Analytical reference materials, standards and high purity solvents 2011/2012

LGC Standards

Excellence through measurement

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Introduction

LGC Standards

Excellence through measurement

LGC Standards

Excellence through measurement

Global quality management solutions for the laboratory

LGC Standards provides products and services to improve measurement and quality control within your laboratory:

- Reference materials for a wide range of sectors including food, environmental, pharmaceutical, clinical and industrial
- Biological standards and reagents
- Production of pharmaceutical impurities
- High purity solvents
- Proficiency testing schemes
- Analytical quality training courses.

Why choose LGC Standards?

- **Widest range of reference materials from a single source**
  giving laboratories access to over 100,000 products, from over 90 suppliers worldwide
- **Access to 30 proficiency testing schemes**
  offering rapid turnaround of results and expert advice
- **Expert technical support**
  on product usage and selecting the appropriate material for your needs
- **Network of international offices**
  offering customer service in your local language and time zone
- **Access to knowledge**
  on import requirements, licensing, shipping regulations and controlled substances management.

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Introduction

About LGC Standards and LGC

LGC Standards provides the widest range of reference materials from a single supplier. We work closely with the leading manufacturers to provide laboratories worldwide with improved access to reference materials, covering an increasingly large range of parameters. Our network of offices in Europe, US, UAE, China and India combined with our extensive experience in selling reference materials and our technical expertise allows LGC Standards to work in partnership with our customers to provide fast delivery together with sound technical advice as well as dealing with complex import and export regulations.

LGC Standards is part of LGC, an established leader in laboratory services, measurement standards, reference materials and proficiency testing. LGC's business is focused upon customers in: forensic science; pharmaceutical and biotechnology research, development and quality control; food chain and environmental surveillance and safety; life science, genomics, proteomics and basic research. LGC also plays a pivotal role in a number of programmes with both government and industry to improve analytical standards and laboratory performance.

LGC's Science and Technology Division acts as the designated UK National Measurement Institute (NMI) for chemical and bioanalytical measurement, and has a long history in the development and validation of analytical methods and the production of reference materials.

Many of the analytical methods, which cover the food, environment, industrial, clinical and pharmaceutical sectors, are accredited to ISO/IEC 17025 (Requirements for the competency of testing and calibration laboratories). Full details of the accreditation schedule can be found on the UKAS website www.ukas.com.

LGC's Science and Technology Division is accredited to ISO Guide 34 (General requirements for the competence of reference materials producers) for the production of reference materials. The measurement capabilities used to produce certified reference materials in its capacity as the UK NMI are verified through participation in key comparison studies organised by the Consultative Committee for the Amount of Substance (CCQM) of the International Weights and Measures Organisation (BIPM). The certificates are recognised by other National Measurement Institutes, under the Mutual Recognition Arrangement.

In its role as the NMI, LGC serves on the International Organisation for Standardisation (ISO) Committee for Reference Materials (REMCO), which aims to carry out and encourage a broad international effort for the harmonization, production and application of certified reference materials (CRMs).

This catalogue

This catalogue "Analytical reference materials and standards 2011/2012" combines products for the environmental, food and industrial sectors, and includes matrix materials, standard solutions and pure materials, and replaces the 2008 edition and subsequent newsletter updates.

New in this catalogue

This catalogue provides a fully updated listing of all relevant reference materials, standards and solvents. Products added since the last catalogue was issued include:

- ULTRAgold® inorganic standards produced under ISO Guide 34
- High purity inorganic compounds
- ULTRA QuECh™ standards for the QuEChERS method
- Mycotoxins and ergot alkaloids
- Labelled toxaphene standards
- Isotope labelled compounds from Cambridge Isotope Laboratories (pesticides, PCBs, sex and steroidal hormone standards, veterinary and human antibiotics, priority pollutant standards, POPs)
- Standards for USP 467
- Veterinary medicine and pharmaceutical standards
- ERM® (European Reference Materials)
- Reference materials from the National Research Centre for Certified Reference Materials, China (NIM)
- Reference nanomaterials
- GMO reference materials
- Certified materials for microbiological properties
- DR CALUX® matrix reference materials
- Combustion element analyser standards
- CONOSTAN® biodiesel standards
- Glass standards
- eVol® hand-held automated analytical syringe

These products are labelled with "***New***" to help you find them easily.

How to find your product

Products are grouped in this catalogue by type of material, as listed in the Contents. An index of all products is included at the back of the catalogue, listed by name and catalogue number.

Producers of reference materials

This catalogue brings together products from a wide variety of sources. There are certified reference materials from National Measurement Institutes and also reference materials and standards from many different producers. Most products are supplied with a certificate of analysis although the lay-out and format of the certificates will vary according to the producer. A list of the producers is given below.

LGC

LGC's Science and Technology Division, based in Teddington in the UK, is accredited to ISO Guide 34 (General requirements for the competence of reference materials producers) for the production of reference materials. LGC has a long history in the development and validation of analytical methods and the reference materials production facility at LGC complements this expertise.

The measurement capabilities used to produce certified reference materials in its capacity as the UK National Measurement Institute are verified through participation in key comparison studies organised by the Consultative Committee for the Amount of Substance (CCQM) of the International Weights and Measures Organisation (BIPM). The certificates are recognised by other National Measurement Institutes, under the Mutual Recognition Arrangement.

In its role as the NMI, LGC serves on the International Organisation for Standardisation (ISO) Committee for Reference Materials (REMCO), which aims to carry out and encourage a broad international effort for the harmonization, production and application of certified reference materials (CRMs).

IRMM

The Institute for Reference Materials and Measurements (IRMM) is one of the seven institutes of the Joint Research Centre (JRC), a Directorate-General of the European Commission (EC). Today IRMM is one of the world's leading reference material producers, and is accredited according to ISO Guide 34 for the production of reference materials.

BCR® and IRMM reference materials (BCR® is a registered trademark of JRC-EC-IRMM) are the products of both research funding and direct action programmes of the European Commission, in which new or improved measurement or testing methods are developed. These programmes are aimed at improving, harmonising or standardising measurements and testing in the European Union.

As an authorised distributor of BCR® reference materials LGC Standards currently holds stock of more than 6000 units of certified BCR® and IRMM reference materials under carefully controlled and monitored conditions.

Federal Institute for Materials Research and Testing (BAM)

The Federal Institute for Materials Research and Testing (BAM) has a long tradition in the production of Certified Reference Materials. Starting in 1912 with a "Normal Steel" for the determination of carbon, the development of new CRMs has increased continuously. One year later eight steel samples with different carbon contents were available. The development continued with the participation of regional German material research and testing institutes as well as industry (1957). In 1968 within the framework of EURONORM, the first European CRMs in the field of iron and steel were issued.

Today a large range of ferrous and non ferrous CRMs together with environmental CRMs and CRMs for engineering materials are offered.

European Reference Materials (ERM®)

The ERM® range of reference materials was launched in May 2004. It is the result of collaboration between three major reference material producers, LGC in the UK, the Institute for Reference Materials and Measurement (IRMM) in Belgium and Bundesanstalt für Materialforschung und Prüfung (BAM) in Germany. The partners are committed to using the most advanced principles for the production of certified reference materials. The certified values have clearly defined and stated traceability and are internationally recognized through participation of the partners in key comparisons organized by the Bureau International des Poids et Mesures (BIPM). All ERM® materials are subject to rigorous homogeneity and stability testing guaranteeing the certified values for every unit over its complete shelf life.

Cambridge Isotope Laboratories

Cambridge Isotope Laboratories, Inc. (CIL) is a world leader in the field of isotope separations and has the capacity to produce 120 kilograms of carbon-13 and 250 kilograms of oxygen-18 annually. For more than 20 years, CIL has specialised in the development, production, and marketing of stable (non-radioactive) isotopes and chemical compounds labelled with stable isotopes to become the world’s premier producer of stable isotope labelled compounds. In the environmental field CIL offer a wide range of stable isotope labelled contaminant standards designed for use with the high accuracy Isotope Dilution Mass Spectrometry (IDMS) technique.

This catalogue includes a dedicated chapter with the full range of environmental contaminant standards from Cambridge Isotope Laboratories.

ULTRA Scientific

ULTRA Scientific, based in the USA, is recognised as a leader in the chemical standards industry. LGC Standards works in close partnership with ULTRA to ensure that laboratory requirements for high quality environmental standards are satisfied. ULTRA's organic and inorganic calibration standards are widely used in the analysis of drinking water, waste water, soils, sediments, foods, cosmetics and other products. Through LGC Standards ULTRA is also able to provide customised standards within manageable time frames and at affordable prices.

The ULTRA Scientific manufacturing, quality control and distribution system is registered to the International ISO 9001 standard. The quality control laboratory at ULTRA Scientific is accredited to ISO Guide 17025 and ISO Guide 34. Since 2005 LGC Standards has been the exclusive distributor of ULTRA products across most of Europe.

IPO (Institute of Industrial Organic Chemistry)

IPO is a significant research and development centre for the Polish chemical industry. They have been producing neat pesticide reference materials for more than 20 years. IPO products are individual high purity organic compounds or mixtures of definite composition, supplied with a certificate of analysis or statement of purity. The Analytical Department of IPO has implemented a Quality Management System for manufacturing of analytical standards of organic compounds. The system fulfills the requirements of PN-EN ISO 9001:2001 standard (identical with ISO 9001:2000) and was certified in 2002 by the IQNET and PCBC (Polish Centre for Testing and Certification).

LGC Standards is the official distributor of IPO standards.

Cerilliant

Cerilliant Corporation is a leading supplier of chemical standards for environmental analysis and forensic drug testing and for providing custom chemical synthesis. They were the first to produce Carbon-13 labelled chlorinated dioxins and furans in co-operation with Cambridge Isotope Laboratories, to meet the increasing demand for isotope-labelled reference standards. From raw materials analysis to continuing shelf-life studies, Cerilliant's ISO 9001 system requires multiple checks to ensure product conformance, and is accredited to ISO Guide 34, ISO 17025 and ISO 9001.

CONOSTAN® Oil Analysis Standards

CONOSTAN® (now a division of SCP Science) is a pioneer and global leader in the development, manufacturing, and marketing of oil analysis reference materials/standards. The pioneering innovation continues with introductions of standards for lubricant product analysis that are benchmarks for quality, accuracy, precision, and traceability. Their quality program is certified under ISO 9001:2000.

The National Institute of Standards and Technology (NIST)

NIST produces standard reference materials (SRMs®). Based in the United States, NIST has provided reference materials to industry and commerce for nearly 100 years. NIST collaborates with companies to provide academia and industry with SRMs for expanding areas such as air and water pollution, which are international issues.

The National Research Council of Canada (NRC)

NRC produces certified reference materials (CRMs) through a program jointly operated by the Institute for National Measurement Standards (INMS), in Ottawa, Ontario and the Institute for Marine Sciences (IMB), in Halifax, Nova Scotia. The NRC range includes a variety of inorganic and organic CRMs.

The National Water Research Institute (NWRI)

NWRI is Canada's largest freshwater research establishment. It carries out a national program of research and development in the aquatic sciences in partnership with the Canadian and international freshwater science communities.

National Analysis Centre for Iron and Steel (NACIS)

National Analysis Centre for Iron and Steel is a research and development centre of analysis and test technology for iron and steel. Based in the Central Iron and Steel Research Institute in Beijing, China, NACIS has over fifty years experience in research of a wide variety of reference materials and production of metal alloy, ore, and ferrous alloy certified reference materials (CRMs).

ChromaDex™

ChromaDex™ was established in 1999 to develop and supply botanical reference standards along with related phytochemical products and services. Based in California, with a testing and research facility in Colorado, ChromaDex™ provides analytical services and products to the dietary supplement, food, beverage, nutraceutical and cosmetic industries.

Others

Materials from the following organisations are also included in this catalogue:

- AEA Technology, UK
- Agricultural Research Centre, Finland
- BioDetection Systems (BDS), Netherlands
- CANMET, Canada
- Cargille Laboratories INC, USA
- Central Office of Measures (GUM), Poland
- Centre for Ecological Research, Poland
- Chemipan, Poland
- Cyano Biotech GmbH, Germany
- Czech Metrological Institute, Czech Republic
- Faculty of Physics and Nuclear Techniques, Poland
- Federal Institute for Materials Research and Testing (BAM), Germany
- G E Sensing, Ireland
- H & D Fitzgerald Ltd, UK
- Institute of Dyes and Organic Products, Poland
- Institute of Nuclear Chemistry and Technology, Poland
- LabAnalityka, Poland
- Institute of Nuclear Chemistry and Technology, Poland
- International Atomic Energy Agency, Austria
- MV Laboratories Inc., USA
- Nacalai Tesque, Japan
- National Institute for Environmental studies (NIES), Japan
- National Measurement Institute, Australia
- National Research Centre for Certified Reference Materials, China
- Poulten, Selfe & Lee Ltd, UK
- R. T. Corporation, USA
- SGE Analytical Science, UK
- Society of Glass Technology, UK
- Sigma-Aldrich
- Stanhope-Seta, UK
- Starna Scientific Ltd, UK
- WEPAL, Netherlands
- Whitehouse Scientific Ltd, UK

The use of reference materials

Reference materials are instrumental in ensuring the reliability of analytical measurements and so ensuring the use of high quality data as the basis of decision making.

When choosing a matrix reference material for a particular application the analyst should consider the following factors before selecting a material:

- Matrix match and potential interferences
- Analytes
- Measurement range
- Measurement uncertainties
- Certification procedures used by the producer
- Documentation supplied with the material (e.g. certificate or report).

About proficiency testing (PT)

Proficiency testing (PT) is a powerful quality assurance tool for laboratories undertaking analytical measurements. A PT scheme provider distributes test materials on a regular basis to participating laboratories for independent testing. The results are returned to the organiser of the scheme who makes an analysis of the results and provides a report to all the participants.

There are a number of benefits of taking part in a PT scheme:

- enable participants to measure their performance against others;
- give an early indication of potential problems or training requirements;
- encourage good performance and reinforce an interest in quality assurance;
- demonstrate an ability to comply with international regulations;
- provide a valuable source of information;
- provide the means to measure consistency across a group of laboratories.

LGC Standards is a UKAS accredited international provider of proficiency testing (PT) services, with over twenty years experience in all aspects of providing proficiency testing services to laboratories undertaking chemical, microbiological and physical analysis. LGC Standards operates 29 proficiency testing schemes serving over 6,000 laboratories, producing and distributing more than 100,000 samples and processing more than 2,000,000 data points per annum.

LGC Standards offers an unprecedented breadth of chemical, microbiological and physical testing schemes across a wide range of industries including meat, dairy and other food sectors, water, soil and other environmental sectors, brewing, distilling, malting, sugar, forensic, consumer safety, pharmaceutical and phytochemical sectors. Schemes are supplied on an international basis with customers in over 130 countries making LGC Standards a major international provider of proficiency testing services.

All the PT schemes within LGC Standards Proficiency Testing are operated in accordance with the international standard ISO/IEC 17043. The statistical analysis undertaken is in accordance with the international standard ISO 13528. LGC Standards Proficiency Testing is accredited by the United Kingdom Accreditation Service for the provision of proficiency testing schemes, currently against ISO/IEC Guide 43-1 (certificate 0001) and ILAC G13. A copy of our current scope of accreditation is available on the UKAS website (www.ukas.com).

Current schemes provided include:

Water and environmental schemes:

- AQUACHECK - chemical analysis of clean water, waste waters, sludges, sediments and soils
- CONTEST - analysis of contaminated soils for a wide range of contaminants
- STACKS - chemical analysis of gaseous emissions in impinger solution and metals on quartz filters
- QWAS - microbiological assessment of waters, effluents and sludges

Food schemes:

- AFPS - chemical and microbiological analysis of animal feed
- QCS - chemical and microbiological analysis of chocolate
- QDCS - composition and safety testing in the dairy sector
- QFCS - chemical testing of food products
- QGS - microbiological analysis of gelatine samples
- QMAS - chemical and microbiological analysis of meat
- QMS - microbiological examination of food and food ingredients

Beverage schemes:

- BAPS - chemical, microbiological and sensory analysis of a range of beers
- DAPS - analysis of a wide range of alcoholic beverages (excluding beer)
- MAPS - analysis of malt and barley used by the malting, brewing and distilling industries
- SUPS - analysis of raw sugar used in the production of food and beverages
- QBS - chemical and microbiological analysis of soft drinks

Other schemes:

- PACQS - laser diffraction particle size analysis
- PHARMASSURE - measurement of a range of chemical and microbiological analytes in pharmaceutical products
- PHYTAS - phytochemical testing of plant extracts
- QMIS - identification of micro-organisms
- QUARTZ - toxicological analysis of drugs and alcohol in blood
- TOYTEST - toy safety testing to the European Standard EN71 and American Standard ASTM F963

Heathcontrol schemes:

- Heathcontrol Therapeutic Drug Scheme
- Heathcontrol Psychoactive Drug Scheme
- Heathcontrol Antibiotic Drug Scheme
- Heathcontrol Toxicology Scheme
- Heathcontrol Drugs of Abuse in Urine Scheme
- Heathcontrol Drugs in Oral Fluid Scheme
- ASI Immunosuppressives Scheme

In addition to these regular schemes, we are able to offer customised and closed proficiency testing schemes tailored to a specific organisation's requirements. We operate such schemes on behalf of some of the largest companies in the world, all of whom are leading brand names recognised for the quality and added value of their products, and we are happy to discuss your requirements in this area.

Please contact your local LGC Standards office to find out more.

Relevant literature

Applications of Reference Materials in Analytical Chemistry VAM
V. Barwick, S. Burke, R. Lawn, P. Roper and R. Walker published by the RSC, 2001, ISBN 0-85404-488-5

Reference Materials in Analytical Chemistry – A Guide for Selection and Use
A. Zchunke published by Springer-Verlag.

Reference Materials for Chemical Analysis – Certification, Availability and Proper Usage
M. Stoeppler, W.R. Wolf, P.J. Jenks published by Wiley-VCH.

Proficiency Testing in Analytical Chemistry, R.Lawn, M.Thompson and R.Walker published by The Royal Society of Chemistry, 1997 ISBN 0-85404-432-9.

Relevant training courses

A range of training courses is available from LGC to help laboratory managers and analysts demonstrate competence in, and keep abreast of, quality assurance issues and practices. LGC's analytical quality training programme includes:

- Achieving traceability in chemical testing
- Using proficiency testing in the analytical laboratory
- Method validation
- Principles and practice of measurement uncertainty in chemical testing laboratories
- Quality systems in testing laboratories
- Statistics for analytical chemists
- Further statistical tools for analytical chemists
- Evaluating measurement uncertainty for chemical testing laboratories

The majority of the courses are run in Teddington, South West London. In addition, LGC can provide training for groups of staff at your own site, where the courses can be customised to meet your exact needs.

For further information, please contact:

Bernadette Francis

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Queens Road
Teddington, Middlesex
TW11 0LY, UK
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Email: training@lgc.co.uk
Web: www.lgc.co.uk

General ordering information

Prices and delivery procedures are shown in the price list that accompanies this catalogue, or are available from your local LGC Standards sales office. For products requiring special delivery procedures (cooled shipping, dangerous goods, etc) additional charges will be applied.

Please check with your local LGC Standards sales office for detailed procedures and transport charges where applicable.

Unless otherwise agreed in advance and in writing, orders are accepted only against LGC Standards standard terms and conditions of sale.

Once delivered to the customer, reference substances are not returnable. For this reason it is very important for users to be certain that the product ordered meets their needs.

LGC Standards technical staff are available to advise on the use and suitability of a particular product. Customers requiring assistance with the use or application of a particular reference substance should contact their local LGC Standards office, contact details are provided at the beginning of this catalogue.

For further information please contact any of the offices listed on the inside cover or visit **www.lgcstandards.com**.

ERM® Application Notes

ERM® Application Note 1

Comparison of a measurement result with the certified value

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The comparison of a measurement result on a certified reference material with the certified value is explained. The method compares the difference between the certified and measured values with its uncertainty, i.e. the combined uncertainty of certified and measured value. Guidance on how to determine the standard uncertainties of certified values as well as standard uncertainties of measurement results is given.

Introduction

One of the most frequent applications of certified reference materials is validation of measurement procedures. To achieve this, measurements on certified reference materials are performed and the results are compared with the certified values. This comparison is often described in a qualitative manner such as measurement results “agree”, “agree well” or even “agree perfectly” with the certified values. However, a structured and quantitative approach exists that allows a statement of the evidence of any bias to be made. This approach takes into account the certified value, the measurement result and their respective uncertainties. These uncertainties are subsequently combined and the expanded uncertainty is compared to the difference. This note will explain the procedure of the uncertainty estimation and the comparison of results with a certified value.

Basic Principles

After the measurement of a CRM the absolute difference between the mean measured value and the certified value can be calculated as

$$\Delta_m = \left| c_m - c_{CRM} \right|$$

Δ_m absolute difference between mean measured value and certified value

c_m mean measured value

c_{CRM} certified value

Each measurement has an uncertainty u_m as described in the ISO Guide to the Expression of Uncertainty in Measurement (GUM) [1] and the Eurachem/CITAC Guide “Quantifying Uncertainty in Analytical Measurement” [2]. This means, any measurement result is only known within the limits of this uncertainty. Similarly, the certified value of a CRM is only known with a specified uncertainty u_{CRM} stated on the certificate. Uncertainties are usually expressed as standard deviations, but only the variances (the squared standard deviations) are additive. The uncertainty of Δ_m is u_Δ, that is calculated from the uncertainty of the certified value and the uncertainty of the measurement result according to

$$u_\Delta = \sqrt{u_m^2 + u_{CRM}^2}$$

u_Δ combined uncertainty of result and certified value (= uncertainty of Δ_m)

u_m uncertainty of the measurement result

u_{CRM} uncertainty of the certified value

The expanded uncertainty U_Δ, corresponding to a confidence interval of approximately 95 %, is obtained by multiplication of u_Δ by a coverage factor (k), usually equal to 2.

$$U_\Delta = 2 \cdot u_\Delta$$

U_Δ expanded uncertainty of difference between result and certified value

To evaluate method performance, Δ_m is compared with U_Δ:
If $\Delta_m \leq U_\Delta$ then there is no significant difference between the measurement result and the certified value.

Determination of the individual uncertainties

Uncertainty of the certified value

The expanded uncertainties U_{CRM} of each certified value are given on the certificate. Each ERM®-certificate also contains in a footnote an explanation of the derivation of the uncertainty (see Figs. 1 and 2). In most cases, the coverage factor is explicitly stated (an example can be seen in Fig. 1). The standard uncertainty, u_{CRM}, of the certified value is obtained by dividing the stated expanded uncertainty by the coverage factor. In some cases, the uncertainty is the 95 % confidence interval of the mean of laboratory means (for an example see Fig. 2). In this case, the t-factor for a 95 % confidence interval with n-1 degrees of freedom (n being the number of laboratories) needs to be determined from statistical tables. Alternatively, the factor can be derived in MS Excel® using the function tinv(0.05, n-1). The standard uncertainty of the certified value u_{CRM} is then obtained by dividing the stated expanded uncertainty by the t-factor.

Uncertainty of the measured value

According to ISO/IEC 17025 [3], measurement uncertainties must be known for each measurement. In the absence of full uncertainty budgets, several approximations exist (ranked in decreasing usefulness) to estimate measurement uncertainties:
1) The within-laboratory reproducibility standard deviation (intermediate precision) as determined from e.g. quality control charts can be used as (rough) estimation of u_m.
2) A reproducibility standard deviation from other sources (e.g. the certification reports available on www.erm-crm.org or an interlaboratory comparison) can be used after it has been proven that the laboratory's performance is equivalent to the performance of the participants in the study in question.
3) The standard deviation of the measurements over a longer time period can be used as very rough estimation. This estimation is typically underestimating the real uncertainty.

ERM®- BB445

PORK FAT		
Chlorobiphenyl [1] Ballschmiter No. (Congener name)	Mass fraction	
	Certified value [2] [µg/kg]	Uncertainty [3] [µg/kg]
28 (2,4,4'-Trichlorobiphenyl)	14.8	1.3
52 (2,2',5,5'-Tetrachlorobiphenyl)	12.9	0.9

[1] As obtained by quantification using GC methods.
[2] Unweighted mean value of the means of 8 accepted sets of data, each set being obtained in a different laboratory a with a different method of determination. The certified value and its uncertainty are traceable to the International Syst units (SI).
[3] Estimated expanded uncertainty U with a coverage factor $k = 2$ corresponding to a level of confidence of about 95 ' defined in the Guide to the Expression of Uncertainty in Measurement (GUM), ISO, 1995. Uncertainty contributions a

Figure 1: Certificate with expanded uncertainty. The standard uncertainty of the certified value (uCRM) is obtained by dividing the expanded uncertainty by the coverage factor (in this case: 2; marked in red)

ERM®- CC580

ESTUARINE SEDIMENT		
Parameter	Mass fraction (based on dry mass)	
	Certified value [1]	Uncertainty [2]
Total Hg	132 mg / kg	3 mg / kg
CH_3Hg^+	75 µg / kg	4 µg / kg

1) Unweighted mean value of the means of 11 to 13 accepted sets of data, each set being obtained in a different laboratory and / or with a different method of determination. Certified value is based on dry mass. The certified values are traceable to SI.

2) The certified uncertainty is the half-width of the 95 % confidence interval of the mean defined in [1]. k-factors were chosen according to the t-distribution depending of the number of accepted sets of results and were 2.179 for total Hg and 2.228 for MeHg.

Figure 2: Certificate with a confidence interval. The standard uncertainty of the certified value (u_{CRM}) is obtained by dividing the expanded uncertainty (in this case: 4 for CH_3Hg) by the coverage factor (in this case: 2.228; circled)

Example: PCBs in pork fat (ERM-BB445)

PCB 52: certified value = (12.9 ± 0.9) µg/kg. Footnote 2 of the certificate states that a coverage factor of k = 2 was applied. u_{CRM} is therefore 0.9/2 µg/kg= 0.45 µg/kg.
The laboratory measurements gave an average of (14.3 ± 1.8) µg/kg (single standard deviation of 6 measurements spread over three weeks). The standard deviation is divided by the square root of the number of measurements, as the average of the results is compared with the certified value. u_m is therefore estimated as 1.8/√6 µg/kg = 0.74 µg/kg.

$$\Delta_m = |c_m - c_{CRM}| = |12.9 - 14.3| \text{ µg/kg} = 1.4 \text{ µg/kg}$$

$$u_\Delta = \sqrt{u_m^2 + u_{CRM}^2} = \sqrt{0.74^2 + 0.45^2} \text{ µg/kg} = 0.87 \text{ µg/kg}$$

The expanded uncertainty U_Δ is $2 \cdot u_\Delta$ = 1.7 µg/kg. This is larger than the difference Δm between the certified and the measured value. The measured mean value is therefore not significantly different from the certified value.

[1] International Standards Organisation (1993) Guide to the expression of uncertainty in measurement. ISO, Geneva. ISBN 92-67-10188-9

[2] Ellison SLR, Roesslein M, Williams A (eds) (2000) EURACHEM/CITAC Guide: Quantifying uncertainty in analytical measurement, 2nd edn. EURACHEM. ISBN 0-948926-15-5.
Available at http:// www.eurachem.com

[3] International Standards Organisation (1999) ISO/IEC 17025: General Requirements for the competence of calibration and testing laboratories. ISO, Geneva

ERM® Application Note 3

Using Reference Materials to Establish Metrological Traceability

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Traceability of measurements enables results to be compared across space and time and is a requirement of ISO/IEC 17025. This note describes the steps that need to be applied to chemical measurement methods to ensure traceability of the results. Reference materials are key to achieving traceability of measurement results. The ERM® range of certified reference materials are produced by three of Europe's top metrology institutions. ERM® reference materials have stated traceabilities and provide a means of ensuring reliability and comparability of the results of chemical analysis.

Introduction

All chemical measurement results depend upon and are ultimately traceable to the values of measurement standards of various types, such as those for mass, volume and the amount of a particular chemical species. If results obtained by different laboratories are to be comparable, it is essential that all results are based on reliable measurement standards whose values are linked to a stated reference. If there are differences in the quality of the measurement standards used in different laboratories, discrepancies will inevitably arise when different laboratories analyse the same sample. It is a requirement of standards such as ISO/IEC 17025 [1] that test results should be traceable, preferably to national or international standards.

Definition

"Traceability is a property of the result of a measurement or the value of a standard whereby it can be related to stated references, usually national or international standards, through an unbroken chain of comparisons all having stated uncertainties" [2].

Traceable measurements

The value of the result for an unknown quantity obtained from a comparison with the value of a calibration standard (where the uncertainty of the result is the uncertainty of this comparison plus the uncertainty of the standard) is traceable to the value of the calibration standard provided the method used for the comparison is valid and the uncertainty of the calibration standard is known.

Application to chemical measurements

Method development establishes an optimised procedure which can be used to compare a sample and standard. Validation shows that, in terms of its performance, this procedure is fit for the purpose in hand and has the appropriate uncertainty.

Calibration establishes the relationships between the values provided by the measurement system with the values of the reference standards.

Traceability or control has to be established for each parameter specified in the procedure. Traceability is established through the use of measurement standards (e.g. certified reference materials) which are appropriate for each parameter. These certified reference materials are selected on the basis of fitness for purpose.

Establishing traceable results

The following steps are necessary to establish traceable results [3]:

1) Specify the measurand and acceptable uncertainty.
2) Choose a suitable method of estimating the value, i.e. a measurement procedure with associated calculation (equation) and measurement conditions.
3) Demonstrate (validation) that the calculation and measurement conditions include all the 'influence quantities' that significantly affect the result.
4) Identify relative importance of each influence quantity. A methodology to help analysts categorise the degree of control to be applied to realising a particular experimental value has been developed [4].
5) Choose and apply appropriate certified reference materials and standards.

Estimate the uncertainty of the result.

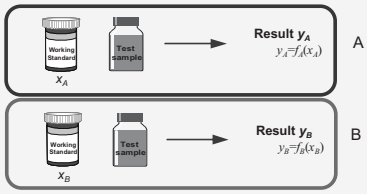

Figure 1:

Two laboratories measure the same test sample using independent working standards (x_A and x_B). Here there is no common reference and no traceability between the results.

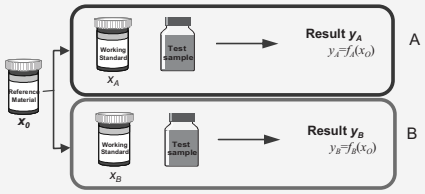

Figure 2:

A relationship between results from Lab A (y_A) and Lab B (y_B) can now be established because they are linked (traceable) to a common reference (x_0)

Figures 1 and 2 show how calibration using a common reference material provides comparability between laboratories and allows a meaningful comparison of results.

A STRATEGY FOR ESTABLISHING TRACEABILITY

To achieve traceability

The method must be properly validated and applied within its stated scope. If not, erroneous results may still be produced, even if all measurements and standards are traceable.

The method must be carried out using the **appropriate stated references**.

Key steps to select the appropriate stated references

Write down and understand the equation used to calculate the analytical result.

Identify any 'reagents' or equipment with specified values detailed in the method.

Identify the fixed conditions used in the method.

Obtain appropriate 'stated references' for use in the practical measurement or realisation of the experimental value.

What are 'appropriate stated references'?

Any 'reference point' that an analyst uses to obtain or realise a particular quantity value in practice.

Physical calibrations are well established, e.g. calibrated weight; reference thermometer; volumetric glassware; stopwatch.

Chemical calibrations can be established in the same way using pure or matrix certified reference materials (calibrants) or other well-characterised pure materials.

What is appropriate?

The analyst must decide, based on:

The degree of control that is required in obtaining or realising a particular value in practice.

The extent to which the quantity affects the result.

The uncertainty of each stated reference must be appropriate.

[1] International Standards Organisation (2005) ISO/IEC 17025: General Requirements for the competence of testing and calibration laboratories. ISO, Geneva

[2] International Vocabulary of Basic and General Terms in Metrology. ISO, Geneva, 1993, 2nd edition. ISBN 92-67-01075-1

[3] Eurachem/CITAC 2003, Traceability in Chemical Measurement. A Guide to achieving comparable results in chemical measurements (www.eurachem.ul.pt)

[4] Meeting the Traceability Requirements of ISO/IEC 17025. An Analyst's Guide. 3rd Edition. V Barwick and S Wood (Editors), LGC Limited, September 2005. ISBN 0-948926-23-6

Acknowledgements
We wish to thank ERM® for the permission to print the Application Notes 1 and 3

ERM® Application Note 6

Use of ERM® certificates and materials

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This application note describes some practical aspects associated with handling and use of certified reference materials (CRMs) in laboratories. The various values provided on a certificate, re-use of materials, applying a moisture correction and interpretation of the traceability statement are also explained.

INTRODUCTION

Understanding the information contained in reference material certificates and correct use of these materials are necessary get the maximum benefit from them. This application note explains the basic terms used on ERM certificates, and gives guidance on the practical handling of materials.

TERMS ON THE CERTIFICATE

Types of assigned values

Three categories of values are assigned for ERM-branded reference materials:

Certified values fulfil the highest standards for reliability. They are traceable to stated references and are accompanied by a GUM (ISO Guide 98 "Guide to the expression of uncertainty in measurement") compatible expanded uncertainty statement valid for the entire shelf life of the ERM-CRM.

Indicative values are not certified due to either a larger uncertainty than required for the intended use or insufficient variety of methods used in the characterisation. The information is therefore unsuitable for certification at the accuracy required for certified values.

Additional material information are values created during the certification exercise, which are usually the result of one method only and indicate the order of magnitude rather than an accurate value. In summary, certified values are those values the certifying body is confident in assigning with the highest accuracy, while indicative values display higher uncertainties and/or lack a full traceability statement. This hierarchy in reliability is shown by the fact that only certified values are on the first page of the certificate. It follows that certified values are more assured than indicative values which in turn are more assured than additional material information.

Metrological traceability statement

Certified and indicative values come with a traceability statement. These statements unambiguously identify the measurand as well as the traceability of the values assigned to this measurand (see also the ERM policy on traceability on www.erm-crm.org). This information is given in one or two footnotes on the certified or indicative values and measurands (see Figures 1 and 2). The following alternatives exist: Measurands can be structurally defined ("rational") like for total Cadmium or Ochratoxin A, or procedurally defined (empirical"), such as for dietary fibre, extractable Cadmium or impact toughness, which are defined via specific measurement protocols.

For structurally defined measurands, ERM principles are stricter than those of ISO Guide 34 and 35 and require availability of results obtained from at least two completely independent methods or confirmation of results by primary methods of measurement by an independent method to demonstrate the absence of any method bias of assigned values.

Values assigned to the measurands can be traceable to the International System of Units (SI) or to an artefact (empirical scales). In the former case, all input factors are calibrated with standards whose values are traceable to the SI, whereas in the latter cases arbitrary standards have been used for at least one step in the calibration (e.g. World Health Organisation primary reference preparation in clinical chemistry, Vienna Standard Mean Ocean Water (VSMOV) for chemical shift).

ERM®- AD452/IFCC

GAMMA-GLUTAMYLTRANSFERASE

	Certified value[1]	Uncertainty [2]
Catalytic concentration in reconstituted material	114.1 U/L 1.90 µkat/L	2.4 U/L 0.04 µkat/L

1) This value is the unweighted mean of 12 sets of results, idependently obtained from 12 laboratories. It is traceable to the IFCC primary reference method at 37 °C. The material must be reconstituted according to the specified procedure (see below). Values were converted from U/L into µkat/L by multiplication with 0.01667.

Figure 1: Traceability statement of ERM-AD452/IFCC. The measurand is procedurally defined and proper calibration of all input factors is assumed.

In earlier ERM certificates, this information was combined into one footnote (Figure 1). Since the adoption of the common ERM policy on traceability, this information is given in two footnotes, one connected to identity of the measurand itself, the other specifying the traceability of the values assigned to it.

Minimum sample intake

Every material is intrinsically heterogeneous. The minimum amount of material that is representative of the whole unit (bottle, vial etc.) is defined as minimum sample intake (Figure 2). The certified value and its uncertainty cannot be guaranteed for subsamples smaller than the minimum sample intake.

Expiry date

Producers of reference materials guarantee the integrity of the material and the validity of the certificate for a specified time (known as the shelf life), provided the material is unopened and stored under the recommended storage conditions. This does not automatically mean that the user has to discard the unused sample once the shelf life has expired, but the producer cannot guarantee stability any longer. Users can continue to use a material under their own responsibility, if they have additional evidence of stability (e.g. no changes in quality control charts, comparison with other materials), however the material certificate will not be valid.

ERM®- BC367

RAPESEED (COLZA)

Parameter	Certified value [1]	Uncertainty [2]
Total glucosinolate (GSL)	99 mmol/kg	9 mmol/kg
Sulphur	10.3 g/kg	0.5 g/kg

1) The certified values for both GSL and S are the unweighted mean of the means of the accepted sets GSL and 7 for S). The values are traceable to SI.

2) Estimated expanded uncertainty *U* with a coverage factor *k* = 2, corresponding to a level of confidence o as defined in the Guide to the Expression of Uncertainty in Measurement (GUM), ISO, 1995. Uncertainty arising from characterisation as well as from homogeneity and stability assessment were taken into considera

This certificate is valid for one year after purchase.

Sales date:

The minimum sample intake is:
- 500 mg for total glucosinolate (GSL) determination,
- 20 g for sulphur calibration by XRF (preparation of discs),
- 200 mg for sulphur determination after digestion.

Figure 2: The shelf life and minimum sample intake are markedin blue and green, respectively.

The shelf life may be extended by the producer if additional information on the stability becomes available. This, however, refers only to newly purchased samples and not to samples distributed before the extension of the original shelf life.

Instructions for use

The instructions for use give a detailed description for each material. These descriptions can refer to dry mass correction (Figure 3), reconstitution procedure, use of values, storage of the material etc. If these instructions are not followed, the assigned values are not valid.

INSTRUCTIONS FOR USE

The sample can be used as it is from the bottle. Before a bottle is opened, it should be shaken manually for 5 min so that the material is re-homogenised. The correction to dry mass should be made on a separate portion of 100 mg which should be dried in an oven at 102 °C for 3-4 h until constant mass is attained. The recommended minimum sample intake is 500 mg.

Figure 3: Definition of the dry mass correction for ERM-CE477. Please note the different recommended sample intakes for dry mass correction and certified measurands (in this case butyltins), reflecting different degrees of homogeneity for moisture and butyltins.

HANDLING ISSUES

Measurement method to be used

The measurement method must determine the same measurand as described in the certificate. This means that for procedurally defined measurands, the method specified on the certificate must be used. For structurally defined measurands, any method determining this measurand can be used and should give unbiased results.

All instruments must be properly calibrated to ensure that measurement results are traceable to the same reference as the certified value. For results traceable to an artefact, a standard whose value is traceable to the same artefact must be used.

Use of opened bottles

For opened units, alteration or even degradation of the material can happen which could not be accounted for during the certification process. Therefore, CRM producers cannot guarantee the assigned values of opened units. It is up to the user's judgement whether or not this material can be further used and which storage conditions or treatment are necessary. As a general guideline, materials should be stored cool, dry, in the dark and closed. Further information is often available in the certification report, which is freely available on www.erm-crm.org. In any case, materials from opened containers should be used as soon as possible after opening to minimise change.

Moisture correction

Many certified values are stated as content per dry mass of sample. As results from different methods (e.g. drying oven, Karl Fischer titration, vacuum drying oven) may differ significantly, the procedure for moisture correction must be clearly stated on the certificate (Figure 3) and this method must be used. Using different conditions can significantly alter the material (Figure 4) and the results obtained. Determination of the dry mass must be performed on a separate subsample.

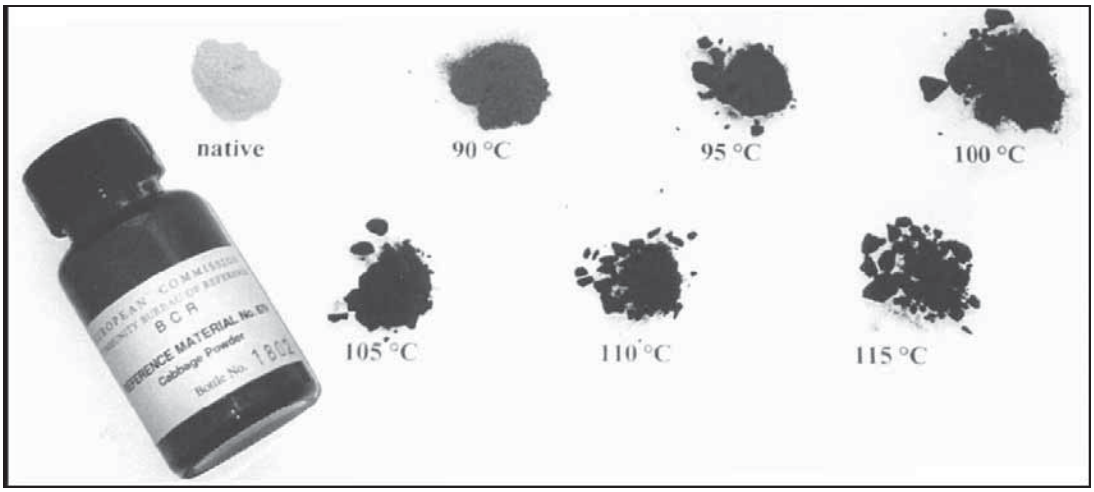

Figure 4: Effect of different drying conditions on a cabbage reference material. Specified drying condition on the certificate: 16h at 70 °C

Matrix reference materials

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Institute for Reference Materials and Measurements (JRC IRMM), Belgium

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Environmental matrix reference materials

Waters

Code	Product	Unit

Drinking water

New ERM-CA011 — Hard drinking water - Metals — 250 mL

Hard drinking water sourced from Tamworth (Staffordshire, UK) spiked with high purity metal standards to levels as close to the EU/UK drinking water regulation limits as possible (EC directive 98/83/EC).

Certified values

Al	209 µg/L	K	5.11mg/L
As	10.15 µg/L	Mg	14.78 mg/L
B	952 µg/L	Mn	48.3 µg/L
Ba	115.2 µg/L	Na	22.77 mg/L
Be	5.01 µg/L	Ni	19.27 µg/L
Ca	73.6 mg/L	Pb	24.51 µg/L
Cd	4.88 µg/L	Sb	5.1 µg /L
Co	4.82 µg/L	Se	9.91 µg/L
Cu	1936 µg/L	Sr	471 µg/L
Cr	48.2 µg/L	Vn	4.75 µg/L
Fe	186 µg/L	Zn	597 µg/L

New ERM-CA015 — Hard drinking water - Anions — 250 mL

Hard drinking water sourced from Teddington, UK, containing anions at concentrations close to the maximum permissible levels specified in EU/UK drinking water regulations (EC directive 98/83/EC).

Certified values

Cl	247 mg/L	Nitrate (as NO_3)	45 mg/L
F	1.3 mg/L	Sulfate (as SO_4)	247 mg/L

New ERM-CA022 — Soft drinking water - Metals — 250 mL

Certified values

Al	204 ± 10 µg/L	Cr	50.8 ± 2.7 µg/L	Na	5.84 ± 0.14 mg/L
As	10.3 ± 1.3 µg/L	Cu	2100 ± 70 µg/L	Ni	20.5 ± 1.6 µg/L
Ba	127 ± 13 µg/L	Fe	201 ± 2 µg/L	Pb	26 ± 0.9 µg/L
Ca	7.33 ± 0.25 mg/L	Mg	1.01 ± 0.04 mg/L	Zn	628 ± 4 µg/L
Cd	5.26 ± 0.21 µg/L	Mn	52.5 ± 3.9 µg/L		

New ERM-CA016 — Soft drinking water - Anions — 250 mL

Soft drinking water sourced from Plymouth, UK, containing anions at concentrations corresponding to the maximum permissible levels specified in EU/UK drinking water regulations (EC directive 98/83/EC).

Certified values

Cl	250 mg/L	Nitrate (as NO_3)	48 mg/L
F	1.5 mg/L	Sulfate (as SO_4)	254 mg/L

New NWLETHBRIDG-03 — Drinking water - Major ions and nutrients — 500 mL

Lot 0909

Certified values

Alkalinity, Total (as $CaCO_3$)	118 mg/L	Nitrate + Nitrite (as N)	0.18 mg/L
Ammonia (as N)	0.385 mg/L	pH	8.19
Calcium	38.5 mg/L	Potassium	1.5 mg/L
Chloride	12.5 mg/L	Silica (as Si)	1.3 mg/L
Conductivity (25°C)	338 µS/cm	Sodium	9.48 mg/L
Dissolved Inorganic Carbon (DIC)	28.0 mg/L	Sulfate (as SO_4)	34.9 mg/L
Fluoride	0.682 mg/L	Total Kjeldahl Nitrogen (TKN)	0.516
Magnesium	13.5 mg/L	Total Nitrogen	0.687
Hardness, Total (as $CaCO_3$)	153 mg/L		

Indicative values for Boron, Colour (Hazen units), Dissolved Organic Carbon (DOC) and Turbidity (JTU/NTU).

Rainwater

NWAES-05 — A low pH acid rain sample - Major ions and nutrients — 500 mL

Lot 0310

Certified Values

Al	0.0117 mg/L	NO_3+ NO_2 (as N)	0.26 mg/L
NH_3 (as N)	0.243 mg/L	K	0.028 mg/L
Ca	0.187 mg/L	SO_4	1.28 mg/L
Cl	0.225 mg/L	Conductivity (µS/cm, 25°C)	10.8
Mg	0.0376 mg/L	pH	4.9
Na	0.181 mg/L	Total Nitrogen	0.512 mg/L

Indicative values

DIC	0.31 mg/L	N (Total Kjeldahl., TKN)	0.26 mg/L
DOC	0.32 mg/L		

DOC = Dissolved Organic Carbon
DIC = Dissolved Inorganic Carbon

Waters

Code	Product	Unit

New ERM-CA408 — Simulated rainwater — 95 mL

	Certified value mg/L	Uncertainty mg/L
Ammonium	0.91	0.028
Chloride	1.96	0.07
Fluoride	0.194	0.008
Magnesium	0.145	0.022
Nitrate	2.01	0.09
Ortho-phosphate	1	0.05
Sulfate	1.46	0.04
Electrochemical property		
Conductivity	18.7 µS/cm	1.8 µS/cm
pH (20°C)	6.3	0.6

NWRAIN-97 — Rain sample - Major ions and nutrients — 500 mL

The sample was collected from a greenhouse roof in Grimsby, Ontario. It was centrifuged and filtered and several years later was modified to represent acid rain by addition of nitric and sulfuric acids. Many of the 52 laboratories which participated in the PE studies are accredited and traceable to NIST and other CRMs.

Lot 1109

Certified Values

Alkalinity, Gran Tit'n (as $CaCO_3$)	- 1.80L	$NO_3 + NO_2$ (as N)	2.22 mg/L
Al	0.034 mg/L	K	0.166 mg/L
NH_3 (as N)	0.186 mg/L	Na	0.298 mg/L
Ca	2.86 mg/L	Sulfate (as SO_4)	5.68 mg/L
Cl	0.576 mg/L	pH	4.47
Dissolved Organic Carbon (DOC)	0.96 mg/L	Conductivity (25°C)	47.2 µS/cm
Mg	1.0 mg/L		

Indicative values for Colour (Hazen units), Dissolved Inorganic Carbon (DIC), Hardness, Total (as $CaCO_3$), Silica (as Si), and Total Kjeldahl Nitrogen (TKN)

New NWTMRAIN-04 — Simulated rain water - Trace elements — 500 mL

Lot 0709

Certified values

Aluminum (Al)	1.94 µg/L	Copper (Cu)	6.95 µg/L	Strontium (Sr)	1.81 µg/L
Antimony (Sb)	0.345 µg/L	Iron (Fe)	24.3 µg/L	Thallium (Tl)	0.371 µg/L
Arsenic (As)	1.14 µg/L	Lead (Pb)	0.344 µg/L	Tin (Sn)	0.723 µg/L
Barium (Ba)	0.868 µg/L	Lithium (Li)	0.518 µg/L	Titanium (Ti)	0.143 µg/L
Beryllium (Be)	0.378 µg/L	Manganese (Mg)	6.70 µg/L	Uranium (U)	0.293 µg/L
Cadmium (Cd)	0.520 µg/L	Molybdenum (Mo)	0.219 µg/L	Vanadium (V)	0.672 µg/L
Chromium (Cr)	0.861 µg/L	Nickel (Ni)	0.910 µg/L	Zinc (Zn)	8.52 µg/L
Cobalt (Co)	0.245 µg/L	Selenium (Se)	0.830 µg/L		

Indicative values for Boron (B) and Rubidium (Rb)

Freshwater

LGC6019 — River water - Trace elements — 250 mL

Collected from the River Thames downstream of Henley-on-Thames at Aston, U.K. Filtered at 0.7 µm and then at 0.45 µm. Stabilised at pH 2 by the addition of concentrated HNO_3.

Certified values

Al	73 µg/L	Cu	15.4 µg/L	Na	24.7 mg/L
Ca	109 mg/L	Fe	287 µg/L	Pb	5.2 µg/L
Cd	0.11 µg/L	K	4.78 mg/L	Zn	59.7 µg/L
Cr	0.78 µg/L	Mg	4.62 mg/L		

LGC6020 — River water - Anions — 250 mL

Collected from the River Thames downstream of Henley-on-Thames at Aston, U.K. Filtered at 0.7 µm and then at 0.45 µm.

Certified values

Cl	38.5 mg/L	Phosphate (as PO_4)	1.1 mg/L
Nitrate (as NO_3)	39.4 mg/L	Sulfate (as SO_4)	53.2 mg/L

BCR-479 — Freshwater - Nitrate, low level — 100 mL

Produced by adding a solution of the required salt to ultra pure water. Final pH was around 6.8

Certified value

NO_3 ..... 214 µmol/kg

BCR-480 — Freshwater - Nitrate, high level — 100 mL

Produced by adding a solution of the required salt to ultra pure water. Final pH was around 6.8

Certified value

NO_3 ..... 885 µmol/kg

Code	Product	Unit

New NIST-1640A — Natural water - Trace elements — 250 mL

This Standard Reference Material (SRM) is intended for use in evaluating methods used in the determination of trace elements in freshwater. NIST-1640a consists of acidified spring water with mass fractions and mass concentrations assigned for 29 elements, 22 of which were gravimetrically added. The solution contains nitric acid at a volume fraction of approximately 2 %. A unit of NIST-1640a consists of 250 mL of solution in a high-density polyethylene (HDPE) bottle sealed inside an aluminized Mylar pouch.

Certified values

Ag ..... 8.017 ± 0.042 µg/kg	Co.....20.08 ± 0.24 µg/kg	Se ..... 19.97 ± 0.16 µg/kg
Al..... 52.6 ± 1.8 µg/kg	Cu.....85.07 ± 0.48 µg/kg	Sr ..... 125.03 ± 0.86 µg/kg
As..... 8.010 ± 0.067 µg/kg	Fe.....36.5 ± 1.7 µg/kg	Tl..... 1.606 ± 0.015 µg/kg
B ..... 300.7 ± 3.1 µg/kg	Mn .....40.07 ± 0.35 µg/kg	U ..... 25.15 ± 0.26 µg/kg
Ba ..... 150.60 ± 0.74 µg/kg	Mo .....45.24 ± 0.59 µg/kg	V ..... 14.93 ± 0.21 µg/kg
Be ..... 3.002 ± 0.027 µg/kg	Ni.....25.12 ± 0.12 µg/kg	Zn..... 55.20 ± 0.32 µg/kg
Cd ..... 3.961 ± 0.072 µg/kg	Pb.....12.005 ± 0.040 µg/kg	
Cr ..... 40.22 ± 0.28 µg/kg	Sb.....5.064 ± 0.045 µg/kg	

NIST-1643e — Simulated freshwater - Trace elements — 250 mL

NIST-1643e simulates the elemental composition of freshwater. Nitric acid is present at a concentration of approximately 0.8 mol/L to stabilise the trace elements.

Certified values

Ag .....1.036 µg/kg	.....1.062 µg/L
Al.....138.33 µg/kg	.....141.8 µg/L
As.....58.98 µg/kg	.....60.45 µg/L
B .....154.0 µg/kg	.....157.9 µg/L
Ba ..... 531.0 µg/kg	.....544.2 µg/L
Be .....13.64 µg/kg	.....13.98 µg/L
Bi.....13.75 µg/kg	.....14.09 µg/L
Ca .....31500 µg/kg	.....32300 µg/L
Cd .....6.408 µg/kg	.....6.568 µg/L
Cr .....19.90 µg/kg	.....20.40 µg/L
Co .....26.40 µg/kg	.....27.06 µg/L
Cu .....22.20 µg/kg	.....22.76 µg/L
Fe.....95.7 µg/kg	.....98.1 µg/L
K .....1984 µg/kg	.....2034 µg/L
Li .....17.0 µg/kg	.....17.4 µg/L
Mg.....7841 µg/kg	.....8037 µg/L
Mn .....38.02 µg/kg	.....38.97 µg/L
Mo .....118.5 µg/kg	.....121.4 µg/L
Na .....20230 µg/kg	.....20740 µg/L
Ni .....60.89 µg/kg	.....62.41 µg/L
Pb .....19.15 µg/kg	.....19.63 µg/L
Rb .....13.80 µg/kg	.....14.14 µg/L
Sb .....56.88 µg/kg	.....58.30 µg/L
Se .....11.68 µg/kg	.....11.97 µg/L
Sr .....315.2 µg/kg	.....323.1 µg/L
Te.....1.07 µg/kg	.....1.09 µg/L
Tl.....7.263 µg/kg	.....7.445 µg/L
V .....36.93 µg/kg	.....37.86 µg/L
Zn.....76.5 µg/kg	.....78.5 µg/L

NIST-1641d — Natural water - Mercury — 10 x 10 mL

Mercury in 2% (v/v) HNO_3 initially stabilised with 1 mg/kg gold

Certified value:.....1.557 mg/kg ± 0.020 mg/kg

New ERM-CA615 — Ground water - Trace elements — 95 mL

Certified values

As..... 9.9 ± 0.7 µg/L	Hg.....0.037 ± 0.004 µg/L	Pb ..... 7.1 ± 0.6 µg/L
Cd ..... 0.106 ± 0.011 µg/L	Mn .....107 ± 5 µg/L	
Fe..... 5.11 ± 0.26 mg/L	Ni.....25.3 ± 1.1 µg/L	

New ERM-CA616 — Ground water - Trace elements, conductivity, pH — 95 mL

ERM-CA616 is a natural groundwater fortified with ammonium dihydrogenphosphate

	Certified value mg/L	Uncertainty mg/L
Calcium	42.6	1.4
Chloride	44.6	0.9
Magnesium	10.1	0.3
Ortho-phosphate	2.24	0.1
Potassium	5.79	0.15
Sodium	27.9	0.8
Electrochemical property		
Conductivity	426 µS/cm	5 µS/cm
pH (20°C)	7.12	0.18

BCR-609 — Ground water - Trace elements (low level) — 500 mL

The material has been filtered at 0.45 µm and acidified with HNO_3 to around pH 1.5

Certified values

Al..... 47.7 µg/kg	Cd.....0.164 µg/kg	Pb ..... 1.63 µg/kg
As..... 1.2 µg/kg	Cu.....2.48 µg/kg	

Code	Product	Unit

BCR-610 — Ground water - Trace elements (high level) — 500 mL

The material has been filtered at 0.45 µm and acidified with HNO_3 to around pH 1.5

Certified values

Al ..... 159 µg/kg	Cd ..... 2.94 µg/kg	Pb ..... 7.78 µg/kg
As ..... 10.8 µg/kg	Cu ..... 45.7 µg/kg	

BCR-611 — Ground water - Bromide (low level) — 4 x 25 mL

(Based on IC measurements) The material has been filtered at 0.45 µm and sterilised by autoclaving

Certified value

Br ..... 93 µg/kg

BCR-612 — Ground water - Bromide (high level) — 4 x 25 mL

(Based on IC measurements) The material has been filtered at 0.45 µm and sterilised by autoclaving

Certified value

Br ..... 252 µg/kg

BCR-617 — Artificial ground water - Trace elements, low carbonate content — 75 mL

Produced by adding solutions of the required salts to ultra pure water. Sterilised by autoclaving

Certified values

Ca ..... 14.6 mg/kg	Mg ..... 7.32 mg/kg	NO_3 ..... 25.8 mg/kg
Cl ..... 26.4 mg/kg	Mn ..... 0.050 mg/kg	SO_4 ..... 26.3 mg/kg
K ..... 9.93 mg/kg	Na ..... 14.6 mg/kg	

New NRCSLRS-5 — River water - Trace elements — 470 mL

Certified values

Aluminum (Al) ..... 49.5 ± 5.0 µg/kg	Nickel (Ni) ..... 0.476 ± 0.064 µg/kg
Arsenic (As) ..... 0.413 ± 0.039 µg/kg	Strontium (Sr) ..... 53.6 ± 1.3 µg/kg
Barium (Ba) ..... 14.0 ± 0.5 µg/kg	Vanadium (V) ..... 0.317 ± 0.033 µg/kg
Cadmium (Cd) ..... 0.0060 ± 0.0014 µg/kg	Zinc (Zn) ..... 0.845 ± 0.095 µg/kg
Chromium (Cr) ..... 0.208 ± 0.023 µg/kg	Calcium (Ca) ..... 10.5 ± 0.4 µg/g
Copper (Cu) ..... 17.4 ± 1.3 µg/kg	Magnesium (Mg) ..... 2.54 ± 0.16 µg/g
Iron (Fe) ..... 91.2 ± 5.8 µg/kg	Potassium (K) ..... 0.839 ± 0.036 µg/g
Lead (Pb) ..... 0.081 ± 0.006 µg/kg	Sodium (Na) ..... 5.38 ± 0.10 µg/g
Manganese (Mn) ..... 4.33 ± 0.18 µg/kg	

Indicative values for Sb, Be, Co, Mg, U

The density of SLRS-5 is 1.0007 g/mL.

NWMIRAMICHI-02 — River Water Soft, Coloured - Major ions and nutrients — 500 mL

Lot 0310

Certified values

Alkalinity, Gran (as $CaCO_3$) ..... 6.87 mg/L	Dissolved Organic Carbon (DOC) ..... 4.57 ml/L
Al ..... 0.07 mg/L	Magnesium ..... 0.459 mg/L
Ammonia (as N) ..... 0.025 mg/L	Nitrate + Nitrite (as N) ..... 0.0500 mg/L
Calcium ..... 2.72 mg/L	pH 6.91
Chloride ..... 0.64 mg/L	Potassium ..... 0.358 mg/L
Colour (Hazen units) 33.9	Silica (as Si) ..... 2.78 mg/L
Conductivity (25°C) ..... 24.7 µS/cm	Sodium ..... 1.39 mg/L
Dissolved Inorganic Carbon (DIC) ..... 1.71 mg/L	Sulfate (as SO_4) ..... 2.49 mg/L

Indicative values for Fluoride and Hardness

New NWMISSIPPI-03 — River Water - Major ions and nutrients — 500 mL

Lot 1010

Certified values

Alkalinity, Total (as $CaCO_3$) ..... 142 mg/L	Magnesium ..... 18.1 mg/L
Boron ..... 0.0255 mg/L	Nitrate + Nitrite (as N) ..... 2.42 mg/L
Calcium ..... 44.8 mg/L	pH 8.14
Chloride ..... 17.3 mg/L	Potassium ..... 2.61 mg/L
Colour (Hazen units) 20.7	Silica (as Si) ..... 0.51 mg/L
Conductivity (25°C) ..... 404 µS/cm	Sodium ..... 9.99 mg/L
Dissolved Inorganic Carbon (DIC) ..... 33.6 mg/L	Sulfate (as SO_4) ..... 32.8 mg/L
Dissolved Organic Carbon (DOC) ..... 6.31 ml/L	Total Kjeldahl Nitrogen (TKN) ..... 0.546 mg/L
Fluoride ..... 0.151 mg/L	Total Nitrogen ..... 2.81 mg/L
Hardness, Total (as $CaCO_3$) ..... 187 mg/L	Turbidity (JTU/NTU) 0.141

New NWBATTLE-02 — River water - Major ions and nutrients — 500 mL

Lot 1010

Certified values

Alkalinity, Total (as $CaCO_3$) ..... 299 mg/L	Magnesium ..... 21.6 mg/L
Boron ..... 0.261 mg/L	pH 8.55
Calcium ..... 25.0 mg/L	Potassium ..... 5.54 mg/L
Chloride ..... 41.7 mg/L	Silica (as Si) ..... 0.253 mg/L
Colour (Hazen units) 20.2	Sodium ..... 1.62 mg/L
Conductivity (25°C) ..... 962 µS/cm	Sulfate (as SO_4) ..... 149 mg/L
Dissolved Inorganic Carbon (DIC) ..... 69.5 mg/L	Total Nitrogen ..... 0.548 mg/L
Fluoride ..... 0.196 mg/L	Turbidity (JTU/NTU) 0.157
Hardness, Total (as $CaCO_3$) ..... 152 mg/L	

Indicative values for Dissolved Organic Carbon (DOC), Nitrate + Nitrite (as N) and Total Kjeldahl Nitrogen (TKN).

Code	Product	Unit

NWONTARIO-99 — Natural lake water - Major ions and nutrients — 500 mL

Lot 1109

Certified values

Alkalinity, Total (as $CaCO_3$)	93.1 mg/L	pH	8.12
Calcium	35.4 mg/L	Potassium	1.51 mg/L
Chloride	20.8 mg/L	Silica (as Si)	0.53 mg/L
Dissolved Inorganic Carbon (DIC)	22.2 mg/L	Sodium	12.7 mg/L
Fluoride	0.63 mg/L	Conductivity (25°C)	307 µS/cm
Hardness, Total (as $CaCO_3$)	124 mg/L	Sulfate (as SO_4)	26.0 mg/L
Magnesium	8.6 mg/L	Total nitrogen	0.58 mg/L

Indicative values for Boron, Colour (Hazen Units), Dissolved Organic Carbon (DOC), Nitrate + Nitrite (as N), Total Kjeldahl Nitrogen (as N) and Turbidity (JTU/NTU).

New **NWBIGMOOSE-02** — Lake water - Major ions and nutrients — 500 mL

Lot 1010

Certified values

Alkalinity, Gran (as $CaCO_3$)	0.992 mg/L	Fluoride	0.0648 mg/L
Aluminium	0.117 mg/L	Magnesium	0.326 mg/L
Ammomia (as N)	0.0263 mg/L	Nitrate + Nitrite (as N)	0.179 mg/L
Calcium	2.00 mg/L	pH	6.02
Chloride	0.463 mg/L	Potassium	0.326 mg/L
Colour (Hazen units)	13.0	Silica (as Si)	1.76 mg/L
Conductivity (25°C)	21.2 µS/cm	Sodium	0.729 mg/L
Dissolved Inorganic Carbon (DIC)	0.483 mg/L	Sulfate (as SO_4)	5.08 mg/L
Dissolved Organic Carbon (DOC)	3.90 mg/L	Total Nitrogen	0.352 mg/L

Indicative values for Hardness, Total (as $CaCO_3$). Total Kjeldahl Nitrogen (TKN) and Turbidity (JTU/NTU).

New **NWCRANBERRY-05** — Lake water - Major ions and nutrients — 500 mL

Lot 1010

Certified values

Alkalinity, Total (as $CaCO_3$)	40 mg/L	Nitrate + Nitrite (as N)	0.151 mg/L
Calcium	13.0 mg/L	pH	7.69
Chloride	35.3 mg/L	Potassium	0.70 mg/L
Colour (Hazen units)	19.3	Silica (as Si)	0.269 mg/L
Conductivity (25°C)	219 µS/cm	Sodium	20.1 mg/L
Dissolved Inorganic Carbon (DIC)	9.42 mg/L	Sulfate (as SO_4)	8.86 mg/L
Dissolved Organic Carbon (DOC)	3.64 mg/L	Total Kjeldahl Nitrogen (TKN)	0.208 mg/L
Fluoride	0.68 mg/L	Total Nitrogen	0.343 mg/L
Hardness, Total (as $CaCO_3$)	55.5 mg/L	Turbidity (JTU/NTU)	0.172
Magnesium	5.63 mg/L		

Indicative value for Boron

NWION-915 — Natural lake water - Major ions and nutrients — 500 mL

Collected from Lake Superior

Lot 1109

Certified Values

pH	7.79	K	0.509 mg/L
Dissolved Inorganic Carbon (DIC)	10.2 mg/L	Mg	2.88 mg/L
Dissolved Organic Carbon (DOC)	1.37 mg/L	$NO_3 + NO_2$ (as N)	0.352 mg/L
Conductivity (25°C)	98.9 µS/cm	Na	1.39 mg/L
Total alkalinity (as $CacO_3$)	43.2 mg/L	Silica (as Si)	1.18 mg/L
Total hardness (as $CaCO_3$)	46.4 mg/L	Sulfate (as SO_4)	3.42 mg/L
Ca	13.7 mg/L	Total nitrogen	0.44 mg/L
Cl	1.42 mg/L		

Indicative values for Ammonia, Colour (Hazen units), Fluoride, NH_3 (as N), Total N (Kjeldahl) and Turbidity (NTU/JTU).

NRCORMS-4 — River water - Mercury — 3 x 50 mL

Certified Value for Mercury

Hg ..... 22.0 ± 1.5 pg/g

SPS-SW1 — Surface water - Trace metals — 6 x 50 mL

Certified values

Al	50 ng/mL	Fe	20 ng/mL	Rb	10.0 ng/mL
As	10.0 ng/mL	K	200 ng/mL	S	2000 ng/mL
Ba	50 ng/mL	Mg	400 ng/mL	Se	2.00 ng/mL
Ca	2000 ng/mL	Mn	10.0 ng/mL	Si	1000 ng/mL
Cd	0.50 ng/mL	Mo	10.0 ng/mL	Sr	50.0 ng/mL
Co	2.00 ng/mL	Na	2000 ng/mL	Tl	0.50 ng/mL
Cr	2.00 ng/mL	Ni	10.0 ng/mL	V	10.0 ng/mL
Cs	2.00 ng/mL	P	100 ng/mL	Zn	20 ng/mL
Cu	20 ng/mL	Pb	5.0 ng/mL		

Rare earth metals (Sc, Y, Ce, Dy, Er, Eu, Gd, Ho, La, Lu, Nd, Pr, Sm, Tb, Th, Tm, U, Yb) 0.50 ng/mL

Waters

Code	Product	Unit
SPS-SW2	Surface water - Trace metals	6 x 50 mL

Certified values

Al	250 ng/mL	Fe	100 ng/mL	Rb	50.0 ng/mL
As	50.0 ng/mL	K	1000 ng/mL	S	10000 ng/mL
Ba	250 ng/mL	Mg	2000 ng/mL	Se	10.0 ng/mL
Ca	10000 ng/mL	Mn	50.0 ng/mL	Si	5000 ng/mL
Cd	2.50 ng/mL	Mo	50.0 ng/mL	Sr	250 ng/mL
Co	10.0 ng/mL	Na	10000 ng/mL	V	50.0 ng/mL
Cr	10.0 ng/mL	Ni	50.0 ng/mL	Zn	100 ng/mL
Cs	10.0 ng/mL	P	500 ng/mL	Tl	2.50 ng/mL
Cu	100 ng/mL	Pb	25.0 ng/mL		

Rare earth metals (Sc, Y, Ce, Dy, Er, Eu, Gd, Ho, La, Lu, Nd, Pr, Sm, Tb, Th, Tm, U, Yb) 2.50 ng/mL

Sea water

LGC6016	Estuarine water - Trace metals	50 mL

Collected from the Severn Estuary, UK, offshore from a heavily industrialised area near Avonmouth.

Certified Values

Cd	101 µg/kg	Mn	976 µg/kg	Pb	196 µg/kg
Cu	190 µg/kg	Ni	186 µg/kg		

Indicative values for Ca, K, Mg, Na, Zn

BCR-505	Estuarine water - Trace elements	1 L

The material has been filtered at 0.45 µm and acidified with HNO_3 to around pH 1.5

Certified values

Cd	0.80 nmol/kg	Ni	24.1 nmol/kg
Cu	29.4 nmol/kg	Zn	172 nmol/kg

BCR-579	Coastal sea water - Mercury	1 L

The material has been filtered at 0.45 µm and acidified with HCl to around pH 1.7

Certified value

Hg ..... 1.9 ng/kg

NRCSLEW-3	Estuarine water - Trace elements	470 mL

Collected from the San Francisco Bay, California, USA at a depth of 5 metres

Certified values

As	1.36 µg/L	Cu	1.55 µg/L	Pb	0.0090 µg/L
Cd	0.048 µg/L	Fe	0.568 µg/L	V	2.57 µg/L
Co	0.042 µg/L	Mn	1.61 µg/L	Zn	0.201 µg/L
Cr	0.183 µg/L	Ni	1.23 µg/L		

Indicative values for Ag, Mo, U

New	NRCNASS-6	Seawater - Trace metals	500 mL

Certified values

Arsenic (As)	1.40 ± 0.12 µg/kg	1.43 ± 0.12 µg/L
Cadmium (Cd)	0.0303 ± 0.0019 µg/kg	0.0311 ± 0.0019 µg/L
Chromium (Cr)	0.116 ± 0.008 µg/kg	0.118 ± 0.008 µg/L
Copper (Cu)	0.242 ± 0.025 µg/kg	0.248 ± 0.025 µg/L
Iron (Fe)	0.483 ± 0.045 µg/kg	0.495 ± 0.046 µg/L
Lead (Pb)	0.006 ± 0.002 µg/kg	0.006 ± 0.002 µg/L
Manganese (Mn)	0.516 ± 0.047 µg/kg	0.530 ± 0.050 µg/L
Nickel (Ni)	0.294 ± 0.025 µg/kg	0.301 ± 0.025 µg/L
Vanadium (V)	1.42 ± 0.16 µg/kg	1.46 ± 0.17 µg/L
Zinc (Zn)	0.251 ± 0.020 µg/kg	0.257 ± 0.020 µg/L

Indicative values for Cobalt (Co), Molybdenum (Mo) and Uranium (U).

New	NRCMOOS-2	Sea water - Nutrients	2 x 50 mL

This certified reference material is primarily intended for use in the calibration of procedures and the development of methods for the analysis of nutrients in seawater.

Certified values

Orthophosphate	1.58 ± 0.10 µmol/L	Nitrite	3.31 ± 0.18 µmol/L
Silicate	28.8 ± 1.0 µmol/L	Nitrite and Nitrate	24.9 ± 1.0 µmol/L

Spiked/fortified water

New	NWTM-15.2	Water - Trace elements	500 mL

Lot 1010

Certified values

Aluminum (Al)	33.6 µg/L	Cobalt (Co)	15.1 µg/L	Selenium (Se)	15.1 µg/L
Antimony (Sb)	16.3 µg/L	Copper (Cu)	17.2 µg/L	Strontium (Sr)	111 µg/L
Arsenic (As)	15.7 µg/L	Iron (Fe)	25.6 µg/L	Thallium (Tl)	18.0 µg/L
Barium (Ba)	13.2 µg/L	Lead (Pb)	11.6 µg/L	Tin (Sn)	14.8 µg/L
Beryllium (Be)	15.3 µg/L	Lithium (Li)	15.0 µg/L	Titanium (Ti)	14.6 µg/L
Boron (B)	23.2 µg/L	Manganese (Mg)	18.1 µg/L	Uranium (U)	15.4 µg/L
Cadmium (Cd)	13.0 µg/L	Molybdenum (Mo)	14.0 µg/L	Vanadium (V)	13.1 µg/L
Chromium (Cr)	16.4 µg/L	Nickel (Ni)	17.6 µg/L	Zinc (Zn)	35.4 µg/L

Indicative value for Bismuth (Bi), Gallium (Ga),, Rubidium (Rb), Silver (Ag) and Tungsten (W)

	Code	Product	Unit
New	NWTM-23.4	Water - Trace elements	500 mL

Lot 1010

Certified values

Aluminum (Al)	94.6 µg/L	Cobalt (Co)	7.09 µg/L	Selenium (Se)	4.59 µg/L
Antimony (Sb)	3.27 µg/L	Copper (Cu)	8.51 µg/L	Strontium (Sr)	111 µg/L
Arsenic (As)	8.16 µg/L	Iron (Fe)	14.4 µg/L	Thallium (Tl)	3.99 µg/L
Barium (Ba)	14.3 µg/L	Lead (Pb)	2.97 µg/L	Tin (Sn)	2.78 µg/L
Beryllium (Be)	2.02 µg/L	Lithium (Li)	2.04 µg/L	Titanium (Ti)	3.19 µg/L
Boron (B)	18.1 µg/L	Manganese (Mg)	8.75 µg/L	Uranium (U)	5.01 µg/L
Cadmium (Cd)	2.92 µg/L	Molybdenum (Mo)	4.23 µg/L	Vanadium (V)	1.93 µg/L
Chromium (Cr)	6.8 µg/L	Nickel (Ni)	4.95 µg/L	Zinc (Zn)	2.47 µg/L

Indicative value for Bismuth (Bi), Gallium (Ga), Rubidium (Rb), Silver (Ag) and Tungsten (W)

New	NWTM-24.3	Water - Trace elements	500 mL

Lot 0510

Certified values

Aluminum (Al)	34.4 µg/L	Cobalt (Co)	6.29 µg/L	Strontium (Sr)	110 µg/L
Antimony (Sb)	3.36 µg/L	Copper (Cu)	6.79 µg/L	Thallium (Tl)	4.18 µg/L
Arsenic (As)	5.21 µg/L	Iron (Fe)	15.4 µg/L	Tin (Sn)	3.72 µg/L
Barium (Ba)	13.2 µg/L	Lead (Pb)	5.82 µg/L	Titanium (Ti)	7.3 µg/L
Beryllium (Be)	2.06 µg/L	Lithium (Li)	5.02 µg/L	Uranium (U)	4.42 µg/L
Bismuth (Bi)	2.37 µg/L	Manganese (Mg)	8.12 µg/L	Vanadium (V)	7.03 µg/L
Boron (B)	15.9 µg/L	Molybdenum (Mo)	6.18 µg/L	Zinc (Zn)	23.5 µg/L
Cadmium (Cd)	3.97 µg/L	Nickel (Ni)	5.12 µg/L		
Chromium (Cr)	5.01 µg/L	Selenium (Se)	3.42 µg/L		

Indicative values for Gallium (Ga), Rubidium (Rb) and Silver (Ag)

New	NWTM-27.3	Water - Trace elements	500 mL

Lot 0310

Certified values

Aluminum (Al)	44.2 µg/L	Cobalt (Co)	2.05 µg/L	Selenium (Se)	1.68 µg/L
Antimony (Sb)	1.49 µg/L	Copper (Cu)	6.19 µg/L	Strontium (Sr)	105 µg/L
Arsenic (As)	2.13 µg/L	Iron (Fe)	10.9 µg/L	Thallium (Tl)	1.48 µg/L
Barium (Ba)	14.8 µg/L	Lead (Pb)	2.86 µg/L	Tin (Sn)	2.26 µg/L
Beryllium (Be)	1.16 µg/L	Lithium (Li)	3.5 µg/L	Titanium (Ti)	2.01 µg/L
Boron (B)	14.7 µg/L	Manganese (Mg)	2.25 µg/L	Uranium (U)	2.03 µg/L
Cadmium (Cd)	1.05 µg/L	Molybdenum (Mo)	2.22 µg/L	Vanadium (V)	2.18 µg/L
Chromium (Cr)	1.74 µg/L	Nickel (Ni)	2.42 µg/L	Zinc (Zn)	16.2 µg/L

Indicative value for Rubidium (Rb) and Silver (Ag)

New	NWTMDA-61.2	Water - Trace elements	500 mL

Lot 0510

Certified values

Aluminum (Al)	57.9 µg/L	Cobalt (Co)	63 µg/L	Strontium (Sr)	113 µg/L
Antimony (Sb)	33.6 µg/L	Copper (Cu)	63.5 µg/L	Thallium (Tl)	36.8 µg/L
Arsenic (As)	34.4 µg/L	Iron (Fe)	79.7 µg/L	Tin (Sn)	55.9 µg/L
Barium (Ba)	62.7 µg/L	Lead (Pb)	61.4 µg/L	Titanium (Ti)	37.2 µg/L
Beryllium (Be)	36.3 µg/L	Lithium (Li)	33.4 µg/L	Uranium (U)	36.8 µg/L
Bismuth (Bi)	22.7 µg/L	Manganese (Mg)	75.7 µg/L	Vanadium (V)	71.1 µg/L
Boron (B)	79 µg/L	Molybdenum (Mo)	72.2 µg/L	Zinc (Zn)	71.3 µg/L
Cadmium (Cd)	58 µg/L	Nickel (Ni)	57.5 µg/L		
Chromium (Cr)	67.2 µg/L	Selenium (Se)	39.3 µg/L		

Indicative values for Gallium (Ga), Rubidium (Rb) and Silver (Ag)

New	NWTMDA-64.2	Water - Trace elements	500 mL

Lot 1010

Certified values

Aluminum (Al)	290 µg/L	Cobalt (Co)	254 µg/L	Strontium (Sr)	640 µg/L
Antimony (Sb)	128 µg/L	Copper (Cu)	274 µg/L	Thallium (Tl)	147 µg/L
Arsenic (As)	162 µg/L	Iron (Fe)	306 µg/L	Tin (Sn)	290 µg/L
Barium (Ba)	291 µg/L	Lead (Pb)	288 µg/L	Titanium (Ti)	128 µg/L
Beryllium (Be)	161 µg/L	Lithium (Li)	152 µg/L	Uranium (U)	142 µg/L
Bismuth (Bi)	131 µg/L	Manganese (Mg)	295 µg/L	Vanadium (V)	290 µg/L
Boron (B)	282 µg/L	Molybdenum (Mo)	290 µg/L	Zinc (Zn)	310 µg/L
Cadmium (Cd)	266 µg/L	Nickel (Ni)	263 µg/L		
Chromium (Cr)	290 µg/L	Selenium (Se)	154 µg/L		

Indicative value for Gallium (Ga), Rubidium (Rb), Silver (Ag) and Tungsten (W)

New	NWTMDA-51.4	Fortified water - Trace elements	500 mL

Lot 1010

Certified values

Aluminum (Al)	94.8 µg/L	Cobalt (Co)	70.4 µg/L	Selenium (Se)	13.8 µg/L
Antimony (Sb)	15.0 µg/L	Copper (Cu)	80.6 µg/L	Strontium (Sr)	116 µg/L
Arsenic (As)	16.3 µg/L	Iron (Fe)	116 µg/L	Thallium (Tl)	20.4 µg/L
Barium (Ba)	72.9 µg/L	Lead (Pb)	68.9 µg/L	Tin (Sn)	16.6 µg/L
Beryllium (Be)	10.0 µg/L	Lithium (Li)	17.8 µg/L	Titanium (Ti)	14.3 µg/L
Boron (B)	47.6 µg/L	Manganese (Mn)	84.0 µg/L	Uranium (U)	29.1 µg/L
Cadmium (Cd)	25.6 µg/L	Molybdenum (Mg)	57.3 µg/L	Vanadium (V)	48.0 µg/L
Chromium (Cr)	66.0 µg/L	Nickel (Ni)	65.6 µg/L	Zinc (Zn)	140 µg/L

Indicative value for Bismuth (Bi), Gallium (Ga), Silver (Ag) and Rubidium (Rb)

Code	Product	Unit

NWTMDA-52.3 — Fortified water - Trace elements — 500 mL

Lot 1010

Certified values

Aluminum (Al)	310 µg/mL	Cobalt (Co)	136 µg/mL	Silver (Ag)	20.6 µg/mL
Antimony (Sb)	16.4 µg/mL	Copper (Cu)	197 µg/mL	Strontium (Sr)	286 µg/mL
Arsenic (As)	25.4 µg/mL	Iron (Fe)	412 µg/mL	Thallium (Tl)	18.3 µg/mL
Barium (Ba)	148 µg/mL	Lead (Pb)	358 µg/mL	Tin (Sn)	19.9 µg/mL
Beryllium (Be)	17.6 µg/mL	Lithium (Li)	13.9 µg/mL	Titanium (Ti)	120 µg/mL
Bismuth (Bi)	12.3 µg/mL	Manganese (Mg)	198 µg/mL	Uranium (U)	22.7 µg/mL
Boron (B)	10.7 µg/mL	Molybdenum (Mo)	207 µg/mL	Vanadium (V)	145 µg/mL
Cadmium (Cd)	90.9 µg/mL	Nickel (Ni)	274 µg/mL	Zinc (Zn)	263 µg/mL
Chromium (Cr)	165 µg/mL	Selenium (Se)	21.7 µg/mL		

Indicative values for Gallium (Ga), Rubidium (Rb) and Tungsten (W)

New **NWTMDA-53.3** — Fortified water - Trace elements — 500 mL

Lot 0310

Certified values

Aluminum (Al)	364 µg/L	Cobalt (Co)	251 µg/L	Silver (Ag)	14.7 µg/L
Antimony (Sb)	16.9 µg/L	Copper (Cu)	308 µg/L	Strontium (Sr)	369 µg/L
Arsenic (As)	34.2 µg/L	Iron (Fe)	325 µg/L	Thallium (Tl)	15.3 µg/L
Barium (Ba)	283 µg/L	Lead (Pb)	349 µg/L	Tin (Sn)	18.5 µg/L
Beryllium (Be)	13.2 µg/L	Lithium (Li)	11 µg/L	Uranium (U)	32.8 µg/L
Bismuth (Bi)	12.0 µg/L	Manganese (Mg)	360 µg/L	Vanadium (V)	315 µg/L
Boron (B)	10.4 µg/L	Molybdenum (Mo)	252 µg/L	Zinc (Zn)	385 µg/L
Cadmium (Cd)	118 µg/L	Nickel (Ni)	311 µg/L		
Chromium (Cr)	340 µg/L	Selenium (Se)	22.7 µg/L		

Indicative value for Rb

NWTMDA-70 — Fortified water - Trace elements — 500 mL

Lot 0310

Certified values

Aluminum (Al)	415 µg/L	Cobalt (Co)	285 µg/L	Selenium (Se)	25.8 µg/L
Antimony (Sb)	21.7 µg/L	Copper (Cu)	398 µg/L	Silver (Ag)	10.9 µg/L
Arsenic (As)	40.7 µg/L	Iron (Fe)	368 µg/L	Strontium (Sr)	441 µg/L
Barium (Ba)	309 µg/L	Lead (Pb)	444 µg/L	Thallium (Tl)	20 µg/L
Beryllium (Be)	15.1 µg/L	Lithium (Li)	21.6 µg/L	Tin (Sn)	19.5 µg/L
Bismuth (Bi)	13.5 µg/L	Manganese (Mg)	302 µg/L	Uranium (U)	55.9 µg/L
Cadmium (Cd)	145 µg/L	Molybdenum (Mo)	259 µg/L	Vanadium (V)	312 µg/L
Chromium (Cr)	389 µg/L	Nickel (Ni)	327 µg/L	Zinc (Zn)	477 µg/L

Indicative values for Boron (B), Rubidium (Rb) and Titanium (Ti)

NWTM-DWS.2 — Fortified water - Trace elements — 500 mL

Lot 1010

Certified values

Aluminum (Al)	58.6 µg/L	Copper (Cu)	167 µg/L	Strontium (Sr)	244 µg/L
Antimony (Sb)	3.21 µg/L	Iron (Fe)	224 µg/L	Thallium (Tl)	8.32 µg/L
Arsenic (As)	4.18 µg/L	Lead (Pb)	7.87 µg/L	Tin (Sn)	12.2 µg/L
Barium (Ba)	146 µg/L	Lithium (Li)	20.2 µg/L	Titanium (Ti)	1.25 µg/L
Beryllium (Be)	13.4 µg/L	Manganese (Mg)	47.3 µg/L	Uranium (U)	14.2 µg/L
Boron (B)	81.5 µg/L	Molybdenum (Mo)	67.1 µg/L	Vanadium (V)	44.5 µg/L
Cadmium (Cd)	4.20 µg/L	Nickel (Ni)	82.5 µg/L	Zinc (Zn)	379 µg/L
Chromium (Cr)	44.4 µg/L	Selenium (Se)	8.65 µg/L		
Cobalt (Co)	64.4 µg/L	Silver (Ag)	9.94 µg/L		

Indicative values for Bismuth (Bi), Gallium (Ga) and Rubidium (Rb)

New **NCS ZC76308** — Water - Trace elements — 100 mL

Certified values

Cd	11.3 ± 5 ng/g	Cu	50 ± 2 ng/g	Zn	91 ± 3 ng/g
Pb	52 ± 2 ng/g	Cr	30 ± 2 ng/g	Ni	62 ± 2 ng/g

New **NIM-GBW08604** — Water - Fluoride — 100 mL

Certified value

F ..... 1.0 µg/g

New **NIM-GBW08605** — Water - Arsenic — 100 mL

Certified value

As ..... 0.500 µg/g

New **NIM-GBW08611** — Water - Arsenic — 20 mL

Certified value

As ..... 1000 µg/mL

New **NIM-GBW08607** — Water - Metals — 20 mL

Certified values

Cd	0.100 µg/g	Cu	1.00 µg/g	Pb	1.00 µg/g
Cr	0.500 µg/g	Ni	0.500 µg/g	Zn	5.00 µg/g

	Code	Product	Unit
New	NIM-GBW08608	Water - Metals Certified values Cd ..... 12.2 ng/g Cu.....51 ng/g Zn..... 91 ng/g Pb ..... 51 ng/g Cr .....33 ng/g Ni ..... 61 ng/g	80 mL
New	NIM-GBW08610	Water - Silver Certified value Ag ..... 1000 µg/mL	20 mL
New	NIM-GBW08612	Water - Cadmium Certified value Cd ..... 1000 µg/mL	20 mL
New	NIM-GBW08602	Water - Cadmium Certified value Cd ..... 0.100 ± 0.002 µg/g	80 mL
New	NIM-GBW08613	Water - Cobalt Certified value Co ..... 1000 µg/mL	20 mL
New	NIM-GBW08614	Water - Chromium Certified value Cr ..... 1000 µg/mL	20 mL
New	NIM-GBW08615	Water - Copper Certified value Cu ..... 1000 µg/mL	20 mL
New	NIM-GBW08616	Water - Iron Certified value Fe..... 1000 µg/mL	20 mL
New	NIM-GBW08617	Water - Mercury Certified value Hg ..... 1000 µg/mL	20 mL
New	NIM-GBW08603	Water - Mercury Certified value Hg ..... 10 ± 0.4 ng/g	20 mL
New	NIM-GBW08618	Water - Nickel Certified value Ni ..... 1000 µg/mL	20 mL
New	NIM-GBW08619	Water - Lead Certified value Pb ..... 1000 µg/mL	20 mL
New	NIM-GBW08601	Water - Lead Certified value Pb ..... 1 µg/g	80 mL
New	NIM-GBW08620	Water - Zinc Certified value Zn..... 1000 µg/mL	20 mL
New	NIM-GBW08606	Water - Chloride, nitrate, sulfate Certified values Cl^-..... 22.2 ± 0.4 µg/g NO_3^-.....4.5 ± 0.1 µg/g SO_4^{2-} ..... 38.1 ± 0.8 µg/g	20 mL
New	NIM-GBW08606-80	Water - Chloride, nitrate, sulfate	80 mL

Miscellaneous

LGC6175	Landfill leachate - Trace elements Landfill leachate collected and supplied in high density polyethylene bottles. Certified values B .....8.9 mg/L Mn ..... 0.33 mg/L Ca .....148 mg/L Na ..... 860 mg/L Fe.....1.05 mg/L Ni..... 0.09 mg/L K .....385 mg/L Zn..... 0.28 mg/L Mg.....221 mg/L	50 mL

Code	Product	Unit
LGC6177	**Landfill leachate - Trace elements** Landfill leachate collected from a landfill site in Loughborough, Leicestershire, UK Assessed values B ..... 9.8 mg/L Ca ..... 74.8 mg/L Cr ..... 0.18 mg/L Fe ..... 3.8 mg/L K ..... 780 mg/L Mg ..... 73.5 mg/L Mn ..... 0.14 mg/L Na ..... 1750 mg/L Ni ..... 0.21 mg/L P ..... 11.5 mg/L	50 mL
BCR-713	**Waste water effluent - Trace elements** Certified values As ..... 9.7 µg/L Cd ..... 5.1 µg/L Cr ..... 21.9 µg/L Cu ..... 69 µg/L Fe ..... 0.40 mg/L Mn ..... 43.4 µg/L Ni ..... 30 µg/L Pb ..... 47 µg/L Se ..... 5.6 µg/L	100 mL
SPS-WW1	**Waste water - Trace metals** Certified values Al ..... 2000 ng/mL As ..... 100.0 ng/mL Cd ..... 20.0 ng/mL Co ..... 60.0 ng/mL Cr ..... 200 ng/mL Cu ..... 400 ng/mL Fe ..... 1000 ng/mL Mn ..... 400 ng/mL Ni ..... 1000 ng/mL P ..... 1000 ng/mL Pb ..... 100.0 ng/mL V ..... 100.0 ng/mL Zn ..... 600 ng/mL	6 x 50 mL
SPS-WW2	**Waste water - Trace metals** Certified values Al ..... 10000 ng/mL As ..... 500 ng/mL Cd ..... 100.0 ng/mL Co ..... 300 ng/mL Cr ..... 1000 ng/mL Cu ..... 2000 ng/mL Fe ..... 5000 ng/mL Mn ..... 2000 ng/mL Ni ..... 5000 ng/mL P ..... 5000 ng/mL Pb ..... 500 ng/mL V ..... 500 ng/mL Zn ..... 3000 ng/mL	6 x 50 mL
SPS-NU-WW1	**Waste water - Anions** Certified values Cl^- ..... 5.00 µg/mL F^- ..... 1.00 µg/mL PO_4^{3-} ..... 1.50 µg/mL NO_3^- ..... 1.00 µg/mL SO_4^{2-} ..... 20.0 µg/mL	6 x 50 mL
SPS-NU-WW2	**Waste water - Anions** Certified values Cl^- ..... 50.0 µg/mL F^- ..... 10.0 µg/mL NO_3^- ..... 5.00 µg/mL PO_4^{3-} ..... 7.50 µg/mL SO_4^{2-} ..... 100 µg/mL	6 x 50 mL
IAEA-304	**Oxygen-18 labelled water** Two Oxygen-18 labelled water samples (A and B) prepared from oxygen-18 enriched water and diluted with distilled water Sample A Assessed value: ..... ^{18}O ..... $251.7\delta D_{VSMOW*}$ Sample B Assessed value: ..... ^{18}O ..... $502.5\delta D_{VSMOW*}$ *The isotopic compositions are given in parts per thousand difference from isotope ratio standard Vienna Standard Mean Ocean Water (VSMOW).	2 x 10 mL
New NCS ZC80301D	**Chemical oxygen demand (COD) - low level** Certified value COD ..... 1164 mg/L	20 mL
New NCS ZC80302D	**Chemical oxygen demand (COD) - medium level** Certified value COD ..... 2528 mg/L	20 mL
New NCS ZC80303D	**Chemical oxygen demand (COD) - high level** Certified value COD ..... 5027 mg/L	20 mL

The Quality Control Materials RTC-QCI-039 - RTC-QCI-088 for water analysis are formulated at known sample target concentrations for routine use. The samples are packaged in flame sealed ampoules to ensure stability. The materials can be used as the basis for a range of control materials by altering the final volume to which the concentrate is diluted.

The analytes and concentrations will vary from lot to lot (except "constant value") but will always be certified within the concentration range shown on the next page.

Code	Product	Unit
RTC-QCI-039	**Residue - Constant value** A set of 2 ampoules of solids for dilution up to 2 litres of residue-free water. Vial 1: Lot 001378 Residue (Total solids) (TS).....491 mg/L Filterable residue (TDS) .....441 mg/L Non-filterable residue (TSS).....57.1 mg/L Vial 2: Lot 018524 Total residue (Total solids) (TS) .....496 mg/L Filterable residue (TDS) .....255 mg/L Non-filterable residue (TSS).....244 mg/L Residue volatile .....50.1 mg/L	set
RTC-QCI-040	**Demand - Constant value** A single sample to be diluted up to 1 litre of reagent water. Biochemical Oxygen Demand (BOD).....147 mg/L Carbonous BOD (CBOD) .....126 mg/L Chemical Oxygen Demand (COD) .....226 mg/L Total Organic Carbon (TOC) .....93.1 mg/L	Amp.
New RTC-QCI-301	**Demand - WP (Whole Volume)** Certified values Biochemical oxygen demand (BOD) ..... 147 ± 5.61 mg/L Carbonaceous BOD (CBOD)..... 126 ± 5.59 mg/L Chemical oxygen demand (COD)..... 227 ± 3.63 mg/L Total organic carbon (TOC)..... 93.2 ± 1.44 mg/L	500 mL
RTC-QCI-041	**pH QC Sample - Constant value** A single sample for direct measurement of pH. pH .....7.2 units	Amp.
New RTC-QCI-028K	**Nutrients** Three samples for dilution up to 1 L QCI-028-1 (20 mL concentrate) Ammonia as N.....14.5 mg/L Nitrate as N.....12.4 mg/L Nitrate + Nitrite as N ..... 12.4 mg/L Orthophosphate as P ..... 1.53 mg/L QCI-028-2 (2 mL concentrate) Kjeldahl nitrogen, total (TKN) .....11.5 mg/L Nitrogen, total ..... 11.5 mg/L Phosphorus, total ..... 3.65 mg/L QCI-028-3 (2 mL concentrate) Nitrite as N 0.672 mg/L	set
RTC-QCI-028-1	**Nutrients** Samples for dilution up to 1 L 20 mL concentrate Ammonia as N.....14.5 mg/L Nitrate as N.....12.4 mg/L Nitrate + Nitrite as N ..... 12.4 mg/L Orthophosphate as P ..... 1.53 mg/L	Amp.
RTC-QCI-028-2	**Nutrients** Sample for dilution up to 1 L 2 mL concentrate Kjeldahl nitrogen, total (TKN) .....11.5 mg/L Nitrogen, total ..... 11.5 mg/L Phosphorus, total ..... 3.65 mg/L	Amp.
RTC-QCI-028-3	**Nutrients** Samples for dilution up to 1L 2 mL concentrate Nitrite as N..... 0.672 mg/L	Amp.
RTC-QCI-042	**Nutrients - Constant value** A two-sample set for dilution up to 2 litres of reagent water. Ampoule 1: Ammonia-N.....2.05 mg/L Nitrate-N .....1.99 mg/L Nitrite-N.....1.50 mg/L Orthophosphate as P.....0.758 mg/L Ampoule 2: Kjeldahl-Nitrogen (TKN) .....7.41 mg/L Total Nitrogen .....7.49 mg/L Total Phosphorus .....1.77 mg/L	set

	Code	Product	Unit
New	RTC-QCI-303-1	**Nutrients - WP (Whole-volume)** Certified values Ammonia as N ..... 12.9 ± 0.129 mg/L Nitrate as N..... 27.8 ± 0.429 mg/L Nitrate+nitrite as N..... 28.2 ± 0.535 mg/L Nitrite as N ..... 0.411 ± 0.00601 mg/L Orthophosphate as P ..... 3.07 ± 0.0199 mg/L	500 mL
New	RTC-QCI-303-2	**Complex Nutrients - WP (Whole-volume)** Certified values Kjeldahl nitrogen (TKN) ..... 3.56 ± 0.140 mg/L Phosphorus, total ..... 7.73 ± 0.121 mg/L	500 mL
	RTC-QCI-032	**Total phenolics** A single sample for dilution up to 1 L Sample Target Concentration Total phenolics..... 1.52 mg/L	Amp.
	RTC-QCI-043	**Phenolics - Constant value** A set of 2 ampoules for dilution up to 2 litres of reagent water. 4AAP (colorimetric) methods are recommended for analysis. RTC-QCI-043-1: Total phenolics (by 4AAP Method) ..... 6.62 mg/L Total phenolics are derived from phenol (40%), 2-Chlorophenol (20%), 2,4-Dinitrophenol (20%), and 2,4-Dichlorophenol (20%). RTC-QCI-043-2: Total phenolics (as phenol)..... 5.0 mg/L	set
	RTC-QCI-033	**Total residual chlorine** A single sample for dilution up to 1 L Sample Target Concentration Total residual chlorine..... 1.47 mg/L	Amp.
	RTC-QCI-044	**Residual chlorine - Constant value** A single sample for dilution up to 1 litre of reagent water. Total or free residual chlorine ..... 1.66 mg/L	Amp.
	RTC-QCI-267	**Water -Total residual chlorine (Low level)** A single sample for dilution up to 2 litres Certified value Total residual chlorine..... 0.104 ± 0.00600 mg/L	
	RTC-QCI-046	**Minerals (set of 2 ampoules) - Constant value** A set of 2 ampoules for dilution into 2 litres of reagent water. RTC-QCI-046-1 and RTC-QCI-046-2 are packaged as 20 mL concentrate Conductivity ..... 458 µhmos/cm^3 Corrositivity (ph)..... 7.25 Hardness ..... 106 mg/L Ca ..... 25.7 mg/L Mg ..... 10.1 mg/L K ..... 8.09 mg/L Na..... 40.6 mg/L Alkalinity as $CaCO_3$..... 43.0 mg/L Chloride..... 85.7 mg/L Fluoride ..... 6.03 mg/L Sulfate ..... 24.4 mg/L	set
	RTC-QCI-031	**Total cyanide** A single sample for dilution up to 1 L Total cyanide..... 0.490 mg/l	Amp.
	RTC-QCI-047	**Cyanide - Constant value** A set of 2 ampoules for dilution up to 2 L of reagent water. Ampoule 1: Cyanide (from Potassium Ferricyanide)..... 0.626 mg/L Ampoule 2: Cyanide (from Potassium Cyanide) ..... 0.482 mg/L	set
	RTC-QCI-048	**Turbidity - Constant value** A single sample for dilution up to 2 L of turbidity-free reagent water. Turbidity .....9.06 NTU	Amp.

Code	Product	Unit

RTC-QCI-034K — Trace metals kit

RTC-QCI-034-2

Lot 016766

Sb	392 µg/kg	Ag	393 µg/kg
Ba	1440 µg/kg	Sr	165 µg/kg
B	1900 µg/kg	Tl	168 µg/kg
Mo	255 µg/kg		

RTC-QCI-034-5

Lot 016205

Sn	1260 µg/kg	Tl	126 µg/kg

RTC-QCI-049 — Trace metal-AA (set of 3 ampoules) - Constant value — set

A set of 3 ampoules for dilution up to 1 L of reagent water.

Ampoule 1:

	Ampoule Concentration		Ampoule Concentration		Ampoule Concentration
Ag	19.2 µg/L	Cd	41 µg/L	Hg	40.8 µg/L
As	30.2 µg/L	Cr	71.5 µg/L	Pb	51.2 µg/L
Ba	109 µg/L	Cu	61.6 µg/L	Se	28.9 µg/L

Ampoule 2:

	Ampoule Concentration		Ampoule Concentration		Ampoule Concentration
Al	107 µg/L	Mn	30.4 µg/L	Tl	41.9 µg/L
Be	40.9 µg/L	Mo	61.9 µg/L	V	71.1 µg/L
Co	30.8 µg/L	Ni	93.5 µg/L		
Fe	84.9 µg/L	Sb	117 µg/L		

Ampoule 3 (21 mL):

	Ampoule Concentration		Ampoule Concentration		Ampoule Concentration
Ba	2030 µg/L	K	1030 µg/L	Zn	844 µg/L
Ca	2080 µg/L	Mg	617 µg/L		
Fe	775 µg/L	Na	1010 µg/L		

RTC-QCI-050 — Trace metal-ICP (set of 2 ampoules) - Constant value — set

A set of 2 ampoules for dilution, the values listed are ampoule concentration.

Ampoule 1:

	Ampoule Concentration		Ampoule Concentration		Ampoule Concentration
As	61.3 µg/L	Fe	30.7 µg/L	Sb	30.7 µg/L
Be	71.6 µg/L	Pb	71.5 µg/L	Se	122 µg/L
Ca	112 µg/L	Li	61.6 µg/L	Sr	143 µg/L
Cd	102 µg/L	Mg	91.9 µg/L	Tl	133 µg/L
Cr	40.9 µg/L	Mn	40.9 µg/L	Ti	72.1 µg/L
Co	61.1 µg/L	Mo	91.9 µg/L	V	91.7 µg/L
Cu	71.2 µg/L	Ni	71.2 µg/L	Zn	30.6 µg/L

Ampoule 2 (21 mL):

	Ampoule Concentration		Ampoule Concentration		Ampoule Concentration
Ag	250 µg/L	B	816 µg/L	Si	3000 µg/L
Al	550 µg/L	K	3700 µg/L		
Ba	664 µg/L	Na	750 µg/L		

RTC-QCI-051 — Anions QC sample — Amp.

A single sample for dilution up to 2 L of reagent water.

	Sample Target Concentration		Sample Target Concentration
Bromide	1 – 10 mg/L	Nitrite as Nitrogen	0.4 – 4 mg/L
Chloride	25 – 275 mg/L	Orthophosphate Phosphorous	0.5 – 5.5 mg/L
Fluoride	0.3 – 4 mg/L	Sulfate	5 – 125 mg/L
Nitrate as Nitrogen	0.25 – 40 mg/L		

RTC-QCI-052 — Corrosivity/Sodium (set of 2 ampoules) - Constant value — set

A set of 2 ampoules for dilution up to 2 L of reagent water.

pH	9.12	Alkalinity as $CaCO_3$	63 mg/L
Filterable residues (TDS)	578 mg/L	Na	25 mg/L
Ca	99.9 mg/L		

New RTC-QCI-244 — Waters - Anionic surfactant (MBAS)-WP — vial

Sample for dilution in 1 litre

Certified values

Surfactants – MBAS	0.414 ± 0.0313 mg/L	Total organic carbon (TOC)	1.45 ± 0.157 mg/L

RTC-QCI-088 — Nonionic surfactants in water — 20 mL

Certified value

Surfactant – Nonionic .....0.700 ± 0.0107 mg/L

Sediments

Code	Product	Unit

Freshwater sediments

LGC6187 — River sediment - Extractable metals — 80 g

The extractable/leachable metal content refers to metals soluble in a hot mixture of nitric and hydrochloric acids using methods based on ISO 11466 (1995).

Certified values

As 24.0 mg/kg	Hg 1.4 mg/kg	Sn 6.8 mg/kg
Cd 2.7 mg/kg	Mn 1240 mg/kg	V 38.3 mg/kg
Cr 84.0 mg/kg	Ni 34.7 mg/kg	Zn 439 mg/kg
Cu 83.6 mg/kg	Pb 77.2 mg/kg	
Fe 23600 mg/kg	Se 1.2 mg/kg	

LGC6189 — River sediment - Extractable metals — 30 g

The river sediment was collected from a monitoring station lagoon on the river Elbe close to the Czech-German Border, Czech Republic. Assessed values for extractable metals precisely following the ISO11466 (1995) method. Only those metals that reached a plateau of concentration after two hours reflux were characterised.

Assessed values

As 26 mg/kg	Cu 87 mg/kg	Ni 34 mg/kg
Cd 3.3 mg/kg	Mn 1120 mg/kg	Pb 87 mg/kg
Cr 93 mg/kg	Mo 1.2 mg/kg	Zn 460 mg/kg

Indicative values for Ba, Se and constituents.

BCR-280R — Lake sediment - Trace elements — 30 g

Certified values

As 33.4 mg/kg	Cr 126 mg/kg	Ni 69 mg/kg
Cd 0.85 mg/kg	Cu 53 mg/kg	Zn 224 mg/kg
Co 16.8 mg/kg	Hg 1.46 mg/kg	

BCR-701 — Sediment - Extractable trace elements (3 step extraction) — 20 g

Certified values

Step 1

Cd 7.34 mg/kg	Cu 49.3 mg/kg	Pb 3.18 mg/kg
Cr 2.26 mg/kg	Ni 15.4 mg/kg	Zn 205 mg/kg

Step 2

Cd 3.77 mg/kg	Cu 124 mg/kg	Pb 126 mg/kg
Cr 45.7 mg/kg	Ni 26.6 mg/kg	Zn 114 mg/kg

Step 3

Cd 0.27 mg/kg	Cu 55.2 mg/kg	Pb 9.3 mg/kg
Cr 143 mg/kg	Ni 15.3 mg/kg	Zn 45.7 mg/kg

BCR-684 — River sediment - Phosphorous — 35 g

Extractable phosphorous in sediment following a five-step extraction procedure

NaOH-extractable P 550 mg/kg	Organic P 209 mg/kg
HCl-extractable P 536 mg/kg	Conc.HCl-extract. P 1373 mg/kg
Inorganic P 1113 mg/kg	

BCR-646 — Freshwater sediment - Butyltin and phenyltin — 40 g

Certified values

TBT 480 µg/kg	MBT 610 µg/kg	DPhT 36 µg/kg
DBT 770 µg/kg	TPhT 29 µg/kg	MPhT 69 µg/kg

Code	Product	Unit
NIST-1939a	River sediment - PCBs and chlorinated pesticides	50 g

Certified Concentrations (Mass Fractions for Selected PCB Congeners

		µg/kg
PCB 52	2,2',5,5'-Tetrachlorobiphenyl	3691 ± 68
PCB 56	2,3,3',4'-Tetrachlorobiphenyl	355 ± 14
PCB 66	2,3',4,4'-Tetrachlorobiphenyl	556 ± 25
PCB 87	2,2'3,4,5'-Pentachlorobiphenyl	166 ± 21
PCB 92	2,2',3,5,5'-Pentachlorobiphenyl	386 ± 27
PCB 95	2,2'3,5',6-Pentachlorobiphenyl	859 ± 29
PCB 101	2,2',4,5,5'-Pentachlorobiphenyl	476 ± 42
PCB 110	2,3,3',4',6-Pentachlorobiphenyl	1008 ± 118
PCB 112	2,3,3',5,6-Pentachlorobiphenyl	33.5 ± 3.1
PCB 153	2,2',4,4',5,5'-Hexachlorobiphenyl	357 ± 92
132	2,2',3,3',4,6'-Hexachlorobiphenyl	
PCB 156	2,3,3',4,4',5-Hexachlorobiphenyl	40.7 ± 4.4
PCB 167	2,3',4,4',5,5'-Hexachlorobiphenyl	17.9 ± 2.0
PCB 172	2,2',3,3',4,5,5'-Heptachlorobiphenyl	16.7 ± 1.5
PCB 175	2,2',3,3',4,5',6-Heptachlorobiphenyl	6.47 ± 0.23
PCB 177	2,2'3,3',4',5,6-Heptachlorobiphenyl	73.3 ± 6.8
PCB 180	2,2',3,4,4',5,5'-Heptachlorobiphenyl	167 ± 11
PCB 8	2,4'-Dichlorobiphenyl	5049 ± 294
PCB 18	2,2',5-Trichlorobiphenyl	2126 ± 264
PCB 28	2,4,4'-Trichlorobiphenyl	1676 ± 91
PCB 31	2,4',5-Trichlorobiphenyl	5698 ± 135
PCB 44	2,2'3,5'-Tetrachlorobiphenyl	766 ± 53
PCB 49	2,2'4,5'-Tetrachlorobiphenyl	3314 ± 317
193	2,3,3',4',5,5',6-Heptachlorobiphenyl	
PCB 189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	3.40 ± 0.47
PCB 191	2,3,3',4,4',5',6-Heptachlorobiphenyl	2.92 ± 0.15
PCB 194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl	41.1 ± 5.7
PCB 199a	2,2',3,3',4,5,5',6'-Octachlorobiphenyl	7.61 ± 0.92
PCB 201a	2,2',3,3',4,5,5',6'-Octachlorobiphenyl	18.9 ± 1.0
PCB 202	2,2',3,3',5,5',6,6'-Octachlorobiphenyl	18.9 ± 2.8
PCB 206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	33.4 ± 2.4
PCB 207	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	3.96 ± 0.22
PCB 208	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	13.1 ± 0.78
PCB 209	2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl	8.32 ± 0.60

Indicative values for further PCB congeners, chlorinated pesticides and PAHs

Code	Product	Unit
NIST-1944	New York/New Jersey waterway sediment - PCBs and PAHs	50 g

This Standard Reference Material® (SRM®) is a mixture of marine sediment collected near urban areas in New York and New Jersey. Reference values are also provided for selected dibenzodioxin and dibenzofuran congeners, total organic carbon, total extractable material, and particle-size characteristics. All of the constituents for which certified, reference, and information values are provided were naturally present in the sediment material before processing.

Certified Concentrations for Selected PAHs

PAHs	Mass Fractions in mg/kg (dry-mass basis)	PAHs	Mass Fractions in mg/kg (dry-mass basis)
Naphthalene	1.65 ± 0.31	Benzo(a)fluoranthene	0.78 ± 012
Phenanthrene	5.27 ± .0.22	Benzo(e)pyrene	3.28 ± 0.11
Anthracene	1.77 ± 0.33	Benzo(a)pyrene	4.30 ± 0.13
Fluoranthene	8.92 ± 0.32	Perylene	1.17 ± 0.24
Pyrene	9.70 ± 0.42	Benzo(ghi)perylene	2.84 ± 0.10
Benzo(c)phenanthrene	0.76 ± 0.10	Indeno(1,2,3-cd)pyrene	2.78 ± 0.10
Benzo(a)anthracene	4.72 ± .0.11	Dibenzo(a,j)anthracene	0.500 ± 0.044
Chrysene	4.86 ± 0.10	Dibenzo(a,c)anthracene	0.335 ± 0.013
Triphenylene	1.04 ± 0.27	Dibenzo(a,h)anthracene	0.424 ± 0.069
Benzo(b)fluoranthene	3.87 ± 0.42	Pentaphene	0.288 ± 0.026
Benzo(j)fluoranthene	2.09 ± 0.44	Benzo(b)chrysene	0.63 ± 0.10
Benzo(k)fluoranthene	2.30 ± 0.20	Picene	0.518 ± 0.093

Certified Concentrations for Selected PCB Congeners

PCB Congeners		Mass Fraction in µg/kg (dry-mass basis)
PCB 8	2,4'-Dichlorobiphenyl	22.3 ± 2.3
PCB 18	2,2',5-Trichlorobiphenyl	51.0 ± 2.6
PCB 28	2,4,4'-Trichlorobiphenyl	80.8 ± 2.7
PCB 31	2,4',5-Trichlorobiphenyl	78.7 ± 1.6
PCB 44	2,2',3,5'-Tetrachlorobiphenyl	60.2 ± 2.0
PCB 49	2,2',4,5'-Tetrachlorobiphenyl	53.0 ± 1.7
PCB 52	2,2',5,5'-Tetrachlorobiphenyl	79.4 ± 2.0
PCB 66	2,3',4,4'-Tetrachlorobiphenyl	71.9 ± 4.3
PCB 87	2,2',3,4,5`-Pentachlorobiphenyl	29.9 ± 4.3
PCB 95	2,2',3,5',6-Pentachlorobiphenyl	65.0 ± 8.9
PCB 99	2,2',4,4',5-Pentachlorobiphenyl	37.5 ± 2.4
PCB 101	2,2',4,5,5'-Pentachlorobiphenyl +	
90	2,2',3,4',5-Pentachlorobiphenyl	73.4 ± 2.5
PCB 105	2,3,3',4,4'-Pentachlorobiphenyl	24.5 ± 1.1
PCB 110	2,3,3',4',6-Pentachlororbiphenyl	63.5 ± 4.7
PCB 118	2,3',4,4',5-Pentachlorobiphenyl	58 ± 4.3
PCB 128	2,2',3,3',4,4'-Hexachlorobiphenyl	8.47 ± 0.28
PCB 138	2,2',3,4,4',5'-Hexachlorobiphenyl +	
163	2,3,3',4',5,6-Hexachlorobiphenyl +	
164	2,3,3',4',5',6-Hexachlorobiphenyl	62.1 ± 3.0
PCB 149	2,2',3,4',5',6-Hexachlorobiphenyl	49.7 ± 1.2
PCB 151	2,2',3,5,5',6-Hexachlorobiphenyl	16.93 ± 0.36
PCB 153	2,2',4,4',5,5'-Hexachlorobiphenyl	74.0 ± 2.9
PCB 156	2,3,3',4,4',5-Hexachlorobiphenyl	6.52 ± 0.66
PCB 170	2,2',3,3',4,4',5-Heptachlorobiphenyl +	
190	(2,3,3',4,4',5,5'-Heptachlorobiphenyl)	22.6 ± 1.4
PCB 180	2,2',3,4,4',5,5'-Heptachlorobiphenyl	44.3 ± 1.2
PCB 183	2,2',3,4,4',5',6-Heptachlorobiphenyl	12.19 ± 0.57
PCB 187	2,2',3,4',5,5',6-Heptachlorobiphenyl +	
159	2,3,3',4,5,5'-Hexachlorobiphenyl +	
182	2,2',3',4,4',5,6'-Heptachlorobiphenyl	25.1 ± 1.0
PCB 194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl	11.2 ± 1.4
PCB 195	2,2',3,3',4,4',5,6-Octachlorobiphenyl	3.75 ± 0.39
PCB 206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	9.21 ± 0.51
PCB 209	Decachlorobiphenyl	6.81 ± 0.33

Certified Concentrations for Selected Chlorinated Pesticides

Chlorinated Pesticides	Mass Fractions in µg/kg (dry-mass basis)
Hexachlorobenzene	6.03 ± 0.35
cis-Chlordane (alpha-Chlordane)	16.51 ± 0.83
trans-Nonachlor	8.20 ± 0.51
4,4'-DDT	119 ± 11

Reference Values for PAHs, Chlorinated Pesticides, Dibenz-p-dioxin and Dibenzofuran Congeners, Particle-Size Characteristics, Total Organic Carbon and Percent Extractable Mass.

Certified and reference concentrations for selected inorganic constituents.

Code	Product	Unit

RTC-CNS329-050 Freshwater sediment - PCBs and PBDEs — 50 g

The PDBEs Reference Values were determined by US EPA Method 1614, ISO 22032 and related GC-MS techniques. The PCB Reference Values were determined by Dutch standard methods (NEN 5771, 5718, and 5719) and EPA extraction methods 3540/3541 or 3550A, followed by Method 8270. The sample is suitable for use by these, or other similar digestion and analytical procedures.

Reference values

Lot 010432

2,4,4'-Trichlorobiphenyl (PCB 28)	54.1 µg/kg
2,2',5,5'-Tetrachlorobiphenyl (PCB 52)	230 µg/kg
2,2',4,5,5'-Pentachlorobiphenyl (PCB 101)	390 µg/kg
2,3',4,4',5-Pentachlorobiphenyl (PCB 118)	75 µg/kg
2,2',3,4,4',5'-Hexachlorobiphenyl (PCB 138)	226 µg/kg
2,2',4,4',5,5'-Hexachlorobiphenyl (PCB 153)	133 µg/kg
2,2',3,4,4',5,5'-Heptachlorobiphenyl (PCB 180)	104 µg/kg
PCBs, total	**1330 µg/kg**
PBDE 47	149 µg/kg
PBDE 99	192 µg/kg
PBDE 100	108 µg/kg
PBDE 153	160 µg/kg
PBDE 154	108 µg/kg
PBDE 183	52.6 µg/kg
PBDE 209	(81.7) µg/kg

New RTC-CNS391-050 Freshwater sediment - PAH, PCBs and Pesticides — 50 g

Reference values

Lot 011305

Acenaphthene	29.9 µg/kg	PCB 138	63.0 µg/kg
Acenaphthylene	53.4 µg/kg	PCB 153	41.3 µg/kg
Anthracene	15.0 µg/kg	PCB 180	54.7 µg/kg
Benzo(a)anthracene	338 µg/kg	2, 4' DDD	15.5 µg/kg
Benzo(a)pyrene	65.3 µg/kg	2, 4' DDE	39.5 µg/kg
Benzo(b)fluoranthene	210 µg/kg	2, 4' DDT	43.0 µg/kg
Benzo(g,h,i)perylene	139 µg/kg	4, 4' DDD	13.9 µg/kg
Benzo(k)fluoranthene	300 µg/kg	4, 4' DDE	18.8 µg/kg
Chrysene	376 µg/kg	4, 4' DDT	10.2 µg/kg
Dibenz(a.h.anthracene)	294 µg/kg	alpha Endosulphan	14.2 µg/kg
Fluoranthene	557 µg/kg	alpha HCH	37.1 µg/kg
Fluorene	408 µg/kg	Aldrin	16.2 µg/kg
Indeno(1,2,3-cd)pyrene	235 µg/kg	beta HCH	21.1µg/kg
Naphthalene	464 µg/kg	gamma HCH	9.50 µg/kg
Phenanthrene	660 µg/kg	Dieldrin	25.7 µg/kg
Pyrene	331 µg/kg	Endrin	10.4 µg/kg
PCB 28	44.9 µg/kg	Hexachlorobenzene	36.5 µg/kg
PCB 52	64.6 µg/kg	Heptachlor	6.54 µg/kg
PCB 101	45.7 µg/kg	Heptachlor epoxide	33.1 µg/kg
PCB 118	24.0 µg/kg		

New RTC-CRM640-025 Lake Sediment - Volatile organic analytes — 25 g

Certified values

Lot 014727

Acetone	20200 µg/kg	Isopropylbenzene	4430 µg/kg
Benzene	4610 µg/kg	Methyl bromide	1410 µg/kg
Bromobenzene	3650 µg/kg	Methyl chloride	4400 µg/kg
Bromodichloromethane	7950 µg/kg	Methylene chloride	9130 µg/kg
Bromoform	7100 µg/kg	4-Methyl-2-pentanone (MIBK)	13900 µg/kg
2-Butanone (Methyl ethyl ketone, MEK)	18400 µg/kg	Methyl tert-butyl ether (MTBE)	5450 µg/kg
Carbon tetrachloride	8640 µg/kg	Naphthalene	6090 µg/kg
Chlorobenzene	3420 µg/kg	Styrene	6370 µg/kg
Chloroethane	2960 µg/kg	1,1,1,2-Tetrachloroethane	3220 µg/kg
1,2-Dibromo-3-chloropropane	7730 µg/kg	1,1,2,2-Tetrachloroethane	4110 µg/kg
Dibromochloromethane	2580 µg/kg	Toluene	2700 µg/kg
Dibromomethane	7010 µg/kg	1,2,4-Trichlorobenzene	3340 µg/kg
1,2-Dichlorobenzene	7440 µg/kg	1,1,1-Trichloroethane	7650 µg/kg
1,3-Dichlorobenzene	4020 µg/kg	Trichloroethene	7620µg/kg
1,4-Dichlorobenzene	2370 µg/kg	Trichlorofluoromethane	5340 µg/kg
1,1-Dichloroethane	6390 µg/kg	1,2,3-Trichloropropane	7330 µg/kg
1,2-Dichloroethane	8500 µg/kg	1,2,4-Trimethylbenzene	13700µg/kg
1,1-Dichloroethylene	7200 µg/kg	1,3,5-Trimethylbenzene	16300µg/kg
cis-1,2-Dichloroethylene	5460 µg/kg	Vinyl chloride	8370 µg/kg
trans-1,3-Dichloropropene	2370 µg/kg	m+p-Xylene	11500 µg/kg
trans-1,2-Dichloroethylene	6360 µg/kg	o-Xylene	2790 µg/kg
Ethylbenzene	5490 µg/kg	Xylene	14500 µg/kg
2-Hexanone	15800 µg/kg		

NIST-RM 8704 Buffalo river sediment - Metals — 50 g

Collected from the Buffalo River in the area of the Ohio Street Bridge, Buffalo, New York. Reference values given for 25 trace elements

NIST-4350b River sediment - Radioactivity — 85 g

Certified values

^{241}Am 1.5 x 10^{-4} Bq/g	^{152}Eu 2.90 x 10^{-2} Bq/g	^{238}Pu 1.3 x 10^{-5} Bq/g
^{60}Co 4.64 x 10^{-3} Bq/g	^{154}Eu 3.78 x 10^{-3} Bq/g	^{239}Pu + ^{240}Pu 5.08 x 10^{-4} Bq/g
^{137}Cs 2.90 x 10^{-2} Bq/g	^{226}Ra 3.58 x 10^{-2} Bq/g	

	Code	Product	Unit
New	NIM-GBW07319	Tibet sediment - Constituents	60 g

Certified values

Ag	6.73 ± 0.62 µg/g	Hg	0.07 ± 0.04 µg/g	Th	8.6 ± 0.6 µg/g
As	512 ± 18 µg/g	Ho	0.86 ± 0.07 µg/g	Ti	0.248 ± 0.006 %
Au	32.6 ± 6.9 µg/g	La	26.6 ± 1.5 µg/g	Tl	2.3 ± 0.8 µg/g
B	43.3 ± 8.6 µg/g	Li	32.7 ± 1.5 µg/g	Tm	0.39 ± 0.04 µg/g
Ba	297 ± 14 µg/g	Lu	0.35 ± 0.02 µg/g	U	6.1 ± 0.4 µg/g
Be	2.32 ± 0.22 µg/g	Mn	0.137 ± 0.007 %	V	80.3 ± 5.9 µg/g
Bi	89.8 ± 4.9 µg/g	Mo	15.5 ± 0.9 µg/g	W	38.7 ± 2.2 µg/g
Br	2.5 ± 1.3 µg/g	Nb	8.6 ± 1.4 µg/g	Y	24.3 ± 1.1 µg/g
Cd	3.76 ± 0.23 µg/g	Nd	23.2 ± 1.6 µg/g	Yb	2.43 ± 0.09 µg/g
Ce	55.6 ± 2.9 µg/g	Ni	46.2 ± 2.4 µg/g	Zn	797 ± 37 µg/g
Cl	87 ± 20 µg/g	P	804 ± 65 µg/g	Zr	132 ± 7 µg/g
Co	45.2 ± 3.1 µg/g	Pb	731 ± 26 µg/g	SiO_2	38.05 ± 0.29 %
Cr	41.3 ± 3.2 µg/g	Pr	6.01 ± 0.37 µg/g	Al_2O_3	9.67 ± 0.19 %
Cs	14.5 ± 0.9 µg/g	Rb	90.0 ± 1.4 µg/g	Fe_2O_3(T)	10.34 ± 0.13 %
Cu	0.50 ± 0.02 %	Sb	13.8 ± 0.8 µg/g	MgO	1.94 ± 0.05 %
Dy	4.40 ± 0.23 µg/g	Sc	8.7 ± 0.3 µg/g	CaO	16.40 ± 0.26 %
Er	2.64 ± 0.15 µg/g	Se	2.8 ± 0.3 µg/g	Na_2O	0.59 ± 0.03 %
Eu	1.17 ± 0.05 µg/g	Sm	4.85 ± 0.24 µg/g	K_2O	1.39 ± 0.03 %
F	632 ± 14 µg/g	Sn	16.6 ± 2.7 µg/g	TiO_2	0.416 ± 0.009 %
Ga	12.4 ± 1.4 µg/g	Sr	324 ± 6 µg/g	MnO	0.174 ± 0.006 %
Gd	4.88 ± 0.23 µg/g	Ta	0.8 ± 0.3 µg/g	P_2O_5	0.182 ± 0.012 %
Ge	1.32 ± 0.30 µg/g	Tb	0.77 ± 0.03 µg/g		
Hf	4.0 ± 0.5 µg/g	Te	0.86 ± 0.32 µg/g		

New	NIM-GBW07320	Tibet sediment - Constituents	60 g

Certified values

Ag	0.05 ± 0.01 µg/g	Ni	35.0 ± 1.1 µg/g	Sm	5.95 ± 0.36 µg/g
As	18.9 ± 0.8 µg/g	P	561 ± 13 µg/g	Eu	1.20 ± 0.04 µg/g
Au	1.2 ± 0.3 µg/g	Pb	30.9 ± 1.4 µg/g	Gd	5.35 ± 0.24 µg/g
B	59.0 ± 6.2 µg/g	Rb	119 ± 2 µg/g	Tb	0.83 ± 0.04 µg/g
Ba	404 ± 11 µg/g	Sc	11.8 ± 0.5 µg/g	Dy	4.71 ± 0.25 µg/g
Be	2.52 ± 0.09 µg/g	Sb	1.44 ± 0.19 µg/g	Ho	0.94 ± 0.08 µg/g
Bi	0.46 ± 0.04 µg/g	Se	0.10 ± 0.02 µg/g	Er	2.79 ± 0.16 µg/g
Br	1.2 ± 0.3 µg/g	Sn	2.8 ± 0.2 µg/g	Tm	0.43 ± 0.03 µg/g
Cd	0.18 ± 0.03 µg/g	Sr	83.8 ± 2.1 µg/g	Yb	2.69 ± 0.08 µg/g
Cl	114 ± 26 µg/g	Ta	1.2 ± 0.2 µg/g	Lu	0.41 ± 0.02 µg/g
Co	16.7 ± 0.7 µg/g	Te	0.045 ± 0.021 µg/g	Y	24.6 ± 0.7 µg/g
Cr	68.2 ± 3.3 µg/g	Th	12.9 ± 0.7 µg/g	SiO_2	63.07 ± 0.43 %
Cs	10.4 ± 1.4 µg/g	Ti	0.375 ± 0.037 %	Al_2O_3	14.18 ± 0.25 %
Cu	27.3 ± 2.1 µg/g	Tl	0.60 ± 0.13 µg/g	Fe_2O_3(T)	5.84 ± 0.07 %
F	659 ± 55 µg/g	U	2.8 ± 0.3 µg/g	MgO	1.55 ± 0.03 %
Ga	19.0 ± 1.3 µg/g	V	102 ± 3 µg/g	CaO	3.69 ± 0.07 %
Ge	1.44 ± 0.14 µg/g	W	1.9 ± 0.2 µg/g	Na_2O	1.11 ± 0.03 %
Hf	6.0 ± 0.3 µg/g	Zn	82.7 ± 3.2 µg/g	K_2O	2.51 ± 0.06 %
Hg	0.022 ± 0.003 µg/g	Zr	210 ± 7 µg/g	TiO_2	0.650 ± 0.016 %
Li	48.5 ± 1.3 µg/g	La	39.0 ± 2.3 µg/g	MnO	0.127 ± 0.003 %
Mn	987 ± 28 µg/g	Ce	76.1 ± 2.3 µg/g	P_2O_5	0.130 ± 0.004 %
Mo	0.75 ± 0.07 µg/g	Pr	8.42 ± 0.42 µg/g		
Nb	14.6 ± 0.6 µg/g	Nd	31.0 ± 1.6 µg/g		

New	NIM-GBW07321	Tibet sediment - Constituents	60 g

Certified values

Ag	0.09 ± 0.01 µg/g	Hg	0.033 ± 0.006 µg/g	Th	12.1 ± 0.6 µg/g
As	22.0 ± 0.5 µg/g	Ho	0.95 ± 0.08 µg/g	Ti	0.439 ± 0.014 %
Au	1.4 ± 0.3 µg/g	La	38.8 ± 2.9 µg/g	Tl	0.64 ± 0.12 µg/g
B	77.0 ± 4.2 µg/g	Li	53.9 ± 1.1 µg/g	Tm	0.43 ± 0.04 µg/g
Ba	508 ± 13 µg/g	Lu	0.41 ± 0.02 µg/g	U	2.6 ± 0.3 µg/g
Be	2.34 ± 0.12 µg/g	Mn	876 ± 15 µg/g	V	101 ± 3 µg/g
Bi	0.50 ± 0.03 µg/g	Mo	0.60 ± 0.05 µg/g	W	2.6 ± 0.2 µg/g
Br	1.0 ± 0.3 µg/g	Nb	15.9 ± 0.6 µg/g	Y	24.4 ± 0.6 µg/g
Cd	0.54 ± 0.04 µg/g	Nd	31.1 ± 1.8 µg/g	Yb	2.73 ± 0.15 µg/g
Ce	74.0 ± 2.9 µg/g	Ni	51.9 ± 1.9 µg/g	Zn	176 ± 6 µg/g
Cl	63 ± 5 µg/g	P	613 ± 19 µg/g	Zr	222 ± 7 µg/g
Co	17.9 ± 0.8 µg/g	Pb	61.9 ± 4.0 µg/g	SiO_2	69.70 ± 0.20 %
Cr	93.8 ± 4.9 µg/g	Pr	8.33 ± 0.46 µg/g	Al_2O_3	13.19 ± 0.16 %
Cs	11.9 ± 1.1 µg/g	Rb	115 ± 2 µg/g	Fe_2O_3(T)	5.85 ± 0.05 %
Cu	27.1 ± 1.5 µg/g	Sb	1.91 ± 0.22 µg/g	MgO	1.58 ± 0.04 %
Dy	4.73 ± 0.25 µg/g	Sc	12.0 ± 0.4 µg/g	CaO	0.39 ± 0.04 %
Er	2.81 ± 0.15 µg/g	Se	0.16 ± 0.02 µg/g	Na_2O	1.23 ± 0.03 %
Eu	1.21 ± 0.04 µg/g	Sm	5.99 ± 0.39 µg/g	K_2O	2.56 ± 0.08 %
F	622 ± 42 µg/g	Sn	14.9 ± 3.2 µg/g	TiO_2	0.725 ± 0.009 %
Ga	17.8 ± 0.9 µg/g	Sr	59.3 ± 2.1 µg/g	MnO	0.113 ± 0.002 %
Gd	5.40 ± 0.25 µg/g	Ta	1.2 ± 0.1 µg/g	P_2O_5	0.140 ± 0.004 %
Ge	1.34 ± 0.13 µg/g	Tb	0.83 ± 0.04 µg/g		
Hf	6.5 ± 0.4 µg/g	Te	0.05 ± 0.03 µg/g		

Code	Product	Unit

NCS DC70314 — Tibet sediment - Constituents — 60 g

Certified values

Ag	0.06 ± 0.01 µg/g	Ni	17.2 ± 0.7 µg/g	Sm	5.55 ± 0.33 µg/g
As	19.0 ± 2.5 µg/g	P	441 ± 10 µg/g	Eu	0.96 ± 0.04 µg/g
Au*	0.9 ± 0.2 µg/g	Pb	23.0 ± 1.2 µg/g	Gd	4.88 ± 0.25 µg/g
B	58.9 ± 5.7 µg/g	Rb	104 ± 2 µg/g	Tb	0.75 ± 0.03 µg/g
Ba	341 ± 10 µg/g	Sc	6.96 ± 0.51 µg/g	Dy	4.24 ± 0.20 µg/g
Be	2.13 ± 0.14 µg/g	Sb	1.08 ± 0.27 µg/g	Ho	0.86 ± 0.07 µg/g
Bi	0.34 ± 0.03 µg/g	Se	0.11 ± 0.01 µg/g	Er	2.56 ± 0.11 µg/g
Br	1.4 ± 0.3 µg/g	Sn	3.1 ± 0.4 µg/g	Tm	0.39 ± 0.03 µg/g
Cd	0.15 ± 0.01 µg/g	Sr	117.5 ± 4.4 µg/g	Yb	2.53 ± 0.08 µg/g
Cl	120 ± 29 µg/g	Ta	1.3 ± 0.1 µg/g	Lu	0.38 ± 0.02 µg/g
Co	7.9 ± 0.4 µg/g	Te	(0.03) µg/g	Y	23.3 ± 1.1 µg/g
Cr	36.2 ± 1.9 µg/g	Th	12.7 ± 0.6 µg/g	SiO_2	76.43 ± 0.13 %
Cs	8.0 ± 0.7 µg/g	Ti	0.276 ± 0.008 %	Al_2O_3	10.60 ± 0.05 %
Cu	13.3 ± 0.7 µg/g	Tl	0.59 ± 0.17 µg/g	Fe_2O_3(T)	3.29 ± 0.04 %
F	444 ± 12 µg/g	U	2.9 ± 0.3 µg/g	MgO	0.72 ± 0.03 %
Ga	13.6 ± 0.6 µg/g	V	56.1 ± 2.1 µg/g	CaO	1.27 ± 0.03 %
Ge	1.30 ± 0.15 µg/g	W	2.4 ± 0.2 µg/g	Na_2O	1.47 ± 0.04 %
Hf	6.5 ± 0.8 µg/g	Zn	51.8 ± 2.2 µg/g	K_2O	2.30 ± 0.03 %
Hg	0.074 ± 0.004 µg/g	Zr	220 ± 11 µg/g	TiO_2	0.469 ± 0.006 %
Li	40.1 ± 1.0 µg/g	La	37.9 ± 2.0 µg/g	MnO	0.067 ± 0.002 %
Mn	517 ± 16 µg/g	Ce	70.6 ± 2.4 µg/g	P_2O_5	0.101 ± 0.002 %
Mo	0.70 ± 0.03 µg/g	Pr	7.86 ± 0.39 µg/g		
Nb	15.2 ± 0.6 µg/g	Nd	29.0 ± 1.3 µg/g		

New NIM-GBW07323 — Tibet sediment - Constituents — 60 g

Certified values

Ag	0.10 ± 0.01 µg/g	Hf	6.0 ± 0.5 µg/g	Tb	0.78 ± 0.04 µg/g
As	22.5 ± 1.1 µg/g	Hg	0.026 ± 0.004 µg/g	Th	12.3 ± 0.6 µg/g
Au	1.6 ± 0.3 µg/g	Ho	0.87 ± 0.07 µg/g	Ti	0.290 ± 0.003 %
B	59.5 ± 4.7 µg/g	La	37.0 ± 2.0 µg/g	Tl	0.62 ± 0.10 µg/g
Ba	384 ± 15 µg/g	Li	27.9 ± 0.9 µg/g	Tm	0.40 ± 0.03 µg/g
Be	2.13 ± 0.11 µg/g	Lu	0.38 ± 0.02 µg/g	U	2.5 ± 0.2 µg/g
Bi	0.46 ± 0.04 µg/g	Mn	567 ± 15 µg/g	V	57.4 ± 2.1 µg/g
Br	1.5 ± 0.3 µg/g	Mo	0.83 ± 0.05 µg/g	W	2.4 ± 0.1 µg/g
Cd	0.33 ± 0.03 µg/g	Nb	15.6 ± 0.4 µg/g	Y	23.7 ± 1.4 µg/g
Ce	71.3 ± 2.0 µg/g	Nd	29.3 ± 1.6 µg/g	Yb	2.55 ± 0.13 µg/g
Cl	96.7 ± 6.4 µg/g	Ni	20.1 ± 0.8 µg/g	Zn	91.1 ± 2.4 µg/g
Co	9.2 ± 0.5 µg/g	P	501 ± 21 µg/g	Zr	206 ± 10 µg/g
Cr	37.5 ± 1.5 µg/g	Pb	31.7 ± 1.6 µg/g	SiO_2	66.50 ± 0.10 %
Cs	7.9 ± 1.2 µg/g	Pr	8.10 ± 0.17 µg/g	Al_2O_3	10.17 ± 0.18 %
Cu	16.6 ± 1.0 µg/g	Rb	104 ± 2 µg/g	Fe_2O_3(T)	3.70 ± 0.04 %
Dy	4.40 ± 0.21 µg/g	Sb	0.82 ± 0.14 µg/g	MgO	1.14 ± 0.04 %
Er	2.60 ± 0.13 µg/g	Sc	7.9 ± 0.5 µg/g	CaO	6.50 ± 0.12 %
Eu	1.04 ± 0.03 µg/g	Se	0.12 ± 0.01 µg/g	Na_2O	1.17 ± 0.03 %
F	539 ± 37 µg/g	Sm	5.61 ± 0.33 µg/g	K_2O	2.26 ± 0.03 %
Ga	14.1 ± 1.0 µg/g	Sn	3.3 ± 0.4 µg/g	TiO_2	0.491 ± 0.010 %
Gd	5.15 ± 0.23 µg/g	Sr	132 ± 3 µg/g	MnO	0.074 ± 0.002 %
Ge	1.09 ± 0.15 µg/g	Ta	1.3 ± 0.2 µg/g	P_2O_5	0.115 ± 0.004 %

NCS DC70316 — Tibet sediment - Constituents — 60 g

Certified values

Ag	0.07 ± 0.01 µg/g	Ni	75.3 ± 3.0 µg/g	Sm	8.11 ± 0.54 µg/g
As	13.7 ± 0.7 µg/g	P	571 ± 28 µg/g	Eu	1.58 ± 0.05 µg/g
Au	1.8 ± 0.4 µg/g	Pb	24.0 ± 1.7 µg/g	Gd	7.11 ± 0.29 µg/g
B	56.1 ± 6.4 µg/g	Rb	117 ± 3 µg/g	Tb	1.08 ± 0.05 µg/g
Ba	476 ± 17 µg/g	Sc	11.7 ± 1.0 µg/g	Dy	6.10 ± 0.31 µg/g
Be	2.43 ± 0.07 µg/g	Sb	1.10 ± 0.13 µg/g	Ho	1.20 ± 0.09 µg/g
Bi	0.30 ± 0.02 µg/g	Se	0.16 ± 0.02 µg/g	Er	3.54 ± 0.17 µg/g
Br	1.9 ± 0.4 µg/g	Sn	3.2 ± 0.2 µg/g	Tm	0.54 ± 0.03 µg/g
Cd	0.10 ± 0.02 µg/g	Sr	113 ± 3 µg/g	Yb	3.47 ± 0.12 µg/g
Cl	56.7 ± 7.0 µg/g	Ta	1.3 ± 0.2 µg/g	Lu	0.52 ± 0.03 µg/g
Co	14.7 ± 0.7 µg/g	Te	0.05 ± 0.02 µg/g	Y	32.7 ± 1.9 µg/g
Cr	139 ± 13 µg/g	Th	15.5 ± 0.6 µg/g	SiO_2	68.50 ± 0.13 %
Cs	13.7 ± 0.8 µg/g	Ti	0.451 ± 0.009 %	Al_2O_3	14.42 ± 0.05 %
Cu	23.1 ± 1.0 µg/g	Tl	0.67 ± 0.11 µg/g	Fe_2O_3(T)	4.81 ± 0.06 %
F	440 ± 22 µg/g	U	2.5 ± 0.6 µg/g	MgO	1.74 ± 0.05 %
Ga	18.5 ± 0.8 µg/g	V	87.7 ± 3.6 µg/g	CaO	0.53 ± 0.02 %
Ge	1.22 ± 0.19 µg/g	W	2.3 ± 0.2 µg/g	Na_2O	1.66 ± 0.04 %
Hf	8.8 ± 0.4 µg/g	Zn	80.9 ± 2.9 µg/g	K_2O	2.66 ± 0.06 %
Hg	0.043 ± 0.002 µg/g	Zr	299 ± 6 µg/g	TiO_2	0.753 ± 0.012 %
Li	41.9 ± 1.3 µg/g	La	48.2 ± 3.2 µg/g	MnO	0.087 ± 0.002 %
Mn	668 ± 17 µg/g	Ce	93.4 ± 4.6 µg/g	P_2O_5	0.134 ± 0.003 %
Mo	0.83 ± 0.07 µg/g	Pr	10.9 ± 0.4 µg/g		
Nb	15.3 ± 0.6 µg/g	Nd	41.9 ± 1.9 µg/g		

Code	Product	Unit

NCS DC70317 — Tibet sediment - Constituents — 60 g

Certified values

Ag	0.32 ± 0.02 µg/g	Hg	0.034 ± 0.004 µg/g	Th	17.5 ± 0.5 µg/g
As	37.3 ± 1.7 µg/g	Ho	0.83 ± 0.06 µg/g	Ti	0.217 ± 0.077 % µg/g
Au*	6.2 ± 1.4 µg/g	La	37.9 ± 1.8 µg/g	Tl	0.96 ± 0.21 µg/g
B	30.0 ± 2.8 µg/g	Li	29.7 ± 0.7 µg/g	Tm	0.38 ± 0.03 µg/g
Ba	369 ± 15 µg/g	Lu	0.36 ± 0.02 µg/g	U	3.4 ± 0.2 µg/g
Be	2.67 ± 0.11 µg/g	Mn	614 ± 21 µg/g	V	45.7 ± 1.9 µg/g
Bi	1.22 ± 0.07 µg/g	Mo	6.6 ± 0.4 µg/g	W	9.2 ± 0.5 µg/g
Br	0.9 ± 0.5 µg/g	Nb	12.0 ± 0.4 µg/g	Y	23.0 ± 1.3 µg/g
Cd	0.57 ± 0.04 µg/g	Nd	29.0 ± 1.5 µg/g	Yb	2.46 ± 0.11 µg/g
Ce	72.0 ± 2.1 µg/g	Ni	20.8 ± 0.7 µg/g	Zn	116 ± 4 µg/g
Cl	69.1 ± 4.6 µg/g	P	389 ± 23 µg/g	Zr	188 ± 12 µg/g
Co	9.8 ± 0.7 µg/g	Pb	127 ± 11 µg/g	SiO_2	64.22 ± 0.22 %
Cr	39.8 ± 3.4 µg/g	Pr	7.89 ± 0.39 µg/g	Al_2O_3	10.84 ± 0.15 %
Cs	17.2 ± 1.0 µg/g	Rb	141 ± 3 µg/g	Fe_2O_3(T)	3.07 ± 0.02 %
Cu	247 ± 6 µg/g	Sb	4.44 ± 0.44 µg/g	MgO	0.87 ± 0.03 %
Dy	4.24 ± 0.25 µg/g	Sc	6.5 ± 0.7 µg/g	CaO	8.19 ± 0.09 %
Er	2.47 ± 0.12 µg/g	Se	0.19 ± 0.02 µg/g	Na_2O	1.74 ± 0.02 %
Eu	0.96 ± 0.04 µg/g	Sm	5.39 ± 0.24 µg/g	K_2O	2.86 ± 0.03 %
F	424 ± 6 µg/g	Sn	3.3 ± 0.4 µg/g	TiO_2	0.366 ± 0.008 %
Ga	14.4 ± 1.3 µg/g	Sr	185 ± 6 µg/g	MnO	0.079 ± 0.003 %
Gd	4.90 ± 0.22 µg/g	Ta	1.1 ± 0.2 µg/g	P_2O_5	0.090 ± 0.005 %
Ge	1.19 ± 0.16 µg/g	Tb	0.76 ± 0.03 µg/g		
Hf	5.7 ± 0.7 µg/g	Te	0.21 ± 0.04 µg/g		

NCS DC70318 — Tibet sediment - Constituents — 60 g

Certified values

Ag	0.06 ± 0.01 µg/g	Hf	6.7 ± 0.7 µg/g	Tb	0.91 ± 0.03 µg/g
As	18.0 ± 0.7 µg/g	Hg	0.030 ± 0.005 µg/g	Th	25.1 ± 1.4 µg/g
Au	1.4 ± 0.3 µg/g	Ho	0.97 ± 0.07 µg/g	Ti	0.253 ± 0.008 %
B	30.6 ± 2.6 µg/g	La	47.8 ± 2.8 µg/g	Tl	1.0 ± 0.2 µg/g
Ba	437 ± 12 µg/g	Li	36.6 ± 0.8 µg/g	Tm	0.46 ± 0.03 µg/g
Be	3.32 ± 0.10 µg/g	Lu	0.44 ± 0.02 µg/g	U	4.8 ± 0.3 µg/g
Bi	0.49 ± 0.03 µg/g	Mn	422 ± 16 µg/g	V	52.5 ± 1.6 µg/g
Br	0.9 ± 0.4 µg/g	Mo	0.59 ± 0.03 µg/g	W	4.1 ± 0.3 µg/g
Cd	0.10 ± 0.01 µg/g	Nb	14.7 ± 0.5 µg/g	Y	26.5 ± 0.8 µg/g
Ce	89.6 ± 3.3 µg/g	Nd	35.8 ± 0.9 µg/g	Yb	2.83 ± 0.07 µg/g
Cl	207 ± 7 µg/g	Ni	16.9 ± 0.5 µg/g	Zn	54.1 ± 1.8 µg/g
Co	6.7 ± 0.4 µg/g	P	420 ± 21 µg/g	Zr	225 ± 9 µg/g
Cr	47.6 ± 3.6 µg/g	Pb	35.8 ± 1.3 µg/g	SiO_2	73.37 ± 0.06 %
Cs	20.2 ± 1.2 µg/g	Pr	9.78 ± 0.42 µg/g	Al_2O_3	12.73 ± 0.10 %
Cu	16.2 ± 1.1 µg/g	Rb	180 ± 3 µg/g	Fe_2O_3(T)	3.19 ± 0.05 %
Dy	4.92 ± 0.24 µg/g	Sb	0.84 ± 0.12 µg/g	MgO	1.07 ± 0.04 %
Er	2.90 ± 0.16 µg/g	Sc	7.3 ± 0.5 µg/g	CaO	1.32 ± 0.04 %
Eu	1.07 ± 0.04 µg/g	Se	0.05 ± 0.01 µg/g	Na_2O	2.09 ± 0.05 %
F	456 ± 4 µg/g	Sm	6.62 ± 0.36 µg/g	K_2O	3.56 ± 0.09 %
Ga	16.3 ± 0.8 µg/g	Sn	3.8 ± 0.4 µg/g	TiO_2	0.422 ± 0.012 %
Gd	5.83 ± 0.23 µg/g	Sr	165 ± 6 µg/g	MnO	0.055 ± 0.002 %
Ge	1.33 ± 0.13 µg/g	Ta	1.8 ± 0.2 µg/g	P_2O_5	0.097 ± 0.004 %

New NIM-GBW07327 — Tibet sediment - Constituents — 60 g

Certified values

Ag	0.21 ± 0.02 µg/g	Hg	0.028 ± 0.003 µg/g	Th	25.5 ± 1.2 µg/g
As	19.6 ± 1.0 µg/g	Ho	0.79 ± 0.06 µg/g	Ti	0.344 ± 0.014 %
Au	1.2 ± 0.3 µg/g	La	42.6 ± 2.4 µg/g	Tl	1.1 ± 0.3 µg/g
B	66.2 ± 7.1 µg/g	Li	26.1 ± 0.8 µg/g	Tm	0.38 ± 0.02 µg/g
Ba	470 ± 17 µg/g	Lu	0.39 ± 0.02 µg/g	U	4.8 ± 0.4 µg/g
Be	2.31 ± 0.10 µg/g	Mn	527 ± 17 µg/g	V	74.7 ± 2.7 µg/g
Bi	0.80 ± 0.05 µg/g	Mo	7.0 ± 0.3 µg/g	W	9.3 ± 4.0 µg/g
Br	1.4 ± 0.7 µg/g	Nb	16.1 ± 0.7 µg/g	Y	21.6 ± 1.0 µg/g
Cd	0.19 ± 0.02 µg/g	Nd	30.6 ± 0.8 µg/g	Yb	2.55 ± 0.08 µg/g
Ce	78.1 ± 4.3 µg/g	Ni	9.5 ± 0.8 µg/g	Zn	62.9 ± 2.7 µg/g
Cl	244 ± 38 µg/g	P	484 ± 18 µg/g	Zr	299 ± 24 µg/g
Co	7.6 ± 0.5 µg/g	Pb	46.8 ± 3.5 µg/g	SiO_2	71.23 ± 0.18 %
Cr	22.6 ± 2.0 µg/g	Pr	8.57 ± 0.43 µg/g	Al_2O_3	13.22 ± 0.03 %
Cs	15.0 ± 1.3 µg/g	Rb	154 ± 6 µg/g	Fe_2O_3(T)	4.11 ± 0.14 %
Cu	151 ± 4 µg/g	Sb	2.70 ± 0.53 µg/g	MgO	0.70 ± 0.03 %
Dy	3.91 ± 0.21 µg/g	Sc	6.2 ± 0.3 µg/g	CaO	1.40 ± 0.03 %
Er	2.39 ± 0.12 µg/g	Se	0.18 ± 0.02 µg/g	Na_2O	2.72 ± 0.04 %
Eu	0.97 ± 0.05 µg/g	Sm	5.42 ± 0.30 µg/g	K_2O	3.65 ± 0.05 %
F	459 ± 25 µg/g	Sn	2.7 ± 0.2 µg/g	TiO_2	0.589 ± 0.017 %
Ga	15.8 ± 0.6 µg/g	Sr	256 ± 4 µg/g	MnO	0.069 ± 0.002 %
Gd	4.57 ± 0.23 µg/g	Ta	1.8 ± 0.3 µg/g	P_2O_5	0.111 ± 0.003 %
Ge	1.13 ± 0.14 µg/g	Tb	0.70 ± 0.04 µg/g		
Hf	9.5 ± 1.0 µg/g	Te	0.10 ± 0.02 µg/g		

Code	Product	Unit

NCS DC73312 — Chinese stream sediment - Trace elements and oxides — 70 g

Certified values

Ag 0.066 ± 0.010 µg/g	Hg 0.040 ± 0.008 µg/g	Tb 1.8 ± 0.4 µg/g
As 6.2 ± 0.6 µg/g	Ho 2.6 ± 0.4 µg/g	Th 70 ± 4 µg/g
B 10.8 ± 2.5 µg/g	I 2.9 ± 0.4 µg/g	Ti 1380 ± 80 µg/g
Ba 185 ± 24 µg/g	La 90 ± 7 µg/g	Tl 1.9 ± 0.4 µg/g
Be 17.1 ± 1.1 µg/g	Li 101 ± 4 µg/g	Tm 1.55 ± 0.21 µg/g
Bi 1.64 ± 0.11 µg/g	Mn 240 ± 20 µg/g	U 17 ± 2 µg/g
Br 3.0 ± 0.6 µg/g	Mo 2.0 ± 0.3 µg/g	V 16.5 ± 1.9 µg/g
Cd 0.065 ± 0.011 µg/g	N 363 ± 60 µg/g	W 24 ± 2 µg/g
Ce 192 ± 5 µg/g	Nb 95 ± 6 µg/g	Y 67 ± 9 µg/g
Co 2.6 ± 0.7 µg/g	Nd 62 ± 7 µg/g	Yb 11 ± 1 µg/g
Cr 12 ± 3 µg/g	Ni 5.5 ± 1.4 µg/g	Zn 44 ± 5 µg/g
Cs 16.6 ± 1.7 µg/g	P 200 ± 27 µg/g	Zr 460 ± 27 µg/g
Cu 4.9 ± 0.5 µg/g	Pb 32 ± 5 µg/g	SiO_2 69.91 ± 0.17 %
Dy 11 ± 2 µg/g	Pr 18.6 ± 3.0 µg/g	Al_2O_3 15.72 ± 0.10 %
Er 8.2 ± 0.6 µg/g	Rb 470 ± 23 µg/g	Fe_2O_3 (T) 1.90 ± 0.06 %
Eu 0.49 ± 0.09 µg/g	Sb 0.46 ± 0.12 µg/g	FeO 0.56 ± 0.09 %
F 1980 ± 163 µg/g	Sc 4.4 ± 0.7 µg/g	MgO 0.21 ± 0.02 %
Ga 27.4 ± 1.3 µg/g	Se 0.20 ± 0.05 µg/g	CaO 0.25 ± 0.04 %
Gd 9.5 ± 1.3 µg/g	Sm 10.8 ± 0.9 µg/g	Na_2O 3.03 ± 0.09 %
Ge 1.7 ± 0.3 µg/g	Sn 29 ± 3 µg/g	K_2O 5.20 ± 0.09 %
Hf 20 ± 3 µg/g	Ta 15.3 ± 1.3 µg/g	H_2O^+ 2.58 ± 0.28 %

H_2O^+ : Loss of water at 950°C

Indicative values for Cl, In, Lu, S, Sr, Te, CO_2, C org., TC

NCS DC73316 — Chinese stream sediment - Trace elements and oxides — 70 g

Certified values

Ag 0.36 ± 0.03 µg/g	La 39 ± 6 µg/g	Ti 4640 ± 120 µg/g
As 13.6 ± 1.0 µg/g	Li 40 ± 1 µg/g	Tl 1.08 ± 0.15 µg/g
B 50 ± 7 µg/g	Lu 0.34 ± 0.09 µg/g	Tm 0.35 ± 0.06 µg/g
Ba 330 ± 24 µg/g	Mn 970 ± 37 µg/g	U 2.4 ± 0.4 µg/g
Be 1.7 ± 0.3 µg/g	Mo 7.7 ± 0.8 µg/g	V 142 ± 8 µg/g
Bi 5.0 ± 0.4 µg/g	Nb 12 ± 3 µg/g	W 25 ± 2 µg/g
Cd 0.43 ± 0.03 µg/g	Nd 33 ± 6 µg/g	Y 20 ± 2 µg/g
Ce 68 ± 7 µg/g	Ni 78 ± 5 µg/g	Yb 2.1 ± 0.3 µg/g
Co 24.4 ± 1.9 µg/g	P 1020 ± 42 µg/g	Zn 144 ± 7 µg/g
Cr 190 ± 15 µg/g	Pb 27 ± 4 µg/g	Zr 170 ± 8 µg/g
Cs 9.1 ± 1.3 µg/g	Pr 8.4 ± 0.8 µg/g	SiO_2 61.24 ± 0.13 %
Cu 383 ± 12 µg/g	Rb 107 ± 6 µg/g	Al_2O_3 14.16 ± 0.09 %
Dy 3.8 ± 0.9 µg/g	S 784 ± 118 µg/g	Fe_2O_3 (T) 5.88 ± 0.07 %
Er 2.2 ± 0.5 µg/g	Sb 1.25 ± 0.22 µg/g	FeO 1.58 ± 0.14 %
Eu 1.50 ± 0.13 µg/g	Sc 17 ± 2 µg/g	MgO 3.00 ± 0.06 %
F 690 ± 35 µg/g	Se 0.30 ± 0.08 µg/g	CaO 3.87 ± 0.07 %
Ga 16.7 ± 0.7 µg/g	Sm 5.6 ± 0.6 µg/g	Na_2O 2.30 ± 0.07 %
Gd 5.5 ± 0.9 µg/g	Sn 2.8 ± 0.7 µg/g	K_2O 2.43 ± 0.05 %
Ge 1.3 ± 0.3 µg/g	Sr 266 ± 18 µg/g	H_2O^+ 3.49 ± 0.27 %
Hf 4.9 ± 1.4 µg/g	Ta 0.75 ± 0.09 µg/g	CO_2 2.03 ± 0.12 %
Hg 0.045 ± 0.008 µg/g	Tb 0.69 ± 0.17 µg/g	TC 0.91 ± 0.15 %
Ho 0.76 ± 0.10 µg/g	Te 0.14 ± 0.04 µg/g	
In 0.14 ± 0.03 µg/g	Th 9.0 ± 1.4 µg/g	

Indicative value for C org.

New NIM-GBW07309 — Chinese stream sediment - Trace elements and oxides — 70 g

Certified values

Ag 0.089 ± 0.010 µg/g	I 0.63 ± 0.09 µg/g	Th 12.4 ± 0.7 µg/g
As 8.4 ± 0.9 µg/g	In 0.056 ± 0.009 µg/g	Ti 5500 ± 160 µg/g
Au (0.0013) µg/g	La 40 ± 3 µg/g	Tl 0.49 ± 0.08 µg/g
B 54 ± 6 µg/g	Li 30 ± 1 µg/g	Tm 0.44 ± 0.07 µg/g
Ba 430 ± 18 µg/g	Lu 0.45 ± 0.03 µg/g	U 2.6 ± 0.4 µg/g
Be 1.8 ± 0.3 µg/g	Mn 620 ± 20 µg/g	V 97 ± 6 µg/g
Bi 0.42 ± 0.04 µg/g	Mo 0.64 ± 0.11 µg/g	W 1.8 ± 0.2 µg/g
Br 1.2 ± 0.3 µg/g	N 440 ± 30 µg/g	Y 27 ± 2 µg/g
Cd 0.26 ± 0.04 µg/g	Nb 18 ± 2 µg/g	Yb 2.8 ± 0.3 µg/g
Ce 78 ± 6 µg/g	Nd 34 ± 2 µg/g	Zn 78 ± 4 µg/g
Cl 52 ± 11 µg/g	Ni 32 ± 2 µg/g	Zr 370 ± 20 µg/g
Co 14.4 ± 1.2 µg/g	P 670 ± 23 µg/g	SiO_2 64.89 ± 0.11 %
Cr 85 ± 7 µg/g	Pb 23 ± 3 µg/g	Al_2O_3 10.58 ± 0.10 %
Cs 5.1 ± 0.8 µg/g	Pr 9.2 ± 0.8 µg/g	Fe_2O_3 (T) 4.86 ± 0.07 %
Cu 32 ± 2 µg/g	Rb 80 ± 3 µg/g	FeO 1.53 ± 0.05 %
Dy 5.1 ± 0.3 µg/g	S 160 ± 16 µg/g	MgO 2.39 ± 0.06 %
Er 2.8 ± 0.3 µg/g	Sb 0.81 ± 0.15 µg/g	CaO 5.35 ± 0.09 %
Eu 1.33 ± 0.06 µg/g	Sc 11.1 ± 0.6 µg/g	Na_2O 1.44 ± 0.04 %
F 494 ± 25 µg/g	Se 0.16 ± 0.03 µg/g	K_2O 1.99 ± 0.06 %
Ga 14.0 ± 0.6 µg/g	Sm 6.3 ± 0.4 µg/g	H_2O^+ 2.93 ± 0.19 %
Gd 5.5 ± 0.4 µg/g	Sn 2.6 ± 0.4 µg/g	CO_2 4.20 ± 0.08 %
Ge 1.3 ± 0.2 µg/g	Sr 166 ± 9 µg/g	C org. 0.46 ± 0.05 %
Hf 9.7 ± 1.5 µg/g	Ta 1.3 ± 0.2 µg/g	TC 1.61 ± 0.08 %
Hg 0.083 ± 0.009 µg/g	Tb 0.87 ± 0.09 µg/g	L.O.I.* 7.21 ± 0.18 %
Ho 0.96 ± 0.07 µg/g	Te 0.041 ± 0.015 µg/g	

* Loss on Ignition

Code	Product	Unit

New NIM-GBW07310 — Chinese stream sediment - Trace elements and oxides — 70 g

Certified values

Ag	0.27 ± 0.02 µg/g	I	1.6 ± 0.3 µg/g	Th	5.0 ± 0.3 µg/g
As	25 ± 3 µg/g	In	0.067 ± 0.016 µg/g	Ti	1270 ± 70 µg/g
B	26 ± 4 µg/g	La	13.0 ± 0.9 µg/g	Tl	0.21 ± 0.05 µg/g
Ba	42 ± 7 µg/g	Li	13.0 ± 0.5 µg/g	Tm	0.20 ± 0.03 µg/g
Be	0.9 ± 0.2 µg/g	Lu	0.19 ± 0.03 µg/g	U	2.1 ± 0.2 µg/g
Bi	0.38 ± 0.04 µg/g	Mn	1010 ± 29 µg/g	V	107 ± 5 µg/g
Br	2.4 ± 0.5 µg/g	Mo	1.2 ± 0.1 µg/g	W	1.6 ± 0.3 µg/g
Cd	1.12 ± 0.08 µg/g	Nb	6.8 ± 1.3 µg/g	Y	14 ± 2 µg/g
Ce	38 ± 4 µg/g	Nd	11.8 ± 1.1 µg/g	Yb	1.2 ± 0.2 µg/g
Co	15.3 ± 1.1 µg/g	Ni	30 ± 2 µg/g	Zn	46 ± 4 µg/g
Cr	136 ± 10 µg/g	P	271 ± 15 µg/g	Zr	70 ± 6 µg/g
Cs	2.3 ± 0.5 µg/g	Pb	27 ± 2 µg/g	SiO_2	88.89 ± 0.19 %
Cu	22.6 ± 1.3 µg/g	Pr	3.2 ± 0.4 µg/g	Al_2O_3	2.84 ± 0.07 %
Dy	2.2 ± 0.3 µg/g	Rb	9.2 ± 1.5 µg/g	Fe_2O_3 (T)	3.86 ± 0.09 %
Er	1.3 ± 0.2 µg/g	Sb	6.3 ± 0.6 µg/g	MgO	0.12 ± 0.04 %
Eu	0.47 ± 0.04 µg/g	Sc	4.1 ± 0.4 µg/g	CaO	0.70 ± 0.03 %
F	149 ± 25 µg/g	Se	0.28 ± 0.05 µg/g	Na_2O	0.039 ± 0.009 %
Ga	6.4 ± 0.7 µg/g	Sm	2.4 ± 0.2 µg/g	K_2O	0.125 ± 0.013 %
Gd	2.2 ± 0.2 µg/g	Sn	1.4 ± 0.3 µg/g	CO_2	0.42 ± 0.06 %
Ge	0.40 ± 0.06 µg/g	Sr	25 ± 3 µg/g	C org.	0.40 ± 0.05 %
Hf	1.8 ± 0.4 µg/g	Ta	0.44 ± 0.12 µg/g	TC	0.51 ± 0.07 %
Hg	0.28 ± 0.03 µg/g	Tb	0.42 ± 0.07 µg/g	L.O.I*	2.88 ± 0.12 %
Ho	0.45 ± 0.07 µg/g	Te	0.08 ± 0.02 µg/g		

Indicative values for Cl, N, S, FeO, H_20^+

* Loss on Ignition

New NIM-GBW07311 — Chinese stream sediment - Trace elements and oxides — 70 g

Certified values

Ag	3.2 ± 0.4 µg/g	Ho	1.4 ± 0.2 µg/g	Tb	1.13 ± 0.09 µg/g
As	188 ± 13 µg/g	I	2.0 ± 0.3 µg/g	Te	0.4 ± 0.1 µg/g
B	68 ± 5 µg/g	In	1.9 ± 0.3 µg/g	Th	23.3 ± 1.2 µg/g
Ba	260 ± 17 µg/g	La	30 ± 2 µg/g	Ti	2100 ± 100 µg/g
Be	26 ± 3 µg/g	Li	71 ± 2 µg/g	Tl	2.9 ± 0.4 µg/g
Bi	50 ± 4 µg/g	Lu	0.78 ± 0.06 µg/g	Tm	0.74 ± 0.09 µg/g
Br	2.2 ± 0.5 µg/g	Mn	2490 ± 84 µg/g	U	9.1 ± 0.9 µg/g
Cd	2.3 ± 0.2 µg/g	Mo	5.9 ± 0.6 µg/g	V	47 ± 3 µg/g
Ce	58 ± 4 µg/g	Nb	25 ± 3 µg/g	W	126 ± 9 µg/g
Cl	290 ± 26 µg/g	Nd	27 ± 2 µg/g	Y	43 ± 5 µg/g
Co	8.5 ± 0.8 µg/g	Ni	14.3 ± 1.0 µg/g	Yb	5.1 ± 0.6 µg/g
Cr	40 ± 3 µg/g	P	255 ± 27 µg/g	Zn	373 ± 14 µg/g
Cs	17.4 ± 0.8 µg/g	Pb	636 ± 22 µg/g	Zr	153 ± 13 µg/g
Cu	79 ± 3 µg/g	Pr	7.4 ± 0.5 µg/g	SiO_2	76.25 ± 0.18 %
Dy	7.2 ± 0.6 µg/g	Rb	408 ± 11 µg/g	Al_2O_3	10.37 ± 0.10 %
Er	4.6 ± 0.5 µg/g	S	170 ± 26 µg/g	Fe_2O_3 (T)	4.39 ± 0.07 %
Eu	0.60 ± 0.06 µg/g	Sb	14.9 ± 1.2 µg/g	MgO	0.62 ± 0.07 %
F	1650 ± 82 µg/g	Sc	7.4 ± 0.4 µg/g	CaO	0.47 ± 0.03 %
Ga	18.5 ± 0.9 µg/g	Se	0.20 ± 0.05 µg/g	Na_2O	0.46 ± 0.03 %
Gd	5.9 ± 0.4 µg/g	Sm	6.2 ± 0.3 µg/g	K_2O	3.28 ± 0.07 %
Ge	1.81 ± 0.21 µg/g	Sn	370 ± 44 µg/g	H_2O^+	2.67 ± 0.12 %
Hf	5.4 ± 0.6 µg/g	Sr	29 ± 4 µg/g		
Hg	0.072 ± 0.009 µg/g	Ta	5.7 ± 0.5 µg/g		

Indicative values for Au, FeO, CO_2, C org., TC, Loss on Ignition (L.O.I.)

NCS DC73310 — Chinese stream sediment - Trace elements and oxides — 70 g

Certified values

Ag	1.15 ± 0.11 µg/g	Ho	0.94 ± 0.07 µg/g	Tb	0.82 ± 0.06 µg/g
As	115 ± 6 µg/g	I	1.8 ± 0.3 µg/g	Te	0.30 ± 0.07 µg/g
B	24 ± 2 µg/g	In	0.96 ± 0.15 µg/g	Th	21.4 ± 1.1 µg/g
Ba	206 ± 15 µg/g	La	32.7 ± 1.4 µg/g	Ti	1510 ± 50 µg/g
Be	8.2 ± 0.7 µg/g	Li	39.0 ± 1.0 µg/g	Tl	1.76 ± 0.27 µg/g
Bi	10.9 ± 0.9 µg/g	Lu	0.58 ± 0.06 µg/g	Tm	0.53 ± 0.06 µg/g
Br	1.7 ± 0.4 µg/g	Mn	1400 ± 47 µg/g	U	7.8 ± 0.7 µg/g
Cd	4.0 ± 0.3 µg/g	Mo	8.4 ± 0.6 µg/g	V	47 ± 4 µg/g
Ce	61 ± 4 µg/g	Nb	15.4 ± 1.1 µg/g	W	37 ± 2 µg/g
Cl	163 ± 25 µg/g	Nd	26 ± 3 µg/g	Y	29 ± 3 µg/g
Co	8.8 ± 0.7 µg/g	Ni	12.8 ± 1.3 µg/g	Yb	3.7 ± 0.4 µg/g
Cr	35 ± 3 µg/g	P	235 ± 22 µg/g	Zn	498 ± 18 µg/g
Cs	7.9 ± 0.4 µg/g	Pb	285 ± 11 µg/g	Zr	234 ± 16 µg/g
Cu	1230 ± 33 µg/g	Pr	6.9 ± 1.1 µg/g	SiO_2	77.29 ± 0.13 %
Dy	4.8 ± 0.2 µg/g	Rb	270 ± 10 µg/g	Al_2O_3	9.30 ± 0.11 %
Er	3.1 ± 0.3 µg/g	S	940 ± 54 µg/g	Fe_2O_3 (T)	4.88 ± 0.09 %
Eu	0.61 ± 0.03 µg/g	Sb	24 ± 3 µg/g	FeO	1.19 ± 0.07 %
F	1250 ± 39 µg/g	Sc	5.1 ± 0.4 µg/g	MgO	0.47 ± 0.08 %
Ga	14.1 ± 0.5 µg/g	Se	0.25 ± 0.03 µg/g	CaO	1.16 ± 0.05 %
Gd	4.4 ± 0.4 µg/g	Sm	5.0 ± 0.4 µg/g	Na_2O	0.44 ± 0.03 %
Ge	1.87 ± 0.13 µg/g	Sn	54 ± 5 µg/g	K_2O	2.91 ± 0.04 %
Hf	8.3 ± 1.0 µg/g	Sr	24 ± 3 µg/g	H_2O^+	2.15 ± 0.10 %
Hg	0.056 ± 0.006 µg/g	Ta	3.2 ± 0.3 µg/g	L.O.I.*	2.62 ± 0.14 %

Indicative values for Au, CO_2, C org. TC

* Loss on Ignition

Code	Product	Unit

NCS DC73371 — Stream sediment - Trace elements and oxides — 70 g

Certified values

Ag 0.036 ± 0.010 µg/g	Ho 0.82 ± 0.11 µg/g	Tb 0.81 ± 0.07 µg/g
As 2.7 ± 0.4 µg/g	I 0.6 ± 0.2 µg/g	Th 27 ± 3 µg/g
B 9.8 ± 1.8 µg/g	La 41 ± 2 µg/g	Ti 5370 ± 210 µg/g
Ba 920 ± 77 µg/g	Li 32 ± 3 µg/g	Tl 0.67 ± 0.14 µg/g
Be 3.1 ± 0.3 µg/g	Lu 0.39 ± 0.04 µg/g	Tm 0.34 ± 0.04 µg/g
Bi 0.49 ± 0.14 µg/g	Mn 910 ± 28 µg/g	U 4.6 ± 0.6 µg/g
Cd 0.11 ± 0.03 µg/g	Mo 1.04 ± 0.13 µg/g	V 115 ± 11 µg/g
Ce 81 ± 7 µg/g	N 741 ± 28 µg/g	W 1.0 ± 0.1 µg/g
Cl 72 ± 7 µg/g	Nb 31.5 ± 1.9 µg/g	Y 22 ± 2 µg/g
Co 20 ± 2 µg/g	Nd 36 ± 3 µg/g	Yb 2.3 ± 0.2 µg/g
Cr 128 ± 6 µg/g	Ni 56 ± 7 µg/g	Zn 90 ± 7 µg/g
Cs 5.5 ± 0.2 µg/g	P 1520 ± 77 µg/g	Zr 316 ± 16 µg/g
Cu 28 ± 2 µg/g	Pb 31 ± 4 µg/g	SiO_2 59.07 ± 0.21 %
Dy 4.3 ± 0.3 µg/g	Pr 9.3 ± 0.9 µg/g	Al_2O_3 15.36 ± 0.06 %
Er 2.3 ± 0.4 µg/g	Rb 126 ± 7 µg/g	Fe_2O_3 (T) 6.50 ± 0.15 %
Eu 1.7 ± 0.2 µg/g	Sb 0.30 ± 0.05 µg/g	MgO 3.30 ± 0.17 %
F 872 ± 52 µg/g	Sc 14 ± 2 µg/g	CaO 4.0 ± 0.1 %
Ga 23.6 ± 1.3 µg/g	Se 0.12 ± 0.03 µg/g	Na_2O 3.4 ± 0.1 %
Gd 5.6 ± 0.6 µg/g	Sm 6.7 ± 0.4 µg/g	K_2O 2.8 ± 0.1 %
Ge 1.5 ± 0.2 µg/g	Sn 3.3 ± 0.6 µg/g	L.O.I 3.8 ± 0.3 %
Hf 9.3 ± 0.7 µg/g	Sr 486 ± 32 µg/g	
Hg 0.032 ± 0.003 µg/g	Ta 3.0 ± 0.3 µg/g	

NCS DC73373 — Stream sediment - Trace elements and oxides — 70 g

Certified values

Ag 0.027 ± 0.005 µg/g	Hg 0.011 ± 0.002 µg/g	Ta (0.52) µg/g
As 2.0 ± 0.2 µg/g	Ho 0.33 ± 0.03 µg/g	Tb 0.28 ± 0.06 µg/g
B 5.3 ± 0.7 µg/g	I 0.3 ± 0.1 µg/g	Th 5.4 ± 0.6 µg/g
Ba 690 ± 54 µg/g	La 24 ± 3 µg/g	Ti 1370 ± 120 µg/g
Be 0.96 ± 0.04 µg/g	Li 7.4 ± 0.7 µg/g	Tl 0.30 ± 0.08 µg/g
Bi 0.057 ± 0.010 µg/g	Lu 0.16 ± 0.03 µg/g	Tm 0.13 ± 0.03 µg/g
Cd 0.045 ± 0.015 µg/g	Mn 218 ± 31 µg/g	U 0.75 ± 0.10 µg/g
Ce 42 ± 4 µg/g	Mo 0.44 ± 0.10 µg/g	V 19 ± 3 µg/g
Cl 32 ± 5 µg/g	Nb 9.0 ± 1.1 µg/g	W 0.50 ± 0.06 µg/g
Co 3.5 ± 0.4 µg/g	Nd 14.7 ± 1.6 µg/g	Y 8.9 ± 1.2 µg/g
Cr 10.7 ± 1.7 µg/g	Ni 3.7 ± 1.0 µg/g	Yb 0.99 ± 0.17 µg/g
Cs 1.0 ± 0.1 µg/g	P 166 ± 11 µg/g	Zn 18 ± 2 µg/g
Cu 11 ± 2 µg/g	Pb 13.5 ± 2.3 µg/g	Zr 187 ± 16 µg/g
Dy 1.56 ± 0.19 µg/g	Pr 4.3 ± 0.5 µg/g	SiO_2 80.58 ± 0.17 %
Er 0.98 ± 0.17 µg/g	Rb 70 ± 6 µg/g	Al_2O_3 9.68 ± 0.16 %
Eu 0.38 ± 0.06 µg/g	Sb 0.19 ± 0.05 µg/g	Fe_2O_3 (T) 1.46 ± 0.05 %
F 133 ± 19 µg/g	Sc 2.4 ± 0.3 µg/g	MgO 0.24 ± 0.04 %
Ga 11.1 ± 0.9 µg/g	Se 0.040 ± 0.011 µg/g	CaO 0.34 ± 0.03 %
Gd 1.8 ± 0.2 µg/g	Sm 2.3 ± 0.2 µg/g	Na_2O 2.35 ± 0.06 %
Ge 1.16 ± 0.05 µg/g	Sn 0.97 ± 0.33 µg/g	K_2O 3.9 ± 0.2 %
Hf 4.5 ± 0.5 µg/g	Sr 87 ± 4 µg/g	L.O.I 1.07 ± 0.21 %

NCS DC73374 — Stream sediment - Trace elements and oxides — 70 g

Certified values

Ag 0.13 ± 0.02 µg/g	Ho 1.43 ± 0.09 µg/g	Ta 5.0 ± 0.4 µg/g
As 18 ± 2 µg/g	I 1.6 ± 0.3 µg/g	Tb 1.23 ± 0.11 µg/g
B 27 ± 4 µg/g	La 54 ± 3 µg/g	Th 12.4 ± 1.2 µg/g
Ba 760 ± 47 µg/g	Li 24 ± 2 µg/g	Ti 14400 ± 500 µg/g
Be 6.0 ± 0.6 µg/g	Lu 0.58 ± 0.07 µg/g	Tl 0.47 ± 0.19 µg/g
Bi 3.0 ± 0.3 µg/g	Mn 1230 ± 82 µg/g	Tm 0.60 ± 0.05 µg/g
Cd 0.20 ± 0.03 µg/g	Mo 2.7 ± 0.3 µg/g	U 3.0 ± 0.4 µg/g
Ce 109 ± 10 µg/g	N 668 ± 25 µg/g	V 190 ± 25 µg/g
Co 28 ± 2 µg/g	Nb 72 ± 6 µg/g	W 5.6 ± 0.5 µg/g
Cr 243 ± 16 µg/g	Nd 45 ± 5 µg/g	Y 34 ± 5 µg/g
Cs 4.3 ± 0.8 µg/g	Ni 87 ± 9 µg/g	Yb 3.8 ± 0.6 µg/g
Cu 66 ± 6 µg/g	P 1000 ± 30 µg/g	Zn 165 ± 15 µg/g
Dy 7.0 ± 0.6 µg/g	Pb 66 ± 6 µg/g	Zr 524 ± 16 µg/g
Er 4.0 ± 0.5 µg/g	Pr 11.8 ± 0.9 µg/g	SiO_2 57.25 ± 0.31 %
Eu 2.5 ± 0.4 µg/g	Rb 87 ± 7 µg/g	Al_2O_3 13.39 ± 0.16 %
F 593 ± 40 µg/g	Sb 2.7 ± 0.4 µg/g	Fe_2O_3 (T) 9.5 ± 0.1 %
Ga 25 ± 3 µg/g	Sc 18 ± 2 µg/g	MgO 3.4 ± 0.1 %
Gd 7.6 ± 1.1 µg/g	Se (0.15) µg/g	CaO 3.5 ± 0.1 %
Ge 1.6 ± 0.3 µg/g	Sm 8.5 ± 0.6 µg/g	Na_2O 2.0 ± 0.1 %
Hf 13.6 ± 0.6 µg/g	Sn 9.5 ± 1.7 µg/g	K_2O 2.3 ± 0.1 %
Hg 0.037 ± 0.004 µg/g	Sr 216 ± 6 µg/g	L.O.I 5.64 ± 0.47 %

NCS ZC76001A — River sediment - Radioactive isotopes — 100 g

Certified values

^{60}Co 0.631 Bq/g	$^{239}Pu + ^{240}Pu$ 0.0199 Bq/g	^{232}Th 0.0599 Bq/g
^{137}Cs 0.131 Bq/g	^{226}Ra 0.120 Bq/g	^{235}U 0.0197 Bq/g
^{40}K 0.415 Bq/g	^{90}Sr 0.197 Bq/g	^{238}U 0.394 Bq/g

IAEA-313 — Stream sediment - Radium-226 — 50 g

Recommended values

^{226}Ra 342 Bq/kg	Th 77.1 mg/kg	U 18.2 mg/kg

Code	Product	Unit

IAEA-314 — Stream sediment - Radium-226 — 50 g

Recommended values

^{226}Ra ..... 732 Bq/kg	Th ..... 17.8 mg/kg	U ..... 56.8 mg/kg

IAEA-SL-1 — Lake sediment - Trace elements — 25 g

Collected at the Sardis Reservoir; Panola Country; Mississippi, USA.

Recommended values

As ..... 27.6 mg/kg	Fe ..... 67.4 mg/kg	Ti ..... 5170 mg/kg
Ba ..... 639 mg/kg	La ..... 52.6 mg/kg	V ..... 170 mg/kg
Br ..... 6.82 mg/kg	Mn ..... 3460 mg/kg	Yb ..... 3.42 mg/kg
Cd ..... 0.26 mg/kg	Na ..... 1700 mg/kg	Zn ..... 223 mg/kg
Ce ..... 117 mg/kg	Rb ..... 113 mg/kg	
Co ..... 19.8 mg/kg	Th ..... 14 mg/kg	

Information values for Cd, Cr, Cs, Cu, Dy, Eu, Ga, Hf, Hg, K, Lu, Na, Ni, Pb, Sb, Sc, Se, Sm, Sr, Ta, Tb, U

IAEA-SL-3 — Lake sediment - Trace elements — 25 g

IAEA-SL-3 lake sediment was collected from the Neusiedlersee, located some 80 km south-east of Vienna.

Recommended values

As ..... 3.2 mg/kg	La ..... 22.5 mg/kg	Sr ..... 470 mg/kg
Ce ..... 45.5 mg/kg	Nd ..... 21.5 mg/kg	Th ..... 7.02 mg/kg
Hf ..... 9.1 mg/kg	Rb ..... 38.8 mg/kg	
K ..... 8.74 g/kg	Sm ..... 3.83 mg/kg	

Information values for Al, Br, Ca, Cs, Dy, Lu, Mg, Na, Sb, Sc, Ta, Tb, Ti, U, Yb

NIST-4354 — Freshwater lake sediment - Radioactivity — 25 g

Certified values

^{241}Am ..... 0.0011 Bq/g	^{228}Th ..... 0.0286 Bq/g	^{238}Pu ..... 0.00026 Bq/g
^{60}Co ..... 0.320 Bq/g	^{232}Th ..... 0.0268 Bq/g	^{239}Pu + ^{240}Pu ..... 0.00400 Bq/g
^{137}Cs ..... 0.0592 Bq/g	^{235}U ..... 0.00075 Bq/g	
^{90}Sr ..... 1.09 Bq/g	^{238}U ..... 0.0174 Bq/g	

NWWQB-1 — Lake sediment - Trace elements — 100 g

Certified values

Al ..... 78134 µg/g	Fe ..... 47358 µg/g	Pb ..... 83.7 µg/g
As ..... 23.00 µg/g	Hg ..... 1.09 µg/g	Se ..... 1.02 µg/g
Co ..... 20.1 µg/g	Mn ..... 2237 µg/g	V ..... 129 µg/g
Cu ..... 79.6 µg/g	Ni ..... 61.5 µg/g	Zn ..... 275 µg/g

Indicative values for Ag, Ba, Be, Bi, Ca, Cd, Cr, K, Mg, Mo, Na, P, Sb, Sn, Sr, Tl, recoverable and leachable element concentrations

NWWQB-3 — Lake sediment - Trace elements — 100 g

A blend of sediments collected from the heavy industrial areas of Hamilton Harbour and Lake Ontario, Canada.

Certified values

Al ..... 52700 µg/g	Fe ..... 6.0 %	Pb ..... 240 µg/g
As ..... 18.8 µg/g	Hg ..... 2.75 µg/g	Se ..... 1.15 µg/g
Co ..... 15.3 µg/g	Mn ..... 1264 µg/g	V ..... 90.7 µg/g
Cu ..... 81.6 µg/g	Ni ..... 52.0 µg/g	Zn ..... 1396 µg/g

Indicative values for Ag, Ba, Be, Bi, Cd, Ca, Cr, K, Mg, Mo, Na, P, Pb, Sb, Sn, Sr,Tl, V, recoverable and leachable element concentrations

NWSUD-1 — Lake sediment - Trace metals — 100 g

Collected from Lake Ramsay in Sudbury, Ontario, Canada, a well-known mining area. It has high cobalt, copper and nickel levels but low mercury levels

Al ..... 58049 µg/g	Ga ..... 14.3 µg/g*	Sb ..... 0.727 µg/g*
As ..... 31.1 µg/g*	Hg ..... 0.098 µg/g*	Sc ..... 11.0 µg/g*
B ..... 42.3 µg/g*	K ..... 19718 µg/g*	Se ..... 2.75 µg/g*
Ba ..... 488 µg/g*	La ..... 24.4 µg/g*	Sn ..... 1.63 µg/g*
Be ..... 1.30 µg/g*	Li ..... 19.1 µg/g*	Sr ..... 202 µg/g*
Bi ..... 1.84 µg/g*	Mg ..... 10501 µg/g*	Ti ..... 2203 µg/g*
Ca ..... 11636 µg/g*	Mn ..... 578 µg/g	Tl ..... 0.513 µg/g*
Cd ..... 1.88 µg/g*	Mo ..... 1.92 µg/g*	U ..... 1.72 µg/g*
Ce ..... 51.8 µg/g*	Na ..... 15798 µg/g*	V ..... 67.8 µg/g
Cr ..... 81.2 µg/g	Nb ..... 6.68 µg/g*	W ..... 0.996 µg/g*
Co ..... 44.2 µg/g	Ni ..... 936 µg/g	Y ..... 12.5 µg/g*
Cs ..... 2.03 µg/g*	P ..... 686 µg/g*	Zn ..... 768 µg/g
Cu ..... 561 µg/g	Pb ..... 56.3 µg/g	
Fe ..... 32688 µg/g	Rb ..... 77.1 µg/g*	

* non-certified values

Information values for recoverable and leachable element concentrations

BCR-535 — Freshwater harbour sediment - PAHs — 40 g

Compound	Certified value mg/kg	Uncertainty mg/kg
Pyrene	2.52	0.18
Benzo(a)anthracene	1.54	0.10
Benzo(a)pyrene	1.16	0.10
Benzo(e)pyrene	1.86	0.13
Benzo(b)fluoranthene	2.29	0.15
Benzo(k)fluoranthene	1.09	0.15
Indeno(1,2,3-cd)pyrene	1.56	0.14

Code	Product	Unit
BCR-536	Freshwater harbour sediment - PCBs	40 g

Compound (IUPAC Code)	Certified value µg/kg	Uncertainty µg/kg
PCB 28	44	5
PCB 52	38	4
PCB 101	44	4
PCB 105	3.5	0.6
PCB 118	27.5	2.2
PCB 128	5.4	1.2
PCB 138	27	4
PCB 149	49	4
PCB 153	50	4
PCB 156	3.0	0.4
PCB 163	17.2	2.6
PCB 170	13.4	1.4
PCB 180	22.4	2.1

NWHR-1 — Harbour sediment - Trace metals — 100 g

NWHR-1 is a harbour sediment from the mouth of the Humber River near Toronto, Ontario, Canada.

Al	59250 µg/g	Ga	14.9 µg/g*	Sb	1.59 µg/g*
As	6.29 µg/g*	Hg	0.342 µg/g*	Sc	11.4 µg/g*
B	55.7 µg/g*	K	20828 µg/g*	Se	0.713 µg/g*
Ba	532 µg/g*	La	28.4 µg/g*	Sn	9.87 µg/g*
Be	1.65 µg/g*	Li	29.9 µg/g*	Sr	287 µg/g*
Bi	0.453 µg/g*	Mg	14328 µg/g*	Ti	3096 µg/g*
Ca	67660 µg/g*	Mn	549 µg/g	Tl	0.502 µg/g*
Cd	3.88 µg/g*	Mo	1.42 µg/g*	U	1.99 µg/g*
Ce	60.2 µg/g*	Na	12027 µg/g*	V	84.1 µg/g
Cr	126 µg/g	Nb	11.5 µg/g*	W	2.00 µg/g*
Co	14.0 µg/g*	Ni	39.4 µg/g	Y	22.3 µg/g*
Cs	2.92 µg/g*	P	1264 µg/g*	Zn	1105 µg/g
Cu	79.9 µg/g	Pb	139 µg/g		
Fe	30579 µg/g	Rb	80.2 µg/g*		

* not-certified values

Information values for recoverable and leachable element concentrations

CAN-LKSD-2 - CAN-LKSD-4

The samples were taken from the bottom centre of each lake; materials from a number of similar lakes were then blended together to produce the four samples. As well as analytical values for elements from total destruction methods, values are also given for aqua regia and dilute aqua regia extraction methods, and for major and minor elements as oxides.

Provisional values for total elements

	CAN-LKSD 2	CAN-LKSD 3	CAN-LKSD 4	
Ag	0.8	2.7	<0.5	mg/kg
As	11	27	16	mg/kg
Au	3	3	2	ng/g
B	65	25	22	mg/kg
Ba	780	680	330	mg/kg
Be	2.5	1.9	1.0	mg/kg
Br	18	16	49	mg/kg
C	4.5	4.5	17.7	wt. %
Ce	108	90	48	mg/kg
Co	17	30	11	mg/kg
Cr	57	87	33	mg/kg
Cs	3	2.3	1.7	mg/kg
Cu	37	35	31	mg/kg
Dy	7.3	4.9	3.7	mg/kg
Eu	1.9	1.5	1.1	mg/kg
F	590	490	260	mg/kg
Fe	4.3	4	2.8	wt. %
Hf	7	4.8	2.8	mg/kg
La	68	52	26	mg/kg
Li	20	25	12	mg/kg
Lu	0.6	0.4	0.5	mg/kg
Mn	2020	1440	500	mg/kg
Mo	<5	<5	<5	mg/kg
Nb	8	8	9	mg/kg
Nd	58	44	25	mg/kg
Ni	26	47	31	mg/kg
Pb	44	29	91	mg/kg
Rb	85	78	28	mg/kg
S	0.14	0.14	0.99	wt. %
Sb	1.1	1.3	1.7	mg/kg
Sc	13	13	7	mg/kg
Sm	11	8	5	mg/kg
Sn	5	3	5	mg/kg
Sr	220	240	110	mg/kg
Ta	0.8	0.7	0.4	mg/kg
Tb	1.4	1	1.2	mg/kg
Th	13.4	11.4	5.1	mg/kg
Ti	3460	3330	2270	mg/kg
U	7.6	4.6	31.0	mg/kg
V	77	82	49	mg/kg
W	<4	<4	<4	mg/kg
Y	44	30	23	mg/kg

Continued on next page

Code	Product	Unit
	Yb 4 2.7 2.0 mg/kg	
	Zn 209 152 194 mg/kg	
	Zr 254 178 105 mg/kg	
	Provisional values for total analytes	
	Water 2.23 2.07 6.55 wt. %	
	Loss on ignition at	
	500°C 12.3 11.8 40.8 wt. %	
	Provisional values for major and minor elements as oxides	
	Al_2O_3 12.3 12.5 5.9 wt. %	
	CaO 2.2 2.3 1.8 wt. %	
	Fe_2O_3 6.2 5.7 4.1 wt. %	
	K_2O 2.6 2.2 0.8 wt. %	
	MnO 0.3 0.2 0.1 wt. %	
	MgO 1.7 2 0.9 wt. %	
	Na_2O 1.9 2.3 0.7 wt. %	
	P_2O_5 0.3 0.2 0.3 wt. %	
	SiO_2 58.9 58.5 41.6 wt. %	
	TiO_2 0.6 0.5 0.4 wt. %	
	Loss on Ignition	
	at 1000°C 13.6 13.4 43.6 wt. %	
	Totals 100.6 99.8 100.2 wt. %	
	Provisional values for aqua regia extractable elements	
	Ag 0.8 0.4 0.2 µg/g	
	As 9 23 12 µg/g	
	Cd 0.8 0.6 1.9 µg/g	
	Co 17 30 11 µg/g	
	Cr 29 51 21 µg/g	
	Cu 36 34 30 µg/g	
	Fe 3.5 3.5 2.7 wt. %	
	Hg 160 290 190 ng/g	
	Mn 1840 1220 430 µg/g	
	Mo 2 2 2 µg/g	
	Ni 23 44 32 µg/g	
	Pb 40 26 93 µg/g	
	Sb 1.2 1.4 1.5 µg/g	
	V 48 55 32µg/g	
	Zn 200 139 189 µg/g	
	Provisional values for dilute aqua regia extractable elements	
	Ag 0.8 2.8 0.2 µg/g	
	Cd 0.6 0.4 1.9 µg/g	
	Co 16 30 9 µg/g	
	Cu 36 34 31 µg/g	
	Fe 3,7 3,6 2.6 wt, %	
	Mn 1840 1300 420 µg/g	
	Ni 23 46 31 µg/g	
	Pb 34 21 91 µg/g	
	Zn 205 151 195 µg/g	

The materials are mixed from various sediments as follows:

CAN-LKSD-2	Lake sediment Sourced from lake 31F in Ontario (Canada) and lakes 86K and 86L in N.W. Territories	100 g
CAN-LKSD-3	Lake sediment A composite of 9 sediments, 31F, M & N 32 C&D, 41P and 42A all in Ontario (Canada) plus 64 L&M in Manitoba	100 g
CAN-LKSD-4	Lake sediment Sourced from two lakes, 31C in Ontario (Canada) and 74H in Saskatchewan (Canada)	100 g

Code	Product	Unit

CAN-STSD-1, CAN-STSD-3, CAN-STSD-4 and CAN-STSD-134

A set of three different samples from CANMET, designed to provide a representative selection of the type of stream sediments likely to be found within a continental shield region. The samples were taken from the bottom of the stream bed; material from a number of similar streams was blended together to produce the four samples. As well as analytical values for elements from total destruction methods, values are also given for aqua regia extraction methods, and the major and minor elements as oxides.

Provisional values for total elements

	CAN-STSD 1	CAN-STSD 3	CAN-STSD 4	
Ag	<0.5	<0.5	<0.5	mg/kg
As	23	28	15	mg/kg
Au	8	7	4	ng/g
B	89	82	46	mg/kg
Ba	630	1490	2000	mg/kg
Be	1.6	2.6	1.7	mg/kg
Br	40	24	13	mg/kg
C	12.3	8.4	4.1	wt. %
Ce	51	63	44	mg/kg
Co	17	16	13	mg/kg
Cr	67	80	93	mg/kg
Cs	1.8	5.2	1.9	mg/kg
Cu	36	39	65	mg/kg
Dy	5.6	5.4	3.8	mg/kg
Eu	1.6	1.3	1.2	mg/kg
F	950	850	380	mg/kg
Fe	4.7	4.4	4.1	wt. %
Hf	6.1	5.1	5.5	mg/kg
La	30	39	24	mg/kg
Li	11	23	14	mg/kg
Lu	0.8	0.8	0.5	mg/kg
Mn	3950	2730	1520	mg/kg
Mo	<5	6	<5	mg/kg
Nb	5	12	9	mg/kg
Nd	28	33	21	mg/kg
Ni	24	30	30	mg/kg
Pb	35	40	16	mg/kg
Rb	30	68	39	mg/kg
S	0.18	0.14	0.09	wt. %
Sb	3.3	4.0	7.3	mg/kg
Sc	14	13	14	mg/kg
Sm	6	7	5	mg/kg
Sn	4	4	2	mg/kg
Sr	170	230	350	mg/kg
Ta	0.4	0.9	0.6	mg/kg
Tb	1.2	1.1	0.8	mg/kg
Th	3.7	8.5	4.3	mg/kg
Ti	4600	4400	4530	mg/kg
U	8.0	10.5	3.0	mg/kg
V	98	134	106	mg/kg
W	<4	<4	<4	mg/kg
Y	42	36	24	mg/kg
Yb	4.0	3.4	2.6	mg/kg
Zn	178	204	107	mg/kg
Zr	218	196	190	mg/kg

Provisional values for total analytes

Water	4.46	3.47	1.73	wt. %

Loss on ignition at

500°C	29.7	21.6	10.2	wt. %

Provisional values for major and minor elements as oxides

Al_2O_3	9.0	0.9	12.1	wt. %
CaO	3.6	3.3	4.0	wt. %
Fe_2O^3	6.5	6.2	5.7	wt. %
K_2O	1.2	1.8	1.6	wt. %
MgO	2.2	2.2	2.1	wt. %
MnO	0.5	0.3	0.2	wt. %
Na_2O	1.8	1.5	2.7	wt. %
P_2O_5	0.4	0.4	0.2	wt. %
SiO_2	42.5	48.6	58.9	wt. %
TiO_2	0.8	0.7	0.8	wt. %

Loss on Ignition

at 1000°C	31.6	23.6	11.6	wt. %
Totals	100.1	99.5	99.9	wt. %

Provisional values for aqua regia extractable elements

Ag	0.3	0.4	0.3	mg/kg
As	17	22	11	mg/kg
Cd	0.8	1.0	0.6	mg/kg
Co	14	14	11	mg/kg
Cr	28	34	30	mg/kg
Cu	36	38	66	mg/kg
Fe	3.5	3.4	2.6	wt. %
Hg	110	90	930	µg/kg
Mn	3740	2630	1200	mg/kg

Continued on next page

Code	Product	Unit

Mo	2	7	2 mg/kg
Ni	18	25	23 mg/kg
Pb	34	39	13 mg/kg
Sb	2.0	2.4	3.6 mg/kg
V	47	61	51 mg/kg
Zn	165	192	82 mg/kg

The materials are mixed from various stream sediments as follows

CAN-STSD-1 — Stream sediments — 100 g

Sourced from the bed of Lavant Creek (31F) in Ontario, Canada

CAN-STSD-3 — Stream sediments — 100 g

A mixture of STSD 1 and 2

CAN-STSD-4 — Stream sediments — 100 g

As STSD 3, but with a greater amount of STSD 1

CAN-STSD-134 — Stream sediments — 3 x 100 g

Set of CAN-STSD-1, CAN-STSD-3 and CAN-STSD-4

RTC-CRM104-050 — Sediment - PAH — 50 g

The certified values were determined by USEPA SW846 (3rd edition) Methods 3540A (Soxhlet extraction) and 8270C (Semivolatile organics by GC/MS).

Certified values

Lot 016136

Naphthalene	2790 µg/kg	2,4-Dimethylphenol	3020 µg/kg
Nitrobenzene	2470 µg/kg	Dimethyl phthalate	2740 µg/kg
1,2,4-Trichlorobenzene	9430 µg/kg	2,4-Dinitrophenol	3050 µg/kg
Acenaphthene	8580 µg/kg	2,4-Dinitrotoluene (2,4-DNT)	5060 µg/kg
Anthracene	5950 µg/kg	2,6-Dinitrotoluene (2,6-DNT)	5730 µg/kg
Benzo(a)anthracene	1690 µg/kg	Di-n-octyl phthalate	12600 µg/kg
Benzo(a)pyrene	3020 µg/kg	bis(2-Ethylhexyl) phthalate (DEHP)	10700 µg/kg
Benzo(b)fluoranthene	4740 µg/kg	Fluoranthene	453 µg/kg
Benzo(k)fluoranthene	1050 µg/kg	Fluorene	8660 µg/kg
4-Bromophenyl phenyl ether	1860 µg/kg	Hexachlorobenzene	5480 µg/kg
Butyl benzyl phthalate	1550 µg/kg	Hexachlorocyclopentadiene	6550 µg/kg
4-Chloro-3-methylphenol	2060 µg/kg	Isophorone	9060 µg/kg
bis(2-Chloroethoxy) methane	7090 µg/kg	2-Methyl-4,6-dinitrophenol	7920 µg/kg
bis(2-Chloroisopropyl) ether	6960 µg/kg	2-Methylnaphthalene	3400 µg/kg
2-Chloronapthalene	4450 µg/kg	2-Methylphenol (o-Cresol)	8190 µg/kg
2-Chlorophenol	8500 µg/kg	2-Methylphenol (p-Cresol)	7810 µg/kg
4-Chlorophenyl phenylether	10700 µg/kg	3+4-Methylphenol (m+p-Cresol)	9270 µg/kg
Dibenzofuran	7240 µg/kg	2-Nitrophenol	6590 µg/kg
Di-n-butyl phthalate	11700 µg/kg	4-Nitrophenol	6810 µg/kg
1,2-Dichlorobenzene	7210 µg/kg	n-Nitrosodimethylamine	1720 µg/kg
1,3-Dichlorobenzene	3900 µg/kg	n-Nitroso-di-n-propylamine	6510 µg/kg
1,4-Dichlorobenzene	2470 µg/kg	Phenanthrene	5570 µg/kg
Hexachlorobutadiene	5430 µg/kg	Phenol	7930 µg/kg
Hexachloroethane	4510 µg/kg	Pyrene	3040 µg/kg
2,6-Dinitrophenol	4060 µg/kg	2,4,5-Trichlorophenol	10100 µg/kg
Diethyl phthalate	2240 µg/kg		

RTC-CNS392-050 — Freshwater Sediment - Trace elements — 50 g

The Reference values were determined by Dutch standard methods (NEN 56..; 57..; 64..; and 66..; series) after total digestion using predominantly Nitric/Hydrochloric acid mixture (Aqua Regia) in pressurized microwave digester units. The sample is suitable for use by these, or other similar digestion and analytical procedures.

Reference values

Lot 011295

Al	(14100) mg/Kg	Mn	6604 mg/Kg
Sb	12.0 mg/Kg	Mo	14.5 mg/Kg
As	6.49 mg/Kg	Ni	32.9 mg/Kg
Ba	54.8 mg/Kg	Se	8.59 mg/Kg
Be	14.3 mg/Kg	Ag	15.8 mg/Kg
Cd	21.5 mg/Kg	Ti	(25.9) mg/Kg
Co	9.16 mg/Kg	V	41.9 mg/Kg
Cr	36.6 mg/Kg	Zn	81.7 mg/Kg
Cu	146 mg/Kg	Chemical Oxygen Demand (COD)	0.610 g/Kg
Fe	7880 mg/Kg	Chloride	0.255 g/Kg
Pb	121 mg/Kg	Kjeldahl-Nitrogen(KN)	0.185 g/Kg
Hg	12.7 mg/Kg	Phosphorus, Total (TP)	0.137 g/Kg

Code	Product	Unit

RTC-CRM016-050 — Freshwater sediment - Trace metals — 50 g

Sediment from a stream located in the Western United States. The following certified values were determined by USEPA SW846 (3rd edition) Methods 3050 and 6010, except for arsenic (7060A), mercury (7471A), selenium (7740), and thallium (7841). The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Al	8920 mg/kg	Hg	0.158 mg/kg
As	7.76 mg/kg	K	1960 mg/kg
Ba	79.3 mg/kg	Mg	13200 mg/kg
Be	0.49 mg/kg	Mn	180 mg/kg
Ca	22600 mg/kg	Na	292 mg/kg
Cd	0.47 mg/kg	Ni	16.7 mg/kg
Co	5.96 mg/kg	Pb	14.1 mg/kg
Cr	14.5 mg/kg	V	22.5 mg/kg
Cu	15.5 mg/kg	Zn	69.7 mg/kg
Fe	16800 mg/kg		

Indicative values for Al, Ba, Cd, Cr, K, B, Mo, Se, Si,Ag, Sr, Tl

RTC-CRM015-050 — Sediment - Trace metals and cyanide — 50 g

Sediment from a stream located in the Western United States. The Certified values were determined by USEPA SW846 (3rd edition) Methods 3050/3051 and 6010, except for arsenic (7060A), mercury (7471A), selenium (7740), thallium (7841), and cyanide (9010A). The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Al	9200 mg/kg	Cu	16.1 mg/kg	Na	400 mg/kg
As	6.6 mg/kg	Fe	17070 mg/kg	Ni	17.5 mg/kg
Ba	83.0 mg/kg	Hg	0.10 mg/kg	Pb	15.04 mg/kg
Be	0.47 mg/kg	K	2074 mg/kg	V	22.1 mg/kg
Ca	23463 mg/kg	Mg	13611 mg/kg	Zn	69.9 mg/kg
Cr	14.3 mg/kg	Mn	183.4 mg/kg	Cyanide	6.04 mg/kg
Co	6.04 mg/kg	Mo	1.16 mg		

Indicative values for Ag, B, Cd, Mo, Sb, Se, Si, Tl

Marine sediments

LGC6137 — Estuarine sediment - Extractable metals — 50 g

Collected from the Severn Estuary, offshore around Avonmouth, UK
The extractable metal content refers to metal soluble in hot Aqua Regia using methods based on ISO 11466 (1995).

Certified values

As	12.4 mg/kg	Fe	30700 mg/kg	Na	7420 mg/kg
Ba	82 mg/kg	K	5010 mg/kg	Pb	73.0 mg/kg
Be	1.0 mg/kg	Li	42.5 mg/kg	V	47.0 mg/kg
Ca	51100 mg/kg	Mg	11100 mg/kg	Zn	231 mg/kg
Cr	47 mg/kg	Mn	665 mg/kg		

Indicative values for Cd, Mo, Se, Sn, Ti

BCR-667 — Estuarine sediment - Trace elements — 40 g

Certified values

Ce	56.7 mg/kg	La	27.8 mg/kg	Tb	0.682 mg/kg
Dy	4.01 mg/kg	Lu	0.325 mg/kg	Th	10.0 mg/kg
Er	2.35 mg/kg	Nd	25.0 mg/ kg	Tm	0.326 mg/ Kg
Eu	1.00 mg/kg	Pr	6.14 mg/kg	U	2.26 mg/kg
Gd	4.41 mg/kg	Sc	13.7 mg/kg	Yb	2.20 mg/kg
Ho	0.796 mg/kg	Sm	4.66 mg/kg		

Indicative values for: As, Au, Br, Cd, Co, Cr, Cs, Cu, Fe, Mn, Ni, Pb, Sb, Se, Sr, Ta, Y and Zn

BCR-277R — Estuarine sediment - Trace elements — 40 g

Certified values

As	18.3 mg/kg	Cr	188 mg/kg	Ni	130 mg/kg
Cd	0.61 mg/kg	Cu	63 mg/kg	Zn	178 mg/kg
Co	22.5 mg/kg	Hg	0.128 mg/kg		

BCR-462 — Coastal sediment - Organotin compounds — 25 g

Compound	Certified value µg/kg	Uncertainty µg/kg
Tributyltin (TBT)	54	15
Dibutyltin (DBT)	68	12

Additional cost for dry ice shipment

BCR-320R — Channel sediment - Trace elements — 40 g

Certified values

As	21.7 mg/kg	Hg	0.85 mg/kg	Tl	0.65 mg/kg
Cd	2.64 mg/kg	Mn	910 mg/kg	U	1.56mg/kg
Co	9.7 mg/kg	Ni	27.1 mg/kg	V	46.5mg/kg
Cr	59 mg/kg	Pb	85 mg/kg	Zn	319 mg/kg
Cu	46.3 mg/kg	Sc	5.2 mg/kg		
Fe	25700 mg/kg	Th	5.3 mg/kg		

Indicative values for Se, Sn

Code	Product	Unit

ERM-CC580 — Estuarine sediment - Mercury and methylmercury — 40 g

	Certified values[1]	uncertainty[2]
Total Hg	132 mg/kg	3 mg/kg
CH_3Hg^+	0.0755 mg/kg	4 µg/kg

1) Unweighted mean value of the means of 11 to 13 accepted sets of data, each set being obtained in a different laboratory and / or with a different method of determination. Certified value is based on dry mass. The certified values are traceable to SI.

2) The certified uncertainty is the half-width of the 95 % confidence interval of the mean defined in 1). k-factors were chosen according to the t-distribution depending of the number of accepted sets of results and were 2.179 for total Hg and 2.228 for MeHg.

NIST-1941b — Organics in marine sediment — 50 g

Collected at the mouth of the Baltimore Harbour.
All of the constituents for which certified, reference, and information values are provided in NIST-1941b were naturally present in the sediment material before processing. A unit of NIST-1941b consists of a bottle containing 50 g of radiation-sterilized, freeze-dried sediment material.

Certified Concentrations for Selected PAHs

PAHs	Mass Fractions in µg/kg (dry-mass basis)	PAHs	Mass Fractions in µg/kg (dry-mass basis)
Naphthalene	848 ± 95	Benzo[b]fluoranthene	453 ± 21
Fluorene	85 ± 15	Benzo[k]fluoranthene	225 ± 18
Phenanthrene	406 ± 44	Benzo[e]pyrene	325 ± 25
Anthracene	184 ± 18	Benzo[a]pyrene	358 ± 17
3-Methylphenanthrene	105 ± 13	Perylene	397 ± 45
2-Methylphenathrene	128 ± 14	Benzo[ghi]perylene	307 ± 45
1-Methylphenanthrene	73.2 ± 5.9	Indeno[1,2,3-cd]pyrene	341 ± 57
Fluoranthene	651 ± 50	Dibenz[a,j]anthracene	48.9 ± 4.6
Pyrene	581 ± 39	Dibenz[a,c]anthracene	36.7 ± 5.2
Benz[a]anthracene	335 ± 25	Dibenz[a,h]anthracene	53 ± 10
Chrysene	291 ± 31	Benzo[b]chrysene	53 ± 12
Triphenylene	108 ± 5	Picene	46.6 ± 4.7

Certified Concentrations for Selected PCB Congeners

PCB Congeners		Mass Fractions in µg/kg (dry-mass basis)
PCB 8	2,4'-Dichlorobiphenyl	1.65 ± 0.19
PCB 18	2,2',5-Trichlorobiphenyl	2.39 ± 0.29
PCB 28	2,4,4'-Trichlorobiphenyl	4.52 ± 0.57
PCB 31	2,4',5-Trichlorobiphenyl	3.18 ± 0.41
PCB 44	2,2'3,5'-Tetrachlorobiphenyl	3.85 ± 0.20
PCB 49	2,2'4,5'-Tetrachlorobiphenyl	4.34 ± 0.28
PCB 52	2,2',5,5'-Tetrachlorobiphenyl	5.24 ± 0.28
PCB 66	2,3',4,4'-Tetrachlorobiphenyl	4.96 ± 0.53
PCB 87	2,2',3,4,5'-Pentachlorobiphenyl	1.14 ± 0.16
PCB 95	2,2',3,5',6-Pentachlorobiphenyl	3.93 ± 0.62
PCB 99	2,2',4,4',5-Pentachlorobiphenyl	2.90 ± 0.36
PCB 101	2,2',4,5,5'-Pentachlorobiphenyl	5.11 ± 0.34
PCB 105	2,3,3',4,4'-Pentachlorobiphenyl	1.43 ± 0.10
PCB 110	2,3,3',4',6-Pentachlorobiphenyl	4.62 ± 0.36
PCB 118	2,3',4,4',5-Pentachlorobiphenyl	4.23 ± 0.19
PCB 128	2,2',3,3',4,4'-Hexachlorobiphenyl	0.696 ± 0.044
PCB 138	2,2',3,4,4',5'-Hexachlorobiphenyl	3.60 ± 0.28
PCB 149	2,2',3,4',5',6-Hexachlorobiphenyl	4.35 ± 0.26
PCB 153	2,2',4,4',5,5'-Hexachlorobiphenyl	5.47 ± 0.32
PCB 156	2,3,3',4,4',5-Hexachlorobiphenyl	0.507 ± 0.090
PCB 170	2,2',3,3',4,4',5-Heptachlorobiphenyl	1.35 ± 0.09
PCB 180	2,2',3,4,4',5,5'-Heptachlorobiphenyl	3.24 ± 0.51
PCB 183	2,2',3,4,4',5',6-Heptachlorobiphenyl	0.979 ± 0.087
PCB 187	2,2',3,4',5,5',6-Heptachlorobiphenyl	2.17 ± 0.22
PCB 194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl	1.04 ± 0.06
PCB 195	2,2',3,3',4,4',5,6-Octachlorbiphenyl	0.645 ± 0.060
PCB 201	2,2',3,3',4,5',6,6'-Octachlorobiphenyl	0.777 ± 0.034
PCB 206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	2.42 ± 0.19
PCB 209	Decachlorobiphenyl	4.86 ± 0.45

Certified Concentrations for Selected Pesticides

Chlorinated Pesticides	Mass Fractions in µg/kg (dry-mass basis)	Chlorinated Pesticides	Mass Fractions in µg/kg (dry-mass basis)
Hexachlorobenzene	5.83 ± 0.38	trans-Nonachlor	0.438 ± 0.073
cis-Chlordane	0.85 ± 0.11	4,4'-DDE	3.22 ± 0.28
trans-Chlordane	0.566 ± 0.093	4,4'-DDD	4.66 ± 0.46
cis-Nonachlor	0.378 ± 0.053		

Reference values for selected PCBs, PCBs, Pesticides and TOC
Indicative values for carbon, hydrogen and nitrogen

NIST-4357 — Ocean sediment - Radioactivity — 85 g

Certified values

^{241}Am	1.1×10^{-3} Bq/g	^{228}Th	2.86×10^{-2} Bq/g
^{60}Co	3.20×10^{-1} Bq/g	^{232}Th	2.68×10^{-2} Bq/g
^{137}Cs	5.92×10^{-2} Bq/g	^{235}U	7.4×10^{-4} Bq/g
^{238}Pu	2.6×10^{-4} Bq/g	^{238}U	1.74×10^{-2} Bq/g
$^{239}Pu + ^{240}Pu$	4.00×10^{-3} Bq/g		

Code	Product	Unit

NIST-1646a — Estuarine sediment - Metals — 70 g

Collected from Chesapeake Bay, USA

Certified values

Al	2.297 %	K	0.864 %	Se	0.193 mg/kg
As	6.23 mg/kg	Mg	0.388 %	Si	40 %
Ca	0.519 %	Mn	234.5 mg/kg	Ti	0.456 %
Cd	0.148 mg/kg	Na	0.741 %	V	44.84 mg/kg
Cr	40.9 mg/kg	P	234.5 mg/kg	Zn	48.9 mg/kg
Cu	10.01 mg/kg	Pb	11.7 mg/kg		
Fe	2.008 %	S	0.352 %		

NIST-2702 — Marine sediment - Trace elements — 50 g

Marine sediment collected at the mouth of the Baltimore Harbor, USA

Certified values

Al	8.41 %	K	2.054 %	Sc	25.9 mg/kg
As	45.3 mg/kg	La	73.5 mg/kg	Sr	119.7 mg/kg
Ba	397.4 mg/kg	Mn	1757 mg/kg	Th	20.51 mg/kg
Ce	123.4 mg/kg	Na	0.681 %	Ti	0.884 %
Cd	0.817 mg/kg	Ni	75.4 mg/kg	Tl	0.8267mg/kg
Co	27.76 mg/kg	P	0.1552 %	V	357.6 mg/kg
Cr	352 mg/kg	Pb	132.8 mg/kg	Zn	485.3 mg/kg
Fe	7.91 %	Rb	127.7 mg/kg		
Hg	0.4474 mg/kg	Sb	5.60 mg/kg		

Indicative values for Ag, Ca, Ga, Mg, Mo, Se, Sn

NIST-2703 — Marine sediment - Trace elements — 5 g

Sediment for solid sampling (small sample) analytical techniques
NIST-2703 is a marine sediment collected at the mouth of the Baltimore Harbor. It is primarily intended for use in evaluating analytical methods for the direct determination of selected elements in solid samples of marine or freshwater sediment and similar matrices. Direct and slurry sampling, as well as dissolution techniques using typically milligram size samples (<10 mg), can employ this Standard Reference Material® in the user's procedures; all certified and reference values are based on measurements using a samples size of at least 0.7 mg. Techniques using large samples (100 mg) should use NIST-2702 Marine sediment - Trace elements.

Certified values

	Mass Fractions (mg/kg, unless noted as %)		Mass Fractions (mg/kg, unless noted as %)		Mass Fractions (mg/kg, unless noted as %)
Al	8.33 % ± 0.22 %	K	2.08 % 0.24 %	Sr	118 ± 18
As	45.5 ± 1.7	La	75.9 ± 3.0	Th	20.22 ± 0.74
Ba	416 ± 32	Mn	1734 48	Ti	0.880 % ± 0.046 %
Cd	0.811 ± 0.076	Na	0.693 % ± 0.019 %	U	8.99 ± 0.72
Ce	125.5 ± 5.0	Pb	130 ± 11	V	360 ± 13
Co	27.70 ± 0.50	Rb	130 ± 11	Zn	480 ± 22
Fe	7.38 % ± 0.32 %	Sb	5.62 ± 0.26		
Hg	0.474 ± 0.066	Sc	25.95 ± 0.68		

Reference and information values for for selected elements

NCS DC74301 — Marine sediment - Trace elements and oxides — 50 g

Certified values

SiO_2	53.86 ± 0.06 %	Co	76.7 ± 1.2 µg/g	Pr	20.1 ± 1.9 µg/g
Al_2O_3	13.75 ± 0.09 %	Cr	58.4 ± 1.3 µg/g	Rb	97.3 ± 2.6 µg/g
Fe_2O_3(T)	6.58 ± 0.07 %	Cs	9.4 ± 0.7 µg/g	Sb	1.85 ± 0.35 µg/g
TiO2	0.67 ± 0.01 %	Cu	424 ± 8 µg/g	Sc	25.6 ± 2.9 µg/g
P_2O_5	0.45 ± 0.01 %	Dy	19.9 ± 1.8 µg/g	Sm	21.5 ± 1.3 µg/g
MnO	0.43 ± 0.01 %	Er	11.0 ± 0.7 µg/g	Sr	267 ± 15 µg/g
MgO	3.38 ± 0.05 %	Eu	5.3 ± 0.3 µg/g	Tb	3.4 ± 0.3 µg/g
CaO	1.71 ± 0.03 %	Ga	23.7 ± 1.7 µg/g	Th	13.9 ± 1.1 µg/g
Na_2O	4.81 ± 0.05 %	Gd	22.0 ± 1.2 µg/g	Tm	1.54 ± 0.14 µg/g
K_2O	2.95 ± 0.05 %	Ho	4.3 ± 0.2 µg/g	U	1.98 ± 0.47 µg/g
Ba	0.44 ± 0.02 %	La	67.8 ± 2.9 µg/g	V	112 ± 5 µg/g
H_2O^+	5.39 ± 0.15 %	Li	60.0 ± 1.5 µg/g	W	5.5 ± 0.6 µg/g
S	0.31 ± 0.02 %	Lu	1.46 ± 0.19 µg/g	Y	104 ± 5 µg/g
Cl	4.07 ± 0.04 %	Mo	7.2 ± 0.5 µg/g	Yb	9.8 ± 1.1 µg/g
As	5.8 ± 0.8 µg/g	Nd	91.8 ± 3.9 µg/g	Zn	160 ± 3 µg/g
B	125 ± 9 µg/g	Ni	150 ± 4 µg/g	Zr	177 ± 10 µg/g
Ce	92 ± 8 µg/g	Pb	29.3 ± 1.1 µg/g		

Indicative values for FeO, Org. C, CO_2, F, L .O.I., Salt, Nb

NCS DC75301 — Offshore marine sediment - Trace elements and oxides — 75 g

Certified values

Cu	31 µg/g	Ni	34.3 µg/g	MgO	2.50 %
Pb	25 µg/g	Co	14.2 µg/g	K_2O	2.48 %
Zn	87 µg/g	Sr	150 µg/g	Na_2O	1.68 %
Cd	0.20 µg/g	Ba	425 µg/g	TiO_2	0.825 %
Cr	86 µg/g	SiO_2	61.91 %	P_2O_5	0.148 %
As	10. 3 µg/g	Al_2O_3	13. Jul %	MnO	0.096 %
Hg	0.048 µg/g	Fe_2O_3(T)	5.36 %	Org.C	0.50 %
Se	0.16 µg/g	CaO	4.31 %	CO_3^{2-}	4.70 %

Indicative values for Ga, Mo, B, Zr , La, Ce, Nd, Sm, Eu, Tb, Ho, Yb, Lu, Y, Pr, Gd, Dy, Er, Tm, Rb, Sc, Th, V, Nb, Ta, Hf, Cs, W, Sb, U

Code	Product	Unit

New NIM-GBW07315 — Offshore marine sediment - Trace elements and oxides — 50 g

Certified values

SiO_2	51.1 %	Br	145 µg/g	Ni	167 µg/g
Al_2O_3	11.41 %	Ce	82 µg/g	Pb	37 µg/g
Fe_2O_3(T)	5.93 %	Co	81 µg/g	Pr	17 µg/g
FeO	-0.3 %	Cr	59 µg/g	Rb	73 µg/g
MnO	0.59 %	Cs	6.8 µg/g	Sb	2 µg/g
MgO	3.02 %	Cu	357 µg/g	Sc	23 µg/g
CaO	5.74 %	Dy	17 µg/g	Sm	18 µg/g
Na_2O	4.43 %	Er	9.8 µg/g	Sr	298 µg/g
K_2O	2.32 %	Eu	4,5 µg/g	Ta	-0.6 µg/g
TiO_2	0.61 %	Ga	18 µg/g	Tb	3.1 µg/g
P_2O_5	0.48 %	Gd	18 µg/g	Th	11 µg/g
H_2O^+	-5.8 %	Hf	3.6 µg/g	Tm	1.4 µg/g
CO_2	3.6 %	Hg	0.95 µg/g	U	1.9 µg/g
Cl	3.9 %	Ho	3.6 µg/g	V	101 µg/g
F	0.11 µg/g	La	62 µg/g	W	5.3 µg/g
As	7.1 µg/g	Li	51 µg/g	Y	98 µg/g
B	125 µg/g	Lu	1.3 µg/g	Yb	8.9 µg/g
Ba	0.31 µg/g	Mo	14 µg/g	Zn	137 µg/g
Be	1.9 µg/g	Nb	11 µg/g	Zr	140 µg/g
Bi	0.9 µg/g	Nd	75 µg/g		

NCS DC75305 — Offshore marine sediment - Trace elements and oxides — 50 g

Certified values

SiO_2	31.6 %	Br	125 µg/g	Nd	51 µg/g
Al_2O_3	7.7 %	Ce	55 µg/g	Ni	108 µg/g
Fe_2O_3(t)	3.81 %	Co	53 µg/g	Pb	22 µg/g
MnO	0.4 %	Cr	38 µg/g	Pr	12 µg/g
MgO	2.04 %	Cs	4.5 µg/g	Rb	50 µg/g
CaO	22.6 %	Cu	231 µg/g	Sb	1.3 µg/g
Na_2O	3.75 %	Dy	11 µg/g	Sc	15 µg/g
K_2O	1.61 %	Er	6.3 µg/g	Sm	12 µg/g
TiO_2	0.39 %	Eu	3 µg/g	Sr	667 µg/g
P_2O_5	0.33 %	Ga	12 µg/g	Tb	2 µg/g
H_2O^+	-4 %	Gd	12 µg/g	Th	7 µg/g
CO_2	17.3 %	Hf	2,3 µg/g	Tm	0.96 µg/g
Cl	3.5 %	Hg	0.13 µg/g	U	1.1 µg/g
F	0.08 µg/g	Ho	2,4 µg/g	V	69 µg/g
As	4.6 µg/g	La	44 µg/g	W	4.1 µg/g
B	84 µg/g	Li	35 µg/g	Y	69 µg/g
Ba	0.25 µg/g	Lu	0.89 µg/g	Yb	5.8 µg/g
Be	1.5 µg/g	Mo	5.7 µg/g	Zn	142 µg/g
Bi	0.57 µg/g	Nb	6.9 µg/g	Zr	94 µg/g

NRCMESS-3 — Estuarine sediment - Trace elements — 50 g

Collected from the Beaufort Sea, Canada

Certified values

Ag	0.18 mg/kg	Cu	33.9 mg/kg	Sb	1.02 mg/kg
Al	8.59	Fe	4.34 %	Se	0.72 mg/kg
As	21.2 mg/kg	Hg	0.091 mg/kg	Sn	2.50 mg/kg
Be	2.30 mg/kg	Li	73.6 mg/kg	Sr	129 mg/kg
Ca	1.47 %	Mn	324 mg/kg	Ti	0.44 %
Cd	0.24 mg/kg	Mo	2.78 mg/kg	Tl	0.90 mg/kg
Co	14.4 mg/kg	Ni	46.9 mg/kg	V	243 mg/kg
Cr	105 mg/kg	Pb	21.1 mg/kg	Zn	159 mg/kg

Indicative values for C, K, Mg, Na, P, S, Si, U

NRCPACS-2 — Harbour sediment - Trace elements and organotin compounds — 65 g

Collected from Esquimalt Harbour in British Columbia, Canada

Certified values

Ag	1.22 mg/kg	Hg	3.04 mg/kg	Pb	183 mg/kg
Al	6.62 %	K	1.24 %	Sb	11.3 mg/kg
As	26.2 mg/kg	Li	32.2 mg/kg	Se	0.92 mg/kg
Be	1.0 mg/kg	Mg	1.47 %	Sn	19.8 mg/kg
Ca	1.96 %	Mn	440 mg/kg	Sr	276 mg/kg
Cd	2.11 mg/kg	Mo	5.43 mg/kg	Ti	0.443 %
Co	11.5 mg/kg	Na	3.45 %	V	133 mg/kg
Cr	90.7 mg/kg	Ni	39.5 mg/kg	Zn	364 mg/kg
Cu	310 mg/kg	P	0.096 %	TBT(as Sn)	0.89 mg/kg
Fe	4.09 %	S	1.29 %	DBT(as Sn)	1.05 mg/kg

Indicative values for C, Cl, Si, Tl, U, MBT (as Sn)

NRCHISS-1 — Sandy sediment - Trace elements — 100 g

Certified values

Ag	0.016 mg/kg	Cu	2.29 mg/kg	Ni	2.16 mg/kg
Al	0.73 %	Fe	0.246 %	Pb	3.13 mg/kg
As	0.801 mg/kg	K	0.332 %	Se	0.050 mg/kg
Be	0.129 mg/kg	Li	2.83 mg/kg	Sr	96.9 mg/kg
Ca	1.14 %	Mg	0.075 %	Ti	0.076 %
Cd	0.024 mg/kg	Mn	66.1 mg/kg	V	6.80 mg/kg
Cr	30.0 mg/kg	Na	0.373 %	Zn	4.94 mg/kg

Indicative values for Co, Hg, Mo Tl, Sb, Sn, U, V

Code	Product	Unit

NRCHIPA-1 — Marine sediment - Tributyltin — 25 g

Certified value

Tributyltin ..... 78 ± 9 ng/g (as Sn)

NRCSOPH-1 — Marine sediment - Dibutyltin and Tributyltin — 12 g

Certified value

Dibutyltin ..... 174 ± 9 ng/g (as Sn) Tributyltin ..... 125 ± 7 ng/g (as Sn)

New **RTC-CRM361-100** — Sea sediment - Total petroleum hydrocarbons (TPH) — 100 g

Certified value

Lot 011244

TPH (Diesel range organics) ..... 694.99 mg/kg

NWTH-1 — Harbour sediment - Trace elements — 100 g

Collected from Toronto Harbour, Canada, in 1981, contains high levels of lead

Al ..... 55597 µg/g	Cu ..... 103 µg/g	Pb ..... 257 µg/g
As ..... 9.59 µg/g*	Fe ..... 35032 µg/g	Se ..... 0.911 µg/g*
Cd ..... 5.41 µg/g*	Hg ..... 0.440 µg/g*	Tl ..... 0.623 µg/g*
Cr ..... 125 µg/g	Mn ..... 583 µg/g	V ..... 89.2 µg/g
Co ..... 15.6 µg/g*	Ni ..... 45.5 µg/g	Zn ..... 1527 µg/g

* non-certified values

NWTH-2 — Harbour sediment - Trace metals — 100 g

Collected from Toronto Harbour, Canada, in 1981, contains high levels of lead

Ag ..... 5.47 µg/g*	Fe ..... 35361 µg/g	Rb ..... 94.0 µg/g*
Al ..... 64799 µg/g	Ga ..... 17.3 µg/g*	Sb ..... 3.22 µg/g*
As ..... 8.70 µg/g	Hg ..... 0.620 µg/g	Sc ..... 13.5 µg/g*
B ..... 84.0 µg/g*	K ..... 22313 µg/g*	Se ..... 0.825 µg/g
Ba ..... 573 µg/g*	La ..... 33.0 µg/g*	Sn ..... 10.77 µg/g*
Be ..... 2.11 µg/g*	Li ..... 35.1 µg/g*	Sr ..... 273 µg/g*
Bi ..... 6.27 µg/g*	Mg ..... 15846 µg/g*	Ti ..... 3015 µg/g*
Ca ..... 77806 µg/g*	Mn ..... 584 µg/g	Tl ..... 0.663 µg/g*
Cd ..... 5.22 µg/g	Mo ..... 1.18 µg/g*	U ..... 2.08 µg/g*
Ce ..... 73.9 µg/g*	Na ..... 10956 µg/g*	V ..... 89.2 µg/g
Cr ..... 123 µg/g	Nb ..... 8.82 µg/g*	W ..... 1.33 µg/g*
Co ..... 15.7 µg/g	Ni ..... 43.0 µg/g	Y ..... 25.1 µg/g*
Cs ..... 3.73 µg/g*	P ..... 1832 µg/g*	Zn ..... 908 µg/g
Cu ..... 124 µg/g	Pb ..... 194 µg/g	

*non-certified values

Information values for recoverable and leachable element concentrations

IAEA-384 — Fangataufa sediment - Radioactive isotopes — 250 g

The sediment was collected in Fangataufa Lagoon (French Polynesia), where nuclear weapon testing had been carried out

Certified values

^{40}K ..... 6.8 Bq/kg	^{230}Th ..... 2.50 Bq/kg	$^{239+240}$Pu ..... 107 Bq/kg
^{60}Co ..... 2.50 Bq/kg	^{238}U ..... 35.5 Bq/kg	^{241}Am* ..... 7.1 Bq/kg
^{155}Eu ..... 7.0 Bq/kg	^{238}Pu ..... 39.0 Bq/kg	

*The values should be corrected for in-growth from ^{241}Pu

IAEA-159 — Sediment - Organic contaminants — 45 g

Samples were collected in Kilbrannan Sound, in the river Clyde's estuary, Scotland.

Recommended values

p,p' DDE ..... 0.89 ± 0.50 ng/g	Naphthalene ..... 23 ± 13 ng/g
p,p' DDD ..... 0.82 ± 0.58 ng/g	1-Methylnaphthalene ..... 20 ± 10 ng/g
o,p DDD ..... 0.39 ± 0.22 ng/g	2 Methylnaphthalene ..... 30 ± 19 ng/g
Heptachlor ..... 0.31 ± 0.21 ng/g	Phenanthrene ..... 59 ± 29 ng/g
Dieldrin ..... 0.48 ± 0.37 ng/g	1 methyl phenanthrene ..... 20 ± 9.6 ng/g
Aroclor 1260 ..... 5.54 ± 3.31 ng/g	Anthracene ..... 11 ± 5.1 ng/g
PCB 18 ..... 0.74 ± 0.53 ng/g	Chrysene ..... 58 ± 26 ng/g
PCB 28 ..... 0.57 ± 0.28 ng/g	Fluorene ..... 13 ± 7.7 ng/g
PCB 44 ..... 0.35 ± 0.14 ng/g	Fluoranthene ..... 110 ± 32 ng/g
PCB 52 ..... 0.67 ± 0.25 ng/g	Pyrene ..... 100 ± 38 ng/g
PCB 66 ..... 0.41 ± 0.07 ng/g	Benzo[b]fluoranthene ..... 100 ± 42 ng/g
PCB 101 ..... 0.52 ± 0.16 ng/g	Benzo[k]fluoranthene ..... 49 ± 14 ng/g
PCB 118 ..... 0.52 ± 0.21 ng/g	Benz[a]anthracene ..... 54 ± 20 ng/g
PCB 138 ..... 0.60 ± 0.31 ng/g	Perylene ..... 27 ± 11 ng/g
PCB 149 ..... 0.52 ± 0.14 ng/g	Benzo[e]pyrene ..... 82 ± 8.2 ng/g
PCB 153 ..... 0.56 ± 0.09 ng/g	Benzo[a]pyrene ..... 58 ± 26 ng/g
PCB 170 ..... 0.15 ± 0.04 ng/g	Benzo[g,h,i]perylene ..... 95 ± 45 ng/g
PCB 180 ..... 0.26 ± 0.10 ng/g	Indeno[1,2,3-cd]pyrene ..... 120 ± 34 ng/g
PCB 194 ..... 0.09 ± 0.04 ng/g	Dibenz[a,h]anthracene ..... 25 ± 14 ng/g
n-C17 ..... 105 ± 56 ng/g	Acenaphthylene ..... 6.4 ± 5.4 ng/g
Pristane ..... 120 ± 53 ng/g	Acenaphthene ..... 6.0 ± 4.0 ng/g
Phytane ..... 81 ± 53 ng/g	Dibenzothiophene ..... 6.5 ± 2.8 ng/g

Indicative values for chlorinated pesticides, PCBs and petroleum hydrocarbons.

Sediments

Code	Product	Unit
IAEA-417	Sediment - Organic contaminants Collected from the Venice Lagoon, Italy Recommended values	40 g

gamma-HCH (Lindane)	0.54 ± 0.35 ng/g	PCB 194	2.7 ± 1.3 ng/g
p,p' DDE	14 ± 6.9 ng/g	PCB 195	1.2 ± 0.53 ng/g
p,p' DDD	21 ± 11 ng/g	PCB 206	1.8 ± 0.96 ng/g
trans-Nonachlor	0.32 ± 0.19 ng/g	PCB 209	1.2 0.7 ng/g
PCB 28	5.7 ± 2.8 ng/g	n - C 17	200 ± 140 ng/g
PCB 31	4.1 ± 1.5 ng/g	Phenanthrene	3900 ± 1500 ng/g
PCB 44	9.7 ± 4.6 ng/g	1-Methylphenanthrene	320 ± 150 ng/g
PCB 49	7.8 ± 2.9 ng/g	Anthracene	630 ± 240 ng/g
PCB 52	17 ± 7.9 ng/g	Chrysene	3600 ± 1700 ng/g
PCB 74	5.1 ± 2.1 ng/g	Fluorene	230 ± 110 ng/g
PCB 87	19 ± 6.0 ng/g	Fluoranthene	7700 ± 3000 ng/g
PCB 99	19 ± 7.8 ng/g	Pyrene	6000 ± 2200 ng/g
PCB 101	42 ± 15 ng/g	Benzo[b]fluoranthene	4100 ± 2000 ng/g
PCB 105	22 ± 4.5 ng/g	Benzo[k]fluoranthene	2000 ± 300 ng/g
PCB 110	42 ± 15 ng/g	Benz[a]anthracene	3200 ± 1200 ng/g
PCB 128	12 ± 4.2 ng/g	Perylene	1200 ± 460 ng/g
PCB 138	45 ± 22 ng/g	Benzo[e]pyrene	3000 ± 830 ng/g
PCB 149	25 ± 11 ng/g	Benzo[a]pyrene	2800 ± 1200 ng/g
PCB 156	5.9 ± 1.2 ng/g	Benzo[ghi]perylene	2300 ± 1300 ng/g
PCB 170	8.1 ± 4.3 ng/g	Indeno[123cd]pyrene	2700 ± 370 ng/g
PCB 174	3.1 ± 0.97 ng/g	Acenaphthylene	42 ± 35 ng/g
PCB 177	1.8 ± 0.61 ng/g	Acenaphthene	180 ± 62 ng/g
PCB 183	3.4 ± 1.4 ng/g	Dibenzothiophene	280 ± 16ng/g
PCB 187	8.1 ± 3.3 ng/g		

Indicative values for chlorinated pesticides, PCBs and petroleum hydrocarbons.

WEPAL sediment reference matrials

The Wageningen Evaluating Programmes for Analytical Laboratories (WEPAL) runs international sample exchange programmes for continuous quality control of analytical data as produced by chemical laboratories. There are almost 700 laboratories who take part in one or more of WEPAL's regular ring-tests programmes.

The WEPAL sediment reference samples are supplied with certificates including consensus values, indicative values and values for information, based on the results of the proficiency programme. The certificates are available on request.

New	WEPAL-SETOC-701	Riverclay - Organic compounds, inorganic composition (please ask for detailed information)	150 g
New	WEPAL-SETOC-704	Sediment - Organic compounds, inorganic composition (please ask for detailed information)	150 g
New	WEPAL-SETOC-705	Sediment - Organic compounds, inorganic composition (please ask for detailed information)	150 g
New	WEPAL-SETOC-707	Marine sediment - Organic compounds, inorganic composition (please ask for detailed information)	150 g
New	WEPAL-SETOC-708	Sediment - Organic compounds, inorganic composition (please ask for detailed information)	150 g
New	WEPAL-SETOC-713	Marine sediment - Organic compounds, inorganic composition (please ask for detailed information)	150 g
New	WEPAL-SETOC-716	Sediment - Organic compounds, inorganic composition (please ask for detailed information)	150 g
New	WEPAL-SETOC-717	Marine sediment - Organic compounds, inorganic composition (please ask for detailed information)	150 g
New	WEPAL-SETOC-724	Sediment - Organic compounds, inorganic composition (please ask for detailed information)	150 g
New	WEPAL-SETOC-725	Soil cont, industrial area - Organic compounds, inorganic composition (please ask for detailed information)	150 g
New	WEPAL-SETOC-728	Sandy soil - Organic compounds, inorganic composition (please ask for detailed information)	150 g
New	WEPAL-SETOC-731	Sediment - Organic compounds, inorganic composition (please ask for detailed information)	150 g
New	WEPAL-SETOC-733	Sediment - Organic compounds, inorganic composition (please ask for detailed information)	150 g
New	WEPAL-SETOC-734	Sediment - Organic compounds, inorganic composition (please ask for detailed information)	150 g
New	WEPAL-SETOC-735	Sediment - Organic compounds, inorganic composition (please ask for detailed information)	150 g
New	WEPAL-SETOC-738	Sediment - Organic compounds, inorganic composition (please ask for detailed information)	150 g
New	WEPAL-SETOC-741	Sediment - Organic compounds, inorganic composition (please ask for detailed information)	150 g
New	WEPAL-SETOC-742	Clay soil - Organic compounds, inorganic composition (please ask for detailed information)	150 g
New	WEPAL-SETOC-743	Soil from industrial area - Organic compounds, inorganic composition (please ask for detailed information)	150 g
New	WEPAL-SETOC-745	Channel sludge - Organic compounds, inorganic composition (please ask for detailed information)	150 g
New	WEPAL-SETOC-747	Sediment - Organic compounds, inorganic composition (please ask for detailed information)	150 g
New	WEPAL-SETOC-748	Sediment - Organic compounds, inorganic composition (please ask for detailed information)	150 g
New	WEPAL-SETOC-749	Sediment - Organic compounds, inorganic composition (please ask for detailed information)	150 g

	Code	Product	Unit
New	WEPAL-SETOC-755	Sediment - Organic compounds, inorganic composition (please ask for detailed information)	75 g
New	WEPAL-SETOC-756	Sediment - Organic compounds, inorganic composition (please ask for detailed information)	150 g
New	WEPAL-SETOC-757	Sediment - Organic compounds, inorganic composition (please ask for detailed information)	150 g
New	WEPAL-SETOC-760	Sediment - Organic compounds, inorganic composition (please ask for detailed information)	150 g
New	WEPAL-SETOC-766	Sediment - Organic compounds, inorganic composition (please ask for detailed information)	150 g
New	WEPAL-SETOC-769	Sediment - Organic compounds, inorganic composition (please ask for detailed information)	150 g
New	WEPAL-SETOC-770	Sediment - Organic compounds, inorganic composition (please ask for detailed information)	150 g

Soils

Code	Product	Unit
BCR-142R	Light sandy soil - Trace elements	40 g

Certified values

Cd ..... 0.34 mg/kg	Hg.....0.067 mg/kg	Pb ..... 40.2 mg/kg
Co ..... 12.1 mg/kg	Mn .....970 mg/kg	
Cu ..... 69.7 mg/kg	Ni.....64.5 mg/kg	

Indicative values for Cr, Zn

Aqua regia soluble content

Certified values

Cd ..... 0.25 mg/kg	Pb.....25.7 mg/kg
Ni ..... 61.1 mg/kg	Zn .....93.3 mg/kg

Indicative values for Co, Cr, Cu, Mn

ERM-CC690	Calcareous soil - Trace elements	70 g

Certified values

Ce ..... 49.1 mg/kg	Nd.....19.1 mg/kg	Th..... 7.64 mg/kg
Dy ..... 2.90 mg/kg	Sc.....7.81 mg/kg	Tm ..... 0.232 mg/kg
Gd ..... 3.25 mg/kg	Sm.....3.50 mg/kg	U ..... 1.90 mg/kg
La..... 24.4 mg/kg	Tb .....0.503 mg/kg	Yb ..... 1.57 mg/kg

Indicative values for: As, Au, Co, Cr, Cs, Cu, Er, Eu, Fe, Hf, Ho, Lu, Ni, Pb, Pr, Sb, Ta, W, Y and Zn

New	ERM-CC141	Loam soil - Trace elements	24 g

Certified values

Total content

As..... 9.9 ± 1.5 mg/kg	Cr .....86 ± 8 mg/kg	Ni ..... 26.4 ± 2.4 mg/kg
Cd ..... 0.35 ± 0.05 mg/kg	Cu.....14.4 ± 1.4 mg/kg	Pb ..... 41 ± 4 mg/kg
Co ..... 8.5 ± 0.5 mg/kg	Mn .....464 ± 18 mg/kg	Zn..... 57 ± 4 mg/kg

Aqua regia extractable content according to ISO 11466

As..... 7.5 ± 1.4 mg/kg	Cr .....31 ± 4 mg/kg	Ni ..... 21.9 ± 1.6 mg/kg
Cd ..... 0.25 ± 0.04 mg/kg	Cu.....12.4 ± 0.9 mg/kg	Pb ..... 32.2 ± 1.4 mg/kg
Co ..... 7.9 ± 0.9 mg/kg	Mn .....387 ± 17 mg/kg	Zn..... 50 ± 4 mg/kg

BCR-700	Organic rich soil - Extractable trace elements	40 g

Certified values

EDTA

Cd ..... 65.2 mg/kg	Cu.....89.4 mg/kg	Pb ..... 103 mg/kg
Cr..... 10.1 mg/kg	Ni.....53.2 mg/kg	Zn..... 510 mg/kg

Acetic acid

Cd ..... 67.5 mg/kg	Cu.....36.3 mg/kg	Pb ..... 4.85 mg/kg
Cr..... 19 mg/kg	Ni.....99 mg/kg	Zn..... 719 mg/kg

EUROSOILS

The environmental fate of a chemical substance that is deliberately or accidentally distributed in the environment can only be understood if one studies its possible interaction with the various environmental compartments. In this context the processes related to soil are of particular importance and as a consequence producers of chemicals are nowadays obliged to access the interaction of a given chemical product with soils (EU Directive 67/548/EEC and amendments). To achieve a better comparability of data the European Commission's IRMM has released the world`s first Certified Reference Materials (IRMM-443) for soil adsorption testing of chemical substances according to the OECD Testguideline 106. Six EU-representative soils have been selected and their adsorption coefficients for three reference substances (Atrazine, 2,4-D and Lindane) have been certified. Furthermore, the soil-pH according to the respective ISO-standards in aqueous solution and in 0.01 M calcium chloride have been certified, too. Additional information on other pedological parameters (CEC, organic carbon content, Total N and C), matrix constituents and background pollution makes IRMM-443 one the best characterised reference soil sets on a global level.

Code	Product	Unit

IRMM-443-1 EUROSOIL 1 — 200 g

Parameter	Value	Parameter	Value
K_f of Atrazine [1]	7.0	1/n of 2,4-D [1]	0.9
1/n of Atrazine [1]	0.91	pH in Water [2]	6.21
K_f of 2,4-D [1]	2.5	pH in 0.01M $CaCl_2$ [2]	5.65

Non-certified indicative values

Parameter	Value	Parameter	Value
K_f of Lindane [1]	68	Organic carbon content	32.7 g/kg
1/n of Lindane [1]	0.9	Total nitrogen content	3.4 g/kg
Total carbon content	33.9 g/kg		

[1] Determination according OECD Test guideline 106

[2] Measurement based on ISO Standard 10390

IRMM-443-2 EUROSOIL 2 — 200 g

Certified values

Parameter	Value	Parameter	Value
K_f of Atrazine [1]	2.7	K_f of Lindane [1]	48
1/n of Atrazine [1]	0.93	1/n of Lindane [1]	0.98
K_f of 2,4-D [1]	0.99	pH in Water [2]	8.1
1/n of 2,4-D [1]	0.96	pH in 0.01M $CaCl_2$ [2]	7.5

Non-certified indicative values

Parameter	Value	Parameter	Value
Total carbon content	108.1 g/kg	Total nitrogen content	2.5 g/kg
Organic carbon content	37.2 g/kg		

[1] Determination according OECD Test guideline 106

[2] Measurement based on ISO 10390

IRMM-443-3 EUROSOIL 3 — 200 g

Certified values

Parameter	Value	Parameter	Value
K_f of Atrazine [1]	2.4	1/n of 2,4-D [1]	0.93
1/n of Atrazine [1]	0.91	pH in Water [2]	6.2
K_f of 2,4-D [1]	1.31	pH in 0.01M $CaCl_2$ [2]	5.5

Non-certified indicative values

Parameter	Value	Parameter	Value
K_f of Lindane [1]	36	Organic carbon content	30.1 g/kg
1/n of Lindane [1]	1.0	Total nitrogen content	3.1 g/kg
Total carbon content	32.5 g/kg		

[1] Determination according OECD Test guideline 106

[2] Measurement based on ISO 10390

IRMM-443-4 EUROSOIL 4 — 200 g

Certified values

Parameter	Value	Parameter	Value
K_f of Atrazine [1]	0.7	K_f of Lindane [1]	8.3
1/n of Atrazine [1]	0.87	1/n of Lindane [1]	0.96
K_f of 2,4-D [1]	0.39	pH in Water [2]	7.5
1/n of 2,4-D [1]	0.86	pH in 0.01M $CaCl_2$ [2]	6.8

Non-certified indicative values

Parameter	Value	Parameter	Value
Total carbon content	14.5 g/kg	Total nitrogen content	1.6 g/kg
Organic carbon content	13.1 g/kg		

[1] Determination according OECD Test guideline 106

[2] Measurement based on ISO 10390

IRMM-443-5 EUROSOIL 5 — 200 g

Certified values

Parameter	Value	Parameter	Value
K_f of Atrazine [1]	13	1/n of 2,4-D [1]	0.9
1/n of Atrazine [1]	0.9	pH in Water [2]	4.1
K_f of 2,4-D [1]	18	pH in 0.01M $CaCl_2$ [2]	3.1

Non-certified indicative values

Parameter	Value	Parameter	Value
K_f of Lindane [1]	99	Organic carbon content	59.6 g/kg
1/n of Lindane [1]	0.9	Total nitrogen content	2.3 g/kg
Total carbon content	64.3 g/kg		

[1] Determination according OECD Test guideline 106

[2] Measurement based on ISO 10390

Code	Product	Unit

IRMM-443-7 — EUROSOIL 7 — 200 g

Certified values

Parameter	Value	Parameter	Value
K_f of Atrazine [1]	4.8	1/n of 2,4-D[1]	0.88
1/n of Atrazine [1]	0.92	pH in Water[2]	5.1
K_f of 2,4-D[1]	8.2	pH in 0.01M $CaCl_2$ [2]	4.3

Non-certified indicative values

Parameter	Value	Parameter	Value
K_f of Lindane [1]	58	Organic carbon content	56.2 g/kg
1/n of Lindane [1]	0.9	Total nitrogen content	4.8 g/kg
Total carbon content	58.7 g/kg		

[1] Determination according OECD Test guideline 106

[2] Measurement based on ISO 10390

AGH S-1 — Polish soil — 50 g

Collected from an agricultural region 150 km from Krakow, the soil is typical of a well used, but unpolluted, agricultural soil in central Europe.

Certified values

As	3.4 µg/g	Eu	0.6 µg/g	Sb	0.5 µg/g
Ca	2.6 mg/g	Fe	9.88 mg/g	Sc	4 µg/g
Cd	0.3 µg/g	K	12.05 mg/g	Th	7 µg/g
Ce	44µg/g	Mn	266 µg/g	Zn	35 µg/g
Co	3.9µg/g	Na	4.44 mg/g	Zr	620 µg/g
Cr	38 µg/g	Pb	15 µg/g	Rb	52 µg/g

RTC-CLNSOIL1-5

These five different soil types are not contaminated and contain only what an analyst can expect to find in a “clean soil”. They are well characterised for nearly every parameter of interest. These soils are useful as a base material with known characteristics that can be spiked for in-house method development and validation, method comparison or other uses.

Code	Product	Unit
RTC-CLN SOIL-1-100	Clean sandy soil Please ask for details	100 g
RTC-CLN SOIL-1-250	Clean sandy soil Please ask for details	250 g
RTC-CLN SOIL-2-100	Clean clay loam Please ask for details	100 g
RTC-CLN SOIL-2-250	Clean clay loam Please ask for details	250 g
RTC-CLN SOIL-3-100	Clean sandy loam Please ask for details	100 g
RTC-CLN SOIL-3-250	Clean sandy loam Please ask for details	250 g
RTC-CLN SOIL-5-100	Clean clay Please ask for details	100 g
RTC-CLN SOIL-5-250	Clean clay Please ask for details	250 g

New **NIST-2701** — Contaminated soil - Hexavalent chromium (high level) — 75 g

Certified values

Hexavalent Cr	551.2 mg/kg ± 34.5 mg/kg	Fe	23.73 % ± 0.19 %
Total Cr	4.26 % ± 0.12 %	Mn	0.2137 % ± 0.0014 %

Indicative values for selected elements.

RTC-CRM041-030 — Soil - Hexavalent Chromium VI

Certified value

Chromium VI, Cr(VI) 91.4 mg/Kg

New **NIST-2709A** — San Joaquin soil - Trace and constituent elements (baseline) — 50 g

Certified values

Aluminum	7.37 ± 0.16 %	Iron	3.36 ± 0.07 %	Sodium	1.22 ± 0.03 %
Antimony	1.55 ± 0.06 mg/kg	Lead	17.3 ± 0.1 mg/kg	Strontium	239 ± 6 mg/kg
Calcium	1.91 ± 0.09 %	Magnesium	1.46 ± 0.02 %	Titanium	0.336 ± 0.007 %
Barium	979 ± 28 mg/kg	Manganese	529 ± 18 mg/kg	Vanadium	110 ± 11 mg/kg
Cadmium	0.371 ± 0.002	Phosphorus	0.0688 ± 0.0013 %	Zirconium	195 ± 46 mg/kg
Chromium	130 ± 9 mg/kg	Potassium	2.11 ± 0.06 %		
Cobalt	12.8 ± 0.2 mg/kg	Silicon	30.3 ± 0.4 %		

	Code	Product	Unit
New	NIST-2710A	Montana I soil - Trace and constitutent elements (highly elevated)	50 g

Certified values

Aluminum 5.95 ± 0.05 %	Iron 4.32 ± 0.08 %	Silicon 31.1 ± 0.4 %
Antimony 52.5 ± 1.6 mg/kg	Lanthanum 30.6 ± 1.2 mg/kg	Sodium 0.894 ± 0.019 %
Arsenic 0.154 ± 0.010 %	Lead 0.552 ± 0.003 %	Strontium 255 ± 7 mg/kg
Barium 792 ± 36 mg/kg	Magnesium 0.734 ± 0.038 %	Titanium 0.311 ± 0.007 %
Calcium 0.964 ± 0.045 %	Manganese 0.214 ± 0.006 %	Uranium 9.11 ± 0.30 mg/kg
Cadmium 12.3 ± 0.3 mg/kg	Mercury 9.88 ± 0.21 mg/kg	Zinc 0.418 ± 0.015 %
Cobalt 5.99 ± 0.14 mg/kg	Phosphorus 0.105 ± 0.004 %	
Copper 0.342 ± 0.005 %	Potassium 2.17 ± 0.13 %	

New	NIST-2711A	Montana II Soil - Trace and constituent elements (mod. elevated)	50 g

This Standard Reference Material (SRM®) is intended primarily for use in the analysis of soils, sediments, or other materials of a similar matrix. One unit of NIST-2711a consists of 50 g of the dried, powdered soil.

Al 6.72 ± 0.06 %	Hg 7.42 ± 0.18 mg/kg	Sb 23.8 ± 1.4 mg/kg
As 107 ± 5 mg/kg	K 2.53 ± 0.10 %	Si 31.4 ± 0.7 %
Ba 730 ± 15 mg/kg	Mg 1.07 ± 0.06 %	Sr 242 ± 10 mg/kg
Ca 2.42 ± 0.06 %	Mn 675 ± 18 mg/kg	Ti 0.317 ± 0.008 %
Ca 54.1 ± 0.5 mg/kg	Na 1.20 ± 0.01 %	U 3.01 ± 0.12 mg/kg
Co 9.89 ± 0.18 mg/kg	Ni 21.7 ± 0.7 mg/kg	V 80.7 ± 5.7 mg/kg
Cr 52.3 ± 2.9 mg/kg	P 842 ± 11 mg/kg	Zn 414 ± 11 mg/kg
Cu 140 ± 2 mg/kg	Pb 0.140 ± 0.001 %	
Fe 2.82 ± 0.04 %	Sa 5.93 ± 0.28 mg/kg	

NIST-4355	Peruvian soil - Radioactivity	75 g

Certified values

^{241}Am 0.000004 Bq/g	^{238}Pu+^{240}Pu 0.0000076 Bq/g	^{230}Th 0.0397 Bq/g
^{137}Cs 0.00033 Bq/g	^{228}Th 0.0422 Bq/g	^{232}Th 0.0430 Bq/g

IAEA-SOIL-6	Soil - Radioactive isotopes	250 g

The IAEA-SOIL-6 sample was collected near Ebensee in Upper Austria at an altitude of 1100 m above sea level.

Recommended values

^{137}Cs 53.65 Bq/kg	^{226}Ra 79.92 Bq/kg
^{239}Pu + ^{240}Pu 1.04 Bq/kg	^{90}Sr 30.34 Bq/kg

New	NIM-GBW07424	Soil - Composition including trace elements	70 g

Certified values

Ag 0.083 ± 0.010 µg/g	Ho 0.97 ± 0.04 µg/g	Ta 1.3 ± 0.2 µg/g
As 8.9 ± 0.9 µg/g	I 3.2 ± 0.2 µg/g	Tb 0.84 ± 0.05 µg/g
B 35 ± 3 µg/g	In 0.055 ± 0.015 µg/g	Th 11.3 ± 0.4 µg/g
Ba 613 ± 12 µg/g	La 35.5 ± 1.7 µg/g	Ti 0.427 ± 0.006 %
Be 2.4 ± 0.1 µg/g	Li 30.6 ± 1.5 µg/g	Tl 0.58 ± 0.05 µg/g
Bi 0.27 ± 0.02 µg/g	Lu 0.46 ± 0.03 µg/g	Tm 0.42 ± 0.03 µg/g
Br 5.8 ± 0.4 µg/g	Mn 681 ± 13 µg/g	U 2.25 ± 0.12 µg/g
Cd 0.105 ± 0.013 µg/g	Mo 0.52 ± 0.04 µg/g	V 74 ± 3 µg/g
Ce 70 ± 4 µg/g	N 0.126 ± 0.011 %	W 1.66 ± 0.10 µg/g
Cl 216 ± 14 µg/g	Nb 16.5 ± 0.7 µg/g	Y 26.5 ± 0.9 µg/g
Co 11.7 ± 0.5 µg/g	Nd 32 ± 2 µg/g	Yb 2.81 ± 0.14 µg/g
Cr 58 ± 2 µg/g	Ni 26 ± 1 µg/g	Zn 60 ± 4 µg/g
Cs 6.5 ± 0.4 µg/g	P 500 ± 27 µg/g	Zr 350 ± 12 µg/g
Cu 19 ± 1 µg/g	Pb 22 ± 2 µg/g	SiO_2 65.50 ± 0.12 %
Dy 4.7 ± 0.3 µg/g	Pr 8.5 ± 0.5 µg/g	Al_2O_3 13.80 ± 0.11 %
Er 2.75 ± 0.17 µg/g	Rb 108 ± 3 µg/g	Fe_2O_3 (T) 4.17 ± 0.03 %
Eu 1.25 ± 0.04 µg/g	S 270 ± 24 µg/g	MgO 1.30 ± 0.03 %
F 452 ± 16 µg/g	Sb(DA) 0.68 ± 0.09 µg/g	CaO 2.62 ± 0.06 %
Ga 18 ± 1 µg/g	Sc 10.2 ± 0.3 µg/g	Na_2O 2.14 ± 0.06 %
Gd 5.2 ± 0.3 µg/g	Se 0.21 ± 0.02 µg/g	K_2O 2.65 ± 0.05 %
Ge 1.31 ± 0.08 µg/g	Sm 6.0 ± 0.2 µg/g	Corg. 1.35 ± 0.07 %
Hf 9.5 ± 0.7 µg/g	Sn 3.4 ± 0.4 µg/g	
Hg 0.033 ± 0.004 µg/g	Sr 226 ± 5 µg/g	

Indicative values for Re, Sb, FeO, H_2O^+, CO_2
Sb(DA) is result with aqua regia digestion

Code	Product	Unit

New NIM-GBW07425 — Soil - Composition including trace elements — 70 g

Certified values

Ag 0.098 ± 0.007 µg/g	Ho 0.89 ± 0.05 µg/g	Ta 1.05 ± 0.14 µg/g
As 7.4 ± 0.5 µg/g	I 1.6 ± 0.1 µg/g	Tb 0.76 ± 0.05 µg/g
B 36 ± 3 µg/g	In 0.047 ± 0.013 µg/g	Te µg/g
Ba 634 ± 10 µg/g	La 34 ± 2 µg/g	Th 10.8 ± 0.6 µg/g
Be 2.25 ± 0.08 µg/g	Li 30 ± 2 µg/g	Ti 0.392 ± 0.006 %
Bi 0.28 ± 0.01 µg/g	Lu 0.41 ± 0.02 µg/g	Tl 0.62 ± 0.02 µg/g
Br 2.8 ± 0.2 µg/g	Mn 572 ± 14 µg/g	Tm 0.38 ± 0.03 µg/g
Cd 0.125 ± 0.012 µg/g	Mo 0.60 ± 0.04 µg/g	U 2.2 ± 0.1 µg/g
Ce 65 ± 3 µg/g	N 0.095 ± 0.010 %	V 74 ± 2 µg/g
Cl 98 ± 12 µg/g	Nb 13.8 ± 0.6 µg/g	W 1.65 ± 0.12 µg/g
Co 11.6 ± 0.4 µg/g	Nd 30 ± 2 µg/g	Y 23.6 ± 0.7 µg/g
Cr 59 ± 3 µg/g	Ni 25.4 ± 1.3 µg/g	Yb 2.54 ± 0.13 µg/g
Cs 6.0 ± 0.4 µg/g	P 483 ± 24 µg/g	Zn 65 ± 5 µg/g
Cu 21.4 ± 1.2 µg/g	Pb 24.7 ± 1.4 µg/g	Zr 270 ± 9 µg/g
Dy 4.2 ± 0.4 µg/g	Pr 7.9 ± 0.5 µg/g	SiO_2 69.42 ± 0.28 %
Er 2.46 ± 0.07 µg/g	Rb 110 ± 4 µg/g	Al_2O_3 13.14 ± 0.06 %
Eu 1.18 ± 0.04 µg/g	S 217 ± 23 µg/g	Fe_2O_3 (T) 4.21 ± 0.06 %
F 425 ± 17 µg/g	Sb(DA) 0.61 ± 0.06 µg/g	MgO 1.20 ± 0.04 %
Ga 17.2 ± 1.0 µg/g	Sc 10.0 ± 0.3 µg/g	CaO 1.33 ± 0.03 %
Gd 4.7 ± 0.3 µg/g	Se 0.20 ± 0.02 µg/g	Na_2O 1.98 ± 0.07 %
Ge 1.3 ± 0.1 µg/g	Sm 5.5 ± 0.2 µg/g	K_2O 2.70 ± 0.04 %
Hf 7.7 ± 0.5 µg/g	Sn 3.1 ± 0.4 µg/g	Corg. 1.07 ± 0.06 %
Hg 0.060 ± 0.009 µg/g	Sr 182 ± 5 µg/g	

Indicative values for Sb, FeO, H_2O^+, CO_2
Sb(DA) is result with aqua regia digestion

New NIM-GBW07426 — Soil - Composition including trace elements — 70 g

Certified values

Ag 0.078 ± 0.007 µg/g	I 1.4 ± 0.2 µg/g	Tb 0.84 ± 0.06 µg/g
As 12.2 ± 0.8 µg/g	In 0.058 ± 0.007 µg/g	Th 10 ± 1 µg/g
B 55 ± 5 µg/g	La 29 ± 2 µg/g	Ti 0.392 ± 0.007 %
Ba 492 ± 20 µg/g	Li 36 ± 2 µg/g	Tl 0.51 ± 0.04 µg/g
Be 2.04 ± 0.06 µg/g	Lu 0.46 ± 0.02 µg/g	Tm 0.44 ± 0.05 µg/g
Bi 0.30 ± 0.02 µg/g	Mn 774 ± 19 µg/g	U 2.4 ± 0.2 µg/g
Br 2.1 ± 0.3 µg/g	Mo 0.96 ± 0.06 µg/g	V 86 ± 4 µg/g
Cd 0.15 ± 0.02 µg/g	N 0.055 ± 0.006 %	W 1.64 ± 0.10 µg/g
Ce 57 ± 2 µg/g	Nb 12 ± 1 µg/g	Y 26.4 ± 0.9 µg/g
Co 12.6 ± 0.3 µg/g	Nd 27.9 ± 1.2 µg/g	Yb 2.9 ± 0.2 µg/g
Cr 59 ± 2 µg/g	Ni 32 ± 1 µg/g	Zn 78 ± 5 µg/g
Cs 7.2 ± 0.4 µg/g	P 708 ± 9 µg/g	Zr 195 ± 7 µg/g
Cu 29 ± 1 µg/g	Pb 19 ± 2 µg/g	SiO_2 60.0 ± 0.3 %
Dy 4.9 ± 0.3 µg/g	Pr 7.0 ± 0.4 µg/g	Al_2O_3 13.27 ± 0.11 %
Er 2.9 ± 0.2 µg/g	Rb 94 ± 3 µg/g	Fe_2O_3 (T) 4.71 ± 0.04 %
Eu 1.22 ± 0.04 µg/g	S 154 ± 15 µg/g	FeO 1.39 ± 0.07 %
F 592 ± 45 µg/g	Sb(DA) 1.05 ± 0.07 µg/g	MgO 2.43 ± 0.07 %
Ga 16.8 ± 0.5 µg/g	Sc 12.6 ± 0.4 µg/g	CaO 5.83 ± 0.06 %
Gd 5.1 ± 0.3 µg/g	Se 0.16 ± 0.02 µg/g	Na_2O 2.00 ± 0.06 %
Ge 1.3 ± 0.1 µg/g	Sm 5.6 ± 0.4 µg/g	K_2O 2.62 ± 0.05 %
Hf 5.5 ± 0.4 µg/g	Sn 2.8 ± 0.4 µg/g	CO_2 3.9 ± 0.4 %
Hg 0.021 ± 0.005 µg/g	Sr 240 ± 5 µg/g	
Ho 1.01 ± 0.04 µg/g	Ta 0.85 ± 0.07 µg/g	

Indicative values for Cl, Sb, H_2O^+, Corg.
Sb(DA) is result with aqua regia digestion

NCS ZC73004 — Soil - Composition including trace elements — 70 g

Certified values

Ag 0.067 ± 0.006 µg/g	Ho 0.92 ± 0.03 µg/g	Tb 0.80 ± 0.03 µg/g
As 10.6 ± 0.8 µg/g	I 2.4 ± 0.2 µg/g	Th 11.0 ± 0.5 µg/g
B 54 ± 3 µg/g	In 0.044 ± 0.009 µg/g	Ti 0.382 ± 0.011 %
Ba 500 ± 15 µg/g	La 34 ± 2 µg/g	Tl 0.52 ± 0.05 µg/g
Be 1.90 ± 0.05 µg/g	Li 31.5 ± 1.5 µg/g	Tm 0.40 ± 0.03 µg/g
Bi 0.29 ± 0.02 µg/g	Lu 0.41 ± 0.02 µg/g	U 2.19 ± 0.12 µg/g
Br 4.0 ± 0.4 µg/g	Mn 580 ± 12 µg/g	V 74 ± 2 µg/g
Cd 0.13 ± 0.01 µg/g	Mo 0.48 ± 0.03 µg/g	W 1.6 ± 0.1 µg/g
Ce 66 ± 3 µg/g	N 0.072 ± 0.009 %	Y 24.5 ± 0.7 µg/g
Cl 80 ± 10 µg/g	Nb 14 ± 1 µg/g	Yb 2.6 ± 0.2 µg/g
Co 11.3 ± 0.5 µg/g	Nd 30 ± 2 µg/g	Zn 65 ± 3 µg/g
Cr 65 ± 2 µg/g	Ni 28.5 ± 1.2 µg/g	Zr 257 ± 9 µg/g
Cs 6.0 ± 0.4 µg/g	P 833 ± 35 µg/g	SiO_2 64.9 ± 0.3 %
Cu 21.6 ± 0.8 µg/g	Pb 21.6 ± 1.2 µg/g	Al_2O_3 11.8 ± 0.1 %
Dy 4.5 ± 0.3 µg/g	Pr 7.9 ± 0.5 µg/g	Fe_2O_3 (T) 4.11 ± 0.4 %
Er 2.57 ± 0.12 µg/g	Rb 91 ± 3 µg/g	FeO 1.25 ± 0.11 %
Eu 1.18 ± 0.05 µg/g	Sb(DA) 0.86 ± 0.06 µg/g	MgO 2.05 ± 0.04 %
F 545 ± 32 µg/g	Sc 10.5 ± 0.3 µg/g	CaO 5.0 ± 0.1 %
Ga 15.0 ± 0.4 µg/g	Se 0.16 ± 0.02 µg/g	Na_2O 1.86 ± 0.07 %
Gd 4.9 ± 0.3 µg/g	Sm 5.6 ± 0.3 µg/g	K_2O 2.27 ± 0.04 %
Ge 1.27 ± 0.07 µg/g	Sn 3.3 ± 0.4 µg/g	CO_2 3.34 ± 0.14 %
Hf 7.0 ± 0.5 µg/g	Sr 195 ± 4 µg/g	Corg. 0.62 ± 0.08 %
Hg 0.052 ± 0.006 µg/g	Ta 1.02 ± 0.09 µg/g	

Indicative values for S, Re, Sb, H_2O
Sb(DA) is result with aqua regia digestion

Code	Product	Unit
New NIM-GBW07428	Soil - Composition including trace elements	70 g

Certified values

Ag ..... 0.084 ± 0.007 µg/g	Ho.....0.93 ± 0.04 µg/g	Ta..... 1.08 ± 0.09 µg/g
As..... 6.5 ± 1.3 µg/g	I .....0.9 ± 0.2 µg/g	Tb..... 0.87 ± 0.06 µg/g
B ..... 46 ± 3 µg/g	In .....0.057 ± 0.006 µg/g	Th..... 12.7 ± 0.5 µg/g
Ba ..... 608 ± 13 µg/g	La .....41 ± 2 µg/g	Ti.....0.406 ± 0.013 %
Be ..... 2.44 ± 0.06 µg/g	Li.....39 ± 3 µg/g	Tl..... 0.63 ± 0.03 µg/g
Bi..... 0.35 ± 0.02 µg/g	Lu .....0.42 ± 0.02 µg/g	Tm..... 0.41 ± 0.03 µg/g
Br ..... 1.7 ± 0.3 µg/g	Mn .....688 ± 15 µg/g	U ..... 2.45 ± 0.12 µg/g
Cd ..... 0.20 ± 0.02 µg/g	Mo .....0.65 ± 0.06 µg/g	V ..... 86 ± 2 µg/g
Ce ..... 80 ± 2 µg/g	N..... 0.081 ± 0.012 %	W ..... 1.5 ± 0.1 µg/g
Cl ..... 50 ± 4 µg/g	Nb.....14.4 ± 0.6 µg/g	Y..... 25 ± 1 µg/g
Co ..... 14.6 ± 0.7 µg/g	Nd.....36 ± 3 µg/g	Yb..... 2.54 ± 0.12 µg/g
Cr ..... 70 ± 3 µg/g	Ni .....33 ± 2 µg/g	Zn..... 96 ± 3 µg/g
Cs ..... 7.0 ± 0.3 µg/g	P .....730 ± 28 µg/g	Zr..... 227 ± 8 µg/g
Cu ..... 27.4 ± 1.1 µg/g	Pb .....31 ± 1 µg/g	SiO_2.....64.5 ± 0.4 %
Dy..... 4.8 ± 0.3 µg/g	Pr.....9.2 ± 0.6 µg/g	Al_2O_3 ..... 14.4 ± 0.2 %
Er ..... 2.6 ± 0.3 µg/g	Rb.....108 ± 4 µg/g	Fe_2O_3 (T)..... 5.32 ± 0.06 %
Eu ..... 1.36 ± 0.06 µg/g	S .....173 ± 21 µg/g	MgO ..... 1.90 ± 0.06 %
F..... 619 ± 39 µg/g	Sb(DA).....0.73 ± 0.08 µg/g	CaO ..... 2.45 ± 0.05 %
Ga ..... 18.8 ± 0.8 µg/g	Sc .....11.7 ± 0.3 µg/g	Na_2O ..... 1.59 ± 0.07 %
Gd ..... 5.5 ± 0.5 µg/g	Se .....0.16 ± 0.02 µg/g	K_2O ..... 2.46 ± 0.07 %
Ge ..... 1.42 ± 0.11 µg/g	Sm .....6.4 ± 0.3 µg/g	Corg. ..... 0.79 ± 0.07 %
Hf ..... 6.4 ± 0.3 µg/g	Sn .....3.1 ± 0.3 µg/g	
Hg ..... 0.089 ± 0.004 µg/g	Sr.....152 ± 5 µg/g	

Indicative values for Sb, FeO, H_2O+, CO_2
Sb(DA) is result with aqua regia digestion

NCS ZC73006	Soil - Composition including trace elements	70 g

Certified values

Ag ..... 0.15 ± 0.02 µg/g	Ho.....1.23 ± 0.07 µg/g	Ta..... 1.52 ± 0.15 µg/g
As..... 21.7 ± 1.2 µg/g	I .....2.3 ± 0.2 µg/g	Tb..... 1.08 ± 0.07 µg/g
B ..... 63 ± 2 µg/g	In .....0.145 ± 0.021 µg/g	Th..... 14.5 ± 0.8 µg/g
Ba ..... 716 ± 16 µg/g	La .....47 ± 2 µg/g	Ti.....0.527 ± 0.020 %
Be ..... 2.7 ± 0.1 µg/g	Li.....44 ± 3 µg/g	Tl..... 0.67 ± 0.04 µg/g
Bi..... 1.16 ± 0.06 µg/g	Lu .....0.54 ± 0.02 µg/g	Tm..... 0.53 ± 0.04 µg/g
Br ..... 2.7 ± 0.3 µg/g	Mn .....963 ± 20 µg/g	U ..... 3.0 ± 0.2 µg/g
Cd ..... 0.21 ± 0.02 µg/g	Mo .....0.92 ± 0.07 µg/g	V ..... 119 ± 3 µg/g
Ce ..... 93 ± 4 µg/g	N..... 0.094 ± 0.010 %	W ..... 2.8 ± 0.2 µg/g
Cl ..... 83 ± 15 µg/g	Nb.....18.6 ± 1.3 µg/g	Y..... 33 ± 2 µg/g
Co ..... 17.6 ± 0.7 µg/g	Nd.....41 ± 2 µg/g	Yb..... 3.5 ± 0.2 µg/g
Cr ..... 87 ± 4 µg/g	Ni .....41 ± 1 µg/g	Zn..... 94 ± 4 µg/g
Cs ..... 8.9 ± 0.4 µg/g	P .....560 ± 18 µg/g	Zr..... 272 ± 8 µg/g
Cu ..... 37 ± 2 µg/g	Pb .....38 ± 2 µg/g	SiO_2.....63.6 ± 0.2 %
Dy..... 6.2 ± 0.4 µg/g	Pr.....10.3 ± 0.8 µg/g	Al_2O_3 ..... 15.3 ± 0.1 %
Er ..... 3.4 ± 0.2 µg/g	Rb.....116 ± 3 µg/g	Fe_2O_3 (T)..... 6.44 ± 0.07 %
Eu ..... 1.56 ± 0.06 µg/g	S .....176 ± 22 µg/g	FeO ..... 1.06 ± 0.15 %
F..... 652 ± 48 µg/g	Sb(DA).....1.9 ± 0.2 µg/g	MgO ..... 1.80 ± 0.06 %
Ga ..... 20.5 ± 1.0 µg/g	Sc .....14.8 ± 0.5 µg/g	CaO ..... 1.53 ± 0.04 %
Gd ..... 6.8 ± 0.5 µg/g	Se .....0.31 ± 0.02 µg/g	Na_2O ..... 1.26 ± 0.05 %
Ge ..... 1.63 ± 0.08 µg/g	Sm .....7.8 ± 03 µg/g	K_2O ..... 2.36 ± 0.04 %
Hf ..... 7.6 ± 0.4 µg/g	Sn .....4.5 ± 0.5 µg/g	Corg. ..... 0.78 ± 0.05 %
Hg ..... 0.094 ± 0.004 µg/g	Sr.....115 ± 4 µg/g	

Indicative values for Re, Sb, Te, H_2O^+, CO_2
Sb(DA) is result with aqua regia digestion

New NIM-GBW07430	Soil - Composition including trace elements	70 g

Certified values

Ag ..... 0.14 ± 0.02 µg/g	Ho.....1.41 ± 0.08 µg/g	Ta..... 2.8 ± 0.2 µg/g
As..... 18 ± 2 µg/g	I .....1.3 ± 0.1 µg/g	Tb..... 1.3 ± 0.1 µg/g
B ..... 63 ± 4 µg/g	In .....0.095 ± 0.027 µg/g	Th..... 28 ± 2 µg/g
Ba ..... 411 ± 18 µg/g	La .....67 ± 3 µg/g	Ti.....0.578 ± 0.026 %
Be ..... 3.8 ± 0.3 µg/g	Li.....51 ± 3 µg/g	Tl..... 1.12 ± 0.08 µg/g
Bi..... 1.44 ± 0.11 µg/g	Lu .....0.58 ± 0.05 µg/g	Tm..... 0.57 ± 0.05 µg/g
Br ..... 2.6 ± 0.3 µg/g	Mn .....441 ± 20 µg/g	U ..... 5.9 ± 0.3 µg/g
Cd ..... 0.25 ± 0.02 µg/g	Mo .....1.15 ± 0.07 µg/g	V ..... 105 ± 4 µg/g
Ce ..... 133 ± 5 µg/g	N..... 0.102 ± 0.011 %	W ..... 5.8 ± 0.2 µg/g
Cl ..... 78 ± 6 µg/g	Nb.....26 ± 1 µg/g	Y..... 38 ± 3 µg/g
Co ..... 13.6 ± 0.6 µg/g	Nd.....57 ± 4 µg/g	Yb..... 3.8 ± 0.2 µg/g
Cr ..... 67 ± 3 µg/g	Ni .....27.4 ± 0.9 µg/g	Zn..... 100 ± 8 µg/g
Cs ..... 13.9 ± 07 µg/g	P .....972 ± 34 µg/g	Zr..... 275 ± 11 µg/g
Cu ..... 32 ± 2 µg/g	Pb .....61 ± 2 µg/g	SiO_2.....63.8 ± 0.2 %
Dy..... 7.4 ± 0.5 µg/g	Pr.....14.6 ± 1.1 µg/g	Al_2O_3 ..... 17.85 ± 0.12 %
Er ..... 3.8 ± 0.2 µg/g	Rb.....173 ± 5 µg/g	Fe_2O_3 (T)..... 5.44 ± 0.05 %
Eu ..... 1.66 ± 0.07 µg/g	S .....261 ± 26 µg/g	MgO ..... 0.84 ± 0.05 %
F..... 790 ± 44 µg/g	Sb(DA).....1.7 ± 0.2 µg/g	CaO ..... 0.40 ± 0.04 %
Ga ..... 25.1 ± 1.2 µg/g	Sc .....14.0 ± 0.5 µg/g	Na_2O ..... 0.33 ± 0.02 %
Gd ..... 8.5 ± 0.7 µg/g	Se .....0.51 ± 0.05 µg/g	K_2O ..... 2.50 ± 0.04 %
Ge ..... 1.70 ± 0.12 µg/g	Sm .....10.4 ± 0.5 µg/g	Corg. ..... 0.97 ± 0.12 %
Hf ..... 8.2 ± 0.4 µg/g	Sn .....12.4 ± 0.8 µg/g	
Hg ..... 0.46 ± 0.05 µg/g	Sr.....68 ± 4 µg/g	

Indicative values for Re, Sb, FeO, H_2O^+, CO_2
Sb(DA) is result with aqua regia digestion

Code	Product	Unit

NIM GBW07403 - NCS DC87105

Soils collected from a variety of locations around China.
Certified and indicative values are given for a large number of elements and oxides

New NIM-GBW07403 — Soil - Composition including trace elements — 70 g

Certified values

Ag 0.091 ± 0.007µg/g	I 1.3 ± 0.2µg/g	Te 0.039 ± 0.013µg/g
As 4.4 ± 0.6µg/g	In 0.031 ± 0.010µg/g	Th 6.0 ± 0.5µg/g
B 23 ± 3µg/g	La 21 ± 2µg/g	Ti 2240 ± 80µg/g
Ba 1210 ± 65µg/g	Li 18.4 ± 0.8µg/g	Tl 0.48 ± 0.05µg/g
Be 1.4 ± 0.2µg/g	Lu 0.29 ± 0.02µg/g	Tm 0.28 ± 0.05µg/g
Bi 0.17 ± 0.03µg/g	Mn 304 ± 14µg/g	U 1.3 ± 0.3µg/g
Br 4.3 ± 0.8µg/g	Mo 0.31 ± 0.06µg/g	V 36 ± 3µg/g
Cd 0.060 ± 0.009µg/g	N 640 ± 50µg/g	W 0.96 ± 0.12µg/g
Ce 39 ± 4µg/g	Nb 9.3 ± 1.5µg/g	Y 15 ± 2µg/g
Cl 57 ± 11µg/g	Nd 18.4 ± 1.7µg/g	Yb 1.7 ± 0.2µg/g
Co 5.5 ± 0.7µg/g	Ni 12 ± 2µg/g	Zn 31 ± 3µg/g
Cr 32 ± 4µg/g	P 320 ± 18µg/g	Zr 246 ± 14µg/g
Cs 3.2 ± 0.4µg/g	Pb 26 ± 3µg/g	SiO_2 74.72 ± 0.19 %
Cu 11.4 ± 1.1µg/g	Pr 4.8 ± 0.4µg/g	Al_2O_3 12.24 ± 0.09 %
Dy 2.6 ± 0.2µg/g	Rb 85 ± 4µg/g	Fe_2O_3 (T) 2.00 ± 0.05 %
Er 1.5 ± 0.3µg/g	S 123 ± 14µg/g	FeO 0.50 ± 0.06 %
Eu 0.72 ± 0.04µg/g	Sb 0.44 ± 0.08µg/g	MgO 0.58 ± 0.04 %
F 246 ± 26µg/g	Sc 5.0 ± 0.4µg/g	CaO 1.27 ± 0.05 %
Ga 13.7 ± 0.9µg/g	Se 0.09 ± 0.02µg/g	Na_2O 2.71 ± 0.06 %
Gd 2.9 ± 0.4µg/g	Sm 3.3 ± 0.2µg/g	K_2O 3.04 ± 0.05 %
Ge 1.16 ± 0.13µg/g	Sn 2.5 ± 0.3µg/g	Corg. 0.51 ± 0.03 %
Hf 6.8 ± 0.8µg/g	Sr 380 ± 16µg/g	TC 0.55 ± 0.05 %
Hg 0.060 ± 0.004µg/g	Ta 0.76 ± 0.15µg/g	L.O.I. 2.67 ± 0.13 %
Ho 0.53 ± 0.06µg/g	Tb 0.49 ± 0.06µg/g	

New NIM-GBW07404 — Soil - Composition including trace elements — 70 g

Certified values

Ag 0.070 ± 0.011 µg/g	Ho 1.46 ± 0.12 µg/g	Tb 0.94 ± 0.09 µg/g
As 58 ± 6 µg/g	I 9.4 ± 1.1 µg/g	Te 0.16 ± 0.06 µg/g
Au (0.0055) µg/g	In 0.12 ± 0.03 µg/g	Th 27 ± 2 µg/g
B 97 ± 9 µg/g	La 53 ± 4 µg/g	Ti 10800 ± 310 µg/g
Ba 213 ± 20 µg/g	Li 55 ± 2 µg/g	Tl 0.94 ± 0.25 µg/g
Be 1.85 ± 0.34 µg/g	Lu 0.75 ± 0.06 µg/g	Tm 0.70 ± 0.10 µg/g
Bi 1.04 ± 0.13 µg/g	Mn 1420 ± 75 µg/g	U 6.7 ± 0.8 µg/g
Br 4.0 ± 0.7 µg/g	Mo 2.6 ± 0.3 µg/g	V 247 ± 14 µg/g
Cd 0.35 ± 0.06 µg/g	N 1000 ± 62 µg/g	W 6.2 ± 0.5 µg/g
Ce 136 ± 11 µg/g	Nb 38 ± 3 µg/g	Y 39 ± 6 µg/g
Cl (39) µg/g	Nd 27 ± 2 µg/g	Yb 4.8 ± 0.6 µg/g
Co 22 ± 2 µg/g	Ni 64 ± 5 µg/g	Zn 210 ± 13 µg/g
Cr 370 ± 16 µg/g	P 695 ± 28 µg/g	Zr 500 ± 42 µg/g
Cs 21.4 ± 1.0 µg/g	Pb 58 ± 5 µg/g	SiO_2 50.95 ± 0.14 %
Cu 40 ± 3 µg/g	Pr 8.4 ± 1.7 µg/g	Al_2O_3 23.45 ± 0.19 %
Dy 6.6 ± 0.6 µg/g	Rb 75 ± 4 µg/g	Fe_2O_3 (T) 10.30 ± 0.11 %
Er 4.5 ± 0.7 µg/g	S 180 ± 36 µg/g	MgO 0.49 ± 0.05 %
Eu 0.85 ± 0.07 µg/g	Sb 6.3 ± 1.1 µg/g	CaO 0.26 ± 0.04 %
F 540 ± 25 µg/g	Sc 20 ± 2 µg/g	Na_2O 0.11 ± 0.02 %
Ga 31 ± 3 µg/g	Se 0.64 ± 0.14 µg/g	K_2O 1.03 ± 0.06 %
Gd 4.7 ± 0.5 µg/g	Sm 4.4 ± 0.4 µg/g	C org. 0.62 ± 0.08
Ge 1.9 ± 0.3 µg/g	Sn 5.7 ± 0.9 µg/g	TC 0.65 ± 0.10
Hf 14 ± 2 µg/g	Sr 77 ± 6 µg/g	
Hg 0.59 ± 0.05 µg/g	Ta 3.1 ± 0.3 µg/g	

New NIM-GBW07405 — Soil - Composition including trace elements — 70 g

Certified values

Ag 4.4 ± 0.4 µg/g	Ho 0.77 ± 0.08 µg/g	Sr 42 ± 4 µg/g
As 412 ± 16 µg/g	I 3.8 ± 0.5 µg/g	Ta 1.8 ± 0.3 µg/g
Au 0.260 ± 0.007 µg/g	In 4.1 ± 0.6 µg/g	Tb 0.7 ± 0.1 µg/g
B 53 ± 6 µg/g	La 36 ± 4 µg/g	Te (5) µg/g
Ba 296 ± 26 µg/g	Li 56 ± 2 µg/g	Th 23 ± 2 µg/g
Be 2.0 ± 0.4 µg/g	Lu 0.42 ± 0.05 µg/g	Ti 6290 ± 210 µg/g
Bi 41 ± 4 µg/g	Mn 1360 ± 71 µg/g	Tl 1.6 ± 0.3 µg/g
Cd 0.45 ± 0.06 µg/g	Mo 4.6 ± 0.4 µg/g	Tm 0.41 ± 0.04 µg/g
Ce 91 ± 10 µg/g	N 610 ± 31 µg/g	U 6.5 ± 0.7 µg/g
Co 12 ± 2 µg/g	Nb 23 ± 3 µg/g	V 166 ± 9 µg/g
Cr 118 ± 7 µg/g	Nd 24 ± 2 µg/g	W 34 ± 2 µg/g
Cs 15 ± 1 µg/g	Ni 40 ± 4 µg/g	Y 21 ± 3 µg/g
Cu 144 ± 6 µg/g	P 390 ± 34 µg/g	Yb 2.8 ± 0.4 µg/g
Dy 3.7 ± 0.5 µg/g	Pb 552 ± 29 µg/g	Zn 494 ± 25 µg/g
Er 2.4 ± 0.3 µg/g	Pr 7.0 ± 1.2 µg/g	Zr 272 ± 16 µg/g
Eu 0.82 ± 0.04 µg/g	Rb 117 ± 6 µg/g	SiO_2 52.57 ± 0.16 %
F 603 ± 28 µg/g	S 410 ± 54 µg/g	Al_2O_3 21.58 ± 0.15 %
Ga 32 ± 4 µg/g	Sb 35 ± 5 µg/g	Fe_2O_3 (T) 12.62 ± 0.18 %
Gd 3.5 ± 0.3 µg/g	Sc 17 ± 1 µg/g	MgO 0.61 ± 0.06 %
Ge 2.6 ± 0.4 µg/g	Se 1.6 ± 0.2 µg/g	Na_2O 0.12 ± 0.02 %
Hf 8.1 ± 1.7 µg/g	Sm 4.0 ± 0.4 µg/g	K_2O 1.50 ± 0.04 %
Hg 0.29 ± 0.03 µg/g	Sn 18 ± 3 µg/g	

	Code	Product	Unit
New	NIM-GBW07406	Soil - Composition including trace elements	70 g

Certified values

Ag	0.20 ± 0.02 µg/g	Ho	0.69 ± 0.05 µg/g	Ta	5.3 ± 0.6 µg/g
As	220 ± 14 µg/g	I	19.4 ± 0.9 µg/g	Tb	0.61 ± 0.08 µg/g
B	57 ± 5 µg/g	In	0.84 ± 0.18 µg/g	Te	0.4 ± 0.1 µg/g
Ba	118 ± 14 µg/g	La	30 ± 2 µg/g	Th	23 ± 2 µg/g
Be	4.4 ± 0.7 µg/g	Li	36 ± 1 µg/g	Ti	4390 ± 120 µg/g
Bi	49 ± 5 µg/g	Lu	0.42 ± 0.05 µg/g	Tl	2.4 ± 0.5 µg/g
Br	8.0 ± 0.7 µg/g	Mn	1450 ± 82 µg/g	Tm	0.40 ± 0.06 µg/g
Cd	0.13 ± 0.03 µg/g	Mo	18 ± 2 µg/g	U	6.7 ± 0.7 µg/g
Ce	66 ± 6 µg/g	N	740 ± 59 µg/g	V	130 ± 7 µg/g
Cl	95 ± 7 µg/g	Nb	27 ± 2 µg/g	W	90 ± 7 µg/g
Co	7.6 ± 1.1 µg/g	Nd	21 ± 2 µg/g	Y	19 ± 2 µg/g
Cr	75 ± 6 µg/g	Ni	53 ± 4 µg/g	Yb	2.7 ± 0.4 µg/g
Cs	10.8 ± 0.6 µg/g	P	303 ± 30 µg/g	Zn	97 ± 6 µg/g
Cu	390 ± 14 µg/g	Pb	314 ± 13 µg/g	Zr	220 ± 14 µg/g
Dy	3.3 ± 0.3 µg/g	Pr	5.8 ± 0.6 µg/g	SiO_2	56.93 ± 0.18 %
Er	2.2 ± 0.3 µg/g	Rb	237 ± 8 µg/g	Al_2O_3	21.23 ± 0.16 %
Eu	0.66 ± 0.04 µg/g	S	260 ± 43 µg/g	Fe_2O_3 (T)	8.09 ± 0.13 %
F	906 ± 45 µg/g	Sb	60 ± 7 µg/g	MgO	0.34 ± 0.05 %
Ga	30 ± 3 µg/g	Sc	15.5 ± 0.9 µg/g	CaO	0.22 ± 0.03 %
Gd	3.4 ± 0.3 µg/g	Se	1.34 ± 0.17 µg/g	Na_2O	0.19 ± 0.02 %
Ge	3.2 ± 0.4 µg/g	Sm	3.8 ± 0.4 µg/g	K_2O	1.70 ± 0.06 %
Hf	7.5 ± 0.8 µg/g	Sn	72 ± 7 µg/g	C org.	0.81 ± 0.09 %
Hg	0.072 ± 0.007 µg/g	Sr	39 ± 4 µg/g	TC	0.83 ± 0.10 %

New	NIM-GBW07407	Soil - Composition including trace elements	70 g

Certified values

Ag	0.057 ± 0.011 µg/g	I	19 ± 2 µg/g	Tb	1.3 ± 0.2 µg/g
As	4.8 ± 1.3 µg/g	In	0.10 ± 0.03 µg/g	Th	9.1 ± 0.7 µg/g
Ba	180 ± 27 µg/g	La	46 ± 5 µg/g	Ti	20200 ± 500 µg/g
Be	2.8 ± 0.6 µg/g	Li	19.5 ± 0.9 µg/g	Tl	0.21 ± 0.06 µg/g
Bi	0.20 ± 0.04 µg/g	Lu	0.35 ± 0.06 µg/g	Tm	0.42 ± 0.05 µg/g
Br	5.1 ± 0.5 µg/g	Mn	1780 ± 113 µg/g	U	2.2 ± 0.4 µg/g
Cd	0.08 ± 0.02 µg/g	Mo	2.9 ± 0.3 µg/g	V	245 ± 21 µg/g
Ce	98 ± 11 µg/g	N	660 ± 62 µg/g	W	1.2 ± 0.2 µg/g
Cl	100 ± 6 µg/g	Nb	64 ± 7 µg/g	Y	27 ± 4 µg/g
Co	97 ± 6 µg/g	Nd	45 ± 2 µg/g	Yb	2.4 ± 0.4 µg/g
Cr	410 ± 23 µg/g	Ni	276 ± 15 µg/g	Zn	142 ± 11 µg/g
Cs	2.7 ± 0.8 µg/g	P	1150 ± 39 µg/g	Zr	318 ± 37 µg/g
Cu	97 ± 6 µg/g	Pb	14 ± 3 µg/g	SiO_2	32.69 ± 0.18 %
Dy	6.6 ± 0.6 µg/g	Pr	11 ± 1 µg/g	Al_2O_3	29.26 ± 0.34 %
Er	2.7 ± 0.5 µg/g	Rb	16 ± 3 µg/g	Fe_2O_3 (T)	18.76 ± 0.33 %
Eu	3.4 ± 0.2 µg/g	S	250 ± 36 µg/g	MgO	0.26 ± 0.03 %
F	321 ± 29 µg/g	Sb	0.42 ± 0.09 µg/g	CaO	0.16 ± 0.02 %
Ga	39 ± 5 µg/g	Sc	28 ± 2 µg/g	Na_2O	0.08 ± 0.02 %
Gd	9.6 ± 0.9 µg/g	Se	0.32 ± 0.05 µg/g	K_2O	0.20 ± 0.02 %
Ge	1.6 ± 0.3 µg/g	Sm	10.3 ± 0.4 µg/g	Corg.	0.64 ± 0.07 %
Hf	7.7 ± 0.5 µg/g	Sn	3.6 ± 0.7 µg/g	TC	0.67 ± 0.09 %
Hg	0.061 ± 0.006 µg/g	Sr	26 ± 4 µg/g		
Ho	1.1 ± 0.2 µg/g	Ta	3.9 ± 0.6 µg/g		

New	NIM-GBW07408	Soil - Composition including trace elements	70 g

Certified values

Ag	0.060 ± 0.009 µg/g	I	1.7 ± 0.2 µg/g	Th	11.8 ± 0.7 µg/g
As	12.7 ± 1.1 µg/g	In	0.044 ± 0.013 µg/g	Ti	3800 ± 120 µg/g
B	54 ± 4 µg/g	La	36 ± 3 µg/g	Tl	0.58 ± 0.06 µg/g
Ba	480 ± 23 µg/g	Li	35 ± 2 µg/g	Tm	0.46 ± 0.07 µg/g
Be	1.9 ± 0.2 µg/g	Lu	0.43 ± 0.04 µg/g	U	2.7 ± 0.4 µg/g
Bi	0.30 ± 0.04 µg/g	Mn	650 ± 23 µg/g	V	81 ± 5 µg/g
Br	2.5 ± 0.5 µg/g	Mo	1.16 ± 0.10 µg/g	W	1.7 ± 0.2 µg/g
Cd	0.13 ± 0.02 µg/g	N	370 ± 54 µg/g	Y	26 ± 2 µg/g
Ce	66 ± 7 µg/g	Nb	15 ± 2 µg/g	Yb	2.8 ± 0.2 µg/g
Cl	68 ± 12 µg/g	Nd	32 ± 2 µg/g	Zn	68 ± 4 µg/g
Co	12.7 ± 1.1 µg/g	Ni	31.5 ± 1.8 µg/g	Zr	229 ± 12 µg/g
Cr	68 ± 6 µg/g	P	775 ± 25 µg/g	SiO_2	58.61 ± 0.13 %
Cs	7.5 ± 0.7 µg/g	Pb	21 ± 2 µg/g	Al_2O_3	11.92 ± 0.15 %
Cu	24.3 ± 1.2 µg/g	Pr	8.3 ± 0.8 µg/g	Fe_2O_3 (T)	4.48 ± 0.05 %
Dy	4.8 ± 0.4 µg/g	Rb	96 ± 4 µg/g	FeO	1.22 ± 0.05 %
Er	2.8 ± 0.2 µg/g	Sb	1.0 ± 0.2 µg/g	MgO	2.38 ± 0.07 %
Eu	1.2 ± 0.1 µg/g	Sc	11.7 ± 0.7 µg/g	CaO	8.27 ± 0.12 %
F	577 ± 24 µg/g	Se	0.10 ± 0.01 µg/g	Na_2O	1.72 ± 0.04 %
Ga	14.8 ± 1.1 µg/g	Sm	5.9 ± 0.4 µg/g	K_2O	2.42 ± 0.04 %
Gd	5.4 ± 0.5 µg/g	Sn	2.8 ± 0.5 µg/g	CO_2	5.97 ± 0.16 %
Ge	1.27 ± 0.20 µg/g	Sr	236 ± 13 µg/g	TC	1.93 ± 0.13 %
Hf	7.0 ± 0.8 µg/g	Ta	1.05 ± 0.25 µg/g	L.O.I.	9.12 ± 0.17 %
Hg	0.017 ± 0.003 µg/g	Tb	0.89 ± 0.08 µg/g		
Ho	0.97 ± 0.08 µg/g	Te	0.045 ± 0.010 µg/g		

Code	Product	Unit
New NIM-GBW07402	Soil - Trace elements and oxides	70 g

Certified values

Ag 0.054 ± 0.010 µg/g	Ho 0.93 ± 0.15 µg/g	Ta 0.78 ± 0.18 µg/g
As 13.7 ± 1.8 µg/g	I 1.8 ± 0.2 µg/g	Tb 0.97 ± 0.40 µg/g
B 36 ± 4 µg/g	In 0.09 ± 0.03 µg/g	Th 16.6 ± 1.2 µg/g
Ba 930 ± 81 µg/g	La 164 ± 16 µg/g	Ti 2710 ± 120 µg/g
Be 1.8 ± 0.3 µg/g	Li 22 ± 1 µg/g	Tl 0.62 ± 0.28 µg/g
Bi 0.38 ± 0.06 µg/g	Lu 0.32 ± 0.06 µg/g	Tm 0.42 ± 0.13 µg/g
Br 4.5 ± 0.6 µg/g	Mn 510 ± 25 µg/g	U 1.4 ± 0.4 µg/g
Cd 0.071 ± 0.022 µg/g	Mo 0.98 ± 0.17 µg/g	V 62 ± 6 µg/g
Ce 402 ± 25 µg/g	N 630 ± 47 µg/g	W 1.08 ± 0.33 µg/g
Cl -56 µg/g	Nb 27 ± 3 µg/g	Y 22 ± 3 µg/g
Co 8.7 ± 1.4 µg/g	Nd 210 ± 22 µg/g	Yb 2.0 ± 0.3 µg/g
Cr 47 ± 6 µg/g	Ni 19.4 ± 1.9 µg/g	Zn 42 ± 5 µg/g
Cs 4.9 ± 0.6 µg/g	P 446 ± 38 µg/g	Zr 219 ± 23 µg/g
Cu 16.3 ± 1.4 µg/g	Pb 20 ± 4 µg/g	SiO_2 73.35 ± 0.27 %
Dy 4.4 ± 0.3 µg/g	Pr 57 ± 6 µg/g	Al_2O_3 10.31 ± 0.15 %
Er 2.1 ± 0.4 µg/g	Rb 88 ± 5 µg/g	Fe_2O_3 (T) 3.52 ± 0.10 %
Eu 3.0 ± 0.3 µg/g	S 210 ± 50 µg/g	FeO 0.57 ± 0.09 %
F 2240 ± 175 µg/g	Sb 1.3 ± 0.3 µg/g	MgO 1.04 ± 0.06 %
Ga 12 ± 1 µg/g	Sc 10.7 ± 0.8 µg/g	CaO 2.36 ± 0.07 %
Gd 7.8 ± 0.6 µg/g	Se 0.16 ± 0.04 µg/g	Na_2O 1.62 ± 0.06 %
Ge 1.2 ± 0.2 µg/g	Sm 18 ± 3 µg/g	K_2O 2.54 ± 0.07 %
Hf 5.8 ± 0.9 µg/g	Sn 3.0 ± 0.4 µg/g	Org.C 0.49 ± 0.05 %
Hg 0.015 ± 0.004 µg/g	Sr 187 ± 14 µg/g	LOI 4.4 ± 0.2 %

Indicative values for Au, Te, H_2O^+, CO_2

NCS DC87101	Soil - Composition including trace elements	100 g

Certified values

SiO_2 67.96 %	B 46 µg/g	Pb 28 µg/g
TiO_2 0.72 %	Ba 677 µg/g	Rb 111 µg/g
Al_2O_3 14.35 %	Be 2.4 µg/g	Sb 0.73 µg/g
Fe_2O_3 4.69 %	Co 15 µg/g	Sr 168 µg/g
MnO 0.093 %	Cr 93 µg/g	Te 0.033 µg/g
MgO 1.62 %	Cu 23 µg/g	Th 12 µg/g
CaO 0.9 %	F 458 µg/g	U 1.9 µg/g
Na_2O 1.78 %	Ga 17 µg/g	V 88 µg/g
K_2O 2.56 %	Hg 0.014 µg/g	W 1.8 µg/g
P_2O_5 0.1 %	La 43 µg/g	Y 24 µg/g
L.O.I 4.64 %	Li 37 µg/g	Zn 68 µg/g
N 0.035 %	Nb 15 µg/g	Zr 274 µg/g
As 10 µg/g	Ni 41 µg/g	

NCS DC87102	Soil - Composition including trace elements	100 g

Certified values

SiO_2 67.21 %	S 0.034 %	Pb 21 µg/g
TiO_2 0.56 %	As 9.8 µg/g	Rb 86 µg/g
Al_2O_3 10.78 %	Ba 469 µg/g	Sb 0.83 µg/g
Fe_2O_3 2.28 %	Be 2 µg/g	Se 0.14 µg/g
MnO 0.066 %	Cl 600 µg/g	Sn 2.9 µg/g
MgO 1.73 %	Co 9.4 µg/g	Sr 197 µg/g
CaO 5.21 %	Cr 61 µg/g	Th 9.6 µg/g
Na_2O 1.95 %	Cu 12 µg/g	U 1.9 µg/g
K_2O 2.15 %	Ga 17 µg/g	V 63 µg/g
P_2O_5 0.15 %	Hg 0.031 µg/g	W 1.5 µg/g
H_2O^+ 2.29 %	La 36 µg/g	Y 21 µg/g
CO_2 3.48 %	Li 27 µg/g	Zn 51 µg/g
L.O.I 6.73 %	Nb 12 µg/g	Zr 291 µg/g
N 0.064 %	Ni 23 µg/g	

NCS DC87103	Soil - Composition including trace elements	100 g

Certified values

SiO_2 72.92 %	Ba 524 µg/g	Rb 91 µg/g
TiO_2 0.69 %	Be 1.9 µg/g	Sb 0.65 µg/g
Al_2O_3 12.28 %	Co 12 µg/g	Se 0.11 µg/g
Fe_2O_3 3.38 %	Cr 56 µg/g	Sn 3.2 µg/g
MnO 0.072 %	Cu 23 µg/g	Sr 227 µg/g
MgO 1.14 %	F 383 µg/g	Th 10 µg/g
CaO 1.44 %	Ga 15 µg/g	U 1.9 µg/g
Na_2O 2.2 %	Hg 0.017 µg/g	V 74 µg/g
K_2O 2.16 %	La 38 µg/g	W 1.5 µg/g
P_2O_5 0.11 %	Li 28 µg/g	Y 22 µg/g
N 0.029 %	Nb 14 µg/g	Zn 48 µg/g
As 6.3 µg/g	Ni 22 µg/g	Zr 331 µg/g
B 50 µg/g	Pb 19 µg/g	

Code	Product	Unit

NCS DC87104 — Soil - Composition including trace elements — 100 g

Certified values

SiO_2	60.76 %	B	44 µg/g	Pb	19 µg/g
TiO_2	0.55 %	Ba	448 µg/g	Rb	82 µg/g
Al_2O_3	10.78 %	Be	1.8 µg/g	Sb	0.78 µg/g
Fe_2O_3	2.79 %	Bi	0.24 µg/g	Sn	2.4 µg/g
MnO	0.058 %	Cl	222 µg/g	Sr	296 µg/g
MgO	1.83 %	Co	9.2 µg/g	Th	9.4 µg/g
CaO	9.07 %	Cr	62 µg/g	U	1.8 µg/g
Na_2O	1.74 %	Cu	17 µg/g	V	65 µg/g
K_2O	2.01 %	F	559 µg/g	W	1.4 µg/g
P_2O_5	0.087 %	Ga	13 µg/g	Y	19 µg/g
CO_2	6.44 %	La	34 µg/g	Zn	45 µg/g
L.O.I	9.62 %	Li	38 µg/g	Zr	258 µg/g
N	0.02 %	Nb	11 µg/g		
As	9.4 µg/g	Ni	23 µg/g		

NCS DC87105 — Soil - Composition including trace elements — 100 g

Certified values

SiO_2	67.53 %	S	0.0092 %	Ni	22 µg/g
TiO_2	0.54 %	As	8.2 µg/g	Pb	20 µg/g
Al_2O_3	10.84 %	B	33 µg/g	Rb	83 µg/g
Fe_2O_3 (T)	-3.26 %	Ba	555 µg/g	Sb	0.7 µg/g
Fe_2O_3	2.64 %	Be	1.8 µg/g	Sn	2.2 µg/g
MnO	0.062 %	Bi	0.21 µg/g	Sr	231 µg/g
MgO	1.68 %	Co	8.9 µg/g	Th	8.9 µg/g
CaO	5.42 %	Cr	54 µg/g	U	2.4 µg/g
Na_2O	1.87 %	Cu	16 µg/g	V	66 µg/g
K_2O	2.18 %	F	657 µg/g	W	1.3 µg/g
P_2O_5	0.074 %	Ga	13 µg/g	Y	19 µg/g
CO_2	3.59 %	La	32 µg/g	Zr	298 µg/g
L.O.I	6.67 %	Li	25 µg/g		
N	0.021 %	Nb	11 µg/g		

New NIM-GBW08302 — Tibet soil - Trace elements — 15 g

Collected from the mountains of Tibet, an area practically unaffected by industrial contamination.

Certified values

Al	7,11 ± 0,12 %	K	2,12 ± 0,18 %	Sc	10,8 ± 1,5 µg/g
As	3,8 ± 0,7 µg/g	La	41,9 ± 4,0 µg/g	Si	30,57 ± 0,11 %
Be	2,96 ± 0,08 µg/g	Mg	1,53 ± 0,04 %	Sm	7,1 ± 0,5 µg/g
Ca	2,59 ± 0,04 %	Mn	677 ± 23 µg/g	Sr	163 ± 29 µg/g
Cd	0,081 ± 0,015 µg/g	Na	1,52 ± 0,11 %	Th	17,6 ± 0,7 µg/g
Co	13,1 ± 1,1 µg/g	N	0,128 ± 0,003 %	Ti	0,40 ± 0,03 %
Ce	83,6 ± 3,3 µg/g	Nd	42,3 ± 4,8 µg/g	U	3,84 ± 0,40 µg/g
Cr	60,8 ± 3,6 µg/g	Ni	31,1 ± 1,6 µg/g	V	77,5 ± 8,0 µg/g
Cu	24,6 ± 2,8 µg/g	P	0,86 ± 0,08 %	Zn	58,0 ± 6,6 µg/g
Eu	1,4 ± 0,3 µg/g	Pb	14,2 ± 2,7 µg/g	Yb	3,1 ± 0,6 µg/g
Fe	3,34 ± 0,11 %	Rb	135 ± 14 µg/g	Se	0,16 ± 0,04 µg/g

Code	Product	Unit

NIM-GBW07412A - NIM-GBW07417A and NCS DC85113

These certified reference materials were prepared in accordance with the ISO guides 30-35. The intended use for these CRMs are the quality control in geochemical exploration, soil and eco-environment research analysis, the evaluation of analytical methods and the calibration of analytical instruments

Composition	Methods
Organic Matter	H_2SO_4,$K_2Cr_2O_7$ oxidation - Volumetric method
Total nitrogen	Kjeldahl method for Nitrogen (not include NO_2- and NO_3-)
pH	Water extraction - Potential method
Cation exchange capacity	CH_3COONH_4 extraction - Volumetric method
Exchangeable Ca, Mg, Na, K, Mn	EDTA-CH_3COONH_4 extraction - ICP-AES method (neutral, acid soil)
Hydrolyzable nitrogen	Alkali Hydrolysis - Diffuse method
Available phosphorus	$NaHCO_3$ extraction - Colorimetry (neutral, calcareous soil)
photometric	NH_4F,dilute HCl extraction - Molybdenum-antimony-ascorbic acid method (acid soil)
Effective potassium	CH_3COONH_4- extraction - ICP-AES method or AAS
Slowly available potassium	Dilute nitric acid extraction - ICP-AES method or AAS
Available sulfur	(P) Phosphat- CH_3COONH_4-extraction - ICP-AES (neutral, acid soil) (Ca) $CaCl_2$ solution extraction - ICP-AES (calcareous soil)
Available silicon	Citric acid extraction - ICP-AES or silicon molybdenum blue colorimetric method
Available Cu, Zn, Fe, Mn, Cd, Pb, Ni, Cr, Co	DTPA* solution extraction - ICP-AES and ICP-MS
Available Cu, Zn, Fe, Mn, Cd, Pb, Ni, Cr, Co	Dilute hydrochloric acid extraction- ICP-AES, ICP-MS or AFS (neutral, acid soil)
Available Cu, Zn, Cd, Pb, Ni, Cr	$NaNO_3$ extraction - ICP-AES and ICP-MS
Available molybdenum or I	Oxalic acid ammonium oxalate (Tamm solution)** - Extraction polarography ICP-AES
Available boron	Boiling water extraction - Curcumin colorimetric method and ICP-AES
Soluble selenium	Boiling water extraction - ICP-AES or AFS
Soluble fluorine	Water extraction - Ion selective electrode method
Soluble salts	
Total	Water extraction - Gravimetric method or conductivity method
Cl^-	Water extraction - Titrimetric method
$SO4^{2-}$	Water extraction - ICP-AES
Ca, Mg, K, Na	Water extraction- ICP-AES or AAS

* DTPA solution 0.005mol/L $C_{14}H_{23}N_3O10$-0.01mol/L $CaCl_2$.0.1mol/L $C_6H_{15}NO_3$, pH 7.3
** Tamm solution 24.9g/L $(NH_4)_2C_2O_4 \cdot H_2O$-12.6g/L $H_2C_2O_4 \cdot 2H_2O$, pH 3.3

	Code	Product	Unit
New	NIM-GBW07412A	Soil (Brown soil) - Available nutrients	500 g

Certified values

pH 6.80
Organic matter ..... 10 g/kg
Total nitrogen ..... 0.63 g/kg
Hydrolysable nitrogen ..... 54 mg/kg
Available phosphorus ($NaHCO_3$ extraction) ..... 100 mg/kg
Effective potassium ..... 0.38 g/kg
Slowly available potassium ..... 1.06 g/kg
Available sulfur (phosphate extraction) ..... 22 mg/kg
Available silicon ..... 0.83 g/kg
Cation exchange capacity ..... 21.6 cmol(+)/kg
Exchangeable calcium ..... 17.8 cmol ($1/2Ca^{2+}$)/kg
Exchangeable magnesium ..... 4.3 cmol ($1/2Mg^{2+}$)/kg
Exchangeable sodium ..... 0.31 cmol (Na^+)/kg
Exchangeable potassium ..... 0.99 cmol (K^+)/kg
Exchangeable manganese ..... 47 mg/kg
Available molybdenum ..... 0.24 mg/kg
Available boron ..... 0.42 mg/kg
Soluble fluorine ..... 5.1 mg/kg

Soluble salt

Cl^- ..... 0.020 g/kg
SO_4^{2-} ..... 0.064 g/kg
Ca^{2+} ..... 0.040 g/kg
Mg^{2+} ..... 10 mg/kg
K^+ ..... 17 mg/kg
Na^+ ..... 27 mg/kg

DTPA extraction

Available copper ..... 3.3 mg/kg
Available zinc ..... 2.4 mg/kg
Available iron ..... 202 mg/kg
Available manganese ..... 31 mg/kg
Available cadmium ..... 0.033 mg/kg
Available lead ..... 1.9 mg/kg
Available nickel ..... 1.1 mg/kg
Available cobalt ..... 0.16 mg/kg

Hydrochlorid acid extraction

Available copper ..... 2.9 mg/kg
Available zinc ..... 5.4 mg/kg
Available iron ..... 111 mg/kg
Available manganese ..... 96 mg/kg
Available cadmium ..... 0.046 mg/kg
Available lead ..... 0.82 mg/kg
Available nickel ..... 2.4 mg/kg
Available chromium ..... 0.42 mg/kg

Sodium nitrate extraction

Available copper ..... 0.025 mg/kg
Available nickel ..... 0.035 mg/kg

	Code	Product	Unit
New	NIM-GBW07413A	Soil (Moist soil) - Available nutrients	500 g

Certified values

pH 8.15
Organic matter ..... 13.2 g/kg
Total nitrogen ..... 0.77 g/kg
Hydrolysable nitrogen ..... 76 mg/kg
Available phosphorus ($NaHCO_3$ extraction) ..... 23.3 mg/kg
Effective potassium ..... 0.29 g/kg
Slowly available potassium ..... 0.95 g/kg
Available sulfur ($CaCl_2$ extraction) ..... 42 mg/kg
Available sulfur (phosphate extraction) ..... 105 mg/kg
Available silicon ..... 0.46 g/kg
Cation exchange capacity ..... 12.8 cmol(+)/kg
Exchangeable magnesium ..... 3.0 cmo(1/2Mg^{2+})/kg
Exchangeable sodium ..... 0.26 cmol (Na^+)/kg
Exchangeable potassium ..... 0.77 cmol (K^+)/kg
Available molybdenum ..... 0.086 mg/kg
Available boron ..... 0.55 mg/kg
Soluble fluorine ..... 14.6 mg/kg

Soluble salt

Cl^- ..... 0.022 g/kg
SO_4^{2-} ..... 0.125 g/kg
Ca^{2+} ..... 0.17 g/kg
Mg^{2+} ..... 22 mg/kg
K^+ ..... 31 mg/kg
Na^+ ..... 29 mg/kg

DTPA extraction

Available copper ..... 1.17 mg/kg
Available zinc ..... .1.08 mg/kg
Available iron ..... 55 mg/kg
Available manganese ..... 17.3 mg/kg
Available cadmium ..... 0.040 mg/kg
Available lead ..... 1.7 mg/kg
Available nickel ..... 0.27 mg/kg
Available cobalt ..... 0.13 mg/kg

Sodium nitrate extraction

Available copper ..... 0.047 mg/kg

New	NIM-GBW07414A	Soil (Purple soil) - Available nutrients	500 g

Please ask for details

	Code	Product	Unit
New	NIM-GBW07415A	Soil (Paddy soil) - Available nutrients	500 g

Certified values

pH 6.08
Organic matter ..... 33.3 g/kg
Total nitrogen ..... 1.97 g/kg
Hydrolysable nitrogen ..... 165 mg/kg
Available phosphorus (NH_4F extraction) ..... 1.5 mg/kg
Effective potassium ..... 0.25 g/kg
Slowly available potassium ..... 0.46 g/kg
Available sulfur (phosphate extraction) ..... 76 mg/kg
Available silicon ..... 0.52 g/kg
Cation exchange capacity ..... 19 cmol(+)/kg
Exchangeable calcium ..... 13 cmol ($1/2Ca^{2+}$)/kg
Exchangeable magnesium ..... 3.98 cmol ($1/2Mg^{2+}$)/kg
Exchangeable sodium ..... 0.32 cmol (Na^+)/kg
Exchangeable potassium ..... 0.63 cmol (K^+)/kg
Exchangeable manganese ..... 43 mg/kg
Available molybdenum ..... 0.112 mg/kg
Available boron ..... 0.31 mg/kg
Soluble fluorine ..... 4.1 mg/kg

Soluble salt

Cl^- ..... 0.058 g/kg
SO_4^{2-} ..... 0.236 g/kg
Ca^{2+} ..... 0.128 g/kg
Mg^{2+} ..... 33 mg/kg
K^+ ..... 24 mg/kg
Na^+ ..... 41 mg/kg

DTPA extraction

Available copper ..... 5.8 mg/kg
Available zinc ..... 1.14 mg/kg
Available iron ..... 252 mg/kg
Available manganese ..... 45 mg/kg
Available cadmium ..... 0.137 mg/kg
Available lead ..... 5.6 mg/kg
Available nickel ..... 0.58 mg/kg
Available cobalt ..... 0.34 mg/kg

Hydrochloride acid extraction

Available copper ..... 6.8 mg/kg
Available zinc ..... 3.1 mg/kg
Available iron ..... 428 mg/kg
Available manganese ..... 98 mg/kg
Available cadmium ..... 0.174 mg/kg
Available lead ..... 5.4 mg/kg
Available nickel ..... 1.23 mg/kg
Available chromium ..... 0.60 mg/kg
Available selenium ..... 6.8 mg/kg

Sodium nitrate extraction

Available copper ..... 0.066 mg/kg

New	NIM-GBW07416A	Soil (Red soil) - Available nutrients	500 g

Please ask for details

	Code	Product	Unit
New	NIM-GBW07417A	Soil - Available nutrients	500 g

Certified values

pH 6.80
Organic matter ..... 38.5 g/kg
Total nitrogen ..... 2.11 g/kg
Hydrolysable nitrogen ..... 155 mg/kg
Available phosphorus ($NaHCO_3$ extraction) ..... 90 mg/kg
Effective potassium ..... 0.162 g/kg
Slowly available potassium ..... 0.33 g/kg
Available sulfur (phosphate extraction) ..... 105 mg/kg
Available silicon ..... 0.37 g/kg
Cation exchange capacity ..... 19.7 cmol(+)/kg
Exchangeable calcium ..... 18.9 cmol ($1/2Ca^{2+}$)/kg
Exchangeable magnesium ..... 2.82 cmol ($1/2Mg^{2+}$)/kg
Exchangeable sodium ..... 0.93 cmol (Na^+)/kg
Exchangeable potassium ..... 0.41 cmol (K^+)/kg
Exchangeable manganese ..... 128 mg/kg
Available molybdenum ..... 0.14 mg/kg
Available boron ..... 0.31 mg/kg
Soluble fluorine ..... 11.4 mg/kg

Soluble salt

Cl^- ..... 0.16 g/kg
SO_4^{2-} ..... 0.335 g/kg
Ca^{2+} ..... 0.166 g/kg
Mg^{2+} ..... 25 mg/kg
K^+ ..... 18.7 mg/kg
Na^+ ..... 154 mg/kg

DTPA extraction

Available copper ..... 10.3 mg/kg
Available zinc ..... 2.1 mg/kg
Available iron ..... 258 mg/kg
Available manganese ..... 88 mg/kg
Available cadmium ..... 0.20 mg/kg
Available lead ..... 8.1 mg/kg
Available nickel ..... 0.47 mg/kg
Available cobalt ..... 0.43 mg/kg

Hydrochlorid acid extraction

Available copper ..... 10.6 mg/kg
Available zinc ..... 6.6 mg/kg
Available iron ..... 134 mg/kg
Available manganese ..... 295 mg/kg
Available cadmium ..... 0.30 mg/kg
Available lead ..... 6.7 mg/kg
Available nickel ..... 1.3 mg/kg
Available chromium ..... 0.64 mg/kg
Available arsenic ..... 0.094 mg/kg

Sodium nitrate extraction

Available copper ..... 0.064 mg/kg

	Code	Product	Unit
New	NCS DC85113	Soil - Available nutrients	500 g

Certified values

pH 6.14
Organic matter ..... 34.5 g/kg
Total nitrogen ..... 1.62 g/kg
Hydrolysable nitrogen ..... 157 mg/kg

Available phosphorus (NH_4F extraction) ..... 32 mg/kg
Effective potassium ..... 0.36 g/kg
Slowly available potassium ..... 0.98 g/kg
Available sulfur (phosphate extraction) ..... 33 mg/kg
Available silicon ..... 0.63 g/kg
Cation exchange capacity ..... 31 cmol(+)/kg
Exchangeable calcium ..... 22.5 cmol ($1/2Ca^{2+}$)/kg
Exchangeable magnesium ..... 5.4 cmo($1/2Mg^{2+}$)/kg
Exchangeable sodium ..... 0.24 cmol (Na^+)/kg
Exchangeable potassium ..... 0.94 cmol (K^+)/kg
Exchangeable manganese ..... 80 mg/kg
Available molybdenum ..... 0.13 mg/kg
Available boron ..... 0.56 mg/kg
Soluble fluorine ..... 2.9 mg/kg

Soluble salt

Cl^- ..... 0.016 g/kg
SO_4^{2-} ..... 0.109 g/kg
Ca^{2+} ..... 0.080 g/kg
Mg^{2+} ..... 19 mg/kg
K^+ ..... 18 mg/kg
Na^+ ..... 24 mg/kg

DTPA extraction

Available copper ..... 2.6 mg/kg
Available zinc ..... 2.3 mg/kg
Available iron ..... 142 mg/kg
Available manganese ..... 67 mg/kg
Available cadmium ..... 0.048 mg/kg
Available lead ..... 2.07 mg/kg
Available nickel ..... 2.4 mg/kg
Available cobalt ..... 0.39 mg/kg

Hydrochloric acid extraction

Available copper ..... 1.08 mg/kg
Available zinc ..... 3.6 mg/kg
Available iron ..... 16.3 mg/kg
Available manganese ..... 131 mg/kg
Available cadmium ..... 0.053 mg/kg
Available lead ..... 0.8 mg/kg
Available nickel ..... 3.3 mg/kg
Available chromium ..... 0.25 mg/kg
Available arsenic ..... 0.018 mg/kg

Sodium nitrate extraction

Available copper ..... 0.034 mg/kg
Available zinc ..... .0.068 mg/kg
Available nickel ..... 0.047 mg/kg

Code	Product	Unit
CIL-EDF-5183	Soil - Organic contaminants	10 g

Reference values

Polychlorinated dioxins and furans

2,3,78-TCDD	0.11 ± 0.14 ng/kg
Total TCDD	0.32 ± 0.88 ng/kg
1,2,3,7,8-PeCDD	0.39 ± 0.32 ng/kg
Total PeCDD	2.96 ± 2.40 ng/kg
1,2,3,4,7,8-HxCDD	1.12 ± 0.52 ng/kg
1,2,3,6,7,8-HxCDD	4.39 ± 0.88 ng/kg
1,2,3,7,8,9-HxCDD	2.00 ± 1.20 ng/kg
Total HxCDD	50.9 ± 22.8 ng/kg
1,2,3,4,6,7,8-HpCDD	153 ± 57.2 ng/kg
Total HpCDD	492 ± 246 ng/kg
OCDD	7870 ± 1650 ng/kg
2,3,7,8-TCDF	0.70 ± 0.34 ng/kg
Total TCDF	3.21 ± 2.12 ng/kg
1,2,3,7,8-PeCDF	0.23 ± 0.22 ng/kg
2,3,4,7,8-PeCDF	0.34 ± 0.14 ng/kg
Total PeCDF	3.31 ± 5.74 ng/kg
1,2,3,4,7,8-HxCDF	0.86 ± 0.44 ng/kg
1,2,3,6,7,8-HxCDF	0.58 ± 0.26 ng/kg
1,2,3,7,8,9-HxCDF	0.12 ± 0.16 ng/kg
2,3,4,6,7,8-HxCDF	0.72 ± 0.92 ng/kg
Total HxCDF	15.6 ± 12.7 ng/kg
1,2,3,4,6,7,8-HpCDF	13.9 ± 3.68 ng/kg
1,2,3,4,7,8,9-HpCDF	1.25 ± 0.62 ng/kg
Total HpCDF	54.0 ± 16.0 ng/kg
OCDF	58.2 ± 32.4 ng/kg

Polychlorinated biphenyls

2,2',5-TriCB (#18)	78.9 ± 30.4 ng/kg
2,4,4'-TriCB (#28)	140 ± 127 ng/kg
3,4,4'-TriCB (#37)	1710 ± 440 ng/kg
2,2',3,5'-TetraCB (#44)	1070 ± 552 ng/kg
2,2',4,5'-TetraCB (#49)	638 ± 350 ng/kg
2,2',5,5'-TetraCB (#52)	2020 ± 744 ng/kg
2,4,4',5-TetraCB (#74)	447000 ± 348000 ng/kg
3,3',4,4'-TetraCB (#77)	2,230 ± 988 ng/kg
3,4,4',5-TetraCB (#81)	5.52 ± 7.42 ng/kg
2,2',3,4,5'-PentaCB (#87)	2370 ± 532 ng/kg
2,2',4,4',5-PentaCB (#99)	1110 ± 444 ng/kg
2,2',4,5,5'-PentaCB (#101)	5370 ± 1564 ng/kg
2,3,3',4,4'-PentaCB (#105)	629 ± 158.4 ng/kg
2,3,3',4',6-PentaCB (#110)	5880 ± 2,110 ng/kg
2,3,4,4',5-PentaCB (#114)	34.6 ± 18.0 ng/kg
2,3',4,4',5-PentaCB (#118)	6520 ± 2,300 ng/kg
2',3,4,4',5-PentaCB (#123)	24.1 ± 23.2 ng/kg
3,3',4,4',5-PentaCB (#126)	33.5 ± 10.3 ng/kg
2,2',3,3',4,4'-HexaCB (#128)	342 ± 135 ng/kg
2,2',3,4,4',5-HexaCB (#137)	87.1 ± 32.8 ng/kg
2,2',3,4,4',5'-HexaCB (#138)	2350 ± 764 ng/kg
2,2',3,4,5,5'- HexaCB (#141)	514 ± 112 ng/kg
2,2',3,4',5',6- HexaCB (#149)	2280 ± 424 ng/kg
2,2',3,5,5',6- HexaCB (#151)	910 ± 752 ng/kg
2,2',4,4',5,5'-HexaCB (#153)	2330 ± 842 ng/kg
2,3,3',4,4',5-HexaCB (#156)	189 ± 25.0 ng/kg
2,3,3',4,4',5'-HexaCB (#157)	31.0 ± 15.1 ng/kg
2,3,3',4,4',6-HexaCB (#158)	224 ± 44.8 ng/kg
2,3',4,4',5,5'-HexaCB (#167)	83.2 ± 12.0 ng/kg
3,3',4,4',5,5'-HexaCB (#169)	0.57 ± 0.68 ng/kg
2,2',3,3',4,4',5-HeptaCB (#170)	436 ± 102 ng/kg
2,2',3,3',4',5,6-HeptaCB (#177)	362 ± 79.0 ng/kg
2,2',3,3',5,5',6-HeptaCB (#178)	135 ± 22.6 ng/kg
2,2',3,4,4',5,5'-HeptaCB (#180)	1116 ± 500 ng/kg
2,2',3,4,4',5',6-HeptaCB (#183)	360 ± 25.2 ng/kg
2,2',3,4',5,5',6-HeptaCB (#187)	679 ± 143 ng/kg
2,3,3',4,4',5,5'-HeptaCB (#189)	14.2 ± 5.32 ng/kg
2,2',3,3',4,4',5,5'-OctaCB (#194)	182 ± 44.6 ng/kg
2,2',3,3',4,4',5,6-OctaCB (#195)	90.6 ± 17.2 ng/kg
2,2',3,3',4,5,6,6'-OctaCB (#199)	229 ± 34.2 ng/kg
2,2',3,3',4,4',5,5',6-NonaCB (#206)	74.8 ± 108 ng/kg
2,2',3,3',4,5,5',6,6'-NonaCB (#208)	39.3 ± 61.4 ng/kg
DecaCB (#209)	12.9 ± 23.0 ng/kg

Brominated diphenyl ethers

2,2',4-TriBDE (#17)	4.80 ± 6.10 ng/kg
2,4,4'-TriBDE (#28)	38.0 ± 79.8 ng/kg
2,2',4,4'-TetraBDE (#47)5	192 ± 246 ng/kg
2,2',4,5'-TetraBDE (#49)	24.4 ± 19.7 ng/kg
2,3',4,4'-TetraBDE (#66)	12.6 ± 10.9 ng/kg
2,2',3,4,4'-PentaBDE (#85)	19.5 ± 17.9 ng/kg
2,2',4,4',5-PentaBDE (#99)	213 ± 186 ng/kg
2,2',4,4',6-PentaBDE (#100)	55.4 ± 31.0 ng/kg
2,2',3,4,4',5'-HexaBDE (#138)	25.8 ± 25.8 ng/kg
2,2',4,4',5,5'-HexaBDE (#153)	111 ± 24.0 ng/kg
2,2',4,4',5,6'-HexaBDE (#154)	46.0 ± 26.6 ng/kg
2,2',3,4,4',5',6-HeptaBDE (#183)	286 ± 70.8 ng/kg
DecaBDE (#209)	1930 ± 2300 ng/kg

Polyaromatic hydrocarbons

Anthracene	9650 ± 5980 ng/kg
Benz[a]anthracene	11200 ± 9420 ng/kg
Benzo[b]fluoranthene	18100 ± 19200 ng/kg
Benzo[k]fluoranthene	5870 ± 3320 ng/kg
Benzo[g,h,i]perylene	8280 ± 2600 ng/kg
Benzo[a]pyrene	7620 ± 6160 ng/kg
Chrysene	16000 ± 7500 ng/kg
Fluoranthene	33000 ± 10300 ng/kg
Indeno[1,2,3-cd]pyrene	9550 ± 4140 ng/kg
Phenanthrene	25900 ± 38200 ng/kg
Pyrene	26300 ± 8680 ng/kg

Code	Product	Unit
	LGCQC3004 - 3006 Quality control reference materials from LGC	

LGCQC3004 — Clay soil 1 - Metals, inorganics and polynuclear aromatic hydrocarbons — 2 x 250 g

Textural Classification[1] - Clay

Sand 2.00-0.063mm	31 % w/w	Clay <0.002mm	36% w/w
Silt 0.063-0.002mm	33 % w/w		

Indicative values

Extractable metals

As	83 mg/kg	Cu	300 mg/kg	Pb	50 mg/kg
Ba	380 mg/kg	Fe	40000 mg/kg	Sb	370 mg/kg
Be	<2 mg/kg	Hg	670 mg/kg	Se	<3 mg/kg
Cd	<1 mg/kg	Mn	830 mg/kg	Tl	<1 mg/kg
Co	36 mg/kg	Mo	2 mg/kg	V	47 mg/kg
Cr	37 mg/kg	Ni	61 mg/kg	Zn	82 mg/kg

Naphthalene	<40 µg/kg	Chrysene	<80 µg/kg
Acenaphthylene	<20 µg/kg	Benzo(b)fluoranthene	<70 µg/kg
Acenaphthene	<30 µg/kg	Benzo(k)fluoranthene	<50 µg/kg
Fluorene	<20 µg/kg	Benzo(e)pyrene	<60 µg/kg
Phenanthrene	<90 µg/kg	Benzo(a)pyrene	<60 µg/kg
Anthracene	<40 µg/kg	Dibenzo(ah)anthracene	<50 µg/kg
Fluoranthene	<130 µg/kg	Indeno(1,2,3,cd)pyrene	<80 µg/kg
Pyrene	<110 µg/kg	Benzo(ghi)perylene	<90 µg/kg
Cyclopenta(cd)pyrene	<10 µg/kg	Anthanthrene	<70 µg/kg
Benz(a)anthracene	<50 µg/kg		

Water Soluble Boron	3 mg/kg	Water Soluble Sulfate	<0.02 g/L
Loss on Ignition	10 % w/w	pH	6.7

[1] According to UK Textural Soil Classification

LGCQC3005 — Loamy Sand Soil 1 - Metals, inorganics and polynuclear aromatic hydrocarbons — 2 x 250 g

Textural Classification[1] - Loamy sand

Sand 2.00-0.063mm	81 % w/w	Clay <0.002mm	10% w/w
Silt 0.063-0.002mm	9 % w/w		

Indicative values

Extractable metals

As	<5 mg/kg	Hg	<3 mg/kg	Se	<3 mg/kg
Ba	180 mg/kg	Mn	150 mg/kg	Tl	<1 mg/kg
Be	<2 mg/kg	Mo	7 mg/kg	V	13 mg/kg
Cd	<1 mg/kg	Ni	14 mg/kg	Zn	220 mg/kg
Co	3 mg/kg	Pb	520 mg/kg		
Cr	180 mg/kg	Sb	9 mg/kg		

Naphthalene	<110 µg/kg	Chrysene	<300 µg/kg
Acenaphthylene	<140 µg/kg	Benzo(b)fluoranthene	<390 µg/kg
Acenaphthene	<60 µg/kg	Benzo(k)fluoranthene	<160 µg/kg
Fluorene	<140 µg/kg	Benzo(e)pyrene	<230 µg/kg
Phenanthrene	<500 µg/kg	Benzo(a)pyrene	<220 µg/kg
Anthracene	<210 µg/kg	Dibenzo(ah)anthracene	<80 µg/kg
Fluoranthene	<370 µg/kg	Indeno(1,2,3,cd)pyrene	<210 µg/kg
Pyrene	<340 µg/kg	Benzo(ghi)perylene	<310 µg/kg
Cyclopenta(cd)pyrene	<10 µg/kg	Anthanthrene	<140 µg/kg
Benz(a)anthracene	<180 µg/kg		

Water Soluble Chloride	54 mg/kg	Loss on Ignition	2 % w/w
Water Soluble Boron	<2 mg/kg	Water Soluble Sulfate(4)	0.1 g/L
Total Sulfate	850 mg/kg	pH	8.1
Total Sulfur	0.02 % w/w		

[1] According to UK Textural Soil Classification

Code	Product	Unit

LGCQC3006 — Sandy Loam Soil 1 - Metals, inorganics and polynuclear aromatic hydrocarbons — 2 x 250 g

Textural Classification[1] - Sandy loam

Sand 2.00-0.063mm	80 % w/w	Clay <0.002mm	11% w/w
Silt 0.063-0.002mm	9 % w/w		

Indicative values

Extractable metals

As	<5 mg/kg	Cu	19 mg/kg	Sb	9 mg/kg
Ba	180 mg/kg	Hg	<1 mg/kg	Se	<3 mg/kg
Be	<2 mg/kg	Mn	170 mg/kg	Tl	<1 mg/kg
Cd	<1 mg/kg	Mo	6 mg/kg	V	13 mg/kg
Co	3 mg/kg	Ni	14 mg/kg	Zn	230 mg/kg
Cr	180 mg/kg	Pb	600 mg/kg		

Naphthalene	<100 µg/kg	Chrysene	<390 µg/kg
Acenaphthylene	<30 µg/kg	Benzo(b)fluoranthene	<340 µg/kg
Acenaphthene	<50 µg/kg	Benzo(k)fluoranthene	<190 µg/kg
Fluorene	<40 µg/kg	Benzo(e)pyrene	<220 µg/kg
Phenanthrene	<330 µg/kg	Benzo(a)pyrene	<230 µg/kg
Anthracene	<180 µg/kg	Dibenzo(ah)anthracene	<70 µg/kg
Fluoranthene	<500 µg/kg	Indeno(1,2,3,cd)pyrene	<150 µg/kg
Pyrene	<400 µg/kg	Benzo(ghi)perylene	<210 µg/kg
Cyclopenta(cd)pyrene	<10 µg/kg	Anthanthrene	<60 µg/kg
Benz(a)anthracene	<280 µg/kg		

Water Soluble Chloride	64 mg/kg	Loss on Ignition	2 % w/w
Water Soluble Boron	<2 mg/kg	Water Soluble Sulfate	0.3 g/L
Total Sulfate	1300 mg/kg	pH	8.2
Total Sulfur	0.03 % w/w		

[1] According to UK Textural Soil Classification

LGC6115 — Soil - PCBs and PAHs — 50 g

LGC6115 is a contaminated sandy loam soil sourced from the Czech Republic. It has been produced to meet the demands of laboratories seeking to validate methods for accreditation to the UK Environment Agency's MCERTS soil testing scheme or similar schemes worldwide.

Certified values

PCB 101	93 µg/kg	Benzo(a)anthracene	36 mg/kg
PCB 118	116 µg/kg	Benzo(a)pyrene	0.13 mg/kg
Phenanthrene	178 mg/kg	Benzo(ghi)perylene	0.33 mg/kg
Fluoranthene	312 mg/kg		

Assesed values

PCB 138	16 µg/kg	PCB 153	19 µg/kg	PCB 180	9.6 µg/kg

New ERM-CC135 — Brick works soil - Extractable metals — 50 g

Collected from Hackney Brick Works

The extractable/leachable metal content refers to metals soluble in Aqua Regia using methods based on ISO11466 (1995).

Total metals

Certified values

Ba	305 mg/kg	K	16300 mg/kg	Pb	411 mg/kg
Ca	23400 mg/kg	Mg	9400 mg/kg	V	139 mg/kg
Cr	455 mg/kg	Mn	390 mg/kg	Zn	345 mg/kg
Cu	107 mg/kg	Na	1700 mg/kg		
Fe	47500 mg/kg	Ni	291 mg/kg		

Indicative values for Al, Be, Co, Li, Mo, Se, Sn, Ti

Extractable metals

Certified values

Al	22700 mg/kg	Cu	105 mg/kg	Na	362 mg/kg
Ba	134 mg/kg	Fe	40900 mg/kg	Ni	277 mg/kg
Be	1.4 mg/kg	Hg	3.2 mg/kg	Pb	391 mg/kg
Ca	21900 mg/kg	K	5100 mg/kg	Se	0.9 mg/kg
Co	20 mg/kg	Mg	7000 mg/kg	V	78 mg/kg
Cr	336 mg/kg	Mn	348 mg/kg	Zn	316 mg/kg

Indicative values for Li, Mo Sn, Ti

Code	Product	Unit

LGC6145 — Contaminated clay loam soil - Extractable metals, PAHs and inorganics — 50 g

LGC6145 is a contaminated clay – loam soil sourced from the Czech Republic. It has been produced to meet the demands of laboratories seeking to validate methods for accreditation to the UK Environment Agency's MCERTS soil testing scheme or similar schemes worldwide.

Certified values

As	38.7 mg/kg	Pb	45.1 mg/kg
Cd	0.65 mg/kg	Se	1.81 mg/kg
Cr	47.6 mg/kg	V	53.9 mg/kg
Cu	62.2 mg/kg	Zn	137 mg/kg
Ni	39.0 mg/kg		

Assessed values

Naphthalene	9.3 mg/kg	Benzo(*b*)fluoranthene	12 mg/kg
Acenaphthylene	0.79 mg/kg	Indeno(1,2,3-*cd*)pyrene	0.97 mg/kg
Phenanthrene	325 mg/kg	Water soluble chloride	65 mg/kg
Anthracene	8.4 mg/kg	Water soluble sulfate	5.3 g/L
Chrysene	45 mg/kg		

Indicative value for Acenaphthene, Fluorene, Fluoranthene, Pyrene, Benzo(*a*)anthracene, Benzo(*k*)fluoranthene, Benzo(*a*)pyrene, Dibenzo(*a,h*)anthracene, Benzo(*ghi*)perylene, Easily liberated cyanide and Total cyanide, Total sulfur, Al_2O^3, CaO, Fe_2O_3, K_2O, MgO, SO_3, SiO_2, TiO_2, Soil textural class (UK), Loss on drying, pH, Loss on ignition, Quartz SiO_2, Kaoline clay, Muscovite clay

BCR-481 — Industrial soil - PCBs — 25 g

Compound (IUPAC Code)	Certified value mg/kg	Uncertainty mg/kg
PCB 101	37	3
PCB 118	9.4	0.7
PCB 128	9.1	0.8
PCB 149	97	7
PCB 153	137	7
PCB 156	7.0	0.5
PCB 170	52	4
PCB 180	124	6

BCR-524 — Contaminated industrial soil - PAHs — 40 g

Compound	Certified value mg/kg	Uncertainty mg/kg
Pyrene	173	11
Benzo(a)anthracene	22.5	1.8
Benzo(a)pyrene	8.6	0.5
Benzo(e)pyrene	10.6	1.4
Benzo(b)fluoranthene	13.5	1.6
Benzo(k)fluoranthene	6.2	0.7
Benzo(b)naphtho(2,1-d)thiophene	3.8	0.6
Indeno(1,2,3-cd)pyrene	5.1	0.4
Pentachlorophenol	0.034	0.005

BCR-529 — Industrial sandy soil - PCDDs and PCDFs — 50 g

Compound	Certified value mg/kg	Uncertainty mg/kg
1,2,3-Trichlorobenzene	0.63	0.11
3,4-Dichlorophenol	0.23	0.04
2,4,5-Trichlorophenol	1.51	0.10
Pentachlorophenol	0.23	0.04
	µg/kg	µg/kg
2,3,7,8-TCDD	4.5	0.6
1,2,3,7,8-PeCDD	0.44	0.05
1,2,3,4,7,8-HxCDD	1.2	0.3
1,2,3,6,7,8-HxCDD	5.4	0.9
1,2,3,7,8,9-HxCDD	3.0	0.4
2,3,7,8-TCDF	0.078	0.013
1,2,3,7,8-PeCDF	0.14	0.03
2,3,4,7,8-PeCDF	0.36	0.07
1,2,3,4,7,8-HxCDF	3.4	0.5
1,2,3,6,7,8-HxCDF	1.09	0.15
1,2,3,7,8,9-HxCDF	0.022	0.010
2,3,4,6,7,8-HxCDF	0.37	0.04

BCR-530 — Industrial clay soil - Dioxins and furans — 50 g

Compound	Certified value mg/kg	Uncertainty mg/kg
1,2,3-Trichlorobenzene	15	4
3,4-Dichlorophenol	6.0	0.5
2,4,5-Trichlorophenol	40	7
Pentachlorophenol	0.47	0.08
	µg/kg	µg/kg
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.061	0.011
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.022	0.003
1,2,3,7,8-Pentachlorodibenzofuran	0.24	0.04
2,3,4,7,8-Pentachlorodibenzofuran	0.62	0.07
1,2,3,4,7,8-Hexachlorodibenzofuran	0.321	0.015
1,2,3,6,7,8-Hexachlorodibenzofuran	0.19	0.03
2,3,4,6,7,8-Hexachlorodibenzofuran	0.126	0.012

Code	Product	Unit
ERM-CC008	Soil - Pentachlorophenol Certified value Pentachlorophenol... 2.04 mg/kg	30 g
ERM-CC009	Soil - Pentachlorophenol Certified value Pentachlorophenol... 2.91 mg/kg	30 g
ERM-CC010	Soil - AOX (DIN 38414 Part 18) Certified value AOX ..... 1349.4 mg/kg AOX - Absorbed Organically Bound Halogens	5.7 g
ERM-CC011	Soil - AOX (DIN 38414 Part 18) Certified value AOX ..... 80.4 mg/kg AOX - Absorbed Organically Bound Halogens	4.2 g
ERM-CC013A	Soil - PAHs Certified values Napthalene .....2.4 mg/kg Fluorene.....1.14 mg/kg Phenanthrene .....12.0 mg/kg Anthracene .....1.14 mg/kg Fluoranthene.....12.9 mg/kg Pyrene .....9.6 mg/kg Benz(a)anthracene .....5.6 mg/kg Chrysene..... 5.3 mg/kg Benzo(b)fluoranthene ..... 7.1 mg/kg Benzo(k)fluoranthene..... 3.4 mg/kg Benzo(a)pyrene..... 4.9 mg/kg Benzo(g,h,i)perylene ..... 4.6 mg/kg Indeno(1,2,3-c,d)pyrene..... 5.2 mg/kg	81 g
ERM-CC012	Soil - AOX (DIN 38414 Part 18) Certified value AOX ..... 102.3 mg/kg AOX - Absorbed Organically Bound Halogens	6.5 g

Code	Product	Unit
CIL-EDF-5184	Contaminated sediment - Organic contaminants	10 g

Reference values

Polychlorinated dioxins and furans

2,3,7,8-TCDD	1.96 ± 1.10 ng/kg
Total TCDD	25.0 ± 13.6 ng/kg
1,2,3,7,8-PeCDD	5.79 ± 2.12 ng/kg
Total PeCDD	45.8 ± 49.2 ng/kg
1,2,3,4,7,8-HxCDD	5.61 ± 2.72 ng/kg
1,2,3,6,7,8-HxCDD	10.9 ± 3.50 ng/kg
1,2,3,7,8,9-HxCDD	6.88 ± 1.94 ng/kg
Total HxCDD	193 ± 134 ng/kg
1,2,3,4,6,7,8-HpCDD	231 ± 77.6 ng/kg
Total HpCDD	497 ± 304 ng/kg
OCDD	2,050 ± 580 ng/kg
2,3,7,8-TCDF	219 ± 47.8 ng/kg
Total TCDF	1,680 ± 486 ng/kg
1,2,3,7,8-PeCDF	122 ± 24.0 ng/kg
2,3,4,7,8-PeCDF	164 ± 50.4 ng/kg
Total PeCDF	1,490 ± 800 ng/kg
1,2,3,4,7,8-HxCDF	277 ± 42.8 ng/kg
1,2,3,6,7,8-HxCDF	159 ± 23.6 ng/kg
1,2,3,7,8,9-HxCDF	7.44 ± 7.38 ng/kg
2,3,4,6,7,8-HxCDF	48.4 ± 18.7 ng/kg
Total HxCDF	1,240 ± 398 ng/kg
1,2,3,4,6,7,8-HpCDF	346 ± 45.6 ng/kg
1,2,3,4,7,8,9-HpCDF	80.2 ± 30.4 ng/kg
Total HpCDF	659 ± 462 ng/kg
OCDF	301 ± 50.6 ng/kg

Polychlorinated biphenyls

2,2',5-TriCB (#18)	27,600 ± 11,200 ng/kg
2,4,4'-TriCB (#28)	54,200 ± 15,500 ng/kg
3,4,4'-TriCB (#37)	16,800 ± 12,700 ng/kg
2,2',3,5'-TetraCB (#44)	657,000 ± 159,000 ng/kg
2,2',4,5'-TetraCB (#49)	476,000 ± 155,000 ng/kg
2,2',5,5'-TetraCB (#52)	1,340,000 ± 260,000 ng/kg
2,3',4,4'-TetraCB (#66)	403,000 ± 40,800 ng/kg
2,4,4',5-TetraCB (#74)	819,000 ± 1,660,000 ng/kg
3,3',4,4'-TetraCB (#77)	11,700 ± 2,600 ng/kg
3,4,4',5-TetraCB (#81)	341 ± 402 ng/kg
2,2',3,4,5'-PentaCB (#87)	1,810,000 ± 1,110,000 ng/kg
2,2',3',4,5-PentaCB (#97)	990,000 ± 1,870,000 ng/kg
2,2',4,4',5-PentaCB (#99)	1,160,000 ± 496,000 ng/kg
2,2',4,5,5'-PentaCB (#101)	3,140,000 ± 552,000 ng/kg
2,3,3',4,4'-PentaCB (#105)	1,050,000 ± 314,000 ng/kg
2,3,3',4',6-PentaCB (#110)	3,340,000 ± 768,000 ng/kg
2,3,4,4',5-PentaCB (#114)	70,000 ± 47,400 ng/kg
2,3',4,4',5-PentaCB (#118)	2,520,000 ± 904,000 ng/kg
2',3,4,4',5-PentaCB (#123)	46,200 ± 29,200 ng/kg
3,3',4,4',5-PentaCB (#126)	2,540 ± 1,080 ng/kg
2,2',3,3',4,4'-HexaCB (#128)	694,000 ± 181,000 ng/kg
2,2',3,4,4',5-HexaCB (#137)	164,000 ± 106,000 ng/kg
2,2',3,4,4',5'-HexaCB (#138)	3,970,000 ± 2,820,000 ng/kg
2,2',3,4,5,5'-HexaCB (#141)	1,010,000 ± 346,000 ng/kg
2,2',3,4',5,5'-HexaCB (#146)	623,000 ± 87,400 ng/kg
2,2',3,4',5',6-HexaCB (#149)	3,390,000 ± 838,000 ng/kg
2,2',3,5,5',6-HexaCB (#151)	1,410,000 ± 788,000 ng/kg
2,2',4,4',5,5'-HexaCB (#153)	3,880,000 ± 902,000 ng/kg
2,3,3',4,4',5-HexaCB (#156)	457,000 ± 189,000 ng/kg
2,3,3',4,4',5'-HexaCB (#157)	88,900 ± 28,000 ng/kg
2,3,3',4,4',6-HexaCB (#158)	512,000 ± 195,000 ng/kg
2,3',4,4',5,5'-HexaCB (#167)	162,000 ± 18,800 ng/kg
3,3',4,4',5,5'-HexaCB (#169)	139 ± 92.4 ng/kg
2,2',3,3',4,4',5-HeptaCB (#170)	1,250,000 ± 334,000 ng/kg
2,2',3,3',4,5,5'-HeptaCB (#172)	207,000 ± 85,600 ng/kg
2,2',3,3',4',5,6-HeptaCB (#177)	743,000 ± 238,000 ng/kg
2,2',3,3',5,5',6-HeptaCB (#178)	290,000 ± 113,000 ng/kg
2,2',3,4,4',5,5'-HeptaCB (#180)	2,940,000 ± 774,000 ng/kg
2,2',3,4,4',5',6-HeptaCB (#183)	810,000 ± 394,000 ng/kg
2,2',3,4',5,5',6-HeptaCB (#187)	1,520,000 ± 232,000 ng/kg
2,3,3',4,4',5,5'-HeptaCB (#189)	50,200 ± 18,200 ng/kg
2,2',3,3',4,4',5,5'-OctaCB (#194)	622,000 ± 146,000 ng/kg
2,2',3,3',4,4',5,6-OctaCB (#195)	268,000 ± 73,800 ng/kg
2,2',3,3',4,5,5',6'-OctaCB (#199)	691,000 ± 226,000 ng/kg
2,2',3,4,4',5,5',6-OctaCB (#203)	442,000 ± 108,000 ng/kg
2,2',3,3',4,4',5,5',6-NonaCB (#206)	152,000 ± 35,400 ng/kg
2,2',3,3',4,5,5',6,6'-NonaCB (#208)	31,800 ± 11,100 ng/kg
DecaCB (#209)	6,030 ± 3,100 ng/kg

Polybrominated diphenyl ethers

2,4,4'-TriBDE (#28) 6	25.8 ± 31.2 ng/kg
2,2',4,4'-TetraBDE (#47)	94.7 ± 218 ng/kg
2,2',4,5'-TetraBDE (#49)	14.5 ± 34.8 ng/kg
2,3',4,4'-TetraBDE (#66)	32.0 ± 112 ng/kg
3,3',4,4'-TetraBDE (#77)	106 ± 66.6 ng/kg
2,2',3,4,4'-PentaBDE (#85)	14.4 ± 45.0 ng/kg
2,2',4,4',5-PentaBDE (#99)	95.1 ± 206 ng/kg
2,2',4,4',6-PentaBDE (#100)	17.6 ± 38.0 ng/kg
2,2',3,4,4',5'-HexaBDE (#138)	12.2 ± 40.6 ng/kg
2,2',4,4',5,5'-HexaBDE (#153)	22.4 ± 59.4 ng/kg
2,2',4,4',5,6'-HexaBDE (#154)	25.3 ± 73.8 ng/kg
2,2',3,4,4',5',6-HeptaBDE (#183)	43.3 ± 82.8 ng/kg
DecaBDE (#209)	9,900 ± 14,300 ng/kg

Polyaromatic hydrocarbons

Acenaphthene	39,300 ± 14,800 ng/kg
Acenaphthylene	419,000 ± 308,000 ng/kg
Anthracene	551,000 ± 258,000 ng/kg
Benz[a]anthracene	2,620,000 ± 1,010,000 ng/kg
Benzo[b]fluoranthene	1,550,000 ± 574,000 ng/kg
Benzo[k]fluoranthene	856,000 ± 290,000 ng/kg
Benzo[g,h,i]perylene	1,130,000 ± 428,000 ng/kg
Benzo[a]pyrene	2,390,000 ± 1,010,000 ng/kg
Benzo[e]pyrene	1,740,000 ± 271,000 ng/kg
Chrysene	2,490,000 ± 442,000 ng/kg
Dibenz[a,h]anthracene	243,000 ± 159,000 ng/kg
Fluoranthene	3,690,000 ± 636,000 ng/kg
Fluorene	69,400 ± 76,800 ng/kg
Indeno[1,2,3-cd]pyrene	1,320,000 ± 780,000 ng/kg
Naphthalene	82,900 ± 33,800 ng/kg
Phenanthrene	622,000 ± 424,000 ng/kg
Perylene	428,000 ± 470,000 ng/kg
Pyrene	5,710,000 ± 445,000 ng/kg

	Code	Product	Unit
New	RTC-CRM090-100	Clay soil - Nutritients Lot 014687 Certified values Ammonia as N .....743 ± 35.2 mg/kg Kjeldahl nitrogen, total (TKN) .....2530 ± 104 mg/kg Phosphorus, total.....809 ± 79.5 mg/kg Total organic carbon (TOC).....5280 ± 592 mg/kg	100 g
	RTC-CRM401-225	Superfund soil (Sludge) - TCLP organics Organic contaminated soil from a superfund site in the Western United States. Certified using methods USEPA, SW846, 3rd edition, Extraction Method 1311 and analytical methods 8031, 8150 and 8270. Lot D5401 Certified values o-Cresol .....888 mg/kg Total cresol .....2660 mg/kg Lindane .....1.05 mg/kg Pentachlorophenol ..... 117 mg/kg 2,4,6-Trichlorophenol ..... 58.7 mg/kg Indicative values for m+p Cresol, 2,4-D TCLP: Total Characteristic Leaching Procedure. Superfund: US Government funding for the cleaning up of sites in the United States where dumping of hazardous waste has occurred.	225 g
	RTC-CRM402-225	Superfund soil (Sandy loam) - TCLP organics The reference values were determined by USEPA SW846 (3rd edition) Extraction Method 1311 and Analytical Methods 8081, 8150, and 8270. The sample is suitable for these and other similar methods. Certified values CD402 Nitrobenzene .....12.2 mg/L 2,4-Dinitrotoluene (2,4-DNT) .....0.619 mg/L BHC (Lindane) ..... 1.28 mg/L 2,4-D ..... 67.1 mg/L	225 g
	RTC-CRM910-050	Soil (Loam) - PCBs Real-world waste produced from a contaminated site in the Eastern United States. The sample was certified by USEPA SW846, 3rd edition Method 3540A/8081 and is suitable for use by these and other similar methods. Certified value D910 Aroclor 1242 ..... 39.4 mg/kg	50 g
	RTC-CRM911-050	Soil (Loam) - PCBs Real-world waste collected from a percolation pond at an electric generating facility in the Southeastern United States. The sample was certified by USEPA SW846 (3rd edition) Methods 3540A/3545/3550 and 8082. The sample is suitable for use by these and other similar methods. Certified value BC911 Aroclor 1254 ..... 1.28 mg/kg	50 g
	RTC-CRM913-050	Soil (Sandy loam) - PCBs Real-world waste collected from electric utility storage site Western United States. The PCB value was certified using extraction method 3540A and analysis method 8081 (PCBs by GC) and is suitable for use by these and other similar methods. Certified value Lot DG913 Aroclor 1254 ..... 5.93 mg/kg	50 g
	RTC-CRM915-050	Soil (Sandy loam) - PCBs Real-world waste collected from a site in the Western United States. The sample was certified by USEPA SW846, 3rd edition Method 3540A/8081 and is suitable for use by these and other similar methods. Certified values Lot JG915 Aroclor 1260 ..... 1.50 mg/kg	50 g
	RTC-CRM916-050	Soil (Loamy sand) - PCBs Real-world waste collected from a site in the Western United States. The sample was certified by USEPA SW846, 3rd edition Method 3540A/8081 and is suitable for use by these and other similar methods. Certified value Lot IH916 Aroclor 1248 ..... 10.7 mg/kg	50 g
	RTC-CRM917-050	Soil (Loamy sand) - PCBs Real-world waste collected from a site in the Western United States. The sample was certified by USEPA SW846, 3rd edition Method 3540A/8081 and is suitable for use by these and other similar methods. Certified value Lot II917 Aroclor 1242 ..... 5.05 mg/kg	50 g

Code	Product	Unit
RTC-CRM918-050	Soil (Sandy loam) - PCBs Real-world waste collected from a site in the Western United States. The sample was certified by USEPA SW846, 3rd edition Method 3540A/8081 and is suitable for use by these and other similar methods. Certified value Lot JI918 Aroclor 1252 ..... 274 mg/kg	50 g
RTC-CRM921-050	Soil (Sandy loam) - PCBs Real-world waste collected from a site in the Western United States. The sample was certified by USEPA SW846, 3rd edition Method 3540A/8081 and is suitable for use by these and other similar methods. Certified value Lot AL921 Aroclor 1242 ..... 29.8 mg/kg	50 g
RTC-CRM922-050	Soil (Loam) - PCBs Real-world waste collected from a site in the Western United States. The sample was certified by USEPA SW846, 3rd edition Method 3540A/8081 and is suitable for use by these and other similar methods. Certified value Aroclor 1016 ..... 8.30 mg/kg	50 g
RTC-CRM923-050	Soil (Sandy loam) - PCBs Real-world waste collected from a site in the Western United States. The sample was certified by USEPA SW846, 3rd edition Method 3540A/8081 and is suitable for use by these and other similar methods. Certified value BL923 Aroclor 1254 ..... 5.47 mg/kg	50 g
RTC-CRM924-050	Soil (Silt loam) - PCBs Certified value Lot P76 Aroclor 1242 ..... 8.27 mg/kg	50 g
New RTC-CRM927-050	Soil (Clay loam) - PCBs The certified value was determined by USEPA SW846 (3rd edition) Methods 8081A and 8082. The sample is suitable for use by these and other similar methods. Certified value Lot 002392 Aroclor 1242 ..... 7.03 mg/kg	50 g
New RTC-CRM961-050	Clay soil - PCBs Certified values Lot 013366 PCBs, total ..... 3,100 ± 516 µg/kg 2,4,4'-Trichlorobiphenyl (PCB 28)..... 135 ± 19.8 µg/kg 2,2',5,5'-Tetrachlorobiphenyl (PCB 52)..... 85.9 ± 18.2 µg/kg 3,3',4,4'-Tetrachlorobiphenyl (PCB 77)..... 223 ± 31.5 µg/kg 3,4,4',5-Tetrachlorobiphenyl (PCB 81)..... 205 ± 35.8 µg/kg 2,2',4,5,5'-Pentachlorobiphenyl (PCB 101)..... 106 ± 11.0 µg/kg 2,3,3',4,4'-Pentachlorobiphenyl (PCB 105)..... 147 ± 18.5 µg/kg 2,3',4,4',5-Pentachlorobiphenyl (PCB 118)..... 173 ± 19.9 µg/kg 2,3',4,4',5'-Pentachlorobiphenyl (PCB 123)..... 170 ± 24.0 µg/kg 2,3,4,4',5-Pentachlorobiphenyl (PCB 114)..... 183 ± 28.9 µg/kg 3,3',4,4',5-Pentachlorobiphenyl (PCB 126)..... 213 ± 26.6 µg/kg 2,2',3,4,4',5'-Hexachlorobiphenyl (PCB 138)..... 130 ± 22.8 µg/kg 2,2',4,4',5,5'-Hexachlorobiphenyl (PCB 153)..... 137 ± 18.5 µg/kg 2,3',4,4',5,5'-Hexachlorobiphenyl (PCB 167)..... 236 ± 43.7 µg/kg 3,3',4,4',5,5'-Hexachlorobiphenyl (PCB 169)..... 124 ± 15.5 µg/kg 2,2',3,4,4',5,5'-Heptachlorobiphenyl (PCB 180)..... 116 ± 11.6 µg/kg 2,3,3',4,4',5,5'-Heptachlorobiphenyl (PCB 189)..... 247 ± 60.2 µg/kg PCB (156)+(157)..... 370 ± 4.59 µg/kg	50 g

	Code	Product	Unit
New	RTC-CRM962-050	Loamy sand - PCBs	50 g

Certified values

Lot 012222

2,4,4'-Trichlorobiphenyl (PCB 28)..... 180 ± 53.6 µg/kg
2,2',5,5'-Tetrachlorobiphenyl (PCB 52)..... 179 ± 40.7 µg/kg
3,3',4,4'-Tetrachlorobiphenyl (PCB 77)..... 221 ± 32.1 µg/kg
3,4,4',5-Tetrachlorobiphenyl (PCB 81) ..... 165 ± 2.73 µg/kg
2,2',4,5,5'-Pentachlorobiphenyl (PCB 101)..... 119 ± 39.5 µg/kg
2,3,3',4,4'-Pentachlorobiphenyl (PCB 105)..... 108 ± 19.6 2 µg/kg
2,3',4,4',5-Pentachlorobiphenyl (PCB 118)..... 154 ± 11.8 2 µg/kg
2,3',4,4',5'-Pentachlorobiphenyl (PCB 123)..... 187 ± 28.0 µg/kg
2,3,4,4',5-Pentachlorobiphenyl (PCB 114) ..... 128 ± 3.69 µg/kg
3,3',4,4',5-Pentachlorobiphenyl (PCB 126)..... 124 ± 23.3 µg/kg
2,2',3,4,4',5'-Hexachlorobiphenyl (PCB 138) ..... 265 ± 84.9 µg/kg
2,2',4,4',5,5'-Hexachlorobiphenyl (PCB 153) ..... 204 ± 74.9 µg/kg
2,3,3',4,4',5'-Hexachlorobiphenyl (PCB 157) ..... 241 ± 101 µg/kg
2,3,3',4,4',5-Hexachlorobiphenyl (PCB 156)..... 211 ± 60.3 µg/kg
2,3',4,4',5,5'-Hexachlorobiphenyl (PCB 167) ..... 225 ± 35.0 µg/kg
3,3',4,4',5,5'-Hexachlorobiphenyl (PCB 169) ..... 178 ± 32.9 µg/kg
2,2',3,4,4',5,5'-Heptachlorobiphenyl (PCB 180)..... 287 ± 66.5 µg/kg
2,3,3',4,4',5,5'-Heptachlorobiphenyl (PCB 189)..... 204 ± 35.7 µg/kg
PCB (156)+(157) ..... 450 ± 29.7 µg/kg

New	RTC-CRM304-030	Soil - BETX	30 g

This soil is typical of that found in the backfill surrounding a leaking underground diesel storage tank (LUST). The sample has been analyzed by a minimum of 20 laboratories to meet the requirements specified by the IPA/AALA RM-03, ISO Guides 34 and 35. The soil was certified by USEPA SW846, 3rd edition Method 5030A and 8020A or 8040B and is suitable for use by these and other similar methods.

Certified values

Lot 002520

Benzene.....3.57 mg/kg
Ethylbenzene .....8.73 mg/kg
Toluene.....3.84 mg/kg
m+p-Xylene.....2.43 mg/kg
o-Xylene ..... 2.40 mg/kg
Xylene, total ..... 7.02 mg/kg
Gasoline range organics (C6-C12) ..... 65.5 mg/kg

New	RTC-CRM305-030	Silt loam - BETX	30 g

The sample was certified by USEPA SW846, 3rd edition Method 5030A and 8020A or 8240B and is suitable for use by these and other similar methods.

Certified values

Lot 010406

Benzene.....57.5 mg/kg
Ethylbenzene .....3.49 mg/kg
Methyl tert-butyl ether (MTBE).....31.6 mg/kg
Toluene.....15.5 mg/kg
m+p-Xylene..... 42.7 mg/kg
o-Xylene ..... 23.2 mg/kg
Xylene, total ..... 66.7 mg/kg
Gasoline range organics (C6-C12) ..... 235 mg/kg

New	RTC-CRM306-030	Soil - BETX	30 g

This soil is typical of that found in the backfill surrounding a leaking underground diesel storage tank (LUST). The soil was certified by USEPA SW846, 3rd edition Method 5030A and 8021B or 8260B and is suitable for use by these and other similar methods.

Certified values

Lot 010590

Benzene.....20.2 mg/kg
Ethylbenzene .....40.1 mg/kg
Methyl tert-butyl ether (MTBE).....9.45 mg/kg
Toluene.....51.4 mg/kg
o-Xylene ..... 33.6 mg/kg
m+p Xylene..... 30.4 mg/kg
Total Xylene ..... 69.5 mg/kg

	RTC-CRM307-030	Soil - BTEX	30 g

This soil is typical of that found in the backfill surrounding a leaking underground diesel storage tank (LUST). The soil was certified by USEPA SW846, 3rd edition Method 5030A and 8021B or 8260B and is suitable for use by these and other similar methods. The value for GRO was determined by GC method 8015M.

Certified values

Lot 015190

Benzene.....4240 µg/kg
Ethylbenzene .....6540 µg/kg
MTBE.....5430 µg/kg
Napthalene .....3560 µg/kg
Toluene.....2790 µg/kg
1,2,4 –Trimethylbenzene .....2190 µg/kg
1,3,5 – Trimethylbenzene ..... 1750 µg/kg
m+p-Xylene..... 6300 µg/kg
o-Xylene ..... 3190 µg/kg
Total Xylene ..... 9820 µg/kg
Total purgeable hydrocarbons ..... 65500 µg/kg

	RTC-CRM308-030	Soil - BTEX	30 g

Certified values

Lot 014714

Benzene.....4150 µg/kg
1,2- Dichlorobenzene.....6400 µg/kg
1,3-Dichlorobenzene.....1500 µg/kg
1,4-Dichlorobenzene.....5670 µg/kg
Ethylbenzene .....1550 µg/kg
Methyl tert-butyl ether (MTBE).....4720 µg/kg
Napthalene .....3200 µg/kg
Toluene ..... 4940 µg/kg
1,2,4-Trimethylbenzene ..... 5100 µg/kg
1,3,5-Trimethylbenzene ..... 2690 µg/kg
m+p-Xylene..... 5170 µg/kg
o-Xylene ..... 2320 µg/kg
Xylene, total ..... 7390 µg/kg
Total purgeable Hydrocarbons..... 67300 µg/kg

	Code	Product	Unit
New	RTC-CRM309-030	Soil - BETX Certified values Lot 013253 Benzene.....2300 µg/kg Ethylbenzene .....6130 µg/kg Methyl tert-butyl ether (MTBE).....5070 µg/kg Toluene.....5190 µg/kg m+p-Xylene ..... 7240 µg/kg o-Xylene ..... 6440 µg/kg Xylenes, total..... 12100 µg/kg	30 g
New	ERM-CC017	Mineral oil contaminated soil - Total petrol hydrocarbons (TPH) To be used for verification of analytical procedures for the determination of TPH in soils and sediments according to ISO 16703:2004 by GC/FID and for quality control in analytical laboratories. Certified values Total petrol hydrocarbons (TPH) .....6.6 ± 0.5 g/kg	81 g
New	ERM-CC016	Waste - Total petrol hydrocarbons (TPH) The intended purpose of reference material ERM®-CC016 is the verification of analytical procedures for the determination of mineral oil hydrocarbons in waste and soils according to EN 14039 and ISO 16703 by GC-FID and for quality control in analytical laboratories. Certified value Total petrol hydrocarbons (TPH) .....3010 ± 220 mg/kg	83 g
New	LGCQC3013	Loamy sand soil 2 - Total Petroleum Hydrocarbons Quality control reference material The method used for the determination of TPH was based on the ISO 16703:2004(E) Standard Soil Quality-Determination of content of hydrocarbons in the range of C10 to C40 by gas chromatography. Indicative values Textural classification Sand: 2.00-0.063 mm .....87 % Silt: 0.063 – 0.002.....6 % Clay: < 0.002 mm.....7 % Constituent Total Petroleum Hydrocarbons (C10-C40) .....4100 mg/kg	100 g
	RTC-CRM352-100	Soil (Loamy sand) - Total petroleum hydrocarbons (TPH) This soil is typical of that found in the backfill surrounding a leaking underground diesel storage tank (LUST). The soil was certified by USEPA 418.1. Certified value TPH..... 1130 mg/kg	100 g
	RTC-CRM350-100	Soil (Sandy loam) - Total petroleum hydrocarbons (TPH) This soil is typical of that found in the backfill surrounding a leaking underground diesel storage tank (LUST). The soil was certified by USEPA 418.1. Certified value Lot 013246 TPH..... 8300 mg/kg	100 g
	RTC-CRM353-100	Soil (Sandy loam) - Total petroleum hydrocarbons (TPH) This soil is typical of that found in the backfill surrounding a leaking underground diesel storage tank (LUST). The soil was certified by USEPA 418.1. Certified value Lot 012182 TPH..... 2200 mg/kg	100 g
	RTC-CRM355-100	Soil (Sandy loam) - Total petroleum hydrocarbons (TPH) This soil is typical of that found in the backfill surrounding a leaking underground diesel storage tank (LUST). The soil was certified by USEPA 418.1. Certified value Lot JC355 TPH..... 7040 mg/kg	100 g
	RTC-CRM356-100	Soil (Sandy loam) - Total petroleum hydrocarbons (TPH) This soil is typical of that found in the backfill surrounding a leaking underground diesel storage tank (LUST). The soil was certified by USEPA 418.1. Certified value Lot GK356 TPH.....3810 mg/kg Diesel Range Organics (C10-C20) ..... 611 mg/kg	100 g
	RTC-CRM358-100	Soil (Sandy loam) - Total petroleum hydrocarbons (TPH) The value was determined by USEPA Method 8015M, 418.1, Total Recoverable Petroleum Hydrocarbons. Certified value TPH..... 3650 mg/kg	100 g

Code	Product	Unit

RTC-CRM359-100 — Soil (Sandy loam) - Total petroleum hydrocarbons (TPH) (as diesel) — 100 g

Certified value

Lot 015649

Diesel range organics, C10-C28 .....982 mg/kg
Diesel Range Organics (DRO) .....1030 mg/kg
Total EPH ..... 1110 mg/kg

RTC-CRM360-100 — Soil (Sandy loam) - Total petroleum hydrocarbons (TPH) as (30/40WT motor) oil — 100 g

The reference value for TPH was determined by USEPA SW846 (3rd edition) Method 8015B and 8015M.
TPH source is 30/40WT motor oil.

Certified values

Lot 013220

Residual Range Organics (RRO) C28-C35.....414 mg/kg

RTC-CRM357-100 — Soil (Sandy loam) - Total petroleum hydrocarbons (TPH) — 100 g

This soil is typical of that found in the backfill surrounding a leaking underground diesel storage tank (LUST).
The soil was certified by USEPA 418.1.

Certified value

Lot JF357

TPH ..... 3220 mg/kg

New **RTC-CRM372-100** — Sandy soil - Total petroleum hydrocarbons (TPH) — 100 g

Certified values

Lot 014092

Total Petroleum Hydrocarbon.....2020 mg/kg
C10 to C12 Aliphatics .....70.9 mg/kg
C12 to C16 Aliphatics .....314 mg/kg
C16 to C21 Aliphatics .....209 mg/kg
C21 to C35 Aliphatics .....460 mg/kg
C10 to C12 Aromatics..... 17.1 mg/kg
C12 to C16 Aromatics..... 112 mg/kg
C16 to C21 Aromatics..... 96.2 mg/kg
C21 to C35 Aromatics..... 39.4 mg/kg

New **RTC-CRM373-100** — Loamy Soil - TPH Banded — 100 g

The soil is to be extracted and analyzed using an appropriate extraction and analytical method for TPH, assuming a high concentration sample. The values given are based on GC-FID/PID and column separation methods for aliphatics and aromatics.

Certified values

Lot 014476

C10 to C12 Aliphatics .....93.6 ± 10.5 mg/kg
C12 to C16 Aliphatics .....302 ± 23.2 mg/kg
C16 to C21 Aliphatics .....205 ± 10.3 mg/kg
C21 to C35 Aliphatics .....539 ± 30.9 mg/kg
C10 to C12 Aromatics .....36.8 ± 8.15 mg/kg
C12 to C16 Aromatics .....151 ± 24.0 mg/kg
C16 to C21 Aromatics .....86.8 ± 11.1 mg/kg
C21 to C35 Aromatics .....26.7 ± 6.50 mg/kg
Total Petroleum Hydrocarbons.....1050 ± 101 mg/kg (TPH), (C6-C35)

New **RTC-CRM371-100** — Loamy Soil - TPH Banded — 100 g

The soil is to be extracted and analyzed using an appropriate extraction and analytical method for TPH, assuming a high concentration sample.

Certified values

Lot 013042

C10 to C12 Aliphatics ..... 280 ± 14.8 mg/kg
C12 to C16 Aliphatics ..... 764 ± 42.1 mg/kg
C16 to C21 Aliphatics ..... 574 ± 30.4 mg/kg
C21 to C35 Aliphatics ..... 63.4 ± 6.89 mg/kg
C10 to C12 Aromatics ..... 60.0 ± 6.70 mg/kg
C12 to C16 Aromatics ..... 210 ± 35.9 mg/kg
C16 to C21 Aromatics ..... 168 ± 12.4 mg/kg
C21 to C35 Aromatics ..... 23.6 ± 4.78 mg/kg
Total Petroleum Hydrocarbons(C6-C35) (TPH) ..... 1,570 ± 286 mg/kg

RTC-CRM500-030 — Soil (Sandy loam) - Gasoline — 30 g

The sample was certified by USEPA Method 8015B, and is suitable for use by this and other similar methods.

Certified value

Benzene.....9.03 mg/kg
Ethylbenzene .....6.16 mg/kg
Napthalene .....1.51 mg/kg
Toluene.....30.1 mg/kg
m+p-Xylene ..... 25.3 mg/kg
o-Xylene ..... 9.23 mg/kg
Xylene, total ..... 46.3 mg/kg
Gasoline range organics (C5-C10) ..... 334 mg/kg

New **RTC-CRM501-030** — Soil (Loamy clay) - BTEX/GRO — 30 g

The sample was certified by USEPA Method 8015B, and is suitable for use by this and other similar methods.

Certified values

Lot 010589

Benzene.....10.5 mg/kg
Ethylbenzene .....9.63 mg/kg
Toluene.....42.6 mg/kg
m+p-Xylene.....34.2 mg/kg
o-Xylene ..... 12.6 mg/kg
Xylene, total ..... 46.3 mg/kg
Gasoline range organics (C6-C12) ..... 480 mg/kg

	Code	Product	Unit
New	RTC-CRM502-030	Soil (clay) - BTEX/GRO	30 g

The sample was certified by USEPA Method 8015B, and is suitable for use by this and other similar methods.

Certified values

Lot 013606

Benzene	8.79 mg/kg	o-Xylene	8.66 mg/kg
Ethylbenzene	5.77 mg/kg	Xylene, total	33.0 mg/kg
Toluene	27.4 mg/kg	Gasoline range organics (C5-C10)	357 mg/kg
m+p-Xylene	23.4 mg/kg		

	RTC-CRM504-030	Soil (Sandy loam) - Gasoline	30 g

The certified values were determined by USEPA SW846 (3rd edition) Method 8015B.

Certified values

Lot 016116

GRO (Gasoline Range Organics)	886 mg/kg	o-Xylene	26.1 mg/kg
Benzene	22.5 mg/kg	Total Xylene	92.9 mg/kg
Ethylbenzene	16.5 mg/kg	Naphthalene	3.94 mg/kg
Toluene	76.9 mg/kg	GRO (C5-C10)	685 mg/kg
m+p-Xylene	70.7 mg/kg		

New	RTC-CRM513-030	Soil - BTEX/GRO	30 g

Certified values

Lot 011783

Benzene	5.11 mg/kg	o-Xylene	5.70 mg/kg
Ethylbenzene	3.86 mg/kg	Xylene, total	18.7 mg/kg
Toluene	18.6 mg/kg	Gasoline range organic (GRO), C5-C10	242 mg/kg
m+p-Xylene	14.5 mg/kg		

	RTC-CRM550-100	Soil (Sandy loam) - Diesel	100 g

This soil is typical of that found in the backfill surrounding a leaking underground diesel storage tank (LUST).
The soil was certified by USEPA SW846 (3rd edition) Method 8015B.

Certified value

Lot 015644

Diesel Range Organics 963mg/kg

New	RTC-CRM555-100	Soil (Silty loam) - Diesel	100 g

The reference value for DRO was determined by USEPA SW846 (3rd edition) Method 8015B and 8015M.
The reference value for TPH was determined by USEPA SW846 (3rd edition) Method 413.1 and 418.1.

New	RTC-CRM558-100	Soil (Clay loam)- Diesel	100 g

The sample was certified by USEPA Method 8015B, and is suitable for use by this and other similar methods.

Certified values

EPH ....591 mg/kg
Diesel range organics (DRO)....544 mg/kg

New	RTC-CRM608-025	Sandy loam 1 - Volatile organic analytes (VOAs)	25 g

Certified values

Acetone	8620 µg/Kg	Hexachloroethane	2030 µg/Kg
Benzene	7750 µg/Kg	2-Hexanone	16800 µg/Kg
Bromobenzene	7660 µg/Kg	Isopropylbenzene	5800 µg/Kg
Bromodichloromethane	2490 µg/Kg	Methyl bromide	5010 µg/Kg
Bromoform	8840 µg/Kg	Methyl chloride	2480 µg/Kg
2-Butanone (Methyl ethyl ketone,MEK)	20900 µg/Kg	Methylene chloride (Dichloromethane)	6220 µg/Kg
Carbon tetrachloride	3050 µg/Kg	4-Methyl-2-pentanone	5690 µg/Kg
Chlorobenzene	5730 µg/Kg	Methyl tert-butyl ether	3340 µg/Kg
1,2-Dibromo-3-chloropropane (DBCP)	5200 µg/Kg	Naphthalene	4830 µg/Kg
1,2-Dibromoethane (EDB, Ethylene dibromide)	7190 µg/Kg	Styrene	4780 µg/Kg
Dibromomethane	8620 µg/Kg	1,1,2,2-Tetrachloroethane	4060 µg/Kg
1,2-Dichlorobenzene	2460 µg/Kg	Tetrachloroethylene (Perchloroethylene)	4460 µg/Kg
1,3-Dichlorobenzene	7150 µg/Kg	Toluene	8180 µg/Kg
1,4-Dichlorobenzene	5850 µg/Kg	1,2,4-Trichlorobenzene	6160 µg/Kg
1,1-Dichloroethane	2270 µg/Kg	1,1,1-Trichloroethane	5830 µg/Kg
1,2-Dichloroethane	8210 µg/Kg	1,1,2-Trichloroethane	2050 µg/Kg
1,1-Dichloroethylene	9860 µg/Kg	Trichlorofluoromethane	5140 µg/Kg
cis-1,2-Dichloroethylene	7810 µg/Kg	1,2,3-Trichloropropane	2820 µg/Kg
1,2-Dichloropropane	8690 µg/Kg	1,2,4-Trimethylbenzene	4670 µg/Kg
cis-1,3-Dichloropropene	7960 µg/Kg	1,3,5-Trimethylbenzene	6140 µg/Kg
trans-1,3-Dichloropropene	4300 µg/Kg	Vinyl chloride	1560 µg/Kg
trans-1,2-Dichloroethylene	9050 µg/Kg	m+p-Xylene	9940 µg/Kg
Ethylbenzene	7770 µg/Kg	o-Xylene	8350 µg/Kg
		Xylene, total	18200 µg/Kg

Code	Product	Unit

RTC-CRM627-030 Soil (Sandy loam) - Volatile organic analytes (low level) — 30 g

The following sample was certified using USEPA SW846, 3rd edition, method 8260, and is ideal for methanol extraction

Certified values

Benzene	56.5 µg/kg	Styrene	39 µg/kg
Carbon tetrachloride	44.8 µg/kg	1,1,1,2-Tetrachloroethane	99.8 µg/kg
Chlorobenzene	52.6 µg/kg	1,1,2,2-Tetrachloroethane	87.8 µg/kg
1,2-Dichlorobenzene	40.9 µg/kg	Toluene	75.7 µg/kg
1,3-Dichlorobenzene	70.4 µg/kg	1,2,4-Trichlorobenzene	48.9 µg/kg
1,4-Dichlorobenzene	74.9 µg/kg	1,1,2-Trichloroethane	71.3 µg/kg
1,2-Dichloroethane	60.7 µg/kg	1,2,3-Trichloropropane	53 µg/kg
Ethylbenzene	88.4 µg/kg	1,2,4-Trimethylbenzene	90.5 µg/kg
Hexachloroethane	147 µg/kg	m+p-Xylene	67.3 µg/kg
Methyl chloride (Chloromethane)	23.3 µg/kg	o-Xylene	49.9 µg/kg
Methyl tert-butyl ether (MTBE)	121 µg/kg	Xylene, total	117 µg/kg

RTC-CRM633-030 Soil (Loamy sandy) - Volatile organic analytes (low level) — 30 g

Analytical data for certification was obtained using USEPA SW846, 3rd edition method 8260 (VOCs by GC/MS). The sample is intended for use in analytical systems using this and related methods.

Certified values

Lot 015216

Acetone	411 µg/kg	2-Hexanone	422 µg/kg
Benzene	52.2 µg/kg	Isopropylbenzene	106 µg/kg
Bromobenzene	153 µg/kg	Methyl bromide (Bromomethane)	79.3 µg/kg
Bromodichloromethane	65.1 µg/kg	Methyl chloride (Chloromethane)	60.2 µg/kg
2-Butanone (Methyl ethyl ketone, MEK)	330 µg/kg	Methyl tert-butyl ether (MTBE)	82.3 µg/kg
Carbon tetrachloride	145 µg/kg	Naphthalene	94.8 µg/kg
Chlorobenzene	158 µg/kg	Styrene	81.9 µg/kg
Chloroethane	92.2 µg/kg	1,1,1,2-Tetrachloroethane	120 µg/kg
Chloroform	120 µg/kg	Tetrachloroethylene	131 µg/kg
1,2-Dibromo-3-chloropropane (DBCP)	98.4 µg/kg	Toluene	86.2 µg/kg
Dibromochloromethane	183 µg/kg	1,2,4-Trichlorobenzene	83.8 µg/kg
1,2-Dibromoethane (EDB)	158 µg/kg	1,1,1-Trichloroethane	38.8 µg/kg
Dibromomethane	27.0 µg/kg	1,1,2-Trichloroethane	127 µg/kg
1,2-Dichlorobenzene	49.9 µg/kg	Trichloroethene (Trichloroethylene)	188 µg/kg
1,3-Dichlorobenzene	68.3 µg/kg	Trichlorofluoromethane	102 µg/kg
1,4-Dichlorobenzene	40.0 µg/kg	1,2,3-Trichloropropane	134 µg/kg
1,2-Dichloroethane	31.6 µg/kg	1,2,4-Trimethylbenzene	132 µg/kg
1,1-Dichloroethylene	132 µg/kg	1,3,5-Trimethylbenzene	190 µg/kg
cis-1,2-Dichloroethylene	81.3 µg/kg	Vinyl chloride	63.2 µg/kg
1,2-Dichloropropane	37.2 µg/kg	m+p-Xylene	110 µg/kg
cis-1,3-Dichloropropene	183µg/kg	o-Xylene	47.7 µg/kg
trans-1,2-Dichloroethylene	49.6µg/kg	Xylene, total	158 µg/kg
Ethylbenzene	56.6 µg/kg		

New RTC-CRM636-025 Loamy sand 4 - Volatile organic analytes — 25 g

Certified values

Lot 016530

Acrolein	1080 µg/kg	Ethylbenzene	6150 µg/kg
Acetone	27900 µg/kg	2-Hexanone	11700 µg/kg
Benzene	5110 µg/kg	Isopropylbenzene	5440 µg/kg
Bromobenzene	3810 µg/kg	Methyl bromide	1980 µg/kg
Bromodichloromethane	3500 µg/kg	Methyl chloride	3620 µg/kg
2-Butanone (Methyl ethyl ketone, MEK)	15800 µg/kg	4-Methyl-2-pentanone (MIBK)	10700 µg/kg
Carbon tetrachloride	3110 µg/kg	Methyl tert-butyl ether (MTBE)	6600 µg/kg
Chlorobenzene	4740 µg/kg	Naphthalene	6780 µg/kg
Chloroethane	4010 µg/kg	Styrene	7070 µg/kg
2-Chloroethyl vinyl ether	923 µg/kg	1,1,1,2-Tetrachloroethane	5580 µg/kg
Chloroform	8260 µg/kg	1,1,2,2-Tetrachloroethane	7070 µg/kg
1,2-Dibromo-3-chloropropane	5280 µg/kg	Tetrachloroethylene	8430 µg/kg
Dibromochloromethane	8680 µg/kg	Toluene	4840 µg/kg
Dibromomethane	7950 µg/kg	1,2,4-Trimethylbenzene	8400 µg/kg
1,2-Dichlorobenzene	5330 µg/kg	1,1,2-Trichloroethane	2260 µg/kg
1,3-Dichlorobenzene	6440 µg/kg	Trichloroethene	7630 µg/kg
1,4-Dichlorobenzene	5680 µg/kg	Trichlorofluoromethane	8280 µg/kg
1,1-Dichloroethane	5770 µg/kg	1,2,3-Trichloropropane	8550µg/kg
1,2-Dichloroethane	8540 µg/kg	1,2,4-Trimethylbenzene	7650 µg/kg
1,1-Dichloroethylene	5310 µg/kg	1,3,5-Trimethylbenzene	12000 µg/kg
cis-1,2-Dichloroethylene	9050 µg/kg	Vinyl chloride	5360 µg/kg
1,2-Dichloropropane	7800 µg/kg	m+p-Xylene	8920 µg/kg
trans-1,3-Dichloropropene	6690 µg/kg	o-Xylene	2680 µg/kg
trans-1,2-Dichloroethylene	6720 µg/kg	Xylene	11300 µg/kg

Code	Product	Unit

New RTC-CRM638-025 — Clay 2- Volatile organic analytes — 25 g

Certified values

Lot 015215

Acetone	27900 µg/kg	2-Hexanone	15800 µg/kg
Benzene	5390 µg/kg	Isopropylbenzene	8520 µg/kg
Bromobenzene	3660 µg/kg	Methyl bromide	5020 µg/kg
Bromodichloromethane	3870 µg/kg	Methyl chloride	1970 µg/kg
2-Butanone (Methyl ethyl ketone, MEK)	11100 µg/kg	4-Methyl-2-pentanone (MIBK)	10600 µg/kg
Carbon tetrachloride	6910 µg/kg	Methyl tert-butyl ether (MTBE)	3060 µg/kg
Chlorobenzene	9080 µg/kg	Naphthalene	6250 µg/kg
Chloroethane	4060 µg/kg	Styrene	5650 µg/kg
Chloroform	5800 µg/kg	1,1,1,2-Tetrachloroethane	5280 µg/kg
1,2-Dibromo-3-chloropropane	5730 µg/kg	Tetrachloroethylene	7200 µg/kg
Dibromochloromethane	3320 µg/kg	Toluene	8060 µg/kg
1,2-Dibromomethane	6300 µg/kg	1,2,4-Trichlorobenzene	2960 µg/kg
Dibromomethane	6240 µg/kg	1,1,1-Trichloroethane	9380 µg/kg
1,2-Dichlorobenzene	9130 µg/kg	1,1,2-Trichloroethane	2940 µg/kg
1,3-Dichlorobenzene	3600 µg/kg	Trichloroethene	7470µg/kg
1,4-Dichlorobenzene	3320 µg/kg	Trichlorofluoromethane	8400 µg/kg
1,2-Dichloroethane	7970 µg/kg	1,2,3-Trichloropropane	3490 µg/kg
1,1-Dichloroethylene	5780 µg/kg	1,2,4-Trimethylbenzene	11400 µg/kg
cis-1,2-Dichloroethylene	5050 µg/kg	1,3,5-Trimethylbenzene	18800 µg/kg
1,2-Dichloropropane	6900 µg/kg	Vinyl chloride	8370 µg/kg
cis-1,3-Dichloropropene	6640 µg/kg	m+p-Xylene	11500 µg/kg
trans-1,2-Dichloroethylene	9380 µg/kg	o-Xylene	2790 µg/kg
Ethylbenzene	6480 µg/kg	Xylene	14500 µg/kg

RTC-CRM106-100 — Soil (Sandy loam) - Semi-volatile organic analytes (Semi-VOAs) — 100 g

Soil contaminated with semi-volatile organic compounds, from the Western region of the United States. The sample was certified by USEPA SW846, 3rd edition extraction methods 3540A (Soxhlet), 3550 (sonication), and analysis method 8270A (Semivolatile organics by GC/MS). The sample is suitable for use by these and other similar methods.

Certified values

Lot CF106

Phenol	19.54 mg/kg	2,4-Dintrotoluene	29.31 mg/kg
Chlorophenol	17.76 mg/kg	2,6-Dinitrotoluene	16.64 mg/kg
4-Methylphenol	1.71 mg/kg	Pentachlorophenol	29.89 mg/kg
3-Nitroaniline	11.64 mg/kg	Phenanthrene	0.63 mg/kg
2,4-Dinitrophenol	3.90 mg/kg	Bis(2-ethylhexyl)phthalate	24.14 mg/kg
4-Nitrophenol	15.15 mg/kg		

RTC-CRM114-100 — Soil (Loam) - Semi-volatile organic analytes (Semi-VOAs) — 100 g

Soil contaminated with Semi-Volatile Organic compounds, from a site in the Western region of the United States. The Semi-VOA values in the sample were certified by USEPA SW846, 3rd edition Extraction Methods 3540C (Soxhlet extraction), 3550 (Sonication) and analysis method 8270C (Semivolatile organics by GC/MS). The sample is suitable for use by these and other similar methods.

Certified values

Lot II114

Benzo(a)anthracene	11.5 mg/kg	Hexachlorobenzene	77.1 mg/kg
Benzo(a)pyrene	33.8 mg/kg	Hexachloroethane	11.0 mg/kg
Benzo(ghi)perylene	6.68 mg/kg	1- and 2-Methylnaphthalene	61.3 mg/kg
2-Chlorophenol	30.7 mg/kg	3-Nitroaniline	29.2 mg/kg
2,4-Dichlorophenol	24.6 mg/kg	Nitrobenzene	29.9 mg/kg
2,4-Dinitrotoluene	30.2 mg/kg	4-Nitrophenol	45.4 mg/kg
Fluoranthene	54.4 mg/kg	Pentachlorophenol	30.9 mg/kg
Fluorene	25.4 mg/kg	Pyrene	9.2 mg/kg

RTC-CRM109-100 — Soil (Sandy loam) - Organic contaminants — 100 g

BNA contaminated soil, from a site in the Western United States and is not "spiked or fortified" in any manner. The BNA values in the sample were certified by USEPA SW846, 3rd edition Extraction Methods 3540A/3541 (Soxhlet), 3550 (sonication), and analysis method 8270A (Semivolatile organics by GC/MS). The sample is suitable for use by these and other similar methods.

RTC-CRM110-100 — Soil (Sandy loam) - Organic contaminants — 100 g

BNA contaminated soil from a site in the Western United States. The BNA values in the sample were certified by USEPA SW846, 3rd edition Extraction Methods 3540A/3541 (Soxhlet), 3550 (sonication), and analysis method 8270B (Semivolatile organics by GC/MS). The sample is suitable for use by these and other similar methods.

Certified values

Lot LG110

Acenaphthene	55.6 mg/kg	Hexachlorobenzene	71.3 mg/kg
Bis(2-ethylhexyl)phthalate	13.1 mg/kg	Hexachloroethane	8.79 mg/kg
2-Chlorophenol	21.4 mg/kg	Naphthalene	30.3 mg/kg
Dibenzofuran	47.8 mg/kg	2-Nitroaniline	46.3 mg/kg
2,4-Dinitrophenol	9.98 mg/kg	4-Nitrophenol	26.2 mg/kg
2,4-Dinitrotoluene	44.6 mg/kg	Nitrobenzene	15.1 mg/kg
2,6-Dinitrotoluene	19.4 mg/kg	Pentachlorophenol	27.1 mg/kg
Fluoranthene	11.8 mg/kg	Phenol	13.9 mg/kg
Fluorene	14.2 mg/kg		

Indicative value for 3-Nitroaniline

Code	Product	Unit

RTC-CRM111-100 Soil (Loamy sand) - Organic contaminants — 100 g

BNA contaminated soil from a site in the Rocky Mountain region of the United States. The BNA values in the sample were certified by USEPA SW846, 3rd edition Extraction Methods 3540A/3541 (Soxhlet), 3550 (sonication), and analysis method 8270A (Semivolatile organics by GC/MS). The sample is suitable for use by these and other similar methods.

Certified values

Lot IH111

Acenaphthene	21.3 mg/kg	Hexachloroethane	7.51 mg/kg
Bis(2-ethylhexyl)phthalate	36.0 mg/kg	Naphthalene	10.8 mg/kg
Dibenzofuran	6.91 mg/kg	2-Nitroaniline	30 mg/kg
2,4-Dinitrotoluene	33.7 mg/kg	3-Nitroaniline	5.85 mg/kg
2,6-Dinitrotoluene	15.4 mg/kg	Nitrobenzene	30.7 mg/kg
Fluoranthene	56.1 mg/kg	4-Dinitrophenol	8.70 mg/kg
Fluorene	21.4 mg/kg	Pentachlorophenol	22.0 mg/kg
Hexachlorobenzene	23.1 mg/kg		

RTC-CRM113-100 Soil (Loamy sand) - Organic contaminants — 100 g

BNA contaminated soil from a site in the Western region of the United States. The BNA values in the sample were certified by USEPA SW846, 3rd edition Extraction Methods 3540A/3541 (Soxhlet), 3550 (Sonication), and analysis method 8270C (Semivolatile Organics by GC/MS). The sample is suitable for use by these and other similar methods.

Certified values

Lot FI113

Bis(2-ethylhexyl)phthalate	0.97 mg/kg	Hexachlorobenzene	14.3 mg/kg
Benzo(b)fluoranthene	3.53 mg/kg	Hexachloroethane	1.65 mg/kg
Benzo(a)pyrene	3.17 mg/kg	4-Methylphenol	7.55 mg/kg
Chrysene	7.21 mg/kg	2-Nitroaniline	14.5 mg/kg
2,4-Dinitrophenol	1.64 mg/kg	3-Nitroaniline	0.98 mg/kg
2,4-Dinitrotoluene	16.0 mg/kg	Nitrobenzene	5.88 mg/kg
Fluoranthene	6.51 mg/kg	4-Nitrophenol	4.56 mg/kg
Fluorene	8.41 mg/kg	Pyrene	37.0 mg/kg

RTC-CRM115-100 Soil (Loamy sand) - Organic contaminants — 100 g

PAH contaminated soil from a site in the Western Region of the United States.

Certified values

Lot JC115

Acenaphthene	4.60 mg/kg	Fluoranthene	22.1 mg/kg
Benzo(a)anthracene	12.1 mg/kg	Fluorene	13.0 mg/kg
Benzo(b)Fluoranthene	0.930 mg/kg	Naphthalene	1.34 mg/kg
Chrysene	16.8 mg/kg	Phenanthrene	0.080 mg/kg
Dibenzofuran	10.6 mg/kg	Pyrene	7.66 mg/kg

Indicative values for Anthracene and Bis(2-ethylhexyl)phthalate

New RTC-CRM116-100 Soil (Loam) - Organic contaminants — 100 g

BNA contaminated soil from a site in the Western United States. The certified values were determined by USEPA SW846 (3rd edition) Extraction Method 3540C (soxhlet) and 3550 (sonicaton), and Analysis Method 8270C (semivolatile organics by GC/MS).The sample is suitable for these and other similar methods.

Certified values

Lot JL116

Naphthalene	2.81 mg/Kg	2,6-Dinitrotoluene (2,6-DNT)	7.54 mg/Kg
Nitrobenzene	3.89 mg/Kg	bis(2-Ethylhexyl) phthalate (DEHP)	9.51 mg/Kg
Acenaphthene	6.04 mg/Kg	Fluoranthene	7.08 mg/Kg
Acenaphthylene	7.8 mg/Kg	Fluorene	5.72 mg/Kg
Anthracene	6.15 mg/Kg	Hexachlorobenzene	7.12 mg/Kg
Benzo(a)anthracene	5.25 mg/Kg	Isophorone	6.63 mg/Kg
4-Bromophenyl phenyl ether	9.92 mg/Kg	2-Methyl-4,6-dinitrophenol	5.96 mg/Kg
4-Chloro-3-methylphenol	5.88 mg/Kg	2-Nitrophenol	4.9 mg/Kg
2-Chlorophenol	5.51 mg/Kg	4-Nitrophenol	6.79 mg/Kg
Chrysene	1.38 mg/Kg	Pentachlorophenol	6.55 mg/Kg
Dibenzofuran	5.91 mg/Kg	Phenanthrene	6.96 mg/Kg
Di-n-butyl phthalate	10.8 mg/Kg	Phenol	9.28 mg/Kg
2,4-Dichlorophenol	6.84 mg/Kg	Pyrene	3.92 mg/Kg
2,4-Dinitrophenol	4.02 mg/Kg	2,4,6-Trichlorophenol	5.35 mg/Kg
2,4-Dinitrotoluene (2,4-DNT)	8.5 mg/Kg		

Code	Product	Unit

New RTC-CRM118-100 — Soil (Sandy loam) - Organic contaminants — 100 g

The certified values were determined by USEPA SW846 (3rd edition) Extraction Method 3540C (soxhlet) and 3550 (sonicaton), and Analysis Method 8270C (semivolatile organics by GC/MS). The sample is suitable for these and other similar methods.

Certified values

Lot AI118

1,2,4-Trichlorobenzene	6.43 mg/kg	Benzo(k)fluoranthene	6.05 mg/kg
2,4,5-Trichlorophenol	8.75 mg/kg	Dibenzofuran	7.99 mg/kg
2,4,6-Trichlorophenol	6.60 mg/kg	Diethylphthalate	7.00 mg/kg
2,4-Dichlorophenol	7.05 mg/kg	Di-n-butylphthalate	7.30 mg/kg
2,4-Dimethylphenol	6.42 mg/kg	Fluoranthene	4.64 mg/kg
2,4-Dinitrotoluene	2.64 mg/kg	Fluorene	4.75 mg/kg
2,6-Dinitrotoluene	3.42 mg/kg	Hexachlorobenzene	5.48 mg/kg
2-Chlorophenol	5.99 mg/kg	Hexachlorobutadiene	4.61 mg/kg
2-Nitrophenol	7.08 mg/kg	Hexachloroethane	4.99 mg/kg
4-Bromophenyl-phenylether	11.80 mg/kg	Isophorone	5.83 mg/kg
4-Chloro-3-methylphenol	5,80 mg/kg	Naphthalene	7.79 mg/kg
4-Nitrophenol	8.25 mg/kg	Nitrobenzene	7.95 mg/kg
Acenaphthene	7.92 mg/kg	Pentachlorophenol	5.07 mg/kg
Acenaphthylene	7.91 mg/kg	Phenanthrene	5.69 mg/kg
Anthracene	8.35 mg/kg	Phenol	9.23 mg/kg
Benzo(a)pyrene	7.83 mg/kg	Pyrene	5.00 mg/kg

Indicative value for 2,4-Dinitrophenol

New RTC-CRM119-100 — Soil (Sandy loam) - Organic contaminants — 100 g

The certified values were determined by USEPA SW846 (3rd edition) Extraction Method 3540C (soxhlet) and 3550 (sonicaton), and Analysis Method 8270C (semivolatile organics by GC/MS). The sample is suitable for these and other similar methods.

Certified values

Lot BC119

Acenaphthene	4.77 mg/kg	2,4-Dimethylphenol	4.68 mg/kg
Acenaphthylene	4.52 mg/kg	Dimethylphthalate	9.73 mg/kg
Anthracene	3.90 mg/kg	Dioctylphthalate	5.73 mg/kg
Benzo(a)pyrene	6.43 mg/kg	Fluoranthene	5.70 mg/kg
Bis(2-ethylhexyl)	8.80 mg/kg	Fluorene	4.09 mg/kg
4-Bromophenyl-phenylether	10.3 mg/kg	Isophorone	4.46 mg/kg
Butylbenzylphthalate	14.2 mg/kg	2-Methyl-4,6-dinitrophenol	2.41 mg/kg
4-Chloro-3-methylphenol	7.65 mg/kg	2-Methylnaphthalene	11.6 mg/kg
2-Chloronaphthalene	7.26 mg/kg	2-Methylphenol	7.79 mg/kg
2-Chlorophenol	4.40 mg/kg	4-Methylphenol	8.47 mg/kg
4-Chlorophenyl-phenylether	9.87 mg/kg	Naphthalene	8.61 mg/kg
Chrysene	11.7 mg/kg	2-Nitroaniline	10.0 mg/kg
Dibenzofuran	4.12 mg/kg	2-Nitrophenol	7.09 mg/kg
1,3-Dichlorobenzene	3.79 mg/kg	4-Nitrophenol	3.47 mg/kg
1,4-Dichlorobenzene	2.35 mg/kg	Pentachlorophenol	7.50 mg/kg
2,4-Dichlorophenol	6.93 mg/kg	Phenanthrene	6.62 mg/kg
Diethylphthalate	4.73 mg/kg		

Indicative values for Carbazole, 2,6-Dichlorophenol, Di-n-butylphthalate and Phenol

RTC-CRM131-100 — Soil (Sandy loam) - Organic contaminants — 100 g

The values were determined by USEPA SW846 (3rd edition) Extraction Method 3540C (soxhlet) and 3550 (sonicaton), and Analysis Method 8270C (semivolatile organics by GC/MS). The sample is suitable for these and other similar methods.

Certified values

Lot 013243

1,2-Dichlorobenzene	1580 µg/kg	2,6-Dichlorophenol	959 µg/kg
1,3-Dichlorobenzene	1400 µg/kg	Diethyl phthalate	3950 µg/kg
1,4-Dichlorobenzene	502 µg/kg	Dimethyl phthalate	2970 µg/kg
Hexachloroethane	1180 µg/kg	2,4-Dichlorophenol	1550 µg/kg
Naphthalene	1200 µg/kg	2,4-Dinitrotoluene	1530 µg/kg
Nitrobenzene	1810 µg/kg	2,6-Dinitrotoluene	2340 µg/kg
Acenaphthene	260 µg/kg	Di-n-octyl phthalate	1990 µg/kg
Anthracene	389 µg/kg	Fluoranthene	3870 µg/kg
Benzo(a)anthracene	4060 µg/kg	Fluorene	5670 µg/kg
Benzo(a)pyrene	406 µg/kg	Hexachlorobenzene	1240 µg/kg
Benzo(b)fluoranthene	1560 µg/kg	Indeno(1,2,3-cd) pyrene	1840 µg/kg
Benzo(g,h,i)perylene	4720 µg/kg	2-Methyl-4,6-dinitrophenol	4250 µg/kg
Benzo(k)fluoranthene	3820 µg/kg	2-Methylnapthalene	1350 µg/kg
4-Bromophenyl phenyl ether	8732 µg/kg	2-Methylphenol (o-Cresol)	280 µg/kg
Butyl benzyl phthalate	2780 µg/kg	4-Nitrophenol	3550 µg/kg
bis(2-Chloroethoxy)methane	878 µg/kg	n-Nitroso-di-n-propylamine	2000 µg/kg
bis(2-Chlorophenyl)ether	1230 µg/kg	Pentachlorophenol	3190 µg/kg
2-Chlorophenol	3525 µg/kg	Phenanthrene	1900 µg/kg
4-Chlorophenyl phenyether	1180 µg/kg	Phenol	899 µg/kg
Chrysene	6790 µg/kg	Pyrene	1110 µg/kg
Dibenz(a,h) anthracene	4800 µg/kg	2,4,6-Trichlorophenol	5950 µg/kg
Dibenzofuran	4400 µg/kg		

Code	Product	Unit

New RTC-CRM143-040 — Sandy loam - Organic contaminants — 40 g

Certified values
Lot 016496

1,3-Dichlorobenzene	5470 µg/kg	2,4-Dichlorophenol	6810 µg/kg
1,4-Dichlorobenzene	7770 µg/kg	Diethyl phthalate	7340 µg/kg
Hexachlorobutadiene	4300 µg/kg	2,4-Dimethylphenol	3640 µg/kg
Hexachloroethane	6100 µg/kg	2,4-Dinitrophenol	1630 µg/kg
Naphthalene	4460 µg/kg	2,4-Dinitrotoluene (2,4-DNT)	5880 µg/kg
Nitrobenzene	5510 µg/kg	2,6-Dinitrotoluene (2,6-DNT)	8710 µg/kg
1,2,4-Trichlorobenzene	1240 µg/kg	bis(2-Ethylhexyl) phthalate	4840 µg/kg
Acenaphthene	2050 µg/kg	Di-n-octyl phthalate	9910 µg/kg
Acenapthyllene	4040 µg/kg	Fluoranthene	6520 µg/kg
Anthracene	2810 µg/kg	Fluorene	5370 µg/kg
Benzo(a)anthracene	4000µg/kg	Indeno(1,2,3-cd) pyrene	1000 µg/kg
Benzo(a)pyrene	3860µg/kg	Isophorone	4580 µg/kg
Benzo(b)fluoranthene	3670µg/kg	2-Methylnapthalene	2880 µg/kg
Benzo(g,h,i)perylene	5050 µg/kg	2-Methylphenol (o-Cresol)	4040 µg/kg
Benzo(k)fluoranthene	3870 µg/kg	4-Methylphenol (p-Cresol)	4090 µg/kg
4-Bromophenyl phenyl ether	11200 µg/kg	2-Nitroaniline	2510 µg/kg
Butyl benzyl phthalate	6480 µg/kg	2-Nitrophenol	5780 µg/kg
Carbazole	1730 µg/kg	4-Nitrophenol	4680 µg/kg
bis(2-Chloroethoxy) methane	6830µg/kg	n-Nitrosodiphenylamine	4480 µg/kg
bis (2-Chloroethyl) ether	9680µg/kg	Pentachlorophenol	2890 µg/kg
4-Chlorophenyl phenylether	4810 µg/kg	Phenanthrene	8080 µg/kg
Chrysene	3630 µg/kg	Phenol	7250 µg/kg
Dibenz(a,h) anthracene	2280 µg/kg	Pyrene	1450 µg/kg
Dibenzofuran	3820 µg/kg	2,4,6-Trichlorophenol	7570 µg/kg

RTC-CRM121-100 — Soil (Loam) - Organic contaminants — 100 g

BNA contaminated soil from a site in the Western United States. The certified values were determined by USEPA SW846 (3rd edition) Extraction Method 3540C (soxhlet) and 3550 (sonicaton), and Analysis Method 8270C (semivolatile organics by GC/MS). The sample is suitable for these and other similar methods.

Certified values

Lot BL121

Benzo(a)pyrene	5.34 mg/kg	Dimethylphthalate	7.38 mg/kg
Bis(2-ethylhexyl)phthalate	1.49 mg/kg	Di-n-butylphthalate	10.2 mg/kg
4-Bromophenyl phenylether	11.8 mg/kg	2,4-Dinitrotoluene	19.7 mg/kg
Butylbenzylphthalate	5.66 mg/kg	Fluoranthene	5.65 mg/kg
4-Chloro-3-methylphenol	8.80 mg/kg	Fluorene	5.42 mg/kg
2-Chloronaphthalene	8.17 mg/kg	Hexachlorobenzene	6.26 mg/kg
2-Chlorophenol	8.30 mg/kg	Isophorone	9.53 mg/kg
4-Chlorophenyl phenylether	9.37 mg/kg	2-Methyl-4,6-dinitrophenol	11.4 mg/kg
Chrysene	4.94 mg/kg	2-Methylphenol (o-Cresol)	9.65 mg/kg
Dibenzofuran	6.10 mg/kg	Naphthalene	8.63 mg/kg
1,2-Dichlorobenzene	4.19 mg/kg	Nitrobenzene	9.42 mg/kg
1,3-Dichlorobenzene	4.24 mg/kg	Phenanthrene	5.87 mg/kg
1,4-Dichlorobenzene	3.15 mg/kg	Phenol	9.60 mg/kg
2,4-Dichlorophenol	6.66 mg/kg	Pyrene	8.20 mg/kg
2,6-Dichlorophenol	12.9 mg/kg	1,2,4-Trichlorobenzene	6.79 mg/kg
Diethylphthalate	6.74 mg/kg	2,4,5-Trichlorophenol	6.98 mg/kg

Indicative values for Carbazole, 3-Methylphenol (m-Cresol) , 4-Methylphenol (p-Cresol)

RTC-CRM123-100 — Soil (Silty loam) - Organic contaminants — 100 g

BNA contaminated soil from a site in the Western United States. The certified values were determined by USEPA SW846 (3rd edition) Extraction Method 3540C (soxhlet) and 3550 (sonicaton), and Analysis Method 8270C (semivolatile organics by GC/MS).The sample is suitable for these and other similar methods.

Certified values

Lot CD123

Acenaphthene	7.52 mg/kg	Dimethylphthalate	9.56 mg/kg
Acenaphthylene	7.24 mg/kg	2,4-Dinitrotoluene	17.5 mg/kg
Anthracene	6.94 mg/kg	Di-n-oxtylphthalate	11.4 mg/kg
Benzo(a)anthracene	8.38 mg/kg	Fluoranthene	9.31 mg/kg
Benzo(a)pyrene	7.77 mg/kg	Fluorene	6.88 mg/kg
Bis(2-ethylhexyl)phthalate	8.90 mg/kg	Hexachlorobenzene	6.81 mg/kg
4-Bromophenyl-phenylether	13.0 mg/kg	Hexachlorobutadiene	5.46 mg/kg
4-Chloro-3-methylphenol	7.60 mg/kg	Hexachloroethane	10.6 mg/kg
2-Chloronaphthalene	7.42 mg/kg	Isophorone	8.07 mg/kg
2-Chlorophenol	8.45 mg/kg	2-Methylphenol (o-Cresol)	7.70 mg/kg
4-Chlorophenyl-phenylether	9.39 mg/kg	3-Methylphenol (m-Cresol)	9.80 mg/kg
Chrysene	11.3 mg/kg	4-Methylphenol (p-Cresol)	7.04 mg/kg
Dibenzofuran	8.19 mg/kg	Naphthalene	9.73 mg/kg
Di-n-butylphthalate	16.8 mg/kg	Nitrobenzene	10.6 mg/kg
1,2-Dichlorobenzene	5.15 mg/kg	2-Nitrophenol	6.30 mg/kg
1,3-Dichlorobenzene	4.25 mg/kg	Phenanthrene	7.94 mg/kg
1,4-Dichlorobenzene	3.98 mg/kg	Pyrene	6.75 mg/kg
2,4-Dichlorophenol	10.6 mg/kg	2,4,5-Trichlorophenol	5.29 mg/kg
2,4-Dimethylphenol	9.25 mg/kg		

Code	Product	Unit

New RTC-CRM125-100 — Soil - Organic contaminants — 100 g

The values were determined by USEPA SW846 (3rd edition) Extraction Method 3540C (soxhlet) and 3550 (sonicaton), and Analysis Method 8270C (semivolatile organics by GC/MS). The sample is suitable for these and other similar methods.

Certified values (on a dry basis)

Lot 012218

1,2-Dichlorobenzene	1082.52 µg/kg	2,4-Dichlorophenol	4700.09 µg/kg
1,3-Dichlorobenzene	495.07 µg/kg	Diethylphthalate	8064.98 µg/kg
Hexachlorobutadiene	1168.02 µg/kg	2,4-Dinitrophenol	1969.88 µg/kg
Hexachloroethane	201.29 µg/kg	2,4-Dinitrotoluene(2,4-DNT)	7840.28 µg/kg
Nitrobenzene	5588.60 µg/kg	bis(2-Ethylhexyl)phthalate	3096.73 µg/kg
1,2,4-Trichlorobenzene	2380.01 µg/kg	Fluoranthene	5098.72 µg/kg
Acenaphthene	2116.63 µg/kg	Hexachlorocyclopentadiene	429.03 µg/kg
Anthracene	1194.84 µg/kg	Indeno(1,2,3-cd)pyrene	1309.09 µg/kg
Benzo(a)pyrene	1563.19 µg/kg	Isophorone	3311.47 µg/kg
Benzo(b)fluoranthene	3925.10 µg/kg	2-Methyl-4,6-dinitrophenol	5064.86 µg/kg
Benzo(g,h,i)perylene	2831.44 µg/kg	2-Methylphenol(o-Cresol)	1900.24 µg/kg
Benzo(k)fluoranthene	1782.84 µg/kg	3-Methylphenol(m-Cresol)	233.21 µg/kg
Benzylalcohol	3325.86 µg/kg	4-Methylphenol(p-Cresol)	2507.76 µg/kg
4-Bromophenylphenylether	8043.07 µg/kg	3+4-Methylphenol(m+p-Cresol)	2296.70 µg/kg
Butylbenzylphthalate	7286.12 µg/kg	4-Nitroaniline	1841.66 µg/kg
4-Chloro-3-methylphenol	3359.15 µg/kg	2-Nitrophenol	4882.89 µg/kg
bis(2-Chloroethoxy)methane	5348.24 µg/kg	n-Nitrosodimethylamine	777.05 µg/kg
bis(2-Chloroethyl)ether	966.61 µg/kg	n-Nitrosodiphenylamine	348.50 µg/kg
4-Chlorophenylphenylether	6402.37 µg/kg	n-Nitrosodi-n-propylamine	6481.25 µg/kg
Chrysene	1213.74 µg/kg	Phenanthrene	57.99 µg/kg
Dibenz(a,h)anthracene	1231.21 µg/kg	Phenol	5906.13 µg/kg
Dibenzofuran	1745.31 µg/kg	2,4,5-Trichlorophenol	5305.96 µg/kg
Di-n-butylphthalate	7326.39 µg/kg	2,4,6-Trichlorophenol	3165.24 µg/kg

New RTC-CRM126-100 — Soil (Clay loam) - Organic contaminants — 100 g

Certified values

Lot 010572

1,2-Dichlorobenzene	2.86 mg/kg	4-Chlorophenyl phenylether	8.33 mg/kg
1,3-Dichlorobenzene	2.57 mg/kg	Chrysene	2.37 mg/kg
Hexachlorobutadiene	1.66 mg/kg	Dibenzofuran	1.91 mg/kg
Hexachloroethane	0.450 mg/kg	Di-n-butyl phthalate	1.34 mg/kg
Naphthalene	0.610 mg/kg	2,4-Dichlorophenol	0.500 mg/kg
Nitrobenzene	6.03 mg/kg	Dimethyl phthalate	4.08 mg/kg
1,2,4-Trichlorobenzene	1.57 mg/kg	2,4-Dinitrotoluene (2,4-DNT)	0.880 mg/kg
Acenaphthene	4.25 mg/kg	Di-n-octyl phthalate	1.34 mg/kg
Anthracene	0.280 mg/kg	bis(2-Ethylhexyl) phthalate (DEHP)	4.88 mg/kg
Benzo(a)pyrene	0.630 mg/kg	Fluoranthene	0.120 mg/kg
Benzo(b)fluoranthene	0.610 mg/kg	Fluorene	1.45 mg/kg
Benzo(g,h,i)perylene	0.570 mg/kg	Hexachlorobenzene	0.620 mg/kg
Benzo(k)fluoranthene	0.720 mg/kg	Isophorone	6.12 mg/kg
Benzo(b+k)fluoranthene	1.29 mg/kg	2-Methyl-4,6-dinitrophenol	3.93 mg/kg
Benzyl alcohol	7.10 mg/kg	2-Methylphenol (o-Cresol)	2.57 mg/kg
4-Bromophenyl phenyl ether	10.6 mg/kg	3+4-Methylphenol (m+p-Cresol)	3.58 mg/kg
4-Chloro-3-methylphenol	0.650 mg/kg	4-Nitrophenol	5.83 mg/kg
4-Chloroaniline	0.580 mg/kg	Pentachlorophenol	0.380 mg/kg
2-Chloronaphthalene	3.89 mg/kg	Phenol	0.740 mg/kg
2-Chlorophenol	1.99 mg/kg	2,4,5-Trichlorophenol	2.26 mg/kg

RTC-CRM135-100 — Soil (Silty clay) - Semi-volatile organic analytes — 100 g

Certified values

Lot 010382

1,2-Dichlorobenzene	673 µg/kg	2-Chlorophenol	1670 µg/kg
1,3-Dichlorobenzene	329 µg/kg	4-Chlorophenyl phenylether	7620 µg/kg
1,4-Dichlorobenzene	163 µg/kg	Dibenzofuran	5100 µg/kg
Hexachlorobutadiene	155 µg/kg	Di-n-butyl phthalate	4600 µg/kg
Hexachloroethane	156 µg/kg	2,4-Dichlorophenol	1550 µg/kg
Naphthalene	640 µg/kg	2,4-Dimethylphenol	3270 µg/kg
Nitrobenzene	4370 µg/kg	Dimethyl phthalate	3780 µg/kg
1,2,4-Trichlorobenzene	1710 µg/kg	2,4-Dinitrophenol	2220 µg/kg
Acenaphthene	1390 µg/kg	Di-n-octyl phthalate	5140 µg/kg
Acenaphthylene	1210 µg/kg	Fluoranthene	328 µg/kg
Aniline	2310 µg/kg	Fluorene	3410 µg/kg
Anthracene	848 µg/kg	Isophorone	742 µg/kg
Benzo(a)anthracene	3520 µg/kg	2-Methyl-4,6-dinitrophenol	4280 µg/kg
Benzo(a)pyrene	347 µg/kg	2-Methylphenol (o-Cresol)	3500 µg/kg
Benzoic acid	1900 µg/kg	4-Methylpheno (p-Cresol)	5900 µg/kg
Benzyl alcohol	1560 µg/kg	3+4-Methylphenol (m+p-Cresol)	6830 µg/kg
4-Bromophenyl phenyl ether	5260 µg/kg	2-Nitroaniline	5090 µg/kg
Butyl benzyl phthalate	3130 µg/kg	3-Nitroaniline	4930 µg/kg
Carbazole	5400 µg/kg	4-Nitroaniline	1730 µg/kg
4-Chloro-3-methylphenol	602 µg/kg	2-Nitrophenol	3820 µg/kg
4-Chloroaniline	749 µg/kg	4-Nitrophenol	3680 µg/kg
bis(2-Chloroethyl) ether	694 µg/kg	Pentachlorophenol	3420 µg/kg
2-Chloronaphthalene	2030 µg/kg	Phenanthrene	2010 µg/kg

Code	Product	Unit

RTC-CRM136-100 Soil (Clay) - Organic contaminants — 100 g

Certified values

Lot 010772

1,4-Dichlorobenzene	350 µg/kg	Dimethyl phthalate	3130 µg/kg
Hexachlorobutadiene	2010 µg/kg	2,4-Dinitrophenol	1600 µg/kg
Nitrobenzene	4670 µg/kg	2,6-Dinitrotoluene (2,6-DNT)	2510 µg/kg
1,2,4-Trichlorobenzene	698 µg/kg	Di-n-octyl phthalate	5250 µg/kg
Acenaphthene	173 µg/kg	bis(2-Ethylhexyl) phthalate (DEHP)	891 µg/kg
Anthracene	431 µg/kg	Fluoranthene	5350 µg/kg
Benzo(a)anthracene	838 µg/kg	Hexachlorobenzene	551 µg/kg
Benzo(b)fluoranthene	442 µg/kg	Hexachlorocyclopentadiene	3930 µg/kg
Benzo(k)fluoranthene	661 µg/kg	Indeno(1,2,3-cd) pyrene	425 µg/kg
Benzo(b+k)fluoranthene	1100 µg/kg	Isophorone	6070 µg/kg
4-Bromophenyl phenyl ether	6460 µg/kg	2-Methylnaphthalene	6190 µg/kg
Butyl benzyl phthalate	7470 µg/kg	4-Methylphenol (p-Cresol)	2940 µg/kg
Carbazole	1370 µg/kg	3+4-Methylphenol (m+p-Cresol)	3270 µg/kg
bis(2-Chloroethoxy)methane	6970 µg/kg	2-Nitrophenol	668 µg/kg
2-Chloronaphthalene	2640 µg/kg	4-Nitrophenol	2630 µg/kg
2-Chlorophenol	1200 µg/kg	n-Nitrosodi-n-propylamine	2630 µg/kg
Chrysene	927 µg/kg	Pentachlorophenol	2560 µg/kg
Dibenz(a,h) anthracene	458 µg/kg	Phenanthrene	973 µg/kg
Dibenzofuran	5160 µg/kg	Phenol	1200 µg/kg
Di-n-butyl phthalate	720 µg/kg	Pyrene	6620 µg/kg
2,4-Dichlorophenol	605 µg/kg	2,4,6-Trichlorophenol	3480 µg/kg
Diethyl phthalate	1470 µg/kg		

New RTC-CRM142-100 Soil (Silty loam) - PAHs — 100 g

The organic sample is a soil containing extractable PAHs for analysis by 8100, 8270, 8310 or equivalent methods.

Certified values

Lot 014105

Acenaphthene	118 ± 19.0 µg/kg	Chrysene	295 ± 33.1 µg/kg
Acenaphthylene	53.4 ± 19.3 µg/kg	Dibenz(a,h) anthracene	320 ± 27.6 µg/kg
Anthracene	109 ± 27.6 µg/kg	Fluoranthene	507 ± 63.7 µg/kg
Benzo(a)anthracene	356 ± 39.4 µg/kg	Fluorene	126 ± 21.2 µg/kg
Benzo(a)pyrene	126 ± 20.9 µg/kg	Indeno(1,2,3-cd) pyrene	316 ± 38.0 µg/kg
Benzo(b)fluoranthene	257 ± 27.1 µg/kg	Phenanthrene	532 ± 79.0 µg/kg
Benzo(g,h,i)perylene	569 ± 58.2 µg/kg	Pyrene	272 ± 36.2 µg/kg
Benzo(k)fluoranthene	327 ± 40.0 µg/kg		

RTC-CRM112-100 Soil (Sandy loam) - Phenols — 100 g

Soil contaminated with phenols from a wood treatment site in the Rocky Mountain Region of the United States.The phenol values in the sample were certified by USEPA SW846,3rd edition Analysis Method 8041 which describes open-tubular, capillary column gas chromatography procedures for the analysis of phenols, using both single-column and dual column/dual-detector approches. The sample is suitable for these and other similar methods.

Certified values

Lot LH112

2-Chlorophenol	2.38 mg/kg	m & p Cresol	4.00 mg/kg
4-Chloro-3-methylphenol	4.94 mg/kg	2-Methyl-4,6-dinitrophenol	4.75 mg/kg
2,4-Dichlorophenol	2.53 mg/kg	Pentachlorophenol	5.05 mg/kg
2-Nitrophenol	4.33 mg/kg	Phenol	2.45 mg/kg
4-Nitrophenol	5.66 mg/kg		

Indicative value for 2,4-Dinitrophenol

RTC-CRM107-100 Soil (Sandy loam) - PAH/Pesticides — 100 g

PAH contaminated soil from a superfund site in the Western United States. The BNA values in the sample were certified by USEPA SW846, 3rd edition Extraction Methods 3540A/3541 (Soxhlet), 3550 (sonication), and analysis method 8270A (Semivolatile organics by GC/MS). The Organochlorine Pesticides and PCB values were certified using the same extraction methods and analysis method 8081 (pesticides by GC). The sample is suitable for these and other similar methods.

Certified values

Lot KG107

Acenaphthene	61.9 mg/kg	2,4-Dinitrotoluene	43.1 mg/kg
Bis(2-ethylhexyl)phthalate	38.5 mg/kg	Fluoranthene	19.2 mg/kg
2-Chlorophenol	37.5 mg/kg	Fluorene	30.8 mg/kg
2,4-D Acid	22.9 mg/kg	Hexachlorobenzene	42.9 mg/kg
4,4-DDD	11.1 mg/kg	Hexachloroethane	2.31 mg/kg
4,4-DDT	38.5 mg/kg	Lindane	34.3 mg/kg
2,4-DP	15.4 mg/kg	Naphthalene	36.8 mg/kg
Dalapon	8.09 mg/kg	2-Nitroaniline	15.1 mg/kg
Dibenzofuran	40.1 mg/kg	3-Nitroaniline	4,27 mg/kg
Dicamba	28.4 mg/kg	Nitrobenzene	35,0 mg/kg
2,4-Dichlorophenol	0.23 mg/kg	4-Nitrophenol	70.8 mg/kg
Dieldrin	10.8 mg/kg	2,4,5-T-Acid	15.0 mg/kg
2,4-Dinitrophenol	9.03 mg/kg	Pentachlorophenol	25.0 mg/kg

Indicative value for Aroclor 1248

Code	Product	Unit
RTC-CRM803-050	Soil (Sandy loam) - Herbicides	50 g

Soil contaminated with herbicide compounds from an agricultural region in the Western region of the United States. The sample was certified by USEPA SW846, 3rd edition Methods 8151 (herbicides by GC). The sample is suitable for these and other similar methods.

Certified values

Lot GF803

2,4-D ..... 44600 µg/kg	2,4,5-T .....25746 µg/kg	2,4,5-TP ..... 41334 µg/kg

RTC-CRM804-050 Soil (Sandy loam) - Pesticides 50 g

Soil contaminated with pesticide compounds from an agricultural region in the Western region of the United States. The sample was certified by USEPA SW846, 3rd edition Methods 3540A/3541 (Soxhlet extraction), 3550 (Sonication), and 8081 (Pesticides by GC). The sample is suitable for these and other similar methods.

Certified values

Lot DG804

Aldrin..... 18 µg/kg	4,4'-DDT .....1060 µg/kg	EndosulfanII ..... 1128 µg/kg
4,4'-DDD ..... 1531 µg/kg	Dieldrin .....1863 µg/kg	Endrin ..... 62.2 µg/kg
4,4'-DDE ..... 1520 µg/kg	Endosulfan I .....1464 µg/kg	Lindane ..... 491 µg/kg

RTC-CRM805-050 Soil (Sandy loam) - Pesticides 50 g

Soil contaminated with pesticide compounds from an agricultural region in the Western region of the United States. The sample was certified by USEPA SW846, 3rd edition Methods 3540A/3541 (Soxhlet extraction), 3550 (Sonication), and 8081 (Pesticides by GC). The sample is suitable for use by these and other similar methods.

Certified values

Lot FH805

DDD ..... 19500 µg/kg	Endosulfan I .....6900 µg/kg	Endrine aldehyde ..... 95.5 µg/kg
DDE ..... 18613 µg/kg	Endosulfan II .....5940 µg/kg	Lindane ..... 10618 µg/kg
DDT ..... 786 µg/kg	Endrin .....12967 µg/kg	Methoxychlor..... 15800 µg/kg

RTC-CRM808-050 Soil (Loam) - Herbicides 50 g

Soil fortified with herbicides to meet the requirements of NELAC Fields of Testing. The sample was certified by USEPA SW846 (3rd edition) method 8151 (herbicides by GC). The sample is suitable for these and other similar methods.

Certified values

Lot AC808

2,4-D ..... 314 µg/kg	Dicamba .....307 µg/kg	2,4,5-TP ..... 302 µg/kg
2,4-DB..... 252 µg/kg	2,4,5-T acid .....222 µg/kg	

Indicative value for Pentachlorophenol

RTC-CRM810-050 Soil (Loamy sand) - Herbicides 50 g

Soil fortified with herbicides to meet the requirements of NELAC Fields of Testing. The sample was certified by USEPA SW846 (3rd edition) method 8151A (herbicides by GC). The sample is suitable for these and other similar methods.

Certified values

Lot BC810

2,4,5-T ..... 171 µg/kg	2,4-D.....311 µg/kg	Dicamba..... 369 µg/kg
2,4,5-TP (Silvex)..... 249 µg/kg	Dalapon .....156 µg/kg	

RTC-CRM817-050 Soil (Loam) - Herbicides 50 g

Soil fortified with herbicides to meet the requirements of NELAC Fields of Testing. The sample was certified by USEPA SW846 (3rd edition) method 8151A (herbicides by GC). The sample is suitable for these and other similar methods.

Certified values
Lot BE817

Dalapon ..... 112 µg/kg	Dicamba .....247 µg/kg	2,4,5-T acid ..... 84.5 µg/kg
2,4-D acid ..... 250 µg/kg	MCPP .....4800 µg/kg	2,4,5-TP ..... 188 µg/kg
2,4-DB..... 188 µg/kg	Pentachlorophenol .....267 µg/kg	

RTC-CRM831-050 Soil (Loam) - Herbicides 50 g

Fortified to meet the requirements of NELAC Fields of Testing, RCRA Solid. The Reference Values were determined by USEPA SW846 (3rd edition) Analysis Method 8151 (herbicides by GC).

Certified values

Lot 001679

Pentachlorophenol..... 161 µg/kg	2,4-DB .....361 µg/kg	2,4,5-T ..... 172 µg/kg
2,4-D ..... 415 µg/kg	Dicamba .....374 µg/kg	
Dalapon ..... 158 µg/kg	Silvex (2,4,5-TP).....297 µg/kg	

	Code	Product	Unit

New RTC-CRM814-050 — Soil (Sandy loam) - Pesticides — 50 g

The sample was certified by USEPA SW846 (3rd edition) method 8081A (Pesticides by GC). The sample is suitable for these and other similar methods.

Certified values

Lot 014692

Aldrin	80.1 µg/kg	Endrin ketone	125 µg/kg
4,4'-DDD	189 µg/kg	Heptachlor	99.4 µg/kg
4,4'-DDE	410 µg/kg	Hexachlorobenzene	255 µg/kg
4,4'-DDT	322 µg/kg	alpha-HCH	258 µg/kg
Dieldrin	182 µg/kg	beta-HCH	140 µg/kg
Endosulfan I	425 µg/kg	gamma-HCH (Lindane)	276 µg/kg
Endosulfan II	58.3 µg/kg	alpha- Chlordane	92.5 µg/kg
Endosulfan sulfate	62.0 µg/kg	gamma – Chlordane	63.9 µg/kg
Endrin	393 µg/kg	Methoxychlor	327 µg/kg
Endrin aldehyde	149 µg/kg	Propachlor	98.0 µg/kg

RTC-CRM824-050 — Soil (Sandy loam) - Pesticides — 50 g

Soil fortified with pesticide compounds to meet the requirements of NELAC Fields of Testing. The sample was certified by USEPA SW846 (3rd edition) method 8081A (Pesticides by GC). The sample is suitable for these and other similar methods.

Certified values

Lot BL824

4,4'-DDD	367 µg/kg	Endrin aldehyde	398 µg/kg
4,4'-DDE	396 µg/kg	Heptachlor	338 µg/kg
4,4'-DDT	363 µg/kg	Heptachlor epoxide (beta)	317 µg/kg
Endosulfan I	361 µg/kg	alpha-HCH	361 µg/kg
Endosulfan II	340 µg/kg	beta-HCH	382 µg/kg
Endosulfan sulfate	327 µg/kg	gamma-HCH (Lindane)	371 µg/kg
Endrin	358 µg/kg	Methoxychlor	365 µg/kg

Indicative value for Endrin ketone

New RTC-CRM821-050 — Soil (Sandy loam) - Organophoshorus pesticides — 50 g

Certified values

Lot 014702

Azinphos-methyl (Guthion)	0.792 mg/kg	Malathion	0.277 mg/kg
Chlorfenvinphos	0.186 mg/kg	Parathion, methyl	0.629 mg/kg
Chlorpyrifos	0.150 mg/kg	Parathion, ethyl	0.432 mg/kg
Diazinon	0.509 mg/kg	Phorate	0.0903 mg/kg
EPN	0.508 mg/kg	Ronnel	0.250 mg/kg
Ethoprop	0.328 mg/kg	Sulfotepp	0.026 mg/kg
Famphur	0.526 mg/kg	Tetrachlorvinphos	0.642 mg/kg
Fenthion	0.311 mg/kg	Disulfoton	0.117 mg/kg

RTC-CRM827-050 — Soil (Sandy loam) - Organophosphorus pesticides — 50 g

Soil fortified with pesticide compounds to meet the requirements of NELAC Fields of Testing. The sample was certified by USEPA SW846 (3rd edition) method 8141A. The sample is suitable for these and other similar methods.

Certified values

Lot BL827

Azinophos methyl (guthion)	1.52 mg/kg	Demeton-O	0.710 mg/kg
Dichlorvos (DDVP)	0.887 mg/kg	Diazinon	3.76 mg/kg
Demeton-S	0.525 mg/kg	Malathion	8.02 mg/kg
Ronnel	0.830 mg/kg	Parathion, ethyl	4.88 mg/kg
Phorate	0.48 mg/kg	Stirophos (tetrachlorovinphos)	4.24 mg/kg

RTC-CRM837-050 — Soil (Silty loam) - Organophosphorous pesticides — 50 g

The reference values were determined by USEPA SW846 (3rd edition) Analysis Method 8141A.

Certified values

Lot 015621

Azinphos-methyl (Guthion)	299 µg/kg	Malathion	706 µg/kg
Chlorpyrifos	292 µg/kg	Methyl parathion (Parathion, methyl)	227 µg/kg
Diazinon	624 µg/kg	Parathion, ethyl	782 µg/kg
EPN	553 µg/kg	Ronnel	180 µg/kg
Ethoprop	300 µg/kg	Tetrachlorvinphos	254 µg/kg

New RTC-CRM851-050 — Soil (Silty loam) - Organophosphorous pesticides — 50 g

Certified values

Lot 002536

Azinphos-methyl (Guthion)	1.76 mg/kg	Parathion, ethyl	3.23 mg/kg
Chlorfenvinphos	1.76 mg/kg	Ronnel	2.14 mg/kg
Diazinon	0.217 mg/kg	Tetrachlorvinphos	0.673 mg/kg
Malathion	4.14 mg/kg	Disulfoton	5.18 mg/kg
Parathion, methyl	5.80 mg/kg		

	Code	Product	Unit
New	RTC-CRM806-100	Soil (Loamy sand) - Chlordane The certified value was determined by USEPA SW846 (3rd edition) Extraction Methods 3540B/3541 (soxhlet), 3550A (sonication) and Analysis Method 8081 (pesticides by GC). The sample is suitable for these and other similar methods. Certified value Lot FH806 Chlordane ..... 7.19 mg/kg	100 g
	RTC-CRM812-050	Soil (Sandy loam) - Chlordane The certified value was determined by USEPA SW846 (3rd edition) Extraction Methods 3540B/3541 (soxhlet), 3550A (sonication) and Analysis Method 8081 (pesticides by GC). The sample is suitable for these and other similar methods. Certified value Lot AL812 Chlordane ..... 205 µg/kg	50 g
	RTC-CRM825-050	Soil (Sandy loam) - Chlordane The certified value was determined by USEPA SW846 (3rd edition) Extraction Methods 3540B/3541 (soxhlet), 3550A (sonication) and Analysis Method 8081 (pesticides by GC). The sample is suitable for these and other similar methods. Certified value Lot BL825 Chlordane ..... 392 µg/kg	50 g
New	RTC-CRM852-050	Sediment - Chlordane Certified value Lot 002531 Chlordane (total) ..... 235 µg/kg	50 g
	RTC-CRM828-050	Soil (Silty loam) - Pesticides Fortified to meet the requirements of NELAC Fields of Testing, RCRA Solid. The Reference Values were determined by USEPA SW846 (3rd edition) method 8081A. Certified values Lot 001682 Aldrin ..... 126 µg/Kg 4,4'-DDD ..... 397 µg/Kg 4,4'-DDE ..... 293 µg/Kg 4,4'-DDT ..... 302 µg/Kg Dieldrin ..... 225 µg/Kg Endosulfan I ..... 170 µg/Kg Endosulfan II ..... 223 µg/Kg Endosulfan sulfate ..... 319 µg/Kg Endrin ..... 336 µg/Kg alpha-HCH ..... 338 µg/Kg beta-HCH ..... 272 µg/Kg gamma-HCH (Lindane) ..... 384 µg/Kg Heptachlor ..... 136 µg/Kg Methoxychlor ..... 279 µg/Kg	50 g
	RTC-CRM846-050	Soil (Loamy sand) - Pesticides The reference values were determined by USEPA SW846 (3rd edition) method 8081A. The sample is suitable for this and other similar methods. Certified values Lot 015141 Aldrin ..... 63.8 µg/kg alpha-Chlordane ..... 98.3 µg/kg gamma-Chlordane ..... 376 µg/kg 4,4'-DDD ..... 259 µg/kg 4,4'-DDE ..... 243 µg/kg 4,4'-DDT ..... 190 µg/kg Dieldrin ..... 290 µg/kg Endosulfan I ..... 187 µg/kg Endosulfan II ..... 119 µg/kg Endosulfan sulfate ..... 160 µg/kg Endrin aldehyde ..... 116 µg/kg Endrin ketone ..... 82.7 µg/kg Endrin ..... 222 µg/kg delta-HCH ..... 100 µg/kg alpha-HCH ..... 256 µg/kg beta-HCH ..... 327 µg/kg gamma-HCH (Lindane) ..... 147 µg/kg Heptachlor ..... 70.8 µg/kg Heptachlor epoxide ..... 238 µg/kg Methoxychlor ..... 238 µg/kg Propachlor ..... 287 µg/kg Trifluralin ..... 282 µg/kg	50 g
	RTC-CRM829-050	Soil (Silty loam) - Toxaphenes Certified value Lot 01678 Toxaphene ..... 221 µg/kg	50 g
	RTC-CRM826-050	Soil (Sandy loam) - Toxaphene The Certified value was determined by USEPA SW846 (3rd edition) Extraction Methods 3540B/3541 (soxhlet), 3550A (sonication) and Analysis Method 8081 (pesticides by GC). The sample is suitable for these and other similar methods. Certified value Lot BL826 Toxaphene ..... 257 µg/kg	50 g

Code	Product	Unit

RTC-CRM813-050 — Soil (Sandy loam) - Toxaphene — 50 g

The certified value was determined by USEPA SW846 (3rd edition) Extraction Methods 3540B/3541 (soxhlet), 3550A (sonication) and Analysis Method 8081 (pesticides by GC). The sample is suitable for these and other similar methods.

Certified value

Lot BC813

Toxaphene ..... 254 µg/kg

New **RTC-CRM853-050** — Soil (Clay) - Toxaphenes — 50 g

Certified value

Lot 010770

Toxaphene ..... 306 µg/kg

RTC-CRM847-050 — Soil (Clay Loam) - Pesticides — 50 g

The certified values were determined by USEPA SW846 (3rd edition) method 8081A. The sample is suitable for this and other similar methods.

Certified values

Lot 002405

4,4'-DDD .....228 µg/kg
4,4'-DDE .....218 µg/kg
4,4'-DDT .....172 µg/kg
Aldrin.....115 µg/kg
Dieldrin.....125 µg/kg
Endosulfan I.....160 µg/kg
Endosulfan II.....233 µg/kg
Endosulfan sulfate .....270 µg/kg
Endrin .....377 µg/kg
Endrin aldehyde ..... 49.3 µg/kg
alpha-HCH ..... 225 µg/kg
beta-HCH ..... 92.4 µg/kg
delta-HCH ..... 67.6 µg/kg
gamma-HCH (Lindane)..... 340 µg/kg
Heptachlor..... 109 µg/kg
Heptachlor epoxide (beta)..... 98.7 µg/kg
Methoxychlor..... 172 µg/kg

New **RTC-CRM981-010** — Clay loam - Dioxins/Furans — 10 g

Certified values

Lot 013623

1,2,3,4,6,7,8-HpCDF.....789 ± 50.7 pg/g
1,2,3,4,6,7,8-HpCDD .....196 ± 12.4 pg/g
HpCDD (total) .....196 ± 11.0 pg/g
HpCDF (total).....796 ± 54.3 pg/g
1,2,3,4,7,8-HxCDD .....479 ± 40.5 pg/g
1,2,3,6,7,8-HxCDD .....87.0 ± 11.0 pg/g
1,2,3,7,8,9-HxCDD .....908 ± 55.5 pg/g
HxCDD (total) .....1430 ± 137 pg/g
1,2,3,4,7,8-HxCDF.....228 ± 13.0 pg/g
HxCDF (total).....235 ± 10.2 pg/g
1,2,3,4,6,7,8,9-OCDF .....700 ± 64.3 pg/g
1,2,3,4,6,7,8,9-OCDD ..... 305 ± 36.9 pg/g
1,2,3,7,8-PeCDD..... 83.9 ± 8.43 pg/g
PeCDD (total)..... 95.4 ± 2.34 pg/g
2,3,7,8-TCDD..... 804 ± 57.6 pg/g
2,3,7,8-TCDF ..... 306 ± 28.9 pg/g
TCDF (total) ..... 323 ± 30.0 pg/g
TCDD (total)..... 804 ± 56.9 pg/g
PCDD (total)..... 2750 ± 136 pg/g
PCDD + PCDF (total)..... 4690 ± 275 pg/g
PCDF (total) ..... 1950 ± 183 pg/g

RTC-CRM141-050 — Soil (Loamy clay) - PAHs — 50 g

The organic sample is a soil containing extractable PAHs for analysis by 8100, 8270, 8310 or equivalent methods.

Certified values

Lot: 015161

Naphthalene .....188 ± 40.3 µg/kg
Acenaphthene.....693 ± 174 µg/kg
Acenaphthylene .....176 ± 45.5 µg/kg
Anthracene .....393 ± 130 µg/kg
Benzo(a)anthracene .....409 ± 83.0 µg/kg
Benzo(a)pyrene .....198 ± 25.8 µg/kg
Benzo(b)fluoranthene .....364 ± 48.6 µg/kg
Benzo(g,h,i)perylene.....618 ± 109 µg/kg
Benzo(k)fluoranthene..... 253 ± 43.9 µg/kg
Chrysene..... 316 ± 52.0 µg/kg
Dibenzo(a,h)anthracene ..... 451 ± 70.4 µg/kg
Fluoranthene..... 176 ± 40.3 µg/kg
Fluorene..... 338 ± 111 µg/kg
Indeno(1,2,3-cd)pyrene..... 394 ± 52.0 µg/kg
Phenanthrene ..... 719 ± 221 µg/kg
Pyrene..... 331 ± 62.0 µg/kg

New **RTC-CRM860-050** — Soil (Clay Loam) - Pesticides — 50 g

Certified values

Lot 010760

Hexachlorobenzene..... 83.3 µg/kg
delta-BHC ..... 65.7 µg/kg
alpha-BHC (alpha-Hexachlorocyclohexane)..... 115 µg/kg
beta-BHC (beta-Hexachlorocyclohexane) ..... 109 µg/kg
alpha-Chlordane ..... 74.0 µg/kg
gamma-Chlordane..... 101 µg/kg
4,4'-DDD ..... 116 µg/kg
4,4'-DDE ..... 70.8 µg/kg
4,4'-DDT ..... 49.4 µg/kg
Dieldrin..... 79.7 µg/kg
Endosulfan I..... 91.5 µg/kg
Endosulfan II..... 111 µg/kg
Endosulfan sulfate ..... 58.6 µg/kg
Endrin aldehyde..... 50.2 µg/kg
Endrin ketone ..... 119 µg/kg
Endrin ..... 75.3 µg/kg
Heptachlor ..... 68.1 µg/kg
Heptachlor epoxide..... 106 µg/kg
Methoxychlor..... 96.6 µg/kg

Code	Product	Unit

RTC-CRM020-050 Dry soil No. 2 (Sandy loam) - Trace elements — 50 g

Soil is from a USEPA Superfund site located in the Western United States. The certified values were determined by USEPA SW846 (3rd edition) Methods 3050 and 6010, except for mercury (Method 7471) and pH (method 9045). The sample is suitable for other 3000 series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Lot D020

pH	2.96	Co	4.51 mg/kg	Ni	16.9 mg/kg
Ag	38.5 mg/kg	Cr	13.6 mg/kg	Pb	5111 mg/kg
Al	1760 mg/kg	Cu	729 mg/kg	Sb	8.38 mg/kg
As	400 mg/kg	Fe	191706 mg/kg	Se	6.57 mg/kg
Ba	24.8 mg/kg	Hg	1.12 mg/kg	Tl	5.91 mg/kg
Ca	25584 mg/kg	Mg	2687 mg/kg	V	6.47 mg/kg
Cd	15.4 mg/kg	Mn	945 mg/kg	Zn	3010 mg/kg

Indicative values for K, Na, Sr

RTC-CRM021-100 Dry soil No. 3 (Sandy loam) - Trace elements — 100 g

Soil is from a waste site in the Midwestern United States. The certified values were determined by USEPA SW846 (3rd edition) Methods 3050 and 6010, except for Mercury (Method 7471). The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Lot E021

Ag	6.5 mg/kg	Cr	10.7 mg/kg	Na	380 mg/kg
Al	2725 mg/kg	Cu	4792 mg/kg	Ni	12.6 mg/kg
As	24.8 mg/kg	Fe	6481 mg/kg	Sb	4950 mg/kg
Ba	586 mg/kg	Hg	4.7 mg/kg	Zn	546 mg/kg
Ca	5426 mg/kg	K	1006 mg/kg		
Cd	1.2 mg/kg	Mn	174 mg/kg		

Indicative values for Co, Mg, Pb, Sn, Tl, V

RTC-CRM022-020 Dry soil No. 5 (Loam) - Trace elements and cyanide — 20 g

This soil is from a waste site in the Western United States. The certified values were determined by USEPA SW846 (3rd edition) Methods 3050 and 6010, except for Arsenic (7060A), Mercury (7471A), Selenium (7740), Thallium (7841) and Cyanide (9010A). The sample is suitable for other 3000-series metals digestion procedures and 7000-series 9000-series spectroscopic methods.

Certified values

Lot D522

Al	10060 mg/kg	Co	5.7 mg/kg	Na	268 mg/kg
As	5.4 mg/kg	Cu	12.4 mg/kg	Ni	16 mg/kg
Ba	109 mg/kg	Fe	13555 mg/kg	Pb	415 mg/kg
Be	0.5 mg/kg	Hg	5 mg/kg	V	23 mg/kg
Ca	27242 mg/kg	K	3170 mg/kg	Zn	46 mg/kg
Cd	3.1 mg/kg	Mg	9524 mg/kg	Cyanide	26.6 mg/kg
Cr	18.8 mg/kg	Mn	318 mg/kg		

Indicative values for B, Ag, Hg, Sb, Se, Si, Sn, Sr, Tl

RTC-CRM008-050 Sediment 1 - Trace elements — 50 g

Sediment/soil from a river bank and bottom near the Chesapeake Bay. The certified values were determined by USEPA SW846 (3rd edition) Methods 3050 and 6010, except for arsenic (7060A), mercury (7471A), selenium (7740), and thallium (7841). The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Lot J408

Al	23906 mg/kg	Co	11 mg/kg	Mn	261 mg/kg
As	14 mg/kg	Cu	36 mg/kg	Na	8706 mg/kg
Ba	54 mg/kg	Fe	33042 mg/kg	Ni	26 mg/kg
Be	1 mg/kg	Hg	0.72 mg/kg	Pb	95.9 mg/kg
Ca	2935 mg/kg	K	3948 mg/kg	V	44.4 mg/kg
Cr	48 mg/kg	Mg	6742 mg/kg	Zn	134 mg/kg

Indicative values for Ag, B, Cd, Mo, Sb, Se, Si, Sn, Sr, Tl

RTC-CRM023-050 Soil (Sandy loam) - Metals — 50 g

Soil is from a contaminated site located in the Western United States. The certified values were determined by USEPA SW846 (3rd edition) Methods 3050 and 6010, except for Mercury (Method 7471). The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Lot DG023

Ag	132 mg/kg	Co	8.9 mg/kg	Ni	11.0 mg/kg
Al	8472 mg/kg	Cu	4.7 mg/kg	Pb	213 mg/kg
As	380 mg/kg	Fe	10678 mg/kg	Se	116 mg/kg
Ba	75.5 mg/kg	Hg	77.8 mg/kg	Sr	32,6 mg/kg
Be	0.4 mg/kg	K	2231 mg/kg	Tl	111.51 mg/kg
Ca	5425 mg/kg	Mg	3064 mg/kg	V	21.7 mg/kg
Cd	0.9 mg/kg	Mn	206 mg/kg	Zn	93.8 mg/kg
Cr	31.1 mg/kg	Na	295 mg/kg		

Indicative values for B, Si

Code	Product	Unit

RTC-CRM024-050 Soil (Sandy loam) - Metals — 50 g

This soil is from a site in the Western United States. The certified values were determined by USEPA SW846 (3rd edition) Methods 3050B and 6010B, except for mercury (Method 7471). The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Lot 11024

Ag ..... 13.3 mg/kg	Cr .....25.4 mg/kg	Na ..... 287 mg/kg
Al..... 8681 mg/kg	Cu.....8.70 mg/kg	Ni ..... 15.0 mg/kg
As..... 3.42 mg/kg	Fe .....10196 mg/kg	Pb ..... 15.7 mg/kg
B ..... 7.22 mg/kg	Hg.....0.71 mg/kg	Sr ..... 35.4 mg/kg
Ba ..... 79.6 mg/kg	K.....2102 mg/kg	V ..... 20.8 mg/kg
Be ..... 0.43 mg/kg	Mg .....2945 mg/kg	Zn..... 37.3 mg/kg
Ca ..... 5534 mg/kg	Mn .....199 mg/kg	
Cd ..... 2.15 mg/kg	Mo .....0.58 mg/kg	

Indicative values for Sb, Se, Si, Tl

RTC-CRM025-050 Soil (Sandy loam) - Metals — 50 g

This soil is from a moderate contaminated site located in the Western United States. The certified values were determined by USEPA SW846 (3rd Edition) Methods 3050 and 6010, except for Arsenic (7060A), Mercury (7471A), Selenium (7740), and Thallium (7841). The sample is suitable for other 3000-series metals digestion procedures and 7000-series 9000-series spectroscopic methods.

Certified values

Lot JG025

Ag ..... 132 mg/kg	Cr .....441 mg/kg	Mn..... 173 mg/kg
Al..... 7637 mg/kg	Co.....4.07 mg/kg	Na ..... 313 mg/kg
As..... 339 mg/kg	Cu.....7.76 mg/kg	Ni ..... 12.2 mg/kg
Ba ..... 1839 mg/kg	Fe .....9439 mg/kg	Pb ..... 1447 mg/kg
Be ..... 0.33 mg/kg	Hg.....99.8 mg/kg	Se ..... 518 mg/kg
Ca ..... 28320 mg/kg	K.....1992 mg/kg	V ..... 19.3 mg/kg
Cd ..... 369 mg/kg	Mg .....4376 mg/kg	Zn..... 51.8 mg/kg

Indicative values for B, Mo, Sb, Si, Sr, Tl

RTC-CRM026-050 Soil (Sandy loam) - Metals — 50 g

This soil is from a slightly contaminated site located in the Rocky Mountain Region of the United States. The following certified values were determined by USEPA SW846 (3rd edition) Methods 3050 and 6010, except for mercury (Method 7471). The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Lot BE026

Al..... 17730 mg/kg	Co.....6.77 mg/kg	Na ..... 119 mg/kg
As..... 5.41 mg/kg	Cu.....18.8 mg/kg	Ni ..... 14.4 mg/kg
Ba ..... 214 mg/kg	Fe .....21906 mg/kg	Pb ..... 25.6 mg/kg
Be ..... 18.0 mg/kg	Hg.....2.42 mg/kg	Sr ..... 38.4 mg/kg
Ca ..... 6221 mg/kg	K.....3600 mg/kg	V ..... 32.0 mg/kg
Cd ..... 11.7 mg/kg	Mg .....2837 mg/kg	Zn..... 140 mg/kg
Cr ..... 27.2 mg/kg	Mn .....633 mg/kg	

Indicative values for Ag, B, Mo, Sb, Se, Si, Tl

The following certified values were determined by using USEPA SW846 Method 7060A for Arsenic, by using USEPA SW846 Method 7471B for Mercury, and by using Aqua Regia DIN 38414-S7 Method for Cadmium, Chromium, Copper, Lead, Nickel, and Zinc.

As..... 5.41 mg/kg	Cu.....22.5 mg/kg	Ni ..... 19.3 mg/kg
Cd ..... 12.9 mg/kg	Pb.....30.7 mg/kg	Zn..... 169 mg/kg
Cr ..... 36.9 mg/kg	Hg.....2.42 mg/kg	

RTC-CRM027-050 Soil (Sandy loam) - Metals — 50 g

This soil is from a moderately contaminated site located in the Western United States.The Reference Values were determined by USEPA SW846 (3rd edition) Methods 3050B and 6010, except for mercury (Method 7471) and pH (method 9045).The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Lot HC027

Ag ..... 5.98 mg/kg	Co.....4.70 mg/kg	Ni ..... 10.5 mg/kg
Al..... 8537 mg/kg	Cu.....9.87 mg/kg	Pb ..... 51.9 mg/kg
As..... 12.4 mg/kg	Fe .....11173 mg/kg	Sb ..... 3.28 mg/kg
Ba ..... 166 mg/kg	Hg.....3.80 mg/kg	Se ..... 14.0 mg/kg
Be ..... 2.73 mg/kg	K.....2115 mg/kg	Sr ..... 43.0 mg/kg
Ca ..... 5970 mg/kg	Mg .....2755 mg/kg	V ..... 21.4 mg/kg
Cd ..... 12.0 mg/kg	Mn .....259 mg/kg	Zn..... 51.3 mg/kg
Cr ..... 26.9 mg/kg	Na.....241 mg/kg	

Indicative values for B, Mo, Si ,Tl

Code	Product	Unit

RTC-CRM028-050 Soil (Sandy loam) - Metals — 50 g

This soil is from a moderately contaminated site location in the Western United States.The Reference Values were determined by USEPA SW846 (3rd edition) Methods 3050 and 6010, except for mercury (Method 7471) and pH (method 9045). The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Lot IH028

Al 7562 mg/kg	Cr 19.0 mg/kg	Mn 209 mg/kg
As 3.83 mg/kg	Co 4.3 mg/kg	Na 231 mg/kg
Ba 73.2 mg/kg	Cu 8.51 mg/kg	Ni 11.0 mg/kg
Be 0.38 mg/kg	Fe 10000 mg/kg	Pb 10.4 mg/kg
Ca 5883 mg/kg	K 2045 mg/kg	V 19.2 mg/kg
Cd 0.50 mg/kg	Mg 2995 mg/kg	Zn 75.0 mg/kg

Indicative values for B, Si, Sr

RTC-CRM030-050 Soil (Sandy loam) - Metals — 50 g

This soil is from a moderately contaminated site location in the Western United States. The Reference Values were determined by USEPA SW846 (3rd edition) Methods 3050B and 6010B, except for mercury, pH, cyanide and fluoride (methods 7471, 9045, 9213, and 9214), respectively. The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

New RTC-CRM033-050 Soil - Metals — 50 g

The values were determined by USEPA SW846 (3rd edition) Methods 3050B/3051, 6010B, and 7000 series. The sample is suitable for these and other similar methods.

Certified values

Lot 013545

Antimony, Sb 60.6 mg/kg	Molybdenum, Mo 67.7 mg/kg
Arsenic, As 132 mg/kg	Nickel, Ni 201 mg/kg
Barium, Ba 487 mg/kg	Potassium, K 18900 mg/kg
Beryllium, Be 218 mg/kg	Selenium, Se 304 mg/kg
Boron, B 139 mg/kg	Silicon, Si 858 mg/kg
Cadmium, Cd 56.6 mg/kg	Silver, Ag 82.1 mg/kg
Calcium, Ca 7830 mg/kg	Sodium, Na 1540 mg/kg
Chromium, Cr (total) 302 mg/kg	Strontium, Sr 125 mg/kg
Cobalt, Co 108 mg/kg	Thallium, Tl 72.7 mg/kg
Copper, Cu 61.1 mg/kg	Titanium, Ti 287 mg/kg
Iron, Fe 11100mg/kg	Tin, Sn 107 mg/kg
Lead, Pb 315 mg/kg	Vanadium, V 314 mg/kg
Lithium, Li 128 mg/kg	Zinc, Zn 251 mg/kg
Magnesium, Mg 9990 mg/kg	Aluminum, Al 11900 mg/kg
Manganese, Mn 680 mg/kg	pH 7.76
Mercury, Hg 25.4 mg/kg	Phosphorus, P 162 mg/kg

New RTC-CRM034-050 Soil (Loamy sand) - Metals — 50 g

The values were determined by USEPASW846 (3rd edition) Methods 3050B/3051, 6010B, and 7000 series. The sample is suitable for these and other similar methods.

Certified values

Lot AL034

Ag 27.0 mg/kg	Co 49.7 mg/kg	Mo 76.4 mg/kg
Al 13500 mg/kg	Cr 207 mg/kg	Na 463 mg/kg
As 148 mg/kg	Cu 76.1 mg/kg	Ni 192 mg/kg
B 136 mg/kg	Fe 11900 mg/kg	Pb 60.6 mg/kg
Ba 227 mg/kg	Hg 13.0 mg/kg	Se 68.0 mg/kg
Be 101 mg/kg	K 3420 mg/kg	Tl 97.6 mg/kg
Ca 11300 mg/kg	Mg 4190 mg/kg	V 47.1 mg/kg
Cd 31.3 mg/kg	Mn 559 mg/kg	Zn 324 mg/kg

Indicative values for pH. Sb, Sn

New RTC-CRM036-050 Soil (Loamy sand) - Metals — 50 g

This fortified soil is from a site located in the Western United States. The certified values were determined by USEPA SW846 (3rd edition) Methods 3050B/3051, 6010B, and 7000 series. The sample is suitable for these and other similar methods.

Certified values

Lot 12014

Aluminum, Al 6770 mg/Kg	Cobalt, Co 163 mg/kg	Potassium, K 14200 mg/kg
Antimony, Sb 56.6 mg/kg	Copper, Cu 266 mg/kg	Selenium, Se 188 mg/kg
Arsenic, As 114 mg/kg	Iron, Fe 8200 mg/kg	Silver, Ag 84.0 mg/kg
Barium, Ba 298 mg/kg	Lead, Pb 188 mg/kg	Sodium, Na 9590 mg/kg
Beryllium, Be 108 mg/kg	Magnesium, Mg 8350 mg/kg	Thallium, Tl 85.4 mg/kg
Boron, B 86.6 mg/kg	Manganese, Mn 951 mg/kg	Tin, Sn 102 mg/kg
Cadmium, Cd 224 mg/kg	Mercury, Hg 1.26 mg/kg	Vanadium, V 97.4 mg/kg
Calcium, Ca 3310 mg/kg	Molybdenum, Mo 235 mg/kg	Zinc, Zn 197 mg/kg
Chromium, Cr (total) 77.6 mg/kg	Nickel, Ni 221 mg/kg	pH 6.91

Code	Product	Unit

New RTC-CRM043-050 — Soil (Sandy loam) - Metals — 50 g

The certified values were determined by USEPA SW846 (3rd edition) Methods 3050B/3051, 6010B, 6020, and 7000 series. The sample is suitable for these and other similar methods.

Certified values

Lot 016111

Al	19100 mg/kg	Fe	22500 mg/kg	Sn	196 mg/kg
Ag	87.7 mg/kg	Hg	27.2 mg/kg	Sr	357 mg/kg
As	190 mg/kg	K	5040 mg/kg	Ti	514 mg/kg
B	128 mg/kg	Mg	6640 mg/kg	Tl	140 mg/kg
Ba	690 mg/kg	Mn	789 mg/kg	V	127 mg/kg
Be	122 mg/kg	Mo	110 mg/kg	Zn	424 mg/kg
Ca	16600 mg/kg	Na	402 mg/kg	pH	5.67
Cd	223 mg/kg	Ni	176 mg/kg	Phosphorus, P	523 mg/kg
Co	146 mg/kg	Pb	143 mg/kg	Silica	1380 mg/kg
Cr	301mg/kg	Sb	40.6 mg/kg		
Cu	131 mg/kg	Se	144 mg/kg		

Indicative values for Si, pH

RTC-CRM048-050 — Soil (Sandy loam) - Metals — 50 g

The values were determined by USEPA SW846 (3rd edition) Methods 3050B/3051, 6010B, 6020, and 7000 series.

Certified values

Lot 017065

Ag	75.5 mg/kg	Cu	277 mg/kg	Sb	139 mg/kg
Al	12900 mg/kg	Fe	12300 mg/kg	Se	177 mg/kg
As	123 mg/kg	Hg	28.0 mg/kg	Sn	93.5 mg/kg
B	135 mg/kg	K	11300 mg/kg	Sr	213 mg/kg
Ba	235 mg/kg	Mg	7050 mg/kg	Ti	178 mg/kg
Be	76.8 mg/kg	Mn	1160 mg/kg	Tl	60.5 mg/kg
Ca	6430 mg/kg	Mo	138 mg/kg	V	101 mg/kg
Cd	140 mg/kg	Na	8270 mg/kg	Zn	724 mg/kg
Co	177 mg/kg	Ni	100 mg/kg	pH	6.82
Cr	239 mg/kg	Pb	86.9 mg/kg	Phosphorus, P	298 mg/kg

RTC-CRM044-050 — Soil (Silty loam) - Metals — 50 g

The values were determined by using USEPA SW846 Method 7060A for arsenic, by using USEPA SW846 Method 7471B for mercury, and by using Aqua Regia Method for cadmium, chromium, copper, lead, nickel, and zinc.

Certified values

Lot CF044

Ag	114 mg/kg	Cu	64.0 mg/kg	Sb	106 mg/kg
Al	3540 mg/kg	Fe	3180 mg/kg	Se	81.1 mg/kg
As	52.3 mg/kg	Hg	9.70 mg/kg	Si	991 mg/kg
B	113 mg/kg	K	1480 mg/kg	Sn	93.5 mg/kg
Ba	145 mg/kg	Mg	8920 mg/kg	Sr	4520 mg/kg
Be	37.3 mg/kg	Mn	204 mg/kg	Ti	138 mg/kg
Ca	206000 mg/kg	Mo	14.5 mg/kg	Tl	65.3 mg/kg
Cd	71.6 mg/kg	Na	651 mg/kg	V	82.1 mg/kg
Co	50.6 mg/kg	Ni	87.1 mg/kg	Zn	136 mg/kg
Cr	88.5 mg/kg	Pb	77.8 mg/kg	pH	6.82

RTC-CRM045-050 — Soil (Silty clay) - Metals — 50 g

The values were determined by using USEPA SW846 Method 7060A for arsenic, by using USEPA SW846 Method 7471B for Mercury, and by using Aqua Regia Method for cadmium, chromium, copper, lead, nickel, and zinc.

Certified values

Lot CF045

As	18.4 mg/kg	Cr	85.3 mg/kg	Pb	42.8 mg/kg
Cd	1.61 mg/kg	Hg	0.795 mg/kg	Zn	330 mg/kg
Co	13.5 mg/kg	Mn	292 mg/kg		
Cu	122 mg/kg	Ni	199 mg/kg		

RTC-CRM046-050 — Soil (Clay) - Metals — 50 g

The values were determined by using USEPA SW846 Method 7060A for arsenic, by using USEPA SW846 Method 7471B for Mercury, and by using Aqua Regia Method for cadmium, chromium, copper, lead, nickel, and zinc.

Certified values

Lot CF046

As	7.47 mg/kg	Cu	62.2 mg/kg	Ni	37.5 mg/kg
Cd	7.01 mg/kg	Pb	45.3 mg/kg	Zn	114 mg/kg
Cr	45,7 mg/kg	Mn	118 mg/kg		
Co	8.22 mg/kg	Hg	0.153 mg/kg		

Code	Product	Unit

RTC-CRM049-050 Soil (Sandy clay) - Metals — 50 g

The values were determined by USEPA SW846 (3rd edition) Methods 3050B/3051, 6010B, 6020, and 7000 series. The sample is suitable for these and other similar methods.

Certified values

Lot 10248

Ag	125 mg/kg	Cu	88.5 mg/kg	Sb	123 mg/kg
Al	560 mg/kg	Fe	9170 mg/kg	Se	72.1 mg/kg
As	65.3 mg/kg	Hg	13.5 mg/kg	Si	168 mg/kg
B	59 mg/kg	K	3020 mg/kg	Sn	236 mg/kg
Ba	12.7 mg/kg	Mg	899 mg/kg	Sr	8.62 mg/kg
Be	60.5 mg/kg	Mn	636 mg/kg	Ti	47.1 mg/kg
Ca	4790 mg/kg	Mo	98.6 mg/kg	Tl	125 mg/kg
Cd	80 mg/kg	Na	665 mg/kg	V	57.8 mg/kg
Co	84 mg/kg	Ni	344 mg/kg	Zn	542 mg/kg
Cr	355 mg/kg	Pb	111 mg/kg	pH	2,23

RTC-CRM051-050 Soil (Clay) - Metals — 50 g

The values were determined by USEPA SW846 (3rd edition) Methods 3050B/3051, 6010B, 6020, and 7000 series. The sample is suitable for these and other similar methods.

Certified values

Lot 16485

Al	12600 mg/kg	Fe	6490 mg/kg	Si	453 mg/kg
Ag	29.1 mg/kg	Hg	4.08 mg/kg	Sn	218 mg/kg
As	79.4 mg/kg	K	7790 mg/kg	Sr	283 mg/kg
B	157 mg/kg	Mg	1440 mg/kg	Ti	177 mg/kg
Ba	391 mg/kg	Mn	408 mg/kg	Tl	192 mg/kg
Be	304 mg/kg	Mo	156 mg/kg	V	213 mg/kg
Ca	8320 mg/kg	Na	857 mg/kg	Zn	256 mg/kg
Cd	48.3 mg/kg	Ni	76 mg/kg	pH	4.34
Co	59.2 mg/kg	Pb	181 mg/kg	Phosphorus, P	414 mg/kg
Cr	171 mg/kg	Sb	105 mg/kg	Sulfur, S	471 mg/kg
Cu	327 mg/kg	Se	76.9 mg/kg		

RTC-CRM052-050 Soil (Loamy clay) - Metals — 50 g

The values were determined by Dutch standard methods (NEN 56..; 57..; 64..; and 66..; series) after total digestion using predominantly nitric/hydrochloric acid mixture (Aqua Regia) in pressurised microwave digester units. The sample is suitable for use by these, or other similar digestion and analytical procedures.

Certified values

Lot 015055

Ag	23.0 mg/kg	Mn	217 mg/kg
Al	9660 mg/kg	Mo	34.3 mg/kg
As	33.4 mg/kg	Ni	50.8 mg/kg
Ba	239 mg/kg	Pb	82.9 mg/kg
Be	46.0 mg/kg	Sb	37.9 mg/kg
B	90.5 mg/kg	Se	25.3 mg/kg
Cd	43.0 mg/kg	Si	667 mg/kg
Ca	2860 mg/kg	Na	319 mg/kg
Co	44.1 mg/kg	Sr	148 mg/kg
Cr	57.8 mg/kg	Sn	77.5 mg/kg
Cu	56.5 mg/kg	Tl	113 mg/kg
Fe	14700 mg/kg	Ti	43.2 mg/kg
Hg	2.40 mg/kg	V	107 mg/kg
K	2390 mg/kg	Zn	94.3 mg/kg
Li	101 mg/kg	pH	7.02
Mg	1690 mg/kg		

New RTC-CRM059-050 Soil (Loamy clay) - Metals — 50 g

Certified values

Lot 010755

Antimony, Sb	86.0 mg/kg	Molybdenum, Mo	9.30 mg/kg
Arsenic, As	153 mg/kg	Nickel, Ni	75.5 mg/kg
Barium, Ba	138 mg/kg	Potassium, K	3720 mg/kg
Beryllium, Be	39.1 mg/kg	Selenium, Se	106 mg/kg
Boron, B	155 mg/kg	Silver, Ag	98.5 mg/kg
Cadmium, Cd	65.0 mg/kg	Sodium, Na	5710 mg/kg
Calcium, Ca	11700 mg/kg	Strontium, Sr	43.8 mg/kg
Chromium, Cr (total)	136 mg/kg	Thallium, Tl	81.1 mg/kg
Cobalt, Co	44.3 mg/kg	Tin, Sn	81.9 mg/kg
Copper, Cu	99.4 mg/kg	Titanium, Ti	14.3 mg/kg
Iron, Fe	21100 mg/kg	Vanadium, V	95.1 mg/kg
Lead, Pb	107 mg/kg	Zinc, Zn	428 mg/kg
Magnesium, Mg	1580 mg/kg	pH	6.83
Manganese, Mn	220 mg/kg	Aluminum, Al	7790 mg/kg
Mercury, Hg	9.72 mg/kg	Silicon, Si	508 mg/kg

	Code	Product	Unit
New	RTC-CRM2003-050	Taiwan clay - Trace metals	50 g

The certified values were determined by using USEPA SW846 Method 7060A for Arsenic, by using USEPA SW846 Method 7471B for Mercury, and by using Aqua Regia Method for Cadmium, Chromium, Copper, Lead, Nickel, and Zinc.

Certified values

Lot A-21

Arsenic, As	20.7 mg/kg	Lead, Pb	44.1 mg/kg
Cadmium, Cd	1.66 mg/kg	Manganese, Mn	292 mg/kg
Chromium, Cr (total)	86.8 mg/kg	Mercury, Hg	0.865 mg/kg
Cobalt, Co	13.5 mg/kg	Nickel, Ni	206 mg/kg
Copper, Cu	126 mg/kg	Zinc, Zn	342 mg/kg

New	RTC-CRM2004-050	Taiwan clay - Trace metals	50 g

The certified values were determined by using USEPA SW846 Method 7060A for Arsenic, by using USEPA SW846 Method 7471B for Mercury, and by using Aqua Regia Method for Cadmium, Chromium, Copper, Lead, Nickel, and Zinc.

Certified values

Lot B-22

Arsenic, As	7.81 mg/kg	Lead, Pb	44.9 mg/kg
Cadmium, Cd	7.89 mg/kg	Manganese, Mn	118 mg/kg
Chromium, Cr (total)	47.1 mg/kg	Mercury, Hg	0.140 mg/kg
Cobalt, Co	8.22 mg/kg	Nickel, Ni	38.5 mg/kg
Copper, Cu	65.1 mg/kg	Zinc, Zn	118 mg/kg

	RTC-CRM202-225	Soil (Sandy loam) - TCLP metals	225 g

Collected from sites located in the Western United States and analysed for eight Toxicity Characteristic Leaching Procedure (TCLP) Metals. The samples were certified using method USEPA SW 846, 3rd edition, 1311, 6011 and 7000 series.

Certified values in the Method 1311 extract

Lot 000109

Ag	4.33 mg/L	Cd	21.4 mg/L	Pb	38.2 mg/L
As	1.70 mg/L	Cr	3.64 mg/L	Se	1.96 mg/L
Ba	4.51 mg/L	Hg	2.13 mg/L	Zn	0.449 mg/L

	RTC-CRM204-225	Soil (Sandy loam) - TCLP Metals	225 g

Collected from sites located in the Western United States and analysed for eight Toxicity Characteristic Leaching Procedure (TCLP) Metals. The samples were certified using method USEPA SW 846, 3rd edition, 1311, 6011 and 7000 series.

Certified values

Lot 000107

As	0.5 mg/L	Cr	3.31 mg/L
Cd	14.8 mg/L	Pb	4.51 mg/L

Indicative values for Ag, Ba, Hg, Se

	RTC-CRM206-225	Soil (Sandy loam) - TCLP Metals	225 g

Collected from sites located in the Western United States and analysed for eight Toxicity Characteristic Leaching Procedure (TCLP) Metals. The samples were certified using method USEPA SW 846, 3rd edition, 1311, 6011 and 7000 series.

Certified values

Lot 000117

Ag	0.605 mg/L	Cd	8.20 mg/L	Pb	1.78 mg/L
As	11.7 mg/L	Cr	0.0747 mg/L	Se	20.3 mg/L
Ba	0.247 mg/L	Hg	1.17 mg/L		

	RTC-CRM207-225	Soil (Loamy sand) - TCLP metals	225 g

Collected from sites located in the Western United States and analysed for eight Toxicity Characteristic Leaching Procedure (TCLP) Metals. The samples were certified using method USEPA SW 846, 3rd edition, 1311, 6011 and 7000 series.

Certified values

Lot 000165

Ag	0.965 mg/L	Cd	7.30 mg/L	Pb	2.54 mg/L
As	8.61 mg/L	Cr	0.762 mg/L	Se	21.1 mg/L
Ba	0.426 mg/L	Hg	0.0304 mg/L		

	RTC-CRM208-225	Soil (Sandy loam) - TCLP metals	225 g

Collected from sites located in the Western United States and analysed for six Toxicity Characteristic Leaching Procedure (TCLP) Metals. The samples were certified using method USEPA SW 846, 3rd edition, 1311, 6011 and 7000 series.

Certified values

Lot 000162

As	5.16 mg/L	Cd	46.0 mg/L	Hg	1.33 mg/L
Ba	34.6 mg/L	Cr	0.727 mg/L	Pb	1.76 mg/L

Code	Product	Unit

RTC-CRM209-225 — Soil (Sandy loam) - TCLP metals — 225 g

Collected from sites located in the Western United States and analysed for six Toxicity Characteristic Leaching Procedure (TCLP) Metals. The samples were certified using method USEPA SW 846, 3rd edition, 1311, 6011 and 7000 series.

Certified values

Lot 000153

As 12.3 mg/L	Cd 4.75 mg/L	Pb 31.3 mg/L
Ba 0.265 mg/L	Cr 0.243 mg/L	

RTC-CRM210-225 — Soil (Sandy loam) - TCLP metals — 225 g

Collected from sites located in the Western United States and analysed for eight Toxicity Characteristic Leaching Procedure (TCLP) Metals. The samples were certified using method USEPA SW 846, 3rd edition, 1311, 6011 and 7000 series.

Certified values

Lot 000442

Ag 0.12 mg/L	Cd 6.50 mg/L	Pb 133 mg/L
As 1.98 mg/L	Cr 0.46 mg/L	Se 1.38 mg/L
Ba 0.50 mg/L	Hg 0.45 mg/L	

RTC-CRM211-225 — Soil (Sandy loam) - TCLP metals — 225 g

Collected from sites located in the Western United States and analysed for eight Toxicity Characteristic Leaching Procedure (TCLP) Metals. The samples were certified using method USEPA SW 846, 3rd edition, 1311, 6011 and 7000 series.

Certified values

Lot 000534

As 4.49 mg/L	Cr 0.533 mg/L	Zn 1.43 mg/L
Ba 0.320 mg/L	Pb 0.867 mg/L	
Cd 3.18 mg/L	Se 1.68 mg/L	

RTC-CRM212-225 — Soil (Loamy sand) - TCLP metals — 225 g

Collected from sites located in the Western United States and analysed for eight Toxicity Characteristic Leaching Procedure (TCLP) Metals. The samples were certified using method USEPA SW 846, 3rd edition, 1311, 6011 and 7000 series.

Certified values

Lot 000609

As 0.295 mg/L	Cd 0.377 mg/L	Se 0.310 mg/L
Ba 0.716 mg/L	Cr 0.0187 mg/L	

Indicative values for Cu, Ag, Hg, Zn

RTC-CRM213-225 — Soil (Loamy sand) - TCLP metals — 225 g

Collected from sites located in the Western United States and analysed for eight Toxicity Characteristic Leaching Procedure (TCLP) Metals. The samples were certified using method USEPA SW 846, 3rd edition, 1311, 6011 and 7000 series.

Certified values

Lot 000718

As 3.12 mg/L	Cd 13.1 mg/L	Hg 1.36 mg/L
Ag 0.0335 mg/L	Cr 0.280 mg/L	Se 7.56 mg/L
Ba 2.12 mg/L	Pb 4.83 mg/L	

RTC-CRM215-225 — Soil (Sandy loam) - TCLP metals — 225 g

Collected from sites located in the Western United States and analysed for eight Toxicity Characteristic Leaching Procedure (TCLP) Metals. The samples were certified using method USEPA SW 846, 3rd edition, 1311, 6011 and 7000 series.

Certified values

Lot 000962

	Extraction fluid 1	Extraction fluid 2
As	3.3 mg/L	5.76 mg/L
Ba	16.5mg/L	17.4 mg/L
Cd	31.4 mg/L	54.1 mg/L
Cr	0.912 mg/L	2.09 mg/L
Pb	0.565 mg/L	1.93 mg/L
Hg	1.48 mg/L	1.78 mg/L
Se	1.31 mg/L	1.87 mg/L
Ag	ND	ND

ND: not detected

RTC-CRM217-225 — Soil (Sandy loam) - TCLP metals — 225 g

Collected from sites located in the Western United States and analysed for eight Toxicity Characteristic Leaching Procedure (TCLP) Metals. The samples were certified using method USEPA SW 846, 3rd edition, 1311, 6011 and 7000 series.

Certified values

Lot BC217

As 1.84 mg/L	Cr 0.467 mg/L	Se 8.63 mg/L
Ba 3.43 mg/L	Pb 1.75 mg/L	Ag 0.037 mg/L
Cd 8.85 mg/L	Hg 0.198 mg/L	

	Code	Product	Unit
New	RTC-CRM218-225	Soil (Loam) - TCLP Metals	225 g

Collected from sites located in the Western United States and analysed for eight Toxicity Characteristic Leaching Procedure (TCLP) Metals. The samples were certified using method USEPA SW 846, 3rd edition, 1311, 6011 and 7000 series. All values are expressed in mg/L in the Method 1311 extract.

Certified values

Lot 017197

As ..... 5.04 mg/L	Cu ..... 0.0572 mg/L	Se ..... 40.6 mg/L
Ag ..... 0.0377 mg/L	Hg ..... 1.03 mg/L	V ..... 0.794 mg/L
Ba ..... 49.4 mg/L	Pb ..... 6.73 mg/L	Zn ..... 41.3 mg/L
Cd ..... 48.6 mg/L	Ni ..... 0.0213 mg/L	
Cr ..... 0.243 mg/L	Sb ..... 0.0154 mg/L	

BCR-143R	Sewage sludge amended soil - Major and trace elements	40 g

Certified values

Cd ..... 71.8 mg/kg	Hg ..... 1.10 mg/kg	Pb ..... 179.7 mg/kg
Co ..... 12.3 mg/kg	Mn ..... 904 mg/kg	Zn ..... 1055 mg/kg
Cu ..... 130.6 mg/kg	Ni ..... 299 mg/kg	

Aqua regia soluble content

Cd ..... 72.0 mg/kg	Mn ..... 858 mg/kg	Pb ..... 174 mg/kg
Cr ..... 426 mg/kg	Ni ..... 296 mg/kg	Zn ..... 1063 mg/kg

BCR-483	Sewage sludge amended soil - Extractable trace elements	70 g

EDTA-extractable

Certified values

Cd ..... 24.3 mg/kg	Cu ..... 215 mg/kg	Pb ..... 229 mg/kg
Cr ..... 28.6 mg/kg	Ni ..... 28.7 mg/kg	Zn ..... 612 mg/kg

Acetic acid-extractable

Certified values

Cd ..... 18.3 mg/kg	Cu ..... 33.5 mg/kg	Pb ..... 2.10 mg/kg
Cr ..... 18.7 mg/kg	Ni ..... 25.8 mg/kg	Zn ..... 620 mg/kg

Indicative values for the calcium chloride extractable content, the sodium nitrate extractable content and the ammonium nitrate extractable content.

BCR-484	Sewage sludge amended (terra rossa) soil - Extractable trace elements	70 g

EDTA-extractable

Certified values

Cd ..... 0.51 mg/kg	Ni ..... 1.39 mg/kg	Zn ..... 383 mg/kg
Cu ..... 88 mg/kg	Pb ..... 59.7 mg/kg	

Acetic acid-extractable

Certified values

Cd ..... 0.48 mg/kg	Ni ..... 1.69 mg/kg	Zn ..... 193 mg/kg
Cu ..... 33.9 mg/kg	Pb ..... 1.17 mg/kg	

Indicative values for the calcium chloride extractable content, the sodium nitrate extractable content and the ammonium nitrate extractable content.

RTC-CRM005-050	Sewage sludge amended (terra rossa) soil - Trace elements	50 g

Soil from a sewage sludge agricultural land farming application located in the Western United States. The certified values were determined by USEPA SW846 (3rd edition) Methods 3050A and 6010A, except for arsenic (7060A), mercury (7471A), selenium (7740), and thallium (7841). The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

pH 7.59

Certified values

Lot J050

Ag ..... 36.3 mg/kg	Cr ..... 41.4 mg/kg	Na ..... 2490 mg/kg
Al ..... 15300 mg/kg	Cu ..... 465 mg/kg	Ni ..... 26 mg/kg
As ..... 6.91 mg/kg	Fe ..... 12700 mg/kg	Pb ..... 89.2 mg/kg
Ba ..... 853 mg/kg	Hg ..... 3.32 mg/kg	Se ..... 19.9 mg/kg
Be ..... 1 mg/kg	K ..... 6230 mg/kg	V ..... 109 mg/kg
Ca ..... 119000 mg/kg	Mg ..... 6706 mg/kg	Zn ..... 625 mg/kg
Cd ..... 13.7 mg/kg	Mn ..... 172 mg/kg	
Co ..... 6.18 mg/kg	Mo ..... 14 mg/kg	

Indicative values for P, Tl

New	RTC-PB-2000	Clay loam - Lead	50 g

RTC-Pb-2000 was certified using methods USEPA SW846, 3rd edition, 3050 (hot block), 3051 (microwave), 6010 (ICP-EOS), 6020 (ICP-MS) and 7000 (AES) series.

Certified value

Lot 091103/ Lot 01932

Lead, Pb ..... 2000 mg/kg

New	RTC-PB-3000	Soil - Lead	50 g

RTC-Pb-3000 was certified using methods USEPA SW846, 3rd edition, 3050 (hot block), 3051 (microwave), 6010 (ICP-EOS), 6020 (ICP-MS) and 7000 (AES) series.

Certified value

Lot 015429

Lead, Pb ..... 3000 mg/kg

	Code	Product	Unit
New	RTC-CRM499-100	Loamy sand - pH	100 g

The soil is to be extracted and analyzed using an appropriate extraction and analytical method to determine pH corrosivity such as USEPA Method SW-846 9040B or 9045C.

Lot 015063

pH ..... 9.18 ± 0.0577

New RTC-CRM498-100 — Clay soil - pH, conductivity — 100 g

The soil is to be extracted and analyzed using an appropriate extraction and analytical method to determine pH corrosivity such as USEPA Method SW-846 9040B or 9045C.

Lot 015914

Specific conductance Conductivity (25ºC) ..... 2100 ± 389 µmhos/cm
pH ..... 9.20 ± 0.0754

New METRANAL-31 — Light sandy soil - Trace elements METRANAL™ — 80 g

The material is primarily designed for internal and external quality control purposes in the determination of total element contents and contents of element fraction extractable by the below described conventional procedures in soils and materials of similar matrix (quality control charts, inter-laboratory comparisons, estimation of bias etc.) but not for ensuring traceability of measurements and calibration purposes.

Indicative values

Total

Be	3.32 µg/g	Cu	30.8 µg/g	Pb	43.8 µg/g
Cd	0.32 µg/g	Hg	0.087 µg/g	V	58.7 µg/g
Co	9.66 µg/g	Mn	540 µg/g	Zn	120 µg/g
Cr	89.6 µg/g	Ni	31.9 µg/g		

Aqua regia extractable content according to ISO 11466(1995)

As	10.4 µg/g	Co	9.15 µg/g	Ni	31.8 µg/g
Ba	108 µg/g	Cr	71.9 µg/g	Pb	24.1 µg/g
Be	1.02 µg/g	Cu	28.9 µg/g	V	52.0 µg/g
Cd	0.29 µg/g	Mn	479 µg/g	Zn	108 µg/g

Boiling 2 mol/L nitric acid

As	5.92 mg/kg	Cu	24.1 µg/g	V	42.7 µg/g
Be	0.71 µg/g	Mn	438 µg/g	Zn	97.1 µg/g
Co	8.44 µg/g	Ni	18.7 µg/g		
Cr	48.5 µg/g	Pb	23.7 µg/g		

Cold 2 mol/L nitric acid

As	2.32 µg/g	Cr	23.6 µg/g	Pb	20.7 µg/g
Be	0.52 µg/g	Cu	18.1 µg/g	V	21.0 µg/g
Cd	0.18 µg/g	Mn	357 µg/g	Zn	58.0 µg/g
Co	5.19 µg/g	Ni	10.0 µg/g		

New METRANAL-32 — Light sandy soil - Trace elements METRANAL™ — 80 g

The material is primarily designed for internal and external quality control purposes in the determination of total element contents and contents of element fraction extractable by the below described conventional procedures in soils and materials of similar matrix (quality control charts, inter-laboratory comparisons, estimation of bias etc.) but not for ensuring traceability of measurements and calibration purpose.

Indicative values

Total

As	32.4 µg/g	Cr	179 µg/g	Ni	42.0 µg/g
Be	8.77 µg/g	Cu	29.3 µg/g	Pb	58.9 µg/g
Cd	0.31 µg/g	Hg	0.090 µg/g	V	54.9 µg/g
Co	12.6 µg/g	Mn	540 µg/g	Zn	69.0 µg/g

Aqua regia extractable content according to ISO 11466(1995)

As	26.1 µg/g	Cr	147 µg/g	Pb	35.5 µg/g
Be	2.83 µg/g	Cu	27.3 µg/g	V	44.6 µg/g
Cd	0.28 µg/g	Mn	531 µg/g	Zn	64.0 µg/g
Co	11.1 µg/g	Ni	40.1 µg/g		

Boiling 2 mol/L nitric acid

As	15.1 mg/kg	Cr	121 µg/g	Ni	33.7 µg/g
Be	1.94 µg/g	Cu	23.8 µg/g	Pb	34.1 µg/g
Cd	0.26 µg/g	Hg	0.046 µg/g	V	37.7 µg/g
Co	10.2 µg/g	Mn	481 µg/g	Zn	58.1 µg/g

Cold 2 mol/L nitric acid

As	6.12 µg/g	Cr	62.9 µg/g	Pb	30.6 µg/g
Be	1.40 µg/g	Cu	19.8 µg/g	V	21.3 µg/g
Cd	0.21 µg/g	Mn	425 µg/g	Zn	34.2 µg/g
Co	6.64 µg/g	Ni	16.0 µg/g		

	Code	Product	Unit
New	METRANAL-33	Silty clay loam - Trace elements METRANAL™	80 g

The material is primarily designed for internal and external quality control purposes in the determination of total element contents and contents of element fraction extractable by the below described conventional procedures in soils and materials of similar matrix (quality control charts, inter-laboratory comparisons, estimation of bias etc.) but not for ensuring traceability of measurements and calibration purposes.

Indicative values

Total

Be	2.18 µg/g	Cu	29.1 µg/g	Pb	33.5 µg/g
Cd	0.32 µg/g	Hg	0.096 µg/g	V	76.2 µg/g
Co	11.5 µg/g	Mn	600 µg/g	Zn	81.0 µg/g
Cr	79.8 µg/g	Ni	31.3 µg/g		

Aqua regia extractable content according to ISO 11466(1995)

As	11.6 µg/g	Cr	42.4 µg/g	Pb	25.2 µg/g
Be	1.29 µg/g	Cu	25.4 µg/g	V	52.9 µg/g
Cd	0.32 µg/g	Mn	529 µg/g	Zn	69.4 µg/g
Co	10.3 µg/g	Ni	28.8 µg/g		

Boiling 2 mol/L nitric acid

Be	0.95 µg/g	Cu	20.6 µg/g	Pb	22.7 µg/g
Cd	0.27 µg/g	Hg	0.054 µg/g	V	25.3 µg/g
Co	8.31 µg/g	Mn	476 µg/g	Zn	54.2 µg/g
Cr	23.8 µg/g	Ni	22.2 µg/g		

Cold 2 mol/L nitric acid

As	1.30 µg/g	Cr	9.06 µg/g	Pb	19.3 µg/g
Be	0.69 µg/g	Cu	15.8 µg/g	V	11.4 µg/g
Cd	0.23 µg/g	Mn	435 µg/g	Zn	24.4 µg/g
Co	5.90 µg/g	Ni	11.9 µg/g		

New	METRANAL-34	Loam - Trace elements METRANAL™	80 g

The material is primarily designed for internal and external quality control purposes in the determination of total element contents and contents of element fraction extractable by the below described conventional procedures in soils and materials of similar matrix (quality control charts, inter-laboratory comparisons, estimation of bias etc.) but not for ensuring traceability of measurements and calibration purposes.

Indicative values

Total

As	49.6 µg/g	Cr	82.2 µg/g	Ni	33.3 µg/g
Be	4.17 µg/g	Cu	183 µg/g	Pb	93.4 µg/g
Cd	1.52 µg/g	Hg	0.223 µg/g	V	126 µg/g
Co	20.0 µg/g	Mn	869 µg/g	Zn	227 µg/g

Aqua regia extractable content according to ISO 11466(1995)

As	42.4 µg/g	Cr	46.3 µg/g	Pb	83.1 µg/g
Be	2.69 µg/g	Cu	167 µg/g	V	95.1 µg/g
Cd	1.44 µg/g	Mn	741 µg/g	Zn	198 µg/g
Co	17.5 µg/g	Ni	30.4 µg/g		

Boiling 2 mol/L nitric acid

As	27.1 µg/g	Cr	27.3 µg/g	Pb	82.6 µg/g
Be	2.17 µg/g	Cu	159 µg/g	V	48.9 µg/g
Cd	1.44 µg/g	Mn	572 µg/g	Zn	169 µg/g
Co	12.5 µg/g	Ni	21.4 µg/g		

Cold 2 mol/L nitric acid

As	16.4 µg/g	Cr	14.6 µg/g	Ni	11.9 µg/g
Be	1.84 µg/g	Cu	137 µg/g	Pb	71.7 µg/g
Cd	1.36 µg/g	Hg	0.094 µg/g	V	11.4 µg/g
Co	9.42 µg/g	Mn	527 µg/g	Zn	24.4 µg/g

WEPAL soil reference materials

The Wageningen Evaluating Programmes for Analytical Laboratories (WEPAL) runs international sample exchange programmes for continuous quality control of analytical data as produced by chemical laboratories. There are almost 700 laboratories who take part in one or more of WEPAL's regular ring-tests programmes. The WEPAL soil reference samples are supplied with certificates including consensus values, indicative values and values for information, based on the results of the proficiency programme. The certificates are available on request.

For each soil there are values for several sample preparation methods e.g.:

- Real totals
- Acid extractable (so-called totals)
- Aqua Regia (ISO 11466)
- Extraction with boiling 2 M HNO_3
- Extraction with 0.1 M $NaNO_3$
- Extraction with 0.01 M $CaCl_2$ 1:10
- Extraction with 1 M NH_4NO_3 1:2.5 (w/v) (DIN 19730)
- Extraction with 1 M NH_4-acetate
- Extraction with $BaCl_2$
- Soil characteristics

	Code	Product	Unit
New	WEPAL-ISE-880	Cat clay - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-882	Heavy clay - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-886	Riverclay - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-912	Loess (soil under Forest) - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-921	Riverclay - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-930	Moist Clay - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-934	Loess - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-936	Organic clay soil - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-938	Andosol - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-944	Subsoil loess - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-946	Salt-marsh soil - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-948	Forest subsoil - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-950	Sandy soil - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-951	Riverclay - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-953	Heavy clay - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-955	Sandy soil - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-957	Latosol - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-959	Sandy soil - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-963	Irish coarse - Inorganic composition (please ask for detailed information)	55 g
New	WEPAL-ISE-967	Sandy soil - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-968	Sandy soil - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-972	Marine clay - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-973	Organic sandy soil - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-974	Loess (acid brown earth) - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-975	Loess (acid brown earth) - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-977	Sandy soil - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-979	Rendzina soil - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-980	Forrest soil - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-982	Regolith on granodioritic rock - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-983	Marine sediment - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-984	Marine sediment - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-991	Rock soil - Inorganic composition (please ask for detailed information)	100 g
New	WEPAL-ISE-999	Moist clay - Inorganic composition (please ask for detailed information)	100 g

Sewage sludges

Code	Product	Unit
New ERM-CC136	Sewage sludge - Extractable and total metals	25 g

An aged sewage sludge collected from a disused sewage works site at Heathrow in London, UK. Dried, sterilised and ground to a powder. The extractable metal content refers to metals soluble in Aqua Regia using methods based on ISO11466 (1995).

Assessed values

Al 15100 mg/kg	Fe 22200 mg/kg	Ni 130 mg/kg
Ba 633 mg/kg	K 2030 mg/kg	Pb 341 mg/kg
Co 23.2 mg/kg	Mg 2820 mg/kg	Zn 890 mg/kg
Cr 399 mg/kg	Mn 544 mg/kg	
Cu 464 mg/kg	Na 397 mg/kg	

LGC6181 — Sewage sludge - Extractable metals — 100 g

The extractable metal content refers to metals soluble in Aqua Regia using methods based on ISO11466 (1995).

Certified values

Ag 55 mg/kg	Cr 78 mg/kg	Ni 45 mg/kg
As 7.8 mg/kg	Fe 40300 mg/kg	Pb 105 mg/kg
Cd 5.8 mg/kg	Hg 4.9 mg/kg	V 20 mg/kg
Cu 354 mg/kg	Mn 454 mg/kg	Zn 1100 mg/kg

LGC6182 — Sewage sludge - PAHs — 30 g

A digested sewage sludge of mixed origin was taken from a city water treatment plant immediately after discharge from a digestion tank.

Assessed Values

Acenaphthene 0.10 mg/kg	Chrysene 0.84 mg/kg
Anthracene 0.17 mg/kg	Fluoranthene 1.81 mg/kg
Benzo(*a*)anthracene 0.66 mg/kg	Fluorene 0.19 mg/kg
Benzo(*b*)fluoranthene 0.95 mg/kg	Indeno(1,2,3*cd*)pyrene 0.58 mg/kg
Benzo(*k*)fluoranthene 0.45 mg/kg	Naphthalene 0.33 mg/kg
Benzo(*ghi*)perylene 0.62 mg/kg	Phenanthrene 1.04 mg/kg
Benzo(*a*)pyrene 0.59 mg/kg	Pyrene 1.53 mg/kg

Indicative values for Acenaphthylene, Dibenzo(a,h)anthracene

LGC6184 — Sewage sludge - PCBs — 30 g

A digested sewage sludge of mixed origin, taken from a city water treatment plant in the Czech Republic, immediately after discharge from a digestion tank.

Certified values

PCB 101 37 µg/kg	PCB 118 17 µg/kg	PCB 153 112 µg/kg

Assessed values

PCB 28 28 µg/kg	PCB 149 63 µg/kg	PCB 187 35 µg/kg
PCB 52 14 µg/kg	PCB 170 37 µg/kg	PCB 194 13 µg/kg
PCB 138 77 µg/kg	PCB 180 78 µg/kg	

Indicative values for PCB 31, PCB 77, PCB 110

BCR-145R — Sewage sludge (mixed origin) - Trace elements — 40 g

Certified values

Cd 3.50 mg/kg	Hg 2.01 mg/kg	Pb 286 mg/kg
Co 5.61 mg/kg	Mn 156 mg/kg	Zn 2122 mg/kg
Cu 696 mg/kg	Ni 247 mg/kg	

Indicative value for Cr

Aqua Regia soluble content

Certified values

Cr 307 mg/kg	Ni 251 mg/kg	Zn 2137 mg/kg
Cu 707 mg/kg	Pb 282 mg/kg	

Indicative values for Cd, Co, Hg, Mn

BCR-146R — Sewage sludge (industrial origin) - Trace elements — 40 g

Certified values

Cd 18.8 mg/kg	Cu 838 mg/kg	Ni 69.7 mg/kg
Co 7.39 mg/kg	Hg 8.62 mg/kg	Pb 609 mg/kg
Cr 196 mg/kg	Mn 324 mg/kg	Zn 3061 mg/kg

Aqua regia soluble content

Certified values

Cd 18.5 mg/kg	Cu 831 mg/kg	Ni 65.0 mg/kg
Co 6.5 mg/kg	Hg 8.39 mg/kg	Pb 583 mg/kg
Cr 174 mg/kg	Mn 298 mg/kg	Zn 3043 mg/kg

BCR-597 — Sewage sludge - Chromium — 40 g

Certified value

Cr 203 mg/kg

Code	Product	Unit

BCR-677 — Sewage sludge - PCDD/PCDFs — 40 g

Certified values

2,3,7,8-TCDD	1.51 pg/g	2,3,4,7,8-PeCDF	16.9 pg/g
1,2,3,7,8-PeCDD	4.1 pg/g	1,2,3,4,7,8-HxCDF	14.5 pg/g
1,2,3,6,7,8-HxCDD	235 pg/g	1,2,3,6,7,8-HxCDF	6.1 pg/g
1,2,3,7,8,9-HxCDD	79 pg/g	1,2,3,7,8,9-HCDF	0.84 pg/g
1,2,3,4,6,7,8-HpCDD	3.5 x 10^3 pg/g	2,3,4,6,7,8-HxCDF	5.6 pg/g
OCDD	12.7 x 10^3 pg/g	1,2,3,4,6,7,8-HpCDF	62 pg/g
2,3,7,8-TCDF	45 pg/g	1,2,3,4,7,8,9-HpCDF	6.3 pg/g
1,2,3,7,8-PeCDF	24.8 pg/g	OCDF	177 pg/g

CMI-CRM7006 — Sewage sludge - PCDDs and PCDFs — 60 g

Certified values

2,3,7,8-TeCDD	4,5 ± 0,3 ng/kg	1,2,3,4,7,8,9-HpCDF	110 ± 17 ng/kg
1,2,3,7,8-PeCDD	2,1 ± 0,3 ng/kg	OCDF	1590 ± 290 ng/kg
1,2,3,4,7,8-HxCDD	2,6 ± 0,5 ng/kg	PCB 77	2380 ± 370 ng/kg
1,2,3,6,7,8-HxCDD	5 ± 0,9 ng/kg	PCB 81	108 ± 16 ng/kg
1,2,3,7,8,9-HxCDD	3,7 ± 0,6 ng/kg	PCB 126	169 ± 32 ng/kg
1,2,3,4,6,7,8-HpCDD	65 ± 10 ng/kg	PCB 169	25 ± 4 ng/kg
OCDD	519 ± 74 ng/kg	PCB 105	3430 ± 495 ng/kg
2,3,7,8-TeCDF	110 ± 17 ng/kg	PCB 114	169 ± 36 ng/kg
1,2,3,7,8-PeCDF	157 ± 21 ng/kg	PCB 118	15800 ± 2300 ng/kg
2,3,4,7,8-PeCDF	87 ± 11 ng/kg	PCB 123	121 ± 30 ng/kg
1,2,3,4,7,8-HxCDF	376 ± 63 ng/kg	PCB 156	9140 ± 1300 ng/kg
1,2,3,6,7,8-HxCDF	102 ± 13 ng/kg	PCB 157	802 ± 130 ng/kg
1,2,3,7,8,9-HxCDF	11 ± 2,2 ng/kg	PCB 167	4130 ± 670 ng/kg
2,3,4,6,7,8-HxCDF	19,8 ± 2,8 ng/kg	PCB 189	1860 ± 260 ng/kg
1,2,3,4,6,7,8-HpCDF	256 ± 41 ng/kg		

Indicative values for metals, other PCBs, PAHs, pesticides, brominated flame retardants

RTC-CNS312-050 — Sewage sludge - PAHs, PCBs and pesticides — 50 g

The PAH 10 list of polycyclic aromatic hydrocarbons is defined according to VROM, the Dutch Ministry of Housing and Urban Planning. The reference values were determined by Dutch standard methods (NEN 5771, 5718, and 5719).

Reference values

Lot 002554

Acenaphthene	2.99 mg/kg	PCB 118	73.6 µg/kg
Acenaphthylene	2.42 mg/kg	PCB 138	136 µg/kg
Anthracene	1.67 mg/kg	PCB 153	214 µg/kg
Benzo(a)anthracene	1.45 mg/kg	PCB 180	232 µg/kg
Benzo(a)pyrene	0.872 mg/kg	Total PCB	1350 µg/kg
Benzo(b)fluoranthene	0.241 mg/kg	2,4-DDD	625 µg/kg
Benzo(g,h,i)perylene	0.835 mg/kg	2,4-DDE	258 µg/kg
Benzo(k)fluoranthene	0.678 mg/kg	2,4-DDT	223 µg/kg
Chrysene	1.12 mg/kg	4,4-DDD	809 µg/kg
Dibenzo(a,h)anthracene	0.407 mg/kg	4,4-DDE	229 µg/kg
Fluoranthene	4.19 mg/kg	4,4-DDT	23.5 µg/kg
Fluorene	2.01 mg/kg	Aldrin	221 µg/kg
Indeno(1,2,3-cd)pyrene	0.54 mg/kg	alpha-BHC	137 µg/kg
Naphthalene	2.58 mg/kg	beta-BHC	111 µg/kg
Phenanthrene	0.462 mg/kg	gamma-BHC (Lindane)	578 µg/kg
Pyrene	4.17 mg/kg	Dieldrin	569 µg/kg
Total PAH 10 (VROM 10)	13.8 mg/kg	Endosulfan I	296 µg/kg
Total PAH16 (EPA 16)	25.1 mg/kg	Endrin	336 µg/kg
PCB 28	205 µg/kg	Hexachlorobenzene	689 µg/kg
PCB 52	263 µg/kg	Heptachlor	197 µg/kg
PCB 101	257 µg/kg	Heptachlor epoxide (beta)	104 µg/kg

RTC-CNS311-050 — Sewage Sludge - Trace Elements — 50 g

The Reference Values were determined by Dutch standard methods (NEN 56..; 57..; 64..; and 66..; series) after total digestion using predominantly nitric/hydrochloric acid mixture (Aqua Regia) in pressurised microwave digester units. The sample is suitable for use by these, or other similar digestion and analytical procedures.
Reference values

Lot 002545

Ag	18 mg/kg	Mn	232 mg/kg
Al	13200 mg/kg	Mo	10.4 mg/kg
As	3.3 mg/kg	Ni	19.2 mg/kg
Ba	347 mg/kg	Pb	25.4 mg/kg
Cd	1.74 mg/kg	V	12 mg/kg
Co	2.97 mg/kg	Zn	563 mg/kg
Cr	40.4 mg/kg	Chemical Oxygen Demand (COD)	771 mg/kg
Cu	402 mg/kg	Kjeldahl – Nitrogen (KN)	41.1 g/kg
Fe	22500 mg/kg	Phosphorus, Total (TP)	23.1 g/kg
Hg	1.71 mg/kg		

Code	Product	Unit

RTC-CRM018-050 Sewage sludge (wet) - Metals — 50 g

Raw sewage sludge from a publicly owned treatment works (POTW), representative of a residential area with industrial influence. The certified values were determined by USEPA SW846 (3rd edition) Methods 3050 and 6010, except for arsenic (7060A), mercury (7471A), selenium (7740), and thallium (7841). The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Lot AG18a

Ag ..... 72.1 mg/kg	Cr .....40.1 mg/kg	Na ..... 1000 mg/kg
Al..... 22400 mg/kg	Cu.....840 mg/kg	Ni ..... 20.4 mg/kg
As..... 6.63 mg/kg	Fe .....9900 mg/kg	Pb ..... 126 mg/kg
Ba ..... 1100 mg/kg	Hg.....4.78 mg/kg	Se ..... 8.38 mg/kg
Be ..... 0.30 mg/kg	K.....2660 mg/kg	Sr ..... 420 mg/kg
Ca ..... 49100 mg/kg	Mg .....4300 mg/kg	V ..... 39.2 mg/kg
Cd ..... 5.57 mg/kg	Mn .....200 mg/kg	Zn..... 1120 mg/kg
Co ..... 3.22 mg/kg	Mo .....10.5 mg/kg	

Indicative values for B, P, Si,Sb, Tl, Ammonia as N, TOC, Nitrogen (total Kjeldahl), Total solids

RTC-CRM029-050 Sewage sludge - Metals — 50 g

Digested sewage sludge from a publicly owned treatment works (POTW), representative of a residential area with light industrial influenence. The certified values were determined by USEPA SW846 (3rd edition) Methods 3050B and 6010B, except for Mercury (Method 7471). The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Lot 013583

Ag ..... 70.4 mg/kg	K.....3370 mg/kg	Tl..... 44.9 mg/kg
Al..... 12400 mg/kg	Li .....63.7 mg/kg	Ti..... 34.0 mg/kg
As..... 27.4 mg/kg	Mg .....8280 mg/kg	V ..... 41.5 mg/kg
Ba ..... 1080 mg/kg	Mn .....399 mg/kg	Zn..... 1400 mg/kg
Be ..... 4.51 mg/kg	Mo .....19.1 mg/kg	Ammonia as N..... 5450 mg/kg
B ..... 186 mg/kg	Na.....1650 mg/kg	Kjeldahl nitrogen..... 4.07 Wt%
Ca ..... 48400 mg/kg	Ni.....172 mg/kg	Nitrate ..... 11200 mg/kg
Cd ..... 487 mg/kg	Pb.....300 mg/kg	pH 7.10
Co ..... 5.70 mg/kg	Sb.....5.78 mg/kg	Phosphorus, total..... 2.21 Wt%
Cr ..... 345 mg/kg	Se.....25.4 mg/kg	Residue, total (TS)..... 91.5 Wt%
Cu ..... 1100 mg/kg	Si .....828 mg/kg	Residue, volatile ..... 59.1 Wt%
Fe..... 20700 mg/kg	Sn.....97.1 mg/kg	S ..... 13600 mg/kg
Hg ..... 6.13 mg/kg	Sr.....647 mg/kg	Total organic carbon.. 28.3 Wt%

RTC-CRM031-040 Sewage sludge - Metals — 40 g

The values were determined by USEPA SW846 (3rd edition) Methods 3050B/3051, 6010B, 6020, and 7000 series. The pH value was determined by USEPA SW 846 (3rd edition) Methods 9040, and 9045C.The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Lot 014679

Ag .....100 mg/kg	Na ..... 845 mg/kg
Al.....13100 mg/kg	Ni..... 136 mg/kg
As.....217 mg/kg	Pb..... 121 mg/kg
B .....158 mg/kg	Sb..... 107 mg/kg
Ba .....851 mg/kg	Se..... 119 mg/kg
Be .....155 mg/kg	Sn..... 94.0 mg/kg
Ca .....49400 mg/kg	Sr ..... 459 mg/kg
Cd .....212 mg/kg	Ti ..... 31.1 mg/kg
Co .....73.4 mg/kg	Tl ..... 112 mg/kg
Cr (total).....243 mg/kg	V..... 133 mg/kg
Cu .....639 mg/kg	Zn ..... 908 mg/kg
Fe.....22400 mg/kg	Ammonia as N ..... 5380 mg/kg
Hg .....11 mg/kg	Kjeldahl nitrogen total (TKN).....3.55 %
K .....7460 mg/kg	pH 7.02
Li .....103 mg/kg	Phosphorus total .....2.21 %
Mg .....8920 mg/kg	Residue total (TS).....90.6 %
Mn .....1240 mg/kg	Residue-volatile .....55.5 %
Mo .....71.4 mg/kg	Sulfur..... 13900 mg/kg

Sewage sludges

Code	Product	Unit
RTC-CRM055-050	Sludge - Metals The values were determined by USEPA SW846 3050(Nitric Acid/Hot Plate), 3051(Nitric Acid/Microwave), 7000 series(AA), 6010(ICP) and Dutch standard methods (NEN 56..; 57..; 64..; and 66..; series) after total digestion using predominantly nitric/hydrochloric acid mixture (Aqua Regia) in pressurised microwave digester units. The sample is suitable for use by these, or other similar digestion and analytical procedures. Certified values Lot 015148 Ag ....64.7 mg/kg Al ....14800 mg/kg As ....229 mg/kg B ....110 mg/kg Ba ....765 mg/kg Be ....167 mg/kg Ca ....47200 mg/kg Cd ....60.6 mg/kg Co ....97.0 mg/kg Cr ....289 mg/kg Cu ....482 mg/kg Fe ....20100 mg/kg Hg ....12.5 mg/kg K ....2420 mg/kg Mn ....693 mg/kg Mg ....9210 mg/kg Mo .... 133 mg/kg Na .... 758 mg/kg Ni .... 163 mg/kg Pb .... 154 mg/kg Sb .... 75.3 mg/kg Se .... 162 mg/kg Sn .... 148 mg/kg Sr .... 445 mg/kg Tl .... 82.0 mg/kg V .... 245 mg/kg Zn .... 1240 mg/kg pH .... 7.16 Phosphorus (total) .... 2.14 Wt% Residue, total (TS) .... 86.4 Wt% Residue-volatile .... 56.2 Wt% Sulfur .... 11500 mg/kg	50 g
NIST-2781	Domestic sludge - Metals Certified values As .... 7.82 mg/kg Cd .... 12.78 mg/kg Cu .... 627.4 mg/kg Hg .... 3.64 mg/kg Mo ....46.7 mg/kg N .... 4.78 % Ni ....80.2 mg/kg Pb ....202.1 mg/kg Se .... 16.0 mg/kg Zn .... 1273 mg/kg Indicative values for Ag, Al, Ca, Cr, Fe, K, Mg, Na, P, Si, Ti	40 g
NIST-2782	Industrial sludge - Leachable and total metals Obtained from an industrial site in northern New Jersey, USA where pharmaceutical research is carried out. Certified values As .... 166 mg/kg Cd .... 4.17 mg/kg Cr .... 109 mg/kg Cu .... 2594 mg/kg Hg ....1.10 mg/kg Mo ....10.07 mg/kg Ni ....154.1 mg/kg Pb ....574 mg/kg Se .... 0.44 mg/kg Zn .... 1254 mg/kg Indicative values for a wide range of additional elements	70 g

WEPAL sewage sludge and compost reference materials

The Wageningen Evaluating Programmes for Analytical Laboratories (WEPAL) runs international sample exchange programmes for continuous quality control of analytical data as produced by chemical laboratories. There are almost 700 laboratories who take part in one or more of WEPAL's regular ring-tests programmes.

The WEPAL sewage sluge and compost reference samples are supplied with certificates including consensus values, indicative values and values for information, based on the results of the proficiency programme. The certificates are available on request.

New	WEPAL-MARSEP-202	Compost - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-MARSEP-205	Compost - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-MARSEP-207	Sewage sludge - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-MARSEP-208	Sewage sludge - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-MARSEP-217	Sewage sludge - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-MARSEP-223	Compost - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-MARSEP-241	Champost - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-MARSEP-247	Sewage sludge - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-MARSEP-249	Sewage sludge - Inorganic composition (please ask for detailed information)	20 g

Plants

Code	Product	Unit

Trees and bushes

BCR-100 — Beech leaves - Trace elements — 30 g

Certified values

Al	0.435 g/kg	Cr	0.0080 g/kg	N	26.29 g/kg
Ca	5.30 g/kg	K	9.94 g/kg	P	1.55 g/kg
Cl	1.49 g/kg	Mg	0.878 g/kg	S	2.69 g/kg

Indicative values for Cd, Cu, Fe, Mn, Mo, Pb, Zn

NIST-1575a — Pine needles - Trace elements and minor constituents — 50 g

Certified values

P	0.107 %	Ba	6.0 mg/kg	Fe	46 mg/kg
K	0.417 %	Cd	0.233 mg/kg	Hg	0.0399 mg/kg
Ca	0.25 %	Cl	421 mg/kg	Rb	16.5 mg/kg
Al	580 mg/kg	Cu	2.g/kg	Zn	38 mg/kg

NIST-1515 — Apple leaves - Trace elements — 50 g

Dried leaves from Golden Delicious and Rome varieties.

Certified values

Al	286 mg/kg	Fe	83 mg/kg	Ni	0.91 mg/kg
As	0.038 mg/kg	Hg	0.044 mg/kg	P	0.159 %
B	27 mg/kg	K	1.61 %	Pb	0.470 mg/kg
Ba	49 mg/kg	Mg	0.271 %	Rb	10.2 mg/kg
Ca	1.526 %	Mn	54 mg/kg	Se	0.050 mg/kg
Cd	0.013 mg/kg	Mo	0.094 mg/kg	Sr	25 mg/kg
Cl	579 mg/kg	N	2.25 %	V	0.26 mg/kg
Cu	5.64 mg/kg	Na	24.4 mg/kg	Zn	12.5 mg/kg

Indicative values for Au, Br, Ce, Co, Cr, Eu, Gd, I, La, Nd, S, Sb, Sc, Sm, Sn, Tb, Th, U, W, Yb

NIST-1547 — Peach leaves - Trace elements — 50 g

Dried leaves from the Coronet variety.

Certified values

Al	249 mg/kg	Fe	218 mg/kg	Ni	0.69 mg/kg
As	0.060 mg/kg	Hg	0.031 mg/kg	P	0.137 %
B	29 mg/kg	K	2.43 %	Pb	0.87 mg/kg
Ba	124 mg/kg	Mg	0.432 %	Rb	19.7 mg/kg
Ca	1.56 %	Mn	98 mg/kg	Se	0.120 mg/kg
Cd	0.026 mg/kg	Mo	0.060 mg/kg	Sr	53 mg/kg
Cl	360 mg/kg	N	2.94 %	V	0.37 mg/kg
Cu	3.7 mg/kg	Na	24 mg/kg	Zn	17.9 mg/kg

Indicative values for Br, Ce, Co, Cr, Eu, Gd, I, La, Nd, S, Sb, Sc, Sm, Sn, Tb, Th, U, Yb

New **NIM-GBW07602** — Bush branches and leaves - Trace elements — 35 g

Certified values

Ag	0.027 µg/g	Eu	0.037 µg/g	Rb	4.2 µg/g
Al	0.214 %	F	24 µg/g	S	0.32 %
As	0.95 µg/g	Fe	1020 µg/g	Sb	0.045 µg/g
B	34 µg/g	Hf	0.14 µg/g	Sc	0.31 µg/g
Ba	19 µg/g	K	0.85 %	Se	0.184 µg/g
Be	0.056 µg/g	La	1.23 µg/g	Si	0.58 %
Bi	0.027 µg/g	Li	2.4 µg/g	Sm	0.19 µg/g
Br	2.4 µg/g	Mg	0.287 %	Sr	345 µg/g
Ca	2.22 %	Mn	58 µg/g	Th	0.37 µg/g
Cd	0.14 µg/g	Mo	0.26 µg/g	Ti	95 µg/g
Ce	2.4 µg/g	N	1.20 %	V	2.4 µg/g
Co	0.39 µg/g	Na	1.10 %	Yb	0.063 µg/g
Cr	2.3 µg/g	Ni	1.7 µg/g	Zn	20.6 µg/g
Cs	0.27 µg/g	P	830 µg/g		
Cu	5.2 µg/g	Pb	7.1 µg/g		

Indicative values for Cl, Nd, Tb, U, W, Y

Code	Product	Unit

New NIM-GBW07603 — Bush branches and leaves - Trace elements — 35 g

Certified values

Ag	0.027 µg/g	Eu	0.037 µg/g	Rb	4.2 µg/g
Al	0.214 %	F	24 µg/g	S	0.32 %
As	0.95 µg/g	Fe	1020 µg/g	Sb	0.045 µg/g
B	34 µg/g	Hf	0.14 µg/g	Sc	0.31 µg/g
Ba	19 µg/g	K	0.85 %	Se	0.184 µg/g
Be	0.056 µg/g	La	1.23 µg/g	Si	0.58 %
Bi	0.027 µg/g	Li	2.4 µg/g	Sm	0.19 µg/g
Br	2.4 µg/g	Mg	0.287 %	Sr	345 µg/g
Ca	2.22 %	Mn	58 µg/g	Th	0.37 µg/g
Cd	0.14 µg/g	Mo	0.26 µg/g	Ti	95 µg/g
Ce	2.4 µg/g	N	1.20 %	V	2.4 µg/g
Co	0.39 µg/g	Na	1.10 %	Yb	0.063 µg/g
Cr	2.3 µg/g	Ni	1.7 µg/g	Zn	20.6 µg/g
Cs	0.27 µg/g	P	830 µg/g		
Cu	5.2 µg/g	Pb	7.1 µg/g		

Indicative values for Cl, Nd, Tb, U, W, Y

BCR-683 — Beech wood - PCP and PAHs — 60 g

Compound	Certified value mg/kg	Uncertainty mg/kg
Pentachlorophenol	3.6	0.5
Benzo(a)anthracene	6.5	0.7
Benzo(a)pyrene	3.4	0.4
Benzo(e)pyrene	9.3	1.0
Benzo(b)fluoranthene	5.8	0.6
Benzo(k)fluoranthene	2.58	0.29

New ERM-CD100 — Wood - Trace elements and pentachlorophenol (PCP) — 74 g

The certified reference material ERM-CD100 is intended for the verification of a correct implementation of standardised analytical methods for waste wood characterisation such as CEN/TR 14823 for the determination of PCP or digestion methods according to EN 13657 for the determination of trace elements. Furthermore, it can be used for the validation of modified or new analytical procedures.

Arsenic (As)	3.1 ± 0.5 mg/kg	Mercury (Hg)	0.60 ± 0.14 mg/kg
Cadmium (Cd)	3.02 ± 0.24 mg/kg	Lead (Pb)	39 ± 4 mg/kg
Chromium (Cr)	36.4 ± 2.6 mg/kg	Pentachlorophenol	7.9 ± 0.6 mg/kg
Copper (Cu)	22.9 ± 1.7 mg/kg		

Additional information

The moisture content of the bottled wood material at the time of certification was (7.48 ± 0.14) %, corresponding to a drying temperature of (103 ± 2) °C.

New IC-INCT-OBTL-5 — Oriental basma tobacco leaves - Trace elements — 50 g

Certified values

Al	0.198 ± 0.028 %	Co	0.981 ± 0.067 mg/kg	Rb	19.1 ± 1 mg/kg
Ca	3.996 ± 0.142 %	Cs	0.288 ± 0.02 mg/kg	Sb	0.076 ± 0.013 mg/kg
K	2.271 ± 0.076 %	Cu	10.1 ± 0.4 mg/kg	Sc	0.64 ± 0.027 mg/kg
Mg	0.853 ± 0.034 %	Er	0.101 ± 0.006 mg/kg	Sm	0.264 ± 0.013 mg/kg
P	0.17 ± 0.012 %	Eu	0.06 ± 0.004 mg/kg	Sr	105 ± 5 mg/kg
S	0.455 ± 0.091 %	Hf	0.291 ± 0.024 mg/kg	Ta	0.042 ± 0.004 mg/kg
Ag	0.053 ± 0.011 mg/kg	Hg	0.021 ± 0.001 mg/kg	Tb	0.035 ± 0.002 mg/kg
As	0.668 ± 0.086 mg/kg	La	1.69 ± 0.09 mg/kg	Th	0.503 ± 0.043 mg/kg
B	33.6 ± 2.2 mg/kg	Mn	180 ± 6 mg/kg	V	4.12 ± 0.55 mg/kg
Ba	67.4 ± 3.8 mg/kg	Mo	0.414 ± 0.062 mg/kg	Yb	0.115 ± 0.023 mg/kg
Br	87.4 ± 5.4 mg/kg	Nd	1.33 ± 0.11 mg/kg	Zn	52.4 ± 1.8 mg/kg
Cd	2.64 ± 0.14 mg/kg	Ni	8.5 ± 0.49 mg/kg		
Ce	2.99 ± 0.18 mg/kg	Pb	2.01 ± 0.31 mg/kg		

Indicative values for Au. Be. Cl. Cr. Dy. Fe. Gd. Ho. Li. Lu. Na. Pr. Ti. Tl. Tm. U and Y

New IC-INCT-PVLT-6 — Tobacco leaves - Trace elements — 50 g

Certified values

Ca	2.297 ± 0.078 %	Ce	0.743 ± 0.051 mg/kg	Ni	1.49 ± 0.14 mg/kg
K	2.64 ± 0.09 %	Co	0.154 ± 0.007 mg/kg	Pb	0.972 ± 0.147 mg/kg
Mg	0.241 ± 0.009 %	Cu	5.12 ± 0.2 mg/kg	Rb	5.97 ± 0.28 mg/kg
P	0.242 ± 0.015 %	Er	0.019 ± 0.003 mg/kg	Sb	0.037 ± 0.004 mg/kg
S	0.378 ± 0.059 %	Eu	0.014 ± 0.003 mg/kg	Sc	0.06 ± 0.003 mg/kg
Ag	0.019 ± 0.004 mg/kg	Hf	0.161 ± 0.008 mg/kg	Sm	0.058 ± 0.004 mg/kg
Al	252 ± 49 mg/kg	Hg	0.023 ± 0.002 mg/kg	Sr	133 ± 6 mg/kg
As	0.138 ± 0.01 mg/kg	La	0.54 ± 0.027 mg/kg	Ta	0.011 ± 0.001 mg/kg
B	33.4 ± 1.9 mg/kg	Li	3.35 ± 0.67 mg/kg	Tb	0.008 ± 0.001 mg/kg
Ba	41.6 ± 1.9 mg/kg	Mn	136 ± 5 mg/kg	Th	0.089 ± 0.007 mg/kg
Br	19.5 ± 1 mg/kg	Mo	0.396 ± 0.029 mg/kg	V	0.405 ± 0.056 mg/kg
Cd	2.23 ± 0.12 mg/kg	Nd	0.322 ± 0.024 mg/kg	Zn	43.6 ± 1.4 mg/kg

Indicative values for Bi, Cl, Cr, Cs, Fe, Na, Pr, Sn, Ti, Tl, U and Y

Code	Product	Unit

Grasses and crops

BCR-129 — Hay powder - Trace elements — 30 g

Certified values

Ca ..... 6.4 g/kg	Mg ..... 1.45 g/kg	S ..... 3.16 g/kg
I ..... 0.167 mg/kg	N ..... 37.2 g/kg	Zn ..... 32.1 mg/kg
K ..... 33.8 g/kg	P ..... 2.36 g/kg	Kjeldahl-N ..... 34.2 g/kg

New **ERM-CD281** — Rye grass - Trace elements — vial

Certified values

As ..... 0.042 ± 0.01 mg/kg	Hg ..... 0.0164 ± 0.0022 mg/kg	Sb ..... 0.042 ± 0.007 mg/kg
B ..... 5.5 ± 0.5 mg/kg	Mn ..... 82 ± 4 mg/kg	Se ..... 0.023 ± 0.004 mg/kg
Cd ..... 0.12 ± 0.007 mg/kg	Mo ..... 2.22 ± 0.12 mg/kg	Sn ..... 0.062 ± 0.011 mg/kg
Cr ..... 24.8 ± 1.3 mg/kg	Ni ..... 15.2 ± 0.6 mg/kg	Zn ..... 30.5 ± 1.1 mg/kg
Cu ..... 10.2 ± 0.5 mg/kg	Pb ..... 1.67 ± 0.11 mg/kg	

New **IAEA-372** — Grass - Radionuclides — 100 g

Certified values (dry mass basis)

^{40}K ..... 1060 ± 56 7 Bq/kg	$_{137}$Cs ..... 11320 ± 360 Bq/kg

NIST-2695 — Vegetation - Fluoride — 2 x 25 g

Two samples of timothy grass with fluoride concentrations above natural levels.

Low level

Certified value

Fluoride ..... 64.0 µg/g

High level

Certified value

Fluoride ..... 277 µg/g

IAEA-V-9 — Cellulose (cotton) - Trace elements — 25 g

Certified values

Ba ..... 9 mg/kg	Hg ..... 0.06 mg/kg	Ni ..... 0.09 mg/kg
Ca ..... 240 mg/kg	Mg ..... 53 mg/kg	Pb ..... 0.25 mg/kg
Cl ..... 600 mg/kg	Mn ..... 0.15 mg/kg	Sr ..... 0.65 mg/kg
Cr ..... 0.11 mg/kg	Mo ..... 0.034 mg/kg	
Cu ..... 0.59 mg/kg	Na ..... 56 mg/kg	

Indicative values for Al, Br, Fe, V

BCR-402 — White clover - Trace elements — 25 g

Collected from an area with soil especially rich in selenium, resulting in a high selenium content

Certified values

As ..... 0.093 mg/kg	Mo ..... 6.93 mg/kg
Co ..... 0.178 mg/kg	Se ..... 6.70 mg/kg

Indicative values for Cr, Fe, Ni, Zn

IAEA-156 — Clover - Radioactive isotopes — 250 g

Recommended values

^{134}Cs ..... 132 Bq/kg	^{40}K ..... 657 Bq/kg
^{137}Cs ..... 264 Bq/kg	^{90}Sr ..... 14.8 Bq/kg

Aquatic plants

BCR-060 — Aquatic plant (*Lagarosiphon major*) - Trace elements — 25 g

Certified values

Al ..... 4180 mg/kg	Hg ..... 0.34 mg/kg	Zn ..... 313 mg/kg
Cd ..... 2.20 mg/kg	Mn ..... 1759 mg/kg	
Cu ..... 51.2 mg/kg	Pb ..... 63.8 mg/kg	

Indicative values for Ag, As, Au, B, Br, CaO, Ce, Cl, Co, Cr, Cs, Eu, F, Fe_eO_3, K_2O, La, MgO, Mo, N, Na_2O, Ni, P_2O_5, Rb, S, Sb, Sc, Se, SiO_2, Sn, Ta, Tb, TiO_2, Tl, U, V, W

BCR-596 — Aquatic plant (*trapa natans*) - Chromium — 25 g

Certified value

Cr ..... 36.3 mg/kg

BCR-414 — Plankton - Trace elements — 5 g

Certified values

As ..... 6.82 µg/g	Hg ..... 0.276 µg/g	Se ..... 1.75 µg/g
Cd ..... 0.383 µg/g	Mn ..... 299 µg/g	V ..... 8.10 µg/g
Cr ..... 23.8 µg/g	Ni ..... 18.8 µg/g	Zn ..... 111.6 µg/g
Cu ..... 29.5 µg/g	Pb ..... 3.97 µg/g	

Plants

Code	Product	Unit
BCR-670	Aquatic plant (*Lemna minor*) - Trace elements	10 g

Certified values

Ce ..... 0.99 mg/kg	La .....0.487 mg/kg	Tb..... 14.0 µg/kg
Dy..... 79 µg/kg	Lu .....6.3 µg/kg	Th..... 0.159 mg/kg
Er ..... 44.0 µg/kg	Nd.....0.473 mg/kg	Tm..... 5.70 µg/kg
Eu ..... 23.2 µg/kg	Pr.....0.121 mg/kg	U ..... 82 µg/kg
Gd ..... 98 µg/kg	Sc .....0.191 mg/kg	Y..... 0.46 mg/kg
Ho ..... 15.8 µg/kg	Sm .....94 µg/kg	Yb..... 40 µg/kg

Indicative values for : As, Cd, Cr, Cs, Cu, Fe, Mo, Ni, Pb, Sb, Se and Zn

NIES03 — Chlorella (green algae) - Trace elements — 36 g

The material was prepared from spray-dried chlorella (*Chlorella pyrenoidosa*) obtained from a commercial source.

Certified values

Ca .....0.49 %	Fe ..... 0.185 %	Mn ..... 69 µg/g
Co ..... 0.87 µg/g	K ..... 1.24 %	Sr ..... 40 µg/g
Cu ..... 3.5 µg/g	Mg ..... 0.33 %	Zn..... 20.5 µg/g

Indicative values for Cd, P, Pb, Sc

NIST-4359 — Seaweed - Radioactivity — 300 g

NIST-4359 contains low levels of anthropogenic and natural radioactivity.

Certified values for ^{40}K, ^{137}Cs , ^{210}Pb , ^{210}Po , ^{228}Ra , ^{232}Th , ^{234}U , ^{235}U , ^{238}U , ^{238}Pu , ^{239}Pu , ^{239,240}Pu, ^{241}Am

Indicative values for further isotopes

New NIES26 — Algae - Microcystines, trace elements — 54 mg

Certified values

Microcystins[1)] ..... 4.5 ± 0.4 mg/g

Ca .....0.56 ± 0.02 %	Mg ..... 0.44 ± 0.03 %	Sr ..... 4.5 ± 0.3 mg/kg
Fe.....0.086 ± 0.006 %	Na..... 0.12 ± 0.02 %	Zn..... 13 ± 2 mg/kg
K .....0.90 ± 0.05 %	Mn .....39 ± 3 mg/kg	

Indicative values for S, P, Co, Cu, Ni, Pb

[1)] The microcystins were determined in accordance with the manual for examination of substances requiring investigation by the Ministry of Environment, Japan (March 2003). This method followed those in reports for the determination of total microcystins. The microcystins were oxidatively decomposed to MMPB, which was determined using HPLC-mass spectrometry, or gas chromatography-mass spectrometry after esterification.

IAEA-392 — Algae - Trace elements — 20 g

Algae material (type: *Scenedesmus obliquus* 208)

Recommended values

Ca ..... 2680 ± 67.4 mg/kg	Mg .....2376 ± 78.8 mg/kg	Ni ..... 0.571 ± 0.028 mg/kg
Cu ..... 23.2 ± 1.74 mg/kg	Mn .....67.5 ± 1.54 mg/kg	Pb ..... 0.574 ± 0.019 mg/kg
Fe..... 497 ± 13.6 mg/kg	Na.....680 ± 23.0 mg/kg	Zn..... 128 ± 2.0 mg/kg

Indicative values for As, Cd, Cr, K

IAEA-413 — Algae - Trace elements — 10 g

Algae material (type: *Chlorella Boehm*)

Recommended values (based on dry mass)

As..... 127 ± 6.6 mg/kg	Fe .....1370 ± 39 mg/kg	Ni ..... 113 ± 4.9 mg/kg
Ca ..... 3143 ± 112 mg/kg	K.....10740 ± 270 mg/kg	Pb ..... 242 ± 7 mg/kg
Cd ..... 204 ± 8.5 mg/kg	Mg .....4058 ± 117 mg/kg	Zn..... 169 ± 3.3 mg/kg
Co ..... 4.24 ± 0.25 mg/kg	Mn .....158 ± 3.4 mg/kg	
Cr ..... 377 ± 14 mg/kg	Na.....375 ± 20 mg/kg	

Indicative values for further elements

Miscellaneous

LGC7162 — Strawberry leaves - Trace elements — 20 g

The raw material was collected from a private farm in the Czech Republic. The mixture was cut and jet milled to pass a 250 µm nylon sieve. The resulting powder was homogenised, separated in 20 g portions and placed in 60 mL bottles.

Certified Values

Ca ..... 1.53 g/100 g	Ba .....107 mg/kg	Mo ..... 0.32 mg/kg
Mg ..... 0.377 g/100 g	Cd.....0.17 mg/kg	Hg ..... 0.027 mg/kg
N ..... 2.01 g/100 g	Co.....0.47 mg/kg	Ni ..... 2.6 mg/kg
P ..... 0.260 g/100 g	Cr.....2.15 mg/kg	Sr ..... 64 mg/kg
K ..... 1.96 g/100 g	Fe .....818 mg/kg	Zn..... 24 mg/kg
S ..... 0.174 g/100 g	Pb .....1.8 mg/kg	
As..... 0.28 mg/kg	Mn .....171 mg/kg	

NIST-1573a — Tomato leaves - Trace elements — 50 g

Certified values

Al..... 598 mg/kg	Cu.....4.70 mg/kg	P .....0.216 %
As..... 0.112 mg/kg	Hg.....0.034 mg/kg	Rb ..... 14.89 mg/kg
B ..... 33.3 mg/kg	K ..... 2.70 %	Sb ..... 0.063 mg/kg
Cd ..... 1.52 mg/kg	Mn .....246 mg/kg	Se ..... 0.054 mg/kg
Ca .....5.05 %	N..... 3.03 %	V ..... 0.57 mg/kg
Co ..... 0.57 mg/kg	Na.....136 mg/kg	Zn..... 82 mg/kg
Cr ..... 1.99 mg/kg	Ni .....1.59 mg/kg	

Indicative values for Eu, Gd, Mg, Pb, S, Sc, Sm, Sr, Th, U

Code	Product	Unit
NIST-RM 8491	**Sugar cane bagasse - Whole biomass feedstocks** This Reference Material (RM) is intended primarily for use in evaluating analytical methods for the determination of summative composition of lignocellulosic materials. Reference concentration values for the following constituents are given: Ash, 95% Ethanol extractives, Acid soluble lignin, Acid insoluble lignin, Total lignin. Glucoronic acid, Arabinan, Xylan, Mannan, Galactan and Glucan.	50 g
NIST-RM 8492	**Eastern cottonwood - Whole biomass feedstocks** This Reference Material (RM) is intended primarily for use in evaluating analytical methods for the determination of summative composition of lignocellulosic materials. Reference concentration values for the following constituents are given: Ash, 95% Ethanol extractives, Acid soluble lignin, Acid insoluble lignin, Total lignin. Glucoronic acid, Arabinan, Xylan, Mannan, Galactan and Glucan.	50 g
NIST-RM 8493	**Monterey pine - Whole biomass feedstocks** This Reference Material (RM) is intended primarily for use in evaluating analytical methods for the determination of summative composition of lignocellulosic materials. Reference concentration values for the following constituents are given: Ash, 95% Ethanol extractives, Acid soluble lignin, Acid insoluble lignin, Total lignin. Glucoronic acid, Arabinan, Xylan, Mannan, Galactan and Glucan.	50 g
NIST-RM 8494	**Wheat straw - Whole biomass feedstocks** This Reference Material (RM) is intended primarily for use in evaluating analytical methods for the determination of summative composition of lignocellulosic materials. Reference concentration values for the following constituents are given: Ash, 95% Ethanol extractives, Acid soluble lignin, Acid insoluble lignin, Total lignin. Glucoronic acid, Arabinan, Xylan, Mannan, Galactan and Glucan.	50 g
BCR-482	**Lichen - Trace elements** Certified values Al ..... 1103 mg/kg; Cr ..... 4.12 mg/kg; Ni ..... 2.47 mg/kg As ..... 0.85 mg/kg; Cu ..... 7.03 mg/kg; Pb ..... 40.9 mg/kg Cd ..... 0.56 mg/kg; Hg ..... 0.48 mg/kg; Zn ..... 100.6 mg/kg	15 g
IAEA-336	**Lichen - Trace elements** Recommended values As ..... 0.63 mg/kg; Fe ..... 430 mg/kg; Se ..... 0.22 mg/kg Ba ..... 6.4 mg/kg; Hg ..... 0.2 mg/kg; Sm ..... 0.106 mg/kg Br ..... 12.9 mg/kg; K ..... 1840 mg/kg; Sr ..... 9.3 mg/kg Ce ..... 1.28 mg/kg; La ..... 0.66 mg/kg; Th ..... 0.14 mg/kg Co ..... 0.29 mg/kg; Mn ..... 63 mg/kg; Zn ..... 30.4 mg/kg Cs ..... 0.11 mg/kg; Na ..... 320 mg/kg Cu ..... 3.6 mg/kg; Sb ..... 0.073 mg/kg Information values for Al, Cd, Cl, Cr, Eu, Lu, Nd, P, Pb, Rb, Sc, Tb, V, Yb	20 g
BCR-273	**Single cell protein** The material consists of about 10 g single cell protein powder in a sealed argon filled ampoule. Certified values Ca ..... 11.97 g/kg; K ..... 2.22 g/kg; P ..... 26.8 g/kg Fe ..... 0.156 mg/kg; N ..... 121.6 g/kg Indicative values for Mg, N (Kjeldahl), Na, S	10 g
BCR-274	**Single cell protein - Trace elements** Certified values As ..... 132 µg/kg; Cu ..... 13.1 µg/kg; Se ..... 1.03 mg/kg Cd ..... 30 µg/kg; Mn ..... 51.9 mg/kg; Zn ..... 42.7 µg/g Co ..... 39 µg/kg; Pb ..... 44 µg/kg Indicative values for F, I, Ni	10 g
New NIES23	**Tea leaves - Elements** Certified values Mg ..... 0.169 ± 0.012 %; Ca ..... 0.249 ± 0.021 %; Cu ..... 9.48 ± 0.76 mg/kg P ..... 0.472 ± 0.032 %; Mn ..... 704 ± 52 mg/kg; Zn ..... 31.9 ± 2.2 mg/kg K ..... 2.03 ± 0.11 %; Ni ..... 7.89 ± 0.57 mg/kg; Sr ..... 3.93 ± 0.25 mg/kg Indicative values for S, Na, Al, Cs and Ba.	35 g

WEPAL plant reference materials

The Wageningen Evaluating Programmes for Analytical Laboratories (WEPAL) runs international sample exchange programmes for continuous quality control of analytical data as produced by chemical laboratories. There are almost 700 laboratories who take part in one or more of WEPAL's regular ring-tests programmes.

The WEPAL plants reference samples are supplied with certificates including consensus values, indicative values and values for information, based on the results of the proficiency programme. The certificates are available on request.

	Code	Product	Unit
New	WEPAL-IPE-101	Coast cross (grass) / *Cynodon dactylon* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-103	Banana (seeds) / *Musa paradisiaca* (seeds) - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-105	Elephant grass / *Pennisetum purpurem schum* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-108	Parsley / *Petroselinum crispum* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-110	Clover (Honey-stalk) / *Melilotus officinalis desr*, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-111	Chive(s) / *Allium schoenoprasum l*, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-113	Rosa (plant) / *Rosa l*, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-114	Rosa (plant) / *Rosa l*, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-115	Rosa (plant) / *Rosa l*, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-116	Rosa (plant) / *Rosa l*, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-117	Rosa (plant) / *Rosa l*, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-118	Rosa (plant) / *Rosa l*, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-119	Rosa (plant) / *Rosa l*, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-120	Mushroom / *Agaricus bisporus* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-126	Maize (plant) / Zea mays - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-131	Potato (bulb) / *Solanum tuberosum* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-132	Broccoli / *Brassica oleracea l*, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-136	Bokashi / Bokashi - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-137	French bean / *Phaseolus vulgaris l*, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-138	Kiwi (leaf + stalk) / *Actinidia chinensis pl*, - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-140	Dandelion (root) / *Radix taraxaci tot*, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-141	Thyme / *Folia thymus vulgaris cong* - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-143	Valerian root / *Valeriana officinalis* - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-145	Valerian (root) / *Radix valerianae tot*, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-149	Luzerne / *Medicago sativum* - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-151	Grass / *Poaceae* - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-152	Lucerne/ *Medicago savitum* - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-162	Stinging nettle / *Urtica dioica* - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-164	Chrysanthemum / *Chrysanthemum l*, - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-165	Oil palm (leaf) / *Elaeis guineensis* - Inorganic composition (please ask for detailed information)	20 g
	Code	Product	Unit
New	WEPAL-IPE-167	French bean / *Phaseolus vulgaris* - Inorganic composition (please ask for detailed information)	20 g

	Code	Product	Unit
New	WEPAL-IPE-168	Sunflower / *Heliantus annuus* - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-174	Tulip (tuber) / *Tulipa l*, - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-176	Reed / *Phragmites communis* - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-178	Green pea / *Pisum sativum* - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-192	String bean (pods) / *Phaseolus vulgaris* - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-200	Maize (shoots) / Zea mays - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-548	Barley (grain) / *Hordeum vulgare* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-551	Peas (grain) / *Pisum sativum* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-556	Wheat (grain) / *Triticum aestivum* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-561	Summer barley (grain) / *Hordeum vulgara* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-565	Summer barley (grain) / *Hordeum distichon* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-568	Summer wheat (grain) / *Triticum aestivum* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-599	Sprouts / *Brassica oleracea var, gemmifera* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-605	Summer barley / *Hordeum vulgara* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-606	Winter rye / *Secale cereale l*, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-638	Maize (plant) / Zea mays L, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-677	Maize (plant) / Zea mays - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-680	Barley (straw) / *Hordeum vulgare* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-681	Sugar-beet (pulp) / *Beta vulgaris* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-682	Wheat (straw) / *Triticum aestivum* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-684	Wheat (grain) / *Triticum aestivum* - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-686	Grass / *Poaceae* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-722	Amaryllis (leaf) / *Hippeastrum* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-723	Maize (plant) / Zea mays - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-732	Cucumber (fruit) / *Cucumis sativus* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-753	Cucumber (fruit) / *Cucumis sativus* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-761	Pine (needles) / *Pinus radiata* - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-763	Lily (bulb) / *Lilium* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-767	Amaryllis (shoot) / *Hippeastrum* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-768	Amaryllis (bulb) / *Hippeastrum* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-775	Endive mixture / *Cichorium endiva l*, - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-776	Lettuce / *Lactuca sativa* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-778	Celery (turnip) / *Apium graveolens* (coarse, milled over 1 mm sieve) - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-780	Oats (grain) / *Avena sativa* - Inorganic composition (please ask for detailed information)	10 g

Plants

	Code	Product	Unit
New	WEPAL-IPE-783	Wheat (grain) / *Triticum aestivum* - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-790	Scots pine (needles) / *Pinus silvestris* - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-791	Crocus (tuber) / *Crocus vernus* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-792	Lettuce / *Lactuca sativa* - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-814	Peanut (plant) / *Arachis hypogaea* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-815	Sunflower (plant) / *Helianthus annuus l*, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-816	Caster-oil (shoot) / *Ricinus communis l*, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-817	Cucumber (fruit) / *Cucumis sativus* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-820	Endive / *Cichorium endiva* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-827	Lily (bulb) / *Lilium* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-846	Carrots (shoot) / *Daucus carota l*, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-853	Carrots (leaf) / *Daucus carota l*, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-858	Forrest Litter - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-873	Gladiolus (leaf) / *Gladiolus* - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-874	Gladiolus (bulb) / *Gladiolus* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-879	Conifers / *Coniferae* - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-883	Carnation (straw) / *Dianthus* - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-884	Yam / *Dioscorea* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-885	Maize (leafs) / Zea mays - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-896	Artichoke / *Cynara scólymus* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-898	Cabbage / *Brassica oleracea* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-899	Cabbage (leaf) / *Brassica oleracea* - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-900	Beet spinach / *Beta vulgaris* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-901	Maize (flour) / Zea mays - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-903	Broadbeans / *Vicia fàba* - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-904	Broadbeans (bark) / *Vicia fàba* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-920	Curly Kail (leaf) / *Brassica oleracea Laciniata* - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-929	Banana (fruit) / *Musa paradisiaca* - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-933	Lucerne / *Medicago sativum* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-936	Iceberg lettuce (mixture) / *Lactuca sativa l*, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-937	Crocus (tuber) / *Crocus vernus* - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-941	Gherkin (mixture) / *Sicyos l*, - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-944	Wintercarrots (mixture) / *Daucus carota l*, var, (coarse, milled over 1 mm sieve) - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-945	Apple (leaf Mixture) / *Malus* - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-946	Wintercarrots (leaf) / *Daucus carota l*, var, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-947	Gladiolus (mixture) / *Juncàceae* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-950	Melon / *Cucumis melo l*, - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-951	Aubergine (leaf+fruit) / *Solanum melongena* l, - Inorganic composition (please ask for detailed information)	10 g

	Code	Product	Unit
New	WEPAL-IPE-952	Grass (mixture) / *Poaceae* - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-954	Seaclub-rush / *Scirpus maritimus* - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-955	Cord grass / *Spartina anglica* - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-956	Sea aster / *Aster tripolium* - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-962	Wheat (straw) / *Triticum L*, - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-965	Tall fescue / *Festuca arundinacea* - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-966	Lucerne / *Medicago sativum* - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-968	Maize (stalk) / Zea mays - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-971	Potato (mixture) / *Solanum tuberosum* - Inorganic composition (please ask for detailed information)	30 g
New	WEPAL-IPE-975	Lucerne / *Medicago sativum* - Inorganic composition (please ask for detailed information)	20 g
New	WEPAL-IPE-976	Pansy / *Herba violae tric, tot*, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-977	Angelica / *Radix angelicae totum* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-978	Lucerne / *Medicago sativum* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-979	Dandelion (leaf) / *Folia taraxaci* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-981	Grape (stalk) / *Vitis labrusca* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-982	Lettuce / *Lactuca sativa l, Castelfranco* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-984	Spinach / *Spinacia oleracea* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-986	Rubber plant (leaves) / *Ficus elastica roxburghii* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-987	Lucerne / *Medicago sativum* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-988	Mangrove (leaf) / *Ceriops candolleana* (coarse, milled over 1 mm sieve) - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-990	Alfalfa farine de Lucerne / *Medicago sativa* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-991	Juniper-shoot / *Juniperus l*, - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-992	Saw-dust - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-996	Red-chicory / *Cycorium intibus l*, (coarse, milled over 1 mm sieve) - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-997	Red-chicory / *Cycorium intibus l*,(coarse, milled over 1 mm sieve) - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-998	Potato (tuber) / *Solanum tuberosom* - Inorganic composition (please ask for detailed information)	10 g
New	WEPAL-IPE-999	Acacia (leaf) / *Robina pseudo* - Inorganic composition (please ask for detailed information)	10 g

Ash, particulate and dust

Ash and particulate

Code	Product	Unit
LGC6180	Pulverised fuel ash - Extractable and total metals	50 g

Collected from a disposal site near Camarthan Bay in South Wales, UK. Pulverised fuel ash is a waste product of coal-fired power stations.
The extractable metal content refers to metals soluble in Aqua Regia using methods based on ISO 11466 (1995).

Extractable metal content

Assessed values

Al 25700 mg/kg	Cr 43.8 mg/kg	Na 1230 mg/kg
As 91.7 mg/kg	Cu 67.9 mg/kg	Ni 48.4 mg/kg
Ba 676 mg/kg	K 6170 mg/kg	Pb 48.6 mg/kg
Ca 6415 mg/kg	Mg 3660 mg/kg	V 105 mg/kg
Co 18.5 mg/kg	Mn 259 mg/kg	Zn 115 mg/kg

Indicative values for B, Be, Fe, Hg, Li, Sb, Se, Ti

Total metal content

Indicative values for Al, As, Ba, Be, Ca, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sn, Ti, V, Zn

BCR-038	Fly ash from pulverised coal - Trace elements	5 g

Certified values

As 48.0 mg/kg	Cu 176 mg/kg	Na 3740 mg/kg
Cd 4.6 mg/kg	F 538 mg/kg	Pb 262 mg/kg
Cl 323 mg/kg	Fe 33800 mg/kg	Zn 581 mg/kg
Co 53.8 mg/kg	Hg 2.10 mg/kg	
Cr 192 mg/kg	Mn 479 mg/kg	

Indicative values for Ni, Th, V

BCR-176R	Fly ash - Trace elements	40 g

The CRM was prepared from a fly ash collected in the electrostatic filters of a city waste incineration plant.

Compound	Certified value (mg/kg)	Uncertainty (mg/kg)
As	54	5
Cd	226	19
Co	26.7	1.6
Cr	810	70
Cu	1050	70
Fe	13100	500
Ni	117	6
Pb	5000	500
Sb	850	50
Se	18.3	1.9
Tl	1.32	0.21
Zn	16800	400

BCR-490	Fly ash - Dioxins and furans	30 g

Compound	Certified value µg/kg	Uncertainty µg/kg
2,3,7,8-TCDD	0.169	0.012
1,2,3,7,8-PeCDD	0.67	0.04
1,2,3,4,7,8-HxCDD	0.95	0.11
1,2,3,6,7,8-HxCDD	4.8	0.4
1,2,3,7,8,9-HxCDD	2.84	0.17
2,3,7,8-TCDF	0.90	0.05
1,2,3,7,8-PeCDF	1.71	0.12
2,3,4,7,8-PeCDF	1.8	0.11
1,2,3,4,7,8-HxCDF	2.37	0.12
1,2,3,6,7,8-HxCDF	2.64	0.14
1,2,3,7,8,9-HxCDF	0.34	0.05
2,3,4,6,7,8-HxCDF	2.47	0.17

BCR-615	Fly ash - Dioxins and furans	50 g

Certified values

2,3,7,8-T_4CDD (D48) 27 pg/g	2,3,4,7,8-P_5CDF (F114) 125 pg/g
1,2,3,7,8-P_5CDD (D54) 92 pg/g	1,2,3,4,7,8-H_6CDF (F118) 203 pg/g
1,2,3,4,7,8-H_6CDD (D66) 74 pg/g	1,2,3,6,7,8-H_6CDF (F121) 204 pg/g
1,2,3,6,7,8-H_6CDD (D67) 103 pg/g	1,2,3,7,8,9-H_6CDF (F124) 13.3 pg/g
1,2,3,7,8,9-H_6CDD (D70) 108 pg/g	2,3,4,6,7,8-H_6CDF (F130) 130 pg/g
1,2,3,4,6,7,8-H_7CDD (D73) 0.87×10^3 pg/g	1,2,3,4,6,7,8-H_7CDF (F131) 0.75×10^3 pg/g
O_8CDD (D75) 1.75×10^3 pg/g	1,2,3,4,7,8,9-H_7CDF (F134) 61 pg/g
2,3,7,8-T_4CDF (F83) 86 pg/g	O_8CDF (F135) 0.29×10^3 pg/g
1,2,3,7,8-P_5CDF (F94) 176 pg/g	

Code	Product	Unit

New NIES24 — Fly ash - PCDDs and PCDFs — 15 g

Certified values (dry weight basis)

PCDD isomers

2,3,7,8-TeCDD	4.2 ± 0.6 ng/g	1,2,3,7,8,9-HxCDD	49 ± 8 ng/g
1,2,3,7,8-PeCDD	28 ± 4 ng/g	1,2,3,4,6,7,8-HpCDD	250 ± 60 ng/g
1,2,3,4,7,8-HxCDD	39 ± 7 ng/g	OCDD	280 ± 70 ng/g
1,2,3,6,7,8-HxCDD	38 ± 7 ng/g		

PCDF isomers

2,3,7,8-TeCDF	7.1 ± 1.7 ng/g	1,2,3,7,8,9-HxCDF	2.9 ± 1.2 ng/g
1,2,3,7,8-PeCDF	23 ± 8 ng/g	2,3,4,6,7,8-HxCDF	38 ± 9 ng/g
2,3,4,7,8-PeCDF	23 ± 5 ng/g	1,2,3,4,6,7,8-HpCDF	160 ± 50 ng/g
1,2,3,4,7,8-HxCDF	43 ± 8 ng/g	1,2,3,4,7,8,9-HpCDF	18 ± 7 ng/g
1,2,3,6,7,8-HxCDF	45 ± 8 ng/g	OCDF	63 ± 21 ng/g

PCDD congeners

TeCDDs	55 ± 8 ng/g	HpCDDs	420 ± 80 ng/g
PeCDDs	170 ± 20 ng/g	OCDD	280 ± 70 ng/g
HxCDDs	390 ± 60 ng/g	Total PCDDs	1300 ± 200 ng/g

PCDF congener

TeCDFs	220 ± 30 ng/g	HpCDFs	260 ± 80 ng/g
PeCDFs	330 ± 50 ng/g	OCDF	63 ± 21 ng/g
HxCDFs	400 ± 50 ng/g	Total PCDFs	1300 ± 200 ng/g

Total (PCDDs + PCDFs) 2600 ± 400 ng/g

TEQ values are also listed in the certificate

Indicative values for PCBs

New CIL-EDF-5369 — Fly ash — 10 g

Analyte (all values in ng/kg)	Assigned Value[1]	Standard Deviation	Reference Value[2]	(n)[3]
Polychlorinated dioxins and furans				
1,3,6,8-TetraCDD	18.9	3.90	18.9 ± 7.8	20
2,3,7,8-TetraCDD	11.4	2.98	11.4 ± 5.96	37
Total TetraCDD	147	25.9	147 ± 51.8	30
1,2,3,7,8-PentaCDD	38.4	9.72	38.4 ± 19.4	37
Total PentaCDD	327	58.1	327 ± 116	30
1,2,3,4,7,8-HexaCDD	31.3	10.9	31.3 ± 21.8	37
1,2,3,6,7,8-HexaCDD	70.4	22.2	70.4 ± 44.4	37
1,2,3,7,8,9-HexaCDD	56.3	19.2	56.3 ± 38.4	37
Total HexaCDD	780	132	780 ± 264	30
1,2,3,4,6,7,8-HeptaCDD	899	301	899 ± 602	37
Total HeptaCDD	1810	440	1810 ± 880	30
OctaCDD	3660	1150	3660 ± 2300	38
1,3,6,8-TetraCDF	29.2	8.27	29.2 ± 16.5	9
2,3,7,8-TetraCDF	21.8	5.87	21.8 ± 11.7	37
Total TetraCDF	621	104	621 ± 208	30
1,2,3,7,8-PentaCDF	59.6	14.4	59.6 ± 28.8	37
2,3,4,7,8-PentaCDF	46.9	12.0	46.9 ± 24.0	37
Total-PentaCDF	780	131	780 ± 262	30
1,2,3,4,7,8-HexaCDF	89.7	28.8	89.7 ± 57.6	37
1,2,3,6,7,8-HexaCDF	100	30.4	100 ± 60.8	37
1,2,3,7,8,9-HexaCDF	13.3	2.54	13.3 ± 5.08	35
2,3,4,6,7,8-HexaCDF	125	34.7	125 ± 69.4	37
Total-HexaCDF	1000	154	1000 ± 308	30
1,2,3,4,6,7,8-HeptaCDF	530	159	530 ± 318	37
1,2,3,4,7,8,9-HeptaCDF	117	37.5	117 ± 75.0	37
Total-HeptaCDF	1080	228	1080 ± 456	30
OctaCDF	864	243	864 ± 486	37
Polychlorinated biphenyls[4]				
3,3',4,4'-TetraCB (#77)	8.26	1.85	8.26 ± 3.70	23
3,4,4',5-TetraCB (#81)	5.26	0.93	5.26 ± 1.86	23
2,3,3',4,4'-PentaCB (#105)	7.61	3.29	7.61 ± 6.58	24
2,3,4,4',5-PentaCB (#114)	2.75	0.65	2.75 ± 1.30	24
2,3',4,4',5-PentaCB (#118)	8.26	4.48	8.26 ± 8.96	25
2',3,4,4',5-PentaCB (#123)	1.72	0.45	1.72 ± 0.90	23
3,3',4,4',5-PentaCB (#126)	13.9	2.52	13.9 ± 5.04	24
2,3,3',4,4',5-HexaCB (#156)	9.43	1.65	9.43 ± 3.30	24
2,3,3',4,4',5'-HexaCB (#157)	6.24	0.84	6.24 ± 1.68	24
2,3',4,4',5,5'-HexaCB (#167)	4.26	0.69	4.26 ± 1.38	24
3,3',4,4',5,5'-HexaCB (#169)	9.93	1.45	9.93 ± 2.90	24
2,2',3,3',4,4',5-HeptaCB (#170)	20.2	7.90	20.2 ± 15.8	6
2,2',3,4,4',5,5'-HeptaCB (#180)	11.4	5.07	11.4 ± 10.1	6
2,3,3',4,4',5,5'-HeptaCB (#189)	14.3	2.22	14.3 ± 4.44	24

[1] Assigned value as determined by Manna Associates in the UK using Cofino analysis of raw interlaboratory study data.
[2] Reference value is the Assigned Value plus or minus two standard deviations. Negative numbers resulting from two standard deviations being greater than the assigned value have no significance.
[3] Number of laboratories providing results for this analyte.
[4] All numbers in parentheses refer to the IUPAC designation for the compound.

Code	Product	Unit

NIST-2689 — Coal fly ash - Constituent elements — set (3)

Set of 3 x 10 g

Certified values

Al	12.94 %	K	2.20 %	P	0.10 %
Ca	2.18 %	Mg	0.61 %	Si	24.06 %
Fe(total)	9.32 %	Na	0.25 %	Ti	0.75 %

Indicative values for As, Ba, Be, Cd, Co, Cr, Cs, Eu, Hf, Hg, Mn, Ni, Pb, Sb, Sc, Se, Sr, Th, Zn

NIST-2690 — Coal fly ash - Constituent elements — set (3)

Set of 3 x 10 g

Certified values

Al	12.35 %	Mg	1.53 %	Si	25.85 %
Ca	5.71 %	Na	0.24 %	Ti	0.52 %
Fe(total)	3.57 %	P	0.52 %		
K	1.04 %	S	0.15 %		

Indicative values for As, Ba, Be, Cd, Co, Cr, Cs, Eu, Hf, Hg, Mn, Ni, Pb, Sb, Sc, Se, Sr, Th, Zn

NIST-2691 — Coal fly ash - Constituent elements — set (3)

Set of 3 x 10 g

Certified values

Al	9.81 %	Mg	3.12 %	Si	16.83 %
Ca	18.45 %	Na	1.09 %	Ti	0.90 %
Fe(total)	4.42 %	P	0.51 %		
K	0.34 %	S	0.83 %		

Indicative values for As, Ba, Be, Cd, Co, Cr, Cs, Eu, Hf, Hg, Mn, Ni, Pb, Sb, Sc, Se, Sr, Th, Zn

IC-CTA-FFA-1 — Fine fly ash - Constituent elements — 50 g

Collected from the 3rd zone electrofilters at Kozienice power station in Poland

Certified values for elements

Al	14.87 wt. %	Hf	6.09 mg/kg	Si	22.48 wt %
As	53.6 mg/kg	La	60.7 mg/kg	Sm	10.9 mg/kg
Ba	835 mg/kg	Li	128 mg/kg	Sc	24.2 mg/kg
Ce	120 mg/kg	Lu	0.658 mg/kg	Sr	250 mg/kg
Cr	156 mg/kg	Mn	1066 mg/kg	Ta	2.11 mg/kg
Cu	158 mg/kg	Na	2.19 mg/kg	Tb	1.38 mg/kg
Dy	9.09 mg/kg	Nd	56.8 mg/kg	Th	29.4 mg/kg
Er	4.52 mg/kg	Ni	99.0 mg/kg	Tm	0.705 mg/kg
Eu	2.39 mg/kg	P	725 mg/kg	W	10.5 mg/kg
F	198 mg/kg	Pb	369 mg/kg	Y	45.0 mg/kg
Fe	4.89 wt. %	Rb	185 mg/kg	Yb	4.24 mg/kg
Gd	10.0 mg/kg	Sb	17.6 mg/kg	Zn	569 mg/kg

Informational values for Be, Ca, Cd, Ga, In, K, Mg, Mo, Se

NCS FC82012 — Coal ash - Constituents — 30 g

Certified values

SiO_2	46.77 %	MgO	1.73 %	Na_2O	1.36 %
Al_2O_3	14.96 %	SO_3	3.94 %	P_2O_5	0.50 %
Fe_2O_3	5.51 %	TiO_2	0.63 %		
CaO	21.37 %	K_2O	1.41 %		

NCS FC82014 — Coal ash - Constituents — 30 g

Certified values

SiO_2	59.98 %	MgO	1.08 %	Na_2O	0.22 %
Al_2O_3	31.70 %	SO_3	0.28 %	P_2O_5	0.28 %
Fe_2O_3	7.80 %	TiO_2	1.17 %		
CaO	1.44 %	K_2O	1.36 %		

NCS FC82015 — Coal ash - Constituents — 30 g

Certified values

SiO_2	62.93 %	MgO	0.90 %	Na_2O	1.18 %
Al_2O_3	17.88 %	SO_3	1.20 %	P_2O_5	0.85 %
Fe_2O_3	6.04 %	TiO_2	0.79 %		
CaO	6.11 %	K_2O	0.87 %		

New **NIM-GBW11131** — Coal ash - Constituents — 30 g

Certified values

SiO_2	50.08 %	MgO	0.76 %	Na_2O	0.41 %
Al_2O_3	33.78 %	SO_3	1.25 %	P_2O_5	0.18 %
Fe_2O_3	4.36 %	TiO_2	1.77 %		
CaO	5.50 %	K_2O	0..87 %		

NCS FC82017 — Coal ash - Constituents — 30 g

Certified values

SiO_2	31.24 %	MgO	1.17 %	Na_2O	0.46 %
Al_2O_3	10.00 %	SO_3	2.76 %	P_2O_5	0.04 %
Fe_2O_3	8.16 %	TiO_2	0.56 %		
CaO	42.40 %	K_2O	1.28 %		

Code	Product	Unit

New NIM-GBW08401 — **Coal fly ash - Metals** — 30 g

Certified values

As 11.4 µg/g	Cr 60 µg/g	Pb 33.8 µg/g
Be 10.7 µg/g	Cu 53 µg/g	Se 1.13 µg/g
Cd 0.16 µg/g	Fe 7.65 %	V 95 µg/g
Co 33.2 µg/g	Mn 1178 µg/g	Zn 61 µg/g

Indicative values for Ba, Hg

RTC-CRM001-100 — **Fly ash - Trace elements** — 100 g

Sample from a power plant in the Western United States. The certified values were determined by USEPA SW846 (3rd edition) Methods 3050 and 6010. This sample is suitable for use by these and other similar methods.

Certified values

Ba 428 mg/kg	Cu 40.7 mg/kg
Cr 29.1 mg/kg	Ni 19.8 mg/kg

RTC-CRM012-100 — **Industrial incineration ash - Metals** — 100 g

Ash material from an industrial incineration facility located in the Western United States. The certified values were determined by USEPA SW846 (3rd edition) Methods 3050 and 6010. The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Lot AR12

Ag 54,8 mg/kg	Cr 162000 mg/kg	Mn 202 mg/kg
Al 2160 mg/kg	Cu 3020 mg/kg	Na 29200 mg/kg
Ba 18,7 mg/kg	Fe 28700 mg/kg	Ni 13300 mg/kg
Cd 362 mg/kg	K 73300 mg/kg	Pb 120 mg/kg
Ca 2110 mg/kg	Mg 1510 mg/kg	Zn 635 mg/kg

Indicative values for Co, V

NIST-1975 — **Diesel particulate extract - PAHs** — 4 x 1.2 mL

Certified Concentrations for Selected PAHs

	Mass Fraction mg/kg		Mass Fraction mg/kg
Phenanthrene	8.00 ± 0.20	Triphenylene	2.38 ± 0.10
Fluoranthene	13.5 ± 0.6	Benzo(b)fluoranthene	3.20 ± 0.10
Benzo(a)anthracene	0.092 ± 0.015	Benzo(k)fluoranthene	0.174 ± 0.050
Chrysene	1.95 ± 0.07	Benzo(e)pyrene	0.268 ± 0.023

Reference Concentrations for PAHs, Nitro-substituted PAHs, Extract Residue Mass, Mutagenicity (revertants/ µg of organic extract).

NIST-2975 — **Diesel particulate matter - PAHs** — 1 g

Certified Concentrations for Selected PAHs

	Mass Fraction mg/kg		Mass Fraction mg/kg
Phenanthrene	17.0 ± 2.8	Benzo(j)fluoranthene	0.82 ± 0.11
Fluoranthene	26.6 ± 5.1	Benzo(k)fluoranthene	0.678 ± 0.076
Pyrene	0.90 ± 0.24	Benzo(e)pyrene	1.11 ± 0.10
Benzo(a)anthracene	0.317 ± 0.066	Benzo(a)pyrene	0.0522 ± 0.043
Chrysene	4.56 ± 0.16	Benzo(ghi)perylene	0.498 ± 0.044
Triphenylene	5.22 ± 0.20		

Reference Concentrations for PAHs, Total Extractable Mass and Particle-Size Characteristics.

NIST-1650b — **Diesel particulate matter - PAHs and nitro-PAHs** — 200 mg

Certified concentrations for selected PAHs in NIST-1650b

Naphthalene	5.07 ± 0.43 mg/kg	Triphenylene	9.17 ± 0.94 mg/kg
1-Methylnaphthalene	1.51 ± 0.12 mg/kg	Benzo(a)fluoranthene	0.370 ± 0.029 mg/kg
2-Methylnaphthalene	3.05 ± 0.56 mg/kg	Benzo(b)fluoranthene	6.77 ± 0.84 mg/kg
Phenanthrene	69.5 ± 1.9 mg/kg	Benzo(j)fluoranthene	3.24 ± 0.42 mg/kg
Anthracene	7.67 ± 0.47 mg/kg	Benzo(k)fluoranthene	2.37 ± 0.21 mg/kg
1-Methylphenanthrene	28.3 ± 1.5 mg/kg	Benzo(a)pyrene	1.17 ± 0.09 mg/kg
2-Methylphenanthrene	70.7 ± 2.7 mg/kg	Benzo(e)pyrene	6.30 ± 0.50 mg/kg
3-Methylphenanthrene	55.1 ± 1.9 mg/kg	Perylene	0.165 ± 0.032 mg/kg
9-Methylphenanthrene	35.1 ± 1.9 mg/kg	Benzo(ghi)perylene	5.91 ± 0.18 mg/kg
Fluoranthene	47.3 ± 0.8 mg/kg	Indeno(1,2,3-cd)pyrene	4.44 ± 0.28 mg/kg
Pyrene	43.4 ± 1.6 mg/kg	Dibenz(a,c)anthracene	0.438 ± 0.043 mg/kg
Benzo(ghi)fluoranthene	10.8 ± 1.0 mg/kg	Dibenz(a,h)anthracene	0.365 ± 0.071 mg/kg
Benzo(c)phenanthrene	2.51 ± 0.29 mg/kg	Dibenz(a,j)anthracene	0.387 ± 0.051 mg/kg
Benz(a)anthracene	6.18 ± 0.30 mg/kg	Benzo(b)chrysene	0.290 ± 0.020 mg/kg
Chrysene	13.3 ± 1.1 mg/kg	Picene	0.499 ± 0.061 mg/kg

Certified concentrations for selected nitro-PAHs in NIST-1650b

9-Nitroanthracene	5890 ± 310 µg/kg	6-Nitrochrysene	45.5 ± 1.9 µg/kg
1-Nitropyrene	18200 ± 200 µg/kg	6-Nitrobenzo(a)pyrene	1390 ± 100 µg/kg
7-Nitrobenz(a)anthracene	967 ± 42 µg/kg	1,6-Dinitropyrene	84.0 ± 3.0 µg/kg

Reference values for selected PAHs, NItro-PAHs.
Indicative values for for particle-size characteristics and specific surface area

Ash, particulate and dust

Code	Product	Unit
NIES08	Vehicle exhaust particulates - Major and minor constituents and trace elements	7 g

The NIES CRM " Vehicle Exhaust Particulates" was prepared from particulate matter collected from electrostatic precipitators in huge ventilators connected to a highway tunnel.

Certified values

Al 0,33 ± 0,02 %	As 2,6 ± 0,2 µg/g	Pb 219 ± 9 µg/g
Ca 0,53 ± 0,02 %	Cd 1,1 ± 0,1 µg/g	Sb 6,0 ± 0,4 µg/g
K 0,115 ± 0,008 %	Co 3,3 ± 0,3 µg/g	Sr 89 ± 3 µg/g
Mg 0,101 ± 0,005 %	Cr 25,5 ± 1,5 µg/g	V 17 ± 2 µg/g
Na 0,192 ± 0,008 %	Cu 67 ± 3 µg/g	
Zn 0,104 ± 0,005 %	Ni 18,5 ± 1,5 µg/g	

New NIES28 — Urban aerosols - Elements — 15 g

Certified values

Na 0.796 ± 0.065 %	Fe 2.92 ± 0.17 %	As 90.2 ± 10.7 mg/kg
Mg 1.40 ± 0.06 %	Zn 0.114 ± 0.010 %	Sr 469 ± 16 mg/kg
Al 5.04 ± 0.10 %	V 73.2 ± 7.0 mg/kg	Cd 5.60 ± 0.43 mg/kg
K 1.37 ± 0.06 %	Mn 686 ± 42 mg/kg	Ba 874 ± 65 mg/kg
Ca 6.69 ± 0.24 %	Ni 63.8 ± 3.4 mg/kg	Pb 403 ± 32 mg/kg
Ti 0.292 ± 0.033 %	Cu 104 ± 12 mg/kg	U 4.33 ± 0.26 mg/kg

Indicative value for further elements.

Dust and Fumes

BCR-605 — Urban dust - Trimethyllead — 15 g

Certified value

Trimethyllead 7.9 µg/kg

BCR-723 — Road dust - Palladium, platinum and rhodium — 25 g

Certified values

Pd 6.1 µg/kg	Pt 81.3 µg/kg	Rh 12.8 µg/kg

NIST-1648A — Urban particulate matter - Constituent elements — 2 g

Certified values

Al 3.42 %	Cr 402 mg/kg	Pb 0.655 %
As 115 mg/kg	Cu 610 mg/kg	Rb 51.0 mg/kg
Br 502 mg/kg	Fe 3.92 %	S 5.51 %
Ca 5.84 %	K 1.056 %	Sb 45.4 mg/kg
Cd 75 mg/kg	Mg 0.813 %	Sr 215 mg/kg
Ce 54.6 mg/kg	Mn 790 mg/kg	Ti 4021 mg/kg
Cl 4543 mg/kg	Na 4240 mg/kg	V 127 mg/kg
Co 17.93 mg/kg	Ni 81.1 mg/kg	Zn 4800 mg/kg

Indicative values for Ag, B, Cs, La, Se, Si, Sm and W

Code	Product	Unit

New NIST-1649B — Urban dust - Organic contaminants — 2.5 g

This Standard Reference Material® (SRM®) is an atmospheric particulate material collected in an urban area and is intended for use in evaluating analytical methods for the determination of selected polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyl (PCB) congeners, and chlorinated pesticides in atmospheric particulate material and similar matrices. Reference values are also provided for nitro-substituted polycyclic aromatic hydrocarbons (nitro-PAHs), decabromodiphenyl ether, toxaphene congeners, and polychlorinated dibenzo-p-dioxin and dibenzofuran congeners. Information concentration values are provided for selected hydrocarbons, hopanes, steranes, ketones, and particle-size characteristics. All of the constituents for which certified, reference, and information values are provided in NIST-1649B are naturally present in the particulate material.

Certified concentrations for selected PAHs

	Mass fraction (mg/kg)		Mass fraction (mg/kg)
Phenanthrene	3.941 ± 0.047	Benzo[e]pyrene	2.970 ± 0.043
4H-Cyclopenta[def]phenanthrene	0.252 ± 0.018	Benzo[a]pyrene	2.47 ± 0.17
Fluoranthene	6.14 ± 0.12	Perylene	0.606 ± 0.013
Pyrene	4.784 ± 0.029	Benzo[ghi]perylene	3.937 ± 0.052
Benzo[ghi]fluoranthene	0.885 ± 0.015	Indeno[1,2,3-cd]pyrene	2.96 ± 0.17
Benzo[c]phenanthrene	0.449 ± 0.014	Anthanthrene	0.509 ± 0.014
Benz[a]anthracene	2.092 ± 0.048	Dibenz[a,c]anthracene	0.212 ± 0.017
Chrysene	3.008 ± 0.044	Dibenz[a,h]anthracene	0.290 ± 0.004
Triphenylene	1.244 ± 0.052	Picene	0.390 ± 0.028
Benzo[b]fluoranthene	5.99 ± 0.20	Dibenzo[b,k]fluoranthene	0.655 ± 0.035
Benzo[j]fluoranthene	1.731 ± 0.083	Dibenzo[a,e]pyrene	0.538 ± 0.024
Benzo[k]fluoranthene	1.748 ± 0.083		

Certified concentrations for selected PCB congeners

		Mass fraction (µg/kg)
PCB 49	2,2'4,5'-Tetrachlorobiphenyl	8.92 ± 1.0
PCB 52	2,2',5,5'-Tetrachlorobiphenyl	23.7 ± 3.6
PCB 101	2,2',4,5,5'-Pentachlorobiphenyl	55.1 ± 5.1
PCB 105	2,3,3',4,4'-Pentachlorobiphenyl	9.7 ± 1.0
PCB 110	2,3,3',4',6-Pentachlorobiphenyl	32.9 ± 3.0
PCB 149	2,2',3,4',5',6-Hexachlorobiphenyl	77.5 ± 2.1
PCB 151	2,2',3,5,5',6-Hexachlorobiphenyl	32.6 ± 2.1
PCB 153	2,2',4,4',5,5'-Hexachlorobiphenyl	74.8 ± 1.0
PCB 163	2,3,3',4'5,6-Hexachlorobiphenyl	21.69 ± 0.33
PCB 183	2,2',3,4,4',5',6-Heptachlorobiphenyl	16.80 ± 0.85
PCB 187	2,2',3,4',5,5',6-Heptachlorobiphenyl	38.5 ± 2.9
PCB 194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl	27.8 ± 1.6
PCB 206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	16.6 ± 1.2

Certified concentrations for selected chlorinated pesticides

Chlorinated pesticides	Mass fraction in µg/kg	Chlorinated pesticides	Mass fraction in µg/kg
trans-Chlordane (γ-Chlordane)	50.7 ± 5.1	4,4'-DDE	49.5 ± 1.3
trans-Nonachlor	33.0 ± 3.5	4,4'-DDD	36.8 ± 1.9

Reference values for PAHs, nitro-substituted PAHs, PCBs, pesticides incl. toxaphene, decabromodiphenyl ether, dibenzo-p-dioxin and dibenzofuran congeners.

BCR-553-4 — Formaldehyde-2,4-dinitrophenyl-hydrazone on filter — set

Set of 2 x BCR 553 & 1 x BCR 554 (blank)

BCR-553 (spiked filter)

Certified value (per filter)

Formaldehyde-2,4-dinitrophenylhydrazone.....4.96 µg

BCR-554 (blank filter)

Certified value (per filter)

Formaldehyde-2,4-dinitrophenylhydrazone..... < 0.1µg

Code	Product	Unit
	BCR-555 Council directive 80/1107/EEC and national legislation prescribes that the exposure of each individual worker to certain potentially harmful vapours has to be monitored periodically. This requires “personal monitoring” where a tube, containing a suitable sorbing agent, is attached to the worker’s clothes. After a set sampling period any harmful vapours absorbed onto the material in the tube are desorbed, either by heating or solvent extraction, and determined using gas chromatography.	
BCR-555	Tenax charged tube - Chlorinated hydrocarbons Stainless steel tube of 9.0 cm length and 0.25 inches outer diameter containing a single section of 250 mg TENAX GR, charged with 4 chlorinated hydrocarbons and toluene at the levels shown above. Certified values Dichloromethane..... 320 ng Trichloroethylene.....390 ng Toluene..... 57 ng 1,1,1-Trichloroethane..... 370 ng Perchloroethylene .....327 ng	tube
RTC-CRM014-050	Baghouse dust - Trace metals Certified values Lot V014 Cd ..... 510 mg/kg Cr.....2230 mg/kg Pb ..... 1910 mg/kg	50 g
NIST-1878a	Respirable alpha quartz One form of respirable silica Certified value Crystalline α–quartz.....93.7 % ± 0.21 %	5 g
NIST-1879a	Respirable cristabolite One form of respirable silica Certified value Crystalline cristabolite..... 95.6 %	5 g

Code	Product	Unit
NIST-2585	This Standard Reference Material® (SRM®) is a house dust intended for use in evaluating analytical methods for the determination of selected polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyl (PCB) congeners, chlorinated pesticides, and polybrominated diphenyl ether (PBDE) congeners in house dust and similar matrices.	10 g

Certified Concentrations for Selected PAHs

	Mass Fraction (dry-mass basis)		Mass Fraction (dry-mass basis)
Naphthalene	266 ± 8 µg/kg	Benzo[j]fluoranthene	1320 ± 110 µg/kg
Dibenzothiophene	109 ± 8 µg/kg	Benzo[k]fluoranthene	1330 ± 70 µg/kg
Phenanthrene	1920 ± 20 µg/kg	Benzo[a]fluoranthene	74.5 ± 8.1 µg/kg
Anthracene	96.0 ± 5.2 µg/kg	Benzo[e]pyrene	2160 ± 80 µg/kg
4H-cyclopenta[def]phenanthrene	117 ± 10 µg/kg	Benzo[a]pyrene	1140 ± 10 µg/kg
3-Methylphenanthrene	293 ± 36 µg/kg	Perylene	387 ± 23 µg/kg
2-Methylphenathrene	352 ± 40 µg/kg	Benzo[ghi]perylene	2280 ± 40 µg/kg
9-Methylphenanthrene	205 ± 16 µg/kg	Indeno[1,2,3-cd]pyrene	2080 ± 100 µg/kg
1-Methylphenanthrene	197 ± 29 µg/kg	Dibenz[a,j]anthracene	267 ± 9 µg/kg
Fluoranthene	4380 ± 100 µg/kg	Dibenz[a,c]anthracene	183 ± 25 µg/kg
Pyrene	3290 ± 30 µg/kg	Dibenz[a,h]anthracene	301 ± 50 µg/kg
Benzo[ghi]fluoranthene	317 ± 11 µg/kg	Benzo[b]chrysene	182 ± 6 µg/kg
Benzo[c]phenanthrene	288 ± 10 µg/kg	Picene	413 ± 15 µg/kg
Benz[a]anthracene	1160 ± 54 µg/kg	Coronene	603 ± 38 µg/kg
Chrysene	2260 ± 60 µg/kg	Dibenzo[b,k]fluoranthene	596 ± 22 µg/kg
Triphenylene	589 ± 17 µg/kg	Dibenzo[a,e]pyrene	477 ± 67 µg/kg
Benzo[b]fluoranthene	2700 ± 90 µg/kg		

Certified Concentrations for Selected PCB Congeners

	Mass Fraction (dry-mass basis)
PCB 18 (2,2',5-Trichlorobiphenyl)	12.8 ± 1.0 µg/kg
PCB 28 (2,4,4'-Trichlorobiphenyl)	13.4 ± 0.5 µg/kg
PCB 31 (2,4',5-Trichlorobiphenyl)	14.0 ± 0.5 µg/kg
PCB 44 (2,2'3,5'-Tetrachlorobiphenyl)	18.1 ± 1.9 µg/kg
PCB 52 (2,2',5,5'-Tetrachlorobiphenyl	21.8 ± 1.9 µg/kg
PCB 56 (2,3,3',4-Tetrachlorobiphenyl)	4.42 ± 0.28 µg/kg
PCB 70 (2,3',4',5-Tetrachlorobiphenyl)	13.1 ± 1.2 µg/kg
PCB 74 (2,4,4',5-Tetrachlorobiphenyl)	5.22 ± 0.51 µg/kg
PCB 87 (2,2',3,4,5'-Pentachlorobiphenyl)	16.6 ± 0.8 µg/kg
PCB 92 (2,2',3,5,5'-Pentachlorobiphenyl)	5.48 ± 0.72 µg/kg
PCB 95 (2,2',3,5',6-Pentachlorobiphenyl)	22.7 ± 2.6 µg/kg
PCB 99 (2,2',4,4',5-Pentachlorobiphenyl)	11.6 ± 0.4 µg/kg
PCB 101 (2,2',4,5,5'-Pentachlorobiphenyl)	29.8 ± 2.3 µg/kg
PCB 105 (2,3,3',4,4'-Pentachlorobiphenyl	13.2 ± 1.4 µg/kg
PCB 107 (2,3,3',4,5'-Pentachlorobiphenyl)	4.14 ± 0.47 µg/kg
PCB 110 (2,3,3',4',6-Pentachlorobiphenyl	28.1 ± 3.7 µg/kg
PCB 118 (2,3',4,4',5-Pentachlorobiphenyl)	26.3 ± 1.7 µg/kg
PCB 138 (2,2',3,4,4',5'-Hexachlorobiphenyl)	27.6 ± 2.1 µg/kg
PCB 146 (2,2',3,4',5,5'-Hexachlorobiphenyl)	4.89 ± 0.38 µg/kg
PCB 149 (2,2',3,4',5',6-Hexachlorobiphenyl)	24.4 ± 1.9 µg/kg
PCB 151 (2,2',3,5,5',6-Hexachlorobiphenyl)	6.92 ± 0.64 µg/kg
PCB 153 (2,2',4,4',5,5'-Hexachlorobiphenyl)	40.2 ± 1.8 µg/kg
132 (2,2',3,3, ',4,6'-Hexachlorobiphenyl)	
PCB 158 (2,3,3',4,4',6-Hexachlorobiphenyl)	4.50 ± 0.43 µg/kg
PCB 163 (2,3,3',4',5,6-Hexachlorobiphenyl)	7.2 ± 1.2 µg/kg
PCB 170 (2,2',3,3',4,4',5-Heptachlorobiphenyl)	8.8 ± 1.0 µg/kg
PCB 174 (2,2',3,3',4,5,6'-Heptachlorobiphenyl)	8.83 ± 0.47 µg/kg
PCB 180 (2,2',3,4,4',5,5'-Heptachlorobiphenyl)	18.4 ± 3.2 µg/kg
PCB 183 (2,2',3,4,4',5',6-Heptachlorobiphenyl)	5.27 ± 0.39 µg/kg
PCB 187 (2,2',3,4',5,5',6-Heptachlorobiphenyl)	11.3 ± 1.4 µg/kg
PCB 206 (2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl)	3.81 ± 0.13 µg/kg

Certified Concentrations for Selected Chlorinated Pesticides

Mass Fraction (dry-mass basis)		Mass Fraction (dry-mass basis)		Mass Fraction (dry-mass basis)
4,4'-DDE	261 ± 2 µg/kg	2,4'-DDT	44.5 ± 3.9 µg/kg	
4,4'-DDD	27.3 ± 0.8 µg/kg	4,4'-DDT	111 ± 23 µg/kg	

Certified Concentrations for Selected PBDE Congeners

	Mass Fraction (dry-mass basis)
PBDE 17 (2,2',4-Tribromodiphenyl ether)	11.5 ± 1.2 µg/kg
PBDE 28 (2,4,4'-Tribromodiphenyl ether)	46.9 ± 4.4 µg/kg
33 (2',3,4-Tribromodiphenyl ether)	
PBDE 47 (2,2',4,4'-Tetrabromodiphenyl ether)	497 ± 46 µg/kg
PBDE 49 (2,2',4,5'-Tetrabromodiphenyl ether)	53.5 ± 4.2 µg/kg
PBDE 85 (2,2',3,4,4'-Pentabromodiphenyl ether)	43.8 ± 1.6 µg/kg
PBDE 99 (2,2',4,4',5-Pentabromodiphenyl ether)	892 ± 53 µg/kg
PBDE 100 (2,2',4,4',6-Pentabromodiphenyl ether)	145 ± 11 µg/kg
PBDE 138 (2,2',3,4,4',5'-Hexabromodiphenylether)	15.2 ± 2.0 µg/kg
PBDE 153 (2,2',4,4',5,5'-Hexabromodiphenyl ether)	119 ± 1 µg/kg
PBDE 154 (2,2',4,4',5,6'-Hexabromodiphenyl ether)	83.5 ± 2.0 µg/kg
PBDE 155 (2,2',4,4',6,6'-Hexabromodiphenyl ether)	3.94 ± 0.34 µg/kg
PBDE 183 (2,2',3,4,4',5',6-Heptabromodiphenyl ether)	43.0 ± 3.5 µg/kg
PBDE 203 (2,2',3,4,4',5,6',6-Octabromodiphenyl ether)	36.7 ± 6.4 µg/kg
PBDE 206 (2,2',3,3',4,4',5,5',6-Nonabromodiphenyl ether)	271 ± 42 µg/kg
PBDE 209 (Decabromodiphenyl ether)	2510 ± 190 µg/kg

Reference values for PAHs, PCBs, Pesticides, PBDEs

Code	Product	Unit
NIST-2583	Indoor dust - Trace elements Certified values As ..... 7.0 mg/kg Cr ..... 80 mg/kg Pb ..... 85.9 mg/kg Cd ..... 7.3 mg/kg Hg ..... 1.56 mg/kg	8 g
NIST-2584	Indoor dust - Trace elements Collected from vacuum cleaner bags used in the cleaning of interior dwelling places Certified values As ..... 17.4 mg/kg Cr ..... 135.0 mg/kg Pb ..... 9761 mg/kg Cd ..... 10.0 mg/kg Hg ..... 5.20 mg/kg Indicative values for a wide range of additional elements	8 g
	ERM-CZ100 and ERM-CZ120 The European Air Quality Directive, specifically 2008/50/EC and 2004/107/EC require the monitoring of arsenic, cadmium, nickel, lead and several polycyclic aromatic hydrocarbons (PAHs) in PM_{10} (particulate matter of 10 µm and less aerodynamic diameter) in ambient air.	
New ERM-CZ100	Fine dust (PM_{10}-like) – PAHs PM_{10} (particulate matter of 10 µm and less aerodynamic diameter) Certified values Benzo[a]anthracene ..... 0.91 ± 0.07 mg/kg Benzo[a]pyrene ..... 0.72 ± 0.05 mg/kg Benzo[b]fluoranthene ..... 1.42 ± 0.14 mg/kg Benzo[j]fluoranthene ..... 0.75 ± 0.14 mg/kg Benzo[k]fluoranthene ..... 0.67 ± 0.06 mg/kg Dibenzo[a,h]anthracene ..... 0.18 ± 0.04 mg/kg Indeno[1,2,3,-c-d]pyrene ..... 1.07 ± 0.10 mg/kg Sum of benzo[b]fluoranthene, ... 2.84 ± 0.21 mg/kg benzo[k]fluoranthene and benzo[j]fluoranthene Indicative values for further PAHs	0.5 g
New ERM-CZ120	Fine dust (PM_{10}-like) - As, Cd, Pb and Ni PM_{10} (particulate matter of 10 µm and less aerodynamic diameter) Certified values Arsenic (As) ..... 7.1 ± 0.7 mg/kg Lead (Pb) ..... 113 ± 17 mg/kg Cadmium (Cd) ..... 0.90 ± 0.22 mg/kg Nickel (Ni) ..... 58 ± 7 mg/kg Indicative values for further elements.	0.5 g

Occupational hygiene reference materials

Filter media

Code	Product	Unit
BCR-545	Glass fibre filter - Chromium Welding dust loaded on a filter. Certified values Cr (VI) ..... 40.2 g/kg total leachable Cr ..... 39.5 g/kg	filter
	NAMI() A-3 and NAMI() B-3 Intended for use in conjunction with measurements of elements in air filters collected from work-room air. The 37 mm cellulose ester membrane filters were prepared by spiking each filter with an aqueous solution containing 25 elements with concentrations gravimetrically traceable to ultrapure metals or stoichiometrically well defined oxides. The levels correspond to current threshold limit values of contaminants in workroom atmospheres (provided that the simulated filter has been exposed to one cubic meter of air). The certified values are based on a gravimetric procedure, i.e. weight per volume composition of the primary reference material dissolved in high purity sub-distilled acids.	
NAMI(1)/A-3	Cellulose ester membrane filter - Metals Certified values Al ..... 225 ± 1 µg Fe ..... 521 ± 2 µg Sn ..... 37.7 ± 0.1 µg As ..... 7.65 ± 0.05 µg Mg ..... 74.5 ± 0.4 µg Sr ..... 35.2 ± 0.1 µg Ba ..... 37.4 ± 0.1 µg Mn ..... 150 ± 1 µg Ti ..... 37.0 ± 0.1 µg Be ..... 1.48 ± 0.01 µg Mo ..... 37.6 ± 0.2 µg Tl ..... 2.61 ± 0.01 µg Cd ..... 15.0 ± 0.1 µg Ni ..... 60.3 ± 0.2 µg V ..... 15.5 ± 0.1 µg Co ..... 37.3 ± 0.1 µg Pb ..... 37.0 ± 0.1 µg Zn ..... 226 ± 1 µg Cr ..... 47.8 ± 0.3 µg Pt ..... 35.2 ± 0.1 µg Zr ..... 37.3 ± 0.2 µg Cu ..... 75.0 ± 0.4 µg Sb ..... 37.5 ± 0.1 µg Indicative values for B, W	filter
NAMI(5)/A-3	Cellulose ester membrane filter - Metals	5 filter

Code	Product	Unit
NAMI(1)/B-3	Cellulose ester membrane filter - Metals Certified values Al 110 ± 1 µg; As 3.76 ± 0.04 µg; Ba 18.4 ± 0.2 µg; Be 0.73 ± 0.01 µg; Cd 7.35 ± 0.07 µg; Co 18.3 ± 0.2 µg; Cr 23.5 ± 0.2 µg; Cu 36.9 ± 0.4 µg; Fe 256 ± 3 µg; Mg 36.6 ± 0.4 µg; Mn 73.6 ± 0.8 µg; Mo 15.9 ± 0.3 µg; Ni 29.7 ± 0.3 µg; Pb 18.2 ± 0.2 µg; Pt 17.3 ± 0.2 µg; Sb 18.4 ± 0.2 µg; Sn 18.6 ± 0.2 µg; Sr 17.3 ± 0.2 µg; Ti 17.8 ± 0.4 µg; Tl 1.28 ± 0.01 µg; V 7.61 ± 0.08 µg; Zn 111 ± 1 µg; Zr 18.3 ± 0.2 µg Indicative values for B, W	filter
NAMI(5)/B-3	Cellulose ester membrane filter - Metals	5 filter
NIST-2951	Respirable alpha quartz on filter media, 5 µg A unit of NIST-2951 consists of five filters, each containing a nominal mass of 5 µg of respirable alpha quartz. The SRM is provided with five blank PVC filters containing no alpha quartz.	set
NIST-2952	Respirable alpha quartz on filter media, 10 µg A unit of NIST-2952 consists of five filters, each containing a nominal mass of 10 µg of respirable alpha quartz. The SRM is provided with five blank PVC filters containing no alpha quartz.	set
NIST-2953	Respirable alpha quartz on filter media, 20 µg A unit of NIST-2953 consists of five filters, each containing a nominal mass of 20 µg of respirable alpha quartz. The SRM is provided with five blank PVC filters containing no alpha quartz.	set
NIST-2954	Respirable alpha quartz on filter media, 50 µg A unit of NIST-2954 consists of five filters, each containing a nominal mass of 50 µg of respirable alpha quartz. The SRM is provided with five blank PVC filters containing no alpha quartz.	set
NIST-2955	Respirable alpha quartz on filter media, 100 µg A unit of NIST-2955 consists of five filters, each containing a nominal mass of 100 µg of respirable alpha quartz. The SRM is provided with five blank PVC filters containing no alpha quartz.	set
NIST-2956	Respirable alpha quartz on filter media, 250 µg A unit of NIST-2956 consists of five filters, each containing a nominal mass of 250 µg of respirable alpha quartz. The SRM is provided with five blank PVC filters containing no alpha quartz.	set
NIST-2957	Respirable alpha quartz on filter media, 500 µg A unit of NIST-2957 consists of five filters, each containing a nominal mass of 500 µg of respirable alpha quartz. The SRM is provided with five blank PVC filters containing no alpha quartz.	set
NIST-2958	Respirable alpha quartz on filter media, 1000 µg A unit of NIST-2958 consists of five filters, each containing a nominal mass of 1000 µg of respirable alpha quartz. The SRM is provided with five blank PVC filters containing no alpha quartz.	set
NIST-2950	Respirable alpha quartz on filter media, 10-500 µg Each unit of NIST-2950 consists of one unit each of NIST 2952, 2953, 2954, 2955, 2956, and 2957.	set
NIST-2961	Respirable cristobalite on filter media, 5 µg A unit of NIST-2961 consists of five filters, each containing a nominal mass of 5 µg of respirable cristobalite and is provided with five blank PVC filters containing no cristobalite.	set
NIST-2962	Respirable cristobalite on filter media, 10 µg A unit of NIST-2962 consists of five filters, each containing a nominal mass of 10 µg of respirable cristobalite and is provided with five blank PVC filters containing no cristobalite.	set
NIST-2963	Respirable cristobalite on filter media, 20 µg A unit of NIST-2963 consists of five filters, each containing a nominal mass of 20 µg of respirable cristobalite and is provided with five blank PVC filters containing no cristobalite.	set
NIST-2964	Respirable cristobalite on filter media, 50 µg A unit of NIST-2964 consists of five filters, each containing a nominal mass of 50 µg of respirable cristobalite and is provided with five blank PVC filters containing no cristobalite.	set
NIST-2965	Respirable cristobalite on filter media, 100 µg A unit of NIST-2965 consists of five filters, each containing a nominal mass of 100 µg of respirable cristobalite and is provided with five blank PVC filters containing no cristobalite.	set
NIST-2966	Respirable cristobalite on filter media, 250 µg A unit of NIST-2966 consists of five filters, each containing a nominal mass of 250 µg of respirable cristobalite and is provided with five blank PVC filters containing no cristobalite.	set
NIST-2966	Respirable cristobalite on filter media, 250 µg A unit of NIST-2966 consists of five filters, each containing a nominal mass of 250 µg of respirable cristobalite and is provided with five blank PVC filters containing no cristobalite.	set
NIST-2960	Respirable cristobalite on filter media, 5 - 250 µg NIST-2960 consists of one unit each of NIST-2961, 2962, 2963, 2964, 2965, and 2966. Each unit of NIST-2961, 2962, 2963, 2964, 2965, and 2966 consists of five blank PVC filters containing no cristobalite and five loaded PVC filters containing a known mass of respirable cristobalite.	set

Code	Product	Unit
NIST-2967	Respirable cristobalite on filter media, 500 µg A unit of NIST-2967 consists of five filters, each containing a nominal mass of 500 µg of respirable cristobalite and is provided with five blank PVC filters containing no cristobalite.	set
NIST-2783	Air particulate on filter media - Trace elements This Standard Reference Material is an air particulate sample reduced in particle size to simulate $PM_{2.5}$ air particulate matter (particles with an aerodynamic equivalent diameter of 2.5 µm) and deposited on a polycarbonate filter membrane. NIST-2783 included two loaded filters and two blank filters. Certified values Al ..... 23210 ng; Cu .....404 ng; Ni ..... 68 ng As ..... 11.8 ng; Fe .....26500 ng; Pb ..... 317 ng Ba ..... 335 ng; K .....5280 ng; Sb ..... 71.8 ng Ca ..... 13200 ng; Mg .....8620 ng; Ti ..... 1490 ng Co ..... 7.7 ng; Mn .....320 ng; V ..... 48.5 ng Cr ..... 135 ng; Na .....2860 ng; Zn ..... 1790 ng Indicative values for Ce, Rb, S, Sc, Si, SM, Th, U, W	4 filter
NIST-RM 8785	Filter media - Air particulate matter This Reference Material NIST-RM 8785 is intended primarily for use in the evaluation of analytical methods used to characterise the carbon composition of atmospheric fine-particulate matter (PM) for national air quality monitoring programs. This RM consists of only the fine fraction (nominally < 2.5 µm aerodynamic diameter) of NIST-1649a Urban Dust resuspended in air and filtered onto quartz-fiber filter. NIST-RM 8785 also provides the atmospheric chemistry and ocean-sciences community with a means to inter-compare methods and laboratories for the measurement of elemental (black) carbon. RM 8785 has value-assignments for total carbon, elemental carbon and organic carbon measured according to two thermal-optical methods: the NIOSH and IMPROVE protocols. A unit of NIST-RM 8785 consists of three loaded filters, each uniquely identified by its APM identification number (e.g., APM 1257), its production characteristics, i.e., batch and chamber-column-row (e.g., 12959-30 and IV-D-5, respectively) and its mass of fine NIST-1649a on the filter (e.g., 1948 µg).	3 filter
NIST-RM 8786	Filter blank for NIST-RM 8785 A unit of NIST-RM 8786 consists of a single production blank filter with a 37 mm diameter	filter
NIST-2678	Blank cellulose acetate membrane filter Set of 10 blank filters Intended for use in evaluating the performance of air sampling filter methods. Certified values or limits of detection for each of 30 constituent elements as well as 6 leachable anions and cations.	set (10)
NIST-2681	Blank ashless filter - Trace elements Intended for use in evaluating the performance of air sampling filter methods. Certified values or limits of detection for each of 30 constituent elements as well as 6 leachable anions and cations.	set (10)
RTC-CRM002-100	Activated charcoal filter - Trace elements From a commercial water treatment system. Certified values Lot AZ02 Ag ..... 18.3 mg/kg; Cr .....36000 mg/kg; Cu ..... 96900 mg/kg Indicative values for 22 further elements	100 g
RTC-CRM004-100	Diatomaceous earth filter - Trace elements From a commercial water treatment system in the Eastern United States. Certified values Lot AY04 Ba ..... 1590 mg/kg; Cr .....21.4 mg/kg Cd ..... 2.4 mg/kg; Pb .....11900 mg/kg Indicative values for 20 further elements	100 g

Respirable materials (solid form)

	Code	Product	Unit
New	NIST-1877	Beryllium oxide powder Certified value Beryllium mass fraction..... 0.3576 ± 0.0024 g/g Indicative values for specific surface area, specific gravity, count median diameter (CMD) and size distribution of the primary beryllium oxide particles, mass median diameter (MMD) and size distribution of the primary beryllium oxide particles.	20 g
	NIST-1878a	Respirable alpha quartz One form of respirable silica Certified value Crystalline α–quartz.....93.7 % ± 0.21 %	5 g

Code	Product	Unit
NIST-1879a	Respirable cristabolite One form of respirable silica Certified value Crystalline cristabolite ..... 95.6 %	5 g

Food matrix reference materials

Milk and milk products

Code	Product	Unit
LGC7104	Sterilised cream - Proximates and nutrient elements LGC7104 is a cream product, sealed in cans in 170g portions. Assessed values Moisture ..... 70.2 g/100 g Nitrogen ..... 0.40 g/100 g Total fat..... 22.7 g/100 g Ash..... 0.58 g/100 g Ca.....845 mg/kg K.....1160 mg/kg Mg .....84 mg/kg Na.....505 mg/kg P ..... 823mg/kg Zn..... 3.1 mg/kg Indicative values for Cl, Lactose	170 g
BCR-380R	Whole milk powder - Major nutrients Certified values Crude protein .....28.66 ± 0.28 g/100 g (Kjeldahl-N x 6.38) Fat.....26.95 ± 0.16 g/100 g Lactose (anhydrous) .....37.1 ± 1.0 g/100 g Ash.....6.00 ± 0.13 g/100 g	100 g
BCR-685	Skimmed milk powder - Major nutrients Certified values Crude protein .....38.2 ± 0.4 g/100 g (Kjeldahl-N x 6.38) Fat.....0.96 ± 0.12 g/100 g	50 g
BCR-063R	Skimmed milk powder - Major and trace elements Natural elemental levels in skim milk powder. Certified values Ca ..... 13.49 mg/g Cl ..... 9.94 mg/g Cu ..... 0.602 µg/g Fe..... 2.32 µg/g I .....0.81 µg/g K.....17.68 mg/g Mg .....1.263 mg/g N (total) .....62.3 mg/g Na ..... 4.37 mg/g P ..... 11.10 mg/g Pb ..... 18.5 ng/g Zn..... 49.0 µg/g	50 g
BCR-150	Spiked skimmed milk powder - Trace elements Milk spiked with Cd, Cu, Fe and Hg. Certified values Cd ..... 21.8 µg/kg Cu ..... 2.23 mg/kg Fe .....11.8 mg/kg Hg.....9.4 µg/kg I..... 1.29 mg/kg Pb ..... 1.00 mg/kg Indicative values for Co, Mn, Ni, Se, Tl, Zn	23 g
BCR-151	Spiked skimmed milk powder - Trace elements Milk spiked with Cd, Cu, Fe and Hg. Certified values Cd ..... 101.0 µg/kg Cu ..... 5.23 mg/kg Fe .....50.1 mg/kg Hg.....101 µg/kg I..... 5.35 mg/kg Pb ..... 2002 mg/kg Indicative values for Co, Mn, Ni, Se, Tl, Zn	23 g
NIST-1549	Non-fat milk powder - Trace elements Certified values Ca ..... 1.30 % Cd ..... 0.0005 mg/kg Cl ..... 1.09 % Cr..... 0.0026 mg/kg Cu ..... 0.7 mg/kg I..... 3.38 mg/kg Fe .....1.78 mg/kg Hg.....0.0003 mg/kg K.....1.69 % Mg .....0.120 % Mn .....0.26 mg/kg Na.....0.497 % P ..... 1.06 % Pb ..... 0.019 mg/kg S ..... 0.351 % Se ..... 0.11 mg/kg Zn..... 46.1 mg/kg Indicative values for Ag, Al, As, Br, Co, F, Mo, Rb, Sb, Sn	100 g
IAEA-153	Milk powder - Trace elements Certified values Br ..... 12.3 mg/kg Ca ..... 12870 mg/kg Fe..... 2.53 mg/kg K.....17620 mg/kg Mg .....1060 mg/kg Na.....4180 mg/kg P ..... 10100 mg/kg Rb ..... 14 mg/kg Zn..... 39.6 mg/kg Indicative values for Cu, Mn, Mo, Sr	50 g

Code	Product	Unit

IAEA-155 — Whey powder - Trace elements — 50 g

Certified values

Br	39.1 mg/kg	Hg	0.0026 mg/kg	Pb	0.104 mg/kg
Cd	0.016 mg/kg	Mg	3190 mg/kg	Rb	39.2 mg/kg
Cl	69200 mg/kg	Mn	9.3 mg/kg	Sc	0.028 mg/kg
Co	0.0427 mg/kg	Na	15.8 mg/kg	Se	0.064 mg/kg
Cr	0.59 mg/kg	Ni	0.54 mg/kg	Zn	34.3 mg/kg
Cs	0.086 mg/kg	P	16210 mg/kg		

Indicative values for Al, As, B, Ca, Cu, Fe, K, S, Sr

New NIM-GBW10017 — Milk powder - Trace elements — 35 g

Certified elements

As	0.031 ± 0.007 mg/kg	Cu	0.51 ± 0.13 mg/kg	P	0.76 ± 0.03 %
B	1.56 ± 0.22 mg/kg	Fe	7.8 ± 1.3 mg/kg	Pb	0.07 ± 0.02 mg/kg
Ba	1.0 ± 0.3 mg/kg	I	1.12 ± 0.23 mg/kg	Rb	11.6 ± 0.7 mg/kg
Br	5.7 ± 1.4 mg/kg	K	1.25 ± 0.05 %	S	0.25 ± 0.02 %
Ca	0.94 ± 0.03 %	Mg	0.096 ± 0.007 %	Se	0.11 ± 0.03 mg/kg
Cl	0.81 ± 0.09 %	Mn	0.51 ± 0.17 mg/kg	Sr	5.3 ± 0.6 mg/kg
Co	0.030 ± 0.007 mg/kg	Mo	0.28 ± 0.03 mg/kg	Y	0.008 ± 0.003 mg/kg
Cr	0.39 ± 0.04 mg/kg	N	3.8 ± 0.2 %	Zn	34 ± 2 mg/kg
Cs	0.034 ± 0.005 mg/kg	Na	0.47 ± 0.03 mg/kg		

Indicative values for further elements

ERM-BD282 — Whole milk powder - Aflatoxin M1 (zero level) — 30 g

Compound	Certified value µg/kg
Aflatoxin M1	< 0.002

ERM-BD283 — Whole milk powder - Aflatoxin M1 (low level) — 30 g

Compound	Certified value µg/kg	Uncertainty µg/kg
Aflatoxin M1	0.111	0.018

ERM-BD284 — Whole milk powder - Aflatoxin M1 (high level) — 30 g

Compound	Certified value µg/kg	Uncertainty µg/kg
Aflatoxin M1	0.44	0.06

BCR-187 — Natural milk powder - Pesticides — 20 g

Compound	Certified value µg/kg	Uncertainty µg/kg
HCB	1.50	0.2
alpha-HCH	1.8	0.14
gamma-HCH	5.7	0.7
4,4'-DDE	6.6	0.6

BCR-188 — Milk powder (spiked) - Pesticides — 20 g

Compound	Certified value µg/kg	Uncertainty µg/kg
HCB	37.4	2.7
beta-HCH	12.0	1.2
gamma-HCH	45.4	2.9
beta-Heptachlor epoxide	32.0	1.8
4,4'-DDE	51.3	3.5
Dieldrin	36.1	2.4
Endrin	6.2	0.9
4,4'-DDT	69.0	4.6

BCR-450 — Natural milk powder - PCBs — 20 g

Compound	Certified value µg/kg	Uncertainty µg/kg
PCB 52	1.16	0.17
PCB 118	3.3	0.4
PCB 153	19.0	0.7
PCB 156	1.62	0.2
PCB 170	4.8	0.6
PCB 180	11.0	0.7

BCR-607 — Natural spray dried milk powder - Dioxins and furans — 100 g

Compound	Certified value ng/kg	Uncertainty ng/kg
2,3,7,8-TCDD	0.25	0.03
1,2,3,7,8-PeCDD	0.79	0.04
1,2,3,4,7,8-HxCDD	0.42	0.07
1,2,3,6,7,8-HxCDD	0.98	0.11
1,2,3,7,8,9-HxCDD	0.34	0.05
2,3,7,8-TCDF	0.05	0.03
1,2,3,7,8-PeCDF	0.054	0.013
2,3,4,7,8-PeCDF	1.81	0.13
1,2,3,4,7,8-HxCDF	0.94	0.04
1,2,3,6,7,8-HxCDF	1.01	0.09
2,3,4,6,7,8-HxCDF	1.07	0.05

Code	Product	Unit
IAEA-152	Milk powder - Radioactive isotopes	250 g

Certified values

^{134}Cs	764 Bq/kg	^{40}K	539 Bq/kg
^{137}Cs	2129 Bq/kg	^{90}Sr	7.7 Bq/kg

IAEA-321	Milk powder - Radioactive isotopes	250 g

Certified values

^{134}Cs	15.5 Bq/kg	^{40}K	552 Bq/kg
^{137}Cs	72.6 Bq/kg	^{90}S	3.3 Bq/kg

IAEA-154	Whey powder - Radioactive isotopes	250 g

Certified values

^{134}Cs	1355 Bq/kg	^{40}K	1575 Bq/kg
^{137}Cs	3749 Bq/kg	^{90}S	6.9 Bq/kg

BCR-519	Anhydrous butter fat - Triglycerides	2 amps.

Triglyceride contents of an anhydrous butter fat with additional value for free cholesterol.

Compound	Certified value mass fraction (%)	Uncertainty mass fraction (%)
Cholesterol	0.30	0.03
C24	0.05	0.02
C26	0.25	0.03
C28	0.59	0.04
C30	1.15	0.05
C32	2.43	0.12
C34	5.64	0.18
C36	10.47	0.19
C38	12.53	0.22
C40	10.03	0.16
C42	6.69	0.10
C44	6.11	0.08
C46	6.86	0.08
C48	8.69	0.15
C50	11.40	0.24
C52	10.96	0.25
C54	5.89	0.13

Code	Product	Unit

BCR-632 — Butter fat - cholesterol and triglyceride — 2 amps.

BCR-623 consists of a 5 mL ampoule of BCR-632a and a 5 mL ampoule of BCR-632b

Certified values

BCR-632A Pure butter fat - Cholesterol and triglycerides

Compound	certified value g/100 g	Uncertainty g/100 g
C24	0.07	0.04
Cholesterol	0.289	0.012
C26	0.33	0.06
C28	0.74	0.07
C30	1.37	0.08
C32	2.83	0.14
C34	6.09	0.29
C36	10.7	0.5
C38	12.5	0.4
C40	10.05	0.19
C42	7.07	0.13
C44	6.68	0.12
C46	7.36	0.17
C48	8.74	0.21
C50	10.74	0.24
C52	9.8	0.4
C54	4.7	0.5

BCR-632B Adulterated butter fat - Cholesterol and triglycerides

Compound	certified value g/100 g	Uncertainty g/100 g
C24	0.08	0.04
Cholesterol	0.278	0.011
C26	0.34	0.06
C28	0.75	0.06
C30	1.46	0.07
C32	3.30	0.12
C34	6.57	0.25
C36	11.1	0.4
C38	12.7	0.4
C40	10.07	0.17
C42	7.10	0.10
C44	6.57	0.12
C46	7.12	0.17
C48	8.42	0.19
C50	10.28	0.19
C52	9.36	0.28
C54	4.5	0.4

BCR-633 — Anhydrous butter fat - Tracers — Amp.

Compound	certified value mg/kg	Uncertainty mg/kg
ß-Apo-8`-carotenic acid ethyl ester	26.5	1.4
ß-Sitosterol	530	29
Stigmasterol	147	11
n-Heptanoic acid triglyceride	1.06×10^4	0.04×10^4

BCR-599 — Ewes'/Goats' curd - Adulteration with cows' milk — set (2)

Two freeze dried curd materials made from a mixture of ewes' and goats' milk intended to detect adulteration by cows' milk in cheeses made from ewes' milk, goats' milk and mixtures of the two.

Unadulterated material 0% cows' milk

Adulterated material 1% cows' milk

BCR-122 — Margarine - Vitamins — 200 g

Certified values

D_3 (cholecalciferol) ..... 0.125 mg/kg

E (tocopherol) ..... 241 mg/kg

BCR-492-3 — Lyophilized skimmed milk powder - Oxytetracycline — set

Set of BCR-492 and BCR-493

BCR-492

Certified value

Oxytetracyline ..... 307 µg/L

BCR-493

Certified value

Oxytetracyline ..... <10 µg/L

MUVA reference materials

MUVA reference materials are so-called secondary (non-certified) reference materials for chemical analysis of milk and milk products. They have been characterised at the MUVA Kempten laboratories for homogeneity and stability as well as for contents of relevant compounds by different methods, where possible. Reference values are characterised by interlaboratory studies. During storage at MUVA Kempten materials are regularly checked for their contents.

Code	Product	Unit
MUVA-RM56	Milk powder, roller dried - Proximates Best before: 12/2011 Reference values Fat (Röse-Gottlieb) ..... 26.02 ± 0.11 g/100 g Free Fat ..... 21.50 ± 0.18 g/100 g Dry matter (102 °C) ..... 96.16 ± 0.04 g/100 g Protein (Kjeldahl) ..... 25.70 ± 0.09 g/100 g Lactose (Monohydrate) ..... 37.48 ± 0.22 g/100 g Ash ..... 5.64 ± 0.04 g/100 g	
MUVA-RM 59	Milk powder, spray dried - Proximates Best before: 06/2014 Reference values Fat (Röse-Gottlieb) ..... 26.46 ± 0.15 g/100 g Free fat ..... 14.49 ± 0.60 g/100 g Dry matter (102 °C) ..... 97.99 ± 0.08 g/100 g Protein (Kjeldahl) ..... 26.68 ± 0.08 g/100 g Lactose (Monohydrate) ..... 38.48 ± 0.54 g/100 g Ash ..... 5.71 ± 0.04 g/100 g	70 g
MUVA-RM 58	Milk powder mixed - Proximates Best before: 01/2013 Reference values Fat (Röse-Gottlieb) ..... 13.84 ± 0.15 g/100 g Free Fat ..... 4.62 ± 0.36 g/100 g Dry matter (102 °C) ..... 97.38 ± 0.07 g/100 g Protein (Kjeldahl) ..... 32.28 ± 0.11 g/100 g Lactose (Monohydrate) ..... 43.68 ± 0.40 g/100 g Ash ..... 6.83 ± 0.04 g/100 g	70 g
MUVA-MP-0201	Skimmed milk powder spray dried - Proximates Best before: 11/2014 Reference values Fat (Röse-Gottlieb) ..... 0.71 ± 0.12 g/100 g Dry matter ..... 95.97 ± 0.08 g/100 g Protein (Kjeldahl) ..... 36.61 ± 0.11 g/100 g Lactose (Monohydrate) ..... 50.72 ± 0.54 g/100 g Ash ..... 7.85 ± 0.07 g/100 g Nitrate ..... 35.1 ± 5.6 mg/kg	70 g
MUVA-MP-0202	Skimmed milk powder spray dried - Proximates Best before: 11/2014 Reference values Fat (Röse-Gottlieb) ..... 26.72 ± 0.54 g/100 g Dry matter ..... 97.80 ± 0.06 g/100 g Protein (Kjeldahl) ..... 27.14 ± 0.18 g/100 g Lactose (Monohydrate) ..... 38.11 ± 0.46 g/100 g Ash ..... 5.66 ± 0.06 g/100 g Nitrate ..... 5.2 ± 2.8 mg/kg	70 g
MUVA-RM 71	Whey powder - Proximates Best before: 12/2011 Reference values Fat (Röse-Gottlieb) ..... 1.63 ± 0.05 g/100 g Dry matter (102 °C) ..... 96.68 ± 0.08 g/100 g Dry matter (87 °C) ..... 97.31 ± 0.05 g/100 g Protein (Kjeldahl) ..... 25.59 ± 0.16 g/100 g Lactose (Monohydrate) ..... 48.06 ± 0.43 g/100 g Nitrate ..... 211 ± 11 mg/kg Calcium ..... 8129 ± 435 mg/kg Magnesium ..... 2233 ± 97 mg/kg Ash ..... 15.04 ± 0.08 g/100 g	20 g
MUVA-RM 72	Whey powder - Proximates Best before: 12/2011 Reference values Fat (Röse-Gottlieb) ..... 0.98 ± 0.05 g/100 g Dry matter (102 °C) ..... 97.95 ± 0.08 g/100 g Dry matter (87 °C) ..... 98.35 ± 0.08 g/100 g Protein (Kjeldahl) ..... 13.28 ± 0.10 g/100 g Lactose (Monohydrate) ..... 74.14 ± 0.61 g/100 g Nitrate ..... 158 ± 11 mg/kg Ash ..... 7,62 ± 0,07 g/100 g Calcium ..... 4614 ± 310 mg/kg Magnesium ..... 1161 ± 66 mg/kg	20 g
MUVA-RM 74	Whey powder - Proximates Best before: 01/2013 Reference values Fat (Röse-Gottlieb) ..... 1.97 ± 0.12 g/100 g Dry matter (102 °C) ..... 96.16 ± 0.12 g/100 g Dry matter (87 °C) ..... 96.89 ± 0.09 g/100 g Protein (Kjeldahl) ..... 30.34 ± 0.63 g/100 g Lactose (Monohydrate) ..... 48.88 ± 0.89 g/100 g Ash ..... 8.41 ± 0.10 g/100 g Lactic acid ..... 1101 ± 60 g/100 g Nitrate ..... 34.66 ± 5.25 mg/kg	70 g
MUVA-RM 803	Whey powder - Proximates Best before: 12/2011 Reference values Sodium ..... 6.26 ± 0.22 mg/g Potassium ..... 23.61 ± 0.66 mg/g Calcium ..... 4.67 ± 0.13 mg/g Magnesium ..... 1.15 ± 0.03 mg/g Lead ..... 11 ± 12 µg/kg	20 g

	Code	Product	Unit
New	MUVA-MO-0610	Whey powder - Proximates Best before: 08/2015 Fat (Röse-Gottlieb) ..... 0.84 ± 0.06 g/100g Dry matter (87 °C)..... 97.92 ± 0.08 g/100 g Dry matter (102 °C)..... 97.62 ± 0.06 g/100 g Protein (Kjeldahl) ..... 13.07 ± 0.08 g/100 g Lactose (Monohydrate) ..... 79.17 ± 0.89 g/100 g Ash ..... 3.29 ± 0.02 g/100 g Calcium (AAS/ICP) ..... 3038 ± 154 mg/kg Magnesium (AAS/ICP)..... 901 ± 36 mg/kg NPN (Kjeldahl) ..... 2.93 ± 0.26 g/100 g	70 g
New	MUVA-RM 84	Acid casein - Proximates Best before: 12/2011 Reference values Fat (SBR)..... 1.09 ± 0.16 g/100 g Water ..... 9.28 ± 0.22 g/100 g Protein (Kjeldahl) ..... 88.61 ± 0.27 g/100 g Lactose (Monohydrate) ..... 0.09 ± 0.03 g/100 g Ash ..... 1.73 ± 0.08 g/100 g Nitrate..... 4.94 ± 1.56 mg/kg	60 g
New	MUVA-RM 85	Sodium casein - Proximates Best before: 12/2011 Reference values Fat (SBR)..... 1.15 ± 0.09 g/100 g Water ..... 6.82 ± 0.05 g/100 g Protein (Kjeldahl) ..... 89.00 ± 0.16 g/100 g Lactose (Monohydrate) ..... 0.10 ± 0.02 g/100 g Ash ..... 3.57 ± 0.11 g/100 g Nitrate..... 17.9 ± 2.20 mg/kg	60 g
New	MUVA-KM-0504	Evaporated milk (4% fat) - Proximates Best before 2/2013 Reference values Fat (Röse-Gottlieb) ..... 4.03 ± 0.01 g/100 g Dry matter (102 °C)..... 24.20 ± 0.09 g/100 g Protein (Kjeldahl) ..... 7.37 ± 0.04 g/100 g Ash ..... 1.63 ± 0.01 g/100 g Phosphorus ..... 2157 ± 128 mg/100 g	170 g
New	MUVA-HA-1505	Grana Padano / Hard cheese (grated) - Proximates Best before: 4 weeks after shipment Reference values Fat (SBR)..... 27.42 ± 0.30 g/100 g Dry matter (102 °C)..... 68.67 ± 0.22 g/100 g Protein (Kjeldahl) ..... 34.31 ± 0.30 g/100 g Sodium chloride ..... 1.31 ± 0.04 g/100 g pH-value..... 5.54 ± 0.02 Lactic acid ..... 1452 ± 262 mg/100 g	100 g
New	MUVA-HA-1506	Hard cheese (grated, dehydrated) - Proximates Best before: 4 weeks after shipment Reference values Fat (SBR)..... 31.96 ± 0.11 g/100 g Dry matter (102 °C)..... 88.85 ± 20 g/100 g Protein (Kjeldahl) ..... 46.84 ± 0.19 g/100 g Sodium chloride ..... 3.34 ± 0.03 g/100 g pH-value..... 5.52 ± 0.05 Lactic acid ..... 1555 ± 176 mg/100 g	100 g
	MUVA-FK-1207	Fresh cheese, 18% f.i.d.m. - Proximates Best before: 05/2012 Reference values Fat (SBR)..... 4.32 ± 0.07 g/100 g Dry matter (102 °C)..... 20.42 ± 0.18 g/100 g Protein (Kjeldahl) ..... 10.34 ± 0.08 g/100 g Lactic acid (enzyme) ..... 602.2 ± 19.0 mg/100 g	200 g
	MUVA-FK-1208	Fresh cheese, 50% f.i.d.m. - Proximates Best before: 05/2012 Reference values Fat (SBR)..... 14.32 ± 0.08 g/100 g Dry matter (102 °C)..... 27.22 ± 0.27 g/100 g Protein (Kjeldahl) ..... 6.97 ± 0.12 g/100 g Lactic acid (enzyme) ..... 522.1 ± 16.6 mg/100 g	200 g
New	MUVA-SK-0303	Processed cheese 45 % f.i.d.m. - Proximates Best before: 05/2013 Reference values Fat (SBR)..... 22.91 ± 0.13 g/100 g Dry matter (102 °C)..... 50.76 ± 0.24 g/100 g Protein (Kjeldahl) ..... 20.31 ± 0.12 g/100 g Sodium chloride ..... 1.89 ± 0.07 g/100 g pH value..... 5.65 ± 0.02 Phosphorus..... 0.97 ± 0.02 g/100 g	75 g
New	MUVA-SK-0304	Processed cheese 55 % f.i.d.m. - Proximates Best before: 03/2013 Reference values Fat (SBR)..... 22.69 ± 0.39 g/100 g Dry matter (102 °C)..... 43.71 ± 0.72 g/100 g Protein (Kjeldahl) ..... 15.08 ± 0.17 g/100 g Sodium chloride ..... 1.46 ± 0.04 g/100 g pH value..... 5.84 ± 0.02 Citric acid ..... 142.9 ± 13.2 mg/100g Sodium..... 11286 ± 607 mg/kg Potassium ..... 492 ± 74 mg/kg Ash ..... 492 ± 74 mg/kg Nitrate..... 4.7 ± 0.8 mg/kg	200 g

	Code	Product	Unit
New	MUVA-SK-0305	Processed cheese 38 % f.i.d.m. - Proximates	200 g

Best before: 03/2014

Reference values

Fat (SBR)	17.22 ± 0.39 g/100 g
Dry matter (102 °C)	46.44 ± 0.41 g/100 g
Protein (Kjeldahl)	22.58 ± 0.15 g/100 g
Sodium chloride	1.12 ± 0.05 g/100 g
pH value	5.57 ± 0.03
Citric acid	108.5 ± 4.5 mg/100g
Sodium	10248 ± 932 mg/kg
Potassium	669 ± 107 mg/kg
Ash	4.81 ± 0.03 g/100 g
Nitrate	4.1 ± 1.4 mg/kg

	MUVA-M-0110	UHT milk 3.5% Fat (in sterilized bottle)	250 mL

Best before: 02/2012

Reference values

Fat (Röse-Gottlieb)	3.542 ± 0.008 g/100 g
Protein (Kjeldahl)	3.356 ± 0.012 g/100 g
Lactose (Monohydrate)	4.678 ± 0.044 g/100 g
Freezing point	- 0.5155 ± 0.0012 °C
Dry matter (102 °C)	12.35 ± 0.07 g/100 g

New	MUVA-M-0111	Skimmed UHT milk 0.06% Fat (in sterilized bottle)	250 mL

Best before: 02/2012

Reference values

Fat (Röse-Gottlieb)	0.062 ± 0.005 g/100 g
Protein (Kjeldahl)	3.415 ± 0.014 g/100 g
Lactose (Monohydrate)	4.659 ± 0.040 g/100 g
Freezing point	- 0.4995 ± 0.0015 °C
Dry matter (102 °C)	8.90 ± 0.03 g/100 g

New	MUVA-RO-0714	Shock frozen raw milk - Proximates	40 mL

Best before: 01/2012

Reference values

Fat (Röse-Gottlieb)	2.331 ± 0.010 g/100 g
Protein (Kjeldahl)	3.550 ± 0.020 g/100 g
Lactose (Monohydrate)	4.866 ± 0.023 g/100 g
Freezing point	- 0.5241 ± 0.0011 °C
pH value	6.66 ± 0.02
Caseine	2.782 ± 0.020 g/100 g
NPN	0.191 ± 0.011 g/100 g

New	MUVA-RO-0716	Shock frozen raw milk - Proximates	40 mL

Best before: 06/2012

Reference values

Fat (Röse-Gottlieb)	3.003 ± 0.010 g/100 g
Dry matter	11.67 ± 0.05 g/100 g
Protein (Kjeldahl)	3.383 ± 0.023 g/100 g
Lactose (Monohydrate)	4.866 ± 0.031 g/100 g
Freezing point	- 0.4921 ± 0.0009 °C
Urea	196 ± 18mg/l
pH value	6.68 ± 0.02

New	MUVA-RO-0717	Shock frozen raw milk - Proximates	40 mL

Best before: 01/2013

Reference values

Fat (Röse-Gottlieb)	4.264 ± 0.010 g/100 g
Protein (Kjeldahl)	3.774 ± 0.018 g/100 g
Casein	2.956 ± 0.03 g/100 g
Lactose (Monohydrate)	4.730 ± 0.054 g/100 g
Freezing point	- 0.5238 ± 0.0010 °C
pH value	6.68 ± 0.02
NPN	0.170 ± 0.019 g/100 g

New	MUVA-RO-0718	Shock frozen raw milk - Proximates	40 mL

Best before: 01/2013

Reference values

Fat (Röse-Gottlieb)	4.802 ± 0.013 g/100 g
Protein (Kjeldahl)	3.453 ± 0.012 g/100 g
Caseine	2.71 ± 0.020 g/100 g
Freezing point	- 0.5208 ± 0.0010 °C
pH value	6.68 ± 0.02
NPN	0.167 ± 0.014 g/100 g

New	MUVA-S-0810	Nut-Nougat-cream - Proximates	160 g

Best before: please enquire

Reference values

Fat (Weibull-Stoldt)	31.27 ± 0.61 g/100 g
Protein (Kjeldahl)	7.27 ± 0.12 g/100 g
Lactose (monohydrate)	4.29 ± 0.11 g/100 g
Saccharose	49.05 ± 0.69 g/100 g
Theobromine	1795 ± 52 mg/kg

	MUVA-RM 404	Dark chocolate - Proximates	150 g

Best before: please enquire

Reference values

Fat (Weibull-Stoldt)	33.09 ± 0.32 g/100 g
Protein (Kjeldahl)	5.91 ± 0.09 g/100 g
Saccharose	49.6 ± 1.0 g/100 g
Theobromin (HPLC)	4873 ± 195 mg/kg

	MUVA-RM 407	Dark chocolate - Proximates	150 g

Best before: 10/2012

Reference values

Fat (Weibull-Stoldt)	42.02 ± 0.22 g/100 g
Milk fat	1.49 ± 0.34 g/100 g
Protein (Kjeldahl)	9.74 ± 0.13 g/100 g
Saccharose	24.41 ± 0.42 g/100 g
Theobromin (HPLC)	7547 ± 145 mg/kg

MUVA reference materials

	Code	Product	Unit
New	MUVA-S-0811	**Milk chocolate - Proximates** Best before: 06/2013 Reference value Fat (Weibull-Stoldt) ..... 33.38 ± 0.16 g/100 g Milk fat ..... 6.02 ± 0.57 g/100 g Protein (Kjeldahl) ..... 7.41 ± 0.06 g/100 g Lactose (monohydrate) ..... 9.14 ± 0.11 g/100 g Saccharose ..... 43.88 ± 0.51 g/100 g Theobromine ..... 1332 ± 47 mg/kg Dry matter ..... 99.29 ± 0.09 g/100 g	100 g
New	MUVA-HO-1702	**Blossom honey - Proximates** Best before: 05/2013 Reference values Glucose ..... 34.05 ± 0.36 g/100 g Fructose ..... 36.81 ± 0.40 g/100 g Hydroxymethylfurfural .....28.57 ± 3.37 mg/kg Ash ..... 0.11 ± 0.02 g/100g pH value ..... 3.84 ± 0.07 Conductivity ..... 0.24 ± 0.02 mS/cm	60 g
New	MUVA-HO-1701	**Honeydew honey - Proximates** Best before: 05/2013 Reference values Glucose ..... 24.51 ± 0.36 g/100 g Fructose ..... 32.58 ± 0.45 g/100 g Hydroxymethylfurfural .....18.21 ± 2.44 mg/kg Ash ..... 0.83 ± 0.09 g/100g pH value ..... 4.67 ± 0.04 Condutivity ..... 0.24 ± 0.02 mS/cm	60 g
	MUVA-RM 700	**Boiled sausage - Proximates** Best before: please enquire Reference values Fat ..... 22.32 ± 0.48 g/100 g Water (103 °C) ..... 60.66 ± 0.28 g/100 g Protein (Kjeldahl) ..... 13.02 ± 0.09 g/100 g Hydroxyproline ..... 0.22 ± 0.03 g/100 g Sodium chloride ..... 1.85 ± 0.19 g/100 g Nitrate ..... 68.20 ± 4.84 mg/kg Calcium ..... 140 ± 42 mg/kg Phosphorus ..... 185 ± 16 mg/100 g Ash ..... 2.77 ± 0.04 g/100 g	48 g
	MUVA-RM 701	**Boiled sausage - Proximates** Best before: please enquire Reference values Fat ..... 22.88 ± 2.01 g/100 g Water (103 °C) ..... 60.79 ± 0.87 g/100 g Protein (Kjeldahl) ..... 12.35 ± 0.21 g/100 g Collagen ..... 0.21 ± 0.02 g/100 g Sodium chloride ..... 2.38 ± 0.06 g/100 g Nitrate ..... 24.88 ± 7.30 mg/kg Calcium ..... 199 ± 68 mg/kg Ash ..... 3.42 ± 0.04 g/100 g	48 g
New	MUVA-BU-1303	**Sweet cream butter - Proximates** Best before: please enquire Certified values Solids non-fat (102°C) ..... 1.72 ± 0.13 g/100 g Water ..... 15.78 ± 0.11 g/100 g pH-Value ..... 6.72 ± 0.03 Cholesterol ..... 2380 ± 184 mg/ kg	250 g
New	MUVA-BU-1304	**Mild acid butter - Proximates** Best before: please enquire Certified values Solids non-fat (102°C) ..... 1.83 ± 0.25 g/100 g Water (102°C) ..... 15.84 ± 0.34 g/100 g pH-Value ..... 5.01 ± 0.04 Cholesterol ..... 2432 ± 314 mg/ kg	250 g
New	MUVA-BU-1305	**Salted butter - Proximates** Best before: 01/2013 Reference values Solids non-fat (102°C) ..... 2.79 ± 0.22 g/100 g Water ..... 16.00 ± 0.13 g/100 g pH-Value ..... 5.02 ± 0.01 Cholesterol ..... 2217 ± 105 mg/ kg Sodium chloride ..... 1.20 ± 0.02 g/100 g	250 g
	MUVA-RM 750	**Infant food** Best before: 08/2013 Reference values Saccharose ..... 1.08 ± 0.32 g/100 g Fructose ..... 4.85 ± 0.40 g/100 g Glucose ..... 12.51 ± 0.20 g/100 g Starch ..... 16.54 ± 1.10 mg/100 g Vitamin C (HPLC) ..... 103.3 ± 10.9 mg/100 g Vitamin E ..... 5.68 ± 0.68 mg/100 g	50 g
	MUVA-RM 751	**Infant food** Best before: 08/2012 Rerference values Saccharose ..... 3.0 ± 0.48 g/100 g Fructose ..... 7.79 ± 1.18 g/100 g Glucose ..... 6.28 ± 1.44 g/100 g Starch ..... 10.25 ± 0.62 g/100 g Vitamin C (HPLC) ..... 150.6 ± 55.6 mg/100 g Vitamin E ..... 2.63 ± 0.49 mg/100 g	50 g

Code	Product	Unit
MUVA-RM 752	Dietary supplement Best before: 02/2013 Reference values Sodium ....2054 ± 108 mg/kg Potassium ....9653 ± 517 mg/kg Calcium ....7024 ± 320 mg/kg Magnesium ....2614 ± 232 mg/kg Lead .... 22.50 ± 3.83 mg/kg Zinc .... 69.71 ± 5.11 mg/kg Phosphorus .... 819 ± 22 mg/100 g Chloride .... 455 ± 16 mg/100 g	60 g
MUVA-RM 753	Dietary supplement Best before: 08/2015 Reference values Sodium ....6398 ± 934 mg/kg Potassium ....14067 ± 2451 mg/kg Calcium ....7800 ± 610 mg/kg Magnesium ....1808 ± 135 mg/kg Fe ....228 ± 15 mg/kg Zinc .... 191.73 ± 13.44 mg/kg Phosphorus .... 6300 ± 211 mg/kg Chloride .... 10997 ± 1896 mg/kg Cu .... 1.70 ± 0.12 mg/kg Mn .... 1.43 ± 0.17 mg/kg	50 g
New MUVA-NEM-1601	Dietary supplement Best before: 08/2015 Reference values Sodium ....6398 ± 934 mg/kg Potassium ....14067 ± 2451 mg/kg Calcium ....7800 ± 610 mg/kg Magnesium ....1808 ± 135 mg/kg Fe ....228 ± 15 mg/kg Zn .... 191.73 ± 13.44 mg/kg Phosphorus .... 6300 ± 211 mg/kg Chloride .... 10997 ± 1896 mg/kg Cu .... 1.70 ± 0.12 mg/kg Mn .... 1.43 ± 0.17 mg/kg	50 g
New MUVA-NEM-1602	Dietary supplement Best before: 02/2015 Reference values Sodium ....2514 ± 92 mg/kg Potassium ....7221 ± 371 mg/kg Calcium ....5696 ± 420 mg/kg Magnesium ....523 ± 30 mg/kg Phosphorus .... 55.22 ± 3.37 mg/kg Chloride .... 3711 ± 153 mg/kg Copper .... 2.74 ± 0.18 mg/kg Manganese .... 1.21 ± 0.07 mg/kg	50 g
New MUVA-R-0416	Cream 30 % - Proximates Best before: please enquire Fat (SBR) ....30.08 ± 0.10 g/100 g Dry matter (102°C) ....36.73 ± 0.17 g/100 g Protein (Kjeldahl) .... 2.35 ± 0.02 g/100 g	100 mL
New MUVA-R-0417	Cream 40 % - Proximates Best before: please enquire Fat (SBR) ....40.50 ± 0.26 g/100 g Dry matter (102°C) ....45.90 ± 0.21 g/100 g Protein (Kjeldahl) .... 1.90 ± 0.02 g/100 g	100 mL

Meat and meat products

Code	Product	Unit
ERM-BB501	Processed meat - Proximates, chloride, nitrate, hydroxyproline European Reference Material ERM-BB501 is a pork-based processed meat containing dry pork protein and pea starch. This material is sealed in retort pouches in 180g portions. Certified values Moisture ....618 g/kg Nitrogen ....23.0 g/kg Total fat ....151 g/kg Ash ....33.2 g/kg Chloride .... 14.5 g/kg Hydroxyproline .... 3.3 g/kg Nitrate (NO_3) .... 0.209 g/kg	180 g
New ERM-BB384	Pork muscle - Proximates and essential elements One set consists of two amber glass vials each containing about 18 g of lyophilised pork muscle filled under protective atmosphere (argon).	2 vials

	Certified value	Uncertainty
Kjeldahl nitrogen	14.2 g/100 g	0.4 g/100 g
Total fat	8.99 g/100 g	0.20 g/100 g
Ash	4.51 g/100 g	0.19 g/100 g
Na	1.86 mg/g	0.15 mg/g
Mg	1.03 mg/g	0.04 mg/g
Ca	0.164 mg/g	0.021 mg/g
P	8.7 mg/g	0.5 mg/g

Code	Product	Unit
LGC7200	Beef, raw - Meat species Rump steak from Scottish Aberdeen Angus cattle, aged 20 months, purchased from an organic farm. The cattle had been fed grass rich in clover. This material is intended for use as a reference standard for species identification analytical methods. The species content of the material was checked using both an immunoassay test and DNA analysis. Assessed value Beef - raw.....100 % Beef Indicative value for moisture	30 g
LGC7201	Beef, cooked - Meat species Rump steak from Scottish Aberdeen Angus cattle, aged 20 months, purchased from an organic farm. The cattle had been fed grass rich in clover. This material is intended for use as a reference standard for species identification analytical methods. The species content of the material was checked using both an immunoassay test and DNA analysis. Assessed value Beef - cooked.....100 % Beef Indicative value for moisture	30 g
LGC7202	Lamb, raw - Meat species Suffolk-cross leg of lamb, aged 9 months, was purchased from an organic meat supplier. This material is intended for use as a reference standard for species identification analytical methods. The species content of the material was checked using both an immunoassay test and DNA analysis. Assessed value Lamb - raw.....100 % Lamb Indicative value for moisture	30 g
LGC7203	Lamb, cooked - Meat species Suffolk-cross leg of lamb, aged 9 months, was purchased from an organic meat supplier. This material is intended for use as a reference standard for species identification analytical methods. The species content of the material was checked using both an immunoassay test and DNA analysis. Assessed value Lamb - cooked.....100 % Lamb Indicative value for moisture	30 g
LGC7204	Pork, raw - Meat species 'Free range' Land Race/Large White Cross pork leg steak, aged approximately 5 months at slaughter, was purchased from an organic meat supplier. This material is intended for use as a reference standard for species identification analytical methods. The species content of the material was checked using both an immunoassay test and DNA analysis. Assessed value Pork - raw ..... 100 % Pork Indicative value for moisture	30 g
LGC7205	Pork, cooked - Meat species 'Free range' Land Race/Large White Cross pork leg steak, aged approximately 5 months at slaughter, was purchased from an organic meat supplier. This material is intended for use as a reference standard for species identification analytical methods. The species content of the material was checked using both an immunoassay test and DNA analysis. Assessed value Pork - cooked..... 100 % Pork Indicative value for moisture	30 g
LGC7206	Chicken, raw - Meat species 'Free range' Ross whole chickens, aged 42 to 45 days at slaughter, were purchased from an organic meat supplier. This material is intended for use as a reference standard for species identification analytical methods. The species content of the material was checked using both an immunoassay test and DNA analysis. Assessed value Chicken - raw.....100 % Chicken Indicative value for moisture	30 g
LGC7207	Chicken, cooked - Meat species 'Free range' Ross whole chickens, aged 42 to 45 days at slaughter, were purchased from an organic meat supplier. This material is intended for use as a reference standard for species identification analytical methods. The species content of the material was checked using both an immunoassay test and DNA analysis. Assessed value Chicken - cooked..... 100 % Chicken Indicative value for moisture	30 g

Code	Product	Unit

LGC7208 — Turkey, raw - Meat species — 30 g

Organic turkeys were purchased from a local butcher's shop.

This material is intended for use as a reference standard for species identification analytical methods.

The species content of the material was checked using both an immunoassay test and DNA analysis.

Assessed value

Turkey - raw ..... 100 % Turkey

Indicative value for moisture

LGC7209 — Turkey, cooked - Meat species — 30 g

Organic turkeys were purchased from a local butcher's shop.

This material is intended for use as a reference standard for species identification analytical methods.

The species content of the material was checked using both an immunoassay test and DNA analysis.

Assessed value

Turkey - cooked ..... 100 % Turkey

Indicative value for moisture

BCR-673 — Clenbuterol in reconstituted bovine eye (blank) — vial

The material consists of the equivalent of 2.00 ± 0.01 g (0.5 %) wet bovine eye material in sealed glass vials. It is a greyish powder obtained after lyophilisation and has to be reconstituted before use.

Compound	certified value
Clenbuterol free base	< 0.50 µg/kg

BCR-474/475 — Bovine liver - Trenbolone — set

Set of 2 x 2.8 g lyophylised liver powder

Certified values

BCR-474

17alpha-Trenbolone.. <0.5 µg/kg

BCR-475

17alpha-Trenbolone.... 7.6 µg/kg

BCR-674 — Clenbuterol in reconstituted bovine eye (positive) — vial

The material consists of the equivalent of 2.00 ± 0.01 g (0.5 %) wet bovine eye material in sealed glass vials. It is a greyish powder obtained after lyophilisation and has to be reconstituted before use.

Compound	certified value
Clenbuterol free base	9 µg/kg

BCR-185R — Bovine liver - Trace elements — 15 g

Certified values

As ..... 33.0 µg/kg	Mn ..... 11.07 mg/kg	Zn ..... 138.6 mg/kg
Cd ..... 544 µg/kg	Pb ..... 172 µg/kg	
Cu ..... 277 mg/kg	Se ..... 1680 µg/kg	

New **NIST-1577C** — Bovine liver - Trace elements — 20 g

Standard Reference Material (SRM) 1577c consists of tissue derived from healthy steers. The material was collected and prepared under strict protocols designed to preserve the original composition, and to minimize contamination. NIST-1577c is intended primarily for use in evaluating the accuracy of analytical methods for selected elements in animal tissues and other biological materials. A unit of the SRM consists of one bottle containing 20 g of freeze-dried liver powder.

Certified values for mass fractions (on a dry-mass basis) of selected elements

Ag ..... 5.9 ± 1.6 µg/kg	Fe ..... 197.94 ± 0.65 mg/kg	Pb ..... 62.8 ± 1.0 µg/kg
As ..... 19.6 ± 1.4 µg/kg	K ..... 1.023 ± 0.064 %	S ..... 0.749 ± 0.034 %
Ca ..... 131 ± 10 mg/kg	Mg ..... 620 ± 42 mg/kg	Se ..... 2.031 ± 0.045 mg/kg
Cd ..... 97.0* ± 1.4 µg/kg	Mn ..... 10.46 ± 0.47 mg/kg	Sr ..... 95.3 ± 4.2 µg/kg
Co ..... 0.300 ± 0.018 mg/kg	Mo ..... 3.30 ± 0.13 mg/kg	V ..... 8.17 ± 0.66 µg/kg
Cr ..... 53 ± 14 µg/kg	Na ..... 0.2033 ± 0.0064 %	Zn ..... 181.1 ± 1.0 mg/kg
Cu ..... 275.2 ± 4.6 mg/kg	Ni ..... 44.5 ± 9.2 µg/kg	

NCS ZC71001 — Beef liver - Trace metals — 25 g

Certified values

Ca ..... 189 µg/g	K ..... 1.05 %	P ..... 1.30 %
Cl ..... 0.29 %	Mg ..... 668 µg/g	Rb ..... 23.6 µg/g
Co ..... 0.254 µg/g	Mn ..... 8.92 µg/g	Se ..... 0.56 µg/g
Cu ..... 91.6 µg/g	Mo ..... 3.76 µg/g	Sr ..... 0.53 µg/g
Fe ..... 346 µg/g	Na ..... 0.222 %	

Indicative values for Al, Ba, Br, Cd, F, Hg, Rb, Pb, S, Ti

	Code	Product	Unit
New	NIM-GBW10018	Chicken - Trace elements	35 g

Certified values

Ag ..... 0.016 ± 0.003 %	Dy ..... 1.1 ± 0.4 µg/kg	Ni ..... 0.15 ± 0.03 mg/kg
As ..... 0.109 ± 0.013 mg/kg	Fe ..... 31 ± 3 mg/kg	P ..... 0.96 ± 0.08 %
B ..... 0.76 ± 0.13 mg/kg	Hg ..... 3.6 ± 1.5 µg/kg	Pb ..... 0.11 ± 0.02 mg/kg
Ba ..... 1.5 ± 0.4 mg/kg	K ..... 1.46 ± 0.07 %	Pr ..... 2.8 ± 0.6 µg/kg
Bi ..... 1.3 ± 0.4 µg/kg	La ..... 0.024 ± 0.004 mg/kg	Rb ..... 33 ± 2 mg/kg
Br ..... 1.6 ± 0.4 mg/kg	Li ..... 0.034 ± 0.007 mg/kg	S ..... 0.86 ± 0.05 %
Ca ..... 0.022 ± 0.002 %	Mg ..... 0.128 ± 0.010 %	Se ..... 0.49 ± 0.06 mg/kg
Ce ..... 0.06 ± 0.01 mg/kg	Mn ..... 1.65 ± 0.07 mg/kg	Sm ..... 1.3 ± 0.5 µg/kg
Cl ..... 0.153 ± 0.015 %	Mo ..... 0.11 ± 0.01 mg/kg	Sr ..... 0.64 ± 0.08 mg/kg
Cr ..... 0.59 ± 0.11 mg/kg	N ..... 14.8 ± 0.5 %	Y ..... 0.007 ± 0.002 mg/kg
Cs ..... 0.070 ± 0.013 mg/kg	Na ..... 0.144 ± 0.009 mg/kg	Zn ..... 26 ± 1 mg/kg
Cu ..... 1.46 ± 0.12 mg/kg	Nd ..... 0.0095 ± 0.0035 mg/kg	

Indicative values for further elements

BCR-487	Pig liver - Vitamins	15 g

Certified values

B_1 (thiamin) ..... 8.6 mg/kg	B_{12} ..... 1.12 mg/kg
B_2 (riboflavin) ..... 106.8 mg/kg	Folate (total) ..... 13.3 mg/kg
B_6 (total pyridoxine) ..... 19.3 mg/kg	

New	ERM-BB124	Pork muscle - Nitroimidazoles	10 g

Nitroimidazoles in the reconstituted material

Compound	Certified value µg/kg	Uncertainty µg/kg
Ronidazole (RNZ)	2.09	0.25
Metronidazole (MNZ)	1.93	0.15
2-hydroxymethyl-1-methyl-5-nitroimidazole (HMMNI)	0.69	0.09
Hydroxymetronidazole (MNZOH)	6.2	0.9
Hydroxyipronidazole (IPZOH)	1.67	0.12
Dimetridazole (DMZ)	< 0.25	

BCR-695	Pig liver - Chlortetracycline	vial

Certified value

Chlortetracycline ..... < 0.004 mg/kg

BCR-697	Pig muscle - Chlortetracycline	vial

Certified value

Chlortetracycline ..... < 0.006 mg/kg

BCR-706	Pig kidney - Chlortetracycline	vial

Certified value

Chlortetracycline ..... < 0.005 mg/kg

BCR-411	Bovine muscle - Diethylstilbestrol	5 g

Certified value

Diethylstilbestrol ..... >0.5 µg/L

BCR-412	Bovine muscle - Diethylstilbestrol	5 g

Certified value

Diethylstilbestrol ..... >0.1 µg/L

BCR-648-9	Bovine liver - Clenbuterol	set

Set of 2 x 10 g lyophilised bovine liver

Certified values

BCR-648

Clenbuterol ..... <0.5 µg/kg

BCR-649

Clenbuterol ..... 1.2 µg/kg

NIST-1546	Meat homogenate - Nutrients	4 x 85 g

Certified values

Certified Concentrations for Fatty Acids and Cholesterol

Decanoic acid (C10:0) (Capric acid) ..... 0.171 ± 0.032 g/kg
Dodecanoic acid (C12:0) (Lauric acid) ..... 0.133 ± 0.028 g/kg
Tetradecanoic acid (C14:0) (Myristic acid) ..... 2.53 ± 0.19 g/kg
Hexadecanoic acid (C16:0) (Palmitic acid) ..... 45.6 ± 3.9 g/kg
Octadecenoic acid (C18:1) (Stearic acid) ..... 21.7 ± 2.9 g/kg
(Z)-9-Octadecanoic acid (C18:0) (Oleic acid) ..... 82.0 ± 9.6 g/kg
Eicosanoic acid (Arachidic acid) ..... 0.315 ± 0.063 g/kg
Cholesterol ..... 0.750 ± 0.072g/kg

Certified Concentrations for Selected Elements ..... K	2370 ± 200 mg/kg
Ca ..... 323 ± 28 mg/kg	Na ..... 9990 ± 716 mg/kg
Mg ..... 163 ± 11 mg/kg	Zn ..... 18.3 ± 1.3 mg/kg
P ..... 1530 ± 100 mg/kg	

Indicative values for additional fatty acids, proximates, calories, water-soluble vitamins, sucrose, minerals, trace elements, amino acids and additional constituents.

	Code	Product	Unit

New NIM-GBW08552 — Pork muscle - Trace elements — 10 g

Certified values

Br ..... 6.2 µg/g	K .....1.4 %	P .....0.813 %
Ca ..... 147 µg/g	Mg .....988 µg/g	Rb ..... 42.7 µg/g
Cl .....0.187 %	Mn .....0.48 µg/g	Se ..... 0.49 µg/g
Cu ..... 3.88 µg/g	N.....12.27 %	Zn..... 94.2 µg/g
Fe..... 43.6 µg/g	Na.....0.202 %	

Indicative values for Ba, Co, Cr, Cs, Hg, Mo, Pb, Sr

BCR-163 — Beef/pork fat blend - Fatty acids — 2 amps.

The entire fatty acid (methyl ester) profile was determined but certified values are only given for the major components (>2%) and indicative values are given for all minor components.

Methyl esters
(mass fraction fatty acid methyl ester/total fatty acid methyl ester)
Certified values

14:0 n-Tetradecanoic acids .....2.29 g/100 g	18:1 n-Octadecenoic acids ..... 38.34 g/100 g
16:0 n-Hexadecanoic acid .....25.96 g/100 g	18:2 n-Octadecadienoic acids..... 7.05 g/100 g
16:1 n-Hexadecanoic acids .....2.58 g/100 g	18:3 n-Octadecatrienoic acids ..... 0.86 g/100 g
18:0 n-Octadecenoic acids .....18.29 g/100 g	

Sterols
(mass fraction in fat)
Certified value

Cholesterol..... 133.6 mg/100 g

Indicative values for additional methyl esters of fatty acids

ERM-BB444 — Pork fat - PCBs (blank) — 5 g

Certified values

PCB 28 ..... <2 µg/kg	PCB 118.....<2 µg/kg	PCB 180 ..... <2 µg/kg
PCB 52 ..... <2 µg/kg	PCB 138.....<2 µg/kg	PCB sum ..... <14 µg/kg
PCB 101 ..... <2 µg/kg	PCB 153.....<2 µg/kg	

Indicative value for 2,2',4,4'-Tetrabromodiphenyl ether (BDE 47)

ERM-BB445 — Pork fat - PCBs (low level) — 5 g

Compound	Certified value µg/kg	Uncertainty µg/kg
PCB 28	14.8	1.3
PCB 52	12.9	0.9
PCB 101	12.5	1.2
PCB 118	12.7	1.3
PCB 138	14.6	1.6
PCB 153	13.1	1.1
PCB 180	12.6	0.9
PCB sum	93	7

Indicative value for 2,2',4,4'-Tetrabromodiphenyl ether (BDE 47)

ERM-BB446 — Pork fat - PCB (high level) — 5 g

Compound	Certified value µg/kg	Uncertainty µg/kg
PCB 28	29.6	2.1
PCB 52	25.5	1.8
PCB 101	30	4
PCB 118	30.2	2.7
PCB 138	32	4
PCB 153	30.8	2.4
PCB 180	29.8	2.5
PCB sum	207	11

Indicative value for 2,2',4,4'-Tetrabromodiphenyl ether (BDE 47)

BCR-444 — Porcine muscle - Chloramphenicol (blank) — 7 g

Certified value

Chloramphenicol..... <0.2 µg/kg

BCR-445 — Porcine muscle - Chloramphenicol (positive) — 7 g

Certified value

Chloramphenicol..... 8.9 µg/kg

New ERM-BB130 — Pork muscle - Chloramphenicol — bottle

Certified value

Chloramphenicol.....0.230 ± 0.021µg/kg

Fish and fish products

Code	Product	Unit

Shellfish

BCR-668 — Mussel tissue - Trace elements — 10 g

Certified values

Ce ..... 89 µg/kg	La .....80 µg/kg	Tb..... 1.62 µg/kg
Dy..... 8.9 µg/kg	Lu .....0.389 µg/kg	Th..... 10.7 µg/kg
Er ..... 4.5 µg/kg	Nd.....54 µg/kg	Tm..... 0.480 µg/kg
Eu ..... 2.79 µg/kg	Pr.....12.3 µg/kg	U ..... 56 µg/kg
Gd ..... 13.0 µg/kg	Sm.....11.2 µg/kg	Y..... 59 µg/kg

Indicative values for As, Cd, Co, Cr, Cr, Cs, Ho, Fe, Mo, Sc, Yb and Zn

BCR-682 — Mussel tissue - PCBs — 70 g

Certified values

PCB 28 ..... 0.30 µg/kg	PCB 138.....4.6 µg/kg	PCB 170 ..... 0.17 µg/kg
PCB 52 ..... 0.78 µg/kg	PCB 149.....5.7 µg/kg	PCB 180 ..... 0.77 µg/kg
PCB 118 ..... 2.6 µg/kg	PCB 153.....9.2 µg/kg	

ERM-CE477 — Mussel tissue - Butyltin compounds — 14 g

Compound	Certified value mg/kg	Uncertainty mg/kg
Tributyltin (TBT)	2.20	0.19
Dibutyltin (DBT)	1.54	0.12
Monobutyltin (MBT)	1.50	0.28

New **NIES15** — Scallop - Tributyltin, Triphenyltin — 20 g

Certified values

TBT [$Sn(C_4H_9)^{3+}$].....0.404 ± 0.027 mg/kg	Sn..... 0.179 ± 0.021 mg/kg
TPT [$Sn(C_6H_5)^{3+}$].....0.0170 ± 0.0017 mg/kg	

Indicative values for futher elements

NIST-2976 — Mussel tissue -Trace elements and methylmercury — 25 g

Certified values

As.....13.3 mg/kg	Se..... 1.80 mg/kg
Cd .....0.82 mg/kg	Zn..... 137 mg/kg
Cu .....4.02 mg/kg	Methylmercury ..... 27.8 µg/kg
Fe.....171 mg/kg	Total mercury ..... 61.0 µg/kg
Pb .....1.19 mg/kg	

Indicative values for: Ag, Al, Br, Ca, Ce, Cl, Co, Cr, Cs Eu, K, Mg, Mn, Na, Ni, P, Pb, Rb, S, Sc, Sn, Sr, Th, Tl

Code	Product	Unit
New NIST-1974B	Mussel tissue (frozen) - PAHs, PCBs, Pesticides	5 x 8 - 10 g

Standard Reference Material NIST-1974b is a frozen mussel tissue homogenate intended for use in evaluating analytical methods for the determination of selected polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyl (PCB) congeners, and chlorinated pesticides in marine bivalve mollusk tissue and similar matrices. All of the constituents for which certified and reference values are provided in NIST-1974b were naturally present in the tissue material before processing. A unit of NIST-1974b consists of five bottles each containing approximately 8 g to 10 g (wet basis) of frozen tissue homogenate.

Certified Concentrations for Selected PAHs in NIST-1974b

	Mass Fractions in µg/kg	
	Wet-Mass Basis	Dry-Mass Basis
Naphthalene	2.43 ± 0.12	24.0 ± 1.2
Fluorene	0.494 ± 0.036	4.88 ± 0.36
Phenanthrene	2.58 ± 0.11	25.5 ± 1.1
Anthracene	0.527 ± 0.071	5.20 ± 0.71
1-Methylphenanthrene	0.98 ± 0.13	9.66 ± 1.3
2-Methylphenathrene	1.28 ± 0.31	24.0 ± 1.2
3-Methylphenanthrene	1.27 ± 0.04	12.5 ± 0.4
Fluoranthene	17.1 ± 0.7	169 ± 7
Pyrene	18.04 ± 0.6	178 ± 6
Benz[a]anthracene	4.74 ± 0.53	46.8 ± 5.2
Chrysene	6.3 ± 1.0	62.2 ± 9.9
Triphenylene	4.33 ± 0.72	42.7 ± 7.1
Benzo[b]fluoranthene	6.46 ± 0.59	63.8 ± 5.8
Benzo[j]fluoranthene	2.99 ± 0.29	29.5 ± 2.9
Benzo[k]fluoranthene	3.16 ± 0.18	31.2 ± 1.8
Benzo[a]fluoranthene	0.634 ± 0.074	6.26 ± 0.73
Benzo[e]pyrene	10.3 ± 1.1	102 ± 11
Benzo[a]pyrene	2.80 ± 0.38	27.6 ± 3.8
Perylene	0.99 ± 0.14	9.8 ± 1.4
Benzo[ghi]perylene	3.12 ± 0.33	30.8 ± 3.3
Indeno[1,2,3-cd]pyrene	2.14 ± 0.11	21.1 ± 1.1
Dibenz[a,h]anthracene	0.327 ± 0.031	3.23 ± 0.31

Certified Concentrations for Selected PCB Congeners in NIST-1974b

		Mass Fractions in µg/kg	
		Wet-Mass Basis	Dry-Mass Basis
PCB 18	2,2',5-Trichlorobiphenyl	0.84 ± 0.13	8.30 ± 1.3
PCB 28	2,4,4'-Trichlorobiphenyl	3.43 ± 0.25	33.9 ± 2.5
PCB 31	2,4',5-Trichlorobiphenyl	2.88 ± 0.23	28.4 ± 2.3
PCB 44	2,2'3,5'-Tetrachlorobiphenyl	3.85 ± 0.20	38.0 ± 2.0
PCB 49	2,2'4,5'-Tetrachlorobiphenyl	5.66 ± 0.23	55.9 ± 2.3
PCB 52	2,2',5,5'-Tetrachlorobiphenyl	6.26 ± 0.37	61.8 ± 3.7
PCB 66	2,3',4,4'-Tetrachlorobiphenyl	6.37 ± 0.37	62.9 ± 3.7
PCB 70	2,3',4',5-Tetrachlorobiphenyl	6.01 ± 0.22	59.3 ± 2.2
PCB 74	2,4,4',5-Tetrachlorobiphenyl	3.55 ± 0.23	35.0 ± 2.3
PCB 82	2,2',3,3',4-Pentachlorobiphenyl	1.16 ± 0.14	11.5 ± 1.4
PCB 87	2,2',3,4,5'-Pentachlorobiphenyl	4.33 ± 0.36	42.7 ± 3.6
PCB 95	2,2',3,5',6-Pentachlorobiphenyl	6.04 ± 0.36	59.6 ± 3.6
PCB 99	2,2',4,4',5-Pentachlorobiphenyl	5.92 ± 0.27	58.4 ± 2.7
PCB 101	2,2',4,5,5'-Pentachlorobiphenyl	10.7 ± 1.1	106 ± 11
PCB 105	2,3,3',4,4'-Pentachlorobiphenyl	4.00 ± 0.18	39.5 ± 1.8
PCB 107	2,3,3',4,5'-Pentachlorobiphenyl	1.03 ± 0.12	10.2 ± 1.2
PCB 110	2,3,3',4',6-Pentachlorobiphenyl	10.0 ± 0.7	99.1 ± 7.1
PCB 118	2,3',4,4',5-Pentachlorobiphenyl	10.3 ± 0.4	102 ± 4
PCB 128	2,2',3,3',4,4'-Hexachlorobiphenyl	1.79 ± 0.12	17.7 ± 1.2
PCB 132	2,2',3,3',4,6'-Hexachlorobiphenyl	2.43 ± 0.25	24.0 ± 2.5
PCB 138	2,2',3,4,4',5'-Hexachlorobiphenyl	9.2 ± 1.4	91 ± 14
PCB 146	2,2',3,4',5,5'-Hexachlorobiphenyl	1.92 ± 0.16	19.0 ± 1.6
PCB 149	2,2',3,4',5',6-Hexachlorobiphenyl	7.01 ± 0.28	69.2 ± 2.8
PCB 151	2,2',3,5,5',6-Hexachlorobiphenyl	1.86 ± 0.16	18.4 ± 1.6
PCB 153	2,2',4,4',5,5'-Hexachlorobiphenyl	12.3 ± 0.8	121 ± 8
PCB 156	2,3,3',4,4',5-Hexachlorobiphenyl	0.718 ± 0.080	7.09 ± 0.79
PCB 158	2,3,3',4,4',6-Hexachlorobiphenyl	0.999 ± 0.096	9.86 ± 0.95
PCB 170	2,2',3,3',4,4',5-Heptachlorobiphenyl	0.269 ± 0.034	2.66 ± 0.34
PCB 180	2,2',3,4,4',5,5'-Heptachlorobiphenyl	1.17 ± 0.10	11.5 ± 1.0
PCB 183	2,2',3,4,4',5',6-Heptachlorobiphenyl	1.25 ± 0.03	12.3 ± 0.3
PCB 187	2,2',3,4',5,5',6-Heptachlorobiphenyl	2.94 ± 0.15	29.0 ± 1.5

Certified Concentrations for Selected Chlorinated Pesticides in NIST-1974b

	Mass Fractions in µg/kg	
	Wet-Mass Basis	Dry-Mass Basis
cis-Chlordane	1.36 ± 0.10	13.4 ± 1.0
trans-Chlordane	1.14 ± 0.17	11.3 ± 1.7
trans-Nonachlor	1.30 ± 0.14	12.8 ± 1.4
2,4'-DDE	0.336 ± 0.044	3.32 ± 0.43
4,4'-DDE	4.15 ± 0.38 4	1.0 ± 3.8
2,4'-DDD	1.09 ± 0.16	10.8 ± 1.6
4,4'-DDD	3.34 ± 0.22	33.0 ± 2.2

Certified and Reference Concentrations for Total Mercury and Methylmercury in NIST1974b

	Mass Fraction in µg/kg	
	Wet-Mass Basis	Dry-Mass Basis
Total Mercury	17.0 ± 1.1	167 ± 11
Methylmercury	7.05 ± 0.44	69.6 ± 4.3

Indicative values for selected PAHs, PCB congeners and total PCBs, chlorinated pesticides and total extractable organics, additional trace elements

Code	Product	Unit
New NIST-2974A	Mussel tissue - Organics	5 g

This Standard Reference Material® (SRM®) is intended for use in evaluating analytical methods for the determination of selected polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyl (PCB) congeners, chlorinated pesticides, polybrominated diphenyl ether (PBDE) congeners, hexabromocyclododecane (HBCD) isomers, methylmercury, inorganic mercury, and total mercury in marine bivalve mollusk tissue and similar matrices. All of the constituents for which certified and reference values are provided are naturally present in the freeze-dried mussel tissue. A unit of NIST-2974A consists of one bottle containing approximately 5 g of freeze-dried mussel tissue.

Certified Concentration Values for Selected PAHs in NIST-2974A

	Mass Fraction µg/kg (dry-mass basis) µg/kg (dry-mass basis)		Mass Fraction
Phenanthrene	74.4 ± 4.7	Benzo[c]phenanthrene	23.2 ± 1.9
1-Methylphenanthrene	17.6 ± 1.6	Benz[a]anthracene	31.1 ± 3.9
2-Methylphenanthrene	28.2 ± 2.6	Chrysene and Triphenylene	123.6 ± 2.9
3-Methylphenanthrene	24.1 ± 1.4	Benzo[b]fluoranthene	41.5 ± 2.6
9-Methylphenanthrene	15.9 ± 1.3	Benzo[j]fluoranthene	21.4 ± 1.1
4-H-Cyclopenta[def]phenanthrene	13.15 ± 0.71	Benzo[k]fluoranthene	18.95 ± 0.54
Fluoranthene	287 ± 34	Benzo[e]pyrene	58.9 ± 2.9
Pyrene	166 ± 21	Benzo[a]pyrene	9.73 ± 0.43
1-Methylpyrene	10.69 ± 0.83	Perylene	6.80 ± 0.34
4-Methylpyrene	19.77 ± 0.89	Benzo[ghi]perylene	23.7 ± 2.2
Benzo[ghi]fluoranthene	18.7 ± 1.7		

Certified Concentration Values for Selected PCB Congeners in NIST-2974A

		Mass Fraction µg/kg (dry-mass basis)
PCB 8	2,4'-Dichlorobiphenyl	2.01 ± 0.08
PCB 18	2,2',5-Trichlorobiphenyl	4.03 ± 0.22
PCB 44	2,2'3,5'-Tetrachlorobiphenyl	16.24 ± 0.71
PCB 49	2,2',4,5'-Tetrachlorobiphenyl	17.1 ± 1.2
PCB 52	2,2',5,5'-Tetrachlorobiphenyl	22.42 ± 0.92
PCB 66	2,3',4,4'-Tetrachlorobiphenyl	20.6 ± 1.1
PCB 70	2,3',4',5-Tetrachlorobiphenyl	15.45 ± 0.64
PCB 74	2,4,4',5-Tetrachlorobiphenyl	9.02 ± 0.37
PCB 87	2,2',3,4,5'-Pentachlorobiphenyl	14.36 ± 0.56
PCB 95	2,2',3,5',6-Pentachlorobiphenyl	23.72 ± 0.49
PCB 99	2,2',4,4'5-Pentachlorobiphenyl	24.51 ± 0.54
PCB 101	2,2',4,5,5'-Pentachlorobiphenyl	39.84 ± 0.96
PCB 105	2,3,3',4,4'-Pentachlorobiphenyl	16.47 ± 0.43
PCB 110	2,3,3',4',6-Pentachlorobiphenyl	35.88 ± 0.87
PCB 118	2,3',4,4',5-Pentachlorobiphenyl	42.9 ± 2.1
PCB 128	2,2',3,3',4,4'-Hexachlorobiphenyl	8.24 ± 0.33
PCB 138	2,2',3,4,4',5'-Hexachlorobiphenyl	61.5 ± 2.3
PCB 146	2,2',3,4',5,5'-Hexachlorobiphenyl	8.07 ± 0.40
PCB 149	2,2',3,4',5',6-Hexachlorobiphenyl	31.77 ± 0.95
PCB 151	2,2',3,5,5',6-Hexachlorobiphenyl	5.99 ± 0.20
PCB 153	2,2',4,4',5,5'-Hexachlorobiphenyl	78.8 ± 2.5
PCB 156	2,3,3',4,4',5-Hexachlorobiphenyl	5.80 ± 0.25
PCB 170	2,2',3,3',4,4',5-Heptachlorobiphenyl	2.04 ± 0.08
PCB 177	2,2'3,3',4',5,6-Heptachlorobiphenyl	5.48 ± 0.20
PCB 180	2,2',3,4,4',5,5'-Heptachlorobiphenyl	5.31 ± 0.16
193	2,3,3',4',5,5',6-Heptachlorobiphenyl	
PCB 183	2,2',3,4,4'5',6-Heptachlorobiphenyl	7.06 ± 0.26
PCB 187	2,2',3,4',5,5'6-Heptachlorobiphenyl	15.52 ± 0.48
PCB 194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl	0.485 ± 0.040

Certified Concentration Values for Selected Chlorinated Pesticides in NIST-2974A

	Mass Fraction µg/kg (dry-mass basis) µg/kg (dry-mass basis)		Mass Fraction
Hexachlorobenzene	0.113 ± 0.007	cis-Chlordane	8.54 ± 0.17
4,4'-DDE	17.37 ± 0.82	trans-Chlordane	7.12 ± 0.15
4,4'-DDD	13.56 ± 0.58	cis-Nonachlor	1.91 ± 0.10
4,4'-DDT	6.78 ± 0.32	trans-Nonachlor	5.60 ± 0.39

Certified Concentration Values for Selected PBDE Congeners in NIST-2974A

		Mass Fraction µg/kg (dry-mass basis)
PBDE 28	2,4,4'-Tribromodiphenyl ether	0.905 ± 0.051
33	2',3,4-Tribromodiphenyl ether	
PBDE 49	2,2',4,5'-Tetrabromodiphenyl ether	1.36 ± 0.06
PBDE 99	2,2',4,4',5-Pentabromodiphenyl ether	4.78 ± 0.24
PBDE 153	2,2',4,4',5,5'-Hexabromodiphenyl ether	0.201 ± 0.014
PBDE 209	Decabromodiphenyl ether	1.99 ± 0.11

Certified Concentration Value of Methylmercury, Inorganic Mercury, and Total Mercury in NIST-2974A

	Mass Fraction µg/kg (dry-mass basis) µg/kg (dry-mass basis)		Mass Fraction
Methylmercury	69.06 ± 0.81	Total Mercury	195 ± 3
Inorganic Mercury	122 ± 3		

Reference values for selected PAHs, PCBs and PBDE Congeners.

Code	Product	Unit

IAEA-432 — Mussel homogenate - Organic contaminants — 40 g

Recommended values

HCB	0.2 ± 0.1 ng/g	1-Methylphenanthrene	4.2 ± 2.8 ng/g
pp' DDE	2.1 ± 1.0 ng/g	2-Methylphenanthrene	9.4 ± 4.9 ng/g
pp' DDD	0.88 ± 0.49 ng/g	Anthracene	1.5 ± 1.1 ng/g
PCB 49	0.29 ± 0.08 ng/g	Chrysene	5.5 ± 3.8 ng/g
PCB 70	0.64 ± 0.35 ng/g	Fluorene	4.1 ± 2.2 ng/g
PCB 101	1.2 ± 0.49 ng/g	Fluoranthene	12 ± 6.5 ng/g
PCB 110	1.12 ± 0.4 ng/g	Pyrene	13 ± 6.0 ng/g
PCB 118	1.09 ± 0.42 ng/g	Benzo[b]fluoranthene	4.8 ± 1.7 ng/g
PCB 138	2.2 ± 0.84 ng/g	Benzo[k]fluoranthene	1.9 ± 1.1 ng/g
PCB 149	1.4 ± 0.41 ng/g	Benz[a]anthracene	3.8 ± 3.1 ng/g
PCB 153	2.8 ± 0.99 ng/g	Benzo[a]pyrene	0.9 ± 0.5 ng/g
PCB 180	0.2 ± 0.11 ng/g	Benzo[e]pyrene	4.5 ± 1.7 ng/g
Phenanthrene	27 ± 21 ng/g		

Indicative values for pesticides, PCBs, petroleum hydrocarbons

New NRCCRM-DSP-MUS — Mussel tissue - Okadaic acid and Dinophysistoxin-1 — 4 g

A thermally sterilized mixed homogenate of mussel (Mytilus edilus) digestive gland tissue and a small amount of the dinoflagellate Prorocentrum lima.

Certified values

Okadaic acid (OA)	10.1 µg/g
Dinophysistoxin 1 (DTX1)	1.3 µg/g

BCR-543 — Mussel - dc-Saxitoxin — 15 g

Mussel material BCR-543 is intended to serve as an analytical blank or as a material enriched with the saxitoxin enrichment solution (BCR-663).
As an analytical blank it may serve
- to establish recovery values for a method of analysis at various levels of contamination
- to check the specific background level of the laboratories methods.

BCR-543 enriched with saxitoxin enrichent solution (BCR-663) may be used to validate the laboratory's own methods.

Compound	Certified value (mg/kg)	Uncertainty (mg/kg)
Saxitoxin·2HCl	<0.07	
Saxitoxin·2HCl	0.48	0.06
DC-Saxitoxin·2HCl	<0.04	

This reference material is a "dual usage" material and requires special export/ import documents under the authority of IRMM.

BCR-663 — Saxitoxin in acetic acid — Amp.

This material is an acetic acid solution (0.2 mol/L), containing saxitoxin.2HCl.

Compound	Certified value mg/kg	Uncertainty mg/kg
Saxitoxin.2HCl	9.8	1.2

This reference material is a "dual usage" material and requires special export/ import documents under the authority of IRMM.

NRCCRM-MUS-C — Mussel tissue - Domoic acid (amnesic toxin) — 8 g

A homogenised slurry of mussel tissue (Mytilus edulis L.).

Certified values

Domoic acid	41 µg/g
C5'-Epidomoic acid	3.2 µg/g
Domoic acid + C5'-Epidomoic acid	44 µg/g

NIST-1566b — Oyster Tissue - Trace elements and methyl mercury — 25 g

This Standard Reference Material® (SRM®) is intended primarily for use in evaluating analytical methods and instruments used for the determination of the concentrations of selected elements and proximates, selected fatty acids, total dietary fibre, as well as the calorific content in marine bivalve tissue, foods, or similar materials. A unit of NIST-1566b contains approximately 25 g of freeze-dried oyster tissue.

Certified values

Ca	0.0838 ± 0.0020 %	Pb	0.308 ± 0.009 mg/kg
Cl	0.514 ± 0.010 %	Mn	18.5 ± 0.2 mg/kg
Mg	0.1085 ± 0.0023 %	Hg (total)	0.0371 ± 0.0013 mg/kg
K	0.652 ± 0.009 %	Methylmercury (as Hg)	0.0132 ± 0.0007 mg/kg
Na	0.3297 ± 0.0053 %	Ni	1.04 ± 0.09 mg/kg
S	0.6887 ± 0.0140 %	Rb	3.262 ± 0.145 mg/kg
Al	197.2 ± 6.0 mg/kg	Se	2.06 ± 0.15 mg/kg
As	7.65 ± 0.65 mg/kg	Ag	0.666 ± 0.009 mg/kg
Cd	2.48 ± 0.08 mg/kg	Th	0.0367 ± 0.0043 mg/kg
Co	0.371 ± 0.009 mg/kg	V	0.577 ± 0.023 mg/kg
Cu	71.6 ± 1.6 mg/kg	Zn	1 424 ± 46 mg/kg
Fe	205.8 ± 6.8 mg/kg		

Indicative values for proximates, nitrogen, total dietary fiber, selected fatty acids (as triglycerides) and calories

Fish and fish products

Code	Product	Unit

NRCLUTS-1 — Non-defatted Lobster Hepatopancreas - Trace elements and methyl-mercury — 6 x 10 g

Prepared from edible grade lobster tomalley. Except for the addition of some water and a small quantity of antioxidant the sample is natural biological material containing 55 % lipids on a dry weight basis.

As bottled

Certified values

Ag	0.580 mg/kg	K	948 mg/kg
As	2.83 mg/kg	Mg	89.5 mg/kg
Ca	203 mg/kg	Mn	1.20 mg/kg
Cd	2.12 mg/kg	Ni	0.200 mg/kg
Co	0.051 mg/kg	Pb	0.010 mg/kg
Cr	0.079 mg/kg	Se	0.641 mg/kg
Cu	15.9 mg/kg	Sr	2.46 mg/kg
Fe	11.6 mg/kg	Zn	12.4 mg/kg
Hg	0.0167 mg/kg	Methylmercury (as Hg)	0.0094 mg/kg

Dry weight

Certified values

Ag	3.89 mg/kg	K	6360 mg/kg
As	19.0 mg/kg	Mg	601 mg/kg
Ca	1360 mg/kg	Mn	8.02 mg/kg
Cd	14.2 mg/kg	Ni	1.34 mg/kg
Co	0.34 mg/kg	Pb	0.069 mg/kg
Cr	0.53 mg/kg	Se	4.30 mg/kg
Cu	107 mg/kg	Sr	16.5 mg/kg
Fe	77.8 mg/kg	Zn	82.9 mg/kg
Hg	0.112 mg/kg	Methylmercury (as Hg)	0.063 mg/kg

NRCTORT-2 — Lobster hepatopancreas - Trace elements and methyl-mercury — 35 g

Partially defatted lobster (Homarus americanus) hepatopancreas prepared from edible grade lobster tomalley.

Certified values

As	21.6 mg/kg	Mo	0.95 mg/kg
Cd	26.7 mg/kg	Ni	2.50 mg/kg
Co	0.51 mg/kg	Pb	0.35 mg/kg
Cr	0.77 mg/kg	Se	5.63 mg/kg
Cu	106 mg/kg	Sr	45.2 mg/kg
Fe	105 mg/kg	V	1.64 mg/kg
Hg	0.27 mg/kg	Zn	180 mg/kg
Mn	13.6 mg/kg	Methylmercury (as Hg)	0.152 mg/kg

Indicative values for Sn

Fish

LGC1706 — Malachite green oxalate — 250 mg

The material is intended for the use as an analytical standard for the determination of malachite green oxalate in foodstuff especially fish

Assessed value

Purity..... 94.2 ± 1.4 mass%

Indicative values for Monode -malachite green, 4-(Dimethylamino)benzophenone, Malachite green carbinol (MG-carbinol), Leucomalachite green (LMG).

ERM-AC303 — Leucomalachite Green 4,4'-Benzylidenbis(N,N-dimethylaniline) — 100 mg

Certified value

Purity..... 98.8 ± 0.8%

BCR-463 — Tuna fish - Total mercury and methyl-mercury — 15 g

Certified values

Methylmercury..... 3.04 mg/kg
Total mercury..... 2.85 mg/kg

ERM-CE464 — Tuna fish - Total mercury and methyl mercury — 15 g

Certified values

Methylmercury..... 5.50 mg/kg
Total mercury..... 5.24 mg/kg

BCR-349 — Cod liver oil - PCBs — 2 g

Compound	Certified value µg/kg	Uncertainty µg/kg
PCB 28	68	8
PCB 52	149	21
PCB 101	372	18
PCB 118	460	40
PCB 153	940	40
PCB 180	282	23

Code	Product	Unit

New ERM-BB350 — Salmon oil - PCBs — 2 g

Compound	Certified value ng/g	Uncertainty ng/kg
2,4,4'-Trichlorobiphenyl (PCB 28)	21.3	1.1
2,2',5,5'-Tetrachlorobiphenyl (PCB 52)	37.4	2.2
2,4,4',5-Tetrachlorobiphenyl (PCB 74)	23	1.9
2,2',4,4',5-Pentachlorobiphenyl (PCB 99)	62	6
2,2',4,5,5'-Pentachlorobiphenyl (PCB 101)	111	5
2,3,3',4,4'-Pentachlorobiphenyl (PCB 105)	25.8	2.1
2,3,3',4',6-Pentachlorobiphenyl (PCB 110)	54.1	2.8
2,3',4,4',5-Pentachlorobiphenyl (PCB 118)	84	4
2,2',3,4,4',5'-Hexachlorobiphenyl (PCB 138)	137	10
2,2',3,4',5',6-Hexachlorobiphenyl (PCB 149)	88	9
2,2',4,4',5,5'-Hexachlorobiphenyl (PCB 153)	220	11
2,3,3',4,4',5-Hexachlorobiphenyl (PCB 156)	20.1	1.3
2,2',3,3',4,5',6'-Heptachlorobiphenyl (PCB 177)	25.8	2
2,2',3,4,4',5,5'-Heptachlorobiphenyl (PCB 180)	67	4
2,2',3,4,4',5',6-Heptachlorobiphenyl (PCB 183)	22.5	1.8
2,2',3,4',5,5',6-Heptachlorobiphenyl (PCB 187)	67	5
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (PCB 194)	23.4	1.5
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (PCB 196)	41	7

BCR-598 — Cod liver oil - Organochlorine pesticides — 5 g

Compound	Certified value µg/kg	Uncertainty µg/kg
Hexachlorobenzene	55.7	2
alpha-HCH	42	3
beta-HCH	16	3
gamma-HCH	23	4
gamma-Chlordane	6.9	1.6
alpha-Chlordane	24.4	1.8
Oxychlordane	11	1.8
trans-Nonachlor	39	4
Dieldrin	59	4
4,4'-DDE	0.61×10^3	0.04×10^3
2,4'-DDD	30	4
4,4'-DDD	0.40×10^3	0.03×10^3
4,4'-DDT	0.179×10^3	0.018×10^3

BCR-719 — Canned fresh chub - PCBs — 70 g

The material consists of approx. 70 g of minced sterilised muscle of chub to which butylhydroxy toluene (BHT) was added as an antioxidant.

Certified values

PCB 77	196 ng/kg	PCB 126	20.0 ng/kg
PCB 81	13.6 ng/kg	PCB 169	1.80 ng/kg

BCR-718 — Canned fresh herring - PCBs — 70 g

The material consists of approx. 70 g of minced sterilised muscle of herring to which butylhydroxy toluene (BHT) was added as an antioxidant.

Certified values

PCB 28	0.41 µg/kg	PCB 118	1.78 µg/kg	PCB 153	4.62 µg/kg
PCB 52	1.00 µg/kg	PCB 128	0.62 µg/kg	PCB 156	0.19 µg/kg
PCB 101	2.12 µg/kg	PCB 138	2.97 µg/kg	PCB 170	0.35 µg/kg
PCB 105	0.63 µg/kg	PCB 149	2.58 µg/kg	PCB 180	0.795 µg/kg

BCR-627 — Tuna fish tissue - Arsenic species — 10 g

Certified values

Arsenobetaine	52 µmol/kg	total As	4.8 mg/kg
Dimethylarsinic acid	2 µmol/kg		

BCR-725 — Salmon tissue - Flumequine and oxolinic acid — vial

	Certified value µg/kg	Uncertainty µg/kg
Flumequine	1170	210
Oxolinic acid	600	100

Code	Product	Unit
NIST-1947	Lake Michigan fish tissue - Organic contaminants	5 x 8 g

This Standard Reference Material® (SRM®) 1947 is a frozen fish tissue homogenate, which was prepared from fish collected from Lake Michigan, and is intended primarily for use in evaluating analytical methods for the determination of selected trace elements, methylmercury, total mercury, polychlorinated biphenyl (PCB) congeners, chlorinated pesticides, and polybrominated diphenyl ether (PBDE) congeners, proximates, caloric content and fatty acids in fish tissue and similar matrices. All of the constituents for which certified, reference, and information values are provided are naturally present in the fish tissue homogenate. A unit of NIST-1947 consists of five bottles, each containing approximately 8 g (wet basis) of frozen tissue homogenate.

Certified concentrations for selected elements and methylmercury

	Element Mass Fraction mg/kg (wet-mass basis)		Element Mass Fraction mg/kg (wet-mass basis)
As	0.732 ± 0.039	Rb	4.51 ± 0.09
Cu	0.411 ± 0.029	Se	0.475 ± 0.084
Fe	3.79 ± 0.42	Zn	2.66 ± 0.08
Hg	0.254 ± 0.005	Methylmercury	0.233 ± 0.010
Mn	0.076 ± 0.004		

Certified concentrations for selected PCB congeners

		Mass fraction µg/kg (dry mass basis)
PCB 28	2,4,4'-Trichlorobiphenyl	14.1 ± 1.0
PCB 31	2,4',5-Trichlorobiphenyl	10.4 ± 1.4
PCB 44	2,2',3,5'-Tetrachlorobiphenyl	20.4 ± 1.7
PCB 49	2,2',4,5'-Tetrachlorobiphenyl	27.3 ± 3.8
PCB 52	2,2',5,5'-Tetrachlorobiphenyl	36.4 ± 4.3
PCB 63	2,3,4',5-Tetrachlorobiphenyl	4.75 ± 0.60
PCB 66	2,3',4,4'-Tetrachlorobiphenyl	69.4 ± 5.3
PCB 74	2,4,4',5-Tetrachlorobiphenyl	33.7 ± 3.1
PCB 87	2,2',3,4,5'-Pentachlorobiphenyl	27.9 ± 1.5
PCB 99	2,2',4,4',5-Pentachlorobiphenyl	78.0 ± 6.0
PCB 101	2,2',4,5,5'-Pentachlorobiphenyl	90.8 ± 0.3
PCB 105	2,3,3',4,4'-Pentachlorobiphenyl	50.3 ± 3.7
PCB 107	2,3,3',4',5-Pentachlorobiphenyl	17.1 ± 1.2
PCB 110	2,3,3',4',6-Pentachlorobiphenyl	94.6 ± 4.3
PCB 118	2,3',4,4',5-Pentachlorobiphenyl	112 ± 6
PCB 128	2,2',3,3',4,4'-Hexachlorobiphenyl	31.6 ± 2.1
PCB 132	2,2',3,3',4,6'-Hexachlorobiphenyl	20.8 ± 2.1
PCB 138	2,2',3,4,4',5'-Hexachlorobiphenyl	162.0 ± 6.9
PCB 146	2,2',3,4',5,5'-Hexachlorobiphenyl	40.5 ± 2.0
PCB 149	2,2',3,4',5',6-Hexachlorobiphenyl	67.1 ± 3.7
PCB 153	2,2',4,4',5,5'-Hexachlorobiphenyl	201 ± 3
PCB 156	2,3,3',4,4',5-Hexachlorobiphenyl	13.3 ± 0.9
PCB 158	2,3,3',4,4',6-Hexachlorobiphenyl	11.3 ± 0.9
PCB 170	2,2',3,3',4,4',5-Heptachlorobiphenyl	29.2 ± 2.4
PCB 174	2,2',3,3',4,5,6'-Heptachlorobiphenyl	18.6 ± 1.7
PCB 180	2,2',3,4,4',5,5'-Heptachlorobiphenyl	80.8 ± 5.0
PCB 183	2,2',3,4,4',5',6-Heptachlorobiphenyl	23.3 ± 1.9
PCB 187	2,2',3,4',5,5',6-Heptachlorobiphenyl	54.8 ± 2.6
PCB 193	2,3',3,4',5,5',6-Heptachlorobiphenyl	6.04 ± 0.23
PCB 194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl	13.2 ± 0.9
PCB 195	2,2',3,3',4,4',5,6-Octachlorobiphenyl	4.95 ± 0.77
PCB 206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	6.24 ± 0.8

Certified concentrations for selected chlorinated pesticides

	Mass fraction µg/kg (wet- mass basis)		Mass fraction µg/kg (wet- mass basis)
Hexachlorobenzene	7.48 ± 0.66	Mirex	5.09 ± 0.73
α-HCH	1.06 ± 0.12	2,4'-DDE	3.39 ± 0.28
Heptachlor epoxide	13.4 ± 0.8	4,4'-DDE	720 ± 43
Oxychlordane	23.6 ± 1.5	2,4'-DDD	3.31 ± 0.16
trans-Chlordane	12.8 ± 1.2	4,4'-DDD	45.9 ± 3.6
cis-Nonachlor	54.1 ± 7.3	2,4'-DDT	15.7 ± 0.89
trans-Nonachlor	127 ± 6	4,4'-DDT	59.5 ± 6.7
Dieldrin	80.8 ± 3.8		

Certified concentrations for fat and selected polybrominated diphenyl ether (PBDE)

		Mass fraction µg/kg (wet- mass basis)
BDE 47	2,2',4,4'-Tetrabromodiphenylether	73.3 ± 2.9
BDE 49	2,2',4,5'-Tetrabromodiphenylether	4.01 ± 0.10
BDE 66	2,3',4,4'-Tetrabromodiphenylether	1.85 ± 0.13
BDE 99	2,2',4,4',5-Pentabromodiphenylether	19.2 ± 0.8
BDE 100	2,2',4,4',6-Pentabromodiphenylether	17.1 ± 0.6
BDE 153	2,2',4,4',5,5'-Hexabromodiphenylether	3.83 ± 0.04
BDE 154	2,2',4,4',5,6'-Hexabromodiphenylether	6.88 ± 0.52

Reference concentrations for PCBs, pesticides, PBDE congeners, pesticides, proximates and caloric content, fat and fatty acids.

Code	Product	Unit
NIST-1946	Lake Superior fish tissue - Organic contaminants	5 x 10 g

This Standard Reference Material® (SRM®) is a frozen fish tissue homogenate, which was prepared from lake trout (Salvelinus namaycush namaycush) collected from Lake Superior (U.S./Canada), and is intended primarily for use in evaluating analytical methods for the determination of polychlorinated biphenyl (PCB) congeners, chlorinated pesticides, fatty acids (including omega-3 fatty acids), extractable fat, methylmercury, total mercury, and selected trace elements in fish tissue and similar matrices.

Certified concentrations for selected PCB congeners

		Mass fraction µg/kg (dry mass basis)
PCB 44	2,2',3,5'-Tetrachlorobiphenyl	4.66 ± 0.86
PCB 49	2,2',4,5'-Tetrachlorobiphenyl	3.80 ± 0.39
PCB 52	2,2',5,5'-Tetrachlorobiphenyl	8.1 ± 1.0
PCB 66	2,3',4,4'-Tetrachlorobiphenyl	10.8 ± 1.9
PCB 70	2,3',4',5-Tetrachlorobiphenyl	14.9 ± 0.6
PCB 74	2,4,4',5-Tetrachlorobiphenyl	4.83 ± 0.51
PCB 77	3,3',4,4'-Tetrachlorobiphenyl	0.327 ± 0.025
PCB 87	2,2',3,4,5'-Pentachlorobiphenyl	9.4 ± 1.4
PCB 95	2,2',3,5',6-Pentachlorobiphenyl	11.4 ± 1.3
PCB 99	2,2',4,4',5-Pentachlorobiphenyl	25.6 ± 2.3
PCB 101	2,2',4,5,5'-Pentachlorobiphenyl	34.6 ± 2.6
PCB 105	2,3,3',4,4'-Pentachlorobiphenyl	19.9 ± 0.9
PCB 110	2,3,3',4',6-Pentachlorobiphenyl	22.8 ± 2.0
PCB 118	2,3',4,4',5-Pentachlorobiphenyl	52.1 ± 1.0
PCB 126	3,3',4,4',5-Pentachlorobiphenyl	0.380 ± 0.017
PCB 128	2,2',3,3',4,4'-Hexachlorobiphenyl	22.8 ± 1.9
PCB 138	2,2',3,4,4',5'-Hexachlorobiphenyl	115 ± 13
PCB 146	2,2',3,4',5,5'-Hexachlorobiphenyl	30.1 ± 3.5
PCB 149	2,2',3,4',5',6-Hexachlorobiphenyl	26.3 ± 1.3
PCB 153	2,2',4,4',5,5'-Hexachlorobiphenyl	170 ± 9
PCB 156	2,3,3',4,4',5-Hexachlorobiphenyl	9.52 ± 0.51
PCB 169	2,2',3,4,4',5'-Hexachlorobiphenyl	0.106 ± 0.014
PCB 170	2,2',3,3',4,4',5-Heptachlorobiphenyl	25.2 ± 2.2
PCB 180	2,2',3,4,4',5,5'-Heptachlorobiphenyl	74.4 ± 4.0
PCB 183	2,2',3,4,4',5',6-Heptachlorobiphenyl	21.9 ± 2.5
PCB 187	2,2',3,4',5,5',6-Heptachlorobiphenyl	55.2 ± 2.1
PCB 194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl	13.0 ± 1.3
PCB 195	2,2',3,3',4,4',5,6-Octachlorobiphenyl	5.30 ± 0.45
PCB 206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	5.40 ± 0.43
PCB 209	Decachlorobiphenyl	1.30 ± 0.21

Certified concentrations for selected chlorinated pesticides

	Mass fraction µg/kg (wet- mass basis)		Mass fraction µg/kg (wet- mass basis)
Hexachlorobenzene	7.25 ± 0.83	trans-Nonachlor	99.6 ± 7.6
alpha-HCH	5.72 ± 0.65	Dieldrin	32.5 ± 3.5
gamma-HCH	1.14 ± 0.18	Mirex	6.47 ± 0.77
Heptachlor epoxide	5.50 ± 0.23	4,4'-DDE	373 ± 48
Oxychlordane	18.9 ± 1.5	2,4'-DDD	2.20 ± 0.25
cis-Chlordane (alpha-Chlordane)	32.5 ± 1.8	4,4'-DDD	17.7 ± 2.8
trans-Chlordane	8.36 ± 0.91	4,4'-DDT	37.2 ± 3.5
cis-Nonachlor	59.1 ± 3.6		

Certified concentrations for fat and selected fatty acids

	Mass fraction (%) (wet- mass basis)
Fat (Extractable)	10.17 ± 0.48
Fat (Sum of Fatty Acids)	8.76 ± 0.17

	Mass fraction (%) (as the triglycerdide) (wet- mass basis)
Tetradecanoic acid (C14:0) (Myristic acid)	0.316 ± 0.009
Hexadecanoic acid (C16:0) (Palmitic acid)	1.22 ± 0.04
(Z)-9-Hexadecenoic acid (C16:1) (Palmitoleic acid)	0.816 ± 0.026
Octadecanoic acid (C18:0) (Stearic acid)	0.263 ± 0.011
(Z)-9-Octadecenoic acid (C18:1) (Oleic acid)c	2.64 ± 0.08
(Z,Z)-9,12-Octadecadienoic acid (C18:2) (Linoleic acid)	0.348 ± 0.023
(Z,Z,Z)-9,12,15-Octadecatrienoic acid (C18:3) (Linolenic acid)	0.221 ± 0.025
Eicosanoic acid (C20:0) (Arachidic acid)	0.0100 ± 0.0012
(Z)-11-Eicosenoic acid (C20:1)	0.132 ± 0.012
(Z,Z)-11,14-Eicosadienoic acid (C20:2)	0.0990 ± 0.0043
(Z,Z,Z,Z,Z)-5,8,11,14,17-Eicosapentaenoic acid (C20:5) (EPA)	0.296 ± 0.019
(Z,Z,Z,Z,Z)-7,10,13,16,19-Docosapentaenoic acid (C22:5) (DPA)	0.335 ± 0.026
(Z,Z,Z,Z,Z,Z)-4,7,10,13,16,19-Docosahexaenoic acid (C22:6) (DHA)	0.92 ± 0.10

Certified concentrations for methylmercury, total mercury, arsenic, and iron

	Mass fraction mg/kg (wet- mass basis)		Mass fraction mg/kg (wet- mass basis)
Methylmercury	0.394 ± 0.015	As	0.277 ± 0.010
Hg (Total)	0.433 ± 0.009	Fe	4.00 ± 0.32

Reference concentrations for PCBs, pesticides, fatty acids, proximates and caloric content.

Code	Product	Unit
IAEA-406	Fish - Organic contaminants	35 g

Recommended values

HCB	1.5 ng/g	PCB 28	0.57 ng/g	PCB 153	3.7 ng/g
p,p'-DDE	9.2 ng/g	PCB 31	0.29 ng/g	PCB 156	0.27 ng/g
p,p'-DDD	2.8 ng/g	PCB 52	1.3 ng/g	PCB 170	0.54 ng/g
o,p-DDE	0.76 ng/g	PCB 101	3.1ng/g	PCB 180	1.2 ng/g
Heptachlor	0.32 ng/g	PCB 110	1.4 ng/g	Pyrene	4.5 ng/g
Aldrin	0.75 ng/g	PCB 138	4 ng/g		
alpha-Chlordane	2.8 ng/g	PCB 149	2 ng/g		

Indicative values for PAHs, PCBs, pesticides

IAEA-435	Tuna homogenate - Organic contaminants	30 g

Recommended values

HCB	2.6 ± 1.0 ng/g	PCB 183	11 ± 2.9 ng/g
o,p-DDD	2.5 ± 0.52 ng/g	PCB 187	31 ± 10 ng/g
PCB 28	1.4 ± 0.55 ng/g	PCB 194	3.9 ± 1.1 ng/g
PCB 31	1.5 ± 0.66 ng/g	PCB 206	2.8 ± 1.4 ng/g
PCB 66	5.0 ± 1.2 ng/g	PCB 209	2.0 ± 0.84 ng/g
PCB 99	16 ± 4.1 ng/g	Phytane	83 ± 40 ng/g
PCB 105	6.7 ± 3.6 ng/g	Naphthalene	7.8 ± 5.9 ng/g
PCB 128	9.5 ± 4.7 ng/g	Phenanthrene	8.4 ± 4.9 ng/g
PCB 149	29 ± 7.1 ng/g	1-Methylphenanthrene	4.8 ± 3.6 ng/g
PCB 151	12 ± 2.7 ng/g	Chrysene	2.8 ± 2.6 ng/g
PCB 156	3.4 ± 1.3 ng/g	Acenaphthene	3.4 ± 3.5 ng/g
PCB 177	7.9 ± 4.2 ng/g		

Indicative values for pesticides, PCBs, petroleum hydrocarbons.

Code	Product	Unit
CIL-EDF-2524	Clean Fish (slurry) - Organic contaminants	10 g

Reference values

Polychlorinated dioxins and furans

2,3,7,8-TCDD	0.07 ± 0.06 ng/kg	1,2,3,7,8-PeCDF	0.09 ± 0.06 ng/kg
1,2,3,7,8-PeCDD	0.15 ± 0.03 ng/kg	2,3,4,7,8-PeCDF	0.21 ± 0.14 ng/kg
1,2,3,4,7,8-HxCDD	0.06 ± 0.03 ng/kg	Total-PeCDF	1.22 ± 1.13 ng/kg
1,2,3,6,7,8-HxCDD	0.24 ± 0.14 ng/kg	1,2,3,4,7,8-HxCDF	0.09 ± 0.14 ng/kg
1,2,3,7,8,9-HxCDD	0.07 ± 0.05 ng/kg	1,2,3,6,7,8-HxCDF	0.08 ± 0.12 ng/kg
1,2,3,4,6,7,8-HpCDD	0.29 ± 0.54 ng/kg	2,3,4,6,7,8-HxCDF	0.08 ± 0.05 ng/kg
Total HpCDD	0.23 ± 0.30 ng/kg	Total-HxCDF4	0.55 ± 1.31 ng/kg
OCDD	0.59 ± 0.82 ng/kg	1,2,3,4,6,7,8-HpCDF	0.17 ± 0.28 ng/kg
2,3,7,8-TCDF	2.42 ± 0.74 ng/kg	OCDF	0.24 ± 0.58 ng/kg
Total TCDF	2.49 ± 0.92 ng/kg		

Polychlorinated biphenyls

2,2',5-TriCB (#18)	86.0 ± 60.4 ng/kg
2,4,4'-TriCB (#28)	253 ± 244 ng/kg
3,4,4'-TriCB (#37)	12.6 ± 4.52 ng/kg
2,2',3,5'-TetraCB (#44)	274 ± 192 ng/kg
2,2',4,5'-TetraCB (#49)	176 ± 41.6 ng/kg
2,2',5,5'-TetraCB (#52)	653 ± 200 ng/kg
2,3',4,4'-TetraCB (#66)	218 ± 212 ng/kg
2,4,4',5-TetraCB (#74)	348 ± 398 ng/kg
3,3',4,4'-TetraCB (#77)	8.82 ± 4.16 ng/kg
3,4,4',5-TetraCB (#81)	1.27 ± 2.52 ng/kg
2,2',4,4',5-PentaCB (#99)	588 ± 120 ng/kg
2,2',4,5,5'-PentaCB (#101)	1,130 ± 274 ng/kg
2,3,3',4,4'-PentaCB (#105)	280 ± 80.4 ng/kg
2,3,3',4',6-PentaCB (#110)	789 ± 170 ng/kg
2,3,4,4',5-PentaCB (#114)	18.6 ± 5.98 ng/kg
2,3',4,4',5-PentaCB (#118)	692 ± 104 ng/kg
2',3,4,4',5-PentaCB (#123)	11.4 ± 9.24 ng/kg
3,3',4,4',5-PentaCB (#126)	2.14 ± 1.24 ng/kg
2,2',3,3',4,4'-HexaCB (#128)	127 ± 62.2 ng/kg
2,2',3,4,4',5-HexaCB (#137)	31.8 ± 26.8 ng/kg
2,2',3,4,4',5'-HexaCB (#138)	1,110 ± 400 ng/kg
2,2',3,4,5,5'-HexaCB (#141)	152 ± 119 ng/kg
2,2',3,4',5,5'-HexaCB (#146)	261 ± 69.2 ng/kg
2,2',3,4',5',6-HexaCB (#149)	608 ± 788 ng/kg
2,2',3,5,5',6-HexaCB (#151)	279 ± 212 ng/kg
2,2',4,4',5,5'-HexaCB (#153)	1,360 ± 516 ng/kg
2,3,3',4,4',5-HexaCB (#156)	64.7 ± 18.4 ng/kg
2,3,3',4,4',5'-HexaCB (#157)	19.2 ± 8.68 ng/kg
2,3,3',4,4',6-HexaCB (#158)	73.2 ± 52.6 ng/kg
2,3',4,4',5,5'-HexaCB (#167)	24.7 ± 17.1 ng/kg
3,3',4,4',5,5'-HexaCB (#169)	0.65 ± 0.46 ng/kg
2,2',3,3',4,4',5-HeptaCB (#170)	119 ± 42.0 ng/kg
2,2',3,3',4,5,5'-HeptaCB (#172)	38.6 ± 12.0 ng/kg
2,2',3,3',4',5,6-HeptaCB (#177)	126 ± 47.8 ng/kg
2,2',3,3',5,5',6-HeptaCB (#178)	68.2 ± 5.80 ng/kg
2,2',3,4,4',5,5'-HeptaCB (#180)	412 ± 182 ng/kg
2,2',3,4,4',5',6-HeptaCB (#183)	125 ± 59.4 ng/kg
2,2',3,4',5,5',6-HeptaCB (#187)	357 ± 222 ng/kg
2,3,3',4,4',5,5'-HeptaCB (#189)	6.16 ± 2.72 ng/kg
2,2',3,3',4,4',5,5'-OctaCB (#194)	48.1 ± 25.6 ng/kg
2,2',3,3',4,4',5',6-OctaCB (#196)	44.8 ± 56.6 ng/kg
2,2',3,3',4,5,5',6'-OctaCB (#199)	81.7 ± 67.4 ng/kg
2,2',3,3',4,4',5,5',6-NonaCB (#206)	10.4 ± 2.06 ng/kg
DecaCB (#209)	14.4 ± 1.08 ng/kg

Polybrominated diphenyl ethers

2,4,4'-TriBDE (#28)	26.6 ± 45.8 ng/kg	2,2',4,4',6-PentaBDE (#100)	113 ± 93.6 ng/kg
2,2',4,4'-TetraBDE (#47)	712 ± 818 ng/kg	2,2',4,4',5,5'-HexaBDE (#153)	21.6 ± 14.7 ng/kg
2,3',4,4'-TetraBDE (#66)	23.4 ± 21.6 ng/kg	2,2',4,4',5,6'-HexaBDE (#154)	30.9 ± 39.8 ng/kg
2,2',4,4',5-PentaBDE (#99)	184 ± 86.2 ng/kg		

Polyaromatic hydrocarbons

Acenaphthene	967 ± 604 ng/kg	Fluoranthene	4.930 ± 1.310 ng/kg
Acenaphthylene	516 ± 290 ng/kg	Fluorene	4.400 ± 3.530 ng/kg
Anthracene	592 ± 284 ng/kg	Naphthalene	15.600 ± 15.800 ng/kg
Benzo[b]fluoranthene	794 ± 157 ng/kg	Phenanthrene	12.000 ± 14.000 ng/kg
Benzo[k]fluoranthene	222 ± 7.60 ng/kg	Pyrene	6.300 ± 1.630 ng/kg
Chrysene	720 ± 314 ng/kg		

Pesticides

4.4'-DDE	10.100 ± 2.440 ng/kg	alpha-Hexachlorocyclohexane	267 ± 226 ng/kg
4.4'-DDD	1.640 ± 756 ng/kg	Lindane(gamma-HCH)	390 ± 136 ng/kg
4.4'-DDT	976 ± 1.390 ng/kg	Hexachlorobenzene	783 ± 360 ng/kg
Dieldrin	488 ± 74.6 ng/kg	cis-Nonachlor	211 ± 126 ng/kg
Endosulfan-I	534 ± 378 ng/kg	trans-Nonachlor	1.130 ± 542 ng/kg

Code	Product	Unit
CIL-EDF-2525	Naturally Contaminated Fish (slurry) - Organic contaminants	10 g

Reference values

Polychlorinated dioxins and furans

2,3,7,8-TCDD	17.0 ± 3.90 ng/kg
Total TCDD	16.8 ± 1.54 ng/kg
1,2,3,7,8-PeCDD	3.71 ± 0.90 ng/kg
Total PeCDD	3.68 ± 0.84 ng/kg
1,2,3,4,7,8-HxCDD	0.33 ± 0.18 ng/kg
1,2,3,6,7,8-HxCDD	2.03 ± 0.60 ng/kg
1,2,3,7,8,9-HxCDD	0.30 ± 0.14 ng/kg
Total HxCDD	2.52 ± 1.10 ng/kg
1,2,3,4,6,7,8-HpCDD	0.48 ± 0.36 ng/kg
Total HpCDD	0.56 ± 0.62 ng/kg
OCDD	1.71 ± 1.38 ng/kg
2,3,7,8-TCDF	24.3 ± 4.74 ng/kg
Total TCDF	27.7 ± 9.40 ng/kg
1,2,3,7,8-PeCDF	4.58 ± 1.42 ng/kg
2,3,4,7,8-PeCDF	14.5 ± 4.04 ng/kg
Total PeCDF	23.4 ± 6.66 ng/kg
1,2,3,4,7,8-HxCDF	5.95 ± 1.52 ng/kg
1,2,3,6,7,8-HxCDF	1.73 ± 0.54 ng/kg
1,2,3,7,8,9-HxCDF	0.10 ± 0.20 ng/kg
2,3,4,6,7,8-HxCDF	1.04 ± 0.30 ng/kg
Total HxCDF	10.7 ± 6.18 ng/kg
1,2,3,4,6,7,8-HpCDF	0.59 ± 0.44 ng/kg
1,2,3,4,7,8,9-HpCDF	0.16 ± 0.32 ng/kg
Total HpCDF	1.13 ± 1.48 ng/kg
OCDF	0.38 ± 0.50 ng/kg

Polychlorinated biphenyls

2,2',5-TriCB (#18)	1,390 ± 970 ng/kg
2,4,4'-TriCB (#28)	7,100 ± 1,260 ng/kg
2,4',5-TriCB (#31)	4,000 ± 71.6 ng/kg
2,4',6-TriCB (#32)	220 ± 216 ng/kg
3,4,4'-TriCB (#37)	165 ± 123 ng/kg
2,2',3,5'-TetraCB (#44)	14,200 ± 9,660 ng/kg
2,2',4,4'-TetraCB (#47)	16,000 ± 6,560 ng/kg
2,2',4,5'-TetraCB (#49)	13,600 ± 9,100 ng/kg
2,2',5,5'-TetraCB (#52)	27,100 ± 12,100 ng/kg
2,3',4,4'-TetraCB (#66)	56,500 ± 20,800 ng/kg
2,3',4',5-TetraCB (#70)	44,400 ± 3,860 ng/kg
2,4,4',5-TetraCB (#74)	23,100 ± 8,440 ng/kg
3,3',4,4'-TetraCB (#77)	1,850 ± 834 ng/kg
3,4,4',5-TetraCB (#81)	161 ± 74.0 ng/kg
2,2',3,4,5'-PentaCB (#87)	38,400 ± 24,000 ng/kg
2,2',3',4,5-PentaCB (#97)	29,800 ± 14,700 ng/kg
2,2',4,4',5-PentaCB (#99)	94,300 ± 25,200 ng/kg
2,2',4,5,5'-PentaCB (#101)	82,700 ± 21,400 ng/kg
2,3,3',4,4'-PentaCB (#105)	50,100 ± 15,700 ng/kg
2,3,3',4',6-PentaCB (#110)	84,900 ± 19,100 ng/kg
2,3,4,4',5-PentaCB (#114)	3,410 ± 1,550 ng/kg
2,3',4,4',5-PentaCB (#118)	122,000 ± 38,000 ng/kg
2',3,4,4',5-PentaCB (#123)	3,280 ± 2,020 ng/kg
3,3',4,4',5-PentaCB (#126)	628 ± 242 ng/kg
2,2',3,3',4,4'-HexaCB (#128)	28,200 ± 9,460 ng/kg
2,2',3,4,4',5-HexaCB (#137)	7,250 ± 2,440 ng/kg
2,2',3,4,4',5'-HexaCB (#138)	178,000 ± 27,800 ng/kg
2,2',3,4,5,5'-HexaCB (#141)	22,040 ± 3,500 ng/kg
2,2',3,4',5,5'-HexaCB (#146)	39,500 ± 17,000 ng/kg
2,2',3,4',5',6-HexaCB (#149)	69,800 ± 24,600 ng/kg
2,2',3,5,5',6-HexaCB (#151)	24,900 ± 11,100 ng/kg
2,2',4,4',5,5'-HexaCB (#153)	226,000 ± 71,200 ng/kg
2,3,3',4,4',5-HexaCB (#156)	13,100 ± 2,620 ng/kg
2,3,3',4,4',5'-HexaCB (#157)	3,380 ± 1,010 ng/kg
2,3,3',4,4',6-HexaCB (#158)	11,600 ± 1,870 ng/kg
2,3',4,4',5,5'-HexaCB (#167)	7,060 ± 3,020 ng/kg
3,3',4,4',5,5'-HexaCB (#169)	52.1 ± 14.0 ng/kg
2,2',3,3',4,4',5-HeptaCB (#170)	35,100 ± 12,700 ng/kg
2,2',3,3',4,5,5'-HeptaCB (#172)	8,450 ± 1,600 ng/kg
2,2',3,3',4',5,6-HeptaCB (#177)	18,800 ± 4,140 ng/kg
2,2',3,3',5,5',6-HeptaCB (#178)	12,100 ± 1,840 ng/kg
2,2',3,4,4',5,5'-HeptaCB (#180)	108,000 ± 23,600 ng/kg
2,2',3,4,4',5',6-HeptaCB (#183)	28,300 ± 6,740 ng/kg
2,2',3,4',5,5',6-HeptaCB (#187)	62,900 ± 21,600 ng/kg
2,3,3',4,4',5,5'-HeptaCB (#189)	1,440 ± 498 ng/kg
2,2',3,3',4,4',5,5'-OctaCB (#194)	12,700 ± 3,200 ng/kg
2,2',3,3',4,4',5,6-OctaCB (#195)	4,620 ± 1,450 ng/kg
2,2',3,3',4,4',5',6-OctaCB (#196)	7,720 ± 3,240 ng/kg
2,2',3,3',4,5,6,6'-OctaCB (#199)	16,700 ± 2,400 ng/kg
2,2',3,4,4',5,5',6-OctaCB (#203)	13,800 ± 2,360 ng/kg
2,2',3,3',4,4',5,5',6-NonaCB (#206)	4,960 ± 768 ng/kg
2,2',3,3',4,5,5',6,6'-NonaCB (#208)	2,370 ± 350 ng/kg
DecaCB (#209)	3,510 ± 982 ng/kg

Brominated flame retardants

2,4,4'-TriBDE (#28)6	312 ± 202 ng/kg
2,2',4,4'-TetraBDE (#47)	9,080 ± 2,620 ng/kg
2,2',4,5'-TetraBDE (#49)	524 ± 274 ng/kg
2,3',4,4'-TetraBDE (#66)	262 ± 81.0 ng/kg
2,2',4,4',5-PentaBDE (#99)	2,280 ± 472 ng/kg
2,2',4,4',6-PentaBDE (#100)	1,720 ± 566 ng/kg
2,2',4,4',5,5'-HexaBDE (#153)	2,030 ± 506 ng/kg
2,2',4,4',5,6'-HexaBDE (#154)	2,550 ± 1,000 ng/kg
2,2',3,4,4',5',6-HeptaBDE (#183)	137 ± 47.8 ng/kg
DecaBDE (#209)	545 ± 1,999 ng/kg

Pesticides

Chlordane	33,400 ± 6,300 ng/kg
4,4'-DDE	587,000 ± 140,000 ng/kg
4,4'-DDD	97,600 ± 33,200 ng/kg
4,4'-DDT	9,100 ± 2,700 ng/kg
Dieldrin	54,500 ± 17,300 ng/kg
Endosulfan I	1,310 ± 722 ng/kg
Endosulfan II	10,100 ± 1,620 ng/kg
Endrin	2,420 ± 434 ng/kg
alpha-Hexachlorocyclohexane	1,400 ± 1,140 ng/kg
beta-Hexachlorocyclohexane	834 ± 436 ng/kg
Lindane (gamma-HCH)	492 ± 216 ng/kg
Heptachlor	1,970 ± 1,110 ng/kg
Heptachlor Epoxide	8,210 ± 1,560 ng/kg
Hexachlorobenzene	18,100 ± 15,300 ng/kg
Mirex	93,700 ± 23,200 ng/kg
cis-Nonachlor	27,700 ± 6,400 ng/kg
trans-Nonachlor	57,700 ± 51,000 ng/kg
Oxychlordane	18,100 ± 11,200 ng/kg
alpha-Chlordane	30,100 ± 19,000 ng/kg
gamma-Chlordane	11,500 ± 7,240 ng/kg

Code	Product	Unit

CIL-EDF-2526 — Fortified Fish (slurry) - Organic contaminants — 10 g

Reference values

Polychlorinated dioxins and furans

2,3,7,8 TCDD	19.8 ± 4.18 ng/kg	1,2,3,7,8-PeCDF	39.0 ± 7.36 ng/kg
Total TCDD	19.0 ± 1.08 ng/kg	2,3,4,7,8-PeCDF	37.8 ± 10.2 ng/kg
1,2,3,7,8-PeCDD	39.9 ± 10.6 ng/kg	Total PeCDF	72.0 ± 14.9 ng/kg
Total PeCDD	38.9 ± 13.7 ng/kg	1,2,3,4,7,8-HxCDF	83.3 ± 23.0 ng/kg
1,2,3,4,7,8-HxCDD	54.9 ± 7.80 ng/kg	1,2,3,6,7,8-HxCDF	62.8 ± 19.6 ng/kg
1,2,3,6,7,8-HxCDD	51.1 ± 19.3 ng/kg	1,2,3,7,8,9-HxCDF	57.3 ± 10.9 ng/kg
1,2,3,7,8,9-HxCDD	52.9 ± 18.1 ng/kg	2,3,4,6,7,8-HxCDF	58.6 ± 14.2 ng/kg
Total HxCDD	149 ± 41.8 ng/kg	Total HxCDF	243 ± 70.8 ng/kg
1,2,3,4,6,7,8-HpCDD	70.7 ± 23.2 ng/kg	1,2,3,4,6,7,8-HpCDF	81.6 ± 13.7 ng/kg
Total HpCDD	66.9 ± 32.2 ng/kg	1,2,3,4,7,8,9-HpCDF	76.7 ± 26.6 ng/kg
OCDD	181 ± 53.4 ng/kg	Total HpCDF	148 ± 23.0 ng/kg
2,3,7,8-TCDF	18.7 ± 5.58 ng/kg	OCDF	185 ± 57.4 ng/kg
Total TCDF	19.0 ± 2.20 ng/kg		

Polychlorinated biphenyls

2,2',5-TriCB (#18)	100 ± 49.0 ng/kg	2',3,4,4',5-PentaCB (#123)	7.38 ± 9.58 ng/kg
2,4,4'-TriCB (#28)	245 ± 268 ng/kg	3,3',4,4',5-PentaCB (#126)	431 ± 17.9 ng/kg
2,2',5,5'-TetraCB (#52)	369 ± 124 ng/kg	2,2',3,4,4',5'-HexaCB (#138)	395 ± 184 ng/kg
3,3',4,4'-TetraCB (#77)	451 ± 179 ng/kg	2,2',3,5,5',6-HexaCB (#151)	99.8 ± 17.1 ng/kg
3,4,4',5-TetraCB (#81)	3.00 ± 5.60 ng/kg	2,2',4,4',5,5'-HexaCB (#153)	490 ± 334 ng/kg
2,2',4,4',5-PentaCB (#99)	215 ± 204 ng/kg	2,3,3',4,4',5-HexaCB (#156)	23.3 ± 23.8 ng/kg
2,2',4,5,5'-PentaCB (#101)	579 ± 362 ng/kg	2,3,3',4,4',5'-HexaCB (#157)	9.30 ± 9.16 ng/kg
2,3,3',4,4'-PentaCB (#105)	108 ± 73.0 ng/kg	2,3',4,4',5,5'-HexaCB (#167)	12.0 ± 9.54 ng/kg
2,3,3',4',6-PentaCB (#110)	288 ± 112 ng/kg	3,3',4,4',5,5'-HexaCB (#169)	512 ± 160 ng/kg
2,3,4,4',5-PentaCB (#114)	7.73 ± 4.36 ng/kg	2,2',3,4,4',5,5'-HeptaCB (#180)	116 ± 64.4 ng/kg
2,3',4,4',5-PentaCB (#118)	348 ± 392 ng/kg	2,3,3',4,4',5,5'-HeptaCB (#189)	3.51 ± 2.76 ng/kg

Polybrominated diphenyl ethers

2,2',4,4',5,5'-HexaBDE (#153) ..... 7.48 ± 14.7 ng/kg

CIL-EDF-4023 — Set of three fish reference materials — 3 x 10 g

Clean Natural Matrix (EDF 2524)
Contaminated Natural Matrix (EDF 2525)
Fortified Natural Matrix (EDF 2526)

IAEA-MA-B3/R — Fish flesh - Radioactive isotopes — 50 g

Certified values

^{137}Cs	14.2 Bq/kg	^{40}K	272 Bq/kg

IAEA-414 — Fish - Radioactive isotopes — 100 g

Recommended values

^{40}K	481 Bq/kg	^{234}U	1.22 Bq/kg	^{238}U	1.11 Bq/kg
^{137}Cs	5.18 Bq/kg	^{235}U	0.050 Bq/kg	$^{239+240}$Pu	0.120 Bq/kg
^{232}Th	0.028 Bq/kg	^{238}Pu	0.0230 Bq/kg	^{241}Am	0.197 Bq/kg

NRCDOLT-4 — Dogfish liver - Trace elements — 25 g

Certified values

Ag	0.93 ± 0.07 mg/kg
As	9.66 ± 0.62 mg/kg
Cd	24.3 ± 0.8 mg/kg
Cu	31.2 ± 1.1 mg/kg
Fe	1833 ± 75 mg/kg
Hg	2.58 ± 0.22 mg/kg
Ni	0.97 ± 0.11 mg/kg
Pb	0.16 ± 0.04 mg/kg
Se	8.3 ± 1.3 mg/kg
Zn	116 ± 6 mg/kg
CH_3Hg (as Hg)	1.33 ± 0.12 mg/kg

Indicative value for Cr, Sn, Methylmercury

NRCDORM-3 — Fish protein - Trace elements — 20 g

Certified values

As	6.88 mg/kg	Hg	0.409 mg/kg
Cd	0.290 mg/kg	Ni	1.28 mg/kg
Cu	15.5 mg/kg	Pb	0.395 mg/kg
Cr	1.89 mg/kg	Sn	0.066 mg/kg
Fe	347 mg/kg	Zn	51.3 mg/kg

NRCFEBS-1 — Otolith - Trace elements — 1 g

NRCFEBS-1 is a saggital otolith reference material procured from red snapper (Lutjanus campechanus).

Certified values

Ba	5.09 ± 0.23 mg/kg	Mg	23.6 ± 1.3 mg/kg	Sr	2055 ± 79 mg/kg
Ca	38.3 ± 1.4 %	Mn	0.686 ± 0.016 mg/kg		
Li	0.305 ± 0.044 mg/kg	Na	2594 ± 161 mg/kg		

Indicative values for Cd, Cu, Ni, Pb, Zn

Code	Product	Unit

NRCCARP-2 — Fish (common carp) - Dioxins, furans and PCBs — 6 x 9 g

Prepared from common carp (Cyprinus carpio) collected near the warm water discharge of the Consumer's Power Plant in Saginaw Bay, Lake Huron, Canada

Certified values

PCB18 ..... 27.3 µg/kg	PCB118 ..... 148 µg/kg	PCB194 ..... 10.9 µg/kg
PCB28 ..... 34.0 µg/kg	PCB128 ..... 20.4 µg/kg	PCB206 ..... 4.4 µg/kg
PCB44 ..... 86.6 µg/kg	PCB153 ..... 105 µg/kg	
PCB52 ..... 138 µg/kg	PCB180 ..... 53.3 µg/kg	

Reference Values

2,3,7,8-TCDF ..... 18.2 ng/kg	1,2,3,6,7,8-HxCDD ..... 5.8 ng/kg
1,2,3,7,8-PCDF ..... 5.6 ng/kg	1,2,3,7,8,9-HxCDD ..... 0.78 ng/kg
2,3,7,8-TCDD ..... 7.4 ng/kg	1,2,3,4,6,7,8-HpCDD ..... 6.4 ng/kg
1,2,3,7,8-PCDD ..... 5.3 ng/kg	OCDD ..... 9.4 ng/kg
1,2,3,4,7,8-HxCDD ..... 1.6 ng/kg	

Other reference concentrations for selected PCB congeners and pesticides are given in the certificate.

NIES22 — Fish otolith - Major and minor constituents and trace elements — 3 g

Certified values

Na ..... 0.223 ± 0.010 %	K ..... 282 ± 8 mg/kg	Sr ..... 0.236 ± 0.005 %
Mg ..... 21 ± 1 mg/kg	Ca ..... 38.3 ± 0.5 %	Ba ..... 2.89 ± 0.08mg/kg

Reference values for Cu, Zn, Cd, Pb

New **BDS-BRM-04** — Fishoil - DR CALUX® TEQ (Low) — 20 mL

DR CALUX® TEQ

Expected value[A] (n=16)

DR CALUX® TEQ per gram product ..... 3.7 pg

HRGC/MS PCDD/PCDF TEQ[C] (n=1)

PCDD/PCDF TEQ per gram product ..... 0.35 pg

HRGC/MS PCB TEQ[C] (n=1)

PCB TEQ per gram product ..... 1.85 pg

HRGC/MS PCDD/PCDF/PCB TEQ[C] (n=1)

PCDD/PCDF/PCB TEQ per gram ..... 2.2 pg

[A] The average value is based in the robust mean as described in ISO 57328.
[B] Uncertainty is based on the robust standard deviation as described in ISO 57328.
[C] Based on quantified congeners and WHO-TEF's

New **BDS-BRM-05** — Fishoil - DR CALUX® TEQ (Middle) — 20 mL

DR CALUX® TEQ

Expected value[A] (n=16)

DR CALUX® TEQ per gram product ..... 8.8 pg

HRGC/MS PCDD/PCDF TEQ[C] (n=1)

PCDD/PCDF TEQ per gram product ..... 0.68 pg

HRGC/MS PCB TEQ[C] (n=1)

PCB TEQ per gram product ..... 7.0 pg

HRGC/MS PCDD/PCDF/PCB TEQ[C] (n=1)

PCDD/PCDF/PCB TEQ per gram ..... 7.7 pg

[A] The average value is based in the robust mean as described in ISO 57328.
[B] Uncertainty is based on the robust standard deviation as described in ISO 57328.
[C] Based on quantified congeners and WHO-TEF's

New **BDS-BRM-06** — Fishoil - DR CALUX® TEQ (High) — 20 mL

DR CALUX® TEQ

Expected value[A] (n=16)

DR CALUX® TEQ per gram product ..... 16 pg

HRGC/MS PCDD/PCDF TEQ[C] (n=1)

PCDD/PCDF TEQ per gram product ..... 6.2 pg

HRGC/MS PCB TEQ[C] (n=1)

PCB TEQ per gram product ..... 8.6 pg

HRGC/MS PCDD/PCDF/PCB TEQ[C] (n=1)

PCDD/PCDF/PCB TEQ per gram ..... 14.8 pg

[A] The average value is based in the robust mean as described in ISO 57328.
[B] Uncertainty is based on the robust standard deviation as described in ISO 57328.
[C] Based on quantified congeners and WHO-TEF's

New **BDS-BRM-04-06** — Fishoil - DR CALUX® TEQ (Kit) — kit

Each kit consists of one unit of

BDS-BRM-04 ..... Fishoil - CALUX® TEQ (Low)
BDS-BRM-05 ..... Fishoil - CALUX® TEQ (Middle)
BDS-BRM-06 ..... Fishoil - CALUX® TEQ (High)

Cereals and genetically modified crops

Code	Product	Unit

Wheat

New ERM-BC382 — Wheat flour - Proximates and essential elements — vial

One unit contains about 37 g of wheat flour filled under argon in 100 mL amber glass vials.

	Certified value	Uncertainty
Kjeldahl nitrogen	1.851 g/100 g	0.017 g/100 g
Total fat	1.39 g/100 g	0.17 g/100 g
Ash	0.60 g/100 g	0.10 g/100 g
Starch	81.2 g/100 g	1.7 g/100 g
K	1.88 mg/g	0.08 mg/g
Mg	0.247 mg/g	0.010 mg/g
Ca	0.210 mg/g	0.018 mg/g
P	1.19 mg/g	0.07 mg/g

NIST-1567a — Wheat flour - Trace elements — 80 g

Milled from a blend of Hard Red Spring and Hard Red Winter wheat.

Certified values

Al 5.7 µg/g	K 0.133 %	P 0.134 %
Ca 0.191 %	Mg 0.040 %	Rb 0.68 µg/g
Cd 0.026 µg/g	Mn 9.4 µg/g	S 0.165 %
Cu 2.1 µg/g	Mo 0.48 µg/g	Se 1.1 µg/g
Fe 14.1 µg/g	Na 6.1 µg/g	Zn 11.6 µg/g

Indicative values for As, Br, Cl, Co, Hg, I, Pb, Sn, U, V, W

New NIM-GBW10011 — Wheat flour - Trace elements — 35 g

Certified values

Ag 0.0104 ± 0.0010 %	K 0.140 ± 0.006 %	Pb 0.065 ± 0.024 mg/kg
As 0.031 ± 0.005 mg/kg	La 0.006 ± 0.002 mg/kg	Pr 1.1 ± 0.4 µg/kg
Ba 2.4 ± 0.3 mg/kg	Li 0.024 ± 0.005 mg/kg	Rb 2.6 ± 0.2 mg/kg
Ca 0.034 ± 0.002 %	Mg 0.045 ± 0.007 %	S 0.178 ± 0.017 %
Cd 18 ± 4 µg/kg	Mn 5.4 ± 0.3 mg/kg	Se 0.053 ± 0.007 mg/kg
Ce 0.009 ± 0.002 mg/kg	Mo 0.48 ± 0.05 mg/kg	Sm 0.95 ± 0.28 µg/kg
Cl 0.086 ± 0.003 %	N 2.40 ± 0.06 %	Sr 2.5 ± 0.3 mg/kg
Cr 0.096 ± 0.014 mg/kg	Na 17 ± 5 mg/kg	V 0.034 ± 0.012 mg/kg
Cu 2.7 ± 0.2 mg/kg	Nd 0.0046 ± 0.0014 mg/kg	Y 0.023 ± 0.005 mg/kg
Fe 18.5 ± 3.1 mg/kg	Ni 0.06 ± 0.02 mg/kg	Zn 11.6 ± 0.7 mg/kg
Gd -0.91 µg/kg	P 0.154 ± 0.007 %	

Indicative values for further elements

BCR-121 — Wholewheat flour - Vitamins — 50 g

Certified values

B1 (thiamin) 4.63 mg/kg	Folate (total) 0.5 mg/kg
B6 (total pyridoxine) 4.10 mg/kg	

BCR-563 — Common wheat flour - Properties — 360 g

Certified parameters determined according to ISO and ICC standard: Protein content, Ash content, Falling number/s, Zeleny sedimentation, Chopin Alveograph, Brabender Farinograph, Brabender Extensograph.

BCR-396 — Wheat flour - Deoxynivalenol (DON) blank — 150 g

Certified value

Deoxynivalenol <0.05 mg/kg

BCR-471 — Wheat - Ochratoxin A (blank) — 55 g

Certified value

Ochratoxin A < 0.6 µg/kg

New B-MYC0856 — Wheat flour - Deoxynivalenol — 55 g

Certified values

Deoxynivalenol 877 ± 23 µg/kg

NIST-RM 8441a — Wheat - Hardness — set

Set of 50 x 20 g

Determination of hardness of bulk or single kernel wheat. Ten separate lots of wheat of varying hardness. Five samples of each wheat.

Code	Product	Unit

Corn

BCR-377 — Maize flour - Deoxynivalenol (blank) — 150 g

Certified value

Deoxynivalenol..... <0.05 mg/kg

ERM-BC716 — Maize - very low level ZON — 60 g

Compound	Certified value
Zearalenone	<5 µg/kg

ERM-BC717 — Maize - low level ZON — 60 g

Compound	Certified value	Uncertainty
Zearalenone	83 µg/kg	9 µg/kg

New **B-MYC0851** — Maize flour - Aflatoxins — 55 g

Certified values

Aflatoxin B1	7.4 ± 0.37 µg/kg
Aflatoxin B2	0.7 ± 0.07 µg/kg
Aflatoxin G1	<LOD*
Aflatoxin G2	<LOD*
Aflatoxins total (sum of B1,B2,G1and G2)	8.9 ± 0.26 µg/kg

*The LOD for Aflatoxin G1 of the used method for in-house characterization of the material is 0.1 µg/kg, for Aflatoxin G2 the LOD is 0.1 µg/kg

New **B-MYC0890** — Maize flour check sample - Aflatoxins — 100 g

Indicative values

Aflatoxin B1	8.30 ± 2.34 µg/kg
Aflatoxin B2	0.65 ± 0.43 µg/kg
Aflatoxin G1	<LOD*
Aflatoxin G2	<LOD*
Aflatoxins total (sum of B1,B2,G1 and G2)	8.96 ± 2.63 µg/kg

* The LOD for Aflatoxin G1 of the used method is 0.1 µg/kg, for Aflatoxin G2 the LOD is 0.1 µg/kg

New **B-MYC0891** — Maize flour check sample - Aflatoxins — 100 g

Indicative values

Aflatoxin B1	15.47 ± 3.93 µg/kg
Aflatoxin B2	0.85 ± 0.34 µg/kg
Aflatoxin G1	<LOD*
Aflatoxin G2	<LOD*
Aflatoxins total (sum of B1,B2,G1 and G2)	16.32 ± 4.05 µg/kg

* The LOD for Aflatoxin G1 of the used method is 0.1 µg/kg, for Aflatoxin G2 the LOD is 0.1 µg/kg

New **B-MYC0892** — Maize flour check sample - Deoxynivalenol — 100 g

Indicative value

Deoxynivalenol.....2010 ± 290 µg/kg

New **B-MYC0893** — Maize flour check sample - Fumonisins — 100 g

Indicative values

Fumonisin B1	2630 ± 740 µg/kg	Fumonisin B3	310 ± 210 µg/kg
Fumonisin B2	690 ± 340 µg/kg		

New **B-MYC0894** — Maize flour check sample - Fumonisins — 100 g

Indicative values

Fumonisin B1	270 ± 110 µg/kg	Fumonisin B3	<80 µg/kg
Fumonisin B2	<80 µg/kg		

New **B-MYC0895** — Maize flour check sample - Zearalenone — 100 g

Indicative value

Zearalenone.....177.3 ± 64.8 µg/kg

IC-INCT-CF-3 — Corn flour - Trace elements — 50 g

Certified values

B	1.65 ± 0.33 mg/kg	La	6.6 ± 1.2 ng/kg	P	2831 ± 97 mg/kg
Br	0.388 ± 0.046 mg/kg	Sc	2.13 ± 0.32 ng/kg	Rb	0.912 ± 0.042 mg/kg
Cl	397 ± 33 mg/kg	Mg	1066 ± 37 mg/kg	S	919 ± 121 mg/kg
Cu	1.63 ± 0.13 mg/kg	Mn	4.98 ± 0.22 mg/kg	Zn	20.09 ± 0.76 mg/kg
Fe	32.0 ± 1.4 mg/kg	Mo	152 ± 12 ng/kg		
K	3157 ± 119 mg/kg	Ni	0.383 ± 0.039 mg/kg		

Indicative values for Al, As, Ba, Ca, Hg, Na, Pb, Sb

	Code	Product	Unit
New	NIM-GBW10012	Maize flour - Trace elements	35 g

Certified values

Ag	0.032 ± 0.003 %	Fe	13.3 ± 1.5 mg/kg	Rb	2.1 ± 0.2 mg/kg
As	0.028 ± 0.006 mg/kg	Gd	4.3 ± 0.9 µg/kg	S	0.123 ± 0.016 %
B	0.86 ± 0.11 mg/kg	Ho	0.66 ± 0.15 µg/kg	Sc	3.5 ± 0.9 µg/kg
Ba	0.45 ± 0.16 mg/kg	K	0.129 ± 0.007 %	Se	0.021 ± 0.008 mg/kg
Be	1.7 ± 0.4 µg/kg	La	0.057 ± 0.006 mg/kg	Si	0.008 ± 0.001 %
Bi	2.8 ± 0.9 µg/kg	Li	0.038 ± 0.006 mg/kg	Sm	3.2 ± 0.5 µg/kg
Br	0.46 ± 0.09 mg/kg	Mg	0.018 ± 0.002 %	Sr	0.19 ± 0.05 mg/kg
Ca	0.0055 ± 0.0008 %	Mn	1.55 ± 0.08 mg/kg	Tb	0.73 ± 0.24 µg/kg
Cd	4.1 ± 1.6 µg/kg	Mo	0.045 ± 0.009 mg/kg	Th	4.6 ± 1.5 µg/kg
Ce	0.12 ± 0.02 mg/kg	N	1.40 ± 0.07 %	Ti	1.6 ± 0.5 mg/kg
Cl	0.050 ± 0.006 %	Nd	0.022 ± 0.004 mg/kg	V	0.30 ± 0.11 mg/kg
Cs	0.010 ± 0.004 mg/kg	Ni	0.097 ± 0.014mg/kg	Y	0.021 ± 0.004 mg/kg
Cu	0.66 ± 0.08 mg/kg	P	0.061 ± 0.003%	Yb	1.6 ± 0.2 µg/kg
Dy	3.2 ± 0.8 µg/kg	Pb	0.07 ± 0.02 mg/kg	Zn	2.9 ± 0.3 mg/kg
Er	1.7 ± 0.4 µg/kg	Pr	7 ± 1 µg/kg		

Indicative values for further elements

Rye

New	ERM-BC381	Rye flour - Proximates and essential elements	vial

One unit contains about 37 g of rye flour filled under argon in a 100 mL amber glass vial.

	Certified value	Uncertainty
Kjeldahl nitrogen	1.562 g/100 g	0.014 g/100 g
Total fat	1.36 g/100 g	0.16 g/100 g
Ash	1.08 g/100 g	0.11 g/100 g
Starch	72.2 g/100 g	1.9 g/100 g
K	3.35 mg/g	0.11 mg/g
Mg	0.567 mg/g	0.013 mg/g
Ca	0.32 mg/g	0.04 mg/g
P	2.01 mg/g	0.07 mg/g

IAEA-V-8	Rye flour - Trace elements	50 g

Certified values

Br	0.38 mg/kg	Fe	4.1 mg/kg	P	592 mg/kg
Ca	149 mg/kg	K	1925 mg/kg	Rb	0.48 mg/kg
Cl	570 mg/kg	Mg	121 mg/kg	Zn	2.53 mg/kg
Cu	0.95 mg/kg	Mn	2.06 mg/kg		

Indicative values for Cd, Co, Na

New	B-MYC0852	Rye - Ergot alkaloids	55 g

Certified values

Ergometrine	595 ± 745 µg/kg	Ergotamine	1349 ± 1156 µg/kg
Ergometrinine	335 ± 758 µg/kg	Ergotaminine	464 ± 367 µg/kg
Ergosine	537 ± 260 µg/kg	Ergocornine	614 ± 156 µg/kg
Ergosinine	331 ± 476 µg/kg	Ergocorninine	362 ± 391 µg/kg
alpha-Ergocryptine	570 ± 52 µg/kg	Ergocristine	923 ± 195 µg/kg
alpha-Ergocryptinine	477 ± 526 µg/kg	Ergocristinine	462 ± 469 µg/kg

Rice

BCR-465	Rice flour - Amylose (low level)	10 g

Certified value

Amylose 15.4 g/100 g

BCR-466	Rice flour - Amylose (medium level)	10 g

Certified value

Amylose 23.1 g/100 g

BCR-467	Rice flour - Amylose (high level)	10 g

Certified value

Amylose 27.7 g/100 g

IRMM-804	Rice flour - Trace elements	15 g

Compound	Certified value (mg/kg)	Uncertainty (mg/kg)
As	0.049	0.004
Cd	1.61	0.07
Cu	2.74	0.24
Mn	34.2	2.3
Pb	0.42	0.07
Zn	23.1	1.9

Cereals and genetically modified crops

Code	Product	Unit

NIST-1568a — Rice Flour - Trace elements — 80 g

Produced from 100% long grain rice from Arkansas.

Certified values

Al ..... 4.4 µg/g	Hg 0.0058	P ..... 0.134 %
As ..... 0.29 µg/g	K ..... 0.1280 %	Rb ..... 6.14 µg/g
Ca ..... 0.0118 %	Mg ..... 0.056 %	S ..... 0.120 %
Cd ..... 0.022 µg/g	Mn ..... 20.0 µg/g	Se ..... 0.38 µg/g
Cu ..... 2.4 µg/g	Mo ..... 1.46 µg/g	Zn ..... 19.4 µg/g
Fe ..... 7.4 µg/g	Na ..... 6.1 µg/g	

Indicative values for Br, Cl, Co, I, Pb, Sb, Sn, U, V, W

New **NIM-GBW10010** — Rice - Trace elements — 35 g

Certified values

Ag ..... 0.039 ± 0.004 %	Fe ..... 7.6 ± 1.9 mg/kg	P ..... 0.136 ± 0.006P %
As ..... 0.102 ± 0.008 mg/kg	Hg ..... 5.3 ± 0.5 µg/kg	Pb ..... 0.08 ± 0.03 mg/kg
B ..... 0.92 ± 0.14 mg/kg	K ..... 0.138 ± 0.007 %	Pr ..... 1.1 ± 0.3 µg/kg
Ba ..... 0.40 ± 0.09 mg/kg	La ..... 0.008 ± 0.003 mg/kg	Rb ..... 3.9 ± 0.3 mg/kg
Be ..... 1.8 ± 0.4 µg/kg	Li ..... 0.044 ± 0.007 mg/kg	S ..... 0.147 ± 0.024 %
Br ..... 0.56 ± 0.13 mg/kg	Mg ..... 0.041 ± 0.006 %	Se ..... 0.061 ± 0.015 mg/kg
Ca ..... 0.011 ± 0.001 %	Mn ..... 17 ± 1 mg/kg	Si ..... 0.025 ± 0.003 %
Cd ..... 87 ± 5 µg/kg	Mo ..... 0.53 ± 0.05 mg/kg	Sr ..... 0.30 ± 0.05 mg/kg
Ce ..... 0.011 ± 0.002 mg/kg	N ..... 1.61 ± 0.04 %	Y ..... 0.052 ± 0.009 mg/kg
Cl ..... 0.040 ± 0.004 %	Na ..... 25 ± 8 mg/kg	Zn ..... 23 ± 2 mg/kg
Cs ..... 0.014 ± 0.005 mg/kg	Nb ..... mg/kg	
Cu ..... 4.9 ± 0.3 mg/kg	Ni ..... 0.27 ± 0.02 mg/kg	

Indicative values for further elements

New **NMIJ CRM 7503-A** — White rice flour - Arsenic compounds and trace elements — 20 g

Certified values

Arsenite (As(III)) ..... 0.0711 ± 0.0029 mg/kg as As
Arsenate (As(V)) ..... 0.0130 ± 0.0009 mg/kg as As
Dimethylarsinic acid (DMAA) ..... 0.0133 ± 0.0009 mg/kg as As

Mn ..... 9.2 ± 0.4 mg/kg	Cu ..... 1.88 ± 0.07 mg/kg	As ..... 0.098 ± 0.007 mg/kg
Fe ..... 5.42 ± 0.21 mg/kg	Zn ..... 20.7 ± 0.9 mg/kg	Cd ..... 0.194 ± 0.007 mg/kg

Rapeseed

ERM-BC190 — Rapeseed (colza) - Total glucosinolate and sulfur — 20 g

Certified values

Total glucosinolate ..... 23 mmol/kg S ..... 4.72 g/kg

ERM-BC366 — Rapeseed (colza) - Total glucosinolate and sulfur — 20 g

Certified values

Total glucosinolate ..... 11.9 mmol/kg S ..... 3.31 g/kg

ERM-BC367 — Rapeseed (colza) - Total glucosinolate and sulfur — 20 g

Certified values

Total glucosinolate ..... 99 mmol/kg S ..... 10.3 g/kg

BCR-446 — Rapeseed - Oil content (low) — 153 g

Certified values

"As is" oil ..... 39.49 g/100 g
Moisture and volatiles ..... 7.01 g/100 g
Dry basis oil ..... 42.48 g/100 g

BCR-447 — Rapeseed - Oil content (medium) — 153 g

Certified values

"As is" oil ..... 41.99 g/100 g
Moisture and volatiles ..... 7.42 g/100 g
Dry basis oil ..... 45.36 g/100 g

BCR-448 — Rapeseed - Oil content (high) — 153 g

Certified values

"As is" oil ..... 45.43 g/100 g
Moisture and volatiles ..... 7.68 g/100 g
Dry basis oil ..... 49.21 g/100 g

Genetically modified crops

ERM-BF410ak - ERM-BF410gk

Dried soya seed powders with different mass fractions of genetically modified ("Roundup ReadyTM") soya beans, intended for the calibration of methods for the detection of genetically modified food.

New **ERM-BF410AK** — Soya seed powder – GTS 40-3-2 Soya (0%) — 1 g

Certified value

GTS 40-3-2 Soya ..... < 0.7 g/kg

	Code	Product	Unit
New	ERM-BF410BK	Soya seed powder – GTS 40-3-2 Soya (0.1%) Certified value g/kg / Uncertainty g/kg GTS 40-3-2 Soya ..... 1.0 ..... 0.5	1 g
	ERM-BF410C	Genetically modified soya beans (0.5%) Roundup Ready™ / Certified value g/kg / Uncertainty g/kg Soya bean content ..... 5.0 ..... 1.0	1 g
New	ERM-BF410DK	Soya seed powder - GTS 40-3-2 Soya (1%) Certified value g/kg / Uncertainty g/kg GTS 40-3-2 Soya ..... 10.0 ..... 1.0	1 g
New	ERM-BF410GK	Soya seed powder - GTS 40-3-2 Soya (10 %) Certified value g/kg / Uncertainty g/kg GTS 40-3-2 Soya 100 7	1 g
		ERM-BF425A - ERM-BF425D Dried soya seed powders with different mass fractions of genetically modified (“356043”)soya beans, intended for the calibration of methods for the detection of genetically modified food.	
	ERM-BF425A	Genetically modified 356043 Soya seed (0%) Certified value g/kg 356043 Soya ..... < 0.5	vial
	ERM-BF425B	Genetically modified 356043 Soya seed (0.1%) Certified value g/kg / Uncertainty g/kg 356043 Soya ..... 1.0 ..... 0.4	vial
	ERM-BF425C	Genetically modified 356043 Soya seed (1%) Certified value g/kg / Uncertainty g/kg 356043 Soya ..... 10.0 ..... 1.1	vial
	ERM-BF425D	Genetically modified 356043 Soya seed (10%) Certified value g/kg / Uncertainty g/kg 356043 Soya 100 9	vial
		ERM-BF426A - ERM-BF426D Dried soya seed powders with different mass fractions of genetically modified (“305423”) soya beans, intended for the calibration of methods for the detection of genetically modified food.	
	ERM-BF426A	Genetically modified 305423 Soya seed (0%) Certified value g/kg 305423 Soja ..... < 0.8	vial
	ERM-BF426B	Genetically modified 305423 Soya seed (0.5%) Certified value g/kg / Uncertainty g/kg 305423 Soya ..... 5 ..... 0.8	vial
	ERM-BF426C	Genetically modified 305423 Soya seed (1%) Certified value g/kg / Uncertainty g/kg 305423 Soya 10 1	vial
	ERM-BF426D	Genetically modified 305423 Soya seed (10%) Certified value g/kg / Uncertainty g/kg 305423 Soya 100 7	vial
		ERM-BF411A - ERM-BF411F Dried maize powders with different mass fractions of genetically modified (“Bt-176”) maize, intended for the calibration of methods for the detection of genetically modified food.	
	ERM-BF411A	Genetically Modified Bt-176 Maize (0%) Certified value g/kg Bt-176 maize content ..... < 0.14	1 g
	ERM-BF411B	Genetically Modified Bt-176 Maize (0.1%) Certified value g/kg / Uncertainty g/kg Bt-176 maize content ..... 1.00 ..... 0.29	1 g
	ERM-BF411C	Genetically Modified Bt-176 Maize (0.5%) Certified value g/kg / Uncertainty g/kg Bt-176 maize content ..... 5.00 ..... 0.6	1 g
	ERM-BF411D	Genetically Modified Bt-176 Maize (1%) Certified value g/kg / Uncertainty g/kg Bt-176 maize content ..... 10.0 ..... 0.8	1 g

Code	Product	Unit
ERM-BF411E	Genetically Modified Bt-176 Maize (2%) Certified value g/kg — Uncertainty g/kg Bt-176 maize content ..... 20.0 ..... 1.1	1 g
ERM-BF411F	Genetically Modified Bt-176 Maize (5%) Certified value g/kg — Uncertainty g/kg Bt-176 maize content ..... 50.0 ..... 1.8	1 g
	ERM-BF412A - ERM-BF412F Dried maize powders with different mass fractions of genetically modified (“Bt-11”) maize, intended for the calibration of methods for the detection of genetically modified food.	
ERM-BF412A	Genetically Modified Bt-11 Maize (0%) Certified value g/kg Bt-11 maize content ..... < 0.12	1 g
ERM-BF412B	Genetically Modified Bt-11 Maize (0.1%) Certified value g/kg — Uncertainty g/kg Bt-11 maize content ..... 0.98 ..... 0.29	1 g
ERM-BF412C	Genetically Modified Bt-11 Maize (0.5%) Certified value g/kg — Uncertainty g/kg Bt-11 maize content ..... 4.9 ..... 0.6	1 g
ERM-BF412D	Genetically Modified Bt-11 Maize (1%) Certified value g/kg — Uncertainty g/kg Bt-11 maize content ..... 9.8 ..... 0.9	1 g
ERM-BF412E	Genetically Modified Bt-11 Maize (2%) Certified value g/kg — Uncertainty g/kg Bt-11 maize content ..... 19.6 ..... 1.3	1 g
ERM-BF412F	Genetically Modified Bt-11 Maize (5%) Certified value g/kg — Uncertainty g/kg Bt-11 maize content ..... 48.9 ..... 2.1	1 g
	ERM-BF413AK - ERM-BF413GK Dried maize powders with different mass fractions of genetically modified (“MON 810”) maize, intended for the calibration of methods for the detection of genetically modified food.	
ERM-BF413AK	Genetically modified MON-810 maize powder (blank) Certified value g/kg MON 810 maize mass fraction ..... < 0.9	1 g
ERM-BF413CK	Genetically modified MON-810 maize powder (0.5%) Certified value g/kg — Uncertainty g/kg MON 810 maize mass fraction ..... 4.9 ..... 1.0	1 g
ERM-BF413EK	Genetically modified MON-810 maize powder (2%) Certified value — Uncertainty MON 810 maize mass fraction ..... 19.8 g/kg ..... 1.5 g/kg MON 810 maize DNA copy number ratio ..... 0.77 % ..... 0.08 %	1 g
ERM-BF413GK	Genetically modified MON-810 maize powder (10%) Certified value g/kg — Uncertainty g/kg MON 810 maize mass fraction 99.0 5	1 g
ERM-AD413	Plasmid DNA fragments of MON 810 maize Certified value — Uncertainty Fragment of 5' plant-P35S junction DNA / plasmid ..... 1 ..... negligible Fragment of *hmg* DNA / plasmid ..... 1 ..... negligible	vial
	ERM-BF414A - ERM-BF414F Dried maize powders with different mass fractions of genetically modified (“GA21”) maize, intended for the calibration of methods for the detection of genetically modified food.	
ERM-BF414A	Genetically modified GA21 Maize (0%) Certified value g/kg GA21 maize content ..... < 0.8	vial
ERM-BF414B	Genetically modified GA21 Maize (0.1%) Certified value g/kg — Uncertainty g/kg GA21 maize content ..... 1.0 ..... 0.8	vial
ERM-BF414C	Genetically modified GA21 Maize (0.5%) Certified value g/kg — Uncertainty g/kg GA21 maize content ..... 4.9 ..... 1.0	vial

Code	Product	Unit
ERM-BF414D	Genetically modified GA21 Maize (1%) Certified value g/kg / Uncertainty g/kg GA21 maize content ..... 9.9 ..... 1.1	vial
ERM-BF414E	Genetically modified GA21 Maize (2%) Certified value g/kg / Uncertainty g/kg GA21 maize content ..... 17.2 ..... 1.2	vial
ERM-BF414F	Genetically modified GA21 Maize (5%) Certified value g/kg / Uncertainty g/kg GA21 maize content ..... 42.9 ..... 1.7	vial
	ERM-BF415A - ERM-BF415F Dried maize powders with different mass fractions of genetically modified (“NK603”) maize, intended for the calibration of methods for the detection of genetically modified food.	
ERM-BF415A	Genetically modified NK603 Maize (0%) Certified value g/kg NK603 maize content ..... < 0.4	vial
ERM-BF415B	Genetically modified NK603 Maize (0.1%) Certified value g/kg / Uncertainty g/kg NK603 maize content ..... 1.0 ..... 0.4	vial
ERM-BF415C	Genetically modified NK603 Maize (0.5%) Certified value g/kg / Uncertainty g/kg NK603 maize content ..... 4.9 ..... 0.5	vial
ERM-BF415D	Genetically modified NK603 Maize (1%) Certified value g/kg / Uncertainty g/kg NK603 maize content ..... 9.8 ..... 0.7	vial
ERM-BF415E	Genetically modified NK603 Maize (2%) Certified value g/kg / Uncertainty g/kg NK603 maize content ..... 19.6 ..... 0.9	vial
ERM-BF415F	Genetically modified NK603 Maize (5%) Certified value g/kg / Uncertainty g/kg NK603 maize content ..... 49.1 ..... 1.3	vial
	ERM-BF416A - ERM-BF416D Dried maize powders with different mass fractions of genetically modified (“MON 863”) maize, intended for the calibration of methods for the detection of genetically modified food.	
ERM-BF416A	Genetically modified MON 863 Maize (0%) Certified value[1] g/kg MON 863 Maize ..... < 1.0 1) No contamination was detected in the non-GM material when applying event-specific MON 863 realtime PCR with a detection limit of 0.8 g / kg. With a confidence level of 95 % the MON 863 mass fraction is below the certified value.	vial
ERM-BF416B	Genetically modified MON 863 Maize (0.1%) Certified value g/kg / Uncertainty g/kg MON 863 Maize ..... 1.0 ..... -0.3 ; +1.0	vial
ERM-BF416C	Genetically modified MON 863 Maize (1%) Certified value g/kg / Uncertainty g/kg MON 863 Maize ..... 9.8 ..... -0.7 ; +1.2	vial
ERM-BF416D	Genetically modified MON 863 Maize (10%) Certified value g/kg / Uncertainty g/kg MON 863 Maize ..... 98.5 ..... -2.2 ; +2.5	vial
	ERM-BF417a - ERM-BF417D Dried maize powders with different mass fractions of genetically modified (“MON 863 x MON 810”) maize, intended for the calibration of methods for the detection of genetically modified food.	
ERM-BF417A	Stacked Genetically modified MON 863 x MON 810 Maize Certified value[1] g/kg MON 863 x MON 810 Maize ..... < 1.0 1) No contamination was detected in the non-GM material when applying event-specific MON 863 realtime PCR with a detection limit of 0.8 g/kg and no contamination was detected when applying eventspecific MON 810 real-time PCR with a detection limit of 1.1g /kg. With a confidence level of 95 % the MON 863 x MON 810 maize mass fraction is below the certified value.	vial

Code	Product	Unit
ERM-BF417B	Stacked Genetically modified MON 863 x MON 810 Maize Certified value g/kg — Uncertainty g/kg MON 863 x MON 810 Maize ..... 1.0 ..... -0.2 ; +1.0	vial
ERM-BF417C	Stacked Genetically modified MON 863 x MON 810 Maize Certified value g/kg — Uncertainty g/kg MON 863 x MON 810 Maize ..... 9.8 ..... -0.7 ; +1.2	vial
ERM-BF417D	Stacked Genetically modified MON 863 x MON 810 Maize Certified value g/kg — Uncertainty g/kg MON 863 x MON 810 Maize ..... 98.5 ..... -2.0 ; +2.4	vial
	ERM-BF418A - ERM-BF418D Dried maize powders with different mass fractions of genetically modified (“1507”) maize, intended for the calibration of methods for the detection of genetically modified food.	
ERM-BF418A	Genetically modified 1507 Maize (0%) Certified value[1] g/kg 1507 maize ..... < 0.5 1) No contamination was detected in the non-GM material when applying event-specific 1507 real-time PCR with a detection limit of 0.4 g/kg. With a confidence level of 95 % the 1507 maize mass fraction is below the certified value.	vial
ERM-BF418B	Genetically modified 1507 Maize (0.1%) Certified value g/kg — Uncertainty g/kg 1507 maize ..... 1.0 ..... -0.2; +0.6	vial
ERM-BF418C	Genetically modified 1507 Maize (1%) Certified value g/kg — Uncertainty g/kg 1507 maize ..... 9.9 ..... -0.6; +0.8	vial
ERM-BF418D	Genetically modified 1507 Maize (10%) Certified value g/kg — Uncertainty g/kg 1507 maize ..... 98.6 ..... -1.7; +2.0	vial
	ERM-BF420A - ERM-BF420C Dried maize powders with different mass fractions of genetically modified Event 3272 maize intended for the calibration of methods for the detection of genetically modified food.	
ERM-BF420A	Genetically modified 3272 Maize (0%) Certified value g/kg Event 3272 maize ..... < 1.3	vial
ERM-BF420B	Genetically modified 3272 Maize (1%) Certified value g/kg — Uncertainty g/kg Event 3272 maize ..... 9.8 ..... 1.2	vial
ERM-BF420C	Genetically modified 3272 Maize (10%) Certified value g/kg — Uncertainty g/kg Event 3272 maize 98 8	vial
	ERM-BF423A- ERM-BF423D Dried maize powders with different mass fractions of genetically modified (“MIR604”) maize, intended for the calibration of methods for the detection of genetically modified food.	
ERM-BF423A	Genetically modified MIR604 Maize (0%) Certified value[1] g/kg MIR604 maize ..... < 0.9 1) No contamination was detected in the non-GM material when applying event-specific MIR604 real-time PCR with a detection limit of 0.8 g/kg. With a confidence level of 95 % the MIR604 maize mass fraction is below the certified value.	vial
ERM-BF423B	Genetically modified MIR604 Maize (0.1%) Certified value g/kg — Uncertainty g/kg MIR604 maize ..... 1.0 ..... -0.3; +1.0	vial
ERM-BF423C	Genetically modified MIR604 Maize (1%) Certified value g/kg — Uncertainty g/kg MIR604 maize ..... 9.8 ..... -0.9; +1.3	vial
ERM-BF423D	Genetically modified MIR604 Maize (10%) Certified value g/kg — Uncertainty g/kg MIR604 maize ..... 98.5 ..... -2.6; +2.9	vial
	ERM-BF424A - ERM-BF424D Dried maize powders with different mass fractions of genetically modified (“59122”) maize, intended for the calibration of methods for the detection of genetically modified food.	

Code	Product	Unit
ERM-BF424A	Genetically modified 59122 Maize (0%) Certified value[1] g/kg 59122 maize ..... < 1.2 1) No contamination was detected in the non-GM material when applying event-specific 59122 real-time PCR with a detection limit of 1.0 g/kg. With a confidence level of 95 % the 59122 maize mass fraction is below the certified limit value. The certified value is traceable to the SI.	vial
ERM-BF424B	Genetically modified 59122 Maize (0.1%) Certified value g/kg Uncertainty g/kg 59122 maize .....1.0 ..... -0.2; +1.2	vial
ERM-BF424C	Genetically modified 59122 Maize (1%) Certified value g/kg Uncertainty g/kg 59122 maize .....9.9 ..... -0.8; +1.4	vial
ERM-BF424D	Genetically modified 59122 Maize (10%) Certified value g/kg Uncertainty g/kg 59122 maize .....98.7 ..... -5.8; +5.9	vial
	ERM-BF427A - ERM-BF427D Dried maize seed powders with different mass fractions of genetically modified (“98140”) maize seed, intended for the calibration of methods for the detection of genetically modified food.	
New ERM-BF427A	Genetically modified 98140 Maize seed (blank) Certified value g/kg 98140 Maize ..... < 0.4	vial
New ERM-BF427B	Genetically modified 98140 Maize seed (0.5%) Certified value g/kg Uncertainty g/kg 98140 Maize .....5 ..... 0.6	vial
New ERM-BF427C	Genetically modified 98140 Maize seed (2%) Certified value g/kg Uncertainty g/kg 98140 Maize .....20 ..... 0.8	vial
New ERM-BF427D	Genetically modified 98140 Maize seed (10%) Certified value g/kg Uncertainty g/kg 98140 Maize 100 4	vial
	ERM-BF421A- ERM-BF421B Dried potato powder powders with different mass fractions of genetically modified (“EH92-527-1”) potato, intended for the calibration of methods for the detection of genetically modified food.	
ERM-BF421A	Genetically modified EH92-527-1 Potato (0%) ERM-BF421a is a blank material composed of milled, dried powder from solely “non-EH92-527-1” potatoes. The number fraction is calculated by counting the number of non-modified potatoes and the number of EH92-527-1 potatoes and expressing the result as a percentage. Each individual potato was tested for the presence of the genetic modification by staining a small potato piece for the presence of amylose (Lugol’s test). The genetic identification is based on event-specific real-time PCR for EH92-527-1. Certified property Certified value Number fraction of EH92-527-1 potatoes / total number of potatoes [%] .....0[1] Genetic identity .....Potato without the EH92-527-1 event[2] [1] Based on the experimental confirmation of the absence of the EH92-527-1 genetic modification in every individual potato used for the processing through colorimetric analysis of the amylose content in a surface slice. The uncertainty is considered zero. [2] Based on event-specific real-time PCR analysis. No uncertainty is applicable.	vial
ERM-BF421B	Genetically modified EH92-527-1 Potato (100%) ERM-BF421b is composed of milled, dried powder from purely EH92-527-1 potatoes and its genetic identity has been confirmed by nucleotide sequencing. The number fraction is calculated by counting the number of non-modified potatoes and the number of EH92-527-1 potatoes and expressing the result as a percentage. Each individual potato was tested for the presence of the genetic modification by staining a small potato piece for the presence of amylose (Lugol’s test). The genetic identification is based on event-specific real-time PCR for EH92-527-1 and nucleotide sequencing around the junction region between the transgene insert and the potato genome. Certified property Certified value Number fraction of EH92-527-1 potatoes / total number of potatoes [%] .....100[1] Genetic identity .....EH92-527-1 potato[2] [1] .Based on the experimental confirmation of the presence of the EH92-527-1 genetic modification in every individual potato used for the processing through colorimetric analysis of the amylose content in a cut tuber surface slice. The uncertainty is considered zero. [2] Based on event-specific real-time PCR analysis and nucleotide sequence analysis of the junction region between the transgene DNA insert and the potato genome in EH92-527-1. No uncertainty is applicable.	vial

Code	Product	Unit
	ERM-BF419A - ERM-BF419B Dried sugar beet powders with different mass fractions of genetically modified (“H7-1”) sugar beet, intended for the calibration of methods for the detection of genetically modified food.	
ERM-BF419A	Genetically modified H7-1 Sugar Beet (blank) ERM-BF419a is available in glass bottles containing approximately 1 g of sugar beet powder closed under argon atmosphere. This reference material has been produced from non-modified sugar beet roots delivered by KWS (Einbeck, DE). According to Commission Regulation (EC) No 65/2004 the event H7-1 sugar beet corresponds to the unique identifier KM-ØØØH71-4. The certified H7-1 mass fraction is based on the mass fraction of non-modified sugar beet roots used for the processing of the CRM. All sugar beet roots used in the processing were individually tested by ELISA and event-specific rt-PCR. Certified property ..... Certified value[1] H7-1 sugar beet .....0 g/kg 1) No contamination was detected in the non-GM material when applying event-specific H7-1 real-time PCR and ELISA targeting the 5-enolpyruvylshikimate-3-phosphate synthase protein on each individual sugar beet root used for processing. The certified value is traceable to the SI.	vial
ERM-BF419B	Genetically modified H7-1 Sugar Beet (level 1) ERM-BF419b is available in glass bottles containing approximately 1 g of sugar beet powder closed under argon atmosphere. This reference material has been produced from genetically modified sugar beet roots delivered by KWS (Einbeck, DE). According to Commission Regulation (EC) No 65/2004 the event H7-1 sugar beet corresponds to the unique identifier KM-ØØØH71-4. The certified H7-1 mass fraction is based on the mass fraction of modified sugar beet roots used for the processing of the CRM. All sugar beet roots used in the processing were individually tested by ELISA and event-specific rt-PCR. Certified property ..... Certified value[1] H7-1 sugar beet .....1000 g/kg 1) No contamination was detected in the non-GM material when applying event-specific H7-1 real-time PCR and ELISA targeting the 5-enolpyruvylshikimate-3-phosphate synthase protein on each individual sugar beet root used for processing. The certified value is traceable to the SI.	vial
	ERM-BF422A- ERM-BF422D Dried cotton seed powders with different mass fractions of genetically modified (“281-24-236 x 3006-210-23”) cotton seed, intended for the calibration of methods for the detection of genetically modified food.	
ERM-BF422A	Genetically modified 281-24-236 x 3006-210-23 Cotton seed (0%) Certified value[1] g/kg 281-24-236 x 3006-210-23 Cotton seed .....< 0.5 1) No contamination was detected in the non-GM material when applying real-time PCR methods targeting the 281-24-236 sequence and the 3006-210-23 sequence. The certified value is traceable to the SI.	vial
ERM-BF422B	Genetically modified 281-24-236 x 3006-210-23 Cotton seed (100%) Certified value g/kg 281-24-236 x 3006-210-23 Cotton seed .....> 979	vial
ERM-BF422C	Genetically modified 281-24-236 x 3006-210-23 Cotton seed (1%) Certified value g/kg ..... Uncertainty g/kg 281-24-236 x 3006-210-23 Cotton seed .....10.0.....1.7	vial
ERM-BF422D	Genetically modified 281-24-236 x 3006-210-23 Cotton seed (10%) Certified value g/kg ..... Uncertainty g/kg 281-24-236 x 3006-210-23 Cotton seed .....100.....16	vial
	ERM-BF428A - ERM-BF428C Dried cotton seed powders with different mass fractions of genetically modified (“GHB119”) cotton seed, intended for the calibration of methods for the detection of genetically modified food.	
New ERM-BF428A	Genetically modified GHB119 Cotton seed (blank) Certified value g/kg GHB119 cotton ..... < 0.2	vial
New ERM-BF428B	Genetically modified GHB119 Cotton seed (1%) Certified value g/kg ..... Uncertainty g/kg GHB119 cotton ..... 10..... 4	vial
New ERM-BF428C	Genetically modified GHB119 Cotton seed (10%) Certified value g/kg ..... Uncertainty g/kg GHB119 cotton ..... 100..... 11	vial
	ERM-BF429A - ERM-BF429C Dried cotton seed powders with different mass fractions of genetically modified (“T304-40”) cotton seed, intended for the calibration of methods for the detection of genetically modified food.	
New ERM-BF429A	Genetically modified T304-40 Cotton seed (blank) Certified value g/kg T304-40 cotton..... < 0.4	vial

	Code	Product	Unit
New	ERM-BF429B	Genetically modified T304-40 Cotton seed (1%) Certified value g/kg — Uncertainty g/kg T304-40 cotton.....10 ..... 1.3	vial
New	ERM-BF429C	Genetically modified T304-40 Cotton seed (10%) Certified value g/kg — Uncertainty g/kg T304-40 cotton.....100 11	vial

Vegetable matter

Code	Product	Unit

Fruit and vegetables

ERM-BC084 — Tomato paste - Contaminant metals — 50 g

Certified values

Cd ..... 0.112 mg/kg Pb.....0.316 mg/kg Sn ..... 225 mg/kg

LGC7111 — Potato powder - Sulfur dioxide — 110 g

Assessed value

Total sulfur dioxide.....212 ± 27 mg/kg

New **ERM-BC402** — Potato powder - Iodine — 110 g

Certified value

Iodine ..... 1.86 mg/kg

LGC7162 — Strawberry leaves - Trace elements — 20 g

The raw material was collected from a private farm in the Czech Republic. The mixture was cut and jet milled to pass a 250 μm nylon sieve. The resulting powder was homogenised, separated in 20 g portions and placed in 60 mL bottles.

Certified Values

Ca ..... 1.53 g/100 g	Ba.....107 mg/kg	Mo..... 0.32 mg/kg
Mg..... 0.377 g/100 g	Cd.....0.17 mg/kg	Hg ..... 0.027 mg/kg
N ..... 2.01 g/100 g	Co.....0.47 mg/kg	Ni ..... 2.6 mg/kg
P ..... 0.260 g/100 g	Cr .....2.15 mg/kg	Sr ..... 64 mg/kg
K ..... 1.96 g/100 g	Fe .....818 mg/kg	Zn..... 24 mg/kg
S ..... 0.174 g/100 g	Pb.....1.8 mg/kg	
As..... 0.28 mg/kg	Mn .....171 mg/kg	

ERM-BC516 — Apple - Dietary fibre — 25 g

Certified using five different methods of dietary fibre analysis

Certified values

AOAC 1990 .....16.46 g/100 g	AOAC 1992 MES-TRIS ..... 14.9 g/100 g
Englyst (GC) .....13.7 g/100 g	Englyst (colorimetry) ..... 13.4 g/100 g
Uppsala.....16.2 g/100g	

New **NIM-GBW10019** — Apple - Trace elements — 35 g

Certified values

Ag ..... 0.007 ± 0.001 %	I .....0.12 ± 0.04 mg/kg	Pr ..... 1.8 ± 0.3 μg/kg
As..... 0.020 ± 0.004 mg/kg	K.....0.77 ± 0.04 %	Rb ..... 5.0 ± 0.6 mg/kg
B ..... 19 ± 3 mg/kg	La .....0.014 ± 0.004 mg/kg	S ..... 0.063 ± 0.004 %
Ba ..... 2.5 ± 0.3 mg/kg	Li .....0.115 ± 0.009 mg/kg	Si..... 0.0050 ± 0.0013 %
Ca ..... 0.049 ± 0.001 %	Mg .....0.039 ± 0.006 %	Sm ..... 1.5 ± 0.5 μg/kg
Cd ..... 5.8 ± 1.2 μg/kg	Mn .....2.7 ± 0.2 mg/kg	Sr ..... 6.9 ± 0.5 mg/kg
Ce ..... 0.025 ± 0.005 mg/kg	Mo .....0.08 ± 0.02 mg/kg	Th..... 4.0 ± 0.3 μg/kg
Co ..... 0.026 ± 0.006 mg/kg	N .....0.31 ± 0.03 %	U ..... 8.2 ± 1.8 μg/kg
Cr ..... 0.30 ± 0.06 mg/kg	Na.....0.116 ± 0.009 mg/kg	Y ..... 0.008 ± 0.002 mg/kg
Cu ..... 2.5 ± 0.2 mg/kg	Ni.....0.14 ± 0.05 mg/kg	Zn..... 2.1 ± 0.4 mg/kg
Fe..... 16 ± 2 mg/kg	P .....0.066 ± 0.004 %	
Gd ..... 0.95 ± 0.11 μg/kg	Pb.....0.084 ± 0.032 mg/kg	

Indicative values for further elements

BCR-431 — Brussels sprout - Vitamins — 20 g

Certified values

Vitamin C (total ascorbate).....4830 mg/kg
Niacin.....43 mg/kg

IAEA-359 — Cabbage - Trace elements — 30 g

Certified values

Al..... 0.1 mg/kg	Fe .....148 mg/kg	Ni ..... 1.05 mg/kg
Ba ..... 11 mg/kg	Hg.....0.013 mg/kg	Se ..... 0.12 mg/kg
Ca ..... 18500 mg/kg	K.....32500 mg/kg	Sr ..... 49.2 mg/kg
Cd ..... 0.12 mg/kg	Mg .....2160 mg/kg	Zn..... 38.6 mg/kg
Cr..... 1.3 mg/kg	Mn .....31.9 mg/kg	
Cu ..... 5.67 mg/kg	Na.....580 mg/kg	

Code	Product	Unit

New **NIM-GBW10014** — **Cabbage - Trace elements** — 35 g

Certified values

Ag 0.0166 ± 0.0022 %	Fe 98 ± 10 mg/kg	Pb 0.19 ± 0.03 mg/kg
As 0.062 ± 0.014 mg/kg	Gd 3.1 ± 0.5 µg/kg	Pr 4.0 ± 0.6 µg/kg
B 19.6 ± 1.7 mg/kg	Hg 10.9 ± 1.6 µg/kg	Rb 19.6 ± 1.0 mg/kg
Ba 12 ± 2 mg/kg	I 0.24 ± 0.03 mg/kg	S 0.72 ± 0.05 %
Bi 2.8 ± 0.7 µg/kg	K 1.55 ± 0.06 %	Se 0.20 ± 0.03 mg/kg
Br 6.0 ± 1.3 mg/kg	La 0.024 ± 0.003 mg/kg	Si 0.024 ± 0.005 %
Ca 0.70 ± 0.02 %	Li 0.54 ± 0.08 mg/kg	Sm 3.2 ± 0.7 µg/kg
Cd 35 ± 6 µg/kg	Mg 0.241 ± 0.015 %	Sr 48 ± 3 mg/kg
Ce 0.044 ± 0.004 mg/kg	Mn 18.7 ± 0.8 mg/kg	Th 9 ± 3 µg/kg
Cl 0.64 ± 0.07 %	Mo 0.71 ± 0.07 mg/kg	U 20 ± 3 µg/kg
Co 0.089 ± 0.014 mg/kg	N 2.8 ± 0.2 %	Y 0.015 ± 0.002 mg/kg
Cr 1.8 ± 0.3 mg/kg	Na 1.09 ± 0.06(%) mg/kg	Yb 1.4 ± 0.4 µg/kg
Cs 0.082 ± 0.012 mg/kg	Nd 0.015 ± 0.002 mg/kg	Zn 26 ± 2 mg/kg
Cu 2.7 ± 0.2 mg/kg	Ni 0.93 ± 0.10mg/kg	
Dy 2.6 ± 0.7 µg/kg	P 0.46 ± 0.03%	

Indicative values for further elements

ERM-BC515 — **Carrot - Dietary fibre** — 25 g

Certified using five different methods of dietary fibre analysis

Certified values

AOAC 1990 31.1 g/100 g	AOAC 1992 MES-TRIS 29.5 g/100 g
Englyst (GC) 27.1 g/100 g	Englyst (colorimetry) 25.2 g/100 g
Uppsala 29.8 g/100 g	

IC-CS-CR-2 — **Carrot root powder - Trace elements (control sample)** — 20 g

Prepared from carrot roots collected in a non-contaminated rural area of central Poland.

Reference values

As 0.050 mg/kg	Hg 0.0043 mg/kg	Zn 21.79 mg/kg
Cd 0.196 mg/kg	Pb 0.579 mg/kg	

IRMM-801 — **Cocoa butter - Triglyceride (TG)** — Amp.

Certified values

Triglyceride	Relative mass fraction g TG/100 g total TG	Uncertainty g TG/100 g total TG
1,3-Dipalmitoyl-2-oleyl-glycero	18.14	0.26
1-Palmitoyl-2-oleoyl-3-stearoyl-glycerol	44.68	0.30
1,2-Dioleoyl-3-palmitoyl-glycerol	2.26	0.16
1,3-Distearoyl-2-oleoyl-glycerol	31.63	0.29
1,2-Dioleoyl-3-stearoyl-glycerol	3.29	0.17

NIST-1570a — **Spinach leaves - Trace elements** — 60 g

Certified values

Al 310 mg/kg	Cu 12.2 mg/kg	P 0.518 %
As 0.068 mg/kg	Hg 0.030 mg/kg	Se 0.117 mg/kg
B 37.6 mg/kg	K 2.903 %	Sr 55.6 mg/kg
Cd 2.89 mg/kg	Mn 75.9 mg/kg	Th 0.48 mg/kg
Ca 1.527 %	Na 1.818 %	V 0.835 mg/kg
Co 0.39 mg/kg	Ni 2.14 mg/kg	Zn 30.9 mg/kg

Indicative values for Ba, Br, Ce, Cl, Cs, I, La, Mg, Mo, S, Sc, Sm, Sr, U

New **NIM-GBW10015** — **Spinach - Trace elements** — 35 g

Certified values

Ag 0.061 ± 0.006 %	Gd 54 ± 7 µg/kg	S 0.45 ± 0.04 %
As 0.23 ± 0.03 mg/kg	Hg 20 ± 3 µg/kg	Sb 0.043 ± 0.014 mg/kg
B 25 ± 2 mg/kg	Ho 8.1 ± 1.7 µg/kg	Sc -93 µg/kg
Ba 9.0 ± 0.8 mg/kg	I 0.36 ± 0.12 mg/kg	Se 0.092 ± 0.024 mg/kg
Be 17 ± 2 µg/kg	K 2.49 ± 0.11 %	Si 0.212 ± 0.024 %
Bi 13.5 ± 1.0 µg/kg	La 0.35 ± 0.04 mg/kg	Sm 56 ± 5 µg/kg
Br 10 ± 2 mg/kg	Li 1.46 ± 0.23 mg/kg	Sr 87 ± 5 mg/kg
Ca 0.66 ± 0.03 %	Lu 3.0 ± 0.9 µg/kg	Tb 7.2 ± 0.7 µg/kg
Cd 150 ± 25 µg/kg	Mg 0.552 ± 0.015 %	Th 114 ± 19 µg/kg
Ce 0.66 ± 0.05 mg/kg	Mn 41 ± 3 mg/kg	Ti -28 mg/kg
Cl 1.08 ± 0.07 %	Mo 0.47 ± 0.04 mg/kg	Tl -49 µg/kg
Co 0.22 ± 0.03 mg/kg	N 3.4 ± 0.2 %	Tm 3.1 ± 0.9 µg/kg
Cr 1.4 ± 0.2 mg/kg	Na 1.50 ± 0.06 mg/kg	U 89 ± 11 µg/kg
Cs 0.13 ± 0.02 mg/kg	Nd 0.28 ± 0.03 mg/kg	V 0.87 ± 0.23 mg/kg
Cu 8.9 ± 0.4 mg/kg	Ni 0.92 ± 0.12 mg/kg	Y 0.20 ± 0.04 mg/kg
Dy 41 ± 8 µg/kg	P 0.36 ± 0.02 %	Yb 19 ± 4 µg/kg
Er 17 ± 3 µg/kg	Pb 11.1 ± 0.9 mg/kg	Zn 35.3 ± 1.5 mg/kg
Eu 11.1 ± 1.4 µg/kg	Pr 75 ± 5 µg/kg	
Fe 540 ± 20 mg/kg	Rb 30 ± 2 mg/kg	

Indicative values for further elements

IAEA-330 — **Spinach - Radionuclides** — 100 g

Certified values (dry mass basis)

^{40}K 1188 ± 30 Bq/kg	^{137}Cs 1235 ± 35 Bq/kg	^{238}U 0.95 ± 0.05 Bq/kg
^{90}Sr 20.1 ± 2.1 Bq/kg	^{234}U 1.02 ± 0.07 Bq/kg	

Code	Product	Unit

NIST-1573a — Tomato leaves - Trace elements — 50 g

Certified values

Al 598 mg/kg	Cu 4.70 mg/kg	P 0.216 %
As 0.112 mg/kg	Hg 0.034 mg/kg	Rb 14.89 mg/kg
B 33.3 mg/kg	K 2.70 %	Sb 0.063 mg/kg
Cd 1.52 mg/kg	Mn 246 mg/kg	Se 0.054 mg/kg
Ca 5.05 %	N 3.03 %	V 0.57 mg/kg
Co 0.57 mg/kg	Na 136 mg/kg	Zn 82 mg/kg
Cr 1.99 mg/kg	Ni 1.59 mg/kg	

Indicative values for Eu, Gd, Mg, Pb, S, Sc, Sm, Sr, Th, U

BCR-400 — Red ceramic tile (Tomato paste colour) — unit

100 mm x 100 mm

A ceramic tile the colour of which is defined by Hunter L, a and b values. Each tile is individually certified. The tile is intended for the purpose of calibration and does not represent a standard tomato paste colour.

BCR-383 — Haricots verts (beans) - Major nutrients — 100 g

Certified values

N (Kjeldahl) 1.1 g/100 g	Ca 2.9 g/100 g
Dietary fibre (AOAC 1985/1988) 11.9 g/100 g	K 7.8 g/100 g
Ash at 550°C 2.4 g/100g	Na 0.08 g/100 g

Indicative values for glucose, fructose, sucrose, starch and sugars, dietary fibre (Englyst)

ERM-BC514 — Haricots beans - Dietary fibre — 25 g

Certified using five different methods of dietary fibre analysis

Certified values

AOAC 1990 25.6 g/100 g	AOAC 1992 MES-TRIS 25.9 g/100 g
Englyst (GC) 19.8 g/100 g	Englyst (colorimetry) 20.1 g/100 g
Uppsala 23.7 g/100 g	

BCR-485 — Mixed vegetables - Vitamins — 25 g

Certified values

B_1 (thiamin) 3.07 mg/kg	trans-α-Carotene 10.5 mg/kg	total-β-Carotene 25.6 mg/kg
B_6 (total pyridoxine) 4.8 mg/kg	trans-β-Carotene 23.7 mg/kg	Lutein 12.5 mg/kg
Folate (total) 3.15 mg/kg	total-α-Carotene 9.8 mg/kg	Lutein+Zeaxanthin 22.3 mg/kg

ERM-BC517 — Full fat soya - Dietary fibre — 25 g

Certified using five different methods of dietary fibre analysis

Certified values

AOAC 1990 12.6 g/100 g	AOAC 1992 MES-TRIS 12.4 g/100 g
Englyst (GC) 11.9 g/100 g	Englyst (colorimetry) 12.3 g/100 g
Uppsala 12.8 g/100 g	

BCR-162R — Soya-maize oil blend - Fatty acids — 5.5 g

Certified values

Fatty acid	Relative Mass Fraction in g FAME / 100 g total FAME
16:0 (n-Hexadecanoic acid)	10.74 ± 0.16
18:0 (n-Octadecanoic acid)	2.82 ± 0.04
9c-18:1 (n-Octadecenoic acid)	25.4 ± 0.4
9c,12c-18:2 (n-Octadecadienoic acid)	54.13 ± 0.25
9c,12c,15c-18:3 (n-Octadecatrienoic acid)	3.35 ± 0.05

New NIM-GBW10013 — Soya bean - Trace elements — 35 g

Certified values

As 0,035 ± 0,012 mg/kg	Er 1,0 ± 0,2 µg/kg	Ni 4,0 ± 0,3mg/kg
B 15,8 ± 1,5 mg/kg	Eu 1,3 ± 0,5 µg/kg	P 0,66 ± 0,03%
Ba 3,3 ± 0,4 mg/kg	Fe 139 ± 4 mg/kg	Pb 0,07 ± 0,02 mg/kg
Be 3,5 ± 0,6 µg/kg	Gd 3,3 ± 0,9 µg/kg	Pr 4,5 ± 0,5 µg/kg
Ca 0,153 ± 0,008 %	K 1,86 ± 0,09 %	Rb 14,2 ± 0,7 mg/kg
Ce 0,040 ± 0,006 mg/kg	La 0,023 ± 0,004 mg/kg	S 0,364 ± 0,027 %
Cl 0,008 ± 0,002 %	Li 0,062 ± 0,014 mg/kg	Sm 3,1 ± 0,3 µg/kg
Co 0,125 ± 0,012 mg/kg	Mg 0,230 ± 0,014 %	Sr 9,9 ± 0,6 mg/kg
Cr 0,28 ± 0,04 mg/kg	Mn 28 ± 1 mg/kg	Th 6,8 ± 1,4 µg/kg
Cs 0,043 ± 0,006 mg/kg	Mo 0,71 ± 0,04 mg/kg	Y 0,022 ± 0,004 mg/kg
Cu 10,2 ± 0,5 mg/kg	N 6,7 ± 0,3 %	Yb 1,2 ± 0,4 µg/kg
Dy 2,4 ± 0,6 µg/kg	Nd 0,016 ± 0,003 mg/kg	Zn 38 ± 2 mg/kg

Indicative values for further elements

IC-INCT-SBF-4 — Soya bean flour - Trace elements — 50 g

Certified values

Al 45,5 ± 3,7 mg/kg	Cu 14,30 ± 0,46 mg/kg	P 6555 ± 335 mg/kg
B 39,3 ± 4,0 mg/kg	Fe 90,8 ± 4,0 mg/kg	Rb 31,7 ± 1,7 mg/kg
Ba 7,30 ± 0,23 mg/kg	K 2,423 ± 0,083 wt%	S 4245 ± 471 mg/kg
Br 2,40 ± 0,17 mg/kg	La 19,1 ± 2,4 ng/kg	Sr 9,32 ± 0,46 mg/kg
Ca 2467 ± 170 mg/kg	Mg 3005 ± 82 mg/kg	Th 7,08 ± 0,82 ng/kg
Cl 64,5 ± 4,7 mg/kg	Mn 32,3 ± 1,1 mg/kg	Zn 52,3 ± 1,3 mg/kg

Indicative values for Cd, Cr, Hg, Na, Pb, Sc, SM, Ti, V

Vegetable matter

Code	Product	Unit

ERM-AD413 — Plasmid DNA fragments of MON 810 maize — vial

	Certified value	Uncertainty
Fragment of 5' plant-P35S junction DNA / plasmid	1	negligible
Fragment of *hmg* DNA / plasmid	1	negligible

BCR-679 — White cabbage - Trace elements — 15 g

Certified values

Cd 1.66 mg/kg	Hg 6.3 µg/kg	Sr 11.8 mg/kg
Cu 2.89 mg/kg	Mo 14.8 mg/kg	Tl 3.0 µg/kg
Fe 55.0 mg/kg	Ni 27.0 mg/kg	Zn 79.7 mg/kg
Mn 13.3 mg/kg	Sb 20.6 µg/kg	

New **BCR-401R** — Peanut butter (blank) - Aflatoxins — 100 g

Certified values

Aflatoxin B1 <0.2 µg/kg	Aflatoxin G1 <0.2 µg/kg
Aflatoxin B2 <0.2 µg/kg	Aflatoxin G2 <0.2 µg/kg

New **BCR-385R** — Peanut butter - Aflatoxins (low level) — 100 g

Certified values

Aflatoxin B1 1.77 ± 0.30 µg/kg	Aflatoxin G2 0.30 ± 0.12 µg/kg
Aflatoxin B2 0.48 ± 0.08 µg/kg	Sum of Aflatoxin B1, B2, G1, G2 3.5 ± 0.5 µg/kg
Aflatoxin G1 0.90 ± 0.4 µg/kg	

BCR-262R — Defatted peanut meal (blank) - Aflatoxin B1 — 100 g

Certified value

Aflatoxin B1 <3 µg/kg

BCR-263R — Defatted peanut meal - Aflatoxin B1, B2 and G1 — 100 g

Certified values

Aflatoxin B1 17.1 ± 2.4 µg/kg	Aflatoxin B2 3.0 ± 0.4 µg/kg	Aflatoxin B3 3.0 ± 0.5 µg/kg

BCR-264 — Defatted peanut meal (high level) - Aflatoxin B1 — 150 g

Certified value

Aflatoxin B1 206 µg/kg

IC-INCT-TL-1 — Tea leaves - Trace elements — 50 g

The material was prepared from black tea, usually packed in tea bags.

Certified values

Al 0.229 wt %	Eu 0.050 mg/kg	Sc 0.266 mg/kg
As 0.106 mg/kg	Hg 0.005 mg/kg	Sm 0.177 mg/kg
Ba 43.2 mg/kg	K 1.70 wt %	Sr 20.8 mg/kg
Br 12.3 mg/kg	La 1.00 mg/kg	Tb 0.026 mg/kg
Ca 0.582 wt %	Lu 0.016 mg/kg	Th 0.034 mg/kg
Cd 0.030 mg/kg	Mg 0.224 wt %	Tl 0.063 mg/kg
Cl 573 mg/kg	Mn 0.157 wt %	V 1.97 mg/kg
Co 0.387 mg/kg	Na 24.7 mg/kg	Yb 0.118 mg/kg
Cr 1.91 mg/kg	Ni 6.12 mg/kg	Zn 34.7 mg/kg
Cs 3.61 mg/kg	Pb 1.78 mg/kg	
Cu 20.4 mg/kg	Rb 81.5 mg/kg	

Indicative values for B, Fe, Hf, Nd, P, Sb, Se, Ta, Ti and Tm

New **NIM-GBW10016** — Tea - Trace elements — 35 g

Certified values

Ag 0.094 ± 0.009 %	F 57 ± 15 mg/kg	Pr 42 ± 4 µg/kg
As 0.09 ± 0.01 mg/kg	Fe 242 ± 18 mg/kg	Rb 117 ± 5 mg/kg
B 14 ± 1 mg/kg	Gd 31 ± 5 µg/kg	S 0.30 ± 0.03 %
Ba 9.6 ± 0.5 mg/kg	Hg 3.8 ± 0.8 µg/kg	Sb 0.022 ± 0.006 mg/kg
Be 10 ± 2 µg/kg	Ho 5.4 ± 1.2 µg/kg	Se 0.098 ± 0.008 mg/kg
Bi 18 ± 2 µg/kg	K 1.63 ± 0.07 %	Si 0.099 ± 0.008 %
Br 2.7 ± 0.5 mg/kg	La 0.25 ± 0.02 mg/kg	Sm 29 ± 3 µg/kg
Ca 0.326 ± 0.008 %	Li 0.14 ± 0.02 mg/kg	Sr 9.1 ± 1.2 mg/kg
Cd 62 ± 4 µg/kg	Lu 3.0 ± 0.8 µg/kg	Tb 4.5 ± 0.7 µg/kg
Ce 0.39 ± 0.05 mg/kg	Mg 0.186 ± 0.011 %	Th 38 ± 12 µg/kg
Cl 0.044 ± 0.003 %	Mn 500 ± 20 mg/kg	Tm 2.6 ± 1.0 µg/kg
Co 0.22 ± 0.02 mg/kg	Mo 0.040 ± 0.012 mg/kg	U 10 ± 2 µg/kg
Cr 0.45 ± 0.10 mg/kg	N 5.1 ± 0.3 %	V 0.17 ± 0.03 mg/kg
Cs 0.32 ± 0.06 mg/kg	Na 0.009 ± 0.001 mg/kg	Y 0.23 ± 0.03 mg/kg
Cu 18.6 ± 0.7 mg/kg	Nd 0.15 ± 0.02 mg/kg	Yb 18 ± 4 µg/kg
Dy 25 ± 6 µg/kg	Ni 3.4 ± 0.3 mg/kg	Zn 51 ± 2 mg/kg
Er 14 ± 4 µg/kg	P 0.45 ± 0.03 %	
Eu 6.7 ± 1.4 µg/kg	Pb 1.5 ± 0.2 mg/kg	

Indicative values for further elements

Code	Product	Unit

IC-INCT-MPH-2 Mixed Polish herbs - Trace elements — 50 g

Fresh herbs collected in a non contaminated rural area were collected, mixed and processed as for drug production by Herbapol S.A.

Certified values

Al 670 mg/kg	Eu 0.016 mg/kg	S 0.241 wt %
As 0.191 mg/kg	Hf 0.236 mg/kg	Sb 0.066 mg/kg
Ba 32.5 mg/kg	Hg 0.018 mg/kg	Sc 0.123 mg/kg
Br 7.71 mg/kg	K 1.91 wt %	Sm 0.094 mg/kg
Ca 1.08 wt %	La 0.571 mg/kg	Sr 37.6 mg/kg
Cd 0.199 mg/kg	Lu 0.009 mg/kg	Ta 0.019 mg/kg
Ce 1.12 mg/kg	Mg 0.292 wt %	Tb 0.014 mg/kg
Cl 0.284 wt %	Mn 191 mg/kg	Th 0.154 mg/kg
Co 0.210 mg/kg	Nd 0.457 mg/kg	V 0.952 mg/kg
Cr 1.69 mg/kg	Ni 1.57 mg/kg	Yb 0.053 mg/kg
Cs 0.076 mg/kg	Pb 2.16 mg/kg	
Cu 7.77 mg/kg	Rb 10.7 mg/kg	

Indicative values for P, Fe, Mo, Na, Ti, Tl, U and W

IC-INCT-CS-M-1 Mushrooms (Suillus bovinus) - Trace elements — 25 g

Reference values

As 0.344 ± 0.033 mg/kg	Hg 0.174 ± 0.018 mg/kg	Zn 60.94 ± 4.62 mg/kg
Cd 0.273 ± 0.093 mg/kg	Pb 0.476 ± 0.041 mg/kg	
Cu 9.12 ± 0.83 mg/kg	Se 1.37 ± 0.11 mg/kg	

New NIST-3250 Serenoa repens (Fruit) - Phytosterols and fatty acids — Each

This Standard Reference Material (SRM) is intended primarily for use in validating analytical methods for the determination of phytosterols and fatty acids in the fruit of *Serenoa repens* (saw palmetto) and similar matrices. A unit of NIST-3250 consists of five packets, each containing approximately 6 g of ground saw palmetto fruit.

Certified concentration values for selected phytosterols in NIST-3250

Phytosterols	Mass Fraction (mg/g, dry-mass basis)
Campesterol	0.1175 ± 0.0025
β-Sitosterol	0.454 ± 0.018
Stigmasterol	0.0477 ± 0.0020

Certified concentration values for selected fatty acids (as triglycerides) in NIST-3250

Fatty acids	Mass Fraction (%, dry-mass basis)
Octanoic acid (C8:0) (Caprylic acid)	0.1072 ± 0.0027
Decanoic acid (C10:0) (Capric acid)	0.1175 ± 0.0055
Dodecanoic acid (C12:0) (Lauric acid)	2.962 ± 0.062
Tetradecanoic acid (C14:0) (Myristic acid)	1.103 ± 0. 065
Hexadecanoic acid (C16:0) (Palmitic acid)	0.869 ± 0.027
(Z)-9-Hexadecenoic acid (C16:1 n-7) (Palmitoleic acid)	0.0158 ± 0.0010
Octadecanoic acid (C18:0) (Stearic acid)	0.1791 ± 0.0054
(Z)-9-Octadecenoic acid (C18:1 n-9) (Oleic acid)	3.24 ± 0.15
(Z)-11-Octadecenoic acid (C18:1 n-7) (Vaccenic acid)	0.0547 ± 0.0030
(Z,Z)-9,12-Octadecadienoic acid (C18:2 n-6) (Linoleic acid)	0.824 ± 0.055
(Z,Z,Z)-9,12,15-Octadecatrienoic acid (C18:3 n-3) (Linolenic acid)	0.194 ± 0.025
Eicosanoic acid (C20:0) (Arachidic acid)	0.0097 ± 0.0002
Docosanoic acid (C22:0) (Behenic acid)	0.0066 ± 0.0002
Tetracosanoic acid (C24:0) (Lignoceric acid)	0.0107 ± 0.0003

Reference concentration values for selected fatty acids (as triglycerides) and for free fatty acids

Code	Product	Unit

New NIST-3251 — Serenoa repens extract - Phytosterols, fatty acids, ß-carotene, and gamma-tocopherol — 5 x 1 mL

This Standard Reference Material (SRM) is intended primarily for use in validating analytical methods for the determination of phytosterols, fatty acids, β-carotene, and γ-tocopherol in extracts of Serenoa repens (saw palmetto) and similar matrices. This SRM can also be used for quality assurance when assigning values to in-house control materials. A unit of NIST-3251 consists of five ampoules, each containing approximately 1 mL of saw palmetto extract.

Certified concentration values for selected phytosterols in NIST-3251

Phytosterols	Mass Fraction (mg/g)
Campesterol	0.533 ± 0.031
β-Sitosterol	1.666 ± 0.064
Stigmasterol	0.247 ± 0.040

Certified concentration values for selected fatty acids (as triglycerides) in NIST-3251

Fatty acids	Mass Fraction (%)
Octanoic acid (C8:0) (Caprylic acid)	2.677 ± 0.032
Decanoic acid (C10:0) (Capric acid)	2.690 ± 0.055
Dodecanoic acid (C12:0) (Lauric acid)	26.51 ± 0.66
Tridecanoic acid (C13:0)	0.069 ± 0.002
Tetradecanoic acid (C14:0) (Myristicacid)	10.68 ± 0.16
Pentadecanoic acid (C15:0)	0.0518 ± 0.0018
Hexadecanoic acid (C16:0) (Palmitic acid)	8.55 ± 0.20
Heptadecanoic acid (C17:0)	0.0640 ± 0.0024
Octadecanoic acid (C18:0) (Stearic acid)	1.757 ± 0.021
(Z)-9-Octadecenoic acid (C18:1 n-9) (Oleic acid)	34.73 ± 0.43
(Z)-11-Octadecenoic acid (C18:1 n-7) (Vaccenic acid)	0.834 ± 0.020
(Z,Z)-9,12-Octadecadienoic acid (C18:2 n-6) (Linoleic acid)	6.018 ± 0.093
(Z,Z,Z)-9,12,15-Octadecatrienoic acid (C18:3 n-3) (Linolenic acid)	1.248 ± 0.027
Eicosanoic acid (C20:0) (Arachidic acid)	0.0936 ± 0.0033
(Z)-11-Eicosenoic acid (C20:1 n-9) (Gondoic acid)	0.1939 ± 0.0031
Docosanoic acid (C22:0) (Behenic acid)	0.0646 ± 0.0016
Tetracosanoic acid (C24:0)	0.0929 ± 0.0028

Certified concentration values for total β-carotene and γ-tocopherol in NIST-3251

	Mass Fraction (µg/g)
Total β-carotene	46.8 ± 4.6
γ-Tocopherol	280 ± 13

Reference concentration value for cycloartenol, selected fatty acids (as triglycerides), selected free fatty acids, for β-carotene isomers and δ-tocopherol, brassicasterol and lupeol

New NIST-3254 — Green tea (Camellia sinensis) leaves - Catechins and xanthines — 5 x 3 g

This Standard Reference Material (SRM®) is intended primarily for use in validating analytical methods for the determination of catechins and xanthines in the leaves of Camellia sinensis (green tea) and similar matrices. NIST-3254 can also be used for quality assurance when assigning values to in-house control materials. A unit of NIST-3254 consists of five packets, each containing approximately 3 g of leaf powder.

Certified Mass Fraction Values for Selected Catechins and Xanthines in NIST-3254

	Mass Fraction (mg/g, dry-mass basis)		Mass Fraction (mg/g, dry-mass basis)
(–)-Epicatechin	9.0 ± 1.6	(–)-Gallocatechin gallate	0.99 ± 0.21
(–)-Epicatechin gallate	12.7 ± 1.2	Caffeine	23.5 ± 1.8
(–)-Epigallocatechin	25.2 ± 4.5	Theobromine	0.463 ± 0.052
(–)-Epigallocatechin gallate	52.0 ± 2.2		

Indicative values for (+)-Catechin, (–)-Gallocatechin, Gallic acid and L-theanine

New NIST-3255 — Green tea (Camellia sinensis) extract - Catechins and xanthines — 5 x 1 g

This Standard Reference Material (SRM®) is intended primarily for use in validating analytical methods for the determination of catechins and xanthines in extracts of Camellia sinensis (green tea) and similar matrices. NIST-3255 can also be used for quality assurance when assigning values to in-house control materials. A unit of NIST-3255 consists of five packets, each containing approximately 1 g of extract.

Certified Mass Fraction Values for Selected Catechins and Xanthines in NIST-3255

	Mass Fraction (mg/g, dry-mass basis)		Mass Fraction (mg/g, dry-mass basis)
(+)-Catechin	9.17 ± 0.93	(–)-Gallocatechin	22.0 ± 1.7
(–)-Epicatechin	47.3 ± 6.7	(–)-Gallocatechin gallate	39.0 ± 2.0
(–)-Epicatechin gallate	100.3 ± 7.8	Caffeine	36.9 ± 2.7
(–)-Epigallocatechin	81.8 ± 6.5	Theobromine	0.867 ± 0.076
(–)-Epigallocatechin gallate	422.0 ± 19.0		

Indicative values for (–)-Epigallocatechin methylgallate, Gallic acid, L-theanine and Theophylline.

	Code	Product	Unit

New NIST-3256 — Green tea-containing solid oral dosage form - Catechins, xanthines and toxic elements — 5 x 2.5 g

This Standard Reference Material (SRM®) is intended primarily for use in validating analytical methods for the determination of catechins, xanthines, and toxic elements in solid oral dosage forms containing green tea and in similar matrices. NIST-3256 can also be used for quality assurance when assigning values to in-house control materials. A unit of NIST-3256 consists of five packets, each containing approximately 2.5 g of powdered material.

Certified Mass Fraction Values for Selected Catechins, Gallic Acid, and Xanthines in NIST-3256

	Mass Fraction (mg/g, dry-mass basis)		Mass Fraction (mg/g, dry-mass basis)
(+)-Catechin	2.63 ± 0.18	(–)-Gallocatechin	7.55 ± 0.28
(–)-Epicatechin	12.0 ± 2.6	Gallic acid	13.10 ± 0.49
(–)-Epicatechin gallate	17.1 ± 2.6	Caffeine	70.0 ± 2.6
(–)-Epigallocatechin	30.7 ± 5.7	Theobromine	1.04 ± 0.15
(–)-Epigallocatechin gallate	71.1 ± 6.6		

Certified Mass Fraction Values for Toxic Elements in NIST-3256

	Mass Fraction mg/kg, dry-mass basis)		Mass Fraction mg/kg, dry-mass basis)
Arsenic (As)	0.269 ± 0.019	Lead (Pb)	0.316 ± 0.030
Cadmium (Cd)	0.025 ± 0.002	Mercury (Hg)	0.014 ± 0.002

Indicative values for (–)-Gallocatechin gallate, L-Theanine and Theophylline.

Vegetable oils

BCR-459 — Coconut oil - PAHs (blank) — 45 g

Compound	Certified value µg/kg	Compound	Certified value µg/kg
Pyrene	<0.9	Benzo(a)pyrene	<0.3
Chrysene	<0.6	Benzo(ghi)perylene	<0.2
Benzo(k)fluoranthene	<0.2	Indeno(1,2,3-cd)pyrene	<0.2

New CMI-CRM7007 — Virgin olive oil - PAHs, Pesticides — 2 x 50 mL

Certified values

Anthracene	3.72 ± 0.26 µg/kg	Dibenzo[a,h]anthracene	0.50 ± 0.06 µg/kg
Benzo[a]anthracene	4.78 ± 0.38 µg/kg	Fluoranthene	15.7 ± 1.2 µg/kg
Benzo[b]fluoranthene	3.18 ± 0.30 µg/kg	Indeno[1,2,3-cd]pyrene	2.44 ± 0.18 µg/kg
Benzo[k]fluoranthene	2.22 ± 0.19 µg/kg	Phenanthrene	42.3 ± 3.8 µg/kg
Benzo[ghi]perylene	2.19 ± 0.18 µg/kg	Pyrene	14.6 ± 1.2 µg/kg
Benzo[a]pyrene	2.47 ± 0.18 µg/kg	Chlorpyriphos-methyl	182 ± 13 µg/kg
Chrysene	6.21 ± 0.43 µg/kg	Endosulfan sulfate	186 ± 13 µg/kg

Indicative values for further PAHs

New NIST-3278 — Edible oils - Tocopherols — 5 amps.

This Standard Reference Material® (SRM®) is intended primarily for use in validating analytical methods for the determination of tocopherols in edible oils and similar matrices. This SRM can also be used for quality assurance when assigning values to in-house control materials. A unit of NIST-3278 consists of five ampoules of oil each containing approximately 1 mL of material under argon.

Certified mass fraction values for tocopherols in NIST-3278

alpha-Tocopherol	290.1 ± 6.5 µg/g	gamma-Tocopherol	111.5 ± 5.8 µg/g
beta-Tocopherol	11.38 ± 0.52 µg/g	delta-Tocopherol	28.8 ± 1.8 µg/g

Code	Product	Unit

New NIST-3274

Botanical oils - Omega-3 and omega-6 fatty acids

4 x 1.2 mL

This Standard Reference Material® (SRM®) is intended primarily for use in validating analytical methods for the determination of fatty acids in botanical oils and similar matrices. This SRM can also be used for quality assurance when assigning values to in-house control materials. A unit of SRM 3274 consists of a total of four ampoules, one each of four seed oils (3274-1 Borage [Borago officinalis], 3274-2 Evening Primrose [Oenothera biennis], 3274-3 Flax [Linium usitatissimum], and 3274-4 Perilla [Perilla frutescens]). Each ampoule contains approximately 1.2 mL of oil under argon.

	Mass fraction (mg/g)			
	3274-1 Borage	3274-2 Evening Primrose	3274-3 Flax	3274-4 Perilla
Octanoic Acid (C8:0) (Caprylic Acid)		(0.053 ± 0.010)		(0.021 ± 0.002)
Decanoic Acid (C10:0) (Capric Acid)				(0.020 ± 0.011)
Dodecanoic Acid (C12:0) (Lauric Acid)			(0.016 ± 0.001)	
Tetradecanoic Acid (C14:0) (Myristic Acid)	(0.62 ± 0.11)	**0.363 ± 0.030**	**0.271 ± 0.008**	(0.206 ± 0.025)
Pentadecanoic Acid (C15:0)	**0.074 ± 0.008**	**0.099 ± 0.011**	**0.151 ± 0.016**	(0.061 ± 0.009)
Hexadecanoic Acid (C16:0) (Palmitic Acid)	**110 ± 12**	**58.2 ± 6.1**	**44.8 ± 5.0**	**56.4 ± 5.5**
(Z)-9-Hexadecenoic Acid (C16:1 n-7) (Palmitoleic Acid)	**1.77 ± 0.14**	**0.402 ± 0.043**	**0.383 ± 0.031**	**0.776 ± 0.081**
Heptadecanoic Acid (C17:0) (Margaric Acid)	(0.500 ± 0.086)	(0.188 ± 0.008)	(0.212 ± 0.011)	(0.159 ± 0.040)
Octadecanoic Acid (C18:0) (Stearic Acid)	(33.1 ± 4.0)	**18.30 ± 0.838**	**30.4 ± 2.4**	**20.9 ± 1.1**
(Z)-9-Octadecenoic Acid (C18:1 n-9) (Oleic Acid)	**148.7 ± 8.7**	**68.9 ± 3.7**	**165.7 ± 6.2**	**166.8 ± 7.8**
(E)-9-Octadecenoic Acid (t-C18:1 n-9) (Elaidic Acid)	(0.117 ± 0.020)			
(Z)-11-Octadecenoic Acid (C18:1 n-7) (Vaccenic Acid)	**5.76 ± 0.18**	**5.95 ± 0.37**	(5.61 ± 0.16)	(7.89 ± 0.22)
(Z,Z)-9,12-Octadecadienoic Acid (C18:2 n-6) (Linoleic Acid)	**374 ± 35**	**742 ± 24**	**171 ± 11**	**160 ± 14**
(Z,Z,Z)-9,12,15-Octadecatrienoic Acid (C18:3 n-3) (α-Linolenic Acid)	(3.45 ± 0.63)	(2.72 ± 0.51)	**579 ± 30**	**629 ± 28**
(Z,Z,Z)-6,9,12-Octadecatrienoic Acid (C18:3 n-6) (γ-Linolenic Acid)	**251 ± 24**	**99.9 ± 4.1**	(1.55 ± 0.25)	(2.08 ± 0.48)
Eicosanoic Acid (C20:0) (Arachidic Acid)	(2.13 ± 0.46)	(2.71 ± 0.37)	(1.04 ± 0.15)	(1.21 ± 0.26)
(Z)-11-Eicosenoic Acid (C20:1 n-9) (Gondoic Acid)		**1.84 ± 0.12**		
(Z,Z,Z,Z)-5,8,11,14-Eicosatetraenoic Acid (C20:4 n-6) (Arachidonic Acid)		(0.022 ± 0.002)	**0.633 ± 0.029**	
Heneicosanoic Acid (C21:0)	(2.36 ± 0.32)	(0.132 ± 0.029)		(0.083 ± 0.004)
Docosanoic Acid (C22:0) (Behenic Acid)	**1.509 ± 0.070**	(0.91 ± 0.25)	(0.62 ± 0.13)	(0.118 ± 0.004)
Tetracosanoic Acid (C24:0) (Lignoceric Acid)	(0.334 ± 0.074)	(0.369 ± 0.060)	(0.308 ± 0.059)	(0.096 ± 0.022)
(Z)-15-Tetracosenoic Acid (C24:1)	**7.80 ± 0.61**			**0.084 ± 0.003**

( ) Indicative values
Certified values in bold

New NIST-3275

Fish oil - Omega-3 and omega-6 fatty acids

4 x 1.2 mL

This Standard Reference Material (SRM®) is intended primarily for validation of methods for determining fatty acids in fish oils and similar materials. This SRM can also be used for quality assurance when assigning values to in-house reference materials. SRM 3275 consists of three individual oils: NIST-3275-1, a concentrate high in docosahexaenoic acid (DHA); NIST-3275-2, an anchovy oil high in DHA and eicosapentaenoic acid (EPA); and NIST-3275-3, a concentrate containing 60 % long-chain omega-3 fatty acids. A unit of NIST-3275 consists of two ampoules of each of the three oils, each ampoule containing approximately 1.2 mL of material.

Certified mass fraction values for fatty acids as fatty acid methyl esters (FAMEs)

	Mass fraction (mg/kg)		
	SRM 3275-1	SRM 3275-2	SRM 3275-3
Dodecanoic acid (C12:0; Lauric acid)			0.95 ± 0.12
Tetradecanoic acid (C14:0; Myristic acid)	1.094 ± 0.053	3.45 ± 0.40	67.9 ± 1.5
Hexadecanoic acid (C16:0; Palmitic acid)	5.25 ± 0.35	8.01 ± 0.44	186.9 ± 9.4
(Z)-9-Hexadecenoic acid (C16:1 n-7) (Palmitoleic acid)	7.43 ± 0.24	5.83 ± 0.45	85.7 ± 3.1
Octadecanoic acid (C18:0; Stearic acid)	4.22 ± 0.13	12.94 ± 0.62	38.0 ± 5.7
(Z)-9-Octadecenoic acid (C18:1 n-9) (Oleic acid)	11.25 ± 0.93	22.1 ± 1.6	112.3 ± 2.6
(Z)-11-Octadecenoic acid (C18:1 n-7) (Vaccenic acid)	5.33 ± 0.35	9.24 ± 0.77	38.5 ± 2.2
ω-6 (Z,Z)-9,12-Octadecadienoic acid (C18:2 n-6) (Linoleic acid)	2.31 ± 0.19	3.00 ± 0.42	13.49 ± 0.45
ω-3 (Z,Z,Z)-9,12,15-Octadecatrienoic acid (C18:3 n-3) (α-Linolenic acid; ALA)		14.99 ± 0.37	9.08 ± 0.22
Eicosanoic acid (C20:0; Arachidic acid)		0.357 ± 0.027	1.14 ± 0.26
(Z)-11-Eicosenoic acid (C20:1 n-9) (Gondoic acid)		6.66 ± 0.69	2.92 ± 0.14
ω-3 (Z,Z,Z,Z,Z)-5,8,11,14,17-Eicosapentaenoic acid (C20:5 n-3; EPA)	113 ± 12	460 ± 34	199.1 ± 7.8
Docosanoic acid (C22:0; Behenic acid)	4.02 ± 0.24	1.396 ± 0.046	0.502 ± 0.047
ω-3 (Z,Z,Z,Z,Z,Z)-4,7,10,13,16,19-Docosahexaenoic acid (C22:6 n-3; DHA)	524 ± 42	267 ± 12	163.5 ± 7.2
(Z)-13-Docosenoic acid (C22:1 n-9; Erucic acid)		3.43 ± 0.32	
(Z,Z,Z,Z,Z,)-7,10,13,16,19-Docosapentaenoic acid (C22:5; DPA)	87.2 ± 6.7	81.5 ± 4.4	37.9 ± 2.9
Tetracosanoic acid (C24:0; Lignoceric acid)		1.41 ± 0.13	

Indicative values for further fatty acids as fatty acid methyl esters.

Code	Product	Unit
BCR-537	Plastic film A - Overall migration in olive oil Total immersion in olive oil for 10 days at 40°C Certified value: 8.3 mg/dm^2	film
BCR-538	Plastic film B - Overall migration in olive oil Single sided cell in olive oil for 10 days at 40°C Certified value: 5.7 mg/dm^2	film
BCR-539	Plastic film C - Overall migration in olive oil Pouch in olive oil for 10 days at 40°C Certified value: 6.1 mg/dm^2	film
BCR-593	Plastic film E 120 cm x 20 cm Directive 90/128/EEC on plastic materials and articles intended for food contact regulates the limits of overall migration of specific substances into foodstuff. BCR-593 has been prepared to check the performance of the standard test procedure of film thickness, required for the evaluation of migration tendency. Certified values Fat soluble fluorescent additive (1,4-diphenyl-1,3-butadiene) ..... 12.58 mg/kg Film thickness ..... 149.7 µm	film

Food Authenticity

Isotopic analyses are now official or standard methods in Europe and beyond for routine use in food authenticity testing. Thus, the use of nuclear magnetic resonance (NMR) spectrometry based on the site-specific natural isotope fractionation (SNIF) is prescribed for instance by EC Regulation No. 2676/90 on analytical methods for wine quality control. These methods are based on the measurement of stable isotope content (deuterium, ^{13}C, ^{18}O, etc.) of the products or of a specific component such as an ingredient or target molecule of the product. The determinations, carried out using NMR and/or Isotopic Ratio Mass Spectrometry (IRMS), provide information on the botanical and geographical origin of the food product. In order to enable a clear comparision of results the following certified reference materials have been developed.

Code	Product	Unit
	BCR-123A and BCR-123B Quantitative analysis of deuterium in ethanol by NMR spectrometry based on the site-specific natural isotope fractionation (SNIF) is of considerable importance for the detection of wine enrichment. This technique is prescribed by EC regulation No. 2676/90 on analytical methods for wine quality control. BCR-123 consists of a set of 3 sealed NMR tubes containing forms of ethanol with a range of site specific isotopic ratios, to which tetramethylurea internal standard and the C_6F_6 lock substance have been added.	
BCR-123A	Ethanol - D/H isotopic determination	3 tubes
BCR-123B	Ethanol - D/H isotopic determination	3 tubes
BCR-656	Ethanol from wine (96 % vol.) - Isotope ratios Certified values Parameter ..... Value ..... Uncertainty $(D/H)_I$ by ^{2}H-NMR ..... 102.84 ppm ..... 0.20 ppm $(D/H)_{II}$ by ^{2}H-NMR ..... 132.07 ppm ..... 0.30 ppm R by ^{2}H-NMR ..... 2.570 ..... 0.005 $\delta^{13}C_{VPDB}$ by IRMS ..... -2.691% ..... 0.007% Alcoholic grade t_D ..... 4.61% ..... 0.05%(1) (1) in w/w volume	25 mL
BCR-657	Sugar (glucose) - Carbon-13 isotope ratio Certified value Paramater ..... Value ..... Uncertainty δ^{13} C_{VPDB} by IRMS ..... 1.076 ‰ ..... 0.004‰	1 g
BCR-658	Wine (7% vol) - Oxygen-18 isotope ratio Certified values Parameter ..... Value ..... Uncertainty δ^{18} O_{VSMOW} of water from wine by IRMS ..... - 0.719‰ ..... 0.004‰	25 mL
BCR-659	Wine (12% vol) - Oxygen-18 isotope ratio Certified values Parameter ..... Value ..... Uncertainty δ^{18} O_{VSMOW} of water from wine by IRMS ..... - 0.718‰ ..... ± 0.002‰	25 mL

Code	Product	Unit
BCR-660	Wine ethanol - Isotope ratios	450 mL

Certified values

Parameter	Value	Uncertainty
$(D/H)_I$ by ^{2}H-NMR	102.90 ppm	0.16 ppm
$(D/H)_{II}$ by ^{2}H-NMR	131.35 ppm	0.23 ppm
R by ^{2}H-NMR	2.567	0.005
$\delta^{13}C_{VPDB}$ by IRMS	-2.672%	0.009%
$(D/H)_w$ of water (IRMS)	148.68 ppm	0,14 ppm
Alcoholic grade t_D	11.96%	0.06%(1)

(1) in v/v %

STA-003k — Tetramethylurea (TMU) - Isotopic ratio (D/H) — 500 mL

Used as internal standard for the determination of D/H isotope ratios of ethanol by 2H-NMR method (SNIF-NMR®) according to the formula 5-1 of Regulation EEC 2676/90.

	Certified value	Uncertainty
(D/H) by NMR	141.9 x 10^{-6}	0.9 x 10^{-6}

Food and drink products

Code	Product	Unit

Processed food

LGC7107 — Madeira cake - Proximates — 160 g

Lemon Madeira cakes were prepared by a UK food company. Each cake, weighing approx. 160 g, was sealed in a can.

Assessed values

Moisture 25.9 g/100 g	Total fat 13.4 g/100 g	Sucrose 28.1 g/100 g
Nitrogen 0.66 g/100 g	Ash 1.76 g/100 g	Lactose 0.9 g/100 g

Indicative value for starch content

LGC7105 — Rice pudding - Proximates and elements — 200 g

This reference material is a rice pudding dessert, sealed in retort pouches in 200g portions.

Assessed values

Moisture 71.3 g/100 g	Sucrose 7.2 g/100 g	Mn 0.7 mg/kg
N 0.17 g/100 g	Ca 78 mg/kg	Na 344 mg/kg
Total fat 8.4 g/100 g	K 558 mg/kg	P 346 mg/kg
Ash 0.22 g/100 g	Mg 30 mg/kg	Zn 1.5 mg/kg

LGC7017 — Sugar confectionery - Sugars — 15 g

A commercial supply of sugar confectionery, ground and supplied as 15g units contained in 30ml amber glass bottle with tamper evident caps.

Assessed values

Glucose 9.7 g/100 g	Sucrose 52.6 g/100 g
Fructose 2.3 g/100 g	Maltose 4.2 g/100 g

LGC7103 — Sweet digestive biscuit - Proximates and elements — 50 g

Assessed values

Nitrogen 1.06 g/100 g	Sucrose 16.6 g/100 g	Na 6300 mg/kg
Total fat 20.9 g/100 g	Chloride 0.55 g/100 g	P 870 mg/kg
Ash 2.08 g/100 g	K 1530 mg/kg	Zn 5.8 mg/kg
Fructose 0.24 g/100 g	Mn 5.9 mg/kg	

Indicative values for Moisture, Glucose, Starch, Ca and Mg

BCR-644 — Artificial foodstuff - Free sugars and starch/glucose — 50 g

Sugar	Certified value Mass fraction on dry mass basis (g/100 g)	Uncertainty (g/100 g)
Fructose	16.2	1.1
Sucrose	10.81	0.25
Lactose	15.85	0.29
Starch/glucose	35.1	1.2

BCR-645 — Artificial foodstuff - Free sugars and starch/glucose — 50 g

Sugar	Certified value Mass fraction on dry mass basis (g/100 g)	Uncertainty (g/100 g)
Sucrose	26.2	0.8
Lactose	27.8	0.6
Starch/glucose	25.2	0.9

ERM-BD518 — Bran breakfast cereal - Dietary fibre — 25 g

Certified using five different methods of dietary fibre analysis

Certified values

AOAC 1990 30.2 g/100 g	AOAC 1992 MES-TRIS 30.5 g/100 g
Englyst (GC) 24.1 g/100 g	Englyst (colorimetry) 25.0 g/100 g
Uppsala 27.6 g/100 g	

	Code	Product	Unit
	ERM-BD272	Crispbread - Acrylamide Certified value Acrylamide .... 0.98 ± 0.09 mg/kg	68 g
	ERM-BD273	Toasted bread - Acrylamide The matrix material ERM-BD273, consists of 30 g of toasted bread powder of particle size smaller than 500 µm, stored in amber glass bottles under inert atmosphere and stored at a temperature of - 20 ºC. Certified value Acrylamide ..... 425 ng/g	vial
New	ERM-BD274	Rusk - Acrylamide Certified value Acrylamide ..... 47 ± 7 µg/kg	48 g
New	ERM-BD272-274	Crispbread - Acrylamide; Rusk - Acrylamide Set of ERM-BD272 and ERM-BD274	set
	BCR-191	Brown bread - Trace elements Certified values Cd ..... 28.4 µg/kg Fe .....40.7 mg/kg Pb ..... 187 µg/kg Cu ..... 2.6 mg/kg Mn .....20.3 mg/kg Zn..... 19.5 mg/kg Indicative values for As,Ca, Cl, Cr, Hg, K, Mg, Na, Ni, P, Se	40 g
	NIST-2384	Baking chocolate - Fat, fatty acids Standard Reference Material (SRM®) 2384 is intended primarily for use in validating methods for determining proximates, fatty acids, calories, vitamins, elements, catechins, caffeine, theobromine, and acrylamide in baking chocolate and similar matrices. Certified values for fat Fat (Extractable) ..... 51.4 ± 1.1 % Fat (Sum of fatty acids)..... 50.3 ± 1.1 % Certified values for selected fatty acids	5 x 91 g

	Mass fraction as the Triglyceride	Mass fraction as the Fatty acid
Tetradecanoic acid (C14:0) (Myristic acid)	0.080 ± 0.005%	0.076 ± 0.005%
Hexadecanoic acid (C16:0) (Palmitic acid)	13.06 ± 0.27%	12.44 ± 0.26%
(Z)-9-Hexadecenoic acid (C16:1) (Palmitoleic acid)	0.133 ± 0.007%	0.127 ± 0.007
Octadecanoic acid (C18:0) (Stearic acid)	18.01 ± 0.40%	17.24 ± 0.38%
(Z)-9-Octadecenoic acid (C18:1) (Oleic acid)	16.44 ± 0.36%	15.73 ± 0.35%
(Z)-11-Octadecenoic acid (C18:1) (Vaccenic acid)	0.180 ± 0.018%	0.172 ± 0.017%
(Z,Z)-9,12-Octadecadienoic acid (C18:2) (Linoleic acid)	1.524 ± 0.048%	1.458 ± 0.046%
(Z,Z,Z)-9,12,15-Octadecatrienoic acid (C18:3) (Linolenic acid)	0.097 ± 0.006	0.093 ± 0.006
Eicosanoic acid (C20:0) (Arachidic acid)	0.521 ± 0.013%	0.501 ± 0.012%
Docosanoic acid (C22:0) (Behenic acid)	0.091 ± 0.006%	0.088 ± 0.006%
Tetracosanoic acid (C24:0) (Lignoceric acid)	0.050 ± 0.002%	0.050 ± 0.002%

Certified values for selected additional analytes

Caffeine .....1 060 ± 50 (+)-Catechin ..... 245 ± 51 mg/kg
Theobromine .....11600 ± 1 100 mg/kg (–)-Epicatechin..... 1220 ± 240 mg/kg
Calcium.....840 ± 74 mg/kg Catechin monomers..... 1490 ± 220 mg/kg
Iron.....132 ± 11 mg/kg

Reference values for proximates and caloric content, fatty acids, trace elements, vitamins and other analytes.

Code	Product	Unit
NIST-2387	Peanut butter - Fat, fatty acids, trace elements and tocopherols	3 x 170 g

This Standard Reference Material® (SRM®) is intended primarily for use in validating methods for determining proximates, fatty acids, calories, vitamins, elements, amino acids, and aflatoxins in peanut butter and similar matrices.

Certified concentrations for fat and selected fatty acids

	Mass fraction (%)
Fat (extractable)	51.6 ± 1.4
Fat (sum of fatty acids)	49.8 ± 1.9
Saturated fat	10.4 ± 0.2
Monounsaturated fat	24.4 ± 0.9
Polyunsaturated fat	13.2 ± 0.4

	Mass fraction (%) (as the triglyceride)	Mass fraction (%) (as the fatty acid)
Tetradecanoic acid (C14:0) (Myristic acid)	0.025 ± 0.002	0.024 ± 0.002
Hexadecanoic acid (C16:0) (Palmitic acid)	5.18 ± 0.15	4.94 ± 0.15
(Z)-9-Hexadecenoic acid (C16:1 n-7) (Palmitoleic acid)	0.046 ± 0.011	0.044 ± 0.010
Octadecanoic acid (C18:0) (Stearic acid)	2.23 ± 0.08	2.13 ± 0.08
(Z)-9-Octadecenoic acid (C18:1 n-9) (Oleic acid)	24.43 ± 0.94	23.38 ± 0.90
(Z)-11-Octadecenoic acid (C18:1 n-7) (Vaccenic acid)	0.266 ± 0.017	0.255 ± 0.016
(Z,Z)-9,12-Octadecadienoic acid (C18:2 n-6) (Linoleic acid)	13.75 ± 0.43	13.15 ± 0.41
(Z,Z,Z)-9,12,15-Octadecatrienoic acid (C18:3 n-3) (Linolenic acid)	0.031 ± 0.001	0.030 ± 0.001
Eicosanoic acid (C20:0) (Arachidic acid)	0.739 ± 0.030	0.710 ± 0.029
(Z)-11-Eicosenoic acid (C20:1 n-9) (Gondoic acid)	0.669 ± 0.032	0.643 ± 0.031
Docosanoic acid (C22:0) (Behenic acid)	1.88 ± 0.08	1.81 ± 0.08
Tetracosanoic acid (C24:0)	0.808 ± 0.045	0.781 ± 0.044

Certified concentration values for elements and tocopherol

	Mass fraction (mg/kg)		Mass fraction (mg/kg)
Ca	411 ± 18	K	6070 ± 200
Cu	4.93 ± 0.15	Na	4890 ± 140
fe	16.4 ± 0.8	Zn	26.3 ± 1.1
Mg	1680 ± 70	δ -Tocopherol	10 ± 3
Mn	16.0 ± 0.6	γ - + β -Tocopherol	100 ± 19
P	3378 ± 92	α -Tocopherol	108 ± 11

Reference values for proximates, caloric content, fatty acids, amino acids, water-soluble vitamins, aflatoxins and acrylamide

Code	Product	Unit

New NIST-1849 — Infant/Adult nutritional powder (milk) - Trace elements, proximates and nutrients — 10 x 10 g

NIST-1849 is intended primarily for validation of methods for determining proximates, fatty acids, vitamins, elements, amino acids, and nucleotides in infant and adult nutritional formulas and similar materials. It can also be used for quality assurance when assigning values to in-house reference materials. This material is a milk-based, hybrid infant/adult nutritional powder prepared by a manufacturer of infant formula and adult nutritional products. A unit of NIST-1849 consists of 10 packets, each containing approximately 10 g of material.

Certified concentrations for fatty acids as triglycerides

Octanoic acid (C8:0) ..... 0.638 ± 0.067%
(Caprylic acid)
Decanoic acid (C10:0) ..... 0.473 ± 0.019%
(Capric acid)
Dodecanoic acid (C12:0) ..... 3.712 ± 0.075%
(Lauric acid)
Tetradecanoic acid (C14:0) ..... 1.521 ± 0.021%
(Myristic acid)
Pentadecanoic acid (C15:0) ..... 0.0070 ± 0.0003%
Hexadecanoic acid (C16:0) ..... 2.50 ± 0.16 %
(Palmitic acid)
(Z)-9-Hexadecenoic acid (C16:1 n-7) ..... 0.0262 ± 0.0016%
(Palmitoleic acid)
Octadecanoic acid (C18:0) ..... 0.905 ± 0.056%
(Stearic acid)
(Z)-9-Octadecenoic acid ..... 10.63 ± 0.88%
(C18:1 n-9) (Oleic acid)
(Z)-11-Octadecenoic acid (C18:1 n-7) ..... 0.203 ± 0.021%
(Vaccenic acid)
(Z,Z)-9,12-Octadecadienoic acid (C18:2 n-6) ..... 6.02 ± 0.10%
(Linoleic acid)
(Z,Z,Z)-9,12,15-Octadecatrienoic acid (C18:3 n-3) ..... 0.561 ± 0.043%
(α-Linolenic acid)
Eicosanoic acid (C20:0) ..... 0.095 ± 0.003%
(Arachidic acid)
(Z,Z,Z,Z)-5,8,11,14-Eicosatetraenoic acid (C20:4 n-6) ..... 0.206 ± 0.022%
(Arachidonic acid)
(Z,Z,Z,Z,Z,Z)-4,7,10,13,16,19-Docosahexaenoic acid (C22:6) ..... 0.067 ± 0.006%
Tetracosanoic acid (C24:0) ..... 0.039 ± 0.003%
(Lignoceric acid)

Certified concentrations for selected elements

Ca ..... 4900 ± 130 mg/kg	I ..... 1.37 ± 0.41 mg/kg	Na ..... 4150 ± 140 mg/kg
Cl ..... 6280 ± 140 mg/kg	K ..... 8860 ± 130 mg/kg	P ..... 3782 ± 36 mg/kg
Cr ..... 1.09 ± 0.21 mg/kg	Mg ..... 1578 ± 69 mg/kg	Zn ..... 152.3 ± 5.1 mg/kg
Cu ..... 20.29 ± 0.43 mg/kg	Mn ..... 51.00 ± 0.53 mg/kg	
Fe ..... 177.1 ± 3.3 mg/kg	Mo ..... 1.62 ± 0.15 mg/kg	

Certified concentrations for selected vitamins

Retinol (Vitamin A) ..... 16.4 ± 1.3 mg/kg
Cholecalciferol (Vitamin D3) ..... 0.251 ± 0.027 mg/kg
α-Tocopherol ..... 369 ± 16 mg/kg
γ-Tocopherol ..... 189 ± 13 mg/kg
δ-Tocopherol ..... 79.2 ± 2.4 mg/kg
β-Tocopherol ..... 5.77 ± 0.79 mg/kg
Phylloquinone (Vitamin K1) ..... 2.20 ± 0.18 mg/kg
Thiamine (Vitamin B1) hydrochloride ..... 15.8 ± 1.3 mg/kg
Riboflavin (Vitamin B2) ..... 17.4 ± 1.0 mg/kg
Niacinamide ..... 97.5 ± 2.3 mg/kg
Pantothenic acid ..... 64.8 ± 2.2 mg/kg
Pyridoxine (Vitamin B6) hydrochloride ..... 14.2 ± 1.5 mg/kg
Folic acid ..... 2.11 ± 0.13 mg/kg
Biotin ..... 1.92 ± 0.25 mg/kg

Indicative values for selected fatty acids as triglycerides, proximates, cholesterol, lactose, and calories, selected vitamins, Se, amino acids, taurine and nucleotides

NIST-1548a — Typical diet - Trace elements — set (2)

A unit of NIST-1548a consists of two bottles, each containing approximately 6.5 g of the freeze-dried homogenate of mixed diet foods.

Certified values

Al ..... 72.4 mg/kg	Cu ..... 2.32 mg/kg	Ni ..... 0.369 mg/kg
As ..... 0.20 mg/kg	Fe ..... 35.3 mg/kg	P ..... 3486 mg/kg
Ca ..... 1967 mg/kg	I ..... 0.759 mg/kg	S ..... 1928 mg/kg
Cd ..... 0.035 mg/kg	Mg ..... 580 mg/kg	Se ..... 0.245 mg/kg
Cl ..... 12078 mg/kg	Mn ..... 5.75 mg/kg	Sn ..... 17.2 mg/kg
Cs ..... 0.0098 mg/kg	Na ..... 8132 mg/kg	Zn ..... 24.6 mg/kg

Indicative values for Ash, carbohydrate, fat, N, protein, dietary fibre, calories, B, Ba, Br, Co, Hg, Mo, Sb, Sc, Si, Sr, Ti

NIST-1544 — Diet composite - Fatty acids and cholesterol — 4 x 15 g

Certified values

Cholesterol ..... 0.1483 g/kg	Palmitic acid ..... 5.77 g/kg	Linoleic acid ..... 6.56 g/kg
Lauric acid ..... 1.31 g/kg	Stearic acid ..... 2.00 g/kg	
Myristic acid ..... 1.01 g/kg	Oleic acid ..... 11.64 g/kg	

Indicative values for protein, moisture, total fat, ash, carbohydrate, calories, remaining fatty acids, Ca, K, Na

Code	Product	Unit
NIES27	Typical Japanese diet - Minor and trace elements This certified reference material (CRM) is intended for use in the quality assurance of the analysis of minor and trace elements in the Japanese diet and in similar food matrices. Certified values Ca ..... 0.125 ± 0.004 % K ..... 0.550 ± 0.015 % Na ..... 1.00 ± 0.04 % As..... 0.60 ± 0.04 mg/kg Ba ..... 1.1 ± 0.1 mg/kg Cd..... 0.069 ± 0.009 mg/kg Cu..... 2.8 ± 0.1 mg/kg Mg ..... 576 ± 12 mg/kg Mn ..... 8.9 ± 0.2 mg/kg Se..... 0.25 ± 0.02 mg/kg Sn ..... 1.6 ± 0.1 mg/kg Sr ..... 4.9 ± 0.2 mg/kg Zn..... 20.9 ± 0.9 mg/kg U ..... 0.0029 ± 0.0004 mg/kg Reference values for Br, Cl, Co, Cs, I, Fe	18 g

Drinks

Code	Product	Unit
LGC7140	Soft drink - Colours Known weights of three food colours were added to a diluted solution of commercial soft drink concentrate. Certified values Ponceau 4R (E124) ..... 18.7 mg/L Sunset yellow (E110) ..... 19.6 mg/L Tartrazine (E102) ..... 29.9 mg/L	60 mL
New ERM-BD011	Orange juice This certified reference material is intended for use in the development, validation or quality control of analytical methods for the determination of degrees Brix or Refractive Index of sugar solutions and food extracts. Certified values Degrees Brix ..... 1.26 Refractive index.....1.3348	3 mL
New ERM-BD012	Orange juice This certified reference material is intended for use in the development, validation or quality control of analytical methods for the determination of degrees Brix or Refractive Index of sugar solutions and food extracts. Certified values Degrees Brix ..... 12.72 Refractive index.....1.3521	3 mL
New ERM-BD013	Orange juice This certified reference material is intended for use in the development, validation or quality control of analytical methods for the determination of degrees Brix or Refractive Index of sugar solutions and food extracts. Certified values Degrees Brix ..... 22.07 Refractive index.....1.3673	3 mL
New ERM-BD014	Orange juice This certified reference material is intended for use in the development, validation or quality control of analytical methods for the determination of degrees Brix or Refractive Index of sugar solutions and food extracts. Certified values Degrees Brix ..... 55.55 Refractive index.....1.4320	3 mL
New ERM-BD015	Orange juice This certified reference material is intended for use in the development, validation or quality control of analytical methods for the determination of degrees Brix or Refractive Index of sugar solutions and food extracts. Certified values Degrees Brix ..... 64.73 Refractive index.....1.4529	3 mL

For refractive index standards see the listing of physical standards later in this catalogue.

LGC provides proficiency testing schemes for the soft drinks industry – see introduction “About proficiency testing (PT)” of this catalogue for further details.

Alcoholic beverage

Code	Product	Unit
ERM-BA006	Brandy - Alcohol European Reference Material ERM-BA006 is a commercial brandy available in 50mL portions contained in amber glass vials fitted with 20mm bromo-butyl stoppers and crimp caps. Certified values Apparent alcoholic strength ..... 37.83 % alcohol by volume, ABV Actual alcoholic strength..... 40.12 % alcohol by volume, ABV Apparent density in air of the obscured spirit..... 950.38 kg/m^3	50 mL
LGC5100	Whisky - Congeners Whisky sourced from a commercial source is available in 10mL unit in amber glass vials using sealed septa with crimped caps. Certified values Methanol ..... 8.2 g/100 L Propan-1-ol ..... 67.4 g/100 L 2-Methylpropan-1-ol ..... 64.9 g/100 L 2-Methylbutan-1-ol ..... 19.6 g/100 L 3-Methylbutan-1-ol ..... 51.4 g/100 L 2+3-Methylbutan-1-ol ..... 70.1g/100 L Indicative values for acetaldehyde, butan-1-ol, furfural, ethyl acetate	10 mL

Code	Product	Unit
	LGC5001 and LGC5003 LGC5001 and LGC5003 are wine certified reference materials obtained from a commercial source supplied in 250mL units. They are certified for alcoholic strengths ranging from 5% - 15%. The alcoholic strength was determined from the density of the distillate by reference to the laboratory alcohol tables issued by United Kingdom HM Customs and Excise (ref. RDC80/267).	
LGC5001	Wine - Alcohol (5%) Certified value Alcohol ..... 5.04 mL/100 mL (at 20°C)	250 mL
LGC5003	Wine - Alcohol (15 %) Certified value Alcohol ..... 14.66 % (at 20°C)	250 mL
LGC5004	Lager shandy - Alcohol This certified reference material for lager shandy is supplied in 150mL units and sealed in aluminium cans. Certified value Alcohol ..... 1.02 mL/100 mL (at 20°C)	330 mL
ERM-BA005	Lager - Alcohol Alcohol ..... 5.07 mL/100 mL (at 20°C)	330 mL
	LGC provides three proficiency testing schemes for the alcoholic beverage industry; BAPS (analysis of beer), MAPS (analysis of malted and unmalted barley) and DAPS (analysis of alcoholic beverages other than beer) – see section “About proficiency testing (PT)” of this catalogue for further details.	
BCR-651	Beer - Alcohol (low level) Certified value Ethanol..... 0.505 % (v/v)	10 mL
BCR-652	Beer - Alcohol (very low level) Certified value Ethanol..... 0.051 % (v/v)	10 mL
BCR-653	Wine - Alcohol (low level) Certified value Ethanol..... 0.539 % (v/v)	10 mL
	ERM-AC404 – ERM-AC407 European Reference Material ERM-AC404 – ERM-AC407 are Ethanol/ Water certified reference materials supplied in 50mL units in glass bottles and sealed with crimp cap. They are certified for alcoholic strength ranging from 5% - 70%.	
ERM-AC404	Ethanol/water - 5% Ethanol Certified value Ethanol..... 4.96 mL/100 mL at 20°C Density..... 990.05 kg/m^3 at 20°C	50 mL
ERM-AC405	Ethanol/water - 15% Ethanol Certified value Ethanol.....14.99 mL/100mL at 20^{0}C Density.....977.94 kg/m^3 at 20^{0}C	50 mL
ERM-AC406	Ethanol/water - 40% Ethanol Certified value Ethanol..... 40.04 mL/100 mL at 20°C Density..... 946.91 kg/m^3 at 20°C	50 mL
ERM-AC407	Ethanol/water - 70% Ethanol Certified value Ethanol.....69.98 mL/100mL at 20^{0}C Density.....884.55 kg/m^3 at 20^{0}C ABV:alcohol by volume	50 mL

Code	Product	Unit

Food supplements

IRMM-311 — Genomic DNA of *Bacillus licheniformis* DSM 5749 in agarose inserts for Pulsed Field Gel Electrophoresis (PFGE) — vial

The intended use of this material is the taxonomic identification of the authorised probiotic feed additive *Bacillus licheniformis* DSM 5749 by pulsed field gel electrophoresis (PFGE). The material is supplied in a vial containing one agarose insert of undigested genomic DNA of *Bacillus licheniformis* DSM 5749. Certified values and uncertainties are provided for SfiI digested DNA fragments in the size interval 50 kb - 90 kb and requires the use of a specified analytical procedure.

SfiI digested DNA fragments in the size interval 50 kb – 90 kb	Band no	Fragment length Certified value [kb]	Uncertainty [kb]
	1	89.6	4.7
	2	80.9	2.5
	3	75.3	2.7
	4	72.2	3.5
	5	66.9	1.9
	6	64.6	2.9
	7	60.3	1.3
	8	56.5	1.3
	9	53.9	1.3
	10	50.6	1.3

IRMM-312 — Genomic DNA of *Bacillus subtilis* DSM 5750 in agarose inserts for Pulsed Field Gel Electrophoresis (PFGE) — vial

The intended use of this material is the taxonomic identification of the authorised probiotic feed additive *Bacillus subtilis* DSM 5750 by pulsed field gel electrophoresis (PFGE). The material is supplied in a vial containing one agarose insert of undigested genomic DNA of *Bacillus subtilis* DSM 5750. Certified values and uncertainties are provided for SfiI digested DNA fragments in the size interval 15 kb - 97 kb and requires the use of a specified analytical procedure.

SfiI digested DNA fragments in the size interval 15 kb – 97 kb	Band no	Fragment length Certified value [kb]	Uncertainty [kb]
	1	89.2	0.9
	2	81.4	0.8
	3	77.7	0.6
	4	62.5	1.8
	5	59.5	2.1
	6	44.0	2.4
	7	29.2	2.0
	8	23.6	1.3
	9	18.6	1.3

NRCSELM-1 — Selenium enriched yeast — 8 g

Certified values

Total selenium	2059 ± 64 mg/kg	Methionine	5758 ± 277 mg/kg
Selenomethionine	3431 ± 157 mg/kg		

New **NIST-3280** — Multivitamin/Multielement tablets — 150 tablets

A unit of NIST-3280 consists of five bottles, each containing 30 tablets. Each tablet weighs approximately 1.5 g.

Certified Concentration Values for Vitamins and Carotenoids

Folic acid	394 ± 22 µg/g	Ascorbic acid	42.2 ± 3.7 mg/g
Biotin	23.4 ± 3.2 µg/g	Thiamine hydrochloride	1.06 ± 0.12 mg/g
Ergocalciferol	9.13 ± 0.71 µg/g	Riboflavin	1.32 ± 0.17 mg/g
Phylloquinone	22.8 ± 2.2 µg/g	Niacinamide	14.10 ± 0.23 mg/g
Trans-β-carotene	420 ± 100 µg/g	Pantothenic acid	7.30 ± 0.96 mg/g
Total β-carotene	514 ± 87 µg/g	Pyridoxine hydrochloride	1.81 ± 0.17 mg/g
α-Tocopherol	21.4 ± 3.5 mg/g	Certified Concentration Values for Selected Elements	

Certified Concentration Values for Selected Elements

B	0.141 ± 0.007 mg/g	I	0.1327 ± 0.0066 mg/g	P	75.7 ± 3.2 mg/g
Ca	110.7 ± 5.3 mg/g	Fe	12.35 ± 0.91 mg/g	K	53.1 ± 7.0 mg/g
Cl	53.0 ± 2.3 mg/g	Mg	67.8 ± 4.0 mg/g	Zn	10.15 ± 0.81 mg/g
Cr	0.0937 ± 0.0027 mg/g	Mn	1.44 ± 0.11 mg/g		
Cu	1.40 ± 0.17 mg/g	Mo	0.0707 ± 0.0045 mg/g		

Indicative values for elements, vitamins and carotenoids

NIST-3246 — Ginkgo biloba - Flavonoids, terpene , actones, elements — 5 x 3 g

Standard Reference Material NIST-3246 is intended primarily for use in validating analytical methods for the determination of flavonoids, terpene lactones, and toxic elements in Ginkgo biloba and similar matrices.

Certified values

Quercetin	2.69 ± 0.31 mg/g	Ginkgolide B	0.470 ± 0.090 mg/g
Kaempferol	3.02 ± 0.41 mg/g	Cd	20.8 ± 1.0 ng/g
Isorhamnetin	0.517 ± 0.099 mg/g	Pb	995 ± 30 ng/g
Total Aglycones	6.22 ± 0.77 mg/g	Hg	23.08 ± 0.17 ng/g

Indicative values for selected terpene, lactone

Code	Product	Unit

NIST-3247 — Ginkgo biloba extract - Flavonoids, terpene , actones, elements — 5 x 1 g

Standard Reference Material NIST-3247 is intended primarily for use in validating analytical methods for the determination of flavonoids, terpene lactones, and toxic elements in Ginkgo biloba extracts and similar matrices.

Certified values

Quercetin	45.1 ± 4.6 mg/g	Ginkgolide	12.4 ± 1.4 mg/g
Kaempferol	40.8 ± 3.0 mg/g	Ginkgolide	3.9 ± 1.5 mg/g
Isorhamnetin	10.8 ± 1.3 mg/g	Bilobalide	28.5 ± 2.1 mg/g
Total Aglycones	96.8 ± 8.3 mg/g	Total Terpene Lactones	62.4 ± 5.7 mg/g
Ginkgolide	11.6 ± 1.7 mg/g	Pb	4.273 ± 0.031 ng/g
Ginkgolide	5.92 ± 0.45 mg/g		

Indicative values for As and Cd

NIST-3248 — Ginkgo-containing tablets - Flavonoids aglycones, terpene lactones — 5 x 1 g

Standard Reference Material NIST-3248 is intended primarily for use in validating analytical methods for the determination of flavonoids, terpene lactones, and toxic elements in ginkgo-containing tablets and similar matrices.

Certified values

Quercetin	7.56 ± 0.40	Ginkgolide B	1.12 ± 0.20
Kaempferol	7.19 ± 0.70	Ginkgolide C	2.36 ± 0.42
Isorhamnetin	1.90 ± 0.22	Total Terpene Lactones	11.8 ± 1.4
Total Aglycones	16.6 ± 1.2	Pb	0.7753 ± 0.0089 µg/g

Indicative values for delected terpene, lactones As, Cd and Hg

NIST-3249 — Ginkgo dietary supplement suite - Flavonoids, terpene , actones, elements — 2 each

Standard Reference Material NIST-3249 consists of two bottles each of three ginkgo-related SRMs®: NIST-3246 Ginkgo biloba (Leaves), NIST-3247 Ginkgo biloba extract, and NIST-3248 Ginkgo–containing tablets. These SRMs are intended primarily for use in validating analytical methods for the determination of flavonoids, terpene lactones, and toxic elements in Ginkgo-containing matrices. These SRMs® can also be used for quality assurance when assigning values to in-house control materials.

NIST-3258 — Bitter Orange (Fruit) - Alkaloids — 5 x 5 g

This Standard Reference Material (SRM®) is intended primarily for use in validating analytical methods for the determination of alkaloids in bitter orange-containing solid oral dosage forms and similar matrices. This SRM can also be used for quality assurance when assigning values to in-house control materials. A unit of NIST-3258 consists of five packets, each containing approximately 5 g of ground fruit.

Certified Concentration Values for Selected Alkaloids

	Mass Fraction (mg/g, dry-basis) (mg/g, dry-basis)		Mass Fraction
Synephrine	9.10 ± 0.15	Total Citrus Alkaloids	9.41 ± 0.17
N-Methyltyramine	0.178 ± 0.012		

Indicative values for Octopamine

NIST-3259 — Bitter Orange Extract - Alkaloids — 5 x 1.2 g

This Standard Reference Material (SRM®) is intended primarily for use in validating analytical methods for the determination of alkaloids in bitter orange-containing solid oral dosage forms and similar matrices. This SRM can also be used for quality assurance when assigning values to in-house control materials. A unit of NIST-3259 consists of five packets, each containing approximately 1.2 g of extract.

Certified Concentration Values for Selected Citrus Alkaloids

	Mass Fraction (mg/g, dry-basis) (mg/g, dry-basis)		Mass Fraction
Synephrine	71.9 ± 2.3	Tyramine	0.800 ± 0.067
N-methyltyramine	5.23 ± 0.66	Total Citrus Alkaloids	77.5 ± 1.3

Indicative values for Octopamine

NIST-3260 — Bitter Orange Containing Solid Oral Dosage Form - Alkaloids — 5 x 2.5 g

This Standard Reference Material (SRM®) is intended primarily for use in validating analytical methods for the determination of alkaloids in bitter orange-containing solid oral dosage forms and similar matrices. This SRM can also be used for quality assurance when assigning values to in-house control materials. A unit of NIST-3260 consists of five packets, each containing approximately 2.5 g of powdered material.

Certified Concentration Values for Selected Alkaloids

	Mass Fraction (mg/g, dry-basis) (mg/g, dry-basis)		Mass Fraction
Synephrine	18.19 ± 0.49	Total Citrus Alkaloids	19.57 ± 0.18
Tyramine	0.187 ± 0.022	Caffeine	64.3 ± 1.2

Indicative values for Octopamine and N-methyltyramine

NIST-3261 — Bitter Orange Dietary Supplemental Suite - Alkaloids — set

This Standard Reference Material (SRM®) consists of two packets each of three bitter orange-related SRMs: NIST-3258 Bitter Orange (Fruit), NIST-3259 Bitter Orange Extract, and NIST-3260 Bitter Orange-Containing Solid Oral Dosage Form. These SRMs are intended primarily for use in validating analytical methods for the determination of citrus alkaloids in bitter orange-containing matrices. These SRMs can also be used for quality assurance when assigning values to in-house control materials. The materials in the suite of bitter orange dietary supplement SRMs have been developed to cover a range of natural matrices and analyte levels.

Food and drink products

	Code	Product	Unit
New	NIST-3281	Cranberry (Fruit) - Organic acids A unit of NIST-3281 consists of five packets, each containing approximately 6 g of freeze-dried, powdered fruit. Certified values (dry-mass basis) Citric acid ..... 79.2 ± 6.4 mg/g Malic acid ..... 40.6 ± 2.3 mg/g Quinic acid ..... 47.8 ± 6.8 mg/g Shikimic acid ..... 2.09 ± 0.72 mg/g	5 x 6 g
New	NIST-3282	Low-calorie cranberry juice cocktail - Organic acids, Trace elements A unit of NIST-3282 consists of five ampoules, each containing approximately 1.2 mL of liquid. Certified mass fraction values for organic acids Citric acid ..... 3.221 ± 0.053 mg/g Malic acid ..... 2.133 ± 0.042 mg/g Quinic acid ..... 2.672 ± 0.048 mg/g Certified mass fraction values for elements Calcium .....26.3 ± 1.6 mg/kg Copper .....0.23 ± 0.06 mg/kg Magnesium .....12.97 ± 0.84 mg/kg Manganese ..... 0.493 ± 0.016 mg/kg Potassium ..... 247 ± 12 mg/kg Sodium ..... 201 ± 20 mg/kg Indicative values for organic acids, anions, trace elements and sugars	5 x 1.2 mL
New	NIST-3283	Cranberry extract - Organic acids A unit of NIST-3283 consists of five packets, each containing approximately 2.5 g of cranberry extract. Certified mass fraction values for organic acids (dry-mass basis) Citric acid ..... 18.7 ± 2.3 mg/g Malic acid ..... 9.9 ± 1.2 mg/g Quinic acid ..... 16.6 ± 3.7 mg/g Indicative values for organic acids and anions	5 x 2.5 g
New	NIST-3284	Cranberry-containing solid oral dosage form - Organic acids A unit of NIST-3284 consists of five packets, each containing approximately 2.5 g of powdered material. Certified mass fraction values for organic acids (dry-mass basis) Citric acid ..... 34.7 ± 4.8 mg/g Malic acid ..... 19.9 ± 1.9 mg/g Quinic acid ..... 25.9 ± 3.5 mg/g Indicative values for organic acids and anions	5 x 2.5 g
New	NIST-3285	Mixed Berry-containing solid oral dosage form - Organic acids This Standard Reference Material (SRM) is intended primarily for use in validating analytical methods for the determination of organic acids in solid oral dosage forms containing bilberries, blueberries, and cranberries and in similar matrices. This SRM can also be used for quality assurance when assigning values to in-house control materials. A unit of NIST-3285 consists of five packets, each containing approximately 2.5 g of powdered material. Certified values (dry-mass basis) Malic acid ..... 22.83 ± 0.53 mg/g Quinic acid.....24.87 ± 0.42 mg/g Reference values for organic acids and anions	5 x 2.5 g
New	NIST-3287	Blueberry (Fruit) - Organic acids A unit of NIST-3287 consists of five packets, each containing approximately 5 g of freeze-dried, powdered fruit. Certified values mass fraction values for organic acids (dry-mass basis) Citric acid ..... 24.33 ± 0.63 mg/g Malic acid ..... 1.711 ± 0.060 mg/g Quinic acid ..... 25.53 ± 0.73 mg/g Certified mass fraction values for elements (dry-mass basis) Calcium (Ca).....323 ± 16 mg/kg Copper (Cu) .....2.22 ± 0.16 mg/kg Iron (Fe) .....12.20 ± 0.74 mg/kg Magnesium (Mg).....313.7 ± 7.2 mg/kg Manganese (Mn) ..... 8.47 ± 0.59 mg/kg Phosphorus (P) ..... 671 ± 21 mg/kg Potassium (K) ..... 4490 ± 220 mg/kg Zinc (Zn)..... 6.49 ± 0.61 mg/kg Indicative values for organic acids, anions, proximates, sugars, total dietary fiber, sodium, calories, vitamins and amino acids	5 x 5 g
New	NIST-3291	Bilberry extract - Organic acids A unit of NIST-3291 consists of five packets, each containing approximately 1 g of bilberry extract. Certified mass fraction values for organic acids (dry-mass basis) Citric acid ..... 22.9 ± 2.5 mg/g Malic acid ..... 5.9 ± 1.7 mg/g Quinic acid ..... 12.2 ± 2.2 mg/g Indicative values for organic acids and anions	5 x 1 g

Food allergens

NIST-RM 8445	Spray-Dried Whole Egg for Allergen Detection This Reference Material (RM) is intended primarily for the use in evaluating test kits for determination of the presence of allergenic egg proteins. The material provides a common matrix to the allergen research community, who may wish to conduct studies using a single broadly available material.	5 g

Animal food products

	Code	Product	Unit
New	LGC7173	Poultry feed - Proximates and elements	45 g

Assessed values using Statutory Methods*

Moisture ..... 12.3 ± 0.3 g/100 g	Oil ..... 4.1 ± 0.7 g/100 g	Ash..... 6.4 ± 0.6 g/100 g

Assessed values using data derived from a variety of methods

Moisture ..... 12.0 ± 0.3 g/100 g	Ca..... 1.44 ± 0.15 g/100 g	K ..... 0.74 ± 0.06 g/100 g
Nitrogen ..... 2.56 ± 0.19 g/100 g	Chloride..... 0.28 ± 0.06 g/100 g	Fe..... 145 ± 31 mg/kg
Oil ..... 4.1 ± 0.7 g/100 g	Mg ..... 0.16 ± 0.02 g/100 g	Mn..... 131 ± 19 mg/kg
Ash..... 6.5 ± 0.6 g/100 g	P..... 0.63 ± 0.03 g/100 g	Zn..... 91 ± 11 mg/kg
Crude fibre ..... 4.1 ± 0.7 g/100 g	Na..... 0.17 ± 0.05 g/100 g	

*These values have been assigned using only data derived from laboratories reporting analysis according to "EEC method of analysis of the official control of feedingstuffs", as indicated into UK law in "The Feeding Stuffs (Sampling and Analysis) Regulations 1999".

New	ERM-BE376	Compound feedingstuff - Aflatoxins	2 x 75 g

ERM-BE376 is a compound feeding stuff mixed from contaminated copra, wheat, barley, soya, maize and a mineral / vitamin premix.

Certified values

Aflatoxin B1..... 12.9 ± 1.8 µg/kg	Aflatoxin B2 .... 0.68 ± 0.10 µg/kg	Aflatoxin G1 ..... 5.2 ± 0.8 µg/kg

New	ERM-BE375	Compound feedingstuff - Aflatoxins (very low level)	2 x 75 g

ERM-BE376 is a compound feeding stuff mixed from contaminated copra, wheat, barley, soya, maize and a mineral / vitamin premix.

Certified values

Aflatoxin B1..... 2.6 ± 0.4 µg/kg	Aflatoxin G1..... 0.4 ± 0.1 µg/kg
Aflatoxin B2.... 0.20 ± 0.04 µg/kg	Aflatoxin G2..... < 0.2 µg/kg

BCR-115	Animal feed - Pesticides	30 g

Compound	Certified value mg/kg	Uncertainty mg/kg
HCB	0.0194	0.0014
beta-HCH	0.023	0.003
gamma-HCH	0.0218	0.0020
Heptachlor	0.019	0.0015
gamma-Chlordane	0.048	0.005
Dieldrin	0.018	0.003
alpha-Endosulfan	0.046	0.004
Endrin	0.046	0.006
2,4'-DDT	0.046	0.005
4,4'-DDE	0.047	0.004

BCR-375	Compound feed - Aflatoxin B1 (blank)	50 g

Certified value

Aflatoxin B1..... <1 µg/kg

BCR-708	Synthetic dairy feed - Proximates and elements	40 g

Property	Certified value	Uncertainty
Crude protein	240 g/kg	12 g/kg
Crude oils and fats	65 g/kg	8 g/kg
Crude fibre	93 g/kg	14 g/kg
Crude ash	50 g/kg	3 g/kg
Ca	4.8 g/kg	0.5 g/kg
Cu	37 mg/kg	4 mg/kg
Mg	1.47 g/kg	0.22 g/kg
P	4.7 g/kg	0.4 g/kg

BCR-709	Synthetic feed for growing pigs feed - Proximates and elements	40 g

Property	Certified value	Uncertainty
Crude protein	199 g/kg	5 g/kg
Crude oils and fats	51 g/kg	14 g/kg
Crude fibre	56 g/kg	12 g/kg
Crude ash	42 g/kg	4 g/kg
Ca	1.05 g/kg	0.16 g/kg
Cu	173 mg/kg	25 mg/kg
Mg	1.89 g/kg	0.30 g/kg
P	5.4 g/kg	0.7 g/kg

Code	Product	Unit
IRMM-311	Genomic DNA of *Bacillus licheniformis* DSM 5749 in agarose inserts for Pulsed Field Gel Electrophoresis (PFGE)	vial

The intended use of this material is the taxonomic identification of the authorised probiotic feed additive *Bacillus licheniformis* DSM 5749 by pulsed field gel electrophoresis (PFGE). The material is supplied in a vial containing one agarose insert of undigested genomic DNA of *Bacillus licheniformis* DSM 5749. Certified values and uncertainties are provided for SfiI digested DNA fragments in the size interval 50 kb - 90 kb and requires the use of a specified analytical procedure.

SfiI digested DNA fragments in the size interval 50 kb – 90 kb	Band no	Fragment length Certified value [kb]	Uncertainty [kb]
	1	89.6	4.7
	2	80.9	2.5
	3	75.3	2.7
	4	72.2	3.5
	5	66.9	1.9
	6	64.6	2.9
	7	60.3	1.3
	8	56.5	1.3
	9	53.9	1.3
	10	50.6	1.3

	IRMM-312	Genomic DNA of *Bacillus subtilis* DSM 5750 in agarose inserts for Pulsed Field Gel Electrophoresis (PFGE)	vial

The intended use of this material is the taxonomic identification of the authorised probiotic feed additive *Bacillus subtilis* DSM 5750 by pulsed field gel electrophoresis (PFGE). The material is supplied in a vial containing one agarose insert of undigested genomic DNA of *Bacillus subtilis* DSM 5750. Certified values and uncertainties are provided for SfiI digested DNA fragments in the size interval 15 kb - 97 kb and requires the use of a specified analytical procedure.

SfiI digested DNA fragments in the size interval 15 kb – 97 kb	Band no	Fragment length Certified value [kb]	Uncertainty [kb]
	1	89.2	0.9
	2	81.4	0.8
	3	77.7	0.6
	4	62.5	1.8
	5	59.5	2.1
	6	44.0	2.4
	7	29.2	2.0
	8	23.6	1.3
	9	18.6	1.3

New	BDS-BRM-01	Feedingstuff - DR CALUX® TEQ (Low)	100 g

DR CALUX® TEQ

Expected value[A] (n=16)

DR CALUX® TEQ per gram product ..... 0.68 pg

HRGC/MS PCDD/PCDF TEQ[C] (n=1)

PCDD/PCDF TEQ per gram product..... 0.12 pg

HRGC/MS PCB TEQ[C] (n=1)

PCB TEQ per gram product ..... 0.25 pg

HRGC/MS PCDD/PCDF/PCB TEQ[C] (n=1)

PCDD/PCDF/PCB TEQ per gram ..... 0.37 pg

[A] The average value is based in the robust mean as described in ISO 57328.
[B] Uncertainty is based on the robust standard deviation as described in ISO 57328.
[C] Based on quantified congeners and WHO-TEF's

New	BDS-BRM-02	Feedingstuff - DR CALUX® TEQ (Middle)	100 g

DR CALUX® TEQ

Expected value[A] (n=16)

DR CALUX® TEQ per gram product ..... 0.90 pg

HRGC/MS PCDD/PCDF TEQ[C] (n=1)

PCDD/PCDF TEQ per gram product..... 0.31 pg

HRGC/MS PCB TEQ[C] (n=1)

PCB TEQ per gram product ..... 0.43 pg

HRGC/MS PCDD/PCDF/PCB TEQ[C] (n=1)

PCDD/PCDF/PCB TEQ per gram ..... 0.74 pg

[A] The average value is based in the robust mean as described in ISO 57328.
[B] Uncertainty is based on the robust standard deviation as described in ISO 57328.
[C] Based on quantified congeners and WHO-TEF's

	Code	Product	Unit
New	BDS-BRM-03	Feedingstuff - DR CALUX® TEQ (High) **DR CALUX® TEQ** Expected value[A] (n=16) DR CALUX® TEQ per gram product.....1.4 pg ***HRGC/MS PCDD/PCDF TEQ[C] (n=1)*** PCDD/PCDF TEQ per gram product.....0.71 pg ***HRGC/MS PCB TEQ[C] (n=1)*** PCB TEQ per gram product .....0.83 pg ***HRGC/MS PCDD/PCDF/PCB TEQ[C] (n=1)*** PCDD/PCDF/PCB TEQ per gram .....1.5 pg [A] The average value is based in the robust mean as described in ISO 57328. [B] Uncertainty is based on the robust standard deviation as described in ISO 57328. [C] Based on quantified congeners and WHO-TEF's	100 g
New	BDS-BRM-01-03	Feedingstuff - DR CALUX® (Kit) Each kit consists of one unit of BDS-BRM-01.....Feedingstuff - CALUX® TEQ (Low) BDS-BRM-02.....Feedingstuff - CALUX® TEQ (Middle) BDS-BRM-03.....Feedingstuff - CALUX® TEQ (High)	kit

Purified genomic DNA (gDNA)

The stable genomic DNA (gDNA) standards (IRMM-447, 448, 449) have been developed for the verification and detection of food-borne pathogens by diagnostic polymerase chain reaction (PCR) within the European FOOD-PCR project. These standards support harmonisation and validation of different PCR methods by their use as taxonomic controls in PCR reactions.

	Code	Product	Unit
	IRMM-447	Genomic DNA of *Listeria monocytogenes* Freeze dried genomic DNA Certified identity: genomic DNA *Listeria monocytogenes* (strain 4B, NCTC 11994) Indicative value for the mass of genomic DNA per vial Dry ice shipment required	vial
	IRMM-448	Genomic DNA *Campylobacter jejuni* (NCTC 11351) Indicative value Mass of genomic DNA per vial .....71 ng Dry ice shipment required	vial
New	IRMM-449	Genomic DNA of *Escherichia coli* Freeze dried genomic DNA Certified identity: genomic DNA *Escherichia coli* O157, strain EDL 933 Indicative value for the mass of genomic DNA per vial Dry ice shipment required	vial
	IRMM-311	Genomic DNA of *Bacillus licheniformis* DSM 5749 in agarose inserts for Pulsed Field Gel Electrophoresis (PFGE) The intended use of this material is the taxonomic identification of the authorised probiotic feed additive *Bacillus licheniformis* DSM 5749 by pulsed field gel electrophoresis (PFGE). The material is supplied in a vial containing one agarose insert of undigested genomic DNA of *Bacillus licheniformis* DSM 5749. Certified values and uncertainties are provided for SfiI digested DNA fragments in the size interval 50 kb - 90 kb and requires the use of a specified analytical procedure.	vial

SfiI digested DNA fragments in the size interval 50 kb – 90 kb	Band no	Fragment length Certified value [kb]	Uncertainty [kb]
	1	89.6	4.7
	2	80.9	2.5
	3	75.3	2.7
	4	72.2	3.5
	5	66.9	1.9
	6	64.6	2.9
	7	60.3	1.3
	8	56.5	1.3
	9	53.9	1.3
	10	50.6	1.3

Code	Product	Unit
IRMM-312	Genomic DNA of *Bacillus subtilis* DSM 5750 in agarose inserts for Pulsed Field Gel Electrophoresis (PFGE)	vial

The intended use of this material is the taxonomic identification of the authorised probiotic feed additive *Bacillus subtilis* DSM 5750 by pulsed field gel electrophoresis (PFGE). The material is supplied in a vial containing one agarose insert of undigested genomic DNA of *Bacillus subtilis* DSM 5750. Certified values and uncertainties are provided for SfiI digested DNA fragments in the size interval 15 kb - 97 kb and requires the use of a specified analytical procedure.

SfiI digested DNA fragments in the size interval 15 kb – 97 kb	Band no	Fragment length Certified value [kb]	Uncertainty [kb]
	1	89.2	0.9
	2	81.4	0.8
	3	77.7	0.6
	4	62.5	1.8
	5	59.5	2.1
	6	44.0	2.4
	7	29.2	2.0
	8	23.6	1.3
	9	18.6	1.3

Certified materials for microbiological properties

	Code	Product	Unit
New	BCR-506	*Enterococcus faecium* (WR63) in milk powder	10 caps.

BCR-506 consists of 0.26 g milk powder (with a tolerance interval of ± 5 % m/m), artificially contaminated with *Enterococcus faecium* (WR63), contained in a gelatin capsule. The entire capsule should be reconstituted according to the instruction for use.

Colony forming particles of *Enterococcus faecium* (WR63) according to the procedure	Number of colony forming particles (cfp) Certified value [cfp/capsule]	Uncertainty interval [cfp/capsule]
ISO 7899/2, 1984 KFA	76	71 - 81
ISO 7899/2, 1984 m-EA	72	63 - 82
ISO 6222, 1988 YA	109	102 - 117

Dry ice shipment required

New	BCR-527	*Enterobacter cloacae* (WR3) in milk powder	10 caps.

BCR-527 consists of 0.308 g milk powder, artificially contaminated with *Enterobacter cloacae* (WR3), contained in a gelatine capsule.

Colony forming particles of *Enterobacter cloacae* (WR3) according to the procedure	Number of colony forming particles (cfp) Certified value [cfp/capsule]	Uncertainty interval [cfp/capsule]
ISO 9308-1, 1990 LSA	34	29 - 40

Dry ice shipment required

New	BCR-528	*Bacillus cereus* in milk powder	10 caps.

BCR-528 consists of 0.317 g artificially contaminated with spray dried milk contained in an ochre/white gelatine capsule. The strain used for the contamination is *Bacillus cereus* (ATCC 9139).

Colony forming particles of *Bacillus cereus* according to the procedure	Number of colony forming particles (cfp) Certified value [cfp/capsule]	Uncertainty interval [cfp/capsule]
MEYP (ISO 7932) after 24 h incubation	53.4	51.7 – 55.2
MEYP (ISO 7932) after 48 h incubation	53.7	52.1 – 55.4
PEMBA (L 00.00 - 25) after 24 h incubation	55.0	52.8 – 57.4
PEMBA (L 00.00 - 25) after 48 h incubation	55.8	53.6 – 58.0

Indicative value for colony forming particles of *Bacillus cereus* according to the procedure SBA (Analysis no 67) after 24 h incubation

Dry ice shipment required

New	BCR-594	Escherichia coli in milk powder	10 caps.

BCR-594 consists of 0.28 g milk powder (with a mass tolerance of ± 5 %), artificially contaminated with *Escherichia coli* (WR1), contained in a gelatine capsule.

Number of colony forming particles (z) of *Escherichia coli* (WR1) in 1 mL of suspension of reconstituted artificially contaminated milk powder.

Colony forming particles of *Escherichia coli* according to the procedure	Certified value	Uncertainty Relevant below the certified value	Relevant above the certified value
ISO 9308-1, 1990 T7A 30/37	56	8	10
ISO 9308-1, 1990 T7A 30/44	49	8	10
ISO 9380-1, 1990 LSA 30/37	40	7	8
ISO 9308-1, 1990 LSA 30/44	36	7	8

Dry ice shipment required

	Code	Product	Unit
New	BCR-595	*Listeria monocytogenes* in milk powder	10 caps.

BCR-595 consists of 0.34 g artificially contaminated spray dried milk contained in an orange/white gelatine capsule. The strain used for the contamination is *Listeria monocytogenes* (Scott A strain).

Colony forming particles of *Listeria monocytogenes* according to the procedure	Number of colony forming particles (cfp) Certified value [cfp/capsule]	Uncertainty interval [cfp/capsule]
Enumeration procedure	7.2	6.8 – 7.6

Fraction of negative capsules of *Listeria monocytogenes* according to the procedure	Fraction of negative capsules Certified value [%]	Uncertainty interval [%]
Enumeration procedure	0.075	0.05 – 0.112
Presence/absence procedure according to IDF standard 143	1.2	0 - 2.3

Dry ice shipment required

New	IRMM-351	*Escherichia coli* 0157 in material spheres (Bioball® format)	vial

Each vial contains one material sphere of *Escherichia coli* O157 (NCTC 12900).

Certified values

cfu per material sphere on nutrient agar ..... 4 ± 2 cfu
cfu per material sphere on enterohemolysin agar ..... 5 ± 2 cfu

Recommendation: For application in presence/absence tests, analyse at least two vials of the CRM.

Dry ice shipment required

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New	IRMM-352	*Salmonella enteritidis* in material spheres (Bioball® format)	vial

Each vial contains one material sphere of *Salmonella enteritidis* (NCTC 12694).

Certified values

cfu per material sphere on nutrient agar ..... 5 ± 2 cfu
cfu per material sphere on xylose lysine deoxycholate agar ..... 5 ± 2 cfu

Recommendation: For application in presence/absence tests, analyse at least two vials of the CRM.

Dry ice shipment required

BioBall® - Trademark of BIOMERIEUX INDUSTRY

New	IRMM-354	*Candida albicans* (NCPF 3179) in material pheres (Bioball® format)	vial

Each vial contains one material sphere of *Candida albicans* (NCPF 3179).

IRMM-354 is intended to be used for the measurement of *Candida albicans* by colony counting on nutrient agar or OGYE agar according to ISO 7218 and ISO 13681 respectively.

	Number of colony forming units (cfu) Certified value [cfu]	Uncertainty [cfu]
cfu per material sphere on[1)] nutrient agar (NA)	917	168
cfu per material sphere on Oxytetracyclin-Glucose-YeastExtract agar (OGYE)[2)]	912	173

1) as defined by the procedure according to ISO 7218 [1]
2) as defined by the procedure according to ISO 13681 [2]

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New	IRMM-355	*Enterococcus faecalis* in material spheres (Bioball® format)	vial

Each vial contains one material sphere of *Enterococcus faecalis* (CIP 106877).

This CRM is intended to be used for the measurement of *Enterococcus faecalis* by colony counting on horse blood agar or Slanetz and Bartley agar according to ISO 7218 [1] and ISO 7899-2 [2] respectively.

	Number of colony forming units (cfu) Certified value [cfu]	Uncertainty [cfu]
cfu per material sphere on horse blood agar[1)]	917	168
cfu per material sphere on Slanetz and Bartley agar[2)]	912	173

1) as defined by the procedure according to ISO 7218 [1]
2) as defined by the procedure according to ISO 13681 [2]

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DR CALUX® TEQ reference materials

BioDetection Systems - DR CALUX® is a cell based screening technology which can be used as an alternative to instrumental chemical analysis, as described by the European Commission Directive EC/1883/2006 and EC/152/2009 ('screening methods should be used') . Instead of separating and measuring each individual dioxin and dioxin-like PCB, the DR CALUX® works by mimicking the toxic effect of dioxins/PCBs. A receptor cell which is highly specific to those dioxins/PCBs that exhibit toxicity is used in the test And the DR CALUX® gives a luminescent signal which is a direct measure of the total TEQ value.

This DR CALUX® does not require extensive sample preparation or sophisticated instrumentation and is faster and significantly cheaper to use than conventional HRGC/HRMS. This system offers an attractive alternative screening method to give a result which can be readily checked against the EU regulated limits. By such a screening strategy, compliant samples (25% below the EU limits for food/feed) can be easily selected for no further instrumental analysis.CALUX (Chemical Activated Luciferase gene eXpression)

	Code	Product	Unit
New	BDS-BRM-01	Feedingstuff - DR CALUX® TEQ (Low) **DR CALUX® TEQ** Expected value[A] (n=16) DR CALUX® TEQ per gram product..... 0.68 pg ***HRGC/MS PCDD/PCDF TEQ[C] (n=1)*** PCDD/PCDF TEQ per gram product..... 0.12 pg ***HRGC/MS PCB TEQ[C] (n=1)*** PCB TEQ per gram product ..... 0.25 pg ***HRGC/MS PCDD/PCDF/PCB TEQ[C] (n=1)*** PCDD/PCDF/PCB TEQ per gram ..... 0.37 pg [A] The average value is based in the robust mean as described in ISO 57328. [B] Uncertainty is based on the robust standard deviation as described in ISO 57328. [C] Based on quantified congeners and WHO-TEF's	100 g
New	BDS-BRM-02	Feedingstuff - DR CALUX® TEQ (Middle) **DR CALUX® TEQ** Expected value[A] (n=16) DR CALUX® TEQ per gram product..... 0.90 pg ***HRGC/MS PCDD/PCDF TEQ[C] (n=1)*** PCDD/PCDF TEQ per gram product..... 0.31 pg ***HRGC/MS PCB TEQ[C] (n=1)*** PCB TEQ per gram product ..... 0.43 pg ***HRGC/MS PCDD/PCDF/PCB TEQ[C] (n=1)*** PCDD/PCDF/PCB TEQ per gram ..... 0.74 pg [A] The average value is based in the robust mean as described in ISO 57328. [B] Uncertainty is based on the robust standard deviation as described in ISO 57328. [C] Based on quantified congeners and WHO-TEF's	100 g
New	BDS-BRM-03	Feedingstuff - DR CALUX® TEQ (High) **DR CALUX® TEQ** Expected value[A] (n=16) DR CALUX® TEQ per gram product..... 1.4 pg ***HRGC/MS PCDD/PCDF TEQ[C] (n=1)*** PCDD/PCDF TEQ per gram product..... 0.71 pg ***HRGC/MS PCB TEQ[C] (n=1)*** PCB TEQ per gram product ..... 0.83 pg ***HRGC/MS PCDD/PCDF/PCB TEQ[C] (n=1)*** PCDD/PCDF/PCB TEQ per gram ..... 1.5 pg [A] The average value is based in the robust mean as described in ISO 57328. [B] Uncertainty is based on the robust standard deviation as described in ISO 57328. [C] Based on quantified congeners and WHO-TEF's	100 g
New	BDS-BRM-01-03	Feedingstuff - DR CALUX® (Kit) Each kit consists of one unit of BDS-BRM-01 .....Feedingstuff - CALUX® TEQ (Low) BDS-BRM-02 .....Feedingstuff - CALUX® TEQ (Middle) BDS-BRM-03 .....Feedingstuff - CALUX® TEQ (High)	kit

	Code	Product	Unit
New	BDS-BRM-04	Fishoil - DR CALUX® TEQ (Low) **DR CALUX® TEQ** Expected value[A] (n=16) DR CALUX® TEQ per gram product.....3.7 pg ***HRGC/MS PCDD/PCDF TEQ[C] (n=1)*** PCDD/PCDF TEQ per gram product.....0.35 pg ***HRGC/MS PCB TEQ[C] (n=1)*** PCB TEQ per gram product .....1.85 pg ***HRGC/MS PCDD/PCDF/PCB TEQ[C] (n=1)*** PCDD/PCDF/PCB TEQ per gram .....2.2 pg [A] The average value is based in the robust mean as described in ISO 57328. [B] Uncertainty is based on the robust standard deviation as described in ISO 57328. [C] Based on quantified congeners and WHO-TEF's	20 mL
New	BDS-BRM-05	Fishoil - DR CALUX® TEQ (Middle) **DR CALUX® TEQ** Expected value[A] (n=16) DR CALUX® TEQ per gram product.....8.8 pg ***HRGC/MS PCDD/PCDF TEQ[C] (n=1)*** PCDD/PCDF TEQ per gram product.....0.68 pg ***HRGC/MS PCB TEQ[C] (n=1)*** PCB TEQ per gram product .....7.0 pg ***HRGC/MS PCDD/PCDF/PCB TEQ[C] (n=1)*** PCDD/PCDF/PCB TEQ per gram .....7.7 pg [A] The average value is based in the robust mean as described in ISO 57328. [B] Uncertainty is based on the robust standard deviation as described in ISO 57328. [C] Based on quantified congeners and WHO-TEF's	20 mL
New	BDS-BRM-06	Fishoil - DR CALUX® TEQ (High) **DR CALUX® TEQ** Expected value[A] (n=16) DR CALUX® TEQ per gram product.....16 pg ***HRGC/MS PCDD/PCDF TEQ[C] (n=1)*** PCDD/PCDF TEQ per gram product.....6.2 pg ***HRGC/MS PCB TEQ[C] (n=1)*** PCB TEQ per gram product .....8.6 pg ***HRGC/MS PCDD/PCDF/PCB TEQ[C] (n=1)*** PCDD/PCDF/PCB TEQ per gram .....14.8 pg [A] The average value is based in the robust mean as described in ISO 57328. [B] Uncertainty is based on the robust standard deviation as described in ISO 57328. [C] Based on quantified congeners and WHO-TEF's	20 mL
New	BDS-BRM-04-06	Fishoil - DR CALUX® TEQ (Kit) Each kit consists of one unit of BDS-BRM-04.....Fishoil - CALUX® TEQ (Low) BDS-BRM-05.....Fishoil - CALUX® TEQ (Middle) BDS-BRM-06.....Fishoil - CALUX® TEQ (High)	kit

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The use of reference materials and standards is an essential part of all production stages in the metals industry; from the acceptance of raw materials, through the production process, and finally verifying the end product.

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Excellence through measurement

The use of reference materials

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- Measurement uncertainties
- Certification procedures used by the producer
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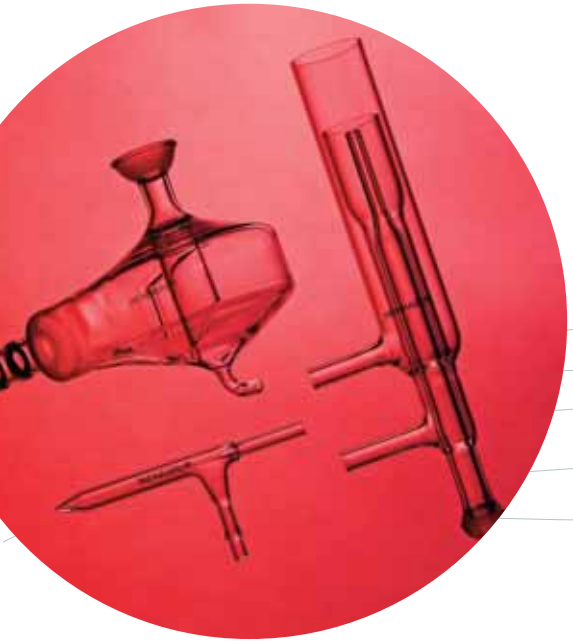
Representative Detection Limits (µG/L)			
Nebulizer type	**Ref. (1)**	**Meinhard Standard**	**High Efficiency Nebulizer**
Solution Flow Rate (µL/min)	1900	200	200
Cu	5.4	3	3
NI	15	5	5
Pb	42	20	20
As	53	30	30
Be	0.3	0.2	0.2

(1)R.K. Winge, V.A. Fassel, V.J. Peterson, and M.A. Floyd, "Inductively Coupled Plasma – Atomic Emission Spectroscopy, An Atlas of Spectral Information", Elsevier, New York (1985)



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Industrial reference materials

Fertilizers

Code	Product	Unit
BCR-032	Moroccan phosphate rock - Trace elements	100 g

Certified values

Ca expressed as CaO	518 g/kg	Total S expressed as SiO_3	18.4 g/kg
Total P expressed as P_2O_5	329.8 g/kg	Al expressed as Al_2O_3	5.5 g/kg
Carbonate Carbon expressed as CO_2	51.0 g/kg	Mg espressed as MgO	4.0 g/kg
F	40.4 g/kg	Fe espresse as Fe_2O_3	2.3 g/kg
Si expressed as SiO_2	20.9 g/kg		

Indicative values/Certified values

As	9.5 mg/kg	Cr	257 mg/kg	Ni	34.6 mg/kg
B	22.6 mg/kg	Cu	33.7 mg/kg	Ti	171 mg/kg
Cd	20.8 mg/kg	Hg	55 mg/kg	V	153 mg/kg
Co	0.59 mg/kg	Mn	18.8 mg/kg	Zn	253 mg/kg

BCR-033	Super-phosphate - Constituents	100 g

Certified values

P_2O_5	193.4 g/kg	SiO_2	29.2 g/kg	Fe_2O_3	4.0 g/kg
SO_4	428.0 g/kg	F	16.5 g/kg	MgO	2.1 g/kg
CaO	314.8 g/kg	Al_2O_3	11.0 g/kg		

BCR-113	Potassium chloride - Elemental composition	100 g

Certified values

Ca	1.03 g/kg	K	502.5 g/kg	Na	15.3 g/kg
Cl	478.0 g/kg	Mg	0.24 g/kg		

Water soluble

K	501.3 g/kg

BCR-114	Potassium sulphate - Elemental composition	100 g

Certified values

Ca	9.4 g/kg	K	418.0 g/kg	SO_4	533 g/kg
Cl	18.5 g/kg	Na	11.0 g/kg		

Water soluble

K	17.6g/kg

BCR-178	Calcium ammonium nitrate - Elemental composition	100 g

Certified values

Ca	88.82 g/kg	NO_3.N	130.15 g/kg
NH_4.N	130.44 g/kg	Total-N	260.19 g/kg

BCR-179	Urea - Composition	100 g

Certified values

Total-N	465.4 g/kg	Uric-N	460.9 g/kg	Biuret	10.37 g/kg

NIST-695	Multi-nutrient fertiliser - Elements	70 g

Intended primarily for use in the evaluation of techniques employed in the analysis of multi-nutrient fertiliser materials and materials of a similar matrix. One unit of NIST-695 consists of approximately 70 g of jet-milled fertiliser.

Certified values

Major and minor constituent elements

Ca	2.26 ± 0.04 %	Mg	1.79 ± 0.05 %	Zn	0.325 ± 0.005 %
Fe	3.99 ± 0.08 %	Mn	0.305 ± 0.005 %		
K	11.65 ± 0.13 %	Na	0.405 ± 0.007 %		

Trace elements

As	200 ± 5 mg/kg	Cu	1225 ± 9 mg/kg	Pb	273 ± 17 mg/kg
Ca	16.9 ± 0.2 mg/kg	Hg	1.955 ± 0.036 mg/kg	V	122 ± 3 mg/kg
Co	65.3 ± 2.4 mg/kg	Mo	20.0 ± 0.3 mg/kg		
Cr	244 ± 6 mg/kg	Ni	135 ± 2 mg/kg		

Indicative values for further selected elements

NIST-120c	Phosphate rock, Florida - Constitutents	90 g

Certified values

Al_2O_3	1.30 %	MnO	0.027 %	U_3O_8	0.0135 %
Fe_2O_3	1.08 %	Na_2O	0.52 %	V_2O_3	0.016 %
K_2O	0.147 %	TiO_2	0.103 %		

Values for the AFPC-method-Dependent concentrations also available

Code	Product	Unit
NIST-694	Phosphate rock, western - Constituents	90 g

Certified values

Al_2O_3 1.8 %	K_2O 0.51 %	SiO_2 11.2 %
CaO 43.6 %	MgO 0.33 %	U 0.01414 %
CdO 0.015 %	MnO 0.0116 %	V_2O_5 0.031 %
F 3.2 %	Na_2O 0.086 %	
Fe_2O_3 0.79 %	P_2O_5 30.2 %	

Indicative values for, Cr_2O_3 , ZnO, TiO_2

NIST-193	Potassium nitrate - Nitrogen and potassium	90 g

Certified values

K 38.66 % N 13.85 %

New NIST-200B	Potassium dihydrogen phosphate - Phosphorous and potassium	90 g

This Standard Reference Material® (SRM®) is a highly purified and homogeneous lot of crystalline potassium dihydrogen phosphate (KH_2PO_4). It is intended primarily for use as a working standard in the calibration and standardization of procedures employed in the fertilizer industry for the determination of potassium and phosphorus. A unit of NIST-200B consists of one bottle containing 90 g of crystalline potassium dihydrogen phosphate.

Certified values

Phosphorus 22.769 % ±0.010 % Potassium 28.735 % ± 0.018 %

Indicative values for selected elements

New NIM-GBW06502	Ammonium dihydrogen phosphate - Nitrogen and phosphorous	30 g

Certified values

P 26.85 % N 12.08 %

Indicative values for Ca, Fe, Mg

New NIM-GBW06503	Potassium sulphate - Potassium	40 g

Certified values

K 44.79 %

Indicative values for Ca, Fe, Mg, Mn

New NIM-GBW06501	Urea - Nitrogen	35 g

Certified values

Biuret 1.38% N 46.30%

Indicative values for B, Ca, Fe, Mn

Rocks, ceramic materials and minerals

Code	Product	Unit
NIST-1d	Limestone, Argillaceous - Constituents	70 g

Certified values

Na_2O 0.0109 %	P_2O_5 0.0413 %	Mn 0.0209 %
MgO 0.301 %	S 0.1028 %	Fe_2O_3 0.3191 %
Al_2O_3 0.526 %	K_2O 0.1358 %	ZnO 0.0022 %
SiO_2 4.080 %	CaO 52.85 %	SrO 0.0303 %

NIST-88b	Limestone, Dolomite - Constituents	75 g

Collected near Skokie, Illinois, USA

Certified values

Al_2O_3 0.336 %	K_2O 0.1030 %	P_2O_5 0.0044 %
CaO 29.95 %	MgO 21.03 %	SiO_2 1.13 %
CO_2 46.37 %	MnO 0.0160 %	SrO 0.0076 %
Fe_2O_3 0.277 %	Na_2O 0.0290 %	

Indicative values for TiO_2, L.O.I.*

* Loss On Ignition

NCS DC60107A	Limestone - Constituents	50 g

Certified values

Al_2O_3 0.22 %	MgO 0.81 %	SO_3 0.018 %
CaO 54.03 %	MnO 0.0067 %	TiO_2 0.010 %
Cl 0.0028 %	Na_2O 0.017 %	L.O.I.* 43.12 %
Fe_2O_3 0.11 %	P_2O_5 0.0081 %	
K_2O 0.84 %	SiO_2 1.09 %	

Indicative value for CO_2, free SiO_2

* Loss On Ignition

Code	Product	Unit

NCS DC60108A — Limestone - Constituents — 50 g

Certified values

Al_2O_3	0.33 %	MgO	2.25 %	SO_3	0.016 %
CaO	51.61 %	MnO	0.0089 %	TiO_2	0.015 %
Cl	0.0066 %	Na_2O	0.070 %	L.O.I.*	42.84 %
Fe_2O_3	0.17 %	P_2O_5	0.017 %		
K_2O	0.17 %	SiO_2	2.09 %		

Indicative value for free SiO_2, CO_2

* Loss On Ignition

NCS DC14014A — Limestone - Constituents — 50 g

Certified values

Al_2O_3	0.093 %	MgO	0.29 %	SiO_2	0.22 %
CaO	55.34 %	MnO	0.005 %	L.O.I.*	43.61 %
Fe_2O_3	0.085 %	P	0.0011 %		
K_2O	0.020 %	S	0.043 %		

Indicative value for Na_2O

* Loss On Ignition

New **ECRM-B 752-1** — Limestone - powder — 100 g

Year of issue: 1984

Certified values

SiO_2	0.70 %	Fe_2O_3	0.045 %	S	0.007 %
CaO	55.4 %	K_2O	0.02 %	SrO	0.019 %
MgO	0.15 %	MnO	0.010 %	TiO_2	0.009 %
Al_2O_3	0.12 %	Na_2O	(0.02) %	L.O.I*	43.4 %
BaO	0.006 %	P_2O_5	(0.0055) %		

* Loss On Ignition

BAS-BCS-CRM 513 — Limestone 1 - Constituents — 100 g

Certified values

Al_2O_3	0.108 %	MgO	0.182 %	SrO	0.0176 %
CaO	55.59 %	MnO	0.0095 %	Zn	0.0014 %
Cr_2O_3	0.0012 %	Pb	0.0009 %	LOI*	43.61 %
Fe_2O_3	0.0275 %	S	0.0097 %		
K_2O	0.015 %	SiO_2	0.228 %		

*Loss On Ignition

ECRM-B 782-1 — Dolomite - powder — 100 g

Year of issue: 1996

Certified values

Si	0.124 ± 0.003 %*	B	(0.0012) %	P	0.0056 ± 0.0003 %*
SiO_2	0.266 ± 0.007 %*	Ba	(0.0007) %	P_2O_5	0.0128 ± 0.0007 %*
Ca	21.68 ± 0.05 %*	Fe	0.314 ± 0.005 %*	Pb	0.0027 ± 0.0002 %*
CaO	30.34 ± 0.07 %*	K	0.0216 ± 0.0013 %*	S	(0.0159) %
Mg	12.84 ± 0.09 %*	K_2O	0.0260 ± 0.0016 %*	Ti	0.0025 ± 0.0002 %*
MgO	21.29 ± 0.15 %*	Mn	0.063 ± 0.002 %*	TiO_2	0.0042 ± 0.0004 %*
Al	0.055 ± 0.003 %*	MnO	0.081 ± 0.003 %*	Zn	0.0066 ± 0.0003 %*
Al_2O_3	0.104 ± 0.006 %*	Ni	(0.0004) %	L.O.I.*	47.25 ± 0.12 %*

(Values in parenthesis are indicative values)

* 95%-confidence interval

* Loss On Ignition

NCS DC14021A — Dolomite - Constituents — 70 g

Certified values

Al_2O_3	0.024 %	MnO	0.020 %	SiO_2	0.049 %
CaO	35.02 %	Na_2O	0.013 %	L.O.I.*	46.32 %
Fe_2O_3	0.495 %	P	0.0012 %		
MgO	17.88 %	S	0.0093 %		

Indicative value for K_2O

* Loss On Ignition

NCS DC14019A — Dolomite - Constituents — 70 g

Certified values

Al_2O_3	0.017 %	MgO	20.37 %	S	0.018 %
CaO	32.11 %	MnO	0.032 %	SiO_2	0.021 %
Fe_2O_3	0.224 %	Na_2O	0.023 %	L.O.I.*	46.89 %
K_2O	0.0011 %	P	0.0010 %		

* Loss On Ignition

BAS-BCS-CRM 512 — Dolomite 1 - Constituents — 100 g

Certified values

Al_2O_3	0.055 %	MgO	21.59 %	SrO	0.024 %
CaO	30.61 %	MnO	0.03 %	TiO_2	0.002 %
Fe_2O_3	0.03 %	SiO_2	0.379 %	LOI*	46.8 %

*Loss On Ignition

Code	Product	Unit

ECRM-F 702-1 — Dolomite - powder — 100 g

Year of issue: 1971

Certified values

Si	1.04 ± 0.03 %	Al	0.21 ± 0.04 %	P	0.024 ± 0.003 %
Ca	21.48 ± 0.27 %	Fe	0.440 ± 0.025 %	S	0.027 ± 0.010 %
Mg	12.37 ± 0.33 %	Mn	0.098 ± 0.006 %	Ti	0.013 ± 0.005 %

ECRM-F 701-1 — Calcite - powder — 100 g

Year of issue: 1970

Certified values

Si	0.93 ± 0.03 %	Fe	0.73 ± 0.05 %	P	0.022 ± 0.004 %
Ca	37.66 ± 0.22 %	K	(0.090) %	Pb	(< 0.005) %
Mg	0.36 ± 0.04 %	Mn	0.022 ± 0.004 %	S	0.040 ± 0.010 %
Al	0.29 ± 0.04 %	Mo	(< 0.003) %	Ti	0.018 ± 0.003 %
C	(11.5) %	Na	(0.020) %	Zn	(< 0.005) %
Cr	(< 0.002) %	Ni	(0.003) %	L.O.I.*	42.4 ± 0.22 %

(Values in parenthesis are indicative values)

* Loss On Ignition

ECRM-F 778-1 — High carbon magnesia - powder — 100 g

Year of issue: 1986

Certified values

Si	0.489 ± 0.019 %	B_2O_3	0.0039 %	Ni	(0.007) %
SiO_2	1.046 %	C	14.00 ± 0.22 %	P	(0.004) %
Ca	0.883 ± 0.024 %	Cr	0.102 ± 0.004 %	Pb	(< 0.001) %
CaO	1.236 %	Cr_2O_3	0.149 %	TiO_2	(0.008) %
Mg	48.87 ± 0.27 %	Fe	0.67 ± 0.05 %	Zn	(< 0.002) %
MgO	81.03 %	K	(0.020) %	Zr	(< 0.002) %
Al	0.297 ± 0.008 %	Mn	0.011 ± 0.001 %	L.O.I.*	15.38 ± 0.14 %
Al_2O_3	0.561 %	MnO	0.014 %		
B	0.0012 ± 0.0001 %	Na	(0.023) %		

(Values in parenthesis are indicative values)

* Loss On Ignition

BAS-BCS-CRM 309 — Sillimanite — 100 g

Certified values

SiO_2	34.1 %	CaO	0.22 %	BaO	(0.006) %
Al_2O_3	61.1 %	MgO	0.17 %	Li_2O	(0.01) %
TiO_2	1.92 %	Na_2O	0.34 %	SrO	(0.003) %
Fe_2O_3	1.51 %	K_2O	0.46 %		
MnO	(0.03) %	L.O.I.	(0.1) %		

(Values in parenthesis are indicative values)

BAS-BCS-CRM 313/1 — High purity silica — 100 g

Certified values

SiO_2	99.78 %	CaO	0.006 %	L.O.I.	(0.1) %
Al_2O_3	0.036 %	MgO	0.0013 %	Cr_2O_3	(<0.0002) %
TiO_2	0.017 %	Na_2O	0.003 %	Li_2O	(0.0005) %
Fe_2O_3	0.012 %	K_2O	0.005 %		
MnO	0.00013 %	ZrO_2	(0.002) %		

(Values in parenthesis are indicative values)

BAS-BCS-CRM 358 — Zirconia — 100 g

Certified values

SiO_2	0.2 %	MgO	3.42 %	BaO	0.1 %
Al_2O_3	0.08 %	Na_2O	(<0.01) %	HfO_2	1.63 %
TiO_2	0.2 %	K_2O	(<0.01) %	SrO	0.07 %
Fe_2O_3	0.064 %	ZrO_2	92.7 %	ThO_2	(0.0007) %
CaO	1.5 %	L.O.I.	0.08 %	U_3O_8	(0.08) %

(Values in parenthesis are indicative values)

BAS-BCS-CRM 362 — Mine tailings sample — 100 g

Certified values

SiO_2	9.03 %	Na_2O	0.084 %	BaO	(2.02) %
Al_2O_3	0.667 %	K_2O	0.14 %	Cr_2O_3	(0.003) %
TiO_2	0.047 %	PbO	2.63 %	SrO	0.034 %
Fe_2O_3	0.483 %	ZnO	2.59 %	C	(9.9) %
Mn_3O_4	0.829 %	P_2O_5	(0.014) %	Cd	0.02 %
CaO	44.21 %	S	1.48 %	Ni	(0.001) %
MgO	0.068 %	L.O.I.	32.81 %		

(Values in parenthesis are indicative values)

Code	Product	Unit

BAS-BCS-CRM 369 — Magnesite-Chrome — 100 g

Certified values

SiO_2	2.59 %	CaO	1.17 %	Cr_2O_3	17.2 %
Al_2O_3	14.7 %	MgO	53.5 %	Li_2O	0.03 %
TiO_2	0.14 %	Na_2O	0.05 %	SrO	(<0.01) %
Fe_2O_3	10.3 %	K_2O	0.03 %	Ni	(0.15) %
MnO	0.11 %	BaO	(<0.01) %		

(Values in parenthesis are indicative values)

BAS-BCS-CRM 370 — Magnesite-Chrome — 100 g

Certified values

SiO_2	3.01 %	CaO	1.54 %	Cr_2O_3	13.4 %
Al_2O_3	12.3 %	MgO	61.8 %	Li_2O	0.03 %
TiO2	0.13 %	Na_2O	0.06 %	SrO	<0.01 %
Fe_2O_3	7.23 %	K_2O	0.03 %	Ni	0.08 %
MnO	0.11 %	BaO	<0,01 %		

BAS-BCS-CRM 376/1 — Feldspar 1 - Constituents — 100 g

Certified values

Al_2O_3	18.63%	Fe_2O_3	0.085%	SiO_2	65.77%
BaO	0.0210%	K_2O	11.59%	LOI*	0.203%
CaO	0.421%	PbO	0.0090%		

*Loss On Ignition

BAS-BCS-CRM 375/1 — Soda feldspar — 100 g

Certified values

SiO_2	69.26 %	K2O	1.47 %	Cr_2O_3	(0.0018) %
Al_2O_3	17.89 %	PbO	(0.0004) %	HfO_2	(0.0004) %
TiO_2	0.313 %	ZnO	(0.0005) %	SrO	(0.012) %
Fe_2O_3	0.291 %	P_2O_5	0.226 %	ThO_2	(0.0011) %
CaO	0.78 %	ZrO_2	(0.0107) %	U_3O_8	(0.0002) %
MgO	0.18 %	L.O.I.	0.72 %	Y_2O_3	(0.0023) %
Na_2O	8.89 %	BaO	(0.0106) %		

(Values in parenthesis are indicative values)

BAS-BCS-CRM 376/1 — Potash feldspar — 100 g

Certified values

SiO_2	65.77 %	CaO	0.421 %	P_2O_5	(0.02) %
Al_2O_3	18.63 %	MgO	(0.03) %	ZrO_2	(<0.01) %
TiO_2	(<0.01) %	Na_2O	3.00 %	L.O.I.	0.203 %
Fe_2O_3	0.085 %	K_2O	11.59 %	BaO	0.021 %
Mn_3O_4	(0.004) %	PbO	0.009 %	Cr_2O_3	0.001 %

(Values in parenthesis are indicative values)

BAS-BCS-CRM 388 — Zircon — 100 g

Certified values

SiO_2	32.7 %	MgO	(<0.05) %	L.O.I.	(0.2) %
Al_2O_3	0.291 %	Na_2O	(<0.02) %	HfO_2	1.3 %
TiO_2	0.232 %	K_2O	(<0.03) %	ThO_2	0.018 %
Fe_2O_3	0.049 %	P_2O_5	0.12 %	U_3O_8	0.034 %
CaO	(0.04) %	ZrO_2	64.9 %	Y_2O_3	0.136 %

(Values in parenthesis are indicative values)

NIST-70a — Potassium feldspar - Constituents — 40 g

Collected from the Kingman feldspar mine in Arizona, USA.

Certified values

Al_2O3	17.9 %	K_2O	11.8 %	TiO_2	0.01 %
BaO	0.02 %	Na_2O	2.55 %	L.O.I.*	0.40 %
CaO	0.11 %	Rb_2O	0.06 %		
Fe_2O_3	0.075 %	SiO_2	67.12 %		

* Loss On Ignition

NCS DC61102 — Potassium feldspar - Constituents — 50 g

Certified values

Al_2O_3	18.63 %	K_2O	9.6 %	SiO_2	66.26 %
CaO	0.76 %	MgO	0.054 %	TiO_2	0.048 %
Fe_2O_3	0.19 %	Na_2O	3.69 %	L.O.I.*	0.86 %

* Loss On Ignition

BAS-BCS-CRM 389/1 — High purity magnesia — 100 g

Certified values

SiO_2	0.274 %	MgO	97.89 %	Cr_2O_3	0.004 %
Al_2O_3	0.104 %	ZnO	(0.0029) %	SrO	0.0007 %
TiO_2	0.0051 %	P_2O_5	0.0295 %	Y_2O_3	0.0029 %
Fe_2O_3	0.607 %	ZrO_2	(0.0008) %	Ni	0.0012 %
MnO	0.1 %	B_2O_3	0.015 %		
CaO	0.88 %	BaO	0.0015 %		

(Values in parenthesis are indicative values)

Code	Product	Unit

BAS-BCS-CRM 396 — Low silica magnesite chrome — 100 g

Certified values

SiO_2 1.37 %	CaO 1.12 %	B_2O_3 0.09 %
Al_2O_3 5.73 %	MgO 64.6 %	Cr_2O_3 15.6 %
TiO_2 0.26 %	Na_2O (0.06) %	Li_2O (0.05) %
Fe_2O_3 10.9 %	K_2O (0.03) %	
MnO 0.17 %	L.O.I. (0.04) %	

(Values in parenthesis are indicative values)

ECRM-D 777-1 — Silica brick - powder — 100 g

Year of issue: 1983

Certified values

Si 44.44 ± 0.15 %	MgO 0.071 ± 0.012 %	K 0.13 ± 0.02 %
SiO_2 95.06 ± 0.32 %	Al 0.42 ± 0.02 %	K_2O 0.15 ± 0.02 %
Ca 2.02 ± 0.08 %	Al_2O_3 0.80 ± 0.04 %	Na 0.02 %
CaO 2.83 ± 0.10 %	Fe 0.23 ± 0.03 %	Ti 0.27 ± 0.02 %
Mg 0.043 ± 0.007 %	Fe_2O_3 0.33 ± 0.04 %	

ECRM-B 776-1 — Firebrick - powder — 100 g

Year of issue: 1983

Certified values

Si 29.34 ± 0.18 %	BaO 0.122 ± 0.011 %	Na 0.362 ± 0.015 %
SiO_2 62.76 ± 0.39 %	Cr 0.015 ± 0.002 %	Na_2O 0.488 ± 0.020 %
Ca 0.221 ± 0.013 %	Cr_2O_3 0.022 ± 0.003 %	P 0.027 ± 0.003 %
CaO 0.310 ± 0.018 %	Fe 0.999 ± 0.017 %	P_2O_5 0.062 ± 0.007 %
Mg 0.287 ± 0.010 %	Fe_2O_3 1.43 ± 0.02 %	Ti 0.969 ± 0.015 %
MgO 0.476 ± 0.016 %	K 2.42 ± 0.05 %	TiO_2 1.62 ± 0.03 %
Al 15.50 ± 0.12 %	K_2O 2.92 ± 0.07 %	Zr (0.030) %
Al_2O_3 29.28 ± 0.22 %	Li 0.009 ± 0.001 %	L.O.I.* (0.3) %
Ba 0.109 ± 0.010 %	Li_2O 0.019 ± 0.002 %	

(Values in parenthesis are indicative values)

* Loss On Ignition

ECRM-D 779-1 — Magnesite - powder — 100 g

Year of issue: 1991

Certified values

Si 0.182 ± 0.015 %	B 0.0116 ± 0.0012 %	Mn 0.503 ± 0.017 %
Ca 1.691 ± 0.023 %	Cr (0.0030) %	Na (0.0058) %
Mg (54.57) %	Fe 3.73 ± 0.06 %	P 0.0267 ± 0.0026 %
Al 0.105 ± 0.007 %	K (0.0020) %	Ti 0.0081 ± 0.0012 %

(Values in parenthesis are indicative values)

ECRM-B 781-1 — Silicon carbide refractory with 35.6% silicon and 48.3% carbon - powder — 100 g

Year of issue: 1993

Certified values

Si 35.56 ± 0.28 %	Cfrei (37.22) %	Na (0.0308) %
Ca (0.0433) %	Fe (0.806) %	Ni (0.0210) %
Mg (0.0421) %	K (0.3765) %	P (0.0117) %
Al 4.39 ± 0.04 %	Mn (0.0274) %	Ti (0.0320) %
B (0.0149) %	Mo (0.0264) %	V (0.0216) %
C 48.25 ± 0.11 %	N (0.0282) %	

(Values in parenthesis are indicative values)

ECRM-B 783-1 — Tungsten carbide - powder — 100 g

Year of issue: 2005

Certified values

C 6.188 ± 0.011+ %	Fe 0.0022 ± 0.0002+ %
C_{free} (0.042) %	O (0.016) %

(Values in parenthesis are indicative values)

NCS DC60112 — Gypsum - Constituents — 50 g

Certified values

Al_2O_3 0.34 %	H_2O^+ 0.39 %	SiO_2 1.68 %
CaO 39.24 %	K_2O 0.094 %	SO_3 51.91 %
Cl 0.033 %	MgO 1.74 %	TiO_2 0.016 %
Fe_2O_3 0.16 %	Na_2O 0.065 %	L.O.I.* 4.55 %

Indicative values for CO_2, SrO

* Loss On Ignition

NCS DC60113 — Gypsum - Constituents — 50 g

Certified values

Al_2O_3 1.92 %	H_2O^+ 14.27 %	SiO_2 7.27 %
CaO 28.50 %	K_2O 0.38 %	SO_3 32.55 %
Cl 0.019 %	MgO 4.92 %	TiO_2 0.10 %
Fe_2O_3 0.63 %	Na_2O 0.021 %	

Indicative values for CO_2, SrO, L.O.I.*

* Loss On Ignition

Code	Product	Unit
NCS DC60115	Gypsum - Constituents	50 g

Certified values

Al_2O_3 ..... 0.14 %	H_2O^+ ..... 17.95 %	SiO_2 ..... 0.63 %
CaO ..... 32.30 %	K_2O ..... 0.026 %	SO_3 ..... 40.72 %
Cl ..... 0.0032 %	MgO ..... 2.47 %	TiO_2 ..... 0.010 %
Fe_2O_3 ..... 0.11 %	Na_2O ..... 0.014 %	L.O.I.* ..... 23.60 %

Indicative values for CO_2, SrO

* Loss On Ignition

NCS DC14022	Fluorspar - Constituents	65 g

Certified values

CaF_2 ..... 94.91 %	Na_2O ..... 0.005 %	SiO_2 ..... 4.72 %
Fe_2O_3 ..... 0.096 %	P ..... 0.0025 %	
K_2O ..... 0.019 %	S ..... 0.029 %	

Indicative value for $CaCO_3$

NCS DC14023	Fluorspar - Constituents	65 g

Certified values

CaF_2 ..... 90.87 %	Na_2O ..... 0.005 %	SiO_2 ..... 8.35 %
Fe_2O_3 ..... 0.124 %	P ..... 0.0031 %	
K_2O ..... 0.026 %	S ..... 0.090 %	

Indicative value for $CaCO_3$

NCS DC14024	Fluorspar - Constituents	65 g

Certified values

CaF_2 ..... 92.57 %	Na_2O ..... 0.006 %	SiO_2 ..... 6.84 %
Fe_2O_3 ..... 0.124 %	P ..... 0.0024 %	
K_2O ..... 0.029 %	S ..... 0.043 %	

Indicative value for $CaCO_3$

NCS DC14025	Fluorspar - Constituents	65 g

Certified values

CaF_2 ..... 85.21 %	Na_2O ..... 0.005 %	SiO_2 ..... 14.15 %
Fe_2O_3 ..... 0.209 %	P ..... 0.0013 %	
K_2O ..... 0.044 %	S ..... 0.045 %	

Indicative value for $CaCO_3$

New NCS DC14026A	Fluorspar - Constituents	65 g

Certified values

$CaCO_3$ ..... 0.44 %	K_2O ..... 0.024 %	S ..... 0.011 %
CaF_2 ..... 98.55 %	Na_2O ..... 0.005 %	SiO_2 ..... 0.70 %
Total Fe ..... 0.44 %	P ..... 0.0075 %	

BAS-BCS-CRM 392	Fluorspar	100 g

Certified values

SiO_2 ..... 0.67 %	BaO ..... 0.37 %	Pb ..... 0,18 %
CaF_2 ..... 97.2 %	S ..... 0.12 %	
CaO ..... 0.52 %	CO_2 ..... 0.48 %	

NIST-79a	Fluorspar, customs grade - Calcium fluoride	120 g

Certified value

CaF_2 ..... 297.39 %

NIST-180	Fluorspar, high grade - Calcium fluoride	120 g

Certified value

CaF_2 ..... 98.80%

NCS DC60116	Siliceous sandstone - Constituents	60 g

Certified values

Al_2O_3 ..... 0.84 %	K_2O ..... 0.061 %	TiO_2 ..... 0.020 %
CaO ..... 0.077 %	MgO ..... 0.066 %	L.O.I.* ..... 0.24 %
Cr_2O_3 ..... 0.00034 %	Na_2O ..... 0.021 %	
Fe_2O_3 ..... 0.093 %	SiO_2 ..... 98.51 %	

Indicative values for MnO, P_2O_5

* Loss On Ignition

New NIM-GBW03113	Siliceous sandstone - Constituents	60 g

Certified values

Al_2O_3 ..... 2.36 %	K_2O ..... 0.67 %	TiO_2 ..... 0.036 %
CaO ..... 0.17 %	MgO ..... 0.098 %	L.O.I.* ..... 0.35 %
Cr_2O_3 ..... 0.00054 %	Na_2O ..... 0.25 %	
Fe_2O_3 ..... 0.21 %	SiO_2 ..... 95.74 %	

Indicative values for MnO, P_2O_5

* Loss On Ignition

Code	Product	Unit

NCS DC60118 — Siliceous sandstone - Constituents — 60 g

Certified values

Al_2O_3	5.48 %	K_2O	2.07 %	TiO_2	0.102 %
CaO	0.34 %	MgO	0.16 %	L.O.I.*	0.53 %
Cr_2O_3	0.0012 %	Na_2O	1.09 %		
Fe_2O_3	0.48 %	SiO_2	89.54 %		

Indicative values for MnO, P_2O_5

* Loss On Ignition

NCS DC60122 — Kaolin - Constituents — 50 g

Certified values

Al_2O_3	31.41 %	MgO	0.12 %	SO_3	0.53 %
CaO	0.052 %	MnO	0.0032 %	TiO_2	0.69 %
Fe_2O_3	0.50 %	Na_2O	0.015 %	L.O.I.*	11.94 %
H_2O^+	11.72 %	P_2O_5	0.099 %		
K_2O	0.34 %	SiO_2	54.55 %		

Indicative values for CO_2, FeO

* Loss On Ignition

NCS DC60123 — Kaolin - Constituents — 50 g

Certified values

Al_2O_3	38.62 %	MgO	0.068 %	SO_3	0.12 %
CaO	0.16 %	MnO	0.0054 %	TiO_2	0.39 %
Fe_2O_3	0.72 %	Na_2O	0.069 %	L.O.I.*	15.00 %
H_2O^+	14.77 %	P_2O_5	0.21 %		
K_2O	0.049 %	SiO_2	44.53 %		

* Loss On Ignition

NIST-278 — Obsidian rock - Constituents — 35 g

Collected from Clear Lake, Newberry Crater, Oregon, USA.

Certified values

Al_2O_3	14.15 %	MnO	0.052 %	SiO_2	73.05 %
CaO	0.983 %	Na_2O	4.84 %	Sr	63.5 mg/kg
Cu	5.9 mg/kg	Ni	3.6 mg/kg	Th	12.4 mg/kg
FeO	1.36 %	P_2O_5	0.036 %	TiO_2	0.245 %
Fe_2O_3	2.04 %	Pb	16.4 mg/kg	Tl	0.54 mg/kg
K_2O	4.16 %	Rb	127.5 mg/kg	U	4.58 mg/kg

Indicative values for B, Ba, C (total Carbon), CO_2, Ce, Co, Cr, Cs, Eu, F, Gd, Hf, Lu, MgO, Sb, Sc, Sm, Ta, Tb, Yb, Zn

NIST-688 — Basalt rock - Constituents — 60 g

Collected from a Cenozoic basalt flow near Jackpot, Nevada, USA.

Certified values

Al_2O_3	17.36 %	MnO	0.167 %	SiO_2	48.4 %
Cr	332 mg/kg	Na_2O	2.15 %	Sr	169.2 mg/kg
FeO	7.64 %	Pb	3.3 mg/kg	Th	0.33 mg/kg
Fe_2O_3	10.35 %	P_2O_5	0.134 %	TiO_2	1.17 %
K_2O	0.187 %	Rb	1.91 mg/kg		

Indicative values for Ba, CO_2, Ce, CaO, Co, Cu, Eu, F, Hf, Lu, MgO, Sm, Ni, Tb, Yb, V, Zn

NIST-120c — Phosphate rock, Florida - Constitutents — 90 g

Certified values

Al_2O_3	1.30 %	MnO	0.027 %	U_3O_8	0.0135 %
Fe_2O_3	1.08 %	Na_2O	0.52 %	V_2O_3	0.016 %
K_2O	0.147 %	TiO_2	0.103 %		

Values for the AFPC-method-Dependent concentrations also available

NIST-694 — Phosphate rock, western - Constituents — 90 g

Certified values

Al_2O_3	1.8 %	K_2O	0.51 %	SiO_2	11.2 %
CaO	43.6 %	MgO	0.33 %	U	0.01414 %
CdO	0.015 %	MnO	0.0116 %	V_2O_5	0.031 %
F	3.2 %	Na_2O	0.086 %		
Fe_2O_3	0.79 %	P_2O_5	30.2 %		

Indicative values for, Cr_2O_3 , ZnO, TiO_2

NIST-2780 — Hard rock mine waste - elements — 50 g

This Standard Reference Material (SRM®) is intended for use in the evaluation of methods and for the calibration of apparatus used to determine heavy metals and other elements in hard rock mine waste and materials of a similar matrix.

Certified values

Al	8.87 %	Mg	0.533 %	Zn	0.257 %
Ca	0.195 %	K	3.38 %	As	48.8 mg/kg
Fe	2.784 %	Na	0.221 %	Cd	12.10 mg/kg
Pb	0.577 %	S	1.263 %	Hg	0.710 mg/kg

Code	Product	Unit

NCS DC79001 — Phosphate rock - Constituents — 50 g

Certified values

Al_2O_3	0.58 %	I	0.0052 %	P_2O_5	36.89 %
CaO	51.32 %	K_2O	0.17 %	SiO_2	3.26 %
CO_2	2.15 %	MgO	0.43 %	SrO	0.077 %
F	3.54 %	MnO	0.024 %	TiO_2	0.037 %
Fe_2O_3	1.04 %	Na_2O	0.33 %		

NCS DC79002 — Phosphate rock - Constituents — 50 g

Certified values

Al_2O_3	2.58 %	I	0.0059 %	P_2O_5	20.89 %
CaO	40.72 %	K_2O	0.28 %	SiO_2	3.61 %
CO_2	18.46 %	MgO	8.19 %	SrO	0.16 %
F	2.05 %	MnO	0.015 %	TiO_2	0.14 %
Fe_2O_3	1.08 %	Na_2O	0.059 %	Total S	0.79 %

IC-CTA-AC-1 — Apatite concentrate — 50 g

Apatite concentrate originating from Kola Peninsula used as a raw material for the production of phosphoric acid.

Certified values

Ba	767 mg/kg	Lu	1.08 mg/kg	Th	21.8 mg/kg
Ca	32.7 wt. %	Mn	317 mg/kg	Ti	2927 mg/kg
Ce	3326 mg/kg	Na	3841 mg/kg	U	4.4 mg/kg
Co	2.72 mg/kg	Nd	1087 mg/kg	V	104 mg/kg
Cu	54.0 mg/kg	Sc	0.244 mg/kg	Y	272 mg/kg
Eu	.46.7 mg/kg	Si	0.57 wt. %	Yb	11.4 mg/kg
Gd	124 mg/kg	Sm	162 mg/kg	Zn	38.0 mg/kg
Hf	1.13 mg/kg	Ta	2.65 mg/kg		
La	2176 mg/kg	Tb	13.9 mg/kg		

Informational values for Al, Fe, Sr, Cr, Dy, Er, Ho, K, Mg, Ni, Pr and Zr.

NCS DC72302 — Ultrabasic rocks - Constituents — 150 g

Certified and indicative values for a wide range of constituent elements and oxides.

New NIM-GBW07127 — Carbonate rock - Constituents — 50 g

Certified values

Ag	0.020±0.010 µg/g	Rb	1.2±0.2 µg/g	Dy	0.12±0.02 µg/g
As	0.50±0.05 µg/g	Sc	0.40±0.16 µg/g	Ho	0.034±0.010 µg/g
Ba	9.7±0.9 µg/g	Sb	0.08±0.01 µg/g	Er	0.09±0.02 µg/g
Be	0.08±0.02 µg/g	Se	0.014±0.003 µg/g	Tm	0.018±0.006 µg/g
Bi	0.015±0.004 µg/g	Sr	227±12 µg/g	Yb	0.11±0.02 µg/g
Cd	0.10±0.03 µg/g	Ta	(0.06) µg/g	Lu	0.019±0.003 µg/g
Cl	34±15 µg/g	Te	0.008±0.003 µg/g	Y	1.2±0.2 µg/g
Co	0.45±0.08 µg/g	Th	0.25±0.07 µg/g	SiO^2	0.55±0.05 %
Cr	4.8±1.2 µg/g	Ti	66±6 µg/g	Al_2O_3	0.17±0.02 %
Cs	0.07±0.03 µg/g	Tl	0.022±0.016 µg/g	Fe_2O_3(T)	0.193±0.004 %
Cu	2.2±0.5 µg/g	U	0.59±0.07 µg/g	MgO	6.76±0.08 %
F	76±19 µg/g	V	4.8±1.1 µg/g	CaO	47.89±0.12 %
Ga	0.3±0.2 µg/g	W	0.17±0.05 µg/g	Na_2O	0.022±0.004 %
Ge	0.11±0.06 µg/g	Zn	8.1±2.0 µg/g	K_2O	0.043±0.002 %
Hf	1.4±0.4 µg/g	Zr	53.7±2.8 µg/g	TiO_2	0.011±0.001 %
Hg	0.004±0.001 µg/g	La	0.9±0.1 µg/g	MnO	0.009±0.001 %
Li	2.9±1.0 µg/g	Ce	1.4±0.2 µg/g	P_2O_5	0.008±0.001 %
Mn	70±4 µg/g	Pr	0.22±0.08 µg/g	SO_3	0.017±0.004 %
Mo	0.35±0.07 µg/g	Nd	0.66±0.08 µg/g	H_2O^+	0.37±0.16 %
Nb	0.3±0.1 µg/g	Sm	0.15±0.03 µg/g	FeO	0.15±0.01 %
Ni	5.8±1.0 µg/g	Eu	0.037±0.006 µg/g	CO_2	44.39±0.15 %
P	35±3 µg/g	Gd	0.13±0.03 µg/g	L.O.I.	43.92±0.20 %
Pb	2.9±1.0 µg/g	Tb	0.022±0.003 µg/g		

Indicative values for C(org),Br, B, I, In, Sn

Code	Product	Unit
NCS DC70302	Carbonate rock - Constituents	50 g

Certified values

Ag	0.021±0.016 µg/g	Rb	1.6±0.1 µg/g	Dy	0.15±0.02 µg/g
As	0.29±0.05 µg/g	Sc	0.5±0.2 µg/g	Ho	0.034±0.006 µg/g
Ba	11.6±0.9 µg/g	Sb	0.09±0.02 µg/g	Er	0.12±0.04 µg/g
Be	0.12±0.02 µg/g	Se	0.015±0.004 µg/g	Tm	0.020±0.007 µg/g
Bi	0.020±0.002 µg/g	Sr	191±10 µg/g	Yb	0.13±0.03 µg/g
Cd	0.09±0.02 µg/g	Ta	0.05±0.03 µg/g	Lu	0.022±0.004 µg/g
Cl	34±17 µg/g	Te	0.008±0.004 µg/g	Y	1.4±0.2 µg/g
Co	0.5±0.1 µg/g	Th	0.25±0.05 µg/g	SiO_2	0.72±0.04 %
Cr	5.6±1.9 µg/g	Ti	132±24 µg/g	Al_2O3	0.22±0.01 %
Cs	0.09±0.02 µg/g	Tl	0.023±0.009 µg/g	Fe_2O_3(T)	0.205±0.004 %
Cu	2.2±0.6 µg/g	U	0.39±0.05 µg/g	MgO	11.62±0.10 %
F	91±19 µg/g	V	5.0±0.8 µg/g	CaO	41.95±0.14 %
Ga	0.33±0.05 µg/g	W	0.18±0.04 µg/g	Na_2O	0.029±0.005 %
Ge	0.12±0.06 µg/g	Zn	9.5±2.3 µg/g	K_2O	0.052±0.004 %
Hf	2.1±0.4 µg/g	Zr	76.8±2.5 µg/g	TiO_2	0.022±0.004 %
Hg	0.015±0.001 µg/g	La	1.2±0.1 µg/g	MnO	0.009±0.001 %
Li	3.1±0.9 µg/g	Ce	1.9±0.4 µg/g	P_2O_5	0.014±0.003 %
Mn	70±5 µg/g	Pr	0.24±0.03 µg/g	SO_3	0.013±0.003 %
Mo	0.26±0.08 µg/g	Nd	0.86±0.08 µg/g	H_2O^+	0.31±0.10 %
Nb	0.46±0.04 µg/g	Sm	0.19±0.03 µg/g	FeO	0.16±0.01 %
Ni	4.3±1.1 µg/g	Eu	0.052±0.007 µg/g	CO2	44.89±0.08 %
P	62±10 µg/g	Gd	0.16±0.03 µg/g	L.O.I.	44.75±0.18 %
Pb	3.9±1.0 µg/g	Tb	0.031±0.007 µg/g		

Indicative values for C(org), H_2O^-,Br, B, I, In, Sn

NCS DC70303	Carbonate rock - Constituents	50 g

Certified values

Ag	0.016±0.002 µg/g	Li	2.7±1.3 µg/g	V	4.0±1.3 µg/g
As	0.78±0.06 µg/g	Lu	0.13±0.02 µg/g	W	0.13±0.03 µg/g
Ba	8.0±1.8 µg/g	Mn	232±78 µg/g	Y	6.1±1.2 µg/g
Be	0.09±0.02 µg/g	Mo	0.18±0.08 µg/g	Yb	0.68±0.12 µg/g
Bi	0.011±0.001 µg/g	Nb	0.34±0.09 µg/g	Zn	6.4±1.4 µg/g
Br	0.4±0.1 µg/g	Nd	1.80±0.2 µg/g	Zr	443±22 µg/g
Cd	0.59±0.15 µg/g	P	99±15 µg/g	SiO_2	0.30±0.03 %
Ce	2.2±0.3 µg/g	Pb	1.4±0.9 µg/g	Al_2O_3	0.15±0.01 %
Cl	50±6 µg/g	Pr	0.49±0.06 µg/g	Fe_2O_3(T)	0.070±0.003 %
Cr	3.8±1.2 µg/g	Rb	0.6±0.2 µg/g	MgO	0.24±0.05 %
Cs	0.13±0.02 µg/g	Sb	0.15±0.02 µg/g	CaO	55.49±0.11 %
Cu	2.2±0.7 µg/g	Sc	0.50±0.09 µg/g	Na_2O	0.014±0.004 %
Dy	0.51±0.08 µg/g	Se	0.007±0.003 µg/g	K_2O	0.012±0.002 %
Er	0.50±0.10 µg/g	Sm	0.38±0.03 µg/g	TiO_2	0.007±0.001 %
Eu	0.078±0.005 µg/g	Sr	87±5 µg/g	MnO	0.030±0.001 %
F	60±18 µg/g	Ta	0.04±0.02 µg/g	P_2O_5	0.023±0.004 %
Ga	0.3±0.1 µg/g	Tb	0.085±0.010 µg/g	SO_3	0.011±0.004 %
Gd	0.39±0.05 µg/g	Te	0.009±0.003 µg/g	H_2O^+	0.23±0.06 %
Ge	0.10±0.06 µg/g	Th	0.54±0.06 µg/g	FeO	0.007±0.002 %
Hf	12.4±2.0 µg/g	Ti	42±6 µg/g	CO_2	43.10±0.24 %
Hg	0.007±0.001 µg/g	Tl	0.04±0.02 µg/g	L.O.I.	43.30±0.19 %
Ho	0.13±0.03 µg/g	Tm	0.092±0.031 µg/g		
La	2.6±0.1 µg/g	U	0.66±0.1 µg/g		

Indicative values for C(org), H_2O^-, Co, Ni, B, I, In, Sn

NCS DC70304	Carbonate rock - Constituents	50 g

Certified values

As	0.17±0.05 µg/g	Lu	0.010±0.003 µg/g	W	0.13±0.03 µg/g
Ba	4.9±1.3 µg/g	Mn	31±5 µg/g	Y	0.7±0.1 µg/g
Be	0.06±0.02 µg/g	Mo	0.14±0.05 µg/g	Yb	0.063±0.014 µg/g
Bi	0.016±0.004 µg/g	Nb	0.3±0.1 µg/g	Zn	3.3±1.0 µg/g
Cd	0.05±0.02 µg/g	Nd	0.61±0.11 µg/g	Zr	6.3±2.9 µg/g
Ce	1.3±0.2 µg/g	Ni	50.5±3.1 µg/g	SiO_2	1.08±0.05 %
Cl	28±11 µg/g	P	22±11 µg/g	Al_2O_3	0.18±0.02 %
Co	2.6±0.5 µg/g	Pb	1.7±0.8 µg/g	Fe_2O_3(T)	0.222±0.003 %
Cr	54±18 µg/g	Pr	0.15±0.03 µg/g	MgO	1.42±0.04 %
Cs	0.10±0.04 µg/g	Rb	1.6±0.1 µg/g	CaO	54.08±0.09 %
Cu	2.1±0.7 µg/g	Sb	0.03±0.01 µg/g	Na_2O	0.015±0.005 %
Dy	0.09±0.01 µg/g	Sc	0.4±0.1 µg/g	K_2O	0.043±0.003 %
Er	0.06±0.02 µg/g	Sm	0.11±0.02 µg/g	TiO_2	0.007±0.001 %
Eu	0.025±0.006 µg/g	Sr	173±9 µg/g	MnO	0.004±0.001 %
F	71±18 µg/g	Ta	0.03±0.01 µg/g	P_2O_5	0.005±0.002 %
Ga	0.3±0.1 µg/g	Tb	0.020±0.004 µg/g	SO_3	0.014±0.005 %
Gd	0.10±0.02 µg/g	Te	0.009±0.002 µg/g	H_2O^+	0.14±0.04 %
Ge	0.12±0.07 µg/g	Th	0.24±0.07 µg/g	FeO	0.09±0.01 %
Hf	0.10±0.02 µg/g	Ti	42±6 µg/g	CO_2	43.13±0.27 %
Hg	0.003±0.001 µg/g	Tm	0.021±0.013 µg/g	L.O.I.	42.64±0.11 %
Ho	0.022±0.005 µg/g	U	0.17±0.05 µg/g		
La	0.78±0.07 µg/g	V	3.6±1.2 µg/g		

Code	Product	Unit
NCS DC70305	Carbonate rock - Constituents	50 g

Certified values

As	0.96±0.08 µg/g	Li	3.1±0.7 µg/g	U	0.70±0.05 µg/g
Ba	0.52%±0.04 %	Lu	0.015±0.004 µg/g	V	5.1±1.2 µg/g
Be	0.08±0.02 µg/g	Mn	93±8 µg/g	W	0.17±0.05 µg/g
Bi	0.025±0.005 µg/g	Mo	0.19±0.04 µg/g	Y	1.1±0.1 µg/g
Br	6.1±1.3 µg/g	Nb	0.4±0.1 µg/g	Yb	0.10±0.02 µg/g
Cd	0.02±0.01 µg/g	Nd	1.10±0.07 µg/g	Zn	3.6±2.0 µg/g
Ce	2.5±0.2 µg/g	Ni	2.9±0.7 µg/g	Zr	4.9±1.6 µg/g
Cl	343±24 µg/g	P	155±10 µg/g	SiO_2	1.15±0.05 %
Co	0.52±0.24 µg/g	Pb	2.9±0.7 µg/g	Al_2O_3	0.29±0.02 %
Cr	3.4±0.8 µg/g	Pr	0.28±0.02 µg/g	Fe_2O_3(T)	0.17±0.01 %
Cs	0.13±0.04 µg/g	Rb	2.6±0.2 µg/g	MgO	20.14±0.15 %
Cu	2.8±0.7 µg/g	Sb	0.06±0.01 µg/g	CaO	30.93±0.13 %
Dy	0.17±0.02 µg/g	Sc	0.4±0.2 µg/g	Na_2O	0.036±0.007 %
Er	0.10±0.01 µg/g	Se	0.013±0.004 µg/g	K_2O	0.16±0.01 %
Eu	0.14±0.07 µg/g	Sm	0.26±0.04 µg/g	TiO_2	0.013±0.002 %
F	459±40 µg/g	Sr	158±8 µg/g	MnO	0.012±0.001 %
Ga	0.31±0.03 µg/g	Ta	0.06±0.05 µg/g	P_2O_5	0.035±0.002 %
Gd	0.22±0.06 µg/g	Tb	0.032±0.004 µg/g	SO_3	0.33±0.04 %
Ge	0.12±0.09 µg/g	Te	0.008±0.004 µg/g	H_2O^+	0.39±0.12 %
Hf	0.13±0.07 µg/g	Th	0.45±0.14 µg/g	FeO	0.07±0.01 %
Hg	0.006±0.001 µg/g	Ti	78±12 µg/g	CO_2	45.58±0.14 %
Ho	0.034±0.005 µg/g	Tl	0.04±0.01 µg/g	L.O.I.	45.73±0.17 %
La	1.3±0.1 µg/g	Tm	0.017±0.004 µg/g		

NCS DC70306	Carbonate rock - Constituents	50 g

Certified values

Ag	0.019±0.012 µg/g	Lu	0.047±0.011 µg/g	V	8.8±1.3 µg/g
As	3.7±0.2 µg/g	Mn	689±46 µg/g	W	0.19±0.05 µg/g
Ba	1.33%±0.11 %	Mo	0.60±0.06 µg/g	Y	3.1±0.5 µg/g
Be	0.30±0.03 µg/g	Nb	1.0±0.2 µg/g	Yb	0.30±0.05 µg/g
Bi	0.058±0.006 µg/g	Nd	3.42±0.32 µg/g	Zn	13.7±2.2 µg/g
Cd	0.04±0.01 µg/g	Ni	6.6±1.3 µg/g	Zr	9.2±2.4 µg/g
Ce	8.1±0.4 µg/g	P	527±27 µg/g	SiO_2	6.27±0.05 %
Cl	77±24 µg/g	Pb	5.6±0.6 µg/g	Al_2O_3	1.13±0.04 %
Co	1.9±0.4 µg/g	Pr	0.94±0.15 µg/g	Fe_2O_3(T)	0.73±0.02 %
Cr	8.1±1.3 µg/g	Rb	10.6±0.6 µg/g	MgO	1.45±0.02 %
Cs	0.75±0.03 µg/g	Sb	0.09±0.01 µg/g	CaO	48.16±0.20 %
Cu	8.3±1.1 µg/g	Sc	1.1±0.2 µg/g	Na_2O	0.05±0.01 %
Dy	0.52±0.07 µg/g	Se	0.018±0.004 µg/g	K_2O	0.40±0.02 %
Er	0.31±0.06 µg/g	Sm	0.74±0.10 µg/g	TiO_2	0.048±0.003 %
Eu	0.30±0.12 µg/g	Sr	477±31 µg/g	MnO	0.089±0.006 %
F	835±99 µg/g	Ta	0.11±0.04 µg/g	P_2O_5	0.121±0.006 %
Ga	1.6±0.2 µg/g	Tb	0.11±0.02 µg/g	SO_3	0.98±0.08 %
Gd	0.69±0.29 µg/g	Te	0.014±0.010 µg/g	H_2O^+	0.52±0.12 %
Ge	0.16±0.08 µg/g	Th	1.3±0.3 µg/g	FeO	0.49±0.03 %
Hf	0.3±0.1 µg/g	Ti	288±18 µg/g	CO_2	38.69±0.06 %
Ho	0.11±0.02 µg/g	Tl	0.07±0.05 µg/g	L.O.I.	39.07±0.13 %
La	4.1±0.5 µg/g	Tm	0.052±0.009 µg/g		
Li	5.1±1.1 µg/g	U	0.94±0.07 µg/g		

NCS DC70308	Carbonate rock - Constituents	50 g

Certified values

Ag	0.035±0.013 µg/g	In	(0.02) µg/g	Tm	0.030±0.009 µg/g
As	5.5±0.3 µg/g	La	0.9±0.1 µg/g	U	1.13±0.07 µg/g
B	(2.3) µg/g	Li	3.0±0.8 µg/g	V	7.5±0.8 µg/g
Ba	10.6±1.2 µg/g	Lu	0.035±0.006 µg/g	W	0.13±0.03 µg/g
Be	0.15±0.02 µg/g	Mn	209±8 µg/g	Y	1.8±0.1 µg/g
Bi	0.012±0.004 µg/g	Mo	0.80±0.08 µg/g	Yb	0.19±0.03 µg/g
Br	0.9±0.2 µg/g	Nb	0.4±0.1 µg/g	Zn	35.7±2.9 µg/g
Cd	0.39±0.12 µg/g	Nd	0.89±0.07 µg/g	Zr	113±14 µg/g
Ce	1.5±0.1 µg/g	Ni	5.6±1.1 µg/g	SiO_2	1.17±0.04 %
Cl	123±25 µg/g	P	40±9 µg/g	Al_2O_3	0.18±0.02 %
Co	0.5±0.1 µg/g	Pb	7.8±1.9 µg/g	Fe_2O_3(T)	0.448±0.009 %
Cr	9.7±1.5 µg/g	Pr	0.21±0.03 µg/g	MgO	14.96±0.07 %
Cs	0.10±0.02 µg/g	Rb	1.1±0.3 µg/g	CaO	38.08±0.12 %
Cu	2.9±0.6 µg/g	Sb	0.59±0.11 µg/g	Na_2O	0.030±0.006 %
Dy	0.20±0.03 µg/g	Sc	0.5±0.2 µg/g	K_2O	0.026±0.004 %
Er	0.15±0.03 µg/g	Se	0.10±0.02 µg/g	TiO_2	0.009±0.001 %
Eu	0.049±0.006 µg/g	Sm	0.21±0.01 µg/g	MnO	0.027±0.001 %
F	179±16 µg/g	Sn	(0.9) µg/g	P_2O_5	0.009±0.002 %
Ga	0.4±0.1 µg/g	Sr	85±4 µg/g	SO_3	0.041±0.009 %
Gd	0.19±0.02 µg/g	Ta	0.030±0.009 µg/g	H_2O^+	0.42±0.18 %
Ge	0.11±0.07 µg/g	Tb	0.035±0.005 µg/g	FeO	0.05±0.01 %
Hf	3.1±0.5 µg/g	Te	0.016±0.012 µg/g	CO_2	45.62±0.15 %
Hg	0.031±0.002 µg/g	Th	0.29±0.04 µg/g	L.O.I.	44.61±0.19 %
Ho	0.046±0.005 µg/g	Ti	54±6 µg/g		
I	(0.2) µg/g	Tl	0.02±0.01 µg/g		

Code	Product	Unit
NCS DC70309	Carbonate rock - Constituents	50 g

Certified values

Ag	0.045±0.020 µg/g	La	12.5±1.2 µg/g	U	1.04±0.06 µg/g
As	2.2±0.2 µg/g	Li	11.8±1.5 µg/g	V	38.5±1.9 µg/g
Ba	101±5 µg/g	Lu	0.091±0.020 µg/g	W	0.25±0.07 µg/g
Be	0.56±0.08 µg/g	Mn	318±8 µg/g	Y	8.0±0.9 µg/g
Bi	0.050±0.005 µg/g	Mo	0.60±0.07 µg/g	Yb	0.60±0.10 µg/g
Br	0.5±0.1 µg/g	Nb	6.5±1.3 µg/g	Zn	24.5±3.1 µg/g
Cd	0.15±0.03 µg/g	Nd	11.0±0.8 µg/g	Zr	47.0±7.6 µg/g
Ce	26.0±2.3 µg/g	Ni	19.2±1.8 µg/g	SiO_2	11.07±0.07 %
Cl	96±46 µg/g	P	410±11 µg/g	Al_2O_3	3.03±0.04 %
Co	7.0±0.7 µg/g	Pb	5.9±1.2 µg/g	Fe_2O_3(T)	1.77±0.04 %
Cr	34.0±4.3 µg/g	Pr	2.84±0.40 µg/g	MgO	1.36±0.03 %
Cs	1.98±0.12 µg/g	Rb	19.2±0.8 µg/g	CaO	43.76±0.09 %
Cu	18.7±1.3 µg/g	Sb	0.27±0.03 µg/g	Na_2O	0.17±0.02 %
Dy	1.39±0.19 µg/g	Sc	3.5±0.7 µg/g	K_2O	0.88±0.03 %
Er	0.75±0.14 µg/g	Se	0.24±0.03 µg/g	TiO_2	0.430±0.008 %
Eu	0.53±0.04 µg/g	Sm	2.11±0.21 µg/g	MnO	0.041±0.002 %
F	454±31 µg/g	Sr	688±25 µg/g	P_2O_5	0.094±0.003 %
Ga	3.7±0.5 µg/g	Ta	0.45±0.06 µg/g	SO_3	1.18±0.13 %
Gd	1.81±0.23 µg/g	Tb	0.29±0.04 µg/g	H_2O^+	0.97±0.39 %
Ge	0.28±0.11 µg/g	Te	0.023±0.008 µg/g	FeO	0.79±0.07 %
Hf	1.2±0.2 µg/g	Th	1.9±0.1 µg/g	CO_2	35.52±0.55 %
Hg	0.026±0.002 µg/g	Ti	0.258%±0.005% µg/g	L.O.I.	36.57±0.16 %
Ho	0.25±0.06 µg/g	Tm	0.099±0.02 µg/g		

NCS DC70310	Carbonate rock - Constituents	50 g

Certified values

Ag	0.022±0.013 µg/g	P	542±24 µg/g	Eu	0.024±0.008 µg/g
As	1.3±0.1 µg/g	Pb	156±4 µg/g	Gd	0.087±0.026 µg/g
Ba	25.6±1.9 µg/g	Rb	0.34±0.08 µg/g	Tb	0.016±0.006 µg/g
Be	0.12±0.02 µg/g	Sc	0.3±0.2 µg/g	Dy	0.063±0.019 µg/g
Bi	0.020±0.003 µg/g	Sb	0.04±0.01 µg/g	Er	0.042±0.015 µg/g
Br	0.5±0.1 µg/g	Se	0.019±0.008 µg/g	Yb	0.043±0.015 µg/g
Cd	0.03±0.01 µg/g	Sr	243±12 µg/g	Lu	0.007±0.003 µg/g
Cl	90±18 µg/g	Ta	0.030±0.015 µg/g	Y	0.42±0.09 µg/g
Co	0.19±0.04 µg/g	Te	0.007±0.004 µg/g	SiO_2	8.25±0.06 %
Cr	6.0±3.8 µg/g	Th	0.15±0.02 µg/g	Al_2O_3	0.10±0.02 %
Cs	0.08±0.02 µg/g	Ti	16±4 µg/g	Fe_2O_3(T)	0.057±0.003 %
Cu	1.8±0.5 µg/g	Tl	0.014±0.013 µg/g	MgO	18.00±0.11 %
F	581±49 µg/g	U	0.23±0.04 µg/g	CaO	33.07±0.09 %
Ga	0.24±0.05 µg/g	V	2.9±1.3 µg/g	Na_2O	0.026±0.007 %
Ge	0.68±0.29 µg/g	W	0.22±0.05 µg/g	K_2O	0.010±0.003 %
Hf	0.2±0.1 µg/g	Zn	10.5±1.5 µg/g	TiO_2	0.003±0.001 %
Hg	0.003±0.001 µg/g	Zr	5.2±2.9 µg/g	MnO	0.027±0.001 %
Li	25.4±4.0 µg/g	La	0.8±0.1 µg/g	P_2O_5	0.124±0.006 %
Mn	209±8 µg/g	Ce	1.3±0.2 µg/g	H_2O^+	1.83±0.16 %
Mo	0.22±0.08 µg/g	Pr	0.13±0.01 µg/g	FeO	0.030±0.006 %
Nb	0.2±0.1 µg/g	Nd	0.48±0.13 µg/g	L.O.I.	39.73±0.27 %
Ni	1.6±0.5 µg/g	Sm	0.090±0.024 µg/g		

New NIM-GBW07103	Rock - Constituents	70 g

Certified values

Ag	0.033±0.010 µg/g	Ho	2.05±0.22 µg/g	Th	54±4 µg/g
As	2.1±0.5 µg/g	La	54±5 µg/g	Ti	1720±100 µg/g
B	24±4 µg/g	Li	131±7 µg/g	Tl	1.93±0.55 µg/g
Ba	343±45 µg/g	Lu	1.15±0.12 µg/g	Tm	1.06±0.11 µg/g
Be	12.4±2.1 µg/g	Mn	463±27 µg/g	U	18.8±2.2 µg/g
Bi	0.53±0.09 µg/g	Mo	3.5±0.3 µg/g	V	24±3 µg/g
Cd	0.029±0.014 µg/g	Nb	40±4 µg/g	W	8.4±0.7 µg/g
Ce	108±11 µg/g	Nd	47±5 µg/g	Y	62±7 µg/g
Cl	127±19 µg/g	Ni	2.3±1.2 µg/g	Yb	7.4±0.7 µg/g
Co	3.4±1.0 µg/g	P	405±30 µg/g	Zn	28±4 µg/g
Cr	3.6±1.1 µg/g	Pb	31±4 µg/g	Zr	167±14 µg/g
Cs	38.4±1.5 µg/g	Pr	12.7±0.8 µg/g	SiO_2	72.83±0.15 %
Cu	3.2±1.3 µg/g	Rb	466±26 µg/g	Al_2O_3	13.40±0.11 %
Dy	10.2±0.5 µg/g	S	380±43 µg/g	TFe_2O_3	2.14±0.08 %
Er	6.5±0.4 µg/g	Sb	0.21±0.09 µg/g	FeO	1.02±0.06 %
Eu	0.85±0.10 µg/g	Sc	6.1±0.6 µg/g	MgO	0.42±0.05 %
F	2350±200 µg/g	Sm	9.7±1.2 µg/g	CaO	1.55±0.07 %
Ga	19±2 µg/g	Sn	12.5±2.0 µg/g	Na_2O	3.13±0.09 %
Gd	9.3±0.8 µg/g	Sr	106±9 µg/g	K_2O	5.01±0.10 %
Ge	2.0±0.3 µg/g	Ta	7.2±0.7 µg/g	H_2O^+	0.60±0.07 %
Hf	6.3±0.8 µg/g	Tb	1.65±0.13 µg/g		
Hg	0.0041±0.0016 µg/g	Te	0.021±0.005 µg/g		

	Code	Product	Unit
New	NIM-GBW07104	Rock - Constituents	70 g

Certified values

Ag	0.071±0.014 µg/g	Ho	0.34±0.03 µg/g	Te	0.017±0.004 µg/g
As	2.1±0.6 µg/g	In	0.037±0.010 µg/g	Th	2.6±0.4 µg/g
B	4.7±1.2 µg/g	La	22±3 µg/g	Ti	3090±140 µg/g
Ba	1020±70 µg/g	Li	18.3±1.4 µg/g	Tl	0.16±0.06 µg/g
Be	1.1±0.2 µg/g	Lu	0.12±0.04 µg/g	Tm	0.15±0.05 µg/g
Bi	0.081±0.025 µg/g	Mn	604±27 µg/g	U	0.90±0.28 µg/g
Cd	0.061±0.021 µg/g	Mo	0.54±0.14 µg/g	V	94±6 µg/g
Ce	40±4 µg/g	Nb	6.8±2.2 µg/g	Y	9.3±1.8 µg/g
Cl	46±15 µg/g	Nd	19±2 µg/g	Yb	0.89±0.20 µg/g
Co	13.2±1.5 µg/g	Ni	17±2 µg/g	Zn	71±7 µg/g
Cr	32±5 µg/g	P	1030±37 µg/g	Zr	99±16 µg/g
Cs	2.3±0.9 µg/g	Pb	11.3±2.8 µg/g	SiO_2	60.62±0.22 %
Cu	55±4 µg/g	Pr	4.9±0.4 µg/g	Al_2O_3	16.17±0.18 %
Dy	1.85±0.20 µg/g	Rb	38±5 µg/g	TFe_2O3	4.90±0.09 %
Er	0.85±0.16 µg/g	S	192±25 µg/g	FeO	2.39±0.11 %
Eu	1.02±0.07 µg/g	Sb	0.12±0.06 µg/g	MgO	1.72±0.08 %
F	280±39 µg/g	Sc	9.5±1.1 µg/g	CaO	5.20±0.11 %
Ga	18.1±2.1 µg/g	Sm	3.4±0.3 µg/g	Na_2O	3.86±0.11 %
Gd	2.7±0.4 µg/g	Sn	0.79±0.26 µg/g	K_2O	1.89±0.07 %
Ge	0.93±0.16 µg/g	Sr	790±54 µg/g	CO_2	3.47±0.08 %
Hf	2.9±0.5 µg/g	Ta	0.40±0.09 µg/g	LOI	4.44±0.13 %
Hg	0.012±0.004 µg/g	Tb	0.41±0.07 µg/g		

New	NIM-GBW07105	Rock - Constituents	70 g

Certified values

Ag	0.040±0.012 µg/g	La	56±7 µg/g	Th	6.0±1.2 µg/g
B	3.5±1.4 µg/g	Li	9.5±1.3 µg/g	Ti	14200±610 µg/g
Ba	527±40 µg/g	Lu	0.19±0.07 µg/g	Tm	0.28±0.04 µg/g
Be	2.5±0.6 µg/g	Mn	1310±94 µg/g	U	1.4±0.4 µg/g
Bi	0.048±0.026 µg/g	Mo	2.6±0.3 µg/g	V	167±17 µg/g
Cd	0.067±0.024 µg/g	Nb	68±12 µg/g	W	0.4±0.2 µg/g
Ce	105±12 µg/g	Nd	54±5 µg/g	Y	22±5 µg/g
Cl	114±26 µg/g	Ni	140±11 µg/g	Yb	1.5±0.5 µg/g
Co	46.5±5.2 µg/g	P	4130±190 µg/g	Zn	150±15 µg/g
Cr	134±16 µg/g	Pb	7±4 µg/g	Zr	277±30 µg/g
Cu	49±4 µg/g	Pr	13.2±1.6 µg/g	SiO_2	44.64±0.16 %
Dy	5.6±0.3 µg/g	Rb	37±6 µg/g	Al_2O_3	13.83±0.20 %
Er	2.0±0.3 µg/g	S	100±20 µg/g	TFe_2O_3	13.40±0.29 %
Eu	3.2±0.3 µg/g	Sb	0.08±0.05 µg/g	FeO	7.60±0.16 %
F	700±68 µg/g	Sc	15.2±1.8 µg/g	MgO	7.77±0.26 %
Ga	24.8±1.3 µg/g	Se	0.073±0.035 µg/g	CaO	8.81±0.14 %
Gd	8.5±0.7 µg/g	Sm	10.2±0.7 µg/g	Na_2O	3.38±0.07 %
Ge	0.98±0.23 µg/g	Sn	2.0±0.6 µg/g	K_2O	2.32±0.08 %
Hf	6.5±0.8 µg/g	Sr	1100±100 µg/g	H_2O^+	2.86±0.19 %
Hg	0.006±0.003 µg/g	Ta	4.3±0.6 µg/g		
Ho	0.88±0.05 µg/g	Tb	1.2±0.2 µg/g		

	NCS DC73304	Rock - Constituents	70 g

Certified values

Ag	0.062±0.010 µg/g	La	21±2 µg/g	Ti	1580±120 µg/g
As	9.1±1.8 µg/g	Li	11.1±0.7 µg/g	Tl	0.36±0.07 µg/g
B	34±8 µg/g	Lu	0.30±0.04 µg/g	Tm	0.32±0.05 µg/g
Ba	143±22 µg/g	Mn	155±10 µg/g	U	2.1±0.4 µg/g
Be	0.97±0.15 µg/g	Mo	0.76±0.21 µg/g	V	33±4 µg/g
Bi	0.18±0.04 µg/g	Nb	5.9±1.3 µg/g	W	1.2±0.3 µg/g
Cd	0.060±0.025 µg/g	Nd	21±3 µg/g	Y	21.5±3.3 µg/g
Ce	48±6 µg/g	Ni	16.6±1.6 µg/g	Yb	1.9±0.2 µg/g
Cl	44±9 µg/g	P	970±61 µg/g	Zn	20±3 µg/g
Co	6.4±0.8 µg/g	Pb	7.6±1.2 µg/g	Zr	214±13 µg/g
Cr	20±4 µg/g	Pr	5.4±0.7 µg/g	SiO_2	90.36±0.20 %
Cs	1.8±0.4 µg/g	Rb	29±3 µg/g	Al_2O_3	3.52±0.13 %
Cu	19±2 µg/g	S	860±40 µg/g	TFe_2O_3	3.22±0.10 %
Dy	4.1±0.5 µg/g	Sb	0.60±0.16 µg/g	FeO	0.61±0.06 %
Er	2.0±0.4 µg/g	Sc	4.2±0.4 µg/g	MgO	0.082±0.031 %
Eu	1.02±0.12 µg/g	Se	0.08±0.03 µg/g	CaO	0.30±0.05 %
F	183±28 µg/g	Sm	4.7±0.4 µg/g	Na_2O	0.061±0.021 %
Ga	5.3±1.1 µg/g	Sn	1.1±0.2 µg/g	K_2O	0.65±0.04 %
Gd	4.5±0.5 µg/g	Sr	58±7 µg/g	H_2O^+	1.01±0.09 %
Ge	1.16±0.26 µg/g	Ta	0.38±0.03 µg/g	Org.C	(0.05) %
Hf	6.6±0.6 µg/g	Tb	0.79±0.13 µg/g	LOI	1.10±0.07 %
Hg	0.008±0.003 µg/g	Te	0.038±0.009 µg/g		
Ho	0.75±0.16 µg/g	Th	7.0±0.6 µg/g		

Code	Product	Unit
New NIM-GBW07107	Rock - Constituents	70 g

Certified values

Ag	0.047±0.013 µg/g	Ho	0.98±0.06 µg/g	Tb	1.02±0.11 µg/g
As	1.4±0.4 µg/g	In	0.082±0.022 µg/g	Th	12.8±1.4 µg/g
B	154±17 µg/g	La	62±5 µg/g	Ti	3950±190 µg/g
Ba	450±45 µg/g	Li	44±2 µg/g	Tl	0.71±0.11 µg/g
Be	3.0±0.4 µg/g	Lu	0.41±0.07 µg/g	Tm	0.43±0.04 µg/g
Bi	0.23±0.04 µg/g	Mn	173±17 µg/g	U	1.5±0.3 µg/g
Cd	0.033±0.017 µg/g	Mo	0.35±0.14 µg/g	V	87±6 µg/g
Ce	109±12 µg/g	Nb	14.3±2.5 µg/g	W	0.79±0.20 µg/g
Co	21±2 µg/g	Nd	48±4 µg/g	Y	26±3 µg/g
Cr	99±8 µg/g	Ni	37±4 µg/g	Yb	2.6±0.4 µg/g
Cs	14±2 µg/g	P	690±53 µg/g	Zn	55±6 µg/g
Cu	42±3 µg/g	Pb	8.7±2.7 µg/g	Zr	96±13 µg/g
Dy	5.1±0.5 µg/g	Pr	13.6±2.1 µg/g	SiO_2	59.23±0.25 %
Er	2.7±0.4 µg/g	Rb	205±12 µg/g	Al_2O_3	18.82±0.22 %
Eu	1.7±0.2 µg/g	Sb	0.17±0.10 µg/g	TFe_2O_3	7.60±0.13 %
F	1290±100 µg/g	Sc	18.5±1.8 µg/g	FeO	1.39±0.08 %
Ga	26±4 µg/g	Se	0.078±0.023 µg/g	MgO	2.01±0.07 %
Gd	6.7±0.6 µg/g	Sm	8.4±0.6 µg/g	CaO	0.60±0.06 %
Ge	3.1±0.4 µg/g	Sn	2.0±0.5 µg/g	Na_2O	0.35±0.03 %
Hf	2.9±0.4 µg/g	Sr	90±11 µg/g	K_2O	4.16±0.15 %
Hg	0.010±0.003 µg/g	Ta	1.0±0.4 µg/g	H_2O^+	5.6±0.4 %

NCS DC73306	Rock - Constituents	70 g

Certified values

Ag	0.043±0.017 µg/g	I	(0.2) µg/g	Th	4.1±0.7 µg/g
As	4.7±0.9 µg/g	In	(0.042) µg/g	Ti	1960±130 µg/g
B	16±4 µg/g	La	15±5 µg/g	Tl	0.35±0.16 µg/g
Ba	120±18 µg/g	Li	20±4 µg/g	Tm	0.17±0.04 µg/g
Be	0.8±0.2 µg/g	Lu	0.14±0.04 µg/g	U	1.9±0.4 µg/g
Bi	0.16±0.05 µg/g	Mn	434±41 µg/g	V	36±9 µg/g
Cd	0.07±0.03 µg/g	Mo	0.38±0.08 µg/g	W	0.67±0.28 µg/g
Ce	25±4 µg/g	Nb	6.6±2.4 µg/g	Y	9.1±2.5 µg/g
Cl	83±25 µg/g	Nd	12.0±1.4 µg/g	Yb	0.90±0.16 µg/g
Co	9±2 µg/g	Ni	18±3 µg/g	Zn	52±6 µg/g
Cr	32±8 µg/g	P	226±48 µg/g	Zr	62±20 µg/g
Cs	3.2±0.8 µg/g	Pb	18±4 µg/g	SiO_2	15.60±0.09 %
Cu	23±3 µg/g	Pr	3.4±0.4 µg/g	Al_2O_3	5.03±0.12 %
Dy	1.6±0.2 µg/g	Rb	32±5 µg/g	TFe_2O_3	2.52±0.10 %
Eu	0.51±0.07 µg/g	S	370±160 µg/g	FeO	1.64±0.09 %
F	406±44 µg/g	Sb	0.43±0.16 µg/g	MgO	5.19±0.18 %
Ga	7.1±1.1 µg/g	Sc	6.0±1.7 µg/g	CaO	35.67±0.39 %
Gd	1.9±0.2 µg/g	Se	0.09±0.02 µg/g	K_2O	0.78±0.06 %
Ge	0.67±0.19 µg/g	Sm	2.4±0.3 µg/g	CO_2	32.4±0.4 %
Hf	1.8±0.3 µg/g	Sr	913±84 µg/g	LOI	34.1±0.2 %
Hg	0.016±0.002 µg/g	Ta	0.42±0.09 µg/g		
Ho	0.33±0.06 µg/g	Tb	0.35±0.07 µg/g		

NCS DC71301	Rock - Constituents	100 g

Certified values

As	6.27±0.45 µg/g	La	149±8 µg/g	W	1.24±0.12 µg/g
B	31.8±2.3 µg/g	Li	32.9±2.3 µg/g	Y	24.7±1.2 µg/g
Ba	251±12 µg/g	Lu	0.43±0.09 µg/g	Yb	2.56±0.10 µg/g
Be	17.2±1.5 µg/g	Mo	0.26±0.06 µg/g	Zn	112±3 µg/g
Bi	0.37±0.04 µg/g	Nb	66.9±4.0 µg/g	Al_2O_3	17.72±0.07 %
Br	1.21±0.41 µg/g	Nd	65.1±4.1 µg/g	SiO_2	54.48±0.06 %
Cd	0.07±0.02 µg/g	Ni	1.75±0.36 µg/g	Ti O_2	0.48±0.02 %
Ce	242±10 µg/g	Pb	196±10 µg/g	Fe_2O_3	6.04±0.05 %
Co	4.59±0.29 µg/g	Pr	22.5±1.8 µg/g	FeO	1.23±0.04 %
Cr	3.6±0.9 µg/g	Rb	130±5 µg/g	MnO	0.12±0.01 %
Cs	2.05±0.30 µg/g	Sb	0.15±0.02 µg/g	MgO	0.65±0.05 %
Cu	11.8±0.8 µg/g	Sc	2.22±0.24 µg/g	CaO	1.39±0.03 %
Dy	4.70±0.52 µg/g	Se	0.05±0.02 µg/g	Na_2O	7.16±0.06 %
Er	2.48±0.18 µg/g	Sm	9.7±0.7 µg/g	K_2O	7.48±0.07 %
Eu	2.35±0.09 µg/g	Sn	6.50±0.52 µg/g	H_2O^+	2.38±0.08 %
Ga	35.8±3.3 µg/g	Ta	1.96±0.16 µg/g	CO_2	0.26±0.04 %
Gd	7.0±1.5 µg/g	Tb	1.02±0.07 µg/g	P_2O_5	0.018±0.003 %
Ge	0.95±0.11 µg/g	Te	0.012±0.005 µg/g	F	0.048±0.004 %
Hf	34.0±4.6 µg/g	Th	79.3±3.4 µg/g	S	0.011±0.003 %
Hg	0.005±0.003 µg/g	Tl	0.76±0.08 µg/g	Cl	0.059±0.004 %
Ho	0.96±0.12 µg/g	Tm	0.46±0.06 µg/g	Fe_2O_3TR	7.41±0.04 %
I	0.14±0.04 µg/g	U	14.6±1.0 µg/g	Fe_2O_3TC	7.40 %
In	0.15±0.03 µg/g	V	179±5 µg/g	Others	0.48 %

Code	Product	Unit

NCS DC71302 — Rock - Constituents — 100 g

Certified values

Ag	0.17±0.02 µg/g	Li	17.5±1.0 µg/g	Yb	3.15±0.10 µg/g
As	5.96±0.83 µg/g	Lu	0.49±0.04 µg/g	Zn	164±4 µg/g
B	10.8±1.3 µg/g	Mo	0.95±0.08 µg/g	Zr	335±18 µg/g
Ba	1053±27 µg/g	Nb	20.8±1.3 µg/g	Al_2O_3	16.1±0.1 %
Be	3.64±0.54 µg/g	Nd	47.2±2.5 µg/g	SiO_2	63.06±0.09 %
Bi	0.09±0.03 µg/g	Ni	12.6±0.9 µg/g	Ti O_2	0.80±0.02 %
Cd	0.61±0.08 µg/g	Pb	97.7±4.4 µg/g	Fe_2O3	4.51±0.06 %
Ce	117±7 µg/g	Pr	13.2±0.6 µg/g	FeO	0.19±0.04 %
Co	7.9±0.4 µg/g	Rb	183±7 µg/g	MnO	0.089±0.002 %
Cr	7.7±1.1 µg/g	Sb	1.34±0.19 µg/g	MgO	0.84±0.05 %
Cs	7.16±0.45 µg/g	Sc	7.52±0.43 µg/g	CaO	2.47±0.03 %
Cu	9.1±0.8 µg/g	Se	0.03±0.02 µg/g	Na_2O	3.06±0.04 %
Dy	5.32±0.20 µg/g	Sm	8.63±0.23 µg/g	K_2O	5.17±0.04 %
Er	2.93±0.14 µg/g	Sn	3.12±0.26 µg/g	H_2O^+	1.79±0.10 %
Eu	1.96±0.07 µg/g	Sr	318±8 µg/g	CO_2	1.03±0.03 %
Ga	19.8±1.1 µg/g	Ta	1.42±0.26 µg/g	P_2O_5	0.36±0.01 %
Gd	6.54±0.40 µg/g	Tb	0.99±0.07 µg/g	F	0.112±0.005 %
Ge	1.11±0.10 µg/g	Th	16.7±0.6 µg/g	S	0.023±0.003 %
Hf	7.5±1.1 µg/g	Tl	1.02±0.15 µg/g	Cl	0.016±0.002 %
Hg	0.014±0.003 µg/g	Tm	0.50±0.04 µg/g	Others	0.28 %
Ho	1.10±0.10 µg/g	U	3.04±0.28 µg/g	O/F,S,Cl	0.062 %
I	0.07±0.04 µg/g	V	64.3±2.9 µg/g	Fe_2O_3TR	4.77±0.03 %
In	0.11±0.03 µg/g	W	1.62±0.12 µg/g	Fe_2O_3 TC	4.72 %
La	62.5±2.5 µg/g	Y	28.0±1.0 µg/g		

NCS DC71303 — Rock - Constituents — 100 g

Please ask for details

NCS DC71304 — Rock - Constituents — 100 g

Please ask for details

NCS DC71305 — Rock - Constituents — 100 g

Please ask for details

NCS DC71306 — Rock - Constituents — 100 g

Please ask for details

NCS DC60106 — Shale - Constituents — 60 g

Certified values

Al_2O_3	14.82 %	K_2O	3.76 %	SiO_2	69.63 %
CaO	0.22 %	MgO	0.67 %	SO_3	0.028 %
Cl	0.014 %	MnO	0.024 %	TiO_2	0.68 %
CO_2	0.13 %	Na_2O	0.20 %	L.O.I.*	4.17 %
Fe_2O_3	5.67 %	P_2O_5	0.043 %		

Indicative values for FeO, H_2O^+

* Loss On Ignition

NRCCACB-1 — Calcium carbonate - Lead and cadmium — 2.5 g

Certified values

Cd	7.6 ± 1.1 ng/g	Pb	243 ± 14 ng/g

Indicative values for Ba, Sr, Ni, Zn, Mo

BAS-BCS-CRM 395 — Bauxite — 100 g

Certified values %

Fe_2O_3	16.3 %	Na_2O	(0.02) %	Pb	(0.0028) %
SiO_2	1.24 %	K_2O	(0.02) %	Sr	(0.0023) %
Al_2O_3	52.4 %	Cr	(0.0453) %	Zn	(0.0043) %
TiO_2	1.93 %	Cu	(0.0021) %	L.O.I.	27.8 %
CaO	0.05 %	Mn	(0.0042) %		
MgO	0.02 %	Ni	(0.0034) %		

(Values in parenthesis are indicative values)

NIST-69b — Bauxite, Arkansas - Constituents — 60 g

Certified values

Al_2O_3	48.8 %	MgO	0.085 %	TiO_2	1.90 %
CaO	0.13 %	MnO	0.110 %	V_2O_5	0.028 %
Cr_2O_3	0.011 %	P_2O_5	0.118 %	ZnO	0.0035 %
Fe_2O_3	7.14 %	SO_3	0.551 %	ZrO_2	0.29 %
K_2O	0.068 %	SiO_2	13.43 %	LOI*	27.2 %

Indicative values for Co, BaO, Na_2O

LOI* Loss on Ignition

Code	Product	Unit
NIST-600	Bauxite, Australian - Constituents	90 g

Certified values

Al_2O_3 40.0 %	MnO 0.013 %	V_2O_5 0.060 %
CaO 0.22 %	Na_2O 0.022 %	ZnO 0.003 %
Cr_2O_3 0.024 %	P_2O_5 0.039 %	ZrO_2 0.060 %
Fe_2O_3 17.0 %	SO_3 0.155 %	LOI* 20.5 %
K_2O 0.23 %	SiO_2 20.3 %	
MgO 0.055	TiO_2 1.31 %	

LOI* Loss on Ignition

NIST-696	Bauxite, Surinam - Constituents	60 g

Certified value

Al_2O_3 54.5 %	MgO 0.012 %	TiO_2 2.64 %
CaO 0.018 %	MnO 0.004 %	V_2O_5 0.072 %
Cr_2O_3 0.047 %	P_2O_5 0.050 %	ZnO 0.0014 %
Fe_2O_3 8.70 %	SiO_2 3.79 %	ZrO_2 0.14 %
K_2O 0.009 %	SO_3 0.15 %	LOI* 29.9 %

Indicative values for Co, BaO, Na_2O

LOI* Loss on Ignition

NIST-697	Bauxite, Dominican - Constituents	60 g

Certified value

Al_2O_3 45.8 %	MgO 0.18 %	TiO_2 2.52 %
CaO 0.71 %	MnO 0.41 %	V_2O_5 0.063 %
Cr_2O_3 0.100 %	P_2O_5 0.97 %	ZnO 0.037 %
Fe_2O_3 20.0 %	SiO_2 6.81 %	ZrO_2 0.065 %
K_2O 0.062 %	SO_3 0.077 %	LOI* 22.1 %

Indicative values for Co, BaO, Na_2O

LOI* Loss on Ignition

NIST-698	Bauxite, Jamaican - Constituents	60 g

Certified value

Al_2O_3 48.2 %	MgO 0.058 %	TiO_2 2.38 %
CaO 0.62 %	MnO 0.38 %	V_2O_5 0.064 %
Cr_2O_3 0.080 %	P_2O_5 0.37 %	ZnO 0.029 %
Fe_2O_3 0.013 %	SiO_2 0.69 %	ZrO_2 0.0,061 %
K_2O 0.010 %	SO_3 0.143 %	LOI* 27.3 %

Indicative values for Co, BaO, Na_2O

LOI* Loss on Ignition

Clays

Code	Product	Unit
BCR-461	Clay - Fluorine	30 g

Certified value

F 568 mg/kg ± 60 mg/kg

NIST-97b	Flint clay - Constituent elements	60 g

Collected from a stockpile near a mine on Anderson Creek, Pike Township, Clearfield County, Pennsylvania, USA.

Certified values

Al 20.76 %	K 0.513 %	Na 0.0492 %
Ca 0.0249 %	Li 0.055 mg/kg	Si 19.81 %
Cr 0.227 %	Mg 0.113 %	Sr 0.0084 %
Fe 0.831 %	Mn 0.0047 %	Ti 1.43 %

Indicative values for Ba, Cs, Co, Eu, Hf, P, Rb, Sb, Sc, Th, Zn, Zr, LOI*

NIST-98b	Plastic clay - Constituent elements	60 g

Collected from the underclay of the Clarion coal bed at a plant in Clearfield County, Pennsylvania, USA.

Certified values

Al 14.3 %	K 2.81 %	Na 0.1496 %
Ca 0.0759 %	Li 215 mg/kg	Si 26.65 %
Cr 119 mg/kg	Mg 0.358 %	Sr 189 mg/kg
Fe 1.18 %	Mn 116 mg/kg	Ti 0.809 %

Indicative values for Ba, Co, Cs, Eu, Hf, P, Rb, Sb, Sc, Th, Zn, Zr, LOI*

NIST-679	Brick clay - Constituents	75 g

Collected from an inactive clay pit in Beltsville, Maryland, USA.

Certified values

Al 11.01 %	Fe 9.05 %	Na 0.1304 %
Ba 432.2 µg/g	K 2.433 %	Si 24.34 %
Ca 0.1628 %	Li 71.7 µg/g	Sr 73.4 µg/g
Cr 109.7 µg/g	Mg 0.7552 %	Ti 0.577 %

Indicative values for Ce, Co, Cs, Eu, Hf, Mn, P, Rb, Sc, Th, Zn

Code	Product	Unit
BAS-BCS-CRM 348	Ball clay	100 g

Certified values

SiO_2	51.1 %	MgO	0.3 %	S	(0.1) %
Al_2O_3	31.6 %	Na_2O	0.34 %	L.O.I.	11.8 %
TiO_2	1.08 %	K_2O	2.23 %	BaO	(0.04) %
Fe_2O_3	1.04 %	P_2O_5	0.071 %	Cr_2O_3	0.016 %
CaO	0.17 %	ZrO_2	(0.03) %	C	(1.64) %

(Values in parenthesis are indicative values)

NCS DC60102	Clay - Constituents	50 g

Certified values

Al_2O_3	26.27 %	MgO	0.46 %	SO_3	0.49 %
CaO	0.13 %	MnO	0.052 %	TiO_2	0.70 %
Cl	0.0041 %	Na_2O	0.060 %	L.O.I.*	10.62 %
Fe_2O_3	10.55 %	P_2O_5	0.14 %		
K_2O	0.79 %	SiO_2	49.98 %		

Indicative values for CO_2, FeO, H_2O^+

* Loss On Ignition

NCS DC60104	Clay - Constituents	50 g

Certified values

Al_2O_3	31.32 %	MgO	0.083 %	SO_3	0.023 %
CaO	1.80 %	MnO	0.020 %	TiO_2	0.030 %
Cl	0.0029 %	Na_2O	2.55 %	L.O.I.*	8.81 %
Fe_2O_3	0.33 %	P_2O_5	0.053 %		
K_2O	1.15 %	SiO_2	53.67 %		

Indicative values for CO_2, FeO, H_2O^+

NCS DC60105	Clay - Constituents	60 g

Certified values

Al_2O_3	13.28 %	K_2O	2.50 %	SiO_2	66.64 %
CaO	3.23 %	MgO	1.84 %	SO_3	0.027 %
Cl	0.011 %	MnO	0.088 %	TiO_2	0.66 %
CO_2	1.66 %	Na_2O	1.81 %	L.O.I.*	5.10 %
Fe_2O_3	4.64 %	P_2O_5	0.106 %		

Indicative values for FeO, H_2O^+

* Loss On Ignition

Petrochemical standards

Conostan® Oil Analysis Standards

Reference standards for lubricant/oil analysis include: Element (metallo-organic) standards and associated blank oils and solvent (for ICP application), Particle Counting (contamination) and standards for Automatic Particle Counters.

The division of SCP science "CONOSTAN® Oil Analysis Standards" is the world's leading manufacturer and marketer of elements (metallo-organic) in oil standards and related spectroscopy products. Its leading position is derived from superior product chemistry, manufacturing technology, and blending techniques. CONOSTAN® products are used extensively in the calibration and operation of analytical instruments for the analysis of elements in oil and other organic fluids. CONOSTAN® is the only source of multi-element metallo-organic standards in the history of the National Institute of Standards & Technology (NIST), for example, NIST-1085b is CONOSTAN® S-21:300, Code CON-S214300 and CON-S218300. The variety of products afford convenience as reference and routine analytical materials for ICP, DCP, Rotating Disc Electrode (RDE), XRF, AA, and other analytical spectrometer techniques. CONOSTAN products are optimized for:

- Compatability: 33 elements can be combined over an extensive concentration range
- Solubility: CONOSTAN® element standards are soluble in CONOSTAN® PremiSolv™ ICP solvent, CONOSTAN® base oils, ketones, such as 4-methyl-2-pentanone (MIBK), as well as in paraffinic and aromatic hydrocarbons, such as mineral oil, xylene, and kerosene.
- Volatility: CONOSTAN® element standards are made in ultra-pure, highly processed hydrocarbon oil only; no solubilizers are used. These element standards are extremely stable to volatile loss.
- Viscosity: Viscosity range at room temperature is ideal for instrumental applications.
- Instrumental Response: Excellent analytical response over a wide range of analytical applications.
- Shelf life: All CONOSTAN® element standards and spectroscopy products have a one year minimum shelf life from the date of shipment.

Single element standards in oil

Single-element CONOSTAN® standards are especially useful for atomic absorption and X-ray fluorescence determinations. The matrix oil for these standards is high purity hydrocarbon oil with a 17 cSt viscosity at 40°C and flash point of 175°C (20 Blank Oil). They are available at the following metal concentrations.
The 1000 and 5000 ppm standards can be used as a source of single-element calibration standard for your specific applications using all types of spectroscopic methods of analysis.
Cobalt 1000 & 5000 ppm, yttrium 1000 & 5000 ppm, and scandium 2000 ppm are often used as internal standards for inductively coupled plasma (ICP) analysis.
Stock concentrations are listed in the table below.
Concentrations not listed in the table below are available as custom single element standards on request.

Code	Product		Unit
CON-150-100-135	Aluminium in 20 blank oil, 1000 µg/g	Al:1000 ppm	50 g
CON-150-500-135	Aluminium in 20 blank oil, 5000 µg/g	Al:5000 ppm	50 g
CON-150-100-515	Antimony in 20 blank oil, 1000 µg/g	Sb:1000 ppm	50 g
CON-150-500-515	Antimony in 20 blank oil, 5000 µg/g	Sb:5000 ppm	50 g
CON-150-103-331	Arsenic in 20 blank oil, 100 µg/g	As:100 ppm	100 g
CON-150-100-565	Barium in 20 blank oil, 1000 µg/g	Ba:1000 ppm	50 g
CON-150-500-565	Barium in 20 blank oil, 5000 µg/g	Ba:5000 ppm	50 g
CON-150-100-045	Beryllium in 20 blank oil, 1000 µg/g	Be:1000 ppm	50 g
CON-150-500-045	Beryllium in 20 blank oil, 5000 µg/g	Be:5000 ppm	50 g
CON-150-100-835	Bismuth in 20 blank oil, 1000 µg/g	Bi:1000 ppm	50 g
CON-150-500-835	Bismuth in 20 blank oil, 5000 µg/g	Bi:5000 ppm	50 g
CON-150-100-055	Boron in 20 blank oil, 1000 µg/g	B:1000 ppm	50 g
CON-150-500-055	Boron in 20 blank oil, 5000 µg/g	B:5000 ppm	50 g
CON-150-100-485	Cadmium in 20 blank oil, 1000 µg/g	Cd:1000 ppm	50 g
CON-150-500-485	Cadmium in 20 blank oil, 5000 µg/g	Cd:5000 ppm	50 g
CON-150-100-205	Calcium in 20 blank oil, 1000 µg/g	Ca:1000 ppm	50 g
CON-150-500-205	Calcium in 20 blank oil, 5000 µg/g	Ca:5000 ppm	50 g
CON-150-100-245	Chromium in 20 blank oil, 1000 µg/g	Cr:1000 ppm	50 g
CON-150-500-245	Chromium in 20 blank oil, 5000 µg/g	Cr:5000 ppm	50 g

Code	Product		Unit
CON-150-100-275	Cobalt in 20 blank oil, 1000 µg/g	Co:1000 ppm	50 g
CON-150-500-275	Cobalt in 20 blank oil, 5000 µg/g	Co:5000 ppm	50 g
CON-150-100-295	Copper in 20 blank oil, 1000 µg/g	Cu:1000 ppm	50 g
CON-150-500-295	Copper in 20 blank oil, 5000 µg/g	Cu:5000 ppm	50 g
CON-150-100-495	Indium in 20 blank oil, 1000 µg/g	In:1000 ppm	50 g
CON-150-500-495	Indium in 20 blank oil, 5000 µg/g	In:5000 ppm	50 g
CON-150-100-265	Iron in 20 blank oil, 1000 µg/g	Fe:1000 ppm	50 g
CON-150-500-265	Iron in 20 blank oil, 5000 µg/g	Fe:5000 ppm	50 g
CON-150-100-575	Lanthanum in 20 blank oil, 1000 µg/g	La:1000 ppm	50 g
CON-150-500-575	Lanthanum in 20 blank oil, 5000 µg/g	La:5000 ppm	50 g
CON-150-100-825	Lead in 20 blank oil, 1000 µg/g	Pb:1000 ppm	50 g
CON-150-500-825	Lead in 20 blank oil, 5000 µg/g	Pb: 5000 ppm	50 g
CON-150-100-035	Lithium in 20 blank oil, 1000 µg/g	Li:1000 ppm	50 g
CON-150-500-035	Lithium in 20 blank oil, 5000 µg/g	Li:5000 ppm	50 g
CON-150-100-125	Magnesium in 20 blank oil, 1000 µg/g	Mg:1000 ppm	50 g
CON-150-500-125	Magnesium in 20 blank oil, 5000 µg/g	Mg:5000 ppm	50 g
CON-150-100-255	Manganese in 20 blank oil, 1000 µg/g	Mn:1000 ppm	50 g
CON-150-500-255	Manganese in 20 blank oil, 5000 µg/g	Mn:5000 ppm	50 g
CON-150-103-801	Mercury in 20 blank oil, 100 µg/g	Hg:100 ppm	100 g
CON-150-100-425	Molybdenum in 20 blank oil, 1000 µg/g	Mo:1000 ppm	50 g
CON-150-500-425	Molybdenum in 20 blank oil, 5000 µg/g	Mo:5000 ppm	50 g
CON-150-100-285	Nickel in 20 blank oil, 1000 µg/g	Ni:1000 ppm	50 g
CON-150-500-285	Nickel in 20 blank oil, 5000 µg/g	Ni:5000 ppm	50 g
CON-150-100-155	Phosphorus in 20 blank oil, 1000 µg/g	P:1000 ppm	50 g
CON-150-500-155	Phosphorus in 20 blank oil, 5000 µg/g	P:5000 ppm	50 g
CON-150-100-195	Potassium in 20 blank oil, 1000 µg/g	K:1000 ppm	50 g
CON-150-500-195	Potassium in 20 blank oil, 5000 µg/g	K:5000 ppm	50 g
CON-150-500-215	Scandium in 20 blank oil, 2000 µg/g	Sc:2000 ppm	50 g
CON-150-103-341	Selenium in 20 blank oil, 100 µg/g	Se:100 ppm	100 g
CON-150-100-145	Silicon in 20 blank oil, 1000 µg/g	Si:1000 ppm	50 g
CON-150-500-145	Silicon in 20 blank oil, 5000 µg/g	Si:5000 ppm	50 g
CON-150-100-475	Silver in 20 blank oil, 1000 µg/g	Al:1000 ppm	50 g
CON-150-500-475	Silver in 20 blank oil, 5000 µg/g	Ag:5000 ppm	50 g
CON-150-100-115	Sodium in 20 blank oil, 1000 µg/g	Na:1000 ppm	50 g
CON-150-500-115	Sodium in 20 blank oil, 5000 µg/g	Na:5000 ppm	50 g
CON-150-100-385	Strontium in 20 blank oil, 1000 µg/g	Sr:1000 ppm	50 g
CON-150-500-385	Strontium in 20 blank oil, 5000 µg/g	Sr:5000 ppm	50 g
CON-150-100-505	Tin in 20 blank oil, 1000 µg/g	Sn:1000 ppm	50 g
CON-150-500-505	Tin in 20 blank oil, 5000 µg/g	Sn:5000 ppm	50 g
CON-150-100-225	Titanium in 20 blank oil, 1000 µg/g	Ti:1000 ppm	50 g
CON-150-500-225	Titanium in 20 blank oil, 5000 µg/g	Ti:5000 ppm	50 g
CON-150-100-745	Tungsten in 20 blank oil, 1000 µg/g	W:1000 ppm	50 g
CON-150-500-745	Tungsten in 20 blank oil, 5000 µg/g	W:5000 ppm	50 g
CON-150-100-235	Vanadium in 20 blank oil, 1000 µg/g	V:1000 ppm	50 g
CON-150-500-235	Vanadium in 20 blank oil, 5000 µg/g	V:5000 ppm	50 g
CON-150-100-395	Yttrium in 20 blank oil, 1000 µg/g	Y:1000 ppm	50 g
CON-150-500-395	Yttrium in 20 blank oil, 5000 µg/g	Y:5000 ppm	50 g
CON-150-100-305	Zinc in 20 blank oil, 1000 µg/g	Zn:1000 ppm	50 g
CON-150-500-305	Zinc in 20 blank oil, 5000 µg/g	Zn:5000 ppm	50 g

Code	Product	Unit

Multi-element standards in oil

Multi-element Conostan standards are especially useful for ICP, RDE, and DCP analysis of metals in oil. They are available in high purity hydrocarbon oil solutions and are blended to approximately 70 cSt viscosity at 40°C and flash point of 215°C (75 Blank Oil). They contain equal amounts of each element. **Concentrations not listed are available as custom multi-element standards on request. You may create your own S-21 and S-12 standards by adding additional elements to the stocked product standards, listed as follows.**

CON-150-021-002	Multi-element standard in 75 blank oil: S-21:10 ppm					100 g
	Ag	10 µg/g	Cu	10 µg/g	P	10 µg/g
	Al	10 µg/g	Fe	10 µg/g	Pb	10 µg/g
	B	10 µg/g	Mg	10 µg/g	Si	10 µg/g
	Ba	10 µg/g	Mn	10 µg/g	Sn	10 µg/g
	Ca	10 µg/g	Mo	10 µg/g	Ti	10 µg/g
	Cd	10 µg/g	Na	10 µg/g	V	10 µg/g
	Cr	10 µg/g	Ni	10 µg/g	Zn	10 µg/g
CON-150-021-018	Multi-element standard in 75 blank oil: S-21:10 ppm					200 g
CON-150-021-008	Multi-element standard in 75 blank oil: S-21:30 ppm					100 g
	Ag	30 µg/g	Cu	30 µg/g	P	30 µg/g
	Al	30 µg/g	Fe	30 µg/g	Pb	30 µg/g
	B	30 µg/g	Mg	30 µg/g	Si	30 µg/g
	Ba	30 µg/g	Mn	30 µg/g	Sn	30 µg/g
	Ca	30 µg/g	Mo	30 µg/g	Ti	30 µg/g
	Cd	30 µg/g	Na	30 µg/g	V	30 µg/g
	Cr	30 µg/g	Ni	30 µg/g	Zn	30 µg/g
CON-150-021-027	Multi-element standard in 75 blank oil: S-21:30 ppm					200 g
CON-150-021-010	Multi-element standard in 75 blank oil: S-21:50 ppm					100 g
	Ag	50 µg/g	Cu	50 µg/g	P	50 µg/g
	Al	50 µg/g	Fe	50 µg/g	Pb	50 µg/g
	B	50 µg/g	Mg	50 µg/g	Si	50 µg/g
	Ba	50 µg/g	Mn	50 µg/g	Sn	50 µg/g
	Ca	50 µg/g	Mo	50 µg/g	Ti	50 µg/g
	Cd	50 µg/g	Na	50 µg/g	V	50 µg/g
	Cr	50 µg/g	Ni	50 µg/g	Zn	50 µg/g
CON-150-021-030	Multi-element standard in 75 blank oil: S-21:50 ppm					200 g
CON-150-021-003	Multi-element standard in 75 blank oil: S-21:100 ppm					100 g
	Ag	100 µg/g	Cu	100 µg/g	P	100 µg/g
	Al	100 µg/g	Fe	100 µg/g	Pb	100 µg/g
	B	100 µg/g	Mg	100 µg/g	Si	100 µg/g
	Ba	100 µg/g	Mn	100 µg/g	Sn	100 µg/g
	Ca	100 µg/g	Mo	100 µg/g	Ti	100 µg/g
	Cd	100 µg/g	Na	100 µg/g	V	100 µg/g
	Cr	100 µg/g	Ni	100 µg/g	Zn	100 µg/g
CON-150-021-019	Multi-element standard in 75 blank oil: S-21:100 ppm					200 g
CON-150-021-009	Multi-element standard in 75 blank oil: S-21:300 ppm					100 g
	Ag	300 µg/g	Cu	300 µg/g	P	300 µg/g
	Al	300 µg/g	Fe	300 µg/g	Pb	300 µg/g
	B	300 µg/g	Mg	300 µg/g	Si	300 µg/g
	Ba	300 µg/g	Mn	300 µg/g	Sn	300 µg/g
	Ca	300 µg/g	Mo	300 µg/g	Ti	300 µg/g
	Cd	300 µg/g	Na	300 µg/g	V	300 µg/g
	Cr	300 µg/g	Ni	300 µg/g	Zn	300 µg/g
CON-150-021-028	Multi-element standard in 75 blank oil: S-21:300 ppm					200 g
CON-150-021-011	Multi-element standard in 75 blank oil: S-21:500 ppm					100 g
	Ag	500 µg/g	Cu	500 µg/g	P	500 µg/g
	Al	500 µg/g	Fe	500 µg/g	Pb	500 µg/g
	B	500 µg/g	Mg	500 µg/g	Si	500 µg/g
	Ba	500 µg/g	Mn	500 µg/g	Sn	500 µg/g
	Ca	500 µg/g	Mo	500 µg/g	Ti	500 µg/g
	Cd	500 µg/g	Na	500 µg/g	V	500 µg/g
	Cr	500 µg/g	Ni	500 µg/g	Zn	500 µg/g
CON-150-021-031	Multi-element standard in 75 blank oil: S-21:500 ppm					200 g
CON-150-021-015	Multi-element standard in 75 blank oil: S-21:900 ppm					100 g
	Ag	900 µg/g	Cu	900 µg/g	P	900 µg/g
	Al	900 µg/g	Fe	900 µg/g	Pb	900 µg/g
	B	900 µg/g	Mg	900 µg/g	Si	900 µg/g
	Ba	900 µg/g	Mn	900 µg/g	Sn	900 µg/g
	Ca	900 µg/g	Mo	900 µg/g	Ti	900 µg/g
	Cd	900 µg/g	Na	900 µg/g	V	900 µg/g
	Cr	900 µg/g	Ni	900 µg/g	Zn	900 µg/g
CON-150-021-035	Multi-element standard in 75 blank oil: S-21:900 ppm					200 g

Code	Product	Unit
CON-150-012-001	Multi-element standard in 75 blank oil: S-12:10 ppm Ag 10 µg/g, Fe 10 µg/g, Pb 10 µg/g Al 10 µg/g, Mg 10 µg/g, Si 10 µg/g Cr 10 µg/g, Na 10 µg/g, Sn 10 µg/g Cu 10 µg/g, Ni 10 µg/g, Ti 10 µg/g	100 g
CON-150-012-009	Multi-element standard in 75 blank oil: S-12:10 ppm	200 g
CON-150-012-004	Multi-element standard in 75 blank oil: S-12:30 ppm Ag 30 µg/g, Fe 30 µg/g, Pb 30 µg/g Al 30 µg/g, Mg 30 µg/g, Si 30 µg/g Cr 30 µg/g, Na 30 µg/g, Sn 30 µg/g Cu 30 µg/g, Ni 30 µg/g, Ti 30 µg/g	100 g
CON-150-012-012	Multi-element standard in 75 blank oil: S-12:30 ppm	200 g
CON-150-012-006	Multi-element standard in 75 blank oil: S-12:50 ppm Ag 50 µg/g, Fe 50 µg/g, Pb 50 µg/g Al 50 µg/g, Mg 50 µg/g, Si 50 µg/g Cr 50 µg/g, Na 50 µg/g, Sn 50 µg/g Cu 50 µg/g, Ni 50 µg/g, Ti 50 µg/g	100 g
CON-150-012-014	Multi-element standard in 75 blank oil: S-12:50 ppm	200 g
CON-150-012-002	Multi-element standard in 75 blank oil: S-12:100 ppm Ag 100 µg/g, Fe 100 µg/g, Pb 100 µg/g Al 100 µg/g, Mg 100 µg/g, Si 100 µg/g Cr 100 µg/g, Na 100 µg/g, Sn 100 µg/g Cu 100 µg/g, Ni 100 µg/g, Ti 100 µg/g	100 g
CON-150-012-010	Multi-element standard in 75 blank oil: S-12:100 ppm	200 g
CON-150-012-005	Multi-element standard in 75 blank oil: S-12:300 ppm Ag 300 µg/g, Fe 300 µg/g, Pb 300 µg/g Al 300 µg/g, Mg 300 µg/g, Si 300 µg/g Cr 300 µg/g, Na 300 µg/g, Sn 300 µg/g Cu 300 µg/g, Ni 300 µg/g, Ti 300 µg/g	100 g
CON-150-012-013	Multi-element standard in 75 blank oil: S-12:300 ppm	200 g
CON-150-012-007	Multi-element standard in 75 blank oil: S-12:500 ppm Ag 500 µg/g, Fe 500 µg/g, Pb 500 µg/g Al 500 µg/g, Mg 500 µg/g, Si 500 µg/g Cr 500 µg/g, Na 500 µg/g, Sn 500 µg/g Cu 500 µg/g, Ni 500 µg/g, Ti 500 µg/g	100 g
CON-150-012-015	Multi-element standard in 75 blank oil: S-12:500 ppm	200 g
CON-150-012-008	Multi-element standard in 75 blank oil: S-12:900 ppm Ag 900 µg/g, Fe 900 µg/g, Pb 900 µg/g Al 900 µg/g, Mg 900 µg/g, Si 900 µg/g Cr 900 µg/g, Na 900 µg/g, Sn 900 µg/g Cu 900 µg/g, Ni 900 µg/g, Ti 900 µg/g	100 g
CON-150-012-016	Multi-element standard in 75 blank oil: S-12:900 ppm	200 g
	AM Special This multi-element standard is used in determination of additive elements in lubricant oils by ICP, RDE, and DCP analysis of metals in oil. [Concentrations not listed are available as custom multi-element standards on request. You may create your own AM Special standards by adding additional elements to the stocked product standards, listed as follows]	
CON-150-250-014	Multi-element standard AM-special in 75 blank oil: AM Special 900 ppm Ba 900 µg/g, Mg 900 µg/g, Zn 900 µg/g Ca 900 µg/g, P 900 µg/g	100 g
CON-150-250-027	Multi-element standard AM-special in 75 blank oil: AM Special 900 ppm	200 g
CON-150-250-006	Multi-element standard AM-special in 75 blank oil: AM Special 1000 ppm Ba 1000 µg/g, Mg 1000 µg/g, Zn 1000 µg/g Ca 1000 µg/g, P 1000 µg/g	100 g
CON-150-250-016	Multi-element standard AM-special in 75 blank oil: AM Special 1000 ppm	200 g

Code	Product		Unit
	Custom Multi-Element Standards in Mineral Oil		
	Customised standards can be prepared if your spectrometric analysis of metals requires a specific combination of elements and concentrations. Custom standards allow testing for unusual combinations and concentrations of elements with minimal spectral interference and repeatable results. Both single element and multi-element custom standards are available. Any element available (All except S, Cl, As, Hg, and Se) can be combined to prepare multi-element custom standards. Create your own S-21, S-12, and AM Special standards by adding additional elements to the stocked product standards. Popular additions to S-21 are potassium, lithium, and antimony. Standards are designated, for example, by S-21+K+Sb:100 ppm, AM Special+Fe:900 ppm, S-12+Mo:100 ppm, etc. Custom standards are available in 100 g, 200 g, and 400 g. Custom standards can be shipped to customers within 5 - 7 days of receipt of an order.		

Sulfur in mineral oil

Sulfur and chlorine calibration standards are specifically designed for analysis of sulfur and chlorine in a wide variety of petroleum products by XRF, ICP and other analytical techniques. All standards are prepared on a weight/weight basis in high purity hydrocarbon oil with a 70 cSt viscosity at 40°C (75 Blank Oil). Stock concentrations are listed in the table below. Concentrations not listed are available as custom standards on request.

CON-150-400-025	Sulfur in mineral oil, blank	S:blank	100 g
CON-150-400-018	Sulfur in mineral oil, 50 µg/g	S:50 ppm; 0.005 wt%	100 g
CON-150-400-002	Sulphur in mineral oil, 100 µg/g	S:100 ppm; 0.01 wt%	100 g
CON-150-400-010	Sulfur in mineral oil, 250 µg/g	S:250 ppm; 0.025 wt%	100 g
CON-150-400-019	Sulfur in mineral oil, 500 µg/g	S:500 ppm; 0.05 wt%	100 g
CON-150-400-023	Sulfur in mineral oil, 750 µg/g	S:750 ppm; 0.075 wt%	100 g
CON-150-400-003	Sulphur in mineral oil, 1000 µg/g	S:1000 ppm; 0.1 wt%	100 g
CON-150-400-011	Sulfur in mineral oil, 2500 µg/g	S:2500 ppm; 0.25 wt%	100 g
CON-150-400-020	Sulfur in mineral oil, 5000 µg/g	S:5000 ppm; 0.5 wt%	100 g
CON-150-400-024	Sulfur in mineral oil, 7500 µg/g	S:7500 ppm; 0.75 wt%	100 g
CON-150-400-004	Sulphur in mineral oil, 10000 µg/g	S:10000 ppm; 1.0 wt%	100 g
CON-150-400-005	Sulphur in mineral oil, 15000 µg/g	S:15000 ppm; 1.5 wt%	100 g
CON-150-400-008	Sulfur in mineral oil, 20000 µg/g	S:20000 ppm; 2.0 wt%	100 g
CON-150-400-012	Sulfur in mineral oil, 25000 µg/g	S:25000 ppm; 2.5 wt%	100 g
CON-150-400-014	Sulfur in mineral oil, 30000 µg/g	S:30000 ppm; 3.0 wt%	100 g
CON-150-400-016	Sulfur in mineral oil, 40000 µg/g	S:40000 ppm; 4.0 wt%	100 g
CON-150-400-021	Sulfur in mineral oil, 50000 µg/g	S:50000 ppm; 5.0 wt%	100 g

Sulfur in residual oil

New	CON-150-420-100	Sulfur in residual oil, 2500 µg/g	50 mL
New	CON-150-420-005	Sulfur in residual oil, 2500 µg/g	100 mL
New	CON-150-420-105	Sulfur in residual oil, 3500 µg/g	50 mL
New	CON-150-420-010	Sulfur in residual oil, 3500 µg/g	100 mL
New	CON-150-420-110	Sulfur in residual oil, 5000 µg/g	50 mL
New	CON-150-420-015	Sulfur in residual oil, 5000 µg/g	100 mL
New	CON-150-420-120	Sulfur in residual oil, 7500 µg/g	50 mL
New	CON-150-420-020	Sulfur in residual oil, 7500 µg/g	100 mL
New	CON-150-420-125	Sulfur in residual oil, 10000 µg/g	50 mL
New	CON-150-420-025	Sulfur in residual oil, 10000 µg/g	100 mL
New	CON-150-420-130	Sulfur in residual oil, 15000 µg/g	50 mL
New	CON-150-420-030	Sulfur in residual oil, 15000 µg/g	100 mL
New	CON-150-420-135	Sulfur in residual oil, 20000 µg/g	50 mL
New	CON-150-420-035	Sulfur in residual oil, 20000 µg/g	100 mL
New	CON-150-420-140	Sulfur in residual oil, 25000 µg/g	50 mL
New	CON-150-420-040	Sulfur in residual oil, 25000 µg/g	100 mL

	Code	Product		Unit
New	CON-150-420-145	Sulfur in residual oil, 30000 µg/g		50 mL
New	CON-150-420-045	Sulfur in residual oil, 30000 µg/g		100 mL
New	CON-150-420-150	Sulfur in residual oil, 35000 µg/g		50 mL
New	CON-150-420-050	Sulfur in residual oil, 35000 µg/g		100 mL
New	CON-150-420-155	Sulfur in residual oil, 40000 µg/g		50 mL
New	CON-150-420-055	Sulfur in residual oil, 40000 µg/g		100 mL
New	CON-150-420-160	Sulfur in residual oil, 50000 µg/g		50 mL
New	CON-150-420-060	Sulfur in residual oil, 50000 µg/g		100 mL

Sulfur in Isooctane

New	CON-150-430-010	Sulfur in isooctane, set of 7 x 10 ml vials: 0, 0.5, 1.0, 2.5, 5.0, 7.5, 10 ppm		7 x 10 mL
New	CON-150-430-020	Sulfur in isooctane, set of 7 x 10 ml vials: 0, 5, 10, 25, 50, 100, 250 ppm		7 x 10 mL
New	CON-150-430-030	Sulfur in isooctane, set of 7 x 10 ml vials: 0, 50, 100, 250, 500, 750, 1000 ppm		7 x 10 mL
New	CON-150-430-100	Sulfur in isooctane, Set of 7		7 x 60 mL
New	CON-150-430-101	Sulfur in isooctane (blank)		60 mL
New	CON-150-430-108	Sulfur in isooctane, 5 µg/g		60 mL
New	CON-150-430-109	Sulfur in isooctane, 10 µg/g		60 mL
New	CON-150-430-102	Sulfur in isooctane, 50 µg/g		60 mL
New	CON-150-430-103	Sulfur in isooctane, 100 µg/g		60 mL
New	CON-150-430-104	Sulfur in isooctane, 250 µg/g		60 mL
New	CON-150-430-105	Sulfur in isooctane, 500 µg/g		60 mL
New	CON-150-430-106	Sulfur in isooctane, 750 µg/g		60 mL
New	CON-150-430-107	Sulfur in isooctane, 1000 µg/g		60 mL

Chlorine in oil

CON-150-200-008	Chlorine in oil, blank	Cl:blank	100 g
CON-150-200-001	Chlorine in oil, 10 µg/g	Cl:10 ppm; 0.001 wt%	100 g
CON-150-200-002	Chlorine in oil, 100 µg/g	Cl:100ppm; 0.01 wt%	100 g
CON-150-200-005	Chlorine in oil, 500 µg/g	Cl:500 ppm; 0.05 wt%	100 g
CON-150-200-003	Chlorine in oil, 1000 µg/g	Cl:1000 ppm; 0.1 wt%	100 g
CON-150-200-006	Chlorine in oil, 5000 µg/g	Cl:5000 ppm; 0.5 wt%	100 g
CON-150-200-004	Chlorine in oil, 10000 µg/g	Cl:10000 ppm; 1.0 wt%	100 g
CON-150-200-007	Chlorine in oil, 50000 µg/g	Cl:50000 ppm; 5.0 wt%	100 g

Blank and base oils

Blank oils are used for blending calibration standards for spectrometric analysis of metals in oil.

CON-150-020-002	20 Blank oil Viscosity 40 °C (104 °F)..... 14-18 cSt 100 °C (212 °F) ..... 3-4 cSt Any trace metal..... <0.10 ppm	100 g
CON-150-020-001	20 Blank oil	400 g
CON-150-020-005	20 Blank oil	3.78 L
CON-150-075-003	75 Blank oil Viscosity 40 °C (104 °F)..... 65-72 cSt 100 °C (212 °F) ..... 8.1-8.7 cSt Any trace metal..... <0.10 ppm	100 g
CON-150-075-002	75 Blank oil	400 g
CON-150-075-006	75 Blank oil	3.78 L
CON-150-020-004	20 Base Oil	500 mL
CON-150-020-003	20 Base Oil	3.76 L
CON-150-075-005	75 Base Oil	500 mL
CON-150-075-004	75 Base Oil	3.76 L

Code	Product	Unit
Stabilizer		
CON-150-010-001	Stabilizer for Conostan® Standards	50 g
Sulfur in diesel fuel		
CON-150-410-012	Sulfur in diesel fuel blank	100 g
CON-150-410-008	Sulfur in diesel fuel, 5 µg/g	100 g
CON-150-410-001	Sulfur in diesel fuel, 10 µg/g	100 g
CON-150-410-005	Sulfur in diesel fuel, 15 µg/g	100 g
CON-150-410-013	Sulfur in diesel fuel, 25 µg/g	100 g
CON-150-410-009	Sulfur in diesel fuel, 50 µg/g	100 g
CON-150-410-014	Sulfur in diesel fuel, 75 µg/g	100 g
CON-150-410-002	Sulfur in diesel fuel, 100 µg/g	100 g
CON-150-410-015	Sulfur in diesel fuel, 200 µg/g	100 g
CON-150-410-016	Sulfur in diesel fuel, 300 µg/g	100 g
CON-150-410-017	Sulfur in diesel fuel, 400 µg/g	100 g
CON-150-410-010	Sulfur in diesel fuel, 500 µg/g	100 g
CON-150-410-018	Sulfur in diesel fuel, 750 µg/g	100 g
CON-150-410-003	Sulfur in diesel fuel, 1000 µg/g	100 g
CON-150-410-019	Sulfur in diesel fuel, 1500 µg/g	100 g
CON-150-410-020	Sulfur in diesel fuel, 3000 µg/g	100 g
CON-150-410-011	Sulfur in diesel fuel, 5000 µg/g	100 g
CON-150-410-021	Sulfur in diesel fuel, 7500 µg/g	100 g
CON-150-410-004	Sulfur in diesel fuel, 10000 µg/g	100 g
CON-150-410-006	Sulfur in diesel fuel, 15000 µg/g	100 g
CON-150-410-007	Sulfur in diesel fuel, 20000 µg/g	100 g
CON-150-410-022	Sulfur in diesel fuel, 30000 µg/g	100 g
CON-150-410-023	Sulfur in diesel fuel, 40000 µg/g	100 g

PremiSolv™ ICP solvent

PremiSolv™ ICP solvent is a superior product vs. low odour kerosene or xylene for use as a diluent and “zero” point standard in ICP/DCP analysis of metals in oil and other organic fluids. PremiSolv™ ICP solvent features:

- **Extremely low odour:** No sulfur/aromatic odor for increased worker comfort and less occupational exposure.
- **Extremely low toxicity** compared to kerosene or xylene.
- **Non-hazardous** for shipping/disposal.
- Supplied with **certificate of analysis** listing the concentration of 33 different metals and sulfur.

CON-150-700-003	PremiSolv™ ICP solvent	3.78 L
CON-150-700-002	PremiSolv™ ICP solvent	5 x 3.78 L

Code	Product	Unit

PartiStan™ particle standards- Compliant with ISO 11171:1999

Automatic particle counters (APC), using a laser source, are used for measurement of contamination in lubrication products, especially hydraulic fluids. These products are necessary for instrument calibration and verification of performance, and may, also, be used for non-laser based particle counting instruments.

PartiStan™ Particle Standard Features:

- Traceable to NIST SRM 2806.
- ISO 11171 compliant, Per Annex F; uses ISO medium test dust.
- Certificate of analysis for 4-30 um(c) (micrometers, certified).
- Maintain conformance to ISO programs (ISO 4402 is obsolete).
- Independent of APC manufacturer.

Routine Products Usage:

- PartiStan™ 2806.
  - Sizing calibration (Clause 6, ISO 11171).
  - Verification fluid for APC performance.
- PartiStan™ SCF (Super Clean Fluid).
  - APC system cleaning.
  - Test sample dilution.
- PartiStan™ Calibration Kits - All fluids for ISO 11171 APC calibration.
- PartiStan™ UFTD.
  - Ultra fine test dust suspensions for ISO 11171 - Annexes A,B,C, & E.

CON-150-701-001	PartiStan™ 2806 - 2.8 mg/L ISO Medium Test Dust suspension in Super Clean Fluid	400 g
CON-150-701-002	PartiStan™ resolution standard	400 g
CON-150-701-003	PartiStan™ SCF - Super Clean Fluid	400 mL
CON-150-701-004	PartiStan™ SCF - Super Clean Fluid	1 gallon
CON-150-701-005	PartiStan™ UFTD - Ultra Fine test dust suspension in Super Clean Fluid	400/250 mL

CONOSTAN D-Series® Element (metallo-organic) Standards: D-3, D-12, D-19 (JOAP)

The CONOSTAN-D-Series® standards are specially designed for military laboratories required to conform to the JOAP (Joint Oil Analysis Program –U.S.) program for emission spectrometers. These standards **should not be used unless the laboratory instrument is JOAP certified**. Refer to and use CONOSTAN multi-element standards, otherwise.

D-3 series (Note: U.S. Dept. Of Defense NSN # equivalent shown with product identity)

CON-150-300-019	CONOSTAN D-Series® Standard: D-3:100 (NSN 9150-01-283-0249) B ..... 100 µg/g Mo ..... 100 µg/g Zn ..... 100 µg/g	200 g

D-12 series (Note: U.S. Dept. Of Defense NSN # equivalent shown with product identity)

CON-150-300-005	CONOSTAN D-Series® Standard: D-12:5 ppm (NSN: 9150-01-307-3343) Ag ..... 5 µg/g Fe ..... 5 µg/g Pb ..... 5 µg/g Al ..... 5 µg/g Mg ..... 5 µg/g Si ..... 5 µg/g Cr ..... 5 µg/g Na ..... 5 µg/g Sn ..... 5 µg/g Cu ..... 5 µg/g Ni ..... 5 µg/g Ti ..... 5 µg/g	200 g
CON-150-300-001	CONOSTAN D-Series® Standard: D-12:10 ppm (NSN: 9150-00-179-5145) Ag ..... 10 µg/g Fe ..... 10 µg/g Pb ..... 10 µg/g Al ..... 10 µg/g Mg ..... 10 µg/g Si ..... 10 µg/g Cr ..... 10 µg/g Na ..... 10 µg/g Sn ..... 10 µg/g Cu ..... 10 µg/g Ni ..... 10 µg/g Ti ..... 10 µg/g	200 g
CON-150-300-003	CONOSTAN D-Series® Standard: D-12:30 ppm (NSN: 9150-00-179-5144) Ag ..... 30 µg/g Fe ..... 30 µg/g Pb ..... 30 µg/g Al ..... 30 µg/g Mg ..... 30 µg/g Si ..... 30 µg/g Cr ..... 30 µg/g Na ..... 30 µg/g Sn ..... 30 µg/g Cu ..... 30 µg/g Ni ..... 30 µg/g Ti ..... 30 µg/g	200 g
CON-150-300-006	CONOSTAN D-Series® Standard: D-12:50 ppm (NSN: 9150-00-179-5143) Ag ..... 50 µg/g Fe ..... 50 µg/g Pb ..... 50 µg/g Al ..... 50 µg/g Mg ..... 50 µg/g Si ..... 50 µg/g Cr ..... 50 µg/g Na ..... 50 µg/g Sn ..... 50 µg/g Cu ..... 50 µg/g Ni ..... 50 µg/g Ti ..... 50 µg/g	200 g
CON-150-300-002	CONOSTAN D-Series® Standard: D-12:100 ppm (NSN: 9150-00-179-5142) Ag ..... 100 µg/g Fe ..... 100 µg/g Pb ..... 100 µg/g Al ..... 100 µg/g Mg ..... 100 µg/g Si ..... 100 µg/g Cr ..... 100 µg/g Na ..... 100 µg/g Sn ..... 100 µg/g Cu ..... 100 µg/g Ni ..... 100 µg/g Ti ..... 100 µg/g	200 g

Code	Product	Unit
CON-150-300-004	CONOSTAN D-Series® Standard: D-12:300 ppm (NSN: 9150-00-179-5141) Ag 300 µg/g, Fe 300 µg/g, Pb 300 µg/g Al 300 µg/g, Mg 300 µg/g, Si 300 µg/g Cr 300 µg/g, Na 300 µg/g, Sn 300 µg/g Cu 300 µg/g, Ni 300 µg/g, Ti 300 µg/g	200 g
	D-19 series (Note: U.S. Dept. Of Defense NSN # equivalent shown with product identity)	
CON-150-300-008	CONOSTAN D-Series® Standard (blank): D-19:0 (NSN:9150-00-179-5137)	100 g
CON-150-300-013	CONOSTAN D-Series® Standard: D-19:5 ppm (no NSN number; not offered by U.S. Dept. Of Defense; see CON-D19 Set, below) Ag 5 µg/g, Fe 5 µg/g, Si 5 µg/g Al 5 µg/g, Mg 5 µg/g, Sn 5 µg/g B 5 µg/g, Mn 5 µg/g, Ti 5 µg/g Ba 5 µg/g, Mo 5 µg/g, V 5 µg/g Cd 5 µg/g, Na 5 µg/g, Zn 5 µg/g Cr 5 µg/g, Ni 5 µg/g Cu 5 µg/g, Pb 5 µg/g	100 g
CON-150-300-009	CONOSTAN D-Series® Standard: D-19:10 ppm (no NSN number; not offered by U.S. Dept. Of Defense; see CON-D19 Set, below) Ag 10 µg/g, Fe 10 µg/g, Si 10 µg/g Al 10 µg/g, Mg 10 µg/g, Sn 10 µg/g B 10 µg/g, Mn 10 µg/g, Ti 10 µg/g Ba 10 µg/g, Mo 10 µg/g, V 10 µg/g Cd 10 µg/g, Na 10 µg/g, Zn 10 µg/g Cr 10 µg/g, Ni 10 µg/g Cu 10 µg/g, Pb 10 µg/g	100 g
CON-150-300-011	CONOSTAN D-Series® Standard: D-19:30 ppm (no NSN number; not offered by U.S. Dept. Of Defense; see CON-D19 Set, below) Ag 30 µg/g, Fe 30 µg/g, Si 30 µg/g Al 30 µg/g, Mg 30 µg/g, Sn 30 µg/g B 30 µg/g, Mn 30 µg/g, Ti 30 µg/g Ba 30 µg/g, Mo 30 µg/g, V 30 µg/g Cd 30 µg/g, Na 30 µg/g, Zn 30 µg/g Cr 30 µg/g, Ni 30 µg/g Cu 30 µg/g, Pb 30 µg/g	100 g
CON-150-300-014	CONOSTAN D-Series® Standard: D-19:50 ppm (no NSN number; not offered by U.S. Dept. Of Defense; see CON-D19 Set, below) Ag 50 µg/g, Fe 50 µg/g, Si 50 µg/g Al 50 µg/g, Mg 50 µg/g, Sn 50 µg/g B 50 µg/g, Mn 50 µg/g, Ti 50 µg/g Ba 50 µg/g, Mo 50 µg/g, V 50 µg/g Cd 50 µg/g, Na 50 µg/g, Zn 50 µg/g Cr 50 µg/g, Ni 50 µg/g Cu 50 µg/g, Pb 50 µg/g	100 g
CON-150-300-010	CONOSTAN D-Series® Standard: D-19:100 ppm (no NSN number; not offered by U.S. Dept. Of Defense; see CON-D19 Set, below) Ag 100 µg/g, Fe 100 µg/g, Si 100 µg/g Al 100 µg/g, Mg 100 µg/g, Sn 100 µg/g B 100 µg/g, Mn 100 µg/g, Ti 100 µg/g Ba 100 µg/g, Mo 100 µg/g, V 100 µg/g Cd 100 µg/g, Na 100 µg/g, Zn 100 µg/g Cr 100 µg/g, Ni 100 µg/g Cu 100 µg/g, Pb 100 µg/g	100 g
CON-150-300-012	CONOSTAN D-Series® Standard: D-19:300 ppm (no NSN number; not offered by U.S. Dept. Of Defense; see CON-D19 Set, below) Ag 300 µg/g, Fe 300 µg/g, Si 300 µg/g Al 300 µg/g, Mg 300 µg/g, Sn 300 µg/g B 300 µg/g, Mn 300 µg/g, Ti 300 µg/g Ba 300 µg/g, Mo 300 µg/g, V 300 µg/g Cd 300 µg/g, Na 300 µg/g, Zn 300 µg/g Cr 300 µg/g, Ni 300 µg/g Cu 300 µg/g, Pb 300 µg/g	100 g
CON-150-300-015	CONOSTAN D-Series® Standard: D-19:500 ppm (no NSN number; not offered by U.S. Dept. Of Defense; see CON-D19 Set, below) Ag 500 µg/g, Fe 500 µg/g, Si 500 µg/g Al 500 µg/g, Mg 500 µg/g, Sn 500 µg/g B 500 µg/g, Mn 500 µg/g, Ti 500 µg/g Ba 500 µg/g, Mo 500 µg/g, V 500 µg/g Cd 500 µg/g, Na 500 µg/g, Zn 500 µg/g Cr 500 µg/g, Ni 500 µg/g Cu 500 µg/g, Pb 500 µg/g	100 g

Code	Product	Unit
CON-150-300-016	CONOSTAN D-Series® Standard: D-19:700 ppm (no NSN number; not offered by U.S. Dept. Of Defense; see CON-D19 Set, below) Ag ..... 700 µg/g Al..... 700 µg/g B ..... 700 µg/g Ba ..... 700 µg/g Cd ..... 700 µg/g Cr ..... 700 µg/g Cu ..... 700 µg/g Fe .....700 µg/g Mg .....700 µg/g Mn .....700 µg/g Mo .....700 µg/g Na.....700 µg/g Ni.....700 µg/g Pb.....700 µg/g Si..... 700 µg/g Sn ..... 700 µg/g Ti..... 700 µg/g V ..... 700 µg/g Zn..... 700 µg/g	100 g
CON-150-300-017	CONOSTAN D-Series® Standard: D-19:900 ppm (no NSN number; not offered by U.S. Dept. Of Defense; see CON-D19 Set, below) Ag ..... 900 µg/g Al..... 900 µg/g B ..... 900 µg/g Ba ..... 900 µg/g Cd ..... 900 µg/g Cr ..... 900 µg/g Cu ..... 900 µg/g Fe .....900 µg/g Mg .....900 µg/g Mn .....900 µg/g Mo .....900 µg/g Na.....900 µg/g Ni.....900 µg/g Pb.....900 µg/g Si..... 900 µg/g Sn ..... 900 µg/g Ti..... 900 µg/g V ..... 900 µg/g Zn..... 900 µg/g	100 g
CON-150-300-018	CONOSTAN D-Series® Standards: D-19:Set (NSN: 9150-01-355-1178) Each set includes CON-D19/0A .....4 x 100 g CON-D19/5A .....1 x 100 g CON-D19/10A .....1 x 100 g CON-D19/30A .....1 x 100 g CON-D19/50A ..... 1 x 100 g CON-D19/500A ..... 1 x 100 g CON-D19/700A ..... 1 x 100 g CON-D19/900A ..... 1 x 100 g CON-D19/100A .....3 x 100 g CON-D19/300A .....2 x 100 g	set

Oils and liquid fuels

	ERM-EF213 – ERM-EF211 Petroleum products containing Sulfur (S) in its natural forms, closely matching petrol fuels. The material is supplied in 19mL units in glass ampoules.	
ERM-EF213	Petrol - Sulfur Certified value S ..... 9.1 ± 0.8 mg/kg	Amp.
ERM-EF212	Petrol - Sulfur Certified value S ..... 20.2 ± 1.1 mg/kg	19 mL
ERM-EF211	Petrol - Sulfur Certified value S ..... 48.8 ± 1.7 mg/kg	Amp.
	ERM-EF674 – ERM-EF673 Petroleum products containing Sulfur (S) in its natural forms, closely matching diesel fuels. The material is supplied in 100mL units in glass bottles with tamper evident tops.	
ERM-EF673	Diesel - Sulfur Certified value S ..... 52.4 ± 1.3 mg/kg Indicative value for density	100 mL
	ERM-EF672 - ERM-EF104 The material is intended to control that gas oil does not contain more sulfur than allowed by Directive 1999/32/EEC so that maximum atmospheric sulfur emissions are not exceeded. It can be used to validate and/or calibrate analytical methods applied.	
ERM-EF674	Diesel - Sulfur Certified value S ..... 11.0 ± 0.9 mg/kg Indicative value for density	100 mL
ERM-EF672	Gas oil - Sulfur Certified value S ..... 0.0203 %	8 mL
ERM-EF671	Gas oil - Sulfur Certified value S ..... 0.0452 %	8 mL
ERM-EF104	Gas oil - Sulfur Certified value S ..... 0.1019 %	8 mL

Code	Product	Unit
BCR-106	**Gas oil - Sulfur** Certified value S ..... 0.502 %	25 g
BCR-107	**Gas oil - Sulfur** Certified value S ..... 1.040 %	25 g
ERM-EF317	**Gas oil - Solvent Yellow 124 (SY124)** Certified value / Uncertainty Solvent Yellow 124 (SY124) content ..... 0.141 mg/kg ..... 0.018 mg/kg	20 mL
ERM-EF318	**Gas oil - Solvent Yellow 124 (SY124)** Certified value / Uncertainty Solvent Yellow 124 (SY124) content ..... 7.0 mg/kg ..... 0.4 mg/kg	20 mL
NIST-2037	**Solvent Red 24 diesel fuel dye** This Standard Reference Material® (SRM®) is intended for the verification and calibration of spectrophotometers used to measure the concentration of Solvent Red dyes employed as colorants to mark “off-road” diesel fuel. NIST-2037 is certified for the purity of the Solvent Red 24 Dye ($C_{24}H_{20}N_4O$, molecular mass 380.45) and for the second-derivative-based molecular absorption coefficients (extinction coefficients) of solutions of Solvent Red 24 Dye in p-xylene and in 97:3 (v:v) kerosene:p-xylene. Each unit of NIST-2037 consists of an amber 30 mL (1 oz), screw-capped bottle containing approximately 100 mg of solid Solvent Red 24 Dye. Certified values Mass Fraction (Purity) of Solvent Red 24 Dye Constituent / Mass Fraction (%) / 95% Uncertainty Interval Solvent Red 24 Dye ..... 98.0 ..... 92.3 % to 100 % Second-Derivative-Based Molecular Absorption Coefficients for Solutions of Solvent Red 24 Dye p-Xylene ..... 534 (Wavelength of Second Derivative Maximum (nm)) ..... 557 (Wavelength of Second Derivative Minimum (nm)) ..... 0.088 ± 0.005 ($L\ g^{-1}cm^{-1}$) ..... 33 ± 2 ($L\ mol^{-1}cm^{-1}$) Kerosene:p-Xylene .. 531 ..... 555 ..... 0.101 ± 0.006 ..... 39 ± 3	100 mg
SS99859-0	**Gas oil - Sulfur ED X-ray** ASTM D4294-IP336, Sulphur in the range 0.003 to 0.016 %m/m	50 mL
SS99867-0	**Gas oil - Sulfur WD X-ray** ASTM D2622, Sulfur in the range 0.001 to 0.013 %m/m	50 mL
BCR-420	**Waste mineral oil - PCBs (low level)** Certified values PCB 28 ..... 0.61 mg/kg; PCB 118 ..... 1.69 mg/kg; PCB 180 ..... 0.195 mg/kg PCB 101 ..... 1.45 mg/kg; PCB 153 ..... 0.92 mg/kg	7.5 g
BCR-449	**Waste mineral oil - PCBs (high level)** Certified values PCB 28 ..... 0.80 mg/kg; PCB 118 ..... 46.6 mg/kg; PCB 170 ..... 6.6 mg/kg PCB 52 ..... 31.4mg/kg; PCB 128 ..... 12.5 mg/kg; PCB 180 ..... 10.4 mg/kg PCB 101 ..... 57.2 mg/kg; PCB 153 ..... 39.0 mg/kg PCB 105 ..... 17.4 mg/kg; PCB 156 ..... 6.9 mg/kg	50 g
BAMCRM5001	**Transformer oil - PCBs** Set (2 x 15 g) of a PCB-free transformer oil and a PCB-containing transformer oil. PCB-containing transformer oil: PCB 44 ..... 240 µg/kg; PCB 118 ..... 860 µg/kg; PCB 153 ..... 700 µg/kg PCB 52 ..... 790 µg/kg; PCB 138+163 ..... 800 µg/kg; PCB 180 ..... 110 µg/kg PCB 101+84 ..... 1430 µg/kg; PCB 149 ..... 650 µg/kg	kit
New RTC-CRM920-010	**Transformer oil - PCBs** Oil taken from an electrical transformer. The sample was certified by USEPA SW846, 3rd edition Method 3540A/8081 and is suitable for use by these and other similar methods. Certified value Aroclor 1260 ..... 35.2 mg/kg	10 g
NIST-1818A	**Lubricating base oil - Chlorine** Set of 5 x 20 mL ampoules Certified values I Cl ..... 31.6 mg/kg II Cl ..... 60.0 mg/kg III Cl ..... 78.2 mg/kg IV C ..... 154.4 mg/kg V Cl ..... 234.0 mg/kg	set

Code	Product	Unit
NIST-2720	**Di-n-butyl sulfide - Sulfur** This Standard Reference Material® (SRM) is intended for use as an internal standard in X-ray fluorescence spectrometry (XRF) measurements of sulfur in oils and other liquid hydrocarbon matrices. Certified value of sulfur (mass fraction) .....21.91 % ± 0.15 %	5 x 4.5 mL
NIST-1819A	**Lubricating base oil - Sulfur** NIST-1819a consists of five lubricating base oils at different sulphur concentrations. Certified values I S ..... 423.5 mg/kg II S ..... 741.1 mg/kg III S..... 4022 mg/kg IV S ..... 4689 mg/kg V S ..... 6135 mg/kg	set
SS99863-0	**Lube oil - Trace elements** ASTM-IP method ICP, Ca in the range 0.18 to 0.35 % m/m ASTM-IP method ICP, P in the range 0.08 to 0.16 %m/m ASTM-IP method ICP, Zn in the range 0.09 to 0.15 %m/m	50 mL
NIST-1848	**Lubricating oil additive package** This Standard Reference Material (SRM®) is intended primarily for use in the evaluation of methods and the calibration of equipment used in the analysis of lubricating oil additive packages, engine lubricating oils, and materials of a similar matrix. NIST-1848 consists of a typical additive package used in the manufacture of crankcase lubricating oil for gasoline engines. Certified values B ..... 0.137 ± 0.019 % Mg .....0.821 ± 0.038 % Zn..... 0.873 ± 0.022 % Ca ..... 0.359 ± 0.01 % P .....0.788 ± 0.028 % Cl ..... 0.0927 ± 0.020 % S.....2.3270 ± 0.043 % Indicative values for H, N, Si, total base number by ASTM D 2896, total base number by ASTM D 4739	100 g
NIST-1634C	**Fuel oil - Trace elements** Certified values As..... 0.1426 mg/kg Ni.....17.54 mg/kg V ..... 28.19 mg/kg Co ..... 0.1510 mg/kg Se.....0.1020 mg/kg Indicative values for Ba, Cl, Na, S	100 mL
SS99860-0	**Fuel oil - Vanadium and nickel** ASTM-IP method IP288, V in the range 16 to 140 µg/g ASTM-IP method IP288, Ni in the range 7 to 45 µg/g	50 mL
SS99862-0	**Fuel oil - Sulfur ED X-ray** ASTM D4294-IP336, Sulfur in the range 0.981 to 2.572 %m/m	50 mL
SS99866-0	**Fuel oil - Sulfur WD X-ray** ASTM D2622, Sulfur in the range 0.9931 to 2.578 %m/m	50 mL
SS99898-0	**Gas oil - Aromatics HPLC** ASTM D6379, Aromatics- Di HPLC in the range 1.44 to 2.82 %m/m ASTM D6379, Aromatics- Mono HPLC in the range 15.2 to 21.2 %m/m ASTM D6379, Aromatics- Total HPLC in the range 16.9 to 22.82 %m/m	50 mL
SS99857-0	**Kerosene - Naphthalenes** ASTM D1840, Naphthalenes in the range 1.35 to 2.4 %vol	50 mL
NIST-1580	**Shale oil - PAHs** Set of 5 x 2 mL ampoules Certified values Benzo[*a*]pyrene..... 21 mg/kg o-Cresol.....385 mg/kg Pyrene ..... 104 mg/kg Benzo[*e*]pyrene..... 18 mg/kg Phenol .....407 mg/kg 2,6-Dimethylphenol... 175 mg/kg Fluoranthene..... 54 mg/kg Perylene .....3.4 mg/kg Benzo[*f*]quinoline ..... 16 mg/kg	set
NIST-1582	**Petroleum crude oil - PAHs** Set of 5 x 2 mL Certified values Benzo[*a*]anthracene... 3.0 mg/kg Fluoranthene .....2.5 mg/kg Phenanthrene ..... 101 mg/kg Benzo[*e*]pyrene..... 1.1 mg/kg Perylene .....31 mg/kg Dibenzothiophene..... 33 mg/kg	set (5)
NIST-2721	**Crude oil (light-sour) - Sulfur and mercury** Certified values S ..... 1.5832 % Hg.....41.7 ng/kg	5 x 10 mL
NIST-2722	**Crude oil (heavy-sweet) - Sulfur and mercury** Certified values S ..... 0.21037 % Hg..... 129 ng/kg	5 x 10 mL
NIST-1616b	**Kerosene - Sulfur** Certified value S ..... 8.41 mg/kg	100 mL

Code	Product	Unit
NIST-2298	Gasoline (High-Octane) - Sulfur Certified value S ..... 4.7 µg/g Indicative value for the desity	5 x 20 mL
NIST-2299	Gasoline (Reformulated) - Sulfur Certified value S ..... 13.6 µg/g Indicative value for the density	5 x 20 mL
SS99868-0	Gasoline - Sulfur UVF ASTM D5453, Sulfur in the range 2.2 to 129 mg/kg	50 mL
SS99858-0	Kerosene - Sulfur ED X-ray ASTM D4294-IP336, Sulphur in the range 0.0032 to 0.07 %m/m	50 mL
NIST-1619B	Residual fuel oil - Sulfur Certified value S ..... 0.6960 % Hg ..... 3.46 ng/kg	100 mL
NIST-1621E	Residual fuel oil - Sulfur Certified value S ..... 0.9480 %	100 mL
NIST-1622E	Residual fuel oil - Sulfur Certified value S ..... 2.1468 %	100 mL
NIST-2717A	Residual fuel oil - Sulfur Certified value S ..... 2.9957 %	100 mL
NIST-1620C	Residual fuel oil - Sulfur Certified value S ..... 4.561 %	100 mL
NIST-2770	Diesel fuel oil - Sulfur NIST-2770 is a commercial “No. 2-D” distillate fuel oil as defined by ASTM D 975-97 Standard Specification for Diesel Fuel Oils. A unit of NIST-2770 consists of 10 amber ampoules, each containing approximately 10 mL of diesel fuel sealed under an argon atmosphere. Certified value S ..... 41.57 mg/kg	10 x 10 mL
New NIST-2771	Diesel fuel blend stock - Sulfur Certified value Sulfur (S) ..... 0.102 ± 0.014 mg/kg	100 mL
NIST-1624d	Diesel fuel oil - Sulphur NIST-1624d is a commercial “No. 2-D” distillate fuel oil as defined by ASTM D 975-97 Standard Specification for Diesel Fuel Oils. A unit of NIST-1624d consists of 10 amber ampoules, each containing approximately 10 mL of diesel fuel sealed under an argon atmosphere. Certified value S ..... 3882 mg/kg	100 mL
	IRMM-441 and IRMM-442 High purity n-heptane and isooctane intended for use as a primary standard in the octane rating of motor and aviation fuels as specified in ASTM test methods (see Volume 05.04, Annual Book of ASTM Standards) and in evaluating ASTM methods for chemical analysis of fuels by gas chromatography (D2268).	
IRMM-441	n-Heptane n-Heptane Certified value: Purity by difference 99.985% Impurities Certified values Total organics (other than n-Heptane) ..... 0.012 % Water ..... 0.003 % Isooctane ..... 0.007 % Pb ..... <0.5 µg/L	100 mL
IRMM-442	Isooctane Isooctane Certified value: Purity by difference 99.985% Impurities Certified values Total organics (other than Isooctane) ..... 0.011% Water ..... 0.004%, n-Heptane ..... 0.002 % Pb ..... <1 µg/L	100 mL

Code	Product	Unit
NIST-1815a	n-Heptane Certified purity..... 99.987 %	100 mL
NIST-1816A	Isooctane (2,2,4-Trimethylpentane) Certified purity..... 99.987 %	100 mL
NIST-2724b	Diesel fuel oil - Sulfur and mercury This Standard Reference Material® (SRM®) is intended for use in the evaluation of methods and the calibration of instruments used in the determination of total sulfur and mercury in fuel oils or materials of similar matrix. NIST-2724B is a commercial “No. 2-D” distillate fuel oil as defined by ASTM D 975-96a Standard Specification for Diesel Fuel Oils. Certified value S ..... 0.04265 % Hg ..... 0.034 ng/kg	10 x 10 mL
NIST-2890	Water saturated octanol NIST-2890 is a solution of water saturated 1-octanol which is certified for its water content. Certified values Water ..... 47.3 mg/g Water .....39.24 mg/mL	5 x 2 mL
NIST-RM 8505	Crude oil - Vanadium Reference value V ..... 390 mg/kg	275 mL
NIST-RM 8506A	Transformer oil - Water A unit of NIST-RM 8506a consists of five ampoules with each ampoule containing 9.5 mL of petroleum electrical insulating oil. The first coulometric value is the NIST result corrected for the coulometrically detected material present in the oil that reacts with iodine but is not water (interfering substances). Because the correction is new, two additional uncorrected values determined by the coulometric method in ASTM Standard D 1533-99 are provided: the NIST result and a consensus result obtained from an interlaboratory study conducted among 14 laboratories from industry. The volumetric reference value, which has not been corrected for interfering substances, is significantly different from the coulometric results. Applying the coulometrically determined correction for interfering substances does not resolve this difference. The basis of the difference between coulometric and volumetric results in this material has not been fully resolved. Reference values for water content NIST coulometric mass concentration of water, ASTM method minus interferences .....12.1 mg/kg ± 1.9 mg/kg NIST coulometric mass concentration of water, ASTM method.....18.3 mg/kg ± 1.9 mg/kg Consensus coulometric mass concentration of water, ASTM method: .....21.2 mg/kg ± 1.7 mg/kg NIST volumetric mass concentration of water, modified ASTM method: .....34.5 mg/kg ± 2.2 mg/kg	set
NIST-RM 8509	Methanol - Water Set of 5 x 5 mL Reference value Water ..... 93 mg/kg Indicative values for Ag, Al, Cr, Cu, Fe, Mg, Mn, Mo, Na, Ni, Pb, S, Si, Sn, Ti, V, Zn	set
NIST-RM 8510	Methanol - Water Set of 5 x 5 mL Reference value Water ..... 325 mg/kg	set
NIST-1083	Oil (base oil) - Wear metals Indicative values for Ag, Al, Cr, Cu, Fe, Mg, Mn, Mo, Na, Ni, Pb, S, Si, Sn, Ti, V, Zn	150 mL
NIST-1084A	Oil - Wear metals Set of 5 x approx. 1.6 g of the oil blend Certified values Ag ..... 101.4 mg/kg Mg .....99.5 mg/kg Sn ..... 97.2 mg/kg Cr ..... 98.3 mg/kg Mo .....100.3 mg/kg Ti..... 100.4 mg/kg Cu ..... 100.0 mg/kg Ni.....99.7 mg/kg V ..... 95.9 mg/kg Fe..... 98.9 mg/kg Pb.....101.1 mg/kg Indicative values for Al, S, Si	set
New NIST-1085B	Oil - Wear metals This Standard Reference Material® (SRM®) is intended primarily for use in the evaluation of methods and in the calibration of apparatus used in the analysis of engine lubricating oils and other materials of similar matrix for metal content. A unit of NIST-085b consists of 10 ampoules: five 5 mL amber borosilicate ampoules, each containing approximately 1.2 g of a blend of 21 constituent elements in a base oil at a nominal concentration of 300 mg/kg; and five ampoules, each containing approximately 1.2 g of a matching base oil intended for use as an analytical blank and for matrix matching. Certified values for elements in NIST-1085b Cadmium (Cd) .....302.9 ± 5.1 mg/kg Nickel (Ni) ..... 295.9 ± 7.4 mg/kg Chromium (Cr).....302.9 ± 3.9 mg/kg Silver (Ag) ..... 304.6 ± 8.9 mg/kg Copper (Cu).....295.6 ± 8.5 mg/kg Sodium (Na)..... 305.2 ± 7.0 mg/kg Lead (Pb).....297.7 ± 6.8 mg/kg Vanadium (V)..... 297.8 ± 4.6 mg/kg Magnesium (Mg).....297.3 ± 4.1 mg/kg Zinc (Zn)..... 296.8 ± 6.8 mg/kg Indicative values for further elements.	set (5)

Code	Product	Unit
NIST-1829	Reference fuel - Alcohols Certified values Methanol ..... 0.335 % Ethanol..... 11.39 % Methanol and t-butanol .....10.33 + 6.63 %	set (6)
NIST-1837	Reference fuel - Methanol and t-butanol Certified values Methanol and t-butanol ..... 10.33 + 6.63 %	set
NIST-1838	Reference fuel - Ethanol Certified value Ethanol.....11.39 %	5 x 20 mL
NIST-1839	Reference fuel - Methanol Certified value Methanol .....0.335 %	set
NIST-2286	Ethanol in gasoline - Oxygen and oxygenate Set of 3 x 20 mL Certified values Oxygenate.....5.73 % Oxygen ..... 2.02 %	set (3)
NIST-2287	Ethanol in gasoline - Oxygen and oxygenate Set of 3 x 20 mL Certified values Oxygenate.....10.07 % Oxygen ..... 3.53 %	set (3)
NIST-2288	t-Amyl methyl ether in gasoline - Oxygen and oxygenate Set of 3 x 20 mL Certified values Oxygenate.....12.78 % Oxygen ..... 2.02 %	set (3)
NIST-2289	t-Amyl methyl ether in gasoline - Oxygen and oxygenate Set of 3 x 20 mL Certified values Oxygenate.....17.30 % Oxygen ..... 2.73 %	set (3)
NIST-2290	Ethyl t-butyl ether in gasoline - Oxygen and oxygenate Set of 3 x 20 mL Certified values Oxygenate.....12.78 % Oygen ..... 2.01 %	set (3)
NIST-2291	Ethyl-t-butyl ether in gasoline - Oxygen and oxygenate Set of 3 x 20 mL Certified values Oxygenate.....17.18 % Oxygen ..... 2.70 %	set (3)
NIST-2293	Methyl t-butyl ether in gasoline - Oxygen and oxygenate A unit of NIST-2292 consists of two 20 mL ampoules of the methyl-t-butyl ether in reference gasoline solution each containing 18 mL, and one 20 ml ampoule containing 18 mL of the reference gasoline, intended for use as a measurement blank. Certified values Oxygenate.....14.86 % Oxygen ..... 2.71 %	set (3)
NIST-2294	Reformulated gasoline - Sulfur, benzene, MTBE and toluene Certified values S (total) ..... 40.9 mg/kg MTBE ..... 10.97 % Benzene.....1.03 % Toluene ..... 8.29 % Indicative values for a wide range of additional constituents	2 x 20 mL
NIST-2295	Reformulated gasoline - Sulfur, benzene, MTBE and toluene Certified values S (total) ..... 308 mg/kg MTBE ..... 14.54 % Benzene.....0.99 % Toluene ..... 7.89 % Indicative values for a wide range of additional constituents	2 x 20 mL
NIST-2296	Reformulated gasoline - Sulfur, benzene, MTBE and toluene Certified values S (total) ..... 40.0 mg/kg ETBE..... 13.02 % Benzene.....1.0 % Toluene ..... 8.02 % Indicative values for a wide range of additional constituents	2 x 20 mL

Code	Product	Unit
NIST-2297	Reformulated gasoline - Sulfur, benzene, MTBE and toluene Certified values S (total) ..... 303.7 mg/kg MTBE .....9.91 % Benzene..... 1.04 % Toluene .....8.27 % Indicative values for a wide range of additional constituents	2 x 20 mL
SS99865-0	Gasoline - Benzene ASTM D3606, Benzene in the range 0.4 to 0.9 %vol	5 x 5 mL
SS99869-0	Gas oil - Aromatics HPLC ASTM D6591, Aromatics in the range 0.6 to 3.6 %m/m	50 mL

SS99905-0 — Kerosene (Jet turbine fuel) - Boiling range distribution — 10 mL

Test Name	ASTM-IP Method	Sample result	Amount/test
SIMDIS IBP	D2887-IP406	102.4 °C	1 mL
SIMDIS 10%	D2887-IP406	150.5 °C	1 mL
SIMDIS 50%	D2887-IP406	193.5 °C	1 mL
SIMDIS 90%	D2887-IP406	246.8 °C	1 mL
SIMDIS 95%	D2887-IP406	256.4 °C	1 mL
SIMDIS FBP	D2887-IP406	288.8 °C	1 mL

SS99906-0 — Gas oil - Boiling range distribution — 10 mL

Test Name	ASTM-IP Method	Range	Amount/test
SIMDIS IBP	D2887-IP406	160 to 190 °C	1 mL
SIMDIS 10%	D2887-IP406	200 to 242 °C	1 mL
SIMDIS 50%	D2887-IP406	260 to 290 °C	1 mL
SIMDIS 90%	D2887-IP406	320 to 350 °C	1 mL
SIMDIS 95%	D2887-IP406	335 to 368 °C	1 mL
SIMDIS FBP	D2887-IP406	350 to 385 °C	1 mL

Multi-test verification materials (MTVMs)

The Multi-Test Verification Materials (MTVMs) are unique because, unlike most other reference materials, they enable a laboratory to use a single sample to validate different tests and instrumentation. Each unit is supplied with data for multiple types of internationally accepted test methods.

SS99850-0 — SETA MTVM Kerosine (Jet turbine fuel) — 500 mL

Test Name	ASTM-IP Method	Range	Amount/test
Distillation IBP	D86-IP123	140-180 °C	100 mL
Distillation 10 %	D86-IP123	159-188 °C	100 mL
Distillation 50 %	D86-IP123	192-218 °C	100 mL
Distillation 90 %	D86-IP123	220-247 °C	100 mL
Distillation FBP	D86-IP123	244-268 °C	100 mL
Distillation residue	D86-IP123	1.1-1.3 %vol	100 mL
Distillation loss	D86-IP123	0.4-0.7 %vol	100 mL
Flashpoint	IP170	35-60 °C	85 mL
Freezing point	D2386-IP16	–62 to -44°C	25 mL
Aromatics FIA	D1319-IP156	18.1-22.7 %vol	0.75 mL
Smoke point	D1322	20-25 mm	20 mL
Acid number	D3242-IP354	<0.100 mg KOH/g	100 mL
Mercaptans	D3227-IP342	0.0003 to 0.0100% (m/m)	40 mL

SS99851-0 — SETA MTVM Gas oil — 500 mL

Test Name	ASTM-IP Method	Range	Amount/test
Density at 15 °C	D1298-IP160	0.83-0.854 kg/L	200 mL
Distillation IBP	D86-IP123	160-190 °C	100 mL
Distillation 10 %	D86-IP123	200-242 °C	100 mL
Distillation 50 %	D86-IP123	260-290 °C	100mL
Distillation 90 %	D86-IP123	320-350 °C	100 mL
Distillation 95 %	D86-IP123	335-368 °C	100 mL
Distillation FBP	D86-IP123	350-385 °C	100 mL
Distillation residue	D86-IP123	1.25-1.42 %vol	100 mL
Distillation loss	D86-IP123	0.26-0.55 %vol	100 mL
Flashpoint	D93-IP34	56-80°C	75 mL
Cloud point	D2500-IP219	–17 to –4 °C	up to 38 mL
CFPP	IP309	–30.0 to –o °C	45 mL
Pour point	D97-IP15	-33 to –6 °C	up to 38 mL
Kin. Visc. (40 °C)	D445-IP71	2.3-3.5 mm^2/s	up to 40 mL
Lubricity HFRR	D6079; IP450	271 to 512 µm	2 mL
Water Karl Fischer	D1744; IP438	23.4 to 63.9 mg/kg	5 mL

SS99852-0 — SETA MTVM Fuel oil — 500 mL

Test Name	ASTM-IP Method	Range	Amount/test
Density at 15 °C	D1298-IP160	0.94-0.994 kg/L	200 mL
Pour point	D97-IP15	–14 to 17 °C	up to 38 mL
Kin. Visc. (50 °C)	D445-IP71	150-1800 mm^2/s	up to 500 mL
Kin. Visc. (100 °C)	D445-IP71	20-95 mm^2/s	up to 500 mL
Micro carbon	D4530;IP398	0.10 to 30.0 %(m/m)	2 mL
Flash point	D93 (b) - IP34(b);	92.3 to 121.6 °C	75 mL

Code	Product	Unit
SS99853-0	SETA MTVM lubricating oil	500 mL

Test Name	ASTM-IP Method	Range	Amount/test
Kin. Visc. (40 °C)	D445-IP71	70-160 mm^2/s	up to 40 mL
Kin. Visc. (100 °C)	D445-IP71	10-19 mm^2/s	up to 40 mL
Viscosity index	D2270-IP226	139-180	up to 80 mL
Pour point	D97-IP15	–49.1 to –33.9 °C	38 mL
Flash point	D93-IP34	196-213 °C	75 mL
Cold cranking sim.	D5293;IP383	3062-6896 mPa.s	5 mL

Code	Product	Unit
SS99854-0	SETA MTVM motor gasoline	500 mL

Test Name	ASTM-IP Method	Range	Amount/test
Motor octane no.	D2700	83-90	
Research octane no.	D2699	96-101	
Density at 15 °C	D1298-IP160	0.71-0.763 kg/L	200 mL
Distillation IBP	D86-IP123	32.0-39.0 °C	100 mL
Distillation 70 °C	D86-IP123	15-36 %vol	100 mL
Distillation 100 °C	D86-IP123	36-58 %vol	100 mL
Distillation 150 °C	D86-IP123	75-90 %vol	100 mL
Distillation FBP	D86-IP123	175-205 °C	100mL
Aromatics FIA	D1319-IP156	19-42 %vol	0.75 mL
Olefins FIA	D1319-IP156	1.5-15 %vol	0.75 mL
Saturates FIA	D1319-IP156	42-72 %vol	0.75 mL
Vapour Pressure	D5191; IP394	50 to 85 kPa	3 mL

Code	Product	Unit
SS99856-0	SETA MTVM bitumen	500 mL

Test Name	ASTM-IP Method	Range	Amount/test
Softening point	IP58	37-54 °C	7.5 mL
Needle penetration	IP49	41-200 Pen	130 mL

Biodiesel standards

Biodiesel standards

	Code	Product	Unit
New	NIST-2772	B100 Biodiesel (Soy-based)	5 x 10 mL

This Standard Reference Material (SRM) is a commercial 100 % biodiesel produced from soy. NIST-2772 is intended for use in evaluating analytical methods for the determination of selected chemical and physical properties in pure biodiesel (B100). A unit of NIST-2772 consists of five 10-mL ampoules, each containing approximately 10 mL of biodiesel.

Certified concentration values for fatty acid methyl esters

Tetradecanoic acid, methyl ester (C14:0) ..... 0.755 ± 0.089 g/kg
(Myristic acid, methyl ester)
Hexadecanoic acid, methyl ester (C16:0) ..... 107 ± 2 g/kg
(Palmitic acid, methyl ester)
(Z)-9-Hexadecenoic acid, methyl ester (C16:1 n-7) ..... 1.32 ± 0.18 g/kg
(Palmitoleic acid, methyl ester)
Octadecanoic acid, methyl ester (C18:0) ..... 43.0 ± 2.7 g/kg
(Stearic acid, methyl ester)
(Z)-9-Octadecenoic acid, methyl ester (C18:1 n-9) ..... 233 ± 6 g/kg
(Oleic acid, methyl ester)
(Z)-11-Octadecenoic acid, methyl ester (C18:1 n-7) ..... 14.3 ± 1.5 g/kg
(Vaccenic acid, methyl ester)
(Z,Z)-9,12-Octadecadienoic acid, methyl ester (C18:2 n-6) ..... 523 ± 17 g/kg
(Linoleic acid, methyl ester)
(Z,Z,Z)-9,12,15-Octadecatrienoic, methyl ester (C18:3 n-3) ..... 78.2 ± 2 g/kg
(Linolenic acid, methyl ester)
Eicosanoic acid, methyl ester (C20:0) ..... 3.66 ± 0.52 g/kg
(Arachidic acid, methyl ester)

Certified concentration value for water

Water ..... 0.018 ± 0.002 %

Certified value for density at 20 °C and kinematic viscosity at 20 °C, 30 °C, and 40 °C

Density at 20 °C ..... 0.88132 ± 0.00006 g/cm^3
Kinematic Viscosity at 20 °C ..... 6.4310 ± 0.0098 mm^2/s
Kinematic Viscosity at 30 °C ..... 5.0532 ± 0.0069 mm^2/s
Kinematic Viscosity at 40 °C ..... 4.0843 ± 0.0057 mm^2/s

Indicative values for fatty acid methyl esters and for additional chemical and physical properties, trace elements, glycerides, and ethanol.

Code	Product	Unit
New NIST-2773	B100 Biodiesel (Animal-based)	5 x 10 mL

This Standard Reference Material (SRM) is a commercial 100 % biodiesel produced from animal feedstocks. NIST-2773 is intended for use in evaluating analytical methods for the determination of selected chemical and physical properties in pure biodiesel (B100). A unit of NIST-2773 consists of five 10-mL ampoules, each containing approximately 10 mL of biodiesel.

Certified concentration values for fatty acid methyl esters

Dodecanoic acid, methyl ester (C12:0).....0.470 ± 0.017 g/kg
(Lauric acid, methyl ester)
Tetradecanoic acid, methyl ester (C14:0).....9.20 ± 0.45 g/kg
(Myristicacid, methyl ester)
Pentadecanoic acid, methyl ester (C15:0).....0.305 ± 0.013 g/kg
Hexadecanoic acid, methyl ester (C16:0).....184 ± 6 g/kg
(Palmitic acid, methyl ester)
(Z)-9-Hexadecenoic acid, methyl ester (C16:1 n-7).....23.3± 0.9 g/kg
(Palmitoleic acid, methyl ester)
Octadecanoic acid, methyl ester (C18:0).....87.8 ± 4.2 g/kg
(Stearic acid, methyl ester)
(Z)-9-Octadecenoic acid, methyl ester (C18:1 n-9) .....343 ± 8 g/kg
(Oleic acid, methyl ester)
(Z)-11-Octadecenoic acid, methyl ester (C18:1 n-7) .....19.4 ± 0.7 g/kg
(Vaccenic acid, methyl ester)
(Z,Z)-9,12-Octadecadienoic acid, methyl ester (C18:2 n-6) .....226 ± 5 g/kg
(Linoleic acid, methyl ester)
(Z,Z,Z)-9,12,15-Octadecatrienoic acid, methyl ester (C18:3 n-3)....25.0 ± 1.0 g/kg
(Linolenic acid, methyl ester)
Eicosanoic acid, methyl ester (C20:0) .....2.28 ± 0.12 g/kg
(Arachidic acid, methyl ester)
(Z)-5,8,11,14-Eicosatetraenoic acid, methyl ester (C20:4 n-6).....2.53 ± 0.09 g/kg
(Arachidonic acid, methyl ester)
Docosanoic acid, methyl ester (C22:0).....1.66 ± 0.06 g/kg
(Behenic acid, methyl ester)

Certified concentration value for water

Water.....0.046 ± 0.002 %

Certified concentration value for sulfur

Sulfur .....7.39 ± 0.39 mg/kg

Certified value for density at 20 °C and kinematic viscosity at 20 °C, 30 °C, and 40 °C

Density at 20 °C..... 0.87628 ± 0.00010 g/cm^3
Kinematic Viscosity at 20 °C .....7.147 ± 0.021 mm^2/s
Kinematic Viscosity at 30 °C .....5.543 ± 0.010 mm^2/s
Kinematic Viscosity at 40 °C .....4.428 ± 0.009 mm^2/s

Indicative values for fatty acid methyl esters and for additional chemical and physical properties, trace elements, glycerides, and ethanol.

SS99908-0	SETA BIO MTVM Gas oil	500 mL

A unique secondary reference material that provides traceable validation of different test parameters from one sample. Internationally tested by a statistically significant number of laboratories to determine certified values. Supplied with traceable certification.

- ULSD EN590 Biofuel
- 5% FAME (EN 14214) in Diesel
- Covers major specification tests
- A highly cost effective solution to laboratory verification requirements
- Verification to ASTM/CEN/ISO/IP and equivalent test procedures
- Cross-checks instrument performance using real Bio product
- Ideal assistance for operator training

Test Name	Method	Sample Result	Units	Amount/ test
Density @ 15°C	D1298-IP160	0.8404	kg/L	200 mL
Distillation IBP	D86-IP123	173.6	°C	1100 mL
Distillation 10%	D86-IP123	204.7	°C	100 mL
Distillation 50%	D86-IP123	260.7	°C	100 mL
Distillation 90%	D86-IP123	327.2	°C	100 mL
Distillation 95%	D86-IP123	346.2	°C	100 mL
Distillation FBP	D86-IP123	358.1	°C	100 mL
Distillation Residue	D86-IP123	1.3	%vol	100 mL
Distillation Loss	D86-IP123	0.6	%vol	100 mL
Flash Point	D93-IP34	66.6	°C	75 mL
Cloud Point	D2500-IP219	-6.3	°C	Up to 38 mL
CFPP	IP309	-19.7	°C	45 mL
Pour Point	D97-IP15	-28.3	°C	Up to 38 mL
Kin Visc. @ 40°C	D445-IP71	2.567	mm²/s	Up to 40 mL
Lubricity HFRR	D6079; IP450	207.1	µm	2 mL
Water Karl Fischer	D1744; IP438	60.138	mg/kg	5 mL

SS99904-0	SETA BIO STVM Gas oil	50 mL

Biodiesel Single Test Verification Material.

Aromatics HPLC, ASTM D6591-IP391; EN 12916

SS99903-0	SETA BIO STVM Gas oil	50 mL

Biodiesel Single Test Verification Material.

Sulfur WD X-Ray, ASTM D2622

Biodiesel standards

Code	Product	Unit
SS99902-0	SETA BIO STVM Gas oil Biodiesel Single Test Verification Material. Sulfur ED X-Ray, ASTM D4294 – IP336, EN ISO 8754	50 mL

CONOSTAN® Biodiesel standards

A new line of CONOSTAN® biodiesel standards for the analysis of metals and sulfur in biodiesel fuel. Manufactured in accordance to ASTM methods D7039, D6751, D5453 and EN14214 for ICP and XRF analysis. Complete with a certificate of analysis.

Metals in Biodiesel

New	CON-150-441-000	Metals in Biodiesel, Blank Matrix	100g
New	CON-150-441-005	Metals in Biodiesel, P, Na, Mg, K, Ca 2.5ppm	100g
New	CON-150-441-010	Metals in Biodiesel, P, Na, Mg, K, Ca 5ppm	100g
New	CON-150-441-015	Metals in Biodiesel, P, Na, Mg, K, Ca 10ppm	100g
New	CON-150-441-020	Metals in Biodiesel, P, Na, Mg, K, Ca 15ppm	100g
New	CON-150-441-025	Metals in Biodiesel, P, Na, Mg, K, Ca 20ppm	100g
New	CON-150-441-030	Metals in Biodiesel, Na, K 2.5ppm	100g
New	CON-150-441-035	Metals in Biodiesel, Na, K 5ppm	100g
New	CON-150-441-040	Metals in Biodiesel, Na, K 10ppm	100g
New	CON-150-441-045	Metals in Biodiesel, Na, K 15ppm	100g
New	CON-150-441-050	Metals in Biodiesel, Na, K 20ppm	100g
New	CON-150-441-055	Metals in Biodiesel, Na, K 25ppm	100g
New	CON-150-441-060	Metals in Biodiesel, Na, K 50ppm	100g
New	CON-150-441-065	Metals in Biodiesel, Ca, Mg 2.5ppm	100g
New	CON-150-441-070	Metals in Biodiesel, Ca, Mg 5ppm	100g
New	CON-150-441-075	Metals in Biodiesel, Ca, Mg 10ppm	100g
New	CON-150-441-080	Metals in Biodiesel, Ca, Mg 15ppm	100g
New	CON-150-441-085	Metals in Biodiesel, Ca, Mg 20ppm	100g
New	CON-150-441-090	Metals in Biodiesel, Ca, Mg 25ppm	100g
New	CON-150-441-095	Metals in Biodiesel, Ca, Mg 50ppm	100g

Sulfur in Biodiesel

New	CON-150-440-000	Sulfur in B5 Bd Std, Blank Matrix	100g
New	CON-150-440-005	Sulfur in B5 Biodiesel Std, 5ppm	100g
New	CON-150-440-010	Sulfur in B5 Biodiesel Std, 10ppm	100g
New	CON-150-440-015	Sulfur in B5 Biodiesel Std, 15ppm	100g
New	CON-150-440-020	Sulfur in B5 Biodiesel Std, 30ppm	100g
New	CON-150-440-025	Sulfur in B5 Biodiesel Std, 50ppm	100g
New	CON-150-440-030	Sulfur in B5 Biodiesel Std, 75ppm	100g
New	CON-150-440-035	Sulfur in B5 Biodiesel Std, 100ppm	100g
New	CON-150-440-040	Sulfur in B5 Biodiesel Std, 200ppm	100g
New	CON-150-440-045	Sulfur in B5 Biodiesel Std, 500ppm	100g
New	CON-150-440-050	Sulfur in B20 Bd Std, Blank Matrix	100g
New	CON-150-440-055	Sulfur in B20 Biodiesel Std, 5ppm	100g
New	CON-150-440-060	Sulfur in B20 Biodiesel Std, 10ppm	100g
New	CON-150-440-065	Sulfur in B20 Biodiesel Std, 15ppm	100g
New	CON-150-440-070	Sulfur in B20 Biodiesel Std, 30ppm	100g
New	CON-150-440-075	Sulfur in B20 Biodiesel Std, 50ppm	100g
New	CON-150-440-080	Sulfur in B20 Biodiesel Std, 75ppm	100g
New	CON-150-440-085	Sulfur in B20 Biodiesel Std, 100ppm	100g
New	CON-150-440-090	Sulfur in B20 Biodiesel Std, 200ppm	100g
New	CON-150-440-095	Sulfur in B20 Biodiesel Std, 500ppm	100g
New	CON-150-440-100	Sulfur in B100 Bd Std, Blank Matrix	100g
New	CON-150-440-105	Sulfur in B100 Biodiesel Std, 5ppm	100g

	Code	Product	Unit
New	CON-150-440-110	Sulfur in B100 Biodiesel Std, 10ppm	100g
New	CON-150-440-115	Sulfur in B100 Biodiesel Std, 15ppm	100g
New	CON-150-440-120	Sulfur in B100 Biodiesel Std, 30ppm	100g
New	CON-150-440-125	Sulfur in B100 Biodiesel Std, 50ppm	100g
New	CON-150-440-130	Sulfur in B100 Biodiesel Std, 75ppm	100g
New	CON-150-440-135	Sulfur in B100 Biodiesel Std, 100ppm	100g
New	CON-150-440-140	Sulfur in B100 Biodiesel Std, 200ppm	100g
New	CON-150-440-145	Sulfur in B100 Biodiesel Std, 500ppm	100g

Biodiesel fuel calibration standards (ASTM D6584, EN 14105:2003)

Oil companies and vehicle manufacturers are actively working with biofuel extender producers to have agreed standards for esterified vegetable oils suitable for blending with conventional diesel to ensure that the product meets the technical requirements of modern diesel engines. The minimum test requirements for biodiesel blend extenders are specified in ASTM D6751 in USA and EN14214 within Europe. All road fuels are subject to strict quality controls, these are vital to maintain standards and provide authorities with the ability to assess safety risks and environmental pollution. In 1997 the European committee for standardisation was given the task to develop a uniform standard for fatty acid methyl esters (FAME). The result was the EN14214 specification. This standard was introduced in 2004 and is valid for all member states of the European Union. In particular this standard gives engine and automobile makers the ability to give warranties to those vehicles which run on biodiesel. At present a limit of 5% FAME is allowed in diesel and this 5% must conform to the EN14214 standard.

Both ASTM D-6751 and EN 14214 specify the use of ASTM Method D-6584 for glycerin determination.

ASTM D 6584 standard solutions

This test method covers the quantitative determination of free and total glycerin in B-100 methyl esters by gas chromatography. The range of detection for free glycerin is 0.005 to 0.05 mass %, and total glycerin from 0.05 to 0.5 mass %. This procedure is not applicable to vegetable oil methyl esters obtained from lauric oils, such as coconut oil and palm kernel oil.

U-RGO-310-1	ASTM D-6584 Standard Solution 1 Solvent: Pyridine Diolein..... 50 µg/mL Monoolein.....100 µg/mL Glycerol..... 5 µg/mL Triolein .....50 µg/mL	1 mL
U-RGO-310	ASTM D-6584 Standard Solution 1	4 x 1 mL
U-RGO-311-1	ASTM D-6584 Standard Solution 2 Solvent: Pyridine Diolein..... 100 µg/mL Monoolein.....100 µg/mL Glycerol..... 15 µg/mL Triolein .....100 µg/mL	1 mL
U-RGO-311	ASTM D-6584 Standard Solution 2	4 x 1 mL
U-RGO-312-1	ASTM D-6584 Standard Solution 3 Solvent: Pyridine Diolein..... 200 µg/mL Monoolein.....200 µg/mL Glycerol..... 25 µg/mL Triolein .....200 µg/mL	1 mL
U-RGO-312	ASTM D-6584 Standard Solution 3	4 x 1 mL
U-RGO-313-1	ASTM D-6584 Standard Solution 4 Solvent: Pyridine Diolein..... 315 µg/mL Monoolein.....350 µg/mL Glycerol..... 35 µg/mL Triolein .....350 µg/mL	1 mL
U-RGO-313	ASTM D-6584 Standard Solution 4	4 x 1 mL
U-RGO-314-1	ASTM D-6584 Standard Solution 5 Solvent: Pyridine Diolein..... 500 µg/mL Monoolein.....500 µg/mL Glycerol..... 50 µg/mL Triolein .....500 µg/mL	1 mL
U-RGO-314	ASTM D-6584 Standard Solution 5	4 x 1 mL

Individual standards for biodiesel testing

U-RGO-220	Monoolein 5000 µg/mL in Pyridine	2 mL
U-RGO-230	Diolein 5000 µg/mL in Pyridine	2 mL
U-RGO-210	Glycerin 500 µg/mL in Pyridine	2 mL
U-RGO-240	Triolein 5000 µg/mL in Pyridine	2 mL

ASTM Methods for petrochemical analysis

Code	Product	Unit
U-RGO-250	Monopalmitin 5000 µg/mL in Pyridine	2 mL

Internal standards

U-RGO-260	1,2,4-Butanetriol 1000 µg/mL in pyridine (ASTM Method D-6584)	5 mL
U-RGO-270	Tricaprin 8000 µg/mL in pyridine (ASTM Method D-6584)	2 mL

Derivatizing agent

U-RGO-200	MSTFA (N-methyl-N-(trimethylsilyl) trifluoracetamide)	5 g

EN 14105:2003 standard solutions

Free and total glycerol and mono-, di-, tri-glyceride content

Method EN 14105 is used to determine glycerin and total glycerine in fatty acid methyl esters (FAME) used in biodiesel products. Samples are derivatized, then analyzed by high temperature gas chromatography (HTGC). It is similar to ASTM D6584.

U-RGO-300-1	EN 14105:2003 Standard Solution 1 Solvent: Pyridine Butanetriol 80 µg/mL; Glycerol 5 µg/mL; Tricaprin 800 µg/mL 1,3-Diolein 50 µg/mL; Monoolein 250 µg/mL; Tiolein 50 µg/mL	1 mL
U-RGO-300	EN 14105:2003 Standard Solution 1	4 x 1 mL
U-RGO-301-1	EN 14105:2003 Standard Solution 2 Solvent: Pyridine Butanetriol 80 µg/mL; Glycerol 20 µg/mL; Tricaprin 800 µg/mL 1,3-Diolein 200 µg/mL; Monoolein 600 µg/mL; Tiolein 150 µg/mL	1 mL
U-RGO-301	EN 14105:2003 Standard Solution 2	4 x 1 mL
U-RGO-280	Monoglycerine Stock Solution Solvent: Pyridine Monoolein 10000 µg/mL; Monopalmitin 10000 µg/mL; Monostearin 10000 µg/mL	1 mL
U-RGO-302-1	EN 14105:2003 Standard Solution 3 Solvent: Pyridine Butanetriol 80 µg/mL; Glycerol 35 µg/mL; Tricaprin 800 µg/mL 1,3-Diolein 350 µg/mL; Monoolein 950 µg/mL; Tiolein 300 µg/mL	1 mL
U-RGO-302	EN 14105:2003 Standard Solution 3	4 x 1 mL
U-RGO-303-1	EN 14105:2003 Standard Solution 4 Solvent: Pyridine Butanetriol 80 µg/mL; Glycerol 50 µg/mL; Tricaprin 800 µg/mL 1,3-Diolein 500 µg/mL; Monoolein 1250 µg/mL; Tiolein 400 µg/mL	1 mL
U-RGO-303	EN 14105:2003 Standard Solution 4	4 x 1 mL

ASTM Methods for petrochemical analysis

ASTM Method D2887

Boiling range distribution of petroleum fractions

Method D2887 covers the determination of the boiling range distribution of petroleum products. The test method is applicable to petroleum products and fractions having a final boiling point of 538°C (1000°F) or lower at atmospheric pressure as measured by this test method. The test method is limited to samples having a boiling range greater than 55°C (100°F), and having a vapor pressure sufficiently low to permit sampling at ambient temperature.

Code	Product	Unit
U-ASTM-120-1	ASTM Method D2887 Column Test Mix 1% (w/v) in n-Octane Each analyte at 1 % (w/v) in n-Octane n-Hexadecane; n-Octadecane	1 mL
U-ASTM-120	ASTM Method D2887 Column Test Mixture	4 x 1 mL
U-ASTM-110-1	ASTM Method D2887 Column Test Mixture n-Hexane 6 % (w/w); n-Dodecane 12 % (w/w); n-Octacosane 1 % (w/w) n-Heptane 6 % (w/w); n-Tetradecane 12 % (w/w); n-Dotriacontane 1 % (w/w) n-Octane 8 % (w/w); n-Hexadecane 10 % (w/w); n-Hexatriacontane 1 % (w/w) n-Nonane 8 % (w/w); n-Octadecane 5 % (w/w); n-Tetracontane 1 % (w/w) n-Decane 12 % (w/w); n-Eicosane 2 % (w/w); n-Tetratetracontane 1 % (w/w) n-Undecane 12 % (w/w); n-Tetracosane 2 % (w/w)	1 mL

Code	Product	Unit
U-ASTM-110	ASTM Method D2887 Column Test Mixture	4 x 1 mL

ASTM Method D3710

Boiling range distribution of gasoline and gasoline fractions

Method D3710 covers the determination of the boiling range distribution of gasoline and gasoline components. The test method is applicable to petroleum products and fractions with a final boiling point of 500°F (260°C) or lower.

U-ASTM-100-1 — ASTM Method D3710 Calibration Mixture — 1 mL

2-Methylbutane	10 % (v/v)	Toluene	12 % (v/v)	n-Dodecane	4 % (v/v)
n-Pentane	8 % (v/v)	n-Octane	5 % (v/v)	n-Tridecane	2 % (v/v)
2-methylpentane	6 % (v/v)	p-Xylene	14 % (v/v)	n-Tetradecane	2 % (v/v)
n-Hexane	6 % (v/v)	n-Propylbenzene	5 % (v/v)	n-Pentadecane	2 % (v/v)
2,4-Dimethylpentane	6 % (v/v)	n-Decane	4 % (v/v)		
n-Heptane	10 % (v/v)	n-Butylbenzene	4 % (v/v)		

U-ASTM-100 — ASTM Method D3710 Calibration Mixture — 4 x 1 mL

ASTM Method E1387

Saponification number (empirical) of synthetic and natural waxes

Method E1387 covers the determination of the saponification number of synthetic waxes and natural waxes.

U-ASTM-130-1 — ASTM E1387-90 Column Resolution Check Mixture — 1 mL

2000 µg/mL of each analyte in Methylene chloride (Dichloromethane)

n-Hexane	n-Tetradecane	Toluene	p-Xylene
n-Octane	n-Hexadecane	1,2,4-Trimethylbenzene	
n-decane	n-Octadecane	2-Ethyltoluene	
n-Dodecane	n-Eicosane	3-Ethyltoluene	

U-ASTM-130 — ASTM E1387-90 Column Resolution Check Mixture — 4 x 1 mL

ASTM Method D4815

MTBE, ETBE, TAME, DIPE, tertiary-Amyl alcohol and C1 to C4 alcohols in gasoline

Method D4815 covers the determination of ethers and alcohols in gasolines by gas chromatography.

U-RGO-422-1 — ASTM D4815 Quantitative Peak ID Mixture — 1 mL

Methanol	7.30 % (w/w)	n-Butyl alcohol	7.30 % (w/w)
Ethyl alcohol (Ethanol)	7.30 % (w/w)	tert-Amyl methyl ether (TAME)	7.30 % (w/w)
Isopropyl alcohol (Isopropanol)	7.30 % (w/w)	1,2-Dimethoxyethane (DME)	6.00 % (w/w)
tert-Butanol	7.30 % (w/w)	Benzene	5.00 % (w/w)
1-Propanol	7.30 % (w/w)	Methylcyclopentane	4.00 % (w/w)
sec-Butanol (2-Butanol)	7.30 % (w/w)	tert-Dutylmethyl ether (MTBE)	4.00 % (w/w)
Isobutyl alcohol	7.30 % (w/w)	Isopropyl ether	4.00 % (w/w)
tert-Pentanol (tert-Amyl alcohol)	7.30 % (w/w)	tert-Butyl ethyl ether (ETBE)	4.00 % (w/w)

U-RGO-422 — ASTM D4815 Quantitative Peak ID Mixture — 4 x 1 mL

U-RGO-711-1 — ASTM Surrogate Base Gasoline — 1 mL

Benzene	1 % (v/v)	n-Octane	15 % (v/v)
n-Decane	10 % (v/v)	1,2,4,5-Tetramethylbenzene (Durene)	5 % (w/v)
n-Dodecane	5 % (v/v)	Toluene	9 % (v/v)
Ethylbenzene	5 % (v/v)	1,2,4-Trimethylbenzene	5 % (v/v)
n-Heptane	15 % (v/v)	o-Xylene	5 % (v/v)
n-Hexane	10 % (v/v)	m-Xylene	5 % (v/v)
2,2,4-Trimethylpentane (iso-Octane)	10 % (v/v)		

U-RGO-711 — ASTM Surrogate Base Gasoline — 4 x 1 mL

ASTM Method D-5453

Standard test method for determination of total sulfur in light hydrocarbons, spark ignition engine fuel, diesel engine fuel, and engine oil by ultraviolet fluorescence

ASTM D5453 - Total sulfur by UV fluorescence (low) (Solvent: Toluene)

New U-PANAL0211 — ASTM D5453 - Total sulfur by UV fluorescence kit (low) — 6 x 2 mL

Each kit contains:

Description.	Concentration
Ampoule 1 ... Toluene	Solvent blank
Ampoule 2 ... Butylsulfide (as S) in Toluene	1.0 mg/L
Ampoule 3 ... Butylsulfide (as S) in Toluene	2.5 mg/L
Ampoule 4 ... Butylsulfide (as S) in Toluene	5.0 mg/L
Ampoule 5 ... Butylsulfide (as S) in Toluene	7.5 mg/L
Ampoule 6 ... Butylsulfide (as S) in Toluene	10.0 mg/L

New U-PANAL0211-1 — ASTM D5453 - Toluene (blank) — 2 mL

New U-PANAL0211-2 — ASTM D5453 - Butyl sulfide (as S) - 1 mg/L in Toluene — 2 mL

	Code	Product	Unit
New	U-PANAL0211-3	ASTM D5453 - Butyl sulfide (as S) - 2.5 mg/L in Toluene	2 mL
New	U-PANAL0211-4	ASTM D5453 - Butyl sulfide (as S) - 5 mg/L in Toluene	2 mL
New	U-PANAL0211-5	ASTM D5453 - Butyl sulfide (as S) - 7.5 mg/L in Toluene	2 mL
New	U-PANAL0211-6	ASTM D5453 - Butyl sulfide (as S) - 10 mg/L in Toluene	2 mL

ASTM D5453 - Total sulfur by UV fluorescence (medium) (Solvent: Toluene)

New	U-PANAL0212	ASTM D5453 - Total sulfur by UV fluorescence kit (medium) Each kit contains: **Description . Concentration** Ampoule 1.... Toluene.....Solvent blank Ampoule 2.... Butylsulfide (as S) in Toluene..... 5.0 mg/L Ampoule 3.... Butylsulfide (as S) in Toluene..... 25 mg/L Ampoule 4.... Butylsulfide (as S) in Toluene ..... 50 mg/L Ampoule 5.... Butylsulfide (as S) in Toluene..... 100 mg/L Ampoule 6.... Butylsulfide (as S) in Toluene..... 200 mg/L	6 x 2 mL
New	U-PANAL0212-1	ASTM D5453 - Toluene (blank)	2 mL
New	U-PANAL0212-2	ASTM D5453 - Butyl sulfide (as S) - 5 mg/L in Toluene	2 mL
New	U-PANAL0212-3	ASTM D5453 - Butyl sulfide (as S) - 25 mg/L in Toluene	2 mL
New	U-PANAL0212-4	ASTM D5453 - Butyl sulfide (as S) - 50 mg/L in Toluene	2 mL
New	U-PANAL0212-5	ASTM D5453 - Butyl sulfide (as S) - 100 mg/L in Toluene	2 mL
New	U-PANAL0212-6	ASTM D5453 - Butyl sulfide (as S) - 200 mg/L in Toluene	2 mL

ASTM D5453 - Total sulfur by UV fluorescence (high) (Solvent: Toluene)

New	U-PANAL0213	ASTM D5453 - Total sulfur by UV fluorescence kit (high) Each kit contains: **Description . Concentration** Ampoule 1.... Toluene.....Solvent blank Ampoule 2.... Butylsulfide (as S) in Toluene..... 100 mg/L Ampoule 3.... Butylsulfide (as S) in Toluene..... 250 mg/L Ampoule 4.... Butylsulfide (as S) in Toluene..... 500 mg/L Ampoule 5.... Butylsulfide (as S) in Toluene..... 750 mg/L Ampoule 6.... Butylsulfide (as S) in Toluene..... 1000 mg/L	6 x 2 mL
New	U-PANAL0213-1	ASTM D5453 - Toluene (blank)	2 mL
New	U-PANAL0213-2	ASTM D5453 - Butyl sulfide (as S) - 100 mg/L in Toluene	2 mL
New	U-PANAL0213-3	ASTM D5453 - Butyl sulfide (as S) - 250 mg/L in Toluene	2 mL
New	U-PANAL0213-4	ASTM D5453 - Butyl sulfide (as S) - 500 mg/L in Toluene	2 mL
New	U-PANAL0213-5	ASTM D5453 - Butyl sulfide (as S) - 750 mg/L in Toluene	2 mL
New	U-PANAL0213-6	ASTM D5453 - Butyl sulfide (as S) - 1000 mg/L in Toluene	2 mL

ASTM D5453 - Total sulfur by UV fluorescence (low) (Solvent: Isooctane)

U-PANAL0214	ASTM D5453 - Total sulfur by UV fluorescence kit (low) Each kit contains: **Description . Concentration** Ampoule 1.... Isooctane .....Solvent blank Ampoule 2.... Butylsulfide (as S) in Isooctane ..... 1.0 mg/L Ampoule 3.... Butylsulfide (as S) in Isooctane ..... 2.5 mg/L Ampoule 4.... Butylsulfide (as S) in Isooctane ..... 5.0 mg/L Ampoule 5.... Butylsulfide (as S) in Isooctane ..... 7.5 mg/L Ampoule 6.... Butylsulfide (as S) in Isooctane ..... 10.0 mg/L	6 x 2 mL
U-PANAL0214-1	ASTM D5453 - Isooctane (blank)	2 mL
U-PANAL0214-2	ASTM D5453 - Butyl sulfide (as S) - 1.0 mg/L in Isooctane	2 mL
U-PANAL0214-3	ASTM D5453 - Butyl sulfide (as S) - 2.5 mg/L in Isooctane	2 mL
U-PANAL0214-4	ASTM D5453 - Butyl sulfide (as S) - 5.0 mg/L in Isooctane	2 mL
U-PANAL0214-5	ASTM D5453 - Butyl sulfide (as S) - 7.5 mg/L in Isooctane	2 mL
U-PANAL0214-6	ASTM D5453 - Butyl sulfide (as S) - 10 mg/L in Isooctane	2 mL

	Code	Product	Unit

ASTM D5453 - Total sulfur by UV fluorescence (medium) (Solvent: Isooctane)

	Code	Product	Unit
	U-PANAL0215	ASTM D5453 - Total sulfur by UV fluorescence kit (medium) Each kit contains: **Description. Concentration** Ampoule 1 ... Isooctane ..... Solvent blank Ampoule 2 ... Butylsulfide (as S) in Isooctane .....5.0 mg/L Ampoule 3 ... Butylsulfide (as S) in Isooctane .....25 mg/L Ampoule 4 ... Butylsulfide (as S) in Isooctane .....50 mg/L Ampoule 5 ... Butylsulfide (as S) in Isooctane .....100 mg/L Ampoule 6 ... Butylsulfide (as S) in Isooctane .....200 mg/L	6 x 2 mL
New	U-PANAL0215-1	ASTM D5453 - Isooctane (blank)	2 mL
New	U-PANAL0215-2	ASTM D5453 - Butyl sulfide (as S) - 5 mg/L in Isooctane	2 mL
	U-PANAL0215-3	ASTM D5453 - Butyl sulfide (as S) - 25 mg/L in Isooctane	2 mL
	U-PANAL0215-4	ASTM D5453 - Butyl sulfide (as S) - 50 mg/L in Isooctane	2 mL
	U-PANAL0215-5	ASTM D5453 - Butyl sulfide (as S) - 100 mg/L in Isooctane	2 mL
	U-PANAL0215-6	ASTM D5453 - Butyl sulfide (as S) - 200 mg/L in Isooctane	2 mL

ASTM D5453 - Total sulfur by UV fluorescence (high) (Solvent: Isooctane)

	Code	Product	Unit
	U-PANAL0216	ASTM D5453 - Total sulfur by UV fluorescence kit (high) Each kit contains: **Description. Concentration** Ampoule 1 ... Isooctane ..... Solvent blank Ampoule 2 ... Butylsulfide (as S) in Isooctane .....100 mg/L Ampoule 3 ... Butylsulfide (as S) in Isooctane .....250 mg/L Ampoule 4 ... Butylsulfide (as S) in Isooctane .....500 mg/L Ampoule 5 ... Butylsulfide (as S) in Isooctane .....750 mg/L Ampoule 6 ... Butylsulfide (as S) in Isooctane .....1000 mg/L	6 x 2 mL
New	U-PANAL0216-1	ASTM D5453 - Isooctane (blank)	2 mL
New	U-PANAL0216-2	ASTM D5453 - Butyl sulfide (as S) - 100 mg/L in Isooctane	2 mL
	U-PANAL0216-3	ASTM D5453 - Butyl sulfide (as S) - 250 mg/L in Isooctane	2 mL
	U-PANAL0216-4	ASTM D5453 - Butyl sulfide (as S) - 500 mg/L in Isooctane	2 mL
	U-PANAL0216-5	ASTM D5453 - Butyl sulfide (as S) - 750 mg/L in Isooctane	2 mL
	U-PANAL0216-6	ASTM D5453 - Butyl sulfide (as S) - 1000 mg/L in Isooctane	2 mL

ASTM D3120, D3246 & D3961 sulfur by oxidative microcoulometry

	Code	Product	Unit
New	U-PANAL0217	ASTM D3120, D3246, D3961 Sulfur by oxidatative microcoulometry kit Each kit contains: **Description. Concentration** Ampoule 1 ... Isooctane ..... Solvent blank Ampoule 2 ... Butylsulfide (as S) in Isooctane .....1.0 mg/L Ampoule 3 ... Butylsulfide (as S) in Isooctane .....10 mg/L Ampoule 4 ... Butylsulfide (as S) in Isooctane .....40 mg/L Ampoule 5 ... Butylsulfide (as S) in Isooctane .....75 mg/L Ampoule 6 ... Butylsulfide (as S) in Isooctane .....100 mg/L	6 x 2 mL
New	U-PANAL0217-1	ASTM D3120, D3246 and D3961 - Isooctane (blank)	2 mL
New	U-PANAL0217-2	ASTM D3120, D3246 and D3961 - Butyl sulfide (as S) - 1 mg/L in Isooctane	2 mL
New	U-PANAL0217-3	ASTM D3120, D3246 and D3961 - Butyl sulfide (as S) - 10 mg/L in Isooctane	2 mL
New	U-PANAL0217-4	ASTM D3120, D3246 and D3961 - Butyl sulfide (as S) - 40 mg/L in Isooctane	2 mL
New	U-PANAL0217-5	ASTM D3120, D3246 and D3961 - Butyl sulfide (as S) - 75 mg/L in Isooctane	2 mL
New	U-PANAL0217-6	ASTM D3120, D3246 and D3961 - Butyl sulfide (as S) - 100 mg/L in Isooctane	2 mL

	Code	Product	Unit

ASTM Method D4629

Trace nitrogen in liquid petroleum hydrocarbons

Method D4629 covers the determination of trace total nitrogen in liquid petroleum hydrocarbons by syringe/inlet oxidative combustion and chemiluminescence detection.

ASTM D4629 - Trace nitrogen by chemiluminescence kit (low)

New	U-PANAL0218	ASTM D4629 Trace nitrogen by chemiluminescence kit (low) Each kit contains: **Description . Concentration** Ampoule 1.... Isooctane .....Solvent blank Ampoule 2.... Pyridine (as N) in Isooctane..... 1 mg/L Ampoule 3.... Pyridine (as N) in Isooctane..... 2 mg/L Ampoule 4.... Pyridine (as N) in Isooctane..... 5 mg/L Ampoule 5.... Pyridine (as N) in Isooctane..... 10 mg/L Ampoule 6.... Pyridine (as N) in Isooctane..... 20 mg/L	6 x 2 mL
New	U-PANAL0218-1	ASTM D4629 - Isooctane (blank)	2 mL
New	U-PANAL0218-2	ASTM D4629 - Pyridine (as N) - 1 mg/L in Isooctane	2 mL
New	U-PANAL0218-3	ASTM D4629 - Pyridine (as N) - 2 mg/L in Isooctane	2 mL
New	U-PANAL0218-4	ASTM D4629 - Pyridine (as N) - 5 mg/L in Isooctane	2 mL
New	U-PANAL0218-5	ASTM D4629 - Pyridine (as N) - 10 mg/L in Isooctane	2 mL
New	U-PANAL0218-6	ASTM D4629 - Pyridine (as N) - 20 mg/L in Isooctane	2 mL

ASTM D4629 - Trace nitrogen by chemiluminescence (medium)

New	U-PANAL0219	ASTM D4629 Trace nitrogen by chemiluminescence kit (medium) Each kit contains: **Description . Concentration** Ampoule 1.... Isooctane .....Solvent blank Ampoule 2.... Pyridine (as N) in Isooctane..... 50 mg/L Ampoule 3.... Pyridine (as N) in Isooctane..... 100 mg/L Ampoule 4.... Pyridine (as N) in Isooctane..... 200 mg/L Ampoule 5.... Pyridine (as N) in Isooctane..... 500 mg/L Ampoule 6.... Pyridine (as N) in Isooctane..... 1000 mg/L	6 x 2 mL
New	U-PANAL0219-1	ASTM D4629 - Isooctane (blank)	2 mL
New	U-PANAL0219-2	ASTM D4629 - Pyridine (as N) - 50 mg/L in Isooctane	2 mL
New	U-PANAL0219-3	ASTM D4629 - Pyridine (as N) - 100 mg/L in Isooctane	2 mL
New	U-PANAL0219-4	ASTM D4629 - Pyridine (as N) - 200 mg/L in Isooctane	2 mL
New	U-PANAL0219-5	ASTM D4629 - Pyridine (as N) - 500 mg/L in Isooctane	2 mL
New	U-PANAL0219-6	ASTM D4629 - Pyridine (as N) - 1000 mg/L in Isooctane	2 mL

ASTM D4629 - Trace nitrogen by chemiluminescence (high)

New	U-PANAL0220	ASTM D4629 Trace nitrogen by chemiluminescence kit Each kit contains: **Description . Concentration** Ampoule 1.... Isooctane .....Solvent blank Ampoule 2.... Pyridine (as N) in Isooctane..... 500 mg/L Ampoule 3.... Pyridine (as N) in Isooctane..... 1000 mg/L Ampoule 4.... Pyridine (as N) in Isooctane..... 2000 mg/L Ampoule 5.... Pyridine (as N) in Isooctane..... 5000 mg/L Ampoule 6.... Pyridine (as N) in Isooctane..... 10000 mg/L	6 x 2 mL
New	U-PANAL0220-1	ASTM D4629 - Isooctane (blank)	2 mL
New	U-PANAL0220-2	ASTM D4629 - Pyridine (as N) - 500 mg/L in Isooctane	2 mL
New	U-PANAL0220-3	ASTM D4629 - Pyridine (as N) - 1000 mg/L in Isooctane	2 mL
New	U-PANAL0220-4	ASTM D4629 - Pyridine (as N) - 2000 mg/L in Isooctane	2 mL
New	U-PANAL0220-5	ASTM D4629 - Pyridine (as N) - 5000 mg/L in Isooctane	2 mL
New	U-PANAL0220-6	ASTM D4629 - Pyridine (as N) - 10000 mg/L in Isooctane	2 mL

	Code	Product	Unit

ASTM D5762 - Trace nitrogen by chemiluminescence

New	U-PANAL0221	ASTM D5762 Trace Nitrogen by Chemiluminescence kit Each kit contains: **Description. Concentration** Ampoule 1 ... Toluene.....Solvent blank Ampoule 2 ... Acridine (as N) in Toluene.....1 mg/L Ampoule 3 ... Acridine (as N) in Toluene.....5 mg/L Ampoule 4 ... Acridine (as N) in Toluene.....10 mg/L Ampoule 5 ... Acridine (as N) in Toluene.....50 mg/L Ampoule 6 ... Acridine (as N) in Toluene.....100 mg/L	6 x 2 mL
New	U-PANAL0221-1	ASTM D5762 - Toluene (blank)	2 mL
New	U-PANAL0221-2	ASTM D5762 - Pyridine (as N) - 1 mg/L in Toluene	2 mL
New	U-PANAL0221-3	ASTM D5762 - Pyridine (as N) - 5 mg/L in Toluene	2 mL
New	U-PANAL0221-4	ASTM D5762 - Pyridine (as N) - 10 mg/L in Toluene	2 mL
New	U-PANAL0221-5	ASTM D5762 - Pyridine (as N) - 50 mg/L in Toluene	2 mL
New	U-PANAL0221-6	ASTM D5762 - Pyridine (as N) - 100 mg/L in Toluene	2 mL

ASTM D4929 (B) organic chloride in crude oil

New	U-PANAL0223	ASTM D4929 (B) Organic chloride in crude Oil kit Each kit contains: **Description. Concentration** Ampoule 1 ... Isooctane.....Solvent blank Ampoule 2 ... Chlorobenzene (as Cl) in Isooctane .....5 mg/L Ampoule 3 ... Chlorobenzene (as Cl) in Isooctane .....10 mg/L Ampoule 4 ... Chlorobenzene (as Cl) in Isooctane .....25 mg/L Ampoule 5 ... Chlorobenzene (as Cl) in Isooctane .....50 mg/L Ampoule 6 ... Chlorobenzene (as Cl) in Isooctane .....100 mg/L	6 x 2 mL

ASTM D5808 organic chlorine in hydrocarbons

Organic chloride in aromatic hydrocarbons

Method D5808 covers the determination of organic chloride in aromatic hydrocarbons and related chemicals by microcoulometry.

New	U-PANAL0224	ASTM D5808 Organic chloride in hydrocarbons kit Each kit contains: **Description. Concentration** Ampoule 1 ... Methanol.....Solvent blank Ampoule 2 ... Trichlorophenol (as Cl) in Isooctane.....1 mg/L Ampoule 3 ... Trichlorophenol (as Cl) in Isooctane.....5 mg/L Ampoule 4 ... Trichlorophenol (as Cl) in Isooctane.....10 mg/L Ampoule 5 ... Trichlorophenol (as Cl) in Isooctane.....15 mg/L Ampoule 6 ... Trichlorophenol (as Cl) in Isooctane.....25 mg/L	6 x 2 mL

Viscosity oil standards

PSL2700V01 - PSL2700V19

These standards are calibrated by the PSL Calibration ISO 17025 Accredited Laboratory. The standards will be supplied complete with UKAS calibration certificates and have direct traceability to NIST and other international laboratories. Uncertainties of measurement are stated on the calibration certificates. Long shelf lives are provided by using stable base oils. The viscosity oil standards are suitable for the calibration and verification of the following:

- Glass Capillary viscometers
- Automated Kinematic Viscometer Systems
- Rotational/Cone & Plate Viscometers
- Low Temperature Viscometer Systems
- Cold Cranking Simulators
- Flow Cups

PSL2700V01	N4 - Viscosity oil standard Kinematic viscosity (nominal) 0.47 mm^2/s,cSt (20 °C) 0.45 mm^2/s,cSt (25 °C) 0.40 mm^2/s,cSt (40 °C) Dynamic viscosity (nominal) 0.31 mPa.s,cP (20 °C) 0.29 mPa.s,cP (25 °C) 0.26 mPa.s,cP (40 °C)		500 mL

Code	Product	Unit
PSL2700V02	N8 - Viscosity oil standard Kinematic viscosity (nominal) 1. mm^2/s,cSt (20 °C) 0.89 mm^2/s,cSt (25 °C) 0.75 mm^2/s,cSt (40 °C) Dynamic viscosity (nominal) 0.77 mPa.s,cP (20 °C) 0.72 mPa.s,cP (25 °C) 0.56 mPa.s,cP (40 °C)	500 mL
PSL2700V03	N1.0 - Viscosity oil standard Kinematic viscosity (nominal) 1.3 mm^2/s,cSt (20 °C) 1.2 mm^2/s,cSt (25 °C) 0.97 mm^2/s,cSt (40 °C) Dynamic viscosity (nominal) 1.0 mPa.s,cP (20 °C) 0.93 mPa.s,cP (25 °C) 0.76 mPa.s,cP (40 °C)	500 mL
New PSL2700-V03A	N2 - Viscosity oil standard Kinematic viscosity (nominal) 2.9 mm^2/s,cSt (20 °C) 2.6 mm^2/s,cSt (25 °C) 2.0 mm^2/s,cSt (40 °C) 1.7 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 2.2 mPa.s,cP (20 °C) 2.0 mPa.s,cP (25 °C) 1.5 mPa.s,cP (40 °C) 1.3 mPa.s,cP (50 °C)	500 mL
PSL2700V04	S3 - Viscosity oil standard Kinematic viscosity (nominal) 5.0 mm^2/s,cSt (20 °C) 2.9 mm^2/s,cSt (40 °C) 1.3 mm^2/s,cSt (100 °C) 4.4 mm^2/s,cSt (25 °C) 2.6 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 4.1 mPa.s,cP (20 °C) 2.4 mPa.s,cP (40 °C) 0.98 mPa.s,cP (100 °C) 3.6 mPa.s,cP (25 °C) 2.1 mPa.s,cP (50 °C)	500 mL
PSL2700V05	S6 - Viscosity oil standard Kinematic viscosity (nominal) 11 mm^2/s,cSt (20 °C) 5.7 mm^2/s,cSt (40 °C) 1.9 mm^2/s,cSt (100 °C) 8.9 mm^2/s,cSt (25 °C) 4.6 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 8.8 mPa.s,cP (20 °C) 4.8 mPa.s,cP (40 °C) 1.5 mPa.s,cP (100 °C) 7.4 mPa.s,cP (25 °C) 3.7 mPa.s,cP (50 °C)	500 mL
PSL2700V06	N10 - Viscosity oil standard Kinematic viscosity (nominal) 21 mm^2/s,cSt (20 °C) 10 mm^2/s,cSt (40 °C) 2.7 mm^2/s,cSt (100 °C) 17 mm^2/s,cSt (25 °C) 7.5 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 17 mPa.s,cP (20 °C) 9.0 mPa.s,cP (40 °C) 2.1 mPa.s,cP (100 °C) 14 mPa.s,cP (25 °C) 6.2 mPa.s,cP (50 °C)	500 mL
PSL2700V07	S20 - Viscosity oil standard Kinematic viscosity (nominal) 47 mm^2/s,cSt (20 °C) 18 mm^2/s,cSt (40 °C) 4.0 mm^2/s,cSt (100 °C) 37 mm^2/s,cSt (25 °C) 13 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 40 mPa.s,cP (20 °C) 16 mPa.s,cP (40 °C) 3.2 mPa.s,cP (100 °C) 31 mPa.s,cP (25 °C) 11 mPa.s,cP (50 °C)	500 mL
PSL2700V08	N35 - Viscosity oil standard Kinematic viscosity (nominal) 95 mm^2/s,cSt (20 °C) 32 mm^2/s,cSt (40 °C) 5.8 mm^2/s,cSt (100 °C) 72 mm^2/s,cSt (25 °C) 23 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 82 mPa.s,cP (20 °C) 27 mPa.s,cP (40 °C) 4.7 mPa.s,cP (100 °C) 62 mPa.s,cP (25 °C) 19 mPa.s,cP (50 °C)	500 mL
PSL2700V09	S60 - Viscosity oil standard Kinematic viscosity (nominal) 160 mm^2/s,cSt (20 °C) 54 mm^2/s,cSt (40 °C) 7.7 mm^2/s,cSt (100 °C) 120 mm^2/s,cSt (25 °C) 35 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 140 mPa.s,cP (20 °C) 47 mPa.s,cP (40 °C) 6.3 mPa.s,cP (100 °C) 104 mPa.s,cP (25 °C) 30 mPa.s,cP (50 °C)	500 mL
PSL2700V10	N100 - Viscosity oil standard Kinematic viscosity (nominal) 320 mm^2/s,cSt (20 °C) 97 mm^2/s,cSt (40 °C) 11.0 mm^2/s,cSt (100 °C) 230 mm^2/s,cSt (25 °C) 59 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 280 mPa.s,cP (20 °C) 84 mPa.s,cP (40 °C) 9.1 mPa.s,cP (100 °C) 200 mPa.s,cP (25 °C) 51 mPa.s,cP (50 °C)	500 mL

	Code	Product	Unit
	PSLN140	N140 - Viscosity oil standard Kinematic viscosity (nominal) 400 mm^2/s,cSt (20 °C) 140 mm^2/s,cSt (40 °C) 18.0 mm^2/s,cSt (100 °C) 300 mm^2/s,cSt (25 °C) 90 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 350 mPa.s,cP (20 °C) 120 mPa.s,cP (40 °C) 15.0 mPa.s,cP (100 °C) 260 mPa.s,cP (25 °C) 77 mPa.s,cP (50 °C)	500 mL
	PSL2700V11	S200 - Viscosity oil standard Kinematic viscosity (nominal) 660 mm^2/s,cSt (20 °C) 180 mm^2/s,cSt (40 °C) 17 mm^2/s,cSt (100 °C) 460 mm^2/s,cSt (25 °C) 110 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 590 mPa.s,cP (20 °C) 150 mPa.s,cP (40 °C) 14 mPa.s,cP (100 °C) 410 mPa.s,cP (25 °C) 91 mPa.s,cP (50 °C)	500 mL
New	PSL2700V11A	N230 - Viscosity oil standard Kinematic viscosity (nominal) 860 mm^2/s,cSt (20 °C) 230 mm^2/s,cSt (40 °C) 21 mm^2/s,cSt (100 °C) 600 mm^2/s,cSt (25 °C) 145 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 770 mPa.s,cP (20 °C) 190 mPa.s,cP (40 °C) 17.0 mPa.s,cP (100 °C) 535 mPa.s,cP (25 °C) 120 mPa.s,cP (50 °C)	500 mL
	PSL2700V12	N350 - Viscosity oil standard Kinematic viscosity (nominal) 1400 mm^2/s,cSt (20 °C) 310 mm^2/s,cSt (40 °C) 24 mm^2/s,cSt (100 °C) 920 mm^2/s,cSt (25 °C) 180 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 1200 mPa.s,cP (20 °C) 270 mPa.s,cP (40 °C) 20 mPa.s,cP (100 °C) 790 mPa.s,cP (25 °C) 150 mPa.s,cP (50 °C)	500 mL
	PSL2700V12A	N415 - Viscosity oil standard Kinematic viscosity (nominal) 1900 mm^2/s,cSt (20 °C) 415 mm^2/s,cSt (40 °C) 34 mm^2/s,cSt (100 °C) 1240 mm^2/s,cSt (25 °C) 240 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 1630 mPa.s,cP (20 °C) 360 mPa.s,cP (40 °C) 28.0 mPa.s,cP (100 °C) 1065 mPa.s,cP (25 °C) 200 mPa.s,cP (50 °C)	500 mL
	PSL2700V13	S600 - Viscosity oil standard Kinematic viscosity (nominal) 2400 mm^2/s,cSt (20 °C) 520 mm^2/s,cSt (40 °C) 35 mm^2/s,cSt (100 °C) 1600 mm^2/s,cSt (25 °C) 290 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 2100 mPa.s,cP (20 °C) 450 mPa.s,cP (40 °C) 29 mPa.s,cP (100 °C) 1400 mPa.s,cP (25 °C) 240 mPa.s,cP (50 °C)	500 mL
New	PSL2700-V13A	N730 - Viscosity oil standard Kinematic viscosity (nominal) 3390 mm^2/s,cSt (20 °C) 730 mm^2/s,cSt (40 °C) 49 mm^2/s,cSt (100 °C) 2260 mm^2/s,cSt (25 °C) 410 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 2970 mPa.s,cP (20 °C) 630 mPa.s,cP (40 °C) 40.0 mPa.s,cP (100 °C) 1980 mPa.s,cP (25 °C) 340 mPa.s,cP (50 °C)	500 mL
	PSL2700V14	N1000 - Viscosity oil standard Kinematic viscosity (nominal) 4800 mm^2/s,cSt (20 °C) 940 mm^2/s,cSt (40 °C) 55 mm^2/s,cSt (100 °C) 3100 mm^2/s,cSt (25 °C) 520 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 4100 mPa.s,cP (20 °C) 800 mPa.s,cP (40°C) 45 mPa.s,cP (100 °C) 2700 mPa.s,cP (25 °C) 450 mPa.s,cP (50°C)	500 mL
	PSLN1300	N1300 - Viscosity oil standard Kinematic viscosity (nominal) 6760 mm^2/s,cSt (20 °C) 1320 mm^2/s,cSt (40 °C) 77 mm^2/s,cSt (100 °C) 4365 mm^2/s,cSt (25 °C) 730 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 5775 mPa.s,cP (20 °C) 1120 mPa.s,cP (40 °C) 63.0 mPa.s,cP (100 °C) 3800 mPa.s,cP (25 °C) 630 mPa.s,cP (50 °C)	500 mL

Code	Product	Unit
PSL2700V15	S2000 - Viscosity oil standard Kinematic viscosity (nominal) 8600 mm^2/s,cSt (20 °C) 1700 mm^2/s,cSt (40 °C) 81 mm^2/s,cSt (100 °C) 5600 mm^2/s,cSt (25 °C) 880 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 7500 mPa.s,cP (20 °C) 1500 mPa.s,cP (40 °C) 68 mPa.s,cP (100 °C) 4800 mPa.s,cP (25 °C) 760 mPa.s,cP (50 °C)	500 mL
PSL2700V16	N4000 - Viscosity oil standard Kinematic viscosity (nominal) 18000 mm^2/s,cSt (20 °C) 3400 mm^2/s,cSt (40 °C) 130 mm^2/s,cSt (100 °C) 11000 mm^2/s,cSt (25 °C) 1700 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 16000 mPa.s,cP (20 °C) 2900 mPa.s,cP (40 °C) 112 mPa.s,cP (100 °C) 10000 mPa.s,cP (25 °C) 1500 mPa.s,cP (50 °C)	500 mL
PSL2700V17	S8000 - Viscosity oil standard Kinematic viscosity (nominal) 35000 mm^2/s,cSt (20 °C) 6700 mm^2/s,cSt (40 °C) 220 mm^2/s,cSt (100 °C) 22000 mm^2/s,cSt (25 °C) 3200 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 31000 mPa.s,cP (20 °C) 5900 mPa.s,cP (40 °C) 190 mPa.s,cP (100 °C) 20000 mPa.s,cP (25 °C) 2700 mPa.s,cP (50 °C)	500 mL
PSL2700V18	N15000 - Viscosity oil standard Kinematic viscosity (nominal) 65000 mm^2/s,cSt (20 °C) 13000 mm^2/s,cSt (40 °C) 370 mm^2/s,cSt (100 °C) 41000 mm^2/s,cSt (25 °C) 5800 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 58000 mPa.s,cP (20 °C) 11000 mPa.s,cP (40 °C) 320 mPa.s,cP (100 °C) 37000 mPa.s,cP (25 °C) 5100 mPa.s,cP (50 °C)	500 mL
PSL2700V19	S30000-Viscosity oil standard Kinematic viscosity (nominal) 82000 mm^2/s,cSt (25 °C) 23000 mm^2/s,cSt (40 °C) 11000 mm^2/s,cSt (50 °C) 670 mm^2/s,cSt (100 °C) Dynamic viscosity (nominal) 74000 mPa.s,cP (25 °C) 21000 mPa.s,cP (40 °C) 9900 mPa.s,cP (50 °C) 580 mPa.s,cP (100 °C)	500 mL

Solid fuels

Code	Product	Unit
BCR-331	Low volatile steam coal - Sulfur Certified value S ..... 4.99 g/kg	20 g
BCR-332	High volatile industrial coal - Sulfur Certified value S ..... 9.61 g/kg	20 g
BCR-333	Coking steam coal - Sulfur Certified value S ..... 13.44 g/kg	20 g
BCR-334	Anthracite - Sulfur Certified value S ..... 16.09 g/kg	20 g
BCR-335	Flame coal - Sulfur Certified value S ..... 50.8 g/kg	20 g
BCR-336	High volatile steam coal - Sulfur Certified value S ..... 32.90 g/kg	20 g
BCR-460	Coal - Fluorine Certified value F..... 225 mg/kg Indicative value for Cl	40 g

	Code	Product	Unit
	NCS FC82007	Coal - Fluorine Certified value F..... 248±12 µg/g	50 g
	NCS FC82008	Coal - Fluorine Certified value F..... 864±16 µg/g	50 g
	NCS FC82009	Coal - Fluorine Certified value F..... 1496±20 µg/g	50 g
	NIST-2682b	Coal (sub-bituminous) - Sulphur, mercury and heat of combustion Certified values S ..... 0.4917 % Hg ..... 108.8 µg/kg Indicative values for chlorine, ash content, gross calorific value	50 g
New	NIST-2692C	Coal (bituminous) - Sulfur, mercury Certified values (dry mass basis) S ..... 1.064 ± 0.013 % Hg ..... 0.1790 ± 0.00.69 µg/g Reference values (dry mass basis) Chlorine (Cl).....1338 ± 22 µg/g Ash Content (mass fraction) ..... 7.499 ± 0.024%	50 g
	NIST-2693	Coal (bituminous) - Sulfur and mercury Certified values S ..... 0.4571 % Hg.....37.3 µg/kg Cl ..... 369.6 mg/kg	50 g
	NCS FC28003G	Coal - Elements and properties Coal type: Anthracite Certified values C ..... 70.95 % Ash..... 24.38 % H ..... 0.76 % Volatile matter..... 5.39 % N ..... 0.30 % Relative density (20°C) ..... 2.04 Total S ..... 0.39 % Calorific value .....23.93 MJ/kg	50 g
New	NIM-GBW11104F	Coal - Elements and properties Coal type: Anthracite Certified values C ..... 79.17 % Ash..... 13.85 % H ..... 2.15 % Volatile matter..... 6.97 % N ..... 1.14 % Relative density (20°C) ..... 1.65 Total S ..... 1.14 % Calorific value .....29.54 MJ/kg	50 g
New	NIM-GBW11108G	Coal (bitumite) - Elements and properties Coal type: Bitumite Certified values C ..... 68.29 % Ash..... 14.66 % H ..... 4.22 % Volatile matter..... 34.56 % N ..... 1.21 % Relative density (20°C) ..... 1.48 Total S ..... 1.84 % Calorific value .....27.61 MJ/kg	50 g
New	NCS FC28007H	Coal (bitumite) - Elements and properties Coal type: Bitumite Certified values C ..... 68.77 % Ash..... 14.77 % H ..... 4.25 % Volatile matter..... 34.46 % N ..... 1.20 % Relative density (20°C) ..... 1.47 Total S ..... 1.83 % Calorific value .....27.42 MJ/kg	50 g
New	NIM-GBW11112D	Coal - Elements and properties Coal type: Anthacite Certified values C ..... 72.26 % Ash..... 20.52 % H ..... 1.81 % Volatile matter..... 6.17 % N ..... 0.85 % Density (20°C)..... 1.79 Total S ..... 2.26 % Gross calorific value.....26.52 MJ/kg	50 g
New	NCS FC28012C	Coal - Elements and properties Coal type: Anthracite Certified values C ..... 70.35 % Ash..... 19.67 % H ..... 2.86 % Volatile matter..... 10.84 % N ..... 1.09 % Relative density (20°C) ..... 1.60 S ..... 3.07 % Gross calorific value.....27.29 MJ/kg	50 g

	Code	Product	Unit
New	NCS FC28005E	Coal (anthracite) - Elements and properties Coal type: Anthracite Certified values C ..... 77.83 % H ..... 2.76 % N ..... 0.85 % Total S ..... 1.76 % Ash ..... 14.25 % Volatile matter ..... 8.82 % Relative density (20°C) ..... 1.57 Calorific value ..... 29.58 MJ/kg	50 g
	NCS FC28101	Coal - Elements and properties Coal type: Anthracite Certified values C ..... 90.27 % H ..... 3.01 % N ..... 0.60 % Total S ..... 0.20 % Ash ..... 3.95 % Volatile matter ..... 6.64 % Relative density (20 °C) ..... 1.47 Calorific value ..... 34.34 MJ/kg	50 g
	NCS FC28102	Coal - Elements and properties Coal type: Anthracite Certified values C ..... 87.47 % H ..... 2.86 % N ..... 0.60 % Total S ..... 0.19 % Ash ..... 6.46 % Volatile matter ..... 7.90 % Relative density (20 °C) ..... 1.5 Calorific value ..... 33.1 MJ/kg	50 g
	NCS FC28103	Coal - Elements and properties Coal type: Anthracite Certified values C ..... 81.55 % H ..... 3.33 % N ..... 1.30 % Total S ..... 0.36 % Ash ..... 10.51 % Volatile matter ..... 9.45 % Relative density (20 °C) ..... 1.47 Calorific value ..... 31.8 MJ/kg	50 g
	NCS FC28104	Coal - Elements and properties Coal type: Anthracite Certified values C ..... 81.60 % H ..... 3.52 % N ..... 1.34 % Total S ..... 0.41 % Ash ..... 10.09 % Volatile matter ..... 11 % Relative density (20 °C) ..... 1.45 Calorific value ..... 32.04 MJ/kg	50 g
	NCS FC28105	Coal - Elements and properties Coal type: Anthracite Certified values C ..... 81.54 % H ..... 3.70 % N ..... 1.16 % Total S ..... 1.06 % Ash ..... 9.61 % Volatile matter ..... 12.21 % Relative density (20 °C) ..... 1.43 Calorific value ..... 32.31 MJ/kg	50 g
	NCS FC28106	Coal - Elements and properties Coal type: Bitumite Certified values C ..... 79.09 % H ..... 4.95 % N ..... 1.38 % Total S ..... 1.72 % Ash ..... 8.56 % Volatile matter ..... 31.92 % Relative density (20 °C) ..... 1.35 Calorific value ..... 32.98 MJ/kg	50 g
	NCS FC28107	Coal - Elements and properties Coal type: Bitumite Certified values C ..... 79.80 % H ..... 3.80 % N ..... 1.10 % Total S ..... 0.66 % Ash ..... 10.41 % Volatile matter ..... 15.30 % Relative density (20 °C) ..... 1.43 Calorific value ..... 31.64 MJ/kg	50 g
	NCS FC28108	Coal - Elements and properties Coal type: Bitumite Certified values C ..... 72.94 % H ..... 4.46 % N ..... 1.26 % Total S ..... 0.57 % Ash ..... 13.68 % Volatile matter ..... 30.84 % Relative density (20 °C) ..... 1.42 Calorific value ..... 29.9 MJ/kg	50 g

Code	Product	Unit
NCS FC28109	Coal - Elements and properties Coal type: Anthracite Certified values C ..... 79.42 % Ash ..... 11.98 % H ..... 3.28 % Volatile matter ..... 11.30 % N ..... 1.09 % Relative density (20 °C) ..... 1.49 Total S ..... 0.58 % Calorific value ..... 30.66 MJ/kg	50 g
NCS FC28110	Coal - Elements and properties Coal type: Bitumite Certified values C ..... 75.96 % Ash ..... 8.42 % H ..... 4.56 % Volatile matter ..... 32.94 % N ..... 1.33 % Relative density (20 °C) ..... 1.41 Total S ..... 0.87 % Calorific value ..... 30.92 MJ/kg	50 g
NCS FC28111	Coal - Elements and properties Coal type: Bitumite Certified values C ..... 60.24 % Ash ..... 25.19 % H ..... 3.73 % Volatile matter ..... 28.39 % N ..... 1.04 % Relative density (20 °C) ..... 1.57 Total S ..... 1.28 % Calorific value ..... 24.35 MJ/kg	50 g
NCS FC28112	Coal - Elements and properties Coal type: Bitumite Certified values C ..... 78.78 % Ash ..... 8.08 % H ..... 5.01 % Volatile matter ..... 33.70 % N ..... 1.31 % Relative density (20 °C) ..... 1.33 Total S ..... 2.10 % Calorific value ..... 32.82 MJ/kg	50 g
NCS FC28113	Coal - Elements and properties Coal type: Bitumite Certified values C ..... 74.80 % Ash ..... 7.06 % H ..... 4.47 % Volatile matter ..... 33.40 % N ..... 1.02 % Relative density (20 °C) ..... 1.41 Total S ..... 0.27 % Calorific value ..... 30.03 MJ/kg	50 g
NCS FC28114	Coal - Elements and properties Coal type: Bitumite Certified values C ..... 76.36 % Ash ..... 4.66 % H ..... 4.54 % Volatile matter ..... 33.07 % N ..... 1.08 % Relative density (20 °C) ..... 1.4 Total S ..... 0.20 % Calorific value ..... 30.73 MJ/kg	50 g
NCS FC28115	Coal - Elements and properties Coal type: Bitumite Certified values C ..... 77.44 % Ash ..... 6.38 % H ..... 4.42 % Volatile matter ..... 32.22 % N ..... 1.21 % Relative density (20 °C) ..... 1.41 Total S ..... 0.42 % Calorific value ..... 31.05 MJ/kg	50 g
NCS FC28116	Coal - Elements and properties Coal type: Bitumite Certified values C ..... 78.68 % Ash ..... 6.08 % H ..... 4.59 % Volatile matter ..... 32.34 % N ..... 1.34 % Relative density (20 °C) ..... 1.39 Total S ..... 0.54 % Calorific value ..... 31.82 MJ/kg	50 g
NCS FC59001	Coke - Sulphur, ash and volatile matter Certified values Total Sulfur ..... 0.63±0.03 % Ash ..... 7.22±0.06 % Volatile matter ..... 1.39±0.08 %	60 g
NCS FC82004	Coal - Chlorine Certified value Cl ..... 0.010±0.002 %	50 g
NCS FC82005	Coal - Chlorine Certified value Cl ..... 0.057±0.003 %	50 g

Code	Product	Unit

NCS FC82006 — Coal - Chlorine — 50 g

Certified value

Cl ..... 0.110±0.006 %

New **NCS FC28001N** — Coal (bitumite) - Elements and properties — 50 g

Coal type: Bitumite

Certified values

C	52.61%	Ash	35.58 %
H	3.45 %	Volatile matter	24.31 %
N	1.00 %	Relative density (20°C)	1.65
Total S	0.47 %	Calorific value	21.15 MJ/kg

NCS FC82002 — Coal - Arsenic and Phosphorus — 50 g

Certified value

As ..... 34±2 µg/g P ..... 0.007±0.001%

NCS FC82003 — Coal - Arsenic and Phosphorus — 50 g

Certified value

As ..... 51±3 µg/g P ..... 0.092±0.005%

NCS FC62001 — Bituminous Coal — 20 g

Certified values

M_{ad}	4.51%	V_{ad}	22.89%	$S_{t,d}$	1.53%
A_{ad}	21.17%	V_d	23,97%	$Q_{gr,ad}$	23.91 MJ/kg
A_d	22.17%	$S_{t,ad}$	1,46%	$Q_{gr,d}$	25.04 MJ/kg

M_{ad}, A_{ad}, V_{ad}, $S_{t,ad}$ and $Q_{gr,ad}$ mean moisture, ash, volatile material, total sulfur and calorific value of air dried sample; A_d, V_d, $S_{t,d}$ and $Q_{gr,d}$ mean ash, volatile material, total sulfur and calorific value of dried sample.

NCS FC62002 — Bituminous Coal — 20 g

Certified values

M_{ad}	2.27%	V_{ad}	4.21%	$S_{t,d}$	2.95%
A_{ad}	25.82%	V_d	4.31%	$Q_{gr.ad}$	23.48 MJ/kg
A_d	26.42%	$S_{t.ad}$	2.88%	$Q_{gr.d}$	24.02 MJ/kg

M_{ad}, A_{ad}, V_{ad}, $S_{t,ad}$ and $Q_{gr,ad}$ mean moisture, ash, volatile material, total sulfur and calorific value of air dried sample; A_d, V_d, $S_{t,d}$ and $Q_{gr,d}$ mean ash, volatile material, total sulfur and calorific value of dried sample.

NIST-2775 — Foundry coke - Sulfur — 50 g

Certified value

S ..... 0.5816 %

Indicative values for ash, volatile matter, carbon, hydrogen and nitrogen

NIST-2776 — Foundry coke - Sulfur, ash and volatile matter — 50 g

Certified values

S ..... 0.825 ± 0.016 %

Indicative values for ash, volatile matter, carbon, hydrogen, nitrogen

NIST-2718 — Green petroleum coke - Trace elements — 50 g

Certified values

Al	16.5 mg/kg	Fe	290 mg/kg	S	47032 mg/kg
Ca	174 mg/kg	Ni	139.1 mg/kg	V	302 mg/kg

Indicative values for C, Co, H, N, Na, Si, Ash, Volatile matter, Gross calorific value

NIST-2719 — Calcinated petroleum coke - Trace elements — 50 g

Certified values

Al	58.9 mg/kg	Fe	201.6 mg/kg	S	8877 mg/kg
Ca	57.7 mg/kg	Ni	204 mg/kg	V	58.6 mg/kg

Indicative values for C, Co, H, N, Na, Si, Ash, Volatile content, Gross calorific value

NJV 94-1 — Energy peat (Carex) - Trace elements — 50 g

Milled peat from Sweden with an approximate composition of 80:20 Carex: Sphagnum.

Certified values

Al	0.090 %	Fe	0.39 %	Pb	2.4 mg/kg
Ca	1.02 %	Mg	0.077 %	S	0.29 %
Cd	0.062 mg/kg	Mn	0.0036 %	Zn	9 mg/kg
Cl	0.028 %	N	2.09 %	Ash	4.07 %
Cu	2.0 mg/kg	P	0.045 %	Calorific value	22.3 MJ/kg

Indicative values for As, C, Cr, H, K, Na, Si, Ti, Volatile matter

NJV 94-2 — Energy peat (sphagnum) - Trace elements — 50 g

Sod peat from Sweden with an approximate composition of 90:10 Sphagnum: Peat wool.

Certified values

Al	0.095 %	Fe	0.13 %	Pb	10.1 mg/kg
Ca	0.12 %	Mg	0.11 %	S	0.217 %
Cd	0.16 mg/kg	Mn	0.0008 %	Zn	9 mg/kg
Cl	0.061 %	N	1.10 %	Ash	1.57 %
Cu	1.7 mg/kg	P	0.024 %	Calorific value	21.8 MJ/kg

Indicative values for C, Cr, H, K, Na, Si, Ti, Volatile matter

Code	Product	Unit
NJV 94-3	Energy forest (salix) - Trace elements	50 g

Salix cultivated in Sweden.

Certified values

Ca	0.44 %	Mg	0.034 %	Zn	75 mg/kg
Cd	1.8 mg/kg	Mn	0.006 %	Ash	1.56 %
Cu	4.0 mg/kg	N	0.37 %	Calorific value	19.5 MJ/kg
Fe	0.0026 %	P	0.05 %		
K	0.20 %	S	0.028 %		

Indicative values for Al, C, Cl, H, Na, Si, Pb, Volatile matter

NJV 94-4	Energy grass (phalaris arudinaceae L.) - Trace elements	50 g

Spring harvested reed canary grass (Phalaris arudinaceae L.) from Sweden.

Certified values

Al	0.18 %	Fe	0.106 %	S	0.132 %
As	0.4 mg/kg	K	0.38 %	Si	2.1 %
Ca	0.21 %	Mg	0.088 %	Zn	42 mg/kg
Cd	0.09 mg/kg	Mn	0.016 %	Ash	6.87 %
Cl	0.058 %	N	1.04 %	Calorific value	18.5 MJ/kg
Cr	3.4 mg/kg	P	0.109 %		
Cu	6.8 mg/kg	Pb	2.1 mg/kg		

Indicative values for C, H, Na, Ti, Volatile matter

NJV 94-5	Wood fuel - Trace elements	50 g

Pine wood waste from a saw mill in Sweden with a composition of approximately 70:30 bark: chip

Certified values

Al	0.026 %	Fe	0.007 %	Pb	0.68 mg/kg
As	0.8 mg/kg	K	0.09 %	S	0.018 %
Ca	0.35 %	Mg	0.030 %	Zn	38 mg/kg
Cd	0.27 mg/kg	Mn	0.021 %	Ash	1.22%
Cr	0.8 mg/kg	Na	0.004 %	Calorific value	20.6 MJ/kg
Cu	2.2 mg/kg	P	0.021 %		

Indicative values for C, Cl, H, N, Si, Ti, Volatile matter

Cement

Code	Product	Unit
NIST-634a	Portland cement - Constituents	100 g

Certified values

SiO_2	20.493 %	CaO	65.07 %	K_2O	0.3572 %
Al_2O_3	5.015 %	MgO	1.0057 %	TiO_2	0.2463 %
Fe_2O_3	3.362 %	SO_3	2.780 %	P_2O_5	0.1767 %

Indicative values for Na_2O, Cr_2O_3, ZnO, Mn_2O_3, SrO

New NIST-1880B	Portland cement - Constituents	4 x 5 g

Certified values

SiO_2	20.42 ± 0.36 %	SO_3	2.710 ± 0.099 %	Mn_2O_3	0.1981 ± 0.0020 %
Al_2O_3	5.183 ± 0.073 %	Na_2O	0.0914 ± 0.0052 %	Cl	0.01830 ± 0.00057 %
Fe_2O_3	3.681 ± 0.023 %	K_2O	0.646 ± 0.014 %	Cr_2O_3	0.01927 ± 0.00042 %
CaO	64.16 ± 0.40 %	TiO_2	0.236 ± 0.012 %		
MgO	1.176 ± 0.020 %	P_2O_5	0.2443 ± 0.0027 %		

Reference values for LOI*, ZnO, sulfide sulfur, insoluble residue, CaO (free), SrO, and fluoride

* Loss on Ignition

NIST-1881a	Portland cement - Constituents	4 x 5 g

Certified values

Al_2O_3	7.060 %	MgO	2.981 %	SO_3	3.366 %
CaO	57.58 %	Mn_2O_3	0.013 %	SrO	0.036 %
Cr_2O_3	0.0588 %	Na_2O	0.199 %	TiO_2	0.3663 %
Fe_2O_3	3.09 %	P_2O_5	0.1459 %	ZnO	0.0489
K_2O	1.228 %	SiO_2	22.26 %		

Indicative values for Cl, F, LOI*, Insoluble residue

* Loss on Ignition

NIST-1882a	Calcium aluminate cement (formally orange) - Constituents	4 x 5 g

Certified values

Al_2O_3	39.14 %	MgO	0.51 %	SrO	0.024 %
CaO	39.29 %	Mn_2O_3	0.060 %	TiO_2	1.786 %
Cr_2O_3	0.113 %	Na_2O	0.021 %	ZnO	0.004 %
Fe_2O_3	14.67 %	P_2O_5	0.070 %	LOI*	0.20 %
K_2O	0.051 %	SiO_2	4.01 %		

Indicative value for Total

* Loss on Ignition

Code	Product	Unit

NIST-1883a — Calcium aluminate cement (formally silver) - Constituents — 4 x 5 g

Certified values

Al_2O_3 70.04 %	K_2O 0.014 %	SiO_2 0.24 % %
CaO 29.52 %	MgO 0.19 %	
Fe_2O_3 0.078 %	Na_2O 0.30 %	

Indicative values for Cr_2O_3, P_2O_5, SrO, TiO_2, LOI*, Total

* Loss on Ignition

New **NIST-1884B** — Portland cement - Constituents — 4 x 5 g

This Standard Reference Material® (SRM®) is intended primarily for the evaluation or calibration of methods for analysis of cements and materials of similar matrix. A unit of SRM 1884b consists of five sealed vials, each containing approximately 4.5 g of portland cement ground to pass through a 75 µm (No. 200) sieve.

Certified values for NIST1884b

SiO_2 19.30 ± 0.18 %	SO_3 4.034 ± 0.067 %	Mn_2O_3 0.0750 ± 0.0013 %
Al_2O_3 4.851 ± 0.021 %	Na_2O 0.278 ± 0.010 %	Cr_2O_3 0.00791 ± 0.00070 %
Fe_2O_3 2.937 ± 0.020 %	K_2O 0.957 ± 0.018 %	SrO 0.0258 ± 0.0038 %
CaO 61.31 ± 0.36 %	TiO_2 0.2651 ± 0.0084 %	
MgO 4.74 ± 0.13 %	P_2O_5 0.0965 ± 0.0033 %	

Indicative values for LOI, ZnO, Cl, sulfide sulfur, insoluble residue, free CaO, fluoride (F^-)

NIST-1885a — Portland cement - Constituents — 4 x 5 g

Certified values

Al_2O_3 4.026 %	MgO 4.033 %	SO_3 2.830 %
CaO 62.39 %	Mn_2O_3 0.0478 %	SrO 0.638 %
Cr_2O_3 0.0195 %	Na_2O 1.068 %	TiO_2 0.195 %
Fe_2O_3 1.929 %	P_2O_5 0.1220 %	
K_2O 0.206 %	SiO_2 20.909 %	

Indicative values for ZnO, F, LOI*, Total, Insoluble residues, free CaO

* Loss on Ignition

NIST-1886A — Portland cement (cranberry) - Constituents — 4 x 5 g

Certified values

Al_2O_3 3.99 %	Mn_2O_3 0.013 %	SrO 0.11 %
CaO 67.43 %	Na_2O 0.02 %	TiO_2 0.19 %
Fe_2O_3 0.31 %	P_2O_5 0.025 %	LOI* 1.73 %
K_2O 0.16 %	SiO_2 22.53 %	
MgO 1.60 %	SO_3 2.04 %	

Indicative values for Cl, Cr_2O_3, F, ZnO, Total

* Loss on Ignition

NIST-1887a — Portland cement - Constituents — 4 x 5 g

Certified values

Al_2O_3 6.202 %	Mn_2O_3 0.1186 %	SrO 0.322 %
CaO 60.90 %	Na_2O 0.4778 %	TiO_2 0.2658 %
Fe_2O_3 2.861 %	P_2O_5 0.306 %	ZnO 0.0667 %
K_2O 1.100 %	SiO_2 18.637 %	
MgO 2.835 %	SO_3 4.622 %	

Indicative values for Cl, F, LOI*, Total, Insoluble residues, free CaO

* Loss on Ignition

New **NIST-1888B** — Portland cement - Constituents — 4 x 5 g

Certified values

SiO_2 20.42 ± 0.23 %	K_2O 0.658 ± 0.017 %
Al2O3 4.277 ± 0.036 %	TiO_2 0.2316 ± 0.0076 %
Fe_2O_3 3.062 ± 0.053 %	P_2O_5 0.07307 ± 0.00081 %
CaO 63.13 ± 0.29 %	Mn_2O_3 0.0652 ± 0.0022 %
MgO 3.562 ± 0.057 %	Cl 0.0143 ± 0.0015 %
SO_3 2.634 ± 0.017 %	SrO 0.1009 ± 0.0030 %
Na_2O 0.1364 ± 0.0044 %	

Reference values for Cr_2O_3, ZnO, Sulfide Sulfur, Insoluble Residue, Free CaO, Fluoride, LOI at different temperatures

NIST-1889a — Portland cement - Constituents — 4 x 5 g

Certified values

Al_2O_3 3.89 %	Mn_2O_3 0.2588 %	SrO 0.042 %
CaO 65.34 %	Na_2O 0.195 %	TiO_2 0.227 %
Fe_2O_3 1.937 %	P_2O_5 0.110 %	ZnO 0.0048 %
K_2O 0.605 %	SiO_2 20.66 %	
MgO 0.814 %	SO_3 2.69 %	

Indicative values for Cl, F, LOI*, Total, Insoluble residues, free CaO

* Loss on Ignition

New **NIST-2686A** — Portland cement clinker - Major phases — set (4)

Major phases in cement clinker

Certified values

Alite 63.53 %	Ferrite 10.8 %	Periclase 3.4 %
Belite 18.8 %	Aluminate 2.46 %	Alkali sulfates 0.86 %

Informational values for elemental constituents expressed as the chemical forms.

Code	Product	Unit
NIST-2688	Portland cement clinker - Major phases	3 x 10 g

Major phases in cement clinker

Certified values for phase abundance

Alite	64.95 %	Ferrite	12.2 %
Belite	17.45 %	Aluminate	4.99 %

Informational values for elemental constituents expressed as the chemical forms.

Code	Product	Unit
NIST-2687	Portland cement clinker - Major phases	3 x 10 g

Major phases in cement clinker

Certified values

Alite	71.24 %	Ferrite	2.81 %	Arcanite	0.92 %
Belite	12.57 %	Aluminate	11.87 %		

Informational values for elemental constituents expressed as the chemical forms.

Code	Product	Unit
NIST-114q	Portland cement fineness standard	set (20)

This Standard Reference Material® (SRM®) is intended for use in calibrating fineness testing equipment according to ASTM Standard Methods. The SRM unit consists of 20 glass vials with plastic caps containing powdered cement (each vial is contained in a sealed foil bag). Each vial contains approximately 5 g of cement.

Measurand	ASTM Method	Certified Value and Expanded Uncertainty
Specific Surface Area (Blaine)	C 204-96a	3818 cm^2/g ± 78 cm^2/g
Specific Surface Area (Wagner)	C 115-96a	2183 cm^2/g ± 160 cm^2/g
Sieve Residue (45 µm residue)	C 430-96	0.79 % ± 0.19 %

Code	Product	Unit
NIST-46h	Portland cement - Turbidity and Fineness	10 x 5 g

This Standard Reference Material (SRM®) is intended for use in calibrating fineness testing equipment according to ASTM Standard Methods. A unit of NIST-46h contains 10 glass vials of approximately 5 g of powdered cement.

Measurand	ASTM Method	Certified Value and Expanded Uncertainty
Sieve Residue (45 µm residue)	C 430-96(2003)[a]	7.43 % ± 0.79 %

[a] Standard Test Method for Fineness of Hydraulic Cement by the 45 µm (No. 325) Sieve.

Code	Product	Unit
BAS-BCS-CRM 353	Sulphate resist portland cement	100 g

Certified values

SiO_2	20.5 %	Mn_2O_3	0.23 %	P_2O_5	0.077 %
Al_2O_3	3.77 %	CaO	64.8 %	SO_3	2.25 %
TiO_2	0.16 %	MgO	2.42 %	SrO	0.23 %
Fe_2O_3	4.82 %	Na_2O (Acid Sol)	0.1 %	Cl	(0.01) %
Cr_2O_3	(0.02) %	K_2O (Acid Sol)	0.49 %		

(Values in parenthesis are indicative values)

Code	Product	Unit
BAS-BCS-CRM 354	White Portland Cement	100 g

Certified values

SiO_2	21.8 %	Mn_2O_3	0.057 %	P_2O_5	0.12 %
Al_2O_3	4.85 %	CaO	70 %	SO_3	2.25 %
TiO_2	0.04 %	MgO	0.42 %	SrO	0.11 %
Fe_2O_3	0.3 %	Na_2O (Acid Sol)	0.1 %	Cl	0.005 %
Cr_2O_3	(0.003 %)	K_2O (Acid Sol)	0.11 %		

(Values in parenthesis are indicative values)

Glass and ceramics

Code	Product	Unit
IRMM-435	Pharmaceutical glass - Leaching	20 vials

This material is intended for performance checks of the complete procedure of autoclave leaching of the inner walls of glass containers and subsequent determination of alkali and/or sodium release by titration and/or flame spectrometry.

	Certified value	Uncertainty
Volume of titration solution 0.01 mol/L HCl per 50 mL of leachate[1]	0.38 mL	0.04 mL
Sodium release per volume of leachate[1]	1.41 mg/L	0.14 mg/L
Release of Na_2O per volume of leachate[1]	1.91 mg/L	0.19 mg/L

[1] As determined according to the adapted method for alkali release based on the European Pharmacopoeia method and ISO 4802

Code	Product	Unit

BCR-126A — Lead glass - Constituents — 300 g

Specially selected glass with a composition that displays many typical analytical problems.
Size: 100 x 100 x 10 mm

Certified values

Al_2O_3	0.128 cg/g	Na_2O	3.58 cg/g
BaO	1.036 cg/g	PbO	23.98 cg/g
CaO	1.033 cg/g	Sb_2O_3	0.290 cg/g
Fe_2O_3	0.0055 cg/g	SiO_2	57.80 cg/g
K_2O	10.00 cg/g	ZnO	1.020 cg/g
Li_2O	0.495 cg/g	Density (20°C)	2.9905 g/cm^3
MgO	0.512 cg/g	Refractive index (20°C) at 589.3nm	1.55967

BCR-664 — Glass - Trace elements — plate

Size: 50 x 50 x 7 mm

Certified values

As	5.9 mg/kg	Cl	68.4 mg/kg	Pb	53.1 mg/kg
Ba	29.1 mg/kg	Co	2.77 mg/kg	Sb	24.3 mg/kg
Cd	5.7 mg/kg	Cr	2.65 mg/kg	Se	8.6 mg/kg

BCR-301 (RM) — Mullite — 50 g

High crystallinty. Vitreous phase 0.03 g/g. No other phase detected.

Impurities: CaO, Fe_2O_3, K_2O, MgO, Na_2O, TiO_2

Values for lattice spacing and relative intensity at five different reflections.

Available in granular form to be ground by the user.

BAM-S004 — Glass - hexavalent chromium — 50 g

The certified reference material BAM-S004 consists of container glass for cosmetics. It was crushed into pieces < 10 mm sizes and contains a powdered fraction.

Certified values

Cr-(VI)	94 ± 5 mg/kg	Al2O3	(2.15) %	K2O	(0.16) %
Cr-total	471 ± 25 mg/kg	BaO	(1.2) %	Cr2O3	(0.07) %
SiO2	(70.9) %	MgO	(0.90) %	Fe2O3	(0.06) %
Na2O	(14.5) %	ZnO	(0.33) %	CuO	(0.04) %
CaO	(9.4) %	SO2	(0.17) %		

(Values in parenthesis are indicative values)

BAM-S005A — Multielement glass for XRF analysis (soda lime glass) - disc 39 mm x 5 mm (26 g - 30 g) — disc

Certified values

Arsenic (III) oxide	132 ± 8 mg/kg	Tin (IV) oxide	100 ± 7 mg/kg
Barium oxide	115 ± 9 mg/kg	Sulfur trioxide	1942 ± 85 mg/kg
Cadmium oxide	62 ± 4 mg/kg	Strontium oxide	151 ± 7 mg/kg
Cerium (IV) oxide	105 ± 6 mg/kg	Titanium (IV) oxide	164 ± 9 mg/kg
Chloride	247 ± 33 mg/kg	Vanadium (V) oxide	350 ± 22 mg/kg
Cobalt oxide	49.4 ± 2.4 mg/kg	Zinc oxide	203 ± 10 mg/kg
Chromium (III) oxide	15.6 ± 2.4 mg/kg	Zirconium (IV) oxide	842 ± 125 mg/kg
Copper (II) oxide	112 ± 5 mg/kg	Silicon (IV) oxide	(71) %
Iron (III) oxide	422 ± 11 mg/kg	Sodium oxide	(13.7) %
Manganese (II) oxide	124 ± 5 mg/kg	Calcium oxide	(10.5) %
Molybdenum (VI) oxide	343 ± 12 mg/kg	Magnesium oxide	(2.3) %
Nickel (II) oxide	59.0 ± 2 mg/kg	Aluminium oxide	(1.1) %
Lead (II) oxide	202 ± 8 mg/kg	Potassium oxide	(0.7) %
Antimony (III) oxide	132 ± 7 mg/kg	Certified values	
Selenium	19.6 ± 1.7 mg/kg		

(Values in parenthesis are indicative values)

BAM-S005B — Multielement glass for XRF analysis (soda lime glass) - disc 39 mm x 5 mm (26 g - 30 g) — disc

Certified values

Arsenic (III) oxide	132 ± 8 mg/kg	Selenium	19.6 ± 1.2 mg/kg
Barium oxide	115 ± 5 mg/kg	Tin (IV) oxide	100 ± 7 mg/kg
Cadmium oxide	62 ± 3 mg/kg	Sulfur trioxide	1942 ± 57 mg/kg
Cerium (IV) oxide	105 ± 5 mg/kg	Strontium oxide	151 ± 7 mg/kg
Chloride	247 ± 24 mg/kg	Titanium (IV) oxide	163 ± 7 mg/kg
Cobalt oxide	49.4 ± 2.3 mg/kg	Vanadium (V) oxide	349 ± 22 mg/kg
Chromium (III) oxide	15.2 ± 1.2 mg/kg	Zinc oxide	203 ± 6 mg/kg
Copper (II) oxide	112 ± 4 mg/kg	Zirconium (IV) oxide	842 ± 76 mg/kg
Iron (III) oxide	422 ± 10 mg/kg	Silicon (IV) oxide	(71) %
Manganese (II) oxide	124 ± 5 mg/kg	Sodium oxide	(13.7) %
Molybdenum (VI) oxide	343 ± 12 mg/kg	Calcium oxide	(10.5) %
Nickel (II) oxide	59.0 ± 1.9 mg/kg	Magnesium oxide	(2.3) %
Lead (II) oxide	202 ± 7 mg/kg	Aluminium oxide	(1.1) %
Antimony (III) oxide	132 ± 6 mg/kg	Potassium oxide	(0.7) %

(Values in parenthesis are indicative values)

NIST-89 — Lead-barium glass - Constituents — 45 g

Certified values

Cl	0.05 %	Fe_2O_3	0.049 %	PbO	17.50 %
Al_2O_3	0.18 %	K_2O	8.40 %	SiO_2	63.35 %
As_2O_3	0.03 %	MgO	0.03 %	SO_3	0.03 %
As_2O_5	0.36 %	MnO	0.088 %	TiO_2	0.01 %
BaO	1.40 %	Na_2O	5.70 %	ZrO_2	0.005 %
CaO	0.21 %	P_2O_5	0.23 %	LOI*	0.32 %

Code	Product	Unit

NIST-92 — Low boron soda-lime powder - Boron — 45 g

Certified value

B_2O_3 ..... 0.70 %

Indicative values for CaO, K_2O, MgO, Na_2O, SiO_2, ZnO, LOI*

NIST-93a — Borosilicate glass - Constituents — unit

32 x 6 mm wafer

Certified values

Cl ..... 0.060 %	Fe_2O_3 ..... 0.028 %	Na_2O ..... 3.98 %
Al_2O_3 ..... 2.28 %	FeO ..... 0.016 %	SiO_2 ..... 80.8 %
B_2O_3 ..... 12.56 %	K_2O ..... 0.014 %	TiO_2 ..... 0.014 %
CaO ..... 0.01 %	MgO ..... 0.005 %	ZrO_2 ..... 0.042 %

NIST-1411 — Soft borosilicate glass - Constituents — set (10)

Set of 10 platelets (32 x 32 x 3 mm)

Certified values

Al_2O_3 ..... 5.68 %	Fe_2O_3 ..... 0.050 %	SiO_2 ..... 58.04 %
B_2O_3 ..... 10.94 %	K_2O ..... 2.97 %	SrO ..... 0.09 %
BaO ..... 5.00 %	MgO ..... 0.33 %	TiO_2 ..... 0.02 %
CaO ..... 2.18 %	Na_2O ..... 10.14 %	ZnO ..... 3.85 %

NCS DC61104 — Borosilicate glass - Constituents — 50 g

Certified values

F ..... 0.54 %	Fe_2O_3 ..... 0.34 %	SiO_2 ..... 53.98 %
Al_2O_3 ..... 14.50 %	K_2O ..... 0.59 %	TiO_2 ..... 0.19 %
B_2O_3 ..... 8.87 %	MgO ..... 4.40 %	LOI* ..... 0.26 %
CaO ..... 16.54 %	Na_2O ..... 0.096 %	

NIST-81a — Glass sand - Constituents — 75 g

Certified values

Al_2O_3 ..... 0.66 %	Fe_2O_3 ..... 0.082 %	ZrO_2 ..... 0.034 %
Cr_2O_3 ..... 46 mg/kg	TiO_2 ..... 0.12 %	

NIST-165a — Glass sand (low iron) - Constituents — 75 g

Certified values

Al_2O_3 ..... 0.059 %	TiO_2 ..... 0.011 %
Fe_2O_3 ..... 0.012 %	ZrO_2 ..... 0.006 %

NIST-1413 — Glass sand (high alumina) - Constituents — 75 g

Certified values

Al_2O_3 ..... 9.90 %	Fe_2O_3 ..... 0.24 %	Na_2O ..... 1.75 %
BaO ..... 0.12 %	K_2O ..... 3.94 %	SiO_2 ..... 82.77 %
CaO ..... 0.74 %	MgO ..... 0.06 %	TiO_2 ..... 0.11 %

New **SGTSAND6** — Standard sand 6 - Constituents — 200 g

Certified values

Al_2O_3 ..... 0.60 %	K_2O ..... 0.40 %	SiO_2 ..... 98.66 %
CaO ..... < 0.02 %	MgO ..... <0.02 %	TiO_2 ..... 0.024 %
Fe_2O_3 (total Fe) ..... 0.032 %	Na_2O ..... <0.02 %	LOI* ..... 0.14 %

*Loss on ignition

New **SGTSAND8** — Standard sand 8 - Constituents — 200 g

Certified values

Al_2O_3 ..... 2.07 %	K_2O ..... < 1.06 %	SiO_2 ..... 95.63 %
CaO ..... 0.06 %	MgO ..... 0.12 %	TiO_2 ..... 0.073 %
Fe_2O3 (total Fe) ..... 0.26 %	Na_2O ..... 0.20 %	LOI* ..... 0.48 %

*Loss on ignition

NIST-620 — Soda-lime flat glass - Constituents — set (3)

Set of 3 platelets (35 x 35 x 3 mm)

Certified values

Al_2O_3 ..... 1.80 %	K_2O ..... 0.41 %	SO_3 ..... 0.28 %
As_2O_3 ..... 0.056 %	MgO ..... 3.69 %	TiO_2 ..... 0.018 %
CaO ..... 7.11 %	Na_2O ..... 14.39 %	
Fe_2O_3 ..... 0.043 %	SiO_2 ..... 72.08 %	

NIST-621 — Soda-lime container glass - Constituents — set (3)

Set of 3 discs (38 x 5 mm)

Certified values

Al_2O_3 ..... 2.76 %	Fe_2O_3 ..... 0.040 %	SO_3 ..... 0.13 %
As_2O_3 ..... 0.030 %	K_2O ..... 2.01 %	SiO_2 ..... 71.13 %
BaO ..... 0.12 %	Na_2O ..... 12.74 %	TiO_2 ..... 0.014 %
CaO ..... 10.71 %	MgO ..... 0.27 %	ZrO_2 ..... 0.007 %

Code	Product	Unit
NIST-1830	Soda-lime float glass - Constituents Set of 3 platelets (38 x 38 x 6 mm) Certified values Al_2O_3 0.12 %, K_2O 0.04 %, SO_3 0.26 % CaO 8.56 %, MgO 3.90 %, TiO_2 0.011 % FeO 0.032 %, Na_2O 13.75 % Fe_2O_3 0.121 %, SiO_2 73.07 %	3 platelets
NIST-1831	Soda lime sheet glass - Constituents Set of 3 platelets (37 x 37 x 3 mm) Certified values Al_2O_3 1.21 %, K_2O 0.33 %, SO_3 0.25 % CaO 8.20 %, MgO 3.51 %, TiO_2 0.019 % FeO 0.025 %, Na_2O 13.32 % Fe_2O_3 0.087 %, SiO_2 73.08 %	3 platelets
NIST-1834	Fused ore glass - Constituents 30 x 3 mm disc Certified values Al 20.71 %, K 0.42 %, Sr 0.153 % Ba 0.062 %, Mg 0.088 %, Ti 1.11 % Ca 0.0955, P 0.152 % Fe 0.32 %, Si 20.19 % Indicative values for B, Cr, Li, Na, Zr	disc
New SGTGLASS4-D	Fluoride opal glass - Constituents Reference: Glass Technol., 1962, 3 (1), 9-16, ‘the chemical analysis of a fluoride glass described as Standard Glass No. 4’. Certified values F 4.96 %, K_2O 0.57 %, TiO_2 0.041 % Al_2O_3 3.02 %, MgO <0.05 %, ZnO 3.28 % B_2O_3 0.19 %, Na_2O 15.45 %, Loss at 550 °C 0.22 % CaO 4.24 %, SO_3 (total S) <0.05 % Fe_2O_3 (total Fe) 0.099 %, SiO_2 69.49 %	disc
New SGTGLASS4-P	Fluoride opal glass - Constituents Glass pieces	25 g
New SGTGLASS6-P	Soda-lime-silica glass - Constituents Certified values Al_2O_3 1.70 %, K_2O <0.1 %, SO_3 (total S) 0.20 % CaO 9.97 %, MgO <0.1 %, SiO_2 73.06 % Fe_2O_3 (total Fe) 0.034 %, Na_2O 14.65 %, TiO_2 0.02 %	25 g
New SGTGLASS7-D	Soda - lime - silica glass - Constituents Certified values Al_2O_3 1.50 %, Na_2O 13.90 %, TiO_2 0.042 % CaO 11.03 %, MgO 0.14 %, Loss at 550 °C 0.07 % Fe_2O_3 (total Fe) 0.044 %, SO_3 (total S) 0.19 % K_2O 0.43 %, SiO_2 72.64 %	disc
New SGTGLASS7-P	Soda - lime - silica glass - Constituents Glass pieces	25 g
New SGTGLASS8-P	Lead oxide - potassium oxide - silica glass - Constituents Certified values Al_2O_3 0.05 %, Fe_2O_3 (total Fe) 0.010 %, PbO 30.59 % As_2O_3 (total As) 0.32 %, K_2O 11.85 %, SiO_2 56.34 % B_2O_3 0.36 %, MgO <0.02 %, TiO_2 0.02 % CaO <0.02 %, Na_2O 0.23 %, Loss at 550 °C 0.21 %	25 g
New SGTGLASS10-D	Amber soda - lime - silica container glass - Constituents 40 mm diameter disc Certified values Al_2O_3 1.62 %, K_2O 0.35 %, SO_3 0.05 % BaO 0.02 %, MgO 1.81 %, TiO_2 0.097 % CaO 10.7 %, Na_2O 12.2 %, Cr_3O_3 0.020 % Fe_2O_3 0.325 %, SiO_2 72.7 %	disc
New SGTGLASS10-P	Amber soda - lime - silica container glass - Constituents Glass pieces	25 g
New SGTGLASS11-D	Green soda - lime - silica container glass - Constituents 40 mm diameter disc Certified values Al_2O_3 1.83 %, K_2O 0.69 %, SO_3 0.06 % BaO 0.03 %, MgO 2.14 %, TiO_2 0.068 % CaO 10.3 %, Na_2O 13.6 %, Cr_2O_3 0.205 % Fe_2O_3 0.342 %, SiO_2 70.7 %	disc

Code	Product	Unit
New SGTGLASS11-P	Green soda - lime- silica container glass - Constituents Glass pieces	25 g
NIST-607	Potassium feldspar - Trace elements Certified values Rb ..... 523.90 mg/kg Sr.....65.485 mg/kg	5 g
	NIST-610 and NIST-611 NIST-610 and NIST-611 are the same material and therefore have the same certified values. NIST-610 consists of glass 3 mm thick and NIST-611 is 1 mm thick.	
NIST-610	Glass - Trace elements Certified values Fe..... 458 mg/kg Pb.....426 mg/kg Th..... 457.2 mg/kg Mn..... 485 mg/kg Rb.....425.7 mg/kg U ..... 461.5 mg/kg Ni ..... 458.7 mg/kg Sr.....515.5 mg/kg Indicative values for Ag, Au, Co, Cu, K, Ti, Tl, Zn	6 wafers
NIST-611	Glass - Trace elements	6 wafers
	NIST-612 and NIST-613 NIST-612 and NIST-613 are the same material and therefore have the same certified values. NIST-612 consists of glass 3 mm thick and NIST-613 is 1 mm thick.	
NIST-612	Glass - Trace elements Certified value Ag ..... 22.0 mg/kg Pb.....38.57 mg/kg Th..... 37.9 mg/kg Fe..... 51 mg/kg Rb.....31.4 mg/kg U ..... 37.38 mg/kg Ni ..... 38.8 mg/kg Sr.....78.4 mg/kg Indicative values for Au, B, Ba, Ce, Co, Cu, Dy, Er, Eu, Gd, K, La, Mn, Nd, Sm, Ti, Tl, Zn	6 wafers
NIST-613	Glass - Trace elements	6 wafers
	NIST-614 and NIST-615 NIST-614 and NIST-615 are the same material and therefore have the same certified values. NIST-614 consists of wafers of glass 3 mm thick and NIST-615 is 1 mm thick.	
NIST-614	Glass - Trace elements Certified values Ag ..... 0.42 mg/kg Pb.....2.32 mg/kg Th..... 0.748 mg/kg Cu ..... 1.37 mg/kg Rb.....0.855 mg/kg U ..... 0.823 mg/kg K ..... 30 mg/kg Sr.....78.4 mg/kg Indicative values for Au, B, Cd, Co, Eu, Fe, Ga, La, Ni, Sb, Sc, Ti, Tl	6 wafers
NIST-615	Glass - Trace elements	6 wafers
	NIST-616 and NIST-617 NIST-616 and NIST-617 are the same material and therefore have the same certified values. NIST-616 consists of wafers of glass 3 mm thick and NIST-617 is 1 mm thick.	
NIST-616	Glass - Trace elements Certified values K ..... 29 mg/kg Sr.....41.72 mg/kg U ..... 0.0721 mg/kg Pb ..... 1.85 mg/kg Th.....0.0252 mg/kg Indicative values for Au, B, Cu, Fe, Ga, La, Rb, Sb, Sc, Ti, Tl	6 wafers
NIST-617	Glass - Trace elements	6 wafers
NIST-1872	Synthetic glass - Lead and germanium NIST-1872 consists of three different lead-germanate glasses in rod form approximately 2 x 2 x 20 mm. K-453 Certified values Ge.....28.43 % Pb.....54.21 % Indicative value for O K-491 Certified values Ge.....26.10 % Pb.....54.69 % Indicative values for Al, Ce, Fe, O, Si, Ta, Ti, Zr K-968 Certified values Ge.....25.93 % Pb.....54.74 % Indicative values for Ba, Cr, Eu, Mg, Ni, O, P, Si, Th, Ti, U, Zr	set (3)

Code	Product	Unit
NIST-2066	K-411 glass microspheres This Standard Reference Material (SRM®) is intended for use as a standard for the quantitative microanalysis of particles and for the development of particle matrix correction procedures. The elements present in these microspheres, common to many classes of particles, are silicon, calcium, magnesium, iron, and oxygen. NIST-2066 consists of approximately 50 mg of glass microspheres of known composition and size (1 µm to 40 µm) with minimal microheterogeneity. Certified concentration in mass fraction of microspheres larger than 2 µm Silicon ..... 0.256 ± 0.017 kg/kg Magnesium . 0.092 ± 0.014 kg/kg Calcium..... 0.112 ± 0.023 kg/kg Iron ..... 0.112 ± 0.023 kg/kg Indicative value for oxygen kg/kg	50 mg

Plastics

Code	Product	Unit
	The “Packaging-Directive“ – EC-Directive 94/62/EEC – regulates the amount of metals such as Cd, Cr, Hg and Pb in plastics. The materials VDA 001-4 as well as ERM-EC680 and ERM-EC681 were produced to facilitate the implementation of this directive and to allow the effective introduction of QA-systems for elemental analysis of plastic materials.	
VDA 001-4	Polyethylene - Cadmium Four polyethylene reference materials have been certified by IRMM on behalf of Verband der Automobilindustrie e.V. (VDA). Certified values Sicolen Yellow 09/16493 Cd ..... 40.9 ± 1.2 mg/kg Sicolen Orange 28/16494 Cd ..... 75.9 ± 2.1 mg/kg Sicolen Red 39/16495 Cd ..... 198 ± 5 mg/kg Sicolen Bordeaux 49/16496 Cd ..... 407 ± 12 mg/kg	4 bottles
ERM-EC680K	Polyethylene - Trace elements (low level) Certified values As..... 4.1 mg/kg Cl .....102.2 mg/kg Pb ..... 13.6 mg/kg Br ..... 96 mg/kg Cr.....20.2 mg/kg S ..... 76 mg/kg Cd ..... 19.6 mg/kg Hg.....4.64 mg/kg Sb ..... 10.1 mg/kg	100 g
ERM-EC681K	Polyethylene - Trace elements (high level) Certified values As..... 29.1 mg/kg Cl .....0.8 g/kg Pb ..... 98 mg/kg Br ..... 0.77 g/kg Cr.....100 mg/kg S ..... 0.63 g/kg Cd ..... 137 mg/kg Hg.....23.7 mg/kg Sb ..... 99 mg/kg	100 g
New NIST-2855	Polyethylene - Additive elements This Standard Reference Material (SRM) is intended for the calibration or evaluation of methods for elemental analysis of polymers. A unit of SRM 2855 consists of one bottle of Level I low-density polyethylene, one bottle of Level II high-density polyethylene, and one bottle of Level III high-density polyethylene. Each bottle contains approximately 80 g of material in pellet form. Certified values for NIST-2855 Level II and Level III Level II Na ..... 16.0 ± 1.5mg/kg Ca.....37.6 ± 5.1mg/kg Zn..... 415 ± 20mg/kg P ..... 22.0 ± 1.5mg/kg Ti .....10.4 ± 0.3mg/kg S ..... 21.0 ± 1.4mg/kg Cr.....2.4 ± 0.5mg/kg Level III Na ..... 16.4 ± 1.3mg/kg Ca.....77.2 ± 2.4mg/kg Zn..... 807 ± 15mg/kg P ..... 41.6 ± 2.9mg/kg Ti .....10.4 ± 0.3mg/kg S ..... 41.2 ± 3.1mg/kg Cr.....2.4 ± 0.5mg/kg Indicative values for Level I: Na, Si, P, S, Ca, Ti, Cr, Zn, Br. Cd, Hg and Pb Indicative values for Level II and Level II: Br. Cd. Hg and Pb	300 mg
FLX-PVC-SET	PVC - Trace elements Set of 3 samples. Milled powder and granules up to 5 mm diameter. Certified values FLX-PVC1 Pb ..... 8 ± 2 mg/kg Cd.....<1mg/kg FLX-PVC2 Pb ..... 89 ± 6 mg/kg Cd.....35 ± 3 mg/kg FLX-PVC3 Pb ..... 837 ± 52 mg/kg Cd.....85 ± 6 mg/kg Indicative values for Ca and Zn	3 x 21 g

Code	Product	Unit

BCR-712 — PET bottle material - Chemical inertness — tin can

Refillable PET bottle material with respect to chemical inertness behaviour according to a pr-CEN standard method.

Compound	Certified value in mg/dm^2	Uncertainty in mg/dm^2
Toluene	7.3	0.6
Phenol	4.1	0.5
Limonene	3.9	0.5
Menthol	1.78	0.18
Phenylcylcohexane	3.5	0.4
Benzophenone	5.6	0.6

New **ERM-EC590** — Polyethylene - Polybrominated biphenylether and biphenyls — 20 g

Certified values

Br	2.13 ± 0.09 g/kg
2,2',4,4'-TetraBDE (BDE-47)	0.23 ± 0.04 g/kg
2,2',3,4,4'-PentaBDE (BDE-99)	0.302 ± 0.03 g/kg
2,2',4,4',6-PentaBDE (BDE-100)	0.63 ± 0.005 g/kg
2,2',4,4',5,5'-HexaBDE (BDE-153)	0.047 ± 0.006 g/kg
2,2',4,4',5,6'-HexaBDE (BDE-154)	0.026 ± 0.0026 g/kg
2,2',3,4,4',5,6'-HeptaBDE (BDE-183)	0.132 ± 0.012 g/kg
2,2',3,3',4,4',6,6'-OctaBDE + 2,2',3, 4,4',5,6,6'-OctaBDE (BDE-197+204)	0.076 ± 0.010 g/kg
DecaBDE (BDE-209)	0.65 ± 0.10 g/kg
DecaBB (BB-209)	0.63 ± 0.10 g/kg

Indicative value for Sb

New **ERM-EC591** — Polypropylene - Polybrominated biphenylether and biphenyls — 20 g

Certified values

Br	2.08 ± 0.07 g/kg
2,4,4'-TriBDE (BDE-28)	0.0025 ± 0.0004 g/kg
2,2',4,4'-TetraBDE (BDE-47)	0.245 ± 0.023 g/kg
2,2',3,4,4'-PentaBDE (BDE-99)	0.32 ± 0.04 g/kg
2,2',4,4',6-PentaBDE (BDE-100)	0066 ± 0.007 g/kg
2,2',4,4',5,5'-HexaBDE (BDE-153)	0.044 ± 0.006 g/kg
2,2',4,4',5,6'-HexaBDE (BDE-154)	0.026 ± 0.004 g/kg
2,2',3,4,4',5,6'-HeptaBDE (BDE-183)	0.087 ± 0.008 g/kg
2,2',3,3',4,4',6,6'-OctaBDE + 2,2',3, 4,4',5,6,6'-OctaBDE (BDE-197+204)	0.052 ± 0.009 g/kg
DecaBDE (BDE-209)	0.78 ± 0.09 g/kg
DecaBB (BB-209)	0.74 ± 0.08 g/kg

Indicative value for Sb

New **NCS RC76001** — Polypropylene - Pb, Hg, Cr, Cd (for X-ray Fluorescence (XRF) analysis) — set

Each set include one blank and two different content level. The minimum package is 30 grams.

Certified values

Low level

Lead, Pb	98 ± 6 mg/kg	Chromium, Cr	98 ± 4 mg/kg
Mercury, Hg	91 ± 8 mg/kg	Cadmium, Cd	9.3 ± 0.7 mg/kg

High level

Lead, Pb	985 ± 35 mg/kg	Chromium, Cr	978 ± 24 mg/kg
Mercury, Hg	918 ± 70 mg/kg	Cadmium, Cd	94 ± 4 mg/kg

New **NCS RS76001** — Polypropylene - Pb, Hg, Cr, Cd (for X-ray Fluorescence (XRF) analysis) — set

Set of 4 slices with size 40 mm x 4 mm each (Low level, medium level, high level, blank)

Certified values

Low level

Lead, Pb	98 ± 3 mg/kg	Chromium, Cr	98 ± 3 mg/kg
Mercury, Hg	93 ± 2 mg/kg	Cadmium, Cd	9.3 ± 0.2 mg/kg

Medium level

Lead, Pb	453 ± 13 mg/kg	Chromium, Cr	251 ± 6 mg/kg
Mercury, Hg	388 ± 9 mg/kg	Cadmium, Cd	37 ± 1 mg/kg

High level

Lead, Pb	981 ± 17 mg/kg	Chromium, Cr	983 ± 24 mg/kg
Mercury, Hg	922 ± 24 mg/kg	Cadmium, Cd	92 ± 2 mg/kg

NMIJ CRM 8102-A — ABS resin - Cd, Cr, Pb (low concentration) - pellets — 25 g

Certified values

Cd	10.77 mg/kg	Cr	27.87 mg/kg	Pb	108.9 mg/kg

NMIJ CRM 8103-A — ABS resin - Cd, Cr, Pb (high concentration) - pellets — 25 g

Certified values

Cd	106.9 mg/kg	Cr	269.5 mg/kg	Pb	1084 mg/kg

NMIJ CRM 8112-A — ABS resin - Cd, Cr, Hg, Pb (low concentration) - pellets — 25 g

Certified values

Cd	9.383 mg/kg	Hg	94.10 mg/kg
Cr	94.47 mg/kg	Pb	94.98 mg/kg

Code	Product	Unit
NMIJ CRM 8113-A	ABS resin - Cd, Cr, Hg, Pb (high concentration) - pellets Certified values Cd ..... 93.93 mg/kg Hg.....941.5 mg/kg Cr ..... 943.6 mg/kg Pb.....945.0 mg/kg	25 g
NMIJ CRM 8115-A	ABS resin - Cd, Cr, Hg, Pb (low concentration) - disc (30 mm x 2 mm) Certified values Cd ..... 9.341 mg/kg Hg.....93.81 mg/kg Cr ..... 94.27 mg/kg Pb.....94.21 mg/kg	disc
NMIJ CRM 8116-A	ABS resin - Cd, Cr, Hg, Pb (high concentration) - disc (30 mm x 2 mm) Certified values Cd ..... 93.67 mg/kg Hg.....938.7 mg/kg Cr ..... 943.7 mg/kg Pb.....940.6 mg/kg	disc
New JSAC 0601-3	Plastics (polyester) - Pb, Cd, Cr, Hg Certified values Cd ..... 5.0 µg/g Hg.....1.31 µg/g Cr ..... 11.3 µg/g Pb.....12.2 µg/g	50 g
New JSAC 0602-3	Plastics (polyester) - Pb, Cd, Cr, Hg Certified values Cd ..... 50.6 mg/kg Hg.....12.1 mg/kg Cr ..... 112.5 mg/kg Pb.....112.1 mg/kg	50 g
JSAC 0611-15	Plastics (polyester) for fluorescent X-ray Analysis - Pb, Cd, Cr (40 mm x 4 mm) Set of discs Certified values JSAC 0611 (for blank analysis) Pb ..... < 1 mg/kg Cd.....< 1 mg/kg Cr ..... < 1 mg/kg JSAC 0612 Pb ..... 26.1 mg/kg Cd.....4.5 mg/kg Cr ..... 25.5 mg/kg JSAC 0613 Pb ..... 54.6 mg/kg Cd.....10.0 mg/kg Cr ..... 52.0 mg/kg JSAC 0614 Pb ..... 106.8 mg/kg Cd..... 23.8 mg/kg Cr ..... 98.6 mg/kg JSAC 0615 Pb ..... 202.2 mg/kg Cd..... 43.4 mg/kg Cr ..... 212.8 mg/kg	set
JSAC 0621-25	Plastics (polyester) for fluorescent X-ray analysis - Mercury (40 mm x 4 mm) Set of discs Certified values JSAC 0621(for blank test) JSAC 0622 Hg ..... 10.0 mg/kg JSAC 0623 Hg ..... 49.0 mg/kg JSAC 0624 Hg ..... 121.1 mg/kg JSAC 0625 Hg ..... 244.4 mg/kg	set
JSAC 0631-32	Plastics (polyester) for fluorescent X-ray analysis - Pb, Cd, Cr, Hg (40 mm x 4 mm) Set of discs Certified values JSAC 0631 Pb ..... 24.5 mg/kg Cr.....25.8 mg/kg Cd ..... 22.5 mg/kg Hg.....19.7 mg/kg JSAC 0632 Pb ..... 92.9 mg/kg Cr.....93.3 mg/kg Cd ..... 46.1 mg/kg Hg.....59.4 mg/kg	set

Code	Product	Unit

JSAC 0651-55 — Plastics (polyester) for fluorescent X-ray analysis - Bromine (40 mm x 4 mm) — set

Set of discs

Certified values

JSAC 0651(for blank test)

Br < 1 mg/kg (reference value)

JSAC 0652

Br ..... 105.8 mg/kg

JSAC 0653

Br ..... 292.6 mg/kg

JSAC 0654

Br ..... 595 mg/kg

JSAC 0655

Br ..... 993 mg/kg

JSM P 700-1 — Plastic (polyethylene) - Trace elements — 50 g

Certified values

Cd ..... 5 µg/g	Cr .....4.9 µg/g	Cl .....(0.004) %
Pb ..... 5 µg/g	As .....9.1 µg/g	S .....(0.006) %
Hg ..... 5.3 µg/g	Br..... (0.002) %	

Values in parenthesis are non certified

JSM P 701-1 — Plastic (polyethylene) - Trace elements — 50 g

Certified values

Cd ..... 113.5 µg/g	Cr .....114.8 µg/g	Cl .....(0.06) %
Pb ..... 111.3 µg/g	As .....187.3 µg/g	S .....(0.04) %
Hg ..... 111.6 µg/g	Br..... (0.05) %	

Values in parenthesis are non certified

JSM P 710-1 — Plastic (polyethylene) - Trace elements (30 mm x 30 mm x 3 mm) — set (7)

Certified values

Item no.	Cd µg/g	Pb µg/g	Hg µg/g	Cr µg/g	As µg/g	Br %
a	<1	<1	<1	<1	<1	(<0.001)
b	5	5	5	5	9	(0.0029
c	50	50	51	52	86	(0.035)
d	114	111	112	115	187	(0.05)
e	264	270	254	265	478	(0.15)
f	522	532	546	515	907	(0.27)
g	$1.11x10^3$	$1.12x10^3$	$1.09x10^3$	$1.10x10^3$	$1.95x10^3$	(0.62)

Values in parenthesis are non certified

New **NMIJ CRM 8108-B** — Polybrominated diphenyl ethers in polystyrene - disc (30 mm x 2 mm) — 5 discs

Certified values

Decabromodiphenyl ether (BDE-209).....312 ± 16 mg/kg

New **BAM-H010** — Acrylonitrile-Butadiene-Styrene-Copolymerisate (ABS) - Pb, Br, Cd, Cr (granulate) — 100 g

Granular material

Certified values

Lead (Pb)..... 479 ± 17 µg/g	Cadmium (Cd).....93 ± 5 µg/g
Bromine (Br) ..... 240 ± 21 µg/g	Chromium (Cr) .....470 ±36 µg/g

Indicative value for Mercury (Hg)

New **BAM-H010-D1** — Acrylonitrile-Butadiene-Styrene-Copolymerisate (ABS) - Pb, Br, Cd, Cr (disc 40 mm x 1 mm) — disc

New **BAM-H010-D2** — Acrylonitrile-Butadiene-Styrene-Copolymerisate (ABS) - Pb, Br, Cd, Cr (disc 40 mm x 2 mm) — disc

New **BAM-H010-D3** — Acrylonitrile-Butadiene-Styrene-Copolymerisate (ABS) - Pb, Br, Cd, Cr (disc 40 mm x 6 mm) — disc

New **BAM-H010-D1-D2-D3** — Acrylonitrile-Butadiene-Styrene-Copolymerisate (ABS) - Pb, Br, Cd, Cr (set of discs) — set of discs

Set of

disc 40 mm x 1 mm (BAM-H010-D)
disc 40 mm x 2 mm (BAM-H010-D2)
disc 40 mm x 6 mm) (BAM-H010-D3)

Paint and industrial sludges

Code	Product	Unit
NIST-2579a	Set of six lead paint films (NIST-2570 - NIST-2575) - Lead A unit of NIST-2579a consists of a set of six coated polyester sheets, approximately 7.6 cm wide and 10.2 cm long. Five of the six sheets, NIST-2571 to NIST-2575, are coated with a single, uniform paint layer. The units are color coded and each color indicates a different level of lead content. The paint layer and white polyester sheet are approximately 0.04 mm and 0.2 mm thick, respectively. The sixth sheet, NIST-2570, is coated with a lead-free, lacquer layer of the same thickness as the lead paint samples and is included as a blank. All sheets are over-coated with a clear, thin, plastic laminate to protect the surface from abrasion.	set (6)
	NIST-2570 - NIST-2576 These items consist of one Mylarä sheet per unit. Each sheet, 7.6 cm x 10.2 cm, is coated with a single uniform paint layer for use with portable x-ray fluorescence analysers.	
NIST-2570	Lead paint film (white/blank) - Lead Certified value Pb .....<0.01 mg/cm^2	2 sheets
NIST-2571	Lead paint film (yellow) - Lead A unit of NIST-2571 consists of a white polyester sheet, approximately 7.6 cm wide, 10.2 cm long, and 0.2 mm thick, coated with a single, yellow-colored paint layer, approximately 0.04 mm thick. A blank, SRM 2570, is also provided. Certified value Pb .....3.58 mg/cm^2	2 sheets
NIST-2572	Lead paint film (orange) - Lead A unit of NIST-2572 consists of a white polyester sheet, approximately 7.6 cm wide, 10.2 cm long, and 0.2 mm thick, coated with a single, orange-colored paint layer, approximately 0.04 mm thick. A blank, NIST-2570, is also provided. Certified value Pb .....1.527 mg/cm^2	2 sheets
NIST-2573	Lead paint film (red) - Lead A unit of NIST-2573 consists of a white polyester sheet, approximately 7.6 cm wide, 10.2 cm long, and 0.2 mm thick, coated with a single, red-colored paint layer, approximately 0.04 mm thick. A blank, NIST-2570, is also provided. Certified value Pb .....1.040 mg/cm^2	2 sheets
NIST-2574	Lead paint film (gold) - Lead A unit of NIST-2574 consists of a white polyester sheet, approximately 7.6 cm wide, 10.2 cm long, and 0.2 mm thick, coated with a single, gold-colored paint layer, approximately 0.04 mm thick. A blank, NIST-2570, is also provided. Certified value Pb .....0.714 mg/cm^2	2 sheets
NIST-2575	Lead paint film (green) - Lead A unit of NIST-2575 consists of a white polyester sheet, approximately 7.6 cm wide, 10.2 cm long, and 0.2 mm thick, coated with a single, green-colored paint layer, approximately 0.04 mm thick. A blank, NIST-2570, is also provided. Certified value Pb .....0.307 mg/cm^2	2 sheets
NIST-2576	Lead paint film (blue) - Lead A unit of NIST-2576 consists of a white polyester sheet, approximately 7.6 cm wide, 10.2 cm long, and 0.2 mm thick, coated with a single, blue-colored paint layer, approximately 0.04 mm thick. A blank, NIST-2570, is also provided. Certified value Pb .....5.59 mg/cm^2	2 sheets
NIST-2589	Powdered paint - Lead NIST-2589 is composed of paint collected from the interior surface of housing. Certified value Pb .....9.99 % ± 1.6 %	35 g
NIST-2580	Powdered paint - Lead Certified value Pb .....4.34 %	30 g
NIST-2581	Powdered paint - Lead Certified value Pb .....0.449 %	35 g
NIST-2582	Powdered paint - Lead Certified value Pb ..... 209 mg/kg	20 g

Code	Product	Unit
NIST-RM 8680	Paint on fiberboard - Lead 10.2 x 15.2 x 1.3 cm sheet Indicative value for Pb	sheet
RTC-CRM017-020	Powdered paint - Lead The value was determined by USEPA SW-846 Methods 3050, 3051, 6010, and 7420 and NIOSH 7082. The sample is traceable to NIST by analysis, and is suitable for use by these and other similar methods. Certified value Pb ..... 7418 mg/kg	20 g
RTC-CRM050-020	Black powder paint - Lead Certified value Pb ..... <0.01 mg/kg	20 g
RTC-CRM013-050	Paint chips/waste - Trace elements The values were determined by USEPA SW846 (3rd edition) Methods 3050 and 6010. The sample is suitable for other 3000-series metals digestion procedure and 7000-series spectroscopic methods. Certified values Cd ..... 38 mg/kg Cr .....618 mg/kg Pb ..... 643 mg/kg	50 g
RTC-CRM006-050	Paint sludge - Trace elements Certified values Al..... 73 mg/kg Cr .....11 mg/kg Na ..... 91 mg/kg Ba ..... 9970 mg/kg Fe .....64 mg/kg Pb ..... 753 mg/kg Ca ..... 111 mg/kg K.....8710 mg/kg Zn..... 737431 mg/kg Cd ..... 32 mg/kg Mg .....47 mg/kg Indicative values for B, Cu, Mn, Ni, Se, Sn, Sr, Ti, Tl	50 g
NIST-2586	Soil containing lead from paint - Trace elements Soil collected from urban areas where the principal source of lead is believed to be from old lead-based house paint. Certified values As..... 8.7 mg/kg Cr .....301 mg/kg Cd ..... 2.71 mg/kg Pb.....432 mg/kg Indicative values for a wide range of additional elements	55 g
NIST-2587	Soil containing lead from paint - Trace elements Soil collected from a suburban garden known to have been contaminated by lead-based house paint. Certified values As..... 13.7 mg/kg Cr .....92 mg/kg Cd ..... 1.92 mg/kg Pb.....3242 mg/kg Indicative values for a wide range of additional elements	55 g
RTC-CRM009-100	Electroplating sludge no. 1 - Trace metals The Reference Values were determined by USEPA SW846 (3rd edition) Methods 3050 and 6010. The sample is suitable for other 3000-series metals digestion procedures and 7000- series spectroscopic methods. Reference values Ag ..... 8.9 mg/kg Cu.....121000 mg/kg Cr..... 50.3 mg/kg Ni.....343 mg/kg	100 g
RTC-CRM010-100	Electroplating sludge no. 2 - Trace metals The values were determined by USEPA SW846 (3rd edition) Methods 3050 and 6010, except for Mercury (Method 7471). The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods. Certified values Ag ..... 56 mg/kg Cr .....79 mg/kg Mn..... 17 mg/kg Al..... 692 mg/kg Cu.....63169 mg/kg Ni ..... 194 mg/kg Ba ..... 175 mg/kg Fe .....2,699 mg/kg Zn..... 183 mg/kg Ca ..... 563 mg/kg Pb.....119344 mg/kg Indicative values for Hg, Mg, Mo, Na	100 g
RTC-CRM011-100	Electroplating sludge no. 3 - Trace metals Certified values Cr..... 59225 mg/kg Ni.....41975 mg/kg Cu ..... 108 mg/kg Pb.....269 mg/kg Indicative values for a further 21 elements	100 g
RTC-CRM101-100	API separator sludge - PAHs Polynuclear aromatic hydrocarbons (PAH) contaminated oily sludge from a refinery located in the Western United States. The values were determined by USEPA SW846 (3rd edition) Methods 3540, 3550 and 8270. Sample is suitable for use by these and other similar methods. Certified values Chrysene .....10.6 mg/kg Phenanthrene ..... 169 mg/kg 2-Methylnaphthalene .....250 mg/kg Phenol.....(30.09) mg/kg Fluorene.....68.4 mg/kg Pyrene..... 17 mg/kg Napthalene .....89.5 mg/kg	100 g

Standards for the semiconductor industry

Code	Product	Unit
NIST-2841	**Semiconductor thin film** Al mole fraction x near 0.20 This Standard Reference Material (SRM®) is intended for use as a reference standard for analytical methods that measure the composition of thin films, such as electron microprobe analysis (EMPA), photoluminescence (PL), auger electron spectroscopy (AES) and X-ray photoelectron spectroscopy (XPS). A unit of NIST-2841 consists of an epitaxial layer of AlxGa1-xAs with certified Al mole fraction x grown on a GaAs substrate mounted to a stainless steal disc by the use of adhesive tape. Each unit is sealed in a Mylar envelope containing a nitrogen atmosphere.	disc
NIST-1994	**Standard silicon single crystal wafer for crystalline orientation** This Standard Reference Material (SRM®) is intended for use in the calibration of instruments (X-ray diffractometers) used to measure the crystal orientation of wafers relative to the crystal surface. The SRM unit consists of a 100-mm diameter silicon wafer. The crystal orientation of the (001) silicon crystal planes relative to the surface normal has been measured both parallel and perpendicular to an edge flat that is manufactured into the wafer.	unit
New NIST-1995	**Standard sapphire single crystal wafer for crystalline orientation** This Standard Reference Material® (SRM®) is intended for use in the calibration of instruments (X-ray diffractometers) used to measure the crystal orientation of wafers relative to the crystal surface. NIST-1995 consists of a 50 mm diameter sapphire wafer. Certified values for crystal orientation. Please ask for details.	50-mm wafer

High tech ceramics

Code	Product	Unit
NIST-2842	**Semiconductor thin film: A1xGa1-xAs epitaxial layers** Al mole fraction x near 0.30 This Standard Reference Material (SRM®) is intended for use as a reference standard for analytical methods that measure the composition of thin films, such as electron microprobe analysis (EMPA), photoluminescence (PL), auger electron spectroscopy (AES) and X-ray photoelectron spectroscopy (XPS). A unit of NIST-2842 consists of an epitaxial layer of AlxGa1-xAs with certified Al mole fraction x grown on a GaAs substrate mounted to a stainless steel disc by the use of adhesive tape. Each unit is sealed in a Mylar envelope containing a nitrogen atmosphere.	disc
ERM-ED101	**Silicon nitride powder (BAM-S001)** Certified values Al ..... 469 ± 12 mg/kg Ca ..... 14.1 ± 0.5 mg/kg Co ..... 43.5 ± 0.8 mg/kg Fe ..... 79.5 ± 1.3 mg/kg Mg ..... 4.3 ± 0.4 mg/kg Na ..... 7.59 ± 0.27 mg/kg W ..... 41.3 ± 1.3 mg/kg C ..... 0.162 ± 0.024 % N ..... 38.1 ± 0.2 % O ..... (1.91± 0.07) % ß-phase ..... 7.43 ± 0.09 % (Values in parenthesis are indicative values)	50 g
BAM-S003	**Silicon carbide powder** Certified values Al ..... 372 ± 20 mg/kg B ..... 63 ± 7 mg/kg Ca ..... 29.4 ± 1.8 mg/kg Cr ..... 3.5 ± 0.4 mg/kg Cu ..... 1.5 ± 0.4 mg/kg Fe ..... 149 ± 10 mg/kg Mg ..... 6.3 ± 0.6 mg/kg Mn ..... 1.44 ± 0.17 mg/kg Na ..... 17.7 ± 0.8 mg/kg Ni ..... 32.9 ± 2.7 mg/kg Ti ..... 79 ± 4 mg/kg V ..... 41.4 ± 2.8 mg/kg Zr ..... 25.2 ± 2.0 mg/kg C_{free} ..... 493 ± 79 mg/kg O ..... 910 ± 35 mg/kg N ..... (93 ± 22) mg/kg $SiO_{2\ free}$ ..... (600 ± 148) mg/kg Si_{free} ..... (481 ± 223) mg/kg C_{total} ..... 29.89 ± 0.07 % (Values in parenthesis are indicative values)	bottle
NIST-154c	**Titanium dioxide - Purity** This Standard Reference Material® (SRM®) is intended primarily for use in the evaluation of techniques employed in the assay of titanium dioxide in the paint and ceramic industries. Certified value Titanium dioxide ..... 99.951 % Informational values for impurities	90 g
BAS-BCS-CRM 201A	**Nepheline Syenite** SiO_2 ..... (57.3) % Al_2O_3 ..... (23.54) % TiO_2 ..... (0.05) % Fe_2O_3 ..... (0.12) % CaO ..... (1.07) % MgO ..... (0.025) % Na_2O ..... (7.53) % K_2O ..... (8.9) % P_2O_5 ..... (0.025) % BaO ..... (0.37) % Mn_2O_3 ..... (0.007) % SrO ..... (0.43) % L.O.I. ..... (0.76) % (Values in parenthesis are indicative values)	100 g
BAS-BCS-CRM 202A	**Plaster (Gypsum)** SiO_2 ..... (1.38) % Al_2O_3 ..... (0.33) % TiO_2 ..... (0.03) % Fe_2O_3 ..... (0.1) % CaO ..... (37.4) % MgO ..... (0.39) % Na_2O ..... (<0.03) % K_2O ..... (0.1) % P_2O_5 ..... (<0.01) % SrO ..... (0.33) % SO_3 ..... (53) % (Values in parenthesis are indicative values)	100 g

Code	Product	Unit
BAS-BCS-CRM 203A	Talc SiO_2 .....(59.7) % CaO..... (0.25) % P_2O_5.....(0.13) % Al_2O_3 .....(0.3) % MgO..... (32.08) % L.O.I. .....(6.78) % TiO_2.....(<0.01) % Na_2O..... (0.02) % Fe_2O_3 .....(0.22) % K_2O..... (0.005) % (Values in parenthesis are indicative values)	100 g
BAS-BCS-CRM 204A	Zircon SiO_2 .....(37,6) % CaO..... (0.15) % P_2O_5.....(0.77) % Al_2O_3 .....(0.74) % MgO..... (0.012) % SnO_2 .....(1.69) % TiO_2.....(2.22) % Na_2O..... (0.014) % $ZrO2+HfO_2$.....(53.8) % Fe_2O_3 .....(0.18) % K_2O..... (0.017) % L.O.I. .....(0.5) % (Values in parenthesis are indicative values)	100 g

Miscellaneous

Code	Product	Unit
NIST-2556	Used auto catalyst - recycled pellet Certified values Pb ..... 6228 mg/kg Pt.....697.4 mg/kg Pd ..... 326.0 mg/kg Rh.....51.2 mg/kg	70 g
NIST-2557	Used auto catalyst - recycled monolith Certified values Pb ..... 1131 mg/kg Pt.....1131 mg/kg Pd ..... 233.2 mg/kg Rh.....135.1 mg/kg	70 g
NIST-RM 8495	Northern softwood bleached kraft pulp - Properties (RM) Properties of fibres and paper sheets	10 sheets
New ERM-EB503	Pt, and Pd in unused automobile catalyst - powder Certified values Pt ..... 1880 ± 30 mg/kg Pd.....2780 ± 80 mg/kg Indicative value for Rh	100 g
ERM-EB504	Pt, Pd and Rh in used automobile catalyst - powder Certified values Pt ..... 1777 ± 15 mg/kg Pd.....279 ± 6 mg/kg Rh ..... 338 ± 4 mg/kg	250 g
NIST-RM 8496	Eucalyptus hardwood bleached kraft pulp - Properties (RM) Properties of fibres and paper sheets	10 sheets
ERM-EG001	Antimony implanted in silicon - chip (1 cm x 1 cm x 0.05 cm) (BAM-L001/IRMM-302) Compound Certified value Uncertainty Areal density of Sb atoms /10^{16} cm^{-2} .....4.81 ..... 0.06 Isotope amount ratio n(^{121}Sb) /n(^{123}Sb) .....1.435 ..... 0.006	chip
	IBPO disperse dye samples Samples of potentially sensitising disperse dyes from the Institute of Dyes and Organic Products (IBPO) in Poland provided with a certificate of analysis including TLC and VIS spectroscopy results. Intended for use in testing textile products eco-labeled according to the ecolological criteria established in Commission Decision 2002/371/EC	
IBPO201	C.I. Disperse Blue 7, C.I. No. 62500 (technical)	1 g
IBPO204	C.I. Disperse Yellow 1, C.I. No. 10345 (technical)	1 g
IBPO205	C.I. Disperse Yellow 9, C.I. No. 10375 (technical)	1 g
IBPO206	C.I. Disperse Yellow 49 (technical)	1 g
IBPO207	C.I. Disperse Red 11, C.I. No. 62015 (technical)	1 g
IBPO208	C.I. Disperse Red 17, C.I. No. 11210 (technical)	1 g
IBPO210	Disperse Blue 35 (technical) C.I none, contains 4 dye components - violet blue (main component)	1 g
IBPO211	Disperse Orange 11 (technical) C.I. 60700, contains 5 dye components - orange (main component)	1 g
IBPO212	Disperse Orange 1 (technical) C.I. 11080, cotains three dye components - orange (main component)	1 g
New IBPO213	Disperse Orange 61	1 g
FL-32944-10MG	Disperse Red 1-D3, C.I. No. 11110 OEKANAL®	10 mg
FL-32946-10MG	Disperse Yellow 3-D3 OEKANAL®	10 mg

	Code	Product	Unit
	ERM-AC316	Solvent Yellow 124 (SY124, Sudan 455, Somalia Yellow, T10) The fuel dye Solvent Yellow 124 (SY124) was introduced as a common marker in the European Union in 2002 to distinguish low duty fuels from higher taxed road fuels. ERM-AC316 is a solvent-free certified reference material for SY124 to be used to help accurately determine the amount of SY124 in solutions, thus enabling the appropriate quantity of marker to be added. Certified purity..... 95 %	200 mg
New	NIST-RM 8395	Tissue Engineering Reference Scaffold This Reference Material (RM) is intended to provide a common tissue-engineering scaffold for measurement comparisons. A unit consists of one free-form fabricated poly(ε-caprolactone) scaffold approximately 20 mm in external diameter, 5 mm in external height, 200 µm in strut diameter, 200 µm in strut spacing, and 47 % porosity. Reference values for strut diameter, strut spacing, and porosity are provided	1 scaffold
New	NIST-RM 8396	Tissue Engineering Reference Scaffold This Reference Material (RM) is intended to provide a common tissue-engineering scaffold for measurement comparisons. A unit consists of one free-form fabricated poly(ε-caprolactone) scaffold approximately 20 mm in external diameter, 5 mm in external height, 200 µm in strut diameter, 300 µm in strut spacing, and 60 % porosity. Reference values for strut diameter, strut spacing, and porosity are provided.	1 scaffold
New	NIST-RM 8397	Tissue Engineering Reference Scaffold This Reference Material (RM) is intended to provide a common source tissue-engineering scaffold for measurement comparisons. A unit consists of one free-form fabricated poly(ε-caprolactone) scaffold approximately 20 mm in external diameter, 5 mm in external height, 200 µm in strut diameter, 450 µm in strut spacing, and 69 % porosity. Reference values for strut diameter, strut spacing, and porosity are provided.	1 scaffold

Miscellaneous matrix reference materials

Forensic matrix reference materials

Code	Product	Unit
NIST-2460	Standard bullet Standard Reference Material (SRM®) NIST-2460 is a bullet signature standard comprising bullet profile signatures of six land engraved areas (LEAs) from fired bullets. This SRM is intended primarily for use as a check standard for crime laboratories to help verify that the computerized optical equipment for bullet imaging and profiling is operating properly. A unit of NIST-2460 consists of an SRM standard bullet that is mounted on a blue stub.	Each
New NIST-2905	Trace particulate explosive simulants Standard Reference Material (SRM) 2905 is a surrogate for explosives residues and is intended for use in evaluating analytical equipment used for the detection of trace explosives, which may include those based on ion mobility spectrometry. NIST-2905 consists of four non-explosive materials prepared from inert particles having a diameter of approximately 20 µm to 30 µm that are coated with trace levels of explosives. Two materials contain military-grade trinitrotoluene (TNT) with nominal concentrations of 0.01 % and 0.1 % mass fractions, and two materials contain Composition C-4 plastic explosive with nominal concentrations of 0.01 % and 0.1 % mass fractions. The Composition C-4 materials contain the explosives hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) and octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX). Certified concentrations are provided for TNT, RDX, and HMX. A unit of NIST-2905 consists of four individual plastic squeeze bottles each containing approximately 1 g of the trace particulate explosives materials. Certified concentrations for RDX and HMX in NIST-2905, 0.01 % Composition C-4 (nominal) Explosive Mass Fraction RDX ..... 0.0777 ± 0.0009 mg/g HMX.....0.00866 ± 0.00008 mg/g Certified Concentrations for RDX and HMX in NIST2905, 0.1 % Composition C-4 (nominal) Explosive Mass Fraction RDX ..... 0.687 ± 0.014 mg/g HMX.....0.0757 ± 0.0009 mg/g Certified Concentrations for TNT in NIST-2905, 0.01 % TNT (nominal) Explosive Mass Fraction TNT..... 0.097 ± 0.001 mg/g Certified Concentrations for TNT in NIST-2905, 0.1 % TNT (nominal) Explosive Mass Fraction TNT..... 0.976 ± 0.007 mg/g	150 g

Code	Product	Unit

Miscellaneous matrix reference materials

NIST-RM 8480	Secondary ferrite number standard - Low range This Reference Material (RM) is intended for the calibration of instruments used to measure weld metal ferrite content in accordance with American National Standards Institute (ANSI), American Welding Society (AWS) and International Standards Organisation (ISO) normative standards ANSI/AWS A4.2 and ISO 8249. The ferrite content is measured in terms of a method defined quantity, the Ferrite Number (FN). NIST measurements were made in accordance with ANSI/AWS A4.2. Description and Source of Material: Each RM unit is a set of eight individually measured specimens. Each specimen is approximately 10 mm × 12 mm × 20 mm, and has an identification number scribed on one of the 12 mm × 20 mm faces. The measurement surface is the face opposite the surface that contains the identification number. RM 8480 comprises eight specimens having FN values ranging from 0 FN to 30 FN. The related RM 8481 Secondary Ferrite Number Standard - High Range, comprises eight specimens having FN values ranging from 30 FN to 120 FN. The RM was made from centrifugal castings of chromium-nickel steel alloys. The ferrite content was varied by adjusting the composition of the alloy. The cast specimens approximate the ferrite distribution in a weld deposit and have a solidification structure similar to that of welds. Like the ferrite in welds, the magnetic response of the ferritic (magnetic) phase varies with alloy composition. The homogeneity of the cast material was demonstrated to be sufficient for use as secondary FN standards.	set
NIST-2696	Silica Fume This Standard Reference Material (SRM®) is intended primarily for use in evaluating chemical and instrumental methods of analysis of silica fume used in conjunction with product specifications. Certified values SiO_2 ..... 95.61 ± 0.37% Al_2O_3 ..... 0.2080 ± 0.0071% CaO ..... 0.426 ± 0.016% MgO.....0.235 ± 0.024% K2O .....0.652 ± 0.028% Mn_2O_3 .....0.032 ± 0.004% ZnO..... 0.051 ± 0.005%	70 g
LGCQC4001	Composite foam material with TBT Indicative value Tributyl tin (as Sn).....33 mg/kg	2 g

We constantly add new products to our range, so please contact us to find out about new products and services and to make sure you are automatically kept up to date by subscribing to our free newsletter.

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Customised standards and CERTAN®

LGC Standards

Excellence through measurement

CERTAN®

The ampoule in a bottle

Unopened glass ampoules are ideal for storing volatile standards, but once opened they are no longer suitable for storage. The alternative use of screw cap bottles can result in evaporation through the thread. There is also a risk of contamination from the cap.

The CERTAN® bottle is a sample container with a capillary-opening. It has been specifically developed for use with organic reference solutions. Using the CERTAN® bottle makes the problems of storing volatile solutions a thing of the past. The bottles come in a range of sizes to meet your needs.

Advantages of CERTAN®

- Minimal change in concentration, even when open
- Totally secure, free of losses
- Less risk of contamination
- Aliquots easily removed using a standard GC syringe
- Proven usability from -30°C to +50°C
- Almost impossible to spill.

Applications for CERTAN®

- Supply of standard solutions
- Long term storage for solutions from ampoules
- Storage of stock solution
- Archiving of production samples
- Holding challenging samples, such as BTEX aromatics
- Transport and storage of ring-test samples.

For further information on these products or to receive any one of our catalogues, please contact your local office or visit our website.

LGC Standards

Excellence through measurement

CERTAN® - The ampoule in the bottle

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CERTAN® the solution for solutions!

CERTAN® Advantages

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- Totally secure, free of losses
- Less risk of contamination
- Aliquots easily removed using a standard GC syringe
- Proven usability from -30°C to +50°C
- Almost impossible to spill.

CERTAN® Application Examples

- Supply of standard solutions
- Long term storage for solutions from ampoules
- Storage of working stock
- Archiving of production samples
- Storage of difficult samples, such as BTEX aromatics
- Transport and storage of ring-test samples.

CERTAN® Principle

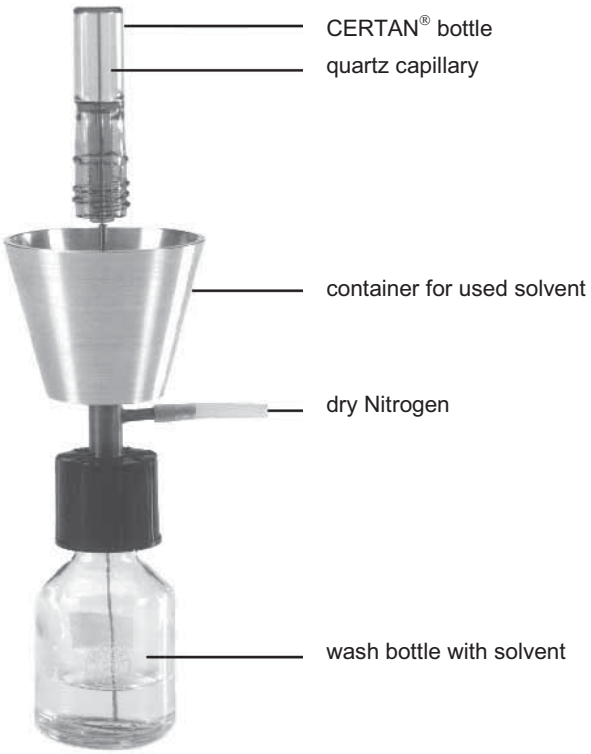
The properties of the patented CERTAN® capillary bottle depend on the unique way in which the glass bottle, capillary and screw cap closures have been engineered. The 1.2 mm diameter and 28 mm long capillary works as a re-condensation zone for any vapourised solvent. The reduced surface area inside the cap ensures a more efficient sealing of the bottle. It also minimises the chance of contamination from the cap insert. The CERTAN® bottle combines the advantages of a sealed ampoule with the flexibility of a screw cap bottle or a septum vial. Both cap and insert have been manufactured in materials which have been tested to ensure they retain their sealing properties, even with critical solvents such as diethylether.

CERTAN® Cleaning Protocol

The CERTAN® bottle can be easily cleaned using the following method:
A 0.53 mm quartz capillary is inserted into the CERTAN® bottle which is then inverted over a solvent container similar to a wash bottle. (See illustration below). Dry nitrogen from a standard gas cylinder pressurises the container forcing the cleaning solvent up the capillary tube spraying the inside of the bottle and cleaning the bottle thoroughly. The capillary of the CERTAN® bottle itself is cleaned by the action of the cleaning solvent draining through. Tests using different cleaning solvents showed that toluene was the most effective solvent for cleaning the CERTAN® bottle.

Once the cleaning process is complete the CERTAN® bottle should be dried by flushing with nitrogen and then placing in a suitable flameproof oven at 400 °C for at least two hours.

Please note that the CERTAN® capillary bottles are gamma-irradiated to give the brown colour. However, at elevated temperatures this colour will disappear leaving no residues.



Advice

The process used to manufacture the CERTAN® bottle, ensures that as far as possible the bottles are free of any chemical contamination. However it is good practice to rinse the bottles out with the same solvent used for the standard. The bottle should also be checked for minute glass particles which may occasionally be found, these can be easily flushed out using dry nitrogen which has been passed through an activated charcoal filter. In the same way the bottle can be dried after rinsing with the appropriate solvent.

Care should be taken when removing aliquots from the CERTAN® bottle, ensuring that no droplets adhere to the end of the needle. Prior to opening a full CERTAN® bottle, check to see if a small column of the solution has migrated into the capillary, if so this can be returned to the bottle easily by a quick flick of the wrist, as you would mercury in clinical thermometer. When replacing the cap on a CERTAN® bottle, it should be firmly tightened so that the top of the capillary leaves a clear indentation on the insert of the cap. We also recommend that with new CERTAN® bottles the cap should be re-tightened after 30 minutes to take up any slack caused by the initial indentation on the insert. The CERTAN® bottle is manufactured using high quality Duran glass, and is robust in its construction. However, care should be taken when handling to avoid dropping onto hard surfaces.

CERTAN®-The ampoule in the bottle

Code	Product	Unit
DE-CE 01	CERTAN® capillary bottle (10 x 1.5 mL)	set
DE-CE 05	CERTAN® capillary bottle (5 x 4.5 mL)	set
DE-CE 10	CERTAN® capillary bottle (5 x 10 mL)	set

Accessories

Racks for CERTAN®

DE-MIG 13	10 place rack for CER 01	unit
DE-MIG 17	10 place rack for CER 05	unit
DE-ENG 416	Plastic shipping container for single CER 01/CER 05 bottle	unit
DE-ENG 484	Plastic shipping container for single CER 10 bottle	unit

CERTAN® wash-bottle

DE-WB 1000	CERTAN® wash bottle incl. capillary	each

Syringes

SGE 2250-7	10 µL GC gas tight syringe with removable needle (50 mm + 70 mm)	each
SGE 3250-7	25 µL GC gas tight syringe with removable needle (50 mm + 70 mm)	each
SGE 4250-7	50 µL GC gas tight syringe with removable needle (50 mm + 70 mm)	each
SGE 5250-7	100 µL GC gas tight syringe with removable needle (50 mm + 70 mm)	each
SGE 7250-7	500 µL GC gas tight syringe with removable needle (50 mm + 70 mm)	each
SGE 8100-7	1 mL GC gas tight syringe with removable needle (50 mm + 70 mm)	each
SGE 8500-7	2.5 mL GC gas tight syringe with removable needle (50 mm + 70 mm)	each
SGE 8700-7	5 mL GC gas tight syringe with removable needle (50 mm + 70 mm)	each
SGE 8900-7	10 mL GC gas tight syringe with removable needle (50 mm + 70 mm)	each

Code	Product	Unit

eVol® hand-held automated analytical syringe

eVol® is the coupling of two precision devices: a digitally controlled electronic drive and an XCHANGE® enabled analytical syringe.

For further information please see section “Chromatography products”.

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Organic contaminants quotation request form

Customised standards solutions - you tell us the components, solvent, concentration and quantity you need. LGC Standards works in close co-operation with ULTRA Scientific and other suppliers to provide the products our customers need. So why not request a free quotation for a standard individually prepared to your specification? A certificate detailing the concentration of each component accompanies all organic custom standards and there is the option of ordering an additional DATApak® with full analytical and gravimetric data.

New! In response to our customer's requirements we also offer customised standard solutions produced in accordance with ISO Guide 34.

Please fax back this form to your local office (see list of offices on the inside front cover).

	ANALYTE	CONCENTRATION
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

SOLVENT

CONTAINER & QUANTITY

CERTAN® capillary bottle	1.5 mL	☐	4.5 mL	☐	10 mL	☐
Ampoule	1.5 mL	☐				
Bottle with screw cap	10 mL	☐				

We recommend that all standard solutions are packed in CERTAN® capillary bottles as this ensures the concentration over a long term storage period.

TYPE OF ANALYSIS

☐ Gravimetric validation
Each standard is prepared by ULTRA Scientific according to their ISO 9001 registered quality system. Every component in the standard is guaranteed to be within the manufactured tolerance limits (± 0.5%). The gravimetric preparation data is reviewed by ULTRA's ISO 17025 accredited laboratory. A certificate accompanies each standard documenting the true gravimetric concentration.

☐ Quantitative validation
Each standard is prepared as per a gravimetric validation. In addition to the certificate of analysis, a DATApak® is provided which includes gravimetric data and extensive instrumental analysis results.

☐ ISO 34
Produced in accordance with ISO/IEC 17025 and ISO Guide 34.

Title First name Last name

Company / organisation

Address / street

Postcode City Country

Phone Fax

Email

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Inorganic standards quotation request form

ULTRA Scientific is recognized as a leading player in the chemical standards industry. Although the ULTRA range includes hundreds of inorganic standards, sometimes it is not possible to find exactly the one you need. If this happens why not request a custom standard that is individually prepared to your specification? Each inorganic custom standard comes with a certificate detailing the exact gravimetric concentration. There is also the option of ordering an additional DATApak® with full analytical and gravimetric data.

New! In response to our customer's requirements we also offer customised standard solutions produced in accordance with ISO Guide 34.

Please fax back this form to your local office (see list of offices on the inside front cover).

	ANALYTE	CONCENTRATION
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

QUANTITY

☐ 1 x 500 ml More than one: ☐ x 500 ml

TYPE OF ANALYSIS

☐ Gravimetric validation

Each standard is prepared by ULTRA Scientific according to their ISO 9001 registered quality system. Every component in the standard is guaranteed to be within the manufactured tolerance limits (± 0.2%). The gravimetric preparation data is reviewed by ULTRA's ISO 17025 accredited laboratory. A certificate accompanies each standard documenting the true gravimetric concentration.

☐ Quantitative validation

Each standard is prepared as per a gravimetric validation. In addition to the certificate of analysis, a DATApak® is provided which includes gravimetric data and extensive instrumental analysis results.

☐ ISO 34
Produced in accordance with ISO/IEC 17025 and ISO Guide 34.

Title First name Last name

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CONOSTAN® elements in oil quotation request form

If your spectrometric analysis of metals in oil requires a combination or concentration not stocked as a standard item, custom blends are readily available.

Request a quotation by filling in the details below and on the other side.

Please fax back this form to your local office (see list of offices on the inside front cover).

ELEMENT	CONCENTRATION	ELEMENT	CONCENTRATION	ELEMENT	CONCENTRATION
Al - Aluminium		Fe - Iron		Sb - Antimony	
Ag - Silver		Hg - Mercury		Sc - Scandium	
As - Arsenic		In - Indium		Se - Selenium	
B - Boron		K - Potassium		Si - Silicon	
Ba - Barium		La - Lanthanum		Sn - Tin	
Be - Beryllium		Li - Lithium		Sr - Strontium	
Bi - Bismuth		Mg - Magnesium		Ti - Titanium	
Ca - Calcium		Mn - Manganese		V - Vanadium	
Cd - Cadmium		Mo - Molybdenum		W - Tungsten	
Ce - Cerium		Na - Sodium		Y - Yttrium	
Co - Cobalt		Ni - Nickel		Zn - Zinc	
Cr - Chromium		P - Phosphorus			
Cu - Copper		Pb - Lead			

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2876/CF/0111

Natural products and food constituents

Phytochemical from ChromaDex

The following list of phytochemicals (sugars, carotenoids, amino acids, vitamins, tea related polyphenols, stevia related compounds and caffeine related compounds) is an extract from the extensive ChromaDex product range.

ChromaDex offers several different grades of reference standards. If you require information about the different grades of the listed compounds to check their suitability for your application, or to get the complete list of available products, please contact any of the LGC Standards offices listed on the inside cover.

Sugars

Code	Product	Unit
CDX-00001045-100	2-Acetamido-2-deoxy-D-galactopyranose	100 mg
CDX-00001180-100	N-Acetyl-beta-D-galactosamine	100 mg
CDX-00001190-100	N-Acetyl-DL-glucosamine	100 mg
CDX-00001190-250	N-Acetyl-DL-glucosamine	250 mg
CDX-00001240-010	N-Acetyl-D-mannosamine	10 mg
CDX-00001240-050	N-Acetyl-D-mannosamine	50 mg
CDX-00001265-010	N-Acetylneuraminic acid	10 mg
CDX-00001265-025	N-Acetylneuraminic acid	25 mg
CDX-00001572-025	D-(+)-Allose	25 mg
CDX-00001572-100	D-(+)-Allose	100 mg
CDX-00001634-025	D-Altrose	25 mg
CDX-00001664-050	4-Aminophenyl-1-thio-beta-D-galactopyranoside	50 mg
CDX-00001665-001	Amylopectine	1 g
CDX-00001666-001	1,4-Anhydroerythritol	1 g
CDX-00001682-001	Arabinic acid	1 g
CDX-00001945-001	D-(-)-Arabinose	1 g
CDX-00001945-005	D-(-)-Arabinose	5 g
CDX-00001950-001	DL-Arabinose	1 g
CDX-00001950-010	DL-Arabinose	10 g
CDX-00001955-001	D-(+)-Arabitol	1 g
CDX-00001955-010	D-(+)-Arabitol	10 g
CDX-00001960-001	L-(-)-Arabitol	1 g
CDX-00001960-005	L-(-)-Arabitol	5 g
CDX-00001960-010	L-(-)-Arabitol	10 g
CDX-00002430-001	6-Bromo-2-naphthyl-beta-D-glucopyranoside	1 g
CDX-00002430-100	6-Bromo-2-naphthyl-beta-D-glucopyranoside	100 mg
CDX-00003112-010	Chitobiose	10 mg
CDX-00003335-001	D-(+)-Cellobiose	1 g
CDX-00003420-001	Chitin	1 g
CDX-00003420-005	Chitin	5 g
CDX-00003423-001	Chitosan	1 g
CDX-00003425-001	alpha-Chloralose	1 g
CDX-00003425-250	alpha-Chloralose	250 mg
CDX-00003592-001	Chondroitin sulfate XRM	1 g
CDX-00003592-005	Chondroitin hydrogensulfate	5 g
CDX-00003593-001	Chondroitin sulfate sodium salt	1 g
CDX-00003593-005	Chondroitin sulfate sodium salt	5 g
CDX-00003594-001	Chondroitin sulfate A sodium salt	1 g
CDX-00003596-025	Chondroitin sulfate B sodium salt	25 mg

Code	Product	Unit
CDX-00003597-001	Chondroitin sulfate C sodium salt	1 g
CDX-00003607-001	Chondroitin sulfate sodium salt bovine	1 g
CDX-00003607-002	Chondroitin	2 g
CDX-00004165-001	2-Deoxy-D-glucose	1 g
CDX-00004165-100	2-Deoxy-D-glucose	100 mg
CDX-00004171-001	2-Deoxy-D-galactose	1 g
CDX-00004205-001	2-Deoxy-D-ribose	1 g
CDX-00004248-001	Dextrose	1 g
CDX-00004248-500	Dextrose	500 mg
CDX-00004430-001	D-(+)-Digitoxose	1 g
CDX-00004430-100	D-(+)-Digitoxose	100 mg
CDX-00005447-001	4,6-O-Ethylidene-alpha-D-glucopyranoside	1 g
CDX-00006244-001	D-(-)-Fructose	1 g
CDX-00006244-005	D-(-)-Fructose	5 g
CDX-00006260-001	D-Fructose-1,6-diphosphate barium salt	1 g
CDX-00006285-001	D-(+)-Fucose	1 g
CDX-00006285-100	D-(+)-Fucose	100 mg
CDX-00006290-100	L-Fucose	100 mg
CDX-00006290-500	L-Fucose	500 mg
CDX-00007010-001	Galactan	1 g
CDX-00007010-005	Galactan	5 g
CDX-00007015-001	D-Galactono-1,4-lactone	1 g
CDX-00007020-001	D-Galactosamine HCl	1 g
CDX-00007020-100	D-Galactosamine HCl	100 mg
CDX-00007021-001	D-(+)-Galactose	1 g
CDX-00007026-001	D-Galacturonic acid	1 g
CDX-00007026-250	D-Galacturonic acid	250 mg
CDX-00007047-005	1,3,6-Tri-O-galloyl-beta-D-glucose	5 mg
CDX-00007047-010	1,3,6-Tri-O-galloyl-beta-D-glucose	10 mg
CDX-00007110-010	Gentianose	10 mg
CDX-00007120-001	beta-Gentiobiose octaacetate	1 g
CDX-00007240-050	alpha-D-Glucoheptose	50 mg
CDX-00007245-001	D-(+)-Gluconic acid D-lactone	1 g
CDX-00007245-005	D-(+)-Gluconic acid D-lactone	5 g
CDX-00007256-001	D-(+)-Glucosamine HCl	1 g
CDX-00007256-500	D-(+)-Glucosamine HCl	500 mg
CDX-00007257-001	D-Glucosamine sulfate potassium salt	1 g
CDX-00007257-500	D-Glucosamine sulfate potassium salt	500 mg
CDX-00007258-001	Glucosamine sulfate	1 g
CDX-00007258-005	Glucosamine sulfate	5 g
CDX-00007260-010	L-Glucose	10 mg
CDX-00007260-100	L-Glucose	100 mg
CDX-00007261-001	D-(+)-Glucose	1 g
CDX-00007261-005	D-(+)-Glucose	5 g
CDX-00007265-001	beta-D-(+)-Glucose	1 g
CDX-00007285-001	alpha-D-Glucose pentaacetate	1 g
CDX-00007290-001	alpha-D-Glucose pentaacetate	1 g
CDX-00007295-100	D-Glucosaminic acid	100 mg
CDX-00007425-001	L-Gluconolactone	1 g
CDX-00008345-010	Hyaluronic acid potassium salt	10 mg
CDX-00009131-100	myo-Inositol	100 mg

Code	Product	Unit
CDX-00009131-250	myo-Inositol	250 mg
CDX-00009305-010	Isomaltose	10 mg
CDX-00009305-100	Isomaltose	100 mg
CDX-00009475-001	Isopropyl-beta-D-thiogalactopyranoside	1 g
CDX-00009475-100	Isopropyl-beta-D-thiogalactopyranoside	100 mg
CDX-00009490-001	1,2-O-Isopropylidene-D-glucofuranose	1 g
CDX-00009495-001	1,2-Isopropylidene-D-xylofuranose	1 g
CDX-00011060-010	1-Thio-beta-D-glucose sodium salt	10 mg
CDX-00011060-100	1-Thio-beta-D-glucose sodium salt	100 mg
CDX-00011520-005	Kojibiose	5 mg
CDX-00012005-001	alpha-Lactose	1 g
CDX-00012020-100	Laminarin	100 mg
CDX-00012160-010	Levoglucosan	10 mg
CDX-00012160-100	Levoglucosan	100 mg
CDX-00013055-001	D-Maltose	1 g
CDX-00013057-100	D-(+)-Maltotriose	100 mg
CDX-00013057-500	D-(+)-Maltotriose	500 mg
CDX-00013100-010	Mannan	10 mg
CDX-00013100-100	Mannan	100 mg
CDX-00013102-001	D-Mannitol	1 g
CDX-00013102-250	D-Mannitol	250 mg
CDX-00013115-025	D-Mannosamine HCl	25 mg
CDX-00013121-001	D-(+)-Mannose	1 g
CDX-00013121-005	D-(+)-Mannose	5 g
CDX-00013176-001	D-Melezitose dihydrate	1 g
CDX-00013221-100	meso-Erythritol	100 mg
CDX-00013440-001	Methyl-beta-D-arabinopyranoside	1 g
CDX-00013440-100	Methyl-beta-D-arabinopyranoside	100 mg
CDX-00013445-001	Methyl-beta-D-arabinopyranoside	1 g
CDX-00013445-100	Methyl-beta-D-arabinopyranoside	100 mg
CDX-00013455-001	Methyl-4,6-O-benzylidene-alpha-D-glucopyranoside	1 g
CDX-00013560-001	Methyl-alpha-D-galactopyranoside	1 g
CDX-00013565-001	3-O-Methyl-alpha-D-glucopyranose	1 g
CDX-00013570-001	Methyl-beta-D-glucopyranoside	1 g
CDX-00013595-001	Methyl-alpha-D-mannopyranoside	1 g
CDX-00013595-005	Methyl-alpha-D-mannopyranoside	5 g
CDX-00013735-001	4-Methylumbelliferyl-beta-D-galactopyranoside	1 g
CDX-00013735-250	4-Methylumbelliferyl-beta-D-galactopyranoside	250 mg
CDX-00013745-001	4-Methylumbelliferyl-beta-D-glucopyranoside	1 g
CDX-00013745-100	4-Methylumbelliferyl-beta-D-galactopyranoside	100 mg
CDX-00013840-001	4-Methylumbelliferyl-beta-D-Xylopyranoside	1 g
CDX-00013899-001	Muic acid	1 g
CDX-00014035-050	Naphthol-As-Bi-n-acetyl-beta-D-glucosaminide	50 mg
CDX-00014035-250	Naphthol-As-Bi-n-acetyl-beta-D-glucosaminide	250 mg
CDX-00014260-025	Neohesperidose	25 mg
CDX-00014260-100	Neohesperidose	100 mg
CDX-00014265-100	Neohesperidose heptaacetate	100 mg
CDX-00014265-500	Neohesperidose heptaacetate	500 mg
CDX-00014365-010	4-Nitrophenyl-alpha-L-fucopyranoside	10 mg
CDX-00014370-010	4-Nitrophenyl-beta-L-fucopyranoside	10 mg
CDX-00014375-001	4-Nitrophenyl-alpha-D-galactopyranoside	1 g

Code	Product	Unit
CDX-00014375-100	4-Nitrophenyl-alpha-D-galactopyranoside	100 mg
CDX-00014380-001	2-Nitrophenyl-beta-D-galactopyranoside	1 g
CDX-00014380-100	2-Nitrophenyl-beta-D-galactopyranoside	100 mg
CDX-00014385-001	3-Nitrophenyl-beta-D-galactopyranoside	1 g
CDX-00014390-001	4-Nitrophenyl-beta-D-galactopyranoside	1 g
CDX-00014390-100	4-Nitrophenyl-beta-D-galactopyranoside	100 mg
CDX-00014405-001	2-Nitrophenyl-beta-D-glucopyranoside	1 g
CDX-00014405-100	2-Nitrophenyl-beta-D-glucopyranoside	100 mg
CDX-00014410-100	3-Nitrophenyl-beta-D-glucopyranoside	100 mg
CDX-00014415-001	4-Nitrophenyl-beta-D-glucopyranoside	1 g
CDX-00014415-100	4-Nitrophenyl-beta-D-glucopyranoside	100 mg
CDX-00014435-001	4-Nitrophenyl-alpha-D-mannopyranoside	1 g
CDX-00014435-100	4-Nitrophenyl-alpha-D-mannopyranoside	100 mg
CDX-00014480-050	2-Nitrophenyl-beta-D-xylopyranoside	50 mg
CDX-00014480-250	2-Nitrophenyl-beta-D-xylopyranoside	250 mg
CDX-00014485-001	2-Nitrophenyl-beta-D-xylopyranoside	1 g
CDX-00014485-100	2-Nitrophenyl-beta-D-xylopyranoside	100 mg
CDX-00015050-001	N-Octyl-beta-D-glucopyranoside	1 g
CDX-00015050-100	N-Octyl-beta-D-glucopyranoside	100 mg
CDX-00016040-010	Palatinose	10 mg
CDX-00016040-025	Palatinose	25 mg
CDX-00016550-001	Phenyl-beta-D-galactopyranoside	1 g
CDX-00016550-100	Phenyl-beta-D-galactopyranoside	100 mg
CDX-00016559-100	Phenyl-alpha-D-glucopyranoside	100 mg
CDX-00016560-001	Phenyl-beta-D-glucopyranoside	1 g
CDX-00016839-010	D-Pinitol	10 mg
CDX-00016839-025	D-Pinitol	25 mg
CDX-00016950-001	Polygalacturonic acid	1 g
CDX-00016950-005	Polygalacturonic acid	5 g
CDX-00018010-001	D-(+)-Raffinose	1 g
CDX-00018211-001	L-(+)-Rhamnose	1 g
CDX-00018211-250	L-(+)-Rhamnose	250 mg
CDX-00018291-001	D-(-)-Ribose	1 g
CDX-00019115-050	Sedoheptulose anhydride	50 mg
CDX-00019115-250	Sedoheptulose anhydride	250 mg
CDX-00019330-050	alpha-D-Sophorose	50 mg
CDX-00019380-001	Sucrose	1 g
CDX-00019380-100	Sucrose	100 mg
CDX-00019383-100	Sucralose	100 mg
CDX-00020010-100	D-Tagatose	100 mg
CDX-00020015-050	D-Talose	50 mg
CDX-00020015-250	D-Talose	250 mg
CDX-00020140-001	1,2,3,4-Tetra-O-acetyl-beta-D-glucopyranose	1 g
CDX-00020140-100	1,2,3,4-Tetra-O-acetyl-beta-D-glucopyranose	100 mg
CDX-00020345-001	D-(+)-Trehalose	1 g
CDX-00024900-001	L-Xylose	1 g
CDX-00024901-001	D-(+)-Xylose	1 g
CDX-00024905-001	DL-Xylose	1 g
CDX-00024905-100	DL-Xylose	100 mg

Code	Product	Unit
Carotenoids		
CDX-00001600-00A	Alloxanthin	2.5 mL
CDX-00001885-00A	Antheraxanthin	2.5 mL
CDX-00002320-005	Bixin	5 mg
CDX-00002320-010	Bixin	10 mg
CDX-00002320-050	Bixin	50 mg
CDX-00003116-00A	Canthaxanthin	2.5 mL
CDX-00003140-001	Capsanthin in Chloroform (3 mg/ml)	1 mg
CDX-00003140-005	Capsanthin in Chloroform (3 mg/ml)	5 mg
CDX-00003204-001	alpha-Carotene	1.5 mL
CDX-00003204-005	alpha-Carotene	7.5 mL
CDX-00003204-010	alpha-Carotene	15 mL
CDX-00003205-00A	alpha-Carotene	2.5 mL
CDX-00003211-005	beta-Carotene	5 mg
CDX-00003211-010	beta-Carotene	10 mg
CDX-00003211-025	beta-Carotene	25 mg
CDX-00003211-100	beta-Carotene	100 mg
CDX-00003885-010	trans-Crocetin	10 mg
CDX-00003889-005	Crocin	5 mg
CDX-00003890-001	Crocin	1 g
CDX-00003891-00A	Crocoxanthin	2.5 mL
CDX-00003900-001	beta-Cryptoxanthin	1 mg
CDX-00003900-005	beta-Cryptoxanthin	5 mg
CDX-00004004-00A	Diadinoxanthin in Ethanol (~ 1mg/L)	2.5 mL
CDX-00004340-00A	Diatoxanthin in Ethanol (~0.7 mg/L)	2.5 mL
CDX-00005026-00A	Echinenone in Ethanol (~ 0.9 mg/L)	2.5 mL
CDX-00006292-00A	Fucoxanthin	2.5 mL
CDX-00008080-005	Helenien	5 mg
CDX-00011054-010	Astaxanthin	10 mg
CDX-00012453-001	Lutein	1 g
CDX-00012453-005	Lutein	5 mg
CDX-00012453-010	Lutein	10 mg
CDX-00012453-025	Lutein	25 mg
CDX-00012453-100	Lutein	100 mg
CDX-00012550-005	Lycopene	5 mg
CDX-00012550-010	Lycopene	10 mg
CDX-00012550-025	Lycopene	25 mg
CDX-00012550-100	Lycopene	100 mg
CDX-00014288-00A	Neoxanthin in Ethanol (1.491 mg/L)	2.5 mL
CDX-00014501-005	Norbixin	5 mg
CDX-00014501-010	Norbixin	10 mg
CDX-00016135-00A	Peridinin	2.5 mL
CDX-00016780-005	Physalien	5 mg
CDX-00022535-00A	Violaxanthin	2.5 mL
CDX-00026504-005	Zeaxanthin	5 mg
CDX-00026504-010	Zeaxanthin	10 mg
CDX-00026504-025	Zeaxanthin	25 mg
Amino acids		
CDX-00001006-010	L-Abrine	10 mg
CDX-00001006-050	L-Abrine	50 mg

Code	Product	Unit
CDX-00001006-500	L-Abrine	500 mg
CDX-00001110-010	N-Acetyl-L-arginine	10 mg
CDX-00001110-100	N-Acetyl-L-arginine	100 mg
CDX-00001140-001	N-Acetyl-L-cysteine	1 g
CDX-00001170-001	N-Acetyl-DL-O-fluorophenylalanine	1 g
CDX-00001175-001	N-Acetyl-DL-O-fluorophenylalanine	1 g
CDX-00001200-001	N-Acetyl-L-glutamine	1 g
CDX-00001200-005	N-Acetyl-L-glutamine	5 g
CDX-00001200-025	N-Acetyl-L-glutamine	25 mg
CDX-00001235-010	N-Acetyl-DL-Leucine	10 mg
CDX-00001235-100	N-Acetyl-DL-Leucine	100 mg
CDX-00001245-010	N-Acetyl-DL-methionine	10 mg
CDX-00001245-100	N-Acetyl-DL-methionine	100 mg
CDX-00001295-010	N-Acetyl-serotonin	10 mg
CDX-00001295-100	N-Acetyl-serotonin	100 mg
CDX-00001320-001	N-Acetyl-L-tyrosine-ethylester	1 g
CDX-00001322-100	N-Acetyl-L-tyrosine	100 mg
CDX-00001322-250	N-Acetyl-L-tyrosine	250 mg
CDX-00001325-010	N-Acetyl-DL-valine	10 mg
CDX-00001325-100	N-Acetyl-DL-valine	100 mg
CDX-00001435-010	S-Adenosyl-L-methionine chloride	10 mg
CDX-00001435-025	S-Adenosyl-L-methionine chloride	25 mg
CDX-00001436-005	S-Adenosyl-L-methionine Iodide	5 mg
CDX-00001436-010	S-Adenosyl-L-methionine Iodide	10 mg
CDX-00001437-010	S-Adenosyl-L-methionine p-toluenesulfonate	10 mg
CDX-00001437-025	S-Adenosyl-L-methionine p-toluenesulfonate	25 mg
CDX-00001438-010	S-Adenosyl-L-methionine p-toluenesulfonate	10 mg
CDX-00001500-001	D-Alanine	1 g
CDX-00001500-250	D-Alanine	250 mg
CDX-00001501-001	DL-Alanine	1 g
CDX-00001501-005	DL-Alanine	5 g
CDX-00001502-001	L-Alanine	1 g
CDX-00001502-005	L-Alanine	5 g
CDX-00001502-100	L-Alanine	100 mg
CDX-00001515-100	Albizziin	100 mg
CDX-00001595-100	DL-Allothreonine	100 mg
CDX-00001981-050	L-Arginine	50 mg
CDX-00001981-100	L-Arginine	100 mg
CDX-00001985-001	DL-Arginine	1 g
CDX-00001990-001	D-Arginine	1 g
CDX-00001990-100	D-Arginine	100 mg
CDX-00001996-010	Arcaine sulfate	10 mg
CDX-00002231-250	Betaine	250 mg
CDX-00003102-025	L-Canavanine sulfate	25 mg
CDX-00003102-100	L-Canavanine sulfate	100 mg
CDX-00003194-001	L-Carnitine	1 g
CDX-00003194-100	L-Carnitine	100 mg
CDX-00003195-001	DL-Carnitine chloride	1 g
CDX-00003195-005	DL-Carnitine chloride	5 g
CDX-00003201-100	L-Carnosine	100 mg
CDX-00003201-250	L-Carnosine	250 mg

Code	Product	Unit
CDX-00003480-100	3-Chloro-L-tyrosine	100 mg
CDX-00003680-001	L-Citrulline	1 g
CDX-00003680-005	L-Citrulline	5 g
CDX-00003681-001	DL-Citrulline	1 g
CDX-00003681-100	DL-Citrulline	100 mg
CDX-00003855-001	Creatine hydrate	1 g
CDX-00003857-010	Creatine	10 mg
CDX-00003857-025	Creatine	25 mg
CDX-00003860-001	Creatine phosphate disodium salt	1 g
CDX-00003871-010	Creatinine	10 mg
CDX-00003871-025	Creatinine	25 mg
CDX-00003875-001	Creatinine HCl	1 g
CDX-00003981-005	S-Allyl-L-cysteine	5 mg
CDX-00003981-025	S-Allyl-L-cysteine	25 mg
CDX-00004330-100	2,6-Diaminopimelic acid	100 mg
CDX-00004640-001	beta-DL-(3,4-Dihydroxyphenyl)-alanine	1 g
CDX-00004640-250	beta-DL-3-(3,4-Dihydroxyphenyl)-alanine	250 mg
CDX-00004671-025	Di-Iodo-L-tyrosine dihydrate	25 mg
CDX-00004671-100	Di-Iodo-L-tyrosine dihydrate	100 mg
CDX-00007307-001	L-Glutamic acid	1 g
CDX-00007307-250	L-Glutamic acid	250 mg
CDX-00007310-001	L-Glutamine	1 g
CDX-00007310-100	L-Glutamine	100 mg
CDX-00007341-001	Glycine	1 g
CDX-00007341-250	Glycine	250 mg
CDX-00008255-001	L-Histidine	1 g
CDX-00008255-100	L-Histidine	100 mg
CDX-00008255-250	L-Histidine	250 mg
CDX-00008260-001	D-Histidine	1 g
CDX-00008260-100	D-Histidine	100 mg
CDX-00008260-250	D-Histidine	250 mg
CDX-00008261-001	DL-Histidine	1 g
CDX-00008261-250	DL-Histidine	250 mg
CDX-00008265-100	L-Histidinol dihydrochloride	100 mg
CDX-00008290-100	DL-Homocysteic acid	100 mg
CDX-00008294-010	DL-Homocysteine	10 mg
CDX-00008294-025	DL-Homocysteine	25 mg
CDX-00008300-001	DL-Homocysteine thiolactone hydrochloride	1 g
CDX-00008305-001	DL-Homocystine	1 g
CDX-00008323-100	L-Homophenylalanine	100 mg
CDX-00008504-005	4-Hydroxyisoleucine	5 mg
CDX-00008504-010	4-Hydroxyisoleucine	10 mg
CDX-00008520-010	3-Hydroxy-DL-kynurenine	10 mg
CDX-00008687-001	L-Hydroxyproline	1 g
CDX-00008687-100	L-Hydroxyproline	100 mg
CDX-00008695-001	trans-4-Hydroxy-L-proline	1 g
CDX-00008695-250	trans-4-Hydroxy-L-proline	250 mg
CDX-00008726-010	5-Hydroxytryptophan	10 mg
CDX-00008726-050	5-Hydroxytryptophan	50 mg
CDX-00009259-100	L-Isoleucine	100 mg
CDX-00011040-001	L-Asparagine	1 g

Code	Product	Unit
CDX-00011040-100	L-Asparagine	100 mg
CDX-00011041-005	DL-Asparagine	5 g
CDX-00011041-100	DL-Asparagine	100 mg
CDX-00011042-005	D-Asparagine	5 g
CDX-00011042-100	D-Asparagine	100 mg
CDX-00011045-001	Aspartame	1 g
CDX-00011045-250	Aspartame	250 mg
CDX-00011050-001	D-Aspartic acid	1 g
CDX-00011050-100	D-Aspartic acid	100 mg
CDX-00011051-005	L-Aspartic acid	5 g
CDX-00011051-100	L-Aspartic acid	100 mg
CDX-00011052-005	DL-Aspartic acid	5 g
CDX-00011052-100	DL-Aspartic acid	100 mg
CDX-00012125-001	L-Leucine	1 g
CDX-00012125-100	L-Leucine	100 mg
CDX-00012600-001	L-Lysine HCl	1 g
CDX-00012600-005	L-Lysine HCl	5 g
CDX-00012605-001	L-(+)-Lysine	1 g
CDX-00012605-100	L-(+)-Lysine	100 mg
CDX-00012610-001	DL-Lysine dihydrochloride	1 g
CDX-00012610-005	DL-Lysine dihydrochloride	5 g
CDX-00012610-100	DL-Lysine dihydrochloride	100 mg
CDX-00013170-010	Melatonin	10 mg
CDX-00013170-050	Melatonin	50 mg
CDX-00013170-100	Melatonin	100 mg
CDX-00013250-001	DL-Methionine	1 g
CDX-00013255-025	L-Methionine	25 mg
CDX-00013255-100	L-Methionine	100 mg
CDX-00013270-100	DL-Methionine sulfoxide	100 mg
CDX-00013275-010	Methotrexate	10 mg
CDX-00013275-025	Methotrexate	25 mg
CDX-00013415-025	5-Methoxytryptamine	25 mg
CDX-00014520-001	D-Norleucine	1 g
CDX-00014520-005	D-Norleucine	5 g
CDX-00014525-001	L-Norleucine (Aminocaproic acid)	1 g
CDX-00014525-005	L-Norleucine (Aminocaproic acid)	5 g
CDX-00014525-100	L-Norleucine (Aminocaproic acid)	100 mg
CDX-00014535-001	L-Norvaline	1 g
CDX-00014535-100	L-Norvaline	100 mg
CDX-00014540-001	DL-Norvaline	1 g
CDX-00014540-100	DL-Norvaline	100 mg
CDX-00015390-100	L-Ornithine HCl	100 mg
CDX-00016255-100	L-Proline	100 mg
CDX-00016500-001	DL-Phenylalanine	1 g
CDX-00016503-100	L-Phenylalanine	100 mg
CDX-00016503-250	L-Phenylalanine	250 mg
CDX-00019164-001	L-serine	1 g
CDX-00019164-100	L-serine	100 mg
CDX-00019170-001	Serotonin creatine sulfate	1 g
CDX-00019170-100	Serotonin creatine sulfate	100 mg
CDX-00019180-100	Serotonin hydrochloride	100 mg

Code	Product	Unit
CDX-00020056-100	Taurine	100 mg
CDX-00020056-250	Taurine	250 mg
CDX-00020249-010	L-Theanine	10 mg
CDX-00020249-025	L-Theanine	25 mg
CDX-00020260-001	L-Threonine	1 g
CDX-00020260-100	L-Threonine	100 mg
CDX-00020285-001	DL-Threonine (Allo-Free)	1 g
CDX-00020510-005	Tryptamine hydrochloride	5 g
CDX-00020510-025	Tryptamine hydrochloride	25 g
CDX-00020521-050	DL-Tryptophan	50 mg
CDX-00020521-100	DL-Tryptophan	100 mg
CDX-00020530-001	D-Tryptophan	1 g
CDX-00020530-100	D-Tryptophan	100 mg
CDX-00020540-001	L-(-)-Tryptophan	1 g
CDX-00020540-100	L-(-)-Tryptophan	100 mg
CDX-00020595-001	Tyramine	1 g
CDX-00020595-100	Tyramine	100 mg
CDX-00020601-050	Tyramine HCl	50 mg
CDX-00020601-100	Tyramine HCl	100 mg
CDX-00020610-001	DL-Tyrosine	1 g
CDX-00020610-250	DL-Tyrosine	250 mg
CDX-00020619-010	L-Tyrosine	10 mg
CDX-00020619-100	L-Tyrosine	100 mg
CDX-00020621-001	D-Tyrosine	1 g
CDX-00020621-100	D-Tyrosine	100 mg
CDX-00020621-250	D-Tyrosine	250 mg
CDX-00022101-001	L-Valine	1 g
CDX-00022101-100	L-Valine	100 mg
CDX-00031015-010	L-Cystathionine	10 mg
CDX-00031015-025	L-Cystathionine	25 mg
CDX-00031030-001	L-Cysteine	1 g
CDX-00031030-100	L-Cysteine	100 mg
CDX-00031035-001	L-Cysteine HCl	1 g
CDX-00031035-100	L-Cysteine HCl	100 mg
CDX-00031040-001	L-Cystine	1 g
CDX-00031040-100	L-Cystine	100 mg

Vitamins

CDX-00003035-001	Calcitriol	1 mg
CDX-00003035-500	Calcitriol	0.5 mg
CDX-00003040-010	Calcium folinate (Folinic acid)	10 mg
CDX-00003040-050	Calcium folinate (Folinic acid)	50 mg
CDX-00004200-100	4-Deoxypyridoxine HCl	100 mg
CDX-00006170-250	Folic acid (Vitamin M)	250 mg
CDX-00013480-025	Methylcobalamin	25 mg
CDX-00013516-025	Methyl folate	25 mg
CDX-00013516-100	Methyl folate	100 mg
CDX-00014303-001	Niacin	1 g
CDX-00014303-010	Niacin	10 mg
CDX-00014303-250	Niacin	250 mg
CDX-00016323-100	2,2,5,7,8-Pentamethyl-6-hydroxychroman	100 mg

Code	Product	Unit
CDX-00018110-100	13-cis-Retinoic acid	100 mg
CDX-00018120-005	9-cis-Retinoic acid	5 mg
CDX-00018285-001	Riboflavin-5'-phosphate	1 g
CDX-00020313-050	D-gamma-tocopherol	50 mg
CDX-00020313-250	D-gamma-tocopherol	250 mg
CDX-00020314-050	D-delta-tocopherol	50 mg
CDX-00020314-250	D-delta-tocopherol	250 mg
CDX-00020317-001	DL-alpha-tocopherol	1 g
CDX-00020317-250	DL-alpha-tocopherol	250 mg
CDX-00022713-001	Vitamin A acetate (Retinol acetate)	1 g
CDX-00022713-250	Vitamin A acetate (Retinol acetate)	250 mg
CDX-00022714-010	Vitamin A (Retinol)	10 mg
CDX-00022714-050	Vitamin A (Retinol)	50 mg
CDX-00022714-100	Vitamin A (Retinol)	100 mg
CDX-00022717-001	Vitamin A palmitate (Retinol palmitate)	1 g
CDX-00022717-250	Vitamin A palmitate (Retinol palmitate)	250 mg
CDX-00022719-001	Vitamin B1 (Thiamine)	1 g
CDX-00022719-050	Vitamin B1 (Thiamine)	50 mg
CDX-00022719-250	Vitamin B1 (Thiamine)	250 mg
CDX-00022720-001	Vitamin B2 (Riboflavin)	1 g
CDX-00022720-250	Vitamin B2 (Riboflavin)	250 mg
CDX-00022724-001	Vitamin B3 (Niacinamide)	1 g
CDX-00022724-250	Vitamin B3 (Niacinamide)	250 mg
CDX-00022728-001	Vitamin B5 (Calcium pantothenate)	1 g
CDX-00022728-250	Vitamin B5 (Calcium pantothenate)	250 mg
CDX-00022729-001	Vitamin B5 (Calcium pantothenate)	1 g
CDX-00022730-001	Vitamin B6 (Pyridoxine)	1 g
CDX-00022730-250	Vitamin B6 (Pyridoxine)	250 mg
CDX-00022731-001	Vitamin B6 (Pyridoxine)	1 g
CDX-00022731-250	Vitamin B6 (Pyridoxine)	250 mg
CDX-00022742-001	Vitamin B12 (Cyanocobalamin)	1 g
CDX-00022742-250	Vitamin B12 (Cyanocobalamin)	250 mg
CDX-00022750-001	Vitamin D2 (Ergocalciferol)	1 g
CDX-00022750-250	Vitamin D2 (Ergocalciferol)	250 mg
CDX-00022774-001	Vitamin D3 (Cholecalciferol)	1 g
CDX-00022774-100	Vitamin D3 (Cholecalciferol)	100 mg
CDX-00022774-250	Vitamin D3 (Cholecalciferol)	250 mg
CDX-00022801-010	Vitamin E (D Form)	10 mg
CDX-00022801-025	Vitamin E (D Form)	25 mg
CDX-00022803-001	Vitamin E (Tocopherol)	1 g
CDX-00022803-250	Vitamin E (Tocopherol)	250 mg
CDX-00022804-001	Vitamin E acetate (DL-alpha-Tocopherol acetate)	1 g
CDX-00022804-250	Vitamin E acetate (DL-alpha-Tocopherol acetate)	250 mg
CDX-00022807-001	Vitamin E Succinate (Tocopherol Succinate)	1 g
CDX-00022807-100	Vitamin E succinate (Tocopherol succinate)	100 mg
CDX-00022807-250	Vitamin E Succinate (Tocopherol Succinate)	250 mg
CDX-00022809-100	Vitamin H (Biotin)	100 mg
CDX-00022809-250	Vitamin H (Biotin)	250 mg
CDX-00022811-001	Vitamin H1 (4-Aminobenzoic acid) (PABA)	1 g
CDX-00022811-250	Vitamin H1 (4-Aminobenzoic acid) (PABA)	250 mg
CDX-00022815-001	Vitamin K1 (Phytonadione)	1 g

Code	Product	Unit
CDX-00022816-001	Vitamin K1 (Phytonadione)	1 g
CDX-00022816-250	Vitamin K1 (Phytonadione)	250 mg
CDX-00022821-025	Vitamin K2 (Menaquinone)	25 mg
CDX-00022821-050	Vitamin K2 (Menaquinone)	50 mg
CDX-00022821-250	Vitamin K2 (4-Menaquinone)	250 mg
CDX-00022825-001	Vitamin K3 (Menadione)	1 g
CDX-00022825-250	Vitamin K3 (Menadione)	250 mg
CDX-00022826-050	Vitamin K5	50 mg

Tea related polyphenols

CDX-00003315-005	(-)-Catechin gallate	5 mg
CDX-00003300-005	(-)-Catechin	5 mg
CDX-00003310-010	(+)-Catechin	10 mg
CDX-00003310-025	(+)-Catechin	25 mg
CDX-00003290-010	DL-Catechin	10 mg
CDX-00005135-005	(-)-Epicatechin gallate	5 mg
CDX-00005135-010	(-)-Epicatechin gallate	10 mg
CDX-00005135-025	(-)-Epicatechin gallate	25 mg
CDX-00005125-005	(-)-Epicatechin	5 mg
CDX-00005125-010	(-)-Epicatechin	10 mg
CDX-00005125-025	(-)-Epicatechin	25 mg
CDX-00005125-050	(-)-Epicatechin	50 mg
CDX-00005130-005	(+)-Epicatechin	5 mg
CDX-00005150-005	(-)-Epigallocatechin gallate	5 mg
CDX-00005150-010	(-)-Epigallocatechin gallate	10 mg
CDX-00005150-025	(-)-Epigallocatechin gallate	25 mg
CDX-00005150-050	(-)-Epigallocatechin gallate	50 mg
CDX-00005145-010	(-)-Epigallocatechin	10 mg
CDX-00005145-025	(-)-Epigallocatechin	25 mg
CDX-00005145-050	(-)-Epigallocatechin	50 mg
CDX-00030330-005	Green Tea BRM	5 g
CDX-00030331-005	Green Tea XRM	5 g
CDX-00020252-005	Theaflavine	5 mg
CDX-00020252-010	Theaflavine	10 mg
CDX-00020254-005	Theaflavine-3,3'-digallate	5 mg
CDX-00020254-010	Theaflavine-3,3'-digallate	10 mg
CDX-00020253-005	Theaflavine-3-gallate	5 mg
CDX-00020253-010	Theaflavine-3-gallate	10 mg

Stevia related compounds

CDX-00004949-005	Dulcoside A	5 mg
CDX-00009591-010	Isosteviol	10 mg
CDX-00009591-050	Isosteviol	50 mg
CDX-00018226-001	Rebaudioside A	1 g
CDX-00018226-010	Rebaudioside A	10 mg
CDX-00018226-050	Rebaudioside A	50 mg
CDX-00018227-005	Rebaudioside B	5 mg
CDX-00018227-010	Rebaudioside B	10 mg
CDX-00018227-025	Rebaudioside B	25 mg
CDX-00018228-005	Rebaudioside C	5 mg
CDX-00018228-010	Rebaudioside C	10 mg
CDX-00018229-001	Rebaudioside D	1 mg

Natural products and food constituents

Code	Product	Unit
CDX-00030120-005	Stevia Leaf RGBRM	5 g
CDX-00030121-005	Stevia Leaf XRM	5 g
CDX-00019352-010	Steviol	10 mg
CDX-00019352-025	Steviol	25 mg
CDX-00019349-010	Steviolbioside	10 mg
CDX-00019349-050	Steviolbioside	50 mg
CDX-00019351-010	Stevioside	10 mg
CDX-00019351-050	Stevioside	50 mg

Caffeine related compounds

CDX-00003032-100	Caffeine	100 mg
CDX-00003032-200	Caffeine	200 mg
CDX-00020248-100	Theobromine	100 mg
CDX-00020248-200	Theobromine	200 mg
CDX-00020255-250	Theophylline	250 mg
CDX-00020256-100	Theophylline	100 mg
CDX-00020256-200	Theophylline	200 mg

Lipid standards

U-FLSA-098	Arachidonic acid (99%)	100 mg
U-FLSA-101	Arachidonic acid (90%)	100 mg
U-FLSA-107	Arachidonic acid methyl ester (99%)	100 mg
U-FLSA-110	Arachidonic acid methyl ester (90%)	100 mg
U-FLSA-115	Butanedioic acid (Succinic acid)	1 g
U-FLSA-132	Butanedioic acid dimethyl ester	1 g
U-FLSA-002	Butanoic acid (Butyric acid)	1 g
U-FLSA-017	Butanoic acid methyl ester	1 g
U-FLSA-121	Decanedioic acid (Sebacic acid)	500 mg
U-FLSA-138	Decanedioic acid dimethyl ester	500 mg
U-FLSA-005	Decanoic acid (Capric acid)	1 g
U-FLSA-020	Decanoic acid methyl ester	1 g
U-FLSA-100	Docosahexenoic acid	100 mg
U-FLSA-109	Docosahexenoic acid methyl ester	100 mg
U-FLSA-011	Docosanoic acid (Behenic acid)	1 g
U-FLSA-026	Docosanoic acid methyl ester	1 g
U-FLMS-018	1-Docosanol (Behenyl Alcohol)	100 mg
U-FLSA-006	Dodecanoic acid (Lauric acid)	1 g
U-FLSA-021	Dodecanoic acid methyl ester	1 g
U-FLSA-091	11,14-Eicosadienoic acid	100 mg
U-FLSA-094	11,14-Eicosadienoic acid methyl ester	100 mg
U-FLSA-010	Eicosanoic acid (Arachidic acid)	1 g
U-FLSA-025	Eicosanoic acid methyl ester	1 g
U-FLMS-016	1-Eicosanol (Arachidyl Alcohol)	500 mg
U-FLSA-097	11,14,17-Eicosatrienoic acid	100 mg
U-FLSA-106	11,14,17-Eicosatrienoic acid methyl ester	100 mg
U-FLSA-072	11-Eicosenoic acid	100 mg
U-FLSA-086	11-Eicosenoic acid methyl ester	100 mg
U-FLSA-066	Elaidic acid	100 mg
U-FLSA-080	Elaidic acid methyl ester	100 mg
U-FLSA-073	Erucic acid	100 mg
U-FLSA-087	Erucic acid methyl ester	100 mg
U-FLSA-113	Ethanedioic acid (Oxalic acid)	1 g

Code	Product	Unit
U-FLSA-130	Ethanedioic acid dimethyl ester	1 g
U-FLSA-001	Ethanoic acid (Acetic acid)	1 g
U-FLSA-016	Ethanoic acid methyl ester	1 g
U-FLSA-036	Hendecanoic acid (Undecylic acid)	100 mg
U-FLSA-051	Hendecanoic acid methyl ester	100 mg
U-FLSA-041	Heneicosanoic acid	100 mg
U-FLSA-056	Heneicosanoic acid methyl ester	100 mg
U-FLMS-017	1-Heneicosanol	100 mg
U-FLSA-059	Heptacosanoic acid methyl ester	50 mg
U-FLMS-023	1-Heptacosanol	50 mg
U-FLSA-039	Heptadecanoic acid (Margaric acid)	100 mg
U-FLSA-054	Heptadecanoic acid methyl ester	100 mg
U-FLMS-013	1-Heptadecanol	100 mg
U-FLSA-118	Heptanedioic acid (Pimelic acid)	1 g
U-FLSA-135	Heptanedioic acid dimethyl ester	1 g
U-FLSA-034	Heptanoic acid (Heptylic acid)	100 mg
U-FLSA-049	Heptanoic acid methyl ester	100 mg
U-FLSA-013	Hexacosanoic acid (Cerotic acid)	100 mg
U-FLSA-028	Hexacosanoic acid methyl ester	100 mg
U-FLMS-022	1-Hexacosanol (Cerotyl Alcohol)	50 mg
U-FLSA-008	Hexadecanoic acid (Palmitic acid)	1 g
U-FLSA-023	Hexadecanoic acid methyl ester	1 g
U-FLMS-012	1-Hexadecanol (Cetyl Alcohol)	1 g
U-FLSA-117	Hexanedioic acid (Adipic acid)	1 g
U-FLSA-134	Hexanedioic acid dimethyl ester	1 g
U-FLSA-003	Hexanoic acid (Caproic acid)	1 g
U-FLSA-018	Hexanoic acid methyl ester	1 g
U-FLSA-147	homo gamma-Linolenic acid	100 mg
U-FLSA-148	homo gamma-Linolenic acid methyl ester	100 mg
U-FLSA-089	Linoleic acid	100 mg
U-FLSA-092	Linoleic acid methyl ester	100 mg
U-FLSA-090	Linolelaidic acid	100 mg
U-FLSA-093	Linolelaidic acid methyl ester	100 mg
U-FLSA-095	Linolenic acid	100 mg
U-FLSA-104	Linolenic acid methyl ester	100 mg
U-FLSA-096	gamma Linolenic acid	100 mg
U-FLSA-105	gamma-Linolenic acid methyl ester	100 mg
U-FLSA-031	Methanoic acid (Formic acid)	1 g
U-FLSA-046	Methanoic acid methyl ester	1 g
U-FLBA-021	2-Methylbutanoic acid (Anteisovaleric acid)	50 mg
U-FLBA-030	2-Methylbutanoic acid methyl ester	50 mg
U-FLBA-034	10-Methyldodecanoic acid methyl ester	50 mg
U-FLBA-038	18-Methyleicosanoic acid methyl ester	25 mg
U-FLBA-004	10-Methylhendecanoic acid (Isolauric acid)	50 mg
U-FLBA-014	10-Methylhendecanoic acid methyl ester	50 mg
U-FLBA-007	16-Methylheptadecanoic acid (Isostearic acid)	10 mg
U-FLBA-017	16-Methylheptadecanoic acid methyl ester	10 mg
U-FLBA-002	6-Methylheptanoic acid (Isocaprylic acid)	50 mg
U-FLBA-012	6-Methylheptanoic acid methyl ester	50 mg
U-FLBA-027	14-Methylhexadecanoic acid (Anteisomargaric acid)	10 mg
U-FLBA-036	14-Methylhexadecanoic acid methyl ester	10 mg

Code	Product	Unit
U-FLBA-022	4-Methylhexanoic acid (Anteisoheptylic acid)	50 mg
U-FLBA-031	4-Methylhexanoic acid methyl ester	50 mg
U-FLBA-008	18-Methylnonadecanoic acid (Isoarachidic acid)	25 mg
U-FLBA-018	18-Methylnonadecanoic acid methyl ester	25 mg
U-FLBA-003	8-Methylnonanoic acid (Isocapric acid)	50 mg
U-FLBA-013	8-Methylnonanoic acid methyl ester	50 mg
U-FLBA-028	16-Methyloctadecanoic acid (Anteisononadecylic acid)	25 mg
U-FLBA-037	16-Methyloctadecanoic acid methyl ester	25 mg
U-FLBA-032	6-Methyloctanoic acid methyl ester	50 mg
U-FLBA-006	14-Methylpentadecanoic acid (Isopalmitic acid)	10 mg
U-FLBA-016	14-Methylpentadecanoic acid methyl ester	10 mg
U-FLBA-001	4-Methylpentanoic acid (Isocaproic acid)	50 mg
U-FLBA-011	4-Methylpentanoic acid methyl ester	50 mg
U-FLBA-026	12-Methyltetradecanoic acid (Anteisopentadecylic acid)	10 mg
U-FLBA-035	12-Methyltetradecanoic acid methyl ester	10 mg
U-FLBA-015	12-Methyltridecanoic acid methyl ester	10 mg
U-FLSA-062	Myristoleic acid	100 mg
U-FLSA-076	Myristoleic acid methyl ester	100 mg
U-FLSA-074	Nervonic acid	100 mg
U-FLSA-088	Nervonic acid methyl ester	100 mg
U-FLSA-040	Nonadecanoic acid (Nonadecylic acid)	100 mg
U-FLSA-055	Nonadecanoic acid methyl ester	100 mg
U-FLMS-015	1-Nonadecanol	100 mg
U-FLSA-120	Nonanedioic acid (Azelaic acid)	500 mg
U-FLSA-137	Nonanedioic acid dimethyl ester	500 mg
U-FLSA-035	Nonanoic acid (Pelargonic acid)	100 mg
U-FLSA-050	Nonanoic acid methyl ester	100 mg
U-FLSA-014	Octacosanoic acid (Montanic acid)	100 mg
U-FLSA-029	Octacosanoic acid methyl ester	100 mg
U-FLMS-024	1-Octacosanol	50 mg
U-FLSA-127	Octadecanedioic acid	50 mg
U-FLSA-144	Octadecanedioic acid dimethyl ester	50 mg
U-FLSA-009	Octadecanoic acid (Stearic acid)	1 g
U-FLSA-024	Octadecanoic acid methyl ester	1 g
U-FLMS-014	1-Octadecanol (Stearyl Alcohol)	1 g
U-FLSA-067	cis-11-Octadecenoic acid	100 mg
U-FLSA-081	cis-11-Octadecenoic acid methyl ester	100 mg
U-FLSA-068	trans-11-Octadecenoic acid (Vaccenic acid)	100 mg
U-FLSA-082	trans-11-Octadecenoic acid methyl ester	100 mg
U-FLSA-119	Octanedioic acid (Suberic acid)	500 mg
U-FLSA-136	Octanedioic acid dimethyl ester	500 mg
U-FLSA-004	Octanoic acid (Caprylic acid)	1 g
U-FLSA-019	Octanoic acid methyl ester	1 g
U-FLSA-065	Oleic acid	100 mg
U-FLSA-079	Oleic acid methyl ester	100 mg
U-FLSA-064	Palmitelaidic acid	100 mg
U-FLSA-078	Palmitelaidic acid methyl ester	100 mg
U-FLSA-063	Palmitoleic acid	100 mg
U-FLSA-077	Palmitoleic acid methyl ester	100 mg
U-FLSA-058	Pentacosanoic acid methyl ester	50 mg
U-FLMS-021	1-Pentacosanol	50 mg

Code	Product	Unit
U-FLSA-038	Pentadecanoic acid (Pentadecylic acid)	100 mg
U-FLSA-053	Pentadecanoic acid methyl ester	100 mg
U-FLSA-033	Pentanoic acid (Valeric acid)	100 mg
U-FLSA-048	Pentanoic acid methyl ester	100 mg
U-FLSA-071	Petroselinic acid	100 mg
U-FLSA-085	Petroselinic acid methyl ester	100 mg
U-FLBA-042	Phytanic acid (3,7,11,15-Tetramethylhexadecanoic acid)	25 mg
U-FLBA-043	Phytanic acid methyl ester (Methyl-3,7,11,15-tetramethylhexadecanoate)	25 mg
U-FLMS-035	Phytol (tech) (3,7,11,15-Tetramethyl-2-hexadecen-1-ol)	1 g
U-FLSA-114	Propanedioic acid (Malonic acid)	1 g
U-FLSA-131	Propanedioic acid dimethyl ester	1 g
U-FLSA-032	Propanoic acid (Propionic acid) E 280	1 g
U-FLSA-047	Propanoic acid methyl ester	1 g
U-FLSA-070	Ricinelaidic acid	100 mg
U-FLSA-084	Ricinelaidic acid methyl ester	100 mg
U-FLSA-069	Ricinoleic acid	100 mg
U-FLSA-083	Ricinoleic acid methyl ester	100 mg
U-FLSA-012	Tetracosanoic acid (Lignoceric acid)	100 mg
U-FLSA-027	Tetracosanoic acid methyl ester	100 mg
U-FLMS-020	1-Tetracosanol (Lignoceryl Alcohol)	50 mg
U-FLSA-125	Tetradecanedioic acid	100 mg
U-FLSA-142	Tetradecanedioic methyl ester	100 mg
U-FLSA-007	Tetradecanoic acid (Myristic acid)	1 g
U-FLSA-022	Tetradecanoic acid methyl ester	1 g
U-FLMS-010	1-Tetradecanol (Myristyl Alcohol)	1 g
U-FLSA-015	Triacontanoic acid (Mellisic acid)	100 mg
U-FLSA-030	Triacontanoic acid methyl ester	100 mg
U-FLMS-026	1-Triacontanol (Melissyl Alcohol)	50 mg
U-FLSA-057	Tricosanoic acid methyl ester	100 mg
U-FLMS-019	1-Tricosanol	100 mg
U-FLSA-037	Tridecanoic acid (Tridecylic acid)	100 mg
U-FLSA-052	Tridecanoic acid methyl ester	100 mg
U-FLPK-001	Unsaturated fatty acids & methyl esters Each kit contains 25 mg each of twenty compounds. cis-9-Tetradecenoic acid (Myristoleic acid) cis-9-Hexadecenoic acid (Palmitoleic acid) trans-9-Hexadecenoic acid (Palmitelaidic acid) cis-9-Octadecenoic acid (Oleic acid) trans-9-Octadecenoic acid (Elaidic acid) cis-9-cis-12-Octadecadienoic acid (Linoleic acid) trans-9-trans-12-Octadecadienoic acid (Linolelaidic acid) cis-9-cis-12-cis-15-Octadecenoate acid (Linolenic acid) cis-11-Eicosenoic acid (Gondonic acid) cis-13-Docosenoic acid (Erucic acid) Methyl cis-9-Tetradecanoate (Methyl myristoleate) Methyl cis-9-Hexadecenoate (Methyl palmitoleate) Methyl trans-9-Hexadecenoate (Methyl palmitelaidate) Methyl cis-9-Octadecenoate (Methyl oleate) trans-9-Octadecenoate (Methyl eleidate) Methyl cis-9-cis-12-Octadecadienoate (Methyl linoleate) Methyl trans-9-cis-12-Octadecadienoate (Methyl linelaidate) Methyl cis-9-cis-12-cis-15-Octadecatrienoate (Methyl linolenate) Methyl cis-11-Eicosenoate (Methyl gondonate) Methyl cis-13-Docosenoate (Methyl erucate)	kit

Code	Product		Unit
U-FLPK-003	Fatty acids and methyl esters kit Each kit contains 25 mg each of sixteen compounds.		kit
	Nonanoic acid	Methyl nonanoate	
	Undecanoic acid	Methyl undecanoate	
	Tridecanoic acid	Methyl tridecanoate	
	Pentadecanoic acid	Methyl pentadecanoate	
	Heptadecanoic acid	Methyl heptadecanoate	
	Nonadecanoic acid	Methyl nondecanoate	
	Heneicosanoic acid	Methyl heneicosanoate	
	Tricosanoic acid	Methy tricosanoate	
U-FLPK-004	Fatty acids and methyl esters kit Each kit contains 100 mg each of twenty compounds.		kit
	Hexanoic acid (Caproic acid)	Hexanoic acid methyl ester	
	Octanoic acid (Caprylic acid)	Octanoic acid methyl ester	
	Decanoic acid (Capric acid)	Decanoic acid methyl ester	
	Dodecanoic acid (Lauric acid)	Dodecanoic acid methyl ester	
	Tetradecanoic acid (Myristic acid)	Tetradecanoic acid methyl ester	
	Hexadecanoic acid (Palmitic acid)	Hexadecanoic acid methyl ester	
	Octadecanoic acid (Stearic acid)	Octadecanoic acid methyl ester	
	Eicosanoic acid (Arachidic acid)	Eicosanoic acid methyl ester	
	Docosanoic acid (Behenic acid)	Docosanoic acid methyl ester	
	Tetracosanoic acid (Lignoceric acid) (25 mg)	Tetracosanoic acid methyl ester (25 mg)	
U-FLPK-005	Volatile fatty acids Each kit contains 1 gm each of ten compounds plus 5 mL of a mixture.		kit
	Methanoic acid (Formic acid)	Isovaleric acid	
	Acetic acid	Hexanoic acid (Caproic acid)	
	Propanoic acid (Propionic acid)	Heptanoic acid	
	Butanoic acid (Butyric acid)	Octanoic acid (Caprylic acid)	
	Isobutyric acid	0.1% C1-C5 Acids test solution in H_2O (5 mL)	
	Pentanoic acid (Valeric acid)		

Code	Product	Unit
New NIST-2377	Fatty acid methyl esters in 2,2,4-trimethylpentane	5 x 1.2mL

This Standard Reference Material (SRM®) is a solution of 26 fatty acid methyl esters (FAMEs) in 2,2,4-trimethylpentane. This SRM is intended primarily for use in the calibration of chromatographic instrumentation used for the determination of FAMEs.

Certified Mass Fraction Values of FAMEs

FAME	CAS Registry No.	Mass Fraction (mg/g)
Octanoic acid methyl ester (Caprylic acid methyl ester)	111-11-5	7.286 ± 0.054
Decanoic acid methyl ester (Capric acid methyl ester)	110-42-9	7.499 ± 0.058
Dodecanoic acid methyl ester (Lauric acid methyl ester)	111-82-0	7.93 ± 0.11
Tetradecanoic acid methyl ester (Myristic acid methyl ester)	124-10-7	7.11 ± 0.13
Hexadecanoic acid methyl ester (Palmitic acid methyl ester)	112-39-0	7.38 ± 0.32
Octadecanoic acid methyl ester (Stearic acid methyl ester)	112-61-8	7.68 ± 0.12
Eicosanoic acid methyl ester (Arachidic methyl ester)	1120-28-1	3.66 ± 0.21
Docosanoic acid methyl ester (Behenic acid methyl ester)	929-77-1	4.28 ± 0.10
Tetracosanoic acid methyl ester (Lignoceric acid methyl ester)	2442-49-1	1.807 ± 0.081
9-Tetradecenoic acid methyl ester (Myristoleic acid methyl ester)	56219-06-8	1.894 ± 0.033
9-Hexadecenoic acid methyl ester (Palmitoleic acid methyl ester)	1120-25-8	5.031 ± 0.039
9-Octadecenoic acid methyl ester (Oleic acid methyl ester)	112-62-9	7.01± 0.31
9-trans-Octadecenoic acid methyl ester (Elaidic acid methyl ester)	1937-62-8	2.02 ± 0.18
11-Octadecenoic acid methyl ester (Vaccenic acid methyl ester)	1937-63-9	2.31 ± 0.14
11-trans-Octadecenoic acid methyl ester (trans-Vaccenic acid methyl ester)	6198-58-9	2.368 ± 0.047
9,12-Octadecadienoic acid methyl ester (Linoleic acid methyl ester)	112-63-0	7.33 ± 0.14
9-trans,12-trans-Octadecadienoic acid methyl ester (Linoelaidic acid methyl ester)	2566-97-4	2.046 ± 0.015
9,12,15-Octadecatrienoic acid methyl ester (alpha-Linolenic acid methyl ester)	301-00-8	4.26 ± 0.26
6,9,12-Octadecatrienoic acid methyl ester (gamma-Linolenic acid methyl ester)	16326-32-2	1.796 ± 0.052
11-Eicosenoic acid methyl ester (Gondolic acid methyl ester)	2390-09-2	1.919 ± 0.081
5,8,11,14-Eicosatetraenoic acid methyl ester (Arachidonic acid methyl ester)	2566-89-4	1.511 ± 0.063
5,8,11,14,17-Eicosapentaenoic acid methyl ester (EPA methyl ester)	2734-47-6	1.526 ± 0.068
7,10,13,16,19-Docosapentaenoic acid methyl ester (DPA methyl ester)	108698-02-8	1.426 ± 0.030
4,7,10,13,16,19-Docosahexaenoic acid methyl ester (DHA methyl ester)	2566-90-7	1.621 ± 0.082
13-Docosenoic acid methyl ester (Erucic acid methyl ester)	1120-34-9	2.204 ± 0.083
15-Tetracosenoic acid methyl ester (Nervonic acid methyl ester)	2733-88-2	1.74 ± 0.011

Please ask for information on the following product groups:

Conjugated PUFAs

Oxylipins

Hydroxy fatty acids

Epoxy fatty acids

Methyl branched fatty acids

Glycerides - Mono-/Di-/Tri-

Fatty alcohols

Wax esters

Phospholipids - natural/semisynthetic

Sphingolipids

Gangliosides and related compounds

Polyprenols

Amino acids

Code	Product	Unit
NIST-2389	Amino acids mixture	5 x 2 mL

This material is a solution of 17 amino acids in a 0.1 mol/L aqueous solution of hydrochloric acid. It is intended primarily for the use in calibration of chromatographic instrumentation for the determination of amino acids. A unit of consists of five 2 mL ampoules each containing approximately 1.2 mL of the solution.

Amino acid	concentration mmol/L	Amino acid	concentration mmol/L
Alanine	2.51 ± 0.09	Lysine	2.47 ± 0.10
Arginine	2.94 ± 0.14	Methionine	2.43 ± 0.09
Aspartic acid	2.50 ± 0.09	Phenylalanine	2.44 ± 0.08
Cystine	1.16 ± 0.04	Proline	2.44 ± 0.09
Glutamic acid	2.47 ± 0.08	Serine	2.43 ± 0.09
Glycine	2.45 ± 0.08	Threonine	2.39 ± 0.08
Histidine	2.83 ± 0.11	Tyrosine	2.47 ± 0.09
Isoleucine	2.39 ± 0.07	Valine	2.44 ± 0.08
Leucine	2.48 ± 0.09		

U-WRK-145	Amino Acids ULTRAkit®	kit

for **qualitative** measurements

1% w/v of each analyte in Water

L-Alanine	2 mL	L-Isoleucine	2 mL	L-Serine	2 mL
Arginine	2 mL	L-Lysine	2 mL	Sarcosine	2 mL
Creatine	2 mL	L-Leucine	2 mL	L-Tryptophan	2 mL
L-Glutamic	2 mL	L-Methionine	2 mL	L-Threonine	2 mL
Glycine	2 mL	L-Norleucine	2 mL	L-Valine	2 mL
L-Histidine	2 mL	L-Proline	2 mL		
Hydroxy-L-proline	2 mL	L-Phenylalanine	2 mL		

Food additives

Colour standards

	Code	Product	Unit
New	NIM-GBW(E)100192	Allura Red (E 129) 100 µg/mL in Water	5 mL
New	NIM-GBW(E)100002A	Amaranth colour 0.5 mg/mL in Water	10 mL
New	NIM-GBW(E)100005A	Brilliant Blue 0.5 mg/mL in Water	10 mL
New	NIM-GBW(E)100191	Erythrosine (E 127) 100 µg/mL in Water	5 mL
New	NIM-GBW(E)100004A	Ponceau 4R 0.5 mg/mL in Water	10 mL
New	NIM-GBW(E)100003A	Sunset Yellow 0.5 mg/mL in Water	10 mL
New	NIM-GBW(E)100001A	Tartrazine 0.5 mg/mL in Water	10 mL

IBPO colour standards

Colour standards from the Institute of Dyes and Organic Products (IBPO) in Poland. The IBPO is accredited by PCA (Polish Centre for Accreditation) according to the standard PN-EN 17025.

Colour standards with E code

Food colours are usually mixtures containing several major constitutents: the main coloring compound, inorganic salt and volatiles. Apart from main colour they often also contain isomeric dyes and dye intermediates. The following standards of colours from IBPO, used in the food industry, are arranged by E code for easy reference. Each colour reference standard is supplied with a detailed certificate of analysis which includes dye content value, determined by spectrophotometry, and values of impurities.

IBPO008	Tartrazine (E 102)	1 g
IBPO007	Quinoline Yellow (E 104)	1 g
IBPO009	Sunset Yellow FCF (E 110)	1 g
IBPO003	Azorubin (E 122)	1 g
IBPO005	Amaranth (E 123)	1 g
IBPO004	Ponceau 4R (E 124)	1 g
IBPO011	Erythrosine (E 127)	1 g
IBPO013	Red 2 G (E 128)	1 g
IBPO014	Allura Red AC (E 129)	1 g
IBPO012	Patent Blue V (E 131)	1 g

Code	Product	Unit
IBPO002	Indigotine (E 132)	1 g
IBPO015	Brilliant Blue FCF (E 133)	1 g
IBPO016	Brilliant Green BS (E 142)	1 g
IBPO010	Brilliant Black PN (E 151)	1 g
IBPO017	Brown HT(E 155)	1 g
	Dyes used for cosmetics	
IBPO006	Cosmetic Red A (Acid Red 33) C.I. 17200	1 g
	Sudan dyes	
IBPO018	Sudan I C.I. 12055	1 g
IBPO019	Sudan II (Solvent orange 7) C.I. 12140	1 g
IBPO020	Sudan III (Solvent Red 23) C.I. 26100	1 g
IBPO021	Sudan IV (Solvent Red 24) C.I. 26105	1 g
IBPO022	Sudan Orange G (Solvent Orange 1) C.I. 11920	250 mg
IBPO023	Sudan Red 7B (Solvent Red 19) C.I. 26050	250 mg
IBPO027	Sudan Red 1 (Solvent Red G) C.I. 12150	1 g
	Other food dyes	
IBPO024	C.I. Pigment Red 1 (Para Red BS) C.I. 12070	1 g
IBPO025	Basic Violet 10 (Rhodamine B) C.I. 45170	1 g
IBPO026	Acid Orange 7 (Orange II) C.I. 15510	1 g
IBPO028	Solvent Yellow 56 C.I.11021	1 g
IBPO029	Solvent Yellow 2 (Butter yellow) C.I.11020	1 g

Preservatives

	IPO F 170	Sorbic acid E 200 Certified purity..... 99.9%	250 mg
New	NIM-GBW(E)100007	Sorbic acid 1.0 mg/mL in Water	10 mL
	LGC7305	Potassium sorbate E 202 Certified purity..... 99.8 %	500 mg
	IPO F 010	Benzoic acid E 210 Certified purity..... 99.9%	250 mg
New	NIM-GBW(E)100006	Benzoic acid 1.0 mg/mL in Water	10 mL
	IPO F 022	Sodium benzoate (E 211)	250 mg
	IPO F 070	Ethyl-4-hydroxybenzoate (Ethylparaben) E 214 Certified purity..... 99.4%	250 mg
	IPO F 080	Propyl-4-hydroxybenzoate (Propylparaben) E 216 Certified purity..... 98.9%	250 mg

Food additives

Code	Product	Unit
IPO F 075	Methyl-4-hydroxybenzoate (Methylparaben) E 218 Certified purity.....99.9%	250 mg
IPO 054	Biphenyl (PCB 0) E 230 Certified purity.....99.6%	250 mg
IPO 735	Thiabendazole E 233 Certified purity.....98.8%	250 mg
IPO F 016	Hexamethylenetetraamine (E 239)	1 mL
U-FLSA-032	Propanoic acid (Propionic acid) E 280	1 g
IPO F 005	Propionic acid E 280, in preparation, available in April/June 2005	1 mL
IPO F 013	Fumaric acid (E 297)	250 mg
U-FLPK-002	Antimicrobial food additives kit Each kit contains 1 g each of thirteen compounds. Acetic acid Benzoic acid Butyl paraben Octanoic acid (Caprylic acid) Ethyl paraben Methyl paraben Potassium sorbate Propanoic acid (Propionic acid) Propyl paraben Sodium benzoate Sodium nitrate Sodium nitrite Sorbic acid	kit

Antioxidants

IPO F 009	Adipic acid (E 355)	250 mg
IPO F 014	Ascorbic acid (E 300)	250 mg
IPO F 015	Butylated hydroxyanisole (BHA) (E 320)	250 mg
IPO F 018	2,6-Di-tert-butyl-4-methylphenol (BHT) E 321 Certified purity.....99.9%	250 mg
ERM-AC301	2-t-Butyl-4-methoxyphenol (BHA) E 320 Certified purity.....99.2%	500 mg
IPO F 011	Citric acid (E 330)	250 mg
LGC7300	2,6-Di-tert-butyl-4-methylphenol (BHT) E 321 Certified purity.....99.8%	500 mg
CIL-DLM-2943-1.2	2,6-Di-(tert-butyl)-4-methylphenol (BHT) (D_{21},98%) 100 µg/mL in Nonane	1.2 mL
IPO F 021	Dodecyl gallate (E312)	250 mg
IPO F 007	D-(-)-Isoascorbic acid (E 315)	250 mg
IPO F 006	Octyl gallate E 311, in preparation, available in April/June 2005	250 mg
IPO F 003	Propyl gallate E 310 Certified purity.....99.6%	250 mg
IPO F 012	Succinic acid (E 363)	250 mg
IPO F 008	L-(+)-Tartaric acid (E 334)	250 mg
U-FLPK-007	Antioxidant food additives kit Each kit contains 1 g each of thirteen compounds. Ascorbic acid Ascorbyl palmitate BHA (2 & 3-t-Butyl-4-methoxyphenol) BHT (2,6-di-tert-Butyl-4-methylphenol) t-Butylhydroquinone Ethoxyquin (1,2-Dihydro-6-ethoxy-2,2,4-trimethylquinoline) Erythorbic acid (Isoascorbic acid) Dilaurel thiodipropionate 4-Hydroxymethyl-2,6-di-t-butylphenol L-Glycine Propyl gallate Thiodipropionic acid THBP (2,4,5-Trihydroxybutyrophenone)	kit

	Code	Product	Unit
	Sweeteners		
	NE9201	Acesulfame potassium 10 µg/mL in Methanol	10 mL
	CDX-00011045-001	Aspartame	1 g
	NE9211	Aspartame 10 µg/mL in Methanol	10 mL
	CDX-00014250-010	Neohesperidin	10 mg
	LGC7302	Saccharin	500 mg
	IPO F 019	Saccharin (E 954)	250 mg
New	NIM-GBW(E)100008	Sodium saccharin 1.0 mg/mL in Water	10 mL

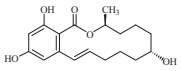
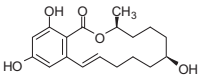
Mycotoxins

	Code	Product	Unit
	Single compounds		
	B-MYC0340-1	3-Acetyl-deoxynivalenol (3-AcDON) 100 µg/mL in Acetonitrile	1 mL
New	B-MYC0340-2	3-Acetyl-deoxynivalenol (3-AcDON) 100 µg/mL in Acetonitrile	2 mL
	B-MYC0340-5	3-Acetyl-deoxynivalenol (3-AcDON) 100 µg/mL in Acetonitrile	5 mL
	B-MYC0340-C	3-Acetyl-deoxynivalenol	5 mg
	B-MYC0345-C	3-Acetyl-deoxynivalenol	10 mg
	B-MYC0350-1.2	3-Acetyl-deoxynivalenol ($^{13}C_{17}$) 25 µg/mL in Acetonitrile CERTAN®	1.2 mL
	B-MYC0360-1	15-Acetyl-deoxynivalenol (15-AcDON) 100 µg/mL in Acetonitrile	1 mL
New	B-MYC0360-2	15-Acetyl-deoxynivalenol (15-AcDON) 100 µg/m in Acetonitrile	2 mL
	B-MYC0360-5	15-Acetyl-deoxynivalenol (15-AcDON) 100 µg/m in Acetonitrile	5 mL
	B-MYC0360-C	15-Acetyl-deoxynivalenol	5 mg
	B-MYC0365-C	15-Acetyl-deoxynivalenol	10 mg
	B-MYC0200-1	Aflatoxin B1 2 µg/mL in Acetonitrile	1 mL
New	B-MYC0200-2	Aflatoxin B1 2 µg/mL in Acetonitrile	2 mL
	B-MYC0200-5	Aflatoxin B1 2 µg/mL in Acetonitrile	5 mL
	ERM-AC057	Aflatoxin B1 in Acetonitrile The material is provided in amber glass ampoules filled with 4 mL. Compound Certified value Uncertainty Aflatoxin B1.....3.79 µg/g ..... 0.30 µg/g	Amp.
New	B-MYC0205-C	Aflatoxin B1	5 mg
New	B-MYC0210-1.2	Aflatoxin B1 (U-$^{13}C_{17}$) 0.5 µg/mL in Acetonitrile CERTAN®	1.2 mL
	B-MYC0220-1	Aflatoxin B2 0.5 µg/mL in Acetonitrile	1 mL
New	B-MYC0220-2	Aflatoxin B2 0.5 µg/mL in Acetonitrile	2 mL

	Code	Product	Unit
	B-MYC0220-5	Aflatoxin B2 0.5 µg/mL in Acetonitrile	5 mL
	ERM-AC058	Aflatoxin B2 in Acetonitrile The material is provided in amber glass ampoules filled with 4 mL. Compound / Certified value / Uncertainty Aflatoxin B2 ..... 3.80 µg/g ..... 0.08 µg/g	Amp.
New	B-MYC0225-C	Aflatoxin B2	5 mg
New	B-MYC0230-1.2	Aflatoxin B2 (U-$^{13}C_{17}$) 0.5 µg/mL in Acetonitrile CERTAN®	1.2 mL
	B-MYC0240-1	Aflatoxin G1 2 µg/mL in Acetonitrile	1 mL
New	B-MYC0240-2	Aflatoxin G1 2 µg/mL in Acetonitrile	2 mL
	B-MYC0240-5	Aflatoxin G1 2 µg/mL in Acetonitrile	5 mL
	ERM-AC059	Aflatoxin G1 in Acetonitrile The material is provided in amber glass ampoules filled with 4 mL. Compound / Certified value / Uncertainty Aflatoxin G1 ..... 3.78 µg/g ..... 0.13 µg/g	Amp.
New	B-MYC0245-C	Aflatoxin G1	5 mg
New	B-MYC0250-1.2	Aflatoxin G1 (U-$^{13}C_{17}$) 0.5 µg/mL in Acetonitrile CERTAN®	1.2 mL
	B-MYC0260-1	Aflatoxin G2 0.5 µg/mL in Acetonitrile	1 mL
New	B-MYC0260-2	Aflatoxin G2 0.5 µg/mL in Acetonitrile	2 mL
	B-MYC0260-5	Aflatoxin G2 0.5 µg/mL in Acetonitrile	5 mL
	ERM-AC060	Aflatoxin G2 in Acetonitrile The material is provided in amber glass ampoules filled with 4 mL. Compound / Certified value / Uncertainty Aflatoxin G2 ..... 3.80 µg/g ..... 0.07 µg/g	Amp.
New	B-MYC0265-C	Aflatoxin G2	5 mg
New	B-MYC0270-1.2	Aflatoxin G2 (U-$^{13}C_{17}$) 0.5 µg/mL in Acetonitrile CERTAN®	1.2 mL
	B-MYC0280-1	Aflatoxin M1 0.5 µg/mL in Acetonitrile	1 mL
New	B-MYC0280-2	Aflatoxin M1 0.5 µg/mL in Acetonitrile	2 mL
	B-MYC0280-5	Aflatoxin M1 0.5 µg/mL in Acetonitrile	5 mL
	BCR-423 (RM)	Aflatoxin M1 standard solution 9.93 µg/mL in chloroform	2.5 mL
New	B-MYC0315-2	Agroclavine - Dried down standard Concentration after reconstitution ..... 100 µg/mL	0.2 mg (2 mL)
	B-MYC0315-5	Agroclavine - Dried down standard Concentration after reconstitution ..... 100 µg/mL	0.5 mg (5 mL)
	B-MYC1400-1	Citrinin 100 µg/mL in Acetonitrile	1 mL
	B-MYC0380-1	Deepoxy-deoxynivalenol 50 µg/mL in Acetonitrile Used as internal standard (IS) in mycotoxin analysis	1 mL
New	B-MYC0380-2	Deepoxy-deoxynivalenol 50 µg/mL in Acetonitrile	2 mL
	B-MYC0380-5	Deepoxy-deoxynivalenol 50 µg/mL in Acetonitrile	5 mL
	B-MYC0320-1	Deoxynivalenol (DON) 100 µg/mL in Acetonitrile	1 mL
New	B-MYC0320-2	Deoxynivalenol (DON) 100 µg/mL in Acetonitrile	2 mL
	B-MYC0320-5	Deoxynivalenol (DON) 100 µg/mL in Acetonitrile	5 mL
	IRMM-315	4-Deoxynivalenol in Acetonitrile The material is provided in amber glass ampoules filled with 4 mL. Certified value 4-Deoxynivalenol ..... 25.1 ± 1.2 µg/g	Amp.
	B-MYC0320-C	Deoxynivalenol	5 mg
	B-MYC0325-C	Deoxynivalenol	10 mg
	B-MYC0330-1.2	Deoxynivalenol ($^{13}C_{15}$, 98%) 25 µg/mL in Acetonitrile CERTAN®	1.2 mL
	B-MYC0335-1	Deoxynivalenol-3-glucoside 50 µg/mL in Acetonitrile	1 mL
	B-MYC0390-1	Diacetoxyscirpenol (DAS) 100 µg/mL in Acetonitrile	1 mL
New	B-MYC0390-2	Diacetoxyscirpenol (DAS) 100 µg/mL in Acetonitrile	2 mL
	B-MYC0390-5	Diacetoxyscirpenol (DAS) 100 µg/mL in Acetonitrile	5 mL
	B-MYC3700-1	Fumagillin 100 µg/mL in Acetonitrile	1 mL

	Code	Product	Unit
	B-MYC0400-1	Fumonisin B1 50 µg/mL in Acetonitrile/water (1:1)	1 mL
New	B-MYC0400-2	Fumonisin B1 50 µg/mL in Acetonitrile/water (1:1)	2 mL
	B-MYC0400-5	Fumonisin B1 50 µg/mL in Acetonitrile/water (1:1)	5 mL
	B-MYC0400-C	Fumonisin B1	5 mg
	B-MYC0405-C	Fumonisin B1	10 mg
	B-MYC0410-1.2	Fumonisin B1 ($^{13}C_{34}$) 25 µg/mL in Acetonitrile/water (1:1) CERTAN®	1.2 mL
	B-MYC0420-1	Fumonisin B2 50 µg/mL in Acetonitrile/water (1:1)	1 mL
New	B-MYC0420-2	Fumonisin B2 50 µg/mL in Acetonitrile/water (1:1)	2 mL
	B-MYC0420-5	Fumonisin B2 50 µg/mL in Acetonitrile/water (1:1)	5 mL
	B-MYC0423-1.2	Fumonisin B2 (U-$^{13}C_{34}$) 10 µg/mL in Acetonitrile/water (1:1) CERTAN®	1.2 mL
	B-MYC0425-1	Fumonisin B3 50 µg/mL in Acetonitrile/water (1:1)	1 mL
	B-MYC0430-1.2	Fumonisin B3 (U-$^{13}C_{34}$) 10 µg/mL in Acetonitrile/water (1:1) CERTAN®	1.2 mL
	B-MYC0450-1	Fusarenon X 100 µg/mL in Acetonitrile	1 mL
New	B-MYC0450-2	Fusarenon X 100 µg/mL in Acetonitrile	2 mL
	B-MYC0450	Fusarenon X 100 µg/mL in Acetonitrile	5 mL
	B-MYC0450-C	Fusarenon X	5 mg
	B-MYC0455-C	Fusarenon X	10 mg
	B-MYC1600-1	Gliotoxin 100 µg/mL in Acetonitrile	1 mL
	B-MYC0560-1	HT-2 Toxin (HT-2) 100 µg/mL in Acetonitrile	1 mL
New	B-MYC0560-2	HT-2 Toxin (HT-2) 100 µg/mL in Acetonitrile	2 mL
	B-MYC0560-5	HT-2 Toxin (HT-2) 100 µg/mL in Acetonitrile	5 mL
	B-MYC0565-1.2	HT-2 Toxin ($^{13}C_{22}$) 25 µg/mL in Acetonitrile CERTAN®	1.2 mL
	B-MYC1800-1	Monoliformin 100 µg/mL in Acetonitrile	1 mL
	B-MYC0457-1	Mycophenolic acid 100 µg/mL in Acetonitrile	1 mL
New	B-MYC0457-2	Mycophenolic acid 100 µg/mL in Acetonitrile	2 mL
	B-MYC0457-5	Mycophenolic acid 100 µg/mL in Acetonitrile	5 mL
New	B-MYC0458-1.2	Mycophenolic acid ($^{13}C_{17}$) 100 µg/mL in Acetonitrile CERTAN®	1.2 mL
	B-MYC0460-1	Neosolaniol (NEO) 100 µg/mL in Acetonitrile Used as internal standard (IS) in mycotoxin analysis	1 mL
New	B-MYC0460-2	Neosolaniol (NEO) 100 µg/mL in Acetonitrile	2 mL
	B-MYC0460-5	Neosolaniol (NEO) 100 µg/mL in Acetonitrile	5 mL
	B-MYC0465-C	Neosolaniol	5 mg
	B-MYC0470-C	Neosolaniol	10 mg
	B-MYC0480-1	Nivalenol 100 µg/mL in Acetonitrile	1 mL
New	B-MYC0480-2	Nivalenol 100 µg/mL in Acetonitrile	2 mL
	B-MYC0480-5	Nivalenol 100 µg/mL in Acetonitrile	5 mL
	IRMM-316	Nivalenol in Acetonitrile The material is provided in amber glass ampoules filled with 4 mL. Certified value Nivalenol .....24.0 ± 1.1 µg/g	Amp.
	B-MYC0480-C	Nivalenol hydrate	5 mg
	B-MYC0485-C	Nivalenol hydrate	10 mg
	B-MYC0490-1	Ochratoxin A 10 µg/mL in Acetonitrile	1 mL
New	B-MYC0490-2	Ochratoxin A 10 µg/mL in Acetonitrile	2 mL
	B-MYC0490-5	Ochratoxin A 10 µg/mL in Acetonitrile	5 mL
	B-MYC0490-C	Ochratoxin A	5 mg
	B-MYC0495-C	Ochratoxin A	10 mg
	B-MYC0495-1.2	Ochratoxin A ($^{13}C_{20}$) 10 µg/mL in Acetonitrile CERTAN®	1.2 mL
	B-MYC2000-1	Ochratoxin B 10 µg/mL in Acetonitrile	1 mL
	B-MYC2050-1	Ochratoxin-alpha 10 µg/mL in Acetonitrile	1 mL
	B-MYC0500-1	Patulin 100 µg/mL in Acetonitrile	1 mL

Mycotoxins

	Code	Product	Unit
New	B-MYC0500-2	Patulin 100 µg/mL in Acetonitrile	2 mL
	B-MYC0500-5	Patulin 100 µg/mL in Acetonitrile	5 mL
New	B-MYC0505-C	Patulin	5 mg
	B-MYC2300-1	Paxilline 100 µg/mL in Acetonitrile	1 mL
	B-MYC2350-1	Penicillic acid 100 µg/mL in Acetonitrile	1 mL
	B-MYC0520-1	Sterigmatocystin 50 µg/mL in Acetonitrile	1 mL
New	B-MYC0520-2	Sterigmatocystin 50 µg/mL in Acetonitrile	2 mL
	B-MYC0520-5	Sterigmatocystin 50 µg/mL in Acetonitrile	5 mL
New	B-MYC0525-C	Sterigmatocystin	5 mg
	B-MYC0575-1	T-2 Tetraol 50 µg/mL in Acetonitrile	1 mL
	B-MYC0540-1	T-2 Toxin (T-2) 100 µg/mL in Acetonitrile	1 mL
New	B-MYC0540-2	T-2 Toxin (T-2) 100 µg/mL in Acetonitrile	2 mL
	B-MYC0540-5	T-2 Toxin (T-2) 100 µg/mL in Acetonitrile	5 mL
	B-MYC0540-C	T-2 Toxin (T-2)	5 mg
	B-MYC0545-C	T-2 Toxin (T-2)	10 mg
	B-MYC0550-1.2	T-2 Toxin (T-2) (U-$^{13}C_{24}$) 25 µg/mL in Acetonitrile CERTAN®	1.2 mL
	B-MYC0570-1	T-2 Triol 50 µg/mL in Acetonitrile	1.2 mL
	B-MYC2500-1	Verruculogen 100 µg/mL in Acetonitrile	1 mL
	B-MYC2600-1	Wortmannin 100 µg/mL in Acetonitrile	1 mL
	B-MYC0580-1	Zearalanone 10 µg/mL in Acetonitrile	1 mL
	B-MYC1200-1	alpha-Zearalanol (Zeranol) 10 µg/mL in Acetonitrile	1 mL
	B-MYC1220-1	beta-Zearalanol (Taleranol) 10 µg/mL in Acetonitrile	1 mL
	B-MYC1240-1	alpha-Zearalenol 10 µg/mL in Acetonitrile	1 mL
	NMIAP1795	alpha-Zearalenol 	5 mg
	B-MYC1260-1	beta-Zearalenol 10 µg/mL in Acetonitrile	1 mL
	NMIAP1796	beta-Zearalenol 	5 mg
New	B-MYC0600-1	Zearalenone 100 µg/mL in Acetonitrile	1 mL
	B-MYC0600-5	Zearalenone 100 µg/mL in Acetonitrile	5 mL
	B-MYC0600-C	Zearalenone	5 mg
	B-MYC0605-C	Zearalenone	10 mg
	ERM-AC699	Zearalenone in Acetonitrile The material is provided in amber glass ampoules filled with 4 mL. Compound — Certified value — Uncertainty Zearalenone ..... 9.95 µg/mL ..... 0.30 µg/mL	Amp.
	B-MYC0610-1.2	Zearalenone (U-$^{13}C_{18}$) 25 µg/mL in Acetonitrile CERTAN®	1.2 mL

Multicomponent standard solutions

	B-MYC0300-1	Aflatoxin Mixture Solvent: Acetonitrile Aflatoxin B1 ..... 2 µg/mL — Aflatoxin G1 ..... 2 µg/mL Aflatoxin B2 ..... 0.5 µg/mL — Aflatoxin G2 ..... 0.5 µg/mL	1 mL
New	B-MYC0300-2	Aflatoxin Mixture	2 mL
	B-MYC0300-5	Aflatoxin Mixture	5 mL
	B-MYC0305-1	Aflatoxin Mixture 0.25 µg/mL of each analyte in Acetonitrile Aflatoxin B1 — Aflatoxin B2 — Aflatoxin G1 — Aflatoxin G2	1 mL
New	B-MYC0305-2	Aflatoxin Mixture	2 mL
	B-MYC0305-6	Aflatoxin Mixture	6 mL
	B-MYC0440-1	Fumonisin Mixture 50 µg/mL of each analyte in Acetonitrile/water (1:1) Fumonisin B1 — Fumonisin B2	1 mL

	Code	Product		Unit
New	B-MYC0440-2	Fumonisin Mixture		2 mL
	B-MYC0440-5	Fumonisin Mixture		5 mL
	B-MYC0700-1	B-Trichothecene Mixture 100 µg/mL of each analyte in Acetonitrile		1 mL
		3-Acetyl-deoxynivalenol (3-AcDON) 15-Acetyl-deoxynivalenol (15-AcDON)	Deoxynivalenol (DON) Nivalenol	
New	B-MYC0700-2	B-Trichothecene Mixture		2 mL
	B-MYC0700-5	B-Trichothecene Mixture		5 mL
	B-MYC0750-1	A + B-Trichothecenes and Zearalenone Mixture 10 µg/mL of each analyte in Acetonitrile		1 mL
		3-Acetyl-deoxynivalenol (3-AcDON) Deoxynivalenol (DON) Nivalenol Fusarenon X	HT-2 Toxin T-2 Toxin Diacetoxyscirpenol Zearalenone	
New	B-MYC0750-2	A + B-Trichothecenes and Zearalenone Mixture		2 mL
	B-MYC0750-5	A + B-Trichothecenes and Zearalenone Mixture		5 mL

Code	Product	Unit

Mycotoxin matrix reference materials

ERM-BD282 — Whole milk powder - Aflatoxin M1 (zero level) — 30 g

Compound	Certified value µg/kg
Aflatoxin M1	< 0.002

ERM-BD283 — Whole milk powder - Aflatoxin M1 (low level) — 30 g

Compound	Certified value µg/kg	Uncertainty µg/kg
Aflatoxin M1	0.111	0.018

ERM-BD284 — Whole milk powder - Aflatoxin M1 (high level) — 30 g

Compound	Certified value µg/kg	Uncertainty µg/kg
Aflatoxin M1	0.44	0.06

BCR-262R — Defatted peanut meal (blank) - Aflatoxin B1 — 100 g

Certified value

Aflatoxin B1 ..... <3 µg/kg

BCR-263R — Defatted peanut meal - Aflatoxin B1, B2 and G1 — 100 g

Certified values

Aflatoxin B1 ..... 17.1 ± 2.4 µg/kg Aflatoxin B2 .....3.0 ± 0.4 µg/kg Aflatoxin B3..... 3.0 ± 0.5 µg/kg

BCR-396 — Wheat flour - Deoxynivalenol (DON) blank — 150 g

Certified value

Deoxynivalenol..... <0.05 mg/kg

BCR-471 — Wheat - Ochratoxin A (blank) — 55 g

Certified value

Ochratoxin A ..... < 0.6 µg/kg

New **B-MYC0856** — Wheat flour - Deoxynivalenol — 55 g

Certified values

Deoxynivalenol.....877 ± 23 µg/kg

BCR-377 — Maize flour - Deoxynivalenol (blank) — 150 g

Certified value

Deoxynivalenol..... <0.05 mg/kg

ERM-BC716 — Maize - very low level ZON — 60 g

Compound	Certified value
Zearalenone	<5 µg/kg

ERM-BC717 — Maize - low level ZON — 60 g

Compound	Certified value	Uncertainty
Zearalenone	83 µg/kg	9 µg/kg

New **B-MYC0851** — Maize flour - Aflatoxins — 55 g

Certified values

Aflatoxin B..... 1 7.4 ± 0.37 µg/kg
Aflatoxin B2..... 0.7 ± 0.07 µg/kg
Aflatoxin G1 ..... <LOD*
Aflatoxin G2 ..... <LOD*
Aflatoxins total (sum of B1,B2,G1and G2)..... 8.9 ± 0.26 µg/kg

*The LOD for Aflatoxin G1 of the used method for in-house characterization of the material is 0.1 µg/kg, for Aflatoxin G2 the LOD is 0.1 µg/kg

BCR-375 — Compound feed - Aflatoxin B1 (blank) — 50 g

Certified value

Aflatoxin B1 ..... <1 µg/kg

B-MYC0880 — Wheat flour check sample - Ochratoxin A — 100 g

Indicative value

Ochratoxin A .....2.7 ± 1.0 µg/kg

New **B-MYC0890** — Maize flour check sample - Aflatoxins — 100 g

Indicative values

Aflatoxin B1.....8.30 ± 2.34 µg/kg
Aflatoxin B2.....0.65 ± 0.43 µg/kg
Aflatoxin G1 .....<LOD*
Aflatoxin G2 .....<LOD*
Aflatoxins total (sum of B1,B2,G1 and G2).....8.96 ± 2.63 µg/kg

* The LOD for Aflatoxin G1 of the used method is 0.1 µg/kg, for Aflatoxin G2 the LOD is 0.1 µg/kg

	Code	Product	Unit
New	B-MYC0891	Maize flour check sample - Aflatoxins Indicative values Aflatoxin B1..... 15.47± 3.93 µg/kg Aflatoxin B2..... 0.85 ± 0.34 µg/kg Aflatoxin G1 ..... <LOD* Aflatoxin G2 ..... <LOD* Aflatoxins total (sum of B1,B2,G1 and G2)..... 16.32 ± 4.05 µg/kg * The LOD for Aflatoxin G1 of the used method is 0.1 µg/kg, for Aflatoxin G2 the LOD is 0.1 µg/kg	100 g
New	B-MYC0892	Maize flour check sample - Deoxynivalenol Indicative value Deoxynivalenol .....2010 ± 290 µg/kg	100 g
New	B-MYC0893	Maize flour check sample - Fumonisins Indicative values Fumonisin B1.....2630 ± 740 µg/kg Fumonisin B2.....690 ± 340 µg/kg Fumonisin B3..... 310 ± 210 µg/kg	100 g
New	B-MYC0894	Maize flour check sample - Fumonisins Indicative values Fumonisin B1.....270 ± 110 µg/kg Fumonisin B2.....<80 µg/kg Fumonisin B3..... <80 µg/kg	100 g
New	B-MYC0895	Maize flour check sample - Zearalenone Indicative value Zearalenone.....177.3 ± 64.8 µg/kg	100 g

Ergot alkaloids

Single compounds

	Code	Product	Unit
	B-MYC3100-5	Ergocornine - Dried down standard Concentration after reconstitution..... 100 µg/mL	0.5 mg (5 mL)
New	B-MYC3150-5	Ergocorninine - Dried down standard Concentration after reconstitution..... 25 µg/mL	125 mg
	B-MYC3200-5	Ergocristine - Dried down standard Concentration after reconstitution..... 100 µg/mL	0.5 mg (5 mL)
New	B-MYC3250-5	Ergocristinine - Dried down standard Concentration after reconstitution..... 25 µg/mL	0.125 mg
	B-MYC3300-5	Ergocryptine - Dried down standard Concentration after reconstitution..... 100 µg/mL	0.5 mg (5 mL)
New	B-MYC3350-5	Ergocryptinine - Dried down standard Concentration after reconstitution..... 25 µg/mL	0.125 mg
	B-MYC3400-5	Ergometrine - Dried down standard DRUG PRECURSOR Concentration after reconstitution..... 100 µg/mL	0.5 mg (5 mL)
New	B-MYC3450-5	Ergometrinine - Dried down standard DRUG PRECURSOR	0.125 mg
	B-MYC3500-5	Ergosine - Dried down standard Concentration after reconstitution..... 100 µg/mL	0.5 mg (5 mL)
New	B-MYC3550-5	Ergosinine - Dried down standard Concentration after reconstitution..... 25 µg/mL	0.125 mg
	B-MYC3600-5	Ergotamine - Dried down standard DRUG PRECURSOR Concentration after reconstitution..... 100 µg/mL	0.5 mg (5 mL)
New	B-MYC3650-5	Ergotaminine - Dried down standard DRUG PRECURSOR Concentration after reconstitution..... 25 µg/mL	0.125 mg

Code	Product	Unit

Multicomponent standard solutions

B-MYC3900-5	Ergotalkaloid Mix 6 - Dried down standard DRUG PRECURSOR 100 µg/mL of each analyte in an appropriate solvent after reconstitution Ergocornine, Ergocryptine, Ergosine Ergocristine, Ergometrine, Ergotamine	5 mL

Ergot alkaloid matrix reference materials

New	B-MYC0852	Rye - Ergot alkaloids Certified values Ergometrine .....595 ± 745 µg/kg Ergometrinine .....335 ± 758 µg/kg Ergosine.....537 ± 260 µg/kg Ergosinine.....331 ± 476 µg/kg alpha-Ergocryptine.....570 ± 52 µg/kg alpha-Ergocryptinine.....477 ± 526 µg/kg Ergotamine..... 1349 ± 1156 µg/kg Ergotaminine..... 464 ± 367 µg/kg Ergocornine..... 614 ± 156 µg/kg Ergocorninine..... 362 ± 391 µg/kg Ergocristine ..... 923 ± 195 µg/kg Ergocristinine ..... 462 ± 469 µg/kg	55 g

Shellfish toxins

Not all hazardous substances found in foodstuffs are anthropogenic, and the shellfish toxins are a case in point. These toxins, which are produced by algae, accumulate in various seafoods, and are generally classified as follows:

Paralytic shellfish poisoning (PSP) toxins are the most common and dangerous family of marine biotoxins found around the world. PSP toxins are produced by microscopic algae in seawater that periodically form dense blooms and then die off. The toxin, a mixture of tetrahydropurines, named Saxitoxins has been known for centuries and has causes respiratory paralysis.

Okadaic acid (OA) and the dinophysistoxins (DTX) are the principal toxin associated with diarrhetic shellfish poisoning (DSP). These are less dangerous than the PSP toxins.

Domoic acid is known to be the toxin responsible for incidents of amnesic shellfish poisoning (ASP), in humans and sea animals on the east and west coasts of North America. Monitoring programs have shown that the causative organisms, diatoms of the Pseudonitzshia species, are found worldwide and that shellfish contamination occurs in many countries.

Diarrhetic shellfish poisons (DSP) and other lipophilic toxins

	Code	Product	Unit
	NRCCRM-OA-C	Okadaic acid solution in methanol Each ampoule contains approximately 0.5 mL of solution with 17.7 ± 1.8 µmoles/L (at 20 °C)/14.3 ± 1.5 µg/mL(at 20 °C)/18.1 ± 1.8 µg/g of Okadaic acid in methanol.	0.5 mL
New	NRCCRM-DSP-MUS	Mussel tissue - Okadaic acid and Dinophysistoxin-1 A thermally sterilized mixed homogenate of mussel (Mytilus edilus) digestive gland tissue and a small amount of the dinoflagellate Prorocentrum lima. Certified values Okadaic acid (OA) ..... 10.1 µg/g Dinophysistoxin 1 (DTX1) ..... 1.3 µg/g	4 g
	NRCCRM-SPX1	13-Desmethyl Spirolide C solution Each ampoule contains approximately 0.5 mL of solution with 10.2 ± 0.5 µmoles/L at 20°C (8.9 µg/g) of 13-Desmethyl Spirolide C in methanol with 0.05% trifluoroacetic acid (TFA).	0.5 mL
	NRCCRM-GYM	Gymnodimine (GYM) Each ampoule contains approximately 0.5 mL of solution with 10.0 ± 0.5 µmoles/L at 20°C (6.4 ± 0.3 µg/g) of Gymnodimine (GYM) in methanol with 0.05% trifluoroacetic acid (TFA).	0.5 mL
	NRCCRM-PTX2	Pectenotoxin-2 (PTX2) solution Each ampoule contains approximately 0.5 mL of solution with 10.0 ± 0.4 µmoles/L at 20°C (10.9 ± 0.4 µg/g) of Pectenotoxin-2 (PTX2) in methanol.	0.5 mL
	NRCCRM-YTX	Yessotoxin (YTX) Each ampoule contains approximately 0.5 mL of solution with 4.5 µmol/L (5.3 µg/mL) YTX in methanol.	0.5 mL
	NRCCRM-AZA1	Azaspiracid-1 solution Each ampoule contains approximately 0.5 mL of solution with 1.47 ± 0.08 µmol/L AZA1 in methanol.	0.5 mL
New	NRCCRM-AZA2	Azaspiracid-2 solution Each ampoule contains approximately 0.5 mL of solution with 1.5 ± 0.06 µmol/L AZA2 in methanol.	0.5 mL
New	NRCCRM-AZA3	Azaspiracid-3 solution Each ampoule contains approximately 0.5 mL of solution with 1.25 ± 0.05 µmol/L AZA3 in methanol.	0.5 mL

Code	Product	Unit

Paralytic shellfish poisons (PSP)

	BCR-663	Saxitoxin in acetic acid This material is an acetic acid solution (0.2 mol/L), containing saxitoxin.2HCl. Compound — Certified value mg/kg — Uncertainty mg/kg Saxitoxin.2HCl ..... 9.8 ..... 1.2 This reference material is a “dual usage” material and requires special export/ import documents under the authority of IRMM.	Amp.
	NRCCRM-C12	N-Sulfocarbamoyl-gonyautoxin-2 and -3 solution Each ampoule contains approximately 0.5 mL of solution with 114 µmoles/L of N-sulfocarbamoyl-gonyautoxin-2 and 35 µmoles/L of N-sulfocarbamoyl-gonyautoxin-3 in aqueous acetic acid (ca. 17 µmoles, pH 5).	
	NRCCRM-STX-E	Saxitoxin dihydrochloride solution Each ampoule contains approximately 0.5 mL of solution with 65 ± 3 µmoles/L (at 20°C) of saxitoxin in filtered and aqueous 0.003 M hydrochloric acid.	0.5 mL
New	NIST-RM 8642	FDA Saxitoxin Dihydrochloride Solution This Reference Material (RM) is intended for use in calibrating the mouse bioassay used in AOAC International Official Method 959.08 Paralytical Shellfish Poison and for other similar uses. The RM is saxitoxin dihydrochloride (CAS No. 35554-08-6) in a solution containing a hydrochloric acid concentration of 5 mmol/L in 20 % ethanol in water (volume fraction). A unit of RM 8642 consists of ten amber, borosilicate glass ampoules, each containing approximately 1.2 mL of solution. The reference value for the mass fraction of saxitoxin hydrochloride in solution in RM 8642 (lot 089) is 103 µg/g with an expanded uncertainty of 4 µg/g.	10 x 1.2 mL
	NRCCRM-DCSTX	Decarbamoylsaxitoxin solution Each ampoule contains approximately 0.5 mL of solution with 65 ± 2 µmoles/L (at 20°C) of decarbamoylsaxitoxin in filtered and aqueous 0.003 M hydrochloric acid.	0.5 mL
New	NRCCRM-NEO-C	Neosaxitoxin solution Each ampoule contains approximately 0.5 mL of solution with 65.6 ± 3.4 µmoles/L (at 20°C) of neosaxitoxin in filtered and aqueous 0.003 M hydrochloric acid.	0.5 mL
New	NRCCRM-DCNEO-B	Decarbamoylneosaxitoxin solution Each ampoule contains approximately 0.5 mL of solution with 28.9±2.6 µmoles/L of decarbamoylneosaxitoxin in filtered and aqueous 0.003 M hydrochloric acid.	0.5 mL
New	NRCCRM-GTX14C	Gonyautoxins-1 (GTX1) and -4 (GTX4) solution Each ampoule contains approximately 0.5 mL of solution with 60.4 ± 3.1 µmoles/L (at 20°C) of GTX1 and 19.7 ± 1.6 µmoles/L (at 20°C) of GTX4 in filtered and aqueous 0.003 M hydrochloric acid plus 0.01 M acetic acid.	0.5 mL
New	NRCCRM-GTX23C	Gonyautoxins-2 (GTX2) and -3 (GTX3) solution Each ampoule contains approximately 0.5 mL of solution with 114.2 ± 5.7 µmoles/L (at 20°C) of GTX2 and 43.4 ± 2.2 µmoles/L (at 20°C) of GTX3 in filtered and aqueous 0.003 M hydrochloric acid plus 0.01 M acetic acid.	0.5 mL
	NRCCRM-DCGTX23B	Decarbamylgonyautoxins-2 and -3 solution Each ampoule contains approximately 0.5 mL of solution with 114 µmoles/L (at 20°C) of decarbamylgonyautoxins-2 and 32 µmoles/L (at 20°C) of decarbamylgonyautoxins-3 in filtered and aqueous 0.003 M hydrochloric acid plus 0.01 M acetic acid.	0.5 mL
	NRCCRM-GTX5B	Gonyautoxin-5 (GTX5) solution Each ampoule contains approximately 0.5 mL of solution with 65 ± 3 µmoles/L (at 20°C) of GTX5 in filtered and aqueous acetic acid.	0.5 mL

Amnesic shellfish poisons (ASP)

New	NRCCRM-DA-F	Domoic acid solution Solution of domoic acid dissolved in Acetonitrile/water (1:19) Solvent: Acetonitrile/Water (1:9, v/v) Certified values Domoic acid + ... 102.7 ± 2.1 µg/g ..... 101.8 ± 2.1 µg/mL (at 20°C) .....327 ± 6.8 µmoles/L (at 20°C) epi-Domoic acid Pure domoic acid in solution has been found to gradually isomerise, especially to the C5’-diastereomer, epidomoic acid; therefore, a mixture will inevitably result on long-term storage of any standard.	0.5 mL

Miscellaneous food related standards

Code	Product	Unit
CHE 100	Acetone	2 mL
CIL-ULM-6721-1.2	Acrylamide (unlabelled) (+100 ppm Hydroquinone 100 µg/mL in Methanol	1.2 mL
CIL-CLM-813-1.2	Acrylamide (1,2,3-$^{13}C_3$,99%) (+100 ppm Hydroquinone) 1000 µg/mL in Methanol	1.2 mL
IPO F 004	Benzyl alcohol	250 mg
CHE 123	Ethyl acetate	2 mL
CHE 111	n-Hexane	2 mL
IPO F 165	Nicotinic acid	250 mg
CIL-CDLM-7279-S	N-Nitrosodimethylamine ($^{13}C_2$,99%;D_6,98%) 1 mg/mL in Methylene chloride-D_2	1 mL

Tobacco related standards

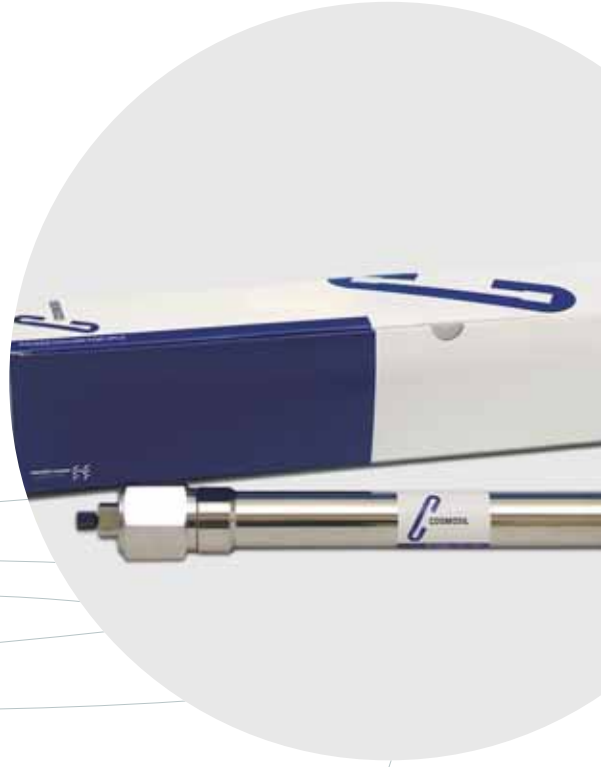
Code	Product	Unit
ERM-AC802	Nicotine	0.6 mL
IPO 505	Nicotine	500 mg
DE-SAL-0100	Nicotine salicylate (in accordance to ISO/DIS 13276)	1 g
DE-SAL-0200	Nicotinehydrogen-L-tartrate (in accordance to ISO/DIS 13276)	1 g
DE-SAL-4100	1,3 Propanediol 99 % (GC)	1 g
DE-SAL-4200	1,2-Propanediol 99.5 % (GC)	1 g
DE-SAL-4300	1,2,3-Propanetriol (Glycerol) 99 % (HPLC)	1 g
IPO F 010	Benzoic acid E 210 Certified purity.....99.9%	250 mg
CIL-DLM-122-1	Benzoic acid (ring-D_5,98%)	1 g
CIL-DLM-122-5	Benzoic acid (ring-D_5,99%)	5 g
IPO F 170	Sorbic acid E 200 Certified purity.....99.9%	250 mg
CIL-ULM-7309-1.2	4-Methylumbelliferone (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
CIL-CLM-6023-1.2	4-Methylumbelliferone (2,3,4-methyl-$^{13}C_4$,99%) 100 µg/mL in Acetonitrile	1.2 mL
CIL-ULM-7168-1.2	NAB (Nitrosoanabasine) (unlabelled) 0.5 mg/mL in Acetonitrile	1.2 mL
CIL-ULM-7207-1.2	NAT (Nitrosoanatabine) (unlabelled) 2000 µg/mL in Acetonitrile	1.2 mL
CIL-CLM-4555-1.2	NNK (Nicotine-derived nitrosamine ketone) (1,2',3',4',5',6'-$^{13}C_6$,99%) 100 µg/mL in Nonane/Ethanol (9:1)	1.2 mL
CIL-CLM-4557-1.2	NNN (N-Nitrosonornicotine) (2,2',3,4,5,6-$^{13}C_6$,99%) 100 µg/mL in Nonane/Ethanol (9:1)	1.2 mL

Contaminant standards

LGC Standards

Excellence through measurement

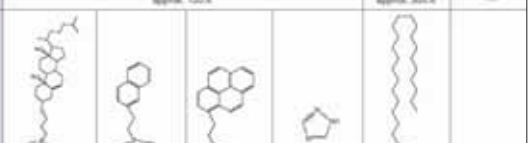
HPLC COSMOSIL columns from Nacalai Tesque



LGC Standards, in partnership with Nacalai Tesque, offers a range of high performance liquid chromatography (HPLC) Cosmosil columns. Cosmosil HPLC columns are based on high purity spherical silica gels giving excellent separation and reproducibility. Each Cosmosil HLPC column is tested prior to sale and supplied with an inspection report.

Nacalai Tesque is an ISO 9001:2000 certified and registered manufacturer of products for research fields including Molecular Biology, Proteomics and Liquid Chromatography. Nacalai Tesque's Quality Control Systems assure that every product conforms to strict regulations and customer requirements.

COSMOSIL specialities

	Cholester	πNAP	PYE	HILIC	Protein-R	Sugar-D
Packing Material	High Purity Porous Spherical Silica					
Average Particle Size	5 μm					
Average Pore Size	approx. 120 Å				approx. 300 Å	—
Stationary Phase						
Main Interaction	Hydrophobic Interaction Molecular Shape Selectivity	Hydrophobic Interaction π-π Interaction	Hydrophobic Interaction π-π Interaction Shape selectivity Charge-transfer Interaction	Hydrophilic Interaction	Hydrophobic Interaction	—
Carbon Content	approx. 20%	approx. 11%	approx. 18%	—	—	—
Features	Specially for steroid isomers Usable under the same condition as C18	Stronger π-π interaction from phenyl moiety	The most powerful π-π interaction	Suitable for highly polar compounds No post reagent is not required	High recovery rate Acid resistant	High durability Low absorption Suitable for quantitative analysis

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COSMOSIL Cholester

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COSMOSIL Protein-R

COSMOSIL Sugar-D

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LGC Standards

Excellence through measurement

Pesticides

	Code	Product	Unit
	Single compounds		
	FL-31732-100MG	Abamectin PESTANAL®	100 mg
New	U-PST-1870M100A01	Abamectin 100 µg/mL in Methanol	1 mL
	IPO 001	Acephate	250 mg
	FL-45315-250MG	Acephate PESTANAL®	250 mg
New	U-PST-1210	Acephate	100 mg
New	U-PST-1210M100A01	Acephate 100 µg/mL in Methanol	1 mL
	CIL-DLM-6000-1.2	Acephate (D_6,98%) 100 µg/mL in Acetonitrile-D_3	1.2 mL
	IPO 008	Acetamiprid	100 mg
	FL-33674-100MG	Acetamiprid PESTANAL®	100 mg
	FL-33379-100MG	Acetochlor PESTANAL®	100 mg
New	U-PST-1880M100A01	Acetochlor 100 µg/mL in Methanol	1 mL
	FL-34145-10MG	Acetochlor ESA sodium salt PESTANAL®	10 mg
	FL-34144-10MG	Acetochlor OA PESTANAL®	10 mg
	FL-36681-1G	Acetonchloroform PESTANAL®	1 g
New	FL-32820-100MG	Acibenzolar-S-methyl PESTANAL®	100 mg
New	U-PST-1755	Acifluorfen	100 mg
New	U-PST-1755M100A01	Acifluorfen 100 µg/mL in Methanol	1 mL
New	U-PST-1755B100A01	Acifluorfen 100 µg/mL in Methyl tert-butyl ether (MTBE)	1 mL
	FL-34311-50MG	Acifluorfen PESTANAL®	50 mg
	FL-36792-250MG	Aclonifen PESTANAL®	250 mg
	IPO 010	Acrinathrin	100 mg
	FL-46415-100MG	Acrinathrin PESTANAL®	100 mg
New	U-PST-2060	Acrinathrin	10 mg
New	U-PST-2060C100A01	Acrinathrin 100 µg/mL in Cyclohexane	1 mL
	IPO 003	Alachlor	250 mg
	CERERA-053	Alachlor	250 mg
	FL-45316-250MG	Alachlor PESTANAL®	250 mg
New	U-PST-625	Alachlor	100 mg
New	U-PST-625M100A01	Alachlor 100 µg/mL in Methanol	1 mL
	U-EPA-1068	Alachlor 5000 µg/mL in Methanol	1 mL
	CIL-CLM-3727-1.2	Alachlor (ring-$^{13}C_6$,98%) 100 µg/mL in Nonane (Chemical purity 96%)	1.2 mL
	CIL-CLM-3687-1.2	Alachlor acetylcysteine adduct (ring-$^{13}C_6$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	FL-34147-10MG	Alachlor ESA sodium salt PESTANAL®	10 mg
	FL-34146-10MG	Alachlor OA PESTANAL®	10 mg
New	FL-32872-100MG	Alanycarb PESTANAL®	100 mg
		Alar see Daminozide	
	IPO 002	Aldicarb	250 mg
	CERERA-054	Aldicarb	250 mg
	FL-33386-100MG	Aldicarb PESTANAL®	100 mg
New	U-PST-940	Aldicarb	100 mg
New	U-PST-940A100A01	Aldicarb 100 µg/mL in Acetonitrile	1 mL

	Code	Product	Unit
	FL-33387-100MG	Aldicarb-sulfone PESTANAL®	100 mg
New	U-PST-1215	Aldicarb-sulfone	10 mg
New	U-PST-1215A100A01	Aldicarb-sulfone 100 µg/mL in Acetonitrile	1 mL
New	U-PST-1215M100A01	Aldicarb-sulfone 100 µg/mL in Methanol	1 mL
	FL-31258-100MG	Aldicarb-sulfoxide PESTANAL®	100 mg
New	U-PST-1760A100A01	Aldicarb-sulfoxide 100 µg/mL in Acetonitrile	1 mL
New	U-PST-1760M100A01	Aldicarb-sulfoxide 100 µg/mL in Methanol	1 mL
		Aldoxycarb see Aldicarb-sulfone	
	IPO 004	Aldrin	250 mg
	CERERA-006	Aldrin	100 mg
New	U-PST-010	Aldrin	10 mg
New	U-PST-010I100A01	Aldrin 100 µg/mL in Isooctane	1 mL
	FL-36666-25MG	Aldrin (HHDN)	25 mg
	U-EPA-1067	Aldrin 5000 µg/mL in Methanol	1 mL
	CIL-CLM-4725-1.2	Aldrin ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	FL-33396-100MG	Allethrin mixture of stereo isomers PESTANAL®	100 mg
New	U-PST-020	Allethrin	100 mg
	FL-45318-100MG	Allidochlor PESTANAL®	100 mg
New	U-PST-867	Allidochlor	100 mg
	FL-45319-250MG	Alloxydim-sodium PESTANAL®	250 mg
	U-EPA-1191	Allyl alcohol 5000 µg/mL in Methanol	1 mL
	FL-36682-1G	Allyl iso-thiocyanate stabilised PESTANAL®	1 g
	FL-45321-250MG	Ametryn PESTANAL®	250 mg
New	U-PST-024	Ametryn	100 mg
New	U-PST-024M100A01	Ametryn 100 µg/mL in Methanol	1 mL
	FL-33588-100MG	Amidosulfuron PESTANAL®	100 mg
	FL-31189-250MG	2-Aminobenzimidazole PESTANAL®	250 mg
	FL-45322-250MG	Aminocarb PESTANAL®	250 mg
New	U-PST-660	Aminocarb (Metacil)	100 mg
	FL-32999-25MG	Aminoethoxyvinyl glycine hydrochloride PESTANAL®	25 mg
	FL-36683-1G	2-Aminophenol PESTANAL®	1 g
	FL-36684-1G	3-Aminophenol PESTANAL®	1 g
	FL-35837-1G	4-Aminophenol PESTANAL®	1 g
	FL-36685-1G	2-Aminopyridine PESTANAL®	1 g
	FL-36687-1G	4-Aminopyridine PESTANAL®	1 g
	IPO 020	Amitraz	250 mg
	FL-45323-250MG	Amitraz PESTANAL®	250 mg
New	U-PST-1895A100A01	Amitraz 100 µg/mL in Acetonitrile	1 mL
	FL-45324-250MG	Amitrole PESTANAL®	250 mg
New	U-PST-030	Amitrole	100 mg
	IPO 006	Anilazine	250 mg
	FL-31464-250MG	Anilazine PESTANAL®	250 mg
	FL-45326-250MG	Aniline PESTANAL®	250 mg
	U-EPA-1069	Aniline 5000 µg/mL in Methanol	1 mL
	FL-37876-100MG	Anilofos PESTANAL®	100 mg
	IPO 007	Anthraquinone	250 mg
	FL-31466-250MG	Anthraquinone PESTANAL®	250 mg

	Code	Product	Unit
	FL-45328-250MG	Antu PESTANAL®	250 mg
	U-PP-400-1	Aramite 100 µg/mL in Methanol	1 mL
	U-PP-400	Aramite 100 µg/mL in Methanol	4 x 1 mL
	CERERA-015S	Aramite 2000 µg/mL in Hexane	1.2 mL
	FL-45329-250MG	Asulam PESTANAL®	250 mg
	FL-31206-250MG	Atraton PESTANAL®	250 mg
New	U-PST-1220	Atraton	25 mg
	IPO 005	Atrazine	250 mg
	CERERA-055	Atrazine	250 mg
	FL-45330-250MG	Atrazine PESTANAL®	250 mg
New	U-PST-005	Atrazine	100 mg
	U-EPA-1176A	Atrazine 1000 µg/mL in Acetone	1 mL
	CIL-DLM-1149-5	Atrazine (ethylamine-D_5,98%)	5 mg
	CIL-CLM-3737-1.2	Atrazine (ring-$^{13}C_3$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-1149-1.2	Atrazine (ethylamine-D_5,98%) 100 µg/mL in Nonane	1.2 mL
	IPO UCI 006	Atrazine-desethyl	250 mg
	FL-36629-250MG	Atrazine-desethyl PESTANAL®	250 mg
New	U-EPA-1178A	Atrazine-desethyl 1000 µg/mL in Acetone	1 mL
New	CIL-CLM-8313-1.2	Atrazine-desethyl (ring-$^{13}C_3$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	IPO UCI 007	Atrazine-desethyl-desisopropyl	250 mg
	FL-36667-250MG	Atrazine-desethyl-desisopropyl PESTANAL®	250 mg
	CIL-CLM-7528-1.2	Atrazine-desethyl-desisopropyl (ring-$^{13}C_3$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	FL-45613-250MG	Atrazine-desethyl-desisopropyl-2-hydroxy PESTANAL®	250 mg
	FL-45490-100MG	Atrazine-desethyl-2-hydroxy PESTANAL®	100 mg
New	CIL-CLM-8315-1.2	Atrazine-desethylhydroxy (ring-$^{13}C_3$,99%) 100 µg/mL in 80% H_2O/Diethylamine	1.2 mL
	IPO UCI 008	Atrazine-desisopropyl	250 mg
	FL-36628-250MG	Atrazine-desisopropyl PESTANAL®	250 mg
New	CIL-CLM-8312-1.2	Atrazine-desisopropyl (ring-$^{13}C_3$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	FL-31523-100MG	Atrazine-desisopropyl-2-hydroxy PESTANAL®	100 mg
New	CIL-CLM-8314-1.2	Atrazine-desisopropylhydroxy (ring-$^{13}C_3$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	IPO UCI 009	Atrazine-2-hydroxy	250 mg
	FL-36631-250MG	Atrazine-2-hydroxy PESTANAL®	250 mg
New	CIL-CLM-8310-1.2	Atrazine-hydroxy (ring-$^{13}C_3$,99%) 100 µg/mL in 80% H_2O/Diethylamine	1.2 mL
	CIL-CLM-3894-1.2	Atrazine mercapturate (ring-$^{13}C_3$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-7346-1.2	Atrazine mercapturate (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-CLM-8311-1.2	Atrazinethiol (ring-$^{13}C_3$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	FL-45331-250MG	Azamethiphos PESTANAL®	250 mg
	FL-45332-250MG	Azinphos-ethyl PESTANAL®	250 mg
New	U-PST-1225M100A01	Azinphos-ethyl 100 µg/mL in Methanol	1 mL
New	U-PST-560M100A01	Azinphos-methyl (Guthion) 100 µg/mL in Methanol	1 mL
New	U-PST-560	Azinphos Methyl (Guthion)	100 mg
	FL-45333-250MG	Azinphos-methyl PESTANAL®	250 mg
	IPO 040	Aziprotryne	250 mg
	FL-45334-250MG	Aziprotryne PESTANAL®	250 mg
	FL-36689-1G	Azobenzene PESTANAL®	1 g
	FL-45335-250MG	Azocyclotin PESTANAL®	250 mg
		Azolamid see Isocarbamid	
	IPO 041	Azoxystrobin	100 mg
	FL-31697-100MG	Azoxystrobin PESTANAL®	100 mg

	Code	Product	Unit
New	U-PST-1905A100A01	Azoxystrobin 100 µg/mL in Acetonitrile	1 mL
New	U-PST-1905M100A01	Azoxystrobin 100 µg/mL in Methanol	1 mL
New	U-PST-1910M100A01	Baythroid 100 µg/mL in Methanol	1 mL
New	U-PST-1230	Barban	100 mg
		Baysan see Climbazol Baytan see Triadimenol	
	IPO 047	Benalaxyl	250 mg
	FL-31222-250MG	Benalaxyl PESTANAL®	250 mg
New	U-PST-2075M100A01	Benalaxyl 100 µg/mL in Methanol	1 mL
New	FL-32900-10MG	Benalaxyl-M PESTANAL®	10 mg
	IPO 048	Benazolin	250 mg
	FL-31038-100MG	Benazolin PESTANAL®	100 mg
	FL-31227-250MG	Benazolin-ethyl ester	250 mg
	FL-45336-250MG	Bendiocarb PESTANAL®	250 mg
New	U-PST-1235A100A01	Bendiocarb 100 µg/mL in Acetonitrile	1 mL
New	U-PST-1235	Bendiocarb	100 mg
	U-EPA-1171	Bendiocarb 1000 µg/mL in Methanol	1 mL
New	CIL-CLM-7140	Bendiocarb ($^{13}C_3$,99%)	on request
New	U-PST-1240	Benefin	100 mg
	FL-45337-250MG	Benfluralin PESTANAL®	250 mg
New	FL-32866-100MG	Beflubutamid PESTANAL®	100 mg
New	U-PST-2775A100A01	Benfuracarb 100 µg/mL in Acetonitrile	1 mL
	FL-31637-100MG	Benfuresate PESTANAL®	100 mg
	FL-45338-250MG	Benodanil PESTANAL®	250 mg
New	U-PST-2780M100A01	Benodanil 100 µg/mL in Methanol	1 mL
	IPO UCI 050	Benomyl	250 mg
	FL-45339-250MG	Benomyl PESTANAL®	250 mg
New	U-PST-1245	Benomyl	25 mg
New	U-PST-1245A100A01	Benomyl 100 µg/mL in Acetonitrile	1 mL
New	U-PST-1245M100A01	Benomyl 100 µg/mL in Methanol	1 mL
	FL-46001-250MG	Benoxacor PESTANAL®	250 mg
	FL-37897-100MG	Bensulfuron-methyl PESTANAL®	100 mg
	FL-31469-250MG	Bensulide PESTANAL®	250 mg
New	U-PST-1250	Bensulide	25 mg
	U-EPA-1169	Bensulide 1000 µg/mL in Methanol	1 mL
	CIL-DLM-7152	Bensulide (isoproxy-D_{14},98%)	on request
	FL-33863-100MG	Bensultap PESTANAL®	100 mg
	IPO 050	Bentazone	250 mg
New	U-PST-1255	Bentazone	100 mg
New	U-PST-1255A100A01	Bentazone 100 µg/mL in Acetone	1 mL
New	U-PST-1255M100A01	Bentazon 100 µg/mL in Methanol	1 mL
	U-EPA-1174	Bentazone 1000 µg/mL in Methanol	1 mL
New	FL-32965-10MG	Bentazone-D7 PESTANAL®	10 mg

	Code	Product	Unit
	SL35100	Bentazone (isopropyl-D_7,98%)	1.5 mL
	IPO 051	Bentazone-methyl	100 mg
New	FL-33006-10MG	Benthiavalicarb isopropyl PESTANAL®	10 mg
	FL-37872-25MG	Bentranil PESTANAL®	25 mg
	FL-33397-100MG	Benzoximate PESTANAL®	100 mg
	FL-31476-100MG	Benzoylprop-ethyl PESTANAL®	100 mg
New	U-PST-1260	Benzoylprop Ethyl	10 mg
	IPO 052	Benzthiazuron	100 mg
	FL-36563-100MG	Benzthiazuron PESTANAL®	100 mg
		BHC see HCH	
New	FL-32504-50MG	Bifenazate PESTANAL®	50 mg
	IPO 053	Bifenthrin	100 mg
	FL-34314-100MG	Bifenthrin PESTANAL®	100 mg
New	U-PST-1915M100A01	Bifenthrin 100 µg/mL in Methanol	1 mL
	FL-31484-250MG	Binapacryl PESTANAL®	250 mg
	FL-31489-250MG	Bioallethrin PESTANAL®	250 mg
		S-Bioallethrin see Esbiol	
	FL-31496-250MG	Bioresmethrin PESTANAL®	250 mg
		BIPC see Chlorbufam	
	IPO 054	Biphenyl (PCB 0) E 230 Certified purity..... 99.6%	250 mg
	FL-35800-1G	Biphenyl PESTANAL®	1 g
	FL-36759-1G	2,2'-Bipyridine PESTANAL®	1 g
	FL-36690-1G	4,4'-Bipyridine anhydrous PESTANAL®	1 g
	FL-36735-1G	Bis-(2-ethylhexyl) phthalate PESTANAL®	1 g
	FL-34238-100MG	Bismerthiazol PESTANAL®	100 mg
New	FL-32967-100MG	Bispyribac sodium PESTANAL®	100 mg
	IPO 056	Bitertanol	250 mg
	FL-45349-250MG	Bitertanol mixture of diastereo isomers PESTANAL®	250 mg
New	U-PST-2070A100A01	Bitertanol (Baycor) 100 µg/mL in Acetonitrile	1 mL
	FL-33875-100MG	Boscalid (Nicobifen) PESTANAL®	100 mg
		Brestan see Fentin-acetate	
	FL-46036-100MG	Brodifacoum PESTANAL®	100 mg
	IPO 059	Bromacil	250 mg
	FL-45350-250MG	Bromacil PESTANAL®	250 mg
New	U-PST-1265	Bromacil	100 mg
New	U-PST-1265M100A01	Bromacil 100 µg/mL in Methanol	1 mL
	FL-46035-100MG	Bromadiolone PESTANAL®	100 mg
New	U-PST-1270	Bromadiolone	10 mg
	IPO 060	Bromfenvinphos	100 mg
	FL-45816-100MG	Bromfenvinphos-ethyl mixture of cis and trans isomers PESTANAL®	100 mg
New	IPO 049	Bromfenvinphos (methyl)	100 mg
	FL-45815-100MG	Bromfenvinphos-methyl PESTANAL®	100 mg
	FL-36523-250MG	4-Bromo-3-chloroaniline PESTANAL®	250 mg
	FL-33398-100MG	Bromocyclen PESTANAL®	100 mg
	FL-45352-250MG	Bromofenoxim PESTANAL®	250 mg
	IPO 061	Bromophos-ethyl	250 mg
	FL-33399-100MG	Bromophos-ethyl PESTANAL®	100 mg

	Code	Product	Unit
New	U-PST-2085M100A01	Bromophos-ethyl 100 µg/mL in Methanol	1 mL
	IPO 062	Bromophos-methyl	250 mg
	FL-33400-100MG	Bromophos-methyl PESTANAL®	100 mg
New	U-PST-2815M100A01	Bromophos-methyl 100 µg/mL in Methanol	1 mL
	FL-45358-250MG	Bromopyrazone PESTANAL®	250 mg
	FL-45355-250MG	Bromoxynil PESTANAL®	250 mg
New	U-PST-1050	Bromoxynil	100 mg
New	U-PST-1050M100A01	Bromoxynil 100 µg/mL in Methanol	1 mL
	CIL-CLM-3741-1.2	Bromoxynil (ring-$^{13}C_6$,99%) 50 µg/mL in Nonane	2 x 1.2 mL
	FL-45356-250MG	Bromoxynil-octanoate PESTANAL®	250 mg
	IPO 063	Brompropylate	250 mg
	FL-45357-250MG	Bromopropylate PESTANAL®	250 mg
New	U-PST-2090A100A01	Bromopropylate 100 µg/mL in Acetonitrile	1 mL
	FL-31644-100MG	Bromuconazole PESTANAL®	100 mg
	FL-32053-250MG	Bronopol PESTANAL®	250 mg
	FL-37892-100MG	Buminafos PESTANAL®	100 mg
	IPO 070	Bupirimate	250 mg
	FL-31510-250MG	Bupirimate PESTANAL®	250 mg
New	U-PST-2100A100A01	Bupirimate 100 µg/mL in Acetonitrile	1 mL
	FL-37886-100MG	Buprofezin PESTANAL®	100 mg
New	U-PST-2105A100A01	Buprofezin (Buprofexin) 100 µg/mL in Acetonitrile	1 mL
	FL-37887-100MG	Butachlor PESTANAL®	100 mg
New	U-PST-1275	Butachlor	100 mg
	U-PST-1275K100A01	Butachlor 100 µg/mL in Acetone	1 mL
New	U-PST-1275M100A01	Butachlor 100 µg/mL in Methanol	1 mL
	FL-33659-100MG	Butafenacil PESTANAL®	100 mg
	FL-36121-100MG	Butocarboxim PESTANAL®	100 mg
	FL-45719-100MG	Butocarboxim-sulfoxide PESTANAL®	100 mg
	FL-36122-100MG	Butoxycarboxim PESTANAL®	100 mg
New	U-PST-2825M100A01	Butocarboxim 100 µg/mL in Methanol	1 mL
	FL-36528-250MG	Butralin PESTANAL®	250 mg
	FL-36510-100MG	Buturon PESTANAL®	100 mg
New	U-PST-2835M100A01	Buturon 100 µg/mL in Methanol	1 mL
	FL-45363-250MG	Butylate PESTANAL®	250 mg
New	U-PST-1280	Butylate	100 mg
New	U-PST-1280K100A01	Butylate 100 µg/mL in Acetone	1 mL
	FL-31533-250MG	Cacodylic acid sodium salt PESTANAL®	250 mg
New	FL-32505-50MG	Cadusafos PESTANAL®	50 mg
	IPO UCI 100	Captafol	250 mg
	FL-45365-250MG	Captafol PESTANAL®	250 mg
New	U-PST-410	Captafol	100 mg
	IPO 088	Captan	250 mg
	FL-32054-250MG	Captan PESTANAL®	250 mg

	Code	Product	Unit
New	U-PST-090	Captan	100 mg
New	U-PST-090M100A01	Captan 100 µg/mL in Methanol	1 mL
	IPO 093	Carbaryl	250 mg
	FL-32055-250MG	Carbaryl PESTANAL®	250 mg
New	U-PST-100	Carbaryl	100 mg
New	U-PST-100A100A01	Carbaryl 100 µg/mL in Acetonitrile	1 mL
New	U-PST-100M100A01	Carbaryl 100 µg/mL in Methanol	1 mL
	CIL-CLM-4682-1.2	Carbaryl (ring-$^{13}C_6$, 99%) 100 µg/mL in Nonane	1.2 mL
	IPO 095	Carbendazim	250 mg
	FL-45368-250MG	Carbendazim (BCM) PESTANAL®	250 mg
New	U-PST-1285	Carbendazim	25 mg
New	U-PST-1285A100A01	Carbendazim 100 µg/mL in Acetonitrile	1 mL
New	U-PST-1285M100A01	Carbendazim 100 µg/mL in Methanol	1 mL
	FL-45369-250MG	Carbetamide PESTANAL®	250 mg
	IPO 097	Carbofuran	250 mg
	FL-32056-250MG	Carbofuran PESTANAL®	250 mg
New	U-PST-1295	Carbofuran	100 mg
New	U-PST-1295A100A01	Carbofuran 100 µg/mL in Acetonitrile	1 mL
New	U-PST-1295M100A01	Carbofuran 100 µg/mL in Methanol	1 mL
	CIL-CLM-1911-1.2	Carbofuran (ring-$^{13}C_6$,99%) 100 µg/mL in p-Dioxane	1.2 mL
	FL-37896-10MG	Carbofuran, 3-hydroxy PESTANAL®	10 mg
	U-PP-510-1	Carbofuran, 3-hydroxy 100 µg/mL in Methanol	1 mL
	U-PP-510	Carbofuran, 3-hydroxy 100 µg/mL in Methanol	4 x 1 mL
	FL-34079-10MG	Carfentrazon ethyl PESTANAL®	10 mg
	FL-37895-10MG	Carbofuran-3-keto PESTANAL®	10 mg
New	CIL-CLM-1859-1.2	Carbofuran phenol (ring-$^{13}C_6$,99%) 200 µg/mL in Methanol	2 x 1.2 mL
	FL-31461-250MG	Carbophenothion PESTANAL®	250 mg
New	U-PST-990	Carbophenothion	100 mg
New	U-PST-990M100A01	Carbophenothion 100 µg/mL in Methanol	1 mL
	NMIAP1727	Carbophenothion sulfone	25 mg
	NMIAP1726	Carbophenothion sulfoxide	25 mg
	FL-32005-250MG	Carbosulfan PESTANAL®	250 mg
New	U-PST-2655M100A01	Carbosulfan 100 µg/mL in Methanol	1 mL
	IPO 100	Carboxin	250 mg
	FL-45371-250MG	Carboxin PESTANAL®	250 mg
New	U-PST-1305	Carboxin	100 mg
New	U-PST-1305M100A01	Carboxin 100 µg/mL in Methanol	1 mL
	FL-31682-100MG	Carpropamid (mixture of isomers) PESTANAL®	100 mg
	FL-45995-100MG	Cartap hydrochloride PESTANAL®	100 mg
		CCC see Chlormequat CDEC see Sulfallate	
	FL-45372-250MG	Chinomethionate PESTANAL®	250 mg
New	U-PST-2845I100A01	Chinomethionate 100 µg/mL in Isooctane	1 mL
		Chinonamid see Quinonamid	
	FL-45373-250MG	alpha-Chloralose PESTANAL®	250 mg
	FL-33392-100MG	Chloramben PESTANAL®	100 mg
New	U-PST-025	Chloramben	100 mg

	Code	Product	Unit
	FL-45374-250MG	p-Chloranil PESTANAL®	250 mg
New	FL-32510-25MG	Chlorantraniliprole PESTANAL®	25 mg
	FL-36123-100MG	Chlorbenside PESTANAL®	100 mg
New	U-PST-2850M100A01	Chlorbenside 100 µg/mL in Methanol	1 mL
	FL-46032-100MG	Chlorbenside-sulfoxide PESTANAL®	100 mg
	FL-45320-250MG	Chlorbicyclen PESTANAL®	250 mg
	IPO 101	Chlorbromuron	250 mg
	FL-45377-250MG	Chlorbromuron PESTANAL®	250 mg
New	U-PST-2110A100A01	Chlorbromuron 100 µg/mL in Acetonitrile	1 mL
	FL-45301-250MG	Chlorbufam PESTANAL®	250 mg
New	U-PST-2115M100A01	Chlorbufam 100 µg/mL in Methanol	1 mL
	CERERC-005	Chlordane technical	100 mg
	FL-45378-250MG	Chlordane technical mixture PESTANAL®	250 mg
New	U-PST-110	Chlordane	100 mg
	U-PP-151-1	Chlordane 100 µg/mL in Hexane	1 mL
	U-PP-150-1	Chlordane 100 µg/mL in Methanol	1 mL
New	U-PST-111I100A01	alpha-Chlordane 100 µg/mL in Isooctane	1 mL
	NIST-3068	Total Chlordane in Methanol Certified value Total Chlordane .....22.35 ± 0.67 mg/kg	5 x 1.2 mL
	U-EPA-1086	Chlordane (tech) 5000 µg/mL in Methanol	1 mL
	IPO 104	cis-Chlordane (alpha isomer)	20 mg
New	U-PST-111	cis-Chlordane (alpha-isomer)	10 mg
	CIL-CLM-8087-1.2	cis-Chlordane ($^{13}C_{10}$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CERERC-003	cis-Chlordane	25 mg
	NMIAP1624	cis-Chlordane	25 mg
New	U-PP-470-1	cis-Chlordane 100 µg/mL in Methanol	1 mL
New	U-PST-112	trans-Chlordane (gamma-isomer)	10 mg
	CERERC-004	trans-Chlordane	25 mg
	NMIAP1625	trans-Chlordane	25 mg
New	U-PP-480-1	trans-Chlordane (gamma isomer) 100 µg/mL in Methanol	1 mL
New	U-PST-112I100A01	trans-Chlordane (gamma-isomer) 100 µg/mL in Isooctane	1 mL
	CIL-CLM-4792-1.2	trans-Chlordane (gamma) ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
New	NMIAP1622	oxy-Chlordane	1 mg
	CERSCO-004	oxy-Chlordane	25 mg
New	U-PP-540-1	oxy-Chlordane 100 µg/mL in Methanol	1 mL
New	U-PP-541-1	oxy-Chlordane 100 µg/mL in Hexane	1 mL
	CIL-CLM-4729-1.2	Oxychlordane ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
	FL-45379-250MG	Chlordecone PESTANAL®	250 mg
	CERERK-001	Chlordecone (Kepone®)	100 mg
New	U-PST-620	Chlordecone (Kepone®)	10 mg
	U-PP-440A-1	Chlordecone (Kepone®) 100 µg/mL in Toluene	1 mL
	U-PP-440A	Chlordecone (Kepone®) 100 µg/mL in Toluene	4 x 1 mL
	CIL-CLM-4814-1.2	Chlordecone (Kepone®) ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
	FL-31517-250MG	Chlordene (mixture of cis and trans isomers) PESTANAL®	250 mg
New	U-PST-1310	Chlordene	25 mg
New	U-PST-1310M100A01	Chlordene 100 µg/mL in Methanol	1 mL
New	U-PST-1310I100A01	Chlordene 100 µg/mL in Isooctane	1 mL

	Code	Product	Unit
	CIL-CLM-4758-1.2	Chlordene ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
	FL-31099-250MG	Chlordimeform PESTANAL®	250 mg
	FL-35914-250MG	Chlordimeform hydrochloride PESTANAL®	250 mg
	FL-34318-100MG	Chlorfenac PESTANAL®	100 mg
	FL-37913-100MG	Chlorfenapyr PESTANAL®	100 mg
New	U-PST-2120M100A01	Chlorfenapyr 100 µg/mL in Methanol	1 mL
	FL-34319-50MG	Chlorfenethol PESTANAL®	50 mg
	FL-45381-250MG	Chlorfenprop-methyl PESTANAL®	250 mg
	FL-36124-100MG	Chlorfenson PESTANAL®	100 mg
	IPO 107	Chlorfenvinphos	250 mg
	FL-36551-250MG	Chlorfenvinphos mixture of cis and trans isomers PESTANAL®	250 mg
New	U-PST-1325	Chlorfenvinphos	25 mg
New	U-PST-1325M100A01	Chlorfenvinphos 100 µg/mL in Methanol	1 mL
	FL-36530-250MG	Chlorfluazuron PESTANAL®	250 mg
	NMIAP1489	Chlorfluazuron	100 mg
	FL-45721-100MG	Chlorflurenol PESTANAL®	100 mg
	FL-45302-250MG	Chlorflurenol-methyl PESTANAL®	250 mg
	IPO 113	Chloridazon	250 mg
	FL-45385-250MG	Chloridazon PESTANAL®	250 mg
New	U-PST-2125A100A01	Chloridazon 100 µg/mL in Acetonitrile	1 mL
	IPO 111	iso-Chloridazon	100 mg
New	FL-32874-100MG	Chlorimuron ethyl PESTANAL®	100 mg
	FL-45386-250MG	Chlormephos PESTANAL®	250 mg
	IPO UCI 112	Chlormequat chloride (CCC)	250 mg
	FL-45387-250MG	Chlormequat chloride (CCC) PESTANAL®	250 mg
New	U-PST-2870M100A01	Chlormequat chloride 100 µg/mL in Methanol	1 mL
	FL-36544-1G	Chloroacetic acid PESTANAL®	1 g
	U-EPA-1204	Chloroacetic acid 1000 µg/mL in Methyl tert-butyl ether	1 mL
	FL-31215-1G	2-Chloroaniline PESTANAL®	1 g
	FL-35824-1G	3-Chloroaniline PESTANAL®	1 g
	FL-35823-1G	4-Chloroaniline PESTANAL®	1 g
	IPO 087	Chlorobenzene	250 mg
	FL-45376-250MG	Chlorobenzilate PESTANAL®	250 mg
	U-PST-120	Chlorobenzilate	100 mg
New	U-PP-410A-1	Chlorobenzilate 100 µg/mL in Hexane	1 mL
		2-Chloro-4,6-diamino-1,3,5-triazine see Atrazine-desethyl-desisopropyl	
	FL-33673-100MG	6-Chlorobenzoxazol-2(3H)-one PESTANAL®	100 mg
	FL-35991-1G	5-Chloro-2,4-dimethoxyaniline PESTANAL®	1 g
	FL-36693-1G	2-Chloroethanol PESTANAL®	1 g
New	CIL-CLM-6759	4-Chloro-2-hydroxymethylphenoxyacetic acid (HMCPA) (ring-$^{13}C_6$,99%)	on request
New	CIL-CLM-6758	4-Chloro-2-methylphenoxyacetic acid (MCPA) (ring-$^{13}C_6$,99%)	on request
	FL-36761-1G	3-Chloro-4-methylaniline PESTANAL®	1 g
	FL-46282-250MG	4-Chloro-2-methylaniline OEKANAL®	250 mg
	FL-35833-1G	4-Chloro-2-methylphenol PESTANAL®	1 g
	FL-36125-100MG	Chloroneb PESTANAL®	100 mg
New	U-PST-1330	Chloroneb	100 mg
New	U-PST-1330M100A01	Chloroneb 100 µg/mL in Methanol	1 mL

	Code	Product	Unit
	FL-36746-1G	2-Chlorophenol PESTANAL®	1 g
	FL-36747-1G	3-Chlorophenol PESTANAL®	1 g
	FL-35826-1G	4-Chlorophenol PESTANAL®	1 g
	CIL-CLM-1913-1.2	4-Chlorophenol ($^{13}C_6$,99%) 100 µg/mL in Toluene	1.2 mL
	FL-45391-250MG	4-Chlorophenoxy acetic acid PESTANAL®	250 mg
	FL-34321-250MG	Chloropicrin PESTANAL®	250 mg
	IPO 110	Chlorothalonil	250 mg
	FL-36791-250MG	Chlorothalonil PESTANAL®	250 mg
New	U-PST-1340	Chlorothalonil	100 mg
New	U-PST-1340M100A01	Chlorothalonil 100 µg/mL in Methanol	1 mL
	FL-45398-250MG	Chlorthiamid PESTANAL®	250 mg
	U-HC-320-1	2-Chlorotoluene 100 µg/mL in Methanol	1 mL
	U-HC-320	2-Chlorotoluene 100 µg/mL in Methanol	4 x 1 mL
	FL-36696-1G	3-Chlorotoluene PESTANAL®	1 g
	FL-36697-1G	4-Chlorotoluene PESTANAL®	1 g
	U-HC-330-1	4-Chlorotoluene 100 µg/mL in Methanol	1 mL
	U-HC-330	4-Chlorotoluene 100 µg/mL in Methanol	4 x 1 mL
	IPO 114	Chlorotoluron	250 mg
	FL-45400-250MG	Chlorotoluron PESTANAL®	250 mg
New	U-PST-2130A100A01	Chlorotoluron 100 µg/mL in Acetonitrile	1 mL
New	U-PST-2130M100A01	Chlorotoluron 100 µg/mL in Methanol	1 mL
	CIL-DLM-3760-0.01	Chlorotoluron (N,N-dimethyl-D_6,98%)	0.01 g
	IPO 102	Chloroxuron	250 mg
	FL-45389-250MG	Chloroxuron PESTANAL®	250 mg
	FL-33363-25MG	Chloroxynil PESTANAL®	25 mg
	FL-45390-250MG	Chlorphacinon PESTANAL®	250 mg
		Chlorphenamidin see Chlordimeform	
	IPO 094	Chlorpropham	250 mg
	FL-45393-250MG	Chlorpropham PESTANAL®	250 mg
New	U-PST-1345	Chlorpropham	100 mg
New	U-PST-1345A100A01	Chlorpropham 100 µg/mL in Acetonitrile	1 mL
New	U-PST-1345M100A01	Chlorpropham 100 µg/mL in Methanol	1 mL
	FL-45394-250MG	Chlorpropylat PESTANAL®	250 mg
New	FL-32979-10MG	N-(6-Chloro-3-pyridylmethyl)-N'-cyano-acetamidine PESTANAL®	10 mg
	IPO 141	Chlorpyriphos (ethyl)	250 mg
	FL-45395-250MG	Chlorpyriphos PESTANAL®	250 mg
New	U-PST-480	Chlorpyriphos	100 mg
	NMIAP1666	Chlorpyriphos	250 mg
New	U-PST-480M100A01	Chlorpyriphos 100 µg/mL in Methanol	1 mL
	CIL-DLM-4360-1.2	Chlorpyrifos (diethyl-D_{10},99%) 100 µg/mL in Nonane	1.2 mL
	IPO 090	Chlorpyriphos-methyl	250 mg
	FL-45396-250MG	Chlorpyriphos-methyl PESTANAL®	250 mg
New	U-PST-1350	Chlorpyriphos methyl	100 mg
New	U-PST-1350M100A01	Chlorpyriphos-methyl 100 µg/mL in Methanol	1 mL
	CIL-DLM-7153	Chlorpyrifos methyl (dimethyl-D_6,98%)	on request
	IPO 143	Chlorsulfuron	100 mg
	FL-34322-100MG	Chlorsulfuron PESTANAL®	100 mg

	Code	Product	Unit
	IPO 103	Chlorthal-dimethyl	250 mg
	FL-45397-250MG	Chlorthal-dimethyl PESTANAL®	250 mg
	FL-35030-25MG	Chlorthion PESTANAL®	25 mg
	FL-36126-100MG	Chlorthiophos mixture of isomers PESTANAL®	100 mg
		Chlortoluron see Chlorotoluron	
		Cimectocarb-ethyl see Trinexapac-ethyl	
	FL-46336-100MG	Cindon-ethyl PESTANAL®	100 mg
	FL-34237-50MG	Cinmethylin PESTANAL®	50 mg
	FL-37893-100MG	Cinosulfuron PESTANAL®	100 mg
		Coumafen see Warfarin	
New	U-PST-1925A100A01	Clethodim 100 µg/mL in Acetonitrile	1 mL
	FL-36127-100MG	Climbazol PESTANAL®	100 mg
	FL-36763-250MG	Clofentezine PESTANAL®	250 mg
New	U-PST-2145A100A01	Clofentezine 100 µg/mL in Acetonitrile	1 mL
	FL-46120-100MG	Clomazone PESTANAL®	100 mg
	IPO 096	Clopyralid	250 mg
	FL-36758-250MG	Clopyralid PESTANAL®	250 mg
	FL-36529-250MG	Clopyralid ((2-Hydroxyethyl) ammonium) PESTANAL®	250 mg
New	U-PST-1995M100A01	Clopyralid (Lontrel) 100 µg/mL in Methanol	1 mL
	FL-34239-25MG	Cloquintocet PESTANAL®	25 mg
	FL-31678-250MG	Cloquintocet-mexyl PESTANAL®	250 mg
	FL-34093-100MG	Closantel PESTANAL®	100 mg
	IPO 082	Clothianidin	250 mg
	FL-33589-100MG	Clothianidin PESTANAL®	100 mg
New	FL-32716-50MG	Codlemone PESTANAL®	50 mg
	FL-45402-250MG	Coumachlor PESTANAL®	250 mg
	FL-34324-10MG	Coumafuryl PESTANAL®	10 mg
	IPO 092	Coumaphos	250 mg
	FL-45403-250MG	Coumaphos PESTANAL®	250 mg
New	U-PST-130	Coumaphos	100 mg
New	U-PST-130M100A01	Coumaphos 100 µg/mL in Methanol	1 mL
	FL-45404-250MG	Coumatetralyl PESTANAL®	250 mg
		4-CPA see 4-Chlorophenoxy acetic acid CPBS see Fenson	
	FL-32957-100MG	Cresyl diphenyl phosphate mixture of isomers PESTANAL®	100 mg
	FL-36564-250MG	Crimidine PESTANAL®	250 mg
	U-PST-1355	Crotoxyphos	5 mg
New	U-PST-1355M100A01	Crotoxyphos 100 µg/mL in Methanol	1 mL
	U-PST-900	Crufomate	100 mg
	FL-36698-1G	Cumene PESTANAL®	1 g
	FL-45407-250MG	Cyanazine PESTANAL®	250 mg
	U-PST-1360	Cyanazine	100 mg
New	U-PST-1360M100A01	Cyanazine 100 µg/mL in Methanol	1 mL
	U-EPA-1165	Cyanazine 1000 µg/mL in Methanol	1 mL
		Cyanazine-des(2-methylpropionitrile) see Atrazine-desisopropyl Cyanazine-desethyl-des(2-methyl-propionitrile) see Atrazine-desethyl-desisopropyl	
	FL-46279-25MG	Cyanophos technical mixture	25 mg

	Code	Product	Unit
New	U-PST-2915M100A01	Cyanophos 100 µg/mL in Methanol	1 mL
	FL-33874-100MG	Cyazofamid PESTANAL®	100 mg
New	FL-32871-100MG	Cyclanilide PESTANAL®	100 mg
	IPO 108	Cycloate	250 mg
	FL-45408-250MG	Cycloate PESTANAL®	250 mg
New	U-PST-1365	Cycloate	100 mg
	FL-46401-100MG	Cycloheximide (mixture of isomers) PESTANAL®	100 mg
	FL-31596-100MG	Cycloxydim PESTANAL®	100 mg
	FL-45409-250MG	Cycluron PESTANAL®	250 mg
New	FL-33738-250MG	Cyfluthrin (Baythroid®) mixture of isomers PESTANAL®	250 mg
	CIL-CLM-7293-1.2	Cyfluthrin (mix of stereoisomers) (phenoxy-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7454-1.2	Cyfluthrin (mix of stereoisomers) (unlabelled) 100 µg/mL in Nonane	1.2 mL
	IPO 089	beta-Cyfluthrin	100 mg
	FL-46003-250MG	beta-Cyfluthrin PESTANAL®	250 mg
New	FL-32403-25MG	Cyflufenamid PESTANAL®	25 mg
	IPO 084	lambda-Cyhalothrin	100 mg
	FL-31058-100MG	lambda-Cyhalothrin PESTANAL®	100 mg
New	U-PST-1990I100A01	lambda-Cyhalothrin 100 µg/mL in Isooctane	1 mL
	FL-45411-250MG	Cyhexatin PESTANAL®	250 mg
	IPO 091	Cymoxanil	100 mg
	FL-34326-100MG	Cymoxanil PESTANAL®	100 mg
New	U-PST-2925A100A01	Cymoxanil 100 µg/mL in Acetonitrile	1 mL
	IPO 109	Cypermethrin	250 mg
	LGC1704	Cypermethrin Assessed purity.....92% m/m	250 mg
	FL-36128-100MG	Cypermethrin mixture of isomers PESTANAL®	100 mg
New	U-PST-1370	Cypermethrin	25 mg
	CIL-CLM-7292-1.2	Cypermethrin (mix of stereoisomers) (phenoxy-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	IPO 099	alpha-Cypermethrin	100 mg
	FL-45806-100MG	alpha-Cypermethrin PESTANAL®	100 mg
New	U-PST-1890A100A01	alpha-Cypermethrin 100 µg/mL in Acetonitrile	1 mL
	FL-46037-100MG	Cyphenothrin PESTANAL®	100 mg
	IPO 085	Cyproconazole	100 mg
	FL-46068-100MG	Cyproconazole PESTANAL®	100 mg
New	U-PST-2150A100A01	Cyproconazole 100 µg/mL in Acetonitrile	1 mL
New	U-PST-2150M100A01	Cyproconazole 100 µg/mL in Methanol	1 mL
	IPO 083	Cyprodinil	250 mg
	FL-34389-250MG	Cyprodinil PESTANAL®	250 mg
New	U-PST-2155A100A01	Cyprodinil 100 µg/mL in Acetonitrile	1 mL
New	U-PST-2155M100A01	Cyprodinil 100 µg/mL in Methanol	1 mL
	FL-45413-250MG	Cyprofuram PESTANAL®	250 mg
	IPO 144	Cyromazine	250 mg
	FL-45414-250MG	Cyromazine PESTANAL®	250 mg
New	U-PST-1935M100A01	Cyromazine 100 µg/mL in Methanol	1 mL
	U-PST-1380	Cythioate	100 mg

	Code	Product	Unit
New	U-PST-140	2,4-D	100 mg
	CIL-DLM-1146-5	2,4-D (2,4-Dichlorophenoxyacetic acid) (ring-D_3,98%)	5 mg
New	U-PST-140A100A01	2,4-D 100 µg/mL in Acetonitrile	1 mL
New	U-HB-100-1	2,4-D 100 µg/mL in Methanol	1 mL
New	U-EPA-1096	2,4-D 5000 µg/mL in Acetonitrile	1 mL
	CIL-CLM-1858-1.2	2,4-D (2,4-Dichlorophenoxyacetic acid) (ring-$^{13}C_6$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	FL-45421-250MG	4,4'-DBP PESTANAL®	250 mg
	FL-45732-250MG	2,4-D-1-butyl ester PESTANAL®	250 mg
	FL-31057-250MG	2,4-D-butylglycol ester PESTANAL®	250 mg
	IPO 117	2,4-D-methyl ester	250 mg
	FL-45416-250MG	2,4-D-methyl ester PESTANAL®	250 mg
New	U-PST-150	2,4-D methyl ester	100 mg
New	U-HB-101-1	2,4-D-methyl ester 100 µg/mL in Methanol	1 mL
	FL-35562-250MG	Dalapon PESTANAL®	250 mg
New	U-HB-140-1	Dalapon 100 µg/mL in Methanol	1 mL
New	U-PST-170	Dalapon	100 mg
	FL-45383-250MG	Dalapon-methyl PESTANAL®	250 mg
New	U-PST-171	Dalapon methyl ester	10 mg
New	U-HB-141-1	Dalapon methyl ester 100 µg/mL in Methanol	1 mL
	IPO 115	Daminozide	250 mg
	FL-45418-250MG	Daminozide PESTANAL®	250 mg
	IPO UCI 850	Dazomet	250 mg
	FL-45419-250MG	Dazomet PESTANAL®	250 mg
	FL-45420-250MG	2,4-DB PESTANAL®	250 mg
New	U-PST-1170	2,4-DB	100 mg
New	U-HB-150-1	2,4-DB 100 µg/mL in Methanol	1 mL
	FL-31244-250MG	2,4-DB-methyl ester PESTANAL®	250 mg
New	U-PST-1171	2,4-DB methyl ester	10 mg
New	U-HB-151-1	2,4-DB methyl ester 100 µg/mL in Methanol	1 mL
	U-PST-180	DBCP	100 mg
	U-PPS-160-1	DCAA (2,4-Dichlorophenylacetic acid) 100 µg/mL in Methyl tert-butyl ether (MTBE)	1 mL
	U-PPS-160	DCAA (2,4-Dichlorophenylacetic acid) 100 µg/mL in Methyl tert.-butyl ether (MTBE)	4 x 1 mL
	U-PPS-162-1	DCAA (2,4-Dichlorophenylacetic acid) 5000 µg/mL in Methanol	1 mL
	U-PPS-162	DCAA (2,4-Dichlorophenylacetic acid) 5000 µg/mL in Methanol	4 x 1 mL
	U-PPS-161-1	DCAA methyl ester 100 µg/mL in Methyl tert-butyl ether (MTBE)	1 mL
	U-PPS-161	DCAA methyl ester 100 µg/mL in Methyl tert.-butyl ether (MTBE)	4 x 1 mL
	CIL-CDLM-6002-1.2	DCCA (3-(2,2-Dichlorovinyl)-2,2-dimethyl-1-cyclopropane) carboxylic acid ($^{13}C_2$, 99%; 1-D,98%) 100 µg/mL in Acetonitrile	1.2 mL
New	U-PST-160M100A01	DCPA (Dacthal) 100 µg/mL in Methanol	1 mL
New	U-PST-160	DCPA (Dacthal)	100 mg
	FL-45812-250MG	DCU PESTANAL®	250 mg
	IPO 118	4,4'-DDA	250 mg
	FL-35484-250MG	4,4'-DDA PESTANAL®	250 mg
New	U-PST-200	DDA	100 mg
	IPO 123	2,4'-DDD	250 mg
	FL-35485-250MG	2,4'-DDD PESTANAL®	250 mg
New	U-PST-210	2,4'-DDD	100 mg
	CERERD-008	2,4'-DDD	250 mg
New	U-PST-210M100A01	2,4'-DDD 100 µg/mL in Methanol	1 mL
	CIL-CLM-6999-1.2	2,4'-DDD (ring-$^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
	IPO 122	4,4'-DDD	250 mg

	Code	Product	Unit
	FL-35486-250MG	4,4'-DDD (TDE) PESTANAL®	250 mg
New	U-PST-220	4,4'-DDD	100 mg
	CERERD-011	4,4'-DDD	100 mg
	NMIAP1311	4,4'-DDD	50 mg
New	U-PST-220I100A01	4,4'-DDD 100 µg/mL in Isooctane	1 mL
New	U-PP-160-1	4,4'-DDD 100 µg/mL in Methanol	1 mL
	U-EPA-1097	4,4'-DDD 5000 µg/mL in Methanol	1 mL
	CIL-CLM-7100-1.2	4,4'-DDD (ring-$^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-3533-1.2	4,4'-DDD (ring-D_8,98%) 100 µg/mL in Nonane	1.2 mL
	IPO 121	2,2'-DDE	20 mg
	IPO 120	2,4'-DDE	100 mg
New	U-PST-241	2,4'-DDE	10 mg
	CERERD-006	2,4'-DDE	100 mg
New	U-PST-241M100A01	2,4'-DDE 100 µg/mL in Methanol	1 mL
New	U-PST-241I100A01	2,4'-DDE 100 µg/mL in Isooctane	1 mL
	CIL-CLM-4693-1.2	2,4'-DDE (ring-$^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	IPO 119	4,4'-DDE	250 mg
	LGC1110	4,4'-DDE Certified value 4,4'-DDE ..... 99.6 ± 0.4 %	250 mg
	NIST-RM 8467	4,4'-DDE - Purity Certified purity 4,4'-DDE ..... 99.8 ± 0.2%	100 mg
	FL-35487-250MG	4,4'-DDE PESTANAL®	250 mg
New	U-PST-250	4,4'-DDE	100 mg
	CERERD-007	4,4'-DDE	100 mg
	CIL-CLM-1627-5	4,4'-DDE (ring-$^{13}C_{12}$,99%)	5 mg
New	U-PST-250I100A01	4,4'-DDE 100 µg/mL in Isooctane	1 mL
New	U-PP-170-1	4,4'-DDE 100 µg/mL in Methanol	1 mL
	U-EPA-1098	4,4'-DDE 1000 µg/mL in Methanol	1 mL
	CIL-CLM-1627-1.2	4,4'-DDE (ring-$^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	IPO 133	4,4'-DDM	250 mg
	FL-35488-250MG	4,4'-DDM PESTANAL®	250 mg
	IPO 124	4,4'-DDMU	250 mg
	FL-35489-250MG	4,4'-DDMU PESTANAL®	250 mg
New	U-PST-2740M100A01	4,4'-DDMU 100 µg/mL in Methanol	1 mL
	FL-31091-250MG	4,4'-DDOH PESTANAL®	250 mg
New	U-PST-260	DDT-Mix	100 mg
	IPO 125	2,4'-DDT	250 mg
New	U-PST-271	2,4'-DDT	10 mg
	CERERD-012	2,4'-DDT	100 mg
New	U-PST-271I100A01	2,4'-DDT 100 µg/mL in Isooctane	1 mL
New	U-PST-271M100A01	2,4'-DDT 100 µg/mL in Methanol	1 mL
	CIL-CLM-4692-1.2	2,4'-DDT (ring-$^{13}C_{12}$, 99 %) 100 µg/mL in Nonane	1.2 mL
New	FL-31041-100MG	4,4'-DDT PESTANAL®	100 mg
	IPO 126	4,4'-DDT	250 mg
New	U-PST-280	4,4'-DDT	100 mg
	CERERD-005	4,4'-DDT	250 mg
	NIST-RM 8469	4,4'-DDT - Purity Certified purity 4,4'-DDT..... 99.9 ± 0.2%	100 mg

	Code	Product	Unit
	NMIAP1309	4,4'-DDT	50 mg
	CIL-CLM-1281-5	4,4'-DDT (ring-$^{13}C_{12}$,99%)	5 mg
New	U-PP-180-1	4,4'-DDT 100 µg/mL in Methanol	1 mL
	U-EPA-1099	4,4'-DDT 5000 µg/mL in Methanol	1 mL
New	U-PST-280I100A01	4,4'-DDT 100 µg/mL in Isooctane	1 mL
	CIL-CLM-1281-1.2	4,4'-DDT (ring-$^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
		DDVP see Dichlorvos	
	FL-36542-250MG	DEET PESTANAL®	250 mg
New	U-PST-298	DEET	100 mg
New	U-PST-298M100A01	DEET 100 µg/mL in Methanol	1 mL
	CIL-ULM-7975-1.2	DEET (N,N-Diethyl-m-toluamide) (unlabelled) 100 µg/ml in Dichloromethane	1.2 mL
New	CIL-ULM-7975-D-1.2	DEET (N,N-Diethyl-m-toluamide) (unlabelled) 100 µg/mL in Dioxane	1.2 mL
	CIL-DLM-4762-1.2	DEET (N,N-Diethyl-m-toluamide) (dimethyl-D_6,98%) 100 µg/mL in Dichloromethane	1.2 mL
New	CIL-DLM-4762-D-1.2	DEET (N,N-Diethyl-m-toluamide) (dimethyl-D6, 98%) 100 µg/mL in Dioxane	1.2 mL
New	U-PST-300	DEF	100 mg
		Deiquat see Diquat dibromide Delnav see Dioxathion	
	IPO 127	Deltamethrin	250 mg
	FL-45423-250MG	Deltamethrin PESTANAL®	250 mg
New	U-PST-1385	Deltamethrin	25 mg
New	U-PST-1385K100A01	Deltamethrin 100 µg/mL in Acetone	1 mL
New	U-PST-1385A100A01	Deltamethrin 100 µg/mL in Acetonitrile	1 mL
	FL-34205-100MG	Demeton-O PESTANAL®	100 mg
New	U-PST-1940M100A01	Demeton S 100 µg/mL in Methanol	1 mL
	FL-45424-250MG	Demeton-S-methyl sulfone PESTANAL®	250 mg
New	U-PST-2005M10A01	Demeton-S-methyl 10 µg/mL in Methanol	1 mL
New	U-PST-2665M100A01	Demeton-S-methyl sulfone 100 µg/mL in Methanol	1 mL
New	CIL-CLM-8316-1.2	Desethylisopropylhyroxyatrazine (Ammeline) (ring-$^{13}C_6$,99%) 100 µg/mL in Acetonitrile	1.2 mL
		Derris see Rotenone	
	IPO 140	Desmedipham	250 mg
	FL-45426-250MG	Desmedipham PESTANAL®	250 mg
	FL-33887-10MG	Desmethyl-formamido-pirimicarb PESTANAL®	10 mg
	FL-33886-10MG	Desmethyl-pirimicarb PESTANAL®	10 mg
	FL-33991-100MG	N-Desethyl-pirimiphos-methyl PESTANAL®	100 mg
	FL-45427-250MG	Desmetryne PESTANAL®	250 mg
New	U-PST-2160M100A01	Desmetryne 100 µg/mL in Methanol	1 mL
		Despirol see Kelevan	
	FL-31571-250MG	Diafenthiuron PESTANAL®	250 mg
	FL-36500-100MG	Dialifos PESTANAL®	100 mg
	U-PST-035	Diallate	100 mg
New	U-PP-420-1	Diallate 100 µg/mL in Methanol	1 mL
	IPO 128	Diazinon	250 mg
	FL-45428-250MG	Diazinon PESTANAL®	250 mg
New	U-PST-320	Diazinon	100 mg
	CIL-DLM-1148-5	Diazinon (diethyl-D_{10},98%)	5 mg
New	U-PST-320A100A01	Diazinon 100 µg/mL in Acetonitrile	1 mL
	U-PST-320AS	Diazinon 100 µg/mL in Hexane	1 mL
New	U-PST-320I100A01	Diazinon 100 µg/mL in Isooctane	1 mL

	Code	Product	Unit
New	U-PST-320M100A01	Diazinon 100 µg/mL in Methanol	1 mL
	CIL-DLM-1148-1.2	Diazinon (diethyl-D_{10},98%) 100 µg/mL in Nonane	1.2 mL
	FL-45429-250MG	Dibrom PESTANAL®	250 mg
	U-PST-730	Dibrom (Naled)	100 mg
	IPO 130	4,4'-Dibromobenzophenone	250 mg
	FL-36601-500MG	4,4'-Dibromobenzophenone PESTANAL®	500 mg
	FL-31257-250MG	1,2-Dibromo-3-chloropropane PESTANAL®	250 mg
	U-HC-340-1	1,2-Dibromo-3-chloropropane (DBCP) 100 µg/mL in Methanol	1 mL
	U-HC-340	1,2-Dibromo-3-chloropropane (DBCP) 100 µg/mL in Methanol	4 x 1 mL
	NMIAP1373	Dibromo-DDE	50 mg
	IPO 129	1,2-Dibromoethane	250 mg
	FL-31040-1G	1,2-Dibromoethane PESTANAL®	1 g
	U-HC-350-1	1,2-Dibromoethane 100 µg/mL in Methanol	1 mL
	U-HC-350	1,2-Dibromoethane 100 µg/mL in Methanol	4 x 1 mL
	CERERD-002	Dibutyl chlorendate	100 mg
	U-PST-1160	Dibutyl chlorendate	50 mg
New	U-PST-1160M100A01	Dibutyl chlorendate 100 µg/mL in Methanol	1 mL
	FL-36736-1G	Dibutyl phthalate PESTANAL®	1 g
	FL-33983-100MG	Dibutysuccinate PESTANAL®	100 mg
	IPO 131	Dicamba	250 mg
	FL-45430-250MG	Dicamba PESTANAL®	250 mg
New	U-PST-050	Dicamba	100 mg
New	U-HB-160-1	Dicamba 100 µg/mL in Methanol	1 mL
	U-PST-1070	Dicapthon	100 mg
	FL-34102-10MG	Dicamba methyl ester PESTANAL®	10 mg
New	U-HB-161-1	Dicamba methyl ester 100 µg/mL in Methanol	1 mL
New	U-PST-051	Dicamba methyl ester	10 mg
	IPO 149	Dichlobenil	250 mg
	FL-45431-250MG	Dichlobenil PESTANAL®	250 mg
New	U-PST-2170A100A01	Dichlobenil 100 µg/mL in Acetonitrile	1 mL
New	U-PST-2170M100A01	Dichlobenil 100 µg/mL in Methanol	1 mL
	FL-36764-50MG	Diclobutrazol PESTANAL®	50 mg
		Dichlobutrazol see Diclobutrazol	
	FL-45432-250MG	Dichlofenthion PESTANAL®	250 mg
New	U-PST-1390M100A01	Dichlofenthion 100 µg/mL in Methanol	1 mL
New	U-PST-1390	Dichlofenthion	25 mg
	IPO 132	Dichlofluanid	250 mg
	FL-45433-250MG	Dichlofluanid PESTANAL®	250 mg
	FL-45434-250MG	Dichlone PESTANAL®	250 mg
New	U-PST-1395	Dichlone	100 mg
	FL-45435-250MG	Dichloran PESTANAL®	250 mg
New	U-PST-190M100A01	Dichloran 100 µg/mL in Methanol	1 mL
	FL-33613-100MG	Dichlormid PESTANAL®	100 mg
	CIL-CLM-816-1.2	Dichlorane (2,6-Dichloro-4-nitroaniline) (ring-$^{13}C_6$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	FL-36545-1G	Dichloroacetic acid PESTANAL®	1 g
	FL-36701-1G	2,3-Dichloroaniline PESTANAL®	1 g
	FL-35829-1G	2,4-Dichloroaniline PESTANAL®	1 g
	FL-36702-1G	2,5-Dichloroaniline PESTANAL®	1 g

	Code	Product	Unit
	FL-36703-1G	2,6-Dichloroaniline PESTANAL®	1 g
	FL-35827-1G	3,4-Dichloroaniline PESTANAL®	1 g
	FL-36704-1G	3,5-Dichloroaniline PESTANAL®	1 g
	FL-36605-1G	2,6-Dichlorobenzamide PESTANAL®	1 g
New	U-PST-2180M100A01	Dichlorobenzamide 100 µg/mL in Methanol	1 mL
	IPO 134	1,2-Dichlorobenzene	250 mg
	U-HC-110-1	1,2-Dichlorobenzene 100 µg/mL in Methanol	1 mL
	U-HC-110	1,2-Dichlorobenzene 100 µg/mL in Methanol	4 x 1 mL
	FL-36707-1G	1,2-Dichlorobenzene PESTANAL®	1 g
	IPO 135	1,3-Dichlorobenzene	250 mg
	FL-36708-1G	1,3-Dichlorobenzene PESTANAL®	1 g
	U-HC-120-1	1,3-Dichlorobenzene 100 µg/mL in Methanol	1 mL
	U-HC-120	1,3-Dichlorobenzene 100 µg/mL in Methanol	4 x 1 mL
	IPO 136	1,4-Dichlorobenzene	250 mg
	FL-35775-1G	1,4-Dichlorobenzene PESTANAL®	1 g
	U-HC-130-1	1,4-Dichlorobenzene 100 µg/mL in Methanol	1 mL
	U-HC-130	1,4-Dichlorobenzene 100 µg/mL in Methanol	4 x 1 mL
	FL-36749-1G	2,4-Dichlorobenzoic acid PESTANAL®	1 g
	FL-36705-1G	2,5-Dichlorobenzoic acid PESTANAL®	1 g
	FL-36706-1G	2,6-Dichlorobenzoic acid PESTANAL®	1 g
	IPO 137	4,4'-Dichlorobenzophenone	250 mg
	FL-45682-250MG	2,3-Dichloronitrobenzene PESTANAL®	250 mg
	FL-36572-250MG	2,5-Dichloronitrobenzene PESTANAL®	250 mg
	FL-35831-1G	3,4-Dichloronitrobenzene PESTANAL®	1 g
	FL-36573-250MG	3,5-Dichloronitrobenzene PESTANAL®	250 mg
	U-RCC-179	Dichlorophen	100 mg
	IPO 138	Dichlorophen	250 mg
	FL-35992-250MG	Dichlorophen PESTANAL®	250 mg
	U-EPA-1217	Dichlorophen 1000 µg/mL in Methanol	1 mL
	FL-35811-1G	2,4-Dichlorophenol PESTANAL®	1 g
	U-RCP-005	2,4-Dichlorophenol	20 mg
	U-PH-120-1	2,4-Dichlorophenol 100 µg/mL in Methanol	1 mL
	U-PH-120	2,4-Dichlorophenol 100 µg/mL in Methanol	4 x 1 mL
	FL-35835-1G	2,5-Dichlorophenol PESTANAL®	1 g
	FL-31102-1G	2,6-Dichlorophenol PESTANAL®	1 g
	U-PH-240-1	2,6-Dichlorophenol 100 µg/mL in Methanol	1 mL
	U-PH-240	2,6-Dichlorophenol 100 µg/mL in Methanol	4 x 1 mL
	IPO UCI 120	4-(2,4-Dichlorophenoxy)benzenamine	100 mg
	FL-45733-250MG	3,4-Dichlorophenyldipropion amide PESTANAL®	250 mg
		3,6-Dichloropicolinic acid see Clopyralid	
	FL-45439-250MG	1,3-Dichloropropane PESTANAL®	250 mg
	U-HC-380-1	1,3-Dichloropropane 100 µg/mL in Methanol	1 mL
	U-HC-380	1,3-Dichloropropane 100 µg/mL in Methanol	4 x 1 mL
	FL-45440-250MG	1,3-Dichloropropene mixture of isomers PESTANAL®	250 mg
	U-EPA-1034	1,3-Dichloropropene (mix) 5000 µg/mL in Methanol	1 mL
	FL-31059-250MG	alpha,alpha-Dichlorotoluene PESTANAL®	250 mg
	FL-45436-250MG	Dichlorprop PESTANAL®	250 mg
	IPO 139	Dichlorprop	250 mg
New	U-PST-370	Dichlorprop	100 mg
New	U-HB-170-1	Dichlorprop 100 µg/mL in Methanol	1 mL

	Code	Product	Unit
	CIL-CLM-3722-1.2	Dichlorprop (ring-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	FL-45734-250MG	2,3-Dichloropropionanilide PESTANAL®	250 mg
	FL-45437-250MG	Dichlorprop-methyl ester PESTANAL®	250 mg
New	U-PST-371	Dichlorprop methyl ester	100 mg
New	U-HB-171-1	Dichlorprop-methyl ester 100 µg/mL in Methanol	1 mL
	FL-31237-250MG	Dichlorprop-P PESTANAL®	250 mg
	IPO 142	Dichlorvos	250 mg
New	U-PST-380	Dichlorvos	100 mg
	FL-45441-250MG	Dichlorvos (DDVP) PESTANAL®	250 mg
New	U-PST-380H100A01	Dichlorvos 100 µg/mL in Hexane	1 mL
New	U-PST-380M100A01	Dichlorvos 100 µg/mL in Methanol	1 mL
	CIL-DLM-2829-0.01	Dichlorvos (dimethyl-D_6,98%)	10 mg
	FL-45442-250MG	Diclofop-methyl PESTANAL®	250 mg
	FL-33968-25MG	Diclosulam PESTANAL®	25 mg
	FL-36677-100MG	Dicofol PESTANAL®	100 mg
New	U-PST-391	Dicofol	100 mg
New	U-PST-391M100A01	Dicofol (Kelthane) 100 µg/mL in Methanol	1 mL
	FL-45305-100MG	Dicrotophos PESTANAL®	100 mg
New	U-PST-2960M100A01	Dicrotophos 100 µg/mL in Methanol	1 mL
	FL-46391-100MG	Dicyclanil PESTANAL®	100 mg
		Dicyclidine see Procymidone	
	IPO 145	Dieldrin	250 mg
	U-PST-400	Dieldrin	10 mg
	CERERD-004	Dieldrin	100 mg
	FL-33491-100MG	Dieldrin PESTANAL®	100 mg
	NMIAP1747	Dieldrin	50 mg
New	U-PST-400K100A01	Dieldrin 100 µg/mL in Acetone	1 mL
New	U-PP-190-1	Dieldrin 100 µg/mL in Methanol	1 mL
	U-PST-400	Dieldrin	10 mg
	U-EPA-1107	Dieldrin 1000 µg/mL in Methanol	1 mL
	CERERD-047S	Dieldrin 1000 µg/ml in Methanol	1.2 mL
	CIL-CLM-4726-1.2	Dieldrin ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	FL-45443-250MG	Dienochlor PESTANAL®	250 mg
	FL-34087-100MG	Diethofencarb PESTANAL®	100 mg
New	U-PST-2185M100A01	Diethofencarb 100 µg/mL in Methanol	1 mL
	FL-36765-1G	2,6-Diethylaniline PESTANAL®	1 g
	ERD-117	O,O-Diethyl hydrogen dithiophosphate potassium salt (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	CERERD-118	Diethyl hydrogen phosphate 1000 µg/mL(as free acid)	1.2 mL
	ERD-119	O,O-Diethyl hydrogen thiophosphate potassium salt 1000 µg/mL (unlabelled) in Methanol	1.2 mL
	CIL-DLM-4852-1.2	O,O-Diethyl hydrogen thiophosphate potassium salt (diethyl-D_{10},98%) 100 µg/mL in Methanol	1.2 mL
	FL-36737-1G	Diethyl phthalate PESTANAL®	1 g
New	FL-32677-25MG	Difenacoum PESTANAL®	25 mg
	FL-36531-250MG	Difenoconazole PESTANAL®	250 mg
New	U-PST-2190M100A01	Difenoconazole 100 µg/mL in Methanol	1 mL
	FL-45444-250MG	Difenoxuron PESTANAL®	250 mg
	FL-34331-250MG	Difenzoquat-methyl sulfate PESTANAL®	250 mg
New	FL-32582-25MG	Diflovidazin PESTANAL®	25 mg
	IPO 148	Diflubenzuron	250 mg

	Code	Product	Unit
	FL-45446-250MG	Diflubenzuron PESTANAL®	250 mg
New	U-PST-1400	Diflubenzuron	25 mg
New	U-PST-1400A100A01	Diflubenzuron 100 µg/mL in Acetonitrile	1 mL
New	U-PST-1400M100A01	Diflubenzuron 100 µg/mL in Methanol	1 mL
	FL-45751-100MG	Diflufenican PESTANAL®	100 mg
New	U-PST-2200M100A01	Diflufenican 100 µg/mL in Methanol	1 mL
	FL-37916-100MG	Diflufenzopyr-sodium PESTANAL®	100 mg
	FL-36502-100MG	Dimefox PESTANAL®	100 mg
	FL-36788-250MG	Dimefuron PESTANAL®	250 mg
	FL-33943-100MG	Dimepiperate PESTANAL®	100 mg
	FL-45447-250MG	Dimethachlor PESTANAL®	250 mg
New	U-PST-2970A100A01	Dimethachlor 100 µg/mL in Acetonitrile	1 mL
New	FL-32632-100MG	Dimethachlor Metabolite CGA 373464 PESTANAL®	100 mg
New	FL-32497-100MG	Dimethachlor Metabolite SYN 528702 sodium salt PESTANAL®	100 mg
New	FL-32635-100MG	Dimethachlor Metabolite SYN 530561 PESTANAL®	100 mg
	FL-45448-250MG	Dimethametryn PESTANAL®	250 mg
	FL-31726-100MG	Dimethenamid PESTANAL®	100 mg
New	U-PST-2205M100A01	Dimethenamid 100 µg/mL in Methanol	1 mL
	FL-33697-100MG	Dimethenamid-P PESTANAL®	100 mg
New	U-PST-2670M100A01	Dimethipin 100 µg/mL in Methanol	1 mL
	IPO 146	Dimethoate	250 mg
	FL-45449-100MG	Dimethoate PESTANAL®	100 mg
New	U-PST-421	Dimethoate	10 mg
	NMIAP1642	Dimethoate	50 mg
New	U-PST-421M100A01	Dimethoate 100 µg/mL in Methanol	1 mL
	CIL-DLM-7151-1.2	Dimethoate (O,O-dimethyl-D_6,98%) 100 µg/mL in Acetonitrile	1.2 mL
		Dimethoate-oxon see Omethoate	
	FL-46027-100MG	Dimethomorph (mixture of E + Z isomers) PESTANAL®	100 mg
New	U-PST-2210A100A01	Dimethomorph 100 µg/mL in Acetonitrile	1 mL
	FL-36766-1G	2,6-Dimethylaniline PESTANAL®	1 g
New	CERERD-155	O,O-Dimethyl hydrogen dithiophosphate (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	U-PPS-280-1	Dimethyl endothall 50 µg/mL in Methanol	1 mL
	U-PPS-280	Dimethyl endothall 50 µg/mL in Methanol	4 x 1 mL
	IPO 151	2,4-Dimethylformanilide	100 mg
	ERD-121	Dimethyl hydrogen phosphate (unlabelled) 1000 µg/mL in Methanol	1.2 mL
New	U-PST-1945M100A01	Dimethyl-p-nitrophenylphosphate 100 µg/mL in Methanol	1 mL
	FL-36614-1G	Dimethyl-5-nitro-iso-phthalate PESTANAL®	1 g
	FL-36713-1G	2,3-Dimethylphenol PESTANAL®	1 g
	FL-36607-1G	2,4-Dimethylphenol PESTANAL®	1 g
	FL-36714-1G	2,5-Dimethylphenol PESTANAL®	1 g
	FL-36715-1G	2,6-Dimethylphenol PESTANAL®	1 g
	FL-36716-1G	3,4-Dimethylphenol PESTANAL®	1 g
	FL-36717-1G	3,5-Dimethylphenol PESTANAL®	1 g
	FL-36738-1G	Dimethyl phthalate PESTANAL®	1 g
	U-PST-430	Dimethyl phthalate	100 mg

	Code	Product	Unit
	U-PS-140-1	Dimethyl phthalate 100 µg/mL in Methanol	1 mL
	U-PS-140	Dimethyl phthalate 100 µg/mL in Methanol	4 x 1 mL
	FL-34301-250MG	Dimethyltin dichloride PESTANAL®	250 mg
	FL-36574-250MG	N,N´-Dimethylurea PESTANAL®	250 mg
	FL-45450-250MG	Dimetilan PESTANAL®	250 mg
		Dimite see Chlorfenethol	
	FL-33499-100MG	Dimoxystrobin PESTANAL®	100 mg
		Dimpylat see Diazinon	
	FL-46049-250MG	Diniconazole PESTANAL®	250 mg
New	U-PST-2215M100A01	Diniconazole 100 µg/mL in Methanol	1 mL
	FL-34333-250MG	Dinitramine PESTANAL®	250 mg
	FL-34334-250MG	2,4-Dinitrophenol (with 0.5 mL water/g) PESTANAL®	250 mg
	FL-45451-250MG	Dinobuton PESTANAL®	250 mg
	FL-45452-250MG	Dinocap technical mixture of isomers PESTANAL®	250 mg
New	U-PST-610	Dinocap	100 mg
New	U-PST-610M100A01	Dinocap 100 µg/mL in Methanol	1 mL
	CIL-CLM-3373-1.2	Dinocap (ring-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	IPO 147	Dinoseb	250 mg
	CERERD-026	Dinoseb	100 mg
	FL-45453-100MG	Dinoseb PESTANAL®	100 mg
New	U-PST-450	Dinoseb	100 mg
New	U-HB-130-1	Dinoseb 100 µg/mL in Methanol	1 mL
	FL-31281-250MG	Dinoseb acetate PESTANAL®	250 mg
New	U-PST-451	Dinoseb methyl ether	10 mg
	CERERD-031	Dinoseb methyl ether	100 mg
New	U-HB-131-1	Dinoseb methyl ether 100 µg/mL in Methanol	1 mL
	FL-31241-250MG	Dinoterb PESTANAL®	250 mg
	FL-34337-250MG	Dinoterb acetate PESTANAL®	250 mg
	FL-31668-250MG	Diofenolan PESTANAL®	250 mg
New	U-PST-1765	Dioxacarb	10 mg
New	U-PST-455	Dioxathion	100 mg
	FL-45455-250MG	Diphenamid PESTANAL®	250 mg
New	U-PST-1405	Diphenamid	100 mg
New	U-PST-1405M100A01	Diphenamid 100 µg/mL in Methanol	1 mL
	FL-36617-1G	Diphenyl phthalate PESTANAL®	1 g
	FL-45458-250MG	Diphenyl-sulfone PESTANAL®	250 mg
	IPO 152	Diphenylamine	250 mg
	FL-45456-250MG	Diphenylamine PESTANAL®	250 mg
New	U-PST-460	Diphenylamine	100 mg
New	U-PST-460M100A01	Diphenylamine 100 µg/mL in Methanol	1 mL
	FL-45457-250MG	Diphenylmercury PESTANAL®	250 mg
New	FL-46528-1G	Diphenyl sulfide PESTANAL®	1 g
	FL-45459-250MG	Dipropetryn PESTANAL®	250 mg
		Dipropyl isocinchomeronate see MGK 326	
	FL-45624-250MG	Dipropyl phthalate PESTANAL®	250 mg
	FL-45422-250MG	Diquat monohydrate (Deiquat monohydrat) (1,1'-Ethylene-2,2'-dipyridyliumdibromide) PESTANAL®	250 mg
New	U-PST-1410	Diquat dibromide	100 mg

	Code	Product	Unit
	NIST-3072	Diquat dibromide monohydrate Certified value Diquat dibromide monohydrate.....39.7 mg/kg ± 0.8 mg/kg	5 x 1.2 mL
	U-PST-1410AS	Diquat dibromide 100 µg/mL in Water	1 mL
	FL-45460-250MG	Disulfoton PESTANAL®	250 mg
New	U-PST-470	Disulfoton	100 mg
New	U-SP-110-1	Disulfoton 100 µg/mL in Methanol	1 mL
New	CIL-DLM-7183	Disulfoton (O,O-diethyl-D_{10},98%)	on request
		Disulfoton-oxon see Demeton-S-methyl	
	FL-45871-100MG	Disulfoton-sulfone PESTANAL®	100 mg
	FL-31562-100MG	Disulfoton-sulfoxide PESTANAL®	100 mg
	IPO UCI 151	Dithianon	250 mg
	FL-45462-250MG	Dithianon PESTANAL®	250 mg
	IPO 150	Diuron	250 mg
	FL-45463-250MG	Diuron PESTANAL®	250 mg
New	U-PST-1415	Diuron	100 mg
New	U-PST-1415M100A01	Diuron 100 µg/mL in Methanol	1 mL
	U-EPA-1179	Diuron 1000 µg/mL in Acetonitrile	1 mL
	IPO 155	DNOC	250 mg
	FL-45464-250MG	DNOC PESTANAL®	250 mg
	FL-45465-250MG	Dodemorph PESTANAL®	250 mg
	IPO 160	Dodine	250 mg
	FL-45466-250MG	Dodine PESTANAL®	250 mg
	FL-34338-250MG	Drazoxolon PESTANAL®	250 mg
		Dursban see Chlorpyriphos	
	ANC 001-0.5	EDDHA (Ethylenediamine-di(o-hydroxyphenylacetic acid))	0.5 g
	ANC 002-0.5	EDDHMA (Ethylenediamine-di(o-hydroxy-p-methylphenylacetic acid))	0.5 g
	FL-45467-250MG	Edifenphos PESTANAL®	250 mg
	FL-33312-100MG	Empenthrin PESTANAL®	100 mg
	U-PST-500	Endosulfan	100 mg
		Endosulfan I see alpha-Endosulfan Endosulfan II see beta-Endosulfan	
	IPO 181	alpha-Endosulfan	250 mg
	FL-45468-100MG	alpha-Endosulfan PESTANAL®	100 mg
New	U-PST-501	alpha- Endosulfan (Endosulfan I)	10 mg
	CERERE-003	alpha-Endosulfan	100 mg
	NMIAP1368	alpha-Endosulfan	50 mg
New	U-PP-200-1	alpha-Endosulfan 100 µg/mL in Methanol	1 mL
	CERERE-018S	alpha-Endosulfan 1000 µg/mL in Methanol	1.2 mL
	CIL-CLM-6025-1.2	Endosulfan I ($^{13}C_9$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-2862-1.2	Endosulfan I (D_4,97%) 100 µg/mL in Nonane	1.2 mL
	IPO 182	beta-Endosulfan	250 mg
	FL-33385-100MG	beta-Endosulfan PESTANAL®	100 mg
	CERERE-004	beta-Endosulfan	100 mg
New	U-PST-502	beta-Endosulfan (Endosulfan II)	10 mg
	NMIAP1369	beta-Endosulfan	50 mg
New	U-PP-210-1	beta-Endosulfan 100 µg/mL in Methanol	1 mL
New	U-PST-502I100A01	beta-Endosulfan 100 µg/mL in Isooctane	1 mL
	CIL-CLM-6026-1.2	Endosulfan II ($^{13}C_9$,99%) 100 µg/mL in Nonane	1.2 mL
	FL-32015-250MG	Endosulfan (alpha+beta=2+1) PESTANAL®	250 mg
	FL-36674-100MG	Endosulfan alcohol PESTANAL®	100 mg

	Code	Product	Unit
	NMIAP1370	Endosulfan diol	50 mg
	FL-36673-100MG	Endosulfan ether PESTANAL®	100 mg
	NMIAP1371	Endosulfan ether	25 mg
	FL-36675-100MG	Endosulfan-lactone PESTANAL®	100 mg
	FL-36676-100MG	Endosulfan-sulfate PESTANAL®	100 mg
New	U-PST-503	Endosulfan sulfate	10 mg
	CERERE-006	Endosulfan-sulfate	100 mg
	NMIAP1372	Endosulfan sulfate	50 mg
New	U-PP-220-1	Endosulfan-sulfate 100 µg/mL in Methanol	1 mL
New	U-PST-503I100A01	Endosulfan sulfate 100 µg/mL in Isooctane	1 mL
	CERERE-020S	Endosulfan-sulfate 1000 µg/mL in Methanol	1.2 mL
	FL-31555-2ML	Endosulfan-sulfate 100 µg/mL in Hexane PESTANAL®	2 mL
	CIL-CLM-7531-1.2	Endosulfan sulfate ($^{13}C_9$,99%) 100 µg/mL in Nonane	1.2 mL
	NMIAP1803	Endosulfan sulfate-d4	unit
	FL-35525-250MG	Endothal monohydrate PESTANAL®	250 mg
	NIST-3064	Endothall in water Certified value Endothall..... 40 ± 1.1 mg/kg	5 x 1.2 mL
	U-PST-1845	Endothall acid	100 mg
	IPO 188	Endrin	250 mg
	CERERE-007	Endrin	100 mg
	FL-32014-250MG	Endrin PESTANAL®	250 mg
New	U-PST-510	Endrin	100 mg
New	U-PP-230-1	Endrin 100 µg/mL in Methanol	1 mL
	U-EPA-1119	Endrin 1000 µg/mL in Methanol	1 mL
	CERERE-015S	Endrin 1000 µg/mL in Methanol	1.2 mL
	CIL-CLM-4782-1.2	Endrin ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	IPO 187	Endrin aldehyde	20 mg
New	U-PST-512	Endrin aldehyde	10 mg
	CERERE-001	Endrin aldehyde	100 mg
	CIL-CLM-4815-50	Endrin aldehyde ($^{13}C_{12}$,99%)	50 µg
New	U-PP-240-1	Endrin aldehyde 100 µg/mL in Methanol	1 mL
	U-EPA-1120	Endrin aldehyde 1000 µg/mL in Methanol	1 mL
	CERERE-016S	Endrin aldehyde 1000 µg/mL in Hexane	1.2 mL
	IPO 189	Endrin ketone	20 mg
New	U-PST-513	Endrin ketone	10 mg
	CERERE-005	Endrin ketone	100 mg
	CIL-CLM-4816-50	Endrin ketone ($^{13}C_{12}$,99%)	50 µg
New	U-PP-521-1	Endrin ketone 100 µg/mL in Acetonitrile	1 mL
	CIL-CLM-3374-1.2	Epichlorohydrin ($^{13}C_3$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-DLM-1008-1	Epichlorohydrin (D_5,98%)	1 g
	FL-36503-100MG	EPN PESTANAL®	100 mg
New	U-PST-520	EPN	100 mg
New	U-PST-520AS	EPN 100 µg/mL in Hexane	1 mL
	FL-36848-100MG	Epoxiconazole PESTANAL®	100 mg
New	FL-34111-2ML	Eprinomectin 100 µg/mL in Acetonitrile PESTANAL®	2 mL
New	FL-34111-10ML	Eprinomectin 100 µg/mL in Acetonitrile PESTANAL®	10 mL
	FL-45469-250MG	EPTC PESTANAL®	250 mg
	U-PST-1420	EPTC	100 mg
New	U-PST-1420M100A01	EPTC 100 µg/mL in Methanol	1 mL

	Code	Product	Unit
	FL-45470-250MG	Esbiol PESTANAL®	250 mg
	FL-33309-100MG	Esbiothrin PESTANAL®	100 mg
	IPO 193	Esfenvalerate	100 mg
	FL-46277-100MG	Esfenvalerate PESTANAL®	100 mg
New	U-PST-1900M100A01	Esfenvalerate (Arsana) 100 µg/mL in Methanol	1 mL
	FL-33898-100MG	Esprocarb PESTANAL®	100 mg
	FL-45471-250MG	Etaconazole PESTANAL®	250 mg
	FL-45472-250MG	Ethalfluralin PESTANAL®	250 mg
	FL-45473-250MG	Ethephon PESTANAL®	250 mg
	FL-45474-250MG	Ethidimuron PESTANAL®	250 mg
	IPO 194	Ethiofencarb	250 mg
	FL-45475-250MG	Ethiofencarb PESTANAL®	250 mg
New	U-PST-2240A100A01	Ethiofencarb 100 µg/mL in Acetonitrile	1 mL
	FL-45810-10MG	Ethiofencarb-sulfone PESTANAL®	10 mg
	FL-45811-10MG	Ethiofencarb-sulfoxide PESTANAL®	10 mg
	FL-45476-250MG	Ethiolate PESTANAL®	250 mg
	IPO 195	Ethion	250 mg
	FL-45477-250MG	Ethion PESTANAL®	250 mg
New	U-PST-530	Ethion	100 mg
New	U-PST-530H100A01	Ethion 100 µg/mL in Hexane	1 mL
New	U-PST-530M100A01	Ethion 100 µg/mL in Methanol	1 mL
	FL-33976-100MG	Ethiprole PESTANAL®	100 mg
	FL-45478-250MG	Ethirimol PESTANAL®	250 mg
	IPO 192	Ethofumesate	250 mg
	FL-45479-250MG	Ethofumesate PESTANAL®	250 mg
	FL-45306-100MG	Ethoprophos PESTANAL®	100 mg
New	U-PST-1425	Ethoprop (Ethoprophos)	100 mg
New	U-PST-1425M100A01	Ethoprop (Ethoprophos) 100 µg/mL in Methanol	1 mL
	FL-31519-250MG	Ethoxyquin PESTANAL®	250 mg
	FL-46300-100MG	Ethoxysulfuron PESTANAL®	100 mg
	FL-34085-100MG	Ethychlozate PESTANAL®	100 mg
	IPO 190	Ethylene thiourea	250 mg
	FL-34064-100MG	2-Ethylhexyl diphenyl phosphate PESTANAL®	100 mg
	CIL-ULM-6091-1.2	Ethyl hydrogen dimethylamidophosphate sodium salt (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	ERE-024	Ethyl methylphosphonic acid (unlabelled) 1000 µg/mL in Methanol	1.2 mL
		Ethylparathion see Parathion-ethyl	
	FL-31198-1G	2-Ethylphenol PESTANAL®	1 g
	FL-36723-1G	3-Ethylphenol PESTANAL®	1 g
	FL-36724-1G	4-Ethylphenol PESTANAL®	1 g
	FL-34094-100MG	Etofenprox PESTANAL®	100 mg
New	U-PST-2260A100A01	Etofenprox 100 µg/mL in Acetonitrile	1 mL
New	FL-32506-50MG	Etoxazole PESTANAL®	50 mg
	FL-34340-100MG	Etridiazole PESTANAL®	100 mg
New	U-PST-1770	Etridiazole	100 mg
New	U-PST-1770M100A01	Etridiazole 100 µg/mL in Methanol	1 mL
	FL-45481-250MG	Etrimfos technical mixture PESTANAL®	250 mg
New	U-PST-2270K100A01	Etrimfos 100 µg/mL in Acetone	1 mL

	Code	Product	Unit
	FL-35995-250MG	Eugenol PESTANAL®	250 mg
New	U-PST-2275A100A01	Famoxadone 100 µg/mL in Acetonitrile	1 mL
New	U-PST-2275C100A01	Famoxadone 100 µg/mL in Cyclohexane	1 mL
	FL-34341-100MG	Famphur PESTANAL®	100 mg
New	U-PST-1430	Famphur	100 mg
New	U-SP-120-1	Famphur 100 µg/mL in Methanol	1 mL
	FL-33965-100MG	Fenamidone PESTANAL®	100 mg
New	U-PST-2280A100A01	Fenamidone 100 µg/mL in Acetonitrile	1 mL
	FL-34183-100MG	Fenamidone metabolite ((S)-3-Anilino-5-methyl-5-phenylimidazolidine-2,4-dione) PESTANAL®	100 mg
	FL-45482-250MG	Fenaminosulf PESTANAL®	250 mg
New	U-PST-310	Fenaminosulf (Dexon)	100 mg
	FL-45483-250MG	Fenamiphos PESTANAL®	250 mg
New	U-PST-1435	Fenamiphos	100 mg
New	U-PST-1435M100A01	Fenamiphos 100 µg/mL in Methanol	1 mL
	FL-46293-100MG	Fenamiphos-sulfoxide PESTANAL®	100 mg
	FL-46292-100MG	Fenamiphos-sulfone PESTANAL®	100 mg
	IPO 191	Fenarimol	250 mg
	FL-45484-250MG	Fenarimol PESTANAL®	250 mg
New	U-PST-1775	Fenarimol	10 mg
New	U-PST-1775M100A01	Fenarimol 100 µg/mL in Methanol	1 mL
	FL-36504-100MG	Fenazaflor PESTANAL®	100 mg
New	U-PST-2285A100A01	Fenazaquin 100 µg/mL in Acetonitrile	1 mL
	FL-45763-250MG	Fenazox PESTANAL®	250 mg
	FL-31654-100MG	Fenbuconazole PESTANAL®	100 mg
New	U-PST-2290M100A01	Fenbuconazole 100 µg/mL in Methanol	1 mL
	FL-34342-250MG	Fenbutatin oxide PESTANAL®	250 mg
	FL-31548-250MG	Fenchlorazol-ethyl PESTANAL®	250 mg
	IPO 197	Fenchlorphos	250 mg
New	U-PST-880	Fenchlorphos (Ronnel)	100 mg
New	U-PST-880A100A01	Fenchlorphos (Ronnel) 100 µg/mL in Acetonitrile	1 mL
New	U-PST-880M100A01	Fenchlorphos (Ronnel) 100 µg/mL in Methanol	1 mL
	FL-46005-250MG	Fenclorim PESTANAL®	250 mg
	FL-45486-250MG	Fenfuram (2-Methyl-3-furanilide) PESTANAL®	250 mg
	IPO 203	Fenhexamid	100 mg
	FL-31713-100MG	Fenhexamid PESTANAL®	100 mg
New	U-PST-2295A100A01	Fenhexamid 100 µg/mL in Acetonitrile	1 mL
New	U-PST-2295M100A01	Fenhexamid 100 µg/mL in Methanol	1 mL
	IPO 199	Fenitrothion	250 mg
	FL-45487-250MG	Fenitrothion PESTANAL®	250 mg
New	U-PST-1080	Fenitrothion	100 mg
New	U-PST-1080M100A01	Fenitrothion 100 µg/mL in Methanol	1 mL
	CIL-DLM-2878-0.01	Fenitrothion (O,O-dimethyl-D_6,98%)	10 mg
	FL-45488-250MG	Fenobucarb PESTANAL®	250 mg

	Code	Product	Unit
	FL-45691-250MG	Fenoprop (Silvex, 2,4,5-TP) PESTANAL®	250 mg
New	U-PST-911	Fenoprop (2,4,5-TP)	100 mg
New	U-HB-110-1	Fenoprop 100 µg/mL in Methanol	1 mL
	U-EPA-1159	Fenoprop 5000 µg/mL in Acetonitrile	1 mL
	FL-45692-250MG	Fenoprop methyl ester PESTANAL®	250 mg
New	U-PST-912	Fenoprop methyl ester (Silvex methyl ester)	100 mg
New	U-HB-111-1	Fenoprop methyl ester 100 µg/mL in Methanol	1 mL
	FL-33872-100MG	Fenoxanil PESTANAL®	100 mg
	FL-36849-100MG	Fenoxaprop PESTANAL®	100 mg
	FL-45518-250MG	Fenoxaprop-ethyl racemate PESTANAL®	250 mg
	FL-36850-100MG	Fenoxaprop-P PESTANAL®	100 mg
	FL-36851-250MG	Fenoxaprop-P-ethyl PESTANAL®	250 mg
	IPO 198	Fenoxycarb	250 mg
	FL-34343-250MG	Fenoxycarb PESTANAL®	250 mg
New	U-PST-2300A100A01	Fenoxycarb 100 µg/mL in Acetonitrile	1 mL
	FL-36532-250MG	Fenpiclonil PESTANAL®	250 mg
	IPO 201	Fenpropathrin	250 mg
	FL-31223-250MG	Fenpropathrin PESTANAL®	250 mg
New	U-PST-2310M100A01	Fenpropathrin 100 µg/mL in Methanol	1 mL
	FL-46017-250MG	Fenpropidin PESTANAL®	250 mg
New	U-PST-2315A100A01	Fenpropidin 100 µg/mL in Acetonitrile	1 mL
	FL-36772-250MG	Fenpropimorph PESTANAL®	250 mg
New	U-PST-2320A100A01	Fenpropimorph 100 µg/mL in Acetonitrile	1 mL
	FL-31684-100MG	Fenpyroximate PESTANAL®	100 mg
New	U-PST-3040A100A01	Fenpyroximate 100 µg/mL in Acetonitrile	1 mL
	FL-45489-250MG	Fenson PESTANAL®	250 mg
	FL-45307-100MG	Fensulfothion PESTANAL®	100 mg
New	U-PST-1440	Fensulfothion	25 mg
New	U-PST-1440M100A01	Fensulfothion 100 µg/mL in Methanol	1 mL
	IPO 200	Fenthion	250 mg
	FL-36552-250MG	Fenthion PESTANAL®	250 mg
New	U-PST-540	Fenthion	100 mg
New	U-PST-540I100A01	Fenthion 100 µg/mL in Isooctane	1 mL
New	U-PST-540M100A01	Fenthion 100 µg/mL in Methanol	1 mL
	FL-46023-10MG	Fenthion-sulfone PESTANAL®	10 mg
	FL-37885-50MG	Fenthion-sulfoxide PESTANAL®	50 mg
	FL-45491-250MG	Fentin-acetate PESTANAL®	250 mg
	FL-45492-250MG	Fentin-chloride (Triphenyltin chloride) PESTANAL®	250 mg
	FL-45493-250MG	Fentin-hydroxide PESTANAL®	250 mg
	FL-37903-100MG	Fentrazamid PESTANAL®	100 mg
	IPO 202	Fenuron	250 mg
	FL-45494-250MG	Fenuron PESTANAL®	250 mg
New	U-PST-1780	Fenuron	100 mg
	IPO 210	Fenvalerate	250 mg
	FL-45495-250MG	Fenvalerate mixture of diastereomers PESTANAL®	250 mg
New	U-PST-1445	Fenvalerate	100 mg
New	U-PST-1445I100A01	Fenvalerate 100 µg/mL in Isooctane	1 mL

	Code	Product	Unit
New	U-PST-1445M100A01	Fenvalerate 100 µg/mL in Methanol	1 mL
	FL-45496-250MG	Ferbam technical mixture PESTANAL®	250 mg
	IPO 215	Fipronil	100 mg
	FL-46451-100MG	Fipronil PESTANAL®	100 mg
	NMIAP1668	Fipronil	50 mg
New	U-PST-1950M100A01	Fipronil 100 µg/mL in Methanol	1 mL
	NMIAP1731	Fipronil sulfone	25 mg
	FL-45497-250MG	Flamprop-isopropyl PESTANAL®	250 mg
	IPO 250	Flamprop-M isopropylester	250 mg
	FL-45752-250MG	Flamprop-M-isopropyl PESTANAL®	250 mg
	FL-34052-50MG	Flazasulfuron PESTANAL®	50 mg
	FL-34084-50MG	Flocoumafen (mixture of isomers) PESTANAL®	50 mg
New	FL-32509-25MG	Flonicamid PESTANAL®	25 mg
New	FL-32586-50MG	Florasulam PESTANAL®	50 mg
New	U-PST-2365M100A01	Flutolanil 100 µg/mL in Methanol	1 mL
New	FL-32824-10MG	Fluazifop PESTANAL®	10 mg
	FL-31285-2ML	Fluazifop 10 µg/mL in Ethyl acetate PESTANAL®	2 mL
	FL-36783-250MG	Fluazifop-butyl PESTANAL®	250 mg
	FL-34027-50MG	Fluazifop-methyl PESTANAL®	50 mg
	IPO 251	Fluazifop-P-butyl	100 mg
	FL-31712-100MG	Fluazifop-P-butyl	100 mg
	FL-34095-100MG	Fluazinam PESTANAL®	100 mg
	FL-46316-2ML	Fluazinam 100 µg/mL in Acetonitrile	2 mL
	FL-46113-100MG	Fluazuron PESTANAL®	100 mg
	NMIAP1490	Fluazuron	100 mg
New	FL-32801-100MG	Flubendiamide PESTANAL®	100 mg
	FL-45499-250MG	Flubenzimine PESTANAL®	250 mg
	FL-45500-250MG	Fluchloralin PESTANAL®	250 mg
New	FL-32529-25MG	Flucycloxuron PESTANAL®	25 mg
	FL-33496-100MG	Flucythrinate PESTANAL®	100 mg
	FL-46102-100MG	Fludioxonil PESTANAL®	100 mg
New	U-PST-2340A100A01	Fludioxonil 100 µg/mL in Acetonitrile	1 mL
New	U-PST-2340M100A01	Fludioxonil 100 µg/mL in Methanol	1 mL
	FL-31718-100MG	Flufenacet PESTANAL®	100 mg
	FL-34153-10MG	Flufenacet OA PESTANAL®	10 mg
	FL-34154-10MG	Flufenacet ESA sodium salt PESTANAL®	10 mg
New	U-PST-2345A100A01	Flufenoxuron 100 µg/mL in Acetonitrile	1 mL
	FL-45735-250MG	Flumequine PESTANAL®	250 mg
	FL-46417-100MG	Flumethrin PESTANAL®	100 mg
	FL-45501-250MG	Flumetralin PESTANAL®	250 mg
New	FL-32525-100MG	Flumioxazin PESTANAL®	100 mg
	FL-45502-250MG	Fluometuron PESTANAL®	250 mg
New	U-PST-1450	Fluometuron	100 mg
	FL-41132-100MG	Fluopicolide PESTANAL®	100 mg
	FL-31220-1G	Fluoroacetic acid sodium salt PESTANAL®	1 g
	FL-45506-250MG	Fluorodifen PESTANAL®	250 mg
	FL-31674-250MG	Fluoroglycofen-ethyl PESTANAL®	250 mg

	Code	Product	Unit
	CIL-CLM-7389-1.2	4-Fluoro-3-phenoxybenzoic acid ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7391-1.2	4-Fluoro-3-phenoxybenzoic acid (unlabelled) 100 µg/mL in Nonane	1.2 mL
	FL-45507-250MG	Fluotrimazole PESTANAL®	250 mg
New	FL-33797-100MG	Fluoxastrobin PESTANAL®	100 mg
New	U-PST-2355A100A01	Fluquinconazole 100 µg/mL in Acetonitrile	1 mL
	FL-31520-250MG	Flurenol-methyl ester PESTANAL®	250 mg
	FL-45511-250MG	Fluridone PESTANAL®	250 mg
New	U-PST-1785	Fluridone	10 mg
	FL-45758-100MG	Fluroxypyr PESTANAL®	100 mg
	IPO 252	Fluroxypyr-1-methylheptylester	250 mg
	FL-36780-100MG	Fluroxypyr-1-methylheptylester PESTANAL®	100 mg
New	FL-32523-100MG	Flurprimidol PESTANAL®	100 mg
	FL-46286-100MG	Flurtamone PESTANAL®	100 mg
	IPO 253	Flusilazole	100 mg
	FL-45753-100MG	Flusilazole PESTANAL®	100 mg
New	U-PST-2360A100A01	Flusilazole 100 µg/mL in Acetonitrile	1 mL
	IPO 255	Flutriafol	100 mg
	FL-34344-100MG	Flutriafol PESTANAL®	100 mg
New	U-PST-2680M100A01	Flutriafol 100 µg/mL in Methanol	1 mL
	IPO UCI 260	tau-Fluvalinate	100 mg
	FL-46294-250MG	tau-Fluvalinate PESTANAL®	250 mg
New	U-PST-2580A100A01	tau-Fluvalinate 100 µg/mL in Acetonitrile	1 mL
New	U-PST-2580M100A01	tau-Fluvalinate 100 µg/mL in Methanol	1 mL
	FL-34387-250MG	Fluxofenim PESTANAL®	250 mg
	FL-32057-250MG	Folpet PESTANAL®	250 mg
New	U-PST-550	Folpet	100 mg
New	U-PST-550M100A01	Folpet 100 µg/mL in Methanol	1 mL
	FL-46325-100MG	Fomesafen PESTANAL®	100 mg
New	U-PST-1090	Fonofos	100 mg
New	U-PST-1090M100A01	Fonofos 100 µg/mL in Methanol	1 mL
	CIL-CLM-4545-1.2	Fonofos (ring-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	FL-33977-100MG	Foramsulfuron PESTANAL®	100 mg
New	FL-32974-100MG	Forchlorfenuron PESTANAL®	100 mg
	FL-45514-250MG	Formetanate hydrochloride PESTANAL®	250 mg
	FL-46424-250MG	Formothion in Xylene PESTANAL®	250 mg
	FL-34099-50MG	Fosthiazate PESTANAL®	50 mg
	FL-45515-250MG	Fuberidazole PESTANAL®	250 mg
		Fumazone see 1,2-Dibromo-3-chloropropane (DBCP)	
	FL-45516-250MG	Furalaxyl PESTANAL®	250 mg
	FL-45517-250MG	Furathiocarb PESTANAL®	250 mg
New	U-PST-3100A100A01	Furilazole 100 µg/mL in Acetonitrile	1 mL
	FL-34347-100MG	Furmecyclox PESTANAL®	100 mg
	FL-45519-250MG	Genite PESTANAL®	250 mg
	FL-36575-250MG	Gibberellic acid, GA3 PESTANAL®	250 mg
New	FL-45520-100MG	Glufosinate-ammonium PESTANAL®	100 mg

	Code	Product	Unit
New	U-PST-1960M100A01	Glufosinate-ammonium 100 µg/mL in Methanol	1 mL
	IPO 260	Glyphosate	250 mg
	FL-45521-250MG	Glyphosate PESTANAL®	250 mg
New	U-PST-1850	Glyphosate	100 mg
	U-PPS-190-1	Glyphosate 100 µg/mL in Water	1 mL
	U-PPS-190	Glyphosate 100 µg/mL in Water	4 x 1 mL
	NIST-3071	Glyphosate in water Certified value Glyphosate.....7.76 ± 0.33 mg/kg	5 x 1.2 mL
	CIL-CNLM-4666-1.2	Glyphosate (2-^{13}C,99%; ^{15}N,98%) 100 µg/mL in Water	1.2 mL
New	CIL-CNLM-4666-10	Glyphosate (2-^{13}C,99%; ^{15}N,98%) 100 µg/mL in Water	10 mL
New	U-PST-1965M100A01	Glyphosate-isopropyl ammonium 100 µg/mL in Methanol	1 mL
		Gramoxone see Paraquat dichloride	
	FL-37915-100MG	Guazatin acetate PESTANAL®	100 mg
New	FL-32918-50MG	Halosulfuron-methyl PESTANAL®	50 mg
	FL-45817-100MG	Haloxyfop PESTANAL®	100 mg
	FL-31256-100MG	Haloxyfop-2-ethoxyethyl ester PESTANAL®	100 mg
	FL-45820-250MG	Haloxyfop-methyl PESTANAL®	250 mg
	FL-33197-100MG	Haloxyfop-p-methyl PESTANAL®	100 mg
		HCB see Hexachlorobenzene	
	FL-36756-250MG	HCH mixture of isomers PESTANAL®	250 mg
New	U-PST-070	HCH-Mix	100 mg
	IPO 270	alpha-HCH	250 mg
	FL-33856-100MG	alpha-HCH PESTANAL®	100 mg
	CERERB-012	alpha-HCH	250 mg
New	U-PST-071	alpha-HCH (alpha-BHC)	10 mg
New	U-PP-110-1	alpha-HCH 100 µg/mL in Methanol	1 mL
	U-EPA-1076	alpha-HCH 1000 µg/mL in Methanol	1 mL
	CERERB-044S	alpha-HCH 1000 µg/mL in Methanol	1.2 mL
	CIL-CLM-2482-1.2	alpha-HCH (alpha-BHC) ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	IPO 271	beta-HCH	100 mg
	CERERB-013	beta-HCH	100 mg
	FL-33376-100MG	beta-HCH PESTANAL®	100 mg
New	U-PST-072	beta-HCH (beta-BHC)	10 mg
New	U-PP-120-1	beta-HCH 100 µg/mL in Methanol	1 mL
	U-EPA-1077	beta-HCH 1000 µg/mL in Acetone	1 mL
	CERERB-045S	beta-HCH 1000 µg/mL in Acetone	1.2 mL
	CIL-CLM-3623-1.2	beta-HCH (beta-BHC) ($^{13}C_6$,99%) 50 µg/mL in Nonane	2 x 1.2 mL
	IPO 275	gamma-HCH	250 mg
	FL-45548-250MG	gamma-HCH	250 mg
	CERERB-015	gamma-HCH	250 mg
New	U-PST-630	gamma-HCH (Lindane) (gamma-BHC)	100 mg
	NIST-RM 8466	gamma-HCH (Lindane) - Purity Certified purity gamma-HCH.....99.9 ± 0.1%	100 mg
	NMIAP1332	gamma-HCH	50 mg
New	U-PST-630A100A01	gamma-HCH 100 µg/mL in Acetonitrile	1 mL
New	U-PP-140-1	gamma-HCH 100 µg/mL in Methanol	1 mL
	U-EPA-1079	gamma-HCH 1000 µg/mL in Methanol	1 mL
	CERERB-047S	gamma-HCH 1000 µg/mL in Methanol	1.2 mL

	Code	Product	Unit
	CIL-CDLM-624-1.2	gamma-HCH (Lindane) ($^{13}C_6$,99%;D_6,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-1282-1.2	gamma-HCH (Lindane) ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	IPO 276	delta-HCH	100 mg
	CERERB-014	delta-HCH	100 mg
New	U-PST-073	delta-HCH (delta-BHC)	10 mg
	U-EPA-1078	delta-HCH 1000 µg/mL in Methanol	1 mL
	CIL-CLM-3648-1.2	delta-HCH ($^{13}C_6$ 99%) 100 µg/mL in Nonane	1.2 mL
	NE7215M	epsilon-HCH 10 µg/mL in Methanol	1.5 mL
		HEOD see Dieldrin	
	CERERH-002	Heptachlor	100 mg
	NMIAP1394	Heptachlor	50 mg
New	U-PST-571	Heptachlor	100 mg
New	U-PST-571I100A01	Heptachlor 100 µg/mL in Isooctane	1 mL
	U-EPA-1123	Heptachlor 1000 µg/mL in Methanol	1 mL
	CIL-CLM-4759-1.2	Heptachlor ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-1191-1.2	Heptachlor epoxide ($^{13}C_1$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4734-1.2	cis-Heptachlor epoxide (isomer B) ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
	FL-35492-50MG	Heptachlor-epoxide (endo)(isomer A) PESTANAL®	50 mg
New	U-PP-260-1	Heptachlor-epoxide (endo)(isomer A) 100 µg/mL in Methanol	1 mL
New	U-PST-581	Heptachlor epoxide (isomer A)	10 mg
	U-EPA-1124	Heptachlor-epoxide (endo)(isomer A) 1000 µg/mL in Methanol	1 mL
	IPO 283	Heptachlor-epoxide (exo) (isomer B)	20 mg
	FL-34309-50MG	Heptachlor-epoxide (exo) (isomer B) PESTANAL®	50 mg
New	U-PST-582	Heptachlor epoxide (isomer B)	10 mg
	CERERH-001	Heptachlor-epoxide (exo) (isomer B)	100 mg
	NMIAP1395	Heptachlor epoxide (exo)	20 mg
New	U-PP-261-1	Heptachlor-epoxide (exo) (isomer B) 100 µg/mL in Methanol	1 mL
New	U-PST-582C100A01	Heptachlor epoxide (isomer B) 100 µg/mL in Cyclohexane	1 mL
	U-EPA-1164	Heptachlor-epoxide (exo) (isomer B) 1000 µg/mL in Methanol	1 mL
New	U-PST-2380M100A01	Heptenophos 100 µg/mL in Methanol	1 mL
	FL-45524-250MG	Hexabromobenzene PESTANAL®	250 mg
	FL-45525-250MG	Hexachloro-1,3-butadiene PESTANAL®	250 mg
	U-PST-590	Hexachlorobenzene	100 mg
	IPO 290	Hexachlorobenzene	250 mg
	FL-45522-250MG	Hexachlorobenzene PESTANAL®	250 mg
	U-CH-151-1	Hexachlorobenzene 100 µg/mL in Methanol	1 mL
	U-CH-150-1	Hexachlorobenzene 100 µg/mL in Methylene chloride	1 mL
	U-PST-590	Hexachlorobenzene	100 mg
	U-EPA-1125	Hexachlorobenzene 1000 µg/mL in Acetone	1 mL
	CIL-CLM-351-1.2	Hexachlorobenzene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	FL-45526-250MG	Hexachlorophene PESTANAL®	250 mg
	FL-34348-100MG	Hexaconazole PESTANAL®	100 mg
New	U-PST-2385A100A01	Hexaconazole 100 µg/mL in Acetonitrile	1 mL
	FL-37902-100MG	Hexaflumuron PESTANAL	100 mg
	IPO 292	Hexazinone	250 mg
	FL-36129-100MG	Hexazinone PESTANAL®	100 mg
New	U-PST-1460	Hexazinone	100 mg
New	U-PST-1460M100A01	Hexazinone 100 µg/mL in Methanol	1 mL
	U-EPA-1180	Hexazinone 1000 µg/mL in Hexane	1 mL

	Code	Product	Unit
	IPO 295	Hexythiazox	250 mg
	FL-33365-100MG	Hexythiazox PESTANAL®	100 mg
New	U-PST-3110A100A01	Hexythiazox 100 µg/mL in Acetonitrile	1 mL
		HHDN see Aldrin Hinosan see Edifenphos	
	FL-46426-250MG	S-Hydroprene PESTANAL®	250 mg
	FL-45528-250MG	4-Hydroxybenzonitrile PESTANAL®	250 mg
	IPO 278	2-Hydroxybiphenyl	250 mg
	FL-45529-250MG	2-Hydroxybiphenyl PESTANAL®	250 mg
	FL-36524-250MG	8-Hydroxyquinoline PESTANAL®	250 mg
	FL-31143-250MG	8-Hydroxyquinoline-sulfate PESTANAL®	250 mg
	IPO 296	Imazalil	250 mg
	FL-32007-100MG	Imazalil PESTANAL®	100 mg
New	U-PST-1970M100A01	Imazalil 100 µg/mL in Methanol	1 mL
	FL-34350-100MG	Imazamethabenz-methyl PESTANAL®	100 mg
	FL-34227-100MG	Imazamox PESTANAL®	100 mg
	FL-34179-100MG	Imazapic PESTANAL®	100 mg
	FL-37877-100MG	Imazapyr PESTANAL®	100 mg
	FL-37878-100MG	Imazaquin PESTANAL®	100 mg
	FL-37923-100MG	Imazethapyr PESTANAL®	100 mg
New	FL-32919-50MG	Imazosulfuron PESTANAL®	50 mg
	IPO 297	Imidacloprid	100 mg
	FL-37894-100MG	Imidacloprid PESTANAL®	100 mg
New	U-PST-1980A100A01	Imidacloprid 100 µg/mL in Acetonitrile	1 mL
New	U-PST-1980M100A01	Imidacloprid 100 µg/mL in Methanol	1 mL
	FL-34170-10MG	Imidacloprid-d_4 PESTANAL®	10 mg
New	CIL-DLM-8512-1.2	Imidacloprid (4,4,5,5-D_4,98%) 100 µg/mL in Methanol	1.2 mL
	FL-45531-250MG	2-Imidazolidinethione (Ethylenethiourea) PESTANAL®	250 mg
	FL-31534-250MG	2-Imidazolidone PESTANAL®	250 mg
		2-Imidazolidinthion see Ethylene thiourea Imidithion see Phosmet	
	FL-45533-250MG	3-Indolyl-acetic acid PESTANAL®	250 mg
	FL-45532-250MG	4-(3-Indolyl)-butyric acid PESTANAL®	250 mg
	FL-33969-25MG	Indoxacarb PESTANAL®	25 mg
New	U-PST-2685K100A01	Indoxacarb 100 µg/mL in Acetone	1 mL
New	U-PST-2685A100A01	Indoxacarb 100 µg/mL in Acetonitrile	1 mL
	IPO 298	Iodofenphos	250 mg
	FL-30317-100MG	Iodosulfuron-methyl sodium salt PESTANAL®	100 mg
	FL-36131-100MG	Ioxynil PESTANAL®	100 mg
New	U-PST-3135A100A01	Ioxynil 100 µg/mL in Acetonitrile	1 mL
	FL-36198-100MG	Ioxynil-methyl PESTANAL®	100 mg
	FL-33381-100MG	Ioxynil-octanoate PESTANAL®	100 mg
		IPC see Propham	
	FL-45814-100MG	Iprobenphos PESTANAL®	100 mg
	IPO 300	Iprodione	250 mg
	FL-36132-100MG	Iprodione PESTANAL®	100 mg

	Code	Product	Unit
New	U-PST-1985A100A01	Iprodione 100 µg/mL in Acetonitrile	1 mL
	FL-33431-100MG	Iprovalicarb PESTANAL®	100 mg
	FL-46105-250MG	Irgarol PESTANAL®	250 mg
	FL-36133-100MG	Isazophos PESTANAL®	100 mg
		Isobumeton see Secbumeton	
	FL-36134-100MG	Isocarbamide PESTANAL®	100 mg
	FL-37901-100MG	Isocarbophos PESTANAL®	100 mg
	FL-33389-100MG	Isodrin PESTANAL®	100 mg
New	U-PST-1855	Isodrin	100 mg
New	U-PP-430-1	Isodrin 100 µg/mL in Methanol	1 mL
	U-EPA-1131	Isodrin 5000 µg/mL in Methanol	1 mL
	CIL-CLM-4727-1.2	Isodrin ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
New	U-PST-2690M100A01	Isofenphos 100 µg/mL in Methanol	1 mL
	FL-33436-50MG	Isofenphos-methyl PESTANAL®	50 mg
	FL-36136-100MG	Isomethiozin PESTANAL®	100 mg
	FL-31036-100MG	Isonoruron PESTANAL®	100 mg
	FL-45541-250MG	Isoprocarb PESTANAL®	250 mg
New	U-PST-1470	Isoprocarb	25 mg
New	U-PST-1470M100A01	Isoprocarb 100 µg/mL in Methanol	1 mL
	FL-36505-100MG	Isopropalin PESTANAL®	100 mg
New	U-PST-1475	Isopropalin	100 mg
	ERI-015	Isopropyl methylphosphonic acid (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	FL-34221-50MG	2-Isopropylthioxanthon PESTANAL®	50 mg
	FL-34222-50MG	4-Isopropylthioxanthone PESTANAL®	50 mg
	IPO 310	Isoproturon	250 mg
	FL-36137-100MG	Isoproturon PESTANAL®	100 mg
New	U-PST-2395M100A01	Isoproturon 100 µg/mL in Methanol	1 mL
	IPO 853	ortho-Isoproturon	100 mg
New	FL-32532-100MG	Isopyrazam PESTANAL®	100 mg
New	FL-32524-100MG	Isotianil PESTANAL®	100 mg
	FL-36138-100MG	Isoxaben PESTANAL®	100 mg
New	FL-33799-100MG	Isoxadifen-ethyl PESTANAL®	100 mg
	FL-46437-100MG	Isoxaflutol PESTANAL®	100 mg
	FL-45544-250MG	Iodofenphos PESTANAL®	250 mg
		Jodfenphos see Iodofenphos	
	FL-36139-100MG	Kadethrin PESTANAL®	100 mg
		Kakodylic acid see Cacodylic acid Karathan see Dinocap	
	FL-45546-250MG	Karbutylate PESTANAL®	250 mg
	FL-35493-250MG	Kelevan PESTANAL®	250 mg
		Kelthane see Dicofol Kepone see Chlordecone	
	IPO 350	Kresoxim-methyl	100 mg
	FL-37899-100MG	Kresoxim-methyl PESTANAL®	100 mg
	NMIAP1725	Ketotriclabendazole	5 mg
New	FL-32972-100MG	Lactofen PESTANAL®	100 mg
	IPO 398	Lenacil	250 mg
	FL-31112-100MG	Lenacil PESTANAL®	100 mg

	Code	Product	Unit
New	U-PST-2410M100A01	Lenacil 100 µg/mL in Methanol	1 mL
	FL-33366-100MG	Leptophos PESTANAL®	100 mg
New	U-PST-1480	Leptophos	100 mg
New	U-PST-1480M100A01	Leptophos 100 µg/mL in Methanol	1 mL
	U-PST-1485	Lethane 384	100 mg
	ERM-AC303	Leucomalachite Green (4,4'-Benzylidenbis(N,N-dimethylaniline)) Certified value Purity.....98.8 ± 0.8%	100 mg
	IPO 425	Linuron	250 mg
	FL-36141-100MG	Linuron PESTANAL®	100 mg
New	U-PST-1490	Linuron	100 mg
New	U-PST-1490A100A01	Linuron 100 µg/mL in Acetonitrile	1 mL
New	U-PST-1490M100A01	Linuron 100 µg/mL in Methanol	1 mL
	U-EPA-1182	Linuron 1000 µg/mL in Hexane	1 mL
		Lontrel see Clopyralid	
	FL-31662-100MG	Lufenuron PESTANAL®	100 mg
	LGC1706	Malachite green oxalate The material is intended for the use as an analytical standard for the determination of malachite green oxalate in foodstuff especially fish Assessed value Purity..... 94.2 ± 1.4 mass% Indicative values for Monode -malachite green, 4-(Dimethylamino)benzophenone, Malachite green carbinol (MG-carbinol), Leucomalachite green (LMG).	250 mg
	FL-36142-100MG	Malaoxon PESTANAL®	100 mg
	IPO 460	Malathion	250 mg
	LGC1205	Malathion Certified purity.....99.4% m/m	250 mg
	CERERM-039	Malathion	250 mg
	FL-36143-100MG	Malathion PESTANAL®	100 mg
New	U-PST-641	Malathion	100 mg
New	U-PST-641M100A01	Malathion 100 µg/mL in Methanol	1 mL
	CIL-DLM-4476-1.2	Malathion (D_{10},99%) 100 µg/mL in Nonane	1.2 mL
	IPO 461	iso-Malathion	100 mg
	FL-45552-250MG	Maleic hydrazide PESTANAL®	250 mg
	FL-45553-250MG	Mancozeb technical mixture PESTANAL®	250 mg
New	FL-32805-100MG	Mandipropamid PESTANAL®	100 mg
	FL-45554-250MG	Maneb PESTANAL®	250 mg
		MCCP see Mecoprop	
	IPO 464	MCPA	250 mg
	FL-45555-250MG	MCPA PESTANAL®	250 mg
New	U-PST-1180	MCPA	100 mg
New	U-PST-1180A100A01	MCPA 100 µg/mL in Acetonitrile	1 mL
New	U-HB-180-1	MCPA 100 µg/mL in Methanol	1 mL
	FL-31290-2ML	MCPA-butoxyethyl ester 10 µg/mL in iso-Octane PESTANAL®	2 mL
	FL-33394-100MG	MCPA-2-ethylhexyl ester PESTANAL®	100 mg
	IPO 465	MCPA-methyl ester	250 mg
	FL-36144-100MG	MCPA-methyl ester PESTANAL®	100 mg
New	U-PST-1181	MCPA-methyl-ester	100 mg
New	U-HB-181-1	MCPA-methyl ester 100 µg/mL in Methanol	1 mL
	FL-45746-250MG	MCPA-sodium salt PESTANAL®	250 mg

	Code	Product	Unit
	IPO 468	MCPB	250 mg
	FL-36145-100MG	MCPB PESTANAL®	100 mg
	IPO 467	MCPB-methyl ester	250 mg
	FL-36146-100MG	MCPB-methyl ester PESTANAL®	100 mg
		MCPP see Mecoprop	
	FL-36515-100MG	Mecarbam PESTANAL®	100 mg
New	U-PST-2415M100A01	Mecarbam 100 µg/mL in Methanol	1 mL
	IPO 470	Mecoprop	250 mg
	FL-36147-100MG	Mecoprop PESTANAL®	100 mg
New	U-PST-1190	Mecoprop (MCPP)	100 mg
New	U-HB-190-1	Mecoprop (MCPP) 100 µg/mL in Methanol	1 mL
	IPO 469	Mecoprop-methyl ester	250 mg
	FL-36148-100MG	Mecoprop-methyl ester PESTANAL®	100 mg
New	U-PST-1191	Mecoprop-methyl ester (MCPP-methyl ester)	100 mg
New	U-HB-191-1	Mecoprop-methyl ester 100 µg/mL in Methanol	1 mL
	FL-37871-100MG	Mecoprop-2-octyl ester PESTANAL®	100 mg
	FL-36773-250MG	Mecoprop-P PESTANAL®	250 mg
	FL-36150-100MG	Mefenacet PESTANAL®	100 mg
	FL-46302-100MG	Mefenpyr-diethyl PESTANAL®	100 mg
	FL-33970-50MG	Mepanipyrim PESTANAL®	50 mg
New	U-PST-2420A100A01	Mepanipyrim 100 µg/mL in Acetonitrile	1 mL
	FL-34352-100MG	Mephosfolan PESTANAL®	100 mg
	FL-36151-100MG	Mepiquat chloride PESTANAL®	100 mg
	FL-33361-100MG	Mepronil PESTANAL®	100 mg
	U-EPA-1172	2-Mercaptobenzothiazole 1000 µg/mL in Methanol	1 mL
New	U-PST-1860	Mercaptobenzothiazole	100 mg
		Mercaptodimethur see Methiocarb	
	U-PST-1500	Merphos	100 mg
New	U-PST-1500H100A01	Merphos 100 µg/mL in Hexane	1 mL
	FL-34178-100MG	Mesosulfuron-methyl PESTANAL®	100 mg
	FL-33855-100MG	Mesotrion PESTANAL®	100 mg
New	FL-32966-100MG	Metaflumizone mixture of isomeres PESTANAL®	100 mg
	IPO 473	Metalaxyl	250 mg
	FL-32012-100MG	Metalaxyl PESTANAL®	100 mg
New	U-PST-2000M100A01	Metalaxyl 100 µg/mL in Methanol	1 mL
New	FL-32808-100MG	Metalaxyl-M PESTANAL®	100 mg
	FL-36611-1G	Metaldehyde PESTANAL®	1 g
	FL-45570-250MG	Metam sodium dihydrate PESTANAL®	250 mg
New	U-PST-1505	Metam sodium	100 mg
	IPO 472	Metamitron	250 mg
	FL-36154-100MG	Metamitron PESTANAL®	100 mg
New	U-PST-2430A100A01	Metamitron 100 µg/mL in Acetonitrile	1 mL
	IPO 471	Metazachlor	250 mg
	FL-36155-100MG	Metazachlor PESTANAL®	100 mg
New	U-PST-2435A100A01	Metazachlor 100 µg/mL in Acetonitrile	1 mL
New	U-PST-2435M100A01	Metazachlor 100 µg/mL in Methanol	1 mL

	Code	Product	Unit
	U-EPA-1183	Metazachlor 1000 µg/mL in Acetonitrile	1 mL
	FL-37909-100MG	Metconazole PESTANAL®	100 mg
	IPO 474	Methabenzthiazuron	250 mg
	FL-36156-100MG	Methabenzthiazuron PESTANAL®	100 mg
New	U-PST-2445A100A01	Methabenzthiazuron 100 µg/mL in Acetonitrile	1 mL
	FL-45569-250MG	Methacrifos PESTANAL®	250 mg
New	U-PST-2695M100A01	Methacrifos 100 µg/mL in Methanol	1 mL
	IPO 483	Methamidophos	250 mg
	FL-33395-100MG	Methamidophos PESTANAL®	100 mg
New	U-PST-1510	Methamidophos	25 mg
New	U-PST-1510M100A01	Methamidophos 100 µg/mL in Methanol	1 mL
	NMIAP1712	Methamidophos-d6	1 mg
New	CIL-DLM-7149	Methamidophos (dimethyl-D_6,98%)	on request
	FL-36157-100MG	Methfuroxam PESTANAL®	100 mg
	FL-36158-100MG	Methidathion PESTANAL®	100 mg
New	U-PST-1520	Methidathion	100 mg
New	U-PST-1520A100A01	Methidathion 100 µg/mL in Acetonitrile	1 mL
New	U-PST-1520I100A01	Methidathion 100 µg/mL in Isooctane	1 mL
	IPO 477	Methiocarb	250 mg
	FL-36152-100MG	Methiocarb (Mercaptodimethur) PESTANAL®	100 mg
New	U-PST-1525	Methiocarb	100 mg
New	U-PST-1525A100A01	Methiocarb 100 µg/mL in Acetonitrile	1 mL
New	U-PST-1525M100A01	Methiocarb 100 µg/mL in Methanol	1 mL
	FL-45729-100MG	Methiocarb-sulfone (Mercaptodimethursulfon) PESTANAL®	100 mg
	FL-34177-100MG	Methiocarb-sulfoxide PESTANAL®	100 mg
	IPO 481	Methomyl	250 mg
	FL-36159-100MG	Methomyl PESTANAL®	100 mg
New	U-PST-680	Methomyl	100 mg
New	U-PST-680A100A01	Methomyl 100 µg/mL in Acetonitrile	1 mL
New	CIL-CNLM-7148-1.2	Methomyl (acetohydroxamate-$^{13}C_2$,99%;^{15}N,98%) 100 µg/mL in Methanol	1.2 mL
	FL-33375-100MG	Methoprene PESTANAL®	100 mg
	FL-31115-100MG	Methoprotryne PESTANAL®	100 mg
	FL-36161-100MG	Methoxychlor PESTANAL®	100 mg
New	U-PST-691	Methoxychlor	100 mg
	NMIAP1305	Methoxychlor	100 mg
New	U-PP-390-1	Methoxychlor 100 µg/mL in Methanol	1 mL
	CIL-CLM-4683-1.2	Methoxychlor (ring-$^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	IPO 475	2,4'-Methoxychlor	100 mg
	IPO 476	4,4'-Methoxychlor	250 mg
	FL-36546-1G	Methyl chloroacetate PESTANAL®	1 g
	FL-36547-1G	Methyl dichloroacetate PESTANAL®	1 g
	IPO 852	S-Methylfenitrothion	100 mg
	FL-45576-250MG	Methyl isothiocyanate PESTANAL®	250 mg
	FL-33368-100MG	Methylmercury chloride PESTANAL®	100 mg
	FL-36558-100MG	2-Methyl-3-nitroanisole PESTANAL®	100 mg
	FL-31179-250MG	3-Methyl-4-nitroanisole PESTANAL®	250 mg
	FL-33367-100MG	Methyl pentachlorophenylsulfide PESTANAL®	100 mg

	Code	Product	Unit
	FL-31264-100MG	3-(Methylphosphinico) propionic acid PESTANAL®	100 mg
	ERM-038	Methylphosphonic acid (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	CIL-DLM-6196-1.2	Methylphosphonic acid (methyl-D_3,98%) 100 µg/mL in Methanol	1.2 mL
	FL-36548-1G	Methyl trichloroacetate PESTANAL®	1 g
	FL-45577-250MG	Metiram technical mixture PESTANAL®	250 mg
	IPO 478	Metobromuron	250 mg
	FL-36162-100MG	Metobromuron PESTANAL®	100 mg
New	U-PST-3165A100A01	Metobromuron 100 µg/mL in Acetonitrile	1 mL
	IPO 482	Metolachlor	250 mg
	FL-36163-100MG	Metolachlor PESTANAL®	100 mg
New	U-PST-1530	Metolachlor	100 mg
New	U-PST-1530M100A01	Metolachlor 100 µg/mL in Methanol	1 mL
	U-EPA-1186	Metolachlor 1000 µg/mL in Hexane	1 mL
	CIL-CLM-3712-1.2	Metolachlor (ring-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	FL-34149-10MG	Metolachlor ESA sodium salt PESTANAL®	10 mg
	FL-34148-10MG	Metolachlor OA PESTANAL®	10 mg
	FL-33859-100MG	S-Metolachlor PESTANAL®	100 mg
New	FL-32641-100MG	S-Metolachlor metabolite CGA 368208 PESTANAL®	100 mg
New	FL-32645-100MG	S-Metolachlor metabolite CGA 37735 PESTANAL®	100 mg
New	FL-32648-100MG	S-Metolachlor metabolite CGA 50267 PESTANAL®	100 mg
New	FL-32650-100MG	S-Metolachlor metabolite CGA 50720 PESTANAL®	100 mg
New	FL-32637-100MG	S-Metolachlor metabolite CGA 357704 PESTANAL®	100 mg
New	FL-32646-100MG	S-Metolachlor metabolite NOA 413173 PESTANAL®	100 mg
	FL-31037-100MG	Metolcarb PESTANAL®	100 mg
	FL-34229-10MG	(Z)-Metominostrobin PESTANAL®	10 mg
	FL-34230-10MG	(E)-Metominostrobin PESTANAL®	10 mg
	FL-46317-100MG	Metosulam PESTANAL®	100 mg
	IPO 486	Metoxuron	250 mg
	FL-36164-100MG	Metoxuron PESTANAL®	100 mg
New	FL-32964-100MG	Metrafenone PESTANAL®	100 mg
	IPO 480	Metribuzin	250 mg
	FL-36165-100MG	Metribuzin PESTANAL®	100 mg
New	U-PST-1535	Metribuzin	100 mg
New	U-PST-1535M100A01	Metribuzin 100 µg/mL in Methanol	1 mL
	FL-46432-100MG	Metsulfuron-methyl PESTANAL®	100 mg
New	U-PST-710	Mevinphos	100 mg
New	U-PST-710M100A01	Mevinphos (Phosdrin) 100 µg/mL in Methanol	1 mL
New	U-PST-1010	Mexacarbate	10 mg
		Mezineb see Propineb technical mixture	
	FL-36168-100MG	MGK 264 mixture of isomers PESTANAL®	100 mg
New	U-PST-1790	MGK-264	100 mg
	FL-36169-100MG	MGK 326 PESTANAL®	100 mg
	IPO 485	Mirex	250 mg
	CERERM-001	Mirex	100 mg
	FL-36170-100MG	Mirex PESTANAL®	100 mg
New	U-PST-720	Mirex	100 mg
New	U-PST-720M100A01	Mirex 100 µg/mL in Methanol	1 mL
	CIL-CLM-4813-1.2	Mirex ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-2078-1	Mirex ($^{13}C_8$,99%) 200 µg/mL in Toluene	1 mL

	Code	Product	Unit
	FL-36171-100MG	Molinate PESTANAL®	100 mg
New	U-PST-1540	Molinate	100 mg
New	U-PST-1540M100A01	Molinate 100 µg/mL in Methanol	1 mL
	FL-36172-100MG	Monalide mixture of isomers PESTANAL®	100 mg
	IPO 489	Monocrotophos	100 mg
	FL-36173-100MG	Monocrotophos PESTANAL®	100 mg
New	U-PST-040	Monocrotophos	100 mg
New	U-PST-040M100A01	Monocrotophos 100 µg/mL in Methanol	1 mL
	IPO 490	Monolinuron	250 mg
	FL-45590-250MG	Monolinuron PESTANAL®	250 mg
New	U-PST-2465A100A01	Monolinuron 100 µg/mL in Acetonitrile	1 mL
	U-EPA-1188	Monolinuron 1000 µg/mL in Acetonitrile	1 mL
	FL-31200-1G	Monomethyl 5-nitro-iso-phthalate PESTANAL®	1 g
New	FL-32811-100MG	Monosultap PESTANAL®	100 mg
	CERERM-003	Monuron	250 mg
	FL-36174-100MG	Monuron PESTANAL®	100 mg
New	U-PST-1545	Monuron	100 mg
New	U-PST-1550	Monuron TCA	100 mg
	FL-46449-100MG	Muscalur PESTANAL®	100 mg
	IPO 495	Myclobutanil	100 mg
	FL-34360-100MG	Myclobutanil PESTANAL®	100 mg
New	U-PST-2470A100A01	Myclobutanil 100 µg/mL in Acetonitrile	1 mL
	FL-45593-250MG	Nabam technical mixture PESTANAL®	250 mg
New	FL-32668-10MG	Nabam-d4 hexahydrate PESTANAL®	10 mg
	FL-34231-100MG	Naftalofos PESTANAL®	100 mg
	FL-31097-1G	1-Naphthol PESTANAL®	1 g
	FL-34066-100MG	2-Naphthoxy acetic acid PESTANAL®	100 mg
	FL-45736-250MG	2-Naphthoxy acetic acid methyl ester PESTANAL®	250 mg
	FL-36732-1G	1-Naphthyl acetamide PESTANAL®	1 g
	FL-35745-1G	1-Naphthyl acetic acid PESTANAL®	1 g
	FL-35746-1G	1-Naphthylacetic acid methyl ester (Methyl 1-naphthylacetate) PESTANAL®	1 g
	IPO 499	Napropamide	250 mg
	FL-36175-100MG	Napropamide PESTANAL®	100 mg
New	U-PST-1555	Napropamide	100 mg
New	U-PST-1555A100A01	Napropamide (Devrinol) 100 µg/mL in Acetonitrile	1 mL
New	U-PST-1555M100A01	Napropamide (Devrinol) 100 µg/mL in Methanol	1 mL
	FL-33371-100MG	Naptalam PESTANAL®	100 mg
	FL-36176-100MG	Neburon PESTANAL®	100 mg
New	U-PST-1560	Neburon	100 mg
New	U-PST-1560M100A01	Neburon 100 µg/mL in Methanol	1 mL
		Neo-Pynamin see Tetramethrin	
	FL-36177-100MG	Niclosamid PESTANAL®	100 mg
	FL-34210-100MG	Nicosulfuron PESTANAL®	100 mg
	FL-46077-100MG	Nitenpyram PESTANAL®	100 mg
	FL-36178-100MG	Nitralin PESTANAL®	100 mg
	FL-33372-100MG	Nitrapyrin PESTANAL®	100 mg
	IPO 510	Nitrofen (2,4-Dichlorphenyl-4'-nitrophenylether)	250 mg

	Code	Product	Unit
	CERERN-020	Nitrofen	250 mg
	FL-33374-100MG	Nitrofen PESTANAL®	100 mg
New	U-PST-1565	Nitrofen	5 mg
New	U-PST-1565M100A01	Nitrofen 100 µg/mL in Methanol	1 mL
	FL-35966-1G	2-Nitrophenol PESTANAL®	1 g
	FL-35836-1G	4-Nitrophenol PESTANAL®	1 g
	FL-36612-1G	4-Nitrophenol sodium salt dihydrate PESTANAL®	1 g
	IPO 854	N-Nitrosopendimethalin	100 mg
	FL-36179-100MG	Nitrothal-isopropyl PESTANAL®	100 mg
	CERERN-001	cis-Nonachlor	25 mg
	U-PST-1200	cis-Nonachlor	10 mg
New	U-PP-490-1	cis-Nonachlor 100 µg/mL in Methanol	1 mL
New	U-PST-1201C100A01	Nonachlor 100 µg/mL in Cyclohexane	1 mL
	CIL-CLM-4811-1.2	cis-Nonachlor ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
New	U-PST-1201	trans-Nonachlor	10 mg
New	NMIAP1623	trans-Nonachlor	10 mg
	CERERN-002	trans-Nonachlor	25 mg
New	U-PP-500-1	trans-Nonachlor 100 µg/mL in Methanol	1 mL
	CIL-CLM-4735-1.2	trans-Nonachlor ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
	FL-46405-100MG	4-n-Nonylphenol PESTANAL®	100 mg
	FL-46018-1G	Nonylphenol PESTANAL®	1 g
New	FL-34364-100MG	Norflurazon PESTANAL®	100 mg
New	U-PST-1795	Norflurazon	10 mg
	IPO 522	Novaluron	100 mg
New	FL-32419-25MG	Novaluron PESTANAL®	25 mg
	FL-31116-100MG	Nuarimol PESTANAL®	100 mg
New	U-PST-2480A100A01	Nuarimol 100 µg/mL in Acetonitrile	1 mL
	FL-46078-250MG	Octhilinone PESTANAL®	250 mg
	FL-46143-100MG	Ofurace PESTANAL®	100 mg
	FL-36181-100MG	Omethoate PESTANAL®	100 mg
New	U-PST-2015A100A01	Omethoate 100 µg/mL in Acetonitrile	1 mL
New	U-PST-2015M100A01	Omethoate 100 µg/mL in Methanol	1 mL
		Omite see Propargite	
	FL-33362-100MG	Orbencarb PESTANAL®	100 mg
New	U-PST-1570	Oryzalin	100 mg
	FL-36182-100MG	Oryzalin PESTANAL®	100 mg
	U-EPA-1170	Oryzalin 1000 µg/mL in Methanol	1 mL
New	U-PST-1100	Ovex	100 mg
	FL-36183-100MG	Oxabetrinil PESTANAL®	100 mg
	FL-33966-100MG	Oxadiargyl PESTANAL®	100 mg
	FL-33382-100MG	Oxadiazon PESTANAL®	100 mg
New	U-PST-1575	Oxadiazon	100 mg
New	U-PST-1575M100A01	Oxadiazon 100 µg/mL in Methanol	1 mL
	IPO 525	Oxadixyl	100 mg
	FL-34365-100MG	Oxadixyl PESTANAL®	100 mg
New	U-PST-2485M100A01	Oxadixyl 100 µg/mL in Methanol	1 mL

	Code	Product	Unit
	IPO 526	Oxamyl	250 mg
	FL-36184-100MG	Oxamyl PESTANAL®	100 mg
New	U-PST-1580	Oxamyl	100 mg
New	U-PST-1580A100A01	Oxamyl 100 µg/mL in Acetonitrile	1 mL
New	U-PST-1580M100A01	Oxamyl 100 µg/mL in Methanol	1 mL
	FL-46416-100MG	Oxasulfuron PESTANAL®	100 mg
	IPO 527	Oxycarboxin	250 mg
	FL-36185-100MG	Oxycarboxin PESTANAL®	100 mg
New	CIL-DLM-7150-1.2	Oxydemeton methyl (di-O-methyl-D_6,98%) 100 µg/mL in Acetonitrile	1.2 mL
	IPO 524	Oxyfluorfen	100 mg
	FL-35031-100MG	Oxyfluorfen PESTANAL®	100 mg
New	U-PST-1590	Oxyfluorfen	100 mg
New	U-PST-1590M100A01	Oxyflourfen 100 µg/mL in Methanol	1 mL
	CIL-CLM-4538-1.2	Oxypyrimidine (methyl-4,5,6-$^{13}C_4$, 99%) (diazinon metabolite) 100 µg/mL in Acetonitrile	1.2 mL
	FL-46046-250MG	Paclobutrazol PESTANAL®	250 mg
New	U-PST-2490M100A01	Paclobutrazol 100 µg/mL in Methanol	1 mL
New	U-PST-1110	Paraoxon-ethyl (Paraoxon)	100 mg
New	U-PST-1110M100A01	Paraoxon-ethyl 100 µg/mL in Methanol	1 mL
	IPO UCI 530	Paraoxon-ethyl	250 mg
	FL-36186-100MG	Paraoxon-ethyl PESTANAL®	100 mg
	IPO UCI 531	Paraoxon-methyl	250 mg
	FL-46192-100MG	Paraoxon-methyl PESTANAL®	100 mg
	FL-36541-100MG	Paraquat dichloride hydrate PESTANAL®	100 mg
New	U-PST-740	Paraquat dichloride	100 mg
	U-PST-740AS	Paraquat dichloride 100 µg/mL in Water	1 mL
	CERERP-079	Parathion-ethyl	250 mg
	IPO 529	Parathion-ethyl	250 mg
New	FL-45607-100MG	Parathion-ethyl PESTANAL®	100 mg
New	U-PST-761	Parathion-ethyl	100 mg
	CIL-DLM-2970-0.01	Parathion-ethyl (diethyl-D10,98%)	10 mg
New	U-PST-761A100A01	Parathion-ethyl 100 µg/mL in Acetonitrile	1 mL
New	U-PST-761M100A01	Parathion-ethyl 100 µg/mL in Methanol	1 mL
New	U-SP-140-1	Parathion-ethyl 100 µg/mL in Methanol	1 mL
	CIL-DLM-2970-1.2	Parathion-ethyl (diethyl-D_{10},98%) 100 µg/mL in Nonane	1.2 mL
New	IPO 531	Parathion-methyl	250 mg
	FL-36187-100MG	Parathion-methyl PESTANAL®	100 mg
New	U-PST-700	Parathion-methyl	100 mg
	CERERM-004	Parathion-methyl	250 mg
New	U-SP-130-1	Parathion-methyl 100 µg/mL in Methanol	1 mL
	FL-36188-100MG	Pebulate PESTANAL®	100 mg
New	U-PST-1595	Pebulate	100 mg
	FL-36189-100MG	Penconazole PESTANAL®	100 mg
New	U-PST-2495M100A01	Penconazole 100 µg/mL in Methanol	1 mL
	FL-31118-100MG	Pencycuron PESTANAL®	100 mg
	IPO 530	Pendimethalin	250 mg
	FL-36191-100MG	Pendimethalin PESTANAL®	100 mg

	Code	Product	Unit
New	U-PST-1600A100A01	Pendimethalin 100 µg/mL in Acetonitrile	1 mL
New	U-PST-1600M100A01	Pendimethalin 100 µg/mL in Methanol	1 mL
New	U-PST-1600	Pendimethalin	100 mg
	FL-46012-100MG	Pentachloroaniline PESTANAL®	100 mg
	IPO 540	Pentachlorobenzene	250 mg
	FL-35886-1G	Pentachlorobenzene PESTANAL®	1 g
	FL-31061-250MG	Pentachloroethane PESTANAL®	250 mg
	U-PPS-130-1	Pentachloronitrobenzene 100 µg/mL in Methyl tert-butyl ether (MTBE)	1 mL
	U-EPA-1151	Pentachloronitrobenzene 5000 µg/mL in Methanol	1 mL
	U-NAI-160-1	Pentachloronitrobenzene 100 µg/mL in Methylene chloride	1 mL
	U-PPS-132-1	Pentachloronitrobenzene 1000 µg/mL in Ethyl acetate	1 mL
	U-PPS-133-1	Pentachloronitrobenzene 5000 µg/mL in Acetone	1 mL
	IPO 560	Pentachlorophenol	100 mg
New	U-PST-780	Pentachlorophenol	20 mg
	U-PH-180-1	Pentachlorophenol 1000 µg/mL in Methanol	1 mL
	U-PH-180	Pentachlorophenol 1000 µg/mL in Methanol	4 x 1 mL
	FL-35550-100MG	Pentachlorophenyl acetate PESTANAL®	100 mg
New	FL-32861-2ML	Pentanochlor, 100 µg/mL in Acetonitrile PESTANAL®	2 mL
	IPO 557	Permethrin	250 mg
	FL-45614-250MG	Permethrin mixture of cis and trans isomers PESTANAL®	250 mg
New	U-PST-1605	Permethrin, mixed isomers	25 mg
New	U-PST-1605M100A01	Permethrin mixed isomers 100 µg/mL in Methanol	1 mL
New	U-PST-2895M100A01	cis-Permethrin 100 µg/mL in Methanol	1 mL
	CIL-CLM-7322-1.2	cis-Permethrin (phenoxy-$^{13}C_6$,99%) 50 µg/mL in Nonane	1.2 mL
	FL-36893-2ML	trans-Permethrin 10 µg/mL in Cyclohexane PESTANAL®	2 mL
	CIL-CLM-7323-1.2	trans-Permethrin (phenoxy-$^{13}C_6$,99%) 50 µg/mL in Nonane	1.2 mL
	IPO 559	Perthane	250 mg
	FL-45615-250MG	Perthane PESTANAL®	250 mg
New	U-PST-790	Perthane	100 mg
New	U-PST-790I100A01	Perthane 100 µg/mL in Isooctane	1 mL
New	U-PST-790M100A01	Perthane 100 µg/mL in Methanol	1 mL
New	FL-32528-50MG	Pethoxamid PESTANAL®	50 mg
	IPO 561	Phenmedipham	250 mg
	FL-36192-100MG	Phenmedipham PESTANAL®	100 mg
	FL-35952-1G	Phenol PESTANAL®	1 g
	FL-36193-100MG	Phenothrin mixture of isomers PESTANAL®	100 mg
New	U-PST-2700M100A01	Phenothrin (tech) 100 µg/mL in Methanol	1 mL
	FL-34366-250MG	Phenoxyacetic acid PESTANAL®	250 mg
	FL-46319-250MG	Phenoxybenzoic acid PESTANAL®	250 mg
	CIL-CLM-4542-1.2	3-Phenoxybenzoic acid (phenoxy-$^{13}C_6$,99%) (Permethrin metabolite) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4542-SA-1.2	3-Phenoxybenzoic acid (phenoxy-$^{13}C_6$,99%) (Permethrin metabolite) 100 µg/mL in Acetonitrile	1.2 mL
New	IPO 566	iso-Phentoate	100 mg
	FL-31611-100MG	Phenthoate PESTANAL®	100 mg
New	U-PST-2020M100A01	Phenthoate 100 µg/mL in Methanol	1 mL
	IPO 567	Phentoate-oxon	100 mg
	FL-45619-250MG	Phenylmercury chloride PESTANAL®	250 mg

	Code	Product	Unit
New	U-PST-1610M100A01	2-Phenylphenol 100 µg/mL in Methanol	1 mL
New	U-PST-1610	2-Phenylphenol	100 mg
	CIL-CLM-3733-1.2	2-Phenylphenol (phenyl-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-3748-1.2	4-Phenylphenol (phenyl-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	FL-31056-250MG	N-Phenylthiourea PESTANAL®	250 mg
	FL-33388-100MG	Phorate PESTANAL®	100 mg
New	U-PST-800	Phorate	100 mg
New	U-SP-150-1	Phorate 100 µg/mL in Methanol	1 mL
	CIL-CLM-4544-1.2	Phorate (diethoxy-$^{13}C_4$, 99%) 100 µg/mL in Acetonitrile	1.2 mL
	FL-46031-100MG	Phorate-sulfone PESTANAL®	100 mg
	FL-45762-100MG	Phorate-sulfoxide PESTANAL®	100 mg
	IPO 562	Phosalone	250 mg
	FL-36194-100MG	Phosalone PESTANAL®	100 mg
New	U-PST-2500M100A01	Phosalone 100 µg/mL in Methanol	1 mL
		Phosdrin see Mevinphos	
	IPO 564	Phosmet	250 mg
New	U-PST-600	Phosmet (Imidan)	100 mg
New	U-PST-600M100A01	Phosmet 100 µg/mL in Methanol	1 mL
	CIL-DLM-4667-1.2	Phosmet (dimethyl-D_6,98%) 100 µg/mL in Acetonitrile	1.2 mL
	FL-45622-100MG	Phosphamidon E + Z isomer PESTANAL®	100 mg
New	U-PST-810	Phosphamidon (Dimecron)	100 mg
	FL-36197-100MG	Phoxim PESTANAL®	100 mg
	FL-36734-1G	Phthalimide PESTANAL®	1 g
	FL-36774-250MG	Picloram PESTANAL®	250 mg
New	U-PST-1620	Picloram	25 mg
New	U-PST-1620A100A01	Picloram 100 µg/mL in Acetonitrile	1 mL
New	U-PST-1620M100A01	Picloram 100 µg/mL in Methanol	1 mL
	U-EPA-1175	Picloram 1000 µg/mL in Methanol	1 mL
	FL-37912-100MG	Picolinafen PESTANAL®	100 mg
	FL-33658-100MG	Picoxystrobin PESTANAL®	100 mg
	FL-45625-250MG	Pindone PESTANAL®	250 mg
New	FL-32821-25MG	Pinoxaden PESTANAL®	25 mg
	IPO 571	Piperonyl butoxide	250 mg
	FL-45626-100MG	Piperonyl butoxide PESTANAL®	100 mg
New	U-PST-820	Piperonyl butoxide	100 mg
New	U-PST-820A100A01	Piperonyl butoxide 100 µg/mL in Acetonitrile	1 mL
New	U-PST-820I100A01	Piperonyl butoxide 100 µg/mL in Isooctane	1 mL
	FL-46011-250MG	Piperophos PESTANAL®	250 mg
	IPO 563	Pirimicarb	250 mg
	FL-45627-250MG	Pirimicarb PESTANAL®	250 mg
New	U-PST-2505A100A01	Pirimicarb 100 µg/mL in Acetonitrile	1 mL
New	U-PST-2505M100A01	Pirimicarb 100 µg/mL in Methanol	1 mL
	FL-34209-10MG	Pirimicarb-d_6 PESTANAL®	10 mg
	FL-45628-250MG	Pirimiphos-ethyl PESTANAL®	250 mg
New	U-PST-2510M100A01	Pirimiphos-ethyl 100 µg/mL in Methanol	1 mL
	IPO 565	Pirimiphos-methyl	250 mg

	Code	Product	Unit
	FL-32058-250MG	Pirimiphos-methyl PESTANAL®	250 mg
New	U-PST-1625	Pirimphos-methyl	100 mg
New	U-PST-1625M100A01	Pirimiphos-methyl 100 µg/mL in Methanol	1 mL
		Plictran see Cyhexatin	
	FL-36569-25MG	Plifenate PESTANAL®	25 mg
New	FL-32917-100MG	Prallethrin PESTANAL®	100 mg
	FL-31251-250MG	Pretilachlor PESTANAL®	250 mg
	IPO 568	Prochloraz	250 mg
	FL-45631-250MG	Prochloraz PESTANAL®	250 mg
New	U-PST-2515M100A01	Prochloraz 100 µg/mL in Methanol	1 mL
	IPO 569	Procymidone	250 mg
	FL-36640-250MG	Procymidone PESTANAL®	250 mg
New	U-PST-2520M100A01	Procymidone 100 µg/mL in Methanol	1 mL
	FL-45632-250MG	Profenophos PESTANAL®	250 mg
New	U-PST-1635	Profenophos	100 mg
New	U-PST-1635M100A01	Profenophos 100 µg/mL in Methanol	1 mL
	FL-45633-250MG	Profluralin PESTANAL®	250 mg
New	U-PST-1640	Profluralin	100 mg
	FL-33698-100MG	Profoxydim Li-salt PESTANAL®	100 mg
	FL-31720-100MG	Prohexadione-calcium PESTANAL®	100 mg
	FL-45634-250MG	Promecarb PESTANAL®	250 mg
New	U-PST-1645	Promecarb	100 mg
New	U-PST-1645M100A01	Promecarb 100 µg/mL in Methanol	1 mL
	FL-45635-250MG	Prometon PESTANAL®	250 mg
New	U-PST-830	Prometon	100 mg
New	U-PST-830M100A01	Prometon 100 µg/mL in Methanol	1 mL
	IPO 570	Prometryn	250 mg
	FL-45636-250MG	Prometryn PESTANAL®	250 mg
New	U-PST-840	Prometyne (Gaparol)	100 mg
New	U-PST-840M100A01	Prometryn (Caparol) 100 µg/mL in Methanol	1 mL
New	U-PST-840K100A01	Prometryn (Caparol) 100 µg/mL in Acetone	1 mL
New	U-PST-1650	Pronamide	100 mg
New	U-PP-460-1	Pronamide 100 µg/mL in Methanol	1 mL
	IPO 573	Propachlor	250 mg
	FL-45637-250MG	Propachlor PESTANAL®	250 mg
New	U-PST-865	Propachlor	100 mg
New	U-PST-865M100A01	Propachlor 100 µg/mL in Methanol	1 mL
	FL-34152-10MG	Propachlor ESA sodium salt PESTANAL®	10 mg
	FL-34151-10MG	Propachlor OA PESTANAL®	10 mg
	FL-45638-250MG	Propamocarb PESTANAL®	250 mg
New	U-PST-3215M100A01	Propamocarb 100 µg/mL in Methanol	1 mL
	FL-45639-250MG	Propanil PESTANAL®	250 mg
New	U-PST-1655	Propanil	100 mg
New	U-PST-1655A100A01	Propanil 100 µg/mL in Acetonitrile	1 mL
New	U-PST-1655M100A01	Propanil 100 µg/mL in Methanol	1 mL

	Code	Product	Unit
	FL-31572-250MG	Propaquizafop PESTANAL®	250 mg
New	U-PST-1660A100A01	Propargite 100 µg/mL in Acetonitrile	1 mL
New	U-PST-1660	Propargite	100 mg
	IPO 575	Propazine	250 mg
	FL-45640-250MG	Propazine PESTANAL®	250 mg
New	U-PST-850	Propazine	100 mg
New	U-PST-850M100A01	Propazine 100 µg/mL in Methanol	1 mL
	CIL-CLM-3738-1.2	Propazine (ring-$^{13}C_3$,99%) 100 µg/mL in Methanol	1.2 mL
		Propazine-bis(desisopropyl) see Atrazine-desethyl-desisopropyl Propazine-desisopropyl see Atrazine-desethyl	
	FL-34371-100MG	Propetamphos PESTANAL®	100 mg
New	U-PST-3225M100A01	Propetamphos 100 µg/mL in Methanol	1 mL
	IPO 580	Propham	250 mg
	FL-45641-250MG	Propham (IPC) PESTANAL®	250 mg
New	U-PST-1665M100A01	Propham 100 µg/mL in Methanol	1 mL
New	U-PST-1665	Propham	100 mg
	IPO 581	Propiconazole	250 mg
	FL-45642-250MG	Propiconazole PESTANAL®	250 mg
New	U-PST-2040A100A01	Propiconazole 100 µg/mL in Acetonitrile	1 mL
New	U-PST-2040M100A01	Propiconazole 100 µg/mL in Methanol	1 mL
	FL-45643-250MG	Propineb technical mixture PESTANAL®	250 mg
	FL-34056-50MG	Propisochlor PESTANAL®	50 mg
	IPO 582	Propoxur	250 mg
	FL-45644-250MG	Propoxur PESTANAL®	250 mg
New	U-PST-060	Propoxur	100 mg
New	U-PST-060A100A01	Propoxur 100 µg/mL in Acetonitrile	1 mL
New	U-PST-060M100A01	Propoxur 100 µg/mL in Methanol	1 mL
New	CIL-DLM-7141	Propoxur (isopropyl-D_7,98%)	on request
	FL-33985-100MG	Propoxycarbazone sodium salt PESTANAL®	100 mg
	FL-31576-1G	N-iso-Propylaniline PESTANAL®	1 g
	FL-35979-250MG	4-iso-Propylaniline PESTANAL®	250 mg
	FL-32949-25MG	Propylene thiourea PESTANAL®	25 mg
	FL-46427-100MG	Propylthio urea PESTANAL®	100 mg
	IPO 590	Propyzamid	250 mg
	FL-45645-250MG	Propyzamid PESTANAL®	250 mg
	FL-31141-250MG	Prosulfocarb PESTANAL®	250 mg
	FL-34232-100MG	Prothioconazole PESTANAL®	100 mg
New	FL-32429-20MG	Prothioconazole-desthio PESTANAL®	20 mg
	FL-45311-50MG	Prothiophos PESTANAL®	50 mg
	FL-46119-250MG	Pymetrozine PESTANAL®	250 mg
	FL-45646-250MG	Pyracarbolid PESTANAL®	250 mg
	FL-33696-100MG	Pyraclostrobin PESTANAL®	100 mg
	FL-45647-250MG	Pyranocumarin PESTANAL®	250 mg
New	FL-32973-100MG	Pyrasulfotole PESTANAL®	100 mg
		Pyrazon see Chloridazon	
	IPO 600	Pyrazophos	250 mg
	FL-45648-250MG	Pyrazophos PESTANAL®	250 mg

	Code	Product	Unit
New	U-PST-2530M100A01	Pyrazophos 100 µg/mL in Methanol	1 mL
	FL-46323-100MG	Pyrazosulfuron-ethyl PESTANAL®	100 mg
New	U-PST-2535M100A01	Pyrethrins 100 µg/mL in Methanol	1 mL
New	FL-33739-100MG	Pyrethrum extract technical mixture PESTANAL®	100 mg
New	FL-46047-25MG	Pyridaben PESTANAL®	25 mg
New	U-PST-2540M100A01	Pyridaben 100 µg/mL in Methanol	1 mL
New	FL-32538-100MG	Pyridaphenthion PESTANAL®	100 mg
	FL-45312-250MG	Pyridate PESTANAL®	250 mg
	FL-45737-100MG	Pyrifenox PESTANAL®	100 mg
New	U-PST-2550M100A01	Pyrifenox 100 µg/mL in Methanol	1 mL
	FL-33694-100MG	Pyriftalid PESTANAL®	100 mg
	IPO 601	Pyrimethanil	250 mg
New	U-PST-2555A100A01	Pyrimethanil 100 µg/mL in Acetonitrile	1 mL
	IPO 299	Pyriproxyfen	100 mg
New	U-PST-2560A100A01	Pyriproxyfen 100 µg/mL in Acetonitrile	1 mL
New	U-PST-2560M100A01	Pyriproxyfen 100 µg/mL in Methanol	1 mL
	FL-45650-250MG	Pyroquilon PESTANAL®	250 mg
	IPO 605	Quinalphos	250 mg
	FL-45651-250MG	Quinalphos PESTANAL®	250 mg
New	U-PST-1675A100A01	Quinalphos 100 µg/mL in Acetonitrile	1 mL
New	U-PST-1675	Quinalphos	25 mg
	FL-36521-250MG	Quinchlorac PESTANAL®	250 mg
	FL-36522-250MG	Quinmerac PESTANAL®	250 mg
	IPO UCI 608	Quinmerac	250 mg
	IPO 609	Quinoclamine	100 mg
New	FL-32719-100MG	Quinoclamine PESTANAL®	100 mg
	FL-45652-250MG	Quinonamid PESTANAL®	250 mg
	FL-46439-100MG	Quinoxyphen PESTANAL®	100 mg
	IPO 610	Quintozene	250 mg
	FL-45653-250MG	Quintozene PESTANAL®	250 mg
New	FL-33822-100MG	Quizalofop-p PESTANAL®	100 mg
	IPO 611	Quizalofop-p-ethyl	100 mg
	FL-34074-100MG	Quizalofop-p-ethyl PESTANAL®	100 mg
	FL-45654-10MG	Rabenzazol PESTANAL®	10 mg
		Reldan see Chlorpyriphos-methyl	
	FL-45655-250MG	Resmethrin PESTANAL®	250 mg
New	U-PST-870	Resmethrin	10 mg
New	U-PST-870M100A01	Resmethrin 100 µg/mL in Methanol	1 mL
	FL-45656-250MG	Rotenone PESTANAL®	250 mg
New	U-PST-890	Rotenone	100 mg
	U-EPA-1168	Rotenone 1000 µg/mL in Methanol	1 mL
	FL-45657-250MG	S 421 (Bis-(2,3,3,3-tetrachlorpropyl)-ether) PESTANAL®	250 mg
		Saturn see Thiobencarb	
	FL-31261-250MG	Sebuthylazine PESTANAL®	250 mg
	U-EPA-1189	Sebuthylazine 1000 µg/mL in Acetonitrile	1 mL

	Code	Product	Unit
	FL-36511-250MG	Sebuthylazine-desethyl PESTANAL®	250 mg
		Sebuthylazine-des-sec-butyl see Atrazine-desisopropyl Sebuthylazine-desethyl-des-sec-butyl see Atrazine-desethyl-desisopropyl	
	FL-45658-250MG	Secbumeton PESTANAL®	250 mg
New	U-PST-1800	Secbumeton	10 mg
New	U-PST-1800M100A01	Secbumeton 100 µg/mL in Methanol	1 mL
	FL-36795-10MG	Sethoxydim PESTANAL®	10 mg
	FL-34373-250MG	Siduron PESTANAL®	250 mg
New	U-PST-1680	Siduron	100 mg
	FL-31574-250MG	Silafluofen PESTANAL®	250 mg
New	FL-32498-25MG	Silthiofam PESTANAL®	25 mg
		Silvex see Fenoprop	
	IPO 692	Simazine	250 mg
	FL-32059-250MG	Simazine PESTANAL®	250 mg
New	U-PST-1130	Simazine	100 mg
New	U-PST-1130A100A01	Simazine 100 µg/mL in Acetonitrile	1 mL
	U-PP-530A-1	Simazine 100 µg/mL in Acetone	1 mL
	U-PP-530A	Simazine 100 µg/mL in Acetone	4 x 1 mL
	CIL-CLM-3739-1.2	Simazine (ring-$^{13}C_3$,99%) 100 µg/mL in Methanol	1.2 mL
		Simazine-bis(desethyl) see Atrazine desethyl-desisopropyl Simazine-desethyl see Atrazine-desisopropyl	
		Simeton-desethyl see Atraton-desisopropyl	
	FL-45660-250MG	Simetryn PESTANAL®	250 mg
New	U-PST-1805	Simetryn	10 mg
New	FL-33706-50MG	Spinosad PESTANAL®	50 mg
	FL-33654-100MG	Spirodiclofen PESTANAL®	100 mg
New	FL-30482-10MG	Spiromesifen Metabolite M01 PESTANAL®	10 mg
	FL-33599-100MG	Spiromesifen PESTANAL®	100 mg
New	FL-32713-100MG	Spirotetramat PESTANAL®	100 mg
	FL-46443-100MG	Spiroxamine mixture of diastereo isomers PESTANAL®	100 mg
New	U-PST-2575A100A01	Spiroxamine 100 µg/mL in Acetonitrile	1 mL
	U-PST-1140	Strobane	1 g
	FL-45661-250MG	L-Strychnine PESTANAL®	250 mg
	FL-46076-250MG	Sulcofuron, sodium monohydrate PESTANAL®	250 mg
	FL-46318-100MG	Sulcotriene PESTANAL®	100 mg
	FL-45662-250MG	Sulfaquinoxaline PESTANAL®	250 mg
	FL-34224-100MG	Sulfometuron methyl PESTANAL®	100 mg
	FL-33307-100MG	Sulfosulfuron PESTANAL®	100 mg
	FL-45664-100MG	Sulfotep PESTANAL®	100 mg
New	U-PST-1810	Sulfotep (Tetraethyl dithiopyrophosphate)	10 mg
New	U-SP-160-1	Sulfotep 100 µg/mL in Methanol	1 mL
	FL-36576-250MG	Sulfur PESTANAL®	250 mg
	FL-45665-250MG	Sulprofos PESTANAL®	250 mg
New	U-PST-1685	Sulprofos (Bolstar)	100 mg
New	U-PST-1685M100A01	Sulprofos (Bolstar) 100 µg/mL in Methanol	1 mL
	FL-45666-250MG	SWEP PESTANAL®	250 mg
New	U-PST-1815	SWEP	10 mg
	IPO 700	2,4,5-T	250 mg
	FL-45667-250MG	2,4,5-T PESTANAL®	250 mg

	Code	Product	Unit
New	U-HB-120-1	2,4,5-T 100 µg/mL in Methanol	1 mL
New	U-PST-930	2,4,5-T	100 mg
	CIL-CLM-4551-1.2	2,4,5-Trichlorophenoxyacetic acid (2,4,5-T) (ring-$^{13}C_6$,99%) 100 µg/mL in Methylene chloride	1.2 mL
	FL-45709-250MG	2,4,5-T-ethylhexyl ester PESTANAL®	250 mg
	FL-45668-250MG	2,4,5-T-methyl ester PESTANAL®	250 mg
New	U-PST-931	2,4,5-T-methyl ester	100 mg
New	U-HB-121-1	2,4,5-T-methyl ester 100 µg/mL in Methanol	1 mL
	FL-45711-250MG	2,4,5-T-2-methyl-1-propyl ester PESTANAL®	250 mg
	FL-45712-250MG	2,4,5-T-1-octyl ester PESTANAL®	250 mg
	FL-45713-250MG	TBTC (Tributyltin chloride) PESTANAL®	250 mg
	FL-45669-250MG	TBTO PESTANAL®	250 mg
	FL-31525-250MG	TCA PESTANAL®	250 mg
		TDE see DDD	
New	IPO 701	Tebuconazol	250 mg
	FL-32013-250MG	Tebuconazole PESTANAL®	250 mg
New	U-PST-1955A100A01	Tebuconazole 100 µg/mL in Acetonitrile	1 mL
New	U-PST-1955M100A01	Tebuconazole 100 µg/mL in Methanol	1 mL
	FL-31652-100MG	Tebufenozide PESTANAL®	100 mg
New	U-PST-3245A100A01	Tebufenozide 100 µg/mL in Acetonitrile	1 mL
	FL-46438-100MG	Tebufenpyrad PESTANAL®	100 mg
New	U-PST-2585A100A01	Tebufenpyrad 100 µg/mL in Acetonitrile	1 mL
	FL-31599-100MG	Tebupirimfos PESTANAL®	100 mg
	FL-36566-250MG	Tebutam PESTANAL®	250 mg
	FL-45671-250MG	Tebuthiuron PESTANAL®	250 mg
New	U-PST-1820	Tebuthiuron	100 mg
	FL-45672-250MG	Tecnazene PESTANAL®	250 mg
New	U-PST-1690	Tecnazene	100 mg
New	U-PST-1690M100A01	Tecnazene 100 µg/mL in Methanol	1 mL
		Tedion see Tetradifon	
	IPO 705	Teflubenzuron	250 mg
	FL-45756-250MG	Teflubenzuron PESTANAL®	250 mg
New	U-PST-3260M100A01	Teflubenzuron 100 µg/mL in Methanol	1 mL
	FL-35548-100MG	Tefluthrin PESTANAL®	100 mg
New	U-PST-2590M100A01	Tefluthrin 100 µg/mL in Methanol	1 mL
		Telodrin see Isobenzan	
New	FL-32766-100MG	Tembotrione PESTANAL®	100 mg
New	U-PST-1875M100A01	Temephos 100 µg/mL in Methanol	1 mL
	FL-46331-100MG	Tepraloxydim PESTANAL®	100 mg
New	U-PST-3270K100A01	TEPP 100 µg/mL in Acetone	1 mL
	FL-45675-250MG	Terbacil PESTANAL®	250 mg
New	U-PST-1695	Terbacil	100 mg
	FL-45313-100MG	Terbufos PESTANAL®	100 mg
New	U-PST-1700	Terbufos	100 mg
New	CIL-CLM-4543	Terbufos (diethoxy-$^{13}C_4$,99%)	on request
	FL-31580-50MG	Terbufos-sulfone PESTANAL®	50 mg

	Code	Product	Unit
New	U-PST-3275M100A01	Terbufos sulfone 100 µg/mL in Methanol	1 mL
	FL-46044-100MG	Terbufos-sulfoxide PESTANAL®	100 mg
	FL-31527-250MG	Terbumeton PESTANAL®	250 mg
		Terbumeton-des-tert.-butyl see Atraton-desisopropyl	
	FL-36514-250MG	Terbumeton-desethyl PESTANAL®	250 mg
	IPO 710	Terbuthylazine	250 mg
	FL-45678-250MG	Terbuthylazine PESTANAL®	250 mg
New	U-PST-1705	Terbuthylazine	25 mg
New	U-PST-1705M100A01	Terbuthylazine 100 µg/mL in Methanol	1 mL
	U-EPA-1190	Terbuthylazine 1000 µg/mL in Hexane	1 mL
		Terbuthylazine-des-tert.-butyl see Atrazine-desisopropyl	
	FL-31229-250MG	Terbuthylazine-desethyl PESTANAL®	250 mg
		Terbuthylazine-desethyl-des-tert.-butyl see Atrazine-desethyl-desisopropyl	
	FL-46019-100MG	Terbutylazine-2-hydroxy PESTANAL®	100 mg
	IPO 720	Terbutryn	250 mg
	FL-45677-250MG	Terbutryn PESTANAL®	250 mg
New	U-PST-1710	Terbutryn	100 mg
New	U-PST-1710M100A01	Terbutryn 100 µg/mL in Methanol	1 mL
	IPO 725	1,2,3,4-Tetrachlorobenzene	250 mg
	FL-46014-100MG	1,2,3,4-Tetrachlorobenzene PESTANAL®	100 mg
	IPO 726	1,2,3,5-Tetrachlorobenzene	250 mg
	IPO 727	1,2,4,5-Tetrachlorobenzene	250 mg
	FL-34379-250MG	1,2,4,5-Tetrachlorobenzene PESTANAL®	250 mg
	FL-34374-100MG	1,2,3,4-Tetrachloro-5-nitrobenzene PESTANAL®	100 mg
	FL-34374-250MG	2,3,4,5-Tetrachloronitrobenzene PESTANAL®	250 mg
	U-PST-950	2,3,4,6-Tetrachlorophenol	20 mg
	FL-36518-10MG	2,3,5,6-Tetrachlorophenol PESTANAL®	10 mg
	IPO 729	Tetrachlorvinphos	250 mg
	U-PST-1715	Tetrachlorvinphos (Stirofos)	100 mg
	FL-45679-250MG	Tetrachlorvinphos PESTANAL®	250 mg
New	U-PST-1715M100A01	Tetrachlorvinphos (Stirofos) 100 µg/mL in Methanol	1 mL
New	U-PST-2595M100A01	Tetraconazole 100 µg/mL in Methanol	1 mL
	IPO 730	Tetradifon	250 mg
	FL-45680-250MG	Tetradifon PESTANAL®	250 mg
New	U-PST-960	Tetradifon	100 mg
New	U-PST-960M100A01	Tetradifon 100 µg/mL in Methanol	1 mL
	IPO 732	Tetramethrin	250 mg
	FL-45681-250MG	Tetramethrin PESTANAL®	250 mg
	FL-36568-250MG	Tetrasul PESTANAL®	250 mg
	FL-45683-250MG	Thallium(I)-sulfate PESTANAL®	250 mg
	IPO 735	Thiabendazole E 233 Certified purity.....98.8%	250 mg
	FL-45684-250MG	Thiabendazole PESTANAL®	250 mg
New	U-PST-1720	Thiabendazole	100 mg
New	U-PST-1720A100A01	Thiabendazole 100 µg/mL in Acetonitrile	1 mL
	U-EPA-1173	Thiabendazole 1000 µg/mL in Methanol	1 mL

	Code	Product	Unit
New	CIL-CLM-8370-1.2	Thiabendazole (ring-$^{13}C_6$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	FL-37905-100MG	Thiacloprid PESTANAL®	100 mg
New	U-PST-3285A100A01	Thiacloprid 100 µg/mL in Acetonitrile	1 mL
	FL-33897-100MG	Thiacloprid-amide PESTANAL®	100 mg
	FL-37924-100MG	Thiamethoxam PESTANAL®	100 mg
New	U-PST-3290A100A01	Thiamethoxam 100 µg/mL in Acetonitrile	1 mL
	FL-45686-250MG	Thidiazuron PESTANAL®	250 mg
New	FL-32721-100MG	Thiencarbazone-methyl PESTANAL®	100 mg
	FL-46028-100MG	Thifensulfuron-methyl PESTANAL®	100 mg
	FL-45687-250MG	Thiobencarb PESTANAL®	250 mg
New	U-PST-1725M100A01	Thiobencarb 100 µg/mL in Methanol	1 mL
New	U-PST-1725	Thiobencarb	100 mg
	FL-31716-100MG	Thiocyclam hydrogeneoxalate PESTANAL®	100 mg
		Thiodemeton see Disulfoton	
	FL-34375-250MG	Thiodicarb PESTANAL®	250 mg
New	U-PST-3305M100A01	Thiodicarb 100 µg/mL in Methanol	1 mL
	FL-45314-100MG	Thiofanox PESTANAL®	100 mg
	FL-31551-100MG	Thiofanox-sulfoxide PESTANAL®	100 mg
New	U-PST-2600M100A01	Thiometon 100 µg/mL in Methanol	1 mL
New	U-PST-1030	Thionazin (Zinophos)	100 mg
	FL-33941-50MG	Thionazin PESTANAL®	50 mg
New	U-PST-1030M100A01	Thionazin 100 µg/mL in Methanol	1 mL
New	U-SP-170-1	Thionazin 100 µg/mL in Methanol	1 mL
	FL-33853-10MG	Thionazin-d_{10} PESTANAL®	10 mg
	IPO 738	Thiophanate-methyl	250 mg
	FL-45688-250MG	Thiophanate-methyl PESTANAL®	250 mg
New	U-PST-1730	Thiophanate-methyl	100 mg
New	U-PST-1730M100A01	Thiophanate-methyl 100 µg/mL in Methanol	1 mL
New	FL-32994-100MG	Thiosultap disodium PESTANAL®	100 mg
		Thioxamyl see Oxamyl	
	IPO 740	Thiram	250 mg
	FL-45689-250MG	Thiram PESTANAL®	250 mg
New	U-PST-3310M100A01	Thiram (Tetramethylthiuram disulfide) 100 µg/mL in Methanol	1 mL
New	U-PST-1825	Tokuthion	10 mg
	IPO 745	Tolclofos-methyl	250 mg
	FL-31209-250MG	Tolclofos-methyl PESTANAL®	250 mg
New	U-PST-2605M100A01	Tolclofos-methyl 100 µg/mL in Methanol	1 mL
	IPO 851	3-(4-Tolyl)-1,1-dimethylurea	100 mg
	IPO 746	Tolylfluanid	250 mg
New	U-PST-2610A100A01	Tolylfluanid 100 µg/mL in Acetonitrile	1 mL
	FL-34225-100MG	Topramezone PESTANAL®	100 mg
	U-PST-970	Toxaphene	100 mg
	U-PP-271-1	Toxaphene 100 µg/mL in Hexane	1 mL
New	U-EPA-1249	Toxaphene 5000 µg/mL in Methanol	1 mL

	Code	Product	Unit
	U-PP-270-1	Toxaphene 100 µg/mL in Methanol	1 mL
	U-PP-270	Toxaphene 100 µg/mL in Methanol	4 x 1 mL
New	U-EPA-1161	Toxaphene 1000 µg/mL in Methanol	1 mL
	NIST-3067	Toxaphene in Methanol Certified value Toxaphene ..... 26.1 ± 1.0 mg/kg	5 x 1.2 mL
		2,4,5-TP see Fenoprop	
	FL-36536-250MG	Tralkoxidym PESTANAL®	250 mg
	FL-46114-250MG	Transfluthrin PESTANAL®	250 mg
	IPO 753	Triadimefon	250 mg
	FL-45693-250MG	Triadimefon PESTANAL®	250 mg
New	U-PST-1830	Triadimefon	100 mg
New	U-PST-1830M100A01	Triadimefon 100 µg/mL in Methanol	1 mL
	IPO 754	Triadimenol (racemate A)	250 mg
	FL-46138-250MG	Triadimenol PESTANAL®	250 mg
New	U-PST-2615M100A01	Triadimenol 100 µg/mL in Methanol	1 mL
	FL-45694-250MG	Triadimenol isomer A PESTANAL®	250 mg
	IPO 755	Triallate	250 mg
	FL-45695-250MG	Triallate PESTANAL®	250 mg
New	U-PST-2620M100A01	Triallate 100 µg/mL in Methanol	1 mL
	FL-33383-100MG	Triasulfuron PESTANAL®	100 mg
	FL-45696-50MG	Triazophos technical mixture, approx. 70% in Xylene PESTANAL®	50 mg
	FL-45696-250MG	Triazophos technical mixture, approx. 70% in Xylene PESTANAL®	250 mg
New	U-PST-2045A100A01	Triazophos 100 µg/mL in Acetonitrile	1 mL
	FL-33373-100MG	Triazoxide PESTANAL®	100 mg
	FL-46013-100MG	Tribenuron-methyl PESTANAL®	100 mg
	FL-33489-100MG	2,4,6-Tribromoanisole PESTANAL®	100 mg
		Tributyl-tin chloride see TBTC	
	IPO 763	Trichlorfon	250 mg
	FL-45698-250MG	Trichlorfon PESTANAL®	250 mg
New	U-PST-490	Trichlorfon (Dylox)	100 mg
	FL-31267-250MG	Trichloroacetic acid PESTANAL®	250 mg
	U-RCA-011	2,4,5-Trichloroaniline	100 mg
	FL-35828-1G	2,4,5-Trichloroaniline PESTANAL®	1 g
	FL-35996-250MG	2,4,6-Trichloroaniline PESTANAL®	250 mg
	U-RCA-012	2,4,6-Trichloroaniline	100 mg
	FL-33412-100MG	2,3,4-Trichloroanisole PESTANAL®	100 mg
	U-RCP-039	2,3,4-Trichloroanisole	100 mg
	U-RCP-040	2,3,6-Trichloroanisole	100 mg
	FL-34384-100MG	2,4,6-Trichloroanisole PESTANAL®	100 mg
	U-RCP-044	2,4,6-Trichloroanisole	50 mg
	IPO 756	1,2,3-Trichlorobenzene	250 mg
	FL-36742-1G	1,2,3-Trichlorobenzene PESTANAL®	1 g
	U-RCP-024	1,2,3-Trichlorobenzene	100 mg
	IPO 757	1,2,4-Trichlorobenzene	250 mg
	FL-36627-1G	1,2,4-Trichlorobenzene PESTANAL®	1 g
	U-RCP-025	1,2,4-Trichlorobenzene	100 mg
	IPO 758	1,3,5-Trichlorobenzene	250 mg

	Code	Product	Unit
	FL-36555-250MG	1,3,5-Trichlorobenzene PESTANAL®	250 mg
	FL-33972-100MG	2,3,5-Trichloro-6-hydroxypyridine PESTANAL®	100 mg
	U-PST-1835	Trichloronate	10 mg
New	U-PST-1835M100A01	Trichloronate 100 µg/mL in Methanol	1 mL
	FL-33393-50MG	2,3,4-Trichlorophenol PESTANAL®	50 mg
	U-RCP-010	2,3,4-Trichlorophenol	20 mg
	FL-36745-250MG	2,3,6-Trichlorophenol PESTANAL®	250 mg
	U-RCP-012	2,3,6-Trichlorophenol	20 mg
	FL-36513-250MG	2,4,5-Trichlorophenol PESTANAL®	250 mg
	U-RCP-013	2,4,5-Trichlorophenol	20 mg
	FL-36543-250MG	2,4,6-Trichlorophenol PESTANAL®	250 mg
New	U-PST-980	2,4,6-Trichlorophenol	20 mg
	NMIAP1375	2,4,6-Trichlorophenoxyacetic acid	50 mg
	FL-32016-250MG	Triclopyr PESTANAL®	250 mg
New	U-PST-1735	Triclopyr	100 mg
New	U-PST-1735A100A01	Triclopyr 100 µg/mL in Acetonitrile	1 mL
New	U-PST-1735M100A01	Triclopyr 100 µg/mL in Methanol	1 mL
	FL-36538-100MG	Triclopyr-2-butoxyethyl ester PESTANAL®	100 mg
	FL-45808-10MG	Tricyclazole PESTANAL®	10 mg
	NMIAP1788	Triclabendazole	10 mg
	U-PST-1840	Tricyclazole	10 mg
	NMIAP1684	Triclabendazole sulfone	25 mg
	NMIAP1685	Triclabendazole sulfoxide	25 mg
	FL-36199-100MG	Tridemorph PESTANAL®	100 mg
New	U-SP-180-1	O,O,O-Triethylphosphorothioate 100 µg/mL in Methanol	1 mL
	U-PST-1865	O,O,O-Triethyl phosphorothioate	100 mg
	U-PST-1865	O,O,O-Triethyl phosphorothioate	100 mg
	FL-46447-100MG	Trifloxystrobin PESTANAL®	100 mg
New	U-PST-2630A100A01	Trifloxystrobin 100 µg/mL in Acetonitrile	1 mL
	FL-33672-100MG	Trifloxysulfuron Na-salt PESTANAL®	100 mg
New	FL-32611-100MG	Triflumizole PESTANAL®	100 mg
	FL-35029-100MG	Triflumuron PESTANAL®	100 mg
New	U-PST-3340A100A01	Triflumuron 100 µg/mL in Acetonitrile	1 mL
	IPO 767	Trifluralin	250 mg
	FL-32061-250MG	Trifluralin PESTANAL®	250 mg
New	U-PST-1740	Trifluralin	100 mg
	NMIAP1408	Trifluralin	50 mg
New	U-PST-1740A100A01	Trifluralin 100 µg/mL in Acetonitrile	1 mL
New	U-PST-1740M100A01	Trifluralin 100 µg/mL in Methanol	1 mL
	CIL-DLM-4479-1.2	Trifluralin (di-n-propyl-D_{14},98%) 100 µg/mL in Nonane	1.2 mL
	FL-31717-100MG	Triflusulfuron-methyl PESTANAL®	100 mg
	IPO 790	Triforine	250 mg
	FL-45701-250MG	Triforine PESTANAL®	250 mg
	FL-34165-10MG	Triforine-d_8 PESTANAL®	10 mg
	FL-37874-10MG	2,3,5-Trimethacarb PESTANAL®	10 mg
	FL-34308-250MG	2,3,5-Trimethylphenol PESTANAL®	250 mg

Pesticides

	Code	Product	Unit
	FL-35998-250MG	2,4,6-Trimethylphenol PESTANAL®	250 mg
	CIL-CLM-6620-1.2	1,2,2-Trimethylpropyl hydrogen methylphosphonate (trimethylpropyl-$^{13}C_6$,99%) 100 µg/mL in Methanol	1.2 mL
	FL-34377-250MG	Trimethyl-tin chloride PESTANAL®	250 mg
	FL-37898-100MG	Trinexapac-ethyl PESTANAL®	100 mg
	FL-34172-100MG	Triticonazole PESTANAL®	100 mg
	FL-33873-100MG	Tritosulfuron PESTANAL®	100 mg
	NMIAP1728	Vamidothion	25 mg
New	U-PST-2645M100A01	Vamidothion 100 µg/mL in Methanol	1 mL
	NMIAP1730	Vamidothion sulfone	25 mg
	NMIAP1729	Vamidothion sulfoxide	25 mg
	FL-45704-250MG	Vernolate PESTANAL®	250 mg
New	U-PST-1745	Vernolate	100 mg
	IPO 812	Vinclozolin	250 mg
	FL-45705-250MG	Vinclozolin PESTANAL®	250 mg
New	U-PST-2050M100A01	Vinclozolin 100 µg/mL in Methanol	1 mL
	IPO 840	Warfarin	250 mg
	FL-45706-250MG	Warfarin PESTANAL®	250 mg
New	U-PST-1000	Warfarin	100 mg
	CIL-DLM-6861-1.2	Warfarin (phenyl-D_5,98%) 100 µg/mL in Acetonitrile-D_3	1.2 mL
	IPO 850	2,4-Xylidine	250 mg
	FL-45707-250MG	Zineb technical mixture PESTANAL®	250 mg
		Zinochlor see Anilazin Zinophos see Thionazin	
	FL-45708-250MG	Ziram PESTANAL®	250 mg
New	U-PST-1750	Ziram	100 mg
New	U-PST-1750M100A01	Ziram 100 µg/mL in Methanol	1 mL
New	FL-32501-50MG	Zoxamide PESTANAL®	50 mg

Pesticide multicomponent standard solutions

Please see section "Environmental contaminant standards from CIL" for a comprehensive list of labelled pesticide standard mixtures.

NIST-1492 — Chlorinated Pesticides in Hexane — 5 x 1.2 mL

Compound	Concentration µg/kg	Concentration ng/mL
Hexachlorobenzene	308 ± 2	205 ± 2
gamma-HCH	310 ± 2	207 ± 2
Heptachlor	299 ± 7	200 ± 5
Heptachlor epoxide	307 ± 7	204 ± 5
cis-Chlordane	305 ± 3	203 ± 2
trans-Nonachlor	297 ± 5	198 ± 4
Dieldrin	307 ± 4	205 ± 3
Mirex	306 ± 3	204 ± 2
2,4'-DDE	303 ± 3	202 ± 2
4,4'-DDE	306 ± 3	204 ± 2
2,4'-DDD	299 ± 4	200 ± 3
4,4'-DDD	296 ± 3	197 ± 2
2,4'-DDT	307 ± 3	205 ± 3
4,4'-DDT	302 ± 3	202 ± 2

Code	Product	Unit

NIST-2261 — Chlorinated Pesticides in Hexane — 5 x 1.2 mL

Certified values

Compound	Concentration mg/kg	Concentration µg/mL
Hexachlorobenzene	3.005 ± 0.014	1.968 ± 0.009
gamma-HCH	3.012 ± 0.015	1.972 ± 0.010
Heptachlor	3.020 ± 0.023	1.977 ± 0.015
Heptachlor epoxide	3.020 ± 0.026	1.977 ± 0.017
cis-Chlordane	3.012 ± 0.019	1.972 ± 0.012
trans-Nonachlor	3.034 ± 0.022	1.986 ± 0.014
Dieldrin	3.012 ± 0.020	1.972 ± 0.013
Mirex	3.041 ± 0.042	1.991 ± 0.028
2,4'-DDE	3.019 ± 0.026	1.976 ± 0.017
4,4'-DDE	3.019 ± 0.015	1.976 ± 0.010
2,4'-DDD	3.013 ± 0.026	1.973 ± 0.017
4,4'-DDD	3.043 ± 0.042	1.992 ± 0.027
2,4'-DDT	2.993 ±0.014	1.959 ± 0.009
4,4'-DDT	3.004 ±0.018	1.967 ± 0.012

NIST-2275 — Chlorinated Pesticides Solution-II in iso-Octane — 5 x 1.2 mL

Compound	Concentration mg/kg	Concentration µg/mL
alpha-HCH	3.00 ± 0.15	2.07 ± 0.10
beta-HCH	2.98 ± 0.12	2.054 ± 0.0083
Oxychlordane	2.86 ± 0.12	1.976 ± 0.083
trans-Chlordane	2.954 ± 0.060	2.038 ± 0.041
Endosulfan-I	2.880 ± 0.067	1.987 ± 0.046
Endrin	2.908 ± 0.099	2.006 ± 0.068
Endosulfan-II	2.943 ± 0.069	2.031 ± 0.048
cis-Nonachlor	2.938 ± 0.076	2.027 ± 0.052
Endosulfan sulfate	2.926 ± 0.087	2.019 ± 0.060

NIST-2273 — Chlorinated Pesticides (DDTs) and Metabolites in iso-Octane — 5 x 1.2 mL

Compound	Concentration mg/kg	Concentration µg/mL
2,4'-DDT	2.896 ± 0.095	1.998 ± 0.066
4,4'-DDT	2.862 ± 0.058	1.974 ± 0.040
2,4'-DDE	2.907 ± 0.076	2.006 ± 0.052
4,4'-DDE	2.912 ± 0.078	2.009 ± 0.054
2,4'-DDD	2.818 ± 0.061	1.944 ± 0.042
4,4'-DDD	2.907 ± 0.075	2.006 ± 0.052
DDMU	2.899 ± 0.084	2.000 ± 0.058

U-US-102BN — Organochlorine Pesticide Mixture — 1 mL

2000 µg/mL of each analyte in Hexane/Toluene (1:1)

Aldrin	Dieldrin
alpha-BHC (alpha-HCH)	Endosulfan I
beta-BHC (beta-HCH)	Endosulfan II
delta-BHC (delta-HCH)	Endosulfan sulfate
gamma-BHC (Lindane)	Endrin
4,4'-DDD	Endrin aldehyde
4,4'-DDE	Heptachlor
4,4'-DDT	Heptachlor epoxide - isomer B

U-US-102BN-4 — Organochlorine Pesticide Mixture — 4 x 1 mL

U-US-112B — Organochlorine Pesticide Mixture — 1 mL

2000 µg/mL of each analyte in Acetone

Aldrin	Endosulfan I
alpha-BHC (alpha-HCH)	Endosulfan II
beta-BHC (beta-HCH)	Endosulfan sulfate
delta-BHC (delta-HCH)	Endrin
gamma-BHC (Lindane)	Endrin aldehyde
4,4'-DDD	Heptachlor
4,4'-DDE	Heptachlor epoxide - isomer B
4,4'-DDT	Methoxychlor
Dieldrin	

U-US-112B-4 — Organochlorine Pesticide Mixture — 4 x 1 mL

Code	Product	Unit
U-PPM-525E-1	Organochlorine Pesticide Mixture	1 mL

100 µg/mL of each analyte in Acetone

Alachlor	Endosulfan I
Aldrin	Endosulfan II
alpha-Chlordane	Endosulfan sulfate
alpha-BHC (alpha-HCH)	Endrin
Atrazine	Endrin aldehyde
beta-BHC (beta-HCH)	Etridiazole
Chlorobenzilate	gamma-Chlordane
Chlorothalonil	Heptachlor
Chloroneb	Heptachlor epoxide - isomer B
DCPA (Dacthal)	gamma-BHC (Lindane)
delta-BHC (delta-HCH)	Methoxychlor
4,4'-DDD	trans-Nonachlor
4,4'-DDT	Permethrins (mixed isomers,total)
4,4'-DDE	Simazine
Dieldrin	

U-PPM-525E	Organochlorine Pesticide Mixture	4 x 1 mL
CERERS-013	Semivolatile Pesticide Stock Standard	1.2 mL

2000 µg/mL of each analyte in Hexane/Toluene (1:1)

Aldrin	4,4'-DDT	Endrin	gamma-HCH (Lindane)
alpha-Chlordane	Dieldrin	Endrin aldehyde	delta-HCH
gamma-Chlordane	Endosulfan I	Endrin ketone	Heptachlor
4,4'-DDD	Endosulfan II	alpha-HCH	Heptachlor epoxide - isomer B
4,4'-DDE	Endosulfan sulfate	beta-HCH	Methoxychlor

U-PPM-808C-1	Organochlorine Pesticide Mixture	1 mL

1000 µg/mL of each analyte in Hexane/Toluene (1:1)

Aldrin	Dieldrin
alpha-BHC (alpha-HCH)	Endosulfan I
beta-BHC (beta-HCH)	Endosulfan II
Delta-BHC (delta-HCH)	Endosulfan sulfate
gamma-BHC (Lindane)	Endrin
alpha-Chlordane	Endrin aldehyde
gamma-Chlordane	Endrin ketone
4,4'-DDD	Heptachlor
4,4'-DDE	Heptachlor epoxide - isomer B
4,4'-DDT	Methoxychlor

U-PPM-808C	Organochlorine Pesticide Mixture	4 x 1 mL
U-PPM-808F-1	Organochlorine Pesticide Mixture	1 mL

1000 µg/mL of each analyte in Hexane/Toluene (1:1)

Chlorobenzilate	Hexachlorobenzene
Diallate (total)	Hexachlorocyclopentadiene
1,2-Dibromo-3-chloropropane	Isodrin

U-PPM-808F	Organochlorine Pesticide Mixture	4 x 1 mL
U-PPM-608B-1	Organochlorine Pesticide Mixture	1 mL

20 µg/mL of each analyte in Methanol

Endosulfan II	Delta-BHC (delta-HCH)
Endosulfan sulfate	gamma-BHC (Lindane)
Endrin	4,4'-DDD
Endrin aldehyde	4,4'-DDE
Heptachlor	4,4'-DDT
Aldrin	Dieldrin
alpha-BHC (alpha-HCH)	Endosulfan I
beta-BHC (beta-HCH)	Heptachlor epoxide - isomer B

U-PPM-608B	Organochlorine Pesticide Mixture	4 x 1 mL
U-PPM-608C-1	Organochlorine Pesticide Mixture	1 mL

Solvent: Methanol

Aldrin	20 µg/mL	Endosulfan I	20 µg/mL
alpha-BHC (alpha-HCH)	20 µg/mL	Endosulfan II	100 µg/mL
beta-BHC (beta-HCH)	20 µg/mL	Endosulfan sulfate	100 µg/mL
Delta-BHC (delta-HCH)	20 µg/mL	Endrin	100 µg/mL
gamma-BHC (Lindane)	20 µg/mL	Endrin aldehyde	20 µg/mL
4,4'-DDD	100 µg/mL	Heptachlor	20 µg/mL
4,4'-DDE	20 µg/mL	Heptachlor epoxide - isomer B	20 µg/mL
4,4'-DDT	100 µg/mL	Methoxychlor	20 µg/mL
Dieldrin	20 µg/mL		

U-PPM-608C	Organochlorine Pesticide Mixture	4 x 1 mL
U-PPM-530-1	Carbamate Pesticide Mixture (531.1)	1 mL

100 µg/mL of each analyte in Methanol

Aldicarb	Carbaryl	Methiocarb	Propoxur
Aldicarb sulfone	Carbofuran	Methomyl	
Aldicarb sulfoxide	3-Hydroxycarbofuran	Oxamyl	

U-PPM-530	Carbamate Pesticide Mixture (531.1)	4 x 1 mL

Code	Product	Unit
U-PPM-017-1	Pesticide Mixture	1 mL

50 µg/ml of each analyte in Acetonitrile

Atrazine	Hexazinone	Metobromuron	Simazine
Chlortoluron	Isoproturon	Metolachlor	Terbuthylazine
Cyanazine	Linuron	Metoxuron	
Atrazine-desethyl	Metazachlor	Monolinuron	
Diuron	Methabenzthiazuron	Sebuthylazine	

U-PPM-017	Pesticide Mixture	4 x 1 mL
U-NPM-525C-1	Nitrogen/Phosphorus Pesticide Mixture	1 mL

100 µg/mL of each analyte in Acetone

Alachlor	Cyanazine	Mevinphos (Phosdrin)	Propazine
Ametryn	Dichlorvos	MGK-264 (mixed, total)	Simetryn
Atraton	Diphenamid	Molinate	Tetrachlorvinphos
(Stirofos)			
Atrazine	EPTC	Napropamide	Tebuthiuron
Bromacil	Ethoprop (Ethoprofos)	Norflurazon	Terbacil
Butachlor	Fenarimol	Pebulate	Terbutryn
Butylate	Fluridone	Prometon	Triadimefon
Chlorpropham	Hexazinone	Prometryn	Tricyclazole
Chlorpyrifos	Methyl paraoxon	Pronamide	Trifluralin
Cycloate	Metolachlor	Propachlor	Vernolate

U-NPM-525C	Nitrogen/Phosphorus Pesticide Mixture	4 x 1 mL
U-SPM-834-1	Organophosphorus Pesticide Mixture	1 mL

200 µg/mL of each analyte in Hexane/Acetone (1:1)

Dimethoate	Malathion	Parathion (ethyl)	TEPP
EPN	Monocrotophos	Sulfotepp	

U-SPM-834	Organophosphorus Pesticide Mixture	4 x 1 mL
U-SPM-824-1	Organophosphorus Pesticide Mixture	1 mL

200 µg/mL of each analyte in Hexane/Acetone

Guthion (Azinphos methyl)	Fenthion
Bolstar (Sulprofos)	Merphos
Chlorpyrifos	Methyl parathion
Coumaphos	Mevinphos (Phosdrin)
Demeton (total, mixed isomers)	Naled
Diazinon	Phorate
Dichlorvos	Fenchlorphos (Ronnel)
Disulfoton	Tetrachlorvinphos (Stirofos)
Ethoprop (Ethoprofos)	Tokuthion
Fensulfothion	Trichloronate

U-SPM-824	Organophosphorus Pesticide Mixture	4 x 1 mL
U-HBM-8151A-1	Chlorinated Herbicide Mixture	1 mL

Solvent: Methanol

Acifluorfen	100 µg/mL	Dichlorprop	100 µg/mL
Bentazon	100 µg/mL	Dinoseb	100 µg/mL
Chloramben	100 µg/mL	MCPA	10000 µg/mL
2,4-D	100 µg/mL	MCPP	10000 µg/mL
Dalapon	100 µg/mL	4-Nitrophenol	100 µg/mL
2,4-DB	100 µg/mL	Pentachlorophenol	100 µg/mL
DCPA (dacthal)	100 µg/mL	Picloram	100 µg/mL
Dicamba	100 µg/mL	Silvex (2,4,5-TP)	100 µg/mL
3,5-Dichlorobenzoic acid	100 µg/mL	2,4,5-T	100 µg/mL

U-HBM-8151A	Chlorinated Herbicide Mixture	4 x 1 mL
U-HBM-815A-1	Chlorinated Herbicide Mixture	1 mL

100 µg/mL of each analyte in Methanol

2,4-D	Silvex (2,4,5-TP)	2,4,5-T

U-HBM-815A	Chlorinated Herbicide Mixture	4 x 1 mL
NE-NC 378	Pesticide Standard Solution	1.5 mL

100 µg/mL of each analyte in Cyclohexane

Aldrin	Endrin ketone
4,4'-DDD	alpha-HCH
4,4'-DDE	beta-HCH
4,4'-DDT	delta-HCH
Dieldrin	gamma-HCH
Endosulfan I	Heptachlor
Endosulfan II	Heptachlor epoxide (endo) (isomer A)
Endosulfan sulphate	Heptachlor epoxide (exo) (isomer B)
Endrin	4,4'-Methoxychlor
Endrin aldehyde	

Code	Product	Unit
NE-USL 020	Pesticide Standard Solution, EN ISO 11369 CERTAN®	1.5 mL

10 µg/mL of each analyte in Acetonitrile

Desethylatrazine	Methabenzthiazuron	Diuron	Linuron
Metoxuron	Atrazine	Metobromuron	Metolachlor
Hexazinone	Chlorotoluron	Metazachlor	
Simazine	Monolinuron	Sebuthylazine	
Cyanazine	Isoproturon	Terbuthylazine	

NE7550	Standard Solution for EN ISO 6468 CERTAN®	1.5 mL

10 µg/mL of each analyte in iso-Octane.

alpha-HCH	Heptachlor
beta-HCH	Heptachlor epoxide (endo) (isomer A)
gamma-HCH	Heptachlor epoxide (exo) (isomer B)
delta-HCH	alpha-Endosulfan
epsilon-HCH	beta-Endosulfan
2,4'-DDE	1,2,3-Trichlorobenzene
4,4'-DDE	1,2,4-Trichlorobenzene
2,4'-TDE	1,3,5-Trichlorobenzene
4,4'-TDE	1,2,3,4-Tetrachlorobenzene
2,4'-DDT	1,2,3,5-Tetrachlorobenzene
4,4'-DDT	1,2,4,5-Tetrachlorobenzene
4,4'-Methoxychlor	Pentachlorobenzene
Aldrin	Hexachlorobenzene
Dieldrin	Pentachlornitrobenzene (PCNB)
Endrin	

PCB 28 ..... 2,4,4'-Trichlorobiphenyl	PCB 153..... 2,2',4,4',5,5'-Hexachlorobiphenyl
PCB 52 ..... 2,2',5,5'-Tetrachlorobiphenyl	PCB 180..... 2,2',3,4,4',5,5'-Heptachlorobiphenyl
PCB 101 ..... 2,2',4,5,5'-Pentachlorobiphenyl	PCB 194.....2,2',3,3',4,4',5,5'-Octachlorobiphenyl
PCB 138 .....2,2',3,4,4',5'-Hexachlorobiphenyl	

NE7551	Pesticide Standard Solution for EN ISO 6468 CERTAN®	1.5 mL

10 µg/mL of each analyte in iso-Octane

alpha-HCH	4,4'-DDT
beta-HCH	4,4'-Methoxychlor
gamma-HCH	Aldrin
delta-HCH	Dieldrin
epsilon-HCH	Endrin
2,4'-DDE	Heptachlor
4,4'-DDE	Heptachlor epoxide (endo) (isomer A)
2,4'-TDE	Heptachlor epoxide (exo) (isomer B)
4,4'-TDE	alpha-Endosulfan
2,4'-DDT	beta-Endosulfan

NE7554	Pesticide Standard Solution (DIN 38407-14) CERTAN®	10 mL

10 µg/mL of each analyte in Methanol

Mecoprop	Dichlorprop	Fenoprop	2,4,5-T
MCPA	2,4-D	MCPB	2,4-DB

NE-USL 101	Triazine Pesticide Standard Solution	1.5 mL

10 µg/mL of each analyte in Methanol

Atrazine	Atrazine desisopropyl	Propazine	Simazine
Atrazine desethyl	Cyanazine	Sebuthylazine	Terbuthylazine

NE-USL 102	Urea Pesticide Standard Solution	1.5 mL

10 µg/mL of each analyte in Methanol

Buturon	Fenuron	Metobromuron	Monuron
Diuron	Isoproturon	Metoxuron	
Chlorotoluron	Methabenzthiazuron	Monolinuron	

NE-USL 103	Pesticide Standard Solution	1.5 mL

10 µg/mL of each analyte in Methanol

Aldicarb	Crimidine	Prometryn	Terbutryn
Chlorfenvinphos	Metazachlor	Parathion-ethyl	Vinclozolin
Chloropropham	Metolachlor	Parathion-methyl	

NE7500	Triazine and Urea Pesticide Mixture	1.2 mL

100 µg/mL of each analyte in Acetonitrile

Atrazine	Simazine	Metabromuron	Chlorpropham
Atrazine-desethyl	Cyanazin	Metazachlor	Terbutryn
Atrazine-desisopropyl	Terbutylazine-desethyl	Propazine	Metolachlor
Metamitron	Methabenzthiazuron	Dimefuron	Ethofumesate
Chloridazon	Chlorotoluron	Terbuthylazin	Ethidimuron
Metoxuron	Monolinuron	Linuron	
Carbetamid	Diuron	Chloroxuron	
Bromacil	Isoproturon	Prometryn	

Code	Product	Unit
SL35000	Pesticide Mixture (25) CERTAN® 100 µg/mL of each analyte in Acetonitrile	4.5 mL

Atrazine-desisopropyl	Terbuthylazine-desethyl	Metobromuron	Terbutryn
Metamitron	Carbamazepin	Metazachlor	Ethofumesat
Chloridazon	Methabenzthiazuron	Dimefuron	Metolachlor
Atrazine-desethyl	Chlortoluron	Terbuthylazine	Flurochloridon
Carbetamide	Atrazin	Linuron	
Simazin	Diuron	Flurtamone	
Metribuzin	Isoproturon	Prometryn	

Camphechlor (Toxaphene) congeners

Introduction

Camphechlor a non-systemic insecticide that was first introduced in 1948 and continues to be used in some countries today. It is prepared by the chlorination of technical camphene, and shows 670 signals in GC/ECD. Camphechlor is soluble in water - 3 mg/L - and a degree of dehydrochlorination takes place with heat, strong sunlight and certain catalysts such as iron. The inherent instability of Camphechlor complicates what is already a great challenge to the analytical chemist.

L. Alder and B. Vieth1 of the German Federal Institute for Consumer Health Protection and Veterinary Medicine (BgVV) in paper entitled "A congener-specific method for the quantification of Camphechlor (Toxaphene) residues in fish and other foodstuffs“ point out that fish appears to be the main source of human Camphechlor intake, and propose the ECD/GC determination of 3 individual chlorobornanes (DE-TOX 401, 402, 403) as indicators representing about 25-50% of the camphechlor residues. A fourth compound (DE-TOX 404), which may serve as an indicator of recent contamination, is also suggested.

In the past few years a number of other chlorinated terpenes have been found to be important contaminants in food and biological samples. The modern congener-specific analysis procedure includes separate determination of at least three other octachlorobornanes – Parlar No. 40, 41 and 44 (DE-TOX 445, 454 and 453 respectively). In contrast, in sediment samples the above mentioned compounds are rare. The dominant two are lower chlorinated Hex-Sed and Hp-Sed (DE-TOX 441 and DE-TOX 442)2, possessing no geminal chlorine atoms.

In our research project on the isolation of Camphechlor components with Dr. V. Nikiforov and his co-workers at the University of St. Petersburg well over 100 compounds have so far been isolated, with structural confirmation by NMR, X-ray and characteristic retention times on DB-5 column[3]. 49 are now available as crystalline compounds and individual standard solutions.

A number of multi-component standard solutions have also been prepared.

DE-USL 420 is a three component mixture of the most important congeners Parlar No. 26, 50 and 62, examined by BAM. It can be recommended as primary standard for Toxaphene residue analysis.

DE-USL 421 contains the three Parlar No. 26, 50 and 62 and an additional isomer Toxicant B (Parlar No. 32), one of the major and most toxic components of technical Toxaphene.

DE-TOX 483 is designed for routine congener-specific analysis of food and biota samples. In addition to the most environmentally relevant Parlar No. 26, 50, 62, 40, 41 and 44 it contains two other structurally related compounds.

DE-TOX 484 is designed for analysis of sediment samples. It contains the two most frequently found Hex-Sed and Hp-Sed, as well as one hexa- and one heptachlorobornane, also without geminal chlorine atoms in a molecule.

DE-TOX 485 is a standard solution of 9 chlorinated dihydrocamphenes, which are present in technical Toxaphene. Their environmental importance is somewhat less studied to date.

DE-TOX 486 is a 7-component solution for determination of compounds of general formula $C_{10}HxCl_{16-x}$. It contains four chlorinated bornenes, two chlorinated camphenes (Parlar No. 25 and Parlar No. 31), reported in environmental samples and a unique tricyclic compound DE-TOX 456, the most polar polychloroterpene, known so far (according to its extremely late elution on Hexane/silicagel column).

DE-TOX 487 contains highly chlorinated congeners – two nonachlorodihydrocamphenes and three decachlorobornanes. These compounds have not been included into the 25-component mixture. They might decompose during GC run, care must be taken to avoid interference with decomposition products. On the other hand, this mixture can be used to verify the suitability of GC system for Toxaphene analysis.

DE-TOX 488 is a standard solution of three congeners, selected for their behavior during clean-up. DE-TOX 409 and DE-TOX 410 are the earliest and the latest eluters among polychlorobornanes on silicagel column, with hexane as eluent. The tricyclic compounds DE-TOX 456 seems to be the most polar among polychloroterpenes of all types. Its elution volume is approximately two times more than that of DE-TOX 410. This mixture can be used to verify complete extraction of all Toxaphene compounds during sample work-up.

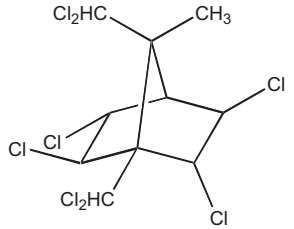
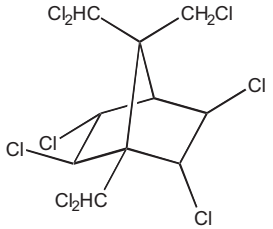
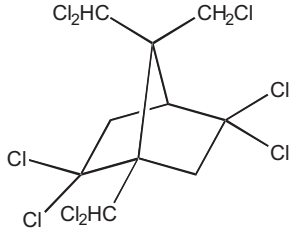
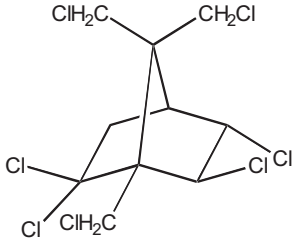
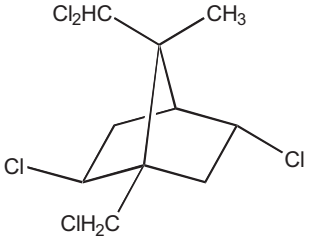
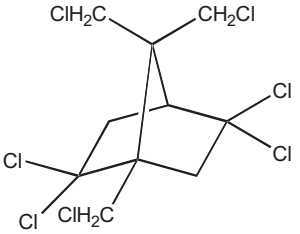
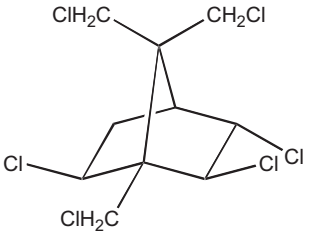
References

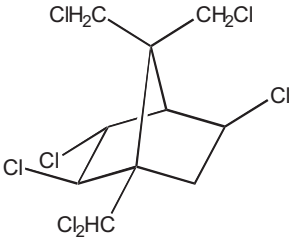
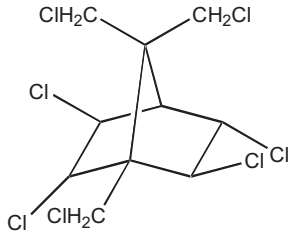
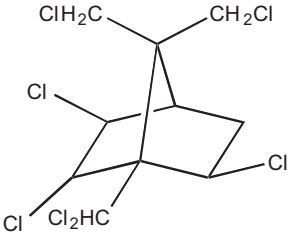
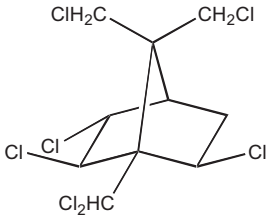
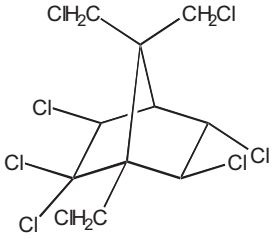
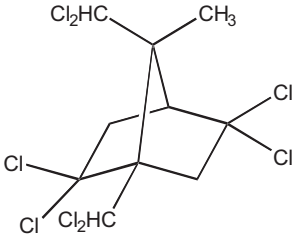
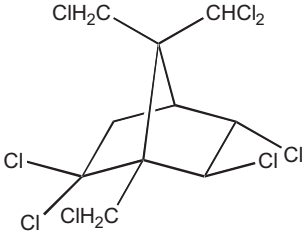
[1] Alder L., B. Vieth.(1996) Fresenius J Anal. Chem. 354:81-92

[2] G.A. Stern, M.D. Loewen, B.M. Miskimmin, D.C.G. Muir, J.B. Westmore. (1996) Env. Sci. Tech. 30: 2251-2258

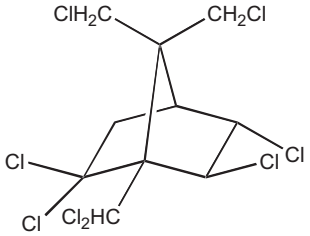
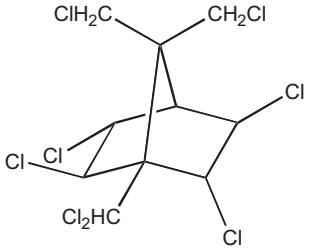
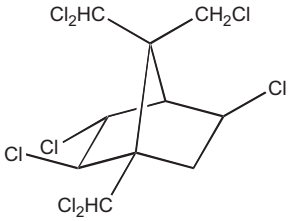
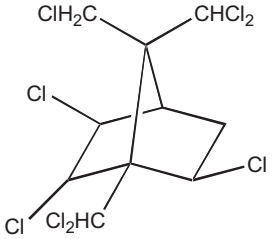
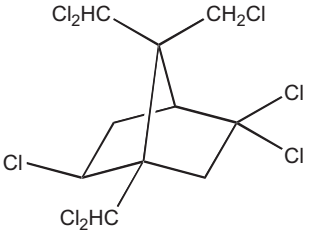
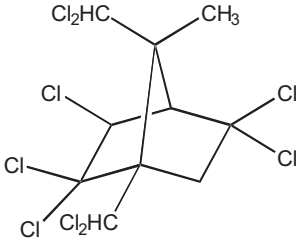
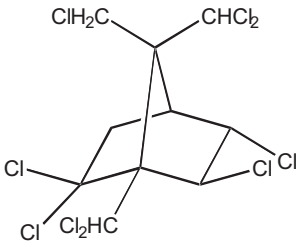
[3] V. Nikiforov, V. Karavan, S. Miltsov. (2000) Chemosphere 41: 467-472

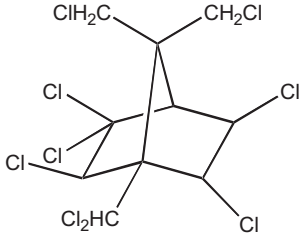
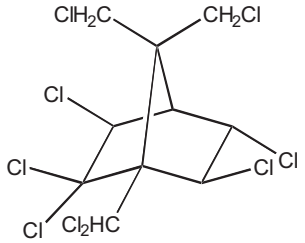
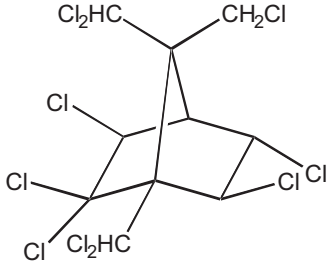
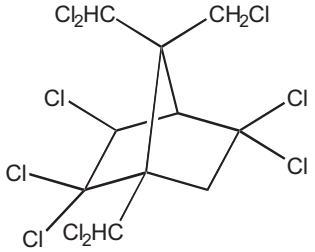
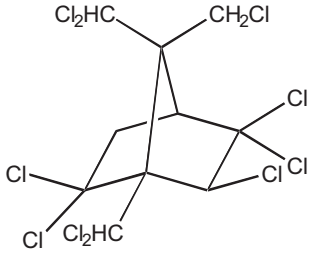
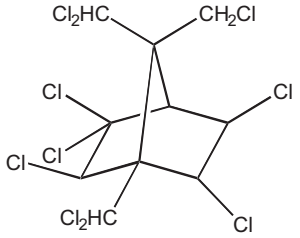
Camphechlor (Toxaphene) congeners

Code	Product		Unit
DE-TOX 401	2-endo,3-exo,5-endo,6-exo,8,8,10,10-Octachlorobornane (BgVV Component 1,T2, TOX8, Parlar No. 26) 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 402	2-endo,3-exo,5-endo,6-exo,8,8,9,10,10-Nonachlorobornane (BgVV Component 2, T12, TOX9, Toxicant Ac, Parlar No. 50) 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 403	2,2,5,5,8,9,9,10,10-Nonachlorobornane (BgVV Component 3, Parlar No. 62) 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 404	2,2,5-endo,6-exo,8,9,10-Heptachlorobornane (BgVV Component 4, Toxcant B, Parlar No. 32) 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 417	2-exo,5-endo,9,10,10- Pentachlorobornane 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 418	2,2,5,5,8,9,10- Heptachlorobornane 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 441	2-exo,3-endo,6-exo,8,9,10-Hexachlorobornane (Hex-Sed) 5 µg/mL in iso-Octane CERTAN®		1.25 mL

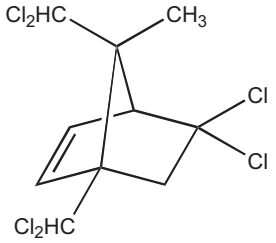
Code	Product		Unit
DE-TOX 414	2-exo,3-endo,5-exo,8,9,10,10-Heptachlorobornane 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 442	2-endo,3-exo,5-endo,6-exo,8,9,10-Heptachlorobornane (Hp-Sed) 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 409	2-endo,3-exo,6-exo,8,9,10,10-Heptachlorobornane 5 µg/mL in iso-Octane CERTAN® (Last Eluting Hexane/SiO2)		1.25 mL
DE-TOX 419	2-exo,3-endo,6-exo,8,9,10,10-Heptachlorobornane 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 412	2,2,3-exo,5-endo,6-exo,8,9,10-Octachlorobornane (Parlar No. 39) 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 408	2,2,5,5,9,9,10,10-Octachlorobornane (Parlar No. 38) 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 439	2,2,5-endo,6-exo,8,8,9,10-Octachlorobornane (Parlar No. 42a; 8-Cl-B) 5 µg/mL in iso-Octane CERTAN®		1.25 mL

Camphechlor (Toxaphene) congeners

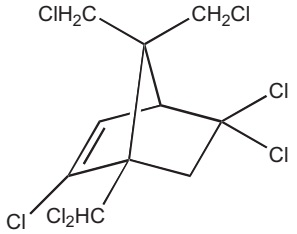
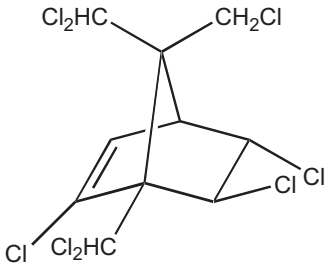
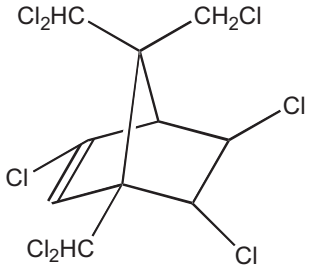
Code	Product		Unit
DE-TOX 444	2,2,5-endo,6-exo,8,9,10,10-Octachlorobornane 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 445	2-endo,3-exo,5-endo,6-exo,8,9,10,10-Octachlorobornane (Parlar No. 40) 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 454	2-exo,3-endo,5-exo,8,9,9,10,10-Octachlorobornane (Parlar No. 41) 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 455	2-endo,3-exo,6-exo,8,8,9,10,10-Octachlorobornane 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 453	2-exo,5,5,8,9,9,10,10-Octachlorobornane (Parlar No. 44) 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 410	2,2,3-exo,5,5,9,9,10,10-Nonachlorobornane 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 423	2,2,5-endo,6-exo,8,8,9,10,10- Nonachlorobornane (Parlar No. 56) 5 µg/mL in iso-Octane CERTAN®		1.25 mL

Code	Product		Unit
DE-TOX 422	Mixture of two Nonachlorobornanes (ratio 1:1) 2,2,3-exo,5-endo,6-exo,8,9,10,10-Nonachlorobonane (A) 2-exo,3,3,5-exo,6-endo,8,9,10,10-Nonachlorobornane (B) 5 µg/mL in iso-Octane CERTAN® 		1.25 mL
DE-TOX 413	2,2,3-exo,5-endo,6-exo,8,9,9,10,10-Decachlorobornane 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 424	2,2,3-exo,5,5,8,9,9,10,10-Decachlorobornane (Parlar No. 70) 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 405	2,2,5,5,6-exo,8,9,9,10,10-Decachlorobornane (Parlar No. 69) 5 mg/L in iso-Octane CERTAN®		1.25 mL
DE-TOX 415	2-exo,3,3,5-exo,6-endo,8,9,9,10,10-Decachlorobornane 5 µg/mL in iso-Octane CERTAN®		1.25 mL

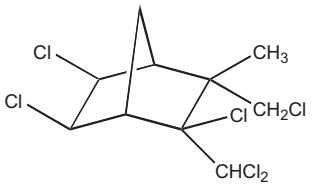
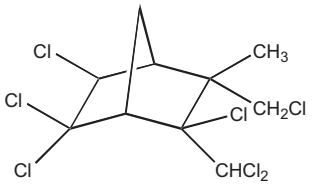
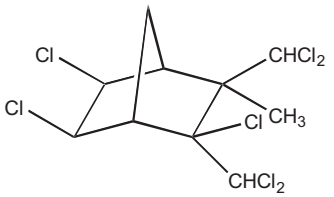
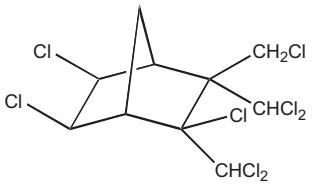
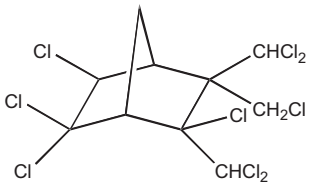
Polychlorinated bornenes

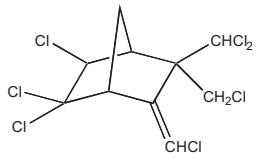
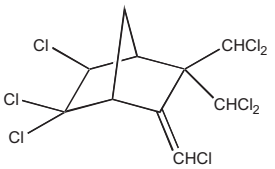
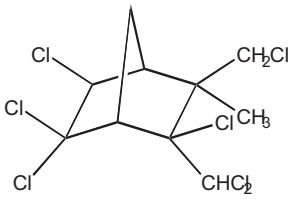
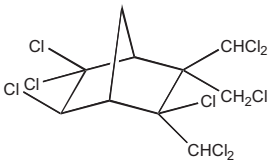
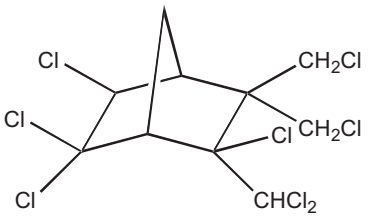
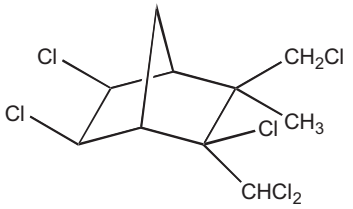
DE-TOX 447	5,5,9,9,10,10-Hexachlorobornene 5 µg/mL in iso-Octane CERTAN®		1.25 mL

Camphechlor (Toxaphene) congeners

Code	Product		Unit
DE-TOX 451	2,5,5,8,9,10,10-Heptachlorobornene 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 446	2,5-endo,6-exo,8,9,9,10,10-Octachlorobornene 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 450	3,5-exo,6-endo,8,9,9,10,10-Octachlorobornene 5 µg/mL in iso-Octane CERTAN®		1.25 mL

Polychlorinated dihydrocamphenes

DE-TOX 459	2-exo,3-exo,6-exo,9,10,10-Hexachlorodihydrocamphene (2-exo,3-exo,6-exo-trichloro,5-endo-chloromethyl,6-dichloromethyl,5-methylnorbornane) 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 452	2,2,3-exo,6-exo,9,10,10-Heptachlorodihydrocamphene (2,2,3-exo,6-exo-tetrachloro,5-endo-chloromethyl,6-dichloromethyl,5-methylnorbornane) 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 460	2-exo,3-exo,6-exo,8,8,10,10-Heptachlorodihydrocamphene (2-exo,3-exo,6-exo-trichloro,5-exo,6-bis(dichloromethyl),5-methylnorbornane) 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 437	2-exo,3-exo,6-exo,8,9,9,10,10-Octachlorodihydrocamphene (2-exo,3-exo,6-exo-trichloro,5-exo-chloromethyl,5,6-bis(dichloromethylnorbornane) 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 457	2,2,3-exo,6-exo,8,8,9,10,10-Nonachlorodihydrocamphene (2,2,3-exo,6-exo-tetrachloro,5-endo-chloromethyl,5,6-bis(dichloromethylnorbornane)) 5 µg/mL in iso-Octane CERTAN®		1.25 mL

Code	Product		Unit
DE-TOX 448	2,2,3-exo,8,8,9,10-Heptachlorocamphene (Parlar No. 25) 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 449	2,2,3-exo,8,8,9,9,10-Octachlorocamphene (Parlar No. 31) 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 435	2,2,3-exo,6-exo,8,10,10-Heptachlorodihydrocamphene (2,2,3-exo,6-exo-tetrachloro,5-exo-chloromethyl,6-dichloromethyl,5-methylbornane) 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 438	2-exo,3,3,6-exo,8,8,9,10,10-Nonachlorodihydrocamphene (2-exo,3,3,6-exo-tetrachloro,5-endo-chloromethyl,5,6-bis(dichloromethyl)norbornane) 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 436	2,2,3-exo,6-exo,8,9,10,10-Octachlorodihydrocamphene (2,2,3-exo,6-exo-tetrachloro,5,5-bis(chloromethyl),6-dichloromethyl-norbornane) 5 µg/mL in iso-Octane CERTAN®		1.25 mL
DE-TOX 458	2-exo,3-exo,6-exo,8,10,10-Hexachlorodihydrocamphene (2-exo,3-exo,6-exo-trichloro,5-exo-chloromethyl,6-dichloromethyl,5-methylnorbornane) 5 µg/mL in iso-Octane CERTAN®		1.25 mL

Labelled Camphechlor (Toxphene) congeners

For labelled camphechlor (toxphene) congeners see section “Environmental contaminant standards from CIL”.

Multicomponent standard solutions

DE-USL 420 — The BgVV Three — 1.25 mL

Standard solution of three important residue components of Camphechlor (Toxaphene) in iso-Octane examined by the German Federal Institute for Materials Research and Testing (BAM).

Compound	Purity (%)	Concentration (mg/L)
2-endo,3-exo,5-endo,6-exo,8,8,10,10-Octachlorobornane (Indicator compound 1, T2, TOX8, Parlar No. 26)	99.78 ± 0.03	4.79 ± 0.08
2-endo,3-exo,5-endo,6-exo,8,8,9,10,10-Nonachlorobornane (Indicator compound 2, T12, TOX9, Toxicant Ac, Parlar No. 50)	99.80 ± 0.02	4.87 ± 0.07
2,2,5,5,8,9,9,10,10-Nonachlorobornane (Indicator compound 3, Parlar No. 62)	99.71 ± 0.13	4.80 ± 0.06

DE-USL 421 — The BgVV Four CERTAN® — 1.25 mL

5 µg/mL of each analyte in iso-Octane

Code	Analyte
DE-TOX 401	2-endo,3-exo,5-endo,6-exo,8,8,10,10-Octachlorobornane
DE-TOX 402	2-endo,3-exo,5-endo,6-exo,8,8,9,10,10-Nonachlorobornane
DE-TOX 403	2,2,5,5,8,9,9,10,10-Nonachlorobornane.
DE-TOX 404	2,2,5-endo,6-exo,8,9,10-Heptachlorobornane

Code	Product	Unit
DE-TOX 482	Polychlorobornane Qualitative Standard Solution CERTAN® (25 analytes) 5 µg/mL of each analyte in iso-Octane	1.25 mL

Code	Analyte
DE-TOX 417	2-exo,5-endo,9,9,10-Pentachlorobornane
DE-TOX 441	2-exo,3-endo,6-exo,8,9,10-Hexachlorobornane (Hx-Sed)
DE-TOX 442	2-endo,3-exo,5-endo,6-exo,8,9,10-Heptachlorobornane (Hp-Sed)
DE-TOX 414	2-exo,3-endo,5-exo,8,9,10,10-Heptachlorobornane
DE-TOX 418	2,2,5,5,8,9,10-Heptachlorobornane
DE-TOX 404	2,2,5-endo,6-exo,8,9,10-Heptachlorobornane(Tox B, Parlar No. 32)
DE-TOX 419	2-exo,3-endo,6-exo,8,9,10,10-Heptachlorobornane
DE-TOX 443	2-exo,3-endo,5-exo,6-exo,8,9,10-Heptachlorobornane
DE-TOX 409	2-endo,3-exo,6-exo,8,9,10,10- Heptachlorobornane
DE-TOX 401	2-endo,3-exo,5-endo,6-exo,8,8,10,10-Octachlorobornane (T2, Parlar No.26)
DE-TOX 408	2,2,5,5,9,9,10,10- Octachlorobornane (Parlar No. 38)
DE-TOX 412	2,2,3-exo,5-endo,6-exo,8,9,10- Octachlorobornane (3-exo-Cl-B, Parlar No.39)
DE-TOX 445	2-endo,3-exo,5-endo,6-exo,8,9,10,10-Octachlorobornane (Parlar No. 40)
DE-TOX 454	2-exo,3-endo,5-exo,8,9,9,10,10-Octachlorobornane Parlar No. 41)
DE-TOX 439	2,2,5-endo,6-exo,8,8,9,10-Octachlorobornane (8-Cl-B, Parlar No. 42a)
DE-TOX 453	2-exo,5,5,8,9,9,10,10-Octachlorobornane (Parlar No. 44)
DE-TOX 444	2,2,5-endo,6-exo,8,9,10,10-Octachlorobornane (10-Cl-B)
DE-TOX 455	2-endo,3-exo,6-exo,8,8,9,10,10-Octachlorobornane
DE-TOX 402	2-endo,3-exo,5-endo,6-exo,8,8,9,10,10-Nonachlorobornane(T12, $ToxA_c$ Parlar No. 50)
DE-TOX 410	2,2,3-exo,5,5,9,9,10,10- Nonachlorobornane
DE-TOX 422	2,2,3-exo,5-endo,6-exo,8,9,10,10-Nonachlorobornane/2-exo,3,3,5-exo,6-endo,8,9,10,10-Nonachlorobornane
DE-TOX 423	2,2,5-endo,6-exo,8,8,9,10,10-Nonachlorobornane (8,10-Cl_2-B, Parlar No. 56)
DE-TOX 411	2,2,3-exo,5,5,8,9,10,10-Nonachlorobornane (ToxC, Parlar No. 58)
DE-TOX 403	2,2,5,5,8,9,9,10,10-Nonachlorobornane (Parlar No. 62)

DE-TOX 483	Toxaphene Mix (important isomers) CERTAN® (8 analytes) 5 µg/mL of each analyte in iso-Octane	1.25 mL

Code	Analyte
DE-TOX 414	2-exo,3-endo,5-exo,8,9,10,10-Heptachlorobornane
DE-TOX 401	2-endo,3-exo,5-endo,6-exo,8,8,10,10-Octachlorobornane (T2, Parlar No.26)
DE-TOX 408	2,2,5,5,9,9,10,10-Octachlorobornane (Parlar No.38)
DE-TOX 445	2-endo,3-exo,5-endo,6-exo,8,9,10,10-Octachlorobornane (Parlar No.40)
DE-TOX 454	2-exo,3-endo,5-exo,8,9,9,10,10-Octachlorobornane (Parlar No.41)
DE-TOX 453	2-exo,5,5,8,9,9,10,10-Octachlorobornane (Parlar No.44)
DE-TOX 402	2-endo,3-exo,5-endo,6-exo,8,8,9,10,10-Nonachlorobornane (T12,$ToxA_c$,Parlar No.50)
DE-TOX 403	2,2,5,5,8,9,9,10,10- Nonachlorobornane (Parlar No.62)

DE-TOX 486	Toxaphene Mix (unsaturated isomers) CERTAN® (7 analytes) 5 µg/mL of each analyte in iso-Octane	1.25 mL

Code	Analyte
DE-TOX 446	2,5-endo,6-exo,8,9,9,10,10-Octachlorobornene
DE-TOX 451	2,5,5,8,9,10,10-Heptachlorobornene
DE-TOX 450	3,5-exo,6-endo,8,9,9,10,10-Octachlorobornene
DE-TOX 447	5,5,9,9,10,10-Hexachlorobornene
DE-TOX 456	Tricylene (5,7-Dichloro-3-3-bis(chloromethyl)-4-(1,1-dichloromethyl)tricyclo[2.2.1.$0^{2,6}$]heptane)
DE-TOX 448	2,2,3-exo,8,8,9,10-Heptachlorocamphene
DE-TOX 449	2,2,3-exo,8,8,9,9,10-Octachlorocamphene

DE-TOX 488	Toxaphene Mix CERTAN® (3 analytes) 5 µg/mL of each analyte in iso-Octane	1.25 mL

Code	Analyte
DE-TOX 456	Tricylene (5,7-Dichloro-3-3-bis(chloromethyl)-4-(1,1-dichloromethyl)tricyclo[2.2.1.$0^{2,6}$]]heptane)
DE-TOX 410	2,2,3-exo,5,5,9,9,10,10-Nonachlorobornane (First Eluting Hexane/SiO2)
DE-TOX 409	2-endo,3-exo,6-exo,8,9,10,10-Heptachlorobonane (Last Eluting Hexane/SiO2)

DE-TOX 485	Toxaphene Mix (Dihydrocamphenes) CERTAN® (9 analytes) 5 µg/mL of each analyte in iso-Octane	1.25 mL

Code	Analyte
DE-TOX 437	2-exo,3-exo,6-exo,8,9,9,10,10-Octachlorodihydro-camphene (2-exo,3-exo,6-exo-trichloro, 5-exo-chloromethyl,5,6-is(dichloromethyl)norbornane)
DE-TOX 436	2,2,3-exo,6-exo,8,9,10,10-Octachlorodihydro-camphene (2,2,3-exo,6-exo-tetrachloro,5,5-bis(chloromethyl),6-dichloromethylnorbornane)
DE-TOX 435	2,2,3-exo,6,8,10,10- Heptachlorodihydrocamphene (2,2,3-exo,6-exo-tetrachloro,5-exo-chloromethyl,6-dichloromethyl,5-methylbornane)
DE-TOX 438	2-exo,3,3,6-exo,8,8,9,10,10-Nonachlorodihydrogencamphene (2-exo,3,3,6-exo-tetrachloro, 5-endo-chloromethyl,5,6-bis(dichloromethyl)norbornane)
DE-TOX 452	2,2,3-exo,6-exo,9,10,10-Heptachlordihydrocamphene (2,2,3-exo,6-exo-tetrachloro,5-endo-chloromethyl,6-dichloromethyl,5-methylnorbornane)
DE-TOX 458	2-exo,3-exo,6-exo,8,10,10-Hexachlorodihydro-camphene (2-exo,3-exo,6-exo-trichloro,5-exo-chloromethyl,6-dichloromethyl,5-methylnorbornane
DE-TOX 460	2-exo,3-exo,6-exo,8,8,10,10-Heptachlorodihydro-camphene (2-exo,3-exo,6-exo-trichloro, 5-exo,6-bis(dichloromethyl),5-methylnorbornane)
DE-TOX 459	2-exo,3-exo,6-exo,9,10,10-Hexachlorodihydocamphene (2-exo,3-exo,6- exo-trichloro,5-endo-chloromethyl,6-dichloromethyl,5-methylnorbornane)
DE-TOX 457	2,2,3-exo,6-exo,8,8,9,10,10-Nonadihydrocamphene (2,2,3-exo,6-exo-tetrachloro,5-endo-chloromethyl,5,6-bis(dichloromethyl)norbornane)

Code	Product	Unit
DE-TOX 487	Toxaphene Mix (perchlorinated compounds) CERTAN® (5 analytes) 5 µg/mL of each analyte in iso-Octane	1.25 mL

Code	Analyte
DE-TOX 438	2-exo,3,3,6-exo,8,8,9,10,10-Nonachlorodihydrocamphene (2-exo,3,3,6-exo-tetrachloro,5-endo-chloromethyl,5,6-bis(dichloromethylnorbornane)
DE-TOX 457	2,2,3-exo,6-exo,8,8,9,10,10-Nonachlorodihydrocamphene (2,2,3-exo,6-exo-tetrachloro,5-endo-chloromethyl,5,6-bis(dichloromethylnorbornane)
DE-TOX 424	2,2,3-exo,5,5,8,9,9,10,10-Decachlorobornane
DE-TOX 413	2,2,3-exo,5-endo,6-exo,8,9,9,10,10-Decachlorobornane
DE-TOX 415	2-exo,3,3,5-exo,6-endo,8,9,9,10,10-Decachlorobornane

DE-TOX 484	Toxaphene Mix (for sediment analysis) CERTAN® (4 analytes) 5 µg/mL of each analyte in iso-Octane	1.25 mL

Code	Analyte
DE-TOX 440	2-endo,3-exo,6-exo,8,9,10-Hexachlorobornane
DE-TOX 442	2-endo,3-exo,5-endo,6-exo,8,9,10-Heptachlorobornane (Hp-Sed)
DE-TOX 441	2-exo,3-endo,6-exo,8,9,10-Hexachlorobornane (Hex-Sed)
DE-TOX 443	2-exo,3-endo,5-exo,6-exo,8,9,10-Heptachlorobornane

Polyhalogenated compounds

Polychloro-n-alkanes

Introduction

Polychloro-*n*-alkanes (PCAs) with carbon chains between 10 and 30 are used for a variety of industrial applications and are components of lubricants, flame-retardants, adhesives, sealants and a number of other miscellaneous products. Commercial PCA formulations, also known as chlorinated paraffins (CPs), are prepared by the direct chlorination of *n*-alkanes with Cl_2 at elevated temperatures and pressures and/or in the presence of UV light. Based on the starting material, PCA mixtures fall into three categories: C_{10}-C_{13} (short), C_{14}-C_{17} (medium) and C_{20}-C_{30} (long); they are further subcategorised into their weight content of chlorine (30-70%) depending on the extent of chlorination [1].

There are particular concerns about the C_{10}-C_{13} PCAs because of their possible adverse effects on terrestrial and aquatic organisms, and potential carcinogenicity to humans [2]. Their release into the environment could occur during production, storage, transportation, or industrial use; leaching from landfill sites is also possible [3-5]. Much of this release is to the aquatic environment, either directly or from sewage treatment systems.

To date, reliable environmental concentrations of PCAs have been a concern because of the unavoidable impurities present in formulations that arise during the industrial synthesis. In addition to the desired products, preparations can be contaminated with isoparaffins, aromatic compounds, sulfur, metals and unreacted *n*-alkanes [6]. Stabilisers such as epoxides and organotin compounds, are also frequently added during the chlorination process to inhibit the decomposition, *i.e.*, loss of HCl, at elevated temperatures [6].

The amount of impurities present in commercial mixtures can differ from one manufacturer to another and because they are currently being used as standards for environmental analysis, this can compromise the accuracy of quantitative measurements [7]. A need exists, therefore, for pure PCA mixtures that can be used as reliable analytical standards.

LGC Standards offers individual PCA mixtures that have been prepared by chlorination of highly pure *n*-alkane starting materials (>99%), with products purified by a series of chromatography steps that removed any unreacted starting material from their chlorinated analogs. GC/MS was used to confirm components and to guarantee purity.

Products of chlorination. Figure 1 shows the negative ion elution profiles of the C_{12}-PCA, determined by monitoring a characteristic fragment ion, *i.e.,* $[M - Cl]^-$ ion [8], formed by the chlorination process. The relative abundance of each molecular formula is also shown. The most predominant component was the $C_{12}H_{20}Cl_6$ species, which accounted for 72% of the total abundance of all the C_{12}-congeners. In a similar manner, the compositions of the C_{10}, C_{11} and C_{13} mixtures were determined, with the results are shown in Table 1.

Chlorine atoms	C10	C11	C12	C13
4	4.9	0.3	0.3	1.5
5	30.2	25.1	13.6	33.2
6	59.9	62.0	71.7	59.2
7	3.7	11.1	12.9	5.6
8	1.2	1.4	1.6	0.5

Table 1. Responses (%) of the congeners present in each mixture.

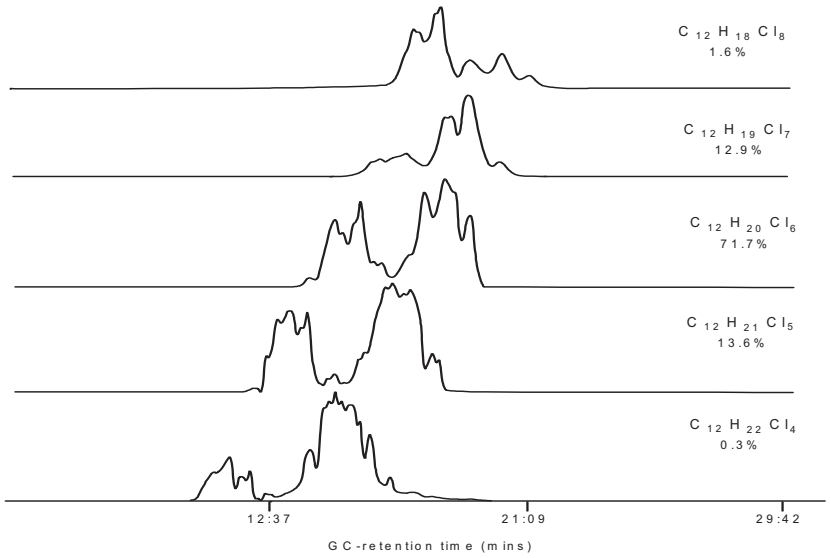


Figure 1. Elution profiles of the C12–chlorinated alkanes, determined by monitoring their respective $[M–Cl]^-$ ion. The relative abundance of each formula group is also shown.

Confirmation of purity. Each reaction mixture was checked to ensure that the chromatography cleanup steps had removed all the unreacted n-alkanes. Figure 2(a-c) shows the EI full scan total ion chromatogram of (a) dodecane, (b) the products derived by the chlorination of dodecane and (c) cleaned-up products free of starting material. It is clear from Figure 1(c) that no residual C12-alkane is present. The other mixtures were cleaned-up and checked for purity in the same manner. In all cases no residual n-alkanes were present.

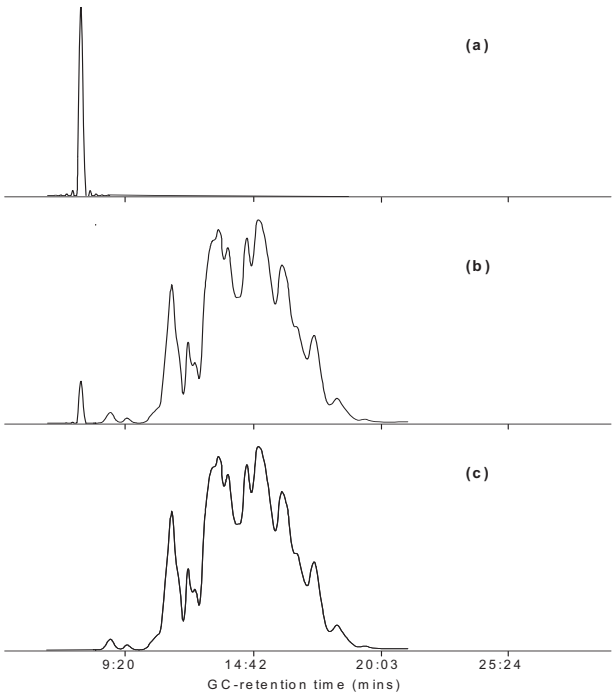


Figure 2. Electron ionisation full scan total ion chromatogram of (a) dodecane, (b) products derived by chlorination of dodecane, and (c) chromatography cleaned-up products.

Similarity of the synthesised mixtures to an industrial preparation. Figure 3 illustrates the similarity in GC-elution profiles of a typical industrial formulation and a mixture created by combining equal amounts of the individual mixtures available from LGC Standards. Depending on the formula group abundance profile of a sample under investigation, and by combining different amounts of the individual standards together, it is possible to create a standard that closely resembles that of the environmental sample under investigation.

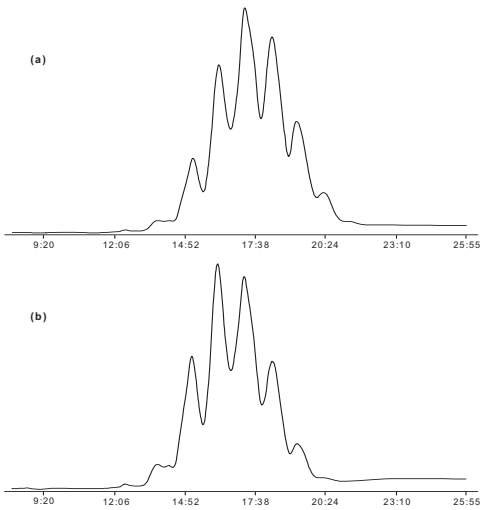


Figure 3. EI-MS total ion chromatogram of (a) industrial formulation and (b) one created by combining equal amounts of the individual mixtures.

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Code	Product	Unit

Polychloro-n-alkane standard solutions

NE0941	Polychloro-n-decane (C10) 100 µg/mL in Cyclohexane	1.25 mL
NE0942	Polychloro-n-undecane (C11) 100 µg/mL in Cyclohexane	1.25 mL
NE0943	Polychloro-n-dodecane (C12) 100 µg/mL in Cyclohexane	1.25 mL
NE0944	Polychloro-n-tridecane (C13) 100 µg/mL in Cyclohexane	1.25 mL

Polychlorinated biphenyls (PCBs)

Introduction

The first PCBs were manufactured as long ago as 1930. Fifty years later an estimated one to two million metric tons had been produced in the industrialised countries, and marketed widely under various trade names.

Trade name	Manufactured in
Aroclor	United States, United Kingdom
Clophen, Elaol	Germany
Pyroclor	United Kingdom
Phenoclor, Pyralene	France
Fenclor	Italy
Chemko	Czech Republic
Sovol	Russia

The industrial PCBs were invariably used as dielectric fluids in transformers and capacitors and as hydraulic and heat transfer fluids. Unfortunately their chemical and physical characteristics which make them so eminently suitable for these applications also qualify them as persistent bioaccumulative environmental pollutants. Jensen first drew attention to this problem in the early sixties, and today the WHO continues to recommend and organise programmes on identification, surveillance and control of potential PCB sources.

Industrial PCBs

Each manufacturer produced a series with varying chlorine content.

Aroclor	Clophen	Phenoclor	Approx. Cl by Wt.
1221			21
1232			32-33
1242	A30	DP3	40-42
1248	A40	DP4	48
1254	A50	DP5	52-54
1260	A60	DP6	60
1262			62
1268			68

Code	Product	Unit
U-RPC-1016	Aroclor 1016	50 mg
NIST-3081	Aroclor 1016 in Methanol Certified value Aroclor 1016 ....17.13 mg/kg ± 0.54 mg/kg or 13.70 mg/L ± 0.44 mg/L	5 x 1.2 mL
U-PP-280-1	Aroclor 1016 100 µg/mL in Methanol	1 mL
U-PP-280	Aroclor 1016 100 µg/mL in Methanol	4 x 1 mL
U-PP-281-1	Aroclor 1016 100 µg/mL in Hexane	1 mL
U-PP-281	Aroclor 1016 100 µg/mL in Hexane	4 x 1 mL
U-PP-282-1	Aroclor 1016 100 µg/mL in iso-Octane	1 mL
U-PP-282	Aroclor 1016 100 µg/mL in iso-Octane	4 x 1 mL
U-RPC-1221	Aroclor 1221	50 mg
U-PP-290-1	Aroclor 1221 100 µg/mL in Methanol	1 mL
U-PP-290	Aroclor 1221 100 µg/mL in Methanol	4 x 1 mL
U-PP-291-1	Aroclor 1221 100 µg/mL in Hexane	1 mL
U-PP-291	Aroclor 1221 100 µg/mL in Hexane	4 x 1 mL
U-PP-292-1	Aroclor 1221 100 µg/mL in iso-Octane	1 mL
U-PP-292	Aroclor 1221 100 µg/mL in iso-Octane	4 x 1 mL
U-EPA-1292	Aroclor 1221 1000 µg/mL in iso-Octane	1 mL
U-RPC-1232	Aroclor 1232	10 mg
NIST-3082	Aroclor 1232 in Methanol Certified value Aroclor 1232 .....5.25 mg/kg ± 0.31 mg/kg or 4.20 mg/L ± 0.25 mg/L	5 x 1.2 mL

Polychlorinated biphenyls (PCBs)

Code	Product	Unit
U-PP-300-1	Aroclor 1232 100 µg/mL in Methanol	1 mL
U-PP-300	Aroclor 1232 100 µg/mL in Methanol	4 x 1 mL
U-PP-301-1	Aroclor 1232 100 µg/mL in Hexane	1 mL
U-PP-301	Aroclor 1232 100 µg/mL in Hexane	4 x 1 mL
U-PP-302-1	Aroclor 1232 100 µg/mL in iso-Octane	1 mL
U-PP-302	Aroclor 1232 100 µg/mL in iso-Octane	4 x 1 mL
U-EPA-1302	Aroclor 1232 1000 µg/mL in iso-Octane	1 mL
U-RPC-1242	Aroclor 1242	50 mg
NIST-3083	Aroclor 1242 in Methanol Certified value Aroclor 1242 ....16.36 mg/kg ± 0.35 mg/kg or 13.08 mg/L ± 0.29 mg/L	5 x 1.2 mL
U-PP-310-1	Aroclor 1242 100 µg/mL in Methanol	1 mL
U-PP-310	Aroclor 1242 100 µg/mL in Methanol	4 x 1 mL
U-PP-311-1	Aroclor 1242 100 µg/mL in Hexane	1 mL
U-PP-311	Aroclor 1242 100 µg/mL in Hexane	4 x 1 mL
U-PP-312-1	Aroclor 1242 100 µg/mL in iso-Octane	1 mL
U-PP-312	Aroclor 1242 100 µg/mL in iso-Octane	4 x 1 mL
U-EPA-1312	Aroclor 1242 1000 µg/mL in iso-Octane	1 mL
U-RPC-1248	Aroclor 1248	50 mg
NIST-3084	Aroclor 1242 in Methanol Certified value Aroclor 1248 .....6.89 mg/kg ± 0.22 mg/kg or 5.51 mg/L ± 0.18 mg/L	5 x 1.2 mL
U-PP-340-1	Aroclor 1248 100 µg/mL in Methanol	1 mL
U-PP-340	Aroclor 1248 100 µg/mL in Methanol	4 x 1 mL
U-PP-341-1	Aroclor 1248 100 µg/mL in Hexane	1 mL
U-PP-341	Aroclor 1248 100 µg/mL in Hexane	4 x 1 mL
U-PP-342-1	Aroclor 1248 100 µg/mL in iso-Octane	1 mL
U-PP-342	Aroclor 1248 100 µg/mL in iso-Octane	4 x 1 mL
U-EPA-1342	Aroclor 1248 1000 µg/mL in iso-Octane	1 mL
U-RPC-1254	Aroclor 1254	50 mg
NIST-3085	Aroclor 1254 in Methanol Certified value Aroclor 1254 .....7.08 mg/kg ± 0.16 mg/kg or 5.66 mg/L ± 0.13 mg/L	5 x 1.2 mL
U-PP-350-1	Aroclor 1254 100 µg/mL in Methanol	1 mL
U-PP-350	Aroclor 1254 100 µg/mL in Methanol	4 x 1 mL
U-PP-351-1	Aroclor 1254 100 µg/mL in Hexane	1 mL
U-PP-351	Aroclor 1254 100 µg/mL in Hexane	4 x 1 mL
U-PP-352-1	Aroclor 1254 100 µg/mL in iso-Octane	1 mL
U-PP-352	Aroclor 1254 100 µg/mL in iso-Octane	4 x 1 mL
U-EPA-1352	Aroclor 1254 1000 µg/mL in iso-Octane	1 mL
U-RPC-1260	Aroclor 1260	50 mg
NIST-3086	Aroclor 1260 in Methanol Certified value Aroclor 1260 .....6.18 mg/kg ± 0.17 mg/kg or 4.94 mg/L ± 0.14 mg/L	5 x 1.2 mL
U-PP-360-1	Aroclor 1260 100 µg/mL in Methanol	1 mL
U-PP-360	Aroclor 1260 100 µg/mL in Methanol	4 x 1 mL
U-PP-361-1	Aroclor 1260 100 µg/mL in Hexane	1 mL
U-PP-361	Aroclor 1260 100 µg/mL in Hexane	4 x 1 mL
U-PP-362-1	Aroclor 1260 100 µg/mL in iso-Octane	1 mL
U-PP-362	Aroclor 1260 100 µg/mL in iso-Octane	4 x 1 mL
U-EPA-1362	Aroclor 1260 1000 µg/mL in iso-Octane	1 mL
U-RPC-1262	Aroclor 1262	50 mg

Code	Product	Unit
U-PP-370-1	Aroclor 1262 100 µg/mL in Methanol	1 mL
U-PP-370	Aroclor 1262 100 µg/mL in Methanol	4 x 1 mL
U-PP-371-1	Aroclor 1262 100 µg/mL in Hexane	1 mL
U-PP-371	Aroclor 1262 100 µg/mL in Hexane	4 x 1 mL
U-PP-372-1	Aroclor 1262 100 µg/mL in iso-Octane	1 mL
U-PP-372	Aroclor 1262 100 µg/mL in iso-Octane	4 x 1 mL
U-EPA-1372	Aroclor 1262 1000 µg/mL in iso-Octane	1 mL
U-RPC-1268	Aroclor 1268	50 mg
U-PP-380-1	Aroclor 1268 100 µg/mL in Methanol	1 mL
U-PP-380	Aroclor 1268 100 µg/mL in Methanol	4 x 1 mL
U-PP-381-1	Aroclor 1268 100 µg/mL in Hexane	1 mL
U-PP-381	Aroclor 1268 100 µg/mL in Hexane	4 x 1 mL
U-PP-382-1	Aroclor 1268 100 µg/mL in iso-Octane	1 mL
U-PP-382	Aroclor 1268 100 µg/mL in iso-Octane	4 x 1 mL
U-EPA-1382	Aroclor 1268 1000 µg/mL in iso-Octane	1 mL
NIST-3091	Aroclors in Methanol This Standad Reference Material® (SRM®) is a set of six different solutions of individual Aroclors in methanol. Certified values NIST-3081 ..... Aroclor 1016 ..17.13 ± 0.54 mg/kg 13.70 ± 0.44 mg/L NIST-3082 ..... Aroclor 1232 ....5.25 ± 0.31 mg/kg 4.20 ± 0.25 mg/L NIST-3083 ..... Aroclor 1242 ..16.36 ± 0.35 mg/kg 13.08 ± 0.29 mg/L NIST-3084 ..... Aroclor 1248 ....6.89 ± 0.22 mg/kg 5.51 ± 0.18 mg/L NIST-3085 ..... Aroclor 1254 ....7.08 ± 0.16 mg/kg 5.66 ± 0.13 mg/L NIST-3086 ..... Aroclor 1260 ....6.18 ± 0.17 mg/kg 4.94 ± 0.14 mg/L	6 x 1.2 mL

Aroclors in transformer oil

NIST-3075	Aroclor 1016 in transformer oil Certified value Aroclor 1016 .....17.1 mg/kg ± 1.0 mg/kg or 15.2 mg/L ± 0.9 mg/L	5 x 1.2 mL
NIST-3076	Aroclor 1232 in transformer oil Certified value Aroclor 1232 .....4252 mg/kg ± 114 mg/kg or 3789 mg/L ± 106 mg/L	5 x 1.2 mL
NIST-3077	Aroclor 1242 in transformer oil Certified value Aroclor 1242 .....4102 mg/kg ± 87 mg/kg or 3656 mg/L ± 82 mg/L	5 x 1.2 mL
NIST-3078	Aroclor 1248 in transformer oil Certified value Aroclor 1248 .....3658 mg/kg ± 161 mg/kg or 3260 mg ± 146 mg/L	5 x 1.2 mL
NIST-3079	Aroclor 1254 in transformer oil Certified value Aroclor 1254 .....3579 mg/kg ± 154 mg/kg or 3190 mg/L ± 139 mg/L	5 x 1.2 mL
NIST-3080	Aroclor 1260 in transformer oil Certified value Aroclor 1260 .....1079 mg/kg ± 98 mg/kg or 962 mg/L ± 88 mg/L	5 x 1.2 mL
NIST-3090	Aroclors in transformer oil This Standard Reference Material® (SRM®) is a set of six different solutions of individual Aroclors in transformer oil. Certified values NIST-3075 .....Aroclor 1016.....17.1 ± 1.0 mg/kg .....15.2 ± 0.9 mg/L NIST-3076 .....Aroclor 1232.....4252 ± 114 mg/kg .....3789 ± 106 mg/L NIST-3077 .....Aroclor 1242.....4102 ± 87mg/kg .....3656 ± 82 mg/L NIST-3078 .....Aroclor 1248.....3658 ± 161mg/kg .....3260 ± 146mg/L NIST-3079 .....Aroclor 1254.....3579 ± 154 mg/kg .....3190 ± 139 mg/L NIST-3080 .....Aroclor 1260.....1079 ± 98 mg/kg .....962 ± 88 mg/L	6 x 1.2 mL

Aroclor in transformer oil kits (wt/vol)

U-1016TK	Aroclor 1016 Kit 3 x 2 mL of Aroclor at 100 µg/mL in PCB free transformer oil 1 x 2 mL of PCB free transformer oil	kit

Polychlorinated biphenyls (PCBs)

Code	Product	Unit
U-1221TK	Aroclor 1221 Kit 3 x 2 mL of Aroclor at 100 µg/mL in PCB free transformer oil 1 x 2 mL of PCB free transformer oil	kit
U-1232TK	Aroclor 1232 Kit 3 x 2 mL of Aroclor at 100 µg/mL in PCB free transformer oil 1 x 2 mL of PCB free transformer oil	kit
U-1242TK	Aroclor 1242 Kit 3 x 2 mL of Aroclor at 100 µg/mL in PCB free transformer oil 1 x 2 mL of PCB free transformer oil	Kit (3 x 2 mL)
U-1248TK	Aroclor 1248 Kit 3 x 2 mL of Aroclor at 100 µg/mL in PCB free transformer oil 1 x 2 mL of PCB free transformer oil	kit
U-1254TK	Aroclor 1254 Kit 3 x 2 mL of Aroclor at 100 µg/mL in PCB free transformer oil 1 x 2 mL of PCB free transformer oil	kit
U-1260TK	Aroclor 1260 Kit 3 x 2 mL of Aroclor at 100 µg/mL in PCB free transformer oil 1 x 2 mL of PCB free transformer oil	kit
U-1262TK	Aroclor 1262 Kit 3 x 2 mL of Aroclor at 100 µg/mL in PCB free transformer oil 1 x 2 mL of PCB free transformer oil	kit
U-1268TK	Aroclor 1268 Kit 3 x 2 mL of Aroclor at 100 µg/mL in PCB free transformer oil 1 x 2 mL of PCB free transformer oil	kit

Aroclor in transformer oil (wt/wt)

U-1242TK-B1	Aroclor 1242 50 µg/g in Transformer Oil	1 mL
U-1242TK-B2	Aroclor 1242 500 µg/g in Transformer Oil	1 mL
U-1248TK-B1	Aroclor 1248 50 µg/g in Transformer Oil	1 mL
U-1248TK-B2	Aroclor 1248 500 µg/g in Transformer Oil	1 mL
U-1254TK-B1	Aroclor 1254 50 µg/g in Transformer Oil	1 mL
U-1254TK-B2	Aroclor 1254 500 µg/g in Transformer Oil	1 mL
U-1260TK-B1	Aroclor 1260 50 µg/g in Transformer Oil	1 mL
U-1260TK-B2	Aroclor 1260 500 µg/g in Transformer Oil	1 mL

PCB contaminant kits (wt/wt)

U-1242TK-B	PCB Contaminant Kit - Aroclor 1242 in Transformer Oil 2 x 1 mL of Aroclor at 50 µg/g in PCB free transformer oil 2 x 1 mL of Aroclor at 500 µg/g in PCB free transformer oil	kit
U-1248TK-B	PCB Contaminant Kit - Aroclor 1248 in Transformer Oil 2 x 1 mL of Aroclor at 50 µg/g in PCB free transformer oil 2 x 1 mL of Aroclor at 500 µg/g in PCB free transformer oil	kit
U-1254TK-B	PCB Contaminant Kit - Aroclor 1254 in Transformer Oil 2 x 1 mL of Aroclor at 50 µg/g in PCB free transformer oil 2 x 1 mL of Aroclor at 500 µg/g in PCB free transformer oil	kit
U-1260TK-B	PCB Contaminant Kit - Aroclor 1260 in Transformer Oil 2 x 1 mL of Aroclor at 50 µg/g in PCB free transformer oil 2 x 1 mL of Aroclor at 500 µg/g in PCB free transformer oil	kit

PCB contaminant kits (wt/vol)

U-1242TK-A	PCB Contaminant Kit - Aroclor 1242 in Transformer Oil 2 x 1 mL of Aroclor at 50 µg/mL in PCB free transformer oil 2 x 1 mL of Aroclor at 500 µg/mL in PCB free transformer oil	Kit (4 x 1 mL)
U-1254TK-A	PCB Contaminant Kit - Aroclor 1254 in Transformer Oil 2 x 1 mL of Aroclor at 50 µg/mL in PCB free transformer oil 2 x 1 mL of Aroclor at 500 µg/mL in PCB free transformer oil	kit
U-1260TK-A	PCB Contaminant Kit - Aroclor 1260 in Transformer Oil 2 x 1 mL of Aroclor at 50 µg/mL in PCB free transformer oil 2 x 1 mL of Aroclor at 500 µg/mL in PCB free transformer oil	kit

	Code	Product	Unit

Single congeners

The PCB numbers represent the Ballschmiter numbers used to identify each specific congener. These numbers are equivalent to the IUPAC numbers for PCBs, with three exceptions. Congeners number 199, 200, and 201 have the IUPAC numbers 200, 201, and 199, respectively. Both usages are found in the literature.

	IPO 054	Biphenyl (PCB 0) E 230 Certified purity..... 99.6%	250 mg
	U-RPC-001S	Biphenyl (PCB 0), 100 µg/mL in Hexane	2 mL
New	U-RPC-001AS	Biphenyl (PCB 0), 100 µg/mL in Isooctane	2 mL
	CIL-CLM-3235-1.2	Biphenyl ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	U-RPC-006	2-Chlorobiphenyl (PCB 1)	50 mg
	U-RPC-006S	2-Chlorobiphenyl (PCB 1), 100 µg/mL in Hexane	2 mL
New	U-RPC-006AS	2-Chlorobiphenyl (PCB 1), 100 µg/mL in Isooctane	2 mL
	CIL-EC-4908-1.2	2-Monochlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #1) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-4908-3	2-Monochlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #1) 40 µg/mL in Nonane	3 mL
	U-RPC-007	3-Chlorobiphenyl (PCB 2)	10 mg
	U-RPC-007S	3-Chlorobiphenyl (PCB 2), 100 µg/mL in Hexane	2 mL
New	U-RPC-007AS	3-Chlorobiphenyl (PCB 2), 100 µg/mL in Isooctane	2 mL
	U-RPC-008	4-Chlorobiphenyl (PCB 3)	50 mg
	U-RPC-008S	4-Chlorobiphenyl (PCB 3), 100 µg/mL in Hexane	2 mL
New	U-RPC-008AS	4-Chlorobiphenyl (PCB 3), 100 µg/mL in Isooctane	2 mL
	CIL-EC-4990-1.2	4-Monochlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #3) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-4990-3	4-Monochlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #3) 40 µg/mL in Nonane	3 mL
	U-RPC-009	2,2'-Dichlorobiphenyl (PCB 4)	25 mg
	CERERD-113	2,2'-Dichlorobiphenyl (PCB 4)	25 mg
	U-RPC-009S	2,2'-Dichlorobiphenyl (PCB 4), 100 µg/mL in Hexane	2 mL
New	U-RPC-009AS	2,2'-Dichlorobiphenyl (PCB 4), 100 µg/mL in Isooctane	2 mL
	CIL-EC-4911-1.2	2,2'-Dichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #4) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-4911-3	2,2'-Dichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #4) 40 µg/mL in Nonane	3 mL
	U-RPC-012	2,3-Dichlorobiphenyl (PCB 5)	25 mg
	CERERD-038	2,3-Dichlorobiphenyl (PCB 5)	25 mg
	U-RPC-012S	2,3-Dichlorobiphenyl (PCB 5), 100 µg/mL in Hexane	2 mL
New	U-RPC-012AS	2,3-Dichlorobiphenyl (PCB 5), 100 µg/mL in Isooctane	2 mL
	U-RPC-101	2,3'-Dichlorobiphenyl (PCB 6)	5 mg
	U-RPC-101S	2,3'-Dichlorobiphenyl (PCB 6), 100 µg/mL in Hexane	2 mL
New	U-RPC-101AS	2,3'-Dichlorobiphenyl (PCB 6), 100 µg/mL in Isooctane	2 mL
	U-RPC-013	2,4-Dichlorobiphenyl (PCB 7)	25 mg
	CERERD-039	2,4-Dichlorobiphenyl (PCB 7)	25 mg
	U-RPC-013S	2,4-Dichlorobiphenyl (PCB 7), 100 µg/mL in Hexane	2 mL
New	U-RPC-013AS	2,4-Dichlorobiphenyl (PCB 7), 100 µg/mL in Isooctane	2 mL
	U-RPC-089	2,4'-Dichlorobiphenyl (PCB 8)	25 mg
	BCR-289	2,4'-Dichlorobiphenyl (PCB 8)	25 mg
	U-RPC-089S	2,4'-Dichlorobiphenyl (PCB 8), 100 µg/mL in Hexane	2 mL
New	U-RPC-089AS	2,4'-Dichlorobiphenyl (PCB 8), 100 µg/mL in Isooctane	2 mL
	CIL-EC-5095-1.2	2,4'-Dichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #8) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-5095-3	2,4'-Dichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #8) 40 µg/mL in Nonane	3 mL
	U-RPC-014	2,5-Dichlorobiphenyl (PCB 9)	50 mg
	U-RPC-014S	2,5-Dichlorobiphenyl (PCB 9), 100 µg/mL in Hexane	2 mL
New	U-RPC-014AS	2,5-Dichlorobiphenyl (PCB 9), 100 µg/mL in Isooctane	2 mL
	CIL-EC-4165-1.2	2,5-Dichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #9) 40 µg/mL in Nonane	1.2 mL

Polychlorinated biphenyls (PCBs)

	Code	Product	Unit
	CIL-EC-4165-3	2,5-Dichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #9) 40 µg/mL in Nonane	3 mL
	U-RPC-015	2,6-Dichlorobiphenyl (PCB 10)	25 mg
	U-RPC-015S	2,6-Dichlorobiphenyl (PCB 10), 100 µg/mL in Hexane	2 mL
New	U-RPC-015AS	2,6-Dichlorobiphenyl (PCB 10), 100 µg/mL in Isooctane	2 mL
	U-RPC-010	3,3'-Dichlorobiphenyl (PCB 11)	50 mg
	CERERD-040	3,3'-Dichlorobiphenyl (PCB 11)	25 mg
	U-RPC-010S	3,3'-Dichlorobiphenyl (PCB 11), 100 µg/mL in Hexane	2 mL
New	U-RPC-010AS	3,3'-Dichlorobiphenyl (PCB 11), 100 µg/mL in Isooctane	2 mL
	U-RPC-016	3,4-Dichlorobiphenyl (PCB 12)	50 mg
	U-RPC-016S	3,4-Dichlorobiphenyl (PCB 12), 100 µg/mL in Hexane	2 mL
New	U-RPC-016AS	3,4-Dichlorobiphenyl (PCB 12), 100 µg/mL in Isooctane	2 mL
	U-RPC-112	3,4'-Dichlorobiphenyl (PCB 13)	5 mg
	U-RPC-112S	3,4'-Dichlorobiphenyl (PCB 13), 100 µg/mL in Hexane	2 mL
New	U-RPC-112AS	3,4'-Dichlorobiphenyl (PCB 13), 100 µg/mL in Isooctane	2 mL
	U-RPC-017	3,5-Dichlorobiphenyl (PCB 14)	50 mg
	U-RPC-017S	3,5-Dichlorobiphenyl (PCB 14), 100 µg/mL in Hexane	2 mL
New	U-RPC-017AS	3,5-Dichlorobiphenyl (PCB 14), 100 µg/mL in Isooctane	2 mL
	U-RPC-011	4,4'-Dichlorobiphenyl (PCB 15)	10 mg
	CERERD-041	4,4'-Dichlorobiphenyl (PCB 15)	25 mg
	U-RPC-011S	4,4'-Dichlorobiphenyl (PCB 15), 100 µg/mL in Hexane	2 mL
New	U-RPC-011AS	4,4'-Dichlorobiphenyl (PCB 15), 100 µg/mL in Isooctane	2 mL
	CIL-EC-1402-1.2	4,4'-Dichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #15) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1402-3	4,4'-Dichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #15) 40 µg/mL in Nonane	3 mL
	U-RPC-092	2,2',3-Trichlorobiphenyl (PCB 16)	5 mg
	U-RPC-092S	2,2',3-Trichlorobiphenyl (PCB 16), 100 µg/mL in Hexane	2 mL
New	U-RPC-092AS	2,2',3-Trichlorobiphenyl (PCB 16), 100 µg/mL in Isooctane	2 mL
	U-RPC-173	2,2',4-Trichlorobiphenyl (PCB 17)	5 mg
	U-RPC-173S	2,2',4-Trichlorobiphenyl (PCB 17), 100 µg/mL in Hexane	2 mL
New	U-RPC-173AS	2,2',4-Trichlorobiphenyl (PCB 17), 100 µg/mL in Isooctane	2 mL
New	U-RPC-021	2,2',5-Trichlorobiphenyl (PCB 18)	25 mg
	U-RPC-021S	2,2',5-Trichlorobiphenyl (PCB 18), 100 µg/mL in Hexane	2 mL
New	U-RPC-021AS	2,2',5-Trichlorobiphenyl (PCB 18), 100 µg/mL in Isooctane	2 mL
	U-RPC-139	2,2',6-Trichlorobiphenyl (PCB 19)	5 mg
	U-RPC-139S	2,2',6-Trichlorobiphenyl (PCB 19), 100 µg/mL in Hexane	2 mL
New	U-RPC-139AS	2,2',6-Trichlorobiphenyl (PCB 19), 100 µg/mL in Isooctane	2 mL
	CIL-EC-4909-1.2	2,2',6-Trichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #19) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-4909-3	2,2',6-Trichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #19) 40 µg/mL in Nonane	3 mL
New	U-RPC-104	2,3,3'-Trichlorobiphenyl	5 mg
	BCR-290	2,3,3'-Trichlorobiphenyl (PCB 20)	25 mg
	U-RPC-104S	2,3,3'-Trichlorobiphenyl (PCB 20), 100 µg/mL in Hexane	2 mL
New	U-RPC-104AS	2,3,3'-Trichlorobiphenyl (PCB 20), 100 µg/mL in Isooctane	2 mL
	U-RPC-018	2,3,4-Trichlorobiphenyl (PCB 21)	25 mg
	U-RPC-018S	2,3,4-Trichlorobiphenyl (PCB 21), 100 µg/mL in Hexane	2 mL
New	U-RPC-018AS	2,3,4-Trichlorobiphenyl (PCB 21), 100 µg/mL in Isooctane	2 mL
	U-RPC-118	2,3,4'-Trichlorobiphenyl (PCB 22)	5 mg
	U-RPC-118S	2,3,4'-Trichlorobiphenyl (PCB 22), 100 µg/mL in Hexane	2 mL
New	U-RPC-118AS	2,3,4'-Trichlorobiphenyl (PCB 22), 100 µg/mL in Isooctane	2 mL
	U-RPC-175S	2,3,5-Trichlorobiphenyl (PCB 23), 100 µg/mL in Hexane	2 mL
New	U-RPC-175AS	2,3,5-Trichlorobiphenyl (PCB 23), 100 µg/mL in Isooctane	2 mL
	U-RPC-083A	2,3,6-Trichlorobiphenyl (PCB 24)	5 mg
	U-RPC-083S	2,3,6-Trichlorobiphenyl (PCB 24), 100 µg/mL in Hexane	2 mL

	Code	Product	Unit
New	U-RPC-083AS	2,3,6-Trichlorobiphenyl (PCB 24), 100 µg/mL in Isooctane	2 mL
	U-RPC-121	2,3',4-Trichlorobiphenyl (PCB 25)	5 mg
	U-RPC-121S	2,3',4-Trichlorobiphenyl (PCB 25), 100 µg/mL in Hexane	2 mL
New	U-RPC-121AS	2,3',4-Trichlorobiphenyl (PCB 25), 100 µg/mL in Isooctane	2 mL
	U-RPC-022	2,3',5-Trichlorobiphenyl (PCB 26)	25 mg
	U-RPC-022S	2,3',5-Trichlorobiphenyl (PCB 26), 100 µg/mL in Hexane	2 mL
New	U-RPC-022AS	2,3',5-Trichlorobiphenyl (PCB 26), 100 µg/mL in Isooctane	2 mL
	U-RPC-120	2,3',6-Trichlorobiphenyl (PCB 27)	5 mg
	U-RPC-120S	2,3',6-Trichlorobiphenyl (PCB 27), 100 µg/mL in Hexane	2 mL
New	U-RPC-120AS	2,3',6-Trichlorobiphenyl (PCB 27), 100 µg/mL in Isooctane	2 mL
	DE-PCB 28	2,4,4'-Trichlorobiphenyl (PCB 28)	10 mg
New	U-RPC-084	2,4,4'-Trichlorobiphenyl (PCB 28)	10 mg
	BCR-291	2,4,4'-Trichlorobiphenyl (PCB 28)	25 mg
	U-RPC-084S	2,4,4'-Trichlorobiphenyl (PCB 28), 100 µg/mL in Hexane	2 mL
New	U-RPC-084AS	2,4,4'-Trichlorobiphenyl (PCB 28), 100 µg/mL in Isooctane	2 mL
	CIL-EC-1413-1.2	2,4,4'-Trichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #28) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1413-3	2,4,4'-Trichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #28) 40 µg/mL in Nonane	3 mL
	U-RPC-019	2,4,5-Trichlorobiphenyl (PCB 29)	50 mg
	U-RPC-019S	2,4,5-Trichlorobiphenyl (PCB 29), 100 µg/mL in Hexane	2 mL
New	U-RPC-019AS	2,4,5-Trichlorobiphenyl (PCB 29), 100 µg/mL in Isooctane	2 mL
New	U-RPC-020	2,4,6-Trichlorobiphenyl (PCB 30)	50 mg
	U-RPC-020S	2,4,6-Trichlorobiphenyl (PCB 30), 100 µg/mL in Hexane	2 mL
New	U-RPC-020AS	2,4,6-Trichlorobiphenyl (PCB 30), 100 µg/mL in Isooctane	2 mL
New	U-RPC-023	2,4',5-Trichlorobiphenyl (PCB 31)	25 mg
	U-RPC-023S	2,4',5-Trichlorobiphenyl (PCB 31), 100 µg/mL in Hexane	2 mL
New	U-RPC-023AS	2,4',5-Trichlorobiphenyl (PCB 31), 100 µg/mL in Isooctane	2 mL
	U-RPC-176S	2,4',6-Trichlorobiphenyl (PCB 32), 100 µg/mL in Hexane	2 mL
New	U-RPC-176AS	2,4',6-Trichlorobiphenyl (PCB 32), 100 µg/mL in Isooctane	2 mL
	CIL-EC-4163-1.2	2,4',6-Trichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #32) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-4163-3	2,4',6-Trichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #32) 40 µg/mL in Nonane	3 mL
	U-RPC-062	2',3,4-Trichlorobiphenyl (PCB 33)	10 mg
	U-RPC-062S	2',3,4-Trichlorobiphenyl (PCB 33), 100 µg/mL in Hexane	2 mL
New	U-RPC-062AS	2',3,4-Trichlorobiphenyl (PCB 33), 100 µg/mL in Isooctane, 100 µg/mL in Isooctane	2 mL
	U-RPC-123	2',3,5-Trichlorobiphenyl (PCB 34)	5 mg
	U-RPC-123S	2',3,5-Trichlorobiphenyl (PCB 34), 100 µg/mL in Hexane	2 mL
New	U-RPC-123AS	2',3,5-Trichlorobiphenyl (PCB 34), 100 µg/mL in Isooctane	2 mL
	U-RPC-107	3,3',4-Trichlorobiphenyl (PCB 35)	5 mg
	U-RPC-107S	3,3',4-Trichlorobiphenyl (PCB 35), 100 µg/mL in Hexane	2 mL
New	U-RPC-107AS	3,3',4-Trichlorobiphenyl (PCB 35), 100 µg/mL in Isooctane	2 mL
	U-RPC-122	3,3',5-Trichlorobiphenyl (PCB 36)	5 mg
	U-RPC-122S	3,3',5-Trichlorobiphenyl (PCB 36), 100 µg/mL in Hexane	2 mL
New	U-RPC-122AS	3,3',5-Trichlorobiphenyl (PCB 36), 100 µg/mL in Isooctane	2 mL
	U-RPC-119	3,4,4'-Trichlorobiphenyl (PCB 37)	5 mg
	U-RPC-119S	3,4,4'-Trichlorobiphenyl (PCB 37), 100 µg/mL in Hexane	2 mL
New	U-RPC-119AS	3,4,4'-Trichlorobiphenyl (PCB 37), 100 µg/mL in Isooctane	2 mL
	CIL-EC-4901-1.2	3,4,4'-Trichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #37) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-4901-3	3,4,4'-Trichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #37) 40 µg/mL in Nonane	3 mL
	U-RPC-124	3,4,5-Trichlorobiphenyl (PCB 38)	5 mg
	U-RPC-124S	3,4,5-Trichlorobiphenyl (PCB 38), 100 µg/mL in Hexane	2 mL
New	U-RPC-124AS	3,4,5-Trichlorobiphenyl (PCB 38), 100 µg/mL in Isooctane	2 mL
	U-RPC-125	3,4',5-Trichlorobiphenyl (PCB 39)	5 mg

Polychlorinated biphenyls (PCBs)

	Code	Product	Unit
	U-RPC-125S	3,4',5-Trichlorobiphenyl (PCB 39), 100 µg/mL in Hexane	2 mL
New	U-RPC-125AS	3,4',5-Trichlorobiphenyl (PCB 39), 100 µg/mL in Isooctane	2 mL
New	U-RPC-065	2,2',3,3'-Tetrachlorobiphenyl (PCB 40)	50 mg
	U-RPC-065S	2,2',3,3'-Tetrachlorobiphenyl (PCB 40), 100 µg/mL in Hexane	2 mL
New	U-RPC-065AS	2,2',3,3'-Tetrachlorobiphenyl (PCB 40), 100 µg/mL in Isooctane	2 mL
	U-RPC-177S	2,2',3,4-Tetrachlorobiphenyl (PCB 41), 100 µg/mL in Hexane	2 mL
New	U-RPC-177AS	2,2',3,4-Tetrachlorobiphenyl (PCB 41), 100 µg/mL in Isooctane	2 mL
	U-RPC-105	2,2',3,4'-Tetrachlorobiphenyl (PCB 42)	5 mg
	U-RPC-105S	2,2',3,4'-Tetrachlorobiphenyl (PCB 42), 100 µg/mL in Hexane	2 mL
New	U-RPC-105AS	2,2',3,4'-Tetrachlorobiphenyl (PCB 42), 100 µg/mL in Isooctane	2 mL
	U-RPC-178S	2,2',3,5-Tetrachlorobiphenyl (PCB 43), 100 µg/mL in Hexane	2 mL
New	U-RPC-178AS	2,2',3,5-Tetrachlorobiphenyl (PCB 43), 100 µg/mL in Isooctane	2 mL
New	U-RPC-029	2,2',3,5'-Tetrachlorobiphenyl (PCB 44)	25 mg
	U-RPC-029S	2,2',3,5'-Tetrachlorobiphenyl (PCB 44), 100 µg/mL in Hexane	2 mL
New	U-RPC-029AS	2,2',3,5'-Tetrachlorobiphenyl (PCB 44), 100 µg/mL in Isooctane	2 mL
	U-RPC-179S	2,2',3,6-Tetrachlorobiphenyl (PCB 45), 100 µg/mL in Hexane	2 mL
New	U-RPC-179AS	2,2',3,6-Tetrachlorobiphenyl (PCB 45), 100 µg/mL in Isooctane	2 mL
	U-RPC-180S	2,2',3,6'-Tetrachlorobiphenyl (PCB 46), 100 µg/mL in Hexane	2 mL
New	U-RPC-180AS	2,2',3,6'-Tetrachlorobiphenyl (PCB 46), 100 µg/mL in Isooctane	2 mL
	U-RPC-035	2,2',4,4'-Tetrachlorobiphenyl (PCB 47)	50 mg
	U-RPC-035S	2,2',4,4'-Tetrachlorobiphenyl (PCB 47), 100 µg/mL in Hexane	2 mL
New	U-RPC-035AS	2,2',4,4'-Tetrachlorobiphenyl (PCB 47), 100 µg/mL in Isooctane	2 mL
	CIL-EC-1434-1.2	2,2',4,4'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #47) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1434-3	2,2',4,4'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #47) 40 µg/mL in Nonane	3 mL
	U-RPC-136	2,2',4,5-Tetrachlorobiphenyl (PCB 48)	5 mg
	U-RPC-136S	2,2',4,5-Tetrachlorobiphenyl (PCB 48), 100 µg/mL in Hexane	2 mL
New	U-RPC-136AS	2,2',4,5-Tetrachlorobiphenyl (PCB 48), 100 µg/mL in Isooctane	2 mL
	U-RPC-030	2,2',4,5'-Tetrachlorobiphenyl (PCB 49)	50 mg
	U-RPC-030S	2,2',4,5'-Tetrachlorobiphenyl (PCB 49), 100 µg/mL in Hexane	2 mL
New	U-RPC-030AS	2,2',4,5'-Tetrachlorobiphenyl (PCB 49), 100 µg/mL in Isooctane	2 mL
	U-RPC-024	2,2',4,6-Tetrachlorobiphenyl (PCB 50)	10 mg
	U-RPC-024S	2,2',4,6-Tetrachlorobiphenyl (PCB 50), 100 µg/mL in Hexane	2 mL
New	U-RPC-024AS	2,2',4,6-Tetrachlorobiphenyl (PCB 50), 100 µg/mL in Isooctane	2 mL
	U-RPC-181S	2,2',4,6'-Tetrachlorobiphenyl (PCB 51), 100 µg/mL in Hexane	2 mL
New	U-RPC-181AS	2,2',4,6'-Tetrachlorobiphenyl (PCB 51), 100 µg/mL in Isooctane	2 mL
New	U-RPC-031	2,2',5,5'-Tetrachlorobiphenyl (PCB 52)	10 mg
	BCR-293	2,2',5,5'-Tetrachlorobiphenyl (PCB 52)	25 mg
	U-RPC-031S	2,2',5,5'-Tetrachlorobiphenyl (PCB 52), 100 µg/mL in Hexane	2 mL
New	U-RPC-031AS	2,2',5,5'-Tetrachlorobiphenyl (PCB 52), 100 µg/mL in Isooctane	2 mL
	CIL-EC-1424-1.2	2,2',5,5'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #52) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1424-3	2,2',5,5'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #52) 40 µg/mL in Nonane	3 mL
	U-RPC-032	2,2',5,6'-Tetrachlorobiphenyl (PCB 53)	25 mg
	U-RPC-032S	2,2',5,6'-Tetrachlorobiphenyl (PCB 53), 100 µg/mL in Hexane	2 mL
New	U-RPC-032AS	2,2',5,6'-Tetrachlorobiphenyl (PCB 53), 100 µg/mL in Isooctane	2 mL
	U-RPC-066	2,2',6,6'-Tetrachlorobiphenyl (PCB 54)	50 mg
	U-RPC-066S	2,2',6,6'-Tetrachlorobiphenyl (PCB 54), 100 µg/mL in Hexane	2 mL
New	U-RPC-066AS	2,2',6,6'-Tetrachlorobiphenyl (PCB 54), 100 µg/mL in Isooctane	2 mL
	CIL-EC-4912-1.2	2,2',6,6'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #54) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-4912-3	2,2',6,6'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #54) 40 µg/mL in Nonane	3 mL
	U-RPC-126	2,3,3',4-Tetrachlorobiphenyl (PCB 55)	5 mg
	U-RPC-126S	2,3,3',4-Tetrachlorobiphenyl (PCB 55), 100 µg/mL in Hexane	2 mL

	Code	Product	Unit
New	U-RPC-126AS	2,3,3',4-Tetrachlorobiphenyl (PCB 55), 100 µg/mL in Isooctane	2 mL
	U-RPC-182S	2,3,3',4'-Tetrachlorobiphenyl (PCB 56), 100 µg/mL in Hexane	2 mL
New	U-RPC-182AS	2,3,3',4'-Tetrachlorobiphenyl (PCB 56), 100 µg/mL in Isooctane	2 mL
	U-RPC-183S	2,3,3',5-Tetrachlorobiphenyl (PCB 57), 100 µg/mL in Hexane	2 mL
New	U-RPC-183AS	2,3,3',5-Tetrachlorobiphenyl (PCB 57), 100 µg/mL in Isooctane	2 mL
	U-RPC-128	2,3,3',5'-Tetrachlorobiphenyl (PCB 58)	5 mg
	U-RPC-128S	2,3,3',5'-Tetrachlorobiphenyl (PCB 58), 100 µg/mL in Hexane	2 mL
New	U-RPC-128AS	2,3,3',5'-Tetrachlorobiphenyl (PCB 58), 100 µg/mL in Isooctane	2 mL
	U-RPC-184S	2,3,3',6-Tetrachlorobiphenyl (PCB 59), 100 µg/mL in Hexane	2 mL
New	U-RPC-184AS	2,3,3',6-Tetrachlorobiphenyl (PCB 59), 100 µg/mL in Isooctane	2 mL
	U-RPC-093	2,3,4,4'-Tetrachlorobiphenyl (PCB 60)	5 mg
	U-RPC-093S	2,3,4,4'-Tetrachlorobiphenyl (PCB 60), 100 µg/mL in Hexane	2 mL
New	U-RPC-093AS	2,3,4,4'-Tetrachlorobiphenyl (PCB 60), 100 µg/mL in Isooctane	2 mL
	CIL-EC-4078-1.2	2,3,4,4'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #60) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-4078-3	2,3,4,4'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #60) 40 µg/mL in Nonane	3 mL
	U-RPC-027	2,3,4,5-Tetrachlorobiphenyl (PCB 61)	50 mg
	U-RPC-027S	2,3,4,5-Tetrachlorobiphenyl (PCB 61), 100 µg/mL in Hexane	2 mL
New	U-RPC-027AS	2,3,4,5-Tetrachlorobiphenyl (PCB 61), 100 µg/mL in Isooctane	2 mL
	U-RPC-148	2,3,4,6-Tetrachlorobiphenyl (PCB 62)	5 mg
	U-RPC-148S	2,3,4,6-Tetrachlorobiphenyl (PCB 62), 100 µg/mL in Hexane	2 mL
New	U-RPC-148AS	2,3,4,6-Tetrachlorobiphenyl (PCB 62), 100 µg/mL in Isooctane	2 mL
	U-RPC-185S	2,3,4',5-Tetrachlorobiphenyl (PCB 63), 100 µg/mL in Hexane	2 mL
New	U-RPC-185AS	2,3,4',5-Tetrachlorobiphenyl (PCB 63), 100 µg/mL in Isooctane	2 mL
	U-RPC-186S	2,3,4',6-Tetrachlorobiphenyl (PCB 64), 100 µg/mL in Hexane	2 mL
New	U-RPC-186AS	2,3,4',6-Tetrachlorobiphenyl (PCB 64), 100 µg/mL in Isooctane	2 mL
	U-RPC-028	2,3,5,6-Tetrachlorobiphenyl (PCB 65)	25 mg
	U-RPC-028S	2,3,5,6-Tetrachlorobiphenyl (PCB 65), 100 µg/mL in Hexane	2 mL
New	U-RPC-028AS	2,3,5,6-Tetrachlorobiphenyl (PCB 65), 100 µg/mL in Isooctane	2 mL
	U-RPC-086	2,3',4,4'-Tetrachlorobiphenyl (PCB 66)	20 mg
	U-RPC-086S	2,3',4,4'-Tetrachlorobiphenyl (PCB 66), 100 µg/mL in Hexane	2 mL
New	U-RPC-086AS	2,3',4,4'-Tetrachlorobiphenyl (PCB 66), 100 µg/mL in Isooctane	2 mL
	U-RPC-187S	2,3',4,5-Tetrachlorobiphenyl (PCB 67), 100 µg/mL in Hexane	2 mL
New	U-RPC-187AS	2,3',4,5-Tetrachlorobiphenyl (PCB 67), 100 µg/mL in Isooctane	2 mL
	U-RPC-188S	2,3',4,5'-Tetrachlorobiphenyl (PCB 68), 100 µg/mL in Hexane	2 mL
New	U-RPC-188AS	2,3',4,5'-Tetrachlorobiphenyl (PCB 68), 100 µg/mL in Isooctane	2 mL
	U-RPC-025	2,3',4,6-Tetrachlorobiphenyl (PCB 69)	10 mg
	U-RPC-025S	2,3',4,6-Tetrachlorobiphenyl (PCB 69), 100 µg/mL in Hexane	2 mL
New	U-RPC-025AS	2,3',4,6-Tetrachlorobiphenyl (PCB 69), 100 µg/mL in Isooctane	2 mL
	U-RPC-033	2,3',4',5-Tetrachlorobiphenyl (PCB 70)	10 mg
	U-RPC-033S	2,3',4',5-Tetrachlorobiphenyl (PCB 70), 100 µg/mL in Hexane	2 mL
New	U-RPC-033AS	2,3',4',5-Tetrachlorobiphenyl (PCB 70), 100 µg/mL in Isooctane	2 mL
	CIL-EC-4914-1.2	2,3',4',5-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #70) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-4914-3	2,3',4',5-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #70) 40 µg/mL in Nonane	3 mL
	U-RPC-189S	2,3',4',6-Tetrachlorobiphenyl (PCB 71), 100 µg/mL in Hexane	2 mL
New	U-RPC-189AS	2,3',4',6-Tetrachlorobiphenyl (PCB 71), 100 µg/mL in Isooctane	2 mL
	U-RPC-034	2,3',5,5'-Tetrachlorobiphenyl (PCB 72)	25 mg
	U-RPC-034S	2,3',5,5'-Tetrachlorobiphenyl (PCB 72), 100 µg/mL in Hexane	2 mL
New	U-RPC-034AS	2,3',5,5'-Tetrachlorobiphenyl (PCB 72), 100 µg/mL in Isooctane	2 mL
	U-RPC-190S	2,3',5',6-Tetrachlorobiphenyl (PCB 73), 100 µg/mL in Hexane	2 mL
New	U-RPC-190AS	2,3',5',6-Tetrachlorobiphenyl (PCB 73), 100 µg/mL in Isooctane	2 mL
	U-RPC-138	2,4,4',5-Tetrachlorobiphenyl (PCB 74)	5 mg

	Code	Product	Unit
	U-RPC-138S	2,4,4',5-Tetrachlorobiphenyl (PCB 74), 100 µg/mL in Hexane	2 mL
New	U-RPC-138AS	2,4,4',5-Tetrachlorobiphenyl (PCB 74), 100 µg/mL in Isooctane	2 mL
	U-RPC-026	2,4,4',6-Tetrachlorobiphenyl (PCB 75)	10 mg
	U-RPC-026S	2,4,4',6-Tetrachlorobiphenyl (PCB 75), 100 µg/mL in Hexane	2 mL
New	U-RPC-026AS	2,4,4',6-Tetrachlorobiphenyl (PCB 75), 100 µg/mL in Isooctane	2 mL
	U-RPC-191S	2',3,4,5-Tetrachlorobiphenyl (PCB 76), 100 µg/mL in Hexane	2 mL
New	U-RPC-191AS	2',3,4,5-Tetrachlorobiphenyl (PCB 76), 100 µg/mL in Isooctane	2 mL
	ERM-AC820	3,3',4,4'-Tetrachlorobiphenyl (PCB 77) Certified purity.....99.8 %	20 mg
New	U-RPC-036	3,3',4,4'-Tetrachlorobiphenyl (PCB 77)	25 mg
	U-RPC-036S	3,3',4,4'-Tetrachlorobiphenyl (PCB 77), 100 µg/mL in Hexane	2 mL
New	U-RPC-036AS	3,3',4,4'-Tetrachlorobiphenyl (PCB 77), 100 µg/mL in Isooctane	2 mL
	CIL-EC-1404-1.2	3,3',4,4'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #77) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1404-3	3,3',4,4'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #77) 40 µg/mL in Nonane	3 mL
	CIL-DLM-3063-1.2	3,3',4,4'-Tetrachlorobiphenyl (D_6,98%) (IUPAC #77) 40 µg/mL in Nonane	1.2 mL
	CIL-DLM-3063-3	3,3',4,4'-Tetrachlorobiphenyl (D_6,98%) (IUPAC #77) 40 µg/mL in Nonane	3 mL
	U-RPC-127	3,3',4,5-Tetrachlorobiphenyl (PCB 78)	5 mg
	U-RPC-127S	3,3',4,5-Tetrachlorobiphenyl (PCB 78), 100 µg/mL in Hexane	2 mL
New	U-RPC-127AS	3,3',4,5-Tetrachlorobiphenyl (PCB 78), 100 µg/mL in Isooctane	2 mL
	U-RPC-129	3,3',4,5'-Tetrachlorobiphenyl (PCB 79)	5 mg
	U-RPC-129S	3,3',4,5'-Tetrachlorobiphenyl (PCB 79), 100 µg/mL in Hexane	2 mL
New	U-RPC-129AS	3,3',4,5'-Tetrachlorobiphenyl (PCB 79), 100 µg/mL in Isooctane	2 mL
	CIL-EC-5048-1.2	3,3',4,5'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #79) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-5048-3	3,3',4,5'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #79) 40 µg/mL in Nonane	3 mL
	U-RPC-091	3,3',5,5'-Tetrachlorobiphenyl (PCB 80)	5 mg
	U-RPC-091S	3,3',5,5'-Tetrachlorobiphenyl (PCB 80), 100 µg/mL in Hexane	2 mL
New	U-RPC-091AS	3,3',5,5'-Tetrachlorobiphenyl (PCB 80), 100 µg/mL in Isooctane	2 mL
	CIL-EC-1414-1.2	3,3',5,5'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #80) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1414-3	3,3',5,5'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #80) 40 µg/mL in Nonane	3 mL
	U-RPC-096	3,4,4',5-Tetrachlorobiphenyl (PCB 81)	5 mg
	U-RPC-096S	3,4,4',5-Tetrachlorobiphenyl (PCB 81), 100 µg/mL in Hexane	2 mL
New	U-RPC-096AS	3,4,4',5-Tetrachlorobiphenyl (PCB 81), 100 µg/mL in Isooctane	2 mL
	CIL-EC-1412-1.2	3,4,4',5-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC# 81) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1412-3	3,4,4',5-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC# 81) 40 µg/mL in Nonane	3 mL
	U-RPC-097	2,2',3,3',4-Pentachlorobiphenyl (PCB 82)	5 mg
	U-RPC-097S	2,2',3,3',4-Pentachlorobiphenyl (PCB 82), 100 µg/mL in Hexane	2 mL
New	U-RPC-097AS	2,2',3,3',4-Pentachlorobiphenyl (PCB 82), 100 µg/mL in Isooctane	2 mL
	U-RPC-192S	2,2',3,3',5-Pentachlorobiphenyl (PCB 83), 100 µg/mL in Hexane	2 mL
New	U-RPC-192AS	2,2',3,3',5-Pentachlorobiphenyl (PCB 83), 100 µg/mL in Isooctane	2 mL
	U-RPC-193S	2,2',3,3',6-Pentachlorobiphenyl (PCB 84), 100 µg/mL in Hexane	2 mL
New	U-RPC-193AS	2,2',3,3',6-Pentachlorobiphenyl (PCB 84), 100 µg/mL in Isooctane	2 mL
	U-RPC-194S	2,2',3,4,4'-Pentachlorobiphenyl (PCB 85), 100 µg/mL in Hexane	2 mL
New	U-RPC-194AS	2,2',3,4,4'-Pentachlorobiphenyl (PCB 85), 100 µg/mL in Isooctane	2 mL
	CIL-EC-4929-1.2	2,2',3,4,4'-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #85) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-4929-3	2,2',3,4,4'-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #85) 40 µg/mL in Nonane	3 mL
	U-RPC-038	2,2',3,4,5-Pentachlorobiphenyl (PCB 86)	10 mg
	U-RPC-038S	2,2',3,4,5-Pentachlorobiphenyl (PCB 86), 100 µg/mL in Hexane	2 mL
New	U-RPC-038AS	2,2',3,4,5-Pentachlorobiphenyl (PCB 86), 100 µg/mL in Isooctane	2 mL
	U-RPC-099	2,2',3,4,5'-Pentachlorobiphenyl (PCB 87)	10 mg
	U-RPC-099S	2,2',3,4,5'-Pentachlorobiphenyl (PCB 87), 100 µg/mL in Hexane	2 mL
New	U-RPC-099AS	2,2',3,4,5'-Pentachlorobiphenyl (PCB 87), 100 µg/mL in Isooctane	2 mL

	Code	Product	Unit
	U-RPC-041	2,2',3,4,6-Pentachlorobiphenyl (PCB 88)	5 mg
	U-RPC-041S	2,2',3,4,6-Pentachlorobiphenyl (PCB 88), 100 µg/mL in Hexane	2 mL
New	U-RPC-041AS	2,2',3,4,6-Pentachlorobiphenyl (PCB 88), 100 µg/mL in Isooctane	2 mL
	U-RPC-195S	2,2',3,4,6'-Pentachlorobiphenyl (PCB 89), 100 µg/mL in Hexane	2 mL
New	U-RPC-195AS	2,2',3,4,6'-Pentachlorobiphenyl (PCB 89), 100 µg/mL in Isooctane	2 mL
	U-RPC-196S	2,2',3,4',5-Pentachlorobiphenyl (PCB 90), 100 µg/mL in Hexane	2 mL
New	U-RPC-196AS	2,2',3,4',5-Pentachlorobiphenyl (PCB 90), 100 µg/mL in Isooctane	2 mL
	U-RPC-197S	2,2',3,4',6-Pentachlorobiphenyl (PCB 91), 100 µg/mL in Hexane	2 mL
New	U-RPC-197AS	2,2',3,4',6-Pentachlorobiphenyl (PCB 91), 100 µg/mL in Isooctane	2 mL
	U-RPC-198S	2,2',3,5,5'-Pentachlorobiphenyl (PCB 92), 100 µg/mL in Hexane	2 mL
New	U-RPC-198AS	2,2',3,5,5'-Pentachlorobiphenyl (PCB 92), 100 µg/mL in Isooctane	2 mL
	U-RPC-069	2,2',3,5,6-Pentachlorobiphenyl (PCB 93)	5 mg
	U-RPC-069S	2,2',3,5,6-Pentachlorobiphenyl (PCB 93), 100 µg/mL in Hexane	2 mL
New	U-RPC-069AS	2,2',3,5,6-Pentachlorobiphenyl (PCB 93), 100 µg/mL in Isooctane	2 mL
	U-RPC-199S	2,2',3,5,6'-Pentachlorobiphenyl (PCB 94), 100 µg/mL in Hexane	2 mL
New	U-RPC-199AS	2,2',3,5,6'-Pentachlorobiphenyl (PCB 94), 100 µg/mL in Isooctane	2 mL
	U-RPC-130	2,2',3,5',6-Pentachlorobiphenyl (PCB 95)	5 mg
	U-RPC-130S	2,2',3,5',6-Pentachlorobiphenyl (PCB 95), 100 µg/mL in Hexane	2 mL
New	U-RPC-130AS	2,2',3,5',6-Pentachlorobiphenyl (PCB 95), 100 µg/mL in Isooctane	2 mL
	U-RPC-200S	2,2',3,6,6'-Pentachlorobiphenyl (PCB 96), 100 µg/mL in Hexan	2 mL
New	U-RPC-200AS	2,2',3,6,6'-Pentachlorobiphenyl (PCB 96), 100 µg/mL in Isooctane	2 mL
	U-RPC-087	2,2',3',4,5-Pentachlorobiphenyl (PCB 97)	10 mg
	U-RPC-087S	2,2',3',4,5-Pentachlorobiphenyl (PCB 97), 100 µg/mL in Hexane	2 mL
New	U-RPC-087AS	2,2',3',4,5-Pentachlorobiphenyl (PCB 97), 100 µg/mL in Isooctane	2 mL
	CIL-EC-1428-1.2	2,2',3',4,5-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #97) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1428-3	2,2',3',4,5-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #97) 40 µg/mL in Nonane	3 mL
	U-RPC-141	2,2',3',4,6-Pentachlorobiphenyl (PCB 98)	5 mg
	U-RPC-141S	2,2',3',4,6-Pentachlorobiphenyl (PCB 98), 100 µg/mL in Hexane	2 mL
New	U-RPC-141AS	2,2',3',4,6-Pentachlorobiphenyl (PCB 98), 100 µg/mL in Isooctane	2 mL
	U-RPC-171	2,2',4,4',5-Pentachlorobiphenyl (PCB 99)	5 mg
	U-RPC-171S	2,2',4,4',5-Pentachlorobiphenyl (PCB 99), 100 µg/mL in Hexane	2 mL
	U-RPC-042	2,2',4,4',6-Pentachlorobiphenyl (PCB 100)	5 mg
	U-RPC-042S	2,2',4,4',6-Pentachlorobiphenyl (PCB 100), 100 µg/mL in Hexane	2 mL
New	U-RPC-042AS	2,2',4,4',6-Pentachlorobiphenyl (PCB 100), 100 µg/mL in Isooctane	2 mL
	U-RPC-039	2,2',4,5,5'-Pentachlorobiphenyl (PCB 101)	10 mg
	U-RPC-039S	2,2',4,5,5'-Pentachlorobiphenyl (PCB 101), 100 µg/mL in Hexane	2 mL
New	U-RPC-039AS	2,2',4,5,5'-Pentachlorobiphenyl (PCB 101), 100 µg/mL in Isooctane	2 mL
	CIL-EC-1405-1.2	2,2',4,5,5'-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #101) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1405-3	2,2',4,5,5'-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #101) 40 µg/mL in Nonane	3 mL
	U-RPC-172	2,2',4,5,6?-Pentachlorobiphenyl (PCB 102)	5 mg
	U-RPC-172S	2,2',4,5,6'-Pentachlorobiphenyl (PCB 102), 100 µg/mL in Hexane	2 mL
New	U-RPC-172AS	2,2',4,5,6'-Pentachlorobiphenyl (PCB 102), 100 µg/mL in Isooctane	2 mL
	U-RPC-040	2,2',4,5',6-Pentachlorobiphenyl (PCB 103)	10 mg
	U-RPC-040S	2,2',4,5',6-Pentachlorobiphenyl (PCB 103), 100 µg/mL in Hexane	2 mL
New	U-RPC-040AS	2,2',4,5',6-Pentachlorobiphenyl (PCB 103), 100 µg/mL in Isooctane	2 mL
	U-RPC-043	2,2',4,6,6'-Pentachlorobiphenyl (PCB 104)	5 mg
	U-RPC-043S	2,2',4,6,6'-Pentachlorobiphenyl (PCB 104), 100 µg/mL in Hexane	2 mL
New	U-RPC-043AS	2,2',4,6,6'-Pentachlorobiphenyl (PCB 104), 100 µg/mL in Isooctane	2 mL
	CIL-EC-4910-1.2	2,2',4,6,6'-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #104) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-4910-3	2,2',4,6,6'-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #104) 40 µg/mL in Nonane	3 mL
New	U-RPC-098	2,3,3',4,4'-Pentachlorobiphenyl (PCB 105)	5 mg

	Code	Product	Unit
	U-RPC-098S	2,3,3',4,4'-Pentachlorobiphenyl (PCB 105), 100 µg/mL in Hexane	2 mL
New	U-RPC-098AS	2,3,3',4,4'-Pentachlorobiphenyl (PCB 105), 100 µg/mL in Isooctane	2 mL
	CIL-EC-1420-1.2	2,3,3',4,4'-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #105) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1420-3	2,3,3',4,4'-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #105) 40 µg/mL in Nonane	3 mL
	U-RPC-142	2,3,3',4,5-Pentachlorobiphenyl (PCB 106)	5 mg
	U-RPC-142S	2,3,3',4,5-Pentachlorobiphenyl (PCB 106), 100 µg/mL in Hexane	2 mL
New	U-RPC-142AS	2,3,3',4,5-Pentachlorobiphenyl (PCB 106), 100 µg/mL in Isooctane	2 mL
	U-RPC-201S	2,3,3',4',5-Pentachlorobiphenyl (PCB 107), 100 µg/mL in Hexane	2 mL
New	U-RPC-201AS	2,3,3',4',5-Pentachlorobiphenyl (PCB 107), 100 µg/mL in Isooctane	2 mL
	U-RPC-131	2,3,3',4,5'-Pentachlorobiphenyl (PCB 108)	5 mg
	U-RPC-131S	2,3,3',4,5'-Pentachlorobiphenyl (PCB 108), 100 µg/mL in Hexane	2 mL
New	U-RPC-131AS	2,3,3',4,5'-Pentachlorobiphenyl (PCB 108), 100 µg/mL in Isooctane	2 mL
	U-RPC-150	2,3,3',4,6-Pentachlorobiphenyl (PCB 109)	5 mg
	U-RPC-150S	2,3,3',4,6-Pentachlorobiphenyl (PCB 109), 100 µg/mL in Hexane	2 mL
New	U-RPC-150AS	2,3,3',4,6-Pentachlorobiphenyl (PCB 109), 100 µg/mL in Isooctane	2 mL
	U-RPC-133	2,3,3',4',6-Pentachlorobiphenyl (PCB 110)	5 mg
	U-RPC-133S	2,3,3',4',6-Pentachlorobiphenyl (PCB 110), 100 µg/mL in Hexane	2 mL
	U-RPC-202S	2,3,3',5,5'-Pentachlorobiphenyl (PCB 111), 100 µg/mL in Hexane	2 mL
New	U-RPC-202AS	2,3,3',5,5'-Pentachlorobiphenyl (PCB 111), 100 µg/mL in Isooctane	2 mL
	CIL-EC-1415-1.2	2,3,3',5,5'-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #111) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1415-3	2,3,3',5,5'-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #111) 40 µg/mL in Nonane	3 mL
	U-RPC-070	2,3,3',5,6-Pentachlorobiphenyl (PCB 112)	5 mg
	U-RPC-070S	2,3,3',5,6-Pentachlorobiphenyl (PCB 112), 100 µg/mL in Hexane	2 mL
New	U-RPC-070AS	2,3,3',5,6-Pentachlorobiphenyl (PCB 112), 100 µg/mL in Isooctane	2 mL
	U-RPC-203S	2,3,3',5',6-Pentachlorobiphenyl (PCB 113), 100 µg/mL in Hexane	2 mL
New	U-RPC-203AS	2,3,3',5',6-Pentachlorobiphenyl (PCB 113), 100 µg/mL in Isooctane	2 mL
New	U-RPC-108	2,3,4,4',5-Pentachlorobiphenyl (PCB 114)	5 mg
	U-RPC-108S	2,3,4,4',5-Pentachlorobiphenyl (PCB 114), 100 µg/mL in Hexane	2 mL
New	U-RPC-108AS	2,3,4,4',5-Pentachlorobiphenyl (PCB 114), 100 µg/mL in Isooctane	2 mL
	CIL-EC-4902-1.2	2,3,4,4',5-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #114) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-4902-3	2,3,4,4',5-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #114) 40 µg/mL in Nonane	3 mL
	U-RPC-071	2,3,4,4',6-Pentachlorobiphenyl (PCB 115)	5 mg
	U-RPC-071S	2,3,4,4',6-Pentachlorobiphenyl (PCB 115), 100 µg/mL in Hexane	2 mL
New	U-RPC-071AS	2,3,4,4',6-Pentachlorobiphenyl (PCB 115), 100 µg/mL in Isooctane	2 mL
	U-RPC-037	2,3,4,5,6-Pentachlorobiphenyl (PCB 116)	10 mg
	U-RPC-037S	2,3,4,5,6-Pentachlorobiphenyl (PCB 116), 100 µg/mL in Hexane	2 mL
New	U-RPC-037AS	2,3,4,5,6-Pentachlorobiphenyl (PCB 116), 100 µg/mL in Isooctane	2 mL
	U-RPC-147	2,3,4',5,6-Pentachlorobiphenyl (PCB 117)	5 mg
	U-RPC-147S	2,3,4',5,6-Pentachlorobiphenyl (PCB 117), 100 µg/mL in Hexane	2 mL
New	U-RPC-147AS	2,3,4',5,6-Pentachlorobiphenyl (PCB 117), 100 µg/mL in Isooctane	2 mL
New	U-RPC-106	2,3',4,4',5-Pentachlorobiphenyl (PCB 118)	5 mg
	U-RPC-106S	2,3',4,4',5-Pentachlorobiphenyl (PCB 118), 100 µg/mL in Hexane	2 mL
New	U-RPC-106AS	2,3',4,4',5-Pentachlorobiphenyl (PCB 118), 100 µg/mL in Isooctane	2 mL
	CIL-EC-1435-1.2	2,3',4,4',5-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #118) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1435-3	2,3',4,4',5-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #118) 40 µg/mL in Nonane	3 mL
	U-RPC-044	2,3',4,4',6-Pentachlorobiphenyl (PCB 119)	5 mg
	U-RPC-044S	2,3',4,4',6-Pentachlorobiphenyl (PCB 119), 100 µg/mL in Hexane	2 mL
New	U-RPC-044AS	2,3',4,4',6-Pentachlorobiphenyl (PCB 119), 100 µg/mL in Isooctane	2 mL
	U-RPC-204S	2,3',4,5,5'-Pentachlorobiphenyl (PCB 120), 100 µg/mL in Hexane	2 mL
New	U-RPC-204AS	2,3',4,5,5'-Pentachlorobiphenyl (PCB 120), 100 µg/mL in Isooctane	2 mL
	U-RPC-045	2,3',4,5',6-Pentachlorobiphenyl (PCB 121)	5 mg

	Code	Product	Unit
	U-RPC-045S	2,3',4,5',6-Pentachlorobiphenyl (PCB 121), 100 µg/mL in Hexane	2 mL
New	U-RPC-045AS	2,3',4,5',6-Pentachlorobiphenyl (PCB 121), 100 µg/mL in Isooctane	2 mL
	U-RPC-117	2',3,3',4,5-Pentachlorobiphenyl (PCB 122)	5 mg
	U-RPC-117S	2',3,3',4,5-Pentachlorobiphenyl (PCB 122), 100 µg/mL in Hexane	2 mL
New	U-RPC-117AS	2',3,3',4,5-Pentachlorobiphenyl (PCB 122), 100 µg/mL in Isooctane	2 mL
New	U-RPC-156	2',3,4,4',5-Pentachlorobiphenyl (PCB 123)	5 mg
	U-RPC-156S	2',3,4,4',5-Pentachlorobiphenyl (PCB 123) 100 µg/mL in Hexane	2 mL
New	U-RPC-156AS	2',3,4,4',5-Pentachlorobiphenyl (PCB 123) 100 µg/mL in Isooctane	2 mL
	CIL-EC-4904-1.2	2',3,4,4',5-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #123) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-4904-3	2',3,4,4',5-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #123) 40 µg/mL in Nonane	3 mL
	U-RPC-134	2',3,4,5,5'-Pentachlorobiphenyl (PCB 124)	5 mg
	U-RPC-134S	2',3,4,5,5'-Pentachlorobiphenyl (PCB 124), 100 µg/mL in Hexane	2 mL
New	U-RPC-134AS	2',3,4,5,5'-Pentachlorobiphenyl (PCB 124), 100 µg/mL in Isooctane	2 mL
	U-RPC-205S	2',3,4,5,6'-Pentachlorobiphenyl (PCB 125), 100 µg/mL in Hexane	2 mL
New	U-RPC-205AS	2',3,4,5,6'-Pentachlorobiphenyl (PCB 125), 100 µg/mL in Isooctane	2 mL
	ERM-AC821	3,3',4',4',5 Pentachlorobiphenyl (PCB 126) Certified purity..... 98.9 %	20 mg
	U-RPC-102	3,3',4,4',5-Pentachlorobiphenyl (PCB 126)	5 mg
	U-RPC-102S	3,3',4,4',5-Pentachlorobiphenyl (PCB 126), 100 µg/mL in Hexane	2 mL
New	U-RPC-102AS	3,3',4,4',5-Pentachlorobiphenyl (PCB 126), 100 µg/mL in Isooctane	2 mL
	CIL-EC-1425-1.2	3,3',4,4',5-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #126) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1425-3	3,3',4,4',5-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #126) 40 µg/mL in Nonane	3 mL
	U-RPC-132	3,3',4,5,5'-Pentachlorobiphenyl (PCB 127)	5 mg
	U-RPC-132S	3,3',4,5,5'-Pentachlorobiphenyl (PCB 127), 100 µg/mL in Hexane	2 mL
New	U-RPC-132AS	3,3',4,5,5'-Pentachlorobiphenyl (PCB 127), 100 µg/mL in Isooctane	2 mL
	CIL-EC-1421-1.2	3,3',4,5,5'-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #127) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1421-3	3,3',4,5,5'-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #127) 40 µg/mL in Nonane	3 mL
New	U-RPC-049	2,2',3,3',4,4'-Hexachlorobiphenyl (PCB 128)	20 mg
	U-RPC-049S	2,2',3,3',4,4'-Hexachlorobiphenyl (PCB 128), 100 µg/mL in Hexane	2 mL
New	U-RPC-049AS	2,2',3,3',4,4'-Hexachlorobiphenyl (PCB 128), 100 µg/mL in Isooctane	2 mL
	CIL-EC-1411-1.2	2,2',3,3',4,4'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC# 128) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1411-3	2,2',3,3',4,4'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC# 128) 40 µg/mL in Nonane	3 mL
	U-RPC-052	2,2',3,3',4,5-Hexachlorobiphenyl (PCB 129)	5 mg
	U-RPC-052S	2,2',3,3',4,5-Hexachlorobiphenyl (PCB 129), 100 µg/mL in Hexane	2 mL
New	U-RPC-052AS	2,2',3,3',4,5-Hexachlorobiphenyl (PCB 129), 100 µg/mL in Isooctane	2 mL
	U-RPC-206S	2,2',3,3',4,5'-Hexachlorobiphenyl (PCB 130), 100 µg/mL in Hexane	2 mL
New	U-RPC-206AS	2,2',3,3',4,5'-Hexachlorobiphenyl (PCB 130), 100 µg/mL in Isooctane	2 mL
	U-RPC-152	2,2',3,3',4,6-Hexachlorobiphenyl (PCB 131)	5 mg
	U-RPC-152S	2,2',3,3',4,6-Hexachlorobiphenyl (PCB 131), 100 µg/mL in Hexane	2 mL
New	U-RPC-152AS	2,2',3,3',4,6-Hexachlorobiphenyl (PCB 131), 100 µg/mL in Isooctane	2 mL
	U-RPC-143	2,2',3,3',4,6'-Hexachlorobiphenyl (PCB 132)	5 mg
	U-RPC-143S	2,2',3,3',4,6'-Hexachlorobiphenyl (PCB 132), 100 µg/mL in Hexane	2 mL
New	U-RPC-143AS	2,2',3,3',4,6'-Hexachlorobiphenyl (PCB 132), 100 µg/mL in Isooctane	2 mL
	U-RPC-114	2,2',3,3',5,5'-Hexachlorobiphenyl (PCB 133)	5 mg
	U-RPC-114S	2,2',3,3',5,5'-Hexachlorobiphenyl (PCB 133), 100 µg/mL in Hexane	2 mL
New	U-RPC-114AS	2,2',3,3',5,5'-Hexachlorobiphenyl (PCB 133), 100 µg/mL in Isooctane	2 mL
	U-RPC-153	2,2',3,3',5,6-Hexachlorobiphenyl (PCB 134)	5 mg
	U-RPC-153S	2,2',3,3',5,6-Hexachlorobiphenyl (PCB 134), 100 µg/mL in Hexane	2 mL
New	U-RPC-153AS	2,2',3,3',5,6-Hexachlorobiphenyl (PCB 134), 100 µg/mL in Isooctane	2 mL
	U-RPC-207S	2,2',3,3',5,6'-Hexachlorobiphenyl (PCB 135), 100 µg/mL in Hexane	2 mL
New	U-RPC-207AS	2,2',3,3',5,6'-Hexachlorobiphenyl (PCB 135), 100 µg/mL in Isooctane	2 mL

Polychlorinated biphenyls (PCBs)

	Code	Product	Unit
	U-RPC-067	2,2',3,3',6,6'-Hexachlorobiphenyl (PCB 136)	20 mg
	U-RPC-067S	2,2',3,3',6,6'-Hexachlorobiphenyl (PCB 136), 100 µg/mL in Hexane	2 mL
New	U-RPC-067AS	2,2',3,3',6,6'-Hexachlorobiphenyl (PCB 136), 100 µg/mL in Isooctane	2 mL
	U-RPC-053	2,2',3,4,4',5-Hexachlorobiphenyl (PCB 137)	5 mg
	U-RPC-053S	2,2',3,4,4',5-Hexachlorobiphenyl (PCB 137), 100 µg/mL in Hexane	2 mL
New	U-RPC-053AS	2,2',3,4,4',5-Hexachlorobiphenyl (PCB 137), 100 µg/mL in Isooctane	2 mL
	DE-PCB 138	2,2',3,4,4',5'-Hexachlorobiphenyl (PCB 138)	20 mg
New	U-RPC-088	2,2',3,4,4',5'-Hexachlorobiphenyl (PCB 138)	5 mg
	BCR-296	2,2',3,4,4',5'-Hexachlorobiphenyl (PCB 138)	25 mg
	U-RPC-088S	2,2',3,4,4',5'-Hexachlorobiphenyl (PCB 138), 100 µg/mL in Hexane	2 mL
New	U-RPC-088AS	2,2',3,4,4',5'-Hexachlorobiphenyl (PCB 138), 100 µg/mL in Isooctane	2 mL
	CIL-EC-1436-1.2	2,2',3,4,4',5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #138) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1436-3	2,2',3,4,4',5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #138) 40 µg/mL in Nonane	3 mL
	U-RPC-056	2,2',3,4,4',6-Hexachlorobiphenyl (PCB 139)	5 mg
	U-RPC-056S	2,2',3,4,4',6-Hexachlorobiphenyl (PCB 139), 100 µg/mL in Hexane	2 mL
New	U-RPC-056AS	2,2',3,4,4',6-Hexachlorobiphenyl (PCB 139), 100 µg/mL in Isooctane	2 mL
	U-RPC-151	2,2',3,4,4',6'-Hexachlorobiphenyl (PCB 140)	5 mg
	U-RPC-151S	2,2',3,4,4',6'-Hexachlorobiphenyl (PCB 140), 100 µg/mL in Hexane	2 mL
New	U-RPC-151AS	2,2',3,4,4',6'-Hexachlorobiphenyl (PCB 140), 100 µg/mL in Isooctane	2 mL
	U-RPC-050	2,2',3,4,5,5'-Hexachlorobiphenyl (PCB 141)	5 mg
	U-RPC-050S	2,2',3,4,5,5'-Hexachlorobiphenyl (PCB 141), 100 µg/mL in Hexane	2 mL
New	U-RPC-050AS	2,2',3,4,5,5'-Hexachlorobiphenyl (PCB 141), 100 µg/mL in Isooctane	2 mL
	CIL-EC-1426-1.2	2,2',3,4,5,5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #141) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1426-3	2,2',3,4,5,5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #141) 40 µg/mL in Nonane	3 mL
	U-RPC-158	2,2',3,4,5,6-Hexachlorobiphenyl (PCB 142)	5 mg
	U-RPC-158S	2,2',3,4,5,6-Hexachlorobiphenyl (PCB 142), 100 µg/mL in Hexane	2 mL
New	U-RPC-158AS	2,2',3,4,5,6-Hexachlorobiphenyl (PCB 142), 100 µg/mL in Isooctane	2 mL
	U-RPC-054	2,2',3,4,5,6'-Hexachlorobiphenyl (PCB 143)	5 mg
	U-RPC-054S	2,2',3,4,5,6'-Hexachlorobiphenyl (PCB 143), 100 µg/mL in Hexane	2 mL
New	U-RPC-054AS	2,2',3,4,5,6'-Hexachlorobiphenyl (PCB 143), 100 µg/mL in Isooctane	2 mL
	U-RPC-155	2,2',3,4,5',6-Hexachlorobiphenyl (PCB 144)	5 mg
	U-RPC-155S	2,2',3,4,5',6-Hexachlorobiphenyl (PCB 144), 100 µg/mL in Hexane	2 mL
New	U-RPC-155AS	2,2',3,4,5',6-Hexachlorobiphenyl (PCB 144), 100 µg/mL in Isooctane	2 mL
	U-RPC-160	2,2',3,4,6,6'-Hexachlorobiphenyl (PCB 145)	5 mg
	U-RPC-160S	2,2',3,4,6,6'-Hexachlorobiphenyl (PCB 145), 100 µg/mL in Hexane	2 mL
New	U-RPC-160AS	2,2',3,4,6,6'-Hexachlorobiphenyl (PCB 145), 100 µg/mL in Isooctane	2 mL
	U-RPC-146S	2,2',3,4',5,5'-Hexachlorobiphenyl (PCB 146), 100 µg/mL in Hexane	2 mL
New	U-RPC-146AS	2,2',3,4',5,5'-Hexachlorobiphenyl (PCB 146), 100 µg/mL in Isooctane	2 mL
	U-RPC-154	2,2',3,4',5,6-Hexachlorobiphenyl (PCB 147)	5 mg
	U-RPC-154S	2,2',3,4',5,6-Hexachlorobiphenyl (PCB 147), 100 µg/mL in Hexane	2 mL
New	U-RPC-154AS	2,2',3,4',5,6-Hexachlorobiphenyl (PCB 147), 100 µg/mL in Isooctane	2 mL
	U-RPC-208S	2,2',3,4',5,6'-Hexachlorobiphenyl (PCB 148), 100 µg/mL in Hexane	2 mL
New	U-RPC-208AS	2,2',3,4',5,6'-Hexachlorobiphenyl (PCB 148), 100 µg/mL in Isooctane	2 mL
New	U-RPC-149	2,2',3,4',5',6-Hexachlorobiphenyl (PCB 149)	5 mg
	U-RPC-149S	2,2',3,4',5',6-Hexachlorobiphenyl (PCB 149), 100 µg/mL in Hexane	2 mL
New	U-RPC-149AS	2,2',3,4',5',6-Hexachlorobiphenyl (PCB 149), 100 µg/mL in Isooctane	2 mL
	U-RPC-209S	2,2',3,4',6,6'-Hexachlorobiphenyl (PCB 150), 100 µg/mL in Hexane	2 mL
New	U-RPC-209AS	2,2',3,4',6,6'-Hexachlorobiphenyl (PCB 150), 100 µg/mL in Isooctane	2 mL
	U-RPC-051	2,2',3,5,5',6-Hexachlorobiphenyl (PCB 151)	5 mg
	U-RPC-051S	2,2',3,5,5',6-Hexachlorobiphenyl (PCB 151), 100 µg/mL in Hexane	2 mL
New	U-RPC-051AS	2,2',3,5,5',6-Hexachlorobiphenyl (PCB 151), 100 µg/mL in Isooctane	2 mL

	Code	Product	Unit
	U-RPC-161	2,2',3,5,6,6'-Hexachlorobiphenyl (PCB 152)	5 mg
	U-RPC-161S	2,2',3,5,6,6'-Hexachlorobiphenyl (PCB 152), 100 µg/mL in Hexane	2 mL
New	U-RPC-161AS	2,2',3,5,6,6'-Hexachlorobiphenyl (PCB 152), 100 µg/mL in Isooctane	2 mL
New	U-RPC-047	2,2',4,4',5,5'-Hexachlorobiphenyl (PCB 153)	10 mg
	BCR-297	2,2',4,4',5,5'-Hexachlorobiphenyl (PCB 153)	25 mg
	U-RPC-047S	2,2',4,4',5,5'-Hexachlorobiphenyl (PCB 153), 100 µg/mL in Hexane	2 mL
New	U-RPC-047AS	2,2',4,4',5,5'-Hexachlorobiphenyl (PCB 153), 100 µg/mL in Isooctane	2 mL
	CIL-EC-1406-1.2	2,2',4,4',5,5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #153) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1406-3	2,2',4,4',5,5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #153) 40 µg/mL in Nonane	3 mL
	U-RPC-048	2,2',4,4',5,6'-Hexachlorobiphenyl (PCB 154)	5 mg
	U-RPC-048S	2,2',4,4',5,6'-Hexachlorobiphenyl (PCB 154), 100 µg/mL in Hexane	2 mL
New	U-RPC-048AS	2,2',4,4',5,6'-Hexachlorobiphenyl (PCB 154), 100 µg/mL in Isooctane	2 mL
	U-RPC-046	2,2',4,4',6,6'-Hexachlorobiphenyl (PCB 155)	50 mg
	U-RPC-046S	2,2',4,4',6,6'-Hexachlorobiphenyl (PCB 155), 100 µg/mL in Hexane	2 mL
New	U-RPC-046AS	2,2',4,4',6,6'-Hexachlorobiphenyl (PCB 155), 100 µg/mL in Isooctane	2 mL
	CIL-EC-4167-1.2	2,2',4,4',6,6'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #155) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-4167-3	2,2',4,4',6,6'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #155) 40 µg/mL in Nonane	3 mL
New	U-RPC-055	2,3,3',4,4',5-Hexachlorobiphenyl (PCB 156)	5 mg
	U-RPC-055S	2,3,3',4,4',5-Hexachlorobiphenyl (PCB 156), 100 µg/mL in Hexane	2 mL
New	U-RPC-055AS	2,3,3',4,4',5-Hexachlorobiphenyl (PCB 156), 100 µg/mL in Isooctane	2 mL
	CIL-EC-1422-1.2	2,3,3',4,4',5-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #156) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1422-3	2,3,3',4,4',5-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #156) 40 µg/mL in Nonane	3 mL
New	U-RPC-164	2,3,3',4,4',5'-Hexachlorobiphenyl (PCB 157)	5 mg
	U-RPC-164S	2,3,3',4,4',5'-Hexachlorobiphenyl (PCB 157), 100 µg/mL in Hexane	2 mL
New	U-RPC-164AS	2,3,3',4,4',5'-Hexachlorobiphenyl (PCB 157), 100 µg/mL in Isooctane	2 mL
	CIL-EC-4051-1.2	2,3,3',4,4',5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #157) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-4051-3	2,3,3',4,4',5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #157) 40 µg/mL in Nonane	3 mL
	U-RPC-109	2,3,3',4,4',6-Hexachlorobiphenyl (PCB 158)	5 mg
	U-RPC-109S	2,3,3',4,4',6-Hexachlorobiphenyl (PCB 158), 100 µg/mL in Hexane	2 mL
New	U-RPC-109AS	2,3,3',4,4',6-Hexachlorobiphenyl (PCB 158), 100 µg/mL in Isooctane	2 mL
	U-RPC-113	2,3,3',4,5,5'-Hexachlorobiphenyl (PCB 159)	5 mg
	U-RPC-113S	2,3,3',4,5,5'-Hexachlorobiphenyl (PCB 159), 100 µg/mL in Hexane	2 mL
New	U-RPC-113AS	2,3,3',4,5,5'-Hexachlorobiphenyl (PCB 159), 100 µg/mL in Isooctane	2 mL
	CIL-EC-5336-1.2	2,3,3',4,5,5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #159) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-5336-3	2,3,3',4,5,5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #159) 40 µg/mL in Nonane	3 mL
	U-RPC-157	2,3,3',4,5,6-Hexachlorobiphenyl (PCB 160)	5 mg
	U-RPC-157S	2,3,3',4,5,6-Hexachlorobiphenyl (PCB 160), 100 µg/mL in Hexane	2 mL
New	U-RPC-157AS	2,3,3',4,5,6-Hexachlorobiphenyl (PCB 160), 100 µg/mL in Isooctane	2 mL
	U-RPC-144	2,3,3',4,5',6-Hexachlorobiphenyl (PCB 161)	5 mg
	U-RPC-144S	2,3,3',4,5',6-Hexachlorobiphenyl (PCB 161), 100 µg/mL in Hexane	2 mL
New	U-RPC-144AS	2,3,3',4,5',6-Hexachlorobiphenyl (PCB 161), 100 µg/mL in Isooctane	2 mL
	U-RPC-210S	2,3,3',4',5,5'-Hexachlorobiphenyl (PCB 162), 100 µg/mL in Hexane	2 mL
New	U-RPC-210AS	2,3,3',4',5,5'-Hexachlorobiphenyl (PCB 162), 100 µg/mL in Isooctane	2 mL
New	U-RPC-163	2,3,3',4',5,6-Hexachlorobiphenyl (PCB 163)	5 mg
	U-RPC-163S	2,3,3',4',5,6-Hexachlorobiphenyl (PCB 163), 100 µg/mL in Hexane	2 mL
	U-RPC-211S	2,3,3',4',5',6-Hexachlorobiphenyl (PCB 164), 100 µg/mL in Hexane	2 mL
New	U-RPC-211AS	2,3,3',4',5',6-Hexachlorobiphenyl (PCB 164), 100 µg/mL in Isooctane	2 mL
	U-RPC-159	2,3,3',5,5',6-Hexachlorobiphenyl (PCB 165)	5 mg
	U-RPC-159S	2,3,3',5,5',6-Hexachlorobiphenyl (PCB 165), 100 µg/mL in Hexane	2 mL
New	U-RPC-159AS	2,3,3',5,5',6-Hexachlorobiphenyl (PCB 165), 100 µg/mL in Isooctane	2 mL
	U-RPC-115	2,3,4,4',5,6-Hexachlorobiphenyl (PCB 166)	5 mg

Polychlorinated biphenyls (PCBs)

	Code	Product	Unit
	U-RPC-115S	2,3,4,4',5,6-Hexachlorobiphenyl (PCB 166), 100 µg/mL in Hexane	2 mL
New	U-RPC-115AS	2,3,4,4',5,6-Hexachlorobiphenyl (PCB 166), 100 µg/mL in Isooctane	2 mL
	U-RPC-100	2,3',4,4',5,5'-Hexachlorobiphenyl (PCB 167)	10 mg
	U-RPC-100S	2,3',4,4',5,5'-Hexachlorobiphenyl (PCB 167), 100 µg/mL in Hexane	2 mL
	CIL-EC-4050-1.2	2,3',4,4',5,5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #167) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-4050-3	2,3',4,4',5,5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #167) 40 µg/mL in Nonane	3 mL
	U-RPC-145	2,3',4,4',5',6-Hexachlorobiphenyl (PCB 168)	5 mg
	U-RPC-145S	2,3',4,4',5',6-Hexachlorobiphenyl (PCB 168), 100 µg/mL in Hexane	2 mL
New	U-RPC-145AS	2,3',4,4',5',6-Hexachlorobiphenyl (PCB 168), 100 µg/mL in Isooctane	2 mL
	ERM-AC822	3,3',4,4',5,5'-Hexachlorobiphenyl (PCB 169)	20 mg
	U-RPC-090	3,3',4,4',5,5'-Hexachlorobiphenyl (PCB 169)	5 mg
	U-RPC-090S	3,3',4,4',5,5'-Hexachlorobiphenyl (PCB 169), 100 µg/mL in Hexane	2 mL
New	U-RPC-090AS	3,3',4,4',5,5'-Hexachlorobiphenyl (PCB 169), 100 µg/mL in Isooctane	2 mL
	CIL-EC-1416-1.2	3,3',4,4',5,5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #169) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1416-3	3,3',4,4',5,5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #169) 40 µg/mL in Nonane	3 mL
New	U-RPC-110	2,2',3,3',4,4',5-Heptachlorobiphenyl (PCB 170)	5 mg
	U-RPC-110S	2,2',3,3',4,4',5-Heptachlorobiphenyl (PCB 170), 100 µg/mL in Hexane	2 mL
New	U-RPC-110AS	2,2',3,3',4,4',5-Heptachlorobiphenyl (PCB 170), 100 µg/mL in Isooctane	2 mL
	CIL-EC-4905-1.2	2,2',3,3',4,4',5-Heptachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #170) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-4905-3	2,2',3,3',4,4',5-Heptachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #170) 40 µg/mL in Nonane	3 mL
	U-RPC-072	2,2',3,3',4,4',6-Heptachlorobiphenyl (PCB 171)	5 mg
	U-RPC-072S	2,2',3,3',4,4',6-Heptachlorobiphenyl (PCB 171), 100 µg/mL in Hexane	2 mL
New	U-RPC-072AS	2,2',3,3',4,4',6-Heptachlorobiphenyl (PCB 171), 100 µg/mL in Isooctane	2 mL
	U-RPC-212S	2,2',3,3',4,5,5'-Heptachlorobiphenyl (PCB 172), 100 µg/mL in Hexane	2 mL
New	U-RPC-212AS	2,2',3,3',4,5,5'-Heptachlorobiphenyl (PCB 172), 100 µg/mL in Isooctane	2 mL
	U-RPC-166	2,2',3,3',4,5,6-Heptachlorobiphenyl (PCB 173)	5 mg
	U-RPC-166S	2,2',3,3',4,5,6-Heptachlorobiphenyl (PCB 173), 100 µg/mL in Hexane	2 mL
New	U-RPC-166AS	2,2',3,3',4,5,6-Heptachlorobiphenyl (PCB 173), 100 µg/mL in Isooctane	2 mL
	U-RPC-213S	2,2',3,3',4,5,6'-Heptachlorobiphenyl (PCB 174), 100 µg/mL in Hexane	2 mL
New	U-RPC-213AS	2,2',3,3',4,5,6'-Heptachlorobiphenyl (PCB 174), 100 µg/mL in Isooctane	2 mL
	U-RPC-214S	2,2',3,3',4,5',6-Heptachlorobiphenyl (PCB 175), 100 µg/mL in Hexane	2 mL
New	U-RPC-214AS	2,2',3,3',4,5',6-Heptachlorobiphenyl (PCB 175), 100 µg/mL in Isooctane	2 mL
	U-RPC-215S	2,2',3,3',4,6,6'-Heptachlorobiphenyl (PCB 176), 100 µg/mL in Hexane	2 mL
New	U-RPC-215AS	2,2',3,3',4,6,6'-Heptachlorobiphenyl (PCB 176), 100 µg/mL in Isooctane	2 mL
	U-RPC-216S	2,2',3,3',4',5,6-Heptachlorobiphenyl (PCB 177), 100 µg/mL in Hexane	2 mL
	U-RPC-217S	2,2',3,3',5,5',6-Heptachlorobiphenyl (PCB 178), 100 µg/mL in Hexane	2 mL
New	U-RPC-217AS	2,2',3,3',5,5',6-Heptachlorobiphenyl (PCB 178), 100 µg/mL in Isooctane	2 mL
	CIL-EC-1417-1.2	2,2',3,3',4,4',5-Heptachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #178) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1417-3	2,2',3,3',5,5',6-Heptachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #178) 40 µg/mL in Nonane	3 mL
	U-RPC-218S	2,2',3,3',5,6,6'-Heptachlorobiphenyl (PCB 179), 100 µg/mL in Hexane	2 mL
New	U-RPC-218AS	2,2',3,3',5,6,6'-Heptachlorobiphenyl (PCB 179), 100 µg/mL in Isooctane	2 mL
New	U-RPC-094	2,2',3,4,4',5,5'-Heptachlorobiphenyl (PCB 180)	5 mg
	BCR-298	2,2',3,4,4',5,5'-Heptachlorobiphenyl (PCB 180)	25 mg
	U-RPC-094S	2,2',3,4,4',5,5'-Heptachlorobiphenyl (PCB 180), 100 µg/mL in Hexane	2 mL
New	U-RPC-094AS	2,2',3,4,4',5,5'-Heptachlorobiphenyl (PCB 180), 100 µg/mL in Isooctane	2 mL
	CIL-EC-1407-1.2	2,2',3,4,4',5,5'-Heptachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #180) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1407-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #180) 40 µg/mL in Nonane	3 mL
	U-RPC-077	2,2',3,4,4',5,6-Heptachlorobiphenyl (PCB 181)	5 mg
	U-RPC-077S	2,2',3,4,4',5,6-Heptachlorobiphenyl (PCB 181), 100 µg/mL in Hexane	2 mL
New	U-RPC-077AS	2,2',3,4,4',5,6-Heptachlorobiphenyl (PCB 181), 100 µg/mL in Isooctane	2 mL
	U-RPC-162	2,2',3,4,4',5,6'-Heptachlorobiphenyl (PCB 182)	5 mg

	Code	Product	Unit
	U-RPC-162S	2,2',3,4,4',5,6'-Heptachlorobiphenyl (PCB 182), 100 µg/mL in Hexane	2 mL
New	U-RPC-162AS	2,2',3,4,4',5,6'-Heptachlorobiphenyl (PCB 182), 100 µg/mL in Isooctane	2 mL
	U-RPC-073	2,2',3,4,4',5',6-Heptachlorobiphenyl (PCB 183)	5 mg
	U-RPC-073S	2,2',3,4,4',5',6-Heptachlorobiphenyl (PCB 183), 100 µg/mL in Hexane	2 mL
	U-RPC-168	2,2',3,4,4',6,6'-Heptachlorobiphenyl (PCB 184)	5 mg
	U-RPC-168S	2,2',3,4,4',6,6'-Heptachlorobiphenyl (PCB 184), 100 µg/mL in Hexane	2 mL
New	U-RPC-168AS	2,2',3,4,4',6,6'-Heptachlorobiphenyl (PCB 184), 100 µg/mL in Isooctane	2 mL
	U-RPC-057	2,2',3,4,5,5',6-Heptachlorobiphenyl (PCB 185)	5 mg
	U-RPC-057S	2,2',3,4,5,5',6-Heptachlorobiphenyl (PCB 185), 100 µg/mL in Hexane	2 mL
New	U-RPC-057AS	2,2',3,4,5,5',6-Heptachlorobiphenyl (PCB 185), 100 µg/mL in Isooctane	2 mL
	U-RPC-116	2,2',3,4,5,6,6'-Heptachlorobiphenyl (PCB 186)	5 mg
	U-RPC-116S	2,2',3,4,5,6,6'-Heptachlorobiphenyl (PCB 186), 100 µg/mL in Hexane	2 mL
New	U-RPC-116AS	2,2',3,4,5,6,6'-Heptachlorobiphenyl (PCB 186), 100 µg/mL in Isooctane	2 mL
New	U-RPC-111	2,2',3,4',5,5',6-Heptachlorobiphenyl (PCB 187)	5 mg
	U-RPC-111S	2,2',3,4',5,5',6-Heptachlorobiphenyl (PCB 187), 100 µg/mL in Hexane	2 mL
	U-RPC-103	2,2',3,4',5,6,6'-Heptachlorobiphenyl (PCB 188)	5 mg
	U-RPC-103S	2,2',3,4',5,6,6'-Heptachlorobiphenyl (PCB 188), 100 µg/mL in Hexane	2 mL
New	U-RPC-103AS	2,2',3,4',5,6,6'-Heptachlorobiphenyl (PCB 188), 100 µg/mL in Isooctane	2 mL
	CIL-EC-4913-1.2	2,2',3,4',5,6,6'-Heptachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #188) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-4913-3	2,2',3,4',5,6,6'-Heptachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #188) 40 µg/mL in Nonane	3 mL
New	U-RPC-137	2,3,3',4,4',5,5'-Heptachlorobiphenyl (PCB 189)	5 mg
	U-RPC-137S	2,3,3',4,4',5,5'-Heptachlorobiphenyl (PCB 189), 100 µg/mL in Hexane	2 mL
New	U-RPC-137AS	2,3,3',4,4',5,5'-Heptachlorobiphenyl (PCB 189), 100 µg/mL in Isooctane	2 mL
	U-RPC-135	2,3,3',4,4',5,6-Heptachlorobiphenyl (PCB 190)	5 mg
	CIL-EC-1409-1.2	2,3,3',4,4',5,5-Heptachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC# 189) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1409-3	2,3,3',4,4',5,5-Heptachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC# 189) 40 µg/mL in Nonane	3 mL
	U-RPC-135S	2,3,3`,4,4',5,6-Heptachlorobiphenyl (PCB 190), 100 µg/mL in Hexane	2 mL
New	U-RPC-135AS	2,3,3`,4,4',5,6-Heptachlorobiphenyl (PCB 190), 100 µg/mL in Isooctane	2 mL
	U-RPC-167	2,3,3',4,4',5',6-Heptachlorobiphenyl (PCB 191)	5 mg
	U-RPC-167S	2,3,3',4,4',5',6-Heptachlorobiphenyl (PCB 191), 100 µg/mL in Hexane	2 mL
New	U-RPC-167AS	2,3,3',4,4',5',6-Heptachlorobiphenyl (PCB 191), 100 µg/mL in Isooctane	2 mL
	U-RPC-165	2,3,3',4,5,5',6-Heptachlorobiphenyl (PCB 192)	5 mg
	U-RPC-165S	2,3,3',4,5,5',6-Heptachlorobiphenyl (PCB 192), 100 µg/mL in Hexane	2 mL
New	U-RPC-165AS	2,3,3',4,5,5',6-Heptachlorobiphenyl (PCB 192), 100 µg/mL in Isooctane	2 mL
	U-RPC-169	2,3,3',4',5,5',6-Heptachlorobiphenyl (PCB 193)	5 mg
	U-RPC-169S	2,3,3',4',5,5',6-Heptachlorobiphenyl (PCB 193), 100 µg/mL in Hexane	2 mL
New	U-RPC-169AS	2,3,3',4',5,5',6-Heptachlorobiphenyl (PCB 193), 100 µg/mL in Isooctane	2 mL
	U-RPC-058	2,2',3,3',4,4',5,5'-Octachlorobiphenyl (PCB 194)	5 mg
	U-RPC-058S	2,2',3,3',4,4',5,5'-Octachlorobiphenyl (PCB 194), 100 µg/mL in Hexane	2 mL
	CIL-EC-1418-1.2	2,2',3,3',4,4',5,5'-Octachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #194) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1418-3	2,2',3,3',4,4',5,5'-Octachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #194) 40 µg/mL in Nonane	3 mL
	U-RPC-074	2,2',3,3',4,4',5,6-Octachlorobiphenyl (PCB 195)	5 mg
	U-RPC-074S	2,2',3,3',4,4',5,6-Octachlorobiphenyl (PCB 195), 100 µg/mL in Hexane	2 mL
New	U-RPC-074AS	2,2',3,3',4,4',5,6-Octachlorobiphenyl (PCB 195), 100 µg/mL in Isooctane	2 mL
	U-RPC-170	2,2',3,3',4,4',5,6'-Octachlorobiphenyl (PCB 196)	5 mg
	U-RPC-170S	2,2',3,3',4,4',5,6'-Octachlorobiphenyl (PCB 196), 100 µg/mL in Hexane	2 mL
	U-RPC-219S	2,2',3,3',4,4',6,6'-Octachlorobiphenyl (PCB 197), 100 µg/mL in Hexane	2 mL
New	U-RPC-219AS	2,2',3,3',4,4',6,6'-Octachlorobiphenyl (PCB 197), 100 µg/mL in Isooctane	2 mL
	U-RPC-075	2,2',3,3',4,5,5',6-Octachlorobiphenyl (PCB 198)	5 mg
	U-RPC-075S	2,2',3,3',4,5,5',6-Octachlorobiphenyl (PCB 198), 100 µg/mL in Hexane	2 mL
New	U-RPC-075AS	2,2',3,3',4,5,5',6-Octachlorobiphenyl (PCB 198), 100 µg/mL in Isooctane	2 mL

Polychlorinated biphenyls (PCBs)

	Code	Product	Unit
	U-RPC-095	2,2',3,3',4,5,6,6'-Octachlorobiphenyl (PCB 199)	5 mg
	U-RPC-095S	2,2',3,3',4,5,6,6'-Octachlorobiphenyl (PCB 199), 100 µg/mL in Hexane	2 mL
New	U-RPC-095AS	2,2',3,3',4,5,6,6'-Octachlorobiphenyl (PCB 199), 100 µg/mL in Isooctane	2 mL
	U-RPC-082	2,2',3,3',4,5',6,6'-Octachlorobiphenyl (PCB 200)	5 mg
	U-RPC-082S	2,2',3,3',4,5',6,6'-Octachlorobiphenyl (PCB 200), 100 µg/mL in Hexane	2 mL
New	U-RPC-082AS	2,2',3,3',4,5',6,6'-Octachlorobiphenyl (PCB 200), 100 µg/mL in Isooctane	2 mL
	U-RPC-220S	2,2',3,3',4,5,5',6'-Octachlorobiphenyl (PCB 201), 100 µg/mL in Hexane	2 mL
	U-RPC-068	2,2',3,3',5,5',6,6'-Octachlorobiphenyl (PCB 202)	5 mg
	U-RPC-068S	2,2',3,3',5,5',6,6'-Octachlorobiphenyl (PCB 202), 100 µg/mL in Hexane	2 mL
New	U-RPC-068AS	2,2',3,3',5,5',6,6'-Octachlorobiphenyl (PCB 202), 100 µg/mL in Isooctane	2 mL
	CIL-EC-1408-1.2	2,2',3,3',5,5',6,6'-Octachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC# 202) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1408-3	2,2',3,3',5,5',6,6'-Octachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC# 202) 40 µg/mL in Nonane	3 mL
	U-RPC-174	2,2',3,4,4',5,5',6-Octachlorobiphenyl (PCB 203)	5 mg
	U-RPC-174S	2,2',3,4,4',5,5',6-Octachlorobiphenyl (PCB 203), 100 µg/mL in Hexane	2 mL
New	U-RPC-174AS	2,2',3,4,4',5,5',6-Octachlorobiphenyl (PCB 203), 100 µg/mL in Isooctane	2 mL
	U-RPC-078	2,2',3,4,4',5,6,6'-Octachlorobiphenyl (PCB 204)	5 mg
	U-RPC-078S	2,2',3,4,4'5,6,6'-Octachlorobiphenyl (PCB 204), 100 µg/mL in Hexane	2 mL
New	U-RPC-078AS	2,2',3,4,4'5,6,6'-Octachlorobiphenyl (PCB 204), 100 µg/mL in Isooctane	2 mL
	U-RPC-140	2,3,3',4,4',5,5',6-Octachlorobiphenyl (PCB 205)	5 mg
	U-RPC-140S	2,3,3',4,4',5,5',6-Octachlorobiphenyl (PCB 205), 100 µg/mL in Hexane	2 mL
New	U-RPC-140AS	2,3,3',4,4',5,5',6-Octachlorobiphenyl (PCB 205), 100 µg/mL in Isooctane	2 mL
	CIL-EC-4199-1.2	2,3,3',4,4',5,5',6-Octachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #205) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-4199-3	2,3,3',4,4',5,5',6-Octachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #205) 40 µg/mL in Nonane	3 mL
	U-RPC-059	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (PCB 206)	5 mg
	U-RPC-059S	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (PCB 206), 100 µg/mL in Hexane	2 mL
New	U-RPC-059AS	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (PCB 206), 100 µg/mL in Isooctane	2 mL
	CIL-EC-4900-1.2	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #206) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-4900-3	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #206) 40 µg/mL in Nonane	3 mL
	U-RPC-080	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (PCB 207)	5 mg
	U-RPC-080S	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (PCB 207), 100 µg/mL in Hexane	2 mL
New	U-RPC-080AS	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (PCB 207), 100 µg/mL in Isooctane	2 mL
	U-RPC-081	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (PCB 208)	5 mg
	U-RPC-081S	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (PCB 208), 100 µg/mL in Hexane	2 mL
New	U-RPC-081AS	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (PCB 208), 100 µg/mL in Isooctane	2 mL
	CIL-EC-1419-1.2	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #208) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1419-3	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #208) 40 µg/mL in Nonane	3 mL
New	U-RPC-060	Decachlorobiphenyl (PCB 209)	10 mg
	U-RPC-060S	Decachlorobiphenyl (PCB 209), 100 µg/mL in Hexane	2 mL
New	U-RPC-060AS	Decachlorobiphenyl (PCB 209), 100 µg/mL in Isooctane, 100 µg/mL in Isooctane	2 mL
	CIL-EC-1410-1.2	Decachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC# 209) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1410-3	Decachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC# 209) 40 µg/mL in Nonane	3 mL

Multicomponent standard solutions

Isotope labelled PCB standard mixtures see section "Environmental contaminant standards from CIL".

U-RPCW-100 - U-RPCW-111 PCB elution window mixtures

ULTRA Scientific has prepared a series of mixtures containing the first and last eluting isomers (based on a DB-5 capillary column) for each PCB isomer group, from monochlorobiphenyls to the nonachlorobiphenyls.

U-RPCW-100-1	PCB Elution Window Mix Biphenyl 100 µg/mL of each analyte in Hexane RRt* Biphenyl 0.0997	1 mL
U-RPCW-100	PCB Elution Window Mix Biphenyl	4 x 1 mL

Code	Product	Unit
U-RPCW-101-1	PCB Elution Window Mix Chlorobiphenyl 100 µg/mL in Hexane RRt* 2-Chlorobiphenyl.....0.1544 RRt* 4-Chlorobiphenyl..... 0.1975	1 mL
U-RPCW-101	PCB Elution Window Mix Chlorobiphenyl	4 x 1 mL
U-RPCW-102-1	PCB Elution Window Mix Dichlorobiphenyl 100 µg/mL in Hexane RRt* 2,6-Dichlorobiphenyl.....0.2243 RRt* 4,4´-Dichlorobiphenyl..... 0.3387	1 mL
U-RPCW-102	PCB Elution Window Mix Dichlorobiphenyl	4 x 1 mL
U-RPCW-103-1	PCB Elution Window Mix Trichlorobiphenyl 100 µg/mL of each analyte in Hexane RRt* 2,2',6-Trichlorobiphenyl.....0.3045 RRt* 3,4,4'-Trichlorobiphenyl..... 0.4858	1 mL
U-RPCW-103	PCB Elution Window Mix Trichlorobiphenyl	4 x 1 mL
U-RPCW-104-1	PCB Elution Window Mix Tetrachlorobiphenyl 100 µg/mL of each analyte in Hexane RRt* 2,2',6,6'-Tetrachlorobiphenyl.....0.38 RRt* 3,3',4,4'-Tetrachlorobiphenyl..... 0.6295	1 mL
U-RPCW-104	PCB Elution Window Mix Tetrachlorobiphenyl	4 x 1 mL
U-RPCW-105-1	PCB Elution Window Mix Pentachlorobiphenyl 100 µg/mL of each analyte in Hexane RRt* 2,2',4,6,6'-Pentachlorobiphenyl.....0.4757 RRt* 3,3',4,4',5-Pentachlorobiphenyl..... 0.7512	1 mL
U-RPCW-105	PCB Elution Window Mix Pentachlorobiphenyl	4 x 1 mL
U-RPCW-106-1	PCB Elution Window Mix Hexachlorobiphenyl 100 µg/mL of each analyte in Hexane RRt* 2,2',4,4',6,6'-Hexachlorobiphenyl.....0.5666 RRt* 3,3',4,4',5,5'-Hexachlorobiphenyl..... 0.8625	1 mL
U-RPCW-106	PCB Elution Window Mix Hexachlorobiphenyl	4 x 1 mL
U-RPCW-107-1	PCB Elution Window Mix Heptachlorobiphenyl 100 µg/mL of each analyte in Hexane RRt* 2,2',3,4',5,6,6'-Heptachlorobiphenyl.....0.692 RRt* 2,3,3',4,4',5,5'-Heptachlorobiphenyl..... 0.9142	1 mL
U-RPCW-107	PCB Elution Window Mix Heptachlorobiphenyl	4 x 1 mL
U-RPCW-108-1	PCB Elution Window Mix Octachlorobiphenyl 100 µg/mL of each analyte in Hexane RRt* 2,2',3,3',5,5',6,6'-Octachlorobiphenyl.....0.8089 RRt* 2,3,3',4,4',5,5',6-Octachlorobiphenyl..... 0.9678	1 mL
U-RPCW-108	PCB Elution Window Mix Octachlorobiphenyl	4 x 1 mL
U-RPCW-109-1	PCB Elution Window Mix Nonachlorobiphenyl 100 µg/mL of each analyte in Hexane RRt* 2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl.....0.932 RRt* 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl..... 1.0103	1 mL
U-RPCW-109	PCB Elution Window Mix Nonachlorobiphenyl	4 x 1 mL
U-RPCW-110-1	PCB Elution Window Mixture Decachlorobiphenyl 100 µg/mL of each analyte in Hexane RRt* Decachlorobiphenyl.....1.0496	1 mL
U-RPCW-110	PCB Elution Window Mixture Decachlorobiphenyl	4 x 1 mL
U-RPCW-111-1	PCB Elution Window Mix Octachloronaphthalene 100 µg/mL of each analyte in Hexane RRt* Octachloronaphthalene.....1.0000	1 mL
U-RPCW-111	PCB Elution Window Mix Octachloronaphthalene	4 x 1 mL

*Relative retention time versus octachloronaphthalene; see M.D. Mullin, et al., *Environ. Sci. Technol.*, 18, 468(1984).

Code	Product	Unit
U-RPCWK	PCB Elution Window Kit Kit contains eleven ampoules: 1 x 1 mL of each of the PCB Window mixtures, RPCW-100 through RPCW-110	kit
U-RPCM-200-1	Dutch Seven PCB Mixture (NEN 5734/VPR C85-16) 10 µg/ml of each analyte in iso-Octane (2,2,4-Trimethylpentane). PCB 28 ..... 2,4,4'-Trichlorobiphenyl PCB 52 ..... 2,2',5,5'-Tetrachlorobiphenyl PCB 101 ..... 2,2',4,5,5'-Pentachlorobiphenyl PCB 118 ..... 2,3',4,4',5-Pentachlorobiphenyl PCB 138..... 2,2',3,4,4',5'-Hexachlorobiphenyl PCB 153..... 2,2',4,4',5,5'-Hexachlorobiphenyl PCB 180..... 2,2',3,4,4',5,5'-Heptachlorobiphenyl	1 mL
U-RPCM-200	Dutch Seven PCB Mixture (NEN 5734/VPR C85-16)	4 x 1 mL
U-RPCM-8082-1	PCB Congeners Mixture 100 µg/mL analytes in iso-Octane (2,2,4-Trimethylpentane) 2-Chlorobiphenyl 2,3-Dichlorobiphenyl 2,2',5-Trichlorobiphenyl 2,4',5-Trichlorobiphenyl 2,2',3,5'-Tetrachlorobiphenyl 2,2',5,5'-Tetrachlorobiphenyl 2,3',4,4'-Tetrachlorobiphenyl 2,2',3,4,5'-Pentachlorobiphenyl 2,2',4,5,5'-Pentachlorobiphenyl 2,3,3',4',6-Pentachlorobiphenyl 2,2',3,4,4',5'-Hexachlorobiphenyl 2,2',3,4,5,5'-Hexachlorobiphenyl 2,2',3,5,5',6-Hexachlorobiphenyl 2,2',4,4',5,5'-Hexachlorobiphenyl 2,2',3,3',4,4',5-Heptachlorobiphenyl 2,2',3,4,4',5,5'-Heptachlorobiphenyl 2,2',3,4,4',5',6-Heptachlorobiphenyl 2,2',3,4',5,5',6-Heptachlorobiphenyl 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	1 mL
U-RPCM-8082	PCB Congeners Mixture	4 x 1 mL
NE5570	World Health Organisation (WHO) coplanar & mono-ortho PCB Mix CERTAN® 10 µg/mL of each analyte in iso-Octane Non-ortho PCBs PCB 77 PCB 81 PCB 126 PCB 169 Mono-ortho PCBs PCB 105 PCB 118 PCB 156 PCB 167 PCB 114 PCB 123 PCB 157 PCB 189	1.5 mL
U-RPCM-220-1	WHO - PCB Mixture 10 µg/mL of each isomer in Isooctane PCB 77 ..... 3,3',4,4'-Tetrachlorobiphenyl PCB 81 ..... 3,4,4',5-Tetrachlorobiphenyl PCB 105 ..... 2,3,3',4,4'-Pentachlorobiphenyl PCB 114 ..... 2,3,4,4',5-Pentachlorobiphenyl PCB 118 ..... 2,3',4,4',5-Pentachlorobiphenyl PCB 123 ..... 2',3,4,4',5-Pentachlorobiphenyl PCB 126..... 3,3',4,4',5-Pentachlorobiphenyl PCB 156..... 2,3,3',4,4',5-Hexachlorobiphenyl PCB 157..... 2,3,3',4,4',5'-Hexachlorobiphenyl PCB 167..... 2,3',4,4',5,5'-Hexachlorobiphenyl PCB 169..... 3,3',4,4',5,5'-Hexachlorobiphenyl PCB 189..... 2,3,3',4,4',5,5'-Heptachlorobiphenyl	1 mL
U-RPCM-220	WHO - PCB Mixture	4 x 1 mL
U-RPCM-230-1	ISS PCB Mixture 10 µg/mL of each isomer in Isooctane PCB 28 ..... 2,4,4'-Trichlorobiphenyl PCB 52 ..... 2,2',5,5'-Tetrachlorobiphenyl PCB 95 ..... 2,2',3,5',6-Pentachlorobiphenyl PCB 99 ..... 2,2',4,4',5-Pentachlorobiphenyl PCB 101 ..... 2,2',4,5,5'-Pentachlorobiphenyl PCB 105 ..... 2,3,3',4,4'-Pentachlorobiphenyl PCB 110 ..... 2,3,3',4',6-Pentachlorobiphenyl PCB 118 ..... 2,3',4,4',5-Pentachlorobiphenyl PCB 138 ..... 2,2',3,4,4',5-Hexachlorobiphenyl PCB 146..... 2,2',3,4',5,5'-Hexachlorobiphenyl PCB 149..... 2,2',3,4',5',6-Hexachlorobiphenyl PCB 151..... 2,2',3,5,5',6-Hexachlorobiphenyl PCB 153..... 2,2',4,4',5,5'-Hexachlorobiphenyl PCB 170..... 2,2',3,3',4,4',5-Heptachlorobiphenyl PCB 177..... 2,2',3,3',4',5,6-Heptachlorobiphenyl PCB 180..... 2,2',3,4,4',5,5'-Heptachlorobiphenyl PCB 183..... 2,2',3,4,4',5',6-Heptachlorobiphenyl PCB 187..... 2,2',3,4',5,5',6-Heptachlorobiphenyl	1 mL
U-RPCM-230	ISS PCB Mixture	4 x 1 mL
U-RPCM-240-1	WHO/ISS PCB Mixture 10 µg/mL of each isomer in Isooctane PCB 18 ..... 2,2',5-Trichlorobiphenyl PCB 28 ..... 2,4,4'-Trichlorobiphenyl PCB 31 ..... 2,4',5-Trichlorobiphenyl PCB 44 ..... 2,2',3,5'-Tetrachlorobiphenyl PCB 52 ..... 2,2',5,5'-Tetrachlorobiphenyl PCB 77 ..... 3,3',4,4'-Tetrachlorobiphenyl PCB 81 ..... 3,4,4',5-Tetrachlorobiphenyl PCB 95 ..... 2,2',3,5',6-Pentachlorobiphenyl PCB 99 ..... 2,2',4,4',5-Pentachlorobiphenyl PCB 101 ..... 2,2',4,5,5'-Pentachlorobiphenyl PCB 105 ..... 2,3,3',4,4'-Pentachlorobiphenyl PCB 110 ..... 2,3,3',4',6-Pentachlorobiphenyl PCB 114 ..... 2,3,4,4',5-Pentachlorobiphenyl PCB 118 ..... 2,3',4,4',5-Pentachlorobiphenyl PCB 123 ..... 2',3,4,4',5-Pentachlorobiphenyl PCB 126 ..... 3,3'4,4',5-Pentachlorobiphenyl PCB 128..... 2,2',3,3',4,4'-Hexachlorobiphenyl PCB 138..... 2,2',3,4,4',5'-Hexachlorobiphenyl PCB 146..... 2,2',3,4',5,5'-Hexachlorobiphenyl PCB 149..... 2,2',3,4',5',6-Hexachlorobiphenyl PCB 151..... 2,2',3,5,5',6,-Hexachlorobiphenyl PCB 153..... 2,2',4,4',5,5'-Hexachlorobiphenyl PCB 156..... 2,3,3',4,4',5-Hexachlorobiphenyl PCB 157..... 2,3,3',4,4',5'-Hexachlorobiphenyl PCB 167..... 2,3',4,4',5,5'-Hexachlorobiphenyl PCB 169..... 3,3',4,4',5,5'-Hexachlorobiphenyl PCB 170..... 2,2',3,3',4,4',5-Heptachlorobiphenyl PCB 177..... 2,2',3,3',4',5,6-Heptachlorobiphenyl PCB 180..... 2,2',3,4,4',5,5'-Heptachlorobiphenyl PCB 183..... 2,2',3,4,4',5',6-Heptachlorobiphenyl PCB 187..... 2,2',3,4',5,5',6-Heptachlorobiphenyl PCB 189..... 2,3,3',4,4',5,5'-Heptachlorobiphenyl	1 mL
U-RPCM-240	WHO/ISS PCB Mixture	4 x 1 mL

Code	Product	Unit
U-RPCM-210-1	EN 12766/CEN EN 61619 PCB Calibration Mixture 10 µg/ml of each analyte in iso-Octane (2,2,4-Trimethylpentane). 2,2',5-Trichlorobiphenyl 2,4,4'-Trichlorobiphenyl 2,4',5-Trichlorobiphenyl 2,2',3,5'-Tetrachlorobiphenyl 2,2',5,5'-Tetrachlorobiphenyl 2,2',4,5,5'-Pentachlorobiphenyl 2,3',4,4',5-Pentachlorobiphenyl 2,2',3,4,4',5'-Hexachlorobiphenyl 2,2',3,4',5',6-Hexachlorobiphenyl 2,2',4,4',5,5'-Hexachlorobiphenyl 2,2',3,3',4,4',5-Heptachlorobiphenyl 2,2',3,4,4',5,5'-Heptachlorobiphenyl 2,2',3,3',4,4',5,5'-Octachlorobiphenyl Decachlorobiphenyl	1 mL
U-RPCM-210	EN 12766/CEN EN 61619 PCB Calibration Mixture	4 x 1 mL
U-RPCM-525-1	PCB Mixture 100 µg/mL of each analyte in Acetone 2-Chlorobiphenyl 2,3-Dichlorobiphenyl 2,4,5-Trichlorobiphenyl 2,2',4,4'-Tetrachlorobiphenyl 2,2',3',4,6-Pentachlorobiphenyl 2,2',4,4',5,6'-Hexachlorobiphenyl 2,2',3,3',4,4',6-Heptachlorobiphenyl 2,2',3,3',4,5',6,6'-Octachlorobiphenyl	1 mL
U-RPCM-525	PCB Mixture	4 x 1 mL
U-RPC-DMC-1	Dry Color Manufacturer's Association (DCMA) Mixture 10 analytes in Hexane 2-Chlorobiphenyl..... 100 µg/mL 3,3'-Dichlorobiphenyl ..... 100 µg/mL 2,4,5-Trichlorobiphenyl ..... 10 µg/mL 2,2',4,4'-Tetrachlorobiphenyl..... 10 µg/mL 2,3',4,5',6-Pentachlorobiphenyl..... 10 µg/mL 2,2',3,3',6,6'-Hexachlorobiphenyl ..... 10 µg/mL 2,2',3,4,5,5',6-Heptachlorobiphenyl..... 5 µg/mL 2,2',3,3',4,4',5,5'-Octachlorobiphenyl ..... 5 µg/mL 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl ..... 5 µg/mL Decachlorobiphenyl ..... 5 µg/mL	1 mL
U-RPC-DMC	Dry Color Manufacturer's Association (DCMA) Mixture	4 x 1 mL
NE-N0813	Seven Key Isomers 10 µg/mL of each analyte in Isooctane PCB 28 ..... 2,4,4'-Trichlorobiphenyl PCB 52 ..... 2,2',5,5'-Tetrachlorobiphenyl PCB 101 ..... 2,2',4,5,5'-Pentachlorobiphenyl PCB 118 ..... 2,3',4,4',5-Pentachlorobiphenyl PCB 138.....2,2',3,4,4',5'-Hexachlorobiphenyl PCB 153.....2,2',4,4',5,5'-Hexachlorobiphenyl PCB 180..... 2,2',3,4,4',5,5'-Heptachlorobiphenyl	1.5 mL
NE-N0813-3	Seven Key Isomers	3 x 1.5 mL
NE-N0813-10	Seven Key Isomers	10 mL
SL32100	Six Key PCB Isomers CERTAN® 10 µg/mL of each analyte in iso-Octane PCB 28 ..... 2,4,4'-Trichlorobiphenyl PCB 52 ..... 2,2',5,5'-Tetrachlorobiphenyl PCB 101 ..... 2,2',4,5,5'-Pentachlorobiphenyl PCB 138.....2,2',3,4,4',5'-Hexachlorobiphenyl PCB 153.....2,2',4,4',5,5'-Hexachlorobiphenyl PCB 180..... 2,2',3,4,4',5,5'-Heptachlorobiphenyl	1.5 mL
SL32110	Six Key PCB Isomers 10 µg/mL of each analyte in iso-Octane PCB 28 ..... 2,4,4'-Trichlorobiphenyl PCB 52 ..... 2,2',5,5'-Tetrachlorobiphenyl PCB 101 ..... 2,2',4,5,5'-Pentachlorobiphenyl PCB 138.....2,2',3,4,4',5'-Hexachlorobiphenyl PCB 153.....2,2',4,4',5,5'-Hexachlorobiphenyl PCB 180..... 2,2',3,4,4',5,5'-Heptachlorobiphenyl	10 mL
NE5573	Six Key PCB Isomers CERTAN® 100 µg/ml of each analyte in iso-Octane. PCB 28 ..... 2,4,4'-Trichlorobiphenyl PCB 52 ..... 2,2',5,5'-Tetrachlorobiphenyl PCB 101 ..... 2,2',4,5,5'-Pentachlorobiphenyl PCB 138.....2,2',3,4,4',5'-Hexachlorobiphenyl PCB 153.....2,2',4,4',5,5'-Hexachlorobiphenyl PCB 180..... 2,2',3,4,4',5,5'-Heptachlorobiphenyl	1.5 mL
NE5575	PCB Mix CERTAN® 10 µg/mL of each analyte in iso-Octane. PCB 28 ..... 2,4,4'-Trichlorobiphenyl PCB 52 ..... 2,2',5,5'-Tetrachlorobiphenyl PCB 101 ..... 2,2',4,5,5'-Pentachlorobiphenyl PCB 138 .....2,2',3,4,4',5'-Hexachlorobiphenyl PCB 153.....2,2',4,4',5,5'-Hexachlorobiphenyl PCB 180..... 2,2',3,4,4',5,5'-Heptachlorobiphenyl PCB 209.....Decachlorobiphenyl	1.5 mL

Code	Product	Unit
NE7550	Standard Solution for EN ISO 6468 CERTAN®	1.5 mL

10 µg/mL of each analyte in iso-Octane.

alpha-HCH
beta-HCH
gamma-HCH
delta-HCH
epsilon-HCH
2,4'-DDE
4,4'-DDE
2,4'-TDE
4,4'-TDE
2,4'-DDT
4,4'-DDT
4,4'-Methoxychlor
Aldrin
Dieldrin
Endrin
Heptachlor
Heptachlor epoxide (endo) (isomer A)
Heptachlor epoxide (exo) (isomer B)
alpha-Endosulfan
beta-Endosulfan
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
1,3,5-Trichlorobenzene
1,2,3,4-Tetrachlorobenzene
1,2,3,5-Tetrachlorobenzene
1,2,4,5-Tetrachlorobenzene
Pentachlorobenzene
Hexachlorobenzene
Pentachlornitrobenzene (PCNB)

PCB 28 ..... 2,4,4'-Trichlorobiphenyl
PCB 52 ..... 2,2',5,5'-Tetrachlorobiphenyl
PCB 101 ..... 2,2',4,5,5'-Pentachlorobiphenyl
PCB 138 .....2,2',3,4,4',5'-Hexachlorobiphenyl
PCB 153..... 2,2',4,4',5,5'-Hexachlorobiphenyl
PCB 180..... 2,2',3,4,4',5,5'-Heptachlorobiphenyl
PCB 194.....2,2',3,3',4,4',5,5'-Octachlorobiphenyl

NE-USL 100-5	15 PCB Congener Standard Solution in n-Hexane	5 mL

Prepared for the DIN/CEN draft method on PCBs in Waste Oil 10 µg/mL of each analyte in n-Hexane.

PCB 18 ..... 2,2',5-Trichlorobiphenyl
PCB 20 ..... 2,3,3'-Trichlorobiphenyl
PCB 28 ..... 2,4,4'-Trichlorobiphenyl
PCB 31 ..... 2,4',5-Trichlorobiphenyl
PCB 44 ..... 2,2',3,5'-Tetrachlorobiphenyl
PCB 52 ..... 2,2',5,5'-Tetrachlorobiphenyl
PCB 101 ..... 2,2',4,5,5'-Pentachlorobiphenyl
PCB 105 ..... 2,3,3',4,4'-Pentachlorobiphenyl
PCB 118 ..... 2,3',4,4',5-Pentachlorobiphenyl
PCB 138 ..... 2,2',3,4,4',5'-Hexachlorobiphenyl
PCB 149 ..... 2,2',3,4',5',6-Hexachlorobiphenyl
PCB 153 ..... 2,2',4,4',5,5'-Hexachlorobiphenyl
PCB 170 ..... 2,2',3,3',4,4',5-Heptachlorobiphenyl
PCB 180 ..... 2,2',3,4,4',5,5'-Heptachlorobiphenyl
PCB 194 ..... 2,2',3,3',4,4',5,5'-Octachlorobiphenyl

ERM-AC823	Polychlorinated biphenyls in 2,2,4-trimethylpentane (iso-Octane)	1.2 mL

Certified values

2,4,4'-Trichlorobiphenyl (PCB 28).....703 µg/kg
2,2',5,5'-Tetrachlorobiphenyl (PCB 52).....706 µg/kg
2,2',4,5,5'-Pentachlorobiphenyl (PCB 101).....696 µg/kg
2,3',4,4',5-Pentachlorobiphenyl (PCB 118).....712 µg/kg
2,2',3,4,4',5'-Hexachlorobiphenyl (PCB 138) .....678 µg/kg
2,2',4,4',5,5'-Hexachlorobiphenyl (PCB 153) .....702 µg/kg
2,2',3,4,4',5,5'-Heptachlorobiphenyl (PCB 180).....700 µg/kg

Indicative values for PCB 31, 77, 100, 149, 163, 170, 187 and 194

BCR-365	PCB Standard Solution in iso-Octane	2 x 2 mL

Solvent: 2,2,4-Trimethylpentane (iso-Octane)

Compound	Certified value	Uncertainty
PCB 8	11.4 µg/g	0.4 µg/g
PCB 20	15.2 µg/g	0.5 µg/g
PCB 28	24.8 µg/g	1.1 µg/g
PCB 35	14.3 µg/g	0.8 µg/g
PCB 52	14.8 µg/g	0.6 µg/g
PCB 101	14.4 µg/g	0.6 µg/g
PCB 118	14.9 µg/g	0.8 µg/g
PCB 138	8.6 µg/g	0.6 µg/g
PCB 153	14.2 µg/g	0.6 µg/g
PCB 180	15.2 µg/g	0.6 µg/g

NIST-2274	PCB Congener Solution II in iso-Octane	5 x 1.2 mL

Certified concentrations

PCB 31 ..... 2.929 ± 0.074 mg/kg.....2.021 ± 0.051 µg/mL at 22°C
PCB 49 ..... 2.916 ± 0072 mg/kg.....2.012 ± 0.050 µg/mL at 22°C
PCB 95 ..... 2.925 ± 0.063 mg/kg.....2.018 ± 0.043 µg/mL at 22°C
PCB 99 ..... 2.933 ± 0.062 mg/kg.....2.023 ± 0.043 µg/mL at 22°C
PCB 110 ..... 2.911 ± 0.059 mg/kg.....2.008 ± 0.041 µg/mL at 22°C
PCB 149 ..... 2.911 ± 0.068 mg/kg.....2.008 ± 00.47 µg/mL at 22°C
PCB 151 ..... 2.904 ± 0.064 mg/kg.....2.003 ± 0.044 µg/mL at 22°C
PCB 156 ..... 2.917 ± 0.059 mg/kg.....2.012 ± 0.041 µg/mL at 22°C
PCB 169 ..... 2.902 ± 0.059 mg/kg.....2.002 ± 0.041 µg/mL at 22°C
PCB 183 ..... 2.879 ± 0.059 mg/kg.....1.986 ± 0.041 µg/mL at 22°C
PCB 194 ..... 2.889 ± 0.063 mg/kg.....1.993 ± 0.043 µg/mL at 22°C

Code	Product	Unit

NIST-2276 — Three Planar PCB Congeners in iso-Octane — 5 x 1.2 mL

Certified concentrations

PCB 77 ..... 2.927 ± 0.067 mg/kg.....2.019 ± 0.019 µg/mL at 22°C
PCB 126 ..... 2.879 ± 0.067 mg/kg.....1.986 ± 0.044 µg/mL at 22°C
PCB 169 ..... 2.971 ± 0.067 mg/kg.....2.050 ±0.046 µg/mL at 22°C

NIST-1493 — PCB Congeners in 2,2,4-Trimethylpentane (iso-Octane) — 5 x 1.2 mL

Compound	Concentration µg/kg	Concentration ng/mL
PCB 18 ..... 2,2',5-Trichlorobiphenyl	290.8 ± 6.8	200.6 ± 4.7
PCB 28 ..... 2,4,4'-Trichlorobiphenyl	288.0 ± 1.7	198.7 ± 1.2
PCB 44 ..... 2,2',3,5'-Tetrachlorobiphenyl	289 ± 16	199 ± 11
PCB 52 ..... 2,2',5,5'-Tetrachlorobiphenyl	285.9 ± 6.0	197.2 ± 4.1
PCB 66 ..... 2,3',4,4'-Tetrachlorobiphenyl	291.9 ± 7.0	201.4 ± 4.8
PCB 77 ..... 3,3',4,4'-Tetrachlorobiphenyl	284.3 ± 2.6	196.2 ± 1.8
PCB 101 ..... 2,2',4,5,5'-Pentachlorobiphenyl	287.8 ± 5.3	198.5 ± 3.6
PCB 105 ..... 2,3,3',4,4'-Pentachlorobiphenyl	286 ± 25	197 ± 17
PCB 126 ..... 3,3',4,4',5-Pentachlorobiphenyl	287.4 ± 3.3	198.3 ± 2.3
PCB 128 ..... 2,2',3,3',4,4'-Hexachlorobiphenyl	290.0 ± 1.9	200.1 ± 1.3
PCB 138 ..... 2,2',3,4,4',5'-Hexachlorobiphenyl	287.1 ± 1.4	198.1 ± 1.0
PCB 153 ..... 2,2',4,4',5,5'-Hexachlorobiphenyl	287.5 ± 5.0	198.4 ± 3.5
PCB 170 ..... 2,2',3,3',4,4',5-Heptachlorobiphenyl	285.3 ± 6.6	196.8 ± 4.6
PCB 180 ..... 2,2',3,4,4',5,5'-Heptachlorobiphenyl	289.2 ± 5.4	199.5 ± 3.8
PCB 187 ..... 2,2',3,4',5,5',6-Heptachlorobiphenyl	285.3 ± 2.0	196.8 ± 1.6
PCB 195 ..... 2,2',3,3',4,4',5,6-Octachlorobiphenyl	289.0 ± 3.3	199.4 ± 2.3
PCB 206 ..... 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	259 ± 12	179.0 ± 8.5
PCB 209 ..... 2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl	289.6 ± 9.4	199.8 ± 6.5

Non-certified concentrations for PCBs 8 and 118 are given in the certificate.

NIST-2262 — PCB Congeners in iso-Octane — 5 x 1.2 mL

Certified concentrations

Compound	Concentration mg/kg
PCB 1 ..... 2-Chlorobiphenyl	2.997 ± 0.041
PCB 8 ..... 1,4'-Dichlorobiphenyl	3.110 ± 0.26
PCB 18 ..... 2,2',5-Trichlorobiphenyl	2.983 ± 0.028
PCB 29 ..... 2,4,5-Trichlorobiphenyl	2.980 ± 0.11
PCB 44 ..... 2,2',3,5'-Tetrachlorobiphenyl	2.977 ± 0.054
PCB 52 ..... 2,2',5,5'-Tetrachlorobiphenyl	2.996 ± 0.034
PCB 66 ..... 3,3',4,4'-Tetrachlorobiphenyl	2.973 ± 0.056
PCB 77 ..... 3,3',4,4'-Tetrachlorobiphenyl	3.040 ± 0.10
PCB 87 ..... 2,2',3,4,5'-Pentachlorobiphenyl	3.000 ± 0.024
PCB 101 ..... 2,2',4,5,5'-Pentachlorobiphenyl	2.950 ± 0.041
PCB 104 ..... 2,2',4,6,6'-Pentachlorobiphenyl	3.007 ± 0.024
PCB 105 ..... 2,3,3',4,4'-Pentachlorobiphenyl	2.960 ± 0.092
PCB 118 ..... 2,3',4,4',5-Pentachlorobiphenyl	2.992 ± 0.095
PCB 126 ..... 3,3',4,4',5-Pentachlorobiphenyl	3.010 ± 0.12
PCB 128 ..... 2,2',3,3',4,4'-Hexachlorobiphenyl	2.985 ± 0.024
PCB 138 ..... 2,2',3,4,4',5'-Hexachlorobiphenyl	2.939 ± 0.035
PCB 153 ..... 2,2',4,4',5,5'-Hexachlorobiphenyl	2.957 ± 0.057
PCB 170 ..... 2,2',3,3',4,4',5-Heptachlorobiphenyl	2.964 ± 0.049
PCB 180 ..... 2,2',3,4,4',5,5'-Heptachlorobiphenyl	2.986 ± 0.029
PCB 187 ..... 2,2',3,4',5,5',6-Heptachlorobiphenyl	2.967 ± 0.027
PCB 188 ..... 2,2',3,4',5,6,6'-Heptachlorobiphenyl	3.008 ± 0.050
PCB 195 ..... 2,2',3,3',4,4',5,6-Octachlorobiphenyl	2.974 ± 0.059
PCB 201 ..... 2.2',3,3',4,5',66,6'-Octachlorobiphenyl	3.001 ± 0.031
PCB 206 ..... 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	2.900 ± 0.054
PCB 209 ..... 2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl	2.989 ± 0.041

Non-certified concentrations of Chlorinated Biphenyl Congeners

PCB 28 ..... 2,4,4'-Trichlorobiphenyl	3.00 ± 0.15
PCB 50 ..... 2,2',4,6-Tetrachlorobiphenyl	3.01 ± 0.12
PCB 154 ..... 2,2',4,4',6,6'-Hexachlorobiphenyl	2.95 ± 0.10
PCB 194 ..... 2,2',3,3',4,4',5,5'-Octachlorobiphenyl	0.32 ± 0.02

Code	Product	Unit
New NIST-2259	PCB Congeners in 2,2,4-Trimethylpentane	5 x 1.2 mL

Certified values

IUPAC #	Compound*	CAS Registry No.	Concentration
PCB 8	2,4'-Dichlorobiphenyl	34883-43-7	2.21 ± 0.18 µg/g
PCB 18	2,2',5-Trichlorobiphenyl	37680-65-2	2.00 ± 0.14 µg/g
PCB 28	2,4,4'-Trichlorobiphenyl	7012-37-5	1.99 ± 0.14 µg/g
PCB 29	2,4,5-Trichlorobiphenyl	15862-07-4	0.363 ± 0.025 µg/g
PCB 31	2,4',5-Trichlorobiphenyl	16606-02-3	4.20 ± 0.24 µg/g
PCB 44	2,2',3,5'-Tetrachlorobiphenyl	41464-39-5	2.53 ± 0.11 µg/g
PCB 45	2,2',3,6-Tetrachlorobiphenyl	70362-45-7	0.574 ± 0.025 µg/g
PCB 49	2,2',4,5'-Tetrachlorobiphenyl	41464-40-8	3.41 ± 0.14 µg/g
PCB 52	2,2',5,5'-Tetrachlorobiphenyl	35693-99-3	5.05 ± 0.47 µg/g
PCB 56	2,3,3',4'-Tetrachlorobiphenyl	41464-43-1	4.18 ± 0.28 µg/g
PCB 63	2,3,4',5-Tetrachlorobiphenyl	74472-34-7	1.039 ± 0.023 µg/g
PCB 66	2,3',4,4'-Tetrachlorobiphenyl	32598-10-0	6.34 ± 0.24 µg/g
PCB 70	2,3',4',5-Tetrachlorobiphenyl	32598-11-1	2.18 ± 0.11 µg/g
PCB 74	2,4,4',5-Tetrachlorobiphenyl	32690-93-0	4.00 ± 0.20 µg/g
PCB 77	3,3',4,4'-Tetrachlorobiphenyl	32598-13-3	0.351 ± 0.015 µg/g
PCB 79	3,3',4,5'-Tetrachlorobiphenyl	41464-48-6	0.610 ± 0.034 µg/g
PCB 82	2,2',3,3',4-Pentachlorobiphenyl	52663-62-4	0.845 ± 0.018 µg/g
PCB 87	2,2',3,4,5'-Pentachlorobiphenyl	38380-02-8	3.65 ± 0.17 µg/g
PCB 92	2,2',3,5,5'-Pentachlorobiphenyl	52663-61-3	2.22 ± 0.12 µg/g
PCB 95	2,2',3,5',6-Pentachlorobiphenyl	38379-99-6	5.84 ± 0.42 µg/g
PCB 99	2,2',4,4',5-Pentachlorobiphenyl	38380-01-7	12.61 ± 0.66 µg/g
PCB 101	2,2',4,5,5'-Pentachlorobiphenyl	37680-73-2	7.45 ± 0.56 µg/g
PCB 105	2,3,3',4,4'-Pentachlorobiphenyl	32598-14-4	5.90 ± 0.26 µg/g
PCB 106	2,3,3',4,5-Pentachlorobiphenyl	70424-69-0	0.314 ± 0.044 µg/g
PCB 109	2,3,3',4',5-Pentachlorobiphenyl BZ#107	70424-68-9	1.814 ± 0.068 µg/g
PCB 110	2,3,3',4',6-Pentachlorobiphenyl	38380-03-9	8.45 ± 0.58 µg/g
PCB 112	2,3,3',5,6-Pentachlorobiphenyl	74472-36-9	0.527 ± 0.026 µg/g
PCB 114	2,3,4,4',5-Pentachlorobiphenyl	74472-37-0	0.667 ± 0.043 µg/g
PCB 118	2,3',4,4',5-Pentachlorobiphenyl	31508-00-6	20.79 ± 0.60 µg/g
PCB 119	2,3',4,4',6-Pentachlorobiphenyl	56558-17-9	0.402 ± 0.045 µg/g
PCB 121	2,3',4,5',6-Pentachlorobiphenyl	56558-18-0	0.355 ± 0.008 µg/g
PCB 126	3,3',4,4',5-Pentachlorobiphenyl	57465-28-8	0.317 ± 0.011 µg/g
PCB 127	3,3',4,5,5'-Pentachlorobiphenyl	39635-33-1	0.811 ± 0.050 µg/g
PCB 128	2,2',3,3',4,4'-Hexachlorobiphenyl	38380-07-3	5.39 ± 0.14 µg/g
PCB 130	2,2',3,3',4,5'-Hexachlorobiphenyl	52663-66-8	1.181 ± 0.078 µg/g
PCB 132	2,2',3,3',4,6'-Hexachlorobiphenyl	38380-05-1	2.91 ± 0.22 µg/g
PCB 137	2,2',3,4,4',5-Hexachlorobiphenyl	35694-06-5	0.964 ± 0.048 µg/g
PCB 138	2,2',3,4,4',5'-Hexachlorobiphenyl	35065-28-2	31.2 ± 1.8 µg/g
PCB 146	2,2',3,4',5,5'-Hexachlorobiphenyl	51908-16-8	7.04 ± 0.15 µg/g
PCB 149	2,2',3,4',5',6-Hexachlorobiphenyl	38380-04-0	9.30 ± 0.91 µg/g
PCB 151	2,2',3,5,5',6-Hexachlorobiphenyl	52663-63-5	4.30 ± 0.22 µg/g
PCB 153	2,2',4,4',5,5'-Hexachlorobiphenyl	35065-27-1	53.3 ± 3.0 µg/g
PCB 154	2,2',4,4',5,6'-Hexachlorobiphenyl	60145-22-4	2.43 ± 0.20 µg/g
PCB 156	2,3,3',4,4',5-Hexachlorobiphenyl	38380-08-4	1.740 ± 0.045 µg/g
PCB 157	2,3,3',4,4',5'-Hexachlorobiphenyl	69782-90-7	1.263 ± 0.135 µg/g
PCB 158	2,3,3',4,4',6-Hexachlorobiphenyl	74472-42-7	1.459 ± 0.052 µg/g
PCB 159	2,3,3',4,5,5'-Hexachlorobiphenyl	39635-35-3	0.370 ± 0.016 µg/g
PCB 163	2,3,3',4',5,6-Hexachlorobiphenyl	74472-44-9	7.43 ± 0.65 µg/g
PCB 165	2,3,3',5,5',6-Hexachlorobiphenyl	74472-46-1	0.487 ± 0.013 µg/g
PCB 166	2,3,4,4',5,6-Hexachlorobiphenyl	41411-63-6	0.746 ± 0.030 µg/g
PCB 167	2,3',4,4',5,5'-Hexachlorobiphenyl	52663-72-6	1.874 ± 0.047 µg/g
PCB 169	3,3',4,4',5,5'-Hexachlorobiphenyl	32774-16-6	0.285 ± 0.016 µg/g
PCB 170	2,2',3,3',4,4',5-Heptachlorobiphenyl	35065-30-6	6.73 ± 0.30 µg/g
PCB 172	2,2',3,3',4,5,5'-Heptachlorobiphenyl	52663-74-8	1.513 ± 0.036 µg/g
PCB 174	2,2',3,3',4,5,6'-Heptachlorobiphenyl	38411-25-5	2.52 ± 0.11 µg/g
PCB 175	2,2',3,3',4,5',6-Heptachlorobiphenyl	40186-70-7	0.998 ± 0.038 µg/g
PCB 176	2,2',3,3',4,6,6'-Heptachlorobiphenyl	52663-65-7	0.738 ± 0.038 µg/g
PCB 177	2,2',3,3',4',5,6-Heptachlorobiphenyl	52663-70-4	3.09 ± 0.14 µg/g
PCB 178	2,2',3,3',5,5',6-Heptachlorobiphenyl	52663-67-9	2.412 ± 0.086 µg/g
PCB 180	2,2',3,4,4',5,5'-Heptachlorobiphenyl	35065-29-3	20.3 ± 1.2 µg/g
PCB 183	2,2',3,4,4',5',6-Heptachlorobiphenyl	52663-69-1	3.26 ± 0.11 µg/g
PCB 185	2,2',3,4,5,5',6-Heptachlorobiphenyl	52712-05-7	0.369 ± 0.010 µg/g
PCB 187	2,2',3,4',5,5',6-Heptachlorobiphenyl	52663-68-0	16.39 ± 0.74 µg/g
PCB 188	2,2',3,4',5,6,6'-Hepatachlorobiphenyl	74487-85-7	0.399 ± 0.032 µg/g
PCB 189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	39635-31-9	0.498 ± 0.021 µg/g
PCB 191	2,3,3',4,4',5',6-Heptachlorobiphenyl	74472-50-7	0.410 ± 0.009 µg/g
PCB 193	2,3,3',4',5,5',6-Heptachlorobiphenyl	69782-91-8	1.00 ± 0.11 µg/g
PCB 194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl	35694-08-7	3.22 ± 0.28 µg/g
PCB 195	2,2',3,3',4,4',5,6-Octachlorobiphenyl	52663-78-2	1.111 ± 0.084 µg/g
PCB 196	2,2',3,3',4,4',5,6'-Octachlorobiphenyl	42740-50-1	6.28 ± 0.14 µg/g
PCB 197	2,2',3,3',4,4',6,6'-Octachlorobiphenyl	33091-17-7	0.475 ± 0.026 µg/g
PCB 199	2,2',3,3',4,5,5',6'-Octachlorobiphenyl BZ# 201	52663-75-9	2.857 ± 0.082 µg/g
PCB 200	2,2',3,3',4,5,6,6'-Octachlorobiphenyl BZ# 199	52663-73-7	10.37 ± 0.23 µg/g
PCB 201	2,2',3,3',4,5',6,6'-Octachlorobiphenyl BZ# 200	40186-71-8	0.385 ± 0.023
PCB 202	2,2',3,3',5,5',6,6'-Octachlorobiphenyl	2136-99-4	2.667 ± 0.085 µg/g
PCB 205	2,3,3',4,4',5,5',6-Octachlorobiphenyl	74472-53-0	0.429 ± 0.013 µg/g
PCB 206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	40186-72-9	3.01 ± 0.22 µg/g
PCB 207	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	52663-79-3	1.030 ± 0.021 µg/g
PCB 208	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	52663-77-1	1.96 ± 0.11 µg/g
PCB 209	2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl	2051-24-3	2.89 ± 0.25 µg/g

*PCBs are numbered based on the IUPAC numberings scheme which differs from the Ballschmiter and Zell numbering scheme for the PCBs noted in the table.

For labelled PCB Mixtures see section “Environmental contaminant standards from CIL”

PCB metabolites - Chlorohydroxybiphenyls

The PCBs are initially metabolised to chlorohydroxybiphenyls, and work has shown that the compound formed depends on the number of chlorine atoms, their position and the animal involved.

Code	Product	Unit
U-RPM-027	2-Biphenylol	100 mg
U-RPM-028	3-Biphenylol	100 mg
U-RPM-029	4-Biphenylol	100 mg
U-RPM-030	2,2'-Biphenyldiol	100 mg
U-RPM-032	4,4'-Biphenyldiol	100 mg
U-RPM-033	2,5-Biphenyldiol	100 mg
U-RPM-034	3,4-Biphenyldiol	100 mg
U-RPM-001	2-Chloro-4-biphenylol	5 mg
U-RPM-003	3-Chloro-4-biphenylol	10 mg
U-RPM-004	4'-Chloro-4-biphenylol	10 mg
U-RPM-009	2',5'-Dichloro-4-biphenylol	10 mg
U-RPM-010	2',5'-Dichloro-3-biphenylol	10 mg
U-RPM-011	3,5-Dichloro-2-biphenylol	10 mg
U-RPM-013	4,4'-Dichloro-3-biphenylol	10 mg
U-RPM-017	2,2',5'-Trichloro-4-biphenylol	10 mg
U-RPM-018	2',3,5'-Trichloro-2-biphenylol	10 mg
U-RPM-020	2',5,5'-Trichloro-2-biphenylol	10 mg
U-RPM-021	3,4',5-Trichloro-4-biphenylol	5 mg
U-RPM-022	2',3',4',5'-Tetrachloro-4-biphenylol	10 mg
U-RPM-023	2',3',4',5'-Tetrachloro-3-biphenylol	10 mg
U-RPM-024	3,3',5,5'-Tetrachloro-4,4'-biphenyldiol	10 mg
U-RPM-025	2',3',4',5,5'-Pentachloro-2-biphenylol	5 mg

Polychlorinated terphenyls (PCTs)

Three chlorinated terphenyl products were produced:
Aroclor 5442 (42% Chlorine), Aroclor 5460 (60% Chlorine) and Aroclor 5060 (60% Chlorine).

Code	Product	Unit
U-RTP-1A	Chlorinated Terphenyls Kit 1 x 1 mL of each Aroclor Aroclor 5442 ..... 100 µg/mL in Hexane Aroclor 5460 ..... 100 µg/mL in Hexane Aroclor 5060 ..... 100 µg/mL in Hexane	3 x 1 mL
U-RTP-019	4-Chloro-o-terphenyl	10 mg
U-RTP-002	4-Chloro-p-terphenyl	20 mg
U-RTP-014	2,4-Dichloro-p-terphenyl	20 mg
U-RTP-005	2,5-Dichloro-o-terphenyl	10 mg
U-RTP-004	2,5-Dichloro-m-terphenyl	10 mg
U-RTP-003	2,5-Dichloro-p-terphenyl	20 mg
U-RTP-008	2,4,6-Trichloro-p-terphenyl	20 mg
U-RTP-015	2,3,5,6-Tetrachloro-p-terphenyl	10 mg
U-RTP-010	2,4,4'',6-Tetrachloro-p-terphenyl	10 mg
U-RTP-016	2,3,4,5,6-Pentachloro-p-terphenyl	10 mg
U-RTP-011	Tetradecachloro-m-terphenyl	25 mg
U-RTP-018	2,2''',5,5'''-Tetrachloro-p,p-quaterphenyl	5 mg

Polychlorinated naphthalenes

Introduction

The polychlorinated naphthalenes (PCNs) have been long recognised as persistent, ubiquitous environmental pollutants. Their presence in the environment is largely the result of the use of technical products, such as the Halowax series, as flame retardants and dielectric fluids.

Code	Product	Unit
Industrial products		
U-HPCK-2F	Halowax 1000 100 µg/mL in Hexane	2 mL
U-HPCK-2G	Halowax 1001 100 µg/mL in Hexane	2 mL
U-HPCK-2E	Halowax 1013 100 µg/mL in Hexane	2 mL
U-HPCK-2C	Halowax 1051 100 µg/mL in Hexane	2 mL
U-HPCK-2D	Halowax 1099 100 µg/mL in Hexane	2 mL
Single congeners		
U-RCN-002	1-Chloronaphthalene	100 mg
CIL-ECN-2610	1-Chloronaphthalene 100 µg/mL in Nonane (Chemical purity: 90%, 10% 2-Monochloronaphthalene)	1 mL
U-RCN-003	2-Chloronaphthalene	100 mg
CIL-ECN-2611	2-Chloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2620	1,2-Dichloronaphthalene 100 µg/mL in Nonane (Chemical purity: 92%)	1 mL
U-RCN-005	1,4-Dichloronaphthalene	25 mg
CIL-ECN-2621	1,4-Dichloronaphthalene 100 µg/mL in Nonane (Chemical purity: 92%)	1 mL
U-RCN-006	1,5-Dichloronaphthalene	25 mg
CIL-ECN-2622	1,5-Dichloronaphthalene 100 µg/mL in Nonane (Chemical purity: 91%)	1 mL
CIL-ECN-2623	1,8-Dichloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2624	2,3-Dichloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2630	1,2,3-Trichloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2640	1,2,3,4-Tetrachloronaphthalene 100 µg/ml in Nonane	1 mL
CIL-ECN-5240	1,2,3,4-Tetrachloronaphthalene ($^{13}C_{10}$,99%) (Chemical purity: 96%) 10 µg/mL in Isooctane	1.2 mL
CIL-ECN-2642	1,2,5,6-Tetrachloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2641	1,3,5,7-Tetrachloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-5241	1,3,5,7-Tetrachloronaphthalene ($^{13}C_{10}$,99%) 10 µg/mL in Isooctane	1.2 mL
CIL-ECN-2643	2,3,6,7-Tetrachloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2652	1,2,3,4,6-Pentachloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2651	1,2,3,5,7-Pentachloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-5250	1,2,3,5,7-Pentachloronaphthalene ($^{13}C_{10}$,99%) 10 µg/mL in Isooctane	1.2 mL
CIL-ECN-2650	1,2,3,5,8-Pentachloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2653	1,2,3,6,7-Pentachloronaphthalene 100 µg/mL in Nonane (Chemical purity: 96%)	1 mL
CIL-ECN-5260	1,2,3,4,5,7-Hexachloronaphthalene ($^{13}C_{10}$,99%) 10 µg/mL in Isooctane	1.2 mL
CIL-ECN-2660	1,2,3,4,6,7-Hexachloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2663	1,2,3,5,6,7-Hexachloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-5261	1,2,3,5,6,7-Hexachloronaphthalene ($^{13}C_{10}$,98%) 10 µg/mL in Isoocctane (contains 0.2% native)	1.2 mL
CIL-ECN-2664	1,2,3,5,6,8-Hexachloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2662	1,2,3,5,7,8-Hexachloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2665	1,2,3,6,7,8-Hexachloronaphthalene 100 µg/mL in Nonane (Chemical purity: 97%)	1 mL
CIL-ECN-2666	1,2,4,5,6,8-Hexachloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2661	1,2,4,5,7,8-Hexachloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2670	1,2,3,4,5,6,7-Heptachloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-5270	1,2,3,4,5,6,7-Heptachloronaphthalene ($^{13}C_{10}$,98%) 10 µg/mL in Isooctane (contains 2% native)	1.2 mL

Code	Product	Unit
CIL-ECN-2671	1,2,3,4,5,6,8-Heptachloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2680	Octachloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-5280	Octachloronaphthalene ($^{13}C_{10}$,99%) 10 µg/mL in Isooctane	1.2 mL
CIL-ECN-5178	Tetra-Octa PCN Mixture Solvent: Nonane 1,2,3,4-Tetrachloronaphthalene..... 1 µg/mL 1,3,5,7-Tetrachloronaphthalene..... 1 µg/mL 1,2,3,5,7-Pentachloronaphthalene..... 1 µg/mL 1,2,3,5,6,7-Hexachloronaphthalene..... 1 µg/mL 1,2,3,4,5,6,7-Heptachloronaphthalene..... 1 µg/mL Octachloronaphthalene..... 1 µg/mL	1.2 mL
CIL-ECN-5102	Tetra-Octa PCN Mixture Solvent: Isooctane 1,2,3,4-Tetrachloronaphthalene ($^{13}C_{10}$,99%).....1.0 µg/mL 1,3,5,7-Tetrachloronaphthalene ($^{13}C_{10}$,99%).....1.0 µg/mL 1,2,3,5,7-Pentachloronaphthalene ($^{13}C_{10}$,99%).....1.0 µg/mL 1,2,3,5,6,7-Hexachloronaphthalene ($^{13}C_{10}$,98%).....1.0 µg/mL 1,2,3,4,5,6,7-Heptachloronaphthalene ($^{13}C_{10}$,98%).....1.0 µg/mL Octachloronaphthalene ($^{13}C_{10}$,99%).....1.0 µg/mL	1.2 mL

Polychlorinated benzenes

Chlorobenzenes are multipurpose industrial chemicals used as solvents for oils, fats, waxes, resins, ethyl cellulose and synthetic rubbers. They are also used in the synthesis of insecticides, dyes, pharmaceutical actives and perfumes.

Code	Product	Unit
Chlorobenzenes		
IPO 087	Chlorobenzene	250 mg
U-RCP-020	Chlorobenzene	100 mg
U-HC-050-1	Chlorobenzene 100 µg/mL in Methanol	1 mL
U-HC-050	Chlorobenzene 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1014	Chlorobenzene 1000 µg/mL in Methanol	1 mL
IPO 134	1,2-Dichlorobenzene	250 mg
U-RCP-021	1,2-Dichlorobenzene	100 mg
U-HC-110-1	1,2-Dichlorobenzene 100 µg/mL in Methanol	1 mL
U-HC-110	1,2-Dichlorobenzene 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1102	1,2-Dichlorobenzene 1000 µg/mL in Methanol	1 mL
IPO 135	1,3-Dichlorobenzene	250 mg
U-RCP-022	1,3-Dichlorobenzene	100 mg
U-HC-120-1	1,3-Dichlorobenzene 100 µg/mL in Methanol	1 mL
U-HC-120	1,3-Dichlorobenzene 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1103	1,3-Dichlorobenzene 5000 µg/mL in Methanol	1 mL
IPO 136	1,4-Dichlorobenzene	250 mg
U-RCP-023	1,4-Dichlorobenzene	100 mg
U-HC-130-1	1,4-Dichlorobenzene 100 µg/mL in Methanol	1 mL
U-HC-130	1,4-Dichlorobenzene 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1104	1,4-Dichlorobenzene 5000 µg/mL in Methanol	1 mL
IPO 756	1,2,3-Trichlorobenzene	250 mg
U-RCP-024	1,2,3-Trichlorobenzene	100 mg
U-HC-420-1	1,2,3-Trichlorobenzene 100 µg/mL in Methanol	1 mL
U-HC-420	1,2,3-Trichlorobenzene 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1051	1,2,3-Trichlorobenzene 5000 µg/mL in Methanol	1 mL
IPO 757	1,2,4-Trichlorobenzene	250 mg
U-RCP-025	1,2,4-Trichlorobenzene	100 mg
U-CH-190-1	1,2,4-Trichlorobenzene 100 µg/mL in Methanol	1 mL
U-CH-190	1,2,4-Trichlorobenzene 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1052	1,2,4-Trichlorobenzene 5000 µg/mL in Methanol	1 mL

Polychlorinated benzenes

Code	Product	Unit
IPO 758	1,3,5-Trichlorobenzene	250 mg
U-EPA-1240	1,3,5-Trichlorobenzene 1000 µg/mL in Hexane	1 mL
IPO 725	1,2,3,4-Tetrachlorobenzene	250 mg
U-RCP-027	1,2,3,4-Tetrachlorobenzene	100 mg
U-EPA-1234	1,2,3,4-Tetrachlorobenzene 1000 µg/mL in Hexane	1 mL
IPO 726	1,2,3,5-Tetrachlorobenzene	250 mg
U-RCP-028	1,2,3,5-Tetrachlorobenzene	100 mg
U-EPA-1235	1,2,3,5-Tetrachlorobenzene 1000 µg/mL in Hexane	1 mL
IPO 727	1,2,4,5-Tetrachlorobenzene	250 mg
U-RCP-029	1,2,4,5-Tetrachlorobenzene	100 mg
U-CH-220-1	1,2,4,5-Tetrachlorobenzene 100 µg/mL in Methylene chloride	1 mL
U-CH-220	1,2,4,5-Tetrachlorobenzene 100 µg/mL in Methylene chloride	4 x 1 mL
U-EPA-1160	1,2,4,5-Tetrachlorobenzene 1000 µg/mL in Acetonitrile	1 mL
IPO 540	Pentachlorobenzene	250 mg
U-RCP-030	Pentachlorobenzene	100 mg
U-CH-210-1	Pentachlorobenzene 100 µg/mL in Methylene chloride	1 mL
U-CH-210	Pentachlorobenzene 100 µg/mL in Methylene chloride	4 x 1 mL
IPO 610	Quintozene	250 mg
IPO 290	Hexachlorobenzene	250 mg
U-RCP-031	Hexachlorobenzene	100 mg
U-CH-151-1	Hexachlorobenzene 100 µg/mL in Methanol	1 mL
U-CH-151	Hexachlorobenzene 100 µg/mL in Methanol	4 x 1 mL
U-CH-150-1	Hexachlorobenzene 100 µg/mL in Methylene chloride	1 mL
U-CH-150	Hexachlorobenzene 100 µg/mL in Methylene chloride	4 x 1 mL
U-EPA-1125	Hexachlorobenzene 1000 µg/mL in Acetone	1 mL
U-FRCK-014	Chlorobenzenes Kit Each kit contains 100 mg each of twelve compounds. Chlorobenzene 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,3,5-Trichlorobenzene 1,2,3,4-Tetrachlorobenzene 1,2,3,5-Tetrachlorobenzene 1,2,4,5-Tetrachlorobenzene Pentachlorobenzene Hexachlorobenzene	kit
NE5730	Chlorobenzene Standard Solution 1 100 µg/mL of each analyte in Cyclohexane Chlorobenzene 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,3,5-Trichlorobenzene 1,2,3,4-Tetrachlorobenzene 1,2,3,5-Tetrachlorobenzene 1,2,4,5-Tetrachlorobenzene Pentachlorobenzene Hexachlorobenzene	1.5 mL
NE7550	Standard Solution for EN ISO 6468 CERTAN® 10 µg/mL of each analyte in iso-Octane. alpha-HCH beta-HCH gamma-HCH delta-HCH epsilon-HCH 2,4'-DDE 4,4'-DDE 2,4'-TDE 4,4'-TDE 2,4'-DDT 4,4'-DDT 4,4'-Methoxychlor Aldrin Dieldrin Endrin Heptachlor Heptachlor epoxide (endo) (isomer A) Heptachlor epoxide (exo) (isomer B) alpha-Endosulfan beta-Endosulfan 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,3,5-Trichlorobenzene 1,2,3,4-Tetrachlorobenzene 1,2,3,5-Tetrachlorobenzene 1,2,4,5-Tetrachlorobenzene Pentachlorobenzene Hexachlorobenzene Pentachlornitrobenzene (PCNB) PCB 28 ..... 2,4,4'-Trichlorobiphenyl PCB 52 ..... 2,2',5,5'-Tetrachlorobiphenyl PCB 101 ..... 2,2',4,5,5'-Pentachlorobiphenyl PCB 138 .....2,2',3,4,4',5'-Hexachlorobiphenyl PCB 153..... 2,2',4,4',5,5'-Hexachlorobiphenyl PCB 180..... 2,2',3,4,4',5,5'-Heptachlorobiphenyl PCB 194.....2,2',3,3',4,4',5,5'-Octachlorobiphenyl	1.5 mL

For isotopically labelled chlorobenzenes see section “Environmental contaminant standards from CIL”.

Flame retardants (technical)

Flame retardants have been used to reduce the flammability and consequent fire risk of polymer plastics. In the late 1950s pentabromobiphenyl oxide was the first aromatic brominated flame retardant to gain commercial significance. Since then a number of other flame retardants have been developed, among them tetrabromobisphenol-A the largest selling brominated flame retardant. Brominated flame retardants have been found in sewage sludge and biological samples. Some investigations had been carried out regarding the formation of polybrominated dibenzofurans and -dioxins from the combustion of polybromobiphenyl ethers.

Code	Product	Unit
U-RBF-075	Hexabromobiphenyl (technical) (Firemaster BP-6, Michigan Chemicals)	10 mg
U-RBF-074	Octabromobiphenyl (technical) (FR250 BA, Dow Chemicals)	50 mg
DE-USC 912S	Pentabromodiphenyloxide (technical) (DE-71-Great Lakes) 50 µg/mL in Methanol CERTAN®	1.5 mL
Polybrominated biphenyls		
U-RBF-076	2-Bromobiphenyl	50 mg
U-RBF-076S	2-Bromobiphenyl 100 µg/mL in Hexane	2 mL
U-RBF-077	3-Bromobiphenyl	50 mg
U-RBF-077S	3-Bromobiphenyl 100 µg/mL in Hexane	2 mL
U-RBF-078	4-Bromobiphenyl	50 mg
U-RBF-078S	4-Bromobiphenyl 100 µg/mL in Hexane	2 mL
U-RBF-081	2,2'-Dibromobiphenyl	50 mg
U-RBF-081S	2,2'-Dibromobiphenyl 100 µg/mL in Hexane	2 mL
U-RBF-082	2,4-Dibromobiphenyl	15 mg
U-RBF-082S	2,4-Dibromobiphenyl 100 µg/mL in Hexane	2 mL
U-RBF-083	2,5-Dibromobiphenyl	15 mg
U-RBF-083S	2,5-Dibromobiphenyl 100 µg/mL in Hexane	2 mL
U-RBF-079S	2,6-Dibromobiphenyl 100 µg/mL in Hexane	2 mL
U-RBF-080	4,4'-Dibromobiphenyl	50 mg
U-RBF-080S	4,4'-Dibromobiphenyl 100 µg/mL in Hexane	2 mL
U-RBF-085	2,2',5-Tribromobiphenyl	10 mg
U-RBF-085S	2,2',5-Tribromobiphenyl 100 µg/mL in Hexane	2 mL
U-RBF-086	2,3',5-Tribromobiphenyl	10 mg
U-RBF-086S	2,3',5-Tribromobiphenyl 100 µg/mL in Hexane	2 mL
U-RBF-097	2,4,5-Tribromobiphenyl	10 mg
U-RBF-097S	2,4,5-Tribromobiphenyl 100 µg/mL in Hexane	2 mL
U-RBF-087	2,4',5-Tribromobiphenyl	10 mg
U-RBF-087S	2,4',5-Tribromobiphenyl 100 µg/mL in Hexane	2 mL
U-RBF-084	2,4,6-Tribromobiphenyl	15 mg
U-RBF-084S	2,4,6-Tribromobiphenyl 100 µg/mL in Hexane	2 mL
U-RBF-098	3,4,5-Tribromobiphenyl	10 mg
U-RBF-098S	3,4,5-Tribromobiphenyl 100 µg/mL in Hexane	2 mL
U-RBF-088S	2,2',4,5'-Tetrabromobiphenyl 100 µg/mL in Hexane	2 mL
U-RBF-089	2,2',5,5'-Tetrabromobiphenyl	20 mg
U-RBF-089S	2,2',5,5'-Tetrabromobiphenyl 100 µg/mL in Hexane	2 mL
U-RBF-091	2,2',5,6'-Tetrabromobiphenyl	20 mg
U-RBF-091S	2,2',5,6'-Tetrabromobiphenyl 100 µg/mL in Hexane	2 mL
U-RBF-090	3,3',5,5'-Tetrabromobiphenyl	20 mg
U-RBF-090S	3,3',5,5'-Tetrabromobiphenyl 100 µg/mL in Hexane	2 mL
U-RBF-092S	2,2',4,5',6-Pentabromobiphenyl 100 µg/mL in Hexane	2 mL
U-RBF-094S	2,2',4,4',5,5'-Hexabromobiphenyl 100 µg/mL in Hexane	2 mL

Code	Product	Unit
U-RBF-093	2,2',4,4',6,6'-Hexabromobiphenyl	5 mg
U-RBF-093S	2,2',4,4',6,6'-Hexabromobiphenyl 100 µg/mL in Hexane	2 mL
U-RBF-102S	Decabromobiphenyl 100 µg/mL in Hexane	2 mL
U-RBF-102	Decabromobiphenyl	50 mg

For isotope labelled and unlabelled brominated diphenyl ether (BDE) standards see "Environmental contaminant standards from CIL" section "Brominated flame retardant standards".

Chlorinated dibenzo-p-dioxins and chlorinated dibenzofurans

Chlorinated dibenzo-p-dioxins

Code	Product	Unit
U-RPE-023	Dibenzo-p-dioxin	25 mg
U-RPE-023S	Dibenzo-p-dioxin 50 µg/mL in Toluene	1 mL
U-RPE-015	1-Chlorodibenzo-p-dioxin	25 mg
U-RPE-015S	1-Chlorodibenzo-p-dioxin 50 µg/mL in Toluene	1 mL
U-RPE-016	2-Chlorodibenzo-p-dioxin	25 mg
U-RPE-016S	2-Chlorodibenzo-p-dioxin 50 µg/mL in Toluene	1 mL
U-RPE-051	2,3-Dichlorodibenzo-p-dioxin	5 mg
U-RPE-051S	2,3-Dichlorodibenzo-p-dioxin 50 µg/mL in Toluene	1 mL
U-RPE-025	2,7-Dichlorodibenzo-p-dioxin	5 mg
U-RPE-025S	2,7-Dichlorodibenzo-p-dioxin 50 µg/mL in Toluene	1 mL
U-RPE-052	2,8-Dichlorodibenzo-p-dioxin	5 mg
U-RPE-052S	2,8-Dichlorodibenzo-p-dioxin 50 µg/mL in Toluene	1 mL
U-RPE-059	1,2,3-Trichlorodibenzo-p-dioxin	5 mg
U-RPE-059S	1,2,3-Trichlorodibenzo-p-dioxin 50 µg/mL in Toluene	1 mL
U-RPE-026	1,2,4-Trichlorodibenzo-p-dioxin	5 mg
U-RPE-026S	1,2,4-Trichlorodibenzo-p-dioxin 50 µg/mL in Toluene	1 mL
U-RPE-053A	2,3,7-Trichlorodibenzo-p-dioxin	5 mg
U-RPE-053S	2,3,7-Trichlorodibenzo-p-dioxin 50 µg/mL in Toluene	1 mL
U-RPE-027	1,2,3,4-Tetrachlorodibenzo-p-dioxin	25 mg
U-RPE-027S	1,2,3,4-Tetrachlorodibenzo-p-dioxin 50 µg/mL in Toluene	1 mL
U-RPE-054A	1,3,6,8-Tetrachlorodibenzo-p-dioxin	5 mg
U-RPE-054S	1,3,6,8-Tetrachlorodibenzo-p-dioxin 50 µg/mL in Toluene	1 mL
U-RPE-060A	1,3,7,8-Tetrachlorodibenzo-p-dioxin	5 mg
U-RPE-060S	1,3,7,8-Tetrachlorodibenzo-p-dioxin 50 µg/mL in Toluene	1 mL
U-RPE-029S	2,3,7,8-Tetrachlorodibenzo-p-dioxin 10 µg/mL in Toluene	1 mL
NIST-3063	2,3,7,8-Tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) in Methan Certified value 2,3,7,8-Tetrachlorodibenzo-p-dioxin ..... 0.410 ± 0.014 mg/kg	5 x 1.2 mL
NIST-1614	2,3,7,8-TCDD in Isooctane Standard reference material (SRM®) 1614 consists of separate solutions of unlabelled and labelled 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) in isooctane. Three ampoules contain approximately 1.2 mL each of an isooctane solution of unlabelled 2,3,7,8-TCDD, and three ampoules contain approximately 1.2 mL isooctane solution of ^{13}C-labelled 2,3,7,8-TCDD. Certified concentration 2,3,7,8-TCDD..... 98.2 ± 3.3 ng/g 2,3,7,8-TCDD-$^{13}C_{12}$..... 95.6 ± 1.5 ng/g	6 x 1.2 mL
U-RPE-055A	1,2,3,4,7-Pentachlorodibenzo-p-dioxin	5 mg
U-RPE-055S	1,2,3,4,7-Pentachlorodibenzo-p-dioxin 50 µg/mL in Toluene	1 mL
U-RPE-056A	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	5 mg
U-RPE-056S	1,2,3,7,8-Pentachlorodibenzo-p-dioxin 50 µg/mL in Toluene	1 mL
U-RPE-057A	1,2,4,7,8-Pentachlorodibenzo-p-dioxin	5 mg
U-RPE-057S	1,2,4,7,8-Pentachlorodibenzo-p-dioxin 50 µg/mL in Toluene	1 mL
U-RPE-058A	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	5 mg

Code	Product	Unit
U-RPE-058S	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin 50 µg/mL in Toluene	1 mL
U-RPE-063A	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	5 mg
U-RPE-063S	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin 50 µg/mL in Toluene	1 mL
U-RPE-017A	Octachlorodibenzo-p-dioxin	50 mg
U-RPE-017S	Octachlorodibenzo-p-dioxin 50 µg/mL in Toluene	1 mL

Chlorinated dibenzofurans

U-RPE-022	Dibenzofuran	50 mg
U-RPE-022S	Dibenzofuran 50 µg/mL in Toluene	1 mL
U-RPE-030	2-Chlorodibenzofuran	5 mg
U-RPE-030S	2-Chlorodibenzofuran 50 µg/mL in Toluene	1 mL
U-RPE-032	2,4-Dichlorodibenzofuran	5 mg
U-RPE-032S	2,4-Dichlorodibenzofuran 50 µg/mL in Toluene	1 mL
U-RPE-033	2,6-Dichlorodibenzofuran	5 mg
U-RPE-033S	2,6-Dichlorodibenzofuran 50 µg/mL in Toluene	1 mL
U-RPE-018	2,8-Dichlorodibenzofuran	10 mg
U-RPE-018S	2,8-Dichlorodibenzofuran 50 µg/mL in Toluene	1 mL
U-RPE-036	2,3,8-Trichlorodibenzofuran	5 mg
U-RPE-036S	2,3,8-Trichlorodibenzofuran 50 µg/mL in Toluene	1 mL
U-RPE-034	2,4,6-Trichlorodibenzofuran	5 mg
U-RPE-034S	2,4,6-Trichlorodibenzofuran 50 µg/mL in Toluene	1 mL
U-RPE-035	2,4,8-Trichlorodibenzofuran	5 mg
U-RPE-035S	2,4,8-Trichlorodibenzofuran 50 µg/mL in Toluene	1 mL
U-RPE-039A	1,2,3,4-Tetrachlorodibenzofuran	5 mg
U-RPE-039S	1,2,3,4-Tetrachlorodibenzofuran 50 µg/mL in Toluene	1 mL
U-RPE-040A	1,3,7,8-Tetrachlorodibenzofuran	5 mg
U-RPE-040S	1,3,7,8-Tetrachlorodibenzofuran 50 µg/mL in Toluene	1 mL
U-RPE-037	2,3,7,8-Tetrachlorodibenzofuran	1 mg
U-RPE-037S	2,3,7,8-Tetrachlorodibenzofuran 50 µg/mL in Toluene	1 mL
U-RPE-041A	1,2,3,4,8-Pentachlorodibenzofuran	5 mg
U-RPE-041S	1,2,3,4,8-Pentachlorodibenzofuran 50 µg/mL in Toluene	1 mL
U-RPE-042A	1,2,3,7,8-Pentachlorodibenzofuran	5 mg
U-RPE-042S	1,2,3,7,8-Pentachlorodibenzofuran 50 µg/mL in Toluene	1 mL
U-RPE-043A	1,2,3,4,7,8-Hexachlorodibenzofuran	5 mg
U-RPE-043S	1,2,3,4,7,8-Hexachlorodibenzofuran 50 µg/mL in Toluene	1 mL
U-RPE-044A	1,2,3,4,6,7,8-Heptachlorodibenzofuran	5 mg
U-RPE-044S	1,2,3,4,6,7,8-Heptachlorodibenzofuran 50 µg/mL in Toluene	1 mL
U-RPE-019A	Octachlorodibenzofuran	50 mg
U-RPE-019S	Octachlorodibenzofuran 50 µg/mL in Toluene	1 mL

Isotope labelled and unlabelled chlorinated dibenzo-p-dioxins see also "Environmental contaminant standards from CIL" section "Dioxin and furan standards".

Code	Product	Unit

Dioxin/Furan multicomponent standard solutions

BCR-614	Solutions of Polychlorodibenzo-p-dioxins and Polychlorodibenzofurans in n-Nonane (EN 1948)	set

The set consists of 11 ampoules, one of BCR-614S2, BCR-614S4-9 and two of BCR-614S1 and BCR-614S3.

The nine solutions of natural and labelled PCDD and PCDF congeners in n-nonane are presented in brown glass ampoules sealed under helium gas. Ampoules S1 to S7 contain about 1 mL solution and ampoule S8 about 0.5 mL. Solutions S1-8 are supplied in one set together with a non-certified solution S9 intended to verify performance of the chromatographic separation system.

The solutions BCR 614 S1 to S5 are intended as GC-HRMS calibration solutions and are ready for use. An additional solution S0 is available separately for very low level determinations. To apply solutions BCR 614 S6 to S8 in accordance with the European Standard EN 1948, appropriate dilutions should be prepared following the recommendations given in the latter document. Solution BCR 614 S9 may serve to check the instrumental performance, particularly with regard to the chromatographic separation of the 2,3,7,8-Cl substituted congeners from potential interfering compounds. With the current technology, the separation of all analytes from interfering isomers in environmental samples requires the analysis to be performed on at least two capillary columns with different polarity. More details are given in the certification report of BCR-614 in the chapter on instructions for use.

Certified purity of the individual ^{12}C and ^{13}C labeled PCDD and PCDF congeners used for the preparation of the solutions

Congener	Purity (%)	Uncertainty (%)
2,3,7,8-T_4CDD	96.4	2.7
1,2,3,7,8-P_5CDD	97.3	1.1
1,2,3,4,7,8-H_6CDD	94.6	1.9
1,2,3,6,7,8-H_6CDD	98.2	0.6
1,2,3,7,8,9-H_6CDD	97.9	1.0
1,2,3,4,6,7,8-H_7CDD	98.1	0.4
1,2,3,4,6,7,8,9-O_8CDD	99.8	0.3
2,3,7,8-T_4CDF	99.5	0.4
1,2,3,7,8-P_5CDF	98.7	1.1
2,3,4,7,8-P_5CDF	99.6	0.5
1,2,3,4,7,8-H_6CDF	97.8	0.6
1,2,3,6,7,8-H_6CDF	99.7	0.5
1,2,3,7,8,9-H_6CDF	96.4	1.1
2,3,4,6,7,8-H_6CDF	98.4	0.8
1,2,3,4,6,7,8-H_7CDF	99.8	0.3
1,2,3,4,7,8,9-H_7CDF	98.8	0.5
1,2,3,4,6,7,8,9-O_8CDF	99.2	1.6
13C-2,3,7,8-T_4CDD	98.6	0.3
13C-1,2,3,7,8-P_5CDD	98.6	0.5
13C-1,2,3,4,7,8-H_6CDD	99.1	0.3
13C-1,2,3,6,7,8-H_6CDD	96.7	0.5
13C-1,2,3,7,8,9-H_6CDD	99.1	0.4
13C-1,2,3,4,6,7,8-H_7CDD	99.3	1.3
13C-1,2,3,4,6,7,8,9-O_8CDD	98.6	0.2
13C-2,3,7,8-T_4CDF	99.8	0.4
13C-1,2,3,7,8-P_5CDF	99.6	0.4
13C-2,3,4,7,8-P_5CDF	99.5	0.3
13C-1,2,3,4,7,8-H_6CDF	98.8	0.3
13C-1,2,3,6,7,8-H_6CDF	99.5	0.5
13C-1,2,3,7,8,9-H_6CDF	98.2	0.5
13C-2,3,4,6,7,8-H_6CDF	99.6	0.4
13C-1,2,3,4,6,7,8-H_7CDF	99.8	0.3
13C-1,2,3,4,7,8,9-H_7CDF	99.3	0.8
13C-1,2,3,4,6,7,8,9-O_8CDF	99.6	0.8
13C-1,2,3,4-T_4CDD	99.2	0.3

Code	Product	Unit
BCR-614S1	Solution of Polychlorodibenzo-p-dioxins and Polychlorodibenzofurans in n-Nonane	Amp.

	Certified values	Indicative values
2,3,7,8-T_4CDD	0.000273 mg/kg	0.196 µg/L
1,2,3,7,8-P_5CDD	0.001394 mg/kg	1.000 µg/L
1,2,3,4,7,8-HCDD	0.00137 mg/kg	0.986 µg/L
1,2,3,6,7,8-HCDD	0.001391 mg/kg	0.998 µg/L
1,2,3,7,8,9-HCDD	0.001408 mg/kg	1.011 µg/L
1,2,3,4,6,7,8-HCDD	0.00280 mg/kg	2.006 µg/L
1,2,3,4,6,7,8,9-O_8CDD	0.002787 mg/kg	2.000 µg/L
2,3,7,8-T_4CDF	0.000279 mg/kg	002 µg/L
1,2,3,7,8-P_5CDF	0.001412 mg/kg	1.013 µg/L
2,3,4,7,8-P_5CDF	0.001395 mg/kg	1.001 µg/L
1,2,3,4,7,8-HCDF	0.001398 mg/kg	1.003 µg/L
1,2,3,6,7,8-HCDF	0.001393 mg/kg	1.000 µg/L
1,2,3,7,8,9-HCDF	0.001397 mg/kg	1.002 µg/L
2,3,4,6,7,8-HCDF	0.001387 mg/kg	0.995 µg/L
1,2,3,4,6,7,8-HCDF	0.002787 mg/kg	2.000 µg/L
1,2,3,4,7,8,9-HCDF	0.00278 mg/kg	2.00 µg/L
1,2,3,4,6,7,8,9-O_8CDF	0.00279 mg/kg	2.00 µg/L
13C-2,3,7,8-T_4CDD	0.01395 mg/kg	10.01 µg/L
13C-1,2,3,7,8-P_5CDD	0.0139 mg/kg	10.00 µg/L
13C-1,2,3,4,7,8-HCDD	0.01398 mg/kg	10.03 µg/L
13C-1,2,3,6,7,8-HCDD	0.01393 mg/kg	10.00 µg/L
13C-1,2,3,7,8,9-HCDD	0.01394 mg/kg	10.01 µg/L
13C-1,2,3,4,6,7,8-HCDD	0.0279 mg/kg	20.0 µg/L
13C-1,2,3,4,6,7,8,9-O_8CDD	0.02786 mg/kg	19.99 µg/L
13C-2,3,7,8-T_4CDF	0.01396 mg/kg	10.01 µg/L
13C-1,2,3,7,8-P_5CDF	0.01393 mg/kg	10.00 µg/L
13C-2,3,4,7,8-P_5CDF	0.01394 mg/kg	10.00 µg/L
13C-1,2,3,4,7,8-HCDF	0.01389 mg/kg	9.97 µg/L
13C-1,2,3,6,7,8-HCDF	0.01393 mg/kg	9.99 µg/L
13C-1,2,3,7,8,9-HCDF	0.01392 mg/kg	9.99 µg/L
13C-2,3,4,6,7,8-HCDF	0.01393 mg/kg	9.99 µg/L
13C-1,2,3,4,6,7,8-HCDF	0.02790 mg/kg	20.02 µg/L
13C-1,2,3,4,7,8,9-HCDF	0.02786 mg/kg	19.99 µg/L
13C-1,2,3,4,6,7,8,9-O_8CDF	0.02787 mg/kg	20.00 µg/L
13C-1,2,3,4-T_4CDD	0.01393 mg/kg	10.00 µg/L

Code	Product	Unit
BCR-614S2	Solution of Polychlorodibenzo-p-dioxins and Polychlorodibenzofurans in n-Nonane	Amp.

	Certified values	Indicative values
2,3,7,8-T_4CDD	0.00109 mg/kg	0.785 µg/L
1,2,3,7,8-P_5CDD	0.00557 mg/kg	4.00 µg/L
1,2,3,4,7,8-HCDD	0.00549 mg/kg	3.94 µg/L
1,2,3,6,7,8-HCDD	0.00556 mg/kg	3.992 µg/L
1,2,3,7,8,9-HCDD	0.00563 mg/kg	4.04 µg/L
1,2,3,4,6,7,8-HCDD	0.01118 mg/kg	8.02 µg/L
1,2,3,4,6,7,8,9-O_8CDD	0.01115 mg/kg	8.000 µg/L
2,3,7,8-T_4CDF	0.001116 mg/kg	0.801 µg/L
1,2,3,7,8-P_5CDF	0.00565 mg/kg	4.05 µg/L
2,3,4,7,8-P_5CDF	0.00558 mg/kg	4.004 µg/L
1,2,3,4,7,8-HCDF	0.00559 mg/kg	4.01 µg/L
1,2,3,6,7,8-HCDF	0.00557 mg/kg	3.999 µg/L
1,2,3,7,8,9-HCDF	0.00559 mg/kg	4.01 µg/L
2,3,4,6,7,8-HCDF	0.00555 mg/kg	3.98 µg/L
1,2,3,4,6,7,8-HCDF	0.01115 mg/kg	8.00 µg/L
1,2,3,4,7,8,9-HCDF	0.01114 mg/kg	7.99 µg/L
1,2,3,4,6,7,8,9-O_8CDF	0.01116 mg/kg	8.01 µg/L
13C-2,3,7,8-T_4CDD	0.01395 mg/kg	10.01 µg/L
13C-1,2,3,7,8-P_5CDD	0.0139 mg/kg	10.00 µg/L
13C-1,2,3,4,7,8-HCDD	0.01398 mg/kg	10.03 µg/L
13C-1,2,3,6,7,8-HCDD	0.01393 mg/kg	10.00 µg/L
13C-1,2,3,7,8,9-HCDD	0.01394 mg/kg	10.01 µg/L
13C-1,2,3,4,6,7,8-HCDD	0.0279 mg/kg	20.0 µg/L
13C-1,2,3,4,6,7,8,9-O_8CDD	0.02786 mg/kg	19.99 µg/L
13C-2,3,7,8-T_4CDF	0.01396 mg/kg	10.01 µg/L
13C-1,2,3,7,8-P_5CDF	0.01393 mg/kg	10.00 µg/L
13C-2,3,4,7,8-P_5CDF	0.01394 mg/kg	10.00 µg/L
13C-1,2,3,4,7,8-HCDF	0.01389 mg/kg	9.97 µg/L
13C-1,2,3,6,7,8-HCDF	0.01393 mg/kg	9.99 µg/L
13C-1,2,3,7,8,9-HCDF	0.01393 mg/kg	9.99 µg/L
13C-2,3,4,6,7,8-HCDF	0.01393 mg/kg	9.99 µg/L
13C-1,2,3,4,6,7,8-HCDF	0.02790 mg/kg	20.02 µg/L
13C-1,2,3,4,7,8,9-HCDF	0.02786 mg/kg	19.99 µg/L
13C-1,2,3,4,6,7,8,9-O_8CDF	0.02787 mg/kg	20.00 µg/L
13C-1,2,3,4-T_4CDD	0.01393 mg/kg	10.00 µg/L

Code	Product	Unit
BCR-614S3	Solution of Polychlorodibenzo-p-dioxins and Polychlorodibenzofurans in n-Nonane	Amp.

	Certified values	Indicative values
2,3,7,8-T_4CDD	0.00547 mg/kg	3.92 µg/L
1,2,3,7,8-P_5CDD	0.0279 mg/kg	20.0 µg/L
1,2,3,4,7,8-HCDD	0.0275 mg/kg	19.7 µg/L
1,2,3,6,7,8-HCDD	0.02781 mg/kg	19.96 µg/L
1,2,3,7,8,9-HCDD	0.02817 mg/kg	20.21 µg/L
1,2,3,4,6,7,8-HCDD	0.0559 mg/kg	40.1 µg/L
1,2,3,4,6,7,8,9-O_8CDD	0.05574 mg/kg	40.00 µg/L
2,3,7,8-T_4CDF	0.00558 mg/kg	4.003 µg/L
1,2,3,7,8-P_5CDF	0.0282 mg/kg	20.3 µg/L
2,3,4,7,8-P_5CDF	0.02790 mg/kg	20.02 µg/L
1,2,3,4,7,8-HCDF	0.02796 mg/kg	20.06 µg/L
1,2,3,6,7,8-HCDF	0.02787 mg/kg	20.00 µg/L
1,2,3,7,8,9-HCDF	0.0279 mg/kg	20.04 µg/L
2,3,4,6,7,8-HCDF	0.02773 mg/kg	19.90 µg/L
1,2,3,4,6,7,8-HCDF	0.05574 mg/kg	40.00 µg/L
1,2,3,4,7,8,9-HCDF	0.0557 mg/kg	40.0 µg/L
1,2,3,4,6,7,8,9-O_8CDF	0.0558 mg/kg	40.0 µg/L
13C-2,3,7,8-T_4CDD	0.01395 mg/kg	10.01 µg/L
13C-1,2,3,7,8-P_5CDD	0.0139 mg/kg	10.00 µg/L
13C-1,2,3,4,7,8-HCDD	0.01398 mg/kg	10.03 µg/L
13C-1,2,3,6,7,8-HCDD	0.01393 mg/kg	10.00 µg/L
13C-1,2,3,7,8,9-HCDD	0.01395 mg/kg	10.01 µg/L
13C-1,2,3,4,6,7,8-HCDD	0.0279 mg/kg	20.0 µg/L
13C-1,2,3,4,6,7,8,9-O_8CDD	0.02787 mg/kg	20.00 µg/L
13C-2,3,7,8-T_4CDF	0.01396 mg/kg	10.02 µg/L
13C-1,2,3,7,8-P_5CDF	0.01393 mg/kg	10.00 µg/L
13C-2,3,4,7,8-P_5CDF	0.01394 mg/kg	10.01 µg/L
13C-1,2,3,4,7,8-HCDF	0.01390 mg/kg	9.97 µg/L
13C-1,2,3,6,7,8-HCDF	0.01393 mg/kg	10.00 µg/L
13C-1,2,3,7,8,9-HCDF	0.01393 mg/kg	10.00 µg/L
13C-2,3,4,6,7,8-HCDF	0.01393 mg/kg	10.00 µg/L
13C-1,2,3,4,6,7,8-HCDF	0.02791 mg/kg	20.03 µg/L
13C-1,2,3,4,7,8,9-HCDF	0.02787 mg/kg	20.00 µg/L
13C-1,2,3,4,6,7,8,9-O_8CDF	0.02788 mg/kg	20.00 µg/L
13C-1,2,3,4-T_4CDD	0.01393 mg/kg	10.00 µg/L

Code	Product	Unit
BCR-614S4	Solution of Polychlorodibenzo-p-dioxins and Polychlorodibenzofurans in n-Nonane	Amp.

	Certified values	Indicative values
2,3,7,8-T_4CDD	0.0273 mg/kg	9.6 µg/L
1,2,3,7,8-P_5CDD	0.1393 mg/kg	100.0 µg/L
1,2,3,4,7,8-HCDD	0.137 mg/kg	98.6 µg/L
1,2,3,6,7,8-HCDD	0.1391 mg/kg	99.8 µg/L
1,2,3,7,8,9-HCDD	0.1408 mg/kg	101.1 µg/L
1,2,3,4,6,7,8-HCDD	0.280 mg/kg	200.6 µg/L
1,2,3,4,6,7,8,9-O_8CDD	0.2787 mg/kg	200.0 µg/L
2,3,7,8-T_4CDF	0.02789 mg/kg	20.02 µg/L
1,2,3,7,8-P_5CDF	0.1412 mg/kg	101.3 µg/L
2,3,4,7,8-P_5CDF	0.1395 mg/kg	100.1 µg/L
1,2,3,4,7,8-HCDF	0.1398 mg/kg	100.3 µg/L
1,2,3,6,7,8-HCDF	0.1393 mg/kg	100.0 µg/L
1,2,3,7,8,9-HCDF	0.1396 mg/kg	100.2 µg/L
2,3,4,6,7,8-HCDF	0.1387 mg/kg	99.5 µg/L
1,2,3,4,6,7,8-HCDF	0.2787 mg/kg	200.0 µg/L
1,2,3,4,7,8,9-HCDF	0.278 mg/kg	200 µg/L
1,2,3,4,6,7,8,9-O_8CDF	0.279 mg/kg	200 µg/L
13C-2,3,7,8-T_4CDD	0.01395 mg/kg	10.01 µg/L
13C-1,2,3,7,8-P_5CDD	0.0139 mg/kg	10.00 µg/L
13C-1,2,3,4,7,8-HCDD	0.01398 mg/kg	10.03 µg/L
13C-1,2,3,67,8-HCDD	0.01393 mg/kg	10.00 µg/L
13C-1,2,3,7,8,9-HCDD	0.01394 mg/kg	10.01 µg/L
13C-1,2,3,4,6,7,8-HCDD	0.0279 mg/kg	20.0 µg/L
13C-1,2,3,4,6,7,8,9-O_8CDD	0.02786 mg/kg	19.99 µg/L
13C-2,3,7,8-T_4CDF	0.01369 mg/kg	10.01 µg/L
13C-1,2,3,7,8-P_5CDF	0.01393 mg/kg	10.00 µg/L
13C-2,3,4,7,8-P5CDF	0.01394 mg/kg	10.00 µg/L
13C-1,2,3,4,7,8-HCDF	0.01389 mg/kg	9.97 µg/L
13C-1,2,3,6,7,8-HCDF	0.01393 mg/kg	9.99 µg/L
13C-1,2,3,7,8,9-HCDF	0.01392 mg/kg	9.99 µg/L
13C-2,3,4,6,7,8-HCDF	0.01393 mg/kg	9.99 µg/L
13C-1,2,3,4,6,7,8-HCDF	0.02790 mg/kg	20.02 µg/L
13C-1,2,3,4,7,8,9-HCDF	0.02786 mg/kg	19.99 µg/L
13C-1,2,3,4,6,7,8,9-O_8CDF	0.02787 mg/kg	20.00 µg/L
13C-1,2,3,4-T_4CDD	0.01393 mg/kg	10.00 µg/L

Code	Product	Unit

BCR-614S5 — Solution of Polychlorodibenzo-p-dioxins and Polychlorodibenzofurans in n-Nonane — Amp.

	Certified values	Indicative values
2,3,7,8-T_4CDD	0.109 mg/kg	78.5 µg/L
1,2,3,7,8-P_5CDD	0.557 mg/kg	400 µg/L
1,2,3,4,7,8-HCDD	0.549 mg/kg	394 µg/L
1,2,3,6,7,8-HCDD	0.556 mg/kg	399.1 µg/L
1,2,3,7,8,9-HCDD	0.563 mg/kg	404 µg/L
1,2,3,4,6,7,8-HCDD	1.118 mg/kg	802 µg/L
1,2,3,4,6,7,8,9-O_8CDD	1.115 mg/kg	799.9 µg/L
2,3,7,8-T_4CDF	0.1116 mg/kg	80.1 µg/L
1,2,3,7,8-P_5CDF	0.565 mg/kg	405 µg/L
2,3,4,7,8-P_5CDF	0.558 mg/kg	400.4 µg/L
1,2,3,4,7,8-HCDF	0.559 mg/kg	401 µg/L
1,2,3,6,7,8-HCDF	0.557 mg/kg	399.9 µg/L
1,2,3,7,8,9-HCDF	0.559 mg/kg	401 µg/L
2,3,4,6,7,8-HCDF	0.555 mg/kg	398 µg/L
1,2,3,4,6,7,8-HCDF	1.115 mg/kg	800 µg/L
1,2,3,4,7,8,9-HCDF	1.114 mg/kg	799 µg/L
1,2,3,4,6,7,8,9-O_8CDF	1.116 mg/kg	801 µg/L
13C-2,3,7,8-T_4CDD	0.01395 mg/kg	10.01 µg/L
13C-1,2,3,7,8-P_5CDD	0.0139 mg/kg	10.00 µg/L
13C-1,2,3,4,7,8-HCDD	0.01398 mg/kg	10.03 µg/L
13C-1,2,3,6,7,8-HCDD	0.01393 mg/kg	10.00 µg/L
13C-1,2,3,7,8,9-HCDD	0.01395 mg/kg	10.01 µg/L
13C-1,2,3,4,6,7,8-HCDD	0.0279 mg/kg	20.0 µg/L
13C-1,2,3,4,6,7,8,9-O_8CDD	0.02786 mg/kg	19.99 µg/L
13C-2,3,7,8-T_4CDF	0.01396 mg/kg	10.02 µg/L
13C-1,2,3,7,8-P_5CDF	0.01393 mg/kg	10.00 µg/L
13C-2,3,4,7,8-P_5CDF	0.01394 mg/kg	10.00 µg/L
13C-1,2,3,4,7,8-HCDF	0.01389 mg/kg	9.97 µg/L
13C-1,2,3,6,7,8-HCDF	0.01393 mg/kg	9.99 µg/L
13C-1,2,3,7,8,9-HCDF	0.01393 mg/kg	9.99 µg/L
13C-2,3,4,6,7,8-HCDF	0.01393 mg/kg	9.99 µg/L
13C-1,2,3,4,6,7,8-HCDF	0.02790 mg/kg	20.02 µg/L
13C-1,2,3,4,7,8,9-HCDF	0.02786 mg/kg	19.99 µg/L
13C-1,2,3,4,6,7,8,9-O_8CDF	0.02787 mg/kg	20.00 µg/L
13C-1,2,3,4-T_4CDD	0.01393 mg/kg	10.00 µg/L

BCR-614S6 — Solution of Polychlorodibenzofurans in n-Nonane — Amp.

	Certified values	Indicative values
13C-1,2,3,7,8-P_5CDF	0.1393 mg/kg	100.0 µg/L
13C-1,2,3,7,8,9-HCDF	0.1394 mg/kg	100.0 µg/L
13C-1,2,3,4,7,8,9-HCDF	0.2787 mg/kg	200.0 µg/L

BCR-614S7 — Solution of Polychlorodibenzo-p-dioxins and Polychlorodibenzofurans in n-Nonane — Amp.

	Certified values	Indicative values
13C-2,3,7,8-T_4CDD	0.1395 mg/Kg	100.1 µg/L
13C-1,2,3,7,8-P_5CDD	0.139 mg/Kg	99.9 µg/L
13C-1,2,3,4,7,8-HCDD	0.1398 mg/Kg	100.3 µg/L
13C-1,2,3,6,7,8-HCDD	0.1393 mg/Kg	100.0 µg/L
13C-1,2,3,4,6,7,8-HCDD	0.279 mg/Kg	200 µg/L
13C-1,2,3,4,6,7,8,9-O_8CDD	0.2787 mg/Kg	200.0 µg/L
13C-2,3,7,8-T_4CDF	0.1395 mg/Kg	100.1 µg/L
13C-2,3,4,7,8-P_5CDF	0.1392 mg/Kg	99.9 µg/L
13C-1,2,3,4,7,8-HCDF	0.1389 mg/Kg	99.7 µg/L
13C-1,2,3,6,7,8-HCDF	0.1394 mg/Kg	100.0 µg/L
13C-2,3,4,6,7,8-HCDF	0.1394 mg/Kg	100.0 µg/L
13C-1,2,3,4,6,7,8-HCDF	0.2787 mg/Kg	200.0 µg/L
13C-1,2,3,4,6,7,8,9-O_8CDF	0.2787 mg/Kg	200.0 µg/L

BCR-614S8 — Solution of Polychlorodibenzo-p-dioxins in n-Nonane — Amp.

	Certified values	Indicative values
13C-1,2,3,7,8,9-HCDD	0.558 mg/kg	400.5 µg/L
13C-1,2,3,4-T_4CDD	0.5574 mg/kg	400.0 µg/L

Code	Product	Unit
BCR-614SO	Solution of Polychlorodibenzo-p-dioxins and Polychlorodibenzofurans in n-Nonane The solution is intended for very low level determinations of PCDD/Fs, e. g. in case of milk analysis.	Amp.

	Certified values	Indicative values
2,3,7,8-T_4CDD	0.000137 mg/kg	0.0983 µg/L
1,2,3,7,8-P_5CDD	0.000698 mg/kg	0.501 µg/L
1,2,3,4,7,8-HCDD	0.000688 mg/kg	0.494 µg/L
1,2,3,6,7,8-HCDD	0.000696 mg/kg	0.500 µg/L
1,2,3,7,8,9-HCDD	0.000705 mg/kg	0.506 µg/L
1,2,3,4,6,7,8-HCDD	0.001400 mg/kg	1.005 µg/L
1,2,3,4,6,7,8,9-O_8CDD	0.001396 mg/kg	1.001 µg/L
2,3,7,8-T_4CDF	0.0001397 mg/kg	0.1002 µg/L
1,2,3,7,8-P_5CDF	0.000707 mg/kg	0.507 µg/L
2,3,4,7,8-P_5CDF	0.000698 mg/kg	0.501 µg/L
1,2,3,4,7,8-HCDF	0.000700 mg/kg	0.502 µg/L
1,2,3,6,7,8-HCDF	0.000698 mg/kg	0.501 µg/L
1,2,3,7,8,9-HCDF	0.000699 mg/kg	0.502 µg/L
2,3,4,6,7,8-HCDF	0.000694 mg/kg	0.498 µg/L
1,2,3,4,6,7,8-HCDF	0.001396 mg/kg	1.001 µg/L
1,2,3,4,7,8,9-HCDF	0.001394 mg/kg	1.001 µg/L
1,2,3,4,6,7,8,9-O_8CDF	0.001397 mg/kg	1.002 µg/L
13C-2,3,7,8-T_4CDD	0.01395 mg/kg	10.01 µg/L
13C-1,2,3,7,8-P_5CDD	0.0139 mg/kg	10.00 µg/L
13C-1,2,3,4,7,8-HCDD	0.01398 mg/kg	10.03 µg/L
13C-1,2,3,6,7,8-HCDD	0.01394 mg/kg	10.00 µg/L
13C-1,2,3,7,8,9-HCDD	0.01395 mg/kg	10.01 µg/L
13C-1,2,3,4,6,7,8-HCDD	0.0279 mg/kg	20.0 µg/L
13C-1,2,3,4,6,7,8,9-O_8CDD	0.02787 mg/kg	20.00 µg/L
13C-2,3,7,8-T_4CDF	0.01396 mg/kg	10.02 µg/L
13C-1,2,3,7,8-P_5CDF	0.01394 mg/kg	10.00 µg/L
13C-2,3,4,7,8-P_5CDF	0.01395 mg/kg	10.01 µg/L
13C-1,2,3,4,7,8-HCDF	0.01390 mg/kg	9.97 µg/L
13C-1,2,3,6,7,8-HCDF	0.01393 mg/kg	10.00 µg/L
13C-1,2,3,7,8,9-HCDF	0.01393 mg/kg	10.00 µg/L
13C-2,3,4,6,7,8-HCDF	0.01393 mg/kg	10.00 µg/L
13C-1,2,3,4,6,7,8-HCDF	0.02792 mg/kg	20.03 µg/L
13C-1,2,3,4,7,8,9-HCDF	0.02787 mg/kg	20.00 µg/L
13C-1,2,3,4,6,7,8,9-O_8CDF	0.02788 mg/kg	20.01 µg/L
13C-1,2,3,4-T_4CDD	0.01394 mg/kg	10.00 µg/L

Further isotope labelled and unlabelled dioxin and furan mixtures see "Environmental contaminant standards from CIL".

Perfluorinated compounds

Labelled perfluorocarboxylic acids

	Code	Product	Unit
	CIL-CLM-8005-1.2	Perfluorooctanoic acid (PFOA) ($^{13}C_8$,99%) 50 µg/mL in Methanol	1.2 mL
	CIL-CLM-8060-1.2	Perfluorononanoic acid ($^{13}C_9$,99%) 50 µg/mL in Methanol	1.2 mL
New	CIL-CLM-8172-1.2	Perfluorodecanoic acid (PFDA) ($^{13}C_9$,99%) 50 ug/mL in Methanol	1.2 mL

Native perfluorocarboxylic acids

	CIL-ULM-7451-1.2	Perfluorooctanoic acid (PFOA) (unlabelled) 50 µg/mL in Methanol	1.2 mL
	CIL-ULM-8066-1.2	Perfluorononanoic acid (PFNA) (unlabelled) 50 µg/mL in Methanol	1.2 mL
New	CIL-ULM-8067-1.2	Perfluorodecanoic acid (PFDA) (unlabelled) 50 ug/mL in Methanol	1.2 mL
New	CIL-ULM-8084-1.2	Perfluoroundecanoic acid (unlabelled) 50 µg/mL in Methanol	1.2 mL

Hydrocarbons

n-Alkane mixtures

Code	Product	Unit
NIST-2285	Arson Test Mixture in Methylene Chloride	5 x 1.2 mL

This Standard Reference Material (SRM®) is intended primarily for use in the calibration of chromatographic instrumentation used for the classification of an ignitable liquid residue. This SRM® is a solution of 15 compounds, including even carbon number aliphatic hydrocarbons from hexane to tetracosane, toluene, p-xylene, 2-ethyltoluene, 3-ethyltoluene, and 1,2,4-trimethylbenzene in methylene chloride.

Certified values

Compound	CAS Registry No.	Certified concentration
n-Hexane	110-54-3	1.004 ± 0.038 mg/g
n-Octane	111-65-9	1.130 ± 0.040 mg/g
n-Decane	124-18-5	1.015 ± 0.023 mg/g
n-Dodecane	112-40-3	1.371 ± 0.031 mg/g
n-Tetradecane	629-59-4	1.307 ± 0.030 mg/g
n-Hexadecane	544-76-3	1.064 ± 0.030 mg/g
n-Octadecane	593-45-3	1.250 ± 0.043 mg/g
n-Eicosane	112-95-8	1.382 ± 0.047 mg/g
n-Docosane	629-97-0	1.356 ± 0.032 mg/g
n-Tetracosane	646-31-1	1.481 ± 0.046 mg/g
Toluene	108-88-3	1.249 ± 0.046 mg/g
p-Xylene	106-42-3	1.360 ± 0.042 mg/g
2-Ethyltoluene	611-14-3	1.284 ± 0.028 mg/g
3-Ethyltoluene	620-14-4	1.243 ± 0.026 mg/g
1,2,4-Trimethylbenzene	95-63-6	1.249 ± 0.031 mg/g

U-UST-210-1	DRO Mixture (Tennessee/Mississippi)	1 mL

1000 µg/mL of each analyte in Methylene chloride.

n-Decane	n-Tetradecane	n-Octadecane	n-Docosane
n-Undecane	n-Pentadecane	n-Nonadecane	n-Tricosane
n-Dodecane	n-Hexadecane	n-Eicosane	n-Tetracosane
n-Tridecane	n-Heptadecane	n-Heneicosane	n-Pentacosane

U-UST-210	DRO Mixture (Tennessee/Mississippi)	4 x 1 mL
New U-SAK-100-1	GRO Mixture	1 mL

5 Analytes

2000 µg/mL of each analyte in Methanol

n-Hexane (C6)	n-Octane (C8)	n-Decane (C10)
n-Heptane (C7)	n-Nonane (C9)	

New U-SAK-100	GRO Mixture	4 x 1 mL
New U-SMA-310-1	Aliphatic Hydrocarbon Standard	1 mL

14 Analytes

1000 µg/mL of each analyte in Hexane

n-Nonane (C9)	n-Eicosane (C20)
n-Decane (C10)	n-Docosane (C22)
n-Dodecane (C12)	n-Tetracosane (C24)
n-Tetradecane (C14)	n-Hexacosane (C26)
n-Hexadecane (C16)	n-Octacosane (C28)
n-Octadecane (C18)	n-Triacontane (C30)
n-Nonadecane (C19)	n-Hexatriacontane (C36)

New U-SMA-310	Aliphatic Hydrocarbon Standard	4 x 1 mL
NE3613	Alkane Standard Solution CERTAN®	1.5 mL

100 µg/mL of each analyte in Cyclohexane.

n-Decane	n-Octadecane	n-Hexacosane	n-Tetratriacontane
n-Dodecane	n-Eicosane	n-Octacosane	n-Hexatriacontane
n-Tetradecane	n-Docosane	n-Triacontane	n-Octatriacontane
n-Hexadecane	n-Tetracosane	n-Dotriacontane	n-Tetracontane

NE1312	Alkane Standard Solution in CERTAN®	1.5 mL

100 µg/mL of each analyte in Petroleum ether (30 - 60°C).

n-Decane	n-Octadecane	n-Hexacosane	n-Tetratriacontane
n-Dodecane	n-Eicosane	n-Octacosane	n-Hexatriacontane
n-Tetradecane	n-Docosane	n-Triacontane	n-Octatriacontane
n-Hexadecane	n-Tetracosane	n-Dotriacontane	n-Tetracontane

U-SFL-601-1	TRPH Standard (Florida)	1 mL

500 µg/mL of each analyte in Hexane.

n-Octane	n-Octadecane	n-Octacosane	n-Octatriacontane
n-Decane	n-Eicosane	n-Triacontane	n-Tetracontane
n-Dodecane	n-Docosane	n-Dotriacontane	
n-Tetradecane	n-Tetracosane	n-Tetratriacontane	
n-Hexadecane	n-Hexacosane	n-Hexatriacontane	

Code	Product	Unit
U-SFL-601	TRPH Standard (Florida)	4 x 1 mL
New U-SNJ-200-1	TRPH Standard (New Jersey)	1 mL

35 Analytes

500 µg/mL of each analyte in Methylene chloride

n-Octane (C8)	n-Hexacosane (C26)
n-Nonane (C9)	n-Heptacosane (C27)
n-decane (C10)	n-Octacosane (C28)
n-Undecane (C11)	n-Nonacosane (C29)
n-Dodecane (C12)	n-Triacontane (C30)
n-Tridecane (C13)	n-Hentriacontane (C31)
n-Tetradecane (C14)	n-Dotriacontane (C32)
n-Pentadecane (C15)	n-Tritriacontane (C33)
n-Hexadecane (C16)	n-Tetratriacontane (C34)
n-Heptadecane (C17)	n-Pentatriacontane (C35)
n-Octadecane (C18)	n-Hexatriacontane (C36)
n-nonadecane (C19)	n-Heptatriacontane (C37)
n-Eicosane (C20)	n-Octatriacontane (C38)
n-Heneicosane (C21)	n-Nonatriacontane (C39)
n-Docosane (C22)	n-Tetracontane (C40)
n-Tricosane (C23)	Phytane
n-Tetracosane (C24)	Pristane
n-Pentacosane (C25)	

New U-SNJ-200	TRPH Standard (New Jersey)	4 x 1 mL
U-ASTM-110-1	ASTM Method D2887 Column Test Mixture	1 mL

n-Hexane ..... 6 % (w/w)	n-Dodecane ..... 12 % (w/w)	n-Octacosane ..... 1 % (w/w)
n-Heptane ..... 6 % (w/w)	n-Tetradecane ..... 12 % (w/w)	n-Dotriacontane ..... 1 % (w/w)
n-Octane ..... 8 % (w/w)	n-Hexadecane ..... 10 % (w/w)	n-Hexatriacontane..... 1 % (w/w)
n-Nonane ..... 8 % (w/w)	n-Octadecane ..... 5 % (w/w)	n-Tetracontane ..... 1 % (w/w)
n-Decane ..... 12 % (w/w)	n-Eicosane ..... 2 % (w/w)	n-Tetratetracontane ... 1 % (w/w)
n-Undecane ..... 12 % (w/w)	n-Tetracosane ..... 2 % (w/w)	

U-ASTM-110	ASTM Method D2887 Column Test Mixture	4 x 1 mL
NE6951	Alkane Mix 1 CERTAN®	1.5 mL

50 µg/mL of each analyte in Methanol

n-Pentane	n-Octane	n-Undecane	n-Tetradecane
n-Hexane	n-Nonane	n-Dodecane	
n-Heptane	n-Decane	n-Tridecane	

CERERD-062	Diesel Range Organics	1.2 mL

1000 µg/mL of each analyte in Hexane.

n-Decane	n-Hexadecane	n-Docosane	n-Octacosane
n-Dodecane	n-Octadecane	n-Tetracosane	
n-Tetradecane	n-Eicosane	n-Hexacosane	

BTEX mixtures

Code	Product	Unit
U-BTX-100-1	BTEX Mixture	1 mL

100 µg/mL of each analyte in Methanol.

Benzene	Toluene	o-Xylene
Ethylbenzene	m-Xylene	p-Xylene

U-BTX-100	BTEX Mixture	4 x 1 mL
U-BTX-110-1	BTEX Mixture	1 mL

200 µg/mL of each analyte in Methanol

Benzene	Toluene	m-Xylene
Ethylbenzene	o-Xylene	p-Xylene

U-BTX-110	BTEX Mixture	4 x 1 mL
U-BTX-2000N	BTEX Mixture	1 mL

2000 µg/mL in Methanol.

Benzene	Toluene	o-Xylene
Ethylbenzene	m-Xylene	p-Xylene

U-BTX-2000N-4	BTEX Mixture	4 x 1 mL
U-UST-141-1	Revised PVOC Mixture (California)	1 mL

1000 µg/mL of each analyte in Methanol.

Benzene	o-Xylene
Ethylbenzene	m-Xylene
tert-Butylmethyl ether (MTBE)	p-Xylene
Toluene	

U-UST-141	Revised PVOC Mixture (California)	4 x 1 mL

Code	Product	Unit

NE6851 — BTEX Mix 1 CERTAN® — 1.5 mL

Solvent: Methanol

Benzene	50 µg/mL	m-Xylene	50 µg/mL
Toluene	50 µg/mL	p-Xylene	50 µg/mL
Ethylbenzene	50 µg/mL	o-Xylene	50 µg/mL

NE6856 — BTEX Mix 6 CERTAN® — 1.5 mL

Solvent: Methanol

Benzene	50 µg/mL	Cumol	50 µg/mL
Toluene	50 µg/mL	Propylbenzene	50 µg/mL
Ethylbenzene	50 µg/mL	1,2,3-Trimethylbenzene	50 µg/mL
m-Xylene	50 µg/mL	1,2,4-Trimethylbenzene	50 µg/mL
p-Xylene	50 µg/mL	1,3,5-Trimethylbenzene	50 µg/mL
o-Xylene	50 µg/mL	Naphthalene	100 µg/mL
Styrene	50 µg/mL		

NE6857 — BTEX Mix 7 CERTAN® — 1.5 mL

Solvent: Methanol

Benzene	50 µg/mL	Propylbenzene	50 µg/mL
Toluene	50 µg/mL	1,2,3-Trimethylbenzene	50 µg/mL
Ethylbenzene	50 µg/mL	1,2,4-Trimethylbenzene	50 µg/mL
m-Xylene	50 µg/mL	1,3,5-Trimethylbenzene	50 µg/mL
p-Xylene	50 µg/mL	o-Ethyltoluene	50 µg/mL
o-Xylene	50 µg/mL	m-Ethyltoluene	50 µg/mL
Styrene	50 µg/mL	p-Ethyltoluene	50 µg/mL
Cumol	50 µg/mL	Naphthalene	100 µg/mL

NE6857H — Ready-for-use BTEX Mix 7 — 5 amps.

Ready-for-use calibration solutions for headspace analysis are delivered in different types of head space ampoules and are ready for use. When ordering please indicate the type of head space ampoule you need. Each headspace ampoule contains 10 ml of solution. Water with small amounts of methanol is used as the solvent.

Benzene	500 µg/L	Propylbenzene	500 µg/L
Toluene	500 µg/L	1,2,3-Trimethylbenzene	500 µg/L
Ethylbenzene	500 µg/L	1,2,4-Trimethylbenzene	500 µg/L
m-Xylene	500 µg/L	1,3,5-Trimethylbenzene	500 µg/L
p-Xylene	500 µg/L	o-Ethyltoluene	500 µg/L
o-Xylene	500 µg/L	m-Ethyltoluene	500 µg/L
Styrene	500 µg/L	p-Ethyltoluene	500 µg/L
Cumol	500 µg/L	Naphthalene	1000 µg/L

NE4620 — BTEX Standard Solution CERTAN® — 1.5 mL

Solvent: Methanol

Benzene	2000 µg/mL	Toluene	2000 µg/mL	p-Xylene	1000 µg/mL
Ethylbenzene	2000 µg/mL	o-Xylene	2000 µg/mL	m-Xylene	1000 µg/mL

NE4621 — Aromatic Hydrocarbon Mix CERTAN® — 1.5 mL

Solvent: Methanol

Benzene	2000 µg/mL	m-Xylene	1000 µg/mL
Ethylbenzene	2000 µg/mL	Styrene	2000 µg/mL
Toluene	2000 µg/mL	Chlorobenzene	2000 µg/mL
o-Xylene	2000 µg/mL	1,4-Dichlorobenzene	2000 µg/mL
p-Xylene	1000 µg/mL		

NE4630 — Aromatic Hydrocarbon Mix CERTAN® — 1.5 mL

Solvent: Methanol

Benzene	2000 µg/mL	m-Xylene	1000 µg/mL
Ethylbenzene	2000 µg/mL	1,2,3-Trimethylbenzene	2000 µg/mL
Toluene	2000 µg/mL	1,2,4-Trimethylbenzene	2000 µg/mL
o-Xylene	2000 µg/mL	1,3,5-Trimethylbenzene	2000 µg/mL
p-Xylene	1000 µg/mL		

CERERB-039S — BTEX Standard Solution — 4 x 1.2 mL

100 µg/mL of each analyte in Methanol.

Benzene	Toluene	m-Xylene
Ethylbenzene	o-Xylene	p-Xylene

NE4622 — BTEX Standard Solution CERTAN® — 4.5 mL

100 µg/mL of each analyte in Methanol.

Benzene	Toluene	m-Xylene
Ethylbenzene	o-Xylene	p-Xylene

CERERG-005 — Gasoline Range Organics — 1.2 mL

1000 µg/mL of each analyte in Methanol.

Benzene	1,2,4-Trimethylbenzene
Ethylbenzene	1,3,5-Trimethylbenzene
Methyl-t-butyl ether	o-Xylene
Naphthalene	m-Xylene
Toluene	p-Xylene

	Code	Product	Unit
New	U-UST-110-1	GRO Mixture (EPA)	1 mL

9 Analytes

Solvent: Methanol

Benzene	500 µg/mL	1,2,4-Trimethylbenzene	1000 µg/mL
Ethylbenzene	500 µg/mL	2,2,4-Trimethylpentane	1500 µg/mL
n-Heptane	500 µg/mL	o-Xylene	1000 µg/mL
2-Methylpentane	1500 µg/mL	m-Xylene	1000 µg/mL
Toluene	1500 µg/mL		

New	U-UST-110	GRO Mixture (EPA)	4 x 1 mL
New	U-UST-120-1	GRO Mixture	1 mL

9 Analytes

1000 µg/mL of each analyte in Methanol

Benzene	1,2,4-Trimethylbenzene
Ethylbenzene	2,2,4-Trimethylpentane (Isooctane)
3-Methylpentane	o-Xylene
Naphthalene	m-Xylene
Toluene	

New	U-UST-120	GRO Mixture	4 x 1 mL
	NE6905	Haloalkanes/BTEX Mix 5 CERTAN®	1.5 mL

Solvent: Methanol

Dichloromethane	40 µg/mL	m-Xylene	50 µg/mL
trans-Dichloroethene	40 µg/mL	p-Xylene	50 µg/mL
cis-Dichloroethene	120 µg/mL	o-Xylene	50 µg/mL
Chloroform	3 µg/mL	Styrene	50 µg/mL
1,1,1-Trichloroethane	1.5 µg/mL	Cumol	50 µg/mL
Tetrachloromethane	0.2 µg/mL	Propylbenzene	50 µg/mL
Trichloroethene	2.5 µg/mL	1,2,3-Trimethylbenzene	50 µg/mL
Tetrachloroethene	0.5 µg/mL	1,2,4-Trimethylbenzene	50 µg/mL
Benzene	50 µg/mL	1,3,5-Trimethylbenzene	50 µg/mL
Toluene	50 µg/mL	Naphthalene	100 µg/mL
Ethylbenzene	50 µg/mL		

NE6905H	Ready-for-use Haloalkanes/BTEX Mix 5	5 amps.

Ready-for-use calibration solutions for headspace analysis are delivered in different types of head space ampoules and are ready for use. When ordering please indicate the type of head space ampoule you need. Each headspace ampoule contains 10 mL of solution. Water with small amounts of methanol is used as the solvent.

Dichloromethane	400 µg/L	m-Xylene	500 µg/L
trans-Dichloroethene	400 µg/L	p-Xylene	500 µg/L
cis-Dichloroethene	1200 µg/L	o-Xylene	500 µg/L
Chloroform	30 µg/L	Styrene	500 µg/L
1,1,1-Trichloroethane	15 µg/L	Cumol	500 µg/L
Tetrachloromethane	2 µg/L	Propylbenzene	500 µg/L
Trichloroethene	25 µg/L	1,2,3-Trimethylbenzene	500 µg/L
Tetrachloroethene	5 µg/L	1,2,4-Trimethylbenzene	500 µg/L
Benzene	500 µg/L	1,3,5-Trimethylbenzene	500 µg/L
Toluene	500 µg/L	Naphthalene	1000 µg/L
Ethylbenzene	500 µg/L		

NIST-1494	Aliphatic congeners in 2,2,4-Trimethylpentane (Isooctane)	5 x 1.2 mL

Certified values

Compound	CAS Registry No.	Concentration (µg/g)	Concentration (µg/mL)
n-Decane	124-18-5	178.2 ± 4.5	122.9 ± 3.1
n-Undecane	1120-21-4	203.2 ± 5.3	140.2 ± 3.7
n-Dodecane	112-40-3	178.9 ± 4.4	123.4 ± 3.0
n-Tridecane	629-50-5	167.7 ± 3.8	115.7 ± 2.6
n-Tetradecane	629-59-4	166.1 ± 3.8	114.6 ± 2.6
n-Pentadecane	629-62-9	161.9 ± 3.7	111.7 ± 2.6
n-Hexadecane	544-76-3	141.1 ± 3.0	97.3 ± 2.1
n-Heptadecane	629-78-7	131.7 ± 2.9	90.9 ± 2.0
Pristane	1921-70-6	80.5 ± 2.1	55.5 ± 1.4
n-Octadecane	593-45-3	121.9 ± 2.8	84.1 ± 1.9
Phytane	638-36-8	9.31 ± 0.29	6.42 ± 0.20
n-Nonadecane	629-92-5	105.2 ± 2.5	72.6 ± 1.7
n-Eicosane	112-95-8	102.7 ± 4.4	70.9 ± 3.0
n-Docosane	629-97-0	81.8 ± 1.8	56.4 ± 1.2
n-Tetracosane	646-31-1	61.3 ± 1.8	42.3 ± 1.2
n-Hexacosane	630.02-4	44.8 ± 1.2	30.9 ± 0.8
n-Octacosane	646-31-1	30.71 ± 0.95	21.19 ± 0.66
n-Triacontane	638-68-6	21.85 ± 0.65	15.07 ± 0.45
n-Dotriacontane	544-85-4	17.58 ± 0.60	12.13 ± 0.41
n-Tetratriacontane	14167-59-0	15.18 ± 0.43	10.47 ± 0.3

Polycyclic aromatic compounds

Introduction

The Polycyclic Aromatic Compounds (PACs) contain the largest number of confirmed and suspected carcinogenic and/or mutagenic chemical compounds known to man. The term PAC is used to describe both the homocyclic and hetero-cyclic compounds. The parent homocyclic polyaromatic hydrocarbons are well known by abbreviation PAH. Work on these compounds started in the early 1930's when Dibenzo(a,h)anthracene was identified as the first chemical carcinogen, and Benzo(a)pyrene isolated from coal tar as a cancer producing hydrocarbon. The many anthropogenic sources of potential PAC carcinogens led to work on the substituted PAHs - usually nitro, amino, methyl or hydroxy - and on the more polar heterocyclic compounds such as the nitrogen, sulfur or oxygen containing PACs.

Nomenclature

The IUPAC nomenclature has not been followed in all cases. Examples are Benzo(b)fluoranthene, Benzo(a)pyrene and Anthanthrene which are frequently not recognised under their respective IUPAC names of Benzo(e)acephenanthrylene, Benzo(def)chrysene and Dibenzo(def,mno)chrysene. Cross references are given. The substituted compounds are listed under the parent compound e.g.

Chrysene
Chrysene, 1-methyl
Chrysene, 2-methyl

Code	Product	Unit
U-RAH-001	Acenaphthene	100 mg
CERERA-009	Acenaphthene	250 mg
U-P-610-1	Acenaphthene 100 µg/mL in Methanol	1 mL
U-P-610	Acenaphthene 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1064	Acenaphthene 5000 µg/mL in Methanol	1 mL
CERERA-033S	Acenaphthene 5000 µg/mL in Methanol	1.2 mL
U-ATS-110-1	Acenaphthene-D_{10} 2000 µg/mL in Methylene chloride	1 mL
U-ATS-110	Acenaphthene-D_{10} 2000 µg/mL in Methylene chloride	4 x 1 mL
CIL-DLM-108-1.2	Acenaphthene (D_{10},98%) 200 µg/mL in Isooctane	1.2 mL
CIL-DLM-108-0.1	Acenaphthene (D_{10},98%)	0.1 g
CIL-DLM-108-1	Acenaphthene (D_{10},98%)	1 g
CIL-DLM-108-5	Acenaphthene (D_{10},98%)	5 g
CIL-CLM-1643-1.2	Acenaphthene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
U-RAH-064	Acenaphthylene	100 mg
CERERA-005	Acenaphthylene	100 mg
U-P-620-1	Acenaphthylene 100 µg/mL in Methanol	1 mL
U-P-620	Acenaphthylene 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1065	Acenaphthylene 5000 µg/mL in Methanol	1 mL
CERERA-034S	Acenaphthylene 5000 µg/mL in Methanol	1.2 mL
CIL-DLM-2204-1.2	Acenaphthylene (D_8,98%) 200 µg/mL in Isooctane	1.2 mL
CIL-DLM-2204-0.1	Acenaphthylene (D_8,98%)	0.1 g
CIL-CLM-2477-1.2	Acenaphthylene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-DLM-849-0.1	Acridine (D_9,98%)	0.1 g
CIL-DLM-849-0.5	Acridine (D_9,98%)	0.5 g
U-RAH-082	Anthanthrene	10 mg
BCR-091	Anthanthrene	100 mg
U-RAH-002	Anthracene	100 mg
CERERA-010	Anthracene	250 mg
U-P-630-1	Anthracene 100 µg/mL in Methylene chloride	1 mL
U-P-630	Anthracene 100 µg/mL in Methylene chloride	4 x 1 mL
U-EPA-1070	Anthracene 1000 µg/mL in Acetone	1 mL
CERERA-035S	Anthracene 1000 µg/mL in Acetone	1.2 mL
CIL-DLM-102-1.2	Anthracene (D_{10},98%) 200 µg/mL in Isooctane	1.2 mL

Polycyclic aromatic compounds

Code	Product	Unit
CIL-DLM-102-1	Anthracene (D_{10},98%)	1 g
CIL-DLM-102-5	Anthracene (D_{10},98%)	5 g
CIL-CLM-1333-1.2	Anthracene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
U-RAH-021	Anthracene, 9,10-dihydro	100 mg
U-RAH-024	Anthracene, 9,10-dimethyl	10 mg
U-RAH-098	Anthracene, 1-methyl	10 mg
U-RAH-036	Anthracene, 2-methyl	100 mg
U-RAH-037	Anthracene, 9-methyl	100 mg
BCR-308	Anthracene, 9-nitro	10 mg
U-RAH-086	Anthracene, 9,10-diphenyl	100 mg
U-RAH-089	Anthracene, 9-phenyl	100 mg
IPO 007	Anthraquinone	250 mg
	7-Azabenzo(a)anthracene see Benzo(a)acridine 12-Azabenzo(a)anthracene see Benzo(c)acridine 7-Azabenzo(a)naphthacene see Dibenzo(a,i)acridine	
BCR-092	10-Azabenzo[a]pyrene	100 mg
	9-Azabenzo(b)triphenylene see Dibenzo(a,c)acridine 7-Azadibenzo(a,h)anthracene see Dibenzo(a,h)acridine 14-Azadibenzo(a,j)anthracene see Dibenzo(a,j)acridine 7-Azadibenzo(a,j)anthracene see Dibenzo(c,h)aridine 7-Aza-7H-dibenzo(c,g)fluorene see 7H Dibenzo(c,g)carbazole	
U-RAH-003	Azulene	10 mg
	1,2-Benzacridine see Benzo(a)acridine 3,4-Benzacridine see Benzo(c)acridine 1,2-Benzanthracene see Benz(a)anthracene Benzo(a)aceanthrylene see Benzo(a)fluoranthene Benzo(e)acephenanthrylene see Benzo(b)fluoranthene	
BCR-157	Benzo[a]acridine	100 mg
BCR-158	Benzo[c]acridine	100 mg
U-RAH-004	Benzo[a]anthracene	20 mg
BCR-271	Benzo[a]anthracene	20 mg
CERERB-006	Benzo[a]anthracene	100 mg
U-P-640-1	Benzo[a]anthracene 100 µg/mL in Methylene chloride	1 mL
U-P-640	Benzo[a]anthracene 100 µg/mL in Methylene chloride	4 x 1 mL
U-EPA-1072	Benzo[a]anthracene 1000 µg/mL in Methanol	1 mL
CERERB-032S	Benzo[a]anthracene 1000 µg/mL in Methanol	1.2 mL
CIL-DLM-610-1.2	Benzo[a]anthracene (D_{12},98%) 200 µg/mL in Isooctane	1.2 mL
CIL-DLM-610-0.1	Benzo[a]anthracene (D_{12},98%)	0.1 g
CIL-CLM-3602-1.2	Benzo[a]anthracene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
U-RAH-025	Benzo[a]anthracene, 7,12-dimethyl	10 mg
U-EPA-1110	Benzo[a]anthracene, 7,12-dimethyl 1000 µg/mL in Methanol	1 mL
BCR-093R	Benzo[a]anthracene, 1-methyl	10 mg
BCR-046	Benzo[b]chrysene	100 mg
BCR-140	Benzo[c]chrysene	100 mg
	Benzo(def)chrysene see Benzo(a)pyrene 5,6-Benzochrysene see Benzo(c)chrysene	
BCR-097	Benzo[a]fluoranthene	100 mg
U-RAH-072	Benzo[b]fluoranthene	10 mg
BCR-047	Benzo[b]fluoranthene	100 mg
CERERB-002	Benzo[b]fluoranthene	100 mg
U-P-660-1	Benzo[b]fluoranthene 100 µg/mL in Methylene chloride	1 mL
U-P-660	Benzo[b]fluoranthene 100 µg/mL in Methylene chloride	4 x 1 mL
U-EPA-1073	Benzo[b]fluoranthene 1000 µg/mL in Acetone	1 mL
CERERB-033S	Benzo[b]fluoranthene 1000 µg/mL in Acetone	1.2 mL

Code	Product	Unit
CIL-DLM-2136-1.2	Benzo[b]fluoranthene (D_{12},98%) 200 µg/mL in Isooctane	1.2 mL
CIL-DLM-2136-0.01	Benzo[b]fluoranthene (D_{12},98%)	0.01 g
CIL-CLM-3599-1.2	Benzo[b]fluoranthene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
BCR-139	Benzo[ghi]fluoranthene	100 mg
BCR-049	Benzo[j]fluoranthene	100 mg
CERERB-005	Benzo[j]fluoranthene	25 mg
U-RAH-073	Benzo[k]fluoranthene	10 mg
BCR-048R	Benzo[k]fluoranthene	10 mg
CERERB-001	Benzo[k]fluoranthene	100 mg
U-P-680-1	Benzo[k]fluoranthene 100 µg/mL in Methylene chloride	1 mL
U-P-680	Benzo[k]fluoranthene 100 µg/mL in Methylene chloride	4 x 1 mL
U-EPA-1074	Benzo[k]fluoranthene 1000 µg/mL in Acetone	1 mL
CERERB-034S	Benzo[k]fluoranthene 1000 µg/mL in Acetone	1.2 mL
NE5021	Benzo[k]fluoranthene 100 µg/mL in Acetonitrile	1.5 mL
CIL-DLM-1923-1.2	Benzo[k]fluoranthene (D_{12},98%) 200 µg/mL in Isooctane	1.2 mL
CIL-DLM-1923-0.01	Benzo[k]fluoranthene (D_{12},98%)	0.01 g
CIL-CLM-3756-1.2	Benzo[k]fluoranthene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	1,2-Benzofluoranthene see Benzo(a)fluoranthene 2,3-Benzofluoranthene see Benzo(a)fluoranthene 3,4-Benzofluoranthene see Benzo(b)fluoranthene 10,11-Benzofluoranthene see Benzo(j)fluoranthene 11,12-Benzofluoranthene see Benzo(k)fluoranthene	
U-RAH-005	Benzo[a]fluorene	10 mg
U-RAH-006	Benzo[b]fluorene	10 mg
BCR-342	Benzo[a]fluorenone	10 mg
BCR-340	Benzo[b]naphtho[1,2-d]furan	10 mg
BCR-341	Benzo[b]naphtho[2,1-d]furan	10 mg
BCR-137R	Benzo[b]naphtho[1,2-d]thiophene	10 mg
BCR-136R	Benzo[b]naphtho[2,3-d]thiophene	10 mg
	Benzo(rst)pentaphene see Dibenzo(a,i)pyrene	
U-RAH-009	Benzo[ghi]perylene	10 mg
BCR-052	Benzo[ghi]perylene	100 mg
CERERB-003	Benzo[ghi]perylene	25 mg
U-P-670-1	Benzo[ghi]perylene 100 µg/mL in Methylene chloride	1 mL
U-P-670	Benzo[ghi]perylene 100 µg/mL in Methylene chloride	4 x 1 mL
CERERB-035S	Benzo[ghi]perylene 1000 µg/mL in Methylene chloride	1.2 mL
NE5025	Benzo[ghi]perylene 100 µg/mL in Acetonitrile	1.5 mL
CIL-DLM-2135-1.2	Benzo[ghi]perylene (D_{12},98%) 200 µg/mL in Toluene-d_8	1.2 mL
CIL-DLM-2135-0.01	Benzo[ghi]perylene (D_{12},98%)	0.01 g
CIL-CLM-1364-1.2	Benzo[ghi]perylene ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	1,12-Benzoperylene see Benzo(ghi)perylene Benzo(a)phenanthrene see Chrysene	
BCR-134	Benzo[c]phenanthrene	100 mg
CERERB-040	Benzo(c)phenanthrene	25 mg
U-RAH-010	Benzo[a]pyrene	10 mg
CERERB-007	Benzo[a]pyrene	100 mg
U-P-650-1	Benzo[a]pyrene 100 µg/mL in Methylene chloride	1 mL
U-P-650	Benzo[a]pyrene 100 µg/mL in Methylene chloride	4 x 1 mL
U-EPA-1075	Benzo[a]pyrene 1000 µg/mL in Acetone	1 mL
CERERB-036S	Benzo[a]pyrene 1000 µg/mL in Acetone	1.2 mL
NE5029	Benzo[a]pyrene 100 µg/mL in Acetonitrile	1.5 mL
CIL-DLM-258-1.2	Benzo[a]pyrene (D_{12},98%) 200 µg/mL in Isooctane	1.2 mL

Polycyclic aromatic compounds

Code	Product	Unit
CIL-DLM-258-0.01	Benzo[a]pyrene (D_{12},98%)	0.01 g
CIL-DLM-258-0.05	Benzo[a]pyrene (D_{12},98%)	0.05 g
CIL-DLM-258-0.1	Benzo[a]pyrene (D_{12},98%)	0.1 g
CIL-CLM-2722-1.2	Benzo[a]pyrene ($^{13}C_4$,99%) 100 µg/mL in Nonane	1.2 mL
BCR-311	Benzo[a]pyrene, 6-nitro	10 mg
U-RAH-081	Benzo[e]pyrene	10 mg
BCR-050	Benzo[e]pyrene	100 mg
CIL-DLM-257-1.2	Benzo[e]pyrene (D_{12},98%) 200 µg/mL in Isooctane	1.2 mL
CIL-DLM-257-0.01	Benzo[e]pyrene (D_{12},98%)	0.01 g
CIL-CLM-6170-1.2	Benzo[e]pyrene (9,10,11,12-$^{13}C_4$,99%) 100 µg/mL in Nonane	1.2 mL
	3,4-Benzopyrene see Benzo(a)pyrene 1,2-Benzopyrene see Benzo(e)pyrene 4,5-Benzopyrene see Benzo(e)pyrene	
BCR-339	Benzo[c,d]pyren-6-one	10 mg
	3,4-Benzotetraphene see Benzo(b)chrysene 2,3-Benzo-9-thiafluorene see Benzo(b)naphtho(2,3-d)thiophene 3,4-Benzo-9-thiafluorene see Benzo(b)naphtho(1,2-d)thiophene Benzo(b)triphenylene see Dibenz(a,c)anthracene	
U-RAH-012	1,1'-Binaphthyl	50 mg
U-RAH-013	2,2'-Binaphthyl	50 mg
U-RAH-071	Biphenyl, 2,2'-dimethyl	10 mg
U-RAH-062	Biphenyl, 3,3'-dimethyl	20 mg
U-RAH-026	Biphenyl, 4,4'-dimethyl	100 mg
U-RAH-038	Biphenyl, 2-methyl	100 mg
U-RAH-039	Biphenyl, 3-methyl	100 mg
U-RAH-040	Biphenyl, 4-methyl	100 mg
U-RAH-041	Cholanthrene, 3-methyl	10 mg
U-P-780-1	Cholanthrene, 3-methyl 100 µg/mL in Methylene chloride	1 mL
U-P-780	Cholanthrene, 3-methyl 100 µg/mL in Methylene chloride	4 x 1 mL
U-RAH-007	Chrysene	100 mg
BCR-269	Chrysene	20 mg
CERERC-001	Chrysene	100 mg
U-P-690-1	Chrysene 100 µg/mL in Methylene chloride	1 mL
U-P-690	Chrysene 100 µg/mL in Methylene chloride	4 x 1 mL
U-EPA-1092	Chrysene 1000 µg/mL in Acetone	1 mL
CERERC-014S	Chrysene 1000 µg/mL in Acetone	1.2 mL
U-ATS-120-1	Chrysene-D_{12} 2000 µg/mL in Methylene chloride	1 mL
U-ATS-120	Chrysene-D_{12} 2000 µg/mL in Methylene chloride	4 x 1 mL
CIL-DLM-261-1.2	Chrysene (D_{12},98%) 200 µg/mL in Toluene-D_8	1.2 mL
CIL-DLM-261-0.1	Chrysene (D_{12},98%)	0.1 g
CIL-DLM-261-1	Chrysene (D_{12},98%)	1 g
CIL-CLM-3757-1.2	Chrysene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
BCR-077R	Chrysene, 1-methyl	10 mg
BCR-078R	Chrysene, 2-methyl	10 mg
BCR-079R	Chrysene, 3-methyl	10 mg
BCR-080R	Chrysene, 4-methyl	10 mg
BCR-081R	Chrysene, 5-methyl	10 mg
CERERM-041	Chrysene, 6-methyl	10 mg
BCR-309	Chrysene, 6-nitro	10 mg
	alpha-Chrysidine see Benzo(c)acridine	
U-RAH-015	Coronene	10 mg
BCR-272	Coronene	20 mg

Code	Product	Unit
CIL-DLM-2715-1.2	Coronene (D_{12},97%) 200 µg/mL in Benzene	1.2 mL
CIL-DLM-2715-0.1	Coronene (D_{12},97%)	0.1 g
U-RAH-088	4H-Cyclopenta[def]phenanthrene	10 mg
BCR-338	4H-Cyclopenta[def]phenanthren-4-one	10 mg
DE-PAH 1520	Cyclopenta[cd]pyrene	10 mg
	Cyclopenteno(cd)pyrene see Cyclopenta(cd)pyrene	
U-RAH-016	Decacyclene	100 mg
	1,2;3,4-Dibenzacridine see Dibenzo(a,c)acridine 1,2;5,6-Dibenzacridine see Dibenzo(a,h)acridine 1,2;6,7-Dibenzacridine see Dibenzo(a,i)acridine 1,2;7,8-Dibenzacridine see Dibenzo(a,j)acridine 3,4;5,6-Dibenzacridine see Dibenzo(c,h)acridine 1,2;3,4-Dibenzanthracene see Dibenz(a,c)anthracene 1,2;5,6-Dibenzanthracene see Dibenz(a,h)anthracene 1,2;7,8-Dibenzanthracene see Dibenz(a,j)anthracene Dibenzo(a,e)aceanthrylene see Dibenzo(a,e)fluoranthene	
BCR-155	Dibenzo[a,c]acridine	100 mg
BCR-153R	Dibenzo[a,h]acridine	10 mg
CERERD-013	Dibenzo[a,h]acridine	25 mg
BCR-152	Dibenzo[a,i]acridine	20 mg
BCR-154	Dibenzo[a,j]acridine	100 mg
CERERD-014	Dibenzo[a,j]acridine	25 mg
CIL-DLM-3843-1.2	Dibenzo[a,j]acridine (D_{13},98%) 50 µg/mL in Toluene-D_8	1.2 mL
BCR-156R	Dibenzo[c,h]acridine	10 mg
U-RAH-018	Dibenzo[a,c]anthracene	10 mg
BCR-094	Dibenzo[a,c]anthracene	100 mg
U-RAH-019	Dibenzo[a,h]anthracene	10 mg
BCR-138	Dibenzo[a,h]anthracene	100 mg
CERERD-003	Dibenzo[a,h]anthracene	100 mg
U-P-700-1	Dibenzo[a,h]anthracene 100 µg/mL in Methylene chloride	1 mL
U-P-700	Dibenzo[a,h]anthracene 100 µg/mL in Methylene chloride	4 x 1 mL
CERERD-042S	Dibenzo[a,h]anthracene 1000 µg/mL in Methylene chloride	1.2 mL
CIL-DLM-677-1.2	Dibenzo[a,h]anthracene (D_{14},97%) 200 µg/mL in Toluene-D_8	1.2 mL
CIL-DLM-677-0.1	Dibenzo[a,h]anthracene (D_{14},97%)	0.1 g
CIL-CLM-3598-1.2	Dibenz[a,h]anthracene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
BCR-095	Dibenzo[a,j]anthracene	100 mg
BCR-266	7H-Dibenzo[c,g]carbazole	20 mg
CIL-DLM-3841-1.2	7H-Dibenzo[c,g]carbazole (D_{12},98%) 50 µg/mL in Toluene-D_8	1.2 ml
	Dibenzo(def,mno)chrysene see Anthanthrene Dibenzo(b,def)chrysene see Dibenzo(a,h)pyrene Dibenzo(def,p)chrysene see Dibenzo(a,l)pyrene	
BCR-265	Dibenzo[a,e]fluoranthene	20 mg
	2,3,5,6-Dibenzofluoranthene see Dibenzo(a,e)fluoranthene	
BCR-337	Dibenzo[b,d]furan	10 mg
	1,2,3,4-Dibenzonaphthalene see Triphenylene	
U-RAH-083	Dibenzo[a,l]pentacene	10 mg
BCR-133	Dibenzo[a,e]pyrene	100 mg
CERERD-151	Dibenzo[a,e]pyrene	10 mg
U-P-801-1	Dibenzo[a,e]pyrene 200 µg/mL in Dichloromethane	1 mL
U-P-801	Dibenzo[a,e]pyrene 200 µg/mL in Dichloromethane	4 x 1 mL
CIL-CLM-3835-1.2	Dibenzo[a,e]pyrene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
U-RAH-076	Dibenzo[a,h]pyrene	10 mg
BCR-159	Dibenzo[a,h]pyrene	100 mg
CERERD-052	Dibenzo[a,h]pyrene	25 mg

Code	Product	Unit
U-P-821-1	Dibenzo[a,h]pyrene 200 µg/mL in Dichloromethane	1 mL
U-P-821	Dibenzo[a,h]pyrene 200 µg/mL in Dichloromethane	4 x 1 mL
CERERD-088S	Dibenzo[a,i]pyrene 100 µg/mL in Toluene	1.2 mL
U-P-811-1	Dibenzo[a,i]pyrene 200 µg/mL in Dichloromethane	1 mL
U-P-811	Dibenzo[a,i]pyrene 200 µg/mL in Dichloromethane	4 x 1 mL
CIL-DLM-3740-1.2	Dibenzo[a,i]pyrene (D_{14},98%) 200 µg/mL in Toluene-D8	1.2 mL
CIL-CLM-3774-A	Dibenzo[a,i]pyrene ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
BCR-096	Dibenzo[a,l]pyrene	100 mg
CERERD-051	Dibenzo[a,l]pyrene	25 mg
U-P-791-1	Dibenzo[a,l]pyrene 200 µg/mL in Dichloromethane	1 mL
U-P-791	Dibenzo[a,l]pyrene 200 µg/mL in Dichloromethane	4 x 1 mL
	Dibenzo(b,h)pyrene see Dibenzo(a,i)pyrene Dibenzo(cd,jk)pyrene see Anthanthrene 1,2;4,5-Dibenzopyrene see Dibenzo(a,e)pyrene 1,2;3,4-Dibenzopyrene see Dibenzo(a,l)pyrene 1,2,7,8-Dibenzopyrene see Dibenzo(a,i)pyrene 3,4;8,9-Dibenzopyrene see Dibenzo(a,h)pyrene 3,4,9,10-Dibenzopyrene see Dibenzo(a,i)pyrene	
U-RAH-084	Diindeno(1,2,3-cd:1',2',3'-lm]perylene	5 mg
U-RAH-020	1,2-Diphenylethane	100 mg
U-RAH-031	Fluoranthene	100 mg
BCR-160R	Fluoranthene	10 mg
CERERF-001	Fluoranthene	250 mg
U-P-710-1	Fluoranthene 100 µg/mL in Methylene chloride	1 mL
U-P-710	Fluoranthene 100 µg/mL in Methylene chloride	4 x 1 mL
U-EPA-1121	Fluoranthene 5000 µg/mL in Methanol	1 mL
CERERF-007S	Fluoranthene 5000 µg/mL in Methanol	1.2 mL
CIL-DLM-2140-1.2	Fluoranthene (D_{10},98%) 200 µg/mL in Isooctane	1.2 mL
CIL-DLM-2140-0.1	Fluoranthene (D_{10},98%)	0.1 g
CIL-CLM-3597-1.2	Fluoranthene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
BCR-310	Fluoranthene, 3-nitro	10 mg
U-RAH-091	Fluoranthene, 1,2,3,4-tetrahydro	10 mg
U-RAH-032	Fluorene	100 mg
CERERF-002	Flurorene	250 mg
U-P-720-1	Fluorene 100 µg/mL in Methanol	1 mL
U-P-720	Fluorene 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1122	Fluorene 5000 µg/mL in Methanol	1 mL
CERERF-008S	Fluorene 5000 µg/mL in Methanol	1.2 mL
CIL-DLM-1123-1.2	Fluorene (D_{10},98%) 200 µg/mL in Isooctane	1.2 mL
CIL-DLM-1123-0.1	Fluorene (D_{10},98%)	0.1 g
CIL-DLM-1123-1	Fluorene (D_{10},98%)	1 g
CIL-CLM-3596-1.2	Fluorene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
U-RAH-043	Fluorene, 1-methyl	100 mg
U-RAH-033	9-Fluorenone	100 mg
	Hexabenzobenzene see Coronene	
U-RAH-065	Indane	100 mg
U-RAH-034	1,3-Indanedione	100 mg
U-RAH-035	Indene	100 mg
BCR-267	Indeno[1,2,3-cd]fluoranthene	20 mg
U-RAH-077	Indeno[1,2,3-cd]pyrene	5 mg
CERERI-001	Indeno[1,2,3-cd]pyrene	25 mg
CERERI-010S	Indeno[1,2,3-cd]pyrene 1000 µg/mL in Methylene chloride	1.2 mL
U-P-730-1	Indeno[1,2,3-cd]pyrene 100 µg/mL in Methylene chloride	1 mL

Code	Product	Unit
U-P-730	Indeno[1,2,3-cd]pyrene 100 µg/mL in Methylene chloride	4 x 1 mL
NE5051	Indeno[1,2,3-cd]pyrene 100 µg/mL in Acetonitrile CERTAN®	1.5 mL
CIL-DLM-2148-1.2	Indeno[1,2,3-cd]pyrene (D_{12},98%) 200 µg/mL in Isooctane	1.2 mL
CIL-DLM-2148-0.01	Indeno[1,2,3-cd]pyrene (D_{12},98%)	0.01 g
CIL-CLM-3600-1.2	Indeno[1,2,3-cd]pyrene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
U-RAH-078	Naphthacene	10 mg
	alpha-Naphthacridine see Benzo(c)acridine	
U-RAH-080	Naphthalene	100 mg
CERERN-003	Naphthalene	250 mg
CHE 158	Naphthalene	1 g
U-P-740-1	Naphthalene 100 µg/mL in Methanol	1 mL
U-P-740	Naphthalene 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1134	Naphthalene 5000 µg/mL in Methanol	1 mL
CERERN-012S	Naphthalene, 5000 µg/mL in Methanol	1.2 mL
CIL-DLM-365-1.2	Naphthalene (D_8,99%) 200 µg/mL in Isooctane	1.2 mL
CIL-DLM-365-1	Naphthalene (D_8,99%)	1 g
CIL-DLM-365-5	Naphthalene (D_8,99%)	5 g
CIL-DLM-365-10	Naphthalene (D_8,99%)	10 g
CIL-CLM-1332-1.2	Naphthalene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
U-RAH-017	Naphthalene, decahydro (mixture of isomers)	100 mg
U-RAH-074	Naphthalene, cis-decahydro	100 mg
U-RAH-075	Naphthalene, trans-decahydro	100 mg
U-RAH-022	Naphthalene, 1,2-dihydro	100 mg
U-RAH-023	Naphthalene, 1,4-dihydro	100 mg
U-RAH-068	Naphthalene, 1,2-dimethyl	100 mg
U-RAH-066	Naphthalene, 1,3-dimethyl	50 mg
U-RAH-027	Naphthalene, 1,4-dimethyl	100 mg
U-RAH-029	Naphthalene, 1,5-dimethyl	100 mg
U-RAH-028	Naphthalene, 1,6-dimethyl	100 mg
U-RAH-067	Naphthalene, 2,3-dimethyl	100 mg
U-RAH-030	Naphthalene, 2,6-dimethyl	100 mg
U-RAH-097	Naphthalene, 2,7-dimethyl	10 mg
U-RAH-044	Naphthalene, 1-methyl	500 mg
U-RAH-045	Naphthalene, 2-methyl	500 mg
BCR-306	Naphthalene, 1-nitro	10 mg
BCR-307	Naphthalene, 2-nitro	10 mg
U-RAH-099	Naphthalene, 1-phenyl	100 mg
U-RAH-079	Naphthalene, 1,2,3,4-tetrahydro	100 mg
U-RAH-092	Naphthalene, 1,2,3,4-tetraphenyl	10 mg
U-RAH-069	Naphthalene, 2,3,5-trimethyl	10 mg
	Naphtho(1,2,3,4-def)chrysene see Dibenzo(a,e)pyrene	
BCR-312	Naphtho[2,1-b]furan, 2-nitro-7-methoxy	10 mg
	3,4-Naphthophenanthrene see Benzo(c)chrysene	
U-RAH-049	Pentacene	10 mg
U-RAH-050	Perylene	10 mg
U-ATS-150-1	Perylene-D_{12} 2000 µg/mL in Methylene chloride	1 mL
U-ATS-150	Perylene-D_{12} 2000 µg/mL in Methylene chloride	4 x 1 mL
CIL-DLM-366-1.2	Perylene (D_{12},98%) 200 µg/mL in Toluene-D_8	1.2 mL
CIL-DLM-366-0.1	Perylene (D_{12},98%)	0.1 g
CIL-DLM-366-1	Perylene (D_{12},98%)	1 g
U-RAH-051	Phenanthrene	100 mg

Polycyclic aromatic compounds

Code	Product	Unit
CERERP-003	Phenanthrene	250 mg
U-P-750-1	Phenanthrene 100 µg/mL in Methylene chloride	1 mL
U-P-750	Phenanthrene 100 µg/mL in Methylene chloride	4 x 1 mL
U-EPA-1154	Phenanthrene 5000 µg/mL in Methanol	1 mL
CERERP-027S	Phenanthrene 5000 µg/mL in Methanol	1.2 mL
CIL-DLM-371-1.2	Phenanthrene (D_{10},98%) 200 µg/mL in Isooctane	1.2 mL
CIL-DLM-371-0.1	Phenanthrene (D_{10},98%)	0.1 g
CIL-DLM-371-1	Phenanthrene (D_{10},98%)	1 g
CIL-CLM-2451-1.2	Phenanthrene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
U-RAH-085	Phenanthrene, 3,6-dimethyl	10 mg
U-RAH-046	Phenanthrene, 1-methyl	10 mg
	4,5-o-Phenylenefluoranthene see Indeno(1,2,3-cd)fluoranthene peri-Phenylenefluoranthene see Indeno(1,2,3-cd)fluoranthene 2,3-o-Phenylenepyrene see Indeno(1,2,3-cd)pyrene	
BCR-168	Picene	10 mg
U-RAH-008	Pyrene	100 mg
BCR-177R	Pyrene	10 mg
CERERP-004	Pyrene	250 mg
U-P-760-1	Pyrene 100 µg/mL in Methylene chloride	1 mL
U-P-760	Pyrene 100 µg/mL in Methylene chloride	4 x 1 mL
U-EPA-1157	Pyrene 1000 µg/mL in Methanol	1 mL
CERERP-034S	Pyrene 1000 µg/mL in Methanol	1.2 mL
NE5063	Pyrene 100 µg/mL in Acetonitrile CERTAN®	1.5 mL
CIL-DLM-155-1.2	Pyrene (D_{10},98%) 200 µg/mL in Isooctane	1.2 mL
CIL-DLM-155-0.1	Pyrene (D_{10},98%)	0.1 g
CIL-DLM-155-0.5	Pyrene (D_{10},98%)	0.5 g
CIL-CLM-3601-1.2	Pyrene ($^{13}C_3$,99%) 100 µg/mL in Nonane	1.2 mL
BCR-305	Pyrene, 1-nitro	10 mg
U-RAH-054	p-Quaterphenyl	100 mg
U-RAH-100	p-Quinquephenyl	10 mg
U-RAH-055	Rubrene	10 mg
U-RAH-056	o-Terphenyl	100 mg
U-RAH-057	m-Terphenyl	100 mg
U-RAH-058	p-Terphenyl	100 mg
	Tetracene see Naphthacene 5-Thiabenzo(b)fluorene see Benzo(b)naphtho(2,3-d)thiophene 7-Thiabenzo(b)fluorene see Benzo(b)naphtho(1,2-d)thiophene	
U-RAH-059	Triphenylene	10 mg
BCR-270	Triphenylene	20 mg
CIL-DLM-601-0.1	Triphenylene (D_{12},98%)	0.1 g
CIL-DLM-601-1	Triphenylene (D_{12},98%)	1 g
U-RAH-087	Triphenylene, dodecahydro	100 mg
U-RAH-060	Triptycene	10 mg
U-RAH-061	Truxene	100 mg

Code	Product	Unit

PAH kits

U-FRNH-068 — Polynuclear Aromatic Hydrocarbons Kit — kit

Each kit contains 5 mg each of twenty compounds.

Acenaphthene	Chrysene
Anthanthrene	Coronene
Anthracene	Dibenzothiophene
Benzo[a]anthracene	Fluoranthene
Benzo[a]anthracene-7,12-dione	4,5-Methylenephenanthrene
Benzo[ghi]perylene	Naphthalene
Benzo[a]pyrene	Perylene
Benzo[e]pyrene	Phenanthrene
Benzo[f]quinoline	Pyrene
Carbazole	Truxene

NE5100 — Kit of 1.5 mL each of the 16 EPA PAHs Priority Pollutants in Acetonitrile — kit

Code	Product	Unit
NE5001	Acenaphthene, 100 µg/mL in Acetonitrile	1.5 mL
NE5005	Acenaphthylene, 100 µg/mL in Acetonitrile	1.5 mL
NE5009	Anthracene, 100 µg/mL in Acetonitrile	1.5 mL
NE5013	Benzo(a)antracene, 100 µg/mL in Acetonitrile	1.5 mL
NE5017	Benzo(b)fluoranthene, 100 µg/mL in Acetonitrile	1.5 mL
NE5021	Benzo(k)fluoranthene, 100 µg/mL in Acetonitrile	1.5 mL
NE5025	Benzo(ghi)perylene, 100 µg/mL in Acetonitrile	1.5 mL
NE5029	Benzo(a)pyrene, 100 µg/mL in Acetonitrile	1.5 mL
NE5033	Chrysene, 100 µg/mL in Acetonitrile	1.5 mL
NE5037	Dibenz(a,h)antracene, 100 µg/mL in Acetonitrile	1.5 mL
NE5041	Fluoranthene, 100 µg/mL in Acetonitrile	1.5 mL
NE5045	Fluorene, 100 µg/mL in Acetonitrile	1.5 mL
NE5049	Indeno(1,2,3-cd)pyrene, 100 µg/mL in Acetonitrile	1.5 mL
NE5053	Naphthalene, 100 µg/mL in Acetonitrile	1.5 mL
NE5057	Phenanthrene, 100 µg/mL in Acetonitrile	1.5 mL
NE5061	Pyrene, 100 µg/mL in Acetonitrile	1.5 mL

PAH multicomponent standard solutions

CIL-ES-4087 — US EPA 16 PAH Cocktail (^{13}C,99%) — 1.2 mL

5 µg/mL of each analyte in Nonane

Acenaphthene ($^{13}C_6$,99%)	Chrysene ($^{13}C_6$,99%)
Acenaphthylene ($^{13}C_6$,99%)	Dibenz(ah)anthracene ($^{13}C_6$,99%)
Anthracene ($^{13}C_6$,99%)	Fluoranthene ($^{13}C_6$,99%)
Benz(a)anthracene ($^{13}C_6$,99%)	Fluorene ($^{13}C_6$,99%)
Benzo(b)fluoranthene ($^{13}C_6$,99%)	Indeno(1,2,3-cd)pyrene ($^{13}C_6$,99%)
Benzo(k)fluoranthene ($^{13}C_6$,99%)	Naphthalene ($^{13}C_6$,99%)
Benzo(ghi)perylene (^{13}C12,99%)	Phenanthrene ($^{13}C_6$,99%)
Benzo(a)pyrene ($^{13}C_6$,99%)	Pyrene ($^{13}C_6$,99%)

CIL-ES-2043 — 'EEC Six' PAH Cocktail — 1 mL

1 µg/mL of each analyte in Benzene (D_6,99.6%)

Benzo(b)fluoranthene (D_{12},98%)	Benzo(a)pyrene (D_{12},98%)
Benzo(k)fluoranthene (D_{12},98%)	Indeno(1,2,3-cd)pyrene (D_{12},98%)
Benzo(ghi)perylene (D_{12},98%)	Fluoranthene (D_{10},98%)

CIL-ES-2528 — PAH Cocktail for CARB 429 method — 1 mL

100 µg/mL of each analyte in Benzene (D_6,99.6%)

Acenaphthene (D_{10},98%)	Chrysene (D_{12},98%)
Acenaphthylene (D_8,98%)	Dibenz(ah)anthracene (D_{14},98%)
Anthracene (D_{10},98%)	Fluoranthene (D_{10},98%)
Benz(a)anthracene (D_{12},98%)	Fluorene (D_{10},98%)
Benzo(b)fluoranthene (D_{12},98%)	Indeno(1,2,3-cd)pyrene (D_{12},98%)
Benzo(k)fluoranthene (D_{12},98%)	Naphthalene (D_8,98%)
Benzo(ghi)perylene (D_{12},99%)	Phenanthrene (D_{10},98%)
Benzo(a)pyrene (D_{12},98%)	Pyrene (D_{10},98%)

CIL-ES-2044 — PAH Surrogate Cocktail — 1 mL

200 µg/mL of each analyte in 50% Methylene chloride (D_2,99.9%) and 50% Methanol (D_2,99.8%).

Acenaphthylene (D_8,98%)	Naphthalene (D_8,98%)
Benzo(ghi)perylene (D_{12},99%)	Phenanthrene (D_{10},98%)
Benzo(a)pyrene (D_{12},98%)	Pyrene (D_{10},98%)
Fluoranthene (D_{10},98%)	

New **CIL-ES-5164** — PAH Surrogate Standard Mix — 10 mL

200 µg/mL of each analyte in 10% Iso-octane / 90% Toluene

Naphthalene (D_8,98%)	Benz(a)anthracene (D_{12},98%)
Phenanthrene (D_{10},98%)	Fluoranthene (D_{10},98%)
Benzo(b)fluoranthene (D_{12},98%)	Benzo(a)pyrene (D_{12},98%)
Benzo(ghi)perylene (D_{12},99%)	Indeno(1,2,3-cd)pyrene (D_{12},98%)
Dibenz(ah)anthracene (D_{14},98%)	Acenaphthylene (D_8,98%)
Acenaphthene (D_{10},98%)	Fluorene (D_{10},98%)
Pyrene (D_{10},98%)	Benzo(k)fluoranthene (D_{12},98%)
Perylene (D_{12},98%)	Chrysene (D_{12},98%)

Code	Product	Unit

New ERM-AC213 — PAHs in acetonitrile/toluene — 2 mL

Certified values

Benz(a)anthracene	3.09 ± 0.04 µg/g	Dibenz(a,h)anthracene	2.76 ± 0.05 µg/g
Chrysene	3.06 ± 0.05 µg/g	Benzo(ghi)perylene	3.07 ± 0.05 µg/g
5-Methylchrysene	3.08 ± 0.07 µg/g	Dibenz(a,l)pyrene	3.08 ± 0.10 µg/g
Benzo(b)fluoranthene	3.05 ± 0.05 µg/g	Dibenz(a,e)pyrene	2.97 ± 0.010 µg/g
Benzo(k)fluoranthene	3.06 ± 0.08 µg/g		
Benzo(j)fluoranthene	3.05 ± 0.10 µg/g		

Indicative values for Benzo(c)fluorene, Cyclopenta(cd)pyrene and Dibenzo(a,i)pyrene

NIST-1647e — Priority pollutant PAHs in acetonitrile — 5 x 1.2 mL

Certified concentrations

Compound	Mass fraction mg/kg	Concentration mg/L (at 23 ± 2°C)
Naphthalene	25.84 ± 0.33	19.85 ± 0.45
Acenaphthylene	19.96 ± 0.47	15.34 ± 0.37
Acenaphthene	26.23 ± 0.60	20.50 ± 0.47
Fluorene	6.09 ± 0.14	4.74 ± 0.11
Phenanthrene	4.52 ± 0.11	3.52 ± 0.09
Anthracene	1.01 ± 0.02	0.79 ± 0.02
Fluoranthene	9.73 ± 0.21	7.58 ± 0.16
Pyrene	10.88 ± 0.22	8.47 ± 0.17
Benzo(a)anthracene	5.25 ± 0.11	4.09 ± 0.09
Chrysene	4.62 ± 0.10	3.60 ± 0.08
Benzo(b)fluoranthene	5.38 ± 0.11	4.19 ± 0.09
Benzo(k)fluoranthene	6.02 ± 0.13	4.69 ± 0.10
Benzo(a)pyrene	6.25 ± 0.15	4.87 ± 0.12
Dibenzo(a,h)anthracene	4.48 ± 0.26	3.49 ± 0.20
Benzo(ghi)perylene	4.71 ± 0.17	3.67 ± 0.13
Indeno(1,2,3-cd)pyrene	5.48 ± 0.17	4.27 ± 0.13

The µg/mL values were calculated from the mass fraction values using the density of acetonitrile at 23°C (0.7789 g/mL).

NIST-2260a — PAHs in Toluene — 5 x 1.2 mL

Certified values

	CAS Registry No.	µg/g	µg/mL
Naphthalene	91-20-3	11.43 ± 0.30	9.89 ± 0.26
Biphenyl	92-52-4	5.61 ± 0.14	4.85 ± 0.12
Acenaphthylene	208-96-8	6.26 ± 0.20	5.41 ± 0.17
Acenaphthene	83-32-9	5.55 ± 0.13	4.80 ± 0.11
Fluorene	86-73-7	4.71 ± 0.11	4.07 ± 0.10
Dibenzothiophene	132-65-0	4.39 ± 0.17	3.80 ± 0.15
Phenanthrene	85-01-8	11.57 ± 0.12	10.01 ± 0.10
Anthracene	120-12-7	3.736 ± 0.054	3.231 ± 0.047
4H-Cyclopenta[def]phenanthrene	203-64-5	2.32 ± 0.11	2.01 ± 0.10
Fluoranthene	206-44-0	8.324 ± 0.087	7.200 ± 0.075
Pyrene	129-00-0	8.949 ± 0.083	7.741 ± 0.072
Benzo[ghi]fluoranthene	203-12-3	3.414 ± 0.045	2.953 ± 0.039
Cyclopenta[cd]pyrene	27208-37-3	1.958 ± 0.024	1.694 ± 0.021
Benzo[c]phenanthrene	195-19-7	4.608 ± 0.036	3.986 ± 0.031
Benz[a]anthracene	56-55-3	4.415 ± 0.078	3.819 ± 0.067
Chrysene	218-01-9	4.62 ± 0.11	4.00 ± 0.10
Triphenylene	217-59-4	4.12 ± 0.16	3.56 ± 0.14
Benzo[b]fluoranthene	205-99-2	7.86 ± 0.10	6.80 ± 0.09
Benzo[j]fluoranthene	205-82-3	4.145 ± 0.097	3.585 ± 0.084
Benzo[k]fluoranthene	207-08-9	3.444 ± 0.036	2.979 ± 0.031
Benzo[a]fluoranthene	203-33-8	2.279 ± 0.064	1.971 ± 0.055
Benzo[e]pyrene	192-97-2	4.561 ± 0.054	3.945 ± 0.047
Benzo[a]pyrene	50-32-8	4.71 ± 0.17	4.07 ± 0.15
Perylene	198-55-0	4.430 ± 0.045	3.83 ± 0.039
Indeno[1,2,3-cd]pyrene	193-39-5	4.425 ± 0.030	3.828 ± 0.026
Benzo[ghi]perylene	191-24-2	5.669 ± 0.069	4.904 ± 0.060
Dibenz[a,h]anthracene	53-70-3	4.555 ± 0.063	3.940 ± 0.054
Dibenz[a,c]anthracene	215-58-7	2.912 ± 0.026	2.519 ± 0.022
Dibenz[a,j]anthracene	224-41-9	4.539 ± 0.062	3.926 ± 0.054
Picene	213-46-7	3.257 ± 0.047	2.817 ± 0.041
Benzo[b]chrysene	214-17-5	4.092 ± 0.033	3.540 ± 0.029
Anthanthrene	191-26-4	2.205 ± 0.029	1.907 ± 0.025
Coronene	191-07-1	2.255 ± 0.033	1.951 ± 0.029
Dibenzo[a,h]pyrene	189-64-0	2.911 ± 0.095	2.518 ± 0.082
Dibenzo[b,k]fluoranthene	205-97-0	1.646 ± 0.068	1.424 ± 0.059
Dibenzo[a,e]pyrene	192-65-4	2.277 ± 0.023	1.970 ± 0.02

Code	Product	Unit

NIST-1597a — Complex mixture of PAHs from coal tar in Toluene — 3 x 1.3 mL

This Standard Reference Material (SRM®) is a natural, combustion-related mixture of polycyclic aromatic hydrocarbons (PAHs) isolated from a coal tar sample and dissolved in toluene. NIST-1597a is intended for use in the evaluation and validation of analytical methods for the determination of PAHs. It is suitable for direct analysis (i.e., without sample cleanup or concentration) in the determination of PAHs using analytical techniques such as gas chromatography (GC), liquid chromatography (LC), or gas chromatography/mass spectrometry (GC/MS). This SRM® may also be used to evaluate procedures for measurement of mutagenic activity of combustion-related mixtures of PAHs and related compounds.

Certified concentrations for selected PAHs in NIST-1597a

Naphthalene	1030 ± 100 µg/kg	Triphenylene	12.1 ± 0.6 µg/kg
Biphenyl	27.6 ± 0.4 µg/kg	Benzo[b]fluoranthene	66.1 ± 4.4 µg/kg
Acenaphthylene	263 ± 7 µg/kg	Benzo[j]fluoranthene	36.5 ± 2.4 µg/kg
Acenaphthene	7.63 ± 0.26 µg/kg	Benzo[k]fluoranthene	41.2 ± 0.4 µg/kg
Fluorene	145 ± 4 µg/kg	Benzo[e]pyrene	50.4 ± 1.0 µg/kg
Phenanthrene	454 ± 7 µg/kg	Benzo[a]pyrene	93.5 ± 1.4 µg/kg
Anthracene	107 ± 3 µg/kg	Perylene	24.6 ± 0.9 µg/kg
3-Methylphenanthrene	15.8 ± 0.8 µg/kg	Benzo[ghi]perylene	50.5 ± 0.6 µg/kg
2-Methylphenathrene	19.1 ± 1.1 µg/kg	Indeno[1,2,3-cd]pyrene	55.5 ± 0.8 µg/kg
9-Methylphenanthrene	5.31 ± 0.50 µg/kg	Dibenz[a,j]anthracene	6.80 ± 0.46 µg/kg
1-Methylphenanthrene	9.23 ± 0.22 µg/kg	Dibenz[a,c]anthracene	4.35 ± 0.21 µg/kg
Fluoranthene	327 ± 7 µg/kg	Dibenz[a,h]anthracene	6.93 ± 0.40 µg/kg
Pyrene	240 ± 7 µg/kg	Benzo[b]chrysene	10.8 ± 0.4 µg/kg
Benzo[ghi]fluoranthene	13.5 ± 0.2 µg/kg	Picene	6.59 ± 0.22 µg/kg
Benzo[c]phenanthrene	11.0 ± 0.5 µg/kg	Dibenzo[b,k]fluoranthene	11.2 ± 0.8 µg/kg
Benz[a]anthracene	98.1 ± 2.3 µg/kg	Dibenzo[a,e]pyrene	9.08 ± 0.39 µg/kg
Chrysene	66.2 ± 5.3 µg/kg	Dibenzo[a,h]pyrene	2.57 ± 0.30 µg/kg

NIST-1491a — Methyl-Substituted Polycyclic Aromatic Hydrocarbons in Toluene — 5 x 1.2 mL

Certified values

	CAS Registry No.	µg/g	µg/mL
1-Methylnaphthalene	90-12-0	1.758 ± 0.041	1.520 ± 0.035
2-Methylnaphthalene	91-57-6	2.030 ± 0.096	1.756 ± 0.083
1,2-Dimethylnaphthalene	573-98-8	1.990 ± 0.071	1.721 ± 0.061
1,6-Dimethylnaphthalene	575-43-9	1.607 ± 0.036	1.390 ± 0.031
2,6-Dimethylnaphthalene	581-42-0	1.564 ± 0.053	1.353 ± 0.046
1-Methylphenanthrene	832-69-9	2.243 ± 0.028	1.940 ± 0.024
2-Methylphenanthrene	2531-84-2	2.396 ± 0.018	2.072 ± 0.016
3-Methylphenanthrene	832-71-3	2.134 ± 0.010	1.846 ± 0.009
9-Methylphenanthrene	883-20-5	2.288 ± 0.019	1.979 ± 0.016
2-Methylanthracene	613-12-7	1.355 ± 0.010	1.172 ± 0.009
1,7-Dimethylphenanthrene	483-87-4	1.962 ± 0.027	1.697 ± 0.023
1-Methylfluoranthene	25889-60-5	1.116 ± 0.011	0.965 ± 0.010
3-Methylfluoranthene	1706-01-0	1.190 ± 0.014	1.029 ± 0.012
1-Methylpyrene	2381-21-7	1.089 ± 0.013	0.942 ± 0.011
4-Methylpyrene	3353-12-6	1.026 ± 0.012	0.887 ± 0.010
Retene	483-65-8	2.079 ± 0.032	1.798 ± 0.028
3-Methylchrysene	3351-31-3	1.132 ± 0.026	0.979 ± 0.022
6-Methylchrysene	1705-85-7	1.200 ± 0.014	1.038 ± 0.012

NIST-1596 — Dinitropyrene isomers and 1-Nitropyrene in Dichloromethane — set

Certified concentrations of Nitro-PAHs

Compound	µg/g	µg/mL
1-Nitropyrene	4.38 ± 0.08	5.81 ± 0.11
1,3-Dinitropyrene	2.10 ± 0.03	2.79 ± 0.04
1,6-Dinitropyrene	4.82 ± 0.17	6.39 ± 0.23
1,8-Dinitropyrene	7.90 ± 0.15	10.48 ± 0.20

New U-PM-022-1 — PAH Mixture — 1 mL

22 Analytes

200 µg/mL of each analyte in Methylene chloride

Naphthalene	Fluoranthene	Benzo(e)pyrene	Dibenzo(a,l)pyrene
Acenaphthylene	Pyrene	Benzo(a)pyrene	Dibenzo(a,e)pyrene
Acenaphthene	Benz(a)anthracene	Perylene	Dibenzo(a,i)pyrene
Fluorene	Chrysene	Indeno(1,2,3-cd)pyrene	Dibenzo(a,h)pyrene
Phenanthrene	Benzo(b)fluoranthene	Benzo(ghi)perylene	
Anthracene	Benzo(k)fluoranthene	Dibenz(a,h)anthracene	

New U-PM-022 — PAH Mixture — 4 x 1 mL

U-PM-006-1 — PAH Mixture — 1 mL

10 µg/mL of each analyte in Acetonitrile

Benzo(b)fluoranthene	Benzo(a)pyrene
Benzo(k)fluoranthene	Fluoranthene
Benzo(ghi)perylene	Indeno(1,2,3-cd)pyrene

U-PM-006 — PAH Mixture — 4 x 1 mL

DE-PAH-7 — Six PAHs in Acetonitrile — 3 x 1.5 mL

Solvent: Acetonitrile

Indeno(1,2,3-cd)pyrene	2 mg/L	Fluoranthene	10 mg/L
Benzo(ghi)perylene	2 mg/L	Benzo(b)fluoranthene	2 mg/L
Benzo(a)pyrene	2 mg/L	Benzo(k)fluoranthene	2 mg/L

Code	Product	Unit
NE5107	EEC Six PAHs in Acetonitrile CERTAN®	4.5 mL

Concentration: each of the following at 10 µg/mL

Indeno(1,2,3-cd)pyrene	Benzo(a)pyrene	Benzo(b)fluoranthene
Benzo(ghi)perylene	Fluoranthene	Benzo(k)fluoranthene

U-PM-007-1 — PAH Mixture — 1 mL

Benzo(b)fluoranthene	10 µg/mL	Fluoranthene	10 µg/mL
Benzo(k)fluoranthene	10 µg/mL	Indeno(1,2,3-cd)pyrene	10 µg/mL
Benzo(ghi)perylene	10 µg/mL	Perylene	5 µg/mL
Benzo(a)pyrene	10 µg/mL		

U-PM-007 — PAH Mixture — 4 x 1 mL

U-JTB-0005 — PAH 16 Calibration Mix — 1 mL

Solvent: Acetonitrile

Naphthalene	20.0 µg/mL	Benz[a]anthracene	4.0 µg/mL
Acenaphthylene	15.0 µg/mL	Chrysene	3.5 µg/mL
Acenaphthene	20.0 µg/mL	Benzo[b]fluoranthene	4.0 µg/mL
Fluorene	5.0 µg/mL	Benzo[k]fluoranthene	4.5 µg/mL
Phenanthrene	3.5 µg/mL	Benzo[a]pyrene	5.0 µg/mL
Anthracene	0.8 µg/mL	Dibenzo[a,h]anthracene	3.5 µg/mL
Fluoranthene	8.0 µg/mL	Benzo[ghi]perylene	3.5 µg/mL
Pyrene	8.5 µg/mL	Indeno[1,2,3-cd]pyrene	4.5 µg/mL

New **U-JTB-0005-4** — PAH 16 Calibration Mix — 4 x 1 mL

U-PM-613A-1 — PAH Mixture — 1 mL

Solvent: Acetonitrile

Acenaphthene	100 µg/mL	Chrysene	10 µg/mL
Acenaphthylene	100 µg/mL	Dibenzo(a,h)anthracene	10 µg/mL
Anthracene	100 µg/mL	Fluoranthene	10 µg/mL
Benzo(a)anthracene	10 µg/mL	Fluorene	100 µg/mL
Benzo(b)fluoranthene	10 µg/mL	Indeno(1,2,3-cd)pyrene	10 µg/mL
Benzo(k)fluoranthene	5 µg/mL	Naphthalene	100 µg/mL
Benzo(ghi)perylene	10 µg/mL	Phenanthrene	100 µg/mL
Benzo(a)pyrene	10 µg/mL	Pyrene	10 µg/mL

U-PM-613A — PAH Mixture — 4 x 1 mL

U-PM-831A-1 — PAH Mixture — 1 mL

Solvent: Acetonitrile/Methanol (9:1)

Acenaphthene	1000 µg/mL	Chrysene	50 µg/mL
Acenaphthylene	500 µg/mL	Dibenzo(a,h)anthracene	200 µg/mL
Anthracene	20 µg/mL	Fluoranthene	50 µg/mL
Benzo(a)anthracene	50 µg/mL	Fluorene	100 µg/mL
Benzo(b)fluoranthene	20 µg/mL	Indeno(1,2,3-cd)pyrene	50 µg/mL
Benzo(k)fluoranthene	20 µg/mL	Naphthalene	500 µg/mL
Benzo(ghi)perylene	80 µg/mL	Phenanthrene	40 µg/mL
Benzo(a)pyrene	50 µg/mL	Pyrene	100 µg/mL

U-PM-831A — PAH Mixture — 4 x 1 mL

U-US-106N — PAH Mixture — 1 mL

2000 µg/mL of each analyte in Methylene chloride/Benzene (1:1)

Acenaphthene	Benzo(b)fluoranthene	Chrysene	Indeno(1,2,3-cd)pyrene
Acenaphthylene	Benzo(k)fluoranthene	Dibenzo(a,h)anthracene	Naphthalene
Anthracene	Benzo(ghi)perylene	Fluoranthene	Phenanthrene
Benzo(a)anthracene	Benzo(a)pyrene	Fluorene	Pyrene

U-US-106N-4 — PAH Mixture — 4 x 1 mL

U-PM-831-1 — PAH Mixture — 1 mL

500 µg/mL of each analyte in Acetonitrile/Acetone/Toluene (6:3:1)

Acenaphthene	Benzo(b)fluoranthene	Chrysene	Indeno(1,2,3-cd)pyrene
Acenaphthylene	Benzo(k)fluoranthene	Dibenzo(a,h)anthracene	Naphthalene
Anthracene	Benzo(ghi)perylene	Fluoranthene	Phenanthrene
Benzo(a)anthracene	Benzo(a)pyrene	Fluorene	Pyrene

U-PM-831 — PAH Mixture — 4 x 1 mL

U-US-126 — PAH Mixture — 1 mL

2000 µg/mL of each analyte in Methylene chloride/Benzene (1:1)

Acenaphthene	Benzo(k)fluoranthene	Dibenzo(a,h)anthracene	Phenanthrene
Acenaphthylene	Benzo(ghi)perylene	Fluoranthene	Pyrene
Anthracene	Benzo(a)pyrene	Fluorene	
Benzo(a)anthracene	Carbazole	Indeno(1,2,3-cd)pyrene	
Benzo(b)fluoranthene	Chrysene	Naphthalene	

CERERS-009 — PAH Standard Solution — 1.2 mL

100 µg/mL of each analyte in Acetonitrile

Acenaphthene	Benzo(b)fluoranthene	Chrysene	Indeno(1,2,3-cd)pyrene
Acenaphthylene	Benzo(k)fluoranthene	Dibenzo(a,h)anthracene	Naphthalene
Anthracene	Benzo(ghi)perylene	Fluoranthene	Phenanthrene
Benzo(a)anthracene	Benzo(a)pyrene	Fluorene	Pyrene

Code	Product	Unit
DE-PROM 16	16 EPA Priority PAH Pollutants Mixture CERTAN®	4.5 mL

100 µg/mL of each analyte in Toluene

Acenaphthene	Benzo(b)fluoranthene	Chrysene	Indeno(1,2,3-cd)pyrene
Acenaphthylene	Benzo(k)fluoranthene	Dibenzo(a,h)anthracene	Naphthalene
Anthracene	Benzo(ghi)perylene	Fluoranthene	Phenanthrene
Benzo(a)anthracene	Benzo(a)pyrene	Fluorene	Pyrene

NE5105	27 PAHs Mixture for Emission Control after Sporenberg CERTAN®	10 mL

10 µg/mL of each analyte in Toluene

Acenaphthene	Acenaphthylene
Anthanthrene	Anthracene
Benzo(a)anthracene	Benzo(a)pyrene
Benzo(b)fluoranthene	Benzo(b)fluorene
Triphenylene	Benzo(e)pyrene
Benzo(ghi)fluoranthene	Benzo(ghi)perylene
Benzo(j)fluoranthene	Benzo(k)fluoranthene
Chrysene	Coronene
Cyclopenta(cd)pyrene	Dibenzo(ac)anthracene
Dibenzo(a,h)anthracene	Fluorene
Fluoranthene	Indeno(1,2,3-cd)pyrene
Naphthalene	Perylene
Phenanthrene	Pyrene
Benzo(b)naphtho(2,1-d)thiophene	

SL30010	PAH - Mix 15 CERTAN®	1.5 mL

According to EU recommendation about the determination of carcinogenic PAHs in food (2005/108/EC)

10 µg/mL of each analyte in Acetonitrile

Benzo(a)anthracene	Benzo(g,h,i)perylene	Dibenzo(a,h)anthracene	Dibenzo(a,l)pyrene
Benzo(b)fluoranthene	Benzo(a)pyrene	Dibenzo(a,e)pyrene	Indeno(1,2,3-cd)pyrene
Benzo(j)fluoranthene	Chrysene	Dibenzo(a,h)pyrene	5-Methylchrysene
Benzo(k)fluoranthene	Cyclopenta(c,d)pyrene	Dibenzo(a,i)pyrene	

SL30015	PAH - Mix 15	1.5 mL
SL30000	PAH - Mix 15 CERTAN®	4.5 mL
SL30005	PAH - Mix 15	5 mL
NIST-2269	Perdeuterated PAH-I solution in Hexane/Toluene	5 x 1.2 mL

Certified concentrations

Compound	mg/kg	µg/mL
Biphenyl-D_{10}	7.84 ± 0.19	5.21 ± 0.13
Phenanthrene-D_{10}	37.25 ± 0.97	24.76 ± 0.64
Fluoranthene-D_{10}	62.6 ± 1.7	41.6 ± 1.10
Benz(a)anthracene-D_{12}	37.93 ± 0.88	25.22 ± 0.58
Dibenz(a,h)anthracene-D_{14}	7.47 ± 0.17	4.97 ± 0.11

NIST-2270	Perdeuterated PAH-II solution in Hexane/Toluene	5 x 1.2 mL

Certified concentrations for deuterated PAHs in NIST-2270

Compound	mg/kg	µg/mL
Naphthalene-D_8	77.0 ± 2.2	51.2 ±1.5
Acenaphthene-D_{10}	7.61 ± 0.22	5.06 ± 0.15
Pyrene-D_{10}	74.5 ± 1.6	49.5 ± 1.10
Benzo(a)pyrene-D_{12}	37.3 ± 1.1	24.80 ± 0.73
Perylene-D_{12}	29.88 ± 0.75	19.86 ± 0.50
Benzo(ghi)perylene-D_{12}	35.34 ± 0.93	23.49 ± 0.62

U-ISM-560-1	Semi-Volatiles Internal Standard Mixture	1 mL

2000 µg/mL of each analyte in Methylene chloride.

Acenaphthene-D_{10}	Naphthalene-D_8
Chrysene-D_{12}	Perylene-D_{12}
1,4-Dichlorobenzene-D_4	Phenanthrene-D_{10}

U-ISM-560	Semi-Volatiles Internal Standard Mixture	4 x 1 mL
New U-ISM-750-1	Deuterated PAH Mixture	1 mL

7 Analytes

200 µg/mL in Methylene chloride

Acenaphthene-d_{10}	Dibenzo(a,i)pyrene-d_{14}
Benz(a)anthracene-d_{12}	Fluoranthene-d_{10}
Benzo(a)pyrene-d_{12}	Phenanthrene-d_{10}
Dibenz(a,h)anthracene-d_{14}	

Standards for the analysis of the mineral oil content

The hydrocarbon contamination of soil and water by the spillage or leakage of petrol, diesel, or lubricants is one of the most common forms of environmental pollution. Standards e.g. EN-ISO 9377-2 or ISO 16703 have been developed for the determination of the mineral oil content in water and soil by gas chromatography.

	Code	Product	Unit
	DE-RIV 1	Oil standard (ISO 9377-2, ISO 16703) Equal amounts of: - Kuwait Gasoil without volatile compounds - Agip Basis Oil HVI 60 (formerly Shell)	5 mL
	BAM-K010	Diesel Fuel/Lubricating Oil (1:1) (ISO 9377-2, ISO 16703, EN 14039) Equal amounts of: - Diesel fuel - Lubricating oil	7 mL
	BAM-K008	Diesel oil (ISO 9377-2, ISO 16703, EN 14039) Diesel oil, certified mass fraction of the boiling range C10 - C40 to be used as calibration standard (type A) for the determination of TPH by GC/FID	7 mL
	BAM-K009	Lubricating oil (ISO 9377-2, ISO 16703, EN 14039) Lubricating oil, certified mass fraction of the boiling range C10 - C40 to be used as calibration standard (type B) for the determination of TPH by GC/FID and recovery standard for the gravimetric TPH determination.	7 mL
New	U-RGO-330-1	ISO 9377 Mineral Oil Mixture Standard Solvent: Hexane Mineral oil (type a) (no additives)..... 5 mg/mL Mineral oil (type b) (no additives)..... 5 mg/mL n-Tetracontane ..... 2 mg/L n-Decane ..... 2 µL/L	1 mL
New	U-RGO-330	ISO 9377 Mineral Oil Mixture Standard	4 x 1 mL
New	U-RGO-320-1	EN 14039/ISO 16703 Hydrocarbon Standard Solvent: n-Heptane Mineral oil (type a) (no additives)..... 4 g/L Mineral oil (type b) (no additives)..... 4 g/L n-Tetracontane ..... 30 mg/L n-Decane ..... 30 µL/L	1 mL
New	U-RGO-320	EN 14039/ISO 16703 Hydrocarbon Standard	4 x 1 mL
	NE1315	Oil Standard (RIV 1) in Petroleum ether (40 - 60°C) CERTAN® 10.000 µg/mL of DE-RIV 1 in Petroleum ether DE-RIV 1 consists of equal amounts of: - Kuwait Gasoil without volatile compounds - Agip Basis Oil HVI 60 (formerly Shell)	1.5 mL
	NE0875	Oil Standard (RIV 1) in Cyclohexane CERTAN® 10.000 µg/mL of DE-RIV 1 in Cylohexane DE-RIV 1 consists of equal amounts of: - Kuwait Gasoil without volatile compounds - Agip Basis Oil HVI 60 (formerly Shell)	1.5 mL
New	U-RGO-333-1	ISO 9377 Quality Control Standard Solvent: Acetone Mineral oil (type a) (no additives)..... 500 µg/mL Mineral oil (type b) (no additives)..... 500 µg/mL	1 mL
New	U-RGO-333	ISO 9377 Quality Control Standard	4 x 1 mL
	NE1311	2 mg n-Tetracontane und 2 µL n-Decane in 100 ml in Petrolether (30 - 60°C)	100 mL
	NE3628	2 mg n-Tetracontane and 2 µL n-Decane in 100 mL Cyclohexane	100 mL
	NE3628H	2 mg n-Tetracontane and 2 µL n-Decane in 100 mL Hexane	100 mL
New	NE3635	2 mg n-Tetracontane and 2 µL n-Decane in 100 mL n-Heptane	100 mL
New	U-RGO-335	ISO 9377 Extraction Solvent Stock Solution Solvent: Hexane n-Tetracontane ..... 20 mg/L n-Decane.....20 µL/L	10 mL
New	U-RGO-325-100	EN 14039/ISO 16703 Retention-Time Window (RTW) Standard Solvent: n-Heptane n-Tetracontane ..... 30 mg/L n-Decane.....30 µL/L	100 mL

	Code	Product	Unit
	NE1503	n-Alkane Standard Solution CERTAN® 100 µg/mL of each analyte in n-Hexane n-Decane, n-Eicosane, n-Triacontane n-Hexadecane, n-Tetracosane, n-Tetracontane	1.5 mL
	NE1312	Alkane Standard Solution in CERTAN® 100 µg/mL of each analyte in Petroleum ether (30 - 60°C). n-Decane, n-Octadecane, n-Hexacosane, n-Tetratriacontane n-Dodecane, n-Eicosane, n-Octacosane, n-Hexatriacontane n-Tetradecane, n-Docosane, n-Triacontane, n-Octatriacontane n-Hexadecane, n-Tetracosane, n-Dotriacontane, n-Tetracontane	1.5 mL
	NE3613	Alkane Standard Solution CERTAN® 100 µg/mL of each analyte in Cyclohexane. n-Decane, n-Octadecane, n-Hexacosane, n-Tetratriacontane n-Dodecane, n-Eicosane, n-Octacosane, n-Hexatriacontane n-Tetradecane, n-Docosane, n-Triacontane, n-Octatriacontane n-Hexadecane, n-Tetracosane, n-Dotriacontane, n-Tetracontane	1.5 mL
New	U-RGO-322-1	EN 14039/ISO 16703/ISO 9377 n-Alkanes System Performance Standard 16 Analytes Solvent: n-Heptane n-Decane ..... 50 µg/mL, n-Docosane .....50 µg/mL, n-Tetratriacontane ..... 50 µg/mL n-Dodecane ..... 50 µg/mL, n-Tetracosane .....50 µg/mL, n-Hexatriacontane ..... 50 µg/mL n-Tetradecane ..... 50 µg/mL, n-Hexacosane .....50 µg/mL, n-Octatriacontane ..... 50 µg/mL n-Hexadecane ..... 50 µg/mL, n-Octacosane.....50 µg/mL, n-Tetracontane ..... 50 µg/mL n-Octadecane ..... 50 µg/mL, n-Triacontane .....50 µg/mL n-Eicosane..... 50 µg/mL, n-Dotriacontane.....50 µg/mL	1 mL
New	U-RGO-322	EN 14039/ISO 16703/ISO 9377 n-Alkanes System Performance Standard	4 x 1 mL
	CHE 143	Decane	2 mL
	NE3673	n-Decane (C10) 50 µg/mL in Cyclohexane CERTAN®	1.5 mL
	U-RNA-011	n-Eicosane	1 g
	NE3615	n-Eicosane (C20) 50 µg/mL in Cyclohexane CERTAN®	1.5 mL
	FL-87086-250MG	Tetracontane puriss. p.a., standard for GC, > 98.5 % (GC)	250 mg
	NE3614	n-Tetracontane (C40) 50 µg/mL in Cyclohexane CERTAN®	1.5 mL
	FL-46408-100MG	Stearyl stearate OEKANAL®	100 mg
New	U-RGO-321-1	EN 14039/ISO 16703 Stearyl Stearate Test Solution Stearyl stearate 1000 µg/mL in n-Heptane	1 mL
New	U-RGO-321	EN 14039/ISO 16703 Stearyl Stearate Test Solution	4 x 1 mL
New	U-RGO-331-1	ISO-9377 Stearyl Stearate Test Solution Stearyl stearate 2000 µg/mL in Hexane	1 mL
New	U-RGO-331	ISO-9377 Stearyl Stearate Test Solution	4 x 1 mL
		Reagents/Sorbents	
	SC-9700-B005	Florisil® (Standard), 60 - 100 mesh (suitable for ISO 9377-2/H53)	500 g

Hydrocarbon fuel standards

Code	Product	Unit
U-RGO-600-1	Regular Unleaded Gasoline 500 µg/mL in Methanol	1 mL
U-RGO-600	Regular Unleaded Gasoline 500 µg/mL in Methanol	4 x 1 mL
U-RGO-610-1	No. 2 Diesel Oil 500 µg/mL in Methanol	1 mL
U-RGO-610	No. 2 Diesel Oil 500 µg/mL in Methanol	4 x 1 mL
U-RGO-605-1	Composite Unleaded Gasoline 2500 µg/mL in Methanol	1 mL
U-RGO-605	Composite Unleaded Gasoline 2500 µg/mL in Methanol	4 x 1 mL
U-RGO-606-1	Composite Unleaded Gasoline 50000 µg/mL in Methylene chloride	1 mL
U-RGO-606	Composite Unleaded Gasoline 50000 µg/mL in Methylene chloride	4 x 1 mL
U-RGO-661-1	Aviation Gas 2500 µg/mL in Methanol	1 mL
U-RGO-661	Aviation Gas 2500 µg/mL in Methanol	4 x 1 mL
U-RGO-616-1	Composite 2 Diesel Fuel 50000 µg/mL in Methylene chloride	1 mL
U-RGO-616	Composite 2 Diesel Fuel 50000 µg/mL in Methylene chloride	4 x 1 mL
U-RGO-615-1	Composite 2 Diesel Fuel 2500 µg/mL in Methanol	1 mL

Weathered hydrocarbon fuel standards

Code	Product	Unit
U-RGO-615	Composite 2 Diesel Fuel 2500 µg/mL in Methanol	4 x 1 mL
U-RGO-616-1	Composite 2 Diesel Fuel 50000 µg/mL in Methylene chloride	1 mL
U-RGO-616	Composite 2 Diesel Fuel 50000 µg/mL in Methylene chloride	4 x 1 mL
U-RGO-625-1	Composite Kerosene 2500 µg/mL in Methanol	1 mL
U-RGO-625	Composite Kerosene 2500 µg/mL in Methanol	4 x 1 mL
U-RGO-626-1	Composite Kerosene 50000 µg/mL in Methylene chloride	1 mL
U-RGO-626	Composite Kerosene 50000 µg/mL in Methylene chloride	4 x 1 mL
U-RGO-671-1	Jet Fuel A 5000 µg/mL in Methylene chloride	1 mL
U-RGO-671	Jet Fuel A 5000 µg/mL in Methylene chloride	4 x 1 mL
U-RGO-672-1	Jet Fuel A 50000 µg/mL in Methylene chloride	1 mL
U-RGO-672	Jet Fuel A 50000 µg/mL in Methylene chloride	4 x 1 mL
U-RGO-631-1	Fuel Oil 4 5000 µg/mL in Methylene chloride	1 mL
U-RGO-631	Fuel Oil 4 5000 µg/mL in Methylene chloride	4 x 1 mL
U-RGO-632-1	Fuel Oil 4 50,000 µg/mL in Methylene chloride	1 mL
U-RGO-632	Fuel Oil 4 50,000 µg/mL in Methylene chloride	4 x 1 mL
U-RGO-641-1	Fuel Oil 5 5000 µg/mL in Methylene chloride	1 mL
U-RGO-641	Fuel Oil 5 5000 µg/mL in Methylene chloride	4 x 1 mL
U-RGO-642-1	Fuel Oil 5 50000 µg/mL in Methylene chloride	1 mL
U-RGO-642	Fuel Oil 5 50000 µg/mL in Methylene chloride	4 x 1 mL
U-RGO-651-1	Fuel Oil 6 5000 µg/mL in Methylene chloride	1 mL
U-RGO-651	Fuel Oil 6 5000 µg/mL in Methylene chloride	4 x 1 mL
U-RGO-652-1	Fuel Oil 6 50000 µg/mL in Methylene chloride	1 mL
U-RGO-652	Fuel Oil 6 50000 µg/mL in Methylene chloride	4 x 1 mL
U-RGO-608-1	Unleaded Regular Gasoline Standard 5000 µg/mL in Methylene chloride	1 mL
U-RGO-608	Unleaded Regular Gasoline Standard 5000 µg/mL in Methylene chloride	4 x 1 mL
U-RGO-609-1	Unleaded Premium Gasoline Standard 5000 µg/mL in Methylene chloride	1 mL
U-RGO-609	Unleaded Premium Gasoline Standard 5000 µg/mL in Methylene chloride	4 x 1 mL
U-RGO-691-1	JP-5 Military Fuel 5000 µg/mL in Methylene chloride	1 mL
U-RGO-691	JP-5 Military Fuel 5000 µg/mL in Methylene chloride	4 x 1 mL
U-RGO-692-1	JP-5 Military Fuel 50000 µg/mL in Methylene chloride	1 mL
U-RGO-692	JP-5 Military Fuel 50000 µg/mL in Methylene chloride	4 x 1 mL
U-RGO-722-1	SAE 10W30 Motor Oil 1000 µg/mL in Methylene chloride	1 mL
U-RGO-722	SAE 10W30 Motor Oil 1000 µg/mL in Methylene chloride	4 x 1 mL

Weathered hydrocarbon fuel standards

Weathered fuel standards are designed to simulate the effects of exposure on hydrocarbon fuel samples. The standards are prepared by evaporation of the low boiling components of the fuel sample until the desired percentage reduction is achieved. Matrix effects have not been simulated.

Unleaded gasoline standards

Code	Product	Unit
U-RGO-601-1	Unleaded Gasoline (Unweathered) 5000 µg/mL in Methanol	1 mL
U-RGO-601	Unleaded Gasoline (Unweathered) 5000 µg/mL in Methanol	4 x 1 mL
U-RGO-602-1	Unleaded Gasoline (25% Weathered) 5000 µg/mL in Methanol	1 mL
U-RGO-602	Unleaded Gasoline (25% Weathered) 5000 µg/mL in Methanol	4 x 1 mL
U-RGO-603-1	Unleaded Gasoline (50% Weathered) 5000 µg/mL in Methanol	1 mL
U-RGO-603	Unleaded Gasoline (50% Weathered) 5000 µg/mL in Methanol	4 x 1 mL
U-RGO-604-1	Unleaded Gasoline (75% Weathered) 5000 µg/mL in Methanol	1 mL
U-RGO-604	Unleaded Gasoline (75% Weathered) 5000 µg/mL in Methanol	4 x 1 mL
U-RGO-611-1	Diesel Fuel 2 (Unweathered) 5000 µg/mL in Methylene chloride	1 mL
U-RGO-611	Diesel Fuel 2 (Unweathered) 5000 µg/mL in Methylene chloride	4 x 1 mL

Code	Product	Unit
U-RGO-612-1	Diesel Fuel 2 (25% Weathered) 5000 µg/mL in Methylene chloride	1 mL
U-RGO-612	Diesel Fuel 2 (25% Weathered) 5000 µg/mL in Methylene chloride	4 x 1 mL
U-RGO-613-1	Diesel Fuel 2 (50% Weathered) 5000 µg/mL in Methylene chloride	1 mL
U-RGO-613	Diesel Fuel 2 (50% Weathered) 5000 µg/mL in Methylene chloride	4 x 1 mL
U-RGO-614-1	Diesel Fuel 2 (75% Weathered) 5000 µg/mL in Methylene chloride	1 mL
U-RGO-614	Diesel Fuel 2 (75% Weathered) 5000 µg/mL in Methylene chloride	4 x 1 mL

Kerosene standards

U-RGO-621-1	Kerosene (Unweathered) 5000 µg/mL in Methylene chloride	1 mL
U-RGO-621	Kerosene (Unweathered) 5000 µg/mL in Methylene chloride	4 x 1 mL
U-RGO-622-1	Kerosene (25% Weathered) 5000 µg/mL in Methylene chloride	1 mL
U-RGO-622	Kerosene (25% Weathered) 5000 µg/mL in Methylene chloride	4 x 1 mL
U-RGO-623-1	Kerosene (50% Weathered) 5000 µg/mL in Methylene chloride	1 mL
U-RGO-623	Kerosene (50% Weathered) 5000 µg/mL in Methylene chloride	4 x 1 mL
U-RGO-624-1	Kerosene (75% weathered) 5000 µg/mL in Methylene chloride	1 mL
U-RGO-624	Kerosene (75% weathered) 5000 µg/mL in Methylene chloride	4 x 1 mL

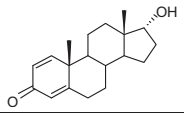
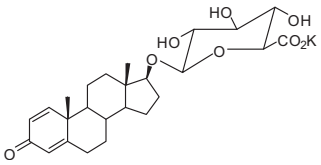
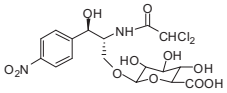
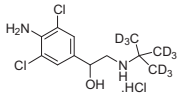
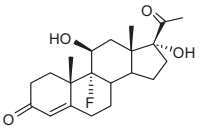
Mineral sprits standards

U-RGO-701-1	Mineral Spirits (Unweathered) 5000 µg/mL in Methylene chloride	1 mL
U-RGO-701	Mineral Spirits (Unweathered) 5000 µg/mL in Methylene chloride	4 x 1 mL
U-RGO-702-1	Mineral Spirits (25% Weathered) 5000 µg/mL in Methylene chloride	1 mL
U-RGO-702	Mineral Spirits (25% Weathered) 5000 µg/mL in Methylene chloride	4 x 1 mL
U-RGO-703-1	Mineral Spirits (50% Weathered) 5000 µg/mL in Methylene chloride	1 mL
U-RGO-703	Mineral Spirits (50% Weathered) 5000 µg/mL in Methylene chloride	4 x 1 mL
U-RGO-704-1	Mineral Spirits (75% Weathered) 5000 µg/mL in Methylene chloride	1 mL
U-RGO-704	Mineral Spirits (75% Weathered) 5000 µg/mL in Methylene chloride	4 x 1 mL

Veterinary medicines and pharmaceuticals

NMIA-Reference materials

The certified reference materials produced by the Australian National Measurement Institute are prepared in accordance with their accreditation from NATA to "ISO Guide 34:2000 General requirements for the competence of reference materials producers"

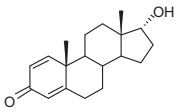
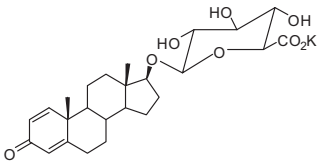
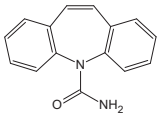
Code	Product		Unit
NMIAD582	17alpha-Boldenone (Epiboldenone) °		1 mg
NMIAD862	17-beta-Boldenone glucuronide potassium salt °		1 mg
NMIAD714	Chloramphenicol glucuronide °		1 mg
NMIAM954	Clenbuterol-D9 HCl		1 mg
NMIAD652	Fluorogestone (Flugestone) °		5 mg

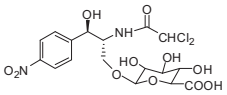
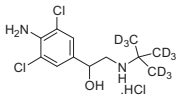
Veterinary medicines and pharmaceuticals

Code	Product	Unit
NMIAD651	Megesterol °	5 mg
NMIAD655	Melengestrol °	5 mg
NMIAD632	Melengestrol acetate °	50 mg
NMIAD861	17-beta-Nandrolone glucuronide potassium salt °	1 mg
NMIAM890	Sulfatroxazole	50 mg
NMIAD708	17alpha-Trenbolone (Epitrenbolone) °	5 mg
NMIAP1801	alpha-Zearalanol	5 mg
NMIAP1802	beta-Zearalanol	5 mg
NMIAP1795	alpha-Zearalenol	5 mg
NMIAP1796	beta-Zearalenol	5 mg
NMIAP1787	Zearalenone	10 mg

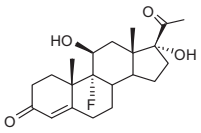
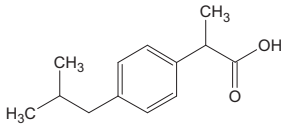
Full listing of veterinary medicine and pharmaceutical standards

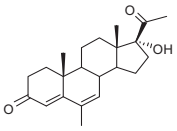
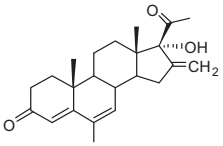
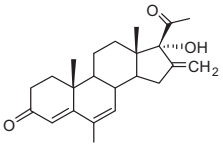
New	FL-32836-10MG	Acepromazine-d6 hydrochloride VETRANAL®	10 mg
New	FL-32527-50MG	Acequinocyl PESTANAL®	50 mg
	FL-33978-100MG	2-Acetamido-5-nitrothiazole VETRANAL®	100 mg
	CIL-ULM-7629-1.2	Acetaminophen (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CNLM-3726-1.2	Acetaminophen (acetyl-$^{13}C_2$,99%; ^{15}N,98%) 100 µg/mL in Acetonitrile	1.2 mL
	FL-33992-100MG	Aklomid VETRANAL®	100 mg
	NMIAP1793	Albendazole sulfone	25 mg
	NMIAP1792	Albendazole sulfoxide	25 mg
	FL-33994-100MG	Altrenogest VETRANAL®	100 mg
New	FL-32841-10MG	2-Aminoflubendazole VETRANAL®	10 mg
	FL-33655-100MG	1-Aminohydantoin hydrochloride VETRANAL®	100 mg
	CIL-DLM-7170-1.2	1-Aminohydantoin hydrochloride (5,5-D_2,98%) (AHD) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-7188-1.2	1-Aminohydantoin hydrochloride (unlabelled) 100 µg/mL in Methanol	1.2 mL
New	FL-32731-10MG	3-Amino-2-methyl-5-nitrobenzamide VETRANAL®	10 mg
New	FL-32733-10MG	5-Amino-2-methyl-3-nitrobenzamide VETRANAL®	10 mg
	CIL-DLM-7171-1.2	3-Amino-2-oxazolidone (AOZ) (ring-D_4,98%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-7189-1.2	3-Amino-2-oxazolidone (AOZ) (unlabelled) 100 µg/mL in Methanol	1.2 mL
New	CIL-ULM-8350-1.2	Amitriptyline:HCl (unlabelled) 100 µg/mL in Methanol	1.2 mL

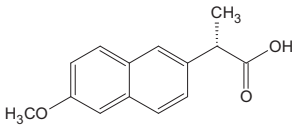
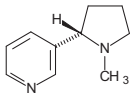
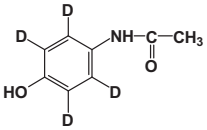
	Code	Product	Unit
New	CIL-DLM-3008-1.2	Amitriptyline:HCl ((N,N-dimethyl-D_6,98%) 100 µg/mL in Methanol	1.2 mL
	FL-31586-250MG	Amoxillin trihydrate VETRANAL®	250 mg
	FL-46006-100MG	Amphotericin B trihydrate VETRANAL®	100 mg
	FL-31591-250MG	Ampicillin trihydrate VETRANAL®	250 mg
	FL-31592-250MG	Amprolium hydrochloride VETRANAL®	250 mg
	FL-31573-100MG	Androstanolone (5a-Androstan-17ß-ol-3-one) VETRANAL®	100 mg
	FL-46025-250MG	Androstanolone 17-benzoate VETRANAL®	250 mg
	FL-46033-250MG	Androstenedione VETRANAL®	250 mg
	FL-31579-250MG	cis-Androsterone VETRANAL®	250 mg
	FL-37919-100MG	Anhydrotetracycline hydrochloride VETRANAL®	100 mg
	FL-33347-50MG	AOZ VETRANAL®	50 mg
	FL-33349-50MG	AMOZ VETRANAL®	50 mg
	FL-31593-250MG	Arecoline hydrobromide VETRANAL®	250 mg
	FL-31584-250MG	4-Arsanilic acid VETRANAL®	250 mg
	FL-32992-25MG	Aspoxicillin VETRANAL®	25 mg
	FL-34045-100MG	Azaconazol VETRANAL®	100 mg
New	FL-32738-10MG	Azaperol VETRANAL®	10 mg
	FL-34223-100MG	Azaperone VETRANAL®	100 mg
New	FL-32854-10MG	Azaperone-d4 VETRANAL®	10 mg
	FL-31626-250MG	Bacitracin A VETRANAL®	250 mg
New	FL-32591-10MG	Baquiloprim VETRANAL®	10 mg
	FL-31735-250MG	Benzathine penicilline G tetrahydrate VETRANAL®	250 mg
	FL-34166-100MG	Betamethason (free compound) VETRANAL®	100 mg
	FL-46074-250MG	Betamethasone 17-valerate VETRANAL®	250 mg
	FL-31622-250MG	Bithionol VETRANAL®	250 mg
	FL-46431-10MG	Boldenon VETRANAL®	10 mg
	NMIAD582	17alpha-Boldenone (Epiboldenone) ° 	1 mg
	NMIAD862	17-beta-Boldenone glucuronide potassium salt ° 	1 mg
New	FL-94972-10MG	Brombuterol hydrochloride VETRANAL®	10 mg
	FL-46356-250MG	Canamycin A disulfate salt dihydrate VETRANAL®	250 mg
New	CIL-ULM-7653-1.2	Caffeine (unlabelled) 100 µg/mL in Methanol	1.2 mL
	CIL-CLM-514-1.2	Caffeine (trimethyl-$^{13}C_3$, 99%) 100 µg/mL in Methanol	1.2 mL
New	FL-32819-10MG	Carazolol-d7 VETRANAL®	10 mg
	NE9228	Carbamazepine 10 µg/mL in Methanol	10 mL
	CERC-053	Carbamazepine (1.0 mg/ml) in Methanol 	1 mL
	CIL-ULM-6581-1.2	Carbamazepine (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-DLM-2806-1.2	Carbamazepine (D_{10},98%) 100 µg/mL in Acetonitrile-D_3	1.2 mL
	FL-46100-250MG	Carbazole VETRANAL®	250 mg
	FL-33975-100MG	Carprofen VETRANAL®	100 mg
New	FL-32736-10MG	Carprofen-d3 VETRANAL®	10 mg
	FL-33989-100MG	Cefalexin VETRANAL®	100 mg
New	FL-32904-100MG	Cefalonium hydrate VETRANAL®	100 mg
	FL-34001-100MG	Ceftiofur VETRANAL®	100 mg

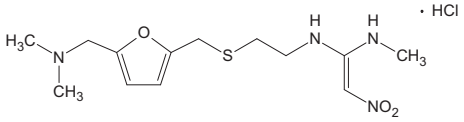
	Code	Product	Unit
	FL-34218-100MG	Cefuroxime VETRANAL®	100 mg
	CIL-ULM-6687-1.2	(+/-)-Chloramphenicol (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
New	FL-34005-10MG	m-Chloramphenicol VETRANAL®	10 mg
New	FL-34005-100MG	m-Chloramphenicol VETRANAL®	100 mg
	NMIAD714	Chloramphenicol glucuronide ° 	1 mg
	FL-46109-250MG	Chloramphenicol palmitate VETRANAL®	250 mg
	FL-46133-250MG	Chlorotetracycline hydrochloride VETRANAL®	250 mg
New	FL-32554-10MG	Chlorpromazin-d6 hydrochloride VETRANAL®	10 mg
New	FL-32568-10MG	Cimaterol VETRANAL®	10 mg
New	FL-32569-10MG	Cimaterol-d7 VETRANAL®	10 mg
New	FL-32576-10MG	Cimbuterol VETRANAL®	10 mg
	FL-33434-100MG	Ciprofloxacine VETRANAL®	100 mg
	CIL-ULM-7710-S	Ciprofloxacin x HCl (unlabelled) 100 µg/mL in Methanol	1.2 mL
New	CIL-ULM-7710-1.2	Ciprofloxacin (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CNLM-7539-1.2	Ciprofloxacin (2,3,carboxyl-$^{13}C_3$, 99%; quinoline-^{15}N, 98%) 100 µg/mL in Acetonitrile	1.2 mL
New	FL-32982-10MG	Ciprofloxacin-d8 hydrochloride monohydrate VETRANAL®	10 mg
	FL-34015-100MG	Citicoline sodium VETRANAL®	100 mg
	NMIAM954	Clenbuterol-D9 HCl 	1 mg
New	FL-32580-10MG	Clenhexerol VETRANAL®	10 mg
New	FL-32825-10MG	Clenpenterole hydrochloride VETRANAL®	10 mg
New	FL-32827-10MG	Clenproperole VETRANAL®	10 mg
New	FL-32828-10MG	Clenproperole-d7 VETRANAL®	10 mg
	FL-33931-100MG	Clioquinol VETRANAL®	100 mg
	NE9240	Clofibric acid 10 µg/mL in Methanol	10 mL
	FL-33988-100MG	Clopidol VETRANAL®	100 mg
	FL-33973-100MG	Clorsulon VETRANAL®	100 mg
New	FL-33755-100MG	Clostebol acetate VETRANAL®	100 mg
	FL-33894-100MG	Clotrimazol VETRANAL®	100 mg
	FL-46140-250MG	Cloxacillin sodium salt hydrate VETRANAL®	250 mg
	FL-46148-100MG	Corticosterone VETRANAL®	100 mg
	FL-46149-100MG	Corticosterone 21-acetate VETRANAL®	100 mg
New	CIL-DLM-2218-A-1.2	Cortisol (9,11,12,12-D_4,98%) 100 µg/mL in Methylene chloride	1.2 mL
	FL-46364-250MG	Crystal violet chloride VETRANAL®	250 mg
New	FL-32853-10MG	Crystal Violet-d6 trihydrate VETRANAL®	10 mg
	FL-33700-100MG	Danofloxacin VETRANAL®	100 mg
	FL-46158-250MG	Dapson VETRANAL®	250 mg
New	FL-32552-10MG	Decoquinate-d5 VETRANAL®	10 mg
	FL-46161-100MG	Demeclocyclin hydrochloride, hemihydrate	100 mg
New	FL-32809-25MG	Desogestrel VETRANAL®	25 mg
	FL-46165-250MG	Dexamethason VETRANAL®	250 mg
	FL-46166-100MG	Dexamethason 21-acetate VETRANAL®	100 mg
	FL-46174-100MG	Diaveridine VETRANAL®	100 mg
	FL-34057-100MG	Diclazuril VETRANAL®	100 mg
	FL-46182-100MG	Dicloxacillin sodium salt hydrate VETRANAL®	100 mg
	FL-46190-100MG	Dienestrol VETRANAL®	100 mg
	FL-31704-250MG	Diethylcarbamazine citrate VETRANAL®	250 mg
	FL-46207-250MG	Diethylstilbestrol VETRANAL®	250 mg

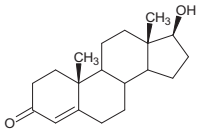
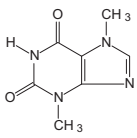
	Code	Product	Unit
	CIL-ULM-7921-1.2	Diethylstilbestrol (cis/trans mix) (unlabelled) 100 µg/mL in Dichloromethane	1.2 mL
New	CIL-ULM-7921-D-1.2	Diethylstilbestrol (cis/trans Mix) (unlabelled) 100 µg/mL in Dioxane	1.2 mL
	CIL-DLM-170-1.2	Diethylstilbestrol (cis/trans mix) (ring-3,3',5,5'-diethyl-1,1,1',1'-D_8,98%) 100 µg/mL in Dichloromethane-D_2	1.2 mL
New	CIL-DLM-170-D-1.2	Diethylstilbestrol (cis/trans mix) (ring-3,3',5,5'-diethyl-1,1,1',1'-D_8,98%) 100 µg/mL in Dioxane	1.2 mL
	FL-33984-100MG	Difloxacin hydrochloride VETRANAL®	100 mg
New	FL-32987-10MG	Difloxacin-d3 hydrochloride VETRANAL®	10 mg
	FL-34196-10MG	Dimetridazol-d_3 VETRANAL®	10 mg
New	CIL-ULM-8533-1.2	5,5-Diphenylhydantoin (unlabelled) 100 µg/mL in Methanol	1.2 mL
New	CIL-CNLM-411-1.2	5,5-Diphenylhydantoin (2-^{13}C,99%; 1,3-$^{15}N_2$,98%) 100 µg/mL in Methanol	1.2 mL
	FL-46232-250MG	Dipyron hydrate VETRANAL®	250 mg
	FL-34214-10MG	DNC-D8 VETRANAL®	10 mg
	FL-33993-100MG	Doramectin VETRANAL®	100 mg
	FL-33429-100MG	Doxycycline hyclate VETRANAL®	100 mg
	FL-33699-100MG	Enrofloxcin VETRANAL®	100 mg
New	FL-32983-10MG	Enrofloxacin-d5 hydrochloride VETRANAL®	10 mg
	FL-37921-100MG	4-Epianhydrotetracycline hydrochloride VETRANAL®	100 mg
	FL-37918-100MG	4-Epitetracycline hydrochloride VETRANAL®	100 mg
New	FL-32526-100MG	Eprinomectin VETRANAL®	100 mg
	FL-46247-50MG	Equilin VETRANAL®	50 mg
	FL-46256-250MG	Erythromycin A dihydrate VETRANAL®	250 mg
	CIL-CLM-3672-1.2	Erythromycin (N,N-dimethyl-$^{13}C_2$,~90%) 100 µg/mL in Acetonitrile	1.2 mL
	FL-31734-250MG	17beta-Estradiol VETRANAL®	250 mg
	CIL-ULM-7449-1.2	Estradiol (unlabelled) 100 µg/mL in Acetronitrile	1.2 mL
	CIL-CLM-7936-1.2	DL-Estradiol (13,14,15,16,17,18-$^{13}C_6$,99%) 100 µg/mL in Methanol	1.2 mL
	CIL-CLM-803-1.2	Estradiol (3,4-$^{13}C_2$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	FL-46551-100MG	17beta-Estradiol 17-acetate VETRANAL®	100 mg
	FL-46552-250MG	17beta-Estradiol 3-benzoate VETRANAL®	250 mg
	FL-46542-100MG	17alpha-Estradiol hemihydrate VETRANAL®	100 mg
	FL-46565-100MG	Estriol VETRANAL®	100 mg
	CIL-DLM-7468-1.2	Estriol (2,4-D_2,98%) 100 ug/mL in p-Dioxane	1.2 mL
	CIL-ULM-7212-1.2	Estrone (unlabelled) 100 µg/mL in Acetronitrile	1.2 mL
	FL-46573-250MG	Estrone VETRANAL®	250 mg
	CIL-CLM-673-1.2	Estrone (3,4-$^{13}C_2$,90%) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-CLM-7935-1.2	DL-Estrone (13,14,15,16,17,18-$^{13}C_6$,99%) 100 µg/mL in Methanol	1.2 mL
	FL-46263-250MG	17alpha-Ethinylestradiol VETRANAL®	250 mg
	CIL-CLM-3375-1.2	Ethynylestradiol (20,21-$^{13}C_2$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	FL-46272-250MG	Ethisterone VETRANAL®	250 mg
	FL-33996-100MG	Ethopabat VETRANAL®	100 mg
	FL-33981-100MG	Febantel VETRANAL®	100 mg
New	FL-32729-10MG	Febantel-d6 VETRANAL®	10 mg
	FL-35032-100MG	Fenbendazole VETRANAL®	100 mg
New	FL-32544-10MG	Fenbendazole sulfone VETRANAL®	10 mg
	NMIAP1791	Fenbendazole-sulfone	25 mg
New	FL-32567-10MG	Fenbendazole-d3 VETRANAL®	10 mg
	FL-34202-100MG	Finasteride VETRANAL®	100 mg
	FL-33930-100MG	Fleroxacin VETRANAL®	100 mg
	FL-34091-100MG	Flubendazol VETRANAL®	100 mg
New	FL-32839-10MG	Flubendazole-d3 VETRANAL®	10 mg
	FL-33586-100MG	Flunixin VETRANAL®	100 mg
	FL-34083-10MG	Flunixin-D3 VETRANAL®	10 mg

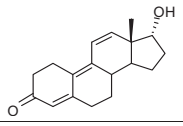
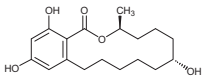
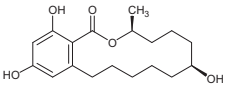
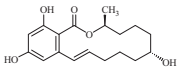
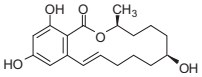
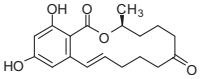
	Code	Product	Unit
	NMIAD652	Fluorogestone (Flugestone) ° 	5 mg
	FL-34012-10MG	Fluoxetine hydrochloride VETRANAL®	10 mg
	FL-34089-100MG	Fosfomycin sodium VETRANAL®	100 mg
	FL-46289-250MG	Furaltadone VETRANAL®	250 mg
	FL-34061-10MG	Furaltadon-D5 VETRANAL®	10 mg
	FL-46297-250MG	Furazolidone VETRANAL®	250 mg
New	FL-32511-10MG	Furazolidone-d4 VETRANAL®	10 mg
	CIL-ULM-8225-1.2	Gemfibrozil (unlabelled) 100 ug/mL in Dioxane	1.2 mL
	CIL-DLM-8221-1.2	Gemfibrozil (2,2-dimethyl-D_6,98%) 100 µg/mL in Dioxane	1.2 mL
	FL-46305-250MG	Gentamycin 2,5-sulfate hexahydrate VETRANAL®	250 mg
	FL-46309-250MG	Griseofulvin VETRANAL®	250 mg
	FL-31715-250MG	Hexachloroethane VETRANAL®	250 mg
	FL-46320-100MG	Hexestrol VETRANAL®	100 mg
New	FL-34003-10MG	HMMNI VETRANAL®	10 mg
New	FL-34003-250MG	HMMNI VETRANAL®	250 mg
	NMIAP1296	HMMNI (nitroimidazole metabolite)	50 mg
	FL-34207-10MG	HMMNI-d_3 VETRANAL®	10 mg
	FL-31719-250MG	Hydrocortisone VETRANAL®	250 mg
	FL-46329-250MG	Hydrocortisone 21-acetate VETRANAL®	250 mg
New	FL-32843-10MG	5-Hydroxymebendazole-d3 VETRANAL®	10 mg
New	FL-32826-10MG	Hydroxymethylclenbuterole VETRANAL®	10 mg
	FL-46337-250MG	17-alpha-Hydroxyprogesterone VETRANAL®	250 mg
	FL-33818-10MG	5-Hydroxythiabendazole VETRANAL®	10 mg
	CERI-009	Ibuprofen (1.0 mg/ml) in Methanol 	1 mL
	CIL-ULM-7275-1.2	Ibuprofen (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-6943-1.2	Ibuprofen (propionic-$^{13}C_3$,99%) 100 µg/mL in Acetonitrile	1.2 mL
New	FL-55264-50MG	Ibuprofen-d3	50 mg
	FL-33997-100MG	Imazalil sulfate PESTANAL®	100 mg
	FL-33441-50MG	Imidocarb dipropionate VETRANAL®	50 mg
	FL-34216-10MG	Ipronidazole-D3 VETRANAL®	10 mg
New	FL-34004-10MG	Ipronidazole-OH VETRANAL®	10 mg
New	FL-34004-100MG	Ipronidazole-OH VETRANAL®	100 mg
	FL-34016-100MG	Ketoprofen VETRANAL®	100 mg
New	FL-32673-10MG	Ketoprofen-d3 VETRANAL®	10 mg
	FL-32991-25MG	Lanoconazole VETRANAL®	25 mg
New	FL-32834-10MG	Leucocrystal Violet-d6 VETRANAL®	10 mg
	FL-31721-250MG	Leucomycin hydrate VETRANAL®	250 mg
	FL-31742-250MG	Levamisol hydrochloride VETRANAL®	250 mg
	FL-34014-100MG	Loperamide hydrochloride VETRANAL®	100 mg
	FL-34046-100MG	Lysozym hydrochloride VETRANAL®	100 mg
New	FL-32573-10MG	Mabuterol hydrochloride VETRANAL®	10 mg
	FL-34069-100MG	Maduramicin VETRANAL®	100 mg

	Code	Product	Unit
	LGC1706	Malachite green oxalate The material is intended for the use as an analytical standard for the determination of malachite green oxalate in foodstuff especially fish Assessed value Purity..... 94.2 ± 1.4 mass% Indicative values for Monode -malachite green, 4-(Dimethylamino)benzophenone, Malachite green carbinol (MG-carbinol), Leucomalachite green (LMG).	250 mg
	FL-46396-250MG	Malachite green oxalate VETRANAL®	250 mg
New	FL-49358-5MG	Mapenterol hydrochloride VETRANAL®	5 mg
	FL-34039-100MG	Marboflaxacin VETRANAL®	100 mg
	FL-46404-250MG	Mebendazol VETRANAL®	250 mg
New	FL-32842-10MG	Mebendazole-d3 VETRANAL®	10 mg
	FL-46411-100MG	Medroxyprogesterone VETRANAL®	100 mg
	FL-46412-250MG	Medroxyprogesterone 17-acetate VETRANAL®	250 mg
	NMIAD651	Megesterol ° 	5 mg
	FL-46420-100MG	Megestrol 17-acetate VETRANAL®	100 mg
	NMIAD655	Melengestrol ° 	5 mg
	NMIAD632	Melengestrol acetate °	50 mg
	FL-33998-100MG	Melengestrol acetate VETRANAL®	100 mg
	FL-33447-100MG	Mecillinam VETRANAL®	100 mg
	FL-37906-100MG	Methacyline hydrochloride VETRANAL®	100 mg
	FL-46429-250MG	Methimazol VETRANAL®	250 mg
	CIL-DLM-4766-1.2	2-Methylisoborneol (2-methyl-D_3,98%) 100 µg/mL in Nonane	1.2 mL
	FL-46436-100MG	6-alpha-Methylprednisolone VETRANAL®	100 mg
New	FL-46444-20MG	17alpha-Methyltestosterone VETRANAL®	20 mg
New	FL-46444-250MG	17alpha-Methyltestosterone VETRANAL®	250 mg
	FL-46453-250MG	6-Methyl-2-thiouracil VETRANAL®	250 mg
	CIL-ULM-7884-1.2	Methyl triclosan (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-7885-1.2	Methyl triclosan (ring-$^{13}C_{12}$, 99%) 100 µg/mL in Nonane	1.2 mL
	FL-46461-250MG	Metronidazol VETRANAL®	250 mg
New	FL-32744-10MG	Metronidazole-13C2,15N2 VETRANAL®	10 mg
	FL-34007-10MG	Metronidazole-OH VETRANAL®	10 mg
New	FL-32549-10MG	Miloxacin-d3 VETRANAL®	10 mg
	FL-46468-100MG	Monensin sodium salt hydrate VETRANAL®	100 mg
	FL-46473-250MG	Morantel tartrate VETRANAL®	250 mg
	CIL-DLM-7172-1.2	5-(4-Morpholinylmethyl)-3-amino-2-oxazolidinone (AMOZ) (4,4,5,5',5,'-D_5,98%) 100 µg/mL in Acetonitrile-D_3	1.2 mL
	CIL-ULM-7190-1.2	5-(4-Morpholinylmethyl)-3-amino-2-oxazolidinone (AMOZ) (unlabelled) 100 µg/mL in Methanol	1.2 mL
New	FL-33746-25MG	Moxidectin VETRANAL®	25 mg
New	FL-32613-10MG	NaDMDTC-d6 dihydrate PESTANAL®	10 mg
	FL-46476-250MG	Nandrolone VETRANAL®	250 mg
	NMIAD861	17-beta-Nandrolone glucuronide potassium salt ° 	1 mg
	FL-46477-100MG	Nandrolon 17-propionate VETRANAL®	100 mg

	Code	Product	Unit
	FL-46482-250MG	Naproxen VETRANAL®	250 mg
	CERN-042	Naproxen (1.0 mg/mL) in Methanol 	1 mL
	CIL-CDLM-7665-1.2	Naproxen (methyl-^{13}C,99%; methyl-D_3,98%) 100 µg/mL in Acetonitrile	1.2 mL
	FL-33492-100MG	Neomycin trisulfate VETRANAL®	100 mg
	FL-33448-10MG	Nequinate VETRANAL®	10 mg
	CERN-008	S(-)-Nicotine (1.0 mg/ml) im Methanol 	1 mL
	FL-46494-100MG	Nifuroxazide VETRANAL®	100 mg
	FL-33871-10MG	2-Nitrobenzaldehyde semicarbazone VETRANAL®	10 mg
New	FL-32800-100MG	Nitarsone VETRANAL®	100 mg
	FL-46502-250MG	Nitrofurantoine VETRANAL®	250 mg
New	FL-32513-10MG	Nitrofurantoin-13C3 VETRANAL®	10 mg
New	FL-32512-10MG	Nitrofurazone-13C,15N2 VETRANAL®	10 mg
	FL-46518-250MG	Nitromid VETRANAL®	250 mg
	FL-34088-100MG	Nitroxinil VETRANAL®	100 mg
	FL-46527-100MG	19-Norethindrone acetate VETRANAL®	100 mg
	FL-46525-250MG	19-Norethisterone VETRANAL®	250 mg
	FL-33899-100MG	Norfloxacin VETRANAL®	100 mg
	FL-34058-10MG	Norfloxacine-D5 VETRANAL®	10 mg
	FL-46531-250MG	Novobiocin sodium salt VETRANAL®	250 mg
	FL-33870-10MG	2-NP-AHD VETRANAL®	10 mg
	FL-33869-10MG	2-NP-AMOZ VETRANAL®	10 mg
	FL-33868-10MG	2-NP-AOZ VETRANAL®	10 mg
	FL-33703-100MG	Ofloxacin VETRANAL®	100 mg
New	FL-32998-10MG	Ofloxacin-d3 hydrochloride VETRANAL®	10 mg
	FL-33987-100MG	Olaquindox VETRANAL®	100 mg
	FL-34041-100MG	Orbifloxacine VETRANAL®	100 mg
	FL-46589-100MG	Oxacillin sodium salt hydrate VETRANAL®	100 mg
	FL-34176-100MG	Oxfendazole VETRANAL®	100 mg
New	FL-32543-10MG	Oxfendazole-d3 VETRANAL®	10 mg
New	FL-32924-100MG	Oxibendazole VETRANAL®	100 mg
New	FL-32737-10MG	Oxibendazole-d7 VETRANAL®	10 mg
New	CIL-ULM-8531-1.2	Oxybenzone (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-CLM-8525-1.2	Oxybenzone (phenyl-$^{13}C_6$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	FL-34078-100MG	Oxyclozanide VETRANAL®	100 mg
	FL-46598-250MG	Oxytetracycline hydrochloride VETRANAL®	250 mg
	CERP-909	Acetaminophen-D4 (0.1 mg/ml) (Paracetamol) in Methanol 	1 mL
New	FL-34213-25MG	Pazufloxacin VETRANAL®	25 mg
	FL-34212-25MG	Pazufloxacin mesilate VETRANAL®	25 mg
New	FL-32551-10MG	Pefloxacin-d5 VETRANAL®	10 mg
New	FL-32838-10MG	Penbutolol hydrochloride VETRANAL®	10 mg
	FL-46616-250MG	Penicillin V potassium salt VETRANAL®	250 mg
	FL-46609-250MG	Penicillin G potassium salt VETRANAL®	250 mg
New	FL-32985-10MG	Penicillin G-d7 N-ethylpiperidinium salt VETRANAL®	10 mg

	Code	Product	Unit
	NE9302	Phenacetin 10 µg/mL in Methanol	10 mL
	FL-34076-100MG	Phenazopyridine hydrochloride VETRANAL®	100 mg
	FL-46624-250MG	Phenothiazine VETRANAL®	250 mg
	FL-46901-250MG	N4-Phthalylsulfathiazole VETRANAL®	250 mg
	FL-46632-250MG	Piperazine citrate pentahydrate VETRANAL®	250 mg
	FL-33895-100MG	Piracetam VETRANAL®	100 mg
	FL-33454-100MG	Potassium clavulanate VETRANAL®	100 mg
	FL-46648-250MG	Praziquantel VETRANAL®	250 mg
	FL-46656-250MG	Prednisolone VETRANAL®	250 mg
	FL-46657-250MG	Prednisolone 21-acetate VETRANAL®	250 mg
	FL-46608-250MG	Procaine hydrochloride VETRANAL®	250 mg
	FL-46665-250MG	Progesterone VETRANAL®	250 mg
	CIL-ULM-8219-1.2	Progesterone (unlabelled) 100 ug/mL in p-Dioxane	1.2 mL
	CIL-DLM-6909-1.2	Progesterone (2,2,6,6,17,21,21,21-D_8,96%) 100 µg/mL in p-Dioxane	1.2 mL
	FL-46674-250MG	Promazine hydrochloride VETRANAL®	250 mg
	FL-46682-250MG	Promethazine hydrochloride VETRANAL®	250 mg
	FL-46689-100MG	Propionylpromazine hydrochloride VETRANAL®	100 mg
New	FL-32837-10MG	Propionylpromazine-d6 hydrochloride VETRANAL®	10 mg
	FL-46698-250MG	6-Propyl-2-thiouracile VETRANAL®	250 mg
	FL-46702-250MG	Pyrantel pamoate VETRANAL®	250 mg
	FL-46706-250MG	Pyrimethamin VETRANAL®	250 mg
	FL-34174-100MG	Pyriproxifen VETRANAL®	100 mg
	FL-34198-100MG	Ractopamine hydrochloride VETRANAL®	100 mg
	FL-34042-100MG	Rafoxanide VETRANAL®	100 mg
	CERR-004	Ranitidine HCl 1 mg/mL (as free base) in Methanol	1 mL
	CERR-002	Ranitidine HCl 	250 mg
	FL-34092-100MG	Resveratrol VETRANAL®	100 mg
	FL-46713-100MG	Rifamycin AMP VETRANAL®	100 mg
	FL-33999-100MG	Rifaximin VETRANAL®	100 mg
	FL-33979-100MG	Robenidine hydrochloride VETRANAL®	100 mg
New	FL-32942-10MG	Robenidine-d8 hydrochloride VETRANAL®	10 mg
	FL-46724-250MG	Roxarsone VETRANAL®	250 mg
	FL-46725-100MG	Salbutamol VETRANAL®	100 mg
	FL-46732-250MG	Salbutamol hemisulfate VETRANAL®	250 mg
	FL-46729-100MG	Salinomycin SV sodium salt penta hemihydrate VETRANAL®	100 mg
	FL-33497-100MG	Sarafloxacin hydrochloride VETRANAL®	100 mg
New	FL-33756-10MG	Sarafloxacin-d8 hydrochloride trihydrate VETRANAL®	10 mg
	FL-33656-100MG	Semicarbazide hydrochloride VETRANAL®	100 mg
	CIL-CNLM-7221-1.2	Semicarbazide hydrochloride (SEM) (^{13}C,99%; $^{15}N_2$,98%) 100 µg/mL in Methanol	1.2 mL
	CIL-ULM-7187-1.2	Semicarbazide hydrochloride (SEM) (unlabelled) 100 µg/mL in Methanol	1.2 mL
	NE9324	Sotalol hydrochloride 10 µg/mL in Methanol	10 mL
	FL-33967-100MG	Sparfloxacin VETRANAL®	100 mg
	FL-46738-250MG	Spectinomycin dihydrochloride pentahydrate VETRANAL®	250 mg
	FL-46745-100MG	Spiramycin VETRANAL®	100 mg
	FL-46754-250MG	Streptomycin sesquisulfate VETRANAL®	250 mg
	FL-46762-250MG	Sulfabenzamide VETRANAL®	250 mg
	FL-46770-250MG	Sulfacetamide VETRANAL®	250 mg
	FL-46778-250MG	Sulfachloropyridazine VETRANAL®	250 mg

	Code	Product	Unit
New	FL-32548-10MG	Sulfachloropyridazine-phenyl-13C6 VETRANAL®	10 mg
	FL-35033-100MG	Sulfadiazine VETRANAL®	100 mg
New	FL-32518-10MG	Sulfadiazine-phenyl-13C6 VETRANAL®	10 mg
	FL-46794-250MG	Sulfadimethoxin VETRANAL®	250 mg
	FL-32996-10MG	Sulfadimethoxine-D6 VETRANAL®	10 mg
	FL-46802-250MG	Sulfadimidine (Sulfamethazine) VETRANAL®	250 mg
	FL-31736-250MG	Sulfadoxine VETRANAL®	250 mg
	FL-32997-10MG	Sulfadoxine-D3 VETRANAL®	10 mg
	FL-46818-250MG	Sulfaguanidine monohydrate VETRANAL®	250 mg
	FL-46826-250MG	Sulfamerazin VETRANAL®	250 mg
New	FL-32517-10MG	Sulfamerazine-phenyl-13C6 VETRANAL®	10 mg
	FL-46834-250MG	Sulfameter VETRANAL®	250 mg
	CIL-CLM-3045-1.2	Sulfamethazine (phenyl-$^{13}C_6$,90%) 100 µg/mL in Acetonitrile	1.2 mL
	FL-46842-250MG	Sulfamethizole VETRANAL®	250 mg
	FL-31737-250MG	Sulfamethoxazole VETRANAL®	250 mg
	CIL-CLM-6944-1.2	Sulfamethoxazole (ring-$^{13}C_6$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	FL-46858-250MG	Sulfamethoxypyridazine VETRANAL®	250 mg
New	FL-32981-10MG	Sulfamethoxypyridazine-d3 VETRANAL®	10 mg
	FL-46874-250MG	Sulfanilamide VETRANAL®	250 mg
	FL-46882-250MG	Sulfanitran VETRANAL®	250 mg
	FL-31738-250MG	Sulfapyridine VETRANAL®	250 mg
New	FL-32547-10MG	Sulfapyridine-phenyl-13C6 VETRANAL®	10 mg
	FL-46902-250MG	Sulfathiazole VETRANAL®	250 mg
New	FL-32515-10MG	Sulfathiazole-phenyl-13C6 VETRANAL®	10 mg
	FL-46908-250MG	Sulfisomidin VETRANAL®	250 mg
	FL-31739-250MG	Sulfisoxazole VETRANAL®	250 mg
	FL-34002-100MG	(S)-(-)-Sulpiride VETRANAL®	100 mg
New	FL-34219-25MG	Temozolomide VETRANAL®	25 mg
	FL-46923-250MG	Testosterone VETRANAL®	250 mg
	CERT-037	Testosterone (1.0 mg/mL) in Acetonitrile 	1 mL
	CIL-ULM-8081-1.2	Testosterone (unlabelled) 100 µg/mL in Methylene chloride	1.2 mL
New	CIL-ULM-8081-D-1.2	Testosterone (unlabelled) 100 µg/mL in p-Dioxane	1.2 mL
	CIL-DLM-8085-1.2	Testosterone (D_5,98%) 100 ug/mL in Methylene chloride	1.2 mL
New	CIL-DLM-8085-D-1.2	Testosterone (D_5,98%) 100 µg/mL in p-Dioxane	1.2 mL
New	CIL-DLM-683-1.2	Testosterone (1,2-D_2,98%) 100 µg/mL in Methylene chloride	1.2 mL
	FL-46924-250MG	Testosterone acetate VETRANAL®	250 mg
	FL-46926-10MG	Testosterone 17-benzoate VETRANAL®	10 mg
	FL-31741-250MG	Tetracycline hydrochloride VETRANAL®	250 mg
	FL-31743-250MG	Tetramisol hydrochloride VETRANAL®	250 mg
New	FL-32844-10MG	Tetramisole-d5 hydrochloride VETRANAL®	10 mg
	CERT-013	Theobromine (0.1 mg/ml) in Methanol 	1 mL
New	CIL-ULM-8371-1.2	Thiabendazole (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-CLM-8370-1.2	Thiabendazole (ring-$^{13}C_6$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	NE9330	Thiamine hydrochloride 10 µg/mL in Methanol	10 mL
	FL-31744-250MG	2-Thiouracil VETRANAL®	250 mg

	Code	Product	Unit
	FL-34044-100MG	Tiamulin-OH VETRANAL®	100 mg
	FL-46959-100MG	Tiamulin fumarate VETRANAL®	100 mg
	FL-33864-100MG	Tilmicosin VETRANAL®	100 mg
	FL-33986-100MG	Tiopronin VETRANAL®	100 mg
	FL-46968-250MG	Tolbutamide VETRANAL®	250 mg
	FL-34073-100MG	Tolfenamic acid VETRANAL®	100 mg
	FL-34000-100MG	Toltrazuril VETRANAL®	100 mg
	FL-33816-10MG	Toltrazuril sulfone VETRANAL®	10 mg
	FL-33815-10MG	Toltrazuril sulfoxide VETRANAL®	10 mg
	NMIAD708	17alpha-Trenbolone (Epitrenbolone) ° 	5 mg
	CIL-ULM-7968-1.2	3,4,4'-Trichlorocarbanilide (Triclocarban) (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-7286-1.2	3,4,4'-Trichlorocarbanilide (Triclocarban) (4'-chlorophenyl-$^{13}C_6$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	NMIAP1788	Triclabendazole	10 mg
New	FL-32802-100MG	Triclabendazole VETRANAL®	100 mg
	NE9337	Triclosan (2',4,4'-Trichloro-2-hydroxydiphenyl ether) 10 µg/mL in Methanol	10 mL
	CIL-ULM-6935-1.2	Triclosan (2',4,4'-Trichloro-2-hydroxydiphenyl ether) (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-6779-1.2	Triclosan (2',4,4'-Trichloro-2-hydroxydiphenyl ether) ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	FL-46976-250MG	Triflupromazine hydrochloride VETRANAL®	250 mg
	FL-46984-250MG	Trimethoprim VETRANAL®	250 mg
New	CIL-ULM-7989-A-1.2	Trimethoprim (unlabelled) 50 µg/ml in Methanol	1.2 mL
New	CIL-CLM-7988-A-1.2	Trimethoprim ($^{13}C_3$,99%) 50 µg/mL in Methanol	1.2 mL
New	FL-53541-10MG	Tulobuterol hydrochloride VETRANAL®	10 mg
New	FL-32553-10MG	Tinidazole VETRANAL®	10 mg
	FL-46981-100MG	Tylosin phosphate VETRANAL®	100 mg
	FL-33847-250MG	Tylosin tartrate VETRANAL®	250 mg
New	FL-32971-25MG	Valnemulin VETRANAL®	25 mg
New	FL-32533-10MG	Vedaprofen VETRANAL®	10 mg
New	FL-32534-10MG	Vedaprofen-d3 VETRANAL®	10 mg
	FL-46995-100MG	Xylazine hydrochloride VETRANAL®	100 mg
New	FL-32555-10MG	Xylazine-d6 VETRANAL®	10 mg
	NMIAP1801	alpha-Zearalanol 	5 mg
	NMIAP1802	beta-Zearalanol 	5 mg
	NMIAP1795	alpha-Zearalenol 	5 mg
	NMIAP1796	beta-Zearalenol 	5 mg
	NMIAP1787	Zearalenone 	10 mg

Miscellaneous organic compounds

Volatile analyte mixtures

Code	Product	Unit
U-HCM-601-1	Purgeable Halocarbon Mixture 100 µg/mL of each analyte in Methanol. Bromodichloromethane Bromoform Bromomethane Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane Dibromochloromethane 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Dichlorodifluoromethane 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethene trans-1,2-Dichloroethene 1,2-Dichloropropane cis-1,3-Dichloropropene trans-1,3-Dichloropropene Methylene chloride 1,1,2,2-Tetrachloroethane Tetrachloroethene 1,1,1-Trichloroethane 1,1,2-Trichloroethane Trichloroethene Trichlorofluoromethane Vinyl chloride	1 mL
U-HCM-601	Purgeable Halocarbon Mixture	4 x 1 mL
U-THM-501N-1	Trihalomethanes Mixture 100 µg/mL of each analyte in Methanol. Bromodichloromethane, Bromoform, Chloroform, Dibromochloromethane	1 mL
U-THM-501N	Trihalomethanes Mixture	4 x 1 mL
U-THM-511-1	Trihalomethanes Mixture 200 µg/mL of each analyte in Methanol. Bromodichloromethane, Bromoform, Chloroform, Dibromochloromethane	1 mL
U-THM-511	Trihalomethanes Mixture	4 x 1 mL
U-DWM-584-1	VOC Gas Mixture 200 µg/mL of each analyte in Methanol. Bromomethane, Chloromethane, Trichlorofluoromethane, Chloroethane, Dichlorodifluoromethane, Vinyl chloride	1 mL
U-DWM-584	VOC Gas Mixture	4 x 1 mL
U-DWM-544-1	VOC Gas Mixture 2000 µg/mL of each analyte in Methanol. Bromomethane, Chloromethane, Trichlorofluoromethane, Chloroethane, Dichlorodifluoromethane, Vinyl chloride	1 mL
U-DWM-544	VOC Gas Mixture	4 x 1 mL
U-DWM-504N-1	DBCP-EDB Mixture 200 µg/mL of each analyte in Methanol. 1,2-Dibromo-3-chloropropane 1,2-Dibromoethane	1 mL
U-DWM-504N	DBCP-EDB Mixture	4 x 1 mL
U-DWM-510-1	Halomethanes Mixture 200 µg/mL of each analyte in Methanol. Bromochloromethane, Bromomethane, Chloromethane, Dichlorodifluoromethane, Bromodichloromethane, Carbon tetrachloride, Dibromochloromethane, Methylene chloride, Bromoform, Chloroform, Dibromomethane, Trichlorofluoromethane	1 mL
U-DWM-510	Halomethanes Mixture	4 x 1 mL
U-DWM-520-1	Haloethanes Mixture 200 µg/mL of each analyte in Methanol. Chloroethane 1,2-Dibromoethane 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethene cis-1,2-Dichloroethene trans-1,2-Dichloroethene 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Tetrachloroethene 1,1,1-Trichloroethane 1,1,2-Trichloroethane Trichloroethene Vinyl chloride	1 mL
U-DWM-520	Haloethanes Mixture	4 x 1 mL

Code	Product	Unit
U-DWM-530-1	Halopropanes Mixture	1 mL

200 µg/mL of each analyte in Methanol.

1,2-Dibromo-3-chloropropane	cis-1,3-Dichloropropene
1,2-Dichloropropane	trans-1,3-Dichloropropene
1,3-Dichloropropane	Hexachlorobutadiene
2,2-Dichloropropane	1,2,3-Trichloropropane
1,1-Dichloropropene	

U-DWM-530	Halopropanes Mixture	4 x 1 mL
U-DWM-540-1	Haloalkanes Mixture	1 mL

200 µg/mL of each analyte in Methanol.

Bromochloromethane	1,2-Dichloropropane
Bromodichloromethane	1,3-Dichloropropane
Bromoform	2,2-Dichloropropane
Bromomethane	1,1-Dichloropropene
Carbon tetrachloride	cis-1,3-Dichloropropene
Chloroethane	trans-1,3-Dichloropropene
Chloroform	Hexachlorobutadiene
Chloromethane	Methylene chloride
Dibromochloromethane	1,1,1,2-Tetrachloroethane
1,2-Dibromo-3-chloropropane	1,1,2,2-Tetrachloroethane
1,2-Dibromoethane	Tetrachloroethene
Dibromomethane	1,1,1-Trichloroethane
Dichlorodifluoromethane	1,1,2-Trichloroethane
1,1-Dichloroethane	Trichloroethene
1,2-Dichloroethane	Trichlorofluoromethane
1,1-Dichloroethene	1,2,3-Trichloropropane
cis-1,2-Dichloroethene	Vinyl chloride
trans-1,2-Dichloroethene	

U-DWM-540	Haloalkanes Mixture	4 x 1 mL
U-DWM-592-1	VOC Mixture	1 mL

2000 µg/mL of each analyte in Methanol.

Acetone	2-Hexanone
Acrylonitrile	Methacrylonitrile
Allyl chloride	Methyl acrylate
2-Butanone (MEK)	Methyl iodide (Iodomethane)
Carbon disulfide	Methyl methacrylate
Chloroacetonitrile	4-Methyl-2-pentanone (MIBK)
1-Chlorobutane	tert-Butylmethyl ether (MTBE)
trans-1,4-Dichloro-2-butene	Nitrobenzene
1,1-Dichloro-2-propanone	2-Nitropropane
Diethyl ether	Pentachloroethane
Ethyl methacrylate	Propionitrile
Hexachloroethane	Tetrahydrofuran (THF)

U-DWM-592	VOC Mixture	4 x 1 mL
U-DWM-560-1	Aromatic Halocarbons Mixture	1 mL

200 µg/mL of each analyte in Methanol.

Bromobenzene	4-Chlorotoluene	1,4-Dichlorobenzene
Chlorobenzene	1,2-Dichlorobenzene	1,2,3-Trichlorobenzene
2-Chlorotoluene	1,3-Dichlorobenzene	1,2,4-Trichlorobenzene

U-DWM-560	Aromatic Halocarbons Mixture	4 x 1 mL
U-DWM-570-1	Aromatics Mixture	1 mL

200 µg/mL of each analyte in Methanol.

Benzene	4-Chlorotoluene	Naphthalene	1,3,5-Trimethylbenzene
Bromobenzene	1,2-Dichlorobenzene	n-Propylbenzene	m-Xylene
n-Butylbenzene	1,3-Dichlorobenzene	Styrene	o-Xylene
sec-Butylbenzene	1,4-Dichlorobenzene	Toluene	p-Xylene
tert-Butylbenzene	Ethylbenzene	1,2,3-Trichlorobenzene	
Chlorobenzene	Isopropylbenzene	1,2,4-Trichlorobenzene	
2-Chlorotoluene	4-Isopropyltoluene	1,2,4-Trimethylbenzene	

U-DWM-570	Aromatics Mixture	4 x 1 mL
U-DWM-550-1	Aromatic Hydrocarbons Mixture	1 mL

200 µg/mL of each analyte in Methanol.

Benzene	Ethylbenzene	n-Propylbenzene	1,3,5-Trimethylbenzene
n-Butylbenzene	Isopropylbenzene	Styrene	m-Xylene
sec-Butylbenzene	4-Isopropyltoluene	Toluene	o-Xylene
tert-Butylbenzene	Naphthalene	1,2,4-Trimethylbenzene	p-Xylene

U-DWM-550	Aromatic Hydrocarbons Mixture	4 x 1 mL

Code	Product	Unit
U-DWM-580-1	VOC Mixture 200 µg/mL of each analyte in Methanol.	1 mL
U-DWM-580	VOC Mixture	4 x 1 mL
U-DWM-583-1	VOC Mixture 200 µg/mL of each analyte in Methanol.	1 mL
U-DWM-583	VOC Mixture	4 x 1 mL
U-HCM-601G-1	Purgeable Gas Mixture 100 µg/mL of each analyte in Methanol.	1 mL
U-HCM-601G	Purgeable Gas Mixture	4 x 1 mL

U-DWM-580-1:

Bromochloromethane
Bromodichloromethane
Bromoform
Carbon tetrachloride
Chloroform
Dibromochloromethane
Dibromomethane
Methylene chloride
1,2-Dibromoethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
cis-1,2-Dichloroethene
trans-1,2-Dichloroethene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
1,2-Dibromo-3-chloropropane
1,2-Dichloropropane
1,3-Dichloropropane
2,2-Dichloropropane
1,1-Dichloropropene
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Hexachlorobutadiene
1,2,3-Trichloropropane
Benzene
n-Butylbenzene
sec-Butylbenzene
tert-Butylbenzene
Ethylbenzene
Isopropylbenzene
4-Isopropyltoluene
Naphthalene
n-Propylbenzene
Styrene
Toluene
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
o-Xylene
m-Xylene
p-Xylene
Bromobenzene
Chlorobenzene
2-Chlorotoluene
4-Chlorotoluene
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
Bromomethane
Chloroethane
Chloromethane
Dichlorodifluoromethane
Trichlorofluoromethane
Vinyl chloride

U-DWM-583-1:

Benzene
Bromobenzene
Bromochloromethane
Bromodichloromethane
Bromoform
n-Butylbenzene
sec-Butylbenzene
tert-Butylbenzene
Carbon tetrachloride
Chlorobenzene
Chloroform
2-Chlorotoluene
4-Chlorotoluene
Dibromochloromethane
1,2-Dibromo-3-chloropropane
1,2-Dibromoethane
Dibromomethane
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
cis-1,2-Dichloroethene
trans-1,2-Dichloroethene
1,2-Dichloropropane
1,3-Dichloropropane
2,2-Dichloropropane
1,1-Dichloropropene
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Ethylbenzene
Hexachlorobutadiene
Isopropylbenzene
4-Isopropyltoluene
Methylene chloride
Naphthalene
n-Propylbenzene
Styrene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethene
Toluene
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
1,2,3-Trichloropropane
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
o-Xylene
m-Xylene
p-Xylene

U-HCM-601G-1:

Bromomethane
Chloroethane
Chloromethane
Dichlorodifluoromethane
Vinyl chloride

Code	Product	Unit
U-HCM-801-1	Halogenated Volatiles Mixture	1 mL

100 µg/mL of each analyte in Methanol.

Allyl chloride	1,1-Dichloroethane
Bromodichloromethane	1,2-Dichloroethane
Bromoform	1,1-Dichloroethene
Bromomethane	trans-1,2-Dichloroethene
Carbon tetrachloride	1,2-Dichloropropane
Chlorobenzene	cis-1,3-Dichloropropene
Chloroethane	trans-1,3-Dichloropropene
Chloroform	Methyl iodide (Iodomethane)
Chloromethane	Methylene chloride
Dibromochloromethane	1,1,1,2-Tetrachloroethane
1,2-Dibromo-3-chloropropane	1,1,2,2-Tetrachloroethane
1,2-Dibromoethane	Tetrachloroethene
Dibromomethane	1,1,1-Trichloroethane
1,2-Dichlorobenzene	1,1,2-Trichloroethane
1,3-Dichlorobenzene	Trichloroethene
1,4-Dichlorobenzene	Trichlorofluoromethane
trans-1,4-Dichloro-2-butene	1,2,3-Trichloropropane
Dichlorodifluoromethane	Vinyl chloride

U-HCM-801	Halogenated Volatiles Mixture	4 x 1 mL

U-HCM-621-1	Purgeable Halocarbon & Aromatics Mixture	1 mL

200 µg/mL of each analyte in Methanol.

Benzene	1,2-Dichlorobenzene	1,2-Dichloropropane	Toluene
Bromodichloromethane	1,3-Dichlorobenzene	cis-1,3-Dichloropropene	1,1,1-Trichloroethane
Bromoform	1,4-Dichlorobenzene	trans-1,3-Dichloropropene	1,1,2-Trichloroethane
Carbon tetrachloride	1,1-Dichloroethane	Ethylbenzene	Trichloroethene
Chlorobenzene	1,2-Dichloroethane	Methylene chloride	
Chloroform	1,1-Dichloroethene	1,1,2,2-Tetrachloroethane	
Dibromochloromethane	trans-1,2-Dichloroethene	Tetrachloroethene	

U-HCM-621	Purgeable Halocarbon & Aromatics Mixture	4 x 1 mL

U-PMX-100-1	Purgeable Mixture	1 mL

20 µg/mL of each analyte in Methanol.

Benzene	Chloromethane	trans-1,2-Dichloroethene	Toluene
Bromodichloromethane	Dibromochloromethane	1,2-Dichloropropane	1,1,1-Trichloroethane
Bromoform	1,2-Dichlorobenzene	cis-1,3-Dichloropropene	1,1,2-Trichloroethane
Bromomethane	1,3-Dichlorobenzene	trans-1,3-Dichloropropene	Trichloroethene
Carbon tetrachloride	1,4-Dichlorobenzene	Ethylbenzene	Trichlorofluoromethane
Chlorobenzene	1,1-Dichloroethane	Methylene chloride	Vinyl chloride
Chloroethane	1,2-Dichloroethane	1,1,2,2-Tetrachloroethane	
Chloroform	1,1-Dichloroethene	Tetrachloroethene	

U-PMX-100	Purgeable Mixture	4 x 1 mL

U-PMX-110-1	Purgeable Mixture	1 mL

100 µg/mL of each analyte in Methanol.

Benzene	Chloromethane	trans-1,2-Dichloroethene	Toluene
Bromodichloromethane	Dibromochloromethane	1,2-Dichloropropane	1,1,1-Trichloroethane
Bromoform	1,2-Dichlorobenzene	cis-1,3-Dichloropropene	1,1,2-Trichloroethane
Bromomethane	1,3-Dichlorobenzene	trans-1,3-Dichloropropene	Trichloroethene
Carbon tetrachloride	1,4-Dichlorobenzene	Ethylbenzene	Trichlorofluoromethane
Chlorobenzene	1,1-Dichloroethane	Methylene chloride	Vinyl chloride
Chloroethane	1,2-Dichloroethane	1,1,2,2□Tetrachloroethane	
Chloroform	1,1-Dichloroethene	Tetrachloroethene	

U-PMX-110	Purgeable Mixture	4 x 1 mL

U-PMX-130-1	Volatiles Mixture	1 mL

200 µg/mL of each analyte in Methanol.

Acetone	cis-1,3-Dichloropropene
Benzene	trans-1,3-Dichloropropene
Bromodichloromethane	Ethyl alcohol (Ethanol)
Bromoform	Ethylbenzene
2-Butanone (MEK)	2-Hexanone
Carbon disulfide	Methyl iodide (Iodomethane)
Carbon tetrachloride	4-Methyl-2-pentanone (MIBK)
Chlorobenzene	Methylene chloride
Chloroform	Styrene
Dibromochloromethane	1,1,2,2-Tetrachloroethane
trans-1,4-Dichloro-2-butene	Tetrachloroethene
1,2-Dichlorobenzene	Toluene
1,3-Dichlorobenzene	1,1,1-Trichloroethane
1,4-Dichlorobenzene	1,1,2-Trichloroethane
1,1-Dichloroethane	Trichloroethene
1,2-Dichloroethane	o-Xylene
1,1-Dichloroethene	m-Xylene
trans-1,2-Dichloroethene	p-Xylene
1,2-Dichloropropane	

U-PMX-130	Volatiles Mixture	4 x 1 mL

Code	Product	Unit
U-PMX-160-1	Purgeable Mixture	1 mL
	2000 µg/mL of each analyte in Methanol.	
	Benzene, Bromodichloromethane, Bromoform, Carbon tetrachloride, Chlorobenzene, Chloroform, Dibromochloromethane, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethene, trans-1,2-Dichloroethene, 1,2-Dichloropropane, cis-1,3-Dichloropropene, trans-1,3-Dichloropropene, Ethylbenzene, Methylene chloride, 1,1,2,2-Tetrachloroethane, Tetrachloroethene, Toluene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Trichloroethene	
U-PMX-160	Purgeable Mixture	4 x 1 mL
U-PMX-141A-1	Volatiles Mixture	1 mL
	200 µg/mL of each analyte in Methanol.	
	Acetonitrile, Allyl alcohol, Allyl chloride, Benzyl chloride, Bis-(2-chloroethyl)sulfide, 2-Chloroethanol, 3-Chloropropionitrile, 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, Dibromomethane, 1,3-Dichloro-2-propanol, 1,2:3,4-Diepoxybutane, 1,4-Dioxane, Epichlorohydrin, Ethyl methacrylate, 2-Hydroxypropionitrile, Isobutyl alcohol, Malononitrile, Methacrylonitrile, Methyl methacrylate, Pentachloroethane, 2-Picoline, Propargyl alcohol, beta-Propiolactone, Propionitrile, n-Propylamine, Pyridine, 1,1,1,2-Tetrachloroethane, 1,2,3-Trichloropropane	
U-PMX-141A	Volatiles Mixture	4 x 1 mL
U-XY-0115-1	Purgeable A Mixture	1 mL
	200 µg/mL of each analyte in Methanol.	
	Carbon tetrachloride, Chlorobenzene, Chloroform, Dibromochloromethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloropropane, Methylene chloride, Tetrachloroethene, 1,1,2-Trichloroethane, Trichloroethene	
U-XY-0115	Purgeable A Mixture	4 x 1 mL
U-XY-0116-1	Purgeable B Mixture	1 mL
	200 µg/mL of each analyte in Methanol.	
	Benzene, Bromodichloromethane, Bromoform, 1,2-Dichloroethane, trans-1,2-Dichloroethene, cis-1,3-Dichloropropene, trans-1,3-Dichloropropene, Ethylbenzene, 1,1,2,2-Tetrachloroethane, Toluene, 1,1,1-Trichloroethane, Trichlorofluoromethane	
U-XY-0116	Purgeable B Mixture	4 x 1 mL
U-AMM-622-1	Purgeable Aromatics Mixture	1 mL
	200 µg/mL of each analyte in Methanol.	
	Benzene, Chlorobenzene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Ethylbenzene, Toluene, o-Xylene, m-Xylene, p-Xylene, tert-Butylmethyl ether (MTBE)	
U-AMM-622	Purgeable Aromatics Mixture	4 x 1 mL
U-AMM-602N-1	Purgeable Aromatics Mixture	1 mL
	100 µg/mL of each analyte in Methanol.	
	Benzene, Chlorobenzene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Ethylbenzene, Toluene	
U-AMM-602N	Purgeable Aromatics Mixture	4 x 1 mL
U-UST-141-1	Revised PVOC Mixture (California)	1 mL
	1000 µg/mL of each analyte in Methanol.	
	Benzene, Ethylbenzene, tert-Butylmethyl ether (MTBE), Toluene, o-Xylene, m-Xylene, p-Xylene	
U-UST-141	Revised PVOC Mixture (California)	4 x 1 mL
U-AMM-802-1	Aromatic Volatiles Mixture	1 mL
	100 µg/mL of each analyte in Methanol.	
	Benzene, Chlorobenzene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Ethylbenzene, Styrene, Toluene, m-Xylene, o-Xylene, p-Xylene	
U-AMM-802	Aromatic Volatiles Mixture	4 x 1 mL

Code	Product	Unit
U-AMM-812-1	Aromatic Volatiles Mixture 2000 µg/mL of each analyte in Methanol Benzene, Chlorobenzene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Ethylbenzene, Toluene, o-Xylene, m-Xylene, p-Xylene	1 mL
U-AMM-812	Aromatic Volatiles Mixture	4 x 1 mL
U-NVM-8015-1	Non-Halogenated Volatiles Mixture 100 µg/mL of each analyte in Methanol. Acetonitrile, Acrylamide, 2-butanone (MEK), Diethyl ether, 1,4-Dioxane, Ethyl alcohol (Ethanol), Ethyl methacrylate, Isobutyl alcohol, Methacrylonitrile, Methyl methacrylate, 4-Methyl-2-pentanone (MIBK), Propionitrile	1 mL
U-NVM-8015	Non-Halogenated Volatiles Mixture	4 x 1 mL
U-NVM-8115-1	Method 8015A Non-Halogenated Volatiles Mixture 2000 µg/mL of each analyte in Methanol. Diethyl ether, Ethyl alcohol (Ethanol), 2-Butanone (MEK), 4-Methyl-2-pentanone (MIBK)	1 mL
U-NVM-8115	Method 8015A Non-Halogenated Volatiles Mixture	4 x 1 mL
U-NVM-8241-1	Non-Halogenated Volatiles Mixture 100 µg/mL of each analyte in Methanol. Acetone, Carbon disulfide, 2-Hexanone	1 mL
U-NVM-8241	Non-Halogenated Volatiles Mixture	4 x 1 mL
U-NVM-826-1	Volatiles Mixture 2000 µg/mL of each analyte in Water. Acetone, 2-Butanone (MEK), n-Butyl alcohol, tert-Butanol, Diethyl ether, 1,4-Dioxane, Ethyl acetate, Ethyl alcohol (Ethanol), 2-Hexanone, Isobutyl alcohol, Isopropyl alcohol (Isopropanol), Methanol, 4-Methyl-2-pentanone (MIBK), 1-Propanol, 2-Pentanone	1 mL
U-NVM-826	Volatiles Mixture	4 x 1 mL
U-CLP-110-1	Volatiles Calibration Check Compounds Mixture 2000 µg/mL of each analyte in Methanol. Chloroform, 1,1-Dichloroethene, 1,2-Dichloropropane, Ethylbenzene, Toluene, Vinyl chloride	1 mL
U-CLP-110	Volatiles Calibration Check Compounds Mixture	4 x 1 mL
U-CLP-120-1	Volatiles System Performance Check Mixture 2000 µg/mL of each analyte in Methanol. Bromoform, Chlorobenzene, Chloromethane, 1,1-Dichloroethane, 1,1,2,2-Tetrachloroethane	1 mL
U-CLP-120	Volatiles System Performance Check Mixture	4 x 1 mL
U-CLP-100N-1	Volatiles Matrix Spiking Solution 1000 µg/mL of each analyte in Methanol. Benzene, Chlorobenzene, 1,1-Dichloroethene, Toluene, Trichloroethene	1 mL
U-CLP-100N	Volatiles Matrix Spiking Solution	4 x 1 mL
U-STM-240N-1	Internal Standard Mixture 2000 µg/mL of each analyte in Methanol 2-Bromo-1-chloropropane, Fluorobenzene	1 mL
U-STM-240N	Internal Standard Mixture	4 x 1 mL
U-STM-250N-1	Internal Standard Mixture 2000 µg/mL of each analyte in Methanol. 1,2-Dichlorobenzene-D_4 Fluorobenzene	1 mL
U-STM-250N	Internal Standard Mixture	4 x 1 mL
U-STM-260N-1	Surrogate Standard Mixture 1000 µg/mL of each analyte in Methanol. 4-Bromofluorobenzene, 1,2-Dichloroethane-D_4, Toluene-D_8	1 mL
U-STM-260N	Surrogate Standard Mixture	4 x 1 mL

Volatile analyte mixtures

Code	Product	Unit
U-STM-320N-1	Internal Standard Mixture 2000 µg/mL of each analyte in Methanol. 4-Bromofluorobenzene; Fluorobenzene; 1,2-Dichlorobenzene-D_4	1 mL
U-STM-320N	Internal Standard Mixture	4 x 1 mL
U-STM-330N-1	Surrogate Standard Mixture 2000 µg/mL of each analyte in Methanol. 4-Bromofluorobenzene; Dibromofluoromethane; Toluene-D_8	1 mL
U-STM-330N	Surrogate Standard Mixture	4 x 1 mL
U-STM-341N-1	Internal Standard Mixture 2000 µg/mL of each analyte in Methanol. Chlorobenzene-D_5; 1,4-Difluorobenzene; 1,4-Dichlorobenzene-D_4; Pentafluorobenzene	1 mL
U-STM-341N	Internal Standard Mixture	4 x 1 mL
U-STM-520-1	Internal Standard Mixture 2500 µg/mL of each analyte in Methanol. Chlorobenzene-D_5; Fluorobenzene; 1,4-Dichlorobenzene-D_4	1 mL
U-STM-520	Internal Standard Mixture	4 x 1 mL
U-STM-530-1	Surrogate Standard Mixture 2500 µg/mL of each analyte in Methanol 4-Bromofluorobenzene; Dibromofluoromethane; 1,2-Dichloroethane-D_4; Toluene-D_8	1 mL
U-STM-530	Surrogate Standard Mixture	4 x 1 mL
NE6801	Haloalkanes Mix 1 CERTAN® Solvent: Methanol Dichloromethane 40 µg/mL; 1,1,1-Trichloroethane 1.5 µg/mL; Trichloroethene 2.5 µg/mL; Chloroform 3 µg/mL; Tetrachloromethane 0.2 µg/mL; Tetrachloroethene 0.5 µg/mL	1.5 mL
NE6801H-10	Ready-for-use Haloalkanes Mix 1	10 amps.
NE6803	Haloalkanes Mix 3 CERTAN® Solvent: Methanol Dichloromethane 40 µg/mL; Bromodichloromethane 1 µg/mL; Chloroform 3 µg/mL; Chlorodibromomethane 1.5 µg/mL; 1,1,1-Trichloroethane 1.5 µg/mL; Tetrachloroethene 0.5 µg/mL; Tetrachloromethane 0.2 µg/mL; Bromoform 8 µg/mL; Trichloroethene 2.5 µg/mL	1.5 mL
NE6804	Haloalkanes Mix 4 CERTAN® Solvent: Methanol Dichloromethane 40 µg/mL; 1,1,1-Trichloroethane 1.5 µg/mL; trans-1,2-Dichloroethene 40 µg/mL; Tetrachloromethane 0.2 µg/mL; cis-1,2-Dichloroethene 120 µg/mL; Trichloroethene 2.5 µg/mL; Chloroform 3 µg/mL; Tetrachloroethene 0.5 µg/mL	1.5 mL
NE6805	Haloalkanes Mix 5 CERTAN® Solvent: Methanol Dichloromethane 40 µg/mL; Trichloroethene 2.5 µg/mL; 1,1-Dichloroethene 10 µg/mL; Bromodichloromethane 1 µg/mL; trans-Dichloroethene 40 µg/mL; 1,1,2-Trichloroethane 10 µg/mL; cis-Dichloroethene 120 µg/mL; Chlorodibromomethane 1.5 µg/mL; Chloroform 3 µg/mL; Tetrachloroethene 0.5 µg/mL; 1,2-Dichloroethane 50 µg/mL; 1,1,1,2-Tetrachloroethane 1 µg/mL; 1,1,1-Trichloroethane 1.5 µg/mL; Bromoform 8 µg/mL; Tetrachloromethane 0.2 µg/mL	1.5 mL
NE6806	Haloalkanes Mix 6 CERTAN® Solvent: Methanol Dichloromethane 40 µg/mL; 1,1,1-Trichloroethane 1.5 µg/mL; 1,1-Dichloroethene 10 µg/mL; Tetrachloromethane 0.2 µg/mL; trans-Dichloroethene 40 µg/mL; Trichloroethene 2.5 µg/mL; 1,1-Dichloroethane 50 µg/mL; 1,1,2-Trichloroethane 10 µg/mL; cis-Dichloroethene 120 µg/mL; Tetrachloroethene 0.5 µg/mL; Chloroform 3 µg/mL; 1,1,1,2-Tetrachloroethane 1 µg/mL; 1,2-Dichloroethane 50 µg/mL; Hexachloroethane 0.5 µg/mL	1.5 mL
NE-W 1250	VOC Standard Solution in Pentane Solvent: Pentane Bromdichloromethane 1.0 µg/mL; Tribromomethane (Bromoform) 4.5 µg/mL; Chlorodibromomethane 1.5 µg/mL; 1,1,1-Trichloroethane 1.0 µg/mL; Dichloromethane 200.0 µg/mL; Trichloroethene 2.5 µg/mL; Tetrachloroethene 0.6 µg/mL; Trichloromethane (Chloroform) 5.0 µg/mL; Tetrachloromethane 0.25 µg/mL	1.5 mL

Code	Product	Unit

NE-W 1260A — VOC Standard Solution CERTAN® — 1.5 mL

Solvent: Acetonitrile

Bromodichloromethane	1.0 µg/mL	Tribromomethane (Bromoform)	4.5 µg/mL
Chlorodibromomethane	1.5 µg/mL	1,1,1-Trichloroethane	1.0 µg/mL
Dichloromethane	200.0 µg/mL	Trichloroethene	2.5 µg/mL
Tetrachloroethene	0.6 µg/mL	Trichloromethane (Chloroform)	5.0 µg/mL
Tetrachloromethane	0.25 µg/mL		

Also available in ampoule (Code W 1260)

NE-USL 556 — Volatiles Standard Solution CERTAN® — 1.5 mL

Solvent: Dimethylformamid

Chloroethene (Vinyl chloride)	20 µg/mL	Tetrachloromethane	10 µg/mL
1,2-Dichloroethane	20 µg/mL	Trichloromethane (Chloroform)	20 µg/mL
cis-1,2-Dichloroethene	10 µg/mL	1,1,1-Trichloroethane	20 µg/mL
Dichloromethane	200 µg/mL	Trichloroethene	10 µg/mL
Tetrachloroethene	10 µg/mL		

NE-USLT90126 — Alkyl Halide Standard Solution CERTAN® — 1.2 mL

Solvent: Methanol

Bromodichloromethane	100 µg/mL	1,1,1,2-Tetrachloroethane	100 µg/mL
Dibromochloromethane	100 µg/mL	Tetrachloroethene	100 µg/mL
1,1-Dichloroethane	100 µg/mL	Tetrachloromethane	10 µg/mL
1,2-Dichloroethane	100 µg/mL	Tribromomethane (Bromoform)	100 µg/mL
1,1-Dichloroethene	100 µg/mL	Trichloromethane (Chloroform)	100 µg/mL
cis-1,2-Dichloroethene	1000 µg/mL	1,1,1-Trichloroethane	100 µg/mL
trans-1,2-Dichloroethene	1000 µg/mL	Trichloroethene	100 µg/mL
Dichloromethane	1000 µg/mL		

NE-USLT90126-3 — Alkyl Halide Standard Solution CERTAN® — 3 x 1.2 mL

NE-USL 304 — VOC Standard Solution CERTAN® — 1.5 mL

100 µg/mL of each analyte in Methanol.

Tetrachloroethene	Trichloroethene
Tetrachloromethane (Carbon tetrachloride)	Trichloromethane (Chloroform)
1,1,1-Trichloroethane	

NIST-1639 — Halocarbons in Methanol — 5 x 1.2 mL

Certified Concentrations of Halocarbons at 23±3°C

Component	Certified Concentration	Component	Certified Concentration
Trichloromethane (Chloroform)	6.235 ± 340 ng/µL	Tetrachloromethane	157.0 ± 4.4 ng/µL
Chlorodibromomethane	124.6 ± 124.6 ng/µL	Trichloroethene	85.8 ± 2.6 ng/µL
Bromodichloromethane	389.9 ± 7.1 ng/µL	Tetrachloroethene	40.6 ± 0.9 ng/µL
Tribromomethane (Bromoform)	86.5 ± 1.4 ng/µL		

NE6905 — Haloalkanes/BTEX Mix 5 CERTAN® — 1.5 mL

Solvent: Methanol

Dichloromethane	40 µg/mL	m-Xylene	50 µg/mL
trans-Dichloroethene	40 µg/mL	p-Xylene	50 µg/mL
cis-Dichloroethene	120 µg/mL	o-Xylene	50 µg/mL
Chloroform	3 µg/mL	Styrene	50 µg/mL
1,1,1-Trichloroethane	1.5 µg/mL	Cumol	50 µg/mL
Tetrachloromethane	0.2 µg/mL	Propylbenzene	50 µg/mL
Trichloroethene	2.5 µg/mL	1,2,3-Trimethylbenzene	50 µg/mL
Tetrachloroethene	0.5 µg/mL	1,2,4-Trimethylbenzene	50 µg/mL
Benzene	50 µg/mL	1,3,5-Trimethylbenzene	50 µg/mL
Toluene	50 µg/mL	Naphthalene	100 µg/mL
Ethylbenzene	50 µg/mL		

These mixtures are used in US Pharmacopeia Method 467 to determine residual solvents in pharmaceutical preparations. The latest revision (July 2008) uses a risk-based system to classify solvents. Class 1 solvents are known or strongly suspected carcinogens that pose a risk to both the consumer and the environment and are are to be avoided. Class 2 solvents are non-genotoxic animal carcinogens or compounds suspected of other significant but reversible toxicities.

USP 467 residual solvents mixture

These mixtures are used in US Pharmacopeia Method 467 to determine residual solvents in pharmaceutical preparations. The latest revision (July 2008) uses a risk-based system to classify solvents. Class 1 solvents are known or strongly suspected carcinogens that pose a risk to both the consumer and the environment and are are to be avoided. Class 2 solvents are non-genotoxic animal carcinogens or compounds suspected of other significant but reversible toxicities.

New **U-USPM-467J-1** — USP 467 Class 1 Residual Solvents Mixture - July 2008 Revision — 1 mL

Solvent: Dimethyl sulfoxide (DMSO)

Benzene	10 mg/mL	1,1-Dichloroethene	40 mg/mL
Carbon tetrachloride	20 mg/mL	1,1,1-Trichloroethane	50 mg/mL
1,2-Dichloroethane	25 mg/mL		

New **U-USPM-467J** — USP 467 Class 1 Residual Solvents Mixture - July 2008 Revision — 4 x 1 mL

	Code	Product	Unit
New	U-USPM-467K-1	USP 467 Class 2 Residual Solvents Mixture A - July 2008 Revision	1 mL

Sovent: Dimethyl sulfoxide (DMSO)

Acetonitrile	2.05 mg/mL	Methylcyclohexane	5.9 mg/mL
Chlorobenzene	1.8 mg/mL	Methylene chloride (Dichloromethane)	3 mg/mL
Cyclohexane	19.4 mg/mL	Tetrahydrofuran (THF)	3.6 mg/mL
cis-1,2-Dichloroethene	4.7 mg/mL	Toluene	4.45 mg/mL
trans-1,2-Dichloroethene	4.7 mg/mL	o-Xylene	0.98 mg/mL
1,4-Dioxane	1.9 mg/mL	m-Xylene	6.51 mg/mL
Ethylbenzene	1.84 mg/mL	p-Xylene	1.52 mg/mL
Methanol	15 mg/mL		

New	U-USPM-467K	USP 467 Class 2 Residual Solvents Mixture A - July 2008 Revision	4 x 1 mL
New	U-USPM-467L	USP 467 Class 2 Residual Solvents Mixture B - July 2008 Revision	4 x 1 mL
New	U-USPM-467L-1	USP 467 Class 2 Residual Solvents Mixture B - July 2008 Revision	1 mL

Solvent: Dimethyl sulfoxide (DMSO)

Chloroform	300 µg/mL	Nitromethane	250 µg/mL
1,2-Dimethoxyethane (DME)	500 µg/mL	Pyridine	1000 µg/mL
n-Hexane	1450 µg/mL	1,2,3,4-Tetrahydronaphthalene	500 µg/mL
2-Hexanone	250 µg/mL	Trichloroethene	400 µg/mL

New	U-USPM-467M-1	USP 467 Class 2 Residual Solvents Mixture C - July 2008 Revision	1 mL

Solvent: Dimethyl sulfoxide (DMSO)

N,N-Dimethylacetamide	5450 µg/mL
N,N-Dimethylformamide	4400 µg/mL
2-Ethoxyethanol	800 µg/mL
Ethylene glycol	3100 µg/mL
Formamide	1100 µg/mL
2-Methoxyethanol (methyl cellosolve)	250 µg/mL
N-Methylpyrrolidone (1-Methyl-2-pyrrolidinone)	2650 µg/mL
Sulfolane (tetramethylene sulfone)	800 µg/mL

New	U-USPM-467M	USP 467 Class 2 Residual Solvents Mixture C - July 2008 Revision	4 x 1 mL
New	U-USPM-467N-1	USP 467 Class 2 Residual Solvents Mixture B (low) - July 2008 Revision	1 mL

Solvent: Dimethyl sulfoxide (DMSO)

Chloroform	60 µg/mL	Nitromethane	50 µg/mL
1,2-Dimethoxyethane (DME)	100 µg/mL	Pyridine	200 µg/mL
n-Hexane	290 µg/mL	1,2,3,4-Tetrahydronaphthalene	100 µg/mL
2-Hexanone	50 µg/mL	Trichloroethene	80 µg/mL

New	U-USPM-467N	USP 467 Class 2 Residual Solvents Mixture B (low) - July 2008 Revision	4 x 1 mL
	U-USPM-467A-1	USP 467 Calibration Mixture	1 mL

Solvent: Dimethyl sulfoxide (DMSO)

Benzene	1000 µg/mL	1,4-Dioxane	1000 µg/mL	Trichloroethene	1000 µg/mL
Chloroform	500 µg/mL	Methylene chloride	1000 µg/mL		

	U-USPM-467A	USP 467 Calibration Mixture	4 x 1 mL
	U-USPM-467B-1	USP 467 Calibration Mixture	1 mL

Solvent: Methanol

Benzene	1000 µg/mL	1,4-Dioxane	1000 µg/mL	Trichloroethene	1000 µg/mL
Chloroform	500 µg/mL	Methylene chloride	1000 µg/mL		

	U-USPM-467B	USP 467 Calibration Mixture	4 x 1 mL
	U-USPM-467E-1	Revised USP 467 Calibration Mixture - January 2000 Revision	1 mL

Solvent: Dimethyl sulfoxide (DMSO)

Benzene	2 µg/mL	1,4-Dioxane	380 µg/mL	Trichloroethene	80 µg/mL
Chloroform	60 µg/mL	Methylene chloride	600 µg/mL		

	U-USPM-467E	Revised USP 467 Calibration Mixture - January 2000 Revision	4 x 1 mL
	U-USPM-467F-1	Revised USP 467 Calibration Mixture - January 2000 Revision	1 mL

Solvent: Methanol

Benzene	2 µg/mL	1,4-Dioxane	380 µg/mL	Trichloroethene	80 µg/mL
Chloroform	60 µg/mL	Methylene chloride	600 µg/mL		

	U-USPM-467F	Revised USP 467 Calibration Mixture - January 2000 Revision	4 x 1 mL
	U-USPM-467C-1	Revised USP 467 Calibration Mixture	1 mL

Solvent: Dimethyl sulfoxide (DMSO)

Benzene	1000 µg/mL	1,4-Dioxane	1000 µg/mL	Trichloroethene	1000 µg/mL
Chloroform	500 µg/mL	Methylene chloride	5000 µg/mL		

	U-USPM-467C	Revised USP 467 Calibration Mixture	4 x 1 mL
	U-USPM-467D-1	Revised USP 467 Calibration Mixture	1 mL

Solvent: Methanol

Benzene	1000 µg/mL	1,4-Dioxane	1000 µg/mL	Trichloroethene	1000 µg/mL
Chloroform	500 µg/mL	Methylene chloride	5000 µg/mL		

	U-USPM-467D	Revised USP 467 Calibration Mixture	4 x 1 mL

Semi-volatile analyte mixtures

Code	Product	Unit

Phenol mixtures

NIST-1584 — Priority Pollutant Phenols in Methanol — 5 x 1.2 mL

Analyte	Certified Concentration at 23 °C ± 4 °C	Analyte	Certified Concentration at 23 °C ± 4 °C
2-Chlorophenol	64.4 ± 1.4 µg/mL	2,4,6-Trichlorophenol	20.4 ± µg/mL
Phenol	29.7 ± 0.9 µg/mL	4-Nitrophenol	20.7 ± 0.7 µg/mL
2-Nitrophenol	25.2 ± 0.7 µg/mL	4,6-Dinitro-o-cresol	20.1 ± 0.9 µg/mL
2,4-Dimethylphenol	51.6 ± 0.2 µg/mL	Pentachlorophenol	15.4 ± 1.1 µg/mL
2,4-Dichlorophenol	35.6 ± 1.3 µg/mL	2,4-Dinitrophenol	(22.4 µg/mL)
4-Chloro-m-cresol	27.4 ± 0.4 µg/mL		

U-US-107N — Phenols Mixture — 1 mL

2000 µg/mL of each analyte in Methylene Chloride.

4-Chloro-3-methylphenol	2-Nitrophenol
2-Chlorophenol	4-Nitrophenol
2,4-Dichlorophenol	Pentachlorophenol
2,4-Dimethylphenol	Phenol
2,4-Dinitrophenol	2,4,6-Trichlorophenol
2-Methyl-4,6-dinitrophenol	

U-US-117N — Phenols Mixture 2 — 1 mL

2000 µg/mL of each analyte in Methylene chloride.

m-Cresol (3-Methylphenol)	Dinoseb (DNBP)
o-Cresol (2-Methylphenol)	Hexachlorophene
p-Cresol (4-Methylphenol)	2,3,4,6-Tetrachlorophenol
2,6-Dichlorophenol	2,4,5-Trichlorophenol

U-EPA-2008N-1 — Acids Mixture — 1 mL

100 µg/mL of each analyte in Methanol

4-Chloro-3-methylphenol	2-Nitrophenol
2-Chlorophenol	4-Nitrophenol
2,4-Dichlorophenol	Pentachlorophenol
2,4-Dimethylphenol	Phenol
2,4-Dinitrophenol	2,4,6-Trichlorophenol
2-Methyl-4,6-dinitrophenol	

U-EPA-2008N — Acids Mixture — 4 x 1 mL

U-PHM-604-1 — Phenols Mixture — 1 mL

20 µg/mL of each analyte in Methanol.

4-Chloro-3-methylphenol	2-Nitrophenol
2-Chlorophenol	4-Nitrophenol
2,4-Dichlorophenol	Pentachlorophenol
2,4-Dimethylphenol	Phenol
2-Methyl-4,6-dinitrophenol	2,4,6-Trichlorophenol
2,4-Dinitrophenol	

U-PHM-604 — Phenols Mixture — 4 x 1 mL

U-PHM-814-1 — Phenols Mixture — 1 mL

2000 µg/mL of each analyte in Isopropanol.

4-Chloro-3-methylphenol	4-Nitrophenol
o-Cresol (2-Methylphenol)	Pentachlorophenol
2,4-Dichlorophenol	Phenol
2-Methyl-4,6-dinitrophenol	2,4,6-Trichlorophenol
2-Nitrophenol	

U-PHM-814 — Phenols Mixture — 4 x 1 mL

U-PHM-824-1 — Phenols Mixture — 1 mL

2000 µg/mL of each analyte in Isopropanol.

2-Chlorophenol	2,4-Dinitrophenol
m-Cresol (3-Methylphenol)	Dinoseb
p-Cresol (4-Methylphenol)	2,3,4,6-Tetrachlorophenol
2,6-Dichlorophenol	2,4,5-Trichlorophenol
2,4-Dimethylphenol	

U-PHM-824 — Phenols Mixture — 4 x 1 mL

Semi-volatile analyte mixtures

Code	Product	Unit
U-PHM-804-1	Phenols Mixture	1 mL

100 µg/mL of each analyte in Methanol

4-Chloro-3-methylphenol	2,4-Dinitrophenol
2-Chlorophenol	2-Nitrophenol
m-Cresol (3-Methylphenol)	4-Nitrophenol
o-Cresol (2-Methylphenol)	Pentachlorophenol
p-Cresol (4-Methylphenol)	Phenol
2,4-Dichlorophenol	2,3,4,6-Tetrachlorophenol
2,6-Dichlorophenol	2,4,5-Trichlorophenol
2,4-Dimethylphenol	2,4,6-Trichlorophenol
2-Methyl-4,6-dinitrophenol	

U-PHM-804	Phenols Mixture	4 x 1 mL
U-PHM-844-1	Phenols Mixture	1 mL

2000 µg/mL of each analyte in Isopropanol.

2-Cyclohexyl-4,6-dinitrophenol	2,3,5,6-Tetrachlorophenol
2,3,4,5-Tetrachlorophenol	

U-PHM-844	Phenols Mixture	4 x 1 mL

Further semi-volatile analyte mixtures

NIST-3074	Adipate and Phthalates in Methanol	5 x 1.2 mL

Certified concentrations of phthalates and one adipate

	Concentration mg/kg	Concentration mg/L
Dimethylphthalate	55.6 ± 1.2	44.0 ± 0.9
Diethylphthalate	51.4 ± 1.7	40.7 ± 1.4
Di-n-bultylphthalate	51.2 ± 1.2	40.5 ± 0.9
Benzylbultylphthalate	52.2 ± 1.4	41.3 ± 1.1
Bis(2-ethylhexyl)adipate	59.9 ± 1.6	47.4 ± 1.2
Bis(2-ethylhexyl)phthalate	58.6 ± 1.3	46.4 ± 1.0
Di-n-octylphthalate	48.2 ± 1.4	38.2 ± 1.1

NIST-1586	Isotopically labelled and unlabelled pollutants in methanol	6 x 1.2 mL

Certified values

Solvent: Methanol

NIST-1586-1

Carbon tetrachloride	128.2 ± 0.5 µg/g	2-Nitrophenol	103.6 ± 3.2 µg/g
Benzene	101.1 ± 0.8 µg/g	2,4-Dichlorophenol	102.5 ± 0.6 µg/g
Chlorobenzene	133.0 ± 0.6 µg/g	Naphthalene	126.5 ± 1.2 µg/g
Phenol	117.0 ± 1.3 µg/g	Bis(2-ethylhexyl)phthalate	63.9 ± 1.7 µg/g
Nitrobenzene	126.0 ± 1.1 µg/g	Benzo(a)pyrene	49.2 ± 0.2 µg/g

NIST-1586-2

Carbon tetrachloride-^{13}C	128.2 ± 0.5 µg/g	2-Nitrophenol-d_4	103.6 ± 3.2 µg/g
Benzene-d_6	101.1 ± 0.8 µg/g	2,4-Dichlorophenol-d_3	102.5 ± 0.6 µg/g
Chlorobenzene-d_5	133.0 ± 0.6 µg/g	Naphthalene-d_8	126.5 ± 1.2 µg/g
Phenol-d_5	117.0 ± 1.3 µg/g	Bis(2-ethylhexyl)phthalate-d_4	63.9 ± 1.7 µg/g
Nitrobenzene-d_5	126.0 ± 1.1 µg/g	Benzo(a)pyrene-d_{12}	49.2 ± 0.2 µg/g

U-625-MA-1	Base/Neutral Extractables Mixture	1 mL

20 µg/mL of each analyte in Methanol.

Acenaphthene	1,4-Dichlorobenzene
Acenaphthylene	3,3'-Dichlorobenzidine
Anthracene	Diethyl phthalate
Benzo(a)anthracene	Dimethyl phthalate
Benzo(b)fluoranthene	2,4-Dinitrotoluene
Benzo(k)fluoranthene	2,6-Dinitrotoluene
Benzo(ghi)perylene	Di-n-octyl phthalate
Benzo(a)pyrene	Fluoranthene
Bis(2-chloroethoxy)methane	Fluorene
Bis(2-chloroethyl) ether	Hexachlorobenzene
Bis(2-chloroisopropyl) ether	Hexachlorobutadiene
Bis(2-ethylhexyl)phthalate	Hexachloroethane
4-Bromophenyl phenyl ether	Indeno(1,2,3-cd)pyrene
Butyl benzyl phthalate	Isophorone
2-Chloronaphthalene	Naphthalene
4-Chlorophenyl phenyl ether	Nitrobenzene
Chrysene	N-Nitrosodi-n-propylamine
Dibenzo(a,h)anthracene	Phenanthrene
Di-n-butyl phthalate	Pyrene
1,2-Dichlorobenzene	1,2,4-Trichlorobenzene
1,3-Dichlorobenzene	

U-625-MA	Base/Neutral Extractables Mixture	4 x 1 mL

Code	Product	Unit
U-SVM-102-1	Base/Neutral Extractables Mixture	1 mL

2000 µg/mL in Methylene chloride/Benzene/Acetonitrile (2:2:1).

Acenaphthene
Acenaphthylene
Anthracene
Azobenzene
Benzo(a)anthracene
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzo(ghi)perylene
Benzo(a)pyrene
Bis(2-chloroethyl) ether
Bis(2-chloroethoxy)methane
Bis(2-ethylhexyl)phthalate
Bis(2-chloroisopropyl) ether
4-bromophenyl phenyl ether
Butyl benzyl phthalate
2-Chloronaphthalene
4-Chlorophenyl phenyl ether
Chrysene
Dibenzo(a,h)anthracene
Di-n-butyl phthalate
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
Diethyl phthalate
Dimethyl phthalate
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Di-n-octyl phthalate
Fluoranthene
Fluorene
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Indeno(1,2,3-cd)pyrene
Isophorone
Naphthalene
Nitrobenzene
N-Nitrosodimethylamine
N-Nitrosodi-n-propylamine
N-Nitrosodiphenylamine
Phenanthrene
Pyrene
1,2,4-Trichlorobenzene

U-SVM-102	Base/Neutral Extractables Mixture	4 x 1 mL
U-PSM-806-1	Phthalates Mixture	1 mL

1000 µg/mL of each analyte in Isooctane.

Bis(2-ethylhexyl)phthalate
Butyl benzyl phthalate
Di-n-butyl phthalate
Diethyl phthalate
Dimethyl phthalate
Di-n-octyl phthalate

U-PSM-806	Phthalates Mixture	4 x 1 mL
U-SVM-525-1	Semi-Volatile Mixture	1 mL

100 µg/mL of each analyte in Acetone

Acenaphthylene
Anthracene
Benzo(a)anthracene
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzo(ghi)perylene
Benzo(a)pyrene
Butyl benzyl phthalate
2-Chlorobiphenyl
Chrysene
Dibenzo(a,h)anthracene
2,3-Dichlorobiphenyl
Bis(2-ethylhexyl) adipate
Bis(2-ethylhexyl)phthalate
Diethyl phthalate
Dimethyl phthalate
Di-n-butyl phthalate
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Fluorene
Hexachlorobenzene
2,2',4,4',5,6'-Hexachlorobiphenyl
2,2',3,3',4,4',6-Heptachlorobiphenyl
Hexachlorocyclopentadiene
Indeno(1,2,3-cd)pyrene
Isophorone
2,2',3,3',4,5',6,6'-Octachlorobiphenyl
2,2',3',4,6-Pentachlorobiphenyl
Phenanthrene
Pyrene
2,2',4,4'-Tetrachlorobiphenyl
2,4,5-Trichlorobiphenyl
Pentachlorophenol

U-SVM-525	Semi-Volatile Mixture	4 x 1 mL
U-US-100N	Base/Neutrals Mixture 1	1 mL

2000 µg/mL of each analyte in Methylene chloride.

Bis(2-chloroethoxy)methane
Bis(2-chloroethyl) ether
Bis(2-ethylhexyl)phthalate
Bis(2-chloroisopropyl) ether
4-Bromophenyl phenyl ether
Butyl benzyl phthalate
4-Chlorophenyl phenyl ether
Diethyl phthalate
Dimethyl phthalate
Di-n-butyl phthalate
Di-n-octyl phthalate
N-Nitrosodimethylamine
N-Nitrosodi-n-propylamine
N-Nitrosodiphenylamine

U-US-101N	Base/Neutrals Mixture 2	1 mL

2000 µg/mL of each analyte in Methylene chloride.

Azobenzene
2-Chloronaphthalene
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Isophorone
Nitrobenzene
1,2,4-Trichlorobenzene

U-US-110	Ethers and Phthalates Mixture	1 mL

2000 µg/mL of each analyte in Methylene chloride.

Bis(2-chloroethoxy) methane
Bis(2-chloroethyl) ether
Bis(2-chloroisopropyl) ether
Bis(2-ethylhexyl) phthalate
4-Bromophenyl phenyl ether
Butyl benzyl phthalate
4-Chlorophenyl phenyl ether
Di-n-butyl phthalate
Diethyl phthalate
Dimethyl phthalate
Di-n-octyl phthalate

Code	Product	Unit
U-US-104N	**Toxic Substances Mixture 2** 2000 µg/mL of each analyte in Methylene chloride. Aniline, 4-Chloroaniline, 2-Methylnaphthalene, 3-Nitroaniline Benzyl alcohol, Dibenzofuran, 2-Nitroaniline, 4-Nitroaniline	1 mL
U-US-103N	**Toxic Substances Mixture 1** 2000 µg/mL of each analyte in Methylene chloride. Benzoic acid, p-Cresol (4-Methylphenol) o-Cresol (2-Methylphenol), 2,4,5-Trichlorophenol	1 mL
U-US-111	**Chlorinated Hydrocarbons Mixture** 2000 µg/mL of each analyte in Methylene chloride. 2-Chloronaphthalene, Hexachloroethane 1,2-Dichlorobenzene, Hexachloropropene 1,3-Dichlorobenzene, Pentachlorobenzene 1,4-Dichlorobenzene, Pentachloroethane Hexachlorobenzene, 1,2,4,5-Tetrachlorobenzene Hexachlorobutadiene, 1,2,4-Trichlorobenzene Hexachlorocyclopentadiene	1 mL
U-US-113N	**Nitrosamines Mixture** 2000 µg/mL of each analyte in Methylene chloride. N-Nitrosodi-n-butylamine, N-Nitrosomethylethylamine N-Nitrosodiethylamine, N-Nitrosomorpholine N-Nitrosodimethylamine, N-Nitrosopiperidine N-Nitrosodiphenylamine, N-Nitrosopyrrolidine N-Nitrosodi-n-propylamine	1 mL
U-NSM-807-1	**Nitrosamines Mixture** 2000 µg/mL of each analyte in Methanol N-Nitrosodimethylamine, N-Nitrosodi-n-propylamine N-Nitrosodiphenylamine	1 mL
U-NSM-807	**Nitrosamines Mixture**	4 x 1 mL
U-US-115	**Base/Neutrals Mixture 4** 2000 µg/mL of each analyte in Methylene chloride. Acetophenone, Methyl methanesulfonate m-Dinitrobenzene, 1,4-Naphthoquinone 2,4-Dinitrotoluene, Nitrobenzene 2,6-Dinitrotoluene, Pentachloronitrobenzene Ethyl methanesulfonate, Safrole Isophorone, 1,3,5-Trinitrobenzene Isosafrole	1 mL
U-US-114	**Base/Neutrals Mixture 3** 2000 µg/mL of each analyte in Methylene chloride. 2-Acetylaminofluorene, 1-Naphthylamine 4-Aminobiphenyl, 2-Naphthylamine 3,3'-Dichlorobenzidine, 5-Nitro-o-toluidine p-(Dimethylamino)azobenzene, Phenacetin 3,3'-Dimethylbenzidine, p-Phenylenediamine α,α-Dimethylphenethylamine, o-Toluidine Diphenylamine	1 mL
U-US-120AN	**Pyridines Mixture** 2000 µg/mL of each analyte in Acetone. Methapyrilene, 2-Picoline 4-Nitroquinoline-1-oxide, Pyridine	1 mL
U-CLP-310-1	**Base/Neutrals Calibration Check Mixture** 1000 µg/mL of each analyte in Methylene chloride. Acenaphthene, Fluoranthene Benzo(a)pyrene, Hexachlorobutadiene 1,4-Dichlorobenzene, N-Nitrosodiphenylamine Di-n-octyl phthalate	1 mL
U-CLP-310	**Base/Neutrals Calibration Check Mixture**	4 x 1 mL
U-CLP-410-1	**Acids Calibration Check Mixture** 2000 µg/mL of each analyte in Methanol. 4-Chloro-3-methylphenol, Pentachlorophenol 2,4-Dichlorophenol, Phenol 2-Nitrophenol, 2,4,6-Trichlorophenol	1 mL
U-CLP-410	**Acids Calibration Check Mixture**	4 x 1 mL
U-ISM-560-1	**Semi-Volatiles Internal Standard Mixture** 2000 µg/mL of each analyte in Methylene chloride. Acenaphthene-D_{10}, Naphthalene-D_8 Chrysene-D_{12}, Perylene-D_{12} 1,4-Dichlorobenzene-D_4, Phenanthrene-D_{10}	1 mL

Code	Product	Unit
U-ISM-560	Semi-Volatiles Internal Standard Mixture	4 x 1 mL
U-US-108N	Semi-Volatiles Internal Standard Mixture 4000 µg/mL of each analyte in Methylene chloride. Acenaphthene-D_{10} Naphthalene-D_8 Chrysene-D_{12} Perylene-D_{12} 1,4-Dichlorobenzene-D_4 Phenanthrene-D_{10}	1 mL
U-US-105N	Benzidines Mixture 2000 µg/mL of each analyte in Methanol. Benzidine 3,3'-Dichlorobenzidine	1 mL

Explosives and their degradation products

Two World Wars led to the production of large amounts of explosives. Inadequate storage, careless disposal of production residues, but also accidents, testing procedures and finally the dismantling of production plants caused extensive soil contamination. In a first report in 1987 Preuß and Haas listed 151 production sites in Germany[1] alone. Concern regarding the ecological and human toxicity of explosives and their degradation products are reflected in the growing number of publications on the analysis of these compounds[2-7], many of which are known or suspected carcinogens[8]. An exact assessment of the hazard on a given site is very complex as a result of the large number of degradation products. The degradation of TNT (2,4,6-Trinitrotoluene) has been described by F.P.M. Karg and G. Kass[9].

References

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Code	Product	Unit
CERERA-017	2-Amino-4,6-dinitrotoluene (3,5-Dinitro-2-methylaniline)	100 mg
U-EPA-1192	2-Amino-4,6-dinitrotoluene 1000 µg/mL in Acetonitrile	1 mL
CERERA-022S	2-Amino-4,6-dinitrotoluene 1000 µg/mL in Acetonitrile	1.2 mL
CERERA-018	4-Amino-2,6-dinitrotoluene (3,5-Dinitro-4-methylaniline)	100 mg
U-EPA-1193	4-Amino-2,6-dinitrotoluene 1000 µg/mL in Acetonitrile	1 mL
CERERA-023S	4-Amino-2,6-dinitrotoluene 1000 µg/mL in Acetonitrile	1.2 mL
CERB-003	1,2,4-Butanetriol-1,4-dinitrate 100 µg/mL in Acetonitrile	1 mL
CERB-002	1,2,4-Butanetriol trinitrate 100 µg/mL in Acetonitrile	1 mL
	CE see Tetryl	
FL-45926-250MG	2-Chloronitrobenzene OEKANAL®	250 mg
FL-45957-250MG	3-Chloronitrobenzene OEKANAL®	250 mg
FL-45925-250MG	4-Chloronitrobenzene OEKANAL®	250 mg
FL-31570-250MG	2-Chloro-4-nitrotoluene OEKANAL®	250 mg
FL-45998-250MG	4-Chloro-2-nitrotoluene OEKANAL®	250 mg
	Cyclonit see Hexogen	
IPO NIT 150	2,4-Diamino-6-nitrotoluene	50 mg
FL-45922-250MG	2,4-Diaminotoluene OEKANAL®	250 mg
FL-45921-250MG	2,6-Diaminotoluene OEKANAL®	250 mg
IPO NIT 050	2,6-Dinitroaniline	100 mg
IPO NIT 051	3,5-Dinitroaniline	100 mg
FL-45965-250MG	1,2-Dinitrobenzene OEKANAL®	250 mg
U-IST-600-1	1,2-Dinitrobenzene 1000 µg/mL in Methanol	1 mL

Explosives and their degradation products

Code	Product	Unit
U-IST-600	1,2-Dinitrobenzene 1000 µg/mL in Methanol	4 x 1 mL
CERERD-110S	1,2-Dinitrobenzene 1000 µg/mL in Methanol	1.2 mL
IPO NIT 006	1,3-Dinitrobenzene	100 mg
CERERD-032S	1,3-Dinitrobenzene 1000 µg/mL in Acetonitrile	1.2 mL
U-EPA-1113	1,3-Dinitrobenzene 5000 µg/mL in Methanol	1 mL
IPO NIT 007	1,4-Dinitrobenzene	100 mg
IPO NIT 113	2,4-Dinitrobenzoic acid	100 mg
IPO NIT 111	3,4-Dinitrobenzoic acid	100 mg
FL-45930-250MG	3,4-Dinitrobenzoic acid OEKANAL®	250 mg
IPO NIT 112	3,5-Dinitrobenzoic acid	100 mg
IPO NIT 138	2,4-Dichloronitrobenzene	100 mg
CERERD-079	2,2'-Dinitrodiphenylamine	250 mg
CERERD-080	2,4'-Dinitrodiphenylamine	250 mg
CERERD-081	4,4'-Dinitrodiphenylamine	250 mg
CERD-004	Dinitroethylene glycol (EGDN) 100 µg/mL in Acetonitrile	1 mL
CERERD-148S	Dinitroethylene glycol 1000 µg/mL in Acetonitrile	1.2 mL
CERD-010	1,2-Dinitroglycerin 1000 µg/mL in Acetonitrile	1 mL
CERD-002	1,2-Dinitroglycerin 100 µg/mL in Acetonitrile	1 mL
CERD-011	1,3-Dinitroglycerin 1000 µg/mL in Acetonitrile	1 mL
CERD-003	1,3-Dinitroglycerin 100 µg/mL in Acetonitrile	1 mL
IPO NIT 008	2,4-Dinitrophenol	100 mg
IPO NIT 011	2,3-Dinitrotoluene	100 mg
FL-45968-250MG	2,3-Dinitrotoluene OEKANAL®	250 mg
IPO NIT 012	2,4-Dinitrotoluene	100 mg
CERERD-033S	2,4-Dinitrotoluene 1000 µg/mL in Acetonitrile	1.2 mL
CERERD-152S	2,4-Dinitrotoluene 10 mg/mL in Acetonitrile	5 mL
IPO NIT 015	2,5-Dinitrotoluene	100 mg
IPO NIT 013	2,6-Dinitrotoluene	100 mg
CERERD-034S	2,6-Dinitrotoluene 1000 µg/mL in Acetonitrile	1.2 mL
IPO NIT 014	3,4-Dinitrotoluene	100 mg
U-IST-590-1	3,4-Dinitrotoluene 1000 µg/mL in Methanol	1 mL
U-IST-590	3,4-Dinitrotoluene 1000 µg/mL in Methanol	4 x 1 mL
CERERD-109S	3,4-Dinitrotoluene 1000 µg/mL in Methanol	1.2 mL
IPO NIT 157	3,5-Dinitrotoluene	100 mg
NE6513	3,5-Dinitrotoluene 100 µg/mL in Methanol CERTAN®	4.5 mL
CERERD-115S	Diphenylamine 5000 µg/mL in Methanol	1.2 mL
CERERE-032S	Ethyl centralite 500 µg/mL in Methanol	1.2 mL
IPO NL 070	Hexogen (RDX; 1,3,5-Trinitro-2,4,6-trihydro-triazine;Trimethylene-trinitramine) 1000 µg/mL in Acetonitrile	1.2 mL
U-EPA-1233	Hexogen (RDX) 1000 µg/mL in Acetonitrile	1 mL
	HMX see Octogen	
IPO NIT 053	2-Methyl-4-nitroaniline (2-Amino-5-nitrotoluene)	100 mg
IPO NIT 041	2-Methyl-5-nitroaniline (2-Amino-4-nitrotoluene)	100 mg
CERM-077	1-Mononitroglycerin 1000 µg/mL in Acetonitrile	1 mL
CERM-001	1-Mononitroglycerin 100 µg/mL in Acetonitrile	1 mL
CERM-078	2-Mononitroglycerin 1000 µg/mL in Acetonitrile	1 mL
CERM-002	2-Mononitroglycerin 100 µg/mL in Acetonitrile	1 mL
IPO NIT 001	Nitrobenzene	500 mg
CERERN-004S	Nitrobenzene 1000 µg/mL in Acetonitrile	1.2 mL
U-EPA-1139	Nitrobenzene 5000 µg/mL in Methanol	1 mL
	Nitroglycerin see Trinitroglycerin	

Code	Product	Unit
IPO NIT 055	2-Nitro-4-methylaniline (4-Amino-3-nitrotoluene)	100 mg
CERERN-027S	N-Nitrosodiphenylamine 1000 µg/mL in Methanol	1.2 mL
CERP-037	Nitropenta 1000 µg/mL in Acetonitrile	1 mL
FL-31567-250MG	2-Nitrotoluene OEKANAL®	250 mg
U-EPA-1227	2-Nitrotoluene 1000 µg/mL in Acetonitrile	1 mL
CERERN-005S	2-Nitrotoluene 1000 µg/mL in Acetonitrile	1.2 mL
FL-45986-250MG	3-Nitrotoluene OEKANAL®	250 mg
U-EPA-1228	3-Nitrotoluene 1000 µg/mL in Acetonitrile	1 mL
FL-31568-250MG	4-Nitrotoluene OEKANAL®	250 mg
U-EPA-1229	4-Nitrotoluene 1000 µg/mL in Acetonitrile	1 mL
CERERN-007S	4-Nitrotoluene 1000 µg/mL in Acetonitrile	1.2 mL
	Pentaerythritol tetranitrate see Nitropenta	
IPO NL 071	Octogen (HMX;Tetramethylene-tetranitramine;1,3,5,7-Tetranitro-1,3,5,7-tetraazacyclooctane) 1000 µg/mL in Acetonitrile	1.2 mL
CERERH-004S	Octogen (HMX) 1000 µg/mL in Acetonitrile	1.2 mL
U-EPA-1221	Octogen (HMX) 1000 µg/mL in Acetonitrile	1 mL
	PETN see Nitropenta	
	Pyronite see Tetryl RDX see Hexogen Tetra see Tetryl Tetramethylene-tetranitramine see Octogen Tetranitromethylaniline see Tetryl 1,3,5,7-Tetranitro-1,3,5,7-tetraazacyclo-octane see Octogen	
U-EPA-1237	Tetryl 1000 µg/mL in Acetonitrile	1 mL
	Trimethylenetrinitramin see Hexogen	
U-EPA-1240	1,3,5-Trichlorobenzene 1000 µg/mL in Hexane	1 mL
CERERT-023S	1,3,5-Trinitrobenzene 1000 µg/mL in Acetonitrile	1.2 mL
CERT-021	Trinitroglycerin 1% w/w in Propylene glycol	1 mL
CERT-022	Trinitroglycerin 1% w/w in Propylene glycol	5 x 0.25 mL
CERT-002	Trinitroglycerin 1000 µg/mL in Acetonitrile	1 mL
	2,4,6-Trinitrophenylmethylnitramine see Tetryl	
IPO NL 020	2,4,6-Trinitrotoluene 1000 µg/mL in Acetonitrile	1.2 mL
U-EPA-1243	2,4,6-Trinitrotoluene 1000 µg/mL in Acetonitrile	1 mL
	1,3,5-Trinitro-2,4,6-trihydrotriazine see Hexogen	
CERERE-013	Method 8330 Kit Each Kit contains one 1.2 mL ampoule of each analyte Concentration: 1000 µg/mL in Acetonitrile 2-Amino-4,6-dinitrotoluene 4-Amino-2,6-dinitrotoluene 1,3-Dinitrobenzene 2,4-Dinitrotoluene 2,6-Dinitrotoluene Hexogen (RDX) Nitrobenzene 2-Nitrotoluene 3-Nitrotoluene 4-Nitrotoluene Octogen (HMX) Tetryl 1,3,5-Trinitrobenzene 2,4,6-Trinitrotoluene (TNT)	kit

Multicomponent calibration solutions

U-NAIM-833B-1	Intermediate Stock Solution 2 1000 µg/mL of each analyte in Acetonitrile 2,6-Dinitrotoluene 2-Nitrotoluene 3-Nitrotoluene 4-Nitrotoluene Tetryl 2-Amino-4,6-dinitrotoluene 4-Amino-2,6-dinitrotoluene	1 mL
U-NAIM-833B	Intermediate Stock Solution 2	4 x 1 mL
U-NAIM-833A-1	Intermediate Stock Solution 1 1000 µg/mL of each analyte in Acetonitrile Octogen (HMX) Hexogen (RDX) 1,3,5-Trinitrobenzene 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene (TNT) 2,4-Dinitrotoluene	1 mL
U-NAIM-833A	Intermediate Stock Solution 1	4 x 1 mL

Code	Product	Unit
U-NAIM-833E-1	Combined Stock Solution 1000 µg/mL of each analyte in Acetonitrile Octogen (HMX) Hexogen (RDX) 1,3,5-Trinitrobenzene 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene (TNT) 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 3-Nitrotoluene 4-Nitrotoluene Tetryl 2-Amino-4,6-dinitrotoluene 4-Amino-2,6-dinitrotoluene	1 mL
U-NAIM-833E	Combined Stock Solution	4 x 1 mL
CERERE-021	Method 8330 Stock Solution 200 µg/mL of each analyte in Acetonitrile 2-Amino-4,6-dinitrotoluene 4-Amino-2,6-dinitrotoluene 1,3-Dinitrobenzene 2,4-Dinitrotoluene 2,6-Dinitrotoluene Hexogen (RDX) Nitrobenzene 2-Nitrotoluene 3-Nitrotoluene 4-Nitrotoluene Octogen (HMX) Tetryl 1,3,5-Trinitrobenzene 2,4,6-Trinitrotoluene (TNT)	1.2 mL
CERERE-011	Method 8330 Calibration Standard Solution A 100 µg/mL of each analyte in Acetonitrile 2-Amino-4,6-dinitrotoluene 1,3-Dinitrobenzene 2,4-Dinitrotoluene Hexogen (RDX) Nitrobenzene Octogen (HMX) 1,3,5-Trinitrobenzene 2,4,6-Trinitrotoluene (TNT)	1.2 mL
CERERE-012	Method 8330 Calibration Standard Solution B 100 µg/mL of each analyte in Acetonitrile 4-Amino-2,6-dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 3-Nitrotoluene 4-Nitrotoluene Tetryl	1.2 mL
CERERE-042	Method 529 Explosives Stock Standard 2000 µg/mL of each analyte in Ethyl acetate 2-Amino-4,6-dinitrotoluene 4-Amino-2,6-dinitrotoluene 3,5-Dinitroaniline 1,3-Dinitrobenzene 2,4-Dinitrotoluene 2,6-Dinitrotoluene Nitrobenzene 2-Nitrotoluene 3-Nitrotoluene 4-Nitrotoluene 1,3,5-Trinitrobenzene 2,4,6-Trinitrotoluene (TNT) RDX Tetryl	1.2 mL
New NIST-2906	Trace explosives calibration solutions	3 sets

This Standard Reference Material (SRM®) is intended for use in calibrating and evaluating analytical equipment used for the detection of trace explosives, which may include those based on ion mobility spectrometry. NIST-2906 consists of three dilute solutions of hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX), 2,4,6-trinitrotoluene (TNT), and pentaerythritol tetranitrate (PETN) A unit of NIST-2906 consists of four glass ampoules of each of the three explosives containing approximately 1 mL of the solution and four vials of the 2-propanol solvent used to prepare the solutions. In addition, there are four labeled dropper bottles for temporary storage of the solutions once opened. The concentrations of the explosives in NIST 2906 were prepared to approximately satisfy the requirements of ASTM Standard E2520-07 *Standard Practice for Verifying Minimum Acceptable Performance of Trace Explosive Detectors*.

Certified Concentrations for RDX, PETN, and TNT in NIST-2906

Explosive	Mass Fraction (µg/g)	Mass Concentration (µg/mL)
RDX	0.189 ± 0.005	0.148 ± 0.004
PETN	2.15 ± 0.06	1.68 ± 0.05
TNT	1.27 ± 0.07	0.99 ± 0.05

Information values for the mass of RDX, PETN, and TNT dispensed per drop of NIST2906 using the provided dropper bottles

Neat reference materials kits

Code	Product	Unit
U-FRCK-013	**Chlorophenols Kit** Each kit contains 20 mg each of nineteen compounds. 2-Chlorophenol 3-Chlorophenol 4-Chlorophenol 2,3-Dichlorophenol 2,4-Dichlorophenol 2,5-Dichlorophenol 2,6-Dichlorophenol 3,4-Dichlorophenol 3,5-Dichlorophenol 2,3,4-Trichlorophenol 2,3,5-Trichlorophenol 2,3,6-Trichlorophenol 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol 3,4,5-Trichlorophenol 2,3,4,5-Tetrachlorophenol 2,3,4,6-Tetrachlorophenol 2,3,5,6-Tetrachlorophenol Pentachlorophenol	kit
U-FRCS-156	**Phthalates Esters Kit** Each kit contains 1 g each of eighteen compounds. Dimethyl phthalate Dimethyl isophthalate Diethyl phthalate Dibutyl phthalate Diisobutyl phthalate Diallyl phthalate Dimethoxyethyl phthalate (Bis(2-methoxyethyl)phthalate) Diisohexyl phthalate Dicyclohexyl phthalate Diphenyl phthalate Diphenyl isophthalate Isobutylcyclohexyl phthalate Butylisooctyl phthalate Diisooctyl phthalate Bis(2-ethylhexyl) isophthalate Diisononyl phthalate Diisodecyl phthalate Butyl phthalyl butyl glyconate	kit
New U-FRCK-009	**Nitroaromatics and Isophorone Kit** Each kit contains 1 x 100 mg of each of four compounds. Isophorone Nitrobenzene 2,4-Dinitrotoluene 2,6-Dinitrotoluene	kit
U-FRCK-010	**Nitrosamines Kit** Each kit contains 100 mg each of ten compounds. N-Nitrosodimethylamine N-Nitrosodiethylamine N-Nitrosodi-n-propylamine N-Nitrosodi-n-butylamine N-Nitrosodiphenylamine N-Nitrosomorpholine (4-Nitrosomorpholine) N-Nitrosopiperidine (1-Nitrosopiperidine) N-Nitrosopyrrolidine (1-Nitrosopyrrolidine) 4-Nitroso-N,N-diethylaniline N,N-Dimethyl-4-nitrosoaniline	kit
U-FRNH-179	**Anilines Kit** Each kit contains 100 mg each of eighteen compounds. Aniline 2-Chloroaniline 3-Chloroaniline 4-Chloroaniline 3,4-Dichloroaniline 2,4,5-Trichloroaniline 4-Bromoaniline 2-Nitroaniline 3-Nitroaniline 4-Nitroaniline 2,4-Dinitroaniline 2-Chloro-4-nitroaniline 4-Chloro-2-nitroaniline 2,6-Dichloro-4-nitroaniline 2-Chloro-4,6-dinitroaniline 2,6-Dibromo-4-nitroaniline 2-Bromo-4,6-dinitroaniline 2,6-Dimethylaniline	kit
U-FRCK-015	**Halobutanes Kit** Each kit contains 100 mg each of fourteen compounds. 1-Chlorobutane 2-Chlorobutane 1,3-Dichlorobutane 1,4-Dichlorobutane 2,2-Dichlorobutane 2,3-Dichlorobutane 1-Bromobutane 2-Bromobutane 1,3-Dibromobutane 1,4-Dibromobutane 1,1,2-Tribromobutane 2,2,3-Tribromobutane 1,2,3,4-Tetrabromobutane 1-Bromo-4-chlorobutane	kit
U-FRCK-005	**Halobutenes Kit** Each kit contains 100 mg each of eight compounds. 1-Chloro-2-butene 3-Chloro-1-butene 1,2-Dichloro-3-butene (3,4-Dichloro-1-butene) 1,3-Dichloro-2-butene cis-1,4-Dichloro-2-butene Hexachloro-1,3-butadiene 1-Bromo-2-butene 4-Bromo-1-butene	kit

ULTRAkits®

Kits for **qualitative** measurements. Each Kit contains 2 mL each of twenty different standards in a convenient box. Solid compounds are dissolved in an appropriate solvent. All standards are packaged in screw-capped vials, and are 98+% pure. The ULTRAkits® are supplied without certificates of analysis.

Code	Product	Unit
U-WRK-100	Hydrocarbons ULTRAkit®	kit

for **qualitative** measurements

n-Hexane	2 mL	Heptene-1	2 mL
n-Heptane	2 mL	Octene-1	2 mL
n-Octane	2 mL	Nonene-1	2 mL
n-Nonane	2 mL	Decene-1	2 mL
n-Decane	2 mL	Undecene-1	2 mL
n-Undecane	2 mL	Dodecene-1	2 mL
n-Dodecane	2 mL	Tetradecene-1	2 mL
n-Tetradecane	2 mL	Hexadecene-1	2 mL
n-Hexadecane	2 mL	Octadecene-1	2 mL
Hexene-1	2 mL	n-Octadecane (10% w/v in Chloroform)	2 mL

U-WRK-101	Wax Range Hydrocarbons ULTRAkit®				kit

for **qualitative** measurements

(Wax range)

Each at 1% w/v in Tetradecane

Hexadecane	2 mL	Docosane	2 mL	Squalane	2 mL
Heptadecane	2 mL	Tricosane	2 mL	Dotriacontane	2 mL
Octadecane	2 mL	Tetracosane	2 mL	Tetratriacontane	2 mL
Nonadecane	2 mL	Pentacosane	2 mL	Hexatriacontane	2 mL
Pristane	2 mL	Hexacosane	2 mL	Octatriacontane	2 mL
Eicosane	2 mL	Octacosane	2 mL	Tetracontane	2 mL
Heneicosane	2 mL	Triacontane	2 mL		

U-WRK-102	Gasoline Range Hydrocarbons ULTRAkit®		kit

for **qualitative** measurements

(Gasoline range)

n-Hexane	2 mL	Cyclohexane	2 mL	Nonene-1	2 mL
n-Heptane	2 mL	Methylcyclohexane	2 mL	Benzene	2 mL
n-Octane	2 mL	Dimethylcyclohexane	2 mL	Toluene	2 mL
Isooctane	2 mL	Hexene-1	2 mL	Xylenes (mixed)	2 mL
n-Nonane	2 mL	Heptene-1	2 mL	Cumene	2 mL
Cyclopentane	2 mL	Octene-1	2 mL	Mesitylene	2 mL
Methylcyclopentane	2 mL	Diisobutylene	2 mL		

U-WRK-103	Branched Chain Hydrocarbons ULTRAkit®		kit

for **qualitative** measurements

(Branched chain)

2-Methylpentane	2 mL	2-Methyl-1-pentene	2 mL
3-Methylpentane	2 mL	4-Methylpentene-2	2 mL
2,2-Dimethylbutane	2 mL	4-Methylpentene-1	2 mL
2,3-Dimethylbutane	2 mL	2-Ethylhexene-1	2 mL
3-Methylhexane	2 mL	2-Methylheptene-3	2 mL
2,3-Dimethylpentane	2 mL	2,4,4-Trimethylpentene-1	2 mL
2,4-Dimethylpentane	2 mL	2,4,4-Trimethylpentene-2	2 mL
2,2,4-Trimethylpentane	2 mL	3,5,5-Trimethylhexene-1	2 mL
2,3,4-Trimethylpentane	2 mL	2,5-Dimethylhexadiene-2,4	2 mL
3-Methylpentadiene-1,3	2 mL		

U-WRK-104	Cyclic Hydrocarbons ULTRAkit®		kit

for **qualitative** measurements

(Cyclic Hydrocarbons)

Cyclopentane	2 mL	Ethylcyclohexane	2 mL	Cycloheptene	2 mL
Methylcyclopentane	2 mL	Isopropylcyclohexane	2 mL	Cyclooctane	2 mL
Cyclopentene	2 mL	Phenylcyclohexane	2 mL	Cyclooctene	2 mL
Cyclohexane	2 mL	Cyclohexene	2 mL	1,5-Cyclooctadiene	2 mL
Methylcyclohexane	2 mL	4-Methylcyclohexene	2 mL	1,3-Cyclooctadiene	2 mL
1,2-Dimethylcyclohexane	2 mL	4-Vinylcyclohexene	2 mL	Dicyclopentadiene	2 mL
1,4-Dimethylcyclohexane	2 mL	Cycloheptane	2 mL		

U-WRK-105	Terpenes ULTRAkit®		kit

for **qualitative** measurements

alpha-Pinene (2% w/v in Ethanol)	2 mL	Myrcene (2% w/v in Chloroform)	2 mL
beta-Pinene (2% w/v in Ethanol)	2 mL	alpha-Terpineol (2% w/v in Ethanol)	2 mL
Fenchone (2% w/v in Ethanol)	2 mL	Citronellol (2% w/v in Ethanol)	2 mL
Geraniol (2% w/v in Ethanol)	2 mL	DL-Menthol (2% w/v in Ethanol)	2 mL
alpha-Terpinene (2% w/v in Ethanol)	2 mL	1-Borneol (2% w/v in Ethanol)	2 mL
gamma-Terpinene (2% w/v in Ethanol)	2 mL	2-Piperidone (2% w/v in Ethanol)	2 mL
Camphene (2% w/v in Ethanol)	2 mL	Dihydrocarveol (2% w/v in Ethanol)	2 mL
Linalool (2% w/v in Ethanol)	2 mL	1-Isopulegol (2% w/v in Ethanol)	2 mL
D-Limonene (2% w/v in Ethanol)	2 mL	Pulegone (2% w/v in Ethanol)	2 mL
Citral (2% w/v in Ethanol)	2 mL		

Code	Product	Unit
U-WRK-110	Aromatics 1 ULTRAkit®	kit

for **qualitative** measurements

Benzene....2 mL
Toluene....2 mL
o-Xylene....2 mL
m-Xylene....2 mL
p-Xylene....2 mL
Ethylbenzene....2 mL
Propylbenzene....2 mL
Cumene....2 mL
Butylbenzene....2 mL
Isobutylbenzene....2 mL
sec-Butylbenzene....2 mL
tert-Butylbenzene....2 mL
p-Cymene....2 mL
1,2,4-Trimethylbenzene....2 mL
Mesitylene....2 mL
p-Diisopropylbenzene....2 mL
Styrene....2 mL
alpha-Methylstyrene....2 mL
beta-Methylstyrene....2 mL
1,2,4,5-Tetramethylbenzene (2% w/v in p-Xylene)....2 mL

U-WRK-111	Aromatics 2 ULTRAkit®	kit

for **qualitative** measurements

Benzene....2 mL
Toluene....2 mL
o-Xylene....2 mL
m-Xylene....2 mL
p-Xylene....2 mL
Indane....2 mL
Indene....2 mL
Tetralin....2 mL
Decalin (decahydronaphthalene)....2 mL
Biphenyl (2% w/v in p-Xylene)....2 mL
Bibenzyl (2% w/v in p-Xylene)....2 mL
Diphenylmethane (2% w/v in p-Xylene)....2 mL
Naphthalene (2% w/v in p-Xylene)....2 mL
1-Methylnaphthalene (2% w/v in p-Xylene)....2 mL
2-Methylnaphthalene (2% w/v in p-Xylene)....2 mL
Anthracene (1% w/v in p-Xylene)....2 mL
Pyrene (2% w/v in p-Xylene)....2 mL
Fluorene (2% w/v in p-Xylene)....2 mL
1,2-Dimethylnaphthalene (2% w/v in p-Xylene)....2 mL
Phenanthrene (2% w/v in p-Xylene)....2 mL
p-Xylene.... 2 mL

U-WRK-112	Polycyclic Aromatics ULTRAkit®	kit

for **qualitative** measurements

(Polycyclic aromatics)

Acenaphthylene (1% w/v in Toluene)....2 mL
Acenaphthene (1% w/v in Toluene)....2 mL
Anthracene (1% w/v in Toluene)....2 mL
Azulene (1% w/v in Toluene)....2 mL
1,2-Benzanthracene (1% w/v in Toluene)....2 mL
2,3-Benzofluorene (1% w/v in Toluene)....2 mL
Chrysene (0.5% w/v in Chloroform)....2 mL
Benzo[a]pyrene (1% w/v in Toluene)....2 mL
9,10-Dimethylanthracene (1% w/v in Toluene)....2 mL
1,2-Dimethylnaphthalene (1% w/v in Toluene)....2 mL
Fluoranthene (1% w/v in Toluene)....2 mL
Fluorene (1% w/v in Toluene)....2 mL
2-Methylanthracene (1% w/v in Toluene)....2 mL
Naphthalene (1% w/v in Toluene)....2 mL
Perylene (0.5% w/v in Chloroform)....2 mL
Phenanthrene (1% w/v in Toluene)....2 mL
Pyrene (1% w/v in Toluene)....2 mL
cis-Stilbene (1% w/v in Toluene)....2 mL
trans-Stilbene (1% w/v in Toluene)....2 mL

U-WRK-300	Industrial Chemicals ULTRAkit®	kit

for **qualitative** measurements

Acetic acid....2 mL
Acetic anhydride....2 mL
Aniline....2 mL
Butyl alcohol....2 mL
Dioctyl phthalate....2 mL
Ethanolamine....2 mL
Ethylene glycol....2 mL
Furfural....2 mL
Furnace oil....2 mL
Isopropyl alcohol....2 mL
Ethyl alcohol.... 2 mL
Methanol.... 2 mL
Methyl ethyl ketone.... 2 mL
1-Methylnaphthalene.... 2 mL
Benzoic acid (2% w/v in p-Xylene).... 2 mL
Naphthalene (2% w/v in p-Xylene).... 2 mL
o-Cresol (2% w/v in p-Xylene).... 2 mL
m-Cresol (2% w/v in p-Xylene).... 2 mL
p-Cresol (2% w/v in p-Xylene).... 2 mL
Phenol (2% w/v in p-Xylene).... 2 mL

Code	Product	Unit

U-WRK-310 Chemical Solvents ULTRAkit® — kit

for **qualitative** measurements

Acetone 2 mL	Gasoline 2 mL	Nitrobenzene 2 mL
Benzene 2 mL	Isooctane 2 mL	Tetrahydrofuran 2 mL
Carbon tetrachloride 2 mL	Isopropyl alcohol 2 mL	Toluene 2 mL
N,N-Dimethyl formamide 2 mL	Kerosene 2 mL	Trichloroethylene 2 mL
Dimethyl sulfoxide 2 mL	Methanol 2 mL	Turpentine 2 mL
Ethyl acetate 2 mL	Methyl ethyl ketone 2 mL	Xylenes (mixed) 2 mL
Furfural 2 mL	Naphtha 2 mL	

U-WRK-140 Acids ULTRAkit® — kit

for **qualitative** measurements

Acetic acid 2 mL	Decanoic (10% w/v in Chloroform) 2 mL
Propanoic acid 2 mL	Undecanoic (10% w/v in Chloroform) 2 mL
Butanoic acid 2 mL	Dodecanoic (10% w/v in Chloroform) 2 mL
2-Methylpropanoic acid 2 mL	Tridecanoic (10% w/v in Chloroform) 2 mL
Pentanoic acid 2 mL	Tetradecanoic (10% w/v in Chloroform) 2 mL
3-Methylbutanoic acid 2 mL	Pentadecanoic (10% w/v in Chloroform) 2 mL
Hexanoic acid 2 mL	Hexadecanoic (10% w/v in Chloroform) 2 mL
Heptanoic acid 2 mL	Heptadecanoic (10% w/v in Chloroform) 2 mL
Octanoic acid 2 mL	Octadecanoic (10% w/v in Chloroform) 2 mL
Nonanoic acid 2 mL	Eicosanoic (1% w/v in Chloroform) 2 mL

U-WRK-141 Acids ULTRAkit® — kit

for **qualitative** measurements

Oxalic acid (2% w/v in DMF) 2 mL	Fumaric acid (2% w/v in DMF) 2 mL
Malonic acid (2% w/v in DMF) 2 mL	Phthalic acid (2% w/v in DMF) 2 mL
Succinic acid (2% w/v in DMF) 2 mL	Isophthalic acid (2% w/v in DMF) 2 mL
Glutaric acid (2% w/v in DMF) 2 mL	Terephthalic acid (1% w/v in DMF) 2 mL
Adipic acid (2% w/v in DMF) 2 mL	Itaconic acid (1% w/v in DMF) 2 mL
Pimelic acid (2% w/v in DMF) 2 mL	Dodecanedioic acid (1% w/v in DMF) 2 mL
Suberic acid (2% w/v in DMF) 2 mL	Tetradecanedioic acid (1% w/v in DMF) 2 mL
Azelaic acid (2% w/v in DMF) 2 mL	Hexadecanedioic acid (1% w/v in DMF) 2 mL
Sebacic acid (2% w/v in DMF) 2 mL	Tartaric acid (1% w/v in DMF) 2 mL
Maleic acid (2% w/v in DMF) 2 mL	Citraconic acid (1% w/v in DMF) 2 mL

U-WRK-142 Aromatic Acids ULTRAkit® — kit

for **qualitative** measurements

Benzoic acid 2 mL	o-Hydroxybenzoic acid 2 mL
o-Toluic acid 2 mL	m-Hydroxybenzoic acid 2 mL
m-Toluic acid 2 mL	p-Hydroxybenzoic acid 2 mL
p-Toluic acid 2 mL	o-Methoxybenzoic acid 2 mL
o-Chlorobenzoic acid 2 mL	m-Methoxybenzoic acid 2 mL
m-Chlorobenzoic acid 2 mL	p-Methoxybenzoic acid 2 mL
p-Chlorobenzoic acid 2 mL	o-Aminobenzoic acid 2 mL
o-Nitrobenzoic acid 2 mL	m-Aminobenzoic acid 2 mL
m-Nitrobenzoic acid 2 mL	p-Aminobenzoic acid 2 mL
p-Nitrobenzoic acid 2 mL	3,4,5-Trihydroxybenzoic acid 2 mL

U-WRK-130 Esters ULTRAkit® — kit

for **qualitative** measurements

Methyl acetate 2 mL
Methyl propanoate 2 mL
Methyl butanoate 2 mL
Methyl pentanoate 2 mL
Methyl hexanoate 2 mL
Methyl heptanoate 2 mL
Methyl octanoate 2 mL
Ethyl acetate 2 mL
Ethyl butanoate 2 mL
Ethyl hexanoate 2 mL
Ethyl octanoate 2 mL
n-Propyl acetate 2 mL
Propyl butanoate 2 mL
Methyl nonanoate (2% w/v in Chloroform) 2 mL
Methyl decanoate (2% w/v in Chloroform) 2 mL
Methyl dodecanoate (2% w/v in Chloroform) 2 mL
Methyl tetradecanoate (2% w/v in Chloroform) 2 mL
Methyl hexadecanoate (2% w/v in Chloroform) 2 mL
Ethyl decanoate (2% w/v in Chloroform) 2 mL
Ethyl dodecanoate (2% w/v in Chloroform) 2 mL

U-WRK-131 Esters ULTRAkit® — kit

for **qualitative** measurements

2% w/v of each compound in Chloroform

Methyl nonanoate 2 mL	Methyl hexadecanoate 2 mL	Ethyl tridecanoate 2 mL
Methyl decanoate 2 mL	Methyl heptadecanoate 2 mL	Ethyl tetradecanoate 2 mL
Methyl undecanoate 2 mL	Methyl octadecanoate 2 mL	Ethyl pentadecanoate 2 mL
Methyl dodecanoate 2 mL	Ethyl nonanoate 2 mL	Ethyl hexadecanoate 2 mL
Methyl tridecanoate 2 mL	Ethyl decanoate 2 mL	Ethyl heptadecanoate 2 mL
Methyl tetradecanoate 2 mL	Ethyl undecanoate 2 mL	Ethyl octadecanoate 2 mL
Methyl pentadecanoate 2 mL	Ethyl dodecanoate 2 mL	

Code	Product	Unit

U-WRK-132 Dibasic Esters ULTRAkit® — kit

for **qualitative** measurements

2% w/v of each compound in Chloroform

Dimethyl oxalate	2 mL	Diethyl malonate	2 mL
Dimethyl malonate	2 mL	Diethyl succinate	2 mL
Dimethyl succinate	2 mL	Diethyl glutarate	2 mL
Dimethyl glutarate	2 mL	Diethyl adipate	2 mL
Dimethyl adipate	2 mL	Diethyl pimelate	2 mL
Dimethyl pimelate	2 mL	Diethyl suberate	2 mL
Dimethyl suberate	2 mL	Diethyl azelate	2 mL
Dimethyl azelate	2 mL	Diethyl sebacate	2 mL
Dimethyl sebacate	2 mL	Diethyl fumarate	2 mL
Diethyl oxalate	2 mL	Diethyl maleate	2 mL

U-WRK-150 Aldehydes & Ketones ULTRAkit® — kit

for **qualitative** measurements

Propanal	2 mL	Heptanal	2 mL	4-Methyl-2-pentanone	2 mL
Butanal	2 mL	Octanal	2 mL	Mesityl oxide	2 mL
2-Methylpropanal	2 mL	2-Butanone	2 mL	2-Heptanone	2 mL
Methacrolein	2 mL	2-Pentanone	2 mL	3-Heptanone	2 mL
Pentanal	2 mL	3-Pentanone	2 mL	2-Octanone	2 mL
2-Methylbutanal	2 mL	2-Hexanone	2 mL	Cyclopentanone	2 mL
Hexanal	2 mL	Cyclohexanone	2 mL		

U-WRK-155 Ketones ULTRAkit® — kit

for **qualitative** measurements

Acetone	2 mL	4-Methyl-2-pentanone	2 mL	2-Nonanone	2 mL
2-Butanone	2 mL	3-Hexanone	2 mL	2-Decanone	2 mL
3-Methyl-2-butanone	2 mL	2-Heptanone	2 mL	2-Undecanone	2 mL
2-Pentanone	2 mL	3-Heptanone	2 mL	2-Dodecanone	2 mL
3-Pentanone	2 mL	2-Methyl-3-hexanone	2 mL	2-Tridecanone	2 mL
2-Hexanone	2 mL	5-methyl-2-hexanone	2 mL		
3-Methyl-2-pentanone	2 mL	2-Octanone	2 mL		

U-WRK-120 Alcohols ULTRAkit® — kit

for **qualitative** measurements

Methanol	2 mL	3-Pentanol	2 mL
Ethanol	2 mL	1-Hexanol	2 mL
n-Propyl alcohol (1-propanol)	2 mL	3-Hexanol	2 mL
Isopropanol	2 mL	n-Heptanol	2 mL
1-Butanol	2 mL	4-Heptanol	2 mL
2-Methylpropanol	2 mL	1-Octanol	2 mL
sec-Butanol	2 mL	1-Decanol	2 mL
2-Methyl-2-propanol (t-Butyl alcohol)	2 mL	1-Dodecanol (2% w/v in Chloroform)	2 mL
Pentanol	2 mL	1-Tetradecanol (2% w/v in Chloroform)	2 mL
2-Pentanol	2 mL	1-Hexadecanol (2% w/v in Chloroform)	2 mL

U-WRK-190 Polyols, Ethers ULTRAkit® — kit

for **qualitative** measurements

1,2-Propanediol	2 mL	Diethylene glycol ethyl ether	2 mL
1,3-Propanediol	2 mL	Diethylene glycol butyl ether	2 mL
1,3-Butanediol	2 mL	2-Methoxyethanol	2 mL
2,3-Butanediol	2 mL	Ethylene glycol monoethyl ether	2 mL
1,4-Butanediol	2 mL	2-Butoxyethanol	2 mL
1,5-Pentanediol	2 mL	1,6-Hexanediol (2% w/v in Ethanol)	2 mL
Ethylene glycol	2 mL	1,7-Heptanediol (2% w/v in Ethanol)	2 mL
Dipropylene glycol	2 mL	1,8-Octanediol (2% w/v in Ethanol)	2 mL
Glycerol	2 mL	1,9-Nonanediol (2% w/v in Ethanol)	2 mL
Diethylene glycol monomethyl ether	2 mL	1,10-Decanediol (2% w/v in Ethanol)	2 mL

U-WRK-160 Chlorinated Hydrocarbons ULTRAkit® — kit

for **qualitative** measurements

1-Chlorobutane	2 mL	1,4-Dichlorobutane	2 mL
2-Chlorobutane	2 mL	1,5-Dichloropentane	2 mL
1-Chloropentane	2 mL	1,2,3-trichloropropane	2 mL
2-Chloropentane	2 mL	Chlorobenzene	2 mL
1-Chlorohexane	2 mL	o-Chlorotoluene	2 mL
1-Chloroheptane	2 mL	m-Chlorotoluene	2 mL
1-Chlorooctane	2 mL	p-Chlorotoluene	2 mL
1-Chlorononane	2 mL	o-Dichlorobenzene	2 mL
1-Chlorodecane	2 mL	m-Dichlorobenzene	2 mL
1,3-Dichloropropane	2 mL	p-Dichlorobenzene (2% w/v in p-Xylene)	2 mL

U-WRK-203 Mixed Functionality ULTRAkit® (C6 and C7) — kit

for **qualitative** measurements

(C6 and C7)

Hexane	2 mL	1-Chlorohexane	2 mL	2-Heptanone	2 mL
1-Hexene	2 mL	Hexylamine	2 mL	Heptanoic acid	2 mL
1-Hexanol	2 mL	Benzene	2 mL	Methyl heptanoate	2 mL
Hexanal	2 mL	Heptane	2 mL	1-Chloroheptane	2 mL
2-Hexanone	2 mL	1-Heptene	2 mL	Heptylamine	2 mL
Hexanoic acid	2 mL	1-Heptanol	2 mL	Toluene	2 mL
Methyl hexanoate	2 mL	Heptanal	2 mL		

Code	Product	Unit

U-WRK-204 Mixed Functionality ULTRAkit® (C8 and C9) — kit

for **qualitative** measurements

(C8 and C9)

Octane ... 2 mL	1-Chlorooctane ... 2 mL	2-Nonanone ... 2 mL
1-Octene ... 2 mL	Octylamine ... 2 mL	Nonanoic acid ... 2 mL
1-Octanol ... 2 mL	Ethylbenzene ... 2 mL	Methyl nonanoate ... 2 mL
Octanal ... 2 mL	Nonane ... 2 mL	1-Chlorononane ... 2 mL
2-Octanone ... 2 mL	1-Nonene ... 2 mL	Nonylamine ... 2 mL
Octanoic acid ... 2 mL	1-Nonanol ... 2 mL	Propylbenzene ... 2 mL
Methyl octanoate ... 2 mL	Nonanal ... 2 mL	

U-WRK-205 Mixed Functionality ULTRAkit® (C10 and C11) — kit

for **qualitative** measurements

(C10 and C11)

Decane ... 2 mL	1-Chlorodecane ... 2 mL	2-Undecanone ... 2 mL
1-Decene ... 2 mL	Decylamine ... 2 mL	Undecanoic acid ... 2 mL
1-Decanol ... 2 mL	Butylbenzene ... 2 mL	Methyl undecanoate ... 2 mL
Decanal ... 2 mL	Undecane ... 2 mL	1-Chloroundecane ... 2 mL
2-Decanone ... 2 mL	1-Undecene ... 2 mL	Undecylamine ... 2 mL
Decanoic acid ... 2 mL	1-Undecanol ... 2 mL	Amylbenzene ... 2 mL
Methyl decanoate ... 2 mL	Undecanal ... 2 mL	

U-WRK-143 Phthalate Esters ULTRAkit® — kit

for **qualitative** measurements

1% w/v of each analyte in Chloroform

Dimethyl isophthalate ... 2 mL	Diisohexyl phthalate ... 2 mL	Diisodecyl phthalate ... 2 mL
Dimethyl phthalate ... 2 mL	Dicyclohexyl pthalate ... 2 mL	Diundecyl phthalate ... 2 mL
Diethyl phthalate ... 2 mL	Di-n-octyl phthalate ... 2 mL	Didodecyl phthalate ... 2 mL
Dibutyl phthalate ... 2 mL	Dioctyl isophthalate ... 2 mL	Ditridecyl phthalate ... 2 mL
Diisobutyl phthalate ... 2 mL	Dinonyl phthalate ... 2 mL	Diphenyl phthalate ... 2 mL
Diamyl phthalate ... 2 mL	Diisononyl phthalate ... 2 mL	Diphenyl isophthalate ... 2 mL
Dihexyl phthalate ... 2 mL	Didecyl phthalate ... 2 mL	

U-WRK-170 Phenols ULTRAkit® — kit

for **qualitative** measurements

2% w/v of each analyte in p-Xylene

Phenol ... 2 mL	2,6-Xylenol ... 2 mL	2-n-Propylphenol ... 2 mL
o-Cresol ... 2 mL	3,4-Dimethylphenol ... 2 mL	2,3,5-Trimethylphenol ... 2 mL
m-Cresol ... 2 mL	3,5-Xylenol ... 2 mL	2,4,6-Trimethylphenol ... 2 mL
p-Cresol ... 2 mL	2-Ethylphenol ... 2 mL	4-tert-Butylphenol ... 2 mL
2,3-Xylenol ... 2 mL	3-Ethylphenol ... 2 mL	1-Naphthol ... 2 mL
2,4-Xylenol ... 2 mL	4-Ethylphenol ... 2 mL	2-Naphthol ... 2 mL
2,5-Dimethylphenol ... 2 mL	2-Isopropylphenol ... 2 mL	

U-WRK-145 Amino Acids ULTRAkit® — kit

for **qualitative** measurements

1% w/v of each analyte in Water

L-Alanine ... 2 mL	L-Isoleucine ... 2 mL	L-Serine ... 2 mL
Arginine ... 2 mL	L-Lysine ... 2 mL	Sarcosine ... 2 mL
Creatine ... 2 mL	L-Leucine ... 2 mL	L-Tryptophan ... 2 mL
L-Glutamic ... 2 mL	L-Methionine ... 2 mL	L-Threonine ... 2 mL
Glycine ... 2 mL	L-Norleucine ... 2 mL	L-Valine ... 2 mL
L-Histidine ... 2 mL	L-Proline ... 2 mL	
Hydroxy-L-proline ... 2 mL	L-Phenylalanine ... 2 mL	

U-WRK-180 Amines ULTRAkit® — kit

for **qualitative** measurements

(Aliphatic amines)

n-Butylamine ... 2 mL	Decylamine ... 2 mL
Isobutylamine ... 2 mL	Cyclohexylamine ... 2 mL
sec-Butylamine ... 2 mL	Diisopropylamine ... 2 mL
tert-Butylamine ... 2 mL	Dibutylamine ... 2 mL
Pentylamine ... 2 mL	Dipentylamine ... 2 mL
Isopentylamine ... 2 mL	Dihexylamine ... 2 mL
Hexylamine ... 2 mL	Dicyclohexylamine ... 2 mL
Heptylamine ... 2 mL	Triethylamine ... 2 mL
Octylamine ... 2 mL	Tributylamine ... 2 mL
Nonylamine ... 2 mL	Hexadecylamine (2% w/v in Ethanol) ... 2 mL

Code	Product	Unit
U-WRK-181	Amines ULTRAkit® for **qualitative** measurements (Aromatic amines) Benzylamine ....2 mL Piperidine....2 mL Aniline....2 mL Dibenzylamine ....2 mL N-Methylaniline ....2 mL N-Ethylaniline....2 mL 2,4-Dimethylaniline ....2 mL N,N-Dimethylaniline ....2 mL N,N-Diethylaniline ....2 mL o-Toluidine ....2 mL m-Toluidine .... 2 mL 2-Methylpiperidine.... 2 mL alpha-Phenylethylamine.... 2 mL beta-Phenylethylamine.... 2 mL Tribenzylamine (2% w/v in Ethanol).... 2 mL p-toluidine (2% w/v in Ethanol) .... 2 mL 1-Naphthylamine (2% w/v in Ethanol).... 2 mL o-Phenylenediamine (2% w/v in Ethanol) .... 2 mL m-Phenylenediamine (2% w/v in Ethanol) .... 2 mL p-Phenylenediamine (2% w/v in Ethanol) .... 2 mL	kit

Miscellaneous individual analytes

Code	Product	Unit
U-RCC-025	2-Acetamidonaphthalene	100 mg
U-NV-100-1	Acetone 100 µg/mL in Methanol	1 mL
U-NV-100	Acetone 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1001	Acetone 5000 µg/mL in Methanol	1 mL
U-RCC-200	Acetone	1 g
CHE 100	Acetone	2 mL
U-NV-110-1	Acetonitrile 100 µg/mL in Methanol	1 mL
U-NV-110	Acetonitrile 100 µg/mL in Methanol	4 x 1 mL
U-RCC-201	Acetonitrile	100 mg
CHE 141	Acetonitrile	2 mL
FL-45983-5ML	Acetonitrile OEKANAL®	5 mL
U-SV-110-1	Acetophenone 100 µg/mL in Methanol	1 mL
U-SV-110	Acetophenone 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1066	Acetophenone 5000 µg/mL in Methanol	1 mL
U-RCC-202	Acetophenone	100 mg
U-NH-300-1	2-Acetylaminofluorene 100 µg/mL in Methanol	1 mL
U-NH-300	2-Acetylaminofluorene 100 µg/mL in Methanol	4 x 1 mL
U-RCC-002	2-Acetylaminofluorene	100 mg
U-AM-170-1	Acrolein 100 µg/mL in Methanol	1 mL
U-AM-170	Acrolein 100 µg/mL in Methanol	4 x 1 mL
CERERA-032	Acrolein	1 g
U-AMN-823-1	Acrylamide 1000 µg/mL in Methanol	1 mL
U-AMN-823	Acrylamide 1000 µg/mL in Methanol	4 x 1 mL
U-RCC-203	Acrylamide	100 mg
U-AM-180-1	Acrylonitrile 100 µg/mL in Methanol	1 mL
U-AM-180	Acrylonitrile 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1002	Acrylonitrile 5000 µg/mL in Methanol	1 mL
CERERA-038S	Acrylonitrile 100 µg/mL in Methanol	1.2 mL
FL-31564-5ML	Acrylonitrile OEKANAL®	5 mL
U-EPA-1191	Allyl alcohol 5000 µg/mL in Methanol	1 mL
U-HC-450-1	Allyl chloride 100 µg/mL in Methanol	1 mL
U-HC-450	Allyl chloride 100 µg/mL in Methanol	4 x 1 mL
U-RCC-026	1-Aminoanthracene	100 mg
U-RCC-027	2-Aminoanthracene	100 mg
FL-46130-250MG	4-Aminoazobenzene OEKANAL®	250 mg
FL-31629-250MG	2-Aminoazotoluene OEKANAL®	250 mg
U-RCC-003	2-Aminobiphenyl	100 mg
U-NH-130-1	4-Aminobiphenyl 100 µg/mL in Methanol	1 mL

Miscellaneous individual analytes

Code	Product	Unit
U-NH-130	4-Aminobiphenyl 100 µg/mL in Methanol	4 x 1 mL
U-RCC-004	4-Aminobiphenyl	100 mg
FL-31598-250MG	4-Aminobiphenyl OEKANAL®	250 mg
U-RCC-028	6-Aminochrysene	100 mg
CIL-CDNLM-6786-1.2	Aminomethylphosphonic acid (AMPA) (^{13}C, 99%; ^{15}N,98%; methylene-D_2,98%) 100 µg/mL in Water	1.2 mL
U-RNH-111	1-Amino-4-nitronaphthalene	100 mg
FL-45946-250MG	4-Amino-2-nitrophenol OEKANAL®	250 mg
CHE 164	n-Amyl acetate	2 mL
U-IST-500-1	5-alpha-Androstane 2000 µg/mL in Methylene chloride	1 mL
U-IST-500	5-alpha-Androstane 2000 µg/mL in Methylene chloride	4 x 1 mL
U-RCC-137	Aniline	1 g
FL-31597-250MG	2-Anisidine OEKANAL®	250 mg
FL-36941-250MG	Anthranilic acid iso-propylamide OEKANAL®	250 mg
U-RGO-661-1	Aviation Gas 2500 µg/mL in Methanol	1 mL
U-RGO-661	Aviation Gas 2500 µg/mL in Methanol	4 x 1 mL
U-RGO-662-1	100 Octane Aviation Fuel 50000 µg/mL in Methylene chloride	1 mL
U-RGO-662	100 Octane Aviation Fuel 50000 µg/mL in Methylene chloride	4 x 1 mL
U-RCC-043	Azobenzene	100 mg
U-SV-120-1	Azobenzene 100 µg/mL in Methanol	1 mL
U-SV-120	Azobenzene 100 µg/mL in Methanol	4 x 1 mL
U-RCC-044	Azoxybenzene	100 mg
FL-37879-50MG	Azulene OEKANAL®	50 mg
	BC-2 see 2,3',4,5'-Tetrabromo-2'-methoxybiphenyl ether	
U-PPS-180-1	BDMC 100 µg/mL in Methanol	1 mL
U-PPS-180	BDMC 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1194	Benzal chloride 1000 µg/mL in Hexane	1 mL
U-RCB-042	Benzal chloride	100 mg
U-AM-100-1	Benzene 100 µg/mL in Methanol	1 mL
U-AM-100	Benzene 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1003	Benzene 5000 µg/mL in Methanol	1 mL
CERERB-021S	Benzene 5000 µg/mL in Methanol	1 mL
NIST-3000	Benzene in Methanol (mass fraction): 0.01 g/g	2 x 2.5 mL
U-RAB-041	Benzene	100 mg
CHE USC 11	Benzene	2 mL
U-STS-100-1	Benzene-D_6 2000 µg/mL in Methanol	1 mL
U-STS-100	Benzene-D_6 2000 µg/mL in Methanol	4 x 1 mL
CERERB-030S	Benzene-D_6 2000 µg/mL in Methanol	1.2 mL
U-B-100-1	Benzidine 100 µg/mL in Methanol	1 mL
U-B-100	Benzidine 100 µg/mL in Methanol	4 x 1 mL
U-GCS-110-1	Benzidine 2000 µg/mL in Methylene chloride	1 mL
U-GCS-110	Benzidine 2000 µg/mL in Methylene chloride	4 x 1 mL
U-EPA-1071	Benzidine 5000 µg/mL in Methanol	1 mL
U-RCC-005	Benzidine	20 mg
FL-31614-100MG	Benzidine OEKANAL®	100 mg
U-PPS-310-1	Benzidine-D_8 500 µg/mL in Acetonitrile/Methanol (1:1)	1 mL
U-PPS-310	Benzidine-D_8 500 µg/mL in Acetonitrile/Methanol (1:1)	4 x 1 mL
U-SV-130-1	Benzoic acid 100 µg/mL in Methanol	1 mL
U-SV-130	Benzoic acid 100 µg/mL in Methanol	4 x 1 mL
U-RCC-143	Benzoic acid	100 mg

Code	Product	Unit
IPO F 010	Benzoic acid E 210 Certified purity..... 99.9%	250 mg
U-EPA-1195	Benzotrichloride 1000 µg/mL in Hexane	1 mL
U-RCB-017	Benzotrichloride	100 mg
FL-36911-250MG	Benzotrichloride OEKANAL®	250 mg
U-SV-140-1	Benzyl alcohol 100 µg/mL in Methanol	1 mL
U-SV-140	Benzyl alcohol 100 µg/mL in Methanol	4 x 1 mL
U-RCC-144	Benzyl alcohol	100 mg
IPO F 004	Benzyl alcohol	250 mg
U-IST-400-1	Benzyl benzoate 5000 µg/mL in Hexane	1 mL
U-IST-400	Benzyl benzoate 5000 µg/mL in Hexane	4 x 1 mL
FL-36927-250MG	Benzyl butyl phthalate PESTANAL®	250 mg
U-EPA-1196	Benzyl chloride 1000 µg/mL in Hexane	1 mL
U-RCB-004	Benzyl chloride	100 mg
U-RCC-129	2,2'-Biquinoline	100 mg
U-BEC-120-1	Bis(2-chloroethoxy)methane 100 µg/mL in Methanol	1 mL
U-BEC-120	Bis(2-chloroethoxy)methane 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1080	Bis(2-chloroethoxy)methane 5000 µg/mL in Methanol	1 mL
U-RCC-145	Bis(2-chloroethoxy)methane	100 mg
U-BEC-110-1	Bis(2-chloroethyl) ether 100 µg/mL in Methanol	1 mL
U-BEC-110	Bis(2-chloroethyl) ether 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1081	Bis(2-chloroethyl) ether 5000 µg/mL in Methanol	1 mL
U-RCC-088	Bis(2-chloroethyl) ether	1 g
U-BEC-130-1	Bis(2-chloroisopropyl) ether 100 µg/mL in Methanol	1 mL
U-BEC-130	Bis(2-chloroisopropyl) ether 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1082	Bis(2-chloroisopropyl) ether 5000 µg/mL in Methanol	1 mL
U-RCC-147	Bis(2-chloroisopropyl) ether	50 mg
FL-36933-250MG	Bis-decyl phthalate PESTANAL®	250 mg
U-EPA-1198	Bis(2-ethylhexyl) adipate 1000 µg/mL in Methanol	1 mL
U-DMP-028	Bis(2-ethylhexyl) adipate (Dioctyl adipate)	100 mg
U-PS-100-1	Bis(2-ethylhexyl) phthalate 100 µg/mL in Methanol	1 mL
U-PS-100	Bis(2-ethylhexyl) phthalate 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1083	Bis(2-ethylhexyl) phthalate 5000 µg/mL in Methanol	1 mL
U-DMP-019	Bis(2-ethylhexyl) phthalate	100 mg
CHE 144	Bis(2-ethylhexyl) phthalate	1 g
FL-36934-250MG	Bis-methylglycol phthalate OEKANAL®	250 mg
FL-31301-250MG	Bis(1-octyl) phthalate OEKANAL®	250 mg
U-EPA-1199	Bromoacetic acid 1000 µg/mL in Methyl tert-butyl ether	1 mL
U-HC-300-1	Bromobenzene 100 µg/mL in Methanol	1 mL
U-HC-300	Bromobenzene 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1004	Bromobenzene 5000 µg/mL in Methanol	1 mL
U-RBF-001	Bromobenzene	100 mg
U-EPA-1201	Bromochloroacetic acid 1000 µg/mL in Methyl tert-butyl ether	1 mL
CERSCB-008	Bromochloroacetic acid	1 g
U-EPA-1202	Bromochloroacetonitrile 1000 µg/mL in Methanol	1 mL
U-STS-480-1	4-Bromochlorobenzene 2000 µg/mL in Methanol	1 mL
U-STS-480	4-Bromochlorobenzene 2000 µg/mL in Methanol	4 x 1 mL
CERERB-079S	4-Bromochlorobenzene 5000 µg/mL in Methanol	1.2 mL
U-HC-310-1	Bromochloromethane 100 µg/mL in Methanol	1 mL
U-HC-310	Bromochloromethane 100 µg/mL in Methanol	4 x 1 mL

Miscellaneous individual analytes

	Code	Product	Unit
	U-STS-180-1	Bromochloromethane 2000 µg/mL in Methanol	1 mL
	U-STS-180	Bromochloromethane 2000 µg/mL in Methanol	4 x 1 mL
	U-EPA-1005	Bromochloromethane 5000 µg/mL in Methanol	1 mL
	U-STS-190-1	2-Bromo-1-chloropropane 2000 µg/mL in Methanol	1 mL
	U-STS-190	2-Bromo-1-chloropropane 2000 µg/mL in Methanol	4 x 1 mL
	CERERB-085S	2-Bromo-1-chloropropane 5000 µg/mL in Methanol	1.2 mL
	U-HC-010-1	Bromodichloromethane 100 µg/mL in Methanol	1 mL
	U-HC-010	Bromodichloromethane 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1006	Bromodichloromethane 5000 µg/mL in Methanol	1 mL
	CHE 167	Bromodichloromethane	1.5 mL
New	FL-36970-1G	Bromodichloromethane OEKANAL®	1 g
	U-RHH-024	Bromoethane	1 g
	U-STS-110N-1	4-Bromofluorobenzene 2000 µg/mL in Methanol	1 mL
	U-STS-110N	4-Bromofluorobenzene 2000 µg/mL in Methanol	4 x 1 mL
	CERERB-022S	4-Bromofluorobenzene 5000 µg/mL in Methanol	1 mL
	CERERB-031	4-Bromofluorobenzene 25 µg/mL in Methanol	10 x 1.2 mL
	U-HC-020-1	Bromoform 100 µg/mL in Methanol	1 mL
	U-HC-020	Bromoform 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1007	Bromoform 5000 µg/mL in Methanol	1 mL
	U-RHH-005	Bromoform	1 g
	FL-36972-1G	Bromoform OEKANAL®	1 g
	U-HC-030-1	Bromomethane (Methyl bromide) 100 µg/mL in Methanol	1 mL
	U-RBF-011	1-Bromonaphthalene	100 mg
	U-IST-550-1	2-Bromonaphthalene 20,000 µg/mL in Methanol	1 mL
	U-IST-550	2-Bromonaphthalene 20,000 µg/mL in Methanol	4 x 1 mL
	U-RBF-015	1-Bromo-2-naphthol	100 mg
	U-RBF-016	6-Bromo-2-naphthol	100 mg
	U-IST-540-1	2-Bromophenol 20,000 µg/mL in Methanol	1 mL
	U-IST-540	2-Bromophenol 20,000 µg/mL in Methanol	4 x 1 mL
	U-RBF-006A	2-Bromophenol	100 mg
	FL-31302-250MG	2-Bromophenol OEKANAL®	250 mg
	U-RBF-006B	3-Bromophenol	100 mg
	U-RBF-006C	4-Bromophenol	100 mg
	U-BEC-140-1	4-Bromophenyl phenyl ether 100 µg/mL in Methanol	1 mL
	U-BEC-140	4-Bromophenyl phenyl ether 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1084	4-Bromophenyl phenyl ether 5000 µg/mL in Methanol	1 mL
	U-RCC-148	4-Bromophenyl phenyl ether	100 mg
	U-RHH-048	1-Bromopropane	1 g
	U-RHH-049	2-Bromopropane	1 g
	FL-36921-250MG	1-Bromo-2-propanol OEKANAL®	250 mg
	U-RHH-052	2-Bromopropene	1 g
	U-PPS-300-1	2-Bromopropionic acid 1000 µg/mL in Methyl tert-butyl ether	1 mL
	U-PPS-300	2-Bromopropionic acid 1000 µg/mL in Methyl tert.-butyl ether	4 x 1 mL
	CHE 101	n-Butanol	2 mL
	U-NV-120-1	2-Butanone 100 µg/mL in Methanol	1 mL
	U-NV-120	2-Butanone 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1008	2-Butanone (MEK) 5000 µg/mL in Methanol	1 mL
	U-RCC-205	2-Butanone (MEK)	1 g
	CHE 151	2-Butanone	2 mL
	CHE 131	n-Butyl acetate	2 mL
	U-AM-200-1	n-Butylbenzene 100 µg/mL in Methanol	1 mL

	Code	Product	Unit
	U-AM-200	n-Butylbenzene 100 µg/mL in Methanol	4 x 1 mL
	U-RAB-016	n-Butylbenzene	100 mg
	CHE 102	Butylbenzene	2 mL
	U-AM-210-1	sec-Butylbenzene 100 µg/mL in Methanol	1 mL
	U-AM-210	sec-Butylbenzene 100 µg/mL in Methanol	4 x 1 mL
	NIST-3016	sec-Butylbenzene in Methanol (mass fraction): 0.01 g/g	2 x 2.5 mL
	U-RAB-017	sec-Butylbenzene	100 mg
	U-AM-220-1	tert-Butylbenzene 100 µg/mL in Methanol	1 mL
	U-AM-220	tert-Butylbenzene 100 µg/mL in Methanol	4 x 1 mL
	U-RAB-018	tert-Butylbenzene	100 mg
	U-PS-110-1	Butyl benzyl phthalate 100 µg/mL in Methanol	1 mL
	U-PS-110	Butyl benzyl phthalate 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1085	Butyl benzyl phthalate 5000 µg/mL in Methanol	1 mL
	U-DMP-037	Butyl benzyl phthalate	100 mg
	U-NV-250-1	tert-Butylmethyl ether 100 µg/mL in Methanol	1 mL
	U-NV-250	tert-Butylmethyl ether 100 µg/mL in Methanol	4 x 1 mL
	U-RCC-149	tert-Butyl methyl ether	1 g
New	FL-32993-10MG	Canthaxanthin (trans) OEKANAL®	10 mg
	U-NH-310-1	Carbazole 100 µg/mL in Methanol	1 mL
	U-NH-310	Carbazole 100 µg/mL in Methanol	4 x 1 mL
	CERERC-026S	Carbazole 2000 µg/mL in Methylene chloride	1.2 mL
	U-EPA-1012	Carbon disulfide 5000 µg/mL in Methanol	1 mL
	U-NV-130-1	Carbon disulfide 100 µg/mL in Methanol	1 mL
	U-NV-130	Carbon disulfide 100 µg/mL in Methanol	4 x 1 mL
	U-RHH-006	Carbon tetrabromide	1 g
	U-HC-040-1	Carbon tetrachloride 100 µg/mL in Methanol	1 mL
	U-HC-040	Carbon tetrachloride 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1013	Carbon tetrachloride 5000 µg/mL in Methanol	1 mL
	NIST-3006	Carbon tetrachloride in Methanol (mass fraction): 0.01 g/g	2 x 2.5 mL
	U-EPA-1203	Chloroacetaldehyde 1000 µg/mL in Methanol	1 mL
	U-EPA-1204	Chloroacetic acid 1000 µg/mL in Methyl tert-butyl ether	1 mL
	U-EPA-1205	Chloroacetonitrile 1000 µg/mL in Methanol	1 mL
	U-RCA-001	2-Chloroaniline	100 mg
	U-RCA-002	3-Chloroaniline	100 mg
	U-EPA-1087	4-Chloroaniline 5000 µg/mL in Methanol	1 mL
	U-RCA-003	4-Chloroaniline	100 mg
	U-RCP-032	2-Chloroanisole	100 mg
	U-RCP-033	3-Chloroanisole	100 mg
	U-RCP-034	4-Chloroanisole	100 mg
	U-RBA-001	2-Chlorobenzoic acid	100 mg
	U-RBA-002	3-Chlorobenzoic acid	100 mg
	U-RBA-003	4-Chlorobenzoic acid	100 mg
	U-EPA-1014	Chlorobenzene 1000 µg/mL in Methanol	1 mL
	U-HC-050-1	Chlorobenzene 100 µg/mL in Methanol	1 mL
	U-HC-050	Chlorobenzene 100 µg/mL in Methanol	4 x 1 mL
	U-RCP-020	Chlorobenzene	100 mg
	U-STS-300-1	Chlorobenzene-D_5 2000 µg/mL in Methanol	1 mL
	CERERC-009S	Chlorobenzene 5000 µg/mL in Methanol	1.2 mL
	U-STS-300	Chlorobenzene-D_5 2000 µg/mL in Methanol	4 x 1 mL
	U-EPA-1206	1-Chlorobutane 1000 µg/mL in Methanol	1 mL
	U-RHH-063	1-Chlorobutane	100 mg

Miscellaneous individual analytes

Code	Product	Unit
CERERC-022	Chlorodibromoacetic acid	25 mg
U-CFC-210-1	1-Chloro-1,1-difluoroethane (Freon 142B) 100 µg/mL in Methanol	1 mL
U-CFC-210	1-Chloro-1,1-difluoroethane (Freon 142B) 100 µg/mL in Methanol	4 x 1 mL
U-CFC-110-1	Chlorodifluoromethane (Freon 22) 100 µg/mL in Methanol	1 mL
U-CFC-110	Chlorodifluoromethane (Freon 22) 100 µg/mL in Methanol	4 x 1 mL
U-RPE-002	2-Chlorodiphenyl ether	10 mg
U-HC-060-1	Chloroethane 100 µg/mL in Methanol	1 mL
U-HC-060	Chloroethane 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1207	2-Chloroethanol 1000 µg/mL in Methanol	1 mL
U-HC-070-1	2-Chloroethylvinyl ether 100 µg/mL in Methanol	1 mL
U-HC-070	2-Chloroethylvinyl ether 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1016	2-Chloroethylvinyl ether 5000 µg/mL in Methanol	1 mL
CERERC-013S	2-Chloroethyl vinyl ether 2000 µg/mL in Methanol	1.2 mL
U-RCC-177	2-Chloroethyl vinyl ether	100 mg
U-STS-450-1	1-Chloro-2-fluorobenzene 2000 µg/mL in Methanol	1 mL
U-STS-450	1-Chloro-2-fluorobenzene 2000 µg/mL in Methanol	4 x 1 mL
U-EPA-1017	Chloroform 5000 µg/mL in Methanol	1 mL
U-HC-080-1	Chloroform 100 µg/mL in Methanol	1 mL
U-HC-080	Chloroform 100 µg/mL in Methanol	4 x 1 mL
U-RHH-002	Chloroform	1 g
CHE 02	Chloroform	1.5 mL
U-EPA-1208	1-Chlorohexane 1000 µg/mL in Methanol	1 mL
U-RHH-055	1-Chlorohexane	100 mg
U-HC-090-1	Chloromethane 100 µg/mL in Methanol	1 mL
U-HC-090	Chloromethane 100 µg/mL in Methanol	4 x 1 mL
FL-46282-250MG	4-Chloro-2-methylaniline OEKANAL®	250 mg
U-EPA-1209	Chloromethyl methyl ether 1000 µg/mL in Methanol	1 mL
U-PH-100-1	4-Chloro-3-methylphenol 100 µg/mL in Methanol	1 mL
U-PH-100	4-Chloro-3-methylphenol 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1088	4-Chloro-3-methylphenol 5000 µg/mL in Methanol	1 mL
U-RCC-154	4-Chloro-3-methylphenol	100 mg
U-RCN-002	1-Chloronaphthalene	100 mg
U-CH-110-1	2-Chloronaphthalene 100 µg/mL in Methylene chloride	1 mL
U-CH-110	2-Chloronaphthalene 100 µg/mL in Methylene chloride	4 x 1 mL
U-EPA-1089	2-Chloronaphthalene 5000 µg/mL in Methanol	1 mL
U-RCN-003	2-Chloronaphthalene	100 mg
U-RCN-013	4-Chloro-1-naphthol	100 mg
FL-45926-250MG	2-Chloronitrobenzene OEKANAL®	250 mg
FL-45957-250MG	3-Chloronitrobenzene OEKANAL®	250 mg
FL-45925-250MG	4-Chloronitrobenzene OEKANAL®	250 mg
FL-45998-250MG	4-Chloro-2-nitrotoluene OEKANAL®	250 mg
FL-31570-250MG	2-Chloro-4-nitrotoluene OEKANAL®	250 mg
U-IST-470-1	1-Chlorooctadecane 2000 µg/mL in Methylene chloride	1 mL
U-IST-470	1-Chlorooctadecane 2000 µg/mL in Methylene chloride	4 x 1 mL
U-STS-490-1	1-Chlorooctane 2000 µg/mL in Methanol	1 mL
U-STS-490	1-Chlorooctane 2000 µg/mL in Methanol	4 x 1 mL
U-PH-110-1	2-Chlorophenol 100 µg/mL in Methanol	1 mL
U-PH-110	2-Chlorophenol 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1090	2-Chlorophenol 5000 µg/mL in Methanol	1 mL
U-RCP-001	2-Chlorophenol	20 mg
U-RCP-002	3-Chlorophenol	20 mg

Code	Product	Unit
NE7755	4-Chlorophenol 100 µg/mL in n-Hexane CERTAN®	10 mL
SL36050	4-Chlorophenol stock solution for DIN 38414-S 17 363 mg/L in n-Heptane (Cl = 100 mg/L)	100 mL
SL36060	4-Chlorophenol working solution for DIN 38414-S 17 36.3 mg/L in n-Heptane (Cl = 10 mg/L)	100 mL
U-RCP-003	4-Chlorophenol	20 mg
IPO P01	4-Chlorophenol	100 mg
CERERC-012	p-Chlorophenyl methyl sulfone	100 mg
CERERC-010	p-Chlorophenyl methyl sulfoxide	100 mg
U-BEC-150-1	4-Chlorophenyl phenyl ether 100 µg/mL in Methanol	1 mL
U-BEC-150	4-Chlorophenyl phenyl ether 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1091	4-Chlorophenyl phenyl ether 5000 µg/mL in Methanol	1 mL
U-RPE-001	4-Chlorophenyl phenyl ether	10 mg
U-RHH-036	2-Chloropropane	1 g
CIL-DLM-4633-0.1	3-Chloro-1,2-propandiol (propane-D_5,98%) (contains 10% 2-Chloro-1,3-propandiole)	0.1 g
CIL-DLM-4633-1.2	3-Chloro-1,2-propanediol (propane-D_5,98%) 1 mg/mL in Methanol	1.2 mL
IPO F 002-1	3-Chloro-1,2-propanediol	1 mL
U-EPA-1210	3-Chloropropionitrile 1000 µg/mL in Methanol	1 mL
U-HC-320-1	2-Chlorotoluene 100 µg/mL in Methanol	1 mL
U-HC-320	2-Chlorotoluene 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1018	2-Chlorotoluene 5000 µg/mL in Methanol	1 mL
U-RCB-001	2-Chlorotoluene	100 mg
U-RCB-002	3-Chlorotoluene	100 mg
U-HC-330-1	4-Chlorotoluene 100 µg/mL in Methanol	1 mL
U-HC-330	4-Chlorotoluene 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1019	4-Chlorotoluene 5000 µg/mL in Methanol	1 mL
U-RCB-003	4-Chlorotoluene	100 mg
U-CFC-120-1	Chlorotrifluoromethane (Freon 13) 100 µg/mL in Methanol	1 mL
U-CFC-120	Chlorotrifluoromethane 100 µg/mL in Methanol	4 x 1 mL
U-RGO-615-1	Composite 2 Diesel Fuel 2500 µg/mL in Methanol	1 mL
U-RGO-615	Composite 2 Diesel Fuel 2500 µg/mL in Methanol	4 x 1 mL
U-RGO-616-1	Composite 2 Diesel Fuel 50000 µg/mL in Methylene chloride	1 mL
U-RGO-616	Composite 2 Diesel Fuel 50000 µg/mL in Methylene chloride	4 x 1 mL
U-RGO-625-1	Composite Kerosene 2500 µg/mL in Methanol	1 mL
U-RGO-625	Composite Kerosene 2500 µg/mL in Methanol	4 x 1 mL
U-RGO-626-1	Composite Kerosene 50000 µg/mL in Methylene chloride	1 mL
U-RGO-626	Composite Kerosene 50000 µg/mL in Methylene chloride	4 x 1 mL
U-RGO-605-1	Composite Unleaded Gasoline 2500 µg/mL in Methanol	1 mL
U-RGO-605	Composite Unleaded Gasoline 2500 µg/mL in Methanol	4 x 1 mL
U-RGO-606-1	Composite Unleaded Gasoline 50000 µg/mL in Methylene chloride	1 mL
U-RGO-606	Composite Unleaded Gasoline 50000 µg/mL in Methylene chloride	4 x 1 mL
FL-46111-250MG	p-Cresidine (2-Methoxy-5-methylaniline) OEKANAL®	250 mg
U-PH-210-1	o-Cresol 100 µg/mL in Methanol	1 mL
U-PH-210	o-Cresol 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1093	o-Cresol 5000 µg/mL in Methanol	1 mL
U-RCC-155	o-Cresol	100 mg
FL-36922-250MG	o-Cresol OEKANAL®	250 mg
U-PH-220-1	m-Cresol 100 µg/mL in Methanol	1 mL
U-PH-220	m-Cresol 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1094	m-Cresol 5000 µg/mL in Methanol	1 mL
U-RCC-156	m-Cresol	100 mg

Miscellaneous individual analytes

	Code	Product	Unit
	U-PH-230-1	p-Cresol 100 µg/mL in Methanol	1 mL
	U-PH-230	p-Cresol 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1095	p-Cresol 5000 µg/mL in Methanol	1 mL
	U-RCC-157	p-Cresol	100 mg
	CHE 103	Cyclohexane	2 mL
	CHE 105	Cyclohexanol	2 mL
	CHE 106	Cyclohexanone	2 mL
	CHE 104	Cyclohexene	2 mL
	CIL-CLM-6096-1.2	Cyclohexyl hydrogen methylphosphonate (cyclohexyl-$^{13}C_6$,99%) 100 µg/mL in Methanol	1.2 mL
	ERC-034	Cyclohexyl methylphosphonic acid (unlabelled) 1000 µg/mL in Methanol	1.2 mL
New	IPO UCI 016	Cyclohexyl methylphosphonic acid (CHMPA)	100 mg
	CHE 142	Cyclopentane	2 mL
	U-PPS-160-1	DCAA (2,4-Dichlorophenylacetic acid) 100 µg/mL in Methyl tert-butyl ether (MTBE)	1 mL
	U-PPS-160	DCAA (2,4-Dichlorophenylacetic acid) 100 µg/mL in Methyl tert.-butyl ether (MTBE)	4 x 1 mL
	U-PPS-162-1	DCAA (2,4-Dichlorophenylacetic acid) 5000 µg/mL in Methanol	1 mL
	U-PPS-162	DCAA (2,4-Dichlorophenylacetic acid) 5000 µg/mL in Methanol	4 x 1 mL
	U-PPS-150-1	Decachlorobiphenyl 1000 µg/mL in Toluene	1 mL
	U-PPS-150	Decachlorobiphenyl 1000 µg/mL in Toluene	4 x 1 mL
	U-RPE-014	Decachlorodiphenyl ether	10 mg
	U-IST-150-1	Decafluorobiphenyl 1000 µg/mL in Methylene chloride	1 mL
	U-IST-150	Decafluorobiphenyl 1000 µg/mL in Methylene chloride	4 x 1 mL
	U-IST-151-1	Decafluorobiphenyl 1000 µg/mL in Acetonitrile	1 mL
	U-IST-151	Decafluorobiphenyl 1000 µg/mL in Acetonitrile	4 x 1 mL
	U-47995N-1	Decafluorotriphenylphosphine 1000 µg/mL in Acetone	1 mL
	U-47995N	Decafluorotriphenylphosphine 1000 µg/mL in Acetone	4 x 1 mL
	U-IST-340-1	Decafluorotriphenylphosphine 250 µg/mL in Methylene chloride	1 mL
	U-IST-340	Decafluorotriphenylphosphine 250 µg/mL in Methylene chloride	4 x 1 mL
	U-IST-341-1	Decafluorotriphenylphosphine 100 µg/mL in Methylene chloride	1 mL
	U-IST-341	Decafluorotriphenylphosphine 100 µg/mL in Methylene chloride	4 x 1 mL
	U-PPS-340-1	Decafluorotriphenylphosphine oxide 500 µg/mL in Acetonitrile/Methanol (1:1)	1 mL
	U-PPS-340	Decafluorotriphenylphosphine oxide 500 µg/mL in Acetonitrile/Methanol (1:1)	4 x 1 mL
	U-PPS-341-1	Decafluorotriphenylphosphine oxide 100 µg/mL in Acetonitrile	1 mL
	U-PPS-341	DFTPPO 100 µg/mL in Acetonitrile	4 x 1 mL
	U-RNA-001	n-Decane	1 g
	CHE 143	Decane	2 mL
New	FL-30540-5ML	n-Decane	5 mL
	CHE 172	1-Decanol	2 mL
	U-RAB-027	n-Decylbenzene (Phenyldecane)	100 mg
	U-RCC-029	2,7-Diacetamidofluorene	100 mg
	FL-36925-250MG	Diallyl phthalate OEKANAL®	250 mg
	U-RCC-030	3,3'-Diaminobenzidine	20 mg
	U-RCC-011	4,4'-Diamino-3,3'-dichlorodiphenylmethane	100 mg
	FL-31673-100MG	4,4'-Diamino-3,3'-dichlorodiphenylmethane OEKANAL®	100 mg
	FL-46106-100MG	4,4'-Diamino-3,3'-dimethyldiphenylmethane, analytical standard, for environmental analysis	100 mg
	U-RCC-031	4,4'-Diaminodiphenylmethane	20 mg
	FL-31640-250MG	4,4'-Diaminodiphenylmethane OEKANAL®	250 mg
	U-RCC-032	2,7-Diaminofluorene	100 mg
	U-RCC-033	1,2-Diaminonaphthalene	100 mg
	U-RCC-034	2,4-Diaminotoluene	100 mg
	FL-45922-250MG	2,4-Diaminotoluene OEKANAL®	250 mg
	FL-31563-250MG	2,5-Diaminotoluene sulfate OEKANAL®	250 mg

	Code	Product	Unit
	FL-45921-250MG	2,6-Diaminotoluene OEKANAL®	250 mg
	U-DMP-016	Diamyl phthalate	100 mg
	U-SV-150-1	Dibenzofuran 100 µg/mL in Methanol	1 mL
	U-SV-150	Dibenzofuran 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1100	Dibenzofuran 5000 µg/mL in Methanol	1 mL
	FL-45775-250MG	Dibenzofuran OEKANAL®	250 mg
	FL-45776-250MG	Dibenzothiophene OEKANAL®	250 mg
	U-EPA-1211	Dibromoacetic acid 1000 µg/mL in Methyl tert-butyl ether	1 mL
	U-EPA-1212	Dibromoacetonitrile 1000 µg/mL in Methanol	1 mL
	U-RBF-002A	1,2-Dibromobenzene	100 mg
	U-RBF-002B	1,3-Dibromobenzene	100 mg
	U-RBF-002C	1,4-Dibromobenzene	100 mg
	FL-35975-1G	1,2-Dibromo-1-chloroethane OEKANAL®	1 g
	U-HC-100-1	Dibromochloromethane 100 µg/mL in Methanol	1 mL
	U-HC-100	Dibromochloromethane 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1020	Dibromochloromethane 5000 µg/mL in Methanol	1 mL
	CHE 08	Dibromochloromethane	1.5 mL
	FL-36971-1G	Dibromochloromethane OEKANAL®	1 g
	U-HC-340-1	1,2-Dibromo-3-chloropropane (DBCP) 100 µg/mL in Methanol	1 mL
	U-HC-340	1,2-Dibromo-3-chloropropane (DBCP) 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1021	1,2-Dibromo-3-chloropropane (DBCP) 5000 µg/mL in Methanol	1 mL
	U-HC-350-1	1,2-Dibromoethane 100 µg/mL in Methanol	1 mL
	U-HC-350	1,2-Dibromoethane 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1022	1,2-Dibromoethane 5000 µg/mL in Methanol	1 mL
	U-RHH-027	1,2-Dibromoethene	1 g
	U-STS-350-1	Dibromofluoromethane 2000 µg/mL in Methanol	1 mL
	U-STS-350	Dibromofluoromethane 2000 µg/mL in Methanol	4 x 1 mL
	U-HC-360-1	Dibromomethane 100 µg/mL in Methanol	1 mL
	U-HC-360	Dibromomethane 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1023	Dibromomethane 5000 µg/mL in Methanol	1 mL
	U-RHH-004	Dibromomethane	1 g
	U-RBF-014	1,4-Dibromonaphthalene	100 mg
	U-RBF-013	2,3-Dibromonaphthalene	50 mg
	U-RBF-017	1,6-Dibromo-2-naphthol	100 mg
	U-IST-140-1	4,4'-Dibromooctafluorobiphenyl 1000 µg/mL in Methylene chloride	1 mL
	U-IST-140	4,4'-Dibromooctafluorobiphenyl 1000 µg/mL in Methylene chloride	4 x 1 mL
	U-PPS-170-1	4,4'-Dibromooctafluorobiphenyl 100 µg/mL in Methyl tert-butyl ether (MTBE)	1 mL
	U-PPS-170	4,4'-Dibromooctafluorobiphenyl 100 µg/mL in Methyl tert-butyl ether (MTBE)	4 x 1 mL
	U-PPS-171-1	4,4'-Dibromooctafluorobiphenyl 250 µg/mL in Acetone	1 mL
	U-PPS-171	4,4'-Dibromooctafluorobiphenyl 250 µg/mL in Acetone	4 x 1 mL
	U-PPS-172-1	4,4'-Dibromooctafluorobiphenyl 5000 µg/mL in Methanol	1 mL
	U-RBF-007	2,4-Dibromophenol	100 mg
	U-RBF-008	2,6-Dibromophenol	100 mg
	U-RHH-050	1,2-Dibromopropane	1 g
	U-RHH-051	1,3-Dibromopropane	1 g
	U-PS-120-1	Di-n-butyl phthalate 100 µg/mL in Methanol	1 mL
	U-PS-120	Di-n-butyl phthalate 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1101	Di-n-butyl phthalate 5000 µg/mL in Methanol	1 mL
	U-DMP-015	Di-n-butyl phthalate	100 mg
New	IPO 903	Dibutyl phthalate	1 mL
	CHE 145	Di-n-butyl phthalate	1 g

Code	Product	Unit
U-PPS-172	4,4'-Dibromooctafluorobiphenyl 5000 µg/mL in Methanol	4 x 1 mL
U-EPA-1214	Dichloroacetic acid 1000 µg/mL in Methyl tert-butyl ether	1 mL
U-EPA-1215	Dichloroacetonitrile 1000 µg/mL in Methanol	1 mL
U-RCA-004	2,3-Dichloroaniline	100 mg
U-RCA-005	2,4-Dichloroaniline	100 mg
U-RCA-006	2,5-Dichloroaniline	100 mg
U-RCA-007	2,6-Dichloroaniline	100 mg
U-RCA-008	3,4-Dichloroaniline	100 mg
U-RCA-009	3,5-Dichloroaniline	100 mg
U-RCP-035	2,3-Dichloroanisole	100 mg
U-RCP-036	2,4-Dichloroanisole	100 mg
U-RCP-046	2,5-Dichloroanisole	50 mg
U-RCP-037	2,6-Dichloroanisole	100 mg
U-RCP-047	3,4-Dichloroanisole	50 mg
U-RCP-038	3,5-Dichloroanisole	100 mg
U-RCP-042	alpha,4-Dichloroanisole	100 mg
U-HC-110-1	1,2-Dichlorobenzene 100 µg/mL in Methanol	1 mL
U-HC-110	1,2-Dichlorobenzene 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1102	1,2-Dichlorobenzene 1000 µg/mL in Methanol	1 mL
CERERD-027S	1,2-Dichlorobenzene 5000 µg/mL in Methanol	1.2 mL
U-RCP-021	1,2-Dichlorobenzene	100 mg
U-STS-210-1	1,2-Dichlorobenzene-D_4 2000 µg/mL in Methanol	1 mL
U-STS-210	1,2-Dichlorobenzene-D_4 2000 µg/mL in Methanol	4 x 1 mL
U-HC-120-1	1,3-Dichlorobenzene 100 µg/mL in Methanol	1 mL
U-HC-120	1,3-Dichlorobenzene 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1103	1,3-Dichlorobenzene 5000 µg/mL in Methanol	1 mL
CERERD-028S	1,3-Dichlorobenzene 5000 µg/mL in Methanol	1.2 mL
U-RCP-022	1,3-Dichlorobenzene	100 mg
U-HC-130-1	1,4-Dichlorobenzene 100 µg/mL in Methanol	1 mL
U-HC-130	1,4-Dichlorobenzene 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1104	1,4-Dichlorobenzene 5000 µg/mL in Methanol	1 mL
CERERD-029S	1,4-Dichlorobenzene 5000 µg/mL in Methanol	1.2 mL
U-RCP-023	1,4-Dichlorobenzene	100 mg
U-ATS-130-1	1,4-Dichlorobenzene-D_4 2000 µg/mL in Methylene chloride	1 mL
U-ATS-130	1,4-Dichlorobenzene-D_4 2000 µg/mL in Methylene chloride	4 x 1 mL
U-B-110-1	3,3'-Dichlorobenzidine 100 µg/mL in Methanol	1 mL
U-B-110	3,3'-Dichlorobenzidine 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1105	3,3'-Dichlorobenzidine 5000 µg/mL in Methanol	1 mL
U-RCC-007	3,3'-Dichlorobenzidine	100 mg
CERERD-137	3,3'-Dichlorobenzidine	100 mg
FL-31641-100MG	3,3'-Dichlorobenzidine dihydrochloride OEKANAL®	100 mg
U-RBA-008	2,3-Dichlorobenzoic acid	100 mg
U-RBA-009	2,4-Dichlorobenzoic acid	100 mg
U-RBA-007	2,5-Dichlorobenzoic acid	100 mg
U-RBA-006	2,6-Dichlorobenzoic acid	100 mg
U-PPS-330-1	Dichlorobenzidine-D_6 500 µg/mL in Acetonitrile/Methanol (1:1)	1 mL
U-PPS-330	Dichlorobenzidine-D_6 500 µg/mL in Acetonitrile/Methanol (1:1)	4 x 1 mL
U-RBA-004	3,4-Dichlorobenzoic acid	100 mg
U-PPS-261-1	3,5-Dichlorobenzoic acid 1000 µg/mL in Methyl tert-butyl ether	1 mL
U-PPS-261	3,5-Dichlorobenzoic acid 1000 µg/mL in Methyl tert-butyl ether	4 x 1 mL
U-RBA-005	3,5-Dichlorobenzoic acid	100 mg

	Code	Product	Unit
	U-PPS-120-1	4,4'-Dichlorobiphenyl 500 µg/mL in Methyl tert-butyl ether (MTBE)	1 mL
	U-PPS-120	4,4'-Dichlorobiphenyl 500 µg/mL in Methyl tert-butyl ether (MTBE)	4 x 1 mL
	U-STS-200-1	1,4-Dichlorobutane 2000 µg/mL in Methanol	1 mL
	U-STS-200	1,4-Dichlorobutane 2000 µg/mL in Methanol	4 x 1 mL
	CERERD-135S	1,4-Dichlorobutane 5000 µg/mL in Methanol	1.2 mL
	U-HC-500-1	cis-1,4-Dichloro-2-butene 100 µg/mL in Methanol	1 mL
	U-HC-500	cis-1,4-Dichloro-2-butene 100 µg/mL in Methanol	4 x 1 mL
	U-RHH-064	cis-1,4-Dichloro-2-butene	100 mg
	U-HC-460-1	trans-1,4-Dichloro-2-butene 100 µg/mL in Methanol	1 mL
	U-HC-460	trans-1,4-Dichloro-2-butene 100 µg/mL in Methanol	4 x 1 mL
	U-RHH-056	trans-1,4-Dichloro-2-butene	100 mg
	U-HC-140-1	Dichlorodifluoromethane 100 µg/mL in Methanol	1 mL
	U-HC-140	Dichlorodifluoromethane 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1024	Dichlorodifluoromethane 5000 µg/mL in Methanol	1 mL
	U-RPE-005	2,4-Dichlorodiphenyl ether	10 mg
	U-RPE-004	2,4'-Dichlorodiphenyl ether	10 mg
	U-RPE-003	4,4'-Dichlorodiphenyl ether	10 mg
	U-HC-150-1	1,1-Dichloroethane 100 µg/mL in Methanol	1 mL
	U-HC-150	1,1-Dichloroethane 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1025	1,1-Dichloroethane 5000 µg/mL in Methanol	1 mL
	U-RHH-012	1,1-Dichloroethane	1 g
	FL-36967-1G	1,1-Dichloroethane OEKANAL®	1 g
	U-HC-160-1	1,2-Dichloroethane 100 µg/mL in Methanol	1 mL
	U-HC-160	1,2-Dichloroethane 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1026	1,2-Dichloroethane 1000 µg/mL in Methanol	1 mL
	NE5612	1,2-Dichloroethane 5000 µg/mL in Methanol CERTAN®	1.5 mL
	NIST-3012	1,2-Dichloroethane in Methanol (mass fraction): 0.01 g/g	2 x 2.5 mL
	U-RHH-013	1,2-Dichloroethane	1 g
	IPO 855	1,2-Dichloroethane	250 mg
	CHE 19	1,2-Dichloroethane	1.5 mL
New	FL-02562-5ML	1,2-Dichloroethane	5 mL
	U-STS-120-1	1,2-Dichloroethane-D_4 2000 µg/mL in Methanol	1 mL
	U-STS-120	1,2-Dichloroethane-D_4 2000 µg/mL in Methanol	4 x 1 mL
	CERERD-036S	1,2-Dichloroethane-D_4 2000 µg/mL in Methanol	1.2 mL
	U-HC-170-1	1,1-Dichloroethene 100 µg/mL in Methanol	1 mL
	U-HC-170	1,1-Dichloroethene 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1027	1,1-Dichloroethene 1000 µg/mL in Methanol	1 mL
	U-RHH-020	1,1-Dichloroethene	1 g
	U-EPA-1028	cis-1,2-Dichloroethene 5000 µg/mL in Methanol	1 mL
	U-HC-370-1	cis-1,2-Dichloroethene 100 µg/mL in Methanol	1 mL
	U-HC-370	cis-1,2-Dichloroethene 100 µg/mL in Methanol	4 x 1 mL
	U-RHH-057	cis-1,2-Dichloroethene	100 mg
	FL-36968-1G	cis-1,2-Dichloroethene (Amylene stabilized) OEKANAL®	1 g
	U-HC-180-1	trans-1,2-Dichloroethene 100 µg/mL in Methanol	1 mL
	U-HC-180	trans-1,2-Dichloroethene 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1029	trans-1,2-Dichloroethene 5000 µg/mL in Methanol	1 mL
	U-RHH-021	trans-1,2-Dichloroethene	1 g
	FL-36969-1G	trans-1,2-Dichloroethene (Amylene stabilized) OEKANAL®	1 g
	U-CFC-250-1	1,1-Dichloro-1-fluoroethane (Freon 141B) 100 µg/mL in Methanol	1 mL
	U-CFC-250	1,1-Dichloro-1-fluoroethane (Freon 141B) 100 µg/mL in Methanol	4 x 1 mL
	U-CFC-130-1	Dichlorofluoromethane (Freon 21) 100 µg/mL in Methanol	1 mL

Miscellaneous individual analytes

Code	Product	Unit
U-CFC-130	Dichlorofluoromethane (Freon 21) 100 µg/mL in Methanol	4 x 1 mL
U-RCN-005	1,4-Dichloronaphthalene	25 mg
U-RCN-006	1,5-Dichloronaphthalene	25 mg
U-RCN-008	2,3-Dichloronaphthalene	5 mg
U-RCN-014	2,4-Dichloro-1-naphthol	100 mg
U-RCP-004	2,3-Dichlorophenol	20 mg
U-PH-120-1	2,4-Dichlorophenol 100 µg/mL in Methanol	1 mL
U-PH-120	2,4-Dichlorophenol 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1106	2,4-Dichlorophenol 5000 µg/mL in Methanol	1 mL
U-RCP-005	2,4-Dichlorophenol	20 mg
IPO P04	2,4-Dichlorophenol	100 mg
U-RCP-006	2,5-Dichlorophenol	20 mg
IPO P05	2,5-Dichlorophenol	100 mg
U-PH-240-1	2,6-Dichlorophenol 100 µg/mL in Methanol	1 mL
U-PH-240	2,6-Dichlorophenol 100 µg/mL in Methanol	4 x 1 mL
U-RCP-007	2,6-Dichlorophenol	20 mg
IPO P06	2,6-Dichlorophenol	100 mg
U-RCP-008	3,4-Dichlorophenol	20 mg
IPO P07	3,4-Dichlorophenol	100 mg
U-RCP-009	3,5-Dichlorophenol	20 mg
U-EPA-1030	1,2-Dichloropropane 1000 µg/mL in Methanol	1 mL
U-HC-190-1	1,2-Dichloropropane 100 µg/mL in Methanol	1 mL
U-HC-190	1,2-Dichloropropane 100 µg/mL in Methanol	4 x 1 mL
NIST-3009	1,2-Dichloropropane in Methanol (mass fraction): 0.01 g/g	2 x 2.5 mL
U-RHH-037	1,2-Dichloropropane	1 g
U-HC-380-1	1,3-Dichloropropane 100 µg/mL in Methanol	1 mL
U-HC-380	1,3-Dichloropropane 100 µg/mL in Methanol	4 x 1 mL
U-RHH-038	1,3-Dichloropropane	1 g
U-HC-390-1	2,2-Dichloropropane 100 µg/mL in Methanol	1 mL
U-HC-390	2,2-Dichloropropane 100 µg/mL in Methanol	4 x 1 mL
U-RHH-058	2,2-Dichloropropane	100 mg
U-PPS-290-1	2,3-Dichloropropanoic acid 1000 µg/mL in Methyl tert-butyl ether	1 mL
U-PPS-290	2,3-Dichloropropanoic acid 1000 µg/mL in Methyl tert-butyl ether	4 x 1 mL
U-EPA-1213	1,3-Dichloro-2-propanol 1000 µg/mL in Methanol	1 mL
U-RCC-178	1,3-Dichloro-2-propanol	100 mg
IPO F 001	1,3-Dichloro-2-propanol	250 mg
U-EPA-1218	1,1-Dichloro-2-propanone 1000 µg/mL in Methanol	1 mL
U-HC-400-1	1,1-Dichloropropene 100 µg/mL in Methanol	1 mL
U-HC-400	1,1-Dichloropropene 100 µg/mL in Methanol	4 x 1 mL
U-RHH-059	1,1-Dichloropropene	100 mg
CERERD-091	1,3-Dichloropropene	100 mg
U-RHH-054	1,3-Dichloro-1-propene (mix)	1 g
U-EPA-1034	1,3-Dichloropropene (mix) 5000 µg/mL in Methanol	1 mL
U-HC-200-1	cis-1,3-Dichloropropene 100 µg/mL in Methanol	1 mL
U-HC-200	cis-1,3-Dichloropropene 100 µg/mL in Methanol	4 x 1 mL
CERERD-024	cis-1,3-Dichloropropene	100 mg
U-HC-210-1	trans-1,3-Dichloropropene 100 µg/mL in Methanol	1 mL
U-HC-210	trans-1,3-Dichloropropene 100 µg/mL in Methanol	4 x 1 mL
CERERD-025	trans-1,3-Dichloropropene	100 mg
U-RHH-045	2,3-Dichloro-1-propene	1 g
U-CFC-260-1	1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114) 100 µg/mL in Methanol	1 mL

	Code	Product	Unit
	U-CFC-260	1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114) 100 µg/mL in Methanol	4 x 1 mL
	FL-45948-250MG	2,3-Dichlorotoluene OEKANAL®	250 mg
	U-RCB-005	2,4-Dichlorotoluene	100 mg
	FL-45972-250MG	2,4-Dichlorotoluene OEKANAL®	250 mg
	U-RCB-006	2,5-Dichlorotoluene	100 mg
	U-RCB-007	2,6-Dichlorotoluene	100 mg
	FL-45974-250MG	2,6-Dichlorotoluene OEKANAL®	250 mg
	U-RCB-008	3,4-Dichlorotoluene	100 mg
	FL-45975-250MG	3,4-Dichlorotoluene OEKANAL®	250 mg
	U-RCB-009	alpha,2-Dichlorotoluene	100 mg
	U-RCB-010	alpha,3-Dichlorotoluene	100 mg
	U-RCB-011	alpha,4-Dichlorotoluene	100 mg
	U-DMP-017	Dicyclohexyl phthalate	100 mg
	FL-36908-250MG	Dicyclohexyl phthalate OEKANAL®	250 mg
	U-EPA-1219	1,2:3,4-Diepoxybutane 1000 µg/mL in Methanol	1 mL
	U-RGO-610-1	No. 2 Diesel Oil 500 µg/mL in Methanol	1 mL
	U-RGO-610	No. 2 Diesel Oil 500 µg/mL in Methanol	4 x 1 mL
New	IPO UCI 020	2-Diethyaminoethanethiol	100 mg
	U-RAB-038	1,2-Diethylbenzene	100 mg
	U-RAB-039	1,3-Diethylbenzene	100 mg
	U-RAB-040	1,4-Diethylbenzene	100 mg
	U-NV-140-1	Diethyl ether 100 µg/mL in Methanol	1 mL
	U-NV-140	Diethyl ether 100 µg/mL in Methanol	4 x 1 mL
	ERD-117	O,O-Diethyl hydrogen dithiophosphate potassium salt (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	CERERD-118	Diethyl hydrogen phosphate 1000 µg/mL(as free acid)	1.2 mL
	ERD-119	O,O-Diethyl hydrogen thiophosphate potassium salt 1000 µg/mL (unlabelled) in Methanol	1.2 mL
	CIL-DLM-4852-1.2	O,O-Diethyl hydrogen thiophosphate potassium salt (diethyl-D_{10},98%) 100 µg/mL in Methanol	1.2 mL
	U-PS-130-1	Diethyl phthalate 100 µg/mL in Methanol	1 mL
	U-PS-130	Diethyl phthalate 100 µg/mL in Methanol	4 x 1 mL
	U-DMP-012	Diethyl phthalate	100 mg
New	IPO 901	Diethyl phthalate	1 mL
	U-EPA-1108	Diethyl phthalate 5000 µg/mL in Methanol	1 mL
	U-STS-130-1	1,4-Difluorobenzene 2000 µg/mL in Methanol	1 mL
	U-STS-130	1,4-Difluorobenzene 2000 µg/mL in Methanol	4 x 1 mL
	CERERD-037S	1,4-Difluorobenzene 5000 µg/mL in Methanol	1.2 mL
	U-IST-160-1	2,2'-Difluorobiphenyl 1000 µg/mL in Methylene chloride	1 mL
	U-IST-160	2,2'-Difluorobiphenyl 1000 µg/mL in Methylene chloride	4 x 1 mL
	U-PPS-270-1	4,4'-Difluorobiphenyl 100 µg/mL in Acetonitrile	1 mL
	U-PPS-270	4,4'-Difluorobiphenyl 100 µg/mL in Acetonitrile	4 x 1 mL
	U-PPS-271-1	4,4'-Difluorobiphenyl 2000 µg/mL in Acetone	1 mL
	U-PPS-271	4,4'-Difluorobiphenyl 2000 µg/mL in Acetone	4 x 1 mL
	U-RCC-138	6,13-Dihydrodibenzo(b,i)phenazine	100 mg
	FL-45778-250MG	1,2-Dihydronaphthalene OEKANAL®	250 mg
New	IPO 905	Diisobutyl phthalate	1 mL
	U-DMP-027	Diisoctyl adipate	100 mg
New	IPO UCI 018	2-(Diisopropylamino)ethanethiol	100 mg
New	IPO UCI 019	2-Diisopropylaminoethanol	100 mg
	ERD-083	Diisopropyl methyl phosphonate (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	ERD-086	Diisopropyl methyl phosphonate (D_{14},98%) 1000 µg/mL in Methanol	1.2 mL
	U-DMP-014	Diisopropyl phthalate	100 mg

Miscellaneous individual analytes

	Code	Product	Unit
New	IPO 907	Diisopropyl phthalate	1 mL
	U-RCC-117	3,3'-Dimethoxybenzidine	100 mg
	U-EPA-1109	p-(Dimethylamino)azobenzene 5000 µg/mL in Methanol	1 mL
	U-RCC-008	p-(Dimethylamino)azobenzene	100 mg
	U-B-120-1	3,3'-Dimethylbenzidine 100 µg/mL in Methanol	1 mL
	U-B-120	3,3'-Dimethylbenzidine 100 µg/mL in Methanol	4 x 1 mL
	CERERD-132S	3,3'-Dimethylbenzidine 2000 µg/mL in Methylene chloride	1.2 mL
	U-RCC-041	3,3'-Dimethylbenzidine	100 mg
	FL-31659-100MG	3,3'-Dimethylbenzidine OEKANAL®	100 mg
	U-RCC-103	Dimethylcarbamoyl chloride	1 g
	U-RAB-029	1,2-Dimethyl-3-ethylbenzene	10 mg
	U-RAB-030	1,2-Dimethyl-4-ethylbenzene	10 mg
	U-RAB-032	1,3-Dimethyl-4-ethylbenzene	10 mg
	U-RAB-033	1,3-Dimethyl-5-ethylbenzene	10 mg
	U-RAB-034	1,4-Dimethyl-2-ethylbenzene	100 mg
	ERD-121	Dimethyl hydrogen phosphate (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	U-PPS-100-1	1,3-Dimethyl-2-nitrobenzene 250 µg/mL in Methyl tert-butyl ether (MTBE)	1 mL
	U-PPS-100	1,3-Dimethyl-2-nitrobenzene 250 µg/mL in Methyl tert-butyl ether (MTBE)	4 x 1 mL
	U-NH-150-1	alpha,alpha-Dimethylphenethylamine 100 µg/mL in Methanol	1 mL
	U-NH-150	alpha,alpha-Dimethylphenethylamine 100 µg/mL in Methanol	4 x 1 mL
	U-PH-130-1	2,4-Dimethylphenol 100 µg/mL in Methanol	1 mL
	U-PH-130	2,4-Dimethylphenol 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1111	2,4-Dimethylphenol 5000 µg/mL in Methanol	1 mL
	U-RCC-158	2,4-Dimethylphenol	100 mg
New	IPO UCI 015	Diethyl methylphosphonate	100 mg
	U-PS-140-1	Dimethyl phthalate 100 µg/mL in Methanol	1 mL
	U-PS-140	Dimethyl phthalate 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1112	Dimethyl phthalate 5000 µg/mL in Methanol	1 mL
	U-DMP-011	Dimethyl phthalate	100 mg
New	IPO 904	Dimethyl phthalate	1 mL
	CHE 146	Dimethyl phthalate	1 g
	FL-31298-250MG	Dimethyl terephthalate OEKANAL®	250 mg
	FL-45963-250MG	2,4-Dinitroaniline OEKANAL®	250 mg
	FL-45965-250MG	1,2-Dinitrobenzene OEKANAL®	250 mg
	U-NAI-140-1	1,3-Dinitrobenzene 100 µg/mL in Methanol	1 mL
	U-NAI-140	1,3-Dinitrobenzene 100 µg/mL in Methanol	4 x 1 mL
	FL-45966-250MG	1,3-Dinitrobenzene OEKANAL®	250 mg
	FL-45967-250MG	1,4-Dinitrobenzene OEKANAL®	250 mg
	FL-45930-250MG	3,4-Dinitrobenzoic acid OEKANAL®	250 mg
	U-RNH-135	2,2'-Dinitrobiphenyl	100 mg
	CERERD-081	4,4'-Dinitrodiphenylamine	250 mg
	U-RNH-137	2,7-Dinitrofluorene	100 mg
	U-RNH-138	2,7-Dinitro-9-fluorenone	100 mg
	U-RCC-169	4,6-Dinitro-2-methylphenol	100 mg
	U-RNH-139	1,3-Dinitronaphthalene	100 mg
	U-RNH-140	1,5-Dinitronaphthalene	100 mg
	U-RNH-141	1,8-Dinitronaphthalene	100 mg
	U-PH-140-1	2,4-Dinitrophenol 1000 µg/mL in Methanol	1 mL
	U-PH-140	2,4-Dinitrophenol 1000 µg/mL in Methanol	4 x 1 mL
	U-EPA-1114	2,4-Dinitrophenol 5000 µg/mL in Methanol	1 mL
	FL-45968-250MG	2,3-Dinitrotoluene OEKANAL®	250 mg

	Code	Product	Unit
	U-NAI-100-1	2,4-Dinitrotoluene 100 µg/mL in Methanol	1 mL
	U-NAI-100	2,4-Dinitrotoluene 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1115	2,4-Dinitrotoluene 5000 µg/mL in Methanol	1 mL
	FL-45969-250MG	2,4-Dinitrotoluene OEKANAL®	250 mg
	U-NAI-110-1	2,6-Dinitrotoluene 100 µg/mL in Methanol	1 mL
	U-NAI-110	2,6-Dinitrotoluene 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1116	2,6-Dinitrotoluene 5000 µg/mL in Methanol	1 mL
	U-RNH-003	2,6-Dinitrotoluene	100 mg
	FL-31565-250MG	2,6-Dinitrotoluene OEKANAL®	250 mg
	U-DMP-036	Dioctyl maleate (Diethylhexyl maleate)	100 mg
	U-PS-150-1	Di-n-octyl phthalate 100 µg/mL in Methanol	1 mL
	U-PS-150	Di-n-octyl phthalate 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1117	Di-n-octyl phthalate 5000 µg/mL in Methanol	1 mL
	U-DMP-020	Di-n-octyl phthalate	100 mg
New	IPO 906	Dioctyl phthalate	1 mL
	U-NV-150-1	1,4-Dioxane 100 µg/mL in Methanol	1 mL
	U-NV-150	1,4-Dioxane 100 µg/mL in Methanol	4 x 1 mL
	U-RCC-180	1,4-Dioxane	1 g
	U-EPA-1118	Diphenylamine 5000 µg/mL in Methanol	1 mL
	FL-45788-250MG	9,10-Diphenylanthracene OEKANAL®	250 mg
	U-RPE-020	Diphenyl ether	100 mg
	U-RCC-174	1,2-Diphenylhydrazine	1 g
	U-RCC-142	4,7-Diphenyl-1,10-phenanthroline	50 mg
	U-DMP-018	Diphenyl phthalate	100 mg
	CHE 147	Diphenyl phthalate	1 g
New	IPO 902	Dipropyl phthalate	1 mL
	U-DMP-013	Di-n-propyl phthalate	100 mg
	CHE 148	Di-n-propyl phthalate	1 g
	IBPO201	C.I. Disperse Blue 7, C.I. No. 62500 (technical)	1 g
	IBPO210	Disperse Blue 35 (technical) C.I none, contains 4 dye components - violet blue (main component)	1 g
	IBPO211	Disperse Orange 11 (technical) C.I. 60700, contains 5 dye components - orange (main component)	1 g
	IBPO212	Disperse Orange 1 (technical) C.I. 11080, cotains three dye components - orange (main component)	1 g
	IBPO207	C.I. Disperse Red 11, C.I. No. 62015 (technical)	1 g
	IBPO208	C.I. Disperse Red 17, C.I. No. 11210 (technical)	1 g
	IBPO205	C.I. Disperse Yellow 9, C.I. No. 10375 (technical)	1 g
	IBPO206	C.I. Disperse Yellow 49 (technical)	1 g
	ERD-087	1,4-Dithiane (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	ERD-085	1,4-Dithiane (D_4,98%) 1000 µg/mL in Methanol	1.2 mL
	U-RNA-012	n-Docosane	1 g
	U-RNA-003	n-Dodecane	1 g
	CHE 134	n-Dodecane	2 mL
	CHE 156	Dodecanol	2 mL
	U-RNA-015	n-Dotriacontane	1 g
	FL-33865-50MG	DTPD OEKANAL®	50 mg
	U-RNA-011	n-Eicosane	1 g
	U-EPA-1220	Epichlorhydrin 1000 µg/mL in Methanol	1 mL
	U-RCC-161	Epichlorhydrin	100 mg
	U-RCC-162	1,2-Epoxybutane	100 mg

Miscellaneous individual analytes

	Code	Product	Unit
New	CHE 108	Ethanol	2 mL
	FL-46139-5ML	Ethanol OEKANAL®	5 mL
	CHE 163	2-Ethoxyethyl acetate	2 mL
	CHE 123	Ethyl acetate	2 mL
	U-NV-160-1	Ethyl alcohol 100 µg/mL in Methanol	1 mL
	U-NV-160	Ethyl alcohol 100 µg/mL in Methanol	4 x 1 mL
	U-RCC-181	Ethyl alcohol	1 g
	U-AM-150-1	Ethylbenzene 100 µg/mL in Methanol	1 mL
	U-AM-150	Ethylbenzene 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1035	Ethylbenzene 5000 µg/mL in Methanol	1 mL
	NIST-3002	Ethylbenzene in Methanol (mass fraction): 0.01 g/g	2 x 2.5 mL
	U-RAB-013	Ethylbenzene	100 mg
	CHE USC 12	Ethylbenzene	2 mL
New	FL-03079-5ML	Ethylbenzene	5 mL
	U-STS-150-1	Ethylbenzene-D_{10} 2000 µg/mL in Methanol	1 mL
	U-STS-150	Ethylbenzene-D_{10} 2000 µg/mL in Methanol	4 x 1 mL
	CERERE-014S	Ethylbenzene-D_{10} 2000 µg/mL in Methanol	1.2 mL
	CHE 155	Ethylene glycol	2 mL
	U-RCC-106	Ethylenethiourea (Imidazolidinethione)	1 g
New	IPO UCI 017	2-Ethylhexyl hydrogen methylphosphonate (EHMPA)	100 mg
	CIL-ULM-6091-1.2	Ethyl hydrogen dimethylamidophosphate sodium salt (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	CIL-DLM-6098-1.2	Ethyl hydrogen methylphosphonate (ethyl-D_5,98%) 100 µg/mL in Methanol	1.2 mL
	IPO F 070	Ethyl-4-hydroxybenzoate (Ethylparaben) E 214 Certified purity.....99.4%	250 mg
	U-NV-170-1	Ethyl methacrylate 100 µg/mL in Methanol	1 mL
	U-NV-170	Ethyl methacrylate 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1036	Ethyl methacrylate 1000 µg/mL in Methanol	1 mL
	U-RCC-206	Ethyl methacrylate	100 mg
	U-SV-160-1	Ethyl methanesulfonate 100 µg/mL in Methylene chloride	1 mL
	U-SV-160	Ethyl methanesulfonate 100 µg/mL in Methylene chloride	4 x 1 mL
	U-RCC-182	Ethyl methanesulfonate	100 mg
New	FL-32702-10MG	4-(1-Ethyl-1-methylhexyl)phenol OEKANAL®	10 mg
New	FL-32707-10MG	4-(2-Ethyl-1-methylhexyl)phenol OEKANAL®	10 mg
	ERE-024	Ethyl methylphosphonic acid (unlabelled) 1000 µg/mL in Methanol	1.2 mL
New	IPO UCI 013	Ethyl methylphosphonic acid	100 mg
	U-RAB-035	2-Ethyltoluene	100 mg
	U-RAB-036	3-Ethyltoluene	100 mg
	U-RAB-037	4-Ethyltoluene	100 mg
	U-IST-170-1	4-Fluoroaniline 1000 µg/mL in Methylene chloride	1 mL
	U-IST-170	4-Fluoroaniline 1000 µg/mL in Methylene chloride	4 x 1 mL
	U-STS-160-1	Fluorobenzene 2000 µg/mL in Methanol	1 mL
	U-STS-160	Fluorobenzene 2000 µg/mL in Methanol	4 x 1 mL
	CERERF-006S	Fluorobenzene 5000 µg/mL in Methanol	1.2 mL
	U-ATS-140-1	2-Fluorobiphenyl 2000 µg/mL in Methylene chloride	1 mL
	U-ATS-140	2-Fluorobiphenyl 2000 µg/mL in Methylene chloride	4 x 1 mL
	CERERF-009S	2-Fluorobiphenyl 2000 µg/mL in Dichloromethane	1.2 mL
	U-IST-180-1	1-Fluoronaphthalene 1000 µg/mL in Methylene chloride	1 mL
	U-IST-180	1-Fluoronaphthalene 1000 µg/mL in Methylene chloride	4 x 1 mL
	CERERF-010S	1-Fluoronaphthalene 2000 µg/mL in Dichloromethane	1.2 mL
	U-IST-190-1	2-Fluoronaphthalene 1000 µg/mL in Methylene chloride	1 mL

	Code	Product	Unit
	U-IST-190	2-Fluoronaphthalene 1000 µg/mL in Methylene chloride	4 x 1 mL
	U-IST-250-1	2-Fluorophenol 1000 µg/mL in Methylene chloride	1 mL
	U-IST-250	2-Fluorophenol 1000 µg/mL in Methylene chloride	4 x 1 mL
	U-RNA-024	n-Heneicosane	1 g
	U-RNA-031	N-Hentriacontaine	10 mg
	U-RNA-028	n-Heptacosane	10 mg
	U-RNA-008	n-Heptadecane	1 g
	CHE 169	n-Heptadecane	1 g
New	FL-51578-5ML	n-Heptadecane	5 mL
New	FL-33827-100MG	Heptadecafluorooctanesulfonic acid OEKANAL®	100 mg
New	FL-33829-100MG	Heptadecafluorooctanesulfonic acid potassium salt OEKANAL®	100 mg
	U-RNA-023	2,2,4,4,6,8,8-Heptamethylnonane	1 g
	U-RNA-019	n-Heptane	1 g
	CHE 112	n-Heptane	2 mL
New	FL-51730-5ML	n-Heptane, puriss. p.a., standard for GC	5 mL
	CHE 137	n-Heptanol	2 mL
	CHE 149	3-Heptanone	2 mL
	CHE 150	4-Heptanone	2 mL
	FL-46204-5ML	4-Heptanone OEKANAL®	5 mL
	U-RAB-024	n-Heptylbenzene (Phenylheptane)	100 mg
	U-RBF-005	Hexabromobenzene	100 mg
	U-CH-150-1	Hexachlorobenzene 100 µg/mL in Methylene chloride	1 mL
	U-CH-150	Hexachlorobenzene 100 µg/mL in Methylene chloride	4 x 1 mL
	U-CH-151-1	Hexachlorobenzene 100 µg/mL in Methanol	1 mL
	U-CH-151	Hexachlorobenzene 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1125	Hexachlorobenzene 1000 µg/mL in Acetone	1 mL
	U-RCP-031	Hexachlorobenzene	100 mg
	U-CH-160-1	Hexachlorobutadiene 100 µg/mL in Methanol	1 mL
	U-CH-160	Hexachlorobutadiene 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1126	Hexachlorobutadiene 5000 µg/mL in Methanol	1 mL
	CHE 166	Hexachloro-1,3-butadiene	1.5 mL
	U-RHH-060	Hexachlorobutadiene	100 mg
	U-CH-170-1	Hexachlorocyclopentadiene 100 µg/mL in Methanol	1 mL
	U-CH-170	Hexachlorocyclopentadiene 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1127	Hexachlorocyclopentadiene 5000 µg/mL in Methanol	1 mL
	U-CH-180-1	Hexachloroethane 100 µg/mL in Methanol	1 mL
	U-CH-180	Hexachloroethane 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1128	Hexachloroethane 5000 µg/mL in Methanol	1 mL
	U-RHH-019	Hexachloroethane	1 g
	U-EPA-1129	Hexachlorophene 5000 µg/mL in Methanol	1 mL
	U-PH-270-1	Hexachlorophene 100 µg/mL in Methanol	1 mL
	U-PH-270	Hexachlorophene 100 µg/mL in Methanol	4 x 1 mL
	U-RCC-166	Hexachlorophene	100 mg
	U-CH-200-1	Hexachloropropene 100 µg/mL in Methanol	1 mL
	U-CH-200	Hexachloropropene 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1130	Hexachloropropene 1000 µg/mL in Methanol	1 mL
	U-RHH-047	Hexachloropropene	1 g
	U-RNA-027	n-Hexacosane	1 g
	CHE 135	n-Hexadecane	2 mL
	U-RNA-007	n-Hexadecane (n-Cetane)	1 g
	FL-36932-1G	Hexadecyltrimethylammonium bromide OEKANAL®	1 g

Miscellaneous individual analytes

	Code	Product	Unit
	U-RAB-012	Hexamethylbenzene	100 mg
	U-RNA-018	n-Hexane	1 g
	CHE 111	n-Hexane	2 mL
	CHE 136	n-Hexanol	2 mL
	U-NV-180-1	2-Hexanone 100 µg/mL in Methanol	1 mL
	U-NV-180	2-Hexanone 100 µg/mL in Methanol	4 x 1 mL
	U-RCC-207	2-Hexanone	100 mg
	U-RNA-017	n-Hexatriacontane	1 g
	CHE 133	n-Hexyl acetate	2 mL
	U-RAB-023	n-Hexylbenzene (Phenylhexane)	100 mg
	U-RCC-167	Hydroquinone	100 mg
	U-EPA-1222	2-Hydroxypropionitrile 1000 µg/mL in Methanol	1 mL
	U-RCC-208	2-Hydroxypropionitrile	100 mg
	FL-45789-250MG	Indane OEKANAL®	250 mg
	FL-45791-250MG	Indene OEKANAL®	250 mg
	CHE 165	n-Isoamyl alcohol	2 mL
	U-NV-190-1	Isobutyl alcohol 100 µg/mL in Methanol	1 mL
	U-NV-190	Isobutyl alcohol 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1037	Isobutyl alcohol 5000 µg/mL in Methanol	1 mL
	U-RCC-183	Isobutyl alcohol	1 g
	CHE 152	Isobutyl alcohol	2 mL
	U-RAB-019	Isobutylbenzene	100 mg
	CHE 113	Isobutylbenzene	2 mL
New	IPO UCI 012	Isobutyl hydrogen methylphosphonate	100 mg
	U-NAI-120-1	Isophorone 100 µg/mL in Methanol	1 mL
	U-NAI-120	Isophorone 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1132	Isophorone 5000 µg/mL in Methanol	1 mL
	U-RCC-209	Isophorone	100 mg
	CHE 161	Isopropyl acetate	2 mL
	U-AM-230-1	Isopropylbenzene 100 µg/mL in Methanol	1 mL
	U-AM-230	Isopropylbenzene 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1038	Isopropylbenzene 5000 µg/mL in Methanol	1 mL
	NIST-3015	Isopropylbenzene in Methanol (mass fraction): 0.01 g/g	2 x 2.5 mL
	U-RAB-015	Isopropylbenzene	100 mg
	CHE 116	Isopropylbenzene	2 mL
New	IPO UCI 011	Isopropyl methyl phosphonic acid (IMPA)	100 mg
	ERI-015	Isopropyl methylphosphonic acid (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	ERI-017	Isopropyl methylphosphonic acid (D_7,98%) 1000 µg/mL in Methanol	1.2 mL
	FL-33652-10MG	2-Isopropyl-d7-thioxanthen-9-one (ITX-d7) OEKANAL®	10 mg
	U-AM-240-1	4-Isopropyltoluene 100 µg/mL in Methanol	1 mL
	U-AM-240-1	4-Isopropyltoluene 100 µg/mL in Methanol	1 mL
	U-EPA-1039	4-Isopropyltoluene 5000 µg/mL in Methanol	1 mL
	U-RAB-042	4-Isopropyltoluene	100 mg
	U-RGO-671-1	Jet Fuel A 5000 µg/mL in Methylene chloride	1 mL
	U-RGO-671	Jet Fuel A 5000 µg/mL in Methylene chloride	4 x 1 mL
	U-RGO-672-1	Jet Fuel A 50000 µg/mL in Methylene chloride	1 mL
	U-RGO-672	Jet Fuel A 50000 µg/mL in Methylene chloride	4 x 1 mL
	U-RGO-691-1	JP-5 Military Fuel 5000 µg/mL in Methylene chloride	1 mL
	U-RGO-691	JP-5 Military Fuel 5000 µg/mL in Methylene chloride	4 x 1 mL
	U-RGO-692-1	JP-5 Military Fuel 50000 µg/mL in Methylene chloride	1 mL
	U-RGO-692	JP-5 Military Fuel 50000 µg/mL in Methylene chloride	4 x 1 mL

	Code	Product	Unit
	FL-34182-10MG	Leucomalachite Green-d5 OEKANAL®	10 mg
	U-EPA-1223	Malononitrile 1000 µg/mL in Methanol	1 mL
	U-RCC-210	Malononitrile	100 mg
	FL-33428-100MG	4,4'-MDI OEKANAL®	100 mg
New	FL-52549-250MG	Melamine, analytical standard, >99.0% (HPLC)	250 mg
	U-NV-200-1	Methacrylonitrile 100 µg/mL in Methanol	1 mL
	U-NV-200	Methacrylonitrile 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1040	Methacrylonitrile 1000 µg/mL in Methanol	1 mL
	CHE 117	Methanol	2 mL
	U-NH-260-1	Methapyrilene 100 µg/mL in Methanol	1 mL
	U-NH-260	Methapyrilene 100 µg/mL in Methanol	4 x 1 mL
	CHE 162	2-Methoxyethyl acetate	2 mL
	CHE 159	Methyl acetate	2 mL
	U-EPA-1224	Methyl acrylate 1000 µg/mL in Methanol	1 mL
	U-RCC-212	Methyl acrylate	100 mg
	U-STS-440-1	Methyl tert-butyl ether 2000 µg/mL in Methanol	1 mL
	U-STS-440	Methyl tert-butyl ether 2000 µg/mL in Methanol	4 x 1 mL
	CHE 118	Methylcyclohexane	2 mL
	U-PH-150-1	2-Methyl-4,6-dinitrophenol 1000 µg/mL in Methanol	1 mL
	U-PH-150	2-Methyl-4,6-dinitrophenol 1000 µg/mL in Methanol	4 x 1 mL
	U-FLHC-002	2-Methyldodecane	50 mg
	U-FLHC-006	2-Methyleicosane	50 mg
	U-HC-220-1	Methylene chloride 100 µg/mL in Methanol	1 mL
	U-HC-220	Methylene chloride 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1041	Methylene chloride 5000 µg/mL in Methanol	1 mL
	NIST-3008	Methylene chloride in Methanol (mass fraction): 0.01 g/g	2 x 2.5 mL
	U-RHH-001	Methylene chloride	1 g
	CHE 01	Methylene chloride	1.5 mL
		4,4'-Methylenebis(2-chloroaniline) see 4,4'-Diamino-3,3'-dichlorodiphenylmethane	
	U-FLHC-009	3-Methylhendecane	50 mg
	U-FLHC-014	3-Methylheneicosane	50 mg
	U-FLHC-012	3-Methylheptadecane	50 mg
	U-FLHC-004	2-Methylhexadecane	50 mg
	IPO F 075	Methyl-4-hydroxybenzoate (Methylparaben) E 218 Certified purity..... 99.9%	250 mg
	U-HC-470-1	Methyl iodide 100 µg/mL in Methanol	1 mL
	U-HC-470	Methyl iodide 100 µg/mL in Methanol	4 x 1 mL
	CHE 157	Methyl isobutyl ketone	2 mL
	FL-46212-5ML	Methyl isopropyl ketone OEKANAL®	5 mL
	U-NV-210-1	Methyl methacrylate 100 µg/mL in Methanol	1 mL
	U-NV-210	Methyl methacrylate 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1042	Methyl methacrylate 1000 µg/mL in Methanol	1 mL
	U-RCC-213	Methyl methacrylate	100 mg
	U-RCC-185	Methyl methanesulfonate	100 mg
	U-SV-180A-1	Methyl methanesulfonate 100 µg/mL in Methylene chloride	1 mL
	U-SV-180A	Methyl methanesulfonate 100 µg/mL in Methylene chloride	4 x 1 mL
	FL-45795-250MG	1-Methylnaphthalene OEKANAL®	250 mg
	U-EPA-1225	1-Methylnaphthalene 1000 µg/mL in Methanol	1 mL
	FL-45796-250MG	2-Methylnaphthalene OEKANAL®	250 mg
	U-SV-200-1	2-Methylnaphthalene 100 µg/mL in Methanol	1 mL

Miscellaneous individual analytes

	Code	Product	Unit
	U-SV-200	2-Methylnaphthalene 100 µg/mL in Methanol	4 x 1 mL
	FL-45984-250MG	2-Methyl-5-nitroaniline (2-Amino-4-nitrotoluene) OEKANAL®	250 mg
	U-RNH-112	2-Methyl-1-nitronaphthalene	100 mg
	U-FLHC-005	2-Methyloctadecane	50 mg
	U-FLHC-011	3-Methylpentadecane	50 mg
	CHE 119	2-Methylpentane	2 mL
	CHE 120	3-Methylpentane	2 mL
	U-NV-220-1	4-Methyl-2-pentanone 100 µg/mL in Methanol	1 mL
	U-NV-220	4-Methyl-2-pentanone 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1043	4-Methyl-2-pentanone (MIBK) 5000 µg/mL in Methanol	1 mL
	U-RCC-214	4-Methyl-2-pentanone (MIBK)	1 g
	ERM-038	Methylphosphonic acid (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	CIL-CDLM-6100-1.2	Methylphosphonic acid (^{13}C, 99%; methyl-D_3, 98%) 100 µg/mL in Methanol	1.2 mL
	CIL-DLM-6196-1.2	Methylphosphonic acid (methyl-D_3,98%) 100 µg/mL in Methanol	1.2 mL
	FL-46211-5ML	Methyl propyl ketone OEKANAL®	5 mL
New	FL-32705-10MG	4-(1-Methyl-1-propylpentyl)phenol OEKANAL®	10 mg
	U-FLHC-003	2-Methyltetradecane	50 mg
	U-FLHC-015	3-Methyltricosane	50 mg
	U-FLHC-010	3-Methyltridecane	50 mg
	FL-36926-250MG	Monomethyl phthalate OEKANAL®	250 mg
	U-IST-200-1	Naphthalene-D_8 1000 µg/mL in Methylene chloride	1 mL
	U-IST-200	Naphthalene-D_8 1000 µg/mL in Methylene chloride	4 x 1 mL
	U-NAI-150A-1	1,4-Naphthoquinone 100 µg/mL in Acetone	1 mL
	U-NAI-150A	1,4-Naphthoquinone 100 µg/mL in Acetone	4 x 1 mL
	U-RCC-215	1,4-Naphthoquinone	100 mg
	U-NH-200-1	1-Naphthylamine 100 µg/mL in Methanol	1 mL
	U-NH-200	1-Naphthylamine 100 µg/mL in Methanol	4 x 1 mL
	FL-34390-250MG	1-Naphthylamine OEKANAL®	250 mg
	U-EPA-1135	2-Naphthylamine 1000 µg/mL in Methanol	1 mL
	FL-31618-100MG	2-Naphthylamine OEKANAL®	100 mg
	ERM-AC802	Nicotine	0.6 mL
	IPO 505	Nicotine	500 mg
	IPO F 165	Nicotinic acid	250 mg
	U-EPA-1136	2-Nitroaniline 5000 µg/mL in Methanol	1 mL
	U-RCC-186	2-Nitroaniline	100 mg
	U-EPA-1137	3-Nitroaniline 5000 µg/mL in Methanol	1 mL
	U-RCC-187	3-Nitroaniline	100 mg
	FL-45989-250MG	3-Nitroaniline OEKANAL®	250 mg
	U-EPA-1138	4-Nitroaniline 5000 µg/mL in Methanol	1 mL
	U-RCC-188	4-Nitroaniline	100 mg
	FL-31569-250MG	4-Nitroaniline OEKANAL®	250 mg
	FL-36909-250MG	3-Nitroanisole OEKANAL®	250 mg
	FL-36916-250MG	4-Nitroanisole OEKANAL®	250 mg
	U-NAI-130-1	Nitrobenzene 100 µg/mL in Methanol	1 mL
	U-NAI-130	Nitrobenzene 100 µg/mL in Methanol	4 x 1 mL
	U-RNH-004	Nitrobenzene	100 mg
	U-IST-210-1	Nitrobenzene-D_5 1000 µg/mL in Methylene chloride	1 mL
	U-IST-210	Nitrobenzene-D_5 1000 µg/mL in Methylene chloride	4 x 1 mL
	U-RNH-117	2-Nitrobiphenyl	100 mg
	U-RNH-118	3-Nitrobiphenyl	100 mg
	U-RNH-177	4-Nitrobiphenyl	200 mg

Code	Product	Unit
U-RNH-123	2-Nitrodiphenylamine	100 mg
U-RNH-097	2-Nitrofluorene	200 mg
U-RNH-126	5-Nitroindane	100 mg
U-RNH-127	1-Nitronaphthalene	100 mg
U-RNH-131	5-Nitro-1,10-phenanthroline	100 mg
U-PH-160-1	2-Nitrophenol 100 µg/mL in Methanol	1 mL
U-PH-160	2-Nitrophenol 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1140	2-Nitrophenol 5000 µg/mL in Methanol	1 mL
U-RCC-170	2-Nitrophenol	100 mg
U-PH-170-1	4-Nitrophenol 100 µg/mL in Methanol	1 mL
U-PH-170	4-Nitrophenol 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1141	4-Nitrophenol 5000 µg/mL in Methanol	1 mL
U-RCC-171	4-Nitrophenol	100 mg
U-RNH-144	2-Nitrophenyl disulfide	100 mg
U-RNH-145	3-Nitrophenyl disulfide	100 mg
U-RNH-146	4-Nitrophenyl disulfide	100 mg
U-RNH-099	2-Nitro-p-phenylenediamine	100 mg
U-RNH-166	3-Nitro-o-phenylenediamine	100 mg
U-RNH-100	4-Nitro-o-phenylenediamine	100 mg
U-RNH-147	4-Nitrophenyl phenyl ether	100 mg
U-RNH-148	4-Nitrophenyl phenyl sulfide	100 mg
U-EPA-1226	2-Nitropropane 1000 µg/mL in Methanol	1 mL
U-RCC-189	2-Nitropropane	100 mg
U-NH-270-1	4-Nitroquinoline-1-oxide 100 µg/mL in Methanol	1 mL
U-NH-270	4-Nitroquinoline-1-oxide 100 µg/mL in Methanol	4 x 1 mL
U-RCC-190	4-Nitroquinoline-1-oxide	100 mg
U-RNH-149	5-Nitroquinoline	100 mg
U-RNH-150	6-Nitroquinoline	100 mg
U-RNH-151	8-Nitroquinoline	100 mg
U-NS-130-1	N-Nitrosodi-n-butylamine 100 µg/mL in Methanol	1 mL
U-NS-130	N-Nitrosodi-n-butylamine 100 µg/mL in Methanol	4 x 1 mL
U-RCC-070	N-Nitrosodi-n-butylamine	20 mg
U-RCC-071	N-Nitrosodicyclohexylamine	100 mg
U-NS-140-1	N-Nitrosodiethylamine 100 µg/mL in Methanol	1 mL
U-NS-140	N-Nitrosodiethylamine 100 µg/mL in Methanol	4 x 1 mL
U-RCC-016	N-Nitrosodiethylamine	100 mg
NE0933	N-Nitrosodiisopropylamine 100 µg/mL in Methanol	5 mL
U-NS-100-1	N-Nitrosodimethylamine (NDMA) 100 µg/mL in Methanol	1 mL
U-NS-100	N-Nitrosodimethylamine (NDMA) 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1143	N-Nitrosodimethylamine (NDMA) 5000 µg/mL in Methanol	1 mL
U-RCC-015	N-Nitrosodimethylamine (NDMA)	100 mg
U-NS-110-1	N-Nitrosodiphenylamine 100 µg/mL in Methanol	1 mL
U-NS-110	N-Nitrosodiphenylamine 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1144	N-Nitrosodiphenylamine 5000 µg/mL in Methanol	1 mL
U-RCC-017	N-Nitrosodiphenylamine	100 mg
U-NS-120-1	N-Nitrosodi-n-propylamine 100 µg/mL in Methanol	1 mL
U-NS-120	N-Nitrosodi-n-propylamine 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1145	N-Nitrosodi-n-propylamine 5000 µg/mL in Methanol	1 mL
U-RCC-072	N-Nitrosodi-n-propylamine	20 mg
U-NS-150-1	N-Nitrosomethylethylamine 100 µg/mL in Methanol	1 mL
U-NS-150	N-Nitrosomethylethylamine 100 µg/mL in Methanol	4 x 1 mL

Miscellaneous individual analytes

	Code	Product	Unit
	U-RCC-191	N-Nitrosomethylethylamine	100 mg
	U-NS-160-1	N-Nitrosomorpholine 100 µg/mL in Methanol	1 mL
	U-NS-160	N-Nitrosomorpholine 100 µg/mL in Methanol	4 x 1 mL
	U-RCC-077	N-Nitrosomorpholine	20 mg
	U-NS-170-1	N-Nitrosopiperidine 100 µg/mL in Methanol	1 mL
	U-NS-170	N-Nitrosopiperidine 100 µg/mL in Methanol	4 x 1 mL
	U-RCC-078	N-Nitrosopiperidine	20 mg
	U-NS-180-1	N-Nitrosopyrrolidine 100 µg/mL in Methanol	1 mL
	U-NS-180	N-Nitrosopyrrolidine 100 µg/mL in Methanol	4 x 1 mL
	U-RNH-133	4-Nitro-p-terphenyl	100 mg
	U-RNH-005	2-Nitrotoluene	100 mg
	FL-31567-250MG	2-Nitrotoluene OEKANAL®	250 mg
	U-RNH-006	3-Nitrotoluene	100 mg
	FL-45986-250MG	3-Nitrotoluene OEKANAL®	250 mg
	U-RNH-007	4-Nitrotoluene	100 mg
	FL-31568-250MG	4-Nitrotoluene OEKANAL®	250 mg
	U-EPA-1149	5-Nitro-o-toluidine 5000 µg/mL in Methanol	1 mL
	U-RCC-192	5-Nitro-o-toluidine	100 mg
	U-RNA-029	n-Nonacosane	10 mg
	U-RNA-010	n-Nonadecane	1 g
	CHE 171	n-Nonadecane	1 g
	U-RNA-021	n-Nonane	1 g
	CHE 122	n-Nonane	2 mL
	U-RAB-026	n-Nonylbenzene (Phenylnonane)	100 mg
	U-RCN-012	Octachloronaphthalene	20 mg
	U-RCB-045	Octachlorostyrene	10 mg
	CERERO-001	Octachlorostyrene	25 mg
	U-RNA-014	n-Octacosane	1 g
	U-RNA-009	n-Octadecane	1 g
	CHE 170	n-Octadecane	1 g
New	FL-74691-5G	n-Octadecane	5 g
	CHE 114	iso-Octane	2 mL
	U-RNA-020	n-Octane	1 g
	CHE 124	n-Octane	2 mL
	FL-46214-5ML	3-Octanone OEKANAL®	5 mL
	U-RNA-033	n-Octatriacontane	100 mg
	U-RAB-025	n-Octylbenzene (Phenyloctane)	100 mg
	FL-46117-250MG	4,4'-Oxydianiline OEKANAL®	250 mg
	FL-37922-100MG	2,3,4,5,6-Pentabromoethylbenzene OEKANAL®	100 mg
	U-RBF-010	Pentabromophenol	100 mg
	FL-45797-100MG	Pentacene OEKANAL®	100 mg
	U-RPE-012	2,3',4,4',5-Pentachlorodiphenyl ether	10 mg
	U-RCB-020	2,3,4,5,6-Pentachlorotoluene	100 mg
	U-RCA-015	Pentachloroaniline	100 mg
	U-RCP-041	Pentachloroanisole	50 mg
	U-CH-210-1	Pentachlorobenzene 100 µg/mL in Methylene chloride	1 mL
	U-CH-210	Pentachlorobenzene 100 µg/mL in Methylene chloride	4 x 1 mL
	U-RCP-030	Pentachlorobenzene	100 mg
	U-CH-230-1	Pentachloroethane 100 µg/mL in Methanol	1 mL
	U-CH-230	Pentachloroethane 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1150	Pentachloroethane 5000 µg/mL in Methanol	1 mL

	Code	Product	Unit
	U-RHH-018	Pentachloroethane	1 g
	U-NAI-160-1	Pentachloronitrobenzene 100 µg/mL in Methylene chloride	1 mL
	U-NAI-160	Pentachloronitrobenzene 100 µg/mL in Methylene chloride	4 x 1 mL
	U-EPA-1151	Pentachloronitrobenzene 5000 µg/mL in Methanol	1 mL
	U-PPS-130-1	Pentachloronitrobenzene 100 µg/mL in Methyl tert-butyl ether (MTBE)	1 mL
	U-PPS-130	Pentachloronitrobenzene 100 µg/mL in Methyl tert-butyl ether (MTBE)	4 x 1 mL
	U-EPA-1152	Pentachlorophenol 5000 µg/mL in Methanol	1 mL
	U-GCS-120-1	Pentachlorophenol 1000 µg/mL in Methylene chloride	1 mL
	U-GCS-120	Pentachlorophenol 1000 µg/mL in Methylene chloride	4 x 1 mL
	U-PH-180-1	Pentachlorophenol 1000 µg/mL in Methanol	1 mL
	U-PH-180	Pentachlorophenol 1000 µg/mL in Methanol	4 x 1 mL
	U-RCP-019	Pentachlorophenol	20 mg
	U-RNA-026	n-Pentacosane	100 mg
	U-RNA-006	n-Pentadecane	1 g
	CHE 168	n-Pentadecane	2 mL
New	FL-33824-100MG	Pentadecafluorooctanoic acid OEKANAL®	100 mg
	U-IST-220-1	2,3,4,5,6-Pentafluorobiphenyl 1000 µg/mL in Methylene chloride	1 mL
	U-IST-220	2,3,4,5,6-Pentafluorobiphenyl 1000 µg/mL in Methylene chloride	4 x 1 mL
	U-STS-170-1	Pentafluorobenzene 2000 µg/mL in Methanol	1 mL
	U-STS-170	Pentafluorobenzene 2000 µg/mL in Methanol	4 x 1 mL
	CERERP-031S	Pentafluorobenzene 5000 µg/mL in Methanol	1.2 mL
	U-IST-260-1	Pentafluorophenol 1000 µg/mL in Methylene chloride	1 mL
	U-IST-260	Pentafluorophenol 1000 µg/mL in Methylene chloride	4 x 1 mL
	U-RNA-022	2,2,4,6,6-Pentamethylheptane	1 g
	U-RAB-011	Pentamethylbenzene	100 mg
	CHE 125	n-Pentane	2 mL
New	FL-76870	n-Pentane puriss. p.a., standard for GC, 99.8% (GC)	10 mL
	CHE 138	n-Pentanol	2 mL
	U-RNA-032	n-Pentatriacontane	100 mg
	U-RAB-020	n-Pentylbenzene (n-Amylbenzene)	100 mg
	U-RAB-021	sec-Pentylbenzene (sec-Amylbenzene)	100 mg
	U-RAB-022	tert-Pentylbenzene (tert-Amylbenzene)	100 mg
	U-EPA-1153	Phenacetin 5000 µg/mL in Methanol	1 mL
	U-RCC-216	Phenacetin	100 mg
	U-RCC-141	1,10-Phenanthroline monohydrate	100 mg
	U-PH-190-1	Phenol 100 µg/mL in Methanol	1 mL
	U-PH-190	Phenol 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1155	Phenol 5000 µg/mL in Methanol	1 mL
	U-RCC-172	Phenol	100 mg
	CHE 110	Phenol	2 mL
	U-IST-270-1	Phenol-D_5 1000 µg/mL in Methylene chloride	1 mL
	U-IST-270	Phenol-D_5 1000 µg/mL in Methylene chloride	4 x 1 mL
	U-RPE-021	4-Phenoxybiphenyl	25 mg
	U-RAB-028	1-Phenyl-2-butene	100 mg
	U-RCC-126	N-Phenylcarbazole	100 mg
	U-NH-240A-1	p-Phenylenediamine 100 µg/mL in Methylene chloride	1 mL
	U-NH-240A	p-Phenylenediamine 100 µg/mL in Methylene chloride	4 x 1 mL
	U-RCC-194	p-Phenylenediamine	100 mg
	U-RCC-040	N-Phenyl-beta-naphthylamine	100 mg
	U-EPA-1156	2-Picoline 5000 µg/mL in Methanol	1 mL
	U-RCC-195	2-Picoline	100 mg

Miscellaneous individual analytes

	Code	Product	Unit
	CIL-CLM-6620-1.2	1,2,2-Trimethylpropyl hydrogen methylphosphonate (trimethylpropyl-$^{13}C_6$,99%) 100 µg/mL in Methanol	1.2 mL
	ERP-083	Pinacolyl methylphosphonic acid (unlabelled) 1000 µg/mL in Methanol	1.2 mL
New	IPO UCI 010	Pinacolyl methylphosphonic acid (PMPA)	100 mg
	CHE 127	n-Propanol	2 mL
	CHE 115	iso-Propanol (iso-Propyl alcohol)	2 mL
	U-RCC-196	Propargyl alcohol	100 mg
	U-EPA-1230	Propargyl alcohol 1000 µg/mL in Methanol	1 mL
	U-NV-230-1	Propionitrile 100 µg/mL in Methanol	1 mL
	U-NV-230	Propionitrile 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1044	Propionitrile 5000 µg/mL in Methanol	1 mL
	CHE 160	Propyl acetate	2 mL
	FL-45945-1G	iso-Propylamine anhydrous OEKANAL®	1 g
	U-EPA-1232	n-Propylamine 1000 µg/mL in Methanol	1 mL
	U-RCC-197	n-Propylamine	100 mg
	U-AM-260-1	n-Propylbenzene 100 µg/mL in Methanol	1 mL
	U-AM-260	n-Propylbenzene 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1045	n-Propylbenzene 5000 µg/mL in Methanol	1 mL
	CHE 121	n-Propylbenzene	2 mL
	U-RAB-014	n-Propylbenzene	100 mg
	U-RCC-092	Propylene oxide	100 mg
	IPO F 003	Propyl gallate E 310 Certified purity.....99.6%	250 mg
	IPO F 080	Propyl-4-hydroxybenzoate (Propylparaben) E 216 Certified purity.....98.9%	250 mg
	FL-45996-250MG	Pseudocumene OEKANAL®	250 mg
	U-NH-290-1	Pyridine 100 µg/mL in Methanol	1 mL
	U-NH-290	Pyridine 100 µg/mL in Methanol	4 x 1 mL
	U-RCC-198	Pyridine	1 g
	CHE 126	Pyridine	2 mL
	U-IST-240-1	Pyridine-D_5 1000 µg/mL in Methylene chloride	1 mL
	U-IST-240	Pyridine-D_5 1000 µg/mL in Methylene chloride	4 x 1 mL
	U-RAH-063	m-Quinquephenyl	10 mg
	U-RGO-600-1	Regular Unleaded Gasoline 500 µg/mL in Methanol	1 mL
	U-RGO-600	Regular Unleaded Gasoline 500 µg/mL in Methanol	4 x 1 mL
	FL-34181-2ML	Sudan I-d5 100 µg/mL in Acetonitrile OEKANAL®	2 mL
	FL-34163-2ML	Sudan IV-d6 100 µg/mL in Acetonitrile OEKANAL®	2 mL
	FL-46408-100MG	Stearyl stearate OEKANAL®	100 mg
	U-AM-270-1	Styrene 100 µg/mL in Methanol	1 mL
	U-AM-270	Styrene 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1046	Styrene 5000 µg/mL in Methanol	1 mL
	CERERS-027S	Styrene 100 µg/mL in Methanol	1.2 mL
	U-RAB-043	Styrene	100 mg
	CHE 140	Styrene	2 mL
	FL-45993-250MG	Styrene OEKANAL®	250 mg
	U-RCC-093	Styrene oxide	1 g
	FL-33427-5ML	2,4-TDI OEKANAL®	5 mL
	FL-33493-100MG	2,6-TDI OEKANAL®	100 mg
	FL-45801-250MG	m-Terphenyl OEKANAL®	250 mg
	U-IST-480-1	o-Terphenyl 2000 µg/mL in Methylene chloride	1 mL

Code	Product	Unit
U-IST-480	o-Terphenyl 2000 µg/mL in Methylene chloride	4 x 1 mL
FL-45800-250MG	o-Terphenyl OEKANAL®	250 mg
U-IST-490-1	p-Terphenyl 2000 µg/mL in Methylene chloride	1 mL
U-IST-490	p-Terphenyl 2000 µg/mL in Methylene chloride	4 x 1 mL
FL-45802-250MG	p-Terphenyl OEKANAL®	250 mg
U-ATS-160-1	p-Terphenyl-D_{14} 2000 µg/mL in Methylene chloride	1 mL
U-ATS-160	p-Terphenyl-D_{14} 2000 µg/mL in Methylene chloride	4 x 1 mL
U-ATS-161-1	p-Terphenyl-D_{14} 500 µg/mL in Methylene chloride	1 mL
U-ATS-161	p-Terphenyl-D_{14} 500 µg/mL in Methylene chloride	4 x 1 mL
U-RHH-028	1,1,2,2-Tetrabromoethane	1 g
U-RCA-013	2,3,4,5-Tetrachloroaniline	100 mg
U-RCA-014	2,3,5,6-Tetrachloroaniline	100 mg
U-RCP-050	2,3,4,5-Tetrachloroanisole	50 mg
U-RCP-051	2,3,4,6-Tetrachloroanisole	50 mg
U-RCP-052	2,3,5,6-Tetrachloroanisole	50 mg
U-EPA-1234	1,2,3,4-Tetrachlorobenzene 1000 µg/mL in Hexane	1 mL
U-RCP-027	1,2,3,4-Tetrachlorobenzene	100 mg
U-EPA-1235	1,2,3,5-Tetrachlorobenzene 1000 µg/mL in Hexane	1 mL
U-RCP-028	1,2,3,5-Tetrachlorobenzene	100 mg
FL-36928-250MG	1,2,3,5-Tetrachlorobenzene OEKANAL®	250 mg
U-CH-220-1	1,2,4,5-Tetrachlorobenzene 100 µg/mL in Methylene chloride	1 mL
U-CH-220	1,2,4,5-Tetrachlorobenzene 100 µg/mL in Methylene chloride	4 x 1 mL
U-EPA-1160	1,2,4,5-Tetrachlorobenzene 1000 µg/mL in Acetonitrile	1 mL
U-RCP-029	1,2,4,5-Tetrachlorobenzene	100 mg
U-RPE-009	2,3',4,4'-Tetrachlorodiphenyl ether	10 mg
U-RPE-011	2,4,4',5-Tetrachlorodiphenyl ether	10 mg
U-RPE-010	3,3',4,4'-Tetrachlorodiphenyl ether	10 mg
U-HC-410-1	1,1,1,2-Tetrachloroethane 100 µg/mL in Methanol	1 mL
U-HC-410	1,1,1,2-Tetrachloroethane 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1047	1,1,1,2-Tetrachloroethane 5000 µg/mL in Methanol	1 mL
U-RHH-016	1,1,1,2-Tetrachloroethane	1 g
CERERT-038	1,1,1,2-Tetrachloroethane	1 g
FL-46254-5ML	1,1,1,2-Tetrachloroethane OEKANAL®	5 mL
U-EPA-1048	1,1,2,2-Tetrachloroethane 5000 µg/mL in Methanol	1 mL
U-HC-230-1	1,1,2,2-Tetrachloroethane 100 µg/mL in Methanol	1 mL
U-HC-230	1,1,2,2-Tetrachloroethane 100 µg/mL in Methanol	4 x 1 mL
U-RHH-017	1,1,2,2-Tetrachloroethane	1 g
FL-46259-5ML	1,1,2,2-Tetrachloroethane OEKANAL®	5 mL
U-HC-240-1	Tetrachloroethene 100 µg/mL in Methanol	1 mL
U-HC-240	Tetrachloroethene 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1049	Tetrachloroethene 5000 µg/mL in Methanol	1 mL
NIST-3010	Tetrachloroethene (mass fraction): 0.01 g/g	2 x 2.5 mL
U-RHH-023	Tetrachloroethene	1 g
CHE 07	Tetrachloroethene	1.5 mL
HXC 008	Tetrachloroguaiacol	1 g
U-RCP-016	2,3,4,5-Tetrachlorophenol	20 mg
CERERT-003	2,3,4,5-Tetrachlorophenol	100 mg
U-PH-250-1	2,3,4,6-Tetrachlorophenol 100 µg/mL in Methanol	1 mL
U-PH-250	2,3,4,6-Tetrachlorophenol 100 µg/mL in Methanol	4 x 1 mL
U-PST-950	2,3,4,6-Tetrachlorophenol	20 mg
CERERT-001	2,3,4,6-Tetrachlorophenol	100 mg

Miscellaneous individual analytes

	Code	Product	Unit
	U-RCP-018	2,3,5,6-Tetrachlorophenol	20 mg
	CERERT-004	2,3,5,6-Tetrachlorophenol	100 mg
	U-RHH-040	1,1,1,2-Tetrachloropropane	1 g
	U-RHH-041	1,1,1,3-Tetrachloropropane	1 g
	U-RHH-042	1,1,2,3-Tetrachloropropane	1 g
	U-RCN-010	1,2,3,4-Tetrachlorotetrahydronaphthalene	100 mg
	U-RCB-019	alpha,alpha,2,6-Tetrachlorotoluene	100 mg
	U-RCB-018	alpha,alpha,alpha,4-Tetrachlorotoluene	100 mg
	U-IST-440-1	2,4,5,6-Tetrachloro-m-xylene 2000 µg/mL in Acetone	1 mL
	U-IST-440	2,4,5,6-Tetrachloro-m-xylene 2000 µg/mL in Acetone	4 x 1 mL
	U-RCB-031	2,4,5,6-Tetrachloro-m-xylene	100 mg
	U-RNA-034	n-Tetracontane	100 mg
	FL-87086-250MG	Tetracontane puriss. p.a., standard for GC, > 98.5 % (GC)	250 mg
	U-RNA-013	n-Tetracosane	1 g
	U-RNA-005	n-Tetradecane	1 g
	CHE 154	Tetradecane	2 mL
	U-CFC-300-1	1,1,1,2-Tetrafluoroethane (Freon 134A) 100 µg/mL in Methanol	1 mL
	U-CFC-300	1,1,1,2-Tetrafluoroethane (Freon 134A) 100 µg/mL in Methanol	4 x 1 mL
	U-CFC-310-1	1,1,2,2-Tetrafluoroethane (Freon 134) 100 µg/mL in Methanol	1 mL
	U-CFC-310	1,1,2,2-Tetrafluoroethane (Freon 134) 100 µg/mL in Methanol	4 x 1 mL
	U-RCC-125	1,2,3,4-Tetrahydrocarbazole	100 mg
	U-EPA-1236	Tetrahydrofuran 1000 µg/mL in Methanol	1 mL
	U-RCC-199	Tetrahydrofuran	1 g
	U-RAB-009	1,2,3,4-Tetramethylbenzene	25 mg
	U-RAB-008	1,2,3,5-Tetramethylbenzene	100 mg
	U-RAB-010	1,2,4,5-Tetramethylbenzene (Durene)	100 mg
	U-FLHC-017	2,6,10,14-Tetramethylhexadecane	100 mg
	U-FLHC-016	2,6,10,14-Tetramethylpentadecane	100 mg
	U-RNA-035	n-Tetratetracontane (96%)	100 mg
	U-RNA-016	n-Tetratriacontane	100 mg
	ERT-053	Thiodiglycol (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	CIL-CLM-4806-1.2	Thiodiglycol ($^{13}C_4$,99%) 100 µg/mL in Methanol	1.2 mL
	ERT-054	Thiodiglycol (D_8,98%) 1000 µg/mL in Methanol	1.2 mL
	ERT-052	Thiodiglycol sulfoxide (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	U-RCC-121	Thiophene	1 g
	U-AM-160-1	Toluene 100 µg/mL in Methanol	1 mL
	U-AM-160	Toluene 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1050	Toluene 1000 µg/mL in Methanol	1 mL
	CERERT-014S	Toluene 5000 µg/mL in Methanol	1 mL
	NIST-3001	Toluene in Methanol (mass fraction): 0.01 g/g	2 x 2.5 mL
	U-RAB-001	Toluene	100 mg
	CHE USC 13	Toluene	2 mL
New	FL-89680-5ML	Toluene	5 mL
	U-ATS-170-1	Toluene-D_8 2000 µg/mL in Methylene chloride	1 mL
	U-ATS-170	Toluene-D_8 2000 µg/mL in Methylene chloride	4 x 1 mL
	U-STS-310-1	Toluene-D_8 2000 µg/mL in Methanol	1 mL
	U-STS-310	Toluene-D_8 2000 µg/mL in Methanol	4 x 1 mL
	FL-31566-250MG	m-Toluidine OEKANAL®	250 mg
	U-NH-250-1	o-Toluidine 100 µg/mL in Methanol	1 mL
	U-NH-250	o-Toluidine 100 µg/mL in Methanol	4 x 1 mL
	U-RCC-193	o-Toluidine	100 mg

Code	Product	Unit
FL-45979-250MG	o-Toluidine OEKANAL®	250 mg
U-PPS-240-1	Toxaphene 2500 µg/mL in Acetone	1 mL
U-PPS-240	Toxaphene 2500 µg/mL in Acetone	4 x 1 mL
U-RNA-030	n-Triacontane	100 mg
U-RCC-115	Triallyl phosphate	1 g
U-IST-420-1	1,3,5-Tribromobenzene 50 µg/mL in Acetone	1 mL
U-IST-420	1,3,5-Tribromobenzene 50 µg/mL in Acetone	4 x 1 mL
U-RBF-003	1,3,5-Tribromobenzene	100 mg
U-ATS-180-1	2,4,6-Tribromophenol 2000 µg/mL in Methylene chloride	1 mL
U-ATS-180	2,4,6-Tribromophenol 2000 µg/mL in Methylene chloride	4 x 1 mL
FL-36918-250MG	2,4,6-Tribromophenol OEKANAL®	250 mg
U-EPA-1238	Trichloroacetic acid 1000 µg/mL in Methyl tert-butyl ether	1 mL
U-EPA-1239A	Trichloroacetonitrile 1000 µg/mL in Acetone	1 mL
U-RCA-010	2,3,4-Trichloroaniline	100 mg
U-RCA-011	2,4,5-Trichloroaniline	100 mg
U-RCA-012	2,4,6-Trichloroaniline	100 mg
U-RCP-039	2,3,4-Trichloroanisole	100 mg
U-RCP-048	2,3,5-Trichloroanisole	50 mg
U-RCP-040	2,3,6-Trichloroanisole	100 mg
U-RCP-043	2,4,5-Trichloroanisole	50 mg
U-RCP-044	2,4,6-Trichloroanisole	50 mg
U-RCP-049	3,4,5-Trichloroanisole	50 mg
U-HC-420-1	1,2,3-Trichlorobenzene 100 µg/mL in Methanol	1 mL
U-HC-420	1,2,3-Trichlorobenzene 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1051	1,2,3-Trichlorobenzene 5000 µg/mL in Methanol	1 mL
U-RCP-024	1,2,3-Trichlorobenzene	100 mg
U-CH-190-1	1,2,4-Trichlorobenzene 100 µg/mL in Methanol	1 mL
U-CH-190	1,2,4-Trichlorobenzene 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1052	1,2,4-Trichlorobenzene 5000 µg/mL in Methanol	1 mL
U-RCP-025	1,2,4-Trichlorobenzene	100 mg
U-RBA-010	2,3,6-Trichlorobenzoic acid	100 mg
U-RPE-006	2,2',4-Trichlorodiphenyl ether	10 mg
U-RPE-008	2',3,4-Trichlorodiphenyl ether	10 mg
U-RPE-007	2,4,4'-Trichlorodiphenyl ether	10 mg
U-HC-250-1	1,1,1-Trichloroethane 100 µg/mL in Methanol	1 mL
U-HC-250	1,1,1-Trichloroethane 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1053	1,1,1-Trichloroethane 1000 µg/mL in Methanol	1 mL
NIST-3011	1,1,1-Trichloroethane in Methanol (mass fraction): 0.01 g/g	2 x 2.5 mL
U-HC-260-1	1,1,2-Trichloroethane 100 µg/mL in Methanol	1 mL
U-HC-260	1,1,2-Trichloroethane 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1054	1,1,2-Trichloroethane 5000 µg/mL in Methanol	1 mL
U-RHH-015	1,1,2-Trichloroethane	1 g
CHE 20	1,1,2-Trichloroethane	1.5 mL
U-HC-270-1	Trichloroethene 100 µg/mL in Methanol	1 mL
U-HC-270	Trichloroethene 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1055	Trichloroethene 1000 µg/mL in Methanol	1 mL
U-RHH-022	Trichloroethene	1 g
CHE 05	Trichloroethene	1.5 mL
FL-46267-5ML	Trichloroethene OEKANAL®	5 mL
U-HC-280-1	Trichlorofluoromethane 100 µg/mL in Methanol	1 mL
U-HC-280	Trichlorofluoromethane 100 µg/mL in Methanol	4 x 1 mL

Miscellaneous individual analytes

Code	Product	Unit
U-EPA-1056	Trichlorofluoromethane 5000 µg/mL in Methanol	1 mL
U-RPE-024	2,4,4'-Trichloro-2'-hydroxydiphenyl ether	50 mg
U-RCP-010	2,3,4-Trichlorophenol	20 mg
U-RCP-011	2,3,5-Trichlorophenol	20 mg
U-RCP-012	2,3,6-Trichlorophenol	20 mg
U-PH-260-1	2,4,5-Trichlorophenol 100 µg/mL in Methanol	1 mL
U-PH-260	2,4,5-Trichlorophenol 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1162	2,4,5-Trichlorophenol 5000 µg/mL in Methanol	1 mL
U-RCP-013	2,4,5-Trichlorophenol	20 mg
U-PH-200-1	2,4,6-Trichlorophenol 100 µg/mL in Methanol	1 mL
U-PH-200	2,4,6-Trichlorophenol 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1163	2,4,6-Trichlorophenol 5000 µg/mL in Methanol	1 mL
U-RCP-014	2,4,6-Trichlorophenol	20 mg
IPO P11	2,4,6-Trichlorophenol	100 mg
U-RCP-015	3,4,5-Trichlorophenol	20 mg
CERERT-039	3,4,5-Trichlorophenol	100 mg
U-HC-440-1	1,2,3-Trichloropropane 100 µg/mL in Methanol	1 mL
U-HC-440	1,2,3-Trichloropropane 100 µg/mL in Methanol	4 x 1 mL
U-PPS-250-1	1,2,3-Trichloropropane 1000 µg/mL in Methanol	1 mL
U-PPS-250	1,2,3-Trichloropropane 1000 µg/mL in Methanol	4 x 1 mL
U-PPS-251-1	1,2,3-Trichloropropane 1000 µg/mL in Methyl tert-butyl ether	1 mL
U-PPS-251	1,2,3-Trichloropropane 1000 µg/mL in Methyl tert-butyl ether	4 x 1 mL
U-EPA-1057	1,2,3-Trichloropropane 5000 µg/mL in Methanol	1 mL
NIST-3014	1,2,3-Trichloropropane in Methanol (mass fraction): 0.01 g/g	2 x 2.5 mL
U-RHH-039	1,2,3-Trichloropropane	1 g
FL-31711-5ML	1,2,3-Trichloropropane OEKANAL®	5 mL
U-EPA-1241	1,1,1-Trichloro-2-propanone 1000 µg/mL in Methanol	1 mL
U-RCB-013	2,3,6-Trichlorotoluene	100 mg
U-RCB-012	2,4,5-Trichlorotoluene	100 mg
U-RCB-015	alpha,2,4-Trichlorotoluene	100 mg
U-RCB-014	alpha,2,6-Trichlorotoluene	100 mg
U-RCB-016	alpha,3,4-Trichlorotoluene	100 mg
U-HC-480-1	1,1,2-Trichlorotrifluoroethane 100 µg/mL in Methanol	1 mL
U-HC-480	1,1,2-Trichlorotrifluoroethane 100 µg/mL in Methanol	4 x 1 mL
U-RNA-025	n-Tricosane	1 g
U-RNA-004	n-Tridecane	1 g
CHE 153	Tridecane	2 mL
New FL-91490-5ML	n-Tridecane	5 mL
U-CFC-140-1	Trifluoromethane (Freon 23) 100 µg/mL in Methanol	1 mL
U-CFC-140	Trifluoromethane (Freon 23) 100 µg/mL in Methanol	4 x 1 mL
U-STS-221-1	alpha,alpha,alpha-Trifluorotoluene 200 µg/mL in Methanol	1 mL
U-STS-221	alpha,alpha,alpha-Trifluorotoluene 200 µg/mL in Methanol	4 x 1 mL
U-RAB-006	1,2,3-Trimethylbenzene	100 mg
CHE 130	1,2,3-Trimethylbenzene	2 mL
FL-45935-250MG	1,2,3-Trimethylbenzene OEKANAL®	250 mg
U-AM-280-1	1,2,4-Trimethylbenzene 100 µg/mL in Methanol	1 mL
U-AM-280	1,2,4-Trimethylbenzene 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1058	1,2,4-Trimethylbenzene 5000 µg/mL in Methanol	1 mL
U-RAB-005	1,2,4-Trimethylbenzene	100 mg
CHE 129	1,2,4-Trimethylbenzene	2 mL
U-AM-290-1	1,3,5-Trimethylbenzene 100 µg/mL in Methanol	1 mL

	Code	Product	Unit
	U-AM-290	1,3,5-Trimethylbenzene 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1059	1,3,5-Trimethylbenzene 5000 µg/mL in Methanol	1 mL
	U-RAB-007	1,3,5-Trimethylbenzene (Mesitylene)	100 mg
	CHE 128	1,3,5-Trimethylbenzene	2 mL
	U-NAI-170-1	1,3,5-Trinitrobenzene 100 µg/mL in Methanol	1 mL
	U-NAI-170	1,3,5-Trinitrobenzene 100 µg/mL in Methanol	4 x 1 mL
	U-RNH-106	2,4,7-Trinitro-9-fluorenone	25 mg
	FL-45804-100MG	Triphenylene OEKANAL®	100 mg
	U-PPS-110-1	Triphenyl phosphate (TPP) 500 µg/mL in Methyl tert-butyl ether (MTBE)	1 mL
	U-PPS-110	Triphenyl phosphate (TPP) 500 µg/mL in Methyl tert-butyl ether (MTBE)	4 x 1 mL
	U-RNA-002	n-Undecane	1 g
	CHE 139	n-Undecane	2 mL
New	FL-94000-5ML	n-Undecane	5 mL
	U-RGO-609-1	Unleaded Premium Gasoline Standard 5000 µg/mL in Methylene chloride	1 mL
	U-RGO-609	Unleaded Premium Gasoline Standard 5000 µg/mL in Methylene chloride	4 x 1 mL
	U-RGO-608-1	Unleaded Regular Gasoline Standard 5000 µg/mL in Methylene chloride	1 mL
	U-RGO-608	Unleaded Regular Gasoline Standard 5000 µg/mL in Methylene chloride	4 x 1 mL
	U-NV-240B-1	Vinyl acetate 100 µg/mL in Acetonitrile	1 mL
	U-NV-240B	Vinyl acetate 100 µg/mL in Acetonitrile	4 x 1 mL
	U-EPA-1060	Vinyl acetate 5000 µg/mL in Acetonitrile	1 mL
	U-RCC-218	Vinyl acetate	100 mg
	U-HC-290-1	Vinyl chloride 100 µg/mL in Methanol	1 mL
	U-HC-290	Vinyl chloride 100 µg/mL in Methanol	4 x 1 mL
New	U-EPA-1250	Vinylchloride 1000 µg/mL in Methanol	1 mL
	U-RCC-094	4-Vinylcyclohexene dioxide	1 g
	U-AM-300-1	o-Xylene 100 µg/mL in Methanol	1 mL
	U-AM-300	o-Xylene 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1061	o-Xylene 5000 µg/mL in Methanol	1 mL
	CERERX-011S	o-Xylene 5000 µg/mL in Methanol	1.2 mL
	NIST-3003	o-Xylene in Methanol (mass fraction): 0.01 g/g	2 x 2.5 mL
	U-RAB-002	o-Xylene	100 mg
	CHE USC 14	o-Xylene	2 mL
	U-AM-310-1	m-Xylene 100 µg/mL in Methanol	1 mL
	U-AM-310	m-Xylene 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1062	m-Xylene 1000 µg/mL in Methanol	1 mL
	CERERX-012S	m-Xylene 5000 µg/mL in Methanol	1.2 mL
	NIST-3004	m-Xylene in Methanol (mass fraction): 0.01 g/g	2 x 2.5 mL
	U-RAB-003	m-Xylene	100 mg
	CHE USC 15	m-Xylene	2 mL
New	FL-95670-5ML	m-Xylene	5 mL
	U-AM-320-1	p-Xylene 100 µg/mL in Methanol	1 mL
	U-AM-320	p-Xylene 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1063	p-Xylene 5000 µg/mL in Methanol	1 mL
	CERERX-002S	p-Xylene 5000 µg/mL in Methanol	1.2 mL
	NIST-3005	p-Xylene in Methanol (mass fraction): 0.01 g/g	2 x 2.5 mL
	U-RAB-004	p-Xylene	100 mg
	CHE USC 16	p-Xylene	2 mL
New	FL-95680-5ML	p-Xylene, (99.5%, GC)	5 mL
	CERERC-054S	1-Chloro-2-fluorobenzene 5000 µg/mL in Methanol	1.2 mL

ULTRA QuECh™ Standards

The QuEChERS method was introduced in 2003 by Anastassiades, Lehotay, et. al. and thereafter codified in two methods: EN 15662 and AOC 2007.1. It is an acronym for Quick, Easy, Cheap, Effective, Rugged and Safe. The four-step process requires homogenization of the food sample, partitioning of the pesticide analytes into an organic phase and final cleanup by a dispersive solid phase extraction. The supernatant is ready to be analyzed by GC/MS or HPLC.

EN 15662 & Mini-Multiresidue Method

	Code	Product	Unit
New	U-PPS-490X	QuEChERS PCB 52 Standard, 50 µg/mL in Acetonitrile	5 mL
New	U-PPS-500X	QuEChERS Triphenyl phosphate Standard, 20 µg/mL in Acetonitrile	5 mL
New	U-PPS-510X	QuEChERS Tris-(1,3-dichloroisopropyl) phosphate Standard, 50 µg/mL in Acetonitrile	5 mL
New	U-PPS-520X	QuEChERS Triphenylmethane Standard, 10 µg/mL in Acetonitrile	5 mL
New	U-PPS-530X	QuEChERS Bis-nitrophenyl urea Standard, 10 µg/mL in Acetonitrile	5 mL
New	U-PPS-560X	QuEChERS PCB 138 QC Standard, 50 µg/mL in Acetonitrile	5 mL
New	U-PPS-570X	QuEChERS PCB 153 QC Standard, 50 µg/mL in Acetonitrile	5 mL
New	U-PPS-580X	QuEChERS Anthracene-D_{10} QC Standard, 100 µg/mL in Acetonitrile	5 mL
New	U-PPS-590X	QuEChERS Anthracene QC Standard, 100 µg/mL in Acetonitrile	5 mL
New	U-PPS-600X	QuEChERS IS Mixture #5 in Acetonitrile 6 analytes PCB 28 ..... 50 µg/mL; PCB 18 ..... 50 µg/mL; PCB 52 ..... 50 µg/mL; Triphenyl phosphate ..... 20 µg/mL; Triphenylmethane ..... 10 µg/mL; Tris-(1,3-dichloroisopropyl) phosphate ..... 50 µg/mL	5 mL
New	U-PPS-603X	QuEChERS IS Mixture #2 in Acetonitrile 2 analytes Triphenyl phosphate ..... 20 µg/mL; Tris-(1,3-Dichloroisopropyl) phosphate ..... 20 µg/mL	5 mL
New	U-PPS-630X	QuEChERS QC Mixture #2 in Acetonitrile 2 analyes PCB 153 .....50 µg/mL; PCB 138.....50 µg/mL	5 mL
New	U-PPS-602-1	QuEChERS IS Mixture #3 in Acetonitrile (concentrate) 3 analytes PCB 52 ..... 5000 µg/mL; Triphenylmethane ..... 1000 µg/mL; Tris-(1,3-dichloroisopropyl) phosphate ..... 5000 µg/mL	1 mL
New	U-PPS-602	QuEChERS IS Mixture #3 in Acetonitrile (concentrate)	4 x 1 mL
New	U-PPS-604-1	QuEChERS IS Mixture #1 in Acetonitrile 2 analytes Nicarbacin..... 10 µg/mL; Tris-(1,3-dichloroisopropyl) phosphate ..... 50 µg/mL	1 mL
New	U-PPS-604	QuEChERS IS Mixture #1 in Acetonitrile	4 x 1 mL
New	U-PPS-620-1	QuEChERS QC Mixture #1 in Acetonitrile 2 analytes PCB 138 .....50 µg/mL; Anthracene-D_{10}.....100 µg/mL	1 mL
New	U-PPS-620	QuEChERS QC Mixture #1 in Acetonitrile	4 x 1 mL
New	U-PPS-480X	QuEChERS PCB 28 Standard, 50 µg/mL in Acetonitrile	5 mL
New	U-PPS-470X	QuEChERS PCB 18 Standard, 50 µg/mL in Acetonitrile	5 mL
New	U-PPS-460X	QuEChERS PCB 8 Standard, 50 µg/mL in Acetonitrile	5 mL
New	U-PPS-601X	QuEChERS IS Mixture #4 in Acetonitrile 4 analytes PCB 28 ..... 50 µg/mL; PCB 18 ..... 50 µg/mL; PCB 52 ..... 50 µg/mL; Tris-(1,3-dichloroisopropyl) phosphate ..... 50 µg/mL	5 mL

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New	U-PPS-610-1	QuEChERS IS Mixture #6 in Acetonitrile 2 analytes alpha-HCH-D_6 (alpha-BHC-D_6)..... 20 µg/mL; Parathion-D_{10} (diethyl-D_{10}) ..... 20 µg/mL	1 mL
New	U-PPS-610	QuEChERS IS Mixture #6 in Acetonitrile	4 x 1 mL
New	U-PPS-501	QuEChERS Triphenyl phosphate Standard (concentrate), 500 µg/mL in Acetonitrile	4 x 1 mL
New	U-PPS-501-1	QuEChERS Triphenyl phosphate Standard (concentrate), 500 µg/mL in Acetonitrile	1 mL
New	U-PPS-540X	QuEChERS Parathion-D_{10} (diethyl-D_{10}) QC Standard, 40 µg/mL in Acetonitrile	5 mL
New	U-PPS-550X	QuEChERS alpha-HCH-D_6 (alpha-BHC-D_6) QC Standard, 40 µg/mL in Acetonitrile	5 mL

Standards for the Italian Environmental Regulation DM 471

DM471 is an Italian environmental regulation used primarily for the detection of organic and inorganic pollutants in soil. DM471 was included in D.L. 152/06, the recognized Italian regulation for environmental analysis of soil, water, emissions, etc. Various labs around the globe that used EPA Method 8270C for the analysis have now switched to DM471.

Code	Product				Unit
U-D471-A-1	Method DM 471 Standard Mixture 1				1 mL
	1000 µg/mL of each analyte in Methanol				
	Benzene		Toluene		
	Ethylbenzene		o-Xylene		
	Styrene		m-Xylene		
	tert-Butylmethyl ether (MTBE)		p-Xylene		
U-D471-A	Method DM 471 Standard Mixture 1				4 x 1 mL
U-D471-B-1	Method DM 471 Standard Mixture 2				1 mL
	10 µg/mL of each analyte in Methanol				
	Benzene		Toluene		
	Ethylbenzene		o-Xylene		
	Styrene		m-Xylene		
	tert-Butylmethyl ether (MTBE)		p-Xylene		
U-D471-B	Method DM 471 Standard Mixture 2				4 x 1 mL
U-D471-C-1	Method DM 471 Standard Mixture 3				1 mL
	10 µg/mL of each analyte in Methanol				
	Aniline	o-Toluidine	m-Anisidine	p-Toluidine	
	Diphenylamine	o-Anisidine	p-Anisidine		
U-D471-C	Method DM 471 Standard Mixture 3				4 x 1 mL
U-D471-D-1	Method DM 471 Standard Mixture 4				1 mL
	500 µg/mL of each analyte in Methanol				
	n-Pentane	n-Heptane	n-Nonane	n-Undecane	
	n-Hexane	n-Octane	n-Decane	n-Dodecane	
U-D471-D	Method DM 471 Standard Mixture 4				4 x 1 mL
U-D471-E-1	Method DM 471 Standard Mixture 5				1 mL
	100 µg/mL of each analyte in Methanol				
	Aniline	o-Toluidine	m-Anisidine	p-Toluidine	
	Diphenylamine	o-Anisidine	p-Anisidine		
U-D471-E	Method DM 471 Standard Mixture 5				4 x 1 mL
U-D471-F-1	Method DM 471 Standard Mixture 6				1 mL
	100 µg/mL of each analyte in Methanol				
	Chlorobenzene		1,2,4-Trichlorobenzene		
	1,2-Dichlorobenzene		1,2,4,5-Tetrachlorobenzene		
	1,3-Dichlorobenzene		Pentachlorobenzene		
	1,4-Dichlorobenzene		Hexachlorobenzene		
U-D471-F	Method DM 471 Standard Mixture 6				4 x 1 mL
U-D471-G-1	Method DM 471 Standard Mixture 7				1 mL
	100 µg/mL of each analyte in Methanol				
	2-Chlorophenol	2,4,6-Trichlorophenol	o-Cresol (2-Methylphenol)		
	4-Chlorophenol	Pentachlorophenol	m-Cresol (3-Methylphenol)		
	2,4-Dichlorophenol	Phenol	p-Cresol (4-Methylphenol)		
U-D471-G	Method DM 471 Standard Mixture 7				4 x 1 mL
U-D471-H-1	Method DM 471 Standard Mixture 8				1 mL
	100 µg/mL of each analyte in Methanol				
	Chloromethane		Methylene chloride (Dichloromethane)		
	Chloroform		Bromoform		
	Vinyl chloride		1,2-Dibromoethane (EDB)		
	1,2-Dichloroethane		Dibromochloromethane		
	1,1-Dichloroethene		Bromodichloromethane		
	1,1-Dichloroethane		1,2-Dichloropropane		
	trans-1,2-Dichloroethene				
U-D471-H	Method DM 471 Standard Mixture 8				4 x 1 mL
U-D471-L-1	Method DM 471 Standard Mixture 9				1 mL
	100 µg/mL of each analyte in Methanol				
	Nitrobenzene		1-Chloro-3-nitrobenzene		
	1,2-Dinitrobenzene		1-Chloro-4-nitrobenzene		
	m-Dinitrobenzene		2,5-Dichloronitrobenzene		
	1-Chloro-2-nitrobenzene		3,4-Dichloronitrobenzene		

Code	Product	Unit
U-D471-L	Method DM 471 Standard Mixture 9	4 x 1 mL
U-D471-I-1	Method DM 471 Standard Mixture 10 100 µg/mL of each analyte in Methanol 1,1,2-Trichloroethane; Trichloroethene; 1,2,3-Trichloropropane; 1,1,2,2-Tetrachloroethane; Tetrachloroethene; Hexachlorobutadiene; 1,1,1-Trichloroethane	1 mL
U-D471-I	Method DM 471 Standard Mixture 10	4 x 1 mL
U-PAH-471-1	Method DM 471 PAH Standard 10 µg/mL of each analyte in Acetonitrile Benzo[a]pyrene; Benzo[b]fluoranthene; Benzo[ghi]perylene; Benz[a]anthracene; Benzo[k]fluoranthene; Chrysene; Dibenz[a,h]anthracene; Indeno[1,2,3-cd]pyrene; Pyrene; Dibenzo[a,e]pyrene; Dibenzo[a,i]pyrene; Dibenzo[a,h]pyrene; Dibenzo[a,l]pyrene	1 mL
U-PAH-471	Method DM 471 PAH Standard	4 x 1 mL
U-P-791-1	Dibenzo[a,l]pyrene 200 µg/mL in Dichloromethane	1 mL
U-P-791	Dibenzo[a,l]pyrene 200 µg/mL in Dichloromethane	4 x 1 mL
U-P-801-1	Dibenzo[a,e]pyrene 200 µg/mL in Dichloromethane	1 mL
U-P-801	Dibenzo[a,e]pyrene 200 µg/mL in Dichloromethane	4 x 1 mL
U-P-821-1	Dibenzo[a,h]pyrene 200 µg/mL in Dichloromethane	1 mL
U-P-801	Dibenzo[a,e]pyrene 200 µg/mL in Dichloromethane	4 x 1 mL
U-PPM-471-1	Method DM 471 Pesticides Standard 100 µg/mL of each analyte in Acetone Alachlor; Aldrin; Atrazine; alpha-BHC (alpha-HCH); beta-BHC (beta-HCH); gamma-BHC (Lindane); Chlordane; 2,4'-DDD; 4,4'-DDD; 2,4'-DDE; 4,4'-DDE; 2,4'-DDT; 4,4'-DDT; Dieldrin; Endrin	1 mL
U-PPM-471	Method DM 471 Pesticides Standard	4 x 1 mL

Organotin compounds

As a result of their antibacterial and fungicidal properties organotin compounds have, for many years, been used as preservatives for wood, textiles, leather, and paper, and as a disinfectant in cooling water systems. In agriculture they have been used as acaricides for the treatment of algal infestation in rice and potato rot. The high toxicity of organotin compounds to a wide variety of aquatic organisms including fish, oysters and mussels has led to a ban on such compounds in marine antifouling paints in a growing number of countries. In the environment the more toxic trialkyl tin compounds are broken down by UV light to the di- and monoalkyl tin compounds.

Code	Product	Unit
CRO-TF 03435-3X	Dimethyltin dichloride	3 x 100 mg
DE-MS-03436-0.3	Tripropyltin chloride	300 mg
DE-MS-02122-0.3	Tetrapropyltin	300 mg
DE-MS-03437-0.3	Monobutyltin trichloride	300 mg
DE-MS-03438-0.3	Dibutyltin dichloride	300 mg
DE-MS-03439-0.3	Tributyltin chloride	300 mg
CIL-ULM-8061-1.2	Tributyltin chloride 100 µg/mL in Methylene chloride	1.2 mL
CIL-DLM-7136-1.2	Tributyltin chloride (D_{27},98%) 100 µg/mL in Methylene chloride-D_2	1.2 mL
DE-MS-03435-0.3	Tetrapentyltin	300 mg
DE-MS-03441	Monoheptyltin trichloride (internal standard)	300 mg
DE-MS-03442-0.3	Diheptyltin dichloride (internal standard)	300 mg
DE-MS-03443-0.3	Monooctyltin trichloride	300 mg
DE-MS-03444	Dioctyltin dichloride	300 mg
CRO-TF 03446-3X	Tetraoctyltin	3 x 100 mg
DE-MS-03447-0.3	Tricyclohexyltin chloride	300 mg
DE-MS-03448-0.3	Triphenyltin chloride	300 mg

Code	Product	Unit

Organotin mixtures

Code	Product	Unit
SL31000	Organotin Mix 8 - Stock solution (DIN EN ISO 17353) DIN 38407-F13 - Determination of selected organotin compounds by gas chromatography. Each 1 mg/mL of the organotin cation in Methanol Monobutyltin trichloride; Monooctyltin trichloride; Di-n-butyltin dichloride; Dioctyltin dichloride; Tributyltin chloride; Triphenyltin chloride; Tetrabutyltin; Tricyclohexyltin chloride	100 mL
SL31005	Organotin Mix 8 - Stock solution (DIN EN ISO 17353) CERTAN® DIN 38407-F13 - Determination of selected organotin compounds by gas chromatography. Each 1 mg/mL of the organotin cation in Methanol Monobutyltin trichloride; Monooctyltin trichloride; Di-n-butyltin dichloride; Dioctyltin dichloride; Tributyltin chloride; Triphenyltin chloride; Tetrabutyltin; Tricyclohexyltin chloride	10 mL
SL31010	Organotin Mix 4 - Internal standard (DIN EN ISO 17353) DIN 38407-F13 - Determination of selected organotin compounds by gas chromatography. Each 1 mg/mL of the organotin cation in Methanol Monoheptyltin trichloride; Tripropyltin chloride; Diheptyltin dichloride; Tetrapropyltin	100 mL
SL31015	Organotin Mix 4 - Internal standard (DIN EN ISO 17353) CERTAN® DIN 38407-F13 - Determination of selected organotin compounds by gas chromatography. Each 1 mg/mL of the organotin cation in Methanol Monoheptyltin trichloride; Tripropyltin chloride; Diheptyltin dichloride; Tetrapropyltin	10 mL
IES-MDT119	^{119}Sn-enriched Butyltin Mix Solvent: Acetic acid/ methanol (3:1) Monobutytin (^{119}Sn,82.4%) ..... 0.110 ± 0.005 µg/g as Sn Dibutyltin (^{119}Sn,82.4%) ..... 0.691 ± 0.009 µg/g as Sn Tributyltin (^{119}Sn,82.4%) ..... 1.046 ± 0.020 µg/g as Sn Isotopic composition	1 mL

Isotope	Sn-112	Sn-114	Sn-115	Sn-117	Sn-118	Sn-119	Sn-120	Sn-122	Sn-124
Content (%)	<0.01	<0.01	<0.01	0.114	14.33	82.40	3.13	<0.01	<0.01

Derivatisation reagents

Code	Product	Unit
DE-MS-03402S-5	Sodium tetraethylborate 20% in THF	5 g
DE-MS-03402S-25	Sodium tetraethylborate 20% in THF	25 g
DE-MS-03402S-5x	Sodium tetraethylborate 20% in THF	5 x 25 g
DE-MS-03401-1*	Sodium tetraethylborate	1 g
DE-MS-03401-5*	Sodium tetraethylborate	5 g
DE-MS-03401-25*	Sodium tetraethylborate	25 g
DE-MS-03415S-5	Sodium tetra-n-propylborate 20% in THF	5 g
DE-MS-03415S-25	Sodium tetra-n-propylborate 20% in THF	25 g
DE-MS-03410-1	Sodium tetra-n-propylborate	1 g
DE-MS-03410-5	Sodium tetra-n-propylborate	5 g

*Sodium tetraethylborate and Sodium tetra-n-propylborate is not available in all countries. Please contact your local office for more details.

Aldehydes / Ketones-DNPH standards

Code	Product	Unit
CERERA-012	Acetaldehyde-DNPH	10 mg
BCR-547	Acetaldehyde-2,4-dinitrophenylhydrazone Certified purity..... 98.3 %	10 mg
CERERA-024S	Acetaldehyde-DNPH 500 µg/mL* in Acetonitrile	1.2 mL
CERERA-011	Acetone-DNPH	10 mg
BCR-549	Acetone-2,4-dinitrophenylhydrazone Certified purity..... > 99.6 %	10 mg
CERERA-025S	Acetone-DNPH 500 µg/mL* in Acetonitrile	1.2 mL
CERERA-021	Acetophenone-DNPH	10 mg

Aldehydes / Ketones-DNPH standards

Code	Product	Unit
CERERA-014	Acrolein-DNPH	10 mg
BCR-548	Acrolein-2,4-dinitrophenylhydrazone Certified purity.....> 97.9 %	10 mg
CERERB-017	Benzaldehyde-DNPH	10 mg
CERERB-026S	Benzaldehyde-DNPH 100 µg/mL* in Acetonitrile	1.2 mL
CERERB-023	1,4-Benzoquinone-DNPH (mono)	10 mg
CERERB-016	2-Butanone (MEK)-DNPH	10 mg
CERERB-028S	2-Butanone (MEK)-DNPH 100 µg/mL* in Methanol	1.2 mL
CERERB-018	n-Butyraldehyde-DNPH	10 mg
CERERB-029S	n-Butyraldehyde-DNPH 500 µg/mL* in Acetonitrile	1.2 mL
CERERC-006	Crotonaldehyde-DNPH	10 mg
CERERC-011S	Crotonaldehyde-DNPH 100 µg/mL* in Acetonitrile	1.2 mL
CERERC-016	Cyclohexanone-DNPH	10 mg
CERERD-030	2,5-Dimethylbenzaldehyde-DNPH	10 mg
CERERD-035S	2,5-Dimethylbenzaldehyde-DNPH 500 µg/mL* in Acetonitrile	1.2 mL
CERERF-003	Formaldehyde-DNPH	10 mg
BCR-546	Formaldehyde-2,4-dinitrophenylhydrazone Certified purity..... > 0.993	10 mg
CERERF-004S	Formaldehyde-DNPH 100 µg/mL* in Acetonitrile	1.2 mL
CERERF-005S	Formaldehyde-DNPH 500 µg/mL* in Acetonitrile	1.2 mL
CERERG-002	Glutaraldehyde-DNPH	10 mg
BCR-550	Glutaraldehyde-2,4-dinitrophenylhydrazone Certified purity.....> 98.1 %	10 mg
CERERH-011	Heptaldehyde-DNPH	10 mg
CERERI-003	Isobutyraldehyde-DNPH	10 mg
CERERI-005	Isophorone-DNPH	10 mg
CERERI-004	Isovaleraldehyde-DNPH	10 mg
CERERI-009S	Isovaleraldehyde-DNPH 500 µg/mL* in Acetonitrile	1.2 mL
CERERM-002	Methacrolein-DNPH	10 mg
CERERM-022S	Methacrolein-DNPH 100 µg/mL* in Acetonitrile	1.2 mL
CERERM-020	Methyl isobutyl ketone-DNPH	10 mg
CERERM-023S	Methyl isobutyl ketone-DNPH 500 µg/mL* in Acetonitrile	1.2 mL
CERERM-024	Methyl isopropyl ketone-DNPH	10 mg
CERERP-005	Propionaldehyde-DNPH	10 mg
CERERP-030S	Propionaldehyde-DNPH 500 µg/mL* in Acetonitrile	1.2 mL
CERERT-007	m-Tolualdehyde-DNPH	10 mg
CERERT-027S	m-Tolualdehyde-DNPH 100 µg/mL* in Acetonitrile	1.2 mL
CERERT-012	o-Tolualdehyde-DNPH	10 mg
CERERT-011	p-Tolualdehyde-DNPH	10 mg
CERERV-001	Valeraldehyde-DNPH	10 mg

*as aldehyde or ketone

Code	Product	Unit
BCR-551-2	2,4-Dinitrophenylhydrazones in Acetonitrile	set

Each set consists of 4 samples of BCR-551 and 1 sample of BCR-552

BCR 551 2,4-Dinitrophenylhydrazones in Acetonitrile

Compound	Certified value (µg/mL)	Uncertainty (µg/mL)
Formaldehyde-DNPH	2.94	0.05
Acetaldehyde-DNPH	4.89	0.07
Acrolein-DNPH	0.483	0.011
Acetone-DNPH	4.69	0.07

BCR-552 2,4-Dinitrophenylhydrazones in a solution of 2,4-Dinitrophenylhydrazine (blank)

Compound	Certified value (µg/mL)
Formaldehyde-DNPH	<0.08
Acetaldehyde-DNPH	<0.05
Acrolein-DNPH	<0.04
Acetone-DNPH	<0.05

CERERA-020	Aldehyde/Ketone-DNPH Standard Solution	1.2 mL

(15 compounds)

15 µg/mL (as Aldehyde/Ketone) of each analyte in Acetonitrile

Acetaldehyde-DNPH
Acetone-DNPH
Acrolein-DNPH
Benzaldehyde-DNPH
n-Butyraldehyde-DNPH
Crotonaldehyde-DNPH
2,5-Dimethylbenzaldehyde-DNPH
Formaldehyde-DNPH
Hexaldehyde-DNPH
Isovaleraldehyde-DNPH
Propionaldehyde-DNPH
o-Tolualdehyde-DNPH
p-Tolualdehyde-DNPH
m-Tolualdehyde-DNPH
Valeraldehyde-DNPH

CERERA-028	Aldehyde/Ketone-DNPH Standard Solution	1.2 mL

(13 compounds)

15 µg/mL (as Aldehyde/Ketone) of each analyte in Acetonitrile

Acetaldehyde-DNPH
Acetone-DNPH
Acrolein-DNPH
Benzaldehyde-DNPH
2-Butanone-DNPH
n-Butyraldehyde-DNPH
Crotonaldehyde-DNPH
Formaldehyde-DNPH
Hexaldehyde-DNPH
Methacrolein-DNPH
Propionaldehyde-DNPH
m-Tolualdehyde-DNPH
Valeraldehyde-DNPH

CERERA-013K	Aldehyde/Ketone-DNPH Working Standard Solution	5 x 1.2 mL

(13 compounds)

3 µg/mL (as Aldehyde/Ketone) of each analyte in Acetonitrile

Acetaldehyde-DNPH
Acetone-DNPH
Acrolein-DNPH
Benzaldehyde-DNPH
2-Butanone-DNPH
n-Butyraldehyde-DNPH
Crotonaldehyde-DNPH
Formaldehyde-DNPH
Hexaldehyde-DNPH
Methacrolein-DNPH
Propionaldehyde-DNPH
m-Tolualdehyde-DNPH
Valeraldehyde-DNPH

CERERA-037	Aldehyde/Ketone-DNPH Check Standard Solution	5 x 1.2 mL

(13 compounds)

1 µg/mL (as Aldehyde/Ketone) of each analyte in Acetonitrile

Acetaldehyde-DNPH
Acetone-DNPH
Acrolein-DNPH
Benzaldehyde-DNPH
2-Butanone-DNPH
n-Butyraldehyde-DNPH
Crotonaldehyde-DNPH
Formaldehyde-DNPH
Hexaldehyde-DNPH
Methacrolein-DNPH
Propionaldehyde-DNPH
m-Tolualdehyde-DNPH
Valeraldehyde-DNPH

CERERA-070	A/K-DNPH Standard Solution-8	1.2 mL

(8 compounds)

15 µg/mL (as Aldehyde/Ketone) of each analyte in Acetonitrile

Acetaldehyde-DNPH
Acetone-DNPH
Acrolein-DNPH
2-Butanone-DNPH
Formaldehyde-DNPH
Methacrolein-DNPH
Methyl Isobutyl Ketone-DNPH
Propionaldehyde-DNPH

CERERA-077	Aldehyde/Ketone-DNPH Stock Standard	1.2 mL

(7 compounds)

15 µg/mL (as Aldehyde/Ketone) of each analyte in Acetonitrile

Acetaldehyde-DNPH
Acetone-DNPH
Acrolein-DNPH
2-Butanone-DNPH
Formaldehyde-DNPH
Methyl Isobutyl Ketone-DNPH
Propionaldehyde-DNPH

Cyanobacterial toxins

Code	Product	Unit
CERERA-030	Aldehyde/Ketone-DNPH Calibration KIT-15	kit

Each kit contains one 3.0 mL ampoule of C1, C2, C3, C4 and C5.

Solvent: Acetonitrile

Concentrations (µg/mL) as Aldehyde or Ketone

Analytes	C1	C2	C3	C4	C5
Acetaldehyde-DNPH	0.01	0.02	0.05	0.10	0.50
Acetone-DNPH	0.01	0.02	0.05	0.10	0.50
Acrolein-DNPH	0.01	0.02	0.05	0.10	0.50
Benzaldehyde-DNPH	0.01	0.02	0.05	0.10	0.50
n-Butyraldehyde-DNPH	0.01	0.02	0.05	0.10	0.50
Crotonaldehyde-DNPH	0.01	0.02	0.05	0.10	0.50
2,5-Dimethylbenzaldehyde-DNPH	0.01	0.02	0.05	0.10	0.50
Formaldehyde-DNPH	0.01	0.02	0.05	0.10	0.50
Hexaldehyde-DNPH	0.01	0.02	0.05	0.10	0.50
Isovaleraldehyde-DNPH	0.01	0.02	0.05	0.10	0.50
Propionaldehyde-DNPH	0.01	0.02	0.05	0.10	0.50
m-Tolualdehyde-DNPH	0.01	0.02	0.05	0.10	0.50
o-Tolualdehyde-DNPH	0.01	0.02	0.05	0.10	0.50
p-Tolualdehyde-DNPH	0.01	0.02	0.05	0.10	0.50
Valeraldehyde-DNPH	0.01	0.02	0.05	0.10	0.50

Cyanobacterial toxins

	Code	Product	Unit
	NRCCRM-CYN	Cylindrospermopsin solution Each ampoule contains approximately 0.5 mL of solution with 30 ± 2 mmoles/L (12.6 ± 0.8 µg/L at 20 °C) of cylindrospermopsin in filtered, deionized water.	0.5 mL
	MCLR-A	Microcystin-LR 10 µg/mL in Methanol	1 mL
	MCRR-A	Microcystin-RR 10 µg/mL in Methanol	1 mL
New	MCRR-P1ML	[D-Asp3,(E)-Dhb7]-Microcystin RR from Planktothrix sp. 10 µg/mL in Methanol	1 mL
	MCYR-A	Microcystin-YR 10 µg/mL in Methanol	1 mL
New	MCNOD-1ML	Nodularin 10 µg/mL in Methanol	1 mL
	MC-MAS	Microcystin Mix Solvent: Methanol Microcystin-LR 5 µg/mL Microcystin-RR 5 µg/mL Microcystin-YR 5 µg/mL	1 mL

Test mixtures for GC and LC

GC column test mixtures

Code	Product	Unit
U-KGCC-101	Capillary Column Test Mixture	2 mL

12 analytes in Methylene chloride (Dichloromethane)

Methyl decanoate	0.423 µg/µL	2,6-Dimethylphenol	0.320 µg/µL
Methyl undecanoate	0.419 µg/µL	Dicyclohexylamine	0.313 µg/µL
Methyl dodecanoate	0.413 µg/µL	2-Ethylhexanoic acid	0.380 µg/µL
Nonanal	0.400 µg/µL	1-Octanol	0.355 µg/µL
2,3-Butanediol	0.530 µg/µL	n-Undecane	0.287 µg/µL
2,6-Dimethylaniline	0.320 µg/µL	n-Decane	0.283 µg/µL

GC detector test mixtures

U-FIDM	Flame Ionization Detector Test Mixture	3 x 1 mL

Solvent: Hexane

n-Tetradecane	0.033 % (w/w)
n-Pentadecane	0.033 % (w/w)
n-Hexadecane	0.033 % (w/w)

U-ECDM	Electron Capture Detector Test Mixture	3 x 1 mL

Solvent: iso-Octane (2,2,4-Trimethylpentane)

Aldrin	33 pg/µL
gamma-HCH (Lindane)	33 pg/µL

GC/MS calibration

New	U-GCS-200	Perfluorotributylamine (FC-43)	2 mL

Code	Product	Unit

GC/MS system performance

NIST-1543	GC/MS system performance This Standard Reference Material (SRM®) is intended primarily for use in evaluating the sensitivity of gas chromatography/mass spectrometry (GC/MS) instrumentation. NIST-1543 consists of four solutions; two concentrations of methyl stearate in hexane and two concentrations of benzphenone in hexane.	set (4)

LC test mixtures

NIST-870	Column performance test mixture for liquid chromatography 5 x 1.1 mL NIST-870 is a mixture of five organic compounds in methanol intended for use in characterising general aspects of liquid chromatographic (LC) column performance, including efficiency, void volume, methylene selectivity, retentiveness, and activity toward chelators and organic bases. Other possible uses include column classification to aid column selection during method development, as a control material for monitoring LC column performance over time, and in quality control for column manufacturing. NIST-870 consists of a mixture of the following five organic compounds in methanol: uracil, toluene, ethylbenzene, quinizarin, and amitriptyline.	set
NIST-877	Chiral selectivity test mixtures for liquid chromatography NIST-877 consists of five solutions of chiral compounds in ethanol designed primarily to indicate enantioselectivity of chiral stationary phases for liquid chromatography and supercritical fluid chromatography. NIST-877 is also suitable for use as a control material for monitoring column performance, comparisons of columns having similar chiral selectors, and (3) use in quality control for column manufacturing. A unit of NIST-877 consists of 5 ampules, each containing 1.1 mL of a solution of one racemic or enantiomerically enriched (nonracemic) compound. The five compounds are ketoprofen, indapamide, N-carbobenzyloxy-phenylalanine (N-CBZ-phenylalanine), propranolol hydrochloride, and warfarin.	set
NIST-869B	Column selectivity test mixture for liquid chromatography This Standard Reference Material® (SRM®) is a mixture of three polycyclic aromatic hydrocarbons (PAHs) in acetonitrile: benzo[a]pyrene (BaP), 1,2:3,4:5,6:7,8-tetrabenzonaphthalene (TBN, dibenzo[g,p]chrysene), and phenanthro[3,4-c]phenanthrene (PhPh). NIST-869b is useful for characterising liquid chromatographic (LC) column selectivity for separation of PAHs. Depending on the elution order of the three components, column selectivity can be predicted for complex PAH mixtures (particularly isomeric PAHs). Even though the primary use of this mixture in the past has been to characterise columns for PAH separations, applications to the assessment of column selectivity for other classes of compounds such as carotene isomers has also been demonstrated. A unit of NIST-869b consists of 5 ampoules, each containing 1.1 mL of the PAH mixture.	set
CERERR-004	HPLC Reverse Phase Test Mix Solvent: Acetonitrile:Water (60:40) Methylbenzoate..... 3210 µg/mL Phenetole .....5130 µg/mL o-Xylene..... 7019 µg/mL 4-Nitroaniline..... 240 µg/mL Theophylline .....100 µg/mL	1.2 mL
New U-LCS-6762	LC Caffeine Standards Kit Each kit contains five vials 1 x 5 mL of each individual standard in Water Caffeine .....5 µg/mL Caffeine .....25 µg/mL Caffeine .....125 µg/mL Caffeine .....250 µg/mL Caffeine .....500 µg/mL	5 x 5 mL
New U-LCS-4045	LC Caffeine Standards Kit Each kit contains six vials 1 x 10 mL of each individual standard in Water Caffeine .....15 µg/mL Caffeine .....40 µg/mL Caffeine .....60 µg/mL Caffeine .....80 µg/mL Caffeine .....100 µg/mL Caffeine .....1000 µg/mL	kit
New U-LCS-6917	LC/MS Caffeine Standards Kit Each kit contains five vials 1 x 5 mL of each individual standard in Water Caffeine .....0.5 µg/mL Caffeine .....1 µg/mL Caffeine .....5 µg/mL Caffeine .....25 µg/mL Caffeine .....50 µg/mL	5 x 5 mL

Standards for the determination of AOX (EN ISO 9562)

Code	Product	Unit
SL36000	4-Chlorophenol stock solution for the determination of AOX (ISO 9562:2004) 725 mg/L in Water (AOX = 200 mg/L)	100 mL
SL36010	4-Chlorophenol working solution for the determination of AOX (ISO 9562:2004) 3.625 mg/L in Water (AOX = 1 mg/L)	100 mL

Standards for the determination of EOX and POX (DIN 38414-S 17)

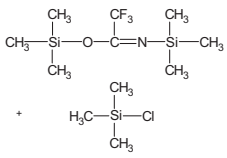
Code	Product	Unit
SL36050	4-Chlorophenol stock solution for DIN 38414-S 17 363 mg/L in n-Heptane (Cl = 100 mg/L)	100 mL
SL36060	4-Chlorophenol working solution for DIN 38414-S 17 36.3 mg/L in n-Heptane (Cl = 10 mg/L)	100 mL
SL36080	Sodium chloride stock solution for DIN 38414-S 17 165 mg/L in Water (Cl = 100 mg/L)	100 mL
SL36090	Sodium chloride standard solution for DIN 38414-S 17 1.65 mg/L in Water (Cl = 1000 µg/L)	100 mL

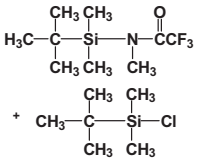
Standards for TOC and TIC

Total Organic Carbon (TOC) detection is an important measurement because of the effects it may have on the environment, human health, and manufacturing processes. TOC detection is a highly sensitive, non-specific measurement of all organics present in a sample. Low TOC can confirm the absence of potentially harmful organic chemicals in water used to manufacture pharmaceutical products or to regulate the organic chemical discharge to the environment in a manufacturing plant. Total Inorganic Carbon (TIC) is measured as part of the equation to determine TOC: TOC=TC (Total Carbon)-TIC.

Code	Product	Unit
U-IQC-111	Total Organic Carbon (TOC) Standard 0.5 mg/L	250 mL
U-IQC-111-5	Total Organic Carbon (TOC) Standard 0.5 mg/L	500 mL
U-IQC-107	Total Organic Carbon (TOC) Standard 1 mg/L	250 mL
U-IQC-107-5	Total Organic Carbon (TOC) Standard 1 mg/L	500 mL
U-IQC-108	Total Organic Carbon (TOC) Standard 10 mg/L	250 mL
U-IQC-108-5	Total Organic Carbon (TOC) Standard 10 mg/L	500 mL
U-IQC-101	Total Organic Carbon (TOC) Standard in Water 25 mg/L	250 mL
U-IQC-101-5	Total Organic Carbon (TOC) Standard in Water 25 mg/L	500 mL
U-IQC-102	Total Organic Carbon (TOC) Standard in Water 50 mg/L	250 mL
U-IQC-102-5	Total Organic Carbon (TOC) Standard in Water 50 mg/L	500 mL
U-IQC-103	Total Organic Carbon (TOC) Standard in Water 100 mg/L	250 mL
U-IQC-103-5	Total Organic Carbon (TOC) Standard in Water 100 mg/L	500 mL
U-IQC-104	Total Organic Carbon (TOC) Standard in Water 250 mg/L	250 mL
U-IQC-104-5	Total Organic Carbon (TOC) Standard in Water 250 mg/L	500 mL
U-IQC-105	Total Organic Carbon (TOC) Standard in Water 500 mg/L	250 mL
U-IQC-105-5	Total Organic Carbon (TOC) Standard in Water 500 mg/L	500 mL
U-IQC-106	Total Organic Carbon (TOC) Standard in Water 1000 mg/L	250 mL
U-IQC-106-5	Total Organic Carbon (TOC) Standard in Water 1000 mg/L	500 mL
U-ICC-033	Total Inorganic Carbon (TIC) Standard in Water 1000 mg/L	250 mL
U-ICC-033-5	Total Inorganic Carbon (TIC) Standard in Water 1000 mg/L	4 x 125mL
U-ICC-033-L	Total Inorganic Carbon (TIC) Standard in Water 1000 mg/L	1000 mL

Derivatisation reagents

Code	Product		Unit
CERB-023	BSTFA with 1% TMCS		10 x 1 mL
U-RGO-200	MSTFA (N-methyl-N-(trimethylsilyl) trifluoracetamide)		5 g

Code	Product		Unit
CERM-108	MTBSTFA (with 1% t-BDMCS)		5 x 1 mL
DE-MS-03401-1*	Sodium tetraethylborate		1 g
DE-MS-03401-5*	Sodium tetraethylborate		5 g
DE-MS-03401-25*	Sodium tetraethylborate		25 g
DE-MS-03410-1	Sodium tetra-n-propylborate		1 g
DE-MS-03410-5	Sodium tetra-n-propylborate		5 g

*Sodium tetraethylborate and Sodium tetra-n-propylborate is not available in all countries. Please contact your local office for more details.

Standards for Spectroscopy

Introduction

This comprehensive range of elemental standards has been compiled by selecting complementary materials from two sources, NIST and ULTRA Scientific Inc. Their combined range covers virtually all calibration needs for elemental emission spectroscopy instruments.
It is important to understand that there are fundamental differences between standards prepared for atomic absorption spectroscopy (AAS) and ICP and ICP-MS techniques. This is because of the intrinsic difference in the way measurement is carried out. In AAS the sample is energised by combustion, a specific light source is passed through the flame and elements present in the sample absorb at a specific wavelength. With ICP and ICP-MS the sample is energised to the point where the elements in the sample emit energy at a specific wavelength. Because measurement is dependent on specific emission there is a considerable potential for impurities to interfere with the analyte of interest. The distinction between AAS and ICP standards is the purity of starting materials. Typically material of 99.9 or 99.99% purity is suitable for AAS, but for critical ICP work the standards need to be produced from a starting material that is 99.999% or better. Remember that ICP/ICP-MS standards are perfectly suitable for AAS, but not the reverse.

NIST Standard Reference Materials® (SRMs®)

NIST Standard Reference Materials® are certified by procedures that conform with the requirements of ISO Guides 30 to 35, and are therefore accepted as primary standards for use in atomic absorption spectroscopy (AAS), optical emission spectroscopy (OES), inductively coupled plasma (ICP), mass [plasma] spectroscopy (MS), ion chromatography or any other analytical technique that requires aqueous solutions of elements for calibration. These SRM® Standards are the most precise and accurate solutions available and are best used as single element solutions.

ULTRA Scientific certified ICP/AA standards

The ULTRA Scientific range of single and multi-element solutions in this catalogue are of the highest quality. ULTRA Scientific are one of the leading manufacturers in the US and have an ISO 9001 registered quality system verified by their ISO 17025 accredited laboratory. The ICP/AA standards are prepared from starting materials having a purity of 99.999% (where possible), high purity acids and ASTM Type I water (18 megohm). Standards are traceable to NIST Standard Reference Materials® (SRM®) whenever possible. Solution density data are available for single element standards.

New ULTRAgold® ISO Guide 34 products to meet the needs of accredited laboratories

From 100 mL to 125 mL

ULTRA Scientific inorganic standards - 25% extra free!

ULTRA Scientific increased the volume of their inorganic standards from 100 mL to 125 mL for the same price as 100 mL !

From 500 mL to 4 x 125 mL

ULTRA has changed the standard unit size from 500 mL to 4 x 125 mL. This convenient standard size allows to work with a freshly opened standard solution and minimizes possible concentration changes and contamination.

Single element standards for ICP

	Code	Product	Unit
	Aluminium - Al		
	NIST-3101a	Al in 10% HNO_3, 10 mg/g	50 mL
New	U-ICP-413	ULTRAgold® Aluminum (Al) in dilute HNO_3, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-313	ULTRAgold® Aluminum (Al) in dilute HNO_3, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-013	Al in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-013-5	Al in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-013-L	Al in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-113	Al in dilute HNO_3, 10 000 µg/mL	125 mL
	U-ICP-113-5	Al in dilute HNO_3, 10 000 µg/mL	4 x 125mL
	U-ICP-113-L	Aluminum (Al) in dilute HNO3, 10 000 µg/mL	1 L
	Antimony - Sb		
	NIST-3102a	Sb in 10% HNO_3 + 2% HF, 10 mg/g	50 mL
New	U-ICP-451	ULTRAgold® Antimony (Sb) in dilute HNO_3 with trace tartaric acid, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-351	ULTRAgold® Antimony (Sb) in dilute HNO_3 with trace tartaric acid, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-051	Sb in dilute $HNO_3/C_4H_6O_6$, 1000 µg/mL	125 mL
	U-ICP-051-5	Sb in dilute $HNO_3/C_4H_6O_6$, 1000 µg/mL	4 x 125mL
	U-ICP-051-L	Sb in dilute $HNO_3/C_4H_6O_6$, 1000 µg/mL	1 L
	U-ICP-151	Sb in dilute $HNO_3/C_4H_6O_6$, 10 000 µg/mL	125 mL
	U-ICP-151-5	Sb in dilute $HNO_3/C_4H_6O_6$, 10 000 µg/mL	4 x 125mL
	U-ICP-151-L	Sb in dilute $HNO_3/C_4H_6O_6$, 10 000 µg/mL	1 L
	Arsenic - As		
	NIST-3103a	As in 15% HNO_3, 10 mg/g	50 mL
New	U-ICP-433	ULTRAgold® Arsenic (As) in dilute HNO_3, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-333	ULTRAgold® Arsenic (As) in dilute HNO_3, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-033	As in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-033-5	As in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-033-L	As in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-133	As in dilute HNO_3, 10 000 µg/mL	125 mL
	U-ICP-133-5	As in dilute HNO_3, 10 000 µg/mL	4 x 125mL
	U-ICP-133-L	As in dilute HNO_3, 10 000 µg/mL	1 L
	Barium - Ba		
	NIST-3104a	Ba in 1% HNO_3, 10 mg/g	50 mL
New	U-ICP-456	ULTRAgold® Barium (Ba) in dilute HNO_3, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-356	ULTRAgold® Barium (Ba) in dilute HNO_3, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-056	Ba in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-056-5	Ba in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-056-L	Ba in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-156	Ba in dilute HNO_3, 10 000 µg/mL	125 mL
	U-ICP-156-5	Ba in dilute HNO_3, 10 000 µg/mL	4 x 125mL
	U-ICP-156-L	Ba in dilute HNO_3, 10 000 µg/mL	1 L
	Beryllium - Be		
	NIST-3105a	Be in 10% HNO_3, 10 mg/g	5 x 10 mL
New	U-ICP-404	ULTRAgold® Beryllium (Be) in dilute HNO_3, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-304	ULTRAgold® Beryllium (Br) in dilute HNO_3, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-004	Be in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-004-5	Be in dilute HNO_3, 1000 µg/mL	4 x 125mL

	Code	Product	Unit
	U-ICP-004-L	Be in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-104	Be in dilute HNO_3, 10 000 µg/mL	125 mL
	U-ICP-104-5	Be in dilute HNO_3, 10 000 µg/mL	4 x 125mL
	U-ICP-104-L	Be in dilute HNO_3, 10 000 µg/mL	1 L

Bismuth - Bi

	NIST-3106	Bi in 10% HNO_3, 10 mg/g	5 x 10 mL
	U-ICP-083	Bi in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-083-5	Bi in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-083-L	Bi in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-183	Bi in dilute HNO_3, 10 000 µg/mL	125 mL

Boron - B

	NIST-3107	B in water, 5 mg/g	50 mL
New	U-ICP-405	ULTRAgold® Boron (B) in dilute NH_4NO_3, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-305	ULTRAgold® Boron (B) in dilute NH_4NO_3, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-005	B in water with trace NH_4OH, 1000 µg/mL	125 mL
	U-ICP-005-5	B in water with trace NH_4OH, 1000 µg/mL	4 x 125mL
	U-ICP-005-L	B in water with trace NH_4OH, 1000 µg/mL	1 L
	U-ICP-105	B in water with trace NH_4OH, 10 000 µg/mL	125 mL
	U-ICP-105-5	B in water with trace NH_4OH, 10 000 µg/mL	4 x 125mL
	U-ICP-105-L	B in dilute HNO_3, 10 000 µg/mL	1 L

Cadmium - Cd

	NIST-3108	Cd in 10% HNO_3, 10 mg/g	50 mL
New	U-ICP-448	ULTRAgold® Cadmium (Cd) in dilute HNO_3, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-348	ULTRAgold® Cadmium (Cd) in dilute HNO_3, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-048	Cd in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-048-5	Cd in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-048-L	Cd in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-148	Cd in dilute HNO_3, 10 000 µg/mL	125 mL
	U-ICP-148-5	Cd in dilute HNO_3, 10 000 µg/mL	4 x 125mL
	U-ICP-148-L	Cd in dilute HNO_3, 10 000 µg/mL	1 L

Caesium - Cs

	NIST-3111a	Cs in 1% HNO_3, 10 mg/g	50 mL
	U-ICP-055	Cs in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-055-5	Cs in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-055-L	Cs in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-155	Cs in dilute HNO_3, 10 000 µg/mL	125 mL

Calcium - Ca

	NIST-3109a	This material is intended for use as a primary calibration standard for the quantitative determination of calcium. A unit consists of five 10 mL sealed borosilicate glass ampoules of an acidified solution prepared gravimetrically to contain a known mass fraction of calcium. The solution contains nitric acid at a volume fraction of approximately 10 %. Certified value.....10.025 ± 0.017 mg/g	5 x 10 mL
New	U-ICP-420	ULTRAgold® Calcium (Ca) in dilute HNO_3, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-320	ULTRAgold® Calcium (Ca) in dilute HNO_3, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-020	Ca in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-020-5	Ca in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-020-L	Ca in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-120	Ca in dilute HNO_3, 10 000 µg/mL	125 mL
	U-ICP-120-5	Ca in dilute HNO_3, 10 000 µg/mL	4 x 125mL
	U-ICP-120-L	Ca in dilute HNO_3, 10 000 µg/mL	1 L

	Code	Product	Unit
	Cerium - Ce		
	NIST-3110	Ce in 10% HNO_3, 10 mg/g	5 x 10 mL
	U-ICP-058	Ce in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-058-5	Ce in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-058-L	Ce in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-158	Ce in dilute HNO_3, 10 000 µg/mL	125 mL
	Chromium - Cr		
	NIST-3112a	Cr in 10% HNO_3, 10 mg/g	5 x 10 mL
New	U-ICP-424	ULTRAgold® Chromium (Cr) in dilute HNO_3, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-324	ULTRAgold® Chromium (Cr) in dilute HNO_3, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-024	Cr in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-024-5	Cr in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-024-L	Cr in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-124	Cr in dilute HNO_3, 10 000 µg/mL	125 mL
	U-ICP-124-5	Cr in dilute HNO_3, 10 000 µg/mL	4 x 125mL
	U-ICP-124-L	Cr in dilute HNO_3, 10 000 µg/mL	1 L
	Chromium (VI) - Cr		
	U-ICP-024A	Chromium (VI) (Cr) in water, 1000 µg/mL	125 mL
New	U-ICP-424A	ULTRAgold® Hexavalent Chromium (VI) (Cr) in water, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-324A	ULTRAgold® Hexavalent Chromium (VI) (Cr) in water, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-024A-5	Chromium (VI) (Cr) in water, 1000 µg/mL	4 x 125mL
	U-ICP-024A-L	Chromium (VI) (Cr) in water, 1000 µg/mL	1 L
	Cobalt - Co		
	NIST-3113	Co in 10% HNO_3, 10 mg/g	5 x 10 mL
New	U-ICP-427	ULTRAgold® Cobalt (Co) in dilute HNO_3, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-327	ULTRAgold® Cobalt (Co) in dilute HNO_3, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-027	Co in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-027-5	Co in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-027-L	Co in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-127	Co in dilute HNO_3, 10 000 µg/mL	127 mL
	U-ICP-127-5	Co in dilute HNO_3, 10 000 µg/mL	4 x 125mL
	U-ICP-127-L	Co in dilute HNO_3, 10 000 µg/mL	1 L
	Copper - Cu		
	NIST-3114	Cu in 10% HNO_3, 10 mg/g	5 x 10 mL
New	U-ICP-429	ULTRAgold® Copper (Cu) in dilute HNO_3, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-329	ULTRAgold® Copper (Cu) in dilute HNO_3, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-029	Cu in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-029-5	Cu in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-029-L	Cu in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-129	Cu in dilute HNO_3, 10 000 µg/mL	125 mL
	U-ICP-129-5	Cu in dilute HNO_3, 10 000 µg/mL	4 x 125mL
	U-ICP-129-L	Cu in dilute HNO_3, 10 000 µg/mL	1 L
	Dysprosium - Dy		
	NIST-3115a	Dy in 10% HNO_3, 10 mg/g	5 x 10 mL
	U-ICP-066	Dy in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-066-5	Dy in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-066-L	Dy in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-166	Dy in dilute HNO_3, 10 000 µg/mL	125 mL

	Code	Product	Unit
	Erbium - Er		
	NIST-3116a	Er in 10% HNO_3, 10 mg/g	5 x 10 mL
	U-ICP-068	Er in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-068-5	Er in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-068-L	Er in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-168	Er in dilute HNO_3, 10 000 µg/mL	125 mL
	Europium - Eu		
	NIST-3117a	Eu in 10% HNO_3, 10 mg/g	5 x 10 mL
	U-ICP-063	Eu in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-063-5	Eu in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-063-L	Eu in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-163	Eu in dilute HNO_3, 10 000 µg/mL	125 mL
	Gadolinium - Gd		
	NIST-3118a	Gd in 10% HNO_3, 10 mg/g	5 x 10 mL
	U-ICP-064	Gd in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-064-5	Gd in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-064-L	Ga in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-164	Gd in dilute HNO_3, 10 000 µg/mL	125 mL
	Gallium - Ga		
	NIST-3119a	Ga in 10% HNO_3, 10 mg/g	5 x 10 mL
	U-ICP-031	Ga in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-031-5	Ga in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-031-L	Ga in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-131	Ga in dilute HNO_3, 10 000 µg/mL	125 mL
	Germanium - Ge		
	NIST-3120a	Ge in 10% Oxalic acid, 10 mg/g	50 mL
	U-ICP-032	Ge in water with trace HF, 1000 µg/mL	125 mL
	U-ICP-032-5	Ge in water with trace HF, 1000 µg/mL	4 x 125mL
	U-ICP-032-L	Germanium (Ge) in water with trace HF, 1000 µg/mL	1 L
	U-ICP-132	Ge in water with trace HF, 10 000 µg/mL	125 mL
	Gold - Au		
	NIST-3121	Au in 5% HNO_3 + 2% HF, 10 mg/g	5 x 10 mL
New	U-ICP-479	ULTRAgold® Gold (Au) in dilute HCl, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-379	ULTRAgold® Gold (Au) in dilute HCl, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-079	Au in dilute HCl, 1000 µg/mL	125 mL
	U-ICP-079-5	Au in dilute HCl, 1000 µg/mL	4 x 125mL
	U-ICP-079-L	Gold (Au) in dilute HCl, 1000 µg/mL	1 L
	U-ICP-179	Au in dilute HCl, 10 000 µg/mL	125 mL
	U-ICP-179-5	Au in dilute HCl, 10 000 µg/mL	4 x 125mL
	U-ICP-179-L	Au in dilute HCl, 10 000 µg/mL	1 L
	Hafnium - Hf		
	NIST-3122	Hf in 10% HNO_3 + 2% HF, 10 mg/g	50 mL
	U-ICP-072	Hf in dilute HCl, 1000 µg/mL	125 mL
	U-ICP-072-5	Hf in dilute HCl, 1000 µg/mL	4 x 125mL
	U-ICP-072-L	Hafnium (Hf) in dilute HCl, 1000 µg/mL	1 L
	U-ICP-172	Hf in dilute HCl, 10 000 µg/mL	125 mL
	Holmium - Ho		
	NIST-3123a	Ho in 10% HNO_3, 10 mg/g	5 x 10 mL

	Code	Product	Unit
	U-ICP-067	Ho in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-067-5	Ho in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-067-L	Ho in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-167	Ho in dilute HNO_3, 10 000 µg/mL	125 mL

Indium - In

	NIST-3124a	In in 10% HNO_3, 10 mg/g	5 x 10 mL
	U-ICP-049	In in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-049-5	In in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-049-L	In in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-149	In in dilute HNO_3, 10 000 µg/mL	125 mL

Iridium - Ir

	U-ICP-077	Ir in dilute HCl, 1000 µg/mL	125 mL
	U-ICP-077-5	Ir in dilute HCl, 1000 µg/mL	4 x 125mL
	U-ICP-077-L	Iridium (Ir) in dilute HCl, 1000 µg/mL	1 L
	U-ICP-177	Ir in dilute HCl, 10 000 µg/mL	125 mL

Iron - Fe

	NIST-3126a	Fe in 10% HNO_3, 10 mg/g	50 mL
New	U-ICP-426	ULTRAgold® Iron (Fe) in dilute HNO_3, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-326	ULTRAgold® Iron (Fe) in dilute HNO_3, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-026	Fe in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-026-5	Fe in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-026-L	Fe in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-126	Fe in dilute HNO_3, 10 000 µg/mL	125 mL
	U-ICP-126-5	Fe in dilute HNO_3, 10 000 µg/mL	4 x 125mL
	U-ICP-126-L	Fe in dilute HNO_3, 10 000 µg/mL	1 L

Lanthanum - La

	NIST-3127a	La in 10% HNO_3, 10 mg/g	5 x 10 mL
	U-ICP-057	La in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-057-5	La in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-057-L	La in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-157	La in dilute HNO_3, 10 000 µg/mL	125 mL

Lead - Pb

	NIST-3128	Pb in 10% HNO_3, 10 mg/g	5 x 10 mL
New	U-ICP-482	ULTRAgold® Lead (Pb) in dilute HNO_3, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-382	ULTRAgold® Lead (Pb) in dilute HNO_3, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-082	Pb in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-082-5	Pb in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-082-L	Pb in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-182	Pb in dilute HNO_3, 10 000 µg/mL	125 mL
	U-ICP-182-5	Pb in dilute HNO_3, 10 000 µg/mL	4 x 125mL
	U-ICP-182-L	Pb in dilute HNO_3, 10 000 µg/mL	1 L

Lithium - Li

	NIST-3129a	This material is intended for use as a primary calibration standard for the quantitative determination of lithium. One unit consists of five 10 mL sealed borosilicate glass ampoules of an acidified aqueous solution prepared gravimetrically from high-purity lithium carbonate to contain a known mass fraction of lithium. The solution contains nitric acid at a volume fraction of approximately 1 %. Certified value:..... 10.01 ± 0.04 mg/g	5 x 10 mL
New	U-ICP-403	ULTRAgold® Lithium (Li) in dilute HNO_3, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-303	ULTRAgold® Lithium (Li) in dilute HNO_3, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-003	Li in dilute HNO_3, 1000 µg/mL	125 mL

	Code	Product	Unit
	U-ICP-003-5	Li in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-003-L	Li in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-103	Li in dilute HNO_3, 10 000 µg/mL	125 mL
	U-ICP-103-5	Li in dilute HNO_3, 10 000 µg/mL	4 x 125mL
	U-ICP-103-L	Li in dilute HNO_3, 10 000 µg/mL	1 L

Lutetium - Lu

	NIST-3130a	Lu in 10% HNO_3, 10 mg/g	5 x 10 mL
	U-ICP-071	Lu in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-071-L	Lu in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-071-5	Lu in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-171	Lu in dilute HNO_3, 10 000 µg/mL	125 mL

Magnesium - Mg

	NIST-3131a	This material is intended for use as a primary calibration standard for the quantitative determination of magnesium. One unit consists of 50 mL of a single element solution in a high density polyethylene bottle sealed in an aluminized bag. The solution is prepared gravimetrically to contain a known mass fraction of magnesium. The solution contains nitric acid at a volume fraction of approximately 10 %. Certified value:.....9.99 ± 0.02 mg/g	50 mL
New	U-ICP-412	ULTRAgold® Magnesium (Mg) in dilute HNO_3, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-312	ULTRAgold® Magnesium (Mg) in dilute HNO_3, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-012	Mg in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-012-5	Mg in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-012-L	Mg in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-112	Mg in dilute HNO_3, 10 000 µg/mL	125 mL
	U-ICP-112-5	Mg in dilute HNO_3, 10 000 µg/mL	4 x 125mL
	U-ICP-112-L	Mg in dilute HNO_3, 10 000 µg/mL	1 L

Manganese - Mn

	NIST-3132	Mn in 10% HNO_3, 10 mg/mL	5 x 10 mL
New	U-ICP-425	ULTRAgold® Manganese (Mn) in dilute HNO_3, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-325	ULTRAgold® Manganese (Mn) in dilute HNO_3, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-025	Mn in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-025-5	Mn in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-025-L	Mn in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-125	Mn in dilute HNO_3, 10 000 µg/mL	125 mL
	U-ICP-125-5	Mn in dilute HNO_3, 10 000 µg/mL	4 x 125mL
	U-ICP-125-L	Mn in dilute HNO_3, 10 000 µg/mL	1 L

Mercury - Hg

	NIST-3133	Hg in 10% HNO_3, 10 mg/g	5 x 10 mL
New	U-ICP-480	ULTRAgold® Mercury (Hg) in dilute HNO_3, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-380	ULTRAgold® Mercury (Hg) in dilute HNO_3, 1000 µg/mL - ISO Guide 34	125 mL
New	NIST-3177	Hg (II) in 3%HNO_3 and 4% HCL, 0.9981 mg/g ± 0.0044 mg/g	5 x 10 mL
	U-ICP-080	Hg in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-080-5	Hg in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-080-L	Hg in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-180	Hg in dilute HNO_3, 10 000 µg/mL	125 mL
	U-ICP-180-5	Hg in dilute HNO_3, 10 000 µg/mL	4 x 125mL
	U-ICP-180-L	Hg in dilute HNO_3, 10 000 µg/mL	1 L

Molybdenum - Mo

	NIST-3134	Mo in 10% HCl, 10 mg/g	5 x 10 mL
New	U-ICP-442	ULTRAgold® Molybdenum (Mo) in dilute NH_4NO_3, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-342	ULTRAgold® Molybdenum (Mo) in dilute NH_4NO_3, 1000 µg/mL - ISO Guide 34	125 mL

Code	Product	Unit
U-ICP-042	Mo in water with trace NH_4OH, 1000 µg/mL	125 mL
U-ICP-042-5	Mo in water with trace NH_4OH, 1000 µg/mL	4 x 125mL
U-ICP-042-L	Molybdenum (Mo) in water with trace NH4OH, 1000 µg/mL	1 L
U-ICP-142	Mo in water with trace NH_4OH, 10 000 µg/mL	125 mL
U-ICP-142-5	Mo in water with trace NH_4OH, 10 000 µg/mL	4 x 125mL
U-ICP-142-L	Mo in water with trace NH_4OH, 10 000 µg/mL	1 L

Neodymium - Nd

NIST-3135a	Nd in 10% HNO_3, 10 mg/g	5 x 10 mL
U-ICP-060	Nd in dilute HNO_3, 1000 µg/mL	125 mL
U-ICP-060-5	Nd in dilute HNO_3, 1000 µg/mL	4 x 125mL
U-ICP-060-L	Nd in dilute HNO_3, 1000 µg/mL	1 L
U-ICP-160	Nd in dilute HNO_3, 10 000 µg/mL	125 mL

Nickel - Ni

	NIST-3136	Ni in 10% HNO_3, 10 mg/g	5 x 10 mL
New	U-ICP-428	ULTRAgold® Nickel (Ni) in dilute HNO_3, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-328	ULTRAgold® Nickel (Ni) in dilute HNO_3, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-028	Ni in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-028-5	Ni in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-028-L	Ni in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-128	Ni in dilute HNO_3, 10 000 µg/mL	125 mL
	U-ICP-128-5	Ni in dilute HNO_3, 10 000 µg/mL	4 x 125mL
	U-ICP-128-L	Ni in dilute HNO_3, 10 000 µg/mL	1 L

Niobium - Nb

NIST-3137	Nb in 5% HNO_3 + 2% HF, 10 mg/g	50 mL
U-ICP-041	Nb in water with trace HF, 1000 µg/mL	125 mL
U-ICP-041-5	Nb in water with trace HF, 1000 µg/mL	4 x 125mL
U-ICP-041-L	Niobium (Nb) in water with trace HF, 1000 µg/mL	1 L
U-ICP-141	Nb in water with trace HF, 10 000 µg/mL	125 mL

Palladium - Pd

U-ICP-046	Pd in dilute HNO_3, 1000 µg/mL	125 mL
U-ICP-046-5	Pd in dilute HNO_3, 1000 µg/mL	4 x 125mL
U-ICP-046-L	Pd in dilute HNO_3, 1000 µg/mL	1 L
U-ICP-146	Pd in dilute HNO_3, 10 000 µg/mL	125 mL

Phosphorus - P

	NIST-3139a	P in 0.8% HNO_3, 10 mg/g	5 x 10 mL
New	U-ICP-415	ULTRAgold® Phosphorus (P) in dilute HNO_3, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-315	ULTRAgold® Phosphorus (P) in dilute HNO_3, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-015	P in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-015-5	P in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-015-L	P in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-115	P in dilute HNO_3, 10 000 µg/mL	125 mL
	U-ICP-115-5	P in dilute HNO_3, 10 000 µg/mL	4 x 125mL
	U-ICP-115-L	P in dilute HNO_3, 10 000 µg/mL	1 L

Platinum - Pt

NIST-3140	Pt in 10% HCl, 10 mg/g	5 x 10 mL
U-ICP-078	Pt in dilute HCl, 1000 µg/mL	125 mL
U-ICP-078-5	Pt in dilute HCl, 1000 µg/mL	4 x 125mL
U-ICP-078-L	Platinum (Pt) in dilute HCl, 1000 µg/mL	1 L

	Code	Product	Unit
	U-ICP-178	Pt in dilute HCl, 10 000 µg/mL	125 mL
	U-ICP-178-5	Pt in dilute HCl, 10 000 µg/mL	4 x 125mL
	U-ICP-178-L	Pt in dilute HCl, 10 000 µg/mL	1 L

Potassium - K

	NIST-3141a	This material is intended for use as a primary calibration standard for the quantitative determination of potassium. One unit consists of 50 mL of a single element solution in a high density polyethylene bottle sealed in an aluminized bag. The solution is prepared gravimetrically to contain a known mass fraction of potassium. The solution contains nitric acid at a volume fraction of approximately 1 %. Certified value:.....10.011 ± 0.029 mg/g	50 mL
New	U-ICP-419	ULTRAgold® Potassium (K) in dilute HNO_3, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-319	ULTRAgold® Potassium (K) in dilute HNO_3, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-019	K in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-019-5	K in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-019-L	K in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-119	K in dilute HNO_3, 10 000 µg/mL	125 mL
	U-ICP-119-5	K in dilute HNO_3, 10 000 µg/mL	4 x 125mL
	U-ICP-119-L	K in dilute HNO_3, 10 000 µg/mL	1 L

Praseodymium - Pr

	NIST-3142a	Pr in 10% HNO_3, 10 mg/g	5 x 10 mL
	U-ICP-059	Pr in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-059-5	Pr in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-059-L	Pr in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-159	Pr in dilute HNO_3, 10 000 µg/mL	125 mL

Rhenium - Re

	NIST-3143	Re in 10% HNO_3, 10 mg/g	50 mL
	U-ICP-075	Re in water, 1000 µg/mL	125 mL
	U-ICP-075-5	Re in water, 1000 µg/mL	4 x 125mL
	U-ICP-075-L	Rhenium (Re) in water, 1000 µg/mL	1 L
	U-ICP-175	Re in water, 10 000 µg/mL	125 mL

Rhodium - Rh

	NIST-3144	Rh in 10% HCl, 10 mg/g	5 x 10 mL
	U-ICP-045	Rh in dilute HCl, 1000 µg/mL	125 mL

Rubidium - Rb

	NIST-3145a	Rb in 1% HNO_3, 10 mg/g	5 x 10 mL
	U-ICP-037	Rb in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-037-L	Rb in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-037-5	Rb in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-137	Rb in dilute HNO_3, 10 000 µg/mL	125 mL

Ruthenium - Ru

	U-ICP-044	Ru in dilute HCl, 1000 µg/mL	125 mL
	U-ICP-044-5	Ru in dilute HCl, 1000 µg/mL	4 x 125mL
	U-ICP-044-L	Ruthenium (Ru) in dilute HCl, 1000 µg/mL	1 L

Samarium - Sm

	NIST-3147a	Sm in 10% HNO_3, 10 mg/g	5 x 10 mL
	U-ICP-062	Sm in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-062-5	Sm in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-062-L	Sa in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-162	Sm in dilute HNO_3, 10 000 µg/mL	125 mL

	Code	Product	Unit
	Scandium - Sc		
	NIST-3148a	Sc in 10% HNO_3, 10 mg/g	5 x 10 mL
	U-ICP-021	Sc in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-021-5	Sc in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-021-L	Sc in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-121	Sc in dilute HNO_3, 10 000 µg/mL	125 mL
	U-ICP-121-5	Sc in dilute HNO_3, 10 000 µg/mL	4 x 125mL
	U-ICP-121-L	Sc in dilute HNO_3, 10 000 µg/mL	1 L
	Selenium - Se		
	NIST-3149	Se in 10% HNO_3, 10 mg/g	5 x 10 mL
New	U-ICP-434	ULTRAgold® Selenium (Se) in dilute HNO_3, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-334	ULTRAgold® Selenium (Se) in dilute HNO_3, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-034	Se in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-034-5	Se in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-034-L	Se in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-134	Se in dilute HNO_3, 10 000 µg/mL	125 mL
	U-ICP-134-5	Se in dilute HNO_3, 10 000 µg/mL	4 x 125mL
	U-ICP-134-L	Se in dilute HNO_3, 10 000 µg/mL	1 L
	Silicon - Si		
	NIST-3150	Si in water, 10 mg/g	50 mL
New	U-ICP-414	ULTRAgold® Silicon (Si) in dilute HNO_3 with trace HF, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-314	ULTRAgold® Silicon (Si) in dilute HNO_3 with trace HF, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-014	Si in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-014-5	Si in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-014-L	Si in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-114	Si in dilute HNO_3, 10 000 µg/mL	125 mL
	U-ICP-114-5	Si in dilute HNO_3, 10 000 µg/mL	4 x 125mL
	U-ICP-114-L	Si in dilute HNO_3, 10 000 µg/mL	1 L
	Silica - Si02		
	U-ICP-014A	SiO_2 in dilute NaOH, 1000 µg/mL	125 mL
	U-ICP-014A-5	SiO_2 in dilute NaOH, 1000 µg/mL	4 x 125mL
	U-ICP-014A-L	SiO_2 in dilute NaOH, 1000 µg/mL	1 L
	Silver - Ag		
	NIST-3151	Ag in 10% HNO_3, 10 mg/g	5 x 10 mL
New	U-ICP-447	ULTRAgold® Silver (Ag) in dilute HNO_3, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-347	ULTRAgold® Silver (Ag) in dilute HNO_3, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-047	Ag in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-047-5	Ag in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-047-L	Ag in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-147	Ag in dilute HNO_3, 10 000 µg/mL	125 mL
	U-ICP-147-5	Ag in dilute HNO_3, 10 000 µg/mL	4 x 125mL
	U-ICP-147-L	Ag in dilute HNO_3, 10 000 µg/mL	1 L
	Sodium - Na		
	NIST-3152a	This material is intended for use as a primary calibration standard for the quantitative determination of sodium. One unit consists of 50 mL of a single element solution in a high density polyethylene bottle sealed in an aluminized bag. The solution is prepared gravimetrically to contain a known mass fraction of sodium. The solution contains nitric acid at a volume fraction of approximately 1 %. Certified value..... 9.949 ± 0.020 mg/g	50 mL
New	U-ICP-411	ULTRAgold® Sodium (Na) in dilute HNO_3, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-311	ULTRAgold® Sodium (Na) in dilute HNO_3, 1000 µg/mL - ISO Guide 34	125 mL

	Code	Product	Unit
	U-ICP-011	Na in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-011-5	Na in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-011-L	Na in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-111	Na in dilute HNO_3, 10 000 µg/mL	125 mL
	U-ICP-111-5	Na in dilute HNO_3, 10 000 µg/mL	4 x 125mL
	U-ICP-111-L	Na in dilute HNO_3, 10 000 µg/mL	1 L

Strontium - Sr

	NIST-3153a	Sr in 10% HNO_3, 10 mg/g	5 x 10 mL
New	U-ICP-438	ULTRAgold® Strontium (Sr) in dilute HNO_3, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-338	ULTRAgold® Strontium (Sr) in dilute HNO_3, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-038	Sr in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-038-5	Sr in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-038-L	Sr in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-138	Sr in dilute HNO_3, 10 000 µg/mL	125 mL
	U-ICP-138-5	Sr in dilute HNO_3, 10 000 µg/mL	4 x 125mL
	U-ICP-138-L	Sr in dilute HNO_3, 10 000 µg/mL	1 L

Sulfur - S

	NIST-3154	S in 0.1% H_2SO_4, 10 mg/g	5 x 10 mL
New	U-ICP-316	ULTRAgold® Sulfur (S) in water, 1000 µg/mL - ISO Guide 34	125 mL
New	U-ICP-416	ULTRAgold® Sulfur (S) in water, 10 µg/mL - ISO Guide 34	125 mL
	U-ICP-016	S in water, 1000 µg/mL	125 mL
	U-ICP-016-5	S in water, 1000 µg/mL	4 x 125mL
	U-ICP-016-L	Sulfur (S) in water, 1000 µg/mL	1 L
	U-ICP-116	S in water, 10 000 µg/mL	125 mL
	U-ICP-116-L	S in water, 10 000 µg/mL	1 L

Tantalum - Ta

	NIST-3155	Ta in 5% HNO_3 + 2% HF, 10 mg/g	50 mL
	U-ICP-073	Ta in water with trace HF, 1000 µg/mL	125 mL
	U-ICP-073-5	Ta in water with trace HF, 1000 µg/mL	4 x 125mL
	U-ICP-073-L	Tantalum (Ta) in water with trace HF, 1000 µg/mL	1 L
	U-ICP-173	Ta in water with trace HF, 10 000 µg/mL	125 mL

Tellurium - Te

	NIST-3156	Te in 20% HCl, 10 mg/g	5 x 10 mL
	U-ICP-052	Te in dilute HCl, 1000 µg/mL	125 mL
	U-ICP-052-5	Te in dilute HCl, 1000 µg/mL	4 x 125mL
	U-ICP-052-L	Tellurium (Te) in dilute HCl, 1000 µg/mL	1 L
	U-ICP-152	Te in dilute HCl, 10 000 µg/mL	125 mL

Terbium - Tb

	NIST-3157a	Tb in 16% HNO_3, 10 mg/g	5 x 10 mL
	U-ICP-065	Tb in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-065-5	Tb in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-065-L	Tb in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-165	Tb in dilute HNO_3, 10 000 µg/mL	125 mL

Thallium - Tl

	NIST-3158a	Tl in 10% HNO_3, 10 mg/g	5 x 10 mL
New	U-ICP-481	ULTRAgold® Thallium (Tl) in dilute HNO_3, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-381	ULTRAgold® Thallium (Tl) in dilute HNO_3, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-081	Tl in dilute HNO_3, 1000 µg/mL	125 mL

Code	Product	Unit
U-ICP-081-5	Tl in dilute HNO_3, 1000 µg/mL	4 x 125mL
U-ICP-081-L	Tl in dilute HNO_3, 1000 µg/mL	1 L
U-ICP-181	Tl in dilute HNO_3, 10 000 µg/mL	125 mL
U-ICP-181-5	Tl in dilute HNO_3, 10 000 µg/mL	4 x 125mL
U-ICP-181-L	Tl in dilute HNO_3, 10 000 µg/mL	1 L

Thorium - Th

NIST-3159	Th in 10% HNO_3, 10 mg/g	50 mL
U-ICP-090	Th in dilute HNO_3, 1000 µg/mL	125 mL
U-ICP-090-5	Th in dilute HNO_3, 1000 µg/mL	4 x 125mL
U-ICP-090-L	Th in dilute HNO_3, 1000 µg/mL	1 L
U-ICP-190	Th in dilute HNO_3, 10 000 µg/mL	125 mL

Thulium - Tm

NIST-3160a	Tm in 10% HNO_3, 10 mg/g	5 x 10 mL
U-ICP-069	Tm in dilute HNO_3, 1000 µg/mL	125 mL
U-ICP-069-5	Tm in dilute HNO_3, 1000 µg/mL	4 x 125mL
U-ICP-069-L	Tm in dilute HNO_3, 1000 µg/mL	1 L
U-ICP-169	Tm in dilute HNO_3, 10 000 µg/mL	125 mL

Tin - Sn

	NIST-3161a	Sn in 5% HNO_3 + 2% HF, 10 mg/g	50 mL
New	U-ICP-450	ULTRAgold® Tin (Sn) in dilute HNO_3 with trace HF, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-350	ULTRAgold® Tin (Sn) in dilute HNO_3 with trace HF, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-050	Sn in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-050-5	Sn in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-050-L	Sn in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-150	Sn in dilute HNO_3, 10 000 µg/mL	125 mL
	U-ICP-150-5	Sn in dilute HNO_3, 10 000 µg/mL	4 x 125mL
	U-ICP-150-L	Sn in dilute HNO_3, 10 000 µg/mL	1 L

Titanium - Ti

	NIST-3162a	Ti in 10% HNO_3 + 2% HF, 10 mg/g	50 mL
New	U-ICP-422	ULTRAgold® Titanium (Ti) in dilute HNO_3 with trace HF, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-322	ULTRAgold® Titanium (Ti) in dilute HNO_3 with trace HF, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-022	Ti in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-022-5	Ti in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-022-L	Ti in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-122	Ti in dilute HNO_3, 10 000 µg/mL	125 mL
	U-ICP-122-5	Ti in dilute HNO_3, 10 000 µg/mL	4 x 125mL
	U-ICP-122-L	Ti in dilute HNO_3, 10 000 µg/mL	1 L

Tungsten - W

NIST-3163	W in 7% HNO_3 + 4% HF, 10 mg/g	50 mL
U-ICP-074	W in water with trace NH_4OH, 1000 µg/mL	125 mL
U-ICP-074-5	W in water with trace NH_4OH, 1000 µg/mL	4 x 125mL
U-ICP-074-L	W in water with trace NH_4OH, 1000 µg/mL	1 L
U-ICP-174	W in water with trace NH_4OH, 10 000 µg/mL	125 mL

Uranium - U

NIST-3164	U in 10% HNO_3, 10 mg/g	5 x 10 mL
U-ICP-092	U in dilute HNO_3, 1000 µg/mL	125 mL
U-ICP-092-5	U in dilute HNO_3, 1000 µg/mL	4 x 125mL
U-ICP-092-L	U in dilute HNO_3, 1000 µg/mL	1 L

	Code	Product	Unit
	U-ICP-192	U in dilute HNO_3, 10 000 µg/mL	125 mL

Vanadium - V

	NIST-3165	V in 10% HNO_3, 10 mg/g	5 x 10 mL
New	U-ICP-423	ULTRAgold® Vanadium (V) in dilute HNO_3 with trace HF, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-323	ULTRAgold® Vanadium (V) in dilute HNO_3 with trace HF, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-023	V in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-023-5	V in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-023-L	V in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-123	V in dilute HNO_3, 10 000 µg/mL	125 mL
	U-ICP-123-5	V in dilute HNO_3, 10 000 µg/mL	4 x 125mL
	U-ICP-123-L	V in dilute HNO_3, 10 000 µg/mL	1 L

Ytterbium - Yb

	NIST-3166a	Yb in 16% HNO_3, 10 mg/g	5 x 10 mL
	U-ICP-070	Yb in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-070-5	Yb in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-070-L	Yb in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-170	Yb in dilute HNO_3, 10 000 µg/mL	125 mL

Yttrium - Y

	NIST-3167a	Y in 10% HNO_3, 10 mg/g	5 x 10 mL
	U-ICP-039	Y in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-039-5	Y in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-039-L	Y in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-139	Y in dilute HNO_3, 10 000 µg/mL	125 mL

Zinc - Zn

	NIST-3168a	Zn in 10% HCl, 10 mg/g	50 mL
New	U-ICP-430	ULTRAgold® Zinc (Zn) in dilute HNO_3, 10 µg/mL - ISO Guide 34	125 mL
New	U-ICP-330	ULTRAgold® Zinc (Zn) in dilute HNO_3, 1000 µg/mL - ISO Guide 34	125 mL
	U-ICP-030	Zn in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-030-5	Zn in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-030-L	Zn in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-130	Zn in dilute HNO_3, 10 000 µg/mL	125 mL
	U-ICP-130-5	Zn in dilute HNO_3, 10 000 µg/mL	4 x 125mL
	U-ICP-130-L	Zn in dilute HNO_3, 10 000 µg/mL	1 L

Zirconium - Zr

	NIST-3169	Zr in 10% HNO_3 + 2% HF, 10 mg/g	50 mL
	U-ICP-040	Zr in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-040-5	Zr in dilute HNO_3, 1000 µg/mL	4 x 125mL
	U-ICP-040-L	Zr in dilute HNO_3, 1000 µg/mL	1 L
	U-ICP-140	Zr in dilute HNO_3, 10 000 µg/mL	125 mL

ULTRA Scientific's EnviroConcentrate™ kits for ICP

Kit

- 20 mL of analyte solution at 10000 µg/mL
- yields 2 x 100 mL 1000 ppm standards
- 500 ml of ASTM Type I water
- 125 mL pre-cleaned LDPE bottle for storage
- starting material 99.999 % pure, where available
- Traceable to NIST Standard, wherever possible

Code	Product	Unit
Aluminum - Al		
U-ECK-013	Al in dilute HNO_3, 10000 µg/mL	kit
Antimony - Sb		
U-ECK-051	Sb in dilute HNO_3, 10000 µg/mL	kit
Arsenic - As		
U-ECK-033	As in dilute HNO_3, 10000 µg/mL	kit
Barium - Ba		
U-ECK-056	Ba in dilute HNO_3, 10000 µg/mL	kit
Beryllium - Be		
U-ECK-004	Be in dilute HNO_3, 10000 µg/mL	kit
Boron - B		
U-ECK-005	B in water with trace NH_4OH, 10000 µg/mL	kit
Cadmium - Cd		
U-ECK-048	Cd in dilute HNO_3, 10000 µg/mL	kit
Calcium - Ca		
U-ECK-020	Ca in dilute HNO_3, 10000 µg/mL	kit
Chromium - Cr		
U-ECK-024	Cr in dilute HNO_3, 10000 µg/mL	kit
Cobalt - Co		
U-ECK-027	Co in dilute HNO_3, 10000 µg/mL	kit
Copper - Cu		
U-ECK-029	Cu in dilute HNO_3, 10000 µg/mL	kit
Iron - Fe		
U-ECK-026	Fe in dilute HNO_3, 10000 µg/mL	kit
Lead - Pb		
U-ECK-082	Pb in dilute HNO_3, 10000 µg/mL	kit
Lithium - Li		
U-ECK-003	Li in dilute HNO_3, 10000 µg/mL	kit
Magnesium - Mg		
U-ECK-012	Mg in dilute HNO_3, 10000 µg/mL	kit
Manganese - Mn		
U-ECK-025	Mn in dilute HNO_3, 10000 µg/mL	kit
Mercury - Hg		
U-ECK-080	Hg in dilute HNO_3, 10000 µg/mL	kit
Molybdenum - Mo		
U-ECK-042	Mo in water with trace NH_4OH, 10000 µg/mL	kit

Code	Product	Unit
Nickel - Ni		
U-ECK-028	Ni in dilute HNO_3, 10000 µg/mL	kit
Phosphorus - P		
U-ECK-015	P in dilute HNO_3, 10000 µg/mL	kit
Potassium - K		
U-ECK-019	K in dilute HNO_3, 10000 µg/mL	kit
Selenium - Se		
U-ECK-034	Se in dilute HNO_3, 10000 µg/mL	kit
Silicon - Si		
U-ECK-014	Si in dilute HNO_3 with trace HF, 10000 µg/mL	kit
Silver - Ag		
U-ECK-047	Ag in dilute HNO_3, 10000 µg/mL	kit
Sodium - Na		
U-ECK-011	Na in dilute HNO_3, 10000 µg/mL	kit
Strontium - Sr		
U-ECK-038	Sr in dilute HNO_3, 10000 µg/mL	kit
Thallium - Tl		
U-ECK-081	Tl in dilute HNO_3, 10000 µg/mL	kit
Tin - Sn		
U-ECK-050	Sn in dilute HNO_3 with trace HF, 10000 µg/mL	kit
Titanium - Ti		
U-ECK-022	Ti in water with trace HF, 10000 µg/mL	kit
Vanadium - V		
U-ECK-023	V in dilute HNO_3, 10000 µg/mL	kit
Zinc - Zn		
U-ECK-030	Zn in dilute HNO_3, 10000 µg/mL	kit

ULTRAgrade® single element standards for atomic absorption spectroscopy

ULTRAgrade® Quality

- Manufactured and tested under ULTRA's ISO 9001 and ISO 17025 quality systems
- Starting materials 99.99% pure, wherever possible
- Traceable to NIST SRMs, wherever possible

Confirmed against an independent second-source standard

Code	Product	Unit
Aluminium - Al		
U-IAA-213	Al in dilute HNO_3, 1000 µg/mL	125 mL
Antimony - Sb		
U-IAA-251	Sb in dilute HNO_3, 1000 µg/mL	125 mL
Arsenic - As		
U-IAA-233	As in dilute HNO_3, 1000 µg/mL	125 mL
Barium - Ba		
U-IAA-256	Ba in dilute HNO_3, 1000 µg/mL	125 mL

Code	Product	Unit
Beryllium - Be		
U-IAA-204	Be in dilute HNO_3, 1000 µg/mL	125 mL
Bismuth - Bi		
U-IAA-283	Bi in dilute HNO_3, 1000 µg/mL	125 mL
Boron - B		
U-IAA-205	B in water with trace NH_4OH, 1000 µg/ml	125 mL
Cadmium - Cd		
U-IAA-248	Cd in dilute HNO_3, 1000 µg/mL	125 mL
Caesium - Cs		
U-IAA-255	Cs in dilute HNO_3, 1000 µg/mL	125 mL
Calcium - Ca		
U-IAA-220	Ca in dilute HNO_3, 1000 µg/mL	125 mL
Cerium - Ce		
U-IAA-258	Ce in dilute HNO_3, 1000 µg/mL	125 mL
Chromium - Cr		
U-IAA-224	Cr in dilute HNO_3, 1000 µg/mL	125 mL
Cobalt - Co		
U-IAA-227	Co in dilute HNO_3, 1000 µg/mL	125 mL
Copper - Cu		
U-IAA-229	Cu in dilute HNO_3, 1000 µg/mL	125 mL
Dysprosium - Dy		
U-IAA-266	Dy in dilute HNO_3, 1000 µg/mL	125 mL
Erbium - Er		
U-IAA-268	Er in dilute HNO_3, 1000 µg/mL	125 mL
Europium - Eu		
U-IAA-263	Eu in dilute HNO_3, 1000 µg/mL	125 mL
Gadolinium - Gd		
U-IAA-264	Gd in dilute HNO_3, 1000 µg/mL	125 mL
Gallium - Ga		
U-IAA-231	Ga in dilute HNO_3, 1000 µg/mL	125 mL
Germanium - Ge		
U-IAA-232	Germanium (Ge) in water with trace HF, 1000 µg/mL	125 mL
Gold - Au		
U-IAA-279	Au in dilute HCl, 1000 µg/mL	125 mL
Hafnium - Hf		
U-IAA-272	Hf in dilute HCl, 1000 µg/mL	125 mL
Holmium - Ho		
U-IAA-267	Ho in dilute HNO_3, 1000 µg/mL	125 mL
Indium - In		
U-IAA-249	In in dilute HNO_3, 1000 µg/mL	125 mL
Iridium - Ir		
U-IAA-277	Ir in dilute HCl, 1000 µg/mL	125 mL

Code	Product	Unit
Iron - Fe		
U-IAA-226	Fe in dilute HNO_3, 1000 µg/mL	125 mL
Lanthanum - La		
U-IAA-257	La in dilute HNO_3, 1000 µg/mL	125 mL
Lead - Pb		
U-IAA-282	Pb in dilute HNO_3, 1000 µg/mL	125 mL
Lithium - Li		
U-IAA-203	Li in dilute HNO_3, 1000 µg/mL	125 mL
Lutetium - Lu		
U-IAA-271	Lu in dilute HNO_3, 1000 µg/mL	125 mL
Magnesium - Mg		
U-IAA-212	Mg in dilute HNO_3, 1000 µg/mL	125 mL
Manganese - Mn		
U-IAA-225	Mn in dilute HNO_3, 1000 µg/mL	125 mL
Mercury - Hg		
U-IAA-280	Hg in dilute HNO_3, 1000 µg/mL	125 mL
Molybdenum - Mo		
U-IAA-242	Mo in water with trace NH_4OH, 1000 µg/mL	125 mL
Neodymium - Nd		
U-IAA-260	Nd in dilute HNO_3, 1000 µg/mL	125 mL
Nickel - Ni		
U-IAA-228	Ni in dilute HNO_3, 1000 µg/mL	125 mL
Niobium - Nb		
U-IAA-241	Nb in water with trace HF, 1000 µg/mL	125 mL
Palladium - Pd		
U-IAA-246	Pd in dilute HNO_3, 1000 µg/mL	125 mL
Phosphorus - P		
U-IAA-215	P in dilute HNO_3, 1000 µg/mL	125 mL
Platinum - Pt		
U-IAA-278	Pt in dilute HCl, 1000 µg/mL	125 mL
Potassium - K		
U-IAA-219	K in dilute HNO_3, 1000 µg/mL	125 mL
Praseodymium - Pr		
U-IAA-259	Pr in dilute HNO_3, 1000 µg/mL	125 mL
Rhenium - Re		
U-IAA-275	Re in water, 1000 µg/mL	125 mL
Rhodium - Rh		
U-IAA-245	Rh in dilute HCl, 1000 µg/mL	125 mL
Rubidium - Rb		
U-IAA-237	Rb in dilute HNO_3, 1000 µg/mL	125 mL
Ruthenium - Ru		
U-IAA-244	Ru in dilute HCl, 1000 µg/mL	125 mL

Code	Product	Unit
Samarium - Sm		
U-IAA-262	Sm in dilute HNO_3, 1000 µg/mL	125 mL
Scandium - Sc		
U-IAA-221	Sc in dilute HNO_3, 1000 µg/mL	125 mL
Selenium - Se		
U-IAA-234	Se in dilute HNO_3, 1000 µg/mL	125 mL
Silicon - Si		
U-IAA-214	Si in dilute HNO_3 with trace HF, 1000 µg/mL	125 mL
Silver - Ag		
U-IAA-247	Ag in dilute HNO_3, 1000 µg/mL	125 mL
Sodium - Na		
U-IAA-211	Na in dilute HNO_3, 1000 µg/mL	125 mL
Strontium - Sr		
U-IAA-238	Sr in dilute HNO_3, 1000 µg/mL	125 mL
Sulfur - S		
U-IAA-216	Sulfur (S) in water, 1000 µg/mL	125 mL
Tantalum - Ta		
U-IAA-273	Ta in water with trace HF, 1000 µg/mL	125 mL
Tellurium - Te		
U-IAA-252	Te in dilute HCl 1000 µg/mL	125 mL
Terbium - Tb		
U-IAA-265	Tb in dilute HNO_3, 1000 µg/mL	125 mL
Thallium - Tl		
U-IAA-281	Tl in dilute HNO_3, 1000 µg/mL	125 mL
Thorium - Th		
U-IAA-290	Th in dilute HNO_3, 1000 µg/mL	125 mL
Thulium - Tm		
U-IAA-269	Tm in dilute HNO_3, 1000 µg/mL	125 mL
Tin - Sn		
U-IAA-250	Sn in dilute HNO_3, 1000 µg/mL	125 mL
Titanium - Ti		
U-IAA-222	Ti in dilute HNO_3, 1000 µg/mL	125 mL
Tungsten - W		
U-IAA-274	W in water with trace $NH_4(OH)$, 1000 µg/mL	125 mL
Uranium - U		
U-IAA-292	U in dilute HNO_3, 1000 µg/mL	125 mL
Vanadium - V		
U-IAA-223	V in dilute HNO_3, 1000 µg/mL	125 mL
Ytterbium - Yb		
U-IAA-270	Yb in dilute HNO_3, 1000 µg/mL	125 mL
Yttrium - Y		
U-IAA-239	Y in dilute HNO_3, 1000 µg/mL	125 mL

Code	Product	Unit
Zinc -Zn		
U-IAA-230	Zn in dilute HNO_3, 1000 µg/mL	125 mL
Zirconium - Zr		
U-IAA-240	Zr in dilute HNO_3, 1000 µg/mL	125 mL

ULTRA Scientific's EnviroConcentrates™ for atomic absorption spectroscopy

ULTRA Scientific's AA EnviroConcentrates consist of a 10 mL bottle of the selected element at a concentration of 10000 µg/mL. Simply pipette the required amount of EnviroConcentrate and dilute to volume. Standards are traceable to NIST Standard Reference Materials® whenever possible.

Code	Product	Unit
Aluminium - Al		
U-IAA-013	Al in dilute HNO_3, 10000 µg/mL	10 mL
Antimony - Sb		
U-IAA-051	Sb in dilute HNO_3, 10000 µg/mL	10 mL
Arsenic - As		
U-IAA-033	As in dilute HNO_3, 10000 µg/mL	10 mL
Barium - Ba		
U-IAA-056	Ba in dilute HNO_3, 10000 µg/mL	10 mL
Beryllium - Be		
U-IAA-004	Be in dilute HNO_3, 10000 µg/mL	10 mL
Bismuth - Bi		
U-IAA-083	Bi in dilute HNO_3, 10000 µg/mL	10 mL
Boron - B		
U-IAA-005	B in water with trace NH_4OH, 10000 µg/mL	10 mL
Cadmium - Cd		
U-IAA-048	Cd in dilute HNO_3, 10000 µg/mL	10 mL
Caesium - Cs		
U-IAA-055	Cs in dilute HNO_3, 10000 µg/mL	10 mL
Calcium - Ca		
U-IAA-020	Ca in dilute HNO_3, 10000 µg/mL	10 mL
Cerium - Ce		
U-IAA-058	Ce in dilute HNO_3, 10000 µg/mL	10 mL
Chromium - Cr		
U-IAA-024	Cr in dilute HNO_3, 10000 µg/mL	10 mL
Cobalt - Co		
U-IAA-027	Co in dilute HNO_3, 10000 µg/mL	10 mL
Copper - Cu		
U-IAA-029	Cu in dilute HNO_3, 10000 µg/mL	10 mL
Dysprosium - Dy		
U-IAA-066	Dy in dilute HNO_3, 10000 µg/mL	10 mL
Erbium - Er		
U-IAA-068	Er in dilute HNO_3, 10000 µg/mL	10 mL

Code	Product	Unit
Europium - Eu		
U-IAA-063	Eu in dilute HNO_3, 10000 µg/mL	10 mL
Gadolinium - Gd		
U-IAA-064	Gd in dilute HNO_3, 10000 µg/mL	10 mL
Gallium - Ga		
U-IAA-031	Ga in dilute HNO_3, 10000 µg/mL	10 mL
Germanium - Ge		
U-IAA-032	Ge in water with trace HF, 10000 µg/mL	10 mL
Holmium - Ho		
U-IAA-067	Ho in dilute HNO_3, 10000 µg/mL	10 mL
Indium - In		
U-IAA-049	In in dilute HNO_3, 10000 µg/mL	10 mL
Iron - Fe		
U-IAA-026	Fe in dilute HNO_3, 10000 µg/mL	10 mL
Lanthanum - La		
U-IAA-057	La in dilute HNO_3, 10000 µg/mL	10 mL
Lead - Pb		
U-IAA-082	Pb in dilute HNO_3, 10000 µg/mL	10 mL
Lithium - Li		
U-IAA-003	Li in dilute HNO_3, 10000 µg/mL	10 mL
Magnesium - Mg		
U-IAA-012	Mg in dilute HNO_3, 10000 µg/mL	10 mL
Manganese - Mn		
U-IAA-025	Mn in dilute HNO_3, 10000 µg/mL	10 mL
Mercury - Hg		
U-IAA-080	Hg in dilute HNO_3, 10000 µg/mL	10 mL
Molybdenum - Mo		
U-IAA-042	Mo in water with trace NH_4OH, 10000 µg/mL	10 mL
Neodymium - Nd		
U-IAA-060	Nd in dilute HNO_3, 10000 µg/mL	10 mL
Nickel - Ni		
U-IAA-028	Ni in dilute HNO_3, 10000 µg/mL	10 mL
Niobium - Nb		
U-IAA-041	Nb in water with trace HF, 10000 µg/mL	10 mL
Phosphorus - P		
U-IAA-015	P in dilute HNO_3, 10000 µg/mL	10 mL
Potassium - K		
U-IAA-019	K in dilute HNO_3, 10000 µg/mL	10 mL
Praseodymium - Pr		
U-IAA-059	Pr in dilute HNO_3, 10000 µg/mL	10 mL
Samarium - Sm		
U-IAA-062	Sm in dilute HNO_3, 10000 µg/mL	10 mL

Code	Product	Unit
Selenium - Se		
U-IAA-034	Se in dilute HNO_3, 10000 µg/mL	10 mL
Silicon - Si		
U-IAA-014	Si in dilute HNO_3 with trace HF, 10000 µg/mL	10 mL
Silver - Ag		
U-IAA-047	Ag in dilute HNO_3, 10000 µg/mL	10 mL
Sodium - Na		
U-IAA-011	Na in dilute HNO_3, 10000 µg/mL	10 mL
Strontium - Sr		
U-IAA-038	Sr in dilute HNO_3, 10000 µg/mL	10 mL
Sulfur - S		
U-IAA-016	Sulfur (S) in water, 10000 µg/mL	10 mL
Tantalum - Ta		
U-IAA-073	Ta in water with trace HF, 10000 µg/mL	10 mL
Tellurium - Te		
U-IAA-052	Te in dilute HCl, 10000 µg/mL	10 mL
Terbium - Tb		
U-IAA-065	Tb in dilute HNO_3, 10000 µg/mL	10 mL
Thallium - Tl		
U-IAA-081	Tl in dilute HNO_3, 10000 µg/mL	10 mL
Thorium - Th		
U-IAA-090	Th in dilute HNO_3, 10000 µg/mL	10 mL
Tin - Sn		
U-IAA-050	Sn in dilute HNO_3 with trace HF, 10000 µg/mL	10 mL
Titanium - Ti		
U-IAA-022	Ti in water with trace HF, 10000 µg/mL	10 mL
Tungsten - W		
U-IAA-074	W in dilute HNO_3 with trace NH_4OH, 10000 µg/mL	10 mL
Uranium - U		
U-IAA-092	U in dilute HNO_3, 10000 µg/mL	10 mL
Vanadium - V		
U-IAA-023	V in dilute HNO_3, 10000 µg/mL	10 mL
Ytterbium - Yb		
U-IAA-070	Yb in dilute HNO_3, 10000 µg/mL	10 mL
Yttrium - Y		
U-IAA-039	Y in dilute HNO_3, 10000 µg/mL	10 mL
Zinc - Zn		
U-IAA-030	Zn in dilute HNO_3, 10000 µg/mL	10 mL
Zirconium - Zr		
U-IAA-040	Zr in dilute HNO_3,10000 µg/mL	10 mL

ULTRAgrade® multi-element standards

ICP Standards

	Code	Product	Unit
New	U-ICM-106	ICP Calibration Standard Surface Water (X) 23 Analytes in 5% HNO_3 with trace HF	125 mL

As (Arsenic) ..... 50 ng/mL	Co (Cobalt) .....25 ng/mL	K (Potassium) ..... 3000 ng/mL
Ba (Barium)..... 50 ng/mL	Cu (Copper).....20 ng/mL	Se (Selenium) ..... 10 ng/mL
Be (Beryllium) ..... 20 ng/mL	Fe (Iron).....100 ng/mL	Na (Sodium)..... 8000 ng/mL
Bi (Bismuth) ..... 10 ng/mL	Pb (Lead).....25 ng/mL	Sr (Strontium) ..... 100 ng/mL
B (Boron) ..... 100 ng/mL	Mg (Magnesium) ...15000 ng/mL	Tl (Thallium)..... 10 ng/mL
Cd (Cadmium) ..... 20 ng/mL	Mn (Manganese) .....30 ng/mL	V (Vanadium)..... 50 ng/mL
Ca (Calcium)..... 35000 ng/mL	Mo (Molybdenum).....100 ng/mL	Zn (Zinc)..... 50 ng/mL
Cr (Chromium)..... 20 ng/mL	Ni (Nickel).....50 ng/mL	

New	U-ICM-103	ICP Calibration Standard (IV) 23 Analytes in 5% HNO_3	125 mL

Ag (Silver)..... 1000 µg/mL	Cr (Chromium) .....1000 µg/mL	Mn (Manganese)..... 1000 µg/mL
Al (Aluminum)..... 1000 µg/mL	Cu (Copper).....1000 µg/mL	Na (Sodium)..... 1000 µg/mL
B (Boron) ..... 1000 µg/mL	Fe (Iron).....1000 µg/mL	Ni (Nickel) ..... 1000 µg/mL
Ba (Barium)..... 1000 µg/mL	Ga (Gallium).....1000 µg/mL	Pb (Lead) ..... 1000 µg/mL
Bi (Bismuth) ..... 1000 µg/mL	In (Indium) .....1000 µg/mL	Sr (Strontium) ..... 1000 µg/mL
Ca (Calcium)..... 1000 µg/mL	K (Potassium).....1000 µg/mL	Tl (Thallium)..... 1000 µg/mL
Cd (Cadmium) ..... 1000 µg/mL	Li (Lithium).....1000 µg/mL	Zn (Zinc)..... 1000 µg/mL
Co (Cobalt) ..... 1000 µg/mL	Mg (Magnesium) .....1000 µg/mL	

New	U-ICM-102	ICP Calibration Standard (I) 19 Analytes in 5% HNO_3	125 mL

Ag (Silver)..... 50 µg/mL	Co (Cobalt) .....20 µg/mL	Ni (Nickel) ..... 50 µg/mL
Al (Aluminum)..... 100 µg/mL	Cr (Chromium) .....25 µg/mL	Pb (Lead) ..... 200 µg/mL
B (Boron) ..... 15 µg/mL	Cu (Copper).....20 µg/mL	Sr (Strontium) ..... 1 µg/mL
Ba (Barium)..... 5 µg/mL	Fe (Iron).....15 µg/mL	Tl (Thallium)..... 400 µg/mL
Be (Beryllium) ..... 1 µg/mL	Ga (Gallium).....150 µg/mL	Zn (Zinc)..... 20 µg/mL
Bi (Bismuth) ..... 200 µg/mL	In (Indium) .....200 µg/mL	
Cd (Cadmium) ..... 20 µg/mL	Mn (Manganese) .....5 µg/mL	

New	U-ICM-108	ICP Calibration Standard - Quality Control (XVI) 21 Analytes in 5% HNO_3 with HF, tartaric acid	125 mL

As (Arsenic) ..... 100 µg/mL	Fe (Iron).....100 µg/mL	Sb (Antimony) ..... 100 µg/mL
Be (Beryllium) ..... 100 µg/mL	Li (Lithium).....100 µg/mL	Se (Selenium)..... 100 µg/mL
Ca (Calcium)..... 100 µg/mL	Mg (Magnesium) .....100 µg/mL	Sr (Strontium) ..... 100 µg/mL
Cd (Cadmium) ..... 100 µg/mL	Mn (Manganese) .....100 µg/mL	Ti (Titanium)..... 100 µg/mL
Co (Cobalt) ..... 100 µg/mL	Mo (Molybdenum).....100 µg/mL	Tl (Thallium)..... 100 µg/mL
Cr (Chromium)..... 100 µg/mL	Ni (Nickel).....100 µg/mL	V (Vanadium)..... 100 µg/mL
Cu (Copper) ..... 100 µg/mL	Pb (Lead).....100 µg/mL	Zn (Zinc)..... 100 µg/mL

New	U-ICM-101	ICP Calibration Standard (VIII) 24 Analytes in 5% HNO_3 with trace HCl	125 mL

Al (Aluminum)..... 100 µg/mL	Cr (Chromium) .....100 µg/mL	Na (Sodium)..... 100 µg/mL
B (Boron) ..... 100 µg/mL	Cu (Copper).....100 µg/mL	Ni (Nickel) ..... 100 µg/mL
Ba (Barium)..... 100 µg/mL	Fe (Iron).....100 µg/mL	Pb (Lead) ..... 100 µg/mL
Be (Beryllium) ..... 100 µg/mL	Ga (Gallium).....100 µg/mL	Se (Selenium)..... 100 µg/mL
Bi (Bismuth) ..... 100 µg/mL	K (Potassium).....100 µg/mL	Sr (Strontium) ..... 100 µg/mL
Ca (Calcium)..... 100 µg/mL	Li (Lithium).....100 µg/mL	Te (Tellurium) ..... 100 µg/mL
Cd (Cadmium) ..... 100 µg/mL	Mg (Magnesium) .....100 µg/mL	Tl (Thallium)..... 100 µg/mL
Co (Cobalt) ..... 100 µg/mL	Mn (Manganese) .....100 µg/mL	Zn (Zinc)..... 100 µg/mL

New	U-ICM-104	ICP Calibration Standard Trace Metals (XIII) 15 Analytes in 5% HNO_3 with trace HF	125 mL

Al (Aluminum)..... 500 µg/mL	Cr (Chromium) .....100 µg/mL	Ni (Nickel) ..... 100 µg/mL
As (Arsenic) ..... 100 µg/mL	Cu (Copper).....100 µg/mL	Pb (Lead) ..... 100 µg/mL
Be (Beryllium) ..... 100 µg/mL	Fe (Iron).....100 µg/mL	Se (Selenium)..... 25 µg/mL
Cd (Cadmium) ..... 25 µg/mL	Hg (Mercury).....5 µg/mL	V (Vanadium)..... 250 µg/mL
Co (Cobalt) ..... 100 µg/mL	Mn (Manganese) .....100 µg/mL	Zn (Zinc)..... 100 µg/mL

New	U-ICM-100	ICP Calibration Standard Earth Alkali Elements (III) 4 Analytes in 5% HNO_3	125 mL

Ba (Barium)..... 1000 µg/mL	Mg (Magnesium) .....1000 µg/mL
Ca (Calcium)..... 1000 µg/mL	Sr (Strontium).....1000 µg/mL

New	U-ICM-105	ICP Calibration Standard Toxic Elements (IX) 5 Analytes in 5% HNO_3	125 mL

As (Arsenic) ..... 100 µg/mL	Ni (Nickel) ..... 100 µg/mL
Be (Beryllium) ..... 100 µg/mL	Pb (Lead) ..... 100 µg/mL
Cd (Cadmium) ..... 100 µg/mL	Se (Selenium) ..... 100 µg/mL
Cr+6 (Chromium (VI) ..... 100 µg/mL	Tl (Thallium) ..... 100 µg/mL
Hg (Mercury) ..... 100 µg/mL	

	Code	Product	Unit
New	U-ICM-109	ICP Calibration Standard Sewage Sludge (XI) 7 Analytes in 5% HNO_3 Cd (Cadmium) ..... 10 µg/mL Cr (Chromium)..... 900 µg/mL Cu (Copper)..... 800 µg/mL Hg (Mercury) .....8 µg/mL Ni (Nickel).....200 µg/mL Pb (Lead) .....900 µg/mL Zn (Zinc) ..... 2500 µg/mL	125 mL
New	U-ICM-107	ICP Calibration Standard HCl Soluble Elements (XVII) 7 Analytes in 15% HCl with trace HNO_3, HF, tartaric Hf (Hafnium) ..... 100 µg/mL Ir (Iridium) ..... 100 µg/mL Sb (Antimony)..... 100 µg/mL Sn (Tin) .....100 µg/mL Ta (Tantalum).....100 µg/mL Ti (Titanium).....100 µg/mL Zr (Zirconium)..... 100 µg/mL	125 mL

ICP, graphite furnace AA & ion chromatography standards

New	U-ICM-110-5	ICP Wavelength Calibration Standard (V) 26 Analytes in 5% HNO_3 with trace HF Al (Aluminum)..... 20 µg/mL As (Arsenic)..... 20 µg/mL B (Boron) ..... 2 µg/mL Ba (Barium) ..... 2 µg/mL Be (Beryllium)..... 1 µg/mL Ca (Calcium)..... 10 µg/mL Cd (Cadmium)..... 2 µg/mL Cr (Chromium)..... 2 µg/mL Cu (Copper)..... 2 µg/mL Fe (Iron).....2 µg/mL Hg (Mercury) .....5 µg/mL K (Potassium).....100 µg/mL Li (Lithium) .....2 µg/mL Mg (Magnesium) .....1 µg/mL Mn (Manganese) .....1 µg/mL Na (Sodium).....20 µg/mL Ni (Nickel).....5 µg/mL P (Phosphorus) .....10 µg/mL Pb (Lead)..... 20 µg/mL Sc (Scandium)..... 1 µg/mL Se (Selenium)..... 20 µg/mL Sr (Strontium) ..... 1 µg/mL Te (Tellurium) ..... 20 µg/mL Ti (Titanium) ..... 2 µg/mL Y (Yttrium)..... 1 µg/mL Zn (Zinc) ..... 2 µg/mL	500 mL
New	U-ICM-120-5	ICP Tuning Standard (XXIV) 15 Analytes in 1% HNO_3 Al (Aluminum)..... 50 µg/mL As (Arsenic)..... 50 µg/mL Ba (Barium) ..... 50 µg/mL Cd (Cadmium) ..... 50 µg/mL Co (Cobalt) ..... 50 µg/mL Cr (Chromium) .....50 µg/mL Cu (Copper) .....50 µg/mL K (Potassium).....500 µg/mL Mn (Manganese) .....50 µg/mL Mo (Molybdenum) .....50 µg/mL Ni (Nickel)..... 50 µg/mL Pb (Lead)..... 50 µg/mL Se (Selenium)..... 50 µg/mL Sr (Strontium) ..... 50 µg/mL Zn (Zinc) ..... 50 µg/mL	500 mL
New	U-ICM-111-5	ICP Wavelength Calibration Standard (XIV) 11 Analytes in 2% HCl with trace HNO_3 As (Arsenic)..... 20 µg/mL K (Potassium)..... 100 µg/mL La (Lanthanum) ..... 20 µg/mL Li (Lithium)..... 20 µg/mL Mn (Manganese) .....20 µg/mL Mo (Molybdenum) .....20 µg/mL Na (Sodium).....20 µg/mL Ni (Nickel).....20 µg/mL P (Phosphorus)..... 100 µg/mL S (Sulfur)..... 100 µg/mL Sc (Scandium)..... 20 µg/mL	500 mL
New	U-ICC-330	IC Cations Mixture (VII) 9 Analytes in 0.2% HNO_3 $NH4^+$ (Ammonium) ... 100 µg/mL Ba^{+2} (Barium)..... 100 µg/mL Ca^{+2} (Calcium)..... 100 µg/mL K^+ (Potassium).....100 µg/mL Li^+ (Lithium).....100 µg/mL Mg^{+2} (Magnesium).....100 µg/mL Mn (Manganese)..... 100 µg/mL Na^+ (Sodium)..... 100 µg/mL Sr^{+2} (Strontium)..... 100 µg/mL	125 mL
New	U-ICM-150	Graphite Furnace AA Calibration Standard (XVIII) 16 Analytes in 5% HNO3 with trace tartaric Ag (Silver)..... 10 µg/mL Al (Aluminum)..... 100 µg/mL As (Arsenic)..... 100 µg/mL Ba (Barium) ..... 50 µg/mL Be (Beryllium)..... 5 µg/mL Cd (Cadmium)..... 5 µg/mL Co (Cobalt).....50 µg/mL Cr (Chromium) .....20 µg/mL Cu (Copper) .....50 µg/mL Fe (Iron).....20 µg/mL Mn (Manganese) .....20 µg/mL Ni (Nickel).....50 µg/mL Pb (Lead)..... 100 µg/mL Sb (Antimony)..... 100 µg/mL Se (Selenium)..... 100 µg/mL Tl (Thallium)..... 100 µg/mL	125 mL

ICP-MS Standards

	U-IMS-102	ICP-MS Calibration Standard (XXI) 29 Analytes in 5% HNO_3 Ag (Silver)..... 10 µg/mL Al (Aluminum)..... 10 µg/mL As (Arsenic)..... 10 µg/mL Ba (Barium) ..... 10 µg/mL Be (Beryllium)..... 10 µg/mL Bi (Bismuth)..... 10 µg/mL Ca (Calcium)..... 10 µg/mL Cd (Cadmium)..... 10 µg/mL Co (Cobalt)..... 10 µg/mL Cr (Chromium)..... 10 µg/mL Cs (Cesium).....10 µg/mL Cu (Copper) .....10 µg/mL Fe (Iron).....10 µg/mL Ga (Gallium).....10 µg/mL In (Indium).....10 µg/mL K (Potassium).....10 µg/mL Li (Lithium) .....10 µg/mL Mg (Magnesium) .....10 µg/mL Mn (Manganese) .....10 µg/mL Na (Sodium).....10 µg/mL Ni (Nickel)..... 10 µg/mL Pb (Lead)..... 10 µg/mL Rb (Rubidium) ..... 10 µg/mL Se (Selenium)..... 10 µg/mL Sr (Strontium) ..... 10 µg/mL Tl (Thallium)..... 10 µg/mL U (Uranium)..... 10 µg/mL V (Vanadium)..... 10 µg/mL Zn (Zinc) ..... 10 µg/mL	125 mL
New	U-IMS-121	Mercury ICP-MS Standard (XXI) in 5% HNO_3 Hg (Mercury)..... 10 µg/mL	125 mL

	Code	Product	Unit
New	U-IMS-120	ICP-MS Calibration Standard (VI) 30 Analytes in 5% HNO_3 with trace HF	125 mL

Ag (Silver) ..... 10 µg/mL	Cr (Chromium) ..... 10 µg/mL	Ni (Nickel) ..... 10 µg/mL
Al (Aluminum) ..... 10 µg/mL	Cu (Copper) ..... 10 µg/mL	Pb (Lead) ..... 10 µg/mL
As (Arsenic) ..... 100 µg/mL	Fe (Iron) ..... 100 µg/mL	Rb (Rubidium) ..... 10 µg/mL
B (Boron) ..... 100 µg/mL	Ga (Gallium) ..... 10 µg/mL	Se (Selenium) ..... 100 µg/mL
Ba (Barium) ..... 10 µg/mL	K (Potassium) ..... 10 µg/mL	Sr (Strontium) ..... 10 µg/mL
Be (Beryllium) ..... 100 µg/mL	Li (Lithium) ..... 10 µg/mL	Te (Tellurium) ..... 10 µg/mL
Bi (Bismuth) ..... 10 µg/mL	Mg (Magnesium) ..... 10 µg/mL	Tl (Thallium) ..... 10 µg/mL
Ca (Calcium) ..... 1000 µg/mL	Mn (Manganese) ..... 10 µg/mL	U (Uranium) ..... 10 µg/mL
Cd (Cadmium) ..... 10 µg/mL	Mo (Molybdenum) ..... 10 µg/mL	V (Vanadium) ..... 10 µg/mL
Co (Cobalt) ..... 10 µg/mL	Na (Sodium) ..... 10 µg/mL	Zn (Zinc) ..... 100 µg/mL

New	U-IMS-130-5	ICP-MS Mass Calibration Standard (XXIII) 15 Analytes in 5% HNO_3 with trace HCl	500 mL

B (Boron) ..... 1 ng/mL	In (Indium) ..... 1 ng/mL	Rh (Rhodium) ..... 1 ng/mL
Ba (Barium) ..... 1 ng/mL	K (Potassium) ..... 1 ng/mL	Sc (Scandium) ..... 1 ng/mL
Co (Cobalt) ..... 1 ng/mL	Li (Lithium) ..... 1 ng/mL	Tl (Thallium) ..... 1 ng/mL
Fe (Iron) ..... 1 ng/mL	Lu (Lutetium) ..... 1 ng/mL	U (Uranium) ..... 1 ng/mL
Ga (Gallium) ..... 1 ng/mL	Na (Sodium) ..... 1 ng/mL	Y (Yttrium) ..... 1 ng/mL

New	U-IMS-133-L	ICP-MS Plasma Setup Solution (XX) 11 Analytes in in 1% HNO_3 with trace HF	1 L

Ba (Barium) ..... 10 ng/mL	Ge (Germanium) ..... 10 ng/mL	Sc (Scandium) ..... 10 ng/mL
Cd (Cadmium) ..... 10 ng/mL	Mg (Magnesium) ..... 10 ng/mL	Tb (Terbium) ..... 10 ng/mL
Ce (Cerium) ..... 10 ng/mL	Pb (Lead) ..... 10 ng/mL	Tl (Thallium) ..... 10 ng/mL
Cu (Copper) ..... 10 ng/mL	Rh (Rhodium) ..... 10 ng/mL	

New	U-IMS-131	ICP-MS Optimization Standard (XXII) 5 Analytes in 2% HNO_3 with trace HCl	125 mL

Cd (Cadmium) ..... 200 ng/mL	Mg (Magnesium) ..... 200 ng/mL	Rh (Rhodium) ..... 200 ng/mL
Cu (Copper) ..... 200 ng/mL	Pb (Lead) ..... 200 ng/mL	

New	U-IMS-132	ICP-MS Detection Limit Standard (XIX) 5 Analytes in 1%HNO_3	125 mL

Be (Beryllium) ..... 10 ng/mL	In (Indium) ..... 10 ng/mL	U (Uranium) ..... 10 ng/mL
Co (Cobalt) ..... 10 ng/mL	Tl (Thallium) ..... 10 ng/mL	

U-IMS-101	ICP/MS Calibration Standard 1 17 Analytes 10 µg/ml of each analyte in 5% HNO_3	125 mL

Cerium	Holmium	Samarium	Ytterbium
Dysprosium	Lanthanum	Scandium	Yttrium
Erbium	Lutetium	Terbium	
Europium	Neodymium	Thorium	
Gadolinium	Praseodymium	Thulium	

U-IMS-103	ICP/MS Calibration Standard 3 10 Analytes, 10 µg/mL of each analyte 10% HCl	125 mL

Antimony	Iridium	Rhodium	Tin
Gold	Palladium	Ruthenium	
Hafnium	Platinum	Tellurium	

U-IMS-104	ICP/MS Calibration Standard 4 12 Analytes, 10 µg/mL of each analyte in water	125 mL

Boron	Niobium	Silicon	Titanium
Germanium	Phosphorus	Sulfur	Tungsten
Molybdenum	Rhenium	Tantalum	Zirconium

U-IMS-105	ICP/MS Calibration Standard 5 Mercury ..... 10 µg/mL in 5% HNO_3	125 mL
U-IMS-110	ICP/MS Tuning Solution 5 Analytes, 10 µg/mL of each analyte 2% HNO_3	125 mL

Beryllium	Indium	Magnesium
Cobalt	Lead	

U-IMS-111	ICP/MS Internal Standard Bismuth ..... 100 µg/mL in 2% HNO_3	125 mL
U-IMS-112	ICP/MS Internal Standard Indium ..... 100 µg/mL in 2% HNO_3	125 mL
U-IMS-113	ICP/MS Internal Standard Scandium ..... 100 µg/mL in 2% HNO_3	125 mL
U-IMS-114	ICP/MS Internal Standard Terbium ..... 100 µg/mL in 2% HNO_3	125 mL
U-IMS-115	ICP/MS Internal Standard Yttrium ..... 100 µg/mL in 2% HNO_3	125 mL

Code	Product	Unit
U-IMS-100	ICP/MS Verification Standard 9 Analytes, 10 µg/mL in 2% HNO_3 Beryllium, Bismuth, Cerium, Cobalt, Indium, Lead, Magnesium, Nickel, Uranium	125 mL

MEINHARD glassware for ICP and ICP-MS

New	MHD-ML175010	Spectro Spray Chamber, Slurry	Each
New	MHD-ML175019	Spectro Spray Chamber, EOP, Lg Dbl Pass	Each
New	MHD-ML175005	Spectro Quartz Torch, Spectroflame, fixed inj 1.8mm	Each
New	MHD-ML175006	Spectro Quartz Torch, Radial, Demountable, 80mm Length	Each
New	MHD-ML175021	Spectro Quartz Injector, 1.5 mm	Each
New	MHD-ML175022	Spectro Quartz Injector, 1.8mm	Each
New	MHD-ML175023	Spectro Quartz Injector, 2.5mm	Each
New	MHD-TR-30-A2	Type A nebulizer, glass, 2 mL/min and 1 L/min @ 30 psi	Each
New	MHD-TR-30-C2	Type C nebulizer, glass, 2 mL/min and 1 L/min @ 30 psi	Each
New	MHD-TR-30-K2	Type K nebulizer, glass, 2 mL/min and 0.7 L/min @ 30 psi	Each
New	MHD-TQ-30-A2	Type A nebulizer, Quartz, 2 mL/min, 1 L/min, 30 psi	Each
New	MHD-Q-DIHEN	Direct injection high efficiency nebulizer, Quartz, Type A, 1 L/min Ar @ 90, 120, 150, 170 psi	Each
New	MHD-Q-HEN	High efficiency nebulizer, Quartz, Type A, 1 L/min Ar at 90, 120, 150, 170 psi	Each
New	MHD-DIHEN	Direct injection high efficiency nebulizer, Type A, 1 L/min Ar at 90, 120, 150, 170 psi	Each
New	MHD-DIHEN ADAPTER	To fit DIHEN to demountable torch, specify instrument make and model	Each
New	MHD-HEN	High efficiency nebulizer, Type A, 1 L/min Ar at 90, 120, 150, 170 psi	Each

Further multielement standards and standards for EPA methods

Code	Product	Unit
U-IQC-007	Inorganic Quality Control Standard 1 7 analytes in 5% HNO_3 Aluminium 100 µg/mL, Barium 100 µg/mL, Boron 100 µg/mL, Potassium 1000 µg/mL, Silicon 50 µg/mL, Silver 100 µg/mL, Sodium 100 µg/mL	125 mL
U-IQC-019	Inorganic Quality Control Standard 2 19 analytes each at 100 µg/mL in dilute HNO_3 Antimony, Arsenic, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Selenium, Thallium, Titanium, Vanadium, Zinc	125 mL
U-IQC-026	Combined Quality Control Standard 26 analytes in dilute HNO_3 Aluminium 100 µg/mL, Barium 100 µg/mL, Boron 100 µg/mL, Potassium 1000 µg/mL, Silicon 50 µg/mL, Silver 100 µg/mL, Sodium 100 µg/mL, Antimony 100 µg/mL, Arsenic 100 µg/mL, Beryllium 100 µg/mL, Cadmium 100 µg/mL, Calcium 100 µg/mL, Chromium 100 µg/mL, Cobalt 100 µg/mL, Copper 100 µg/mL, Iron 100 µg/mL, Lead 100 µg/mL, Magnesium 100 µg/mL, Manganese 100 µg/mL, Molybdenum 100 µg/mL, Nickel 100 µg/mL, Selenium 100 µg/mL, Thallium 100 µg/mL, Titanium 100 µg/mL, Vanadium 100 µg/mL, Zinc 100 µg/mL	125 mL

EPA Method 200.7

Code	Product	Unit
U-ICM-231	EPA Method 200.7 Mixed Calibration Standard I 10 Analytes in 2% HNO_3 Antimony 50 µg/mL, Arsenic 100 µg/mL, Barium 10 µg/mL, Boron 20 µg/mL, Cadmium 20 µg/mL, Calcium 100 µg/mL, Copper 20 µg/mL, Manganese 20 µg/mL, Selenium 50 µg/mL, Silver 5 µg/mL	125 mL
U-ICM-232	EPA Method 200.7 Mixed Calibration Standard II 5 Analytes in 2% HNO_3 Lithium 50 µg/mL, Molybdenum 100 µg/mL, Potassium 200 µg/mL, Sodium 100 µg/mL, Strontium 10 µg/mL	125 mL

Further multielement standards and standards for EPA methods

Code	Product	Unit
U-ICM-233	EPA Method 200.7 Mixed Calibration Standard III 3 Analytes in 2% HNO_3 Cobalt ..... 20 µg/mL Phosphorus .....100 µg/mL Vanadium..... 20 µg/mL	125 mL
U-ICM-234	EPA Method 200.7 Mixed Calibration Standard IV 5 Analytes in 2% HNO_3 Aluminium ..... 100 µg/mL Silicon.....100 µg/mL Zinc ..... 50 µg/mL Chromium ..... 50 µg/mL Tin .....40 µg/mL	125 mL
U-ICM-235	EPA Method 200.7 Mixed Calibration Standard V 6 Analytes in 2% HNO_3 Beryllium ..... 10 µg/mL Lead .....100 µg/mL Nickel ..... 20 µg/mL Iron ..... 100 µg/mL Magnesium .....100 µg/mL Thallium ..... 50 µg/mL	125 mL
U-ICM-642	TCLP Mercury Standard Mercury .....20 µg/mL in 2% HNO_3	125 mL
U-ICK-230A	EPA Method 200.7 Calibration Kit Each Kit contains 100 ml of each of the following standards ICM-231 ICM-233 ICM-235 ICM-232 ICM-234 ICM-642	kit
U-ICM-240	EPA Method 200.7 LPC Solution 30 Analytes in 2% HNO_3 Aluminium ..... 20 µg/mL Copper.....20 µg/mL Potassium ..... 100 µg/mL Antimony ..... 20 µg/mL Iron .....20 µg/mL Selenium ..... 20 µg/mL Arsenic ..... 20 µg/mL Lead .....20 µg/mL Silicon ..... 100 µg/mL Barium ..... 20 µg/mL Lithium.....20 µg/mL Silver ..... 5 µg/mL Beryllium ..... 20 µg/mL Magnesium .....20 µg/mL Sodium..... 20 µg/mL Boron ..... 20 µg/mL Manganese.....20 µg/mL Strontium ..... 20 µg/mL Cadmium ..... 20 µg/mL Mercury.....20 µg/mL Thallium ..... 20 µg/mL Calcium ..... 20 µg/mL Molybdenum .....20 µg/mL Tin ..... 20 µg/mL Chromium ..... 20 µg/mL Nickel .....20 µg/mL Vanadium..... 20 µg/mL Cobalt ..... 20 µg/mL Phosphorus .....100 µg/mL Zinc ..... 20 µg/mL	125 mL
U-ICM-245	EPA Method 200.7 Lab Fortifying Stock Solution 26 Analytes in 2% HNO_3 Aluminium ..... 25 µg/mL Copper.....25 µg/mL Selenium ..... 25 µg/mL Antimony ..... 25 µg/mL Iron .....25 µg/mL Silicon ..... 25 µg/mL Arsenic ..... 25 µg/mL Lead .....25 µg/mL Silver ..... 2.5 µg/mL Barium ..... 25 µg/mL Lithium.....25 µg/mL Strontium ..... 25 µg/mL Beryllium ..... 5 µg/mL Manganese.....25 µg/mL Thallium ..... 25 µg/mL Boron ..... 25 µg/mL Mercury.....5 µg/mL Tin ..... 10 µg/mL Cadmium ..... 10 µg/mL Molybdenum .....10 µg/mL Vanadium..... 10 µg/mL Chromium ..... 25 µg/mL Nickel .....25 µg/mL Zinc ..... 25 µg/mL Cobalt ..... 10 µg/mL Phosphorus .....50 µg/mL	125 mL
U-ICM-241	EPA Method 200.7 SIC Solution I Molybdenum .....50 µg/mL in 2% HNO_3	125 mL
U-ICM-242	EPA Method 200.7 SIC Solution II 5 Analytes in 2% HNO_3 Chromium ..... 20 µg/mL Copper.....40 µg/mL Vanadium..... 20 µg/mL Cobalt ..... 10 µg/mL Manganese.....20 µg/mL	125 mL
U-ICM-243	EPA Method 200.7 SIC Solution III 3 Analytes in 2% HNO_3 Aluminum ..... 30 µg/mL Iron .....150 µg/mL Nickel ..... 20 µg/mL	125 mL
U-ICM-237	EPA Method 200.7 Plasma Solution 4 Analytes in 2% HNO_3 Arsenic ..... 10 µg/mL Selenium .....10 µg/mL Lead ..... 10 µg/mL Thallium.....10 µg/mL	125 mL
U-ICM-238	EPA Method 200.7 Tuning Solution 2 Analytes in 2% HNO_3 Copper ..... 10 µg/mL Lead .....10 µg/mL	125 mL
U-ICM-202	EPA Method 200.7 Calibration Standard 1B 5 Analytes in 5% HNO_3 Arsenic ..... 1000 µg/mL Lead .....1000 µg/mL Thallium ..... 1000 µg/mL Cadmium ..... 500 µg/mL Selenium .....500 µg/mL	125 mL
U-ICM-203	EPA Method 200.7 Calibration Standard 2 7 Analytes in 2% HNO_3 Barium ..... 100 µg/mL Copper.....100 µg/mL Vanadium..... 100 µg/mL Beryllium ..... 100 µg/mL Iron .....1000 µg/mL Cobalt ..... 200 µg/mL Manganese.....100 µg/mL	125 mL

Code	Product	Unit
U-ICM-204	EPA Method 200.7 Calibration Standard 3 3 Analytes in water with trace hydrofluoric acid Boron ..... 100 µg/mL; Molybdenum ..... 1000 µg/mL; Silicon ..... 1000 µg/mL	125 mL
U-ICM-205	EPA Method 200.7 Calibration Standard 4 9 Analytes in 5% HNO_3 Aluminium ..... 1000 µg/mL; Magnesium ..... 1000 µg/mL; Silver ..... 500 µg/mL Calcium ..... 1000 µg/mL; Nickel ..... 500 µg/mL; Sodium ..... 1000 µg/mL Chromium ..... 500 µg/mL; Potassium ..... 1000 µg/mL; Zinc ..... 500 µg/mL	125 mL
U-ICP-051	Sb in dilute $HNO_3/C_4H_6O_6$, 1000 µg/mL	125 mL
U-ICM-221	EPA Method 200.7 Interference Check Std 1 4 Analytes in water with trace hydrofluoric acid Boron ..... 500 µg/mL; Silicon ..... 230 µg/mL Molybdenum ..... 300 µg/mL; Titanium ..... 1000 µg/mL	50 mL
U-ICM-224	Interference Check Standard 4 5 Analytes in 2% HNO_3 Aluminium ..... 3000 µg/mL; Iron ..... 12500 µg/mL; Sodium ..... 2500 µg/mL Calcium ..... 15000 µg/mL; Magnesium ..... 7500 µg/mL	125 mL
U-ICM-223	Interference Check Standard 3 16 Analytes in 5% HNO_3 Arsenic ..... 1000 µg/mL; Copper ..... 300 µg/mL; Silver ..... 300 µg/mL Barium ..... 300 µg/mL; Lead ..... 1000 µg/mL; Thallium ..... 1000 µg/mL Beryllium ..... 100 µg/mL; Manganese ..... 200 µg/mL; Vanadium ..... 300 µg/mL Cadmium ..... 300 µg/mL; Nickel ..... 300 µg/mL; Zinc ..... 300 µg/mL Chromium (III) ..... 300 µg/mL; Potassium ..... 20000 µg/mL Cobalt ..... 300 µg/mL; Selenium ..... 500 µg/mL	50 mL
U-ICM-213	EPA Method 200.7 Spiking Standard 3 12 Analytes in 5% HNO_3 Aluminium ..... 2000 µg/mL; Cobalt ..... 500 µg/mL; Nickel ..... 500 µg/mL Barium ..... 2000 µg/mL; Copper ..... 250 µg/mL; Silver ..... 50 µg/mL Beryllium ..... 50 µg/mL; Iron ..... 1000 µg/mL; Vanadium ..... 500 µg/mL Chromium ..... 200 µg/mL; Manganese ..... 500 µg/mL; Zinc ..... 500 µg/mL	50 mL
U-ICM-212	EPA Method 200.7 Spiking Standard 2 4 Analytes in 5% HNO_3 Calcium ..... 1000 µg/mL; Potassium ..... 10000 µg/mL Magnesium ..... 2000 µg/mL; Sodium ..... 3000 µg/mL	50 mL
U-ICM-211	EPA Method 200.7 Spiking Standard 1 3 Analytes in water with trace hydrofluoric acid Boron ..... 500 µg/mL; Molybdenum ..... 500 µg/mL; Silicon ..... 2000 µg/mL	50 mL
U-ICM-215	EPA Method 200.7 Spiking Standard 5 5 Analytes in 5% HNO_3 Arsenic ..... 800 µg/mL; Lead ..... 1000 µg/mL; Thallium ..... 1000 µg/mL Cadmium ..... 100 µg/mL; Selenium ..... 1000 µg/mL	50 mL

EPA Method 200.8

EPA Method 200.8 provides procedures for determination of dissolved elements in ground waters, surface waters and drinking water by ICP-MS. It may also be used for determination of total recoverable element concentrations in these waters as well as wastewaters, sludges and solid waste samples.

U-ICM-801	EPA Method 200.8 Standard Solution A 18 analytes in dilute nitric acid with trace tartaric acid. Aluminum ..... 10 µg/mL; Cobalt ..... 10 µg/mL; Selenium ..... 50 µg/mL Antimony ..... 10 µg/mL; Copper ..... 10 µg/mL; Thallium ..... 10 µg/mL Arsenic ..... 10 µg/mL; Lead ..... 10 µg/mL; Thorium ..... 10 µg/mL Beryllium ..... 10 µg/mL; Manganese ..... 10 µg/mL; Uranium ..... 10 µg/mL Cadmium ..... 10 µg/mL; Molybdenum ..... 10 µg/mL; Vanadium ..... 10 µg/mL Chromium (III) ..... 10 µg/mL; Nickel ..... 10 µg/mL; Zinc ..... 10 µg/mL	125 mL
U-ICM-801-5	EPA Method 200.8 Standard Solution A	500 mL
U-ICM-802	EPA Method 200.8 Standard Solution B 2 Analytes in dilute HNO_3 Barium ..... 10 µg/mL; Silver ..... 10 µg/mL	125 mL
U-ICM-802-5	EPA Method 200.8 Standard Solution B	500 mL
U-IMS-105	ICP/MS Calibration Standard 5 Mercury ..... 10 µg/mL in 5% HNO_3	125 mL
U-IMS-105-5	ICP/MS Calibration Standard 5	500 mL
U-ICP-079	Au in dilute HCl, 1000 µg/mL	125 mL

Further multielement standards and standards for EPA methods

Code	Product	Unit
U-ICP-079-5	Au in dilute HCl, 1000 µg/mL	4 x 125mL
U-ICM-810	EPA Method 200.8 Internal Standard Solution 5 analytes in dilute HNO_3 Bismuth ..... 100 µg/mL; Scandium .....100 µg/mL; Yttrium ..... 100 µg/mL Indium ..... 100 µg/mL; Terbium .....100 µg/mL	125 mL
U-ICM-810-5	EPA Method 200.8 Internal Standard Solution	500 mL
U-ICM-820	EPA Method 200.8 & ICP-MS Tuning Standard 5 Analytes, 100 µg/mL of each analyte in dilute HNO_3 Beryllium ..... Indium; Magnesium Cobalt ..... Lead	125 mL
U-ICM-820-5	EPA Method 200.8 & ICP-MS Tuning Standard	500 mL
U-IMS-110	ICP/MS Tuning Solution 5 Analytes, 10 µg/mL of each analyte 2% HNO_3 Beryllium; Indium; Magnesium Cobalt; Lead	125 mL
U-IMS-110-5	ICP/MS Tuning Solution	500 mL
U-IMS-111	ICP/MS Internal Standard Bismuth ..... 100 µg/mL in 2% HNO_3	125 mL
U-IMS-111-5	ICP/MS Internal Standard Bismuth ..... 100 µg/mL in 2% HNO_3	500 mL
U-IMS-112	ICP/MS Internal Standard Indium ..... 100 µg/mL in 2% HNO_3	125 mL
U-IMS-112-5	ICP/MS Internal Standard Indium ..... 100 µg/mL in 2% HNO_3	500 mL
U-IMS-113	ICP/MS Internal Standard Scandium ..... 100 µg/mL in 2% HNO_3	125 mL
U-IMS-113-5	ICP/MS Internal Standard Scandium ..... 100 µg/mL in 2% HNO_3	500 mL
U-IMS-114	ICP/MS Internal Standard Terbium ..... 100 µg/mL in 2% HNO_3	125 mL
U-IMS-114-5	ICP/MS Internal Standard Terbium ..... 100 µg/mL in 2% HNO_3	500 mL
U-IMS-115	ICP/MS Internal Standard Yttrium ..... 100 µg/mL in 2% HNO_3	125 mL
U-IMS-115-5	ICP/MS Internal Standard Yttrium ..... 100 µg/mL in 2% HNO_3	500 mL

EPA Method 6010C

U-ICM-601	EPA Method 6010C Mixed Standard Solution I 6 Analytes in 2% HNO_3 Beryllium ..... 50 µg/mL; Lead .....500 µg/mL; Selenium ..... 200 µg/mL Cadmium ..... 150 µg/mL; Manganese.....100 µg/mL; Zinc ..... 150 µg/mL	125 mL
U-ICM-601-5	EPA Method 6010C Mixed Standard Solution I	500 mL
U-ICM-602	EPA Method 6010C Mixed Standard Solution II 5 Analytes in 2% HNO_3 Barium ..... 100 µg/mL; Copper.....100 µg/mL; Vanadium..... 100 µg/mL Cobalt ..... 100 µg/mL; Iron .....10000 µg/mL	125 mL
U-ICM-602-5	EPA Method 6010C Mixed Standard Solution II	500 mL
U-ICM-603	EPA Method 6010C Mixed Standard Solution III 2 Analytes in 2% HNO_3 Arsenic ..... 500 µg/mL; Molybdenum .....100 µg/mL	125 mL
U-ICM-603-5	EPA Method 6010C Mixed Standard Solution III	500 mL
U-ICM-604	EPA Method 6010C Mixed Standard Solution IV 8 Analytes in 2% HNO3 Aluminium ..... 200 µg/mL; Lithium.....100 µg/mL; Sodium..... 200 µg/mL Calcium..... 1000 µg/mL; Nickel .....20 µg/mL; Strontium ..... 10 µg/mL Chromium ..... 20 µg/mL; Potassium .....400 µg/mL	125 mL
U-ICM-604-5	EPA Method 6010C Mixed Standard Solution IV	500 mL

	Code	Product	Unit
	U-ICM-605	EPA Method 6010C Mixed Standard Solution V 4 Analytes in 2% HNO_3 Antimony ..... 200 µg/mL; Silver .....50 µg/mL Magnesium ..... 1000 µg/mL; Thallium.....200 µg/mL	125 mL
	U-ICM-605-5	EPA Method 6010C Mixed Standard Solution V	500 mL
	U-ICP-015	P in dilute HNO_3, 1000 µg/mL	125 mL
	U-ICP-015-5	P in dilute HNO_3, 1000 µg/mL	4 x 125mL
New	U-ICM-607	EPA Method 6010C Mixed Standard Solution IIa 5 Analytes in 2% HNO_3 Barium (Ba) ..... 100 µg/mL; Copper (Cu) .....100 µg/mL; Vanadium (V)..... 100 µg/mL Cobald (Co) ..... 100 µg/mL; Iron (Fe).....1000 µg/mL	125 mL
New	U-ICK-600A	EPA Method 6010C Mixed Standard Solution Kit Each kit contains 125 mL of each of the following standards U-ICM-601 .....EPA Method 6010C Mixed Standard Solution I U-ICM-602 .....EPA Method 6010C Mixed Standard Solution II U-ICM-603 .....EPA Method 6010C Mixed Standard Solution III U-ICM-604 .....EPA Method 6010C Mixed Standard Solution IV U-ICM-605 .....EPA Method 6010C Mixed Standard Solution V U-ICP-015.....Phosphorus (P) in dilute HNO3 , 1000 µg/mL	kit
	U-ICM-611	EPA Method 6010C Interference Check Standard I 5 Analytes in 2% HNO_3 with trace hydrofluoric acid Lithium ..... 300 µg/mL; Phosphorus .....1000 µg/mL; Titanium..... 1000 µg/mL Molybdenum ..... 300 µg/mL; Strontium.....200 µg/mL	125 mL
	U-ICM-611-5	EPA Method 6010C Interference Check Std I	500 mL
	U-ICP-051	Sb in dilute $HNO_3/C_4H_6O_6$, 1000 µg/mL	125 mL
	U-ICM-223	Interference Check Standard 3 16 Analytes in 5% HNO_3 Arsenic..... 1000 µg/mL; Copper .....300 µg/mL; Silver..... 300 µg/mL Barium ..... 300 µg/mL; Lead .....1000 µg/mL; Thallium ..... 1000 µg/mL Beryllium ..... 100 µg/mL; Manganese.....200 µg/mL; Vanadium ..... 300 µg/mL Cadmium ..... 300 µg/mL; Nickel .....300 µg/mL; Zinc..... 300 µg/mL Chromium (III)..... 300 µg/mL; Potassium .....20000 µg/mL Cobalt ..... 300 µg/mL; Selenium .....500 µg/mL	50 mL
	U-ICM-224	Interference Check Standard 4 5 Analytes in 2% HNO_3 Aluminium..... 3000 µg/mL; Iron .....12500 µg/mL; Sodium ..... 2500 µg/mL Calcium..... 15000 µg/mL; Magnesium.....7500 µg/mL	125 mL
New	U-ICK-610A	EPA Method 6010CInterference Check Kit Each kit contains 50 mL of the following standard: U-ICM-223 Interference Check Standard 3 plus 125 mL of each of the following standards: U-ICM-611 .....EPA Method 6010C Interference Check Standard I U-ICP-051.....Antimony (Sb) in dilute HNO3, 1000 µg/mL U-ICM-224 .....Interference Check Standard 4	kit

Matrix modifiers for graphite furnace AA

	Code	Product	Unit
New	U-IMM-001	Matrix Modifier - Palladium in dilute HNO_3, 2000 µg/mL Pd from Palladium nitrate	125 mL
New	U-IMM-002	Matrix Modifier - Palladium in dilute HNO_3, 5000 µg/mL Pd from Palladium nitrate	50 mL
New	U-IMM-003	Matrix Modifier - Magnesium nitrate, 10000 µg/mL in dilute HNO_3	125 mL
New	U-IMM-004	Matrix Modifier - Phosphate, 40000 µg/mL in dilute HNO_3 Phosphate from Ammonium phophate	50 mL
New	U-IMM-005	Matrix Modifier - Ammonium nitrate 10000 µg/mL in dilute HNO_3	50 mL
New	U-IMM-007	Matrix Modifier - Nickel in dilute HNO_3, 4000 µg/mL Ni from Nickel nitrate	50 mL

High purity acids

LGC Standards offers the most frequently used mineral acids for trace analysis: hydrochloric acid, nitric acid, hydrofluoric acid, sulfuric acid, perchloric acid and acetic acid. These are produced by subboiling distillation of very pure starting materials. This purification results in most metallic impurities reduced to (or bellow) ppb ranges. The acids are delivered in special bottles (long - term leached borosilicate glass or modified HDPE) which ensure minimum contamination of the acid from the material of the bottle.

Important note: Element concentrations are at the point of bottling. Concentrations of some elements may increase due to the storage container.

Code	Product	Unit
HPA-0050-B010	Acetic acid for trace analysis min 99.5 % (glass bottle)	1 L

UN 2789

Assay	> 99.5 %	Chloride	< 0.4 ppm
Colour (APHA)	< 10	Phosphate	< 0.5 ppm
Residue	< 2 ppm	Sulfate	< 0.4 ppm

Ag	< 0.1 ppb	Cr	< 0.1 ppb	Ni	< 0.1 ppb
Al	< 0.1 ppb	Cu	< 0.1 ppb	Pb	< 0.1 ppb
As	< 0.1 ppb	Fe	< 0.5 ppb	Se	< 0.5 ppb
Ba	< 0.1 ppb	K	< 0.1 ppb	Sn	< 0.1 ppb
Be	< 0.1 ppb	Li	< 0.1 ppb	Sr	< 0.1 ppb
Bi	< 0.1 ppb	Mg	< 0.1 ppb	Th	< 0.1 ppb
Ca	< 0.5 ppb	Mn	< 0.1 ppb	Ti	< 0.1 ppb
Cd	< 0.1 ppb	Mo	< 0.1 ppb	V	< 0.1 ppb
Co	< 0.1 ppb	Na	< 0.5 ppb	Zn	< 0.5 ppb

Hydrochloric acid stored in glass bottles will see a rise in: Al, B, Ca, K, Mg, Mn, Na and Si.

HPA-0070-B010	Ammonia solution for trace analysis (glass bottle)	1 L

UN 2672

Assay	> 21 %	Chloride	< 500 ppb
Colour (Hazen)	< 10	Phosphate	< 50 ppb
Carbonate	< 10 ppm	Sulfate	< 500 ppb

Al	< 0.5 ppb	Cu	< 0.5 ppb	Se	< 0.1 ppb
As	< 0.1 ppb	Fe	< 0.5 ppb	Ag	< 0.1 ppb
Ba	< 0.1 ppb	Pb	< 0.1 ppb	Na	< 0.5 ppb
Be	< 0.1 ppb	Li	< 0.1 ppb	Sr	< 0.1 ppb
Bi	< 0.1 ppb	Mg	< 0.2 ppb	Th	< 0.1 ppb
Cd	< 0.1 ppb	Mn	< 0.1 ppb	Sn	< 0.1 ppb
Ca	< 0.5 ppb	Mo	< 0.1 ppb	Ti	< 0.1 ppb
Cr	< 0.1 ppb	Ni	< 0.1 ppb	V	< 0.1 ppb
Co	< 0.1 ppb	K	< 0.2 ppb	Zn	< 0.2 ppb

HPA-0010-B010	Hydrochloric acid for trace analysis min. 36 % (glass bottle)	1 L

UN 1789

Assay	> 36 %	free chlorine	< 0.5 ppm
Residue	< 3 ppm	Phosphate	< 0.05 ppm
Colour (APHA)	< 10	Sulfite	< 0.5 ppm
Bromide	< 50 ppm	Sulfate	< 0.5 ppm

Ag	< 0.1 ppb	Cu	< 0.1 ppb	Sb	< 0.1 ppb
Al	< 0.5 ppb	Fe	< 1 ppb	Se	< 0.1 ppb
As	< 0.1 ppb	Hg	< 0.2 ppb	Sn	< 0.1 ppb
B	< 1 ppb	K	< 0.1 ppb	Sr	< 0.1 ppb
Ba	< 0.1 ppb	Li	< 0.1 ppb	Th	< 0.1 ppb
Be	< 0.1 ppb	Mg	< 0.5 ppb	Ti	< 0.1 ppb
Bi	< 0.1 ppb	Mn	< 0.1 ppb	U	< 0.1 ppb
Ca	< 0.5 ppb	Mo	< 0.1 ppb	V	< 0.1 ppb
Cd	< 0.1 ppb	Na	< 0.5 ppb	Zn	< 0.5 ppb
Co	< 0.1 ppb	Ni	< 0.1 ppb	Zr	< 0.1 ppb
Cr	< 0.1 ppb	Pb	< 0.1 ppb		

Hydrochloric acid stored in glass bottles will see a rise in: Al, B, Ca, K, Mg, Mn, Na and Si.

HPA-0030-B010	Hydrofluoric acid for trace analysis min. 48 % (HDPE bottle)	1 L

UN 1790

Assay	> 48 %	Phosphate	< 0.1 ppm
Colour (HAZEN)	< 10	Sulfate	< 0.5 ppm
Chloride	< 1 ppm	Hexafluorosilicate	< 20 ppm

Ag	< 1 ppb	Cu	< 1 ppb	Pb	< 1 ppb
Al	< 1 ppb	Fe	< 1 ppb	Se	< 1 ppb
As	< 1 ppb	Hg	< 1 ppb	Si	< 1 ppb
Ba	< 1 ppb	K	< 1 ppb	Sn	< 1 ppb
Be	< 1 ppb	Li	< 1 ppb	Sr	< 1 ppb
Bi	< 1 ppb	Mg	< 1 ppb	Ti	< 1 ppb
Ca	< 1 ppb	Mn	< 1 ppb	V	< 1 ppb
Cd	< 1 ppb	Mo	< 1 ppb	Zn	< 1 ppb
Co	< 1 ppb	Na	< 1 ppb		
Cr	< 1 ppb	Ni	< 1 ppb		

Hydrofluoric acid stored in polyethylene bottles will see a rise in: Al, Ca, Fe, Na and Zn.

Code	Product	Unit
HPA-0020-B010	Nitric acid for trace analysis min 67 % (glass bottle) UN 2031	1 L

Assay ..... > 67 %
Residue ..... < 1 ppm
Chloride ..... < 0.08 ppm
Phosphate ..... < 0.1 ppm
Sulfate ..... < 0.5 ppm

Ag ..... < 0.1 ppb	Cu ..... < 0.1 ppb	Pb ..... < 0.1 ppb
Al ..... < 0.5 ppb	Fe ..... < 0.5 ppb	Se ..... < 0.1 ppb
As ..... < 0.1 ppb	Hg ..... < 0.2 ppb	Sn ..... < 0.1 ppb
Ba ..... < 0.1 ppb	K ..... < 0.2 ppb	Sr ..... < 0.1 ppb
Be ..... < 0.1 ppb	Li ..... < 0.1 ppb	Th ..... < 0.1 ppb
Bi ..... < 0.1 ppb	Mg ..... < 0.5 ppb	Ti ..... < 0.1 ppb
Ca ..... < 0.5 ppb	Mn ..... < 0.1 ppb	V ..... < 0.1 ppb
Cd ..... < 0.1 ppb	Mo ..... < 0.1 ppb	Zn ..... < 0.5 ppb
Co ..... < 0.1 ppb	Na ..... < 0.5 ppb	
Cr ..... < 0.2 ppb	Ni ..... < 0.1 ppb	

Nitric Acid stored in glass bottles will see a rise in: Al, B, Ca, K, Mg, Mn, Na and Si.

HPA-0060-B010	Perchloric acid for trace analysis min 68 % (glass bottle) UN 1802	1 L

Assay ..... > 68 %
Colour (APHA) ..... < 10
Phosphate ..... < 0.1 ppm
Sulfate ..... < 5 ppm
Total nitrogen ..... < 10 ppm

Ag ..... < 0.1 ppb	Cu ..... < 0.1 ppb	Ni ..... < 0.1 ppb
Al ..... < 0.5 ppb	Fe ..... < 0.5 ppb	Pb ..... < 0.1 ppb
Ba ..... < 0.1 ppb	K ..... < 0.5 ppb	Sn ..... < 0.1 ppb
Be ..... < 0.1 ppb	Li ..... < 0.1 ppb	Sr ..... < 0.1 ppb
Bi ..... < 0.1 ppb	Mg ..... < 0.5 ppb	Th ..... < 0.1 ppb
Ca ..... < 0.5 ppb	Mn ..... < 0.1 ppb	Tl ..... < 0.1 ppb
Cd ..... < 0.1 ppb	Mo ..... < 0.1 ppb	V ..... < 0.5 ppb
Co ..... < 0.1 ppb	Na ..... < 0.5 ppb	Zn ..... < 0.5 ppb

Perchloric acid stored in glass bottles will see a rise in: Al, B, Ca, K, Mg, Mn, Na and Si.

HPA-0040-B010	Sulfuric acid min 95 % (glass bottle) UN 1830	1 L

Assay ..... 95 %
Density ..... 1.83 g/mL
Colour (APHA) ..... < 10
Residue ..... < 2 ppm
Chloride ..... < 0.1 ppm
Phosphate ..... < 0.5 ppm
Nitrate ..... < 0.07 ppm

Ag ..... < 0.1 ppb	Fe ..... < 0.5 ppb	Se ..... < 5 ppb
Al ..... < 0.5 ppb	Hg ..... < 1 ppb	Sn ..... < 0.1 ppb
As ..... < 1 ppb	K ..... < 0.5 ppb	Sr ..... < 0.1 ppb
Ba ..... < 0.1 ppb	Li ..... < 0.1 ppb	Th ..... < 0.1 ppb
Be ..... < 0.1 ppb	Mg ..... < 0.5 ppb	Ti ..... < 1 ppb
Bi ..... < 0.1 ppb	Mn ..... < 0.1 ppb	U ..... < 0.1 ppb
Ca ..... < 0.5 ppb	Mo ..... < 0.1 ppb	V ..... < 0.1 ppb
Cd ..... < 0.1 ppb	Na ..... < 0.5 ppb	Zn ..... < 0.1 ppb
Co ..... < 0.1 ppb	Ni ..... < 0.1 ppb	Zr ..... < 0.1 ppb
Cr ..... < 0.1 ppb	Pb ..... < 0.1 ppb	
Cu ..... < 0.1 ppb	Sb ..... < 0.1 ppb	

Sulfuric acid stored in glass bottles will see a rise in: Al, B, Ca, K, Mg, Mn, Na and Si.

Ion chromatography standards

Anions

Code	Product	Unit
	ULTRA Scientific standards and NIST SRMs® are solutions prepared gravimetrically for use in ion chromatography or other techniques that require aqueous standard solutions for calibration. The standards from ULTRA Scientific are traceable to NIST Standard Reference Materials® (SRM®) wherever possible.	
U-ICC-014	Acetate Standard, 1000 µg/mL in water	125 mL
U-ICC-014-5	Acetate Standard, 1000 µg/mL in water	4 x 125mL
U-ICC-015	Benzoate Standard, 1000 µg/mL in water	125 mL
U-ICC-015-5	Benzoate Standard, 1000 µg/mL in water	4 x 125mL
U-ICC-010	Bromate (BrO_{3-}), 1000 µg/mL in water	125 mL
U-ICC-010-5	Bromate (BrO_{3-}), 1000 µg/mL in water	4 x 125mL
NIST-3184	Bromide (Br^-), 1000 mg/kg in water	5 x 10 mL
U-ICC-001	Bromide (Br^-), 1000 µg/mL in water	125 mL
U-ICC-001-5	Bromide (Br^-), 1000 µg/mL in water	4 x 125mL
U-ICC-011	Chlorate (ClO_{3-}), 1000 µg/mL in water	125 mL

Ion chromatography standards

Code	Product	Unit
U-ICC-011-5	Chlorate (ClO_{3-}), 1000 µg/mL in water	4 x 125mL
NIST-3182	Chloride (Cl^-), 1000 mg/kg in water	5 x 10 mL
U-ICC-002	Chloride (Cl^-), 1000 µg/mL in water	125 mL
U-ICC-002-5	Chloride (Cl^-), 1000 µg/mL in water	4 x 125mL
U-ICC-012	Chlorite (ClO_{2-}), 1000 µg/mL in water	125 mL
U-ICC-012-5	Chlorite (ClO_{2-}), 1000 µg/mL in water	4 x 125mL
U-ICC-016	Chromate Standard, 1000 µg/mL in water	125 mL
U-ICC-016-5	Chromate Standard, 1000 µg/mL in water	4 x 125mL
U-ICC-017	Citrate Standard, 1000 µg/mL in water	125 mL
U-ICC-017-5	Citrate Standard, 1000 µg/mL in water	4 x 125mL
NIST-3183	Fluoride (F^-), 1000 mg/kg in water	50 mL
U-ICC-003	Fluoride (F^-), 1000 µg/mL in water	125 mL
U-ICC-003-5	Fluoride (F^-), 1000 µg/mL in water	4 x 125mL
U-ICC-018	Formate Standard, 1000 µg/mL in water	125 mL
U-ICC-018-5	Formate Standard, 1000 µg/mL in water	4 x 125mL
U-ICC-019	Glycolate Standard, 1000 µg/mL in water	125 mL
U-ICC-019-5	Glycolate Standard, 1000 µg/mL in water	4 x 125mL
U-ICC-020	Iodide Standard, 1000 µg/mL in water	125 mL
U-ICC-020-5	Iodide Standard, 1000 µg/mL in water	4 x 125mL
U-ICC-021	Lactate Standard, 1000 µg/mL in water	125 mL
U-ICC-021-5	Lactate Standard, 1000 µg/mL in water	4 x 125mL
U-ICC-022	Malate Standard, 1000 µg/mL in water	125 mL
U-ICC-022-5	Malate Standard, 1000 µg/mL in water	4 x 125mL
U-ICC-023	Maleate Standard, 1000 µg/mL in water	125 mL
U-ICC-023-5	Maleate Standard, 1000 µg/mL in water	4 x 125mL
U-ICC-024	Methanesulfonate Standard, 1000 µg/mL in water	125 mL
U-ICC-024-5	Methanesulfonate Standard, 1000 µg/mL in water	4 x 125mL
NIST-3185	Nitrate (NO_{3-}), 1000 mg/kg in water	5 x 10 mL
U-ICC-004	Nitrate (NO_{3-}), 1000 µg/mL in water	125 mL
U-ICC-004-5	Nitrate (NO_{3-}), 1000 µg/mL in water	4 x 125mL
U-ICC-004A	Nitrate as N Standard, 1000 µg/mL in water	125 mL
U-ICC-004A-5	Nitrate as N Standard, 1000 µg/mL in water	4 x 125mL
U-ICC-025	Nitrilotriacetate Standard, 1000 µg/mL in water	125 mL
U-ICC-025-5	Nitrilotriacetate Standard, 1000 µg/mL in water	4 x 125mL
U-ICC-007	Nitrite (NO_{2-}), 1000 µg/mL in water	125 mL
U-ICC-007-5	Nitrite (NO_{2-}), 1000 µg/mL in water	4 x 125mL
U-ICC-007A	Nitrite as N Standard, 1000 µg/mL in water	125 mL
U-ICC-007A-5	Nitrite as N Standard, 1000 µg/mL in water	4 x 125mL
U-ICC-026	Oxalate Standard, 1000 µg/mL in water	125 mL
U-ICC-026-5	Oxalate Standard, 1000 µg/mL in water	4 x 125mL
U-ICC-013	Perchlorate (ClO_{4-}), 1000 µg/mL in water	125 mL
U-ICC-013-5	Perchlorate (ClO_{4-}), 1000 µg/mL in water	4 x 125mL
NIST-3186	Phoshate (PO_4^{3-}), 1000 mg/kg in water	5 x 10 mL
U-ICC-005	Phoshate (PO_4^{3-}), 1000 µg/mL in water	125 mL
U-ICC-005-5	Phoshate (PO_4^{3-}), 1000 µg/mL in water	4 x 125mL
U-ICC-005A	Ortho-Phosphate as P Standard, 1000 µg/mL in water	125 mL
U-ICC-005A-5	Ortho-Phosphate as P Standard, 1000 µg/mL in water	4 x 125mL
U-ICC-027	Phthalate Standard, 1000 µg/mL in water	125 mL
U-ICC-027-5	Phthalate Standard, 1000 µg/mL in water	4 x 125mL
U-ICC-028	Propionate Standard, 1000 µg/mL in water	125 mL
U-ICC-028-5	Propionate Standard, 1000 µg/mL in water	4 x 125mL

Code	Product	Unit
U-ICC-029	Succinate Standard, 1000 µg/mL in water	125 mL
U-ICC-029-5	Succinate Standard, 1000 µg/mL in water	4 x 125mL
NIST-3181	Sulfate (SO_4^{2-}), 1000 mg/kg in water	5 x 10 mL
U-ICC-006	Sulfate (SO_4^{2-}), 1000 µg/mL in water	125 mL
U-ICC-006-5	Sulfate (SO_4^{2-}), 1000 µg/mL in water	4 x 125mL
U-ICC-030	Tartrate Standard, 1000 µg/mL in water	125 mL
U-ICC-030-5	Tartrate Standard, 1000 µg/mL in water	4 x 125mL
U-ICC-031	Thiocyanate Standard, 1000 µg/mL in water	125 mL
U-ICC-031-5	Thiocyanate Standard, 1000 µg/mL in water	4 x 125mL
U-ICC-032	Thiosulfate Standard, 1000 µg/mL in water	125 mL
U-ICC-032-5	Thiosulfate Standard, 1000 µg/mL in water	4 x 125mL

Anion mixtures for ion chromatography

U-ICC-200 — IC Anions Mixture 1 — 125 mL

Solvent : Water

Chloride (Cl^-)..... 30 µg/mL
Fluoride (F^-) ..... 20 µg/mL
Nitrate (NO_3^{2-}) .....100 µg/mL
Phosphate (PO_4^{3-}).....150 µg/mL
Sulfate (SO_4^{2-}) ..... 150 µg/mL

U-ICC-210 — IC Anions Mixture 2 — 125 mL

Solvent : Water

Bromide ..... 400 µg/mL
Chloride (Cl^-)..... 200 µg/mL
Fluoride (F^-).....100 µg/mL
Nitrate (NO_3^{2-}) .....400 µg/mL
Phosphate (PO_4^{3-}) .... 600 µg/mL
Sulfate (SO_4^{2-}) ..... 400 µg/mL

New **U-ICC-759** — Ion Chromatography Detector Linearity Kit — kit

Each kit contains 1 x 10 mL of each individual standard in H_2O

Nitrate ..... 5 µg/mL
Nitrate ..... 10 µg/mL
Nitrate ..... 25 µg/mL
Nitrate ..... 50 µg/mL
Nitrate ..... 100 µg/mL

Cations

U-ICC-101	Ammonium (NH_4^+), 1000 µg/mL in water	125 mL
U-ICC-101-5	Ammonium (NH_4^+), 1000 µg/mL in water	4 x 125mL
U-ICC-102	Barium (Ba^{2+}), 1000 µg/mL in 0.2% HNO_3	125 mL
U-ICC-102-5	Barium (Ba^{2+}), 1000 µg/mL in 0.2% HNO_3	4 x 125mL
U-ICC-103	Calcium (Ca^{2+}), 1000 µg/mL in 0.2% HNO_3	125 mL
U-ICC-103-5	Calcium (Ca^{2+}), 1000 µg/mL in 0.2% HNO_3	4 x 125mL
U-ICC-104	Lithium (Li^+), 1000 µg/mL in 0.2% HNO_3	125 mL
U-ICC-104-5	Lithium (Li^+), 1000 µg/mL in 0.2% HNO_3	4 x 125mL
U-ICC-105	Magnesium (Mg^{2+}), 1000 µg/mL in 0.2% HNO_3	125 mL
U-ICC-105-5	Magnesium (Mg^{2+}), 1000 µg/mL in 0.2% HNO_3	4 x 125mL
U-ICC-106	Potassium (K^+), 1000 µg/mL in 0.2% HNO_3	125 mL
U-ICC-106-5	Potassium (K^+), 1000 µg/mL in 0.2% HNO_3	4 x 125mL
U-ICC-107	Sodium (Na^+), 1000 µg/mL in 0.2% HNO_3	125 mL
U-ICC-107-5	Sodium (Na^+), 1000 µg/mL in 0.2% HNO_3	4 x 125mL
U-ICC-108	Strontium (Sr^{2+}), 1000 µg/mL 0.2% HNO_3	125 mL
U-ICC-108-5	Strontium (Sr^{2+}), 1000 µg/mL 0.2% HNO_3	4 x 125mL

Cation mixtures for ion chromatography

U-ICC-300 — IC Cations Mixture 1 — 125 mL

Solvent: 2% HNO_3

Ammonium (NH_4^+).... 400 µg/mL
Calcium (Ca^{2+})..... 1000 µg/mL
Lithium (Li^+).....50 µg/mL
Magnesium (Mg^{2+}).....200 µg/mL
Potassium (K^+)..... 200 µg/mL
Sodium (Na^+)..... 200 µg/mL

U-ICC-310 — IC Cations Mixture 2 — 125 mL

Solvent: 0.5% HNO_3

Ammonium (NH_4^+).... 100 µg/mL
Lithium (Li^+)..... 10 µg/mL
Potassium (K^+).....50 µg/mL
Sodium (Na^+).....100 µg/mL

Code	Product	Unit
U-ICC-320	IC Cations Mixture 3 Solvent: 2% HNO_3 Barium (Ba^{2+})..... 1600 µg/mL Calcium (Ca^{2+})..... 1000 µg/mL Magnesium (Mg^{2+}).....200 µg/mL Strontium (Sr^{2+}) .....600 µg/mL	125 mL

Wet chemistry standards

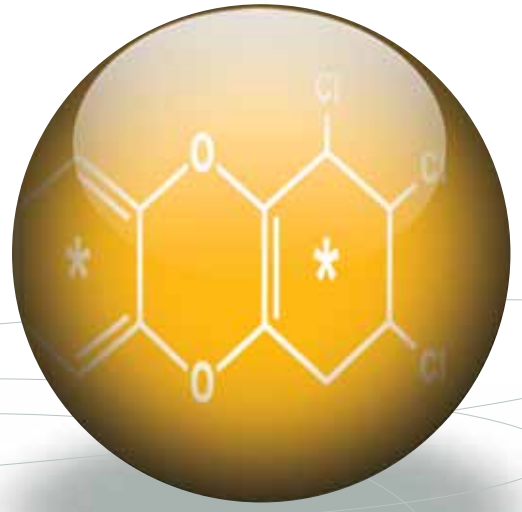
Code	Product	Unit
U-ICC-008	Free cyanide standard in water Cyanide (from KCN) ..... 1000 mg/L	125 mL
U-ICC-008-5	Free cyanide standard in water Cyanide (from KCN) ..... 1000 mg/L	4 x 125mL
U-ICC-009	Complex cyanide standard in water Cyanide (from $K_3Fe(CN)_6$) ..... 1000 mg/L	125 mL
U-ICC-009-5	Complex cyanide standard in water Cyanide (from $K_3Fe(CN)_6$) ..... 1000 mg/L	4 x 125mL

Stable isotope labelled standards from CIL

LGC Standards

Excellence through measurement

Stable isotope labelled standards from Cambridge Isotope Laboratories (CIL)



LGC Standards, in partnership with Cambridge Isotope Laboratories, offers a full range of environmental standards designed for use with isotope dilution mass spectrometry (IDMS). Cambridge Isotope Laboratories is the world's premier producer of stable isotope labelled compounds and specialises in the development, production, and marketing of compounds labelled with stable (non-radioactive) isotopes.

LGC Standards provides you with:

- Expert local customer service and technical support
- Assistance in finding the right product to meet your needs
- Regular updates about new products

For further information or to place an order, please contact your local office.

Dioxins and furans

Polychlorinated biphenyls

Brominated flame retardants

Pesticides and pesticide metabolites

Endocrine disrupting compounds

Polycyclic aromatic hydrocarbons

Chemical warfare agents

Persistent organic pollutants

Pharmaceutical and personal care products

www.lgcstandards.com

LGC Standards

Excellence through measurement

Environmental contaminant standards from CIL

LGC Standards is delighted to introduce a fully updated listing of environmental contaminant standards from Cambridge Isotope Laboratories (CIL).

Cambridge Isotope Laboratories, Inc. (CIL) is the world's premier producer of stable isotope labelled compounds and the world leader in the field of isotope separations with an annual production capacity of 120 kilograms of carbon-13 and 250 kilograms of oxygen-18. For more than 20 years, CIL has specialised in the development, production, and marketing of stable (non-radioactive) isotopes and chemical compounds labelled with stable isotopes. In the environmental field they produce a wide range of contaminant standards designed for use with Isotope Dilution Mass Spectrometry (IDMS). Through their ongoing commitment to the manufacture of the highest quality products CIL has earned the respect of the analytical community.

This catalogue lists a comprehensive selection of around 2500 products covering contaminants from dioxins to veterinary medicine residues and from brominated flame-retardants to chemical weapons. Many new products have been developed in response to worldwide customer requests and others are formulated to meet the needs of customers using official or even draft methods, for example in the important area of Persistent Organic pollutants (POPs) covered by the Stockholm Treaty.

It is not possible to list all the compounds in the CIL inventory in this catalogue so if you cannot find the product you need, please contact your local LGC Standards office for further information.

An introduction to CIL

Cambridge Isotope Laboratories is the world leader in the manufacture and separation of stable isotopes and stable isotope labelled compounds. Their area of expertise is the synthesis of isotopically labelled biochemical and organic compounds with highly enriched isotopes of carbon, hydrogen, nitrogen and oxygen. CIL is committed to providing the highest quality products coupled with unsurpassed service to researchers worldwide. They proudly offer the world’s largest inventory of stable isotope labelled compounds. Their unmatched selection has contributed to advancements in environmental analysis, chemistry, biochemistry, physics, biomedical and diagnostic research.

For nearly 30 years, CIL has produced stable isotope labelled standards for the analysis of environmental contaminants using Isotope Dilution Mass Spectrometry (IDMS). The scope of the field has broadened from a small number of highly specialized analyses requiring complex instrumentation, to a widely expanding range of applications. Recently, IDMS has been applied to more routine, low-resolution Mass Spectrometry (MS) analyses of common pollutants, while detection limits using High-Resolution Gas Chromatography/High-Resolution Mass Spectrometry (HRGC/HRMS) continue to be extended to lower and lower concentrations.

CIL’s continuous collaboration of nearly 30 years with Cerilliant allows them to focus their efforts on the long term expansion of CIL/Cerilliant products and to continue to improve the quality, versatility and responsiveness of their product offering. For three decades, CIL has produced stable isotope labeled standards for the analysis of environmental contaminants using Isotope Dilution Mass Spectrometry (IDMS). The scope of the field has broadened from a small number of highly specialized analyses requiring complex instrumentation to a widely expanding range of applications. IDMS has become more routinely applied to

Detection limits using High-Resolution Gas Chromatography/High-Resolution Mass Spectrometry (HRGC/HRMS) continue to be extended to lower and lower concentrations, while at the same time expanding dynamic range. LC/MS has become a driving force in CIL’s new product development. Many emerging pollutants can only be analyzed by LC/MS, and the use of isotopically labeled internal standards is an invaluable tool to correct for matrix effects, a common problem when using LC/MS in environmental samples.

Commitment

Their unyielding commitment to drive the expansion of market applications of stable isotopes with innovative product development has enabled CIL to maintain its status as the world leader in their field. CIL takes great pride and responsibility in its role as the preferred supplier of stable isotopes to leading analytical, academic, pharmaceutical, government and industrial researchers worldwide. Their goal is to develop and manufacture stable isotope labelled compounds for a wide range of scientific and biomedical applications. This goal is most evident in the steady introduction of new CIL environmental contaminant standards produced in direct response to customer requests and new analytical methodology. In anticipation of the environmental analytical community’s needs CIL consistently develops products before they are required by new methods.

Knowledge

CIL’s only business is the separation and manufacture of stable isotopes and stable isotope labelled compounds. Since 1981, CIL has worked closely with leading scientific groups in the fields of environmental trace analysis as well as metabolism research, molecular biology, protein structure analysis, organic synthesis, clinical and diagnostic research to provide researchers with the products needed to solve complex challenges.Their staff of synthetic and analytical chemists is dedicated to their environmental contaminant standards product line and are experts in their field with extensive years of experience exclusively in the synthesis and analysis of stable isotope labelled compounds.

Quality

Since the beginning of their collaboration in the early 1980's, CIL and Cerilliant have dedicated their programs to providing the highest quality environmental standards available anywhere in the world. Each standard provided by CIL and Cerilliant passes the most extensive series of tests, checks, and analyses designed to guarantee chemical and isomeric purity, identity, isotope enrichment and absolute concentration. A complete certificate of analysis accompanies every standard produced. Unlabeled "Certified Standards", developed by CIL to meet the strict requirements of our isotope-labeled standards QC validation, are a fast-growing component of our product line, and considered essential by the most demanding laboratories in the world.

Cerilliant's quality system is rigorous, thorough, and incorporates constant improvement. Originally certified in 1997 by BSI to the ISO 9001 standard, Cerilliant has maintained their certification through the years and recently acquired the ISO 9001:2008 standard. In November 2009, Cerilliant received further accreditation under ISO Guide 34 for Reference Material Producers, as well as ISO/IEC 17025 accreditation for Testing and Calibration Laboratories.

Service

CIL continues to work with leading groups from many countries to help them develop new solutions to challenging analytical problems. While their catalogue is extensive, new products are added to their inventory on a weekly, sometimes daily, basis. If you are interested in a custom formulation, please contact your local LGC Standards office. If you can't find what you need, we will suggest an in-stock alternative, or quote a price for custom formulation.

Leadership

CIL has worked with the US EPA, the Centers for Disease Control (CDC), Environment Canada, Bromine Science and Environmental Forum (BSEF), Japanese Industrial Standard (JIS), Netherlands Institute for Fisheries Research (RIVO), and many other international environmental agencies to develop the standards needed for ongoing analytical methods. Several examples of these collaborations include US EPA Methods 1613, 1614, 8280, 23, 1653A, 1624/25 and 1668A.

CIL has consistently made available, often for the first time anywhere, novel isotope labelled standards for the environmental testing community. CIL and Cerilliant were the first to:

– Produce ^{13}C standards for all 17 toxic PCDD and PCDF isomers
– Conduct a round-robin to produce consensus values for all 17 toxic PCCD and PCDF isomers (1987)
– Offer PCDD/PCDF PE standards for Soil and Fish
– Develop ^{13}C PCB standards
– Produce certified standards for unlabelled PCBs
– Produce ^{13}C PAH standards
– Produce ^{13}C polybrominated Dioxins and Furans
– Produce ^{13}C polybromodiphenyl ether standards
– Produce ^{13}C chlorinated cyclodiene pesticides
– Produce chemical weapons verification standards
– Produce isotopically labelled PAH, PCB, and BDE Metabolites
– Produce isotopically labelled plasticizer metabolites
– Produce isotopically labelled surfactants
– Produce isotopically labelled standards for all compounds in the Stockholm Convention POPs list

Offer isotope labelled:

– Melamine and cyanuric acid standards
– Pesticides and pesticide metabolites
– Pharmaceutical and personal care products
– $^{13}C_6$-Labelled steroids
– Endocrine disruptors
– Alkyl phenols and ethoxylates
– Chlorophenolics

Offer certified standards for use with:

– US EPA Method 1613, 8280, 23, and 8290
– US EPA Method 1668 and 1668 Revision A
– US EPA Method 1614
– US EPA Method 1624 and US EPA Method 1653
– US EPA draft Methods 1694, 1698, and 1699
– EN-1948 and EN-1948-4
– JIS Methods K0311 and K0312, and the "Simplified assay of trace PCBs in dielectric oil"
– CARB Method 429

CIL sponsorships

In support of the scientific community, CIL sponsors over 150 worldwide conferences and technical symposia each year. CIL is proud to be both a participant in and a sponsor of these conferences which provide a forum for researchers all over the world to unite in the interest of advancing their work. CIL has been a major sponsor of the International Symposium on Halogenated Persistent Organic Pollutants (aka “DIOXIN”) for 23 years, and has generously supported many other meetings, including:

ASMS	American Society for Mass Spectrometry
ASNS	American Society for Nutrition Symposium
BFR	Brominated Flame Retardant Workshop
CSC	Canadian Society For Chemistry
Dioxin	International Symposium on Halogenated Persistant Organic Pollutants
Enviro	EnviroAnalysis
EANM	European Association of Nuclear Medicine
GRC	Gordon Research Conference
KS	Keystone Symposia – Frontiers of NMR in Biology
ICMRBS	International Conference on Magnetic Resonance in Biological Systems
ISMAR	International Society of Magnetic Resonance – ISMAR Prize
ISPAC	International Society of Polyaromatic Compounds
NMRS	National Magnetic Resonance Society of India
NOBCChE	National Organization for Professional Advancement of Black Chemists and Chemical Engineers
Pacifichem	International Chemical Congress of Pacific Basin Societies
SETAC	Society of Environmental Toxicology and Chemistry

Memberships

CIL enjoys being a supporter of several industry organizations that actively contribute to advancements in stable isotope research. Presently, CIL is affiliated with the following associations:

ANZSMS	Australian and New Zealand Society for Mass Spectrometry
AMI	Academy of Molecular Imaging
ABRF	The Association of Biomolecular Resource Facilities
AAAS	American Association for the Advancement of Science
ACS	American Chemical Society
ASMS	American Society for Mass Spectrometry
AUREMN	Associação de Usuários de Ressonância Magnética Nuclear
CNPN	Canadian National Proteomics Network
CRMMA	Chemical Reference Materials Manufacturing Association
EANM	European Association of Nuclear Medicine
GBMSDG	Greater Boston Mass Spec. Discussion Group
HUPO/IAB	Human Proteome Organisation / Industrial Advisory Board
IIS	International Isotope Society
ISNS	Institute for Neonatal Screening
ISSFAL	International Society for the Study of Fatty Acids and Lipids
NGWA	National Groundwater Association
NAOSMM	National Association of Stockroom Managers
SETAC	Society of Environmental Toxicology & Chemistry

Isotope separation facility

CIL is a world leader in the separation of ^{13}C and ^{18}O isotopes. Twice during the past decade CIL has taken a leadership position in the separation of stable isotopes. First CIL constructed the world's largest ^{13}C separation facility, which has been in continuous operation for over 10 years, and more recently CIL has undertaken the construction of the world's largest ^{18}O separation facility. CIL's isotope separation facility, located in Xenia Ohio provides customers with a dependable, secure supply of isotope.

Carbon-13 Isotope Separation Facility

CIL is recognized as the world leader in the separation of ^{13}C. In the 1980's CIL took the initiative to construct the world's largest ^{13}C isotope separation plant in order to provide sufficient supply of ^{13}C to support new research and diagnostic developments. CIL's ^{13}C production facility has an annual production capacity of 120 kg of ^{13}C.

Oxygen-18 Isotope Separation Facility

In 2000, CIL responded to the worldwide shortage of ^{18}O water by embarking on the construction of the world's largest ^{18}O isotope separation facility. CIL is now the world's leading producer of ^{18}O water with an annual production capacity of 250 kg. CIL's ^{18}O water is used in Positron Emission Tomography (PET) and energy expenditure studies.

Product information

There are potential hazards associated with the use of the chemicals that CIL provides. Customers are encouraged to consult standard safety references for the proper use and handling of CIL products. In addition, while every effort was made to ensure that the information in this catalogue is correct, customers are responsible for confirming product information.

Documentation: A Certificate of Analysis (COA) and a Material Safety Data Sheet (MSDS) are supplied with every shipment. Additional information may be available upon request.

Crystalline/neat standards: Vials contain approximately the stated amount. Stated weights should not be used to prepare quantitative standards. Material should be weighed by customer prior to standard formulation. Small amounts may need to be transferred with the use of solvent; the vial should be weighed before transfer, and after all solvent has been evaporated. During shipment, small but significant amounts of material may shift into the vial cap or ampoule tip. Traceable weighing records, or weights tailored to user-specified targets can be obtained for a reasonable surcharge.

Solution standards: All solutions are prepared to be within +/- 2% of stated value, unless otherwise stated on the Certificate of Analysis. Of particular use is uncertainty Information, which is calculated uniquely for every formulation. Cumulative uncertainty from all formulation preparation steps such as weighings and dilutions are presented to help analysts determine the accuracy of their own measurements. Uncertainty for mixtures will of necessity have higher uncertainties than those for Individual solutions, because extra formulation steps introduce additional uncertainty.

Chemical purities:

Chemical purities of unlabelled/native standards are 97-99+% unless otherwise specified.

Chemical purities of labelled standards are 95-99+% unless otherwise specified.

Isotopic enrichment: Isotopic enrichments are 99% for Carbon-13, 98% for deuterium and 96% for Chlorine-37, unless otherwise specified.

Isotopic enrichment is the average enrichment for each labeled atom in the molecule. It is not the percentage of the molecules that are completely isotope-labeled. For instance, Dichlorophenol (ring-$^{13}C_6$, 99%) is not 99% $^{13}C_6$, and 1% $^{12}C_6$. Each carbon atom position (1,2,3,4,5 & 6) has a 99% chance of being ^{13}C-labeled, and a 1% chance of being 12C-labeled. Thus, (99%) or ~94% of the molecules will have a molecular mass 6 AMU higher than native Dichlorophenol, and ~6% will have a molecular mass 5 AMU higher than native Dichlorophenol. Theoretically, only (1%) or ~10-10% will have the molecular mass of

$^{12}C_{6}$-Dichlorophenol.

Solvents used in quantitative solutions: When virtually all the analytes in CIL's Environmental Contaminant Standard products offerings were persistent halogenated aromatic compounds, solvent selection was relatively straightforward. Although Benzene and Toluene were default solvents, they are now solvents of last resort owing to concerns of carcinogenicity. They are also fairly volatile, which can affect the integrity of the quantitative accuracy of the standard. For many years, virtually all of CIL's standards were prepared in Nonane or Isooctane, solvents which CIL buys in bulk as Spectrophotometric Grade, and then distills even further to make suitable for ultra-trace analysis.

The extra-distilled solvents that CIL uses for standard solutions are available for sale to laboratories that wish to dilute or formulate standards using the cleanest possible solvents.

In recent years, as a larger proportion of standards offered by CIL are more polar, and often analyzed in polar media, many standards are now available in polar solvents such as Acetonitrile, Methanol, and even Water. Many of these standards are unstable in certain solvents, so CIL carefully chooses solvents that are suitable in terms of solubility and stability. Even so, some of these classes of compounds are only stable for a few months to a couple years, and special care should be taken to ensure that they are stored properly. In some cases, co-solvents are required for solubility.

Storage: When standards are frozen, it is a good idea to gently warm them to room temperature and vortex before opening. Sonication can cause decomposition of certain compounds, so it should only be used very carefully.

Several compounds that CIL offers have extremely short stability in virtually all solvents. For these products CIL offers neat quantitative standards that can be reconstituted and used as needed. These standards are made by adding a volume of accurately formulated standard solution in the ampoule, and drying off all solvent. The remaining neat product is much more stable than the solution, and can be stored for longer periods.

The biggest threats to the integrity of unopened standards are heat, light (especially UV), Oxygen, and pH. These threats also affect opened standards, or standards that have been combined with other compounds, but opened standards are also subject to contamination from glassware/containers, pipettes, and ambient air. The integrity of opened standards is also threatened by solvent evaporation, solubility (when frozen), and decomposition when mixed with other solvents.

It is always good practice to recertify standards when they have been in storage; the safest laboratory practice is to recertify standards each time they are used.

Statement on shelf life testing and expiration dates of CIL products

Cambridge Isotope Laboratories assigns a retest date and/or expiration date for all manufactured products. The assignments procedure is based upon the known stability characteristics of each product.

- CIL assigns expiration dates for unopened ampoules which have been stored according to CIL's storage instruction. Once the ampoule or vial is opened, it is incumbent upon the user's quality system to decide how long a standard can be used. Ideally, the standard is evaluated each time it is used as part of the analytical QA protocols.
- CIL's expiration date becomes secondary once a standard has been combined with other standards, diluted with solvent, or transferred to a new container. The suitability of the standard then becomes completely dependent on the storage conditions (temperature, light, exposure to other analytes and solvents) and the handling of the standard. The user's QA protocols should determine the duration of the standard's use, and the frequency that it is retested.
- Some products are known to be stable indefinitely. For these products, CIL assigns an expiration date of ten years from the date of release from QC. All other products are retested in five years or less, depending on their chemical characteristics. Most CIL products are sold and shipped with at least one year remaining before the retest date, but occasionally that is not possible.
- Compounds known to be less stable are retested sooner than five years from the date of release; some products are retested as often as every three months or prior to sale, if necessary.

Packaging information

Liquids: Scored (breakneck) clear or amber glass ampoules which are flame sealed under nitrogen atmosphere. CIL's state-of-theart ampouling machine allows us to maintain the highest consistency and quality. Sizes range from 0.1 g to 50 g. Amber glass, screw cap bottles with teflon lined caps and tape seals are also used. Standard sizes range from 5 g to 1 kg.

Solids: Amber glass, wide mouth, screw cap jars with teflon lined caps and tape seals. Clear glass conical vials are used for small quantities.

Quantitative solutions: While many of CIL's Environmental Contaminant Standards are packaged in vials, most are supplied as quantitative solutions in amber vials to prevent evaporation. Ampoules are stored in cardboard rondos or plastic "clamshells" with outside labels. Follow the storage instructions, and carefully transfer to other packaging or end-use mixtures as appropriate.

Dioxin and furan individual standards

Certified reference standards

The preparation of polychlorinated dibenzo-p-dioxin (PCDD) and dibenzofuran (PCDF) certified solution standards begins with the total synthesis of each isomer from known, well-characterized intermediates. Cerilliant QC protocol specifies that all materials be tested to determine identity (multiple techniques), isomer specificity, and purity (multiple techniques), prior to acceptance as a raw material.

With few exceptions, our specifications require a chemical purity of >98% for native material and chemical purity of >97% for 13C material.

Preparation of CIL /Cerilliant certified solution standards is tightly controlled using a validated process to ensure accuracy and consistency. Our gravimetric approach (both analyte and solvent are added by weight) is performed using high precision 5-place, micro and ultra-micro analytical balances and governed by exacting procedures to ensure minimal uncertainty. Balances are fully qualified in their installed state, are calibrated semi-annually with weekly and pre-use verifications performed – all using NIST traceable weights. Various controls are employed during the dispensing process to ensure no evaporation, degradation, or contamination occurs and to ensure homogeneity and consistency of fill volume from ampoule to ampoule.

Fully certified standards are then put through rigorous QC testing to verify concentration accuracy, consistency with previous lots (when available), and comparison to the corresponding native or 13C analog. Finally, homogeneity is assured through testing of samples pulled during the dispensing process using a random stratified sampling plan. The analytical results are detailed in a comprehensive Certificate of Analysis (COA) containing complete traceability documentation, which is supplied with each product at no additional charge.

An international round robin study composed of independent government, commercial, and research laboratories analyzed all 17 CIL /Cerilliant 2,3,7,8-containing polychlorinated dibenzo-p-dioxin (PCDD) and dibenzofuran (PCDF) individual solution standards in August 1987. The objective of the study was to determine the accuracy of CIL /Cerilliant solution reference standards. The consensus average values for each of these solutions agreed closely with CIL /Cerilliant reported values – in fact, 15 out of the 17 were within 4%.

Cambridge Isotope Laboratories (CIL) and Cerilliant Corporation would like to thank the following laboratories for their participation in this study:

Battelle - Columbus
Columbus, OH

Centers for Disease Control
Atlanta, GA St.

Dow Chemical Company
Midland, MI Research

Ontario Ministry of the Environment
Rexdale, Ontario, Canada

ISO Accreditation

Laboratories Midwest Research Institute
Kansas City, MO

Monsanto Company
Louis, MO

Triangle Labs
Triangle Park, NC

Twin City Testing
St. Paul, MN

Unlabelled chlorodioxin/furan standards for elution profiling

CIL introduces the first commercially available set of all 136 Tetra-Octa chlorinated dioxin and furan congeners. These qualitative standards are available as ~25ng/mL solutions in Nonane and are used primarily for elution profiling and peak identification. Homolog group kits are available, as is a suite of all 136 congeners.

ISO Accreditation

Adding to their list of firsts in the field of dioxin and furan reference standards, CIL is pleased to announce the availability of the first dioxin and furan standards manufactured under ISO/ IEC 17025 and ISO Guide 34 accreditation.

Cerilliant Corporation, CIL’s longtime collaborator for dioxin and furan standards, has received accreditation under ISO Guide 34 for Reference Material Producers, as well as ISO/IEC 17025 for Testing and Calibration Laboratories. These two new accreditations provide a powerful boost to their already impressive quality credentials, including ISO-9001:2008.

$^{13}C_{12}$ Labelled chlorodioxin standards

	Code	Product	Unit
	CIL-CLM-1544-1.2	Dibenzo-p-dioxin ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
	CIL-ED-4169	2-Monochlorodibenzo-p-dioxin ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
	CIL-ED-4170	2,3-Dichlorodibenzo-p-dioxin ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
	CIL-ED-925	2,7-Dichlorodibenzo-p-dioxin/2,8-Dichlorodibenzo-p-dioxin isomer pair ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
	CIL-ED-2531	2,3,7-Trichlorodibenzo-p-dioxin ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
New	CIL-ED-911-1	1,2,3,4-Tetrachlorodibenzo-p-dioxin ($^{13}C_{12}$,99%) 1 µg/mL in Nonane	1.2 mL
	CIL-ED-911	1,2,3,4-Tetrachlorodibenzo-p-dioxin ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
New	CIL-ED-911-200	1,2,3,4-Tetrachlorodibenzo-p-dioxin ($^{13}C_{12}$,99%) 200 ng/mL in Nonane	1.2 mL
	CIL-ED-4198	1,3,6,8-Tetrachlorodibenzo-p-dioxin ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
	CIL-ED-900	2,3,7,8-Tetrachlorodibenzo-p-dioxin ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
	CIL-ED-4076	1,2,3,4,7-Pentachlorodibenzo-p-dioxin ($^{13}C_{12}$,99%) 5 µg/mL in Nonane	1.2 mL
	CIL-ED-955	1,2,3,7,8-Pentachlorodibenzo-p-dioxin ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
	CIL-ED-4077	1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin ($^{13}C_{12}$,99%) 5 µg/mL in Nonane	1.2 mL
	CIL-ED-946	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
	CIL-ED-966	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin ($^{13}C_{12}$,99%) 50 µg/mL in 80% Nonane/20% Toluene	1.2 mL
	CIL-ED-996	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin ($^{13}C_{12}$,99%) 50 µg/mL in 80% Nonane/20% Toluene	1.2 mL
	CIL-ED-972	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
	CIL-ED-981	Octachlorodibenzo-p-dioxin ($^{13}C_{12}$,99%) 10 µg/mL in Nonane	4 x 1.2 mL

$^{13}C_6$ and $^{37}Cl_4$ Labelled chlorodioxin standards

	CIL-ED-910	1,2,3,4-Tetrachlorodibenzo-p-dioxin ($^{13}C_6$,99%) 50 µg/mL in Nonane	1.2 mL
	CIL-ED-907	2,3,7,8-Tetrachlorodibenzo-p-dioxin ($^{37}Cl_4$,96%) 50 µg/mL in Nonane	1.2 mL

Unlabelled chlorodioxin standards

	CIL-ULM-1711-1.2	Dibenzo-p-dioxin (unlabelled) 50 µg/mL in Nonane	1.2 mL
	CIL-ED-1771	2-Monochlorodibenzo-p-dioxin 50 µg/mL in Nonane	1.2 mL
	CIL-ED-926	2,7/2,8-Dichlorodibenzo-p-dioxin isomer pair 50 µg/mL in Nonane	1.2 mL
New	CIL-ED-4129-C	1,3,6-Trichlorodibenzo-p-dioxin	on request
	CIL-ED-4090	1,3,7-Trichlorodibenzo-p-dioxin 50 µg/mL in Nonane	1.2 mL
	CIL-ED-1779	2,3,7-Trichlorodibenzo-p-dioxin 50 µg/mL in Nonane	1.2 mL
	CIL-ED-1779-C	2,3,7-Trichlorodibenzo-p-dioxin	1 mg
	CIL-ED-912	1,2,3,4-Tetrachlorodibenzo-p-dioxin 50 µg/mL in Nonane	1.2 mL
	CIL-ED-905	1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin isomer pair 50 µg/mL in Nonane	1.2 mL
	CIL-ED-948	1,2,3,9-Tetrachlorodibenzo-p-dioxin 50 µg/mL in Nonane	1.2 mL
New	CIL-ED-923-C	1,2,6,7-Tetrachlorodibenzo-p-dioxin	1 mg
	CIL-ED-915	1,2,7,8-Tetrachlorodibenzo-p-dioxin 50 µg/mL in Nonane	1.2 mL
	CIL-ED-916	1,2,8,9-Tetrachlorodibenzo-p-dioxin 50 µg/mL in Nonane	1.2 mL
	CIL-ED-2518	1,3,6,8-Tetrachlorodibenzo-p-dioxin 50 µg/mL in Nonane	1.2 mL
	CIL-ED-917	1,3,7,8-Tetrachlorodibenzo-p-dioxin 50 µg/mL in Nonane	1.2 mL
	CIL-ED-4061	1,3,7,9-Tetrachlorodibenzo-p-dioxin 50 µg/mL in Nonane	1.2 mL
	CIL-ED-922	1,4,7,8-Tetrachlorodibenzo-p-dioxin 50 µg/mL in Nonane	1.2 mL
	CIL-ED-922-C	1,4,7,8-Tetrachlorodibenzo-p-dioxin	1 mg
	CIL-ED-901	2,3,7,8-Tetrachlorodibenzo-p-dioxin 50 µg/mL in Nonane	4 x 1.2 mL
	CIL-ED-901-A	2,3,7,8-Tetrachlorodibenzo-p-dioxin 10 µg/mL in Methanol	1.2 mL
	CIL-ED-901-B	2,3,7,8-Tetrachlorodibenzo-p-dioxin 50 µg/mL in DMSO	1.2 mL
	CIL-ED-901-C	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1 mg
New	CIL-ED-901-D	2,3,7,8-Tetrachlorodibenzo-p-dioxin 23 pg/µL in DMSO	0.2 mL
	CIL-ED-950	1,2,3,7,8,-Pentachlorodibenzo-p-dioxin 50 µg/mL in Nonane	1.2 mL
	CIL-ED-950-C	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	1 mg

Dioxin and furan individual standards

Code	Product	Unit
CIL-ED-924	1,2,3,8,9-Pentachlorodibenzo-p-dioxin 5 µg/mL in Nonane	1.2 mL
CIL-ED-927	1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin isomer pair 5 µg/mL in Nonane	1.2 mL
CIL-ED-932	1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin 5 µg/mL in Nonane	1.2 mL
CIL-ED-933	1,2,3,4,6,9-Hexachlorodibenzo-p-dioxin 50 µg/mL in Nonane	1.2 mL
CIL-ED-933-C	1,2,3,4,6,9-Hexachlorodibenzo-p-dioxin	1 mg
CIL-ED-961	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin 50 µg/mL in Nonane	1.2 mL
CIL-ED-961-C	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	1 mg
CIL-ED-960	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin 50 µg/mL in Nonane	1.2 mL
CIL-ED-960-C	1,2,3,6,7,8 Hexachlorodibenzo-p-dioxin	1 mg
CIL-ED-969	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin 50 µg/mL in Nonane	1.2 mL
CIL-ED-969-C	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	1 mg
CIL-ED-929	1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin isomer pair 5 µg/mL in Nonane	1.2 mL
CIL-ED-971	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin 50 µg/mL in Nonane	1.2 mL
CIL-ED-971-C	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	1 mg
CIL-ED-976	1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin 50 µg/mL in Nonane	1.2 mL
CIL-ED-980	Octachlorodibenzo-p-dioxin 10 µg/mL in Nonane	4 x 1.2 mL
New CIL-ED-980-A	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin 5 µg/mL in DMSO	1.2 mL
CIL-ED-980-C	Octachlorodibenzo-p-dioxin	10 mg

Further unlabelled dioxin standards

CIL-ED-1770	1-Monochlorodibenzo-p-dioxin 50 µg/mL in Isooctane	1 mL
CIL-ED-1770-C	1-Monochlorodibenzo-p-dioxin	1 mg
CIL-ED-1772	1,6-Dichlorodibenzo-p-dioxin 50 µg/mL in Isooctane	1 mL
CIL-ED-1772-C	1,6-Dichlorodibenzo-p-dioxin	1 mg
CIL-ED-1773-C	2,3-Dichlorodibenzo-p-dioxin	1 mg
CIL-ED-1776	1,2,3-Trichlorodibenzo-p-dioxin 50 µg/mL in Isooctane	1 mL
CIL-ED-1776-C	1,2,3-Trichlorodibenzo-p-dioxin	1 mg
CIL-ED-1778	1,7,8-Trichlorodibenzo-p-dioxin 50 µg/mL in Isoctane	1 mL
CIL-ED-1778-C	1,7,8-Trichlorodibenzo-p-dioxin	1 mg
CIL-ED-951-C	1,2,3,4,7-Pentachlorodibenzo-p-dioxin	1 mg
CIL-ED-1781	1,2,4,7,8-Pentachlorodibenzo-p-dioxin 50 µg/mL in Toluene	1 mL
CIL-ED-1781-C	1,2,4,7,8-Pentachlorodibenzo-p-dioxin	1 mg

$^{13}C_{12}$ Labelled chlorofuran standards

CIL-CLM-1561-1.2	Dibenzofuran ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
CIL-EF-4168	2-Monochlorodibenzofuran ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
CIL-EF-4171	2,4-Dichlorodibenzofuran ($^{13}C_{12}$,99%) 50 ± 5 µg/mL in Nonane	1.2 mL
CIL-EF-4016	2,8-Dichlorodibenzofuran ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
CIL-EF-4172	2,4,8-Trichlorodibenzofuran ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
CIL-EF-920	1,2,3,4-Tetrachlorodibenzofuran ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
CIL-EF-1438	1,2,7,8-Tetrachlorodibenzofuran ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
CIL-EF-5009	1,3,6,8-Tetrachlorodibenzofuran ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
CIL-EF-904	2,3,7,8-Tetrachlorodibenzofuran ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
CIL-EF-5050	1,2,3,4,6-Pentachlorodibenzofuran ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
CIL-EF-952	1,2,3,7,8-Pentachlorodibenzofuran ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
CIL-EF-958	2,3,4,7,8-Pentachlorodibenzofuran ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
CIL-EF-5052	1,2,3,4,6,9-Hexachlorodibenzofuran ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
CIL-EF-963	1,2,3,4,7,8-Hexachlorodibenzofuran ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
CIL-EF-985	1,2,3,6,7,8-Hexachlorodibenzofuran ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
CIL-EF-986	1,2,3,7,8,9-Hexachlorodibenzofuran ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
CIL-EF-987	2,3,4,6,7,8-Hexachlorodibenzofuran ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
CIL-EF-974	1,2,3,4,6,7,8-Heptachlorodibenzofuran ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL

	Code	Product	Unit
	CIL-EF-5054	1,2,3,4,6,8,9-Heptachlorodibenzofuran ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
	CIL-EF-988	1,2,3,4,7,8,9-Heptachlorodibenzofuran ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
	CIL-EF-983	Octachlorodibenzofuran ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL

Unlabelled chlorofuran standards

	CIL-ULM-1712-1.2	Dibenzofuran 50 µg/mL in Nonane	1.2 mL
	CIL-EF-1785	2-Monochlorodibenzofuran 50 µg/mL in Nonane	1.2 mL
	CIL-EF-1787-C	2,4-Dichlorodibenzofuran	1 mg
	CIL-EF-1789	2,8-Dichlorodibenzofuran 50 µg/mL in Nonane	1.2 mL
	CIL-EF-1789-C	2,8-Dichlorodibenzofuran	1 mg
	CIL-EF-1790	1,2,3-Trichlorodibenzofuran 50 µg/mL in Nonane	1.2 mL
	CIL-EF-1792	2,4,6-Trichlorodibenzofuran 50 µg/mL in Nonane	1 mL
	CIL-EF-1792-C	2,4,6-Trichlorodibenzofuran	5 mg
	CIL-EF-1793	2,4,8-Trichlorodibenzofuran 50 µg/mL in Nonane	1.2 mL
	CIL-EF-1793-C	2,4,8-Trichlorodibenzofuran	1 mg
	CIL-EF-4030	1,2,3,9-Tetrachlorodibenzofuran 50 µg/ml in Nonane	1.2 mL
	CIL-EF-918	1,2,7,8-Tetrachlorodibenzofuran 50 µg/mL in Nonane	1.2 mL
	CIL-EF-939	1,2,8,9-Tetrachlorodibenzofuran 50 µg/mL in Nonane	1.2 mL
	CIL-EF-944	1,3,6,8-Tetrachlorodibenzofuran 50 µg/mL in Nonane	1.2 mL
	CIL-EF-903	2,3,7,8-Tetrachlorodibenzofuran 50 µg/mL in Nonane	1.2 mL
	CIL-EF-903-C	2,3,7,8-Tetrachlorodibenzofuran	1 mg
	CIL-EF-953	1,2,3,7,8-Pentachlorodibenzofuran 50 µg/mL in Nonane	1.2 mL
	CIL-EF-953-C	1,2,3,7,8-Pentachlorodibenzofuran	1 mg
	CIL-EF-954	1,2,3,8,9-Pentachlorodibenzofuran 50 µg/mL in Nonane	1.2 mL
New	CIL-EF-942-50	1,3,4,6,8-Pentachlorodibenzofuran 50 µg/mL in Nonane	1.2 mL
	CIL-EF-956	2,3,4,7,8-Pentachlorodibenzofuran 50 µg/mL in Nonane	1.2 mL
New	CIL-EF-956-M	2,3,4,7,8-Pentachlorodibenzofuran 50 µg/mL in Methanol	1.2 mL
	CIL-EF-956-C	2,3,4,7,8-Pentachlorodibenzofuran	1 mg
	CIL-EF-943-50	1,2,3,4,6,8-Hexachlorodibenzofuran 50 µg/mL in Nonane	1.2 mL
	CIL-EF-964	1,2,3,4,7,8-Hexachlorodibenzofuran 50 µg/mL in Nonane	1.2 mL
	CIL-EF-964-C	1,2,3,4,7,8-Hexachlorodibenzofuran	1 mg
	CIL-EF-965	1,2,3,4,8,9-Hexachlorodibenzofuran 50 µg/mL in Nonane (chemical purity 96%)	1.2 mL
	CIL-EF-962	1,2,3,6,7,8-Hexachlorodibenzofuran 50 µg/mL in Nonane	1.2 mL
	CIL-EF-962-C	1,2,3,6,7,8-Hexachlorodibenzofuran	1 mg
	CIL-EF-967	1,2,3,7,8,9-Hexachlorodibenzofuran 50 µg/mL in Nonane	1.2 mL
	CIL-EF-967-C	1,2,3,7,8,9-Hexachlorodibenzofuran	1 mg
	CIL-EF-968	2,3,4,6,7,8-Hexachlorodibenzofuran 50 µg/mL in Nonane	1.2 mL
	CIL-EF-968-C	2,3,4,6,7,8-Hexachlorodibenzofuran	1 mg
	CIL-EF-973	1,2,3,4,6,7,8-Heptachlorodibenzofuran 50 µg/mL in Nonane	1.2 mL
	CIL-EF-973-C	1,2,3,4,6,7,8-Heptachlorodibenzofuran	1 mg
	CIL-EF-975	1,2,3,4,7,8,9-Heptachlorodibenzofuran 50 µg/mL in Nonane	1.2 mL
	CIL-EF-975-C	1,2,3,4,7,8,9-Heptachlorodibenzofuran	1 mg
	CIL-EF-982	Octachlorodibenzofuran 50 µg/mL in Nonane	1.2 mL
	CIL-EF-982-C	Octachlorodibenzofuran	10 mg
New	CIL-EF-982-C-1	Octachlorodibenzofuran	1 mg

Further unlabelled chlorofuran standards

	CIL-EF-1788	2,6-Dichlorodibenzofuran 50 µg/mL in Toluene	1 mL
	CIL-EF-1788-C	2,6-Dichlorodibenzofuran	1 mg
	CIL-EF-1796	1,2,3,4,8-Pentachlorodibenzofuran 50 µg/mL in Isooctane	1 mL
	CIL-EF-1796-C	1,2,3,4,8-Pentachlorodibenzofuran	1 mg

Comprehensive unlabelled chlorodioxin/chlorofuran standards for elution profiling

For convenience, CIL has bundled these standards by level of chlorination. Kits are available for tetra through hexa dioxins and tetra through hepta furans. a comprehensive kit containing all available standards is also available.

Unlabelled chlorofuran standards elution profile

	Code	Product	Unit
New	CIL-JR-F01-25	1,2,3,4-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F02-25	1,2,3,6-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F03-25	1,2,3,7-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F04-25	1,2,3,8-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F05-25	1,2,3,9-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F06-25	1,2,4,6-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F07-25	1,2,4,7-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F08-25	1,2,4,8-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F09-25	1,2,4,9-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F10-25	1,2,6,7-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F11-25	1,2,6,8-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F12-25	1,2,6,9-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F13-25	1,2,7,8-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F14-25	1,2,7,9-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F15-25	1,2,8,9-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F16-25	1,3,4,6-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F17-25	1,3,4,7-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F18-25	1,3,4,8-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F19-25	1,3,4,9-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F20-25	1,3,6,7-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F21-25	1,3,6,8-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F22-25	1,3,6,9-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F23-25	1,3,7,8-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F24-25	1,3,7,9-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F25-25	1,4,6,7-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F26-25	1,4,6,8-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F27-25	1,4,6,9-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F28-25	1,4,7,8-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F29-25	1,6,7,8-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F30-25	2,3,4,6-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F31-25	2,3,4,7-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F32-25	2,3,4,8-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F33-25	2,3,6,7-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F34-25	2,3,6,8-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F35-25	2,3,7,8-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F36-25	2,4,6,7-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F37-25	2,4,6,8-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F38-25	3,4,6,7-Tetrachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F39-25	1,2,3,4,6-Pentachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F40-25	1,2,3,4,7-Pentachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F41-25	1,2,3,4,8-Pentachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F42-25	1,2,3,4,9-Pentachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F43-25	1,2,3,6,7-Pentachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F44-25	1,2,3,6,8-Pentachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL

	Code	Product	Unit
New	CIL-JR-F45-25	1,2,3,6,9-Pentachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F46-25	1,2,3,7,8-Pentachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F47-25	1,2,3,7,9-Pentachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F48-25	1,2,3,8,9-Pentachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F49-25	1,2,4,6,7-Pentachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F50-25	1,2,4,6,8-Pentachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F51-25	1,2,4,6,9-Pentachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F52-25	1,2,4,7,8-Pentachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F53-25	1,2,4,7,9-Pentachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F54-25	1,2,4,8,9-Pentachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F55-25	1,2,6,7,8-Pentachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F56-25	1,2,6,7,9-Pentachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F57-25	1,3,4,6,7-Pentachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F58-25	1,3,4,6,8-Pentachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F59-25	1,3,4,6,9-Pentachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F60-25	1,3,4,7,8-Pentachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F61-25	1,3,4,7,9-Pentachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F62-25	1,3,6,7,8-Pentachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F63-25	1,4,6,7,8-Pentachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F64-25	2,3,4,6,7-Pentachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F65-25	2,3,4,6,8-Pentachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F66-25	2,3,4,7,8-Pentachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F67-25	1,2,3,4,6,7-Hexachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F68-25	1,2,3,4,6,8-Hexachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F69-25	1,2,3,4,6,9-Hexachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F70-25	1,2,3,4,7,8-Hexachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F71-25	1,2,3,4,7,9-Hexachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F72-25	1,2,3,4,8,9-Hexachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F73-25	1,2,3,6,7,8-Hexachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F74-25	1,2,3,6,7,9-Hexachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F75-25	1,2,3,6,8,9-Hexachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F76-25	1,2,3,7,8,9-Hexachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F77-25	1,2,4,6,7,8-Hexachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F78-25	1,2,4,6,7,9-Hexachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F79-25	1,2,4,6,8,9-Hexachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F80-25	1,3,4,6,7,8-Hexachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F81-25	1,3,4,6,7,9-Hexachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F82-25	2,3,4,6,7,8-Hexachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F83-25	1,2,3,4,6,7,8-Heptachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F84-25	1,2,3,4,6,7,9-Heptachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F85-25	1,2,3,4,6,8,9-Heptachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F86-25	1,2,3,4,7,8,9-Heptachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-F87-25	1,2,3,4,6,7,8,9-Octachlorodibenzofuran approx. 25 ng/mL in Nonane	0.2 mL

Unlabelled chlorodioxin standards elution profile

New	CIL-JR-D01-25	1,2,3,4-Tetrachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D02-25	1,2,3,6-Tetrachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D03-25	1,2,3,7-Tetrachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D04-25	1,2,3,8-Tetrachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D05-25	1,2,3,9-Tetrachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D06-25	1,2,4,6-Tetrachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL

Comprehensive unlabelled chlorodioxin/chlorofuran standards for elution profiling

	Code	Product	Unit
New	CIL-JR-D07-25	1,2,4,7-Tetrachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D08-25	1,2,4,8-Tetrachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D09-25	1,2,4,9-Tetrachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D10-25	1,2,6,7-Tetrachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D11-25	1,2,6,8-Tetrachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D12-25	1,2,6,9-Tetrachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D13-25	1,2,7,8-Tetrachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D14-25	1,2,7,9-Tetrachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D15-25	1,2,8,9-Tetrachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D16-25	1,3,6,8-Tetrachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D17-25	1,3,6,9-Tetrachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D18-25	1,3,7,8-Tetrachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D19-25	1,3,7,9-Tetrachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D20-25	1,4,6,9-Tetrachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D21-25	1,4,7,8-Tetrachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D22-25	2,3,7,8-Tetrachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D23-25	1,2,3,4,6-Pentachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D24-25	1,2,3,4,7-Pentachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D25-25	1,2,3,6,7-Pentachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D26-25	1,2,3,6,8-Pentachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D27-25	1,2,3,6,9-Pentachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D28-25	1,2,3,7,8-Pentachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D29-25	1,2,3,7,9-Pentachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D30-25	1,2,3,8,9-Pentachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D31-25	1,2,4,6,7-Pentachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D32-25	1,2,4,6,8-Pentachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D33-25	1,2,4,6,9-Pentachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D34-25	1,2,4,7,8-Pentachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D35-25	1,2,4,7,9-Pentachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D36-25	1,2,4,8,9-Pentachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D37-25	1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D38-25	1,2,3,4,6,8-Hexachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D39-25	1,2,3,4,6,9-Hexachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D40-25	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D41-25	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D42-25	1,2,3,6,7,9-Hexachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D43-25	1,2,3,6,8,9-Hexachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D44-25	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D45-25	1,2,4,6,7,9-Hexachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D46-25	1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D47-25	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D48-25	1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL
New	CIL-JR-D49-25	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin approx. 25 ng/mL in Nonane	0.2 mL

Comprehensive Dioxin/Furan Column Defining Kits

New	CIL-JR-TCDD-KIT	Comprehensive Tetrachlorodibenzo-p-dioxin Column Defining Kit	kit
New	CIL-JR-TCDF-KIT	Comprehensive Tetrachlorodibenzofuran Column Defining Kit	kit
New	CIL-JR-PECDD-KIT	Comprehensive Pentachlorodibenzo-p-dioxin Column Defining Kit	kit
New	CIL-JR-PECDF-KIT	Comprehensive Pentachlorodibenzofuran Column Defining Kit	kit
New	CIL-JR-HXCDD-KIT	Comprehensive Hexachlorodibenzo-p-dioxin Column Defining Kit	kit
New	CIL-JR-HXCDF-KIT	Comprehensive Hexachlorodibenzofuran Column Defining Kit	kit

	Code	Product	Unit
New	CIL-JR-HPCDF-KIT	Comprehensive Heptachlorodibenzofuran Column Defining Kit	kit
New	CIL-JR-PCDD/F-KIT	Comprehensive Polychlorinated Dioxin and Furan Column Defining Kit (includes all 136 “JR” dioxin and furan congeners)	kit

$^{13}C_{12}$ Labelled bromodioxin standards

	CIL-ED-2532	2,3,7-Tribromodibenzo-p-dioxin ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
	CIL-ED-1440	2,3,7,8-Tetrabromodibenzo-p-dioxin ($^{13}C_{12}$,99%) 5 µg/mL in Nonane	4 x 1.2 mL
	CIL-ED-1440-1.2	2,3,7,8-Tetrabromodibenzo-p-dioxin ($^{13}C_{12}$,99%) 5 µg/mL in Nonane	1.2 mL
	CIL-ED-1450	1,2,3,7,8-Pentabromodibenzo-p-dioxin ($^{13}C_{12}$,99%) 5 µg/mL in Nonane (chemical purity 96%)	4 x 1.2 mL
	CIL-ED-1450-1.2	1,2,3,7,8-Pentabromodibenzo-p-dioxin ($^{13}C_{12}$,99%) 5 µg/mL in Nonane	1.2 mL
	CIL-ED-2534	1,2,3,4,7,8-Hexabromodibenzo-p-dioxin ($^{13}C_{12}$,99%) 5 µg/mL in Nonane	4 x 1.2 mL
	CIL-ED-2534-1.2	1,2,3,4,7,8-Hexabromodibenzo-p-dioxin ($^{13}C_{12}$,99%) 5 µg/mL in Nonane	1.2 mL
	CIL-ED-5237	1,2,3,6,7,8-Hexabromodibenzo-p-dioxin ($^{13}C_{12}$,99%) 5 µg/mL in Nonane	4 x 1.2 mL
	CIL-ED-5237-1.2	1,2,3,6,7,8-Hexabromodibenzo-p-dioxin ($^{13}C_{12}$,99%) 5 µg/mL in Nonane	1.2 mL
	CIL-ED-5238	1,2,3,7,8,9-Hexabromodibenzo-p-dioxin ($^{13}C_{12}$,99%) 5 µg/mL in Nonane	4 x 1.2 mL
	CIL-ED-5238-1.2	1,2,3,7,8,9-Hexabromodibenzo-p-dioxin ($^{13}C_{12}$,99%) 5 µg/mL in Nonane	1.2 mL
	CIL-ED-5357	1,2,3,4,6,7,8-Heptabromodibenzo-p-dioxin ($^{13}C_{12}$,99%) 5 µg/mL in Nonane	4 x 1.2 mL
	CIL-ED-5357-1.2	1,2,3,4,6,7,8-Heptabromodibenzo-p-dioxin ($^{13}C_{12}$,99%) 5 µg/mL in Nonane	1.2 mL
	CIL-ED-5089-1.2	Octabromodibenzo-p-dioxin ($^{13}C_{12}$,99%) 70% Nonane/30% Toluene	1.2 mL

Unlabelled bromodioxin standards

	CIL-ED-1763	2,3,7-Tribromodibenzo-p-dioxin 50 µg/mL in Nonane	1.2 mL
	CIL-ED-1441	2,3,7,8-Tetrabromodibenzo-p-dioxin 5 µg/mL in Nonane	8 x 1.2 mL
	CIL-ED-1441-1.2	2,3,7,8-Tetrabromodibenzo-p-dioxin 5 µg/mL in Nonane	1.2 mL
	CIL-ED-1451	1,2,3,7,8-Pentabromodibenzo-p-dioxin 5 µg/mL in Nonane	8 x 1.2 mL
	CIL-ED-1451-1.2	1,2,3,7,8-Pentabromodibenzo-p-dioxin 5 µg/mL in Nonane	1.2 mL
	CIL-ED-1462	1,2,3,4,7,8-Hexabromodibenzo-p-dioxin 5 µg/ml in Nonane	8 x 1.2 mL
New	CIL-ED-1462-1.2	1,2,3,4,7,8-Hexabromodibenzo-p-dioxin 5 µg/ml in Nonane	1.2 mL
	CIL-ED-1465	1,2,3,6,7,8-Hexabromodibenzo-p-dioxin 5 µg/mL in Nonane	8 x 1.2 mL
	CIL-ED-1465-1.2	1,2,3,6,7,8-Hexabromodibenzo-p-dioxin 5 µg/mL in Nonane	1.2 mL
	CIL-ED-1466	1,2,3,7,8,9-Hexabromodibenzo-p-dioxin 5 µg/mL in Nonane	8 x 1.2 mL
	CIL-ED-1466-1.2	1,2,3,7,8,9-Hexabromodibenzo-p-dioxin 5 µg/mL in Nonane	1.2 mL
	CIL-ED-5356	1,2,3,4,6,7,8-Heptabromodibenzo-p-dioxin 5 µg/mL in Nonane	8 x 1.2 mL
	CIL-ED-5356-1.2	1,2,3,4,6,7,8-Heptabromodibenzo-p-dioxin (unlabelled) 5 µg/mL in Nonane	1.2 mL
	CIL-ED-1481	Octabromodibenzo-p-dioxin 5 µg/mL in Toluene	8 x 1.2 mL
	CIL-ED-1481-1.2	Octabromodibenzo-p-dioxin 5 µg/mL in Toluene	1.2 mL

$^{13}C_{12}$ Labelled bromofuran standards

	CIL-EF-5076	2-Monobromodibenzofuran ($^{13}C_{12}$,99%) 5 µg/mL in Nonane	4 x 1.2 mL
	CIL-EF-5078	2,8-Dibromodibenzofuran ($^{13}C_{12}$,99%) 5 µg/mL in Nonane	4 x 1.2 mL
	CIL-EF-5080	2,4,8-Tribromodibenzofuran ($^{13}C_{12}$,99%) 5 µg/mL in Nonane	4 x 1.2 mL
	CIL-EF-1442	2,3,7,8-Tetrabromodibenzofuran ($^{13}C_{12}$,99%) 5 µg/mL in Nonane	4 x 1.2 mL
	CIL-EF-1442-1.2	2,3,7,8-Tetrabromodibenzofuran ($^{13}C_{12}$,99%) 5 µg/mL in Nonane	1.2 mL
	CIL-EF-5082	2,4,6,8-Tetrabromodibenzofuran ($^{13}C_{12}$,99%) 5 µg/mL in Nonane	4 x 1.2 mL
	CIL-EF-5082-1.2	2,4,6,8-Tetrabromodibenzofuran ($^{13}C_{12}$,99%) 5 µg/mL in Nonane	1.2 mL
	CIL-EF-1452	1,2,3,7,8-Pentabromodibenzofuran ($^{13}C_{12}$,99%) 5 µg/mL in Nonane	4 x 1.2 mL
	CIL-EF-1452-1.2	1,2,3,7,8-Pentabromodibenzofuran ($^{13}C_{12}$,99%) 5 µg/mL in Nonane	1.2 mL
	CIL-EF-1454	2,3,4,7,8-Pentabromodibenzofuran ($^{13}C_{12}$,99%) 5 µg/mL in Nonane	4 x 1.2 mL
	CIL-EF-1454-1.2	2,3,4,7,8-Pentabromodibenzofuran ($^{13}C_{12}$,99%) 5 µg/mL in Nonane	1.2 mL
	CIL-EF-1463	1,2,3,4,7,8-Hexabromodibenzofuran ($^{13}C_{12}$,99%) 5 µg/mL in Nonane	4 x 1.2 mL
	CIL-EF-1463-1.2	1,2,3,4,7,8-Hexabromodibenzofuran ($^{13}C_{12}$,99%) 5 µg/mL in Nonane	1.2 mL
	CIL-EF-5259	1,2,3,4,6,7,8-Heptabromodibenzofuran ($^{13}C_{12}$,99%) 5 µg/mL in 70% Nonane/30% Toluene	4 x 1.2 mL
New	CIL-EF-5259-1.2	1,2,3,4,6,7,8-Heptabromodibenzofuran ($^{13}C_{12}$,99%) 5 µg/mL in 70% Nonane/30% Toluene	1.2 mL

Comprehensive unlabelled chlorodioxin/chlorofuran standards for elution profiling

	Code	Product	Unit
	CIL-EF-5266	Octabromodibenzofuran ($^{13}C_{12}$,99%) 5 µg/mL in Nonane:Toluene ((70:30)	4 x 1.2 mL
	CIL-EF-5266-1.2	Octabromodibenzofuran ($^{13}C_{12}$,99%) 5 µg/mL in Nonane:Toluene ((70:30)	1.2 mL

Unlabelled bromofuran standards

	CIL-EF-5075	2-Monobromodibenzofuran 5 µg/mL in Nonane	8 x 1.2 mL
	CIL-EF-5077	2,8-Dibromodibenzofuran 5 µg/mL in Nonane	8 x 1.2 mL
	CIL-EF-5079	2,4,8-Tribromodibenzofuran 5 µg/mL in Nonane	8 x 1.2 mL
	CIL-EF-1443	2,3,7,8-Tetrabromodibenzofuran 5 µg/mL in Nonane	8 x 1.2 mL
	CIL-EF-1443-1.2	2,3,7,8-Tetrabromodibenzofuran 5 µg/mL in Nonane	1.2 mL
	CIL-EF-5081	2,4,6,8-Tetrabromodibenzofuran 5 µg/mL in Nonane	8 x 1.2 mL
New	CIL-EF-5081-1.2	2,4,6,8-Tetrabromodibenzofuran 5 µg/mL in Nonane unlabelled	1.2 mL
	CIL-EF-1453	1,2,3,7,8-Pentabromodibenzofuran 5 µg/mL in Nonane	8 x 1.2 mL
	CIL-EF-1453-1.2	1,2,3,7,8-Pentabromodibenzofuran 5 µg/mL in Nonane	1.2 mL
	CIL-EF-1455	2,3,4,7,8-Pentabromodibenzofuran 5 µg/mL in Nonane	8 x 1.2 mL
	CIL-EF-1455-1.2	2,3,4,7,8-Pentabromodibenzofuran 5 µg/mL in Nonane	1.2 mL
	CIL-EF-1464	1,2,3,4,7,8-Hexabromodibenzofuran 5 µg/mL in Nonane	8 x 1.2 mL
	CIL-EF-1464-1.2	1,2,3,4,7,8-Hexabromodibenzofuran 5 µg/mL in Nonane	1.2 mL
	CIL-EF-1486	1,2,3,4,6,7,8-Heptabromodibenzofuran 5 µg/mL in 93% Nonane/7% Toluene	8 x 1.2 mL
	CIL-EF-1486-1.2	1,2,3,4,6,7,8-Heptabromodibenzofuran 5 µg/mL in 93% Nonane/7% Toluene	1.2 mL
	CIL-EF-5263	Octabromodibenzofuran 5 µg/mL in 70% Nonane/30% Toluene	8 x 1.2 mL
New	CIL-EF-5263-1.2	Octabromodibenzofuran 5 µg/mL in 70% Nonane/30% Toluene	1.2 mL

$^{13}C_{12}$ Labelled mixed bromo/chlorodioxin standards

	CIL-EBC-2509	1-Bromo-2,3,7,8-tetrachlorodibenzo-p-dioxin ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL

Unlabelled mixed bromo/chlorodioxin standards

	CIL-EBC-1743	2-Bromo-3,7,8-trichlorodibenzo-p-dioxin 50 µg/mL in Nonane	1.2 mL
	CIL-EBC-1741	2,3-Dibromo-7,8-dichlorodibenzo-p-dioxin 50 µg/mL in Nonane	1.2 mL
	CIL-EBC-2501	1-Bromo-2,3,7,8-tetrachlorodibenzo-p-dioxin 50 µg/mL in Nonane	1.2 mL
	CIL-EBC-2504	2-Bromo-3,6,7,8,9-pentachlorodibenzo-p-dioxin 50 µg/mL in Nonane	1.2 mL
	CIL-EBC-2505	1-Bromo-2,3,6,7,8,9-hexachlorodibenzo-p-dioxin 50 µg/mL in Nonane	1.2 mL
	CIL-EBC-2507-A	1-Bromo-2,3,4,6,7,8,9-heptachlorodibenzo-p-dioxin 5 µg/mL in Nonane	8 x 1.2 mL

Unlabelled mixed bromo/chlorofuran standards

	CIL-EBC-2500	3-Bromo-2,7,8-trichlorodibenzofuran 50 µg/mL in Nonane	1.2 mL
	CIL-EBC-2503	1-Bromo-2,3,7,8-tetrachlorodibenzofuran 50 µg/mL in Nonane	1.2 mL

Dioxin & furan method standards, standard mixtures & reference materials

U.S. EPA, JIS, and CEN dioxin and furan method standard mixtures

In 1990 CIL /Cerilliant (formerly Radian) introduced the first “ready-to-use” standard mixtures for U.S. EPA Method 1613 “High Resolution GC/MS Method for the Determination of Tetra-Octa Chlorinated Dioxins and Furans”. With the effectiveness and popularity of these pre-formulated mixtures, CIL /Cerilliant next developed “ready-to-use” standards for EPA Method 8280 for low resolution GC/MS analysis of dioxins and furans. Today CIL /Cerilliant offer convenient dioxin and furan standard mixtures for EPA Methods 23 and 8290, as well as the Japanese Industrial Standards methods JIS-K0311 and K0312, and the European Community method EN-1948.

NEW Reference Materials

In 2006 CIL completed an international interlaboratory study for the determination of many environmental pollutants in our three fish reference materials, as well as two RMs for soil and sediment. In 2007 CIL conducted another interlab study, this time evaluating dioxins, furans, and PCBs in a new Fly Ash Reference Material. In 2010, CIL has launched yet another interlaboratory study to develop consensus values for priority pollutants in Cod Liver Oil Reference Material. Results for the CLO RM will be available in autumn of 2010.

Dioxin and Furan plus PCB Standard Mixtures

CIL /Cerilliant have developed several mixtures which include the 2,3,7,8-containing dioxin and furan congeners, as well as the “toxic” PCB congeners. With full calibration series and matching spiking solutions, analysts can test these two commonly combined groups without having to manipulate several different standard sets.

Non-2,3,7,8-Containing Standard Mixtures

With the development of several new ^{13}C-labelled “non-2,3,7,8” furan standards, CIL /Cerilliant now offer standard mixtures which contain the traditional 17 “2,3,7,8-containing” standards, as well as the new ^{13}C-labelled “non-2,3,7,8-containing” congeners. These standard mixtures allow researchers to use all 17 ^{13}C-labelled 2,3,7,8-containing standards as Internal Standards, while utilizing the labelled “non-2,3,7,8-containing” congeners as Recovery/Injection or Cleanup standards.

NEW Two Column Dioxin and Furan Standard Mixtures

Two Column dioxin and furan standard mixtures are combination mixtures used to confirm dioxins and furans and PCBs using only two columns. These standards combine the benefits of both the “Dioxin and Furan plus PCB” mixtures and the “Non-2,3,7,8-Containing” mixtures.

Expanded PBDD/F Standards and Standard Mixtures

Polybrominated dioxins and furans (PBDD/F) can be found at trace levels in technical brominated flame retardant products, and may also be formed from combustion of these materials in the presence of organic compounds. The biological effects of PBDD/Fs are similar to those of their chlorinated analogs which have been regulated for many years. CIL now offers a comprehensive set of labelled and unlabelled standards for PBDD/F analysis, including new calibration series and corresponding spiking solutions containing tetra-octabromo congeners.

ISO Accreditation

Adding to our list of firsts in the field of dioxin and furan reference standards, CIL is pleased to announce the availability of the first dioxin and furan standards manufactured under ISO/ IEC 17025 and ISO Guide 34 accreditation.

Cerilliant Corporation, CIL’s longtime collaborator for dioxin and furan standards, has received accreditation under ISO Guide 34 for Reference Material Producers, as well as ISO/IEC 17025 for Testing and Calibration Laboratories. These two new accreditations provide a powerful boost to their already impressive quality credentials, including ISO-9001:2008.

U.S. EPA Method 1613 standard mixtures

Code	Product	Unit
CIL-EDF-9999...	Method 1613 Calibration Solution Solvent: Nonane All concentrations are in ng/mL (ppb)	Each

Unlabelled Dioxins & Furans:	***CS0.1**	***CS0.2**	***CS0.5**	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**
2,3,7,8-TetraCDD	0.05	0.1	0.25	0.5	2.0	10	40	200
2,3,7,8-TetraCDF	0.05	0.1	0.25	0.5	2.0	10	40	200
1,2,3,7,8-PentaCDD	0.25	0.5	1.25	2.5	10	50	200	1000
1,2,3,7,8-PentaCDF	0.25	0.5	1.25	2.5	10	50	200	1000
2,3,4,7,8-PentaCDF	0.25	0.5	1.25	2.5	10	50	200	1000
1,2,3,4,7,8-HexaCDD	0.25	0.5	1.25	2.5	10	50	200	1000
1,2,3,6,7,8-HexaCDD	0.25	0.5	1.25	2.5	10	50	200	1000
1,2,3,7,8,9-HexaCDD	0.25	0.5	1.25	2.5	10	50	200	1000
1,2,3,4,7,8-HexaCDF	0.25	0.5	1.25	2.5	10	50	200	1000
1,2,3,6,7,8-HexaCDF	0.25	0.5	1.25	2.5	10	50	200	1000
1,2,3,7,8,9-HexaCDF	0.25	0.5	1.25	2.5	10	50	200	1000
2,3,4,6,7,8-HexaCDF	0.25	0.5	1.25	2.5	10	50	200	1000
1,2,3,4,6,7,8-HeptaCDD	0.25	0.5	1.25	2.5	10	50	200	1000
1,2,3,4,6,7,8-HeptaCDF	0.25	0.5	1.25	2.5	10	50	200	1000
1,2,3,4,7,8,9-HeptaCDF	0.25	0.5	1.25	2.5	10	50	200	1000
OctaCDD	0.5	1.0	2.50	5.0	20	100	400	2000
OctaCDF	0.5	1.0	2.50	5.0	20	100	400	2000

Labelled Dioxins & Furans:	***CS0.1**	***CS0.2**	***CS0.5**	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**
1,2,3,4-TetraCDD ($^{13}C_{12}$,99%)	100	100	100	100	100	100	100	100
2,3,7,8-TetraCDD ($^{13}C_{12}$,99%)	100	100	100	100	100	100	100	100
2,3,7,8-TetraCDD ($^{37}Cl_4$,96%)	0.05	0.1	0.25	0.5	2.0	10	40	200
2,3,7,8-TetraCDF ($^{13}C_{12}$,99%)	100	100	100	100	100	100	100	100
1,2,3,7,8-PeCDD ($^{13}C_{12}$,99%)	100	100	100	100	100	100	100	100
1,2,3,7,8-PeCDF ($^{13}C_{12}$,99%)	100	100	100	100	100	100	100	100
2,3,4,7,8-PeCDF ($^{13}C_{12}$,99%)	100	100	100	100	100	100	100	100
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$,99%)	100	100	100	100	100	100	100	100
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%)	100	100	100	100	100	100	100	100
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%)	100	100	100	100	100	100	100	100
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%)	100	100	100	100	100	100	100	100
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	100	100	100	100	100	100	100	100
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$,99%)	100	100	100	100	100	100	100	100
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	100	100	100	100	100	100	100	100
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%)	100	100	100	100	100	100	100	100
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%)	100	100	100	100	100	100	100	100
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$,99%)	100	100	100	100	100	100	100	100
OctaCDD ($^{13}C_{12}$,99%)	200	200	200	200	200	200	200	200

*NOTE: CS0.1, CS0.2, +CS0.5 are optional extensions of the Method 1613 Calibration Curve for very low MDL analyses, and are not required by the method.

CIL-EDF-9999	Method 1613 Calibration Solution [CS1-CS5]	5 x 0.2 mL
CIL-EDF-9999-0.1	Method 1613 Calibration Solution [CS0.1]	0.2 mL
CIL-EDF-9999-0.2	Method 1613 Calibration Solution [CS0.2]	0.2 mL
CIL-EDF-9999-0.5	Method 1613 Calibration Solution [CS0.5] (this product was formerly listed as EDF-4097)	0.2 mL
CIL-EDF-9999-1	Method 1613 Calibration Solution [CS1]	0.2 mL
CIL-EDF-9999-2	Method 1613 Calibration Solution [CS2]	0.2 mL
CIL-EDF-9999-3	Method 1613 Daily Calibration Check Standard [CS3]	0.2 mL
CIL-EDF-9999-3-4	Method 1613 Daily Calibration Check Standard [CS3]	4 x 0.2 mL
CIL-EDF-9999-4	Method 1613 Calibration Solution [CS4]	0.2 mL
CIL-EDF-9999-5	Method 1613 Calibration Solution [CS5]	0.2 mL
EDF-9999-A*	Method 1613 Calibration Solution [CS1-CS5] (1/10 concentration)	5 x 0.2 mL
EDF-9999-A-3*	Method 1613 Calibration Check Standard [CS3] (1/10 concentration)	0.2 mL

*A set of calibration solutions with both labelled and unlabelled compounds at 1/10 concentration of the corresponding solution in CIL-EDF-9999.

Code	Product	Unit

CIL-EDF-4141 — Method 1613 Daily Calibration plus Window Definer and Isomer Specificity Solution — 0.2 mL

This standard allows three functions:
- Daily MS instrument response
- Daily column resolution
- Daily window definition

to be achieved with a single data acquisition

Daily Calibration Standards	Concentration	Daily Calibration Standards	Concentration
2,3,7,8-TetraCDD	10 ng/mL	2,3,7,8-TetraCDD ($^{13}C_{12}$,99%)	100 ng/mL
2,3,7,8-TetraCDF	10 ng/mL	2,3,7,8-TetraCDD ($^{37}Cl_4$,96%)	10 ng/mL
1,2,3,7,8-PentaCDD	50 ng/mL	2,3,7,8-TetraCDF ($^{13}C_{12}$,99%)	100 ng/mL
1,2,3,7,8-PentaCDF	50 ng/mL	1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%)	100 ng/mL
2,3,4,7,8-PentaCDF	50 ng/mL	1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%)	100 ng/mL
1,2,3,4,7,8-HexaCDD	50 ng/mL	2,3,4,7,8-PentaCDF ($^{13}C_{12}$,99%)	100 ng/mL
1,2,3,6,7,8-HexaCDD	50 ng/mL	1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$,99%)	100 ng/mL
1,2,3,7,8,9-HexaCDD	50 ng/mL	1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%)	100 ng/mL
1,2,3,4,7,8-HexaCDF	50 ng/mL	1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%)	100 ng/mL
1,2,3,6,7,8-HexaCDF	50 ng/mL	1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%)	100 ng/mL
1,2,3,7,8,9-HexaCDF	50 ng/mL	1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	100 ng/mL
2,3,4,6,7,8-HexaCDF	50 ng/mL	1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$,99%)	100 ng/mL
1,2,3,4,6,7,8-HeptaCDD (W.D.)	50 ng/mL	2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	100 ng/mL
1,2,3,4,6,7,8-HeptaCDF (W.D.)	50 ng/mL	1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%)	100 ng/mL
1,2,3,4,7,8,9-HeptaCDF (W.D.)	50 ng/mL	1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%)	100 ng/mL
OctaCDD	100 ng/mL	1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$,99%)	100 ng/mL
OctaCDF	100 ng/mL	OctaCDD ($^{13}C_{12}$,99%)	200 ng/mL
1,2,3,4-TetraCDD ($^{13}C_{12}$,99%)	100 ng/mL		

Window Defining Standards	Concentration	Window Defining Standards	Concentration
1,3,6,8-TetraCDD	10 ng/mL	1,3,4,6,8-PentaCDF	50 ng/mL
1,2,8,9-TetraCDD	10 ng/mL	1,2,3,8,9-PentaCDF	50 ng/mL
1,3,6,8-TetraCDF	10 ng/mL	1,2,4,6,7,9/1,2,4,6,8,9-HexaCDD	50 ng/mL
1,2,8,9-TetraCDF	10 ng/mL	1,2,3,4,6,8-HexaCDF	50 ng/mL
1,2,4,6,8/1,2,4,7,9-PentaCDD	50 ng/mL	1,2,3,4,8,9-HexaCDF	50 ng/mL
1,2,3,8,9-PentaCDD	50 ng/mL	1,2,3,4,6,7,9-HeptaCDD	50 ng/mL

Note 1,2,3,4,6,7-HexaCDD (last eluting HexaCDD) not included due to interference with 1,2,3,7,8,9-HexaCDD.

TetraCDD Isomer Concentration

Specificity Standards	Specificity Standards		
1,2,3,4-TetraCDD	10 ng/mL	1,2,3,9-TetraCDD	10 ng/mL
1,2,3,7/1,2,3,8-TetraCDD	10 ng/mL		

(W.D.) - Window Defining Standard

CIL-EDF-6999 — Method 1613 Clean-up Standard — 7.5 mL

Solvent: Nonane

2,3,7,8-TetraCDD ($^{37}Cl_4$,96%) ..... 0.8 ng/mL

CIL-EDF-6999-10X — Method 1613 Clean-up Standard (10x concentration) — 20 mL

CIL-EDF-5999 — Method 1613 Internal Standard Spiking Solution — 0.5 mL

Solvent: Nonane

1,2,3,4-TetraCDD ($^{13}C_{12}$,99%)	200 ng/mL	1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%)	200 ng/mL

CIL-EDF-8999 — Method 1613 Labelled Compound Stock Solution — 500 µL

Solvent: Nonane

2,3,7,8-TetraCDD ($^{13}C_{12}$,99%)	100 ng/mL	1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	100 ng/mL
2,3,7,8-TetraCDF ($^{13}C_{12}$,99%)	100 ng/mL	1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$,99%)	100 ng/mL
1,2,3,7,8-PeCDD ($^{13}C_{12}$,99%)	100 ng/mL	2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	100 ng/mL
1,2,3,7,8-PeCDF ($^{13}C_{12}$,99%)	100 ng/mL	1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%)	100 ng/mL
2,3,4,7,8-PeCDF ($^{13}C_{12}$,99%)	100 ng/mL	1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%)	100 ng/mL
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$,99%)	100 ng/mL	1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$,99%)	100 ng/mL
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%)	100 ng/mL	OctaCDD ($^{13}C_{12}$,99%)	200 ng/mL
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%)	100 ng/mL		

CIL-EDF-8999-4 — Method 1613 Labelled Compound Stock Solution — 4 x 500 µL

CIL-EDF-7999 — Method 1613 Precision and Recovery Standard Solution — 0.2 mL

Solvent: Nonane

2,3,7,8-TetraCDD	40 ng/mL	1,2,3,6,7,8-HexaCDF	200 ng/mL
2,3,7,8-TetraCDF	40 ng/mL	1,2,3,7,8,9-HexaCDF	200 ng/mL
1,2,3,7,8-PentaCDD	200 ng/mL	2,3,4,6,7,8-HexaCDF	200 ng/mL
1,2,3,7,8-PentaCDF	200 ng/mL	1,2,3,4,6,7,8-HpCDD	200 ng/mL
2,3,4,7,8-PentaCDF	200 ng/mL	1,2,3,4,6,7,8-HpCDF	200 ng/mL
1,2,3,4,7,8-HexaCDD	200 ng/mL	1,2,3,4,7,8,9-HpCDF	200 ng/mL
1,2,3,6,7,8-HexaCDD	200 ng/mL	OctaCDD	400 ng/mL
1,2,3,7,8,9-HexaCDD	200 ng/mL	OctaCDF	400 ng/mL
1,2,3,4,7,8-HexaCDF	200 ng/mL		

Dioxin & furan method standards, standard mixtures & reference materials

Code	Product	Unit
CIL-EDF-7999-10X	Method 1613 Precision and Recovery Standard Solution (10x the concentration of EDF-7999) Solvent: Nonane	1.2 mL

2,3,7,8-TetraCDD	400 ng/mL	1,2,3,6,7,8-HexaCDF	2000 ng/mL
2,3,7,8-TetraCDF	400 ng/mL	1,2,3,7,8,9-HexaCDF	2000 ng/mL
1,2,3,7,8-PentaCDD	2000 ng/mL	2,3,4,6,7,8-HexaCDF	2000 ng/mL
1,2,3,7,8-PentaCDF	2000 ng/mL	1,2,3,4,6,7,8-HeptaCDD	2000 ng/mL
2,3,4,7,8-PentaCDF	2000 ng/mL	1,2,3,4,6,7,8-HeptaCDF	2000 ng/mL
1,2,3,4,7,8-HexaCDD	2000 ng/mL	1,2,3,4,7,8,9-HeptaCDF	2000 ng/mL
1,2,3,6,7,8-HexaCDD	2000 ng/mL	OctaCDD	4000 ng/mL
1,2,3,7,8,9-HexaCDD	2000 ng/mL	OctaCDF	4000 ng/mL
1,2,3,4,7,8-HexaCDF	2000 ng/mL		

	Code	Product	Unit
New	CIL-EDF-1613-KIT	Method 1613 "Starter Kit" Contains one each of the following items: CIL-EDF-9999 Method 1613 Calibration Solutions CIL-EDF-5999 Method 1613 Internal Standard Spiking Solution CIL-EDF-7999 Method 1613 Precision and Recovery Standard Solution CIL-EDF-6999 Method 1613 Cleanup Standard Contains two of the following item: CIL-EDF-8999 Method 1613 labelled Compound Stock Solution	kit

U.S. EPA Method 23 standard mixtures

	Code	Product	Unit
	CIL-EDF-4052	Method 23 Calibration Solutions [CS1-CS5] Solvent: Nonane All concentrations are in pg/µL (ppb)	5 x 0.2 mL

Unlabelled Compounds	CS1	CS2	CS3	CS4	CS5
2,3,7,8-TetraCDD	0.5	1	5	50	100
2,3,7,8-TetraCDF	0.5	1	5	50	100
1,2,3,7,8-PentaCDD	2.5	5	25	250	500
1,2,3,7,8-PentaCDF	2.5	5	25	250	500
2,3,4,7,8-PentaCDF	2.5	5	25	250	500
1,2,3,4,7,8-HexaCDD	2.5	5	25	250	500
1,2,3,6,7,8-HexaCDD	2.5	5	25	250	500
1,2,3,7,8,9-HexaCDD	2.5	5	25	250	500
1,2,3,4,7,8-HexaCDF	2.5	5	25	250	500
1,2,3,6,7,8-HexaCDF	2.5	5	25	250	500
1,2,3,7,8,9-HexaCDF	2.5	5	25	250	500
2,3,4,6,7,8-HexaCDF	2.5	5	25	250	500
1,2,3,4,6,7,8-HeptaCDD	2.5	5	25	250	500
1,2,3,4,6,7,8-HeptaCDF	2.5	5	25	250	500
1,2,3,4,7,8,9-HeptaCDF	2.5	5	25	250	500
OctaCDD	5.0	10	50	500	1000
OctaCDF	5.0	10	50	500	1000
Internal Standards	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**
2,3,7,8-TetraCDD ($^{13}C_{12}$,99%)	100	100	100	100	100
1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%)	100	100	100	100	100
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%)	100	100	100	100	100
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%)	100	100	100	100	100
OctaCDD ($^{13}C_{12}$,99%)	200	200	200	200	200
2,3,7,8-TetraCDF ($^{13}C_{12}$,99%)	100	100	100	100	100
1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%)	100	100	100	100	100
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	100	100	100	100	100
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%)	100	100	100	100	100
Surrogate Standards	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**
2,3,7,8-TetraCDD ($^{37}C_{4}$,96%)	0.5	1	5	50	100
2,3,4,7,8-PentaCDF ($^{13}C_{12}$,99%)	2.5	5	25	250	500
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$,99%	2.5	5	25	250	500
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%)	2.5	5	25	250	500
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$,99%)	2.5	5	25	250	500
Recovery Standards	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**
1,2,3,4-TetraCDD ($^{13}C_{12}$,99%)	100	100	100	100	100
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%)	100	100	100	100	100
Alternate Standard	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$,99%)	2.5	5	25	250	500

	Code	Product	Unit
New	CIL-EDF-4052-1	Method 23 Calibration Solution [CS1]	0.2 mL
New	CIL-EDF-4052-2	Method 23 Calibration Solution [CS2]	0.2 mL
	CIL-EDF-4052-3	Method 23 Daily Calibration Check Standard [CS3]	0.2 mL
New	CIL-EDF-4052-4	Method 23 Calibration Solution [CS4]	0.2 mL
New	CIL-EDF-4052-5	Method 23 Calibration Solution [CS5]	0.2 mL

Code	Product	Unit

CIL-EDF-4053 — Method 23 Internal Standard Stock Solution — 1.2 mL

Solvent: Nonane

2,3,7,8-TetraCDD ($^{13}C_{12}$,99%) ..... 1000 ng/mL	2,3,7,8-TetraCDF ($^{13}C_{12}$,99%) ..... 1000 ng/mL
1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%) ..... 1000 ng/mL	1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%) ..... 1000 ng/mL
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%) ..... 1000 ng/mL	1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%) ..... 1000 ng/mL
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%) ..... 1000 ng/mL	1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%) .... 1000 ng/mL
OctaCDD ($^{13}C_{12}$,99%) ..... 2000 ng/mL	

CIL-EDF-4054 — Method 23 Surrogate Standard Stock Solution — 1.2 mL

Solvent: Nonane

2,3,7,8-TetraCDD ($^{37}Cl_4$,96%) ..... 1000 ng/mL	1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%) ..... 1000 ng/mL
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$,99%) ..... 1000 ng/mL	1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$,99%) ..... 1000 ng/mL
2,3,4,7,8-PentaCDF ($^{13}C_{12}$,99%) ..... 1000 ng/mL	

CIL-EDF-4055 — Method 23 Recovery Standard Stock Solution — 1.2 mL

1,2,3,4-TetraCDD ($^{13}C_{12}$,99%) ..... 500 ng/mL	1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%) ..... 500 ng/mL

CIL-EDF-5189 — Method 23 Alternative Recovery Stock Solution — 1.2 mL

1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$,99%) ..... 1000 ng/mL

U.S. EPA Method 8290 standard mixtures

CIL-EDF-5006 — Method 8290 Calibration Solutions [HRCC1-HRCC5] — 5 x 0.2 mL

Solvent: Nonane

All concentrations are in ng/mL (ppb)

Unlabelled Compounds	HRCC1	HRCC2	HRCC3	HRCC4	HRCC5
2,3,7,8-TetraCDD	1.0	2.5	10	50	200
2,3,7,8-TetraCDF	1.0	2.5	10	50	200
1,2,3,7,8-PentaCDD	2.5	6.25	25	125	500
1,2,3,7,8-PentaCDF	2.5	6.25	25	125	500
2,3,4,7,8-PentaCDF	2.5	6.25	25	125	500
1,2,3,4,7,8-HexaCDD	2.5	6.25	25	125	500
1,2,3,4,7,8-HexaCDF	2.5	6.25	25	125	500
1,2,3,6,7,8-HexaCDD	2.5	6.25	25	125	500
1,2,3,6,7,8-HexaCDF	2.5	6.25	25	125	500
1,2,3,7,8,9-HexaCDD	2.5	6.25	25	125	500
1,2,3,7,8,9-HexaCDF	2.5	6.25	25	125	500
2,3,4,6,7,8-HexaCDF	2.5	6.25	25	125	500
1,2,3,4,6,7,8-HeptaCDD	2.5	6.25	25	125	500
1,2,3,4,6,7,8-HeptaCDF	2.5	6.25	25	125	500
1,2,3,4,7,8,9-HeptaCDF	2.5	6.25	25	125	500
OctaCDD	5.0	12.5	50	250	1000
OctaCDF	5.0	12.5	50	250	1000

Internal Standards	HRCC1	HRCC2	HRCC3	HRCC4	HRCC5
1,2,3,4-TetraCDD ($^{13}C_{12}$,99%)	50	50	50	50	50
2,3,7,8-TetraCDD ($^{13}C_{12}$,99%)	50	50	50	50	50
2,3,7,8-TetraCDF ($^{13}C_{12}$,99%)	50	50	50	50	50
1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%)	50	50	50	50	50
1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%)	50	50	50	50	50
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%)	125	125	125	125	125
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%)	125	125	125	125	125
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%)	125	125	125	125	125
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%)	125	125	125	125	125
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%)	125	125	125	125	125
OctaCDD ($^{13}C_{12}$,99%)	250	250	250	250	250

Recovery Standards	HRCC1	HRCC2	HRCC3	HRCC4	HRCC5
1,2,3,4-TetraCDD ($^{13}C_{12}$,99%)	50	50	50	50	50
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%)	125	125	125	125	125

New	CIL-EDF-5006-1	Method 8290 Continuing Calibration Check Standard [HRCC1]	0.2 mL
New	CIL-EDF-5006-2	Method 8290 Continuing Calibration Check Standard [HRCC2]	0.2 mL
	CIL-EDF-5006-3	Method 8290 Continuing Calibration Check Standard [HRCC3]	0.2 mL
New	CIL-EDF-5006-4	Method 8290 Continuing Calibration Check Standard [HRCC4]	0.2 mL
New	CIL-EDF-5006-5	Method 8290 Continuing Calibration Check Standard [HRCC5]	0.2 mL

CIL-ED-5004 — Method 8290 Recovery Standard Solution — 1.2 mL

Solvent: Nonane

1,2,3,4-TetraCDD ($^{13}C_{12}$,99%) ..... 100 ng/mL	1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%) ..... 250 ng/mL

CIL-EDF-5005 — Method 8290 Sample Fortification Solution — 1.2 mL

Solvent: Nonane

2,3,7,8-TetraCDD ($^{13}C_{12}$,99%) ..... 100 ng/mL	1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%) ..... 250 ng/mL
2,3,7,8-TetraCDF ($^{13}C_{12}$,99%) ..... 100 ng/mL	1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%) ..... 250 ng/mL
1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%) ..... 100 ng/mL	1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%) ..... 250 ng/mL
1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%) ..... 100 ng/mL	OctaCDD ($^{13}C_{12}$,99%) ..... 500 ng/mL
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%) ..... 250 ng/mL	

Code	Product	Unit
CIL-EDF-5008	Method 8290 Matrix Spiking Solution Solvent: Nonane	1.2 mL

2,3,7,8-TetraCDD	100 ng/mL	1,2,3,7,8,9-HexaCDD	250 ng/mL
2,3,7,8-TetraCDF	100 ng/mL	1,2,3,7,8,9-HexaCDF	250 ng/mL
1,2,3,7,8-PentaCDD	250 ng/mL	2,3,4,6,7,8-HexaCDF	250 ng/mL
1,2,3,7,8-PentaCDF	250 ng/mL	1,2,3,4,6,7,8-HeptaCDD	250 ng/mL
2,3,4,7,8-PentaCDF	250 ng/mL	1,2,3,4,6,7,8-HeptaCDF	250 ng/mL
1,2,3,4,7,8-HexaCDD	250 ng/mL	1,2,3,4,7,8,9-HeptaCDF	250 ng/mL
1,2,3,4,7,8-HexaCDF	250 ng/mL	OctaCDD	500 ng/mL
1,2,3,6,7,8-HexaCDD	250 ng/mL	OctaCDF	500 ng/mL
1,2,3,6,7,8-HexaCDF	250 ng/mL		

New	CIL-EDF-5008-50	US EPA Method 8290 Matrix Spiking Solution unlabeled (1:50 Dilution of EDF-5008)	100 µL

U.S. EPA Method 8280 standard methods

These standard solutions have been specifically prepared for the Low-Resolution GC/MS determination of tetra-octa chlorinated dioxins and furans. Use of these carefully prepared and verified solutions avoids any possible error in dilution/cocktail preparation.

CIL-EDF-2519-A — Method 8280 Calibration Solutions [CC1-CC5] — 5 x 0.2 mL

Solvent: Nonane

All concentrations are in ng/µL (ppm)

Unlabelled Dioxins & Furans	CC1	CC2	CC3	CC4	CC5
2,3,7,8-TCDD	0.1	0.25	0.5	1.0	2.0
2,3,7,8-TCDF	0.1	0.25	0.5	1.0	2.0
1,2,3,7,8-PeCDF	0.1	0.25	0.5	1.0	2.0
1,2,3,7,8-PeCDD	0.1	0.25	0.5	1.0	2.0
2,3,4,7,8-PeCDF	—	—	0.5	—	—
1,2,3,4,7,8-HxCDF	—	—	1.25	—	—
1,2,3,6,7,8-HxCDF	0.25	0.625	1.25	2.5	5.0
1,2,3,4,7,8-HxCDD	—	—	1.25	—	—
1,2,3,6,7,8-HxCDD	0.25	0.625	1.25	2.5	5.0
1,2,3,7,8,9-HxCDD	—	—	1.25	—	—
2,3,4,6,7,8-HxCDF	—	—	1.25	—	—
1,2,3,7,8,9-HxCDF	—	—	1.25	—	—
1,2,3,4,7,8,9-HpCDF	—	—	1.25	—	—
1,2,3,4,6,7,8-HpCDF	0.25	0.625	1.25	2.5	5.0
1,2,3,4,6,7,8-HpCDD	0.25	0.625	1.25	2.5	5.0
OCDD	0.5	1.25	2.5	5.0	10.0
OCDF	0.5	1.25	2.5	5.0	10.0

Labelled Dioxins & Furans	CC1	CC2	CC3	CC4	CC5
2,3,7,8-TCDD ($^{13}C_{12}$,99%)	0.5	0.5	0.5	0.5	0.5
2,3,7,8-TCDF ($^{13}C_{12}$,99%)	0.5	0.5	0.5	0.5	0.5
1,2,3,6,7,8-HxCDD ($^{13}C_{12}$,99%)	0.5	0.5	0.5	0.5	0.5
1,2,3,4,6,7,8-HpCDF ($^{13}C_{12}$,99%)	1.0	1.0	1.0	1.0	1.0
OCDD ($^{13}C_{12}$,99%)	1.0	1.0	1.0	1.0	1.0
1,2,3,4-TCDD ($^{13}C_{12}$,99%)	0.5	0.5	0.5	0.5	0.5
1,2,3,7,8,9-HxCDD ($^{13}C_{12}$,99%)	0.5	0.5	0.5	0.5	0.5
2,3,7,8-TCDD ($^{37}Cl_4$,96%)	—	—	0.25	—	—

CIL-EDF-2519-1	Method 8280 Calibration Solution [CC1]	0.2 mL
CIL-EDF-2519-2	Method 8280 Calibration Solution [CC2]	0.2 mL
CIL-EDF-2519-3	Method 8280 Calibration and verification Solution [CC3]	0.2 mL
CIL-EDF-2519-4	Method 8280 Calibration Solution [CC4]	0.2 mL
CIL-EDF-2519-5	Method 8280 Calibration Solution [CC5]	0.2 mL

CIL-EDF-2520 — Method 8280 Internal Standard Solution — 1.2 mL

Solvent: Nonane

2,3,7,8-TetraCDD ($^{13}C_{12}$,99%)	5 ng/µL	1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%)	10 ng/µL
2,3,7,8-TetraCDF ($^{13}C_{12}$,99%)	5 ng/µL	OctaCDD ($^{13}C_{12}$,99%)	10 ng/µL
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%)	5 ng/µL		

CIL-ED-2521 — Method 8280 recovery standard solution — 1.2 mL

Solvent: Nonane

1,2,3,4-TetraCDD ($^{13}C_{12}$,99%)	5 ng/µL	1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%)	5 ng/µL

CIL-ED-2522 — Method 8280 Cleanup Standard Solution — 1.2 mL

Solvent: Nonane

2,3,7,8-TetraCDD ($^{37}Cl_4$,96%) ..... 5 ng/µL

CIL-EDF-2523 — Method 8280 Matrix Spiking Solution — 1.2 mL

Solvent: Nonane

2,3,7,8-TetraCDD	2.5 ng/µL	1,2,3,6,7,8-HexaCDD	6.25 ng/µL
2,3,7,8-TetraCDF	2.5 ng/µL	1,2,3,4,6,7,8-HeptaCDF	6.25 ng/µL
1,2,3,7,8-PentaCDF	6.25 ng/µL	1,2,3,4,6,7,8-HeptaCDD	6.25 ng/µL
1,2,3,7,8-PentaCDD	6.25 ng/µL	OctaCDD	12.5 ng/µL
1,2,3,6,7,8-HexaCDF	6.25 ng/µL	OctaCDF	12.5 ng/µL

Code	Product	Unit
CIL-EDF-2681	Supplemental Internal Standard Solution (not required by USEPA Method 8280)	1.2 mL

Solvent: Nonane

1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%)	5 ng/µL	1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%)	10 ng/µL
1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%)	5 ng/µL	OctaCDF ($^{13}C_{12}$,99%)	10 ng/µL
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%)	5 ng/µL		

CIL-EDF-4095	Modified Method 8280 calibration solutions [CC1-CC5] (all 17 toxic congeners in CC1-CC5)	5 x 0.2 mL

Sovent: Nonane

All Concentrations are in ng/µL (ppm)

Unlabelled Dioxins & Furans	**CC1**	**CC2**	**CC3**	**CC4**	**CC5**
2,3,7,8-TetraCDD	0.1	0.25	0.5	1.0	2.0
2,3,7,8-TetraCDF	0.1	0.25	0.5	1.0	2.0
1,2,3,7,8-PentaCDD	0.1	0.25	0.5	1.0	2.0
1,2,3,7,8-PentaCDF	0.1	0.25	0.5	1.0	2.0
2,3,4,7,8-PentaCDF	0.1	0.25	0.5	1.0	2.0
1,2,3,4,7,8-HexaCDD	0.25	0.625	1.25	2.5	5.0
1,2,3,4,7,8-HexaCDF	0.25	0.625	1.25	2.5	5.0
1,2,3,6,7,8-HexaCDD	0.25	0.625	1.25	2.5	5.0
1,2,3,6,7,8-HexaCDF	0.25	0.625	1.25	2.5	5.0
1,2,3,7,8,9-HexaCDD	0.25	0.625	1.25	2.5	5.0
1,2,3,7,8,9-HexaCDF	0.25	0.625	1.25	2.5	5.0
2,3,4,6,7,8-HexaCDF	0.25	0.625	1.25	2.5	5.0
1,2,3,4,6,7,8-HeptaCDD	0.25	0.625	1.25	2.5	5.0
1,2,3,4,6,7,8-HeptaCDF	0.25	0.625	1.25	2.5	5.0
1,2,3,4,7,8,9-HeptaCDF	0.25	0.625	1.25	2.5	5.0
OctaCDD	0.5	1.25	2.5	5.0	10.0
OctaCDF	0.5	1.25	2.5	5.0	10.0
Labelled Dioxins & Furans	**CC1**	**CC2**	**CC3**	**CC4**	**CC5**
1,2,3,4-TetraCDD ($^{13}C_{12}$,99%)	0.5	0.5	0.5	0.5	0.5
2,3,7,8-TetraCDD ($^{13}C_{12}$,99%)	0.5	0.5	0.5	0.5	0.5
2,3,7,8-TetraCDD ($^{37}Cl_4$,96%)	0.25	0.25	0.25	0.25	0.25
2,3,7,8-TetraCDF ($^{13}C_{12}$,99%)	0.5	0.5	0.5	0.5	0.5
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%)	0.5	0.5	0.5	0.5	0.5
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%)	0.5	0.5	0.5	0.5	0.5
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%)	1.0	1.0	1.0	1.0	10
OctaCDD($^{13}C_{12}$,99%)	1.0	1.0	1.0	1.0	1.0

CIL-EDF-4095-1	Modified Method 8280 Calibration Solutions [CC1]	0.2 mL
CIL-EDF-4095-2	Modified Method 8280 Calibration Solutions [CC2]	0.2 mL
CIL-EDF-4095-3	Modified Method 8280 Calibration Solutions [CC3]	0.2 mL
CIL-EDF-4095-4	Modified Method 8280 Calibration Solutions [CC4]	0.2 mL
CIL-EDF-4095-5	Modified Method 8280 Calibration Solutions [CC5]	0.2 mL

CIL-EDF-4096	Modified Method 8280 Matrix Spiking Solution (all 17 toxic congeners)	1.2 mL

Solvent: Nonane

2,3,7,8-TetraCDD	2.5 ng/µL	1,2,3,7,8,9-HexaCDD	6.25 ng/µL
2,3,7,8-TetraCDF	2.5 ng/µL	1,2,3,7,8,9-HexaCDF	6.25 ng/µL
1,2,3,7,8-PentaCDD	6.25 ng/µL	2,3,4,6,7,8-HexaCDF	6.25 ng/µL
1,2,3,7,8-PentaCDF	6.25 ng/µL	1,2,3,4,6,7,8-HeptaCDD	6.25 ng/µL
2,3,4,7,8-PentaCDF	6.25 ng/µL	1,2,3,4,6,7,8-HeptaCDF	6.25 ng/µL
1,2,3,4,7,8-HexaCDD	6.25 ng/µL	1,2,3,4,7,8,9-HeptaCDF	6.25 ng/µL
1,2,3,4,7,8-HexaCDF	6.25 ng/µL	OctaCDD	12.5 ng/µL
1,2,3,6,7,8-HexaCDD	6.25 ng/µL	OctaCDF	12.5 ng/µL
1,2,3,6,7,8-HexaCDF	6.25 ng/µL		

Code	Product	Unit

JIS Methods K0311 and K0312 dioxin/furan standard mixtures

CIL-EDF-5187 — JIS Dioxin/Furan Calibration Solution [ST1-ST5] — 5 x 0.2 mL

All concentration are in ng/mL

Unlabelled Dioxins & Furans	STD1	STD2	STD3	STD4	STD5
2,3,7,8-TetraCDD	0.2	1	5	20	100
1,2,3,7,8-PentaCDD	0.2	1	5	20	100
1,2,3,4,7,8-HexaCDD	0.4	2	10	40	200
1,2,3,6,7,8-HexaCDD	0.4	2	10	40	200
1,2,3,7,8,9-HexaCDD	0.4	2	10	40	200
1,2,3,4,6,7,8-HeptaCDD	0.4	2	10	40	200
OctaCDD	1	5	25	100	500
2,3,7,8-TetraCDF	0.2	1	5	20	100
1,2,3,7,8-PentaCDF	0.2	1	5	20	100
2,3,4,7,8-PentaCDF	0.2	1	5	20	100
1,2,3,4,7,8-HexaCDF	0.4	2	10	40	200
1,2,3,6,7,8-HexaCDF	0.4	2	10	40	200
1,2,3,7,8,9-HexaCDF	0.4	2	10	40	200
2,3,4,6,7,8-HexaCDF	0.4	2	10	40	200
1,2,3,4,6,7,8-HeptaCDF	0.4	2	10	40	200
1,2,3,4,7,8,9-HeptaCDF	0.4	2	10	40	200
OctaCDF	1	5	25	100	500

Labelled Dioxins & Furans	STD1	STD2	STD3	STD4	STD5
2,3,7,8-TetraCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
OctaCDD ($^{13}C_{12}$,99%)	20	20	20	20	20
2,3,7,8-TetraCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
2,3,4,7,8-PentaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
OctaCDF ($^{13}C_{12}$,99%)	20	20	20	20	20

	Code	Product	Unit
New	CIL-EDF-5187-1	JIS Dioxin/Furan Calibration Solution [ST1]	0.2 mL
New	CIL-EDF-5187-2	JIS Dioxin/Furan Calibration Solution [ST2]	0.2 mL
New	CIL-EDF-5187-3	JIS Dioxin/Furan Calibration Solution [ST3]	0.2 mL
New	CIL-EDF-5187-4	JIS Dioxin/Furan Calibration Solution [ST4]	0.2 mL
New	CIL-EDF-5187-5	JIS Dioxin/Furan Calibration Solution [ST5]	0.2 mL

CIL-EDF-4964-A — JIS Dioxin /Furan Type 1 Clean-up Standard Solution — 0.5 mL

Solvent: Nonane

2,3,7,8-TetraCDD ($^{13}C_{12}$,99%)	2000 ng/mL	1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	2000 ng/mL
2,3,7,8-TetraCDF ($^{13}C_{12}$,99%)	2000 ng/mL	2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	2000 ng/mL
1,2,3,7,8-PeCDD ($^{13}C_{12}$,99%)	2000 ng/mL	1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%)	2000 ng/mL
2,3,4,7,8-PeCDF ($^{13}C_{12}$,99%)	2000 ng/mL	1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%)	2000 ng/mL
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$,99%)	2000 ng/mL	OctaCDD ($^{13}C_{12}$,99%)	4000 ng/mL
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%)	2000 ng/mL	OctaCDF ($^{13}C_{12}$,99%)	4000 ng/mL
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%)	2000 ng/mL		

CIL-EDF-4965-A — JIS Dioxin /Furan Type 1&2 Syringe Standard Solution — 0.5 mL

Solvent: Nonane

1,2,3,4-TetraCDD ($^{13}C_{12}$,99%)	2000 ng/mL	1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%)	2000 ng/mL

CIL-EDF-4967 — JIS Dioxin /Furan Type 2 Clean-up Standard Solution — 1.2 mL

Solvent: Nonane

2,3,7,8-TetraCDD ($^{13}C_{12}$,99%)	10 ng/mL	1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	10 ng/mL
2,3,7,8-TetraCDF ($^{13}C_{12}$,99%)	10 ng/mL	1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%)	10 ng/mL
1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%)	10 ng/mL	1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%)	10 ng/mL
1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%)	10 ng/mL	OctaCDD ($^{13}C_{12}$,99%)	20 ng/mL
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%)	10 ng/mL		

CIL-EDF-4967-A — JIS Dioxin /Furan Type 2 Clean-up Standard Solution — 0.5 mL

Solvent: Nonane

2,3,7,8-TetraCDD ($^{13}C_{12}$,99%)	2000 ng/mL	1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	2000 ng/mL
2,3,7,8-TetraCDF ($^{13}C_{12}$,99%)	2000 ng/mL	1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%)	2000 ng/mL
1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%)	2000 ng/mL	1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%)	2000 ng/mL
1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%)	2000 ng/mL	OctaCDD ($^{13}C_{12}$,99%)	4000 ng/mL
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%)	2000 ng/mL		

Code	Product	Unit
CIL-EDF-4974-A	JIS Wastewater Dioxin /Furan Type1 Clean-up Standard Solution	0.2 mL

Solvent: Nonane

2,3,7,8-TetraCDD ($^{13}C_{12}$,99%)	2000 ng/mL	1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	2000 ng/mL
2,3,7,8-TetraCDF ($^{13}C_{12}$,99%)	2000 ng/mL	1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$,99%)	2000 ng/mL
1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%)	2000 ng/mL	2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	2000 ng/mL
1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%)	2000 ng/mL	1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%)	2000 ng/mL
2,3,4,7,8-PentaCDF ($^{13}C_{12}$,99%)	2000 ng/mL	1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%)	2000 ng/mL
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$,99%)	2000 ng/mL	1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$,99%)	2000 ng/mL
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%)	2000 ng/mL	OctaCDD ($^{13}C_{12}$,99%)	4000 ng/mL
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%)	2000 ng/mL	OctaCDF ($^{13}C_{12}$,99%)	4000 ng/mL

Code	Product	Unit
CIL-EDF-5032	JIS Dioxin/Furan Calibration Solution [STD1-STD5] low concentration	5 x 0.2 mL

All concentration are in ng/mL

Unlabelled Dioxins & Furans	STD1	STD2	STD3	STD4	STD5
2,3,7,8-TetraCDD	0.4	2	10	40	200
1,2,3,7,8-PentaCDD	0.4	2	10	40	200
1,2,3,4,7,8-HexaCDD	1	5	25	100	500
1,2,3,6,7,8-HexaCDD	1	5	25	100	500
1,2,3,7,8,9-HexaCDD	1	5	25	100	500
1,2,3,4,6,7,8-HeptaCDD	1	5	25	100	500
OctaCDD	2	10	50	200	1000
2,3,7,8-TetraCDF	0.4	2	10	40	200
1,2,3,7,8-PentaCDF	0.4	2	10	40	200
2,3,4,7,8-PentaCDF	0.4	2	10	40	200
1,2,3,4,7,8-HexaCDF	1	5	25	100	500
1,2,3,6,7,8-HexaCDF	1	5	25	100	500
1,2,3,7,8,9-HexaCDF	1	5	25	100	500
2,3,4,6,7,8-HexaCDF	1	5	25	100	500
1,2,3,4,6,7,8-HeptaCDF	1	5	25	100	500
1,2,3,4,7,8,9-HeptaCDF	1	5	25	100	500
OctaCDF	2	10	50	200	1000

Labelled Dioxins & Furans	STD1	STD2	STD3	STD4	STD5
2,3,7,8-TetraCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,4-TetraCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
OctaCDD ($^{13}C_{12}$,99%)	20	20	20	20	20
2,3,7,8-TetraCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
2,3,4,7,8-PentaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
OctaCDF ($^{13}C_{12}$,99%)	20	20	20	20	20

Code	Product	Unit
CIL-EDF-5032-1	JIS Dioxin/Furan Calibration Solution [STD1] low concentration	0.2 mL
CIL-EDF-5032-2	JIS Dioxin/Furan Calibration Solution [STD2] low concentration	0.2 mL
CIL-EDF-5032-3	JIS Dioxin/Furan Calibration Solution [STD3] low concentration	0.2 mL
CIL-EDF-5032-4	JIS Dioxin/Furan Calibration Solution [STD4] low concentration	0.2 mL
CIL-EDF-5032-5	JIS Dioxin/Furan Calibration Solution [STD5] low concentration	0.2 mL

Code	Product	Unit

European Air Method EN-1948 standard mixtures

CIL-EDF-4947 — EN-1948 Calibration Solutions [CS1-CS5] — 5 x 0.2 mL

Solvent: Nonane

All Concentrations are in ng/mL (ppb)

Unlabelled Compounds	CS1	CS2	CS3	CS4	CS5
2,3,7,8-TetraCDD	0.5	2.0	10.0	40.0	200
2,3,7,8-TetraCDF	0.5	2.0	10.0	40.0	200
1,2,3,7,8-PentaCDD	2.5	10.0	50.0	200	1000
1,2,3,7,8-PentaCDF	2.5	10.0	50.0	200	1000
2,3,4,7,8-PentaCDF	2.5	10.0	50.0	200	1000
1,2,3,4,7,8-HexaCDD	2.5	10.0	50.0	200	1000
1,2,3,6,7,8-HexaCDD	2.5	10.0	50.0	200	1000
1,2,3,7,8,9-HexaCDD	2.5	10.0	50.0	200	1000
1,2,3,4,7,8-HexaCDF	2.5	10.0	50.0	200	1000
1,2,3,6,7,8-HexaCDF	2.5	10.0	50.0	200	1000
1,2,3,7,8,9-HexaCDF	2.5	10.0	50.0	200	1000
2,3,4,6,7,8-HexaCDF	2.5	10.0	50.0	200	1000
1,2,3,4,6,7,8-HeptaCDD	2.5	10.0	50.0	200	1000
1,2,3,4,6,7,8-HeptaCDF	2.5	10.0	50.0	200	1000
1,2,3,4,7,8,9-HeptaCDF	2.5	10.0	50.0	200	1000
OctaCDD	5.0	20.0	100	400	2000
OctaCDF	5.0	20.0	100	400	2000

^{13}C-Labelled Compounds	CS1	CS2	CS3	CS4	CS5
1,2,3,4-TetraCDD ($^{13}C_{12}$,99%)	100	100	100	100	100
2,3,7,8-TetraCDD ($^{13}C_{12}$,99%)	100	100	100	100	100
2,3,7,8-TetraCDF ($^{13}C_{12}$,99%)	100	100	100	100	100
1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%)	100	100	100	100	100
1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%)	100	100	100	100	100
2,3,4,7,8-PentaCDF ($^{13}C_{12}$,99%)	100	100	100	100	100
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$,99%)	100	100	100	100	100
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%)	100	100	100	100	100
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%)	100	100	100	100	100
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%)	100	100	100	100	100
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	100	100	100	100	100
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$,99%)	100	100	100	100	100
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	100	100	100	100	100
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%)	100	100	100	100	100
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%)	100	100	100	100	100
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$,99%)	100	100	100	100	100
OctaCDD ($^{13}C_{12}$,99%)	200	200	200	200	200
OctaCDF ($^{13}C_{12}$,99%)	200	200	200	200	200

CIL-EDF-4947-CS1 — EN-1948 Calibration Solution [CS1] — 0.2 mL

CIL-EDF-4947-CS2 — EN-1948 Calibration Solution [CS2] — 0.2 mL

CIL-EDF-4947-CS3 — EN-1948 Calibration Solution [CS3] — 0.2 mL

CIL-EDF-4947-CS4 — EN-1948 Calibration Solution [CS4] — 0.2 mL

CIL-EDF-4947-CS5 — EN-1948 Calibration Solution [CS5] — 0.2 mL

CIL-EF-4138 — EN-1948 Sampling Standard Solution — 1.2 mL

Solvent: Nonane

1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%) ..... 100 ng/mL
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$,99%) ..... 100 ng/mL
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$,99%) ..... 200 ng/mL

CIL-EF-4138-10 — EN-1948 Sampling Standard Solution — 2 x 5 mL

CIL-EDF-4139 — EN-1948 Extraction Standard Solution — 1.2 mL

Solvent: Nonane

^{13}C-Labelled Dioxins

2,3,7,8-TetraCDD ($^{13}C_{12}$,99%) ..... 100 ng/mL
1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%) ..... 100 ng/mL
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$,99%) ..... 100 ng/mL
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%) ..... 100 ng/mL
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%) ..... 200 ng/mL
OctaCDD ($^{13}C_{12}$,99%) ..... 200 ng/mL
OctaCDF ($^{13}C_{12}$,99%) ..... 200 ng/mL

^{13}C-Labelled Furans

2,3,7,8-TetraCDF ($^{13}C_{12}$,99%) ..... 100 ng/mL
2,3,4,7,8-PentaCDF ($^{13}C_{12}$,99%) ..... 100 ng/mL
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%) ..... 100 ng/mL
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%) ..... 100 ng/mL
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$,99%) ..... 100 ng/mL
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%) ..... 200 ng/mL

CIL-EDF-4139-10 — EN-1948 Extraction Standard Solution — 2 x 5 mL

CIL-ED-4140 — EN-1948 Syringe Standard Solution — 1.2 mL

Solvent: Nonane

1,2,3,4-TetraCDD ($^{13}C_{12}$,99%) ..... 400 ng/mL
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%) ..... 400 ng/mL

Code	Product	Unit
CIL-EDF-4175	EN-1948 Native Stock Response Factor Solution	0.5 mL

Solvent: Nonane

Unlabelled Dioxins

2,3,7,8-TetraCDD	1000 ng/mL	1,2,3,7,8,9-HexaCDD	4000 ng/mL
1,2,3,7,8-PentaCDD	1000 ng/mL	1,2,3,4,6,7,8-HeptaCDD	2000 ng/mL
1,2,3,4,7,8-HexaCDD	1000 ng/mL	OctaCDD	2000 ng/mL
1,2,3,6,7,8-HexaCDD	1000 ng/mL		

Unlabelled Furans

2,3,7,8-TetraCDF	1000 ng/mL	1,2,3,7,8,9-HexaCDF	1000 ng/mL
1,2,3,7,8-PentaCDF	1000 ng/mL	2,3,4,6,7,8-HexaCDF	1000 ng/mL
2,3,4,7,8-PentaCDF	1000 ng/mL	1,2,3,4,6,7,8-HeptaCDF	2000 ng/mL
1,2,3,4,7,8-HexaCDF	1000 ng/mL	1,2,3,4,7,8,9-HeptaCDF	2000 ng/mL
1,2,3,6,7,8-HexaCDF	1000 ng/mL	OctaCDF	2000 ng/mL

Performance evaluation standards

Fish tissue, soil, and sediment reference materials

In May of 2003 an announcement was sent to Environmental laboratories around the world for a new interlaboratory study conducted by CIL and Cerilliant. The purpose of this study was to characterize dioxin, PCB, pesticide, and other organic contaminant levels in soil, sediment, and fish tissue reference materials.

The objectives of this interlaboratory study were to quantitate the levels of a wide variety of environmental contaminants in two new matrices: a sample taken from river sediment in an area known to have PCB contamination and a soil sample taken from a location where no known contamination had occurred. Additionally, the three Fish Performance Evaluation samples were re-evaluated with new consensus values added to the existing consensus values. The existing analyte list has been expanded to include additional dioxins, furans, and PCBs. Additionally, other analyte groups such as Brominated Flame Retardants, Polyaromatic Hydrocarbons, Pesticides, and other Priority Pollutants have had consensus values obtained.

Participating Laboratories

AgriQuality New Zealand LTD.	New Zealand
Alta Analytical Laboratory	USA
AnalyCen Nordic AB	Sweden
Analytical Solutions	Brazil
Anfaco-Cecopesca	Spain
Australian Government Analytical Laboratory (AGAL)	Australia
Axys Analytical Services	Canada
CARSO	France
Center for Environmental Safety and Health Technology Development/ITRI	Taiwan
Centro Oceanografico de Vigo	Spain
CERVA-CODA-VAR	Belgium
Chinese Academy of Sciences	China
Ciba Specialty Chemical, Inc.	Switzerland
CIEMAT (Energy, Environmental, & Technological Research Center	Spain
Clean Harbors Environmental Services	USA
Columbia Analytical Services, Inc.	USA
Department of Toxic Substance Control	USA
Dow Chemical Company	USA
ECOCHEM, A.S.	Czech Republic
Environmental Protection Authority Victoria	Australia
Enviro-Test Laboratories	Canada
Freshwater Institute	Canada
Frontier Analytical Laboratory	USA
GfA (Gesellschaft für Arbeitsplatz und Umweltanalytik) mbH	Germany
Government Laboratory	China
GSF - National Research Center for Environment & Health	Germany
I.N.E.R.I.S.France Instituto Salud Carlos III	Spain
Institut Pasteur de Lille Laboratoire d'Etudes de Trace Organiques	France
Institute of Ecology & Evolution of Russian Academy of Sci. (IPEE-RAS)	Russia
Institute of Public Health (IPH)	Belgium
LABERCA	France
Maxxam Analytics, Inc.	Canada
Mississippi State Chemical Laboratory	USA
National Center for Scientific Research "Demokritos"	Greece
National Institute of Nutrition and Food Safety	China
National Public Health Institute	Finland
Norwegian Institute for Air Research (NILU)	Norway
Oekometric GmbH	Germany
Ontario Ministry of Environment	Canada
Pace Analytical Services, Inc.	USA
PSC Analytical Services	Canada
Research & Productivity Council (RPC)	Canada
RIKILT Institute for Food Safety	The Netherlands
Severn Trent Laboratories	USA
Shenzhen POPs Laboratory	China
Triangle Laboratories, Inc.	USA
UFR Sciences	France
Worthies Engineering Consultants Corporation	Taiwan

Code	Product	Unit
CIL-EDF-5183	Soil - Organic contaminants	10 g

Reference values

Polychlorinated dioxins and furans

2,3,78-TCDD	0.11 ± 0.14 ng/kg
Total TCDD	0.32 ± 0.88 ng/kg
1,2,3,7,8-PeCDD	0.39 ± 0.32 ng/kg
Total PeCDD	2.96 ± 2.40 ng/kg
1,2,3,4,7,8-HxCDD	1.12 ± 0.52 ng/kg
1,2,3,6,7,8-HxCDD	4.39 ± 0.88 ng/kg
1,2,3,7,8,9-HxCDD	2.00 ± 1.20 ng/kg
Total HxCDD	50.9 ± 22.8 ng/kg
1,2,3,4,6,7,8-HpCDD	153 ± 57.2 ng/kg
Total HpCDD	492 ± 246 ng/kg
OCDD	7870 ± 1650 ng/kg
2,3,7,8-TCDF	0.70 ± 0.34 ng/kg
Total TCDF	3.21 ± 2.12 ng/kg
1,2,3,7,8-PeCDF	0.23 ± 0.22 ng/kg
2,3,4,7,8-PeCDF	0.34 ± 0.14 ng/kg
Total PeCDF	3.31 ± 5.74 ng/kg
1,2,3,4,7,8-HxCDF	0.86 ± 0.44 ng/kg
1,2,3,6,7,8-HxCDF	0.58 ± 0.26 ng/kg
1,2,3,7,8,9-HxCDF	0.12 ± 0.16 ng/kg
2,3,4,6,7,8-HxCDF	0.72 ± 0.92 ng/kg
Total HxCDF	15.6 ± 12.7 ng/kg
1,2,3,4,6,7,8-HpCDF	13.9 ± 3.68 ng/kg
1,2,3,4,7,8,9-HpCDF	1.25 ± 0.62 ng/kg
Total HpCDF	54.0 ± 16.0 ng/kg
OCDF	58.2 ± 32.4 ng/kg

Polychlorinated biphenyls

2,2',5-TriCB (#18)	78.9 ± 30.4 ng/kg
2,4,4'-TriCB (#28)	140 ± 127 ng/kg
3,4,4'-TriCB (#37)	1710 ± 440 ng/kg
2,2',3,5'-TetraCB (#44)	1070 ± 552 ng/kg
2,2',4,5'-TetraCB (#49)	638 ± 350 ng/kg
2,2',5,5'-TetraCB (#52)	2020 ± 744 ng/kg
2,4,4',5-TetraCB (#74)	447000 ± 348000 ng/kg
3,3',4,4'-TetraCB (#77)	2,230 ± 988 ng/kg
3,4,4',5-TetraCB (#81)	5.52 ± 7.42 ng/kg
2,2',3,4,5'-PentaCB (#87)	2370 ± 532 ng/kg
2,2',4,4',5-PentaCB (#99)	1110 ± 444 ng/kg
2,2',4,5,5'-PentaCB (#101)	5370 ± 1564 ng/kg
2,3,3',4,4'-PentaCB (#105)	629 ± 158.4 ng/kg
2,3,3',4',6-PentaCB (#110)	5880 ± 2,110 ng/kg
2,3,4,4',5-PentaCB (#114)	34.6 ± 18.0 ng/kg
2,3',4,4',5-PentaCB (#118)	6520 ± 2,300 ng/kg
2',3,4,4',5-PentaCB (#123)	24.1 ± 23.2 ng/kg
3,3',4,4',5-PentaCB (#126)	33.5 ± 10.3 ng/kg
2,2',3,3',4,4'-HexaCB (#128)	342 ± 135 ng/kg
2,2',3,4,4',5-HexaCB (#137)	87.1 ± 32.8 ng/kg
2,2',3,4,4',5'-HexaCB (#138)	2350 ± 764 ng/kg
2,2',3,4,5,5'- HexaCB (#141)	514 ± 112 ng/kg
2,2',3,4',5',6- HexaCB (#149)	2280 ± 424 ng/kg
2,2',3,5,5',6- HexaCB (#151)	910 ± 752 ng/kg
2,2',4,4',5,5'-HexaCB (#153)	2330 ± 842 ng/kg
2,3,3',4,4',5-HexaCB (#156)	189 ± 25.0 ng/kg
2,3,3',4,4',5'-HexaCB (#157)	31.0 ± 15.1 ng/kg
2,3,3',4,4',6-HexaCB (#158)	224 ± 44.8 ng/kg
2,3',4,4',5,5'-HexaCB (#167)	83.2 ± 12.0 ng/kg
3,3',4,4',5,5'-HexaCB (#169)	0.57 ± 0.68 ng/kg
2,2',3,3',4,4',5-HeptaCB (#170)	436 ± 102 ng/kg
2,2',3,3',4',5,6-HeptaCB (#177)	362 ± 79.0 ng/kg
2,2',3,3',5,5',6-HeptaCB (#178)	135 ± 22.6 ng/kg
2,2',3,4,4',5,5'-HeptaCB (#180)	1116 ± 500 ng/kg
2,2',3,4,4',5',6-HeptaCB (#183)	360 ± 25.2 ng/kg
2,2',3,4',5,5',6-HeptaCB (#187)	679 ± 143 ng/kg
2,3,3',4,4',5,5'-HeptaCB (#189)	14.2 ± 5.32 ng/kg
2,2',3,3',4,4',5,5'-OctaCB (#194)	182 ± 44.6 ng/kg
2,2',3,3',4,4',5,6-OctaCB (#195)	90.6 ± 17.2 ng/kg
2,2',3,3',4,5,6,6'-OctaCB (#199)	229 ± 34.2 ng/kg
2,2',3,3',4,4',5,5',6-NonaCB (#206)	74.8 ± 108 ng/kg
2,2',3,3',4,5,5',6,6'-NonaCB (#208)	39.3 ± 61.4 ng/kg
DecaCB (#209)	12.9 ± 23.0 ng/kg

Brominated diphenyl ethers

2,2',4-TriBDE (#17)	4.80 ± 6.10 ng/kg
2,4,4'-TriBDE (#28)	38.0 ± 79.8 ng/kg
2,2',4,4'-TetraBDE (#47)5	192 ± 246 ng/kg
2,2',4,5'-TetraBDE (#49)	24.4 ± 19.7 ng/kg
2,3',4,4'-TetraBDE (#66)	12.6 ± 10.9 ng/kg
2,2',3,4,4'-PentaBDE (#85)	19.5 ± 17.9 ng/kg
2,2',4,4',5-PentaBDE (#99)	213 ± 186 ng/kg
2,2',4,4',6-PentaBDE (#100)	55.4 ± 31.0 ng/kg
2,2',3,4,4',5'-HexaBDE (#138)	25.8 ± 25.8 ng/kg
2,2',4,4',5,5'-HexaBDE (#153)	111 ± 24.0 ng/kg
2,2',4,4',5,6'-HexaBDE (#154)	46.0 ± 26.6 ng/kg
2,2',3,4,4',5',6-HeptaBDE (#183)	286 ± 70.8 ng/kg
DecaBDE (#209)	1930 ± 2300 ng/kg

Polyaromatic hydrocarbons

Anthracene	9650 ± 5980 ng/kg
Benz[a]anthracene	11200 ± 9420 ng/kg
Benzo[b]fluoranthene	18100 ± 19200 ng/kg
Benzo[k]fluoranthene	5870 ± 3320 ng/kg
Benzo[g,h,i]perylene	8280 ± 2600 ng/kg
Benzo[a]pyrene	7620 ± 6160 ng/kg
Chrysene	16000 ± 7500 ng/kg
Fluoranthene	33000 ± 10300 ng/kg
Indeno[1,2,3-cd]pyrene	9550 ± 4140 ng/kg
Phenanthrene	25900 ± 38200 ng/kg
Pyrene	26300 ± 8680 ng/kg

Code	Product	Unit
CIL-EDF-5184	Contaminated sediment - Organic contaminants	10 g

Reference values

Polychlorinated dioxins and furans

2,3,7,8-TCDD	1.96 ± 1.10 ng/kg
Total TCDD	25.0 ± 13.6 ng/kg
1,2,3,7,8-PeCDD	5.79 ± 2.12 ng/kg
Total PeCDD	45.8 ± 49.2 ng/kg
1,2,3,4,7,8-HxCDD	5.61 ± 2.72 ng/kg
1,2,3,6,7,8-HxCDD	10.9 ± 3.50 ng/kg
1,2,3,7,8,9-HxCDD	6.88 ± 1.94 ng/kg
Total HxCDD	193 ± 134 ng/kg
1,2,3,4,6,7,8-HpCDD	231 ± 77.6 ng/kg
Total HpCDD	497 ± 304 ng/kg
OCDD	2,050 ± 580 ng/kg
2,3,7,8-TCDF	219 ± 47.8 ng/kg
Total TCDF	1,680 ± 486 ng/kg
1,2,3,7,8-PeCDF	122 ± 24.0 ng/kg
2,3,4,7,8-PeCDF	164 ± 50.4 ng/kg
Total PeCDF	1,490 ± 800 ng/kg
1,2,3,4,7,8-HxCDF	277 ± 42.8 ng/kg
1,2,3,6,7,8-HxCDF	159 ± 23.6 ng/kg
1,2,3,7,8,9-HxCDF	7.44 ± 7.38 ng/kg
2,3,4,6,7,8-HxCDF	48.4 ± 18.7 ng/kg
Total HxCDF	1,240 ± 398 ng/kg
1,2,3,4,6,7,8-HpCDF	346 ± 45.6 ng/kg
1,2,3,4,7,8,9-HpCDF	80.2 ± 30.4 ng/kg
Total HpCDF	659 ± 462 ng/kg
OCDF	301 ± 50.6 ng/kg

Polychlorinated biphenyls

2,2',5-TriCB (#18)	27,600 ± 11,200 ng/kg
2,4,4'-TriCB (#28)	54,200 ± 15,500 ng/kg
3,4,4'-TriCB (#37)	16,800 ± 12,700 ng/kg
2,2',3,5'-TetraCB (#44)	657,000 ± 159,000 ng/kg
2,2',4,5'-TetraCB (#49)	476,000 ± 155,000 ng/kg
2,2',5,5'-TetraCB (#52)	1,340,000 ± 260,000 ng/kg
2,3',4,4'-TetraCB (#66)	403,000 ± 40,800 ng/kg
2,4,4',5-TetraCB (#74)	819,000 ± 1,660,000 ng/kg
3,3',4,4'-TetraCB (#77)	11,700 ± 2,600 ng/kg
3,4,4',5-TetraCB (#81)	341 ± 402 ng/kg
2,2',3,4,5'-PentaCB (#87)	1,810,000 ± 1,110,000 ng/kg
2,2',3',4,5-PentaCB (#97)	990,000 ± 1,870,000 ng/kg
2,2',4,4',5-PentaCB (#99)	1,160,000 ± 496,000 ng/kg
2,2',4,5,5'-PentaCB (#101)	3,140,000 ± 552,000 ng/kg
2,3,3',4,4'-PentaCB (#105)	1,050,000 ± 314,000 ng/kg
2,3,3',4',6-PentaCB (#110)	3,340,000 ± 768,000 ng/kg
2,3,4,4',5-PentaCB (#114)	70,000 ± 47,400 ng/kg
2,3',4,4',5-PentaCB (#118)	2,520,000 ± 904,000 ng/kg
2',3,4,4',5-PentaCB (#123)	46,200 ± 29,200 ng/kg
3,3',4,4',5-PentaCB (#126)	2,540 ± 1,080 ng/kg
2,2',3,3',4,4'-HexaCB (#128)	694,000 ± 181,000 ng/kg
2,2',3,4,4',5-HexaCB (#137)	164,000 ± 106,000 ng/kg
2,2',3,4,4',5'-HexaCB (#138)	3,970,000 ± 2,820,000 ng/kg
2,2',3,4,5,5'-HexaCB (#141)	1,010,000 ± 346,000 ng/kg
2,2',3,4',5,5'-HexaCB (#146)	623,000 ± 87,400 ng/kg
2,2',3,4',5',6-HexaCB (#149)	3,390,000 ± 838,000 ng/kg
2,2',3,5,5',6-HexaCB (#151)	1,410,000 ± 788,000 ng/kg
2,2',4,4',5,5'-HexaCB (#153)	3,880,000 ± 902,000 ng/kg
2,3,3',4,4',5-HexaCB (#156)	457,000 ± 189,000 ng/kg
2,3,3',4,4',5'-HexaCB (#157)	88,900 ± 28,000 ng/kg
2,3,3',4,4',6-HexaCB (#158)	512,000 ± 195,000 ng/kg
2,3',4,4',5,5'-HexaCB (#167)	162,000 ± 18,800 ng/kg
3,3',4,4',5,5'-HexaCB (#169)	139 ± 92.4 ng/kg
2,2',3,3',4,4',5-HeptaCB (#170)	1,250,000 ± 334,000 ng/kg
2,2',3,3',4,5,5'-HeptaCB (#172)	207,000 ± 85,600 ng/kg
2,2',3,3',4',5,6-HeptaCB (#177)	743,000 ± 238,000 ng/kg
2,2',3,3',5,5',6-HeptaCB (#178)	290,000 ± 113,000 ng/kg
2,2',3,4,4',5,5'-HeptaCB (#180)	2,940,000 ± 774,000 ng/kg
2,2',3,4,4',5',6-HeptaCB (#183)	810,000 ± 394,000 ng/kg
2,2',3,4',5,5',6-HeptaCB (#187)	1,520,000 ± 232,000 ng/kg
2,3,3',4,4',5,5'-HeptaCB (#189)	50,200 ± 18,200 ng/kg
2,2',3,3',4,4',5,5'-OctaCB (#194)	622,000 ± 146,000 ng/kg
2,2',3,3',4,4',5,6-OctaCB (#195)	268,000 ± 73,800 ng/kg
2,2',3,3',4,5,5',6'-OctaCB (#199)	691,000 ± 226,000 ng/kg
2,2',3,4,4',5,5',6-OctaCB (#203)	442,000 ± 108,000 ng/kg
2,2',3,3',4,4',5,5',6-NonaCB (#206)	152,000 ± 35,400 ng/kg
2,2',3,3',4,5,5',6,6'-NonaCB (#208)	31,800 ± 11,100 ng/kg
DecaCB (#209)	6,030 ± 3,100 ng/kg

Polybrominated diphenyl ethers

2,4,4'-TriBDE (#28) 6	25.8 ± 31.2 ng/kg
2,2',4,4'-TetraBDE (#47)	94.7 ± 218 ng/kg
2,2',4,5'-TetraBDE (#49)	14.5 ± 34.8 ng/kg
2,3',4,4'-TetraBDE (#66)	32.0 ± 112 ng/kg
3,3',4,4'-TetraBDE (#77)	106 ± 66.6 ng/kg
2,2',3,4,4'-PentaBDE (#85)	14.4 ± 45.0 ng/kg
2,2',4,4',5-PentaBDE (#99)	95.1 ± 206 ng/kg
2,2',4,4',6-PentaBDE (#100)	17.6 ± 38.0 ng/kg
2,2',3,4,4',5'-HexaBDE (#138)	12.2 ± 40.6 ng/kg
2,2',4,4',5,5'-HexaBDE (#153)	22.4 ± 59.4 ng/kg
2,2',4,4',5,6'-HexaBDE (#154)	25.3 ± 73.8 ng/kg
2,2',3,4,4',5',6-HeptaBDE (#183)	43.3 ± 82.8 ng/kg
DecaBDE (#209)	9,900 ± 14,300 ng/kg

Polyaromatic hydrocarbons

Acenaphthene	39,300 ± 14,800 ng/kg
Acenaphthylene	419,000 ± 308,000 ng/kg
Anthracene	551,000 ± 258,000 ng/kg
Benz[a]anthracene	2,620,000 ± 1,010,000 ng/kg
Benzo[b]fluoranthene	1,550,000 ± 574,000 ng/kg
Benzo[k]fluoranthene	856,000 ± 290,000 ng/kg
Benzo[g,h,i]perylene	1,130,000 ± 428,000 ng/kg
Benzo[a]pyrene	2,390,000 ± 1,010,000 ng/kg
Benzo[e]pyrene	1,740,000 ± 271,000 ng/kg
Chrysene	2,490,000 ± 442,000 ng/kg
Dibenz[a,h]anthracene	243,000 ± 159,000 ng/kg
Fluoranthene	3,690,000 ± 636,000 ng/kg
Fluorene	69,400 ± 76,800 ng/kg
Indeno[1,2,3-cd]pyrene	1,320,000 ± 780,000 ng/kg
Naphthalene	82,900 ± 33,800 ng/kg
Phenanthrene	622,000 ± 424,000 ng/kg
Perylene	428,000 ± 470,000 ng/kg
Pyrene	5,710,000 ± 445,000 ng/kg

Code	Product	Unit
CIL-EDF-2524	Clean Fish (slurry) - Organic contaminants	10 g

Reference values

Polychlorinated dioxins and furans

2,3,7,8-TCDD	0.07 ± 0.06 ng/kg	1,2,3,7,8-PeCDF	0.09 ± 0.06 ng/kg
1,2,3,7,8-PeCDD	0.15 ± 0.03 ng/kg	2,3,4,7,8-PeCDF	0.21 ± 0.14 ng/kg
1,2,3,4,7,8-HxCDD	0.06 ± 0.03 ng/kg	Total-PeCDF	1.22 ± 1.13 ng/kg
1,2,3,6,7,8-HxCDD	0.24 ± 0.14 ng/kg	1,2,3,4,7,8-HxCDF	0.09 ± 0.14 ng/kg
1,2,3,7,8,9-HxCDD	0.07 ± 0.05 ng/kg	1,2,3,6,7,8-HxCDF	0.08 ± 0.12 ng/kg
1,2,3,4,6,7,8-HpCDD	0.29 ± 0.54 ng/kg	2,3,4,6,7,8-HxCDF	0.08 ± 0.05 ng/kg
Total HpCDD	0.23 ± 0.30 ng/kg	Total-HxCDF4	0.55 ± 1.31 ng/kg
OCDD	0.59 ± 0.82 ng/kg	1,2,3,4,6,7,8-HpCDF	0.17 ± 0.28 ng/kg
2,3,7,8-TCDF	2.42 ± 0.74 ng/kg	OCDF	0.24 ± 0.58 ng/kg
Total TCDF	2.49 ± 0.92 ng/kg		

Polychlorinated biphenyls

2,2',5-TriCB (#18)	86.0 ± 60.4 ng/kg
2,4,4'-TriCB (#28)	253 ± 244 ng/kg
3,4,4'-TriCB (#37)	12.6 ± 4.52 ng/kg
2,2',3,5'-TetraCB (#44)	274 ± 192 ng/kg
2,2',4,5'-TetraCB (#49)	176 ± 41.6 ng/kg
2,2',5,5'-TetraCB (#52)	653 ± 200 ng/kg
2,3',4,4'-TetraCB (#66)	218 ± 212 ng/kg
2,4,4',5-TetraCB (#74)	348 ± 398 ng/kg
3,3',4,4'-TetraCB (#77)	8.82 ± 4.16 ng/kg
3,4,4',5-TetraCB (#81)	1.27 ± 2.52 ng/kg
2,2',4,4',5-PentaCB (#99)	588 ± 120 ng/kg
2,2',4,5,5'-PentaCB (#101)	1,130 ± 274 ng/kg
2,3,3',4,4'-PentaCB (#105)	280 ± 80.4 ng/kg
2,3,3',4',6-PentaCB (#110)	789 ± 170 ng/kg
2,3,4,4',5-PentaCB (#114)	18.6 ± 5.98 ng/kg
2,3',4,4',5-PentaCB (#118)	692 ± 104 ng/kg
2',3,4,4',5-PentaCB (#123)	11.4 ± 9.24 ng/kg
3,3',4,4',5-PentaCB (#126)	2.14 ± 1.24 ng/kg
2,2',3,3',4,4'-HexaCB (#128)	127 ± 62.2 ng/kg
2,2',3,4,4',5-HexaCB (#137)	31.8 ± 26.8 ng/kg
2,2',3,4,4',5'-HexaCB (#138)	1,110 ± 400 ng/kg
2,2',3,4,5,5'-HexaCB (#141)	152 ± 119 ng/kg
2,2',3,4',5,5'-HexaCB (#146)	261 ± 69.2 ng/kg
2,2',3,4',5',6-HexaCB (#149)	608 ± 788 ng/kg
2,2',3,5,5',6-HexaCB (#151)	279 ± 212 ng/kg
2,2',4,4',5,5'-HexaCB (#153)	1,360 ± 516 ng/kg
2,3,3',4,4',5-HexaCB (#156)	64.7 ± 18.4 ng/kg
2,3,3',4,4',5'-HexaCB (#157)	19.2 ± 8.68 ng/kg
2,3,3',4,4',6-HexaCB (#158)	73.2 ± 52.6 ng/kg
2,3',4,4',5,5'-HexaCB (#167)	24.7 ± 17.1 ng/kg
3,3',4,4',5,5'-HexaCB (#169)	0.65 ± 0.46 ng/kg
2,2',3,3',4,4',5-HeptaCB (#170)	119 ± 42.0 ng/kg
2,2',3,3',4,5,5'-HeptaCB (#172)	38.6 ± 12.0 ng/kg
2,2',3,3',4',5,6-HeptaCB (#177)	126 ± 47.8 ng/kg
2,2',3,3',5,5',6-HeptaCB (#178)	68.2 ± 5.80 ng/kg
2,2',3,4,4',5,5'-HeptaCB (#180)	412 ± 182 ng/kg
2,2',3,4,4',5',6-HeptaCB (#183)	125 ± 59.4 ng/kg
2,2',3,4',5,5',6-HeptaCB (#187)	357 ± 222 ng/kg
2,3,3',4,4',5,5'-HeptaCB (#189)	6.16 ± 2.72 ng/kg
2,2',3,3',4,4',5,5'-OctaCB (#194)	48.1 ± 25.6 ng/kg
2,2',3,3',4,4',5',6-OctaCB (#196)	44.8 ± 56.6 ng/kg
2,2',3,3',4,5,5',6'-OctaCB (#199)	81.7 ± 67.4 ng/kg
2,2',3,3',4,4',5,5',6-NonaCB (#206)	10.4 ± 2.06 ng/kg
DecaCB (#209)	14.4 ± 1.08 ng/kg

Polybrominated diphenyl ethers

2,4,4'-TriBDE (#28)	26.6 ± 45.8 ng/kg	2,2',4,4',6-PentaBDE (#100)	113 ± 93.6 ng/kg
2,2',4,4'-TetraBDE (#47)	712 ± 818 ng/kg	2,2',4,4',5,5'-HexaBDE (#153)	21.6 ± 14.7 ng/kg
2,3',4,4'-TetraBDE (#66)	23.4 ± 21.6 ng/kg	2,2',4,4',5,6'-HexaBDE (#154)	30.9 ± 39.8 ng/kg
2,2',4,4',5-PentaBDE (#99)	184 ± 86.2 ng/kg		

Polyaromatic hydrocarbons

Acenaphthene	967 ± 604 ng/kg	Fluoranthene	4.930 ± 1.310 ng/kg
Acenaphthylene	516 ± 290 ng/kg	Fluorene	4.400 ± 3.530 ng/kg
Anthracene	592 ± 284 ng/kg	Naphthalene	15.600 ± 15.800 ng/kg
Benzo[b]fluoranthene	794 ± 157 ng/kg	Phenanthrene	12.000 ± 14.000 ng/kg
Benzo[k]fluoranthene	222 ± 7.60 ng/kg	Pyrene	6.300 ± 1.630 ng/kg
Chrysene	720 ± 314 ng/kg		

Pesticides

4.4'-DDE	10.100 ± 2.440 ng/kg	alpha-Hexachlorocyclohexane	267 ± 226 ng/kg
4.4'-DDD	1.640 ± 756 ng/kg	Lindane(gamma-HCH)	390 ± 136 ng/kg
4.4'-DDT	976 ± 1.390 ng/kg	Hexachlorobenzene	783 ± 360 ng/kg
Dieldrin	488 ± 74.6 ng/kg	cis-Nonachlor	211 ± 126 ng/kg
Endosulfan-I	534 ± 378 ng/kg	trans-Nonachlor	1.130 ± 542 ng/kg

Code	Product	Unit
CIL-EDF-2525	Naturally Contaminated Fish (slurry) - Organic contaminants	10 g

Reference values

Polychlorinated dioxins and furans

2,3,7,8-TCDD	17.0 ± 3.90 ng/kg
Total TCDD	16.8 ± 1.54 ng/kg
1,2,3,7,8-PeCDD	3.71 ± 0.90 ng/kg
Total PeCDD	3.68 ± 0.84 ng/kg
1,2,3,4,7,8-HxCDD	0.33 ± 0.18 ng/kg
1,2,3,6,7,8-HxCDD	2.03 ± 0.60 ng/kg
1,2,3,7,8,9-HxCDD	0.30 ± 0.14 ng/kg
Total HxCDD	2.52 ± 1.10 ng/kg
1,2,3,4,6,7,8-HpCDD	0.48 ± 0.36 ng/kg
Total HpCDD	0.56 ± 0.62 ng/kg
OCDD	1.71 ± 1.38 ng/kg
2,3,7,8-TCDF	24.3 ± 4.74 ng/kg
Total TCDF	27.7 ± 9.40 ng/kg
1,2,3,7,8-PeCDF	4.58 ± 1.42 ng/kg
2,3,4,7,8-PeCDF	14.5 ± 4.04 ng/kg
Total PeCDF	23.4 ± 6.66 ng/kg
1,2,3,4,7,8-HxCDF	5.95 ± 1.52 ng/kg
1,2,3,6,7,8-HxCDF	1.73 ± 0.54 ng/kg
1,2,3,7,8,9-HxCDF	0.10 ± 0.20 ng/kg
2,3,4,6,7,8-HxCDF	1.04 ± 0.30 ng/kg
Total HxCDF	10.7 ± 6.18 ng/kg
1,2,3,4,6,7,8-HpCDF	0.59 ± 0.44 ng/kg
1,2,3,4,7,8,9-HpCDF	0.16 ± 0.32 ng/kg
Total HpCDF	1.13 ± 1.48 ng/kg
OCDF	0.38 ± 0.50 ng/kg

Polychlorinated biphenyls

2,2',5-TriCB (#18)	1,390 ± 970 ng/kg
2,4,4'-TriCB (#28)	7,100 ± 1,260 ng/kg
2,4',5-TriCB (#31)	4,000 ± 71.6 ng/kg
2,4',6-TriCB (#32)	220 ± 216 ng/kg
3,4,4'-TriCB (#37)	165 ± 123 ng/kg
2,2',3,5'-TetraCB (#44)	14,200 ± 9,660 ng/kg
2,2',4,4'-TetraCB (#47)	16,000 ± 6,560 ng/kg
2,2',4,5'-TetraCB (#49)	13,600 ± 9,100 ng/kg
2,2',5,5'-TetraCB (#52)	27,100 ± 12,100 ng/kg
2,3',4,4'-TetraCB (#66)	56,500 ± 20,800 ng/kg
2,3',4',5-TetraCB (#70)	44,400 ± 3,860 ng/kg
2,4,4',5-TetraCB (#74)	23,100 ± 8,440 ng/kg
3,3',4,4'-TetraCB (#77)	1,850 ± 834 ng/kg
3,4,4',5-TetraCB (#81)	161 ± 74.0 ng/kg
2,2',3,4,5'-PentaCB (#87)	38,400 ± 24,000 ng/kg
2,2',3',4,5-PentaCB (#97)	29,800 ± 14,700 ng/kg
2,2',4,4',5-PentaCB (#99)	94,300 ± 25,200 ng/kg
2,2',4,5,5'-PentaCB (#101)	82,700 ± 21,400 ng/kg
2,3,3',4,4'-PentaCB (#105)	50,100 ± 15,700 ng/kg
2,3,3',4',6-PentaCB (#110)	84,900 ± 19,100 ng/kg
2,3,4,4',5-PentaCB (#114)	3,410 ± 1,550 ng/kg
2,3',4,4',5-PentaCB (#118)	122,000 ± 38,000 ng/kg
2',3,4,4',5-PentaCB (#123)	3,280 ± 2,020 ng/kg
3,3',4,4',5-PentaCB (#126)	628 ± 242 ng/kg
2,2',3,3',4,4'-HexaCB (#128)	28,200 ± 9,460 ng/kg
2,2',3,4,4',5-HexaCB (#137)	7,250 ± 2,440 ng/kg
2,2',3,4,4',5'-HexaCB (#138)	178,000 ± 27,800 ng/kg
2,2',3,4,5,5'-HexaCB (#141)	22,040 ± 3,500 ng/kg
2,2',3,4',5,5'-HexaCB (#146)	39,500 ± 17,000 ng/kg
2,2',3,4',5',6-HexaCB (#149)	69,800 ± 24,600 ng/kg
2,2',3,5,5',6-HexaCB (#151)	24,900 ± 11,100 ng/kg
2,2',4,4',5,5'-HexaCB (#153)	226,000 ± 71,200 ng/kg
2,3,3',4,4',5-HexaCB (#156)	13,100 ± 2,620 ng/kg
2,3,3',4,4',5'-HexaCB (#157)	3,380 ± 1,010 ng/kg
2,3,3',4,4',6-HexaCB (#158)	11,600 ± 1,870 ng/kg
2,3',4,4',5,5'-HexaCB (#167)	7,060 ± 3,020 ng/kg
3,3',4,4',5,5'-HexaCB (#169)	52.1 ± 14.0 ng/kg
2,2',3,3',4,4',5-HeptaCB (#170)	35,100 ± 12,700 ng/kg
2,2',3,3',4,5,5'-HeptaCB (#172)	8,450 ± 1,600 ng/kg
2,2',3,3',4',5,6-HeptaCB (#177)	18,800 ± 4,140 ng/kg
2,2',3,3',5,5',6-HeptaCB (#178)	12,100 ± 1,840 ng/kg
2,2',3,4,4',5,5'-HeptaCB (#180)	108,000 ± 23,600 ng/kg
2,2',3,4,4',5',6-HeptaCB (#183)	28,300 ± 6,740 ng/kg
2,2',3,4',5,5',6-HeptaCB (#187)	62,900 ± 21,600 ng/kg
2,3,3',4,4',5,5'-HeptaCB (#189)	1,440 ± 498 ng/kg
2,2',3,3',4,4',5,5'-OctaCB (#194)	12,700 ± 3,200 ng/kg
2,2',3,3',4,4',5,6-OctaCB (#195)	4,620 ± 1,450 ng/kg
2,2',3,3',4,4',5',6-OctaCB (#196)	7,720 ± 3,240 ng/kg
2,2',3,3',4,5,6,6'-OctaCB (#199)	16,700 ± 2,400 ng/kg
2,2',3,4,4',5,5',6-OctaCB (#203)	13,800 ± 2,360 ng/kg
2,2',3,3',4,4',5,5',6-NonaCB (#206)	4,960 ± 768 ng/kg
2,2',3,3',4,5,5',6,6'-NonaCB (#208)	2,370 ± 350 ng/kg
DecaCB (#209)	3,510 ± 982 ng/kg

Brominated flame retardants

2,4,4'-TriBDE (#28)6	312 ± 202 ng/kg
2,2',4,4'-TetraBDE (#47)	9,080 ± 2,620 ng/kg
2,2',4,5'-TetraBDE (#49)	524 ± 274 ng/kg
2,3',4,4'-TetraBDE (#66)	262 ± 81.0 ng/kg
2,2',4,4',5-PentaBDE (#99)	2,280 ± 472 ng/kg
2,2',4,4',6-PentaBDE (#100)	1,720 ± 566 ng/kg
2,2',4,4',5,5'-HexaBDE (#153)	2,030 ± 506 ng/kg
2,2',4,4',5,6'-HexaBDE (#154)	2,550 ± 1,000 ng/kg
2,2',3,4,4',5',6-HeptaBDE (#183)	137 ± 47.8 ng/kg
DecaBDE (#209)	545 ± 1,999 ng/kg

Pesticides

Chlordane	33,400 ± 6,300 ng/kg
4,4'-DDE	587,000 ± 140,000 ng/kg
4,4'-DDD	97,600 ± 33,200 ng/kg
4,4'-DDT	9,100 ± 2,700 ng/kg
Dieldrin	54,500 ± 17,300 ng/kg
Endosulfan I	1,310 ± 722 ng/kg
Endosulfan II	10,100 ± 1,620 ng/kg
Endrin	2,420 ± 434 ng/kg
alpha-Hexachlorocyclohexane	1,400 ± 1,140 ng/kg
beta-Hexachlorocyclohexane	834 ± 436 ng/kg
Lindane (gamma-HCH)	492 ± 216 ng/kg
Heptachlor	1,970 ± 1,110 ng/kg
Heptachlor Epoxide	8,210 ± 1,560 ng/kg
Hexachlorobenzene	18,100 ± 15,300 ng/kg
Mirex	93,700 ± 23,200 ng/kg
cis-Nonachlor	27,700 ± 6,400 ng/kg
trans-Nonachlor	57,700 ± 51,000 ng/kg
Oxychlordane	18,100 ± 11,200 ng/kg
alpha-Chlordane	30,100 ± 19,000 ng/kg
gamma-Chlordane	11,500 ± 7,240 ng/kg

Code	Product	Unit
CIL-EDF-2526	Fortified Fish (slurry) - Organic contaminants	10 g

Reference values

Polychlorinated dioxins and furans

2,3,7,8 TCDD	19.8 ± 4.18 ng/kg	1,2,3,7,8-PeCDF	39.0 ± 7.36 ng/kg
Total TCDD	19.0 ± 1.08 ng/kg	2,3,4,7,8-PeCDF	37.8 ± 10.2 ng/kg
1,2,3,7,8-PeCDD	39.9 ± 10.6 ng/kg	Total PeCDF	72.0 ± 14.9 ng/kg
Total PeCDD	38.9 ± 13.7 ng/kg	1,2,3,4,7,8-HxCDF	83.3 ± 23.0 ng/kg
1,2,3,4,7,8-HxCDD	54.9 ± 7.80 ng/kg	1,2,3,6,7,8-HxCDF	62.8 ± 19.6 ng/kg
1,2,3,6,7,8-HxCDD	51.1 ± 19.3 ng/kg	1,2,3,7,8,9-HxCDF	57.3 ± 10.9 ng/kg
1,2,3,7,8,9-HxCDD	52.9 ± 18.1 ng/kg	2,3,4,6,7,8-HxCDF	58.6 ± 14.2 ng/kg
Total HxCDD	149 ± 41.8 ng/kg	Total HxCDF	243 ± 70.8 ng/kg
1,2,3,4,6,7,8-HpCDD	70.7 ± 23.2 ng/kg	1,2,3,4,6,7,8-HpCDF	81.6 ± 13.7 ng/kg
Total HpCDD	66.9 ± 32.2 ng/kg	1,2,3,4,7,8,9-HpCDF	76.7 ± 26.6 ng/kg
OCDD	181 ± 53.4 ng/kg	Total HpCDF	148 ± 23.0 ng/kg
2,3,7,8-TCDF	18.7 ± 5.58 ng/kg	OCDF	185 ± 57.4 ng/kg
Total TCDF	19.0 ± 2.20 ng/kg		

Polychlorinated biphenyls

2,2',5-TriCB (#18)	100 ± 49.0 ng/kg	2',3,4,4',5-PentaCB (#123)	7.38 ± 9.58 ng/kg
2,4,4'-TriCB (#28)	245 ± 268 ng/kg	3,3',4,4',5-PentaCB (#126)	431 ± 17.9 ng/kg
2,2',5,5'-TetraCB (#52)	369 ± 124 ng/kg	2,2',3,4,4',5'-HexaCB (#138)	395 ± 184 ng/kg
3,3',4,4'-TetraCB (#77)	451 ± 179 ng/kg	2,2',3,5,5',6-HexaCB (#151)	99.8 ± 17.1 ng/kg
3,4,4',5-TetraCB (#81)	3.00 ± 5.60 ng/kg	2,2',4,4',5,5'-HexaCB (#153)	490 ± 334 ng/kg
2,2',4,4',5-PentaCB (#99)	215 ± 204 ng/kg	2,3,3',4,4',5-HexaCB (#156)	23.3 ± 23.8 ng/kg
2,2',4,5,5'-PentaCB (#101)	579 ± 362 ng/kg	2,3,3',4,4',5'-HexaCB (#157)	9.30 ± 9.16 ng/kg
2,3,3',4,4'-PentaCB (#105)	108 ± 73.0 ng/kg	2,3',4,4',5,5'-HexaCB (#167)	12.0 ± 9.54 ng/kg
2,3,3',4',6-PentaCB (#110)	288 ± 112 ng/kg	3,3',4,4',5,5'-HexaCB (#169)	512 ± 160 ng/kg
2,3,4,4',5-PentaCB (#114)	7.73 ± 4.36 ng/kg	2,2',3,4,4',5,5'-HeptaCB (#180)	116 ± 64.4 ng/kg
2,3',4,4',5-PentaCB (#118)	348 ± 392 ng/kg	2,3,3',4,4',5,5'-HeptaCB (#189)	3.51 ± 2.76 ng/kg

Polybrominated diphenyl ethers

2,2',4,4',5,5'-HexaBDE (#153) .....7.48 ± 14.7 ng/kg

CIL-EDF-4023	Set of three fish reference materials	3 x 10 g

Clean Natural Matrix (EDF 2524)
Contaminated Natural Matrix (EDF 2525)
Fortified Natural Matrix (EDF 2526)

Fly ash reference material

In 2007, Cambridge Isotope Laboratories performed an international interlaboratory study on Fly Ash Reference Material purchased from Consorzio INCA in Italy. The ash comes from the filter of a municipal waste incinerator in northern Italy, and has been analyzed and given consensus values for numerous dioxin, furan, and PCB congeners. This sample is meant to be used to evaluate the performance of an analytical laboratory for the analytes given.

Participating Laboratories

AgriQuality Limited – Wellington Laboratory	New Zealand
AIKEN	Japan
ALS Czech Republic s.r.o.	Czech Republic
ARPAT	Italy
Cheng-Shiu University	Taiwan
China Steel Cooperation	Taiwan
Clean Harbors Environmental Services	USA
Dalian Institute of Chemical Physics, CAS	China
The Dow Chemical Company	USA
Environmental Science Laboratory	Japan
Environment Canada	Ontario
Hiyoshi Corporation	Japan
Hokuriku Kankyo Kagaku Kenkyusho	Japan
Ishikawaken Prefectural Institute of Public Health and Environmental Services	Japan
Joetsu Kankyo Kagaku Center	Japan
Kankyo Techno Co., LTD	Japan
KOBELCO Research Institute, Inc.	Japan
Maxxam Analytics, Inc.	Canada
Miyagi Prefectural Institute of Public Health and Environment	Japan
Murata Keisokuki Service	Japan
Nagasaki Food Hygiene Association	Japan
National Central University Graduate Institute of Environmental Engineering	Taiwan
Niigata Kankyo Bunseki Center	Japan
Nippon Steel Techno Research	Japan
Nittech Research Corporation	Japan
Oekometric GmbH	Germany
RCLAB SrL	Italy
SGS Institut Fresenius GmbH Bayreuth	Germany
Shimadzu Techno-Research, Inc.	Japan
Sogo Mizu Kenkyusho	Japan
Sumika Chemical Analysis Service	Japan
Sun Dream Environmental Technology Corporation	Taiwan
Teijin Eco-Science Limited	Japan
Term Corporation	Japan
Tokyo Kensa Center Co., LTD	Japan
Tokyo Technical Service Co., LTD	Japan
Toyo Giken Corporation	Japan
Yunitika Environmental Technical Center	Japan

	Code	Product	Unit
New	CIL-EDF-5369	Fly ash	10 g

Analyte (all values in ng/kg)	Assigned Value[1]	Standard Deviation	Reference Value[2]	(n)[3]
Polychlorinated dioxins and furans				
1,3,6,8-TetraCDD	18.9	3.90	18.9 ± 7.8	20
2,3,7,8-TetraCDD	11.4	2.98	11.4 ± 5.96	37
Total TetraCDD	147	25.9	147 ± 51.8	30
1,2,3,7,8-PentaCDD	38.4	9.72	38.4 ± 19.4	37
Total PentaCDD	327	58.1	327 ± 116	30
1,2,3,4,7,8-HexaCDD	31.3	10.9	31.3 ± 21.8	37
1,2,3,6,7,8-HexaCDD	70.4	22.2	70.4 ± 44.4	37
1,2,3,7,8,9-HexaCDD	56.3	19.2	56.3 ± 38.4	37
Total HexaCDD	780	132	780 ± 264	30
1,2,3,4,6,7,8-HeptaCDD	899	301	899 ± 602	37
Total HeptaCDD	1810	440	1810 ± 880	30
OctaCDD	3660	1150	3660 ± 2300	38
1,3,6,8-TetraCDF	29.2	8.27	29.2 ± 16.5	9
2,3,7,8-TetraCDF	21.8	5.87	21.8 ± 11.7	37
Total TetraCDF	621	104	621 ± 208	30
1,2,3,7,8-PentaCDF	59.6	14.4	59.6 ± 28.8	37
2,3,4,7,8-PentaCDF	46.9	12.0	46.9 ± 24.0	37
Total-PentaCDF	780	131	780 ± 262	30
1,2,3,4,7,8-HexaCDF	89.7	28.8	89.7 ± 57.6	37
1,2,3,6,7,8-HexaCDF	100	30.4	100 ± 60.8	37
1,2,3,7,8,9-HexaCDF	13.3	2.54	13.3 ± 5.08	35
2,3,4,6,7,8-HexaCDF	125	34.7	125 ± 69.4	37
Total-HexaCDF	1000	154	1000 ± 308	30
1,2,3,4,6,7,8-HeptaCDF	530	159	530 ± 318	37
1,2,3,4,7,8,9-HeptaCDF	117	37.5	117 ± 75.0	37
Total-HeptaCDF	1080	228	1080 ± 456	30
OctaCDF	864	243	864 ± 486	37
Polychlorinated biphenyls[4]				
3,3',4,4'-TetraCB (#77)	8.26	1.85	8.26 ± 3.70	23
3,4,4',5-TetraCB (#81)	5.26	0.93	5.26 ± 1.86	23
2,3,3',4,4'-PentaCB (#105)	7.61	3.29	7.61 ± 6.58	24
2,3,4,4',5-PentaCB (#114)	2.75	0.65	2.75 ± 1.30	24
2,3',4,4',5-PentaCB (#118)	8.26	4.48	8.26 ± 8.96	25
2',3,4,4',5-PentaCB (#123)	1.72	0.45	1.72 ± 0.90	23
3,3',4,4',5-PentaCB (#126)	13.9	2.52	13.9 ± 5.04	24
2,3,3',4,4',5-HexaCB (#156)	9.43	1.65	9.43 ± 3.30	24
2,3,3',4,4',5'-HexaCB (#157)	6.24	0.84	6.24 ± 1.68	24
2,3',4,4',5,5'-HexaCB (#167)	4.26	0.69	4.26 ± 1.38	24
3,3',4,4',5,5'-HexaCB (#169)	9.93	1.45	9.93 ± 2.90	24
2,2',3,3',4,4',5-HeptaCB (#170)	20.2	7.90	20.2 ± 15.8	6
2,2',3,4,4',5,5'-HeptaCB (#180)	11.4	5.07	11.4 ± 10.1	6
2,3,3',4,4',5,5'-HeptaCB (#189)	14.3	2.22	14.3 ± 4.44	24

[1] Assigned value as determined by Manna Associates in the UK using Cofino analysis of raw interlaboratory study data.
[2] Reference value is the Assigned Value plus or minus two standard deviations. Negative numbers resulting from two standard deviations being greater than the assigned value have no significance.
[3] Number of laboratories providing results for this analyte.
[4] All numbers in parentheses refer to the IUPAC designation for the compound.

Cod liver oil reference materials

In 2010, Cambridge Isotope Laboratories organized an international interlaboratory study on Cod Liver Oil Reference Materials purchased from TestAmerica Laboratories in TN, USA. Commercially available Cod Liver Oil was spiked with known amounts of Dioxins, Furans, and PCBs for the Fortified Cod Liver Oil reference material. A separate standard with no spike was also prepared as a blank. These samples are meant to be used to evaluate the performance of an analytical laboratory for the analytes given.

New	CIL-EDF-5462	Fortified cod liver oil – PCDDs, PCDFs, PCBs, PBDEs Please ask for details!	10 g
New	CIL-EDF-5463	Fortified cod liver oil – PCBs, PBDEs Please ask for details!	10 g

Code	Product	Unit

Dioxin and furan plus PCB standard mixtures

CIL-EDF-4143 — Calibration Curve for Dioxin, Furan & PCB in tissue [CDC1 - CDC9] — 9 x 0.2 mL

Solvent: Nonane

All Concentrations in ng/mL(ppb)

Unlabelled Compounds	CDC1	CDC2	CDC3	CDC4	CDC5	CDC6	CDC7	CDC8	CDC9
2,3,7,8-TetraCDD	0.04	0.10	0.20	1.00	2.00	7.00	20.0	35.0	50.0
2,3,7,8-TetraCDF	0.04	0.10	0.20	0.50	1.00	2.00	5.00	7.50	10.0
1,2,3,7,8-PentaCDD	0.04	0.10	0.20	0.50	1.00	2.00	5.00	10.0	20.0
1,2,3,7,8-PentaCDF	0.04	0.10	0.20	0.50	1.00	2.00	5.00	7.50	10.0
2,3,4,7,8-PentaCDF	0.04	0.10	0.20	0.50	1.00	2.00	5.00	7.50	10.0
1,2,3,4,7,8-HexaCDD	0.04	0.10	0.20	0.50	1.00	2.00	5.00	10.0	20.0
1,2,3,4,7,8-HexaCDF	0.04	0.10	0.20	0.50	1.00	2.00	5.00	7.50	10.0
1,2,3,6,7,8-HexaCDD	0.10	0.25	0.50	1.25	2.50	5.00	12.5	25.0	50.0
1,2,3,6,7,8-HexaCDF	0.04	0.10	0.20	0.50	1.00	2.00	5.00	7.50	10.0
1,2,3,7,8,9-HexaCDD	0.20	0.50	1.00	2.00	5.00	10.0	20.0	25.0	30.0
1,2,3,7,8,9-HexaCDF	0.04	0.10	0.20	0.50	1.00	2.00	5.00	7.50	10.0
2,3,4,6,7,8-HexaCDF	0.04	0.10	0.20	0.50	1.00	2.00	5.00	7.50	10.0
1,2,3,4,6,7,8-HeptaCDD	1.00	2.00	5.00	10.0	20.0	25.0	50.0	100	200
1,2,3,4,6,7,8-HeptaCDF	0.20	0.50	1.00	2.00	5.00	10.0	20.0	25.0	30.0
1,2,3,4,6,7,9-HeptaCDD	0.04	0.10	0.20	0.50	1.00	2.00	5.00	10.0	20.0
1,2,3,4,7,8,9-HeptaCDF	0.04	0.10	0.20	0.50	1.00	2.00	5.00	7.50	10.0
OctaCDD	10.0	20.0	50.0	100	200	300	400	500	600
OctaCDF	0.04	0.10	0.20	0.50	1.00	2.00	5.00	7.50	10.0

Unlabelled PCBs	CDC1	CDC2	CDC3	CDC4	CDC5	CDC6	CDC7	CDC8	CDC9
3,3',4,4'-TetraCB (PCB-77)	0.80	1.60	4.00	8.00	16.0	20.0	40.0	80.0	160
3,4,4',5-TetraCB (PCB-81)	0.80	1.60	4.00	8.00	16.0	20.0	40.0	80.0	160
3,3',4,4',5-PentaCB (PCB-126)	0.80	1.60	4.00	8.00	16.0	20.0	40.0	80.0	160
3,3',4,4',5,5'-HexaCB (PCB-169)	0.80	1.60	4.00	8.00	16.0	20.0	40.0	80.0	160

Labelled Dioxins & Furans	CDC1	CDC2	CDC3	CDC4	CDC5	CDC6	CDC7	CDC8	CDC9
1,2,3,4-TetraCDD ($^{13}C_6$,99%)	25	25	25	25	25	25	25	25	25
2,3,7,8-TetraCDD ($^{13}C_{12}$,99%)	50	50	50	50	50	50	50	50	50
2,3,7,8-TetraCDF ($^{13}C_{12}$,99%)	50	50	50	50	50	50	50	50	50
1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%)	50	50	50	50	50	50	50	50	50
1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%)	50	50	50	50	50	50	50	50	50
2,3,4,7,8-PentaCDF ($^{13}C_{12}$,99%)	50	50	50	50	50	50	50	50	50
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$,99%)	120	120	120	120	120	120	120	120	120
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%)	125	125	125	125	125	125	125	125	125
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%)	120	120	120	120	120	120	120	120	120
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	125	125	125	125	125	125	125	125	125
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%)	120	120	120	120	120	120	120	120	120
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$,99%)	125	125	125	125	125	125	125	125	125
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	125	125	125	125	125	125	125	125	125
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%)	120	120	120	120	120	120	120	120	120
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%)	125	125	125	125	125	125	125	125	125
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$,99%)	62.5	62.5	62.5	62.5	62.5	62.5	62.5	62.5	62.5
OctaCDD (^{13}C12,99%)	250	250	250	250	250	250	250	250	250
OctaCDF (^{13}C12,99%)	250	250	250	250	250	250	250	250	250

Labelled PCBs	CDC1	CDC2	CDC3	CDC4	CDC5	CDC6	CDC7	CDC8	CDC9
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	48	48	48	48	48	48	48	48	48
3,3',5,5'-TetraCB ($^{13}C_{12}$,99%)	48	48	48	48	48	48	48	48	48
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	48	48	48	48	48	48	48	48	48
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	72	72	72	72	72	72	72	72	72
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	96	96	96	96	96	96	96	96	96

New **CIL-EDF-4143-1** — Calibration Curve for Dioxin, Furan & PCB in tissue CDC1 — 200 µL

New **CIL-EDF-4143-7** — Calibration Curve for Dioxin, Furan & PCB in tissue CDC7 — 200 µL

CIL-EDF-4144 — Internal Standard for Dioxin, Furan and PCB in Tissue — 0.75 mL

Solvent: Nonane

^{13}C-Labelled Dioxins

2,3,7,8-TetraCDD ($^{13}C_{12}$,99%)	25.0 ng/mL	1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%)	62.5 ng/mL
2,3,7,8-TetraCDF ($^{13}C_{12}$,99%)	25.0 ng/mL	1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	62.5 ng/mL
1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%)	25.0 ng/mL	1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$,99%)	62.5 ng/mL
1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%)	25.0 ng/mL	2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	62.5 ng/mL
2,3,4,7,8-PentaCDF ($^{13}C_{12}$,99%)	25.0 ng/mL	1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%)	60.0 ng/mL
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$,99%)	60.0 ng/mL	1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%)	62.5 ng/mL
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%)	60.0 ng/mL	OctaCDD ($^{13}C_{12}$,99%)	125 ng/mL
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%)	60.0 ng/mL	OctaCDF ($^{13}C_{12}$,99%)	125 ng/mL

^{13}C-Labelled PCBs

3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	24.0 ng/mL	3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	36.0 ng/mL
3,4,4',5-Tetr aCB ($^{13}C_{12}$,99%)	24.0 ng/mL	3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	48.0 ng/mL

Code	Product	Unit

CIL-EDF-4144-B — Internal Standard Dioxin, Furan and PCB in Tissue — 5 mL

Solvent: 97.5% Methanol:2.5% Nonane

^{13}C-Labelled Dioxins

2,3,7,8-TetraCDD ($^{13}C_{12}$,99%) ..... 2.5 ng/mL
1,2,3,7,8-PentaCDD($^{13}C_{12}$,99%) ..... 2.5 ng/mL
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$,99%) ..... 6 ng/mL
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%) ..... 6 ng/mL
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%) ..... 6 ng/mL
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%) ..... 6 ng/mL
OctaCDD ($^{13}C_{12}$,99%) ..... 12.5 ng/mL
2,3,7,8-TetraCDF($^{13}C_{12}$,99%) ..... 2.5 ng/mL
1,2,3,7,8-PentaCDF($^{13}C_{12}$,99%) ..... 2.5 ng/mL
2,3,4,7,8-PentaCDF ($^{13}C_{12}$,99%) ..... 2.5 ng/mL
1,2,3,4,7,8-HexaCDF($^{13}C_{12}$,99%) ..... 6.25 ng/mL
1,2,3,6,7,8-HexaCDF($^{13}C_{12}$,99%) ..... 6.25 ng/mL
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$,99%) ..... 6.25 ng/mL
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$,99%) ..... 6.25 ng/mL
1,2,3,4,6,7,8-HeptaCDF($^{13}C_{12}$,99%) ..... 6.25 ng/mL
OctaCDF($^{13}C_{12}$,99%) ..... 12.5 ng/mL

^{13}C-Labelled PCBs

3,3',4,4'-TetraCB (PCB-77) ($^{13}C_{12}$,99%) .. 2.4 ng/mL
3,4,4',5-TetraCB (PCB-81)($^{13}C_{12}$,99%) .... 2.4 ng/mL
3,3',4,4',5-PentaCB (PCB-126) ($^{13}C_{12}$,99%)3.6 ng/mL
3,3',4,4',5,5'-HexaCB (PCB-169) ($^{13}C_{12}$,99%)4.8 ng/mL

CIL-EDF-4145 — Recovery Standard for Dioxin, Furan and PCB Tissue — 0.75 mL

Solvent: Nonane

1,2,3,4-TetraCDD ($^{13}C_6$,99%) ..... 25.0 ng/mL
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$,99%) ..... 62.5 ng/mL
3,3 ',5,5 '-TetraCB ($^{13}C_{12}$,99%) ..... 48.0 ng/mL

New CIL-EDF-4145-A — Recovery Standard for Dioxin, Furan and PCB in Tissue — 0.5 mL

Solvent: Nonane

3,3',5,5'-TetraCB ($^{13}C_{12}$,99%) ..... 48 ng/mL
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$,99%) ..... 62.5 ng/mL
1,2,3,4-TetraCDD ($^{13}C_6$,99%) ..... 25 ng/mL
2,4,6,8-TetraBDF ($^{13}C_{12}$,99%) ..... 20 ng/mL

CIL-ES-5321 — Multi-Analyte Recovery Spiking Standard — 10 mL

Solvent: 88% hexane/2% dodecane/10% nonane

1,2,3,4-TCDD ($^{13}C_6$, 99%) .....2.5 ng/mL
2,2',3,3',4,5,5',6,6'-NonaCB ($^{13}C_{12}$,99%) (PCB-208) .....10 ng/mL
3,3',4,4'-TetraBDE ($^{13}C_{12}$,99%) (BDE-77).....7.5 ng/mL
2,2',3,4,4',6-HexaBDE ($^{13}C_{12}$,99%) (BDE-139).....7.5 ng/mL

CIL-EDF-5086-A — Alternative PCB & Dioxin/Furan Calibration Verification Standard — 1.2 mL

Solvent: Nonane

Labelled Compounds	IUPAC#	Concentration
2,3,7,8-TetraCDD ($^{13}C_{12}$,99%)		10 ng/mL
1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%)		10 ng/mL
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$,99%)		10 ng/mL
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%)		10 ng/mL
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%)		10 ng/mL
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%)		10 ng/mL
OctaCDD ($^{13}C_{12}$,99%)		20 ng/mL
2,3,7,8-TetraCDF ($^{13}C_{12}$,99%)		10 ng/mL
1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%)		10 ng/mL
2,3,4,7,8-PentaCDF ($^{13}C_{12}$,99%)		10 ng/mL
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%)		10 ng/mL
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%)		10 ng/mL
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$,99%)		10 ng/mL
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$,99%)		10 ng/mL
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%)		10 ng/mL
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$,99%)		10 ng/mL
OctaCDF ($^{13}C_{12}$,99%)		20 ng/mL
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77	10 ng/mL
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	10 ng/mL
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	10 ng/mL
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114	10 ng/mL
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	10 ng/mL
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123	10 ng/mL
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	126	10 ng/mL
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	10 ng/mL
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	10 ng/mL
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167	10 ng/mL
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	10 ng/mL
2,2',3,3',4,4',5-HeptaCB ($^{13}C_{12}$,99%)	170	10 ng/mL
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	10 ng/mL
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	10 ng/mL

	Code	Product	Unit
New	CIL-EDF-5393	Dioxin Clean-up Spike	1.2 mL

Solvent: Nonane

Labelled Compounds	IUPAC#	Concentration
2,3,7,8-TCDD ($^{13}C_{12}$,99%)		20 ng/mL
1,3,6,8-TCDD ($^{13}C_{12}$,99%)		20 ng/mL
1,2,3,7,8-PeCDD ($^{13}C_{12}$,99%)		20 ng/mL
1,2,3,4,7,8-HxCDD ($^{13}C_{12}$,99%)		20 ng/mL
1,2,3,6,7,8-HxCDD ($^{13}C_{12}$,99%)		20 ng/mL
1,2,3,7,8,9-HxCDD ($^{13}C_{12}$,99%)		20 ng/mL
1,2,3,4,6,7,8-HpCDD ($^{13}C_{12}$,99%)		20 ng/mL
OCDD ($^{13}C_{12}$,99%)		40 ng/mL
2,3,7,8-TCDF ($^{13}C_{12}$,99%)		20 ng/mL
1,3,6,8-TCDF ($^{13}C_{12}$,99%)		20 ng/mL
1,2,3,7,8-PeCDF ($^{13}C_{12}$,99%)		20 ng/mL
2,3,4,7,8-PeCDF ($^{13}C_{12}$,99%)		20 ng/mL
1,2,3,4,7,8-HxCDF ($^{13}C_{12}$,99%)		20 ng/mL
1,2,3,6,7,8-HxCDF ($^{13}C_{12}$,99%)		20 ng/mL
2,3,4,6,7,8-HxCDF ($^{13}C_{12}$,99%)		20 ng/mL
1,2,3,7,8,9-HxCDF ($^{13}C_{12}$,99%)		20 ng/mL
1,2,3,4,6,7,8-HpCDF ($^{13}C_{12}$,99%)		20 ng/mL
1,2,3,4,7,8,9-HpCDF ($^{13}C_{12}$,99%)		20 ng/mL
OCDF (13C12,99%)		40 ng/mL
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	20 ng/mL
3,3',4,4'-TetraCB ($^{13}C_{12}$2,99%)	77	20 ng/mL
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	126	20 ng/mL
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	20 ng/mL
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123	20 ng/mL
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	20 ng/mL
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	20 ng/mL
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114	20 ng/mL
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167	20 ng/mL
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	20 ng/mL
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	20 ng/mL
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	20 ng/mL
2,2',3,3',4,4',5-HeptaCB ($^{13}C_{12}$,99%)	170	20 ng/mL
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	20 ng/mL

New	CIL-EDF-5395	Dioxin Sampling Spike	1.2 mL

Solvent: Nonane

Labelled Compounds	IUPAC#	Concentration
1,2,3,4-TCDF ($^{13}C_{12}$,99%)		50 ng/mL
1,2,3,4-TCDD ($^{13}C_{12}$,99%)		50 ng/mL
3,3',4,5'-TetraCB ($^{13}C_{12}$,99%)	79	50 ng/mL

	CIL-EF-5394	Dioxin Syringe Standard ($^{13}C_{12}$,99%)	1.2 mL

Solvent: Nonane

1,2,7,8-TCDF ($^{13}C_{12}$,99%)	20 ng/mL	1,2,3,4,6,8,9-HpCDF ($^{13}C_{12}$,99%)	20 ng/mL
1,2,3,4,6,9-HxCDF ($^{13}C_{12}$,99%)	20 ng/mL		

	CIL-EDF-5338	Dioxin/Furan Syringe Spike ($^{13}C_{12}$, 99%)	1.2 mL

Solvent: Nonane

1,2,7,8-TetraCDF ($^{13}C_{12}$,99%)	1000 ng/mL	1,2,3,4,6,9-HexaCDF ($^{13}C_{12}$,99%)	1000 ng/mL
1,2,3,4,6-PentaCDF ($^{13}C_{12}$,99%)	1000 ng/mL	1,2,3,4,6,8,9-HeptaCDF($^{13}C_{12}$,99%)	1000 ng/mL

Code	Product	Unit

Non-2,3,7,8-containing standard mixtures

New CIL-EDF-5392 — Dioxin/Furan Calibration Solutions (unlabelled/$^{13}C_{12}$,99%) [CS1-CS6] — 6 x 0.2 mL

Solvent: Nonane

All concentrations are in ng/mL

Native Compounds	CS1	CS2	CS3	CS4	CS5	CS6
2,3,7,8-TCDD	0.1	0.5	2	10	50	200
1,3,6,8-TCDD	0.1	0.5	2	10	50	200
1,3,7,9-TCDD	0.1	0.5	2	10	50	200
1,2,8,9-TCDD	0.1	0.5	2	10	50	200
1,2,3,7,8-PeCDD	0.1	0.5	2	10	50	200
1,2,3,4,7,8-HxCDD	0.2	1	4	20	100	400
1,2,3,6,7,8-HxCDD	0.2	1	4	20	100	400
1,2,3,7,8,9-HxCDD	0.2	1	4	20	100	400
1,2,3,4,6,7,8-HpCDD	0.2	1	4	20	100	400
OCDD	0.5	2.5	10	50	250	1000
2,3,7,8-TCDF	0.1	0.5	2	10	50	200
1,3,6,8-TCDF	0.1	0.5	2	10	50	200
1,2,7,8-TCDF	0.1	0.5	2	10	50	200
1,2,8,9-TCDF	0.1	0.5	2	10	50	200
1,2,3,7,8-PeCDF	0.1	0.5	2	10	50	200
2,3,4,7,8-PeCDF	0.1	0.5	2	10	50	200
1,2,3,4,7,8-HxCDF	0.2	1	4	20	100	400
1,2,3,6,7,8-HxCDF	0.2	1	4	20	100	400
2,3,4,6,7,8-HxCDF	0.2	1	4	20	100	400
1,2,3,7,8,9-HxCDF	0.2	1	4	20	100	400
1,2,3,4,6,7,8-HpCDF	0.2	1	4	20	100	400
1,2,3,4,7,8,9-HpCDF	0.2	1	4	20	100	400
OCDF	0.5	2.5	10	50	250	1000

^{13}C-Labelled Compound	CS1	CS2	CS3	CS4	CS5	CS6
1,2,3,4-TCDD ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,3,6,8-TCDD ($^{13}C_{12}$,99%)	10	10	10	10	10	10
2,3,7,8-TCDD ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,3,7,8-PeCDD ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,3,4,7,8-HxCDD ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,3,6,7,8-HxCDD ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,3,7,8,9-HxCDD ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,3,4,6,7,8-HpCDD ($^{13}C_{12}$,99%)	10	10	10	10	10	10
OCDD ($^{13}C_{12}$,99%)	20	20	20	20	20	20
2,3,7,8-TCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,3,6,8-TCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,3,4-TCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,7,8-TCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,3,7,8-PeCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10
2,3,4,7,8-PeCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,3,4,6-PeCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,3,4,6,9-HxCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,3,4,7,8-HxCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,3,6,7,8-HxCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10
2,3,4,6,7,8-HxCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,3,7,8,9-HxCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,3,4,6,7,8-HpCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,3,4,7,8,9-HpCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,3,4,6,8,9-HpCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10
OCDF ($^{13}C_{12}$,99%)	20	20	20	20	20	20

New CIL-EDF-5392-1 — Dioxin/Furan Calibration Solution [CS0] (unlabelled/$^{13}C_{12}$,99%) — 0.2 mL

New CIL-EDF-5392-2 — Dioxin/Furan Calibration Solution [CS2] (unlabelled/$^{13}C_{12}$,99%) — 0.2 mL

New CIL-EDF-5392-3 — Dioxin/Furan Calibration Solution [CS3] (unlabelled/$^{13}C_{12}$,99%) — 0.2 mL

New CIL-EDF-5392-4 — Dioxin/Furan Calibration Solution [CS1] (unlabelled/$^{13}C_{12}$,99%) — 0.2 mL

New CIL-EDF-5392-5 — Dioxin/Furan Calibration Solution [CS5] (unlabelled/$^{13}C_{12}$,99%) — 0.2 mL

New CIL-EDF-5392-6 — Dioxin/Furan Calibration Solution [CS6] (unlabelled/$^{13}C_{12}$,99%) — 0.2 mL

	Code	Product	Unit
New	CIL-EDF-5314	Dioxin/Furan Calibration Solution [CS1-CS5] Solvent: Nonane All concentrations are in ng/mL (ppb)	5 x 0.2 mL

Unlabelled Compounds	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**
1,3,6,8-TCDD	0.2	1.0	5.0	20	100
1,3,7,9-TCDD	0.2	1.0	5.0	20	100
1,2,8,9-TCDD	0.2	1.0	5.0	20	100
2,3,7,8-TCDD	0.2	1.0	5.0	20	100
1,2,3,7,8-PeCDD	0.2	1.0	5.0	20	100
1,2,3,4,7,8-HxCDD	0.2	1.0	5.0	20	100
1,2,3,6,7,8-HxCDD	0.2	1.0	5.0	20	100
1,2,3,7,8,9-HxCDD	0.2	1.0	5.0	20	100
1,2,3,4,6,7,8-HpCDD	0.2	1.0	5.0	20	100
OCDD	0.4	2.0	10	40	200
1,3,6,8-TCDF	0.2	1.0	5.0	20	100
1,2,7,8-TCDF	0.2	1.0	5.0	20	100
1,2,8,9-TCDF	0.2	1.0	5.0	20	100
2,3,7,8-TCDF	0.2	1.0	5.0	20	100
1,2,3,7,8-PeCDF	0.2	1.0	5.0	20	100
2,3,4,7,8-PeCDF	0.2	1.0	5.0	20	100
1,2,3,4,7,8-HxCDF	0.2	1.0	5.0	20	100
1,2,3,6,7,8-HxCDF	0.2	1.0	5.0	20	100
1,2,3,7,8,9-HxCDF	0.2	1.0	5.0	20	100
2,3,4,6,7,8-HxCDF	0.2	1.0	5.0	20	100
1,2,3,4,6,7,8-HpCDF	0.2	1.0	5.0	20	100
1,2,3,4,7,8,9-HpCDF	0.2	1.0	5.0	20	100
OCDF	0.4	2.0	10	40	200

^{13}C-Labelled Compounds	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**
1,3,6,8-TCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,4-TCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
2,3,7,8-TCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,7,8-PeCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,4,7,8-HxCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,6,7,8-HxCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,7,8,9-HxCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,4,6,7,8-HpCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
OCDD ($^{13}C_{12}$,99%)	20	20	20	20	20
1,3,6,8-TCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,4-TCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,7,8-TCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
2,3,7,8-TCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,4,6-PeCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,7,8-PeCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
2,3,4,7,8-PeCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,4,6,9-HxCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,4,7,8-HxCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,6,7,8-HxCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,7,8,9-HxCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
2,3,4,6,7,8-HxCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,4,6,8,9-HpCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,4,6,7,8-HpCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,4,7,8,9-HpCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
OCDF ($^{13}C_{12}$,99%)	20	20	20	20	20

New	CIL-EDF-5314-1	Dioxin/Furan Calibration Solution [CS1]	0.2 mL
New	CIL-EDF-5314-2	Dioxin/Furan Calibration Solution [CS2]	0.2 mL
New	CIL-EDF-5314-3	Dioxin/Furan Calibration Solution [CS3]	0.2 mL
New	CIL-EDF-5314-4	Dioxin/Furan Calibration Solution [CS4]	0.2 mL
New	CIL-EDF-5314-5	Dioxin/Furan Calibration Solution [CS5]	0.2 mL

Code	Product	Unit
CIL-EDF-5185	Dioxin Furan Calibration Solutions with first and closest TetraCDD [CS1-CS5] Eluters & Non-2,3,7,8-Containing ^{13}C PCDFs	5 x 0.2 mL

Solvent: Nonane

All concentrations are in ng/mL

Unlabelled Dioxins & Furans	CS1	CS2	CS3	CS4	CS5
1,3,6,8-TetraCDD	0.2	1	5	20	100
1,3,7,9-TetraCDD	0.2	1	5	20	100
1,2,8,9-TetraCDD	0.2	1	5	20	100
2,3,7,8-TetraCDD	0.2	1	5	20	100
1,2,3,7,8-PentaCDD	0.2	1	5	20	100
1,2,3,4,7,8-HexaCDD	0.4	2	10	40	200
1,2,3,6,7,8-HexaCDD	0.4	2	10	40	200
1,2,3,7,8,9-HexaCDD	0.4	2	10	40	200
1,2,3,4,6,7,8-HeptaCDD	0.4	2	10	40	200
OctaCDD	1	5	25	100	500
1,3,6,8-TetraCDF	0.2	1	5	20	100
1,2,7,8-TetraCDF	0.2	1	5	20	100
1,2,8,9-TetraCDF	0.2	1	5	20	100
2,3,7,8-TetraCDF	0.2	1	5	20	100
1,2,3,7,8-PentaCDF	0.2	1	5	20	100
2,3,4,7,8-PentaCDF	0.2	1	5	20	100
1,2,3,4,7,8-HexaCDF	0.4	2	10	40	200
1,2,3,6,7,8-HexaCDF	0.4	2	10	40	200
1,2,3,7,8,9-HexaCDF	0.4	2	10	40	200
2,3,4,6,7,8-HexaCDF	0.4	2	10	40	200
1,2,3,4,6,7,8-HeptaCDF	0.4	2	10	40	200
1,2,3,4,7,8,9-HeptaCDF	0.4	2	10	40	200
OctaCDF	1	5	25	100	500

Labelled Dioxins & Furans	CS1	CS2	CS3	CS4	CS5
1,3,6,8-TetraCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,4-TetraCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
2,3,7,8-TetraCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%)	10	10	10	10	10
OctaCDD ($^{13}C_{12}$,99%)	20	20	20	20	20
1,3,6,8-TetraCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,7,8-TetraCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
2,3,7,8-TetraCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
2,3,4,7,8-PentaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,4,6,8,9-HeptaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10
OctaCDF ($^{13}C_{12}$,99%)	20	20	20	20	20

CIL-EDF-5185-1	Dioxin Furan Calibration Solutions with first and closest TetraCDD [CS1] Eluters & Non-2,3,7,8-Containing ^{13}C PCDFs	0.2 mL
CIL-EDF-5185-2	Dioxin Furan Calibration Solutions with first and closest TetraCDD [CS2] Eluters & Non-2,3,7,8-Containing ^{13}C PCDFs	0.2 mL
CIL-EDF-5185-3	Dioxin Furan Calibration Solutions with first and closest TetraCDD [CS3] Eluters & Non-2,3,7,8-Containing ^{13}C PCDFs	0.2 mL
CIL-EDF-5185-4	Dioxin Furan Calibration Solutions with first and closest TetraCDD [CS4] Eluters & Non-2,3,7,8-Containing ^{13}C PCDFs	0.2 mL
CIL-EDF-5185-5	Dioxin Furan Calibration Solutions with first and closest TetraCDD [CS5] Eluters & Non-2,3,7,8-Containing ^{13}C PCDFs	0.2 mL

Code	Product	Unit
CIL-EDF-5040	Non-2,3,7,8-containing PCDF Calibration Solutions [CS1-CS5] Solvent: Nonane	5 x 0.2 mL

Unlabelled Dioxins & Furans	CS1	CS2	CS3	CS4	CS5
2,3,7,8-TetraCDD	0.2	1	5	20	100
1,2,3,7,8-PentaCDD	0.2	1	5	20	100
1,2,3,4,7,8-HexaCDD	0.4	2	10	40	200
1,2,3,6,7,8-HexaCDD	0.4	2	10	40	200
1,2,3,7,8,9-HexaCDD	0.4	2	10	40	200
1,2,3,4,6,7,8-HeptaCDD	0.4	2	10	40	200
OctaCDD	1	5	25	100	500
2,3,7,8-TetraCDF	0.2	1	5	20	100
1,2,3,7,8-PentaCDF	0.2	1	5	20	100
2,3,4,7,8-PentaCDF	0.2	1	5	20	100
1,2,3,4,7,8-HexaCDF	0.4	2	10	40	200
1,2,3,6,7,8-HexaCDF	0.4	2	10	40	200
1,2,3,7,8,9-HexaCDF	0.4	2	10	40	200
2,3,4,6,7,8-HexaCDF	0.4	2	10	40	200
1,2,3,4,6,7,8-HeptaCDF	0.4	2	10	40	200
1,2,3,4,7,8,9-HeptaCDF	0.4	2	10	40	200
OctaCDF	2	10	50	200	1000

Labelled Dioxins & Furans	CS1	CS2	CS3	CS4	CS5
1,3,6,8-TetraCDD ($^{13}C_{12}$,99%)	20	20	20	20	20
1,2,3,4-TetraCDD ($^{13}C_{12}$,99%)	20	20	20	20	20
2,3,7,8-TetraCDD ($^{13}C_{12}$,99%)	20	20	20	20	20
1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%)	20	20	20	20	20
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$,99%)	20	20	20	20	20
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%)	20	20	20	20	20
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%)	20	20	20	20	20
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%)	20	20	20	20	20
OctaCDD ($^{13}C_{12}$,99%)	40	40	40	40	40
1,3,6,8-TetraCDF ($^{13}C_{12}$,99%)	20	20	20	20	20
1,2,3,4-TetraCDF ($^{13}C_{12}$,99%)	20	20	20	20	20
1,2,7,8-TetraCDF ($^{13}C_{12}$,99%)	20	20	20	20	20
2,3,7,8-TetraCDF ($^{13}C_{12}$,99%)	20	20	20	20	20
1,2,3,4,6-PentaCDF ($^{13}C_{12}$,99%)	20	20	20	20	20
1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%)	20	20	20	20	20
2,3,4,7,8-PentaCDF ($^{13}C_{12}$,99%)	20	20	20	20	20
1,2,3,4,6,9-HexaCDF ($^{13}C_{12}$,99%)	20	20	20	20	20
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%)	20	20	20	20	20
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	20	20	20	20	20
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$,99%)	20	20	20	20	20
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	20	20	20	20	20
1,2,3,4,6,8,9-HeptaCDF ($^{13}C_{12}$,99%)	20	20	20	20	20
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%)	20	20	20	20	20
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$,99%)	20	20	20	20	20
OctaCDF ($^{13}C_{12}$,99%)	40	40	40	40	40

	Code	Product	Unit
New	CIL-EDF-5040-1	Non-2,3,7,8-Containing PCDF Calibration Solution [CS1]	0.2 mL
New	CIL-EDF-5040-2	Non-2,3,7,8-Containing PCDF Calibration Solution [CS2]	0.2 mL
	CIL-EDF-5040-3	Non-2,3,7,8-Containing PCDF Calibration Solution [CS3]	0.2 mL
	CIL-EDF-5040-4	Non-2,3,7,8-Containing PCDF Calibration Solution [CS4]	200 µL
New	CIL-EDF-5040-5	Non-2,3,7,8-Containing PCDF Calibration Solution [CS5]	0.2 mL
	CIL-EDF-5041	Non-2,3,7,8-containing PCDF Clean-up Solution Solvent: Nonane	1.2 mL

2,3,7,8-TetraCDD ($^{13}C_{12}$,99%) 2000 ng/mL	2,3,4,7,8-PentaCDF ($^{13}C_{12}$,99%) 2000 ng/mL
1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%) 2000 ng/mL	1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%) 2000 ng/mL
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$,99%) 2000 ng/mL	1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%) 2000 ng/mL
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%) 2000 ng/mL	1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$,99%) 2000 ng/mL
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%) 2000 ng/mL	2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$,99%) 2000 ng/mL
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%) 2000 ng/mL	1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%) 2000 ng/mL
OctaCDD ($^{13}C_{12}$,99%) 4000 ng/mL	1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$,99%) 2000 ng/mL
2,3,7,8-TetraCDF ($^{13}C_{12}$,99%) 2000 ng/mL	OctaCDF ($^{13}C_{12}$,99%) 4000 ng/mL
1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%) 2000 ng/mL	

	Code	Product	Unit
New	CIL-EDF-5041-20	Non-2,3,7,8-containing PCDF Clean-up Solution 1/20 dilution	1.2 mL
	CIL-EF-5042	Non-2.3.7.8-containing PCDF Syringe Standard Solvent: Nonane	1.2 mL

1,2,7,8-TetraCDF ($^{13}C_{12}$,99%) 2 µg/mL	1,2,3,4,6,8,9-HeptaCDF ($^{13}C_{12}$,99%) 2 µg/mL

	Code	Product	Unit
	CIL-EDF-5043	Non-2.3.7.8-containing PCDF Sampling Standard Solvent: Nonane	1.2 mL

1,2,3,4-TetraCDD ($^{13}C_{12}$,99%) 2000 ng/mL	1,2,3,4,6-PentaCDF ($^{13}C_{12}$,99%) 2000 ng/mL
1,2,3,4-TetraCDF ($^{13}C_{12}$,99%) 2000 ng/mL	1,2,3,4,6,9-HexaCDF ($^{13}C_{12}$,99%) 2000 ng/mL

	Code	Product	Unit
	CIL-EF-5188	Non-2,3,7,8-Containing 13C Furan Syringe Spike Solvent: Nonane	1.2 mL

1,2,3,4,6-PentaCDF ($^{13}C_{12}$,99%) 1000 ng/mL	1,2,3,4,6,8,9-HeptaCDF ($^{13}C^{12}$,99%) 1000 ng/mL

Code	Product	Unit

Two Column Dioxin and Furan Standard Mixtures

New CIL-EDF-5429-7H Two Column Dioxin & Duran Calibration Solutions [CS1H-CS7H] (unlabelled/$^{13}C_{12}$,99%) 7 x 0.2 mL

Solvent: Nonane

All concentrations are in ng/mL

Native Compounds	CS1H	CS2H	CS3H	CS4H	CS5H	CS6H	CS7H
2,3,7,8-TetraCDF	0.1	0.5	2.0	10	50	200	500
1,3,6,8-TetraCDF	0.1	0.5	2.0	10	50	200	500
1,2,7,8-TetraCDF	0.1	0.5	2.0	10	50	200	500
1,2,8,9-TetraCDF	0.1	0.5	2.0	10	50	200	500
1,2,3,7,8-PentaCDF	0.1	0.5	2.0	10	50	200	500
2,3,4,7,8-PentaCDF	0.1	0.5	2.0	10	50	200	500
1,2,3,4,7,8-HexaCDF	0.2	1.0	4.0	20	100	400	1000
1,2,3,6,7,8-HexaCDF	0.2	1.0	4.0	20	100	400	1000
2,3,4,6,7,8-HexaCDF	0.2	1.0	4.0	20	100	400	1000
1,2,3,7,8,9-HexaCDF	0.2	1.0	4.0	20	100	400	1000
1,2,3,4,6,7,8-HeptaCDF	0.2	1.0	4.0	20	100	400	1000
1,2,3,4,7,8,9-HeptaCDF	0.2	1.0	4.0	20	100	400	1000
OctaCDF	0.5	2.5	10	50	250	1000	2500
2,3,7,8-TetraCDD	0.1	0.5	2.0	10	50	200	500
1,3,6,8-TetraCDD	0.1	0.5	2.0	10	50	200	500
1,3,7,9-TetraCDD	0.1	0.5	2.0	10	50	200	500
1,2,8,9-TetraCDD	0.1	0.5	2.0	10	50	200	500
1,2,3,7,8-PentaCDD	0.1	0.5	2.0	10	50	200	500
1,2,3,4,7,8-HexaCDD	0.2	1.0	4.0	20	100	400	1000
1,2,3,6,7,8-HexaCDD	0.2	1.0	4.0	20	100	400	1000
1,2,3,7,8,9-HexaCDD	0.2	1.0	4.0	20	100	400	1000
1,2,3,4,6,7,8-HeptaCDD	0.2	1.0	4.0	20	100	400	1000
OctaCDD	0.5	2.5	10	50	250	1000	2500

13C-Labelled Compound	CS1H	CS2H	CS3H	CS4H	CS5H	CS6H	CS7H
2,3,7,8-TetraCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10	10
1,3,6,8-TetraCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10	10
1,2,7,8-TetraCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10	10
1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10	10
2,3,4,7,8-PentaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10	10
1,2,3,4,6-PentaCDF ($^{13}C_{12}$2,99%)	10	10	10	10	10	10	10
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$2,99%)	10	10	10	10	10	10	10
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10	10
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10	10
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10	10
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10	10
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10	10
1,2,3,4,6,8,9-HeptaCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10	10
OctaCDF ($^{13}C_{12}$,99%)	20	20	20	20	20	20	20
1,2,3,4-TetraCDD($^{13}C_{12}$,99%)	10	10	10	10	10	10	10
2,3,7,8-TetraCDD($^{13}C_{12}$,99%)	10	10	10	10	10	10	10
1,2,3,7,8-PentaCDD($^{13}C_{12}$,99%)	10	10	10	10	10	10	10
1,2,3,4,7,8-HexaCDD($^{13}C_{12}$,99%)	10	10	10	10	10	10	10
1,2,3,6,7,8-HexaCDD($^{13}C_{12}$,99%)	10	10	10	10	10	10	10
1,2,3,4,6,7-HexaCDD($^{13}C_{12}$,99%)	10	10	10	10	10	10	10
1,2,3,7,8,9-HexaCDD($^{13}C_{12}$,99%)	10	10	10	10	10	10	10
1,2,3,4,6,7,8-HeptaCDD($^{13}C_{12}$,99%)	10	10	10	10	10	10	10
OctaCDD($^{13}C_{12}$,99%)	20	20	20	20	20	20	20

New CIL-EDF-5429-6H Two Column Dioxin & Duran Calibration Solutions [6H] (unlabelled/$^{13}C_{12}$,99%) 6 x 0.2 mL

New CIL-EDF-5429-CS1H Two Column Dioxin & Duran Calibration Solutions [CS1H] (unlabelled/$^{13}C_{12}$,99%) 0.2 mL

New CIL-EDF-5429-CS2H Two Column Dioxin & Duran Calibration Solutions [CS2H] (unlabelled/$^{13}C_{12}$,99%) 0.2 mL

New CIL-EDF-5429-CS3H Two Column Dioxin & Duran Calibration Solutions [CS3H] (unlabelled/$^{13}C_{12}$,99%) 0.2 mL

New CIL-EDF-5429-CS4H Two Column Dioxin & Duran Calibration Solutions [CS4H] (unlabelled/$^{13}C_{12}$,99%) 0.2 mL

New CIL-EDF-5429-CS5H Two Column Dioxin & Duran Calibration Solutions [CS5H] (unlabelled/$^{13}C_{12}$,99%) 0.2 mL

New CIL-EDF-5429-CS6H Two Column Dioxin & Duran Calibration Solutions [CS6H] (unlabelled/$^{13}C_{12}$,99%) 0.2 mL

New CIL-EDF-5429-CS7H Two Column Dioxin & Duran Calibration Solutions [CS7H] (unlabelled/$^{13}C_{12}$,99%) 0.2 mL

	Code	Product	Unit
New	CIL-EDF-5429-CS8H	Two Column Dioxin & Duran Calibration Solutions [CS8H] (unlabelled/$^{13}C_{12}$,99%)	0.2 mL

Solvent: Nonane

Native Compounds	Concentration	Native Compounds	Concentration
2,3,7,8-TetraCDF	1000 ng/mL	OctaCDF	5000 ng/mL
1,3,6,8-TetraCDF	1000 ng/mL	2,3,7,8-TetraCDD	1000 ng/mL
1,2,7,8-TetraCDF	1000 ng/mL	1,3,6,8-TetraCDD	1000 ng/mL
1,2,8,9-TetraCDF	1000 ng/mL	1,3,7,9-TetraCDD	1000 ng/mL
1,2,3,7,8-PentaCDF	1000 ng/mL	1,2,8,9-TetraCDD	1000 ng/mL
2,3,4,7,8-PentaCDF	1000 ng/mL	1,2,3,7,8-PentaCDD	1000 ng/mL
1,2,3,4,7,8-HexaCDF	2000 ng/mL	1,2,3,4,7,8-HexaCDD	2000 ng/mL
1,2,3,6,7,8-HexaCDF	2000 ng/mL	1,2,3,6,7,8-HexaCDD	2000 ng/mL
2,3,4,6,7,8-HexaCDF	2000 ng/mL	1,2,3,7,8,9-HexaCDD	2000 ng/mL
1,2,3,7,8,9-HexaCDF	2000 ng/mL	1,2,3,4,6,7,8-HeptaCDD	2000 ng/mL
1,2,3,4,6,7,8-HeptaCDF	2000 ng/mL	OctaCDD	5000 ng/mL
1,2,3,4,7,8,9-HeptaCDF	2000 ng/mL		

^{13}C-Labelled Compounds	Concentration	^{13}C-Labelled Compounds	Concentration
2,3,7,8-TetraCDF ($^{13}C_{12}$,99%)	10 ng/mL	1,2,3,4,6,8,9-HeptaCDF ($^{13}C_{12}$,99%)	10 ng/mL
1,3,6,8-TetraCDF ($^{13}C_{12}$,99%)	10 ng/mL	OctaCDF ($^{13}C_{12}$,99%)	20 ng/mL
1,2,7,8-TetraCDF ($^{13}C_{12}$,99%)	10 ng/mL	1,2,3,4-TetraCDD ($^{13}C_{12}$,99%)	10 ng/mL
1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%)	10 ng/mL	2,3,7,8-TetraCDD ($^{13}C_{12}$,99%)	10 ng/mL
2,3,4,7,8-PentaCDF ($^{13}C_{12}$,99%)	10 ng/mL	1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%)	10 ng/mL
1,2,3,4,6-PentaCDF ($^{13}C_{12}$,99%)	10 ng/mL	1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$,99%)	10 ng/mL
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%)	10 ng/mL	1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%)	10 ng/mL
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	10 ng/mL	1,2,3,4,6,7-HexaCDD ($^{13}C_{12}$,99%)	10 ng/mL
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$,99%)	10 ng/mL	1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%)	10 ng/mL
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$,99%)	10 ng/mL	1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%)	10 ng/mL
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%)	10 ng/mL	OctaCDD ($^{13}C_{12}$,99%)	20 ng/mL
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$,99%)	10 ng/mL		

New	CIL-EDF-5430	Two column Dioxin & Furan clean up spike ($^{13}C_{12}$,99%)	1.2 mL

Solvent: Nonane

2,3,7,8-Tetrachlorodibenzofuran ($^{13}C_{12}$,99%)	50 ng/mL
1,2,3,7,8-Pentachlorodibenzofuran ($^{13}C_{12}$,99%)	50 ng/mL
2,3,4,7,8-Pentachlorodibenzofuran ($^{13}C_{12}$,99%)	50 ng/mL
1,2,3,4,7,8-Hexachlorodibenzofuran ($^{13}C_{12}$,99%)	50 ng/mL
1,2,3,6,7,8-Hexachlorodibenzofuran ($^{13}C_{12}$,99%)	50 ng/mL
2,3,4,6,7,8-Hexachlorodibenzofuran ($^{13}C_{12}$,99%)	50 ng/mL
1,2,3,7,8,9-Hexachlorodibenzofuran ($^{13}C_{12}$,99%)	50 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzofuran ($^{13}C_{12}$,99%)	50 ng/mL
1,2,3,4,7,8,9-Heptachlorodibenzofuran ($^{13}C_{12}$,99%)	50 ng/mL
Octachlorodibenzofuran ($^{13}C_{12}$,99%)	100 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin ($^{13}C_{12}$,99%)	50 ng/mL
1,2,3,7,8-Pentachlorodibenzo-p-dioxin ($^{13}C_{12}$,99%)	50 ng/mL
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin ($^{13}C_{12}$,99%)	50 ng/mL
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin ($^{13}C_{12}$,99%)	50 ng/mL
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin ($^{13}C_{12}$,99%)	50 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin ($^{13}C_{12}$,99%)	50 ng/mL
Octachlorodibenzo-p-dioxin ($^{13}C_{12}$,99%)	100 ng/mL

New	CIL-EDF-5431	Two column Dioxin & Furan syringe spike ($^{13}C_{12}$,99%)	1.2 mL

Solvent: Nonane

1,2,7,8-TetraCDF ($^{13}C_{12}$,99%)	50 ng/mL	1,2,3,4,6,7-HexaCDD($^{13}C_{12}$,99%)	50 ng/mL
1,2,3,4,6-PentaCDF ($^{13}C_{12}$,99%)	50 ng/mL	1,2,3,4,6,8,9-HeptaCDF ($^{13}C_{12}$,99%)	50 ng/mL

New	CIL-EDF-5431-20X	Two column Dioxin & Furan syringe spike ($^{13}C_{12}$,99%)	1.2 mL

Solvent: Nonane

1,2,7,8-TetraCDF ($^{13}C_{12}$,99%)	1000 ng/mL	1,2,3,4,6,7-HexaCDD($^{13}C_{12}$,99%)	1000 ng/mL
1,2,3,4,6-PentaCDF ($^{13}C_{12}$,99%)	1000 ng/mL	1,2,3,4,6,8,9-HeptaCDF ($^{13}C_{12}$,99%)	1000 ng/mL

	Code	Product	Unit
New	CIL-EDF-5444	Two Column Dioxin & Furan Clean-Up Spike ($^{13}C_{12}$,99%)	0.5 mL

Solvent: Nonane

^{13}C-Labelled Compound	IUPAC	Concentration
2,3,7,8-TetraCDD($^{13}C_{12}$,99%)		1000 ng/mL
1,2,3,7,8-PentaCDD($^{13}C_{12}$,99%)		1000 ng/mL
1,2,3,4,7,8-HexaCDD($^{13}C_{12}$2,99%)		1000 ng/mL
1,2,3,6,7,8-HexaCDD($^{13}C_{12}$,99%)		1000 ng/mL
1,2,3,7,8,9-HexaCDD($^{13}C_{12}$,99%)		1000 ng/mL
1,2,3,4,6,7,8-HeptaCDD($^{13}C_{12}$,99%)		1000 ng/mL
OctaCDD($^{13}C_{12}$,99%)		2000 ng/mL
2,3,7,8-TetraCDF ($^{13}C_{12}$,99%)		1000 ng/mL
1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%)		1000 ng/mL
2,3,4,7,8-PentaCDF ($^{13}C_{12}$,99%)		1000 ng/mL
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%)		1000 ng/mL
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%)		1000 ng/mL
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$,99%)		1000 ng/mL
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$,99%)		1000 ng/mL
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%)		1000 ng/mL
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$,99%)		1000 ng/mL
OctaCDF ($^{13}C_{12}$,99%)		2000 ng/mL
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	1000 ng/mL
3,3',4,4'-TetraCB ($^{13}C_{12}$2,99%)	77	1000 ng/mL
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	126	1000 ng/mL
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	1000 ng/mL
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123	1000 ng/mL
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	1000 ng/mL
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	1000 ng/mL
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114	1000 ng/mL
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167	1000 ng/mL
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	1000 ng/mL
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	1000 ng/mL
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	1000 ng/mL
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	1000 ng/mL

	Code	Product	Unit
New	CIL-EDF-5444-A	Two Column Dioxin & Furan Clean-Up Spike ($^{13}C_{12}$,99%)	0.6 mL

Solvent: Nonane

^{13}C-Labelled Compound	IUPAC	Concentration
2,3,7,8-TetraCDD ($^{13}C_{12}$,99%)		1000 ng/mL
1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%)		1000 ng/mL
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$2,99%)		1000 ng/mL
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%)		1000 ng/mL
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%)		1000 ng/mL
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%)		1000 ng/mL
OctaCDD($^{13}C_{12}$,99%)		2000 ng/mL
2,3,7,8-TetraCDF ($^{13}C_{12}$,99%)		1000 ng/mL
1,3,6,8-TCDF ($^{13}C_{12}$,99%)		1000 ng/mL
1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%)		1000 ng/mL
2,3,4,7,8-PentaCDF ($^{13}C_{12}$,99%)		1000 ng/mL
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%)		1000 ng/mL
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%)		1000 ng/mL
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$,99%)		1000 ng/mL
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$,99%)		1000 ng/mL
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%)		1000 ng/mL
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$,99%)		1000 ng/mL
OctaCDF ($^{13}C_{12}$,99%)		2000 ng/mL
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	1000 ng/mL
3,3',4,4'-TetraCB ($^{13}C_{12}$2,99%)	77	1000 ng/mL
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	126	1000 ng/mL
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	1000 ng/mL
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123	1000 ng/mL
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	1000 ng/mL
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	1000 ng/mL
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114	1000 ng/mL
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167	1000 ng/mL
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	1000 ng/mL
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	1000 ng/mL
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	1000 ng/mL
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	1000 ng/mL

	Code	Product	Unit
New	CIL-EDF-5443	Two column Dioxin & Furan & PCB calibration solutions [CS1H-CS6H] (unlabelled/$^{13}C_{12}$,99%)	6 x 0.2 mL

Solvent: Nonane

All concentrations are in ng/mL

Native Compounds	CS1H	CS2H	CS3H	CS4H	CS5H	CS6H
2,3,7,8-TetraCDF	0.1	0.5	2.0	10	50	200
1,3,6,8-TetraCDF	0.1	0.5	2.0	10	50	200
1,2,7,8-TetraCDF	0.1	0.5	2.0	10	50	200
1,2,8,9-TetraCDF	0.1	0.5	2.0	10	50	200
1,2,3,7,8-PentaCDF	0.1	0.5	2.0	10	50	200
2,3,4,7,8-PentaCDF	0.1	0.5	2.0	10	50	200
1,2,3,4,7,8-HexaCDF	0.2	1.0	4.0	20	100	400
1,2,3,6,7,8-HexaCDF	0.2	1.0	4.0	20	100	400
2,3,4,6,7,8-HexaCDF	0.2	1.0	4.0	20	100	400
1,2,3,7,8,9-HexaCDF	0.2	1.0	4.0	20	100	400
1,2,3,4,6,7,8-HeptaCDF	0.2	1.0	4.0	20	100	400
1,2,3,4,7,8,9-HeptaCDF	0.2	1.0	4.0	20	100	400
OctaCDF	0.5	2.5	10	50	250	1000
2,3,7,8-TetraCDD	0.1	0.5	2.0	10	50	200
1,3,6,8-TetraCDD	0.1	0.5	2.0	10	50	200
1,3,7,9-TetraCDD	0.1	0.5	2.0	10	50	200
1,2,8,9-TetraCDD	0.1	0.5	2.0	10	50	200
1,2,3,7,8-PentaCDD	0.1	0.5	2.0	10	50	200
1,2,3,4,7,8-HexaCDD	0.2	1.0	4.0	20	100	400
1,2,3,6,7,8-HexaCDD	0.2	1.0	4.0	20	100	400
1,2,3,7,8,9-HexaCDD	0.2	1.0	4.0	20	100	400
1,2,3,4,6,7,8-HeptaCDD	0.2	1.0	4.0	20	100	400
OctaCDD	0.5	2.5	10	50	250	1000
3,4,4',5-TetraCB (PCB-81)	0.2	1.0	4.0	20	100	400
3,3',4,4'-TetraCB (PCB-77)	0.2	1.0	4.0	20	100	400
3,3',4,4',5-PentaCB (PCB-126)	0.2	1.0	4.0	20	100	400
3,3',4,4',5,5'-HexaCB (PCB-169)	0.2	1.0	4.0	20	100	400
2',3,4,4',5-PentaCB (PCB-123)	0.2	1.0	4.0	20	100	400
2,3',4,4',5-PentaCB (PCB-118)	0.2	1.0	4.0	20	100	400
2,3,3',4,4'-PentaCB (PCB-105)	0.2	1.0	4.0	20	100	400
2,3,4,4',5-PentaCB (PCB-114)	0.2	1.0	4.0	20	100	400
2,3',4,4',5,5'-HexaCB (PCB-167)	0.2	1.0	4.0	20	100	400
2,3,3',4,4',5-HexaCB (PCB-156)	0.2	1.0	4.0	20	100	400
2,3,3',4,4',5'-HexaCB (PCB-157)	0.2	1.0	4.0	20	100	400
2,3,3',4,4',5,5'-HeptaCB (PCB-189)	0.2	1.0	4.0	20	100	400
2,2',3,3',4,4',5-HeptaCB (PCB-170)	0.2	1.0	4.0	20	100	400
2,2',3,4,4',5,5'-HeptaCB (PCB-180)	0.2	1.0	4.0	20	100	400

^{13}C-Labelled Compound	CS1H	CS2H	CS3H	CS4H	CS5H	CS6H
1,2,3,4-TetraCDD ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,3,6,8-TetraCDD ($^{13}C_{12}$,99%)	10	10	10	10	10	10
2,3,7,8-TetraCDD ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,3,4,6,7-HexaCDD ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%)	10	10	10	10	10	10
OctaCDD ($^{13}C_{12}$,99%)	20	20	20	20	20	20
2,3,7,8-TCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,7,8-TCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,3,7,8-PeCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10
2,3,4,7,8-PeCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,3,4,6-PeCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,3,4,7,8-HxCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,3,6,7,8-HxCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10
2,3,4,6,7,8-HxCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,3,7,8,9-HxCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,3,4,6,7,8-HpCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,3,4,6,8,9-HpCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10
1,2,3,4,7,8,9-HpCDF ($^{13}C_{12}$,99%)	10	10	10	10	10	10
OCDF ($^{13}C_{12}$,99%)	20	20	20	20	20	20
3,4,4',5-TetraCB ($^{13}C_{12}$,99%) (PCB 81)	10	10	10	10	10	10
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%) (PCB 77)	10	10	10	10	10	10
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%) (PCB 126)	10	10	10	10	10	10
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%) (PCB 169)	10	10	10	10	10	10
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%) (PCB 123)	10	10	10	10	10	10
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%) (PCB 118)	10	10	10	10	10	10
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%) (PCB 105)	10	10	10	10	10	10
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%) (PCB 1149	10	10	10	10	10	10
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%) (PCB 167)	10	10	10	10	10	10
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%) (PCB 156)	10	10	10	10	10	10
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%) (PCB 157)	10	10	10	10	10	10
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%) (PCB 189)	10	10	10	10	10	10
2,2',3,3',4,4',5-HeptaCB ($^{13}C_{12}$,99%) (PCB 170)	10	10	10	10	10	10
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%) (PCB 180)	10	10	10	10	10	10
2,3',4',5-TetraCB ($^{13}C_{12}$,99%) (PCB 70)	10	10	10	10	10	10
2,3,3',5,5'-PentaCB ($^{13}C_{12}$,99%) (PCB 111)	10	10	10	10	10	10
2,2',3,4,4',5'-HexaCB (1$^{13}C_{12}$,99%) (PCB 138)	10	10	10	10	10	10
2,2',3,3',5,5',6-HeptaCB (1$^{13}C_{12}$,99%) (PCB 178)	10	10	10	10	10	10
3,3',4,5'-TetraCB ($^{13}C_{12}$,99%) (PCB 79)	10	10	10	10	10	10

New	CIL-EDF-5443-CS1H	Two column Dioxin & Furan & PCB calibration solutions [CS1H] (unlabelled/$^{13}C_{12}$,99%)	0.2 mL
New	CIL-EDF-5443-CS2H	Two column Dioxin & Furan & PCB calibration solutions [CS2H] (unlabelled/$^{13}C_{12}$,99%)	0.2 mL
New	CIL-EDF-5443-CS3H	Two column Dioxin & Furan & PCB calibration solutions [CS3H] (unlabelled/$^{13}C_{12}$,99%)	0.2 mL
New	CIL-EDF-5443-CS4H	Two column Dioxin & Furan & PCB calibration solutions [CS4H] (unlabelled/$^{13}C_{12}$,99%)	0.2 mL
New	CIL-EDF-5443-CS5H	Two column Dioxin & Furan & PCB calibration solutions [CS5H] (unlabelled/$^{13}C_{12}$,99%)	0.2 mL
New	CIL-EDF-5443-CS6H	Two column Dioxin & Furan & PCB calibration solutions [CS6H] (unlabelled/$^{13}C_{12}$,99%)	0.2 mL

Code	Product	Unit

Mono-tri dioxin & furan standard mixtures

CIL-EDF-4954	Mono-TriCDD/CDF Native Solution 1 µg/mL of each analyte in Nonane 2-MonoCDD, 2,3,7-TriCDD, 2,8-DiCDF 2,3-DiCDD, 2-MonoCDF, 2,4,8-TriCDF	1.2 mL
CIL-EDF-4955	Mono-TriCDD/CDF ^{13}C-Labelled Solution 1 µg/mL of each analyte in Nonane 2-MonoCDD ($^{13}C_{12}$,99%), 2,3,7-TriCDD ($^{13}C_{12}$,99%), 2,8-DiCDF ($^{13}C_{12}$,99%) 2,3-DiCDD ($^{13}C_{12}$,99%), 2-MonoCDF ($^{13}C_{12}$,99%), 2,4,8-TriCDF ($^{13}C_{12}$,99%)	1.2 mL

Isotope labelled dioxin and furan standard mixtures

CIL-EDF-957	Carbon - 13 Quantifying Cocktail (2,3,7,8 PentaCDD/PentaCDF Isomers) 1 µg/mL of each analyte in Nonane 2,3,7,8-TetraCDD ($^{13}C_{12}$,99%) 1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%) 1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%) 1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%) OctaCDD ($^{13}C_{12}$,99%) 2,3,7,8-TetraCDF ($^{13}C_{12}$,99%) 1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%) 1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%) 1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%) OctaCDF ($^{13}C_{12}$,99%)	3 x 0.4 mL
CIL-EDF-4067	Tetra-OctaCDD and CDF Standard Solution (2,3,7,8-isomers) 1 µg/mL of each analyte in Nonane. ^{13}C-Labelled Dioxins 2,3,7,8-TetraCDD ($^{13}C_{12}$,99%) 1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%) 1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$,99% 1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%) 1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%) 1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%) OctaCDD ($^{13}C_{12}$,99% ^{13}C-Labelled Furans 2,3,7,8-TetraCDF ($^{13}C_{12}$,99%) 1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%) 2,3,4,7,8-PentaCDF ($^{13}C_{12}$,99%) 1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%) 1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%) 1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$,99%) 2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$,99%) 1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%) 1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$,99%) OctaCDF ($^{13}C_{12}$,99%)	1.2 mL
CIL-EDF-4067-A	Tetra-Octa Chlorodibenzo-p-dioxin and Dibenzofuran Standard Solution (2,3,7,8-isomers excluding 1,2,3,7,8,9-HxCDD) 1 µg/mL of each analyte in Nonane. ^{13}C-Labelled Dioxins 2,3,7,8-TetraCDD ($^{13}C_{12}$,99%) 1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%) 1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$,99% 1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%) 1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%) OctaCDD ($^{13}C_{12}$,99% ^{13}C-Labelled Furans 2,3,7,8-TetraCDF ($^{13}C_{12}$,99%) 1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%) 2,3,4,7,8-PentaCDF ($^{13}C_{12}$,99%) 1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%) 1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%) 1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$,99%) 2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$,99%) 1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%) 1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$,99%) OctaCDF ($^{13}C_{12}$,99%)	1.2 mL
CIL-EDF-4903	Tetra-Octa CDD & CDF Standard Solution (2,3,7,8 isomers + 1,3,6,8-TCDD) 1,3,6,8-TetraCDD ($^{13}C_{12}$,99%) ..... 1 µg/mL 2,3,7,8-TetraCDD ($^{13}C_{12}$,99%) ..... 1 µg/mL 2,3,7,8-TetraCDF ($^{13}C_{12}$,99%) ..... 1 µg/mL 1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%) ..... 1 µg/mL 1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%) ..... 1 µg/mL 2,3,4,7,8-PentaCDF ($^{13}C_{12}$,99%) ..... 1 µg/mL 1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$,99%) ..... 1 µg/mL 1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%) ..... 1 µg/mL 1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%) ..... 1 µg/mL 1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%) ..... 1 µg/mL 1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%) ..... 1 µg/mL 1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$,99%) ..... 1 µg/mL 1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%) ..... 1 µg/mL 2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$,99%) ..... 1 µg/mL 1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%) ..... 1 µg/mL 1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$,99%) ..... 1 µg/mL OctaCDD ($^{13}C_{12}$,99%) ..... 2 µg/mL OctaCDF ($^{13}C_{12}$,99%) ..... 2 µg/mL	1.2 mL
CIL-EDF-5304	Dioxin & Furan Clean Up Spike ($^{13}C_{12}$,99%) (2,3,7,8 isomers + 1,3,6,8-TCDD and TCDF) Solvent: Nonane 1,3,6,8-TetraCDD ($^{13}C_{12}$,99%) ..... 1 µg/mL 2,3,7,8-TetraCDD ($^{13}C_{12}$,99%) ..... 1 µg/mL 1,2,3,7,8-PentaCDD($^{13}C_{12}$,99%) ..... 1 µg/mL 1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$,99%) ..... 1 µg/mL 1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%) ..... 1 µg/mL 1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%) ..... 1 µg/mL 1,2,3,4,6,7,8-HeptaCDD($^{13}C_{12}$,99%) ..... 1 µg/mL OctaCDD ($^{13}C_{12}$,99%) ..... 2 µg/mL 1,3,6,8-TetraCDF ($^{13}C_{12}$,99%) ..... 1 µg/mL 2,3,7,8-TetraCDF ($^{13}C_{12}$,99%) ..... 1 µg/mL 1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%) ..... 1 µg/mL 2,3,4,7,8-PentaCDF ($^{13}C_{12}$,99%) ..... 1 µg/mL 1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%) ..... 1 µg/mL 1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%) ..... 1 µg/mL 1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$,99%) ..... 1 µg/mL 2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$,99%) ..... 1 µg/mL 1,2,3,4,6,7,8-HeptaCDF($^{13}C_{12}$,99%) ..... 1 µg/mL 1,2,3,4,7,8,9-HeptaCDF($^{13}C_{12}$,99%) ..... 1 µg/mL OctaCDF ($^{13}C_{12}$,99%) ..... 2 µg/mL	1.2 mL

Code	Product	Unit
CIL-ED-998	TetraCDD-OctaCDD Standard Solution (2,3,7,8 isomers) 1 µg/mL of each analyte in Nonane 2,3,7,8-TetraCDD ($^{13}C_{12}$,99%) 1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%) 1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$,99%) 1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%) 1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%) 1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%) OctaCDD ($^{13}C_{12}$,99%)	1.2 mL
CIL-EF-999	TetraCDF-OctaCDF Standard Solution (2,3,7,8 isomers excluding 2,3,4,6,7,8-HexaCDF) 1 µg/mL of each analyte in Nonane. 2,3,7,8-TetraCDF ($^{13}C_{12}$,99%) 1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%) 2,3,4,7,8-PentaCDF ($^{13}C_{12}$,99%) 1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%) 1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%) 1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$,99%) 1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$,99%) 1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%) OctaCDF ($^{13}C_{12}$,99%)	1.2 mL
CIL-EDF-4136-A	Pre-Sampling Spike Mix ($^{13}C_{12}$,99%; $^{37}Cl_4$,96%) Component — Concentration 2,3-DiCDD ($^{13}C_{12}$,99%) ... 2.5 µg/mL 2,8-DiCDF ($^{13}C_{12}$,99%) ... 2.5 µg/mL 2,3,7-TriCDD ($^{13}C_{12}$,99%) ... 2.5 µg/mL 2,3,7,8-TetraCDD($^{37}C_4$,96%) ... 1.25 µg/mL 2,3,4,7,8-PentaCDF ($^{13}C_{12}$,99%) ... 2.5 µg/mL 1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$,99%) ... 2.5 µg/mL 1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%) ... 2.5 µg/mL 1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$,99%) ... 2.5 µg/mL	1 mL
CIL-EDF-4137-A	Internal Standard Mix-High ($^{13}C_{12}$,99%) Solvent: Nonane 2-MonoCDD ($^{13}C_{12}$,99%) ... 2,5 µg/mL 2-MonoCDF ($^{13}C_{12}$,99%) ... 2,5 µg/mL 2,7/2,8-DiCDD ($^{13}C_{12}$,99%) ... 2,5 µg/mL 2,4-DiCDF ($^{13}C_{12}$,99%) ... 2,5 µg/mL 2,4,8-TriCDF ($^{13}C_{12}$,99%) ... 2,5 µg/mL 2,3,7,8-TetraCDD ($^{13}C_{12}$,99%) ... 1,25 µg/mL 2,3,7,8-TetraCDF ($^{13}C_{12}$,99%) ... 1,25 µg/mL 1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%) ... 2,5 µg/mL 1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%) ... 2,5 µg/mL 1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%) ... 2,5 µg/mL 1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%) ... 2,5 µg/mL 1,2,3,4,6,7,8-HeptaCDD($^{13}C_{12}$,99%) ... 2,5 µg/mL 1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%) ... 2,5 µg/mL OctaCDD ($^{13}C_{12}$,99%) ... 5 µg/mL	1 mL
CIL-EDF-5192	Dioxin/Furan Cleanup Spike ($^{13}C_{12}$, 99%) Solvent: Nonane 2,3,7,8-TetraCDD ($^{13}C_{12}$,99%) ... 200 ng/mL 1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%) ... 200 ng/mL 1,2,3,4,7,8-HexaCDD($^{13}C_{12}$,99%) ... 200 ng/mL 1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%) ... 200 ng/mL 1,2,3,7,8,9-HexaCDD($^{13}C_{12}$,99%) ... 200 ng/mL 1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%) ... 200 ng/mL OctaCDD ($^{13}C_{12}$,99%) ... 400 ng/mL 2,3,7,8-TetraCDF($^{13}C_{12}$,99%) ... 200 ng/mL 1,2,3,7,8-PentaCDF($^{13}C_{12}$,99%) ... 200 ng/mL 2,3,4,7,8-PentaCDF ($^{13}C_{12}$,99%) ... 200 ng/mL 1,2,3,4,7,8-HexaCDF($^{13}C_{12}$,99%) ... 200 ng/mL 1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%) ... 200 ng/mL 1,2,3,7,8,9-HexaCDF($^{13}C_{12}$,99%) ... 200 ng/mL 2,3,4,6,7,8-HexaCDF ... 200 ng/mL 1,2,3,4,6,7,8-HeptaCDF($^{13}C_{12}$,99%) ... 200 ng/mL 1,2,3,4,7,8,9-HeptaCDF($^{13}C_{12}$,99%) ... 200 ng/mL OctaCDF ($^{13}C_{12}$,99%) ... 400 ng/mL	1.2 mL
CIL-EDF-5174-40X	1,3,6,8-TetraCDD/F Containing Clean-Up Spike (40x stock solution) Solvent: Nonane 1,3,6,8-TetraCDD ($^{13}C_{12}$,99%) ... 200 ng/mL 2,3,7,8-TetraCDD ($^{13}C_{12}$,99%) ... 200 ng/mL 1,2,3,7,8-PentaCDD ($^{13}C_{12}$,99%) ... 200 ng/mL 1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$,99%) ... 200 ng/mL 1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$,99%) ... 200 ng/mL 1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$,99%) ... 200 ng/mL 1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$,99%) ... 200 ng/mL OctaCDD ($^{13}C_{12}$,99%) ... 400 ng/mL 1,3,6,8-TetraCDF ($^{13}C_{12}$,99%) ... 200 ng/mL 2,3,7,8-TetraCDF ($^{13}C_{12}$,99%) ... 200 ng/mL 1,2,3,7,8-PentaCDF ($^{13}C_{12}$,99%) ... 200 ng/mL 2,3,4,7,8-PentaCDF ($^{13}C_{12}$,99%) ... 200 ng/mL 1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%) ... 200 ng/mL 1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$,99%) ... 200 ng/mL 1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$,99%) ... 200 ng/mL 2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$,99%) ... 200 ng/mL 1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$,99%) ... 200 ng/mL 1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$,99%) ... 200 ng/mL OctaCDF ($^{13}C_{12}$,99%) ... 400 ng/mL	1.2 mL

Unlabelled dioxin and furan standard mixtures

CIL-ED-906B-5	TetraCDD-HeptaCDD Standard Solution (B) (2,3,7,8 isomers) 5 µg/mL of each analyte in Nonane 2,3,7,8-TetraCDD 1,2,3,7,8-PentaCDD 1,2,3,4,7,8-HexaCDD 1,2,3,6,7,8-HexaCDD 1,2,3,7,8,9-HexaCDD 1,2,3,4,6,7,8-HeptaCDD	1.2 mL
CIL-ED-906B-25	TetraCDD-HeptaCDD Standard Solution (B) (2,3,7,8 isomers) 25 µg/mL of each analyte in Nonane 2,3,7,8-TetraCDD 1,2,3,7,8-PentaCDD 1,2,3,4,7,8-HexaCDD 1,2,3,6,7,8-HexaCDD 1,2,3,7,8,9-HexaCDD 1,2,3,4,6,7,8-HeptaCDD	1.2 mL
CIL-EF-909B-5	TetraCDF-HeptaCDF Standard Solution (B) (2,3,7,8 isomers) 5 µg/mL of each analyte in Nonane 2,3,7,8-TetraCDF 1,2,3,7,8-PentaCDF 2,3,4,7,8-PentaCDF 1,2,3,4,7,8-HexaCDF 1,2,3,6,7,8-HexaCDF 1,2,3,7,8,9-HexaCDF 2,3,4,6,7,8-HexaCDF 1,2,3,4,6,7,8-HeptaCDF 1,2,3,4,7,8,9-HeptaCDF	1.2 mL

Dioxin & furan method standards, standard mixtures & reference materials

Code	Product	Unit
CIL-EF-909B-25	TetraCDF-HeptaCDF Standard Solution (B) (2,3,7,8 isomers) 25 µg/mL of each analyte in Nonane 2,3,7,8-TetraCDF 1,2,3,7,8-PentaCDF 2,3,4,7,8-PentaCDF 1,2,3,4,7,8-HexaCDF 1,2,3,6,7,8-HexaCDF 1,2,3,7,8,9-HexaCDF 2,3,4,6,7,8-HexaCDF 1,2,3,4,6,7,8-HeptaCDF 1,2,3,4,7,8,9-HeptaCDF	1.2 mL
CIL-ED-4135	Chlorodioxin Mix-High (unlabeled) Solvent: Nonane 2-MonoCDD ... 5 µg/mL 2,8-DiCDD ... 5 µg/mL 2,3,7-TriCDD ... 5 µg/mL 2,3,7,8-TetraCDD ... 5 µg/mL 1,2,3,7,8-PentaCDD ... 5 µg/mL 1,2,3,4,7,8-HexaCDD ... 5 µg/mL 1,2,3,6,7,8-HexaCDD ... 5 µg/mL 1,2,3,7,8,9-HexaCDD ... 5 µg/mL 1,2,3,4,6,7,8-HeptaCDD ... 5 µg/mL OctaCDD ... 5 µg/mL	1 mL
CIL-EF-4134	Chlorodibenzofuran Mix-High (unlabeled) Solvent: Nonane 2-MonoCDF ... 5 µg/mL 2,4-DiCDF ... 5 µg/mL 2,4,6-TriCDF ... 5 µg/mL 2,3,7,8-TetraCDF ... 5 µg/mL 1,2,3,7,8-PentaCDF ... 5 µg/mL 2,3,4,7,8-PentaCDF ... 5 µg/mL 1,2,3,4,7,8-HexaCDF ... 5 µg/mL 1,2,3,6,7,8-HexaCDF ... 5 µg/mL 2,3,4,6,7,8-HexaCDF ... 5 µg/mL 1,2,3,7,8,9-HexaCDF ... 5 µg/mL 1,2,3,4,6,7,8-HeptaCDF ... 5 µg/mL 1,2,3,4,7,8,9-HeptaCDF ... 5 µg/mL OctaCDF ... 5 µg/mL	1 mL

Chlorodioxin and chlorofuran window defining mixtures

	Code	Product	Unit
	CIL-EDF-4147	PCDD/PCDF Window Defining and Isomer Specificity Mix (DB-5 and DB-225 Columns) Solvent: Nonane 1,3,6,8-TetraCDD ... 200 ng/mL 1,2,8,9-TetraCDD ... 200 ng/mL 2,3,7,8-TetraCDD ... 200 ng/mL 2,3,7,8-TetraCDD ($^{13}C_{12}$,99%) ... 200 ng/mL 1,2,3,7/1,2,3,8-TetraCDD ... 200 ng/mL 1,2,3,9-TetraCDD ... 200 ng/mL 1,3,6,8-TetraCDF ... 200 ng/mL 1,2,8,9-TetraCDF ... 200 ng/mL 2,3,7,8-TetraCDF ... 200 ng/mL 2,3,7,8-TetraCDF ($^{13}C_{12}$,99%) ... 200 ng/mL 2,3,4,7-TetraCDF ... 200 ng/mL 1,2,3,9-TetraCDF ... 200 ng/mL 1,2,4,6,8/1,2,4,7,9-PentaCDD ... 200 ng/mL 1,2,3,8,9-PentaCDD ... 200 ng/mL 1,3,4,6,8-PentaCDF ... 200 ng/mL 1,2,3,8,9-PentaCDF ... 200 ng/mL 1,2,4,6,7,9/1,2,4,6,8,9-HexaCDD ... 200 ng/mL 1,2,3,4,6,7-HexaCDD ... 200 ng/mL 1,2,3,4,6,8-HexaCDF ... 200 ng/mL 1,2,3,4,8,9-HexaCDF ... 200 ng/mL 1,2,3,4,6,7,9-HeptaCDD ... 200 ng/mL 1,2,3,4,6,7,8-HeptaCDF ... 200 ng/mL 1,2,3,4,6,7,8-HeptaCDD ... 200 ng/mL 1,2,3,4,7,8,9-HeptaCDF ... 200 ng/mL	1.2 mL
New	CIL-ED-1732-S	TCDD-HPCDD Window Defining (DB-5) Solvent: Nonane 1,3,6,8-TCDD ... 800 ng/mL 1,2,8,9-TCDD ... 800 ng/mL 1,2,4,6,8/1,2,4,7,9-PeCDD ... 800 ng/mL 1,2,3,8,9-PeCDD ... 800 ng/mL 1,2,3,4,6,7-HxCDD ... 800 ng/mL 1,2,4,6,7,9/1,2,4,6,8,9-HxCDD ... 800 ng/mL 1,2,3,4,6,7,8-HpCDD ... 800 ng/mL 1,2,3,4,6,7,9-HpCDD ... 800 ng/mL	vial
New	CIL-EF-1731-S	TCDF-HPCDF Window Defining Mixture (DB-5) (unlabelled) Solvent: Nonane 1,3,6,8-Tetrachlorodibenzofuran ... 800 ng/mL 1,2,8,9-Tetrachlorodibenzofuran ... 800 ng/mL 1,3,4,6,8-Pentachlorodibenzofuran ... 800 ng/mL 1,2,3,8,9-Pentachlorodibenzofuran ... 800 ng/mL 1,2,3,4,6,8-Hexachlorodibenzofuran ... 800 ng/mL 1,2,3,4,8,9-Hexachlorodibenzofuran ... 800 ng/mL 1,2,3,4,6,7,8-Heptachlorodibenzofuran ... 800 ng/mL 1,2,3,4,7,8,9-Heptachlorodibenzofuran ... 800 ng/mL	0.5 mL

TCDD & TCDF column performance mixtures

Code	Product	Unit
CIL-ED-908	TetraCDD Column Performance Solution Mixture Solvent: Nonane 1,2,3,4-TetraCDD ... 10 µg/mL 1,2,3,7/1,2,3,8-TetraCDD ... 10 µg/mL 1,2,7,8-TetraCDD ... 10 µg/mL 1,4,7,8-TetraCDD ... 10 µg/mL 2,3,7,8-TetraCDD ... 10 µg/mL	1.2 mL
CIL-ED-935-A	Tetra-CDD Column Performance Check Solution Solvent: Nonane 2,3,7,8-TetraCDD ... 100 ng/mL 1,2,3,4-TetraCDD ... 100 ng/mL 1,4,7,8-TetraCDD ... 100 ng/mL 1,2,3,7/1,2,3,8-TetraCDD ... 100 ng/mL 1,2,7,8-TetraCDD ... 200 ng/mL 2,3,7,8-TetraCDD ($^{13}C_{12}$,99%) ... 250 ng/mL 2,3,7,8-TetraCDD ($^{37}Cl_4$,96%) ... 7 ng/mL 1,2,3,4-TetraCDD ($^{13}C_{12}$,99%) ... 500 ng/mL	0.55 mL

Code	Product	Unit

Bromodioxin/Furan calibration mixtures

New CIL-EDF-5407 — Bromodioxin/furan calibration standard solution [CS1-CS5] (unlabelled/$^{13}C_{12}$,99%) — 5 x 0.2 mL

All concentrations are in ng/mL

Native Compounds	CS1	CS2	CS3	CS4	CS5
2,3,7,8-TBDD	0.1	0.4	2.0	10	50
1,2,3,7,8-PeBDD	0.2	1.0	4.0	20	100
1,2,3,4,7,8-HxBDD	0.6	2.4	12.0	60	300
1,2,3,6,7,8-HxBDD	0.6	2.4	12.0	60	300
1,2,3,7,8,9-HxBDD	0.6	2.4	12.0	60	300
1,2,3,4,6,7,8-HpBDD	0.8	3.0	15.0	75	375
OBDD	1.0	4.0	20.0	100	500
2,3,7,8-TBDF	0.2	0.8	4.0	20	100
2,4,6,8-TBDF	0.2	0.8	4.0	20	100
1,2,3,7,8-PeBDF	0.4	1.6	8.0	40	200
2,3,4,7,8-PeBDF	0.4	1.6	8.0	40	200
1,2,3,4,7,8-HxBDF	0.6	2.4	12.0	60	300
1,2,3,4,6,7,8-HpBDF	0.8	3.0	15.0	75	375
OBDF	1.0	4.0	20.0	100	500

^{13}C-Labelled Compounds	CS1	CS2	CS3	CS4	CS5
2,3,7,8-TBDD ($^{13}C_{12}$, 99%)	20	20	20	20	20
1,2,3,7,8-PeBDD ($^{13}C_{12}$, 99%)	20	20	20	20	20
1,2,3,4,7,8-HxBDD ($^{13}C_{12}$, 99%)	50	50	50	50	50
1,2,3,6,7,8-HxBDD ($^{13}C_{12}$, 99%)	50	50	50	50	50
1,2,3,7,8,9-HxBDD ($^{13}C_{12}$, 99%)	50	50	50	50	50
1,2,3,4,6,7,8-HpBDD ($^{13}C_{12}$, 99%)	100	100	100	100	100
OBDD ($^{13}C_{12}$, 99%)	150	150	150	150	150
2,3,7,8-TBDF ($^{13}C_{12}$, 99%)	20	20	20	20	20
2,4,6,8-TBDF ($^{13}C_{12}$, 99%)	20	20	20	20	20
1,2,3,7,8-PeBDF ($^{13}C_{12}$, 99%)	20	20	20	20	20
2,3,4,7,8-PeBDF ($^{13}C_{12}$, 99%)	20	20	20	20	20
1,2,3,4,7,8-HxBDF ($^{13}C_{12}$, 99%)	50	50	50	50	50
1,2,3,4,6,7,8-HpBDF ($^{13}C_{12}$, 99%)	100	100	100	100	100
OBDF ($^{13}C_{12}$, 99%)	150	150	150	150	150

New CIL-EDF-5407-1 — Bromodioxin/furan calibration standard solution [CS1] (unlabelled/$^{13}C_{12}$,99%) — 0.2 mL

New CIL-EDF-5407-2 — Bromodioxin/furan calibration standard solution [CS1] (unlabelled/$^{13}C_{12}$,99%) — 0.2 mL

New CIL-EDF-5407-3 — Bromodioxin/furan calibration standard solution [CS3] (unlabelled/$^{13}C_{12}$,99%) — 0.2 mL

New CIL-EDF-5407-4 — Bromodioxin/furan calibration standard solution [CS4[(unlabelled/$^{13}C_{12}$,99%) — 0.2 mL

New CIL-EDF-5407-5 — Bromodioxin/furan calibration standard solution [CS5] (unlabelled/$^{13}C_{12}$,99%) — 0.2 mL

New CIL-EDF-5408 — Bromodioxin/furan clean-up spike ($^{13}C_{12}$,99%) — 0.5 mL

Solvent: Nonane

2,3,7,8-TBDD ($^{13}C_{12}$,99%)	100 ng/mL
1,2,3,7,8-PeBDD ($^{13}C_{12}$,99%)	100 ng/mL
1,2,3,4,7,8-HxBDD ($^{13}C_{12}$,99%)	250 ng/mL
1,2,3,6,7,8-HxBDD ($^{13}C_{12}$,99%)	250 ng/mL
1,2,3,4,6,7,8-HpBDD ($^{13}C_{12}$,99%)	500 ng/mL
OBDD ($^{13}C_{12}$,99%)	750 ng/mL
2,3,7,8-TBDF ($^{13}C_{12}$,99%)	100 ng/mL
2,3,4,7,8-PeBDF ($^{13}C_{12}$,99%)	100 ng/mL
1,2,3,4,7,8-HxBDF ($^{13}C_{12}$,99%)	250 ng/mL
1,2,3,4,6,7,8-HpBDF ($^{13}C_{12}$,99%)	500 ng/mL
OBDF ($^{13}C_{12}$,99%)	750 ng/mL

New CIL-EDF-5409 — Bromodioxin/furan syringe spike ($^{13}C_{12}$,99%) — 1.2 mL

Solvent: Nonane

1,2,3,7,8,9-HxBDD ($^{13}C_{12}$,99%)	500 ng/mL
1,2,3,7,8-PeBDF ($^{13}C_{12}$,99%)	200 ng/mL

New CIL-EF-5410 — Bromodioxin/furan sampling spike ($^{13}C_{12}$,99%) — 1.2 mL

Solvent: Nonane

2,4,6,8-TBDF ($^{13}C_{12}$,99%)	200 ng/mL

Code	Product	Unit
CIL-EDF-5381	PBDD/F calibration solutions [CS1-CS7] (unlabelled/$^{13}C_{12}$,99%) Solvent: Nonane All concentrations are in ng/mL	7 x 0.2 mL

Native analytes	CS1	CS2	CS3	CS4	CS5	CS6	CS7
2,3,7,8-TeBDD	0.1	0.4	2	10	20	40	
1,2,3,7,8-PeBDD	0.2	0.8	4	20	40	80	
1,2,3,4,7,8-HxBDD	0.75	3	15	75	150	300	
1,2,3,6,7,8-HxBDD	0.75	3	15	75	150	300	
1,2,3,7,8,9-HxBDD	0.75	3	15	75	150	300	
OBDD	1	4	20	100	200	400	800
2,3,7,8-TeBDF	0.5	2	10	50	100	200	
2,4,6,8-TeBDF	0.5	2	10	50	100	200	
1,2,3,7,8-PeBDF	0.5	2	10	50	100	200	
2,3,4,7,8-PeBDF	0.5	2	10	50	100	200	
1,2,3,4,7,8-HxBDF	0.75	3	15	75	150	300	
1,2,3,4,6,7,8-HpBDF	0.75	3	15	75	150	300	600
OBDF	1	4	20	100	200	400	800

Clean up standards	CS1	CS2	CS3	CS4	CS5	CS6	CS7
2,3,7,8-TeBDD ($^{13}C_{12}$,99%)	10	10	10	10	10	10	
1,2,3,7,8-PeBDD($^{13}C_{12}$,99%)	20	20	20	20	20	20	
1,2,3,4,7,8-HxBDD ($^{13}C_{12}$,99%)	75	75	75	75	75	75	
1,2,3,6,7,8-HxBDD($^{13}C_{12}$,99%)	75	75	75	75	75	75	
OBDD ($^{13}C_{12}$,99%)	225	225	225	225	225	225	225
2,3,7,8-TeBDF ($^{13}C_{12}$,99%)	40	40	40	40	40	40	
2,3,4,7,8-PeBDF ($^{13}C_{12}$,99%)	40	40	40	40	40	40	
1,2,3,4,7,8-HxBDF ($^{13}C_{12}$,99%)	40	40	40	40	40	40	
1,2,3,4,6,7,8-HpBDF ($^{13}C_{12}$,99%)	100	100	100	100	100	100	100
OBDF($^{13}C_{12}$,99%)	225	225	225	225	225	225	225

Syringe standard	CS1	CS2	CS3	CS4	CS5	CS6	CS7
1,2,3,7,8-PeBDF ($^{13}C_{12}$,99%)	40	40	40	40	40	40	
1,2,3,7,8,9-HxBDD ($^{13}C_{12}$,99%)	100	100	100	100	100	100	100

Sampling standard	CS1	CS2	CS3	CS4	CS5	CS6	CS7
2,4,6,8-TeBDF ($^{13}C_{12}$,99%)	40	40	40	40	40	40	

	Code	Product	Unit
New	CIL-EDF-5381-CS1	PBDD/F calibration solutions [CS1] (unlabelled/$^{13}C_{12}$,99%)	0.2 mL
New	CIL-EDF-5381-CS2	PBDD/F calibration solutions [CS2] (unlabelled/$^{13}C^{12}$,99%)	0.2 mL
New	CIL-EDF-5381-CS3	PBDD/F calibration solutions [CS3] (unlabelled/$^{13}C_{12}$,99%)	0.2 mL
New	CIL-EDF-5381-CS4	PBDD/F calibration solutions [CS4] (unlabelled/$^{13}C_{12}$,99%)	0.2 mL
New	CIL-EDF-5381-CS5	PBDD/F calibration solutions [CS5] (unlabelled/$^{13}C_{12}$,99%)	0.2 mL
New	CIL-EDF-5381-CS6	PBDD/F calibration solutions [CS6] (unlabelled/$^{13}C_{12}$,99%)	0.2 mL
New	CIL-EDF-5381-CS7	PBDD/F calibration solutions [CS7] (unlabelled/$^{13}C_{12}$,99%)	0.2 mL

CIL-EDF-5382 — PBDD/F cleanup spike ($^{13}C_{12}$,99%) — 0.5 mL

Solvent: Nonane

- 2,3,7,8-TeBDD ($^{13}C_{12}$,99%) ..... 50 ng/mL
- 1,2,3,7,8-PeBDD ($^{13}C_{12}$,99%) ..... 100 ng/mL
- 1,2,3,4,7,8-HxBDD($^{13}C_{12}$,99%) ..... 375 ng/mL
- 1,2,3,6,7,8-HxBDD($^{13}C_{12}$,99%) ..... 375 ng/mL
- OBDD ($^{13}C_{12}$,99%) ..... 1125 ng/mL
- 2,3,7,8-TeBDF($^{13}C_{12}$,99%) ..... 200 ng/mL
- 2,3,4,7,8-PeBDF ($^{13}C_{12}$,99%)..... 200 ng/mL
- 1,2,3,4,7,8-HxBDF($^{13}C_{12}$,99%) ..... 375 ng/mL
- 1,2,3,4,6,7,8-HpBDF ($^{13}C_{12}$,99%)..... 500 ng/mL
- OBDF($^{13}C_{12}$,99%) ..... 1125 ng/mL

CIL-EDF-5383 — PBDD/F syringe spike stock ($^{13}C_{12}$,99%) — 1.2 mL

Solvent: Nonane

- 1,2,3,7,8,9-HxBDD ($^{13}C_{12}$,99%) ..... 500 ng/mL
- 1,2,3,7,8-PeBDF($^{13}C_{12}$,99%) ..... 200 ng/mL

CIL-EDF-5383-4X — PBDD/F syringe spike stock ($^{13}C_{12}$,99%) — 1.2 mL

Solvent: Nonane

- 1,2,3,7,8,9-HxBDD ($^{13}C_{12}$,99%) ..... 2000 ng/mL
- 1,2,3,7,8-PeBDF($^{13}C_{12}$,99%) ..... 800 ng/mL

CIL-EF-5384 — PBDD/F sampling spike stock ($^{13}C_{12}$,99%) — 1.2 mL

Solvent: Nonane

- 2,4,6,8-HxBDD ($^{13}C_{12}$,99%) ..... 200 ng/mL

CIL-EF-5384-4X — PBDD/F sampling spike stock ($^{13}C_{12}$,99%) — 1.2 mL

Solvent: Nonane

- 2,4,6,8-HxBDD ($^{13}C_{12}$,99%) ..... 800 ng/mL

Code	Product	Unit

CIL-EDF-5070 — Brominated Dioxin/Furan Calibration Solutions [BCS1-BCS5] — 5 x 0.2 mL

Solvent: Nonane

All concentrations are in ng/mL

Unlabelled Dioxins & Furans	BCS1	BCS2	BCS3	BCS4	BCS5
2,3,7,8-TetraBDD	0.5	2	10	40	100
1,2,3,7,8-PentaBDD	2.5	10	50	200	500
1,2,3,4,7,8-HexaBDD	2.5	10	50	200	500
1,2,3,6,7,8-HexaBDD	2.5	10	50	200	500
1,2,3,7,8,9-HexaBDD	2.5	10	50	200	500
2,3,7,8-TetraBDF	0.5	2	10	40	100
1,2,3,7,8-PentaBDF	2.5	10	50	200	500
2,3,4,7,8-PentaBDF	2.5	10	50	200	500

Labelled Dioxins & Furans	BCS1	BCS2	BCS3	BCS4	BCS5
1,2,3,7,8-PentaBDD ($^{13}C_{12}$,99%)	100	100	100	100	100
2,3,7,8-TetraBDF ($^{13}C_{12}$,99%)	100	100	100	100	100
1,2,3,7,8-PentaBDF ($^{13}C_{12}$,99%)	100	100	100	100	100
2,3,4,7,8-PentaBDF ($^{13}C_{12}$,99%)	100	100	100	100	100
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$,99%)	100	100	100	100	100

Clean-Up Standard	BCS1	BCS2	BCS3	BCS4	BCS5
1,2,3,4,7,8-HexaBDD ($^{13}C_{12}$,99%)	0.5	2	10	40	100

Internal Standards	BCS1	BCS2	BCS3	BCS4	BCS5
2,3,7,8-TetraBDD ($^{13}C_{12}$,99%)	100	100	100	100	100
1,2,3,6,7,8-HexaBDD ($^{13}C_{12}$,99%)	25	25	25	25	25
1,2,3,7,8,9-HexaBDD ($^{13}C_{12}$,99%)	75	75	75	75	75

New **CIL-EDF-5070-1** — Brominated Dioxin/Furan Calibration Solution [BCS1] — 0.2 mL

New **CIL-EDF-5070-2** — Brominated Dioxin/Furan Calibration Solution [BCS2] — 0.2 mL

New **CIL-EDF-5070-3** — Brominated Dioxin/Furan Calibration Solution [BCS3] — 0.2 mL

New **CIL-EDF-5070-4** — Brominated Dioxin/Furan Calibration Solution [BCS4] — 0.2 mL

New **CIL-EDF-5070-5** — Brominated Dioxin/Furan Calibration Solution [BCS5] — 0.2 mL

CIL-EDF-5058 — Tetra-Hexa Brominated Dioxin and Furan Standard Solutions — 1.2 mL

Solvent: Nonane

2,3,7,8-TetraBDD ($^{13}C_{12}$,99%) ..... 1000 ng/mL
2,3,7,8-TetraBDF ($^{13}C_{12}$,99%) ..... 1000 ng/mL
1,2,3,7,8-PentaBDD ($^{13}C_{12}$,99%) ..... 1000 ng/mL
2,3,4,7,8-PentaBDF ($^{13}C_{12}$,99%) ..... 1000 ng/mL
1,2,3,4,7,8-HexaBDD ($^{13}C_{12}$,99%) ..... 1000 ng/mL

New **CIL-ED-5073** — Brominated Dioxin/Furan internal standard ($^{13}C_{12}$,99%) — 1.2 mL

Solvent: Nonane

2,3,7,8-Tetrabromodibenzo-p-dioxin ($^{13}C_{12}$,99%) ..... 200 ng/mL
1,2,3,6,7,8-Hexabromodibenzo-p-dioxin ($^{13}C_{12}$,99%) ..... 50 ng/mL
1,2,3,7,8,9-Hexabromodibenzo-p-dioxin ($^{13}C_{12}$,99%) ..... 150 ng/mL

CIL-EDF-5071 — Brominated Dioxin/Furan Labelled Compounds — 1.2 mL

Solvent: Nonane

1,2,3,7,8-PentaBDD ($^{13}C_{12}$,99%) ..... 100 ng/mL
2,3,4,7,8-PentaBDF ($^{13}C_{12}$,99%) ..... 100 ng/mL
2,3,7,8-TetraBDF ($^{13}C_{12}$,99%) ..... 100 ng/mL
1,2,3,4,7,8-HexaBDF ($^{13}C_{12}$,99%) ..... 100 ng/mL
1,2,3,7,8-PentaBDF ($^{13}C_{12}$,99%) ..... 100 ng/mL

CIL-EDF-2530 — Tetra-Penta Brominated Dioxin and Furan Standard Solution — 1.2 mL

Solvent: Nonane

2,3,7,8-TetraBDD ($^{13}C_{12}$,99%) ..... 100 ng/mL
1,2,3,7,8-PentaBDD ($^{13}C_{12}$,99%) ..... 500 ng/mL
2,3,7,8-TetraBDF ($^{13}C_{12}$,99%) ..... 1000 ng/mL
2,3,4,7,8-PentaBDF ($^{13}C_{12}$,99%) ..... 5000 ng/mL

CIL-EDF-4153 — PBDD/PBDF Surrogate Spiking Solution — 1 mL

Solvent: Nonane

2,3,7,8-TetraBDD ($^{13}C_{12}$,99%) ..... 20 ng/mL
2,3,7,8-TetraBDF ($^{13}C_{12}$,99%) ..... 20 ng/mL
1,2,3,7,8-PentaBDD ($^{13}C_{12}$,99%) ..... 20 ng/mL
1,2,3,7,8-PentaBDF ($^{13}C_{12}$,99%) ..... 20 ng/mL
1,2,3,6,7,8 HexaBDD ($^{13}C_{12}$,99%) ..... 10 ng/mL
1,2,3,7,8,9 HexaBDD ($^{13}C_{12}$,99%) ..... 30 ng/mL

New **CIL-EDF-4153-10X** — PBDD/PBDF 10X Stock Surrogate Spiking Solution — 0.5 mL

Solvent: Nonane

2,3,7,8-TetraBDD ($^{13}C_{12}$,99%) ..... 200 ng/mL
2,3,7,8-TetraBDF ($^{13}C_{12}$,99%) ..... 200 ng/mL
1,2,3,7,8-PentaBDD ($^{13}C_{12}$,99%) ..... 200 ng/mL
1,2,3,7,8-PentaBDF ($^{13}C_{12}$,99%) ..... 200 ng/mL
1,2,3,6,7,8 HexaBDD ($^{13}C_{12}$,99%) ..... 100 ng/mL
1,2,3,7,8,9 HexaBDD ($^{13}C_{12}$,99%) ..... 300 ng/mL

CIL-EDF-4154 — PBDD/PBDF Performance Standard Mix — 1 mL

Solvent: Nonane

2,3,4,7,8-PentaBDF ($^{13}C_{12}$,99%) ..... 100 ng/mL
1,2,3,4,7,8-HexaBDD ($^{13}C_{12}$,99%) ..... 100 ng/mL

Code	Product	Unit
CIL-EDF-5059	Polybrominated Dioxin and Furan Mixture Solvent: Nonane 2,3,7,8-TetraBDD..... 1 µg/mL 1,2,3,7,8-PentaBDD..... 1 µg/mL 1,2,3,4,7,8-HexaBDD.... 1 µg/mL 1,2,3,6,7,8-HexaBDD.... 1 µg/mL 1,2,3,7,8,9-HexaBDD ....1 µg/mL OctaBDD .....1 µg/mL 2,3,7,8-TetraBDF.....1 µg/mL 1,2,3,7,8-PentaBDF.....1 µg/mL 2,3,4,7,8-PentaBDF ..... 1 µg/mL 1,2,3,4,7,8-HexaBDF .... 1 µg/mL 1,2,3,4,6,7,8-HeptaBDF 1 µg/mL	1.2 mL
CIL-EDF-5074	Brominated Dioxin/Furan PAR Solution Solvent: Nonane 2,3,7,8-TetraBDD..... 100 ng/mL 1,2,3,7,8-PentaBDD.. 500 ng/mL 1,2,3,4,7,8-HexaBDD 500 ng/mL 1,2,3,6,7,8-HexaBDD 500 ng/mL 1,2,3,7,8,9-HexaBDD 500 ng/mL 2,3,7,8-TetraBDF.....100 ng/mL 1,2,3,7,8-PentaBDF .. 500 ng/mL 2,3,4,7,8-PentaBDF .. 500 ng/mL	1.2 mL

PCB standards and standard mixtures

Unlabelled “Certified” PCB Standards

While CIL’s primary business is isotopically labelled standards, it is important to remember that the accuracy and precision of a quantitative analysis is dependent upon the accuracy and precision of the unlabelled (native) standards. In the past, CIL utilized commercially available native standards from multiple vendors for the confirmation of our isotopically labelled standards. It was discovered, however, that there can be substantial variability among the commercial native standards. Thus CIL initiated the “Certified” PCB standards program. CIL prepares native “Certified” standards using good laboratory practice (GLP). Individual, native, crystalline PCB isomers (98%+ purity) are weighed in triplicate on a microbalance calibrated with NIST traceable Class S weights, and formulated to specific concentration. Triplicate analyses of each of the three solutions in isooctane are carried out using GC/MS. In order to establish statistical control, the relative standard deviation (RSD) of each solution must be less than 5%, and the RSD for the entire set of analyses for all three standards must be <5%. When these parameters have been met, the solutions are combined and the resulting solution analyzed again in triplicate by three chemists. If the RSD of these analyses is also <5%, the final product is the “Certified” PCB standard. These 100 µg/mL solutions are highly accurate native standards for quantitation of PCBs. These standards are used in all CIL calibration series and native standard mixtures, and are used to validate all isotope labelled standards from CIL.

Isotope Labelled PCB Standards

CIL now offers more than 50 individual ^{13}C-labelled PCB standards to meet the growing needs of researchers utilizing Isotope Dilution MS. All ^{13}C-labelled PCB standards are quantified against CIL “Certified” unlabelled PCB standards for utmost precision and accuracy.

In addition to the “Dioxin-Like” (DL) congeners designated by the WHO, CIL also offers standards for the “non-Dioxin-Like” or “Marker” PCB congeners found in commercial mixtures, as well as a host of other ^{13}C-labelled PCB standards used forspecialized purposes.

NEW “High Purity” PCB Standards

For more than 20 years CIL has been a pioneer in developing high quality PCB standards, introducing the first ^{13}C-labelled PCBs used in the earliest IDMS methods, and more recently developing the first PCB standards formulated under the “Certified Standards” protocol. CIL is once again responding to the needs of the analytical community by providing High Purity PCB standards. As new instrumentation and methodologies drive detection limits lower, the presence of even very low levels of impurities in the labelled standards of other PCB congeners or polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD/ Fs), become a hindrance to the laboratories minimum detection capabilities. CIL has developed aggressive cleanup procedures, and adopted much tighter quality control specifications for the eight mono-ortho substituted “dioxin-like” PCBs (DL-PCBs). These new specifications include extremely low allowances for ^{13}C-non-ortho DL-PCBs, native content, other PCB congeners and PCDD/ Fs.

Chemical Identity: Unambiguous identity by GC/MS, x^{1}H-NMR, ^{13}C-NMR, and MP determination

Isotopic Enrichment: 99% by GC/MS

Chemical Purity: >98% by GC/MS, GC/ECD, and ^{1}H-NMR

- Native Content: <0.1% by GC/MS SI
- ^{13}C-non-ortho DL-PCBs: <0.05% by GC/ECD vs. cal-curve, or HRGC/MS
- 17 (2,3,7,8) Containing PCDD/Fs: <0.05% for each compound by HRGC/MS

Concentration: 40 ± 2 µg/mL by comparison assay vs. native “Certified Standard”

Uncertainty: Conforming to Eurachem/CITAC Guide “Quantifying Uncertainty in Analytical Measurement”

CEN Method EN-1948-4 PCB Standard Mixtures

In 2006, CIL collaborated with the CEN (European Committee for Standardization) organizing laboratory to develop and define PCB Calibration series and $^{13}C_{12}$-labelled spiking solutions to be used with method CEN / TS 1948-4. CIL supplied these standards to the organizing laboratory for use in their Interlaboratory Evaluation Study, and now these same standards are available to you from CIL.

NEW Comprehensive Native PCB Mixtures

CIL has produced two large mixes of unlabelled PCBs, formulated entirely from CIL’s PCB “Certified Standards” individual stock solutions. The Comprehensive Native PCB Mixture is a multipurpose mixture that includes all the WHO Dioxin-Like PCBs that have been assigned TEFs, the predominant congeners, and first- and last-eluting congeners from the Mono through Deca homologue groups. Since some pairs of these compounds coelute on certain columns, the Fully Resolved Native Mono-Deca PCB Mixture was formulated with no coeluting congeners under normal analytical conditions.

NEW Mixed Bromo/Chloro Biphenyl Standards

CIL now offers a selection of labelled and unlabelled mixed halogenated biphenyl standards and standard mixtures While very limited research has been done to date, these compounds have been indentified in environmental matrices, and warrant further investigation.

Isotope labelled individual PCB standards

Code	Product	Unit
CIL-CLM-3235-1.2	Biphenyl ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-EC-4908-3	2-Monochlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #1) 40 µg/mL in Nonane	3 mL
CIL-EC-4908-1.2	2-Monochlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #1) 40 µg/mL in Nonane	1.2 mL
CIL-EC-4990-3	4-Monochlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #3) 40 µg/mL in Nonane	3 mL
CIL-EC-4990-1.2	4-Monochlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #3) 40 µg/mL in Nonane	1.2 mL
CIL-EC-4911-3	2,2'-Dichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #4) 40 µg/mL in Nonane	3 mL
CIL-EC-4911-1.2	2,2'-Dichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #4) 40 µg/mL in Nonane	1.2 mL
CIL-EC-5095-3	2,4'-Dichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #8) 40 µg/mL in Nonane	3 mL
CIL-EC-5095-1.2	2,4'-Dichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #8) 40 µg/mL in Nonane	1.2 mL
CIL-EC-4165-3	2,5-Dichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #9) 40 µg/mL in Nonane	3 mL
CIL-EC-4165-1.2	2,5-Dichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #9) 40 µg/mL in Nonane	1.2 mL
CIL-EC-1402-3	4,4'-Dichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #15) 40 µg/mL in Nonane	3 mL
CIL-EC-1402-1.2	4,4'-Dichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #15) 40 µg/mL in Nonane	1.2 mL
CIL-EC-4909-3	2,2',6-Trichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #19) 40 µg/mL in Nonane	3 mL
CIL-EC-4909-1.2	2,2',6-Trichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #19) 40 µg/mL in Nonane	1.2 mL
CIL-EC-1413-3	2,4,4'-Trichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #28) 40 µg/mL in Nonane	3 mL
CIL-EC-1413-1.2	2,4,4'-Trichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #28) 40 µg/mL in Nonane	1.2 mL
CIL-EC-4163-3	2,4',6-Trichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #32) 40 µg/mL in Nonane	3 mL
CIL-EC-4163-1.2	2,4',6-Trichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #32) 40 µg/mL in Nonane	1.2 mL
CIL-EC-4901-3	3,4,4'-Trichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #37) 40 µg/mL in Nonane	3 mL
CIL-EC-4901-1.2	3,4,4'-Trichlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #37) 40 µg/mL in Nonane	1.2 mL
CIL-EC-1434-3	2,2',4,4'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #47) 40 µg/mL in Nonane	3 mL
CIL-EC-1434-1.2	2,2',4,4'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #47) 40 µg/mL in Nonane	1.2 mL
CIL-EC-1424-3	2,2',5,5'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #52) 40 µg/mL in Nonane	3 mL
CIL-EC-1424-1.2	2,2',5,5'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #52) 40 µg/mL in Nonane	1.2 mL
CIL-EC-4912-3	2,2',6,6'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #54) 40 µg/mL in Nonane	3 mL
CIL-EC-4912-1.2	2,2',6,6'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #54) 40 µg/mL in Nonane	1.2 mL
CIL-EC-4078-3	2,3,4,4'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #60) 40 µg/mL in Nonane	3 mL
CIL-EC-4078-1.2	2,3,4,4'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #60) 40 µg/mL in Nonane	1.2 mL
CIL-EC-4914-3	2,3',4',5-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #70) 40 µg/mL in Nonane	3 mL
CIL-EC-4914-1.2	2,3',4',5-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #70) 40 µg/mL in Nonane	1.2 mL
CIL-EC-1404-3	3,3',4,4'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #77) 40 µg/mL in Nonane	3 mL
CIL-EC-1404-1.2	3,3',4,4'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #77) 40 µg/mL in Nonane	1.2 mL
CIL-DLM-3063-3	3,3',4,4'-Tetrachlorobiphenyl (D_6,98%) (IUPAC #77) 40 µg/mL in Nonane	3 mL
CIL-DLM-3063-1.2	3,3',4,4'-Tetrachlorobiphenyl (D_6,98%) (IUPAC #77) 40 µg/mL in Nonane	1.2 mL
CIL-EC-5048-3	3,3',4,5'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #79) 40 µg/mL in Nonane	3 mL
CIL-EC-5048-1.2	3,3',4,5'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #79) 40 µg/mL in Nonane	1.2 mL
CIL-EC-1414-3	3,3',5,5'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #80) 40 µg/mL in Nonane	3 mL
CIL-EC-1414-1.2	3,3',5,5'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #80) 40 µg/mL in Nonane	1.2 mL
CIL-EC-1412-3	3,4,4',5-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC# 81) 40 µg/mL in Nonane	3 mL
CIL-EC-1412-1.2	3,4,4',5-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC# 81) 40 µg/mL in Nonane	1.2 mL
CIL-EC-4929-3	2,2',3,4,4'-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #85) 40 µg/mL in Nonane	3 mL
CIL-EC-4929-1.2	2,2',3,4,4'-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #85) 40 µg/mL in Nonane	1.2 mL
CIL-EC-1428-3	2,2',3',4,5-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #97) 40 µg/mL in Nonane	3 mL
CIL-EC-1428-1.2	2,2',3',4,5-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #97) 40 µg/mL in Nonane	1.2 mL
CIL-EC-1405-3	2,2',4,5,5'-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #101) 40 µg/mL in Nonane	3 mL
CIL-EC-1405-1.2	2,2',4,5,5'-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #101) 40 µg/mL in Nonane	1.2 mL
CIL-EC-4910-3	2,2',4,6,6'-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #104) 40 µg/mL in Nonane	3 mL
CIL-EC-4910-1.2	2,2',4,6,6'-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #104) 40 µg/mL in Nonane	1.2 mL

Code	Product	Unit
CIL-EC-1420-3	2,3,3',4,4'-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #105) 40 µg/mL in Nonane	3 mL
CIL-EC-1420-1.2	2,3,3',4,4'-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #105) 40 µg/mL in Nonane	1.2 mL
CIL-EC-1415-3	2,3,3',5,5'-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #111) 40 µg/mL in Nonane	3 mL
CIL-EC-1415-1.2	2,3,3',5,5'-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #111) 40 µg/mL in Nonane	1.2 mL
CIL-EC-4902-3	2,3,4,4',5-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #114) 40 µg/mL in Nonane	3 mL
CIL-EC-4902-1.2	2,3,4,4',5-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #114) 40 µg/mL in Nonane	1.2 mL
CIL-EC-1435-3	2,3',4,4',5-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #118) 40 µg/mL in Nonane	3 mL
CIL-EC-1435-1.2	2,3',4,4',5-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #118) 40 µg/mL in Nonane	1.2 mL
CIL-EC-4904-3	2',3,4,4',5-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #123) 40 µg/mL in Nonane	3 mL
CIL-EC-4904-1.2	2',3,4,4',5-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #123) 40 µg/mL in Nonane	1.2 mL
CIL-EC-1425-3	3,3',4,4',5-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #126) 40 µg/mL in Nonane	3 mL
CIL-EC-1425-1.2	3,3',4,4',5-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #126) 40 µg/mL in Nonane	1.2 mL
CIL-EC-1421-3	3,3',4,5,5'-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #127) 40 µg/mL in Nonane	3 mL
CIL-EC-1421-1.2	3,3',4,5,5'-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #127) 40 µg/mL in Nonane	1.2 mL
CIL-EC-1411-3	2,2',3,3',4,4'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC# 128) 40 µg/mL in Nonane	3 mL
CIL-EC-1411-1.2	2,2',3,3',4,4'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC# 128) 40 µg/mL in Nonane	1.2 mL
CIL-EC-1436-3	2,2',3,4,4',5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #138) 40 µg/mL in Nonane	3 mL
CIL-EC-1436-1.2	2,2',3,4,4',5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #138) 40 µg/mL in Nonane	1.2 mL
CIL-EC-1426-3	2,2',3,4,5,5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #141) 40 µg/mL in Nonane	3 mL
CIL-EC-1426-1.2	2,2',3,4,5,5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #141) 40 µg/mL in Nonane	1.2 mL
CIL-EC-1406-3	2,2',4,4',5,5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #153) 40 µg/mL in Nonane	3 mL
CIL-EC-1406-1.2	2,2',4,4',5,5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #153) 40 µg/mL in Nonane	1.2 mL
CIL-EC-4167-3	2,2',4,4',6,6'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #155) 40 µg/mL in Nonane	3 mL
CIL-EC-4167-1.2	2,2',4,4',6,6'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #155) 40 µg/mL in Nonane	1.2 mL
CIL-EC-1422-3	2,3,3',4,4',5-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #156) 40 µg/mL in Nonane	3 mL
CIL-EC-1422-1.2	2,3,3',4,4',5-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #156) 40 µg/mL in Nonane	1.2 mL
CIL-EC-4051-3	2,3,3',4,4',5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #157) 40 µg/mL in Nonane	3 mL
CIL-EC-4051-1.2	2,3,3',4,4',5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #157) 40 µg/mL in Nonane	1.2 mL
CIL-EC-5336-3	2,3,3',4,5,5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #159) 40 µg/mL in Nonane	3 mL
CIL-EC-5336-1.2	2,3,3',4,5,5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #159) 40 µg/mL in Nonane	1.2 mL
CIL-EC-4050-3	2,3',4,4',5,5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #167) 40 µg/mL in Nonane	3 mL
CIL-EC-4050-1.2	2,3',4,4',5,5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #167) 40 µg/mL in Nonane	1.2 mL
CIL-EC-1416-3	3,3',4,4',5,5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #169) 40 µg/mL in Nonane	3 mL
CIL-EC-1416-1.2	3,3',4,4',5,5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #169) 40 µg/mL in Nonane	1.2 mL
CIL-EC-4905-3	2,2',3,3',4,4',5-Heptachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #170) 40 µg/mL in Nonane	3 mL
CIL-EC-4905-1.2	2,2',3,3',4,4',5-Heptachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #170) 40 µg/mL in Nonane	1.2 mL
CIL-EC-1417-3	2,2',3,3',5,5',6-Heptachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #178) 40 µg/mL in Nonane	3 mL
CIL-EC-1417-1.2	2,2',3,3',4,4',5-Heptachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #178) 40 µg/mL in Nonane	1.2 mL
CIL-EC-1407-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #180) 40 µg/mL in Nonane	3 mL
CIL-EC-1407-1.2	2,2',3,4,4',5,5'-Heptachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #180) 40 µg/mL in Nonane	1.2 mL
CIL-EC-4913-3	2,2',3,4',5,6,6'-Heptachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #188) 40 µg/mL in Nonane	3 mL
CIL-EC-4913-1.2	2,2',3,4',5,6,6'-Heptachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #188) 40 µg/mL in Nonane	1.2 mL
CIL-EC-1409-3	2,3,3',4,4',5,5-Heptachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC# 189) 40 µg/mL in Nonane	3 mL
CIL-EC-1409-1.2	2,3,3',4,4',5,5-Heptachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC# 189) 40 µg/mL in Nonane	1.2 mL
CIL-EC-1418-3	2,2',3,3',4,4',5,5'-Octachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #194) 40 µg/mL in Nonane	3 mL
CIL-EC-1418-1.2	2,2',3,3',4,4',5,5'-Octachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #194) 40 µg/mL in Nonane	1.2 mL
CIL-EC-1408-3	2,2',3,3',5,5',6,6'-Octachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC# 202) 40 µg/mL in Nonane	3 mL
CIL-EC-1408-1.2	2,2',3,3',5,5',6,6'-Octachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC# 202) 40 µg/mL in Nonane	1.2 mL
CIL-EC-4199-3	2,3,3',4,4',5,5',6-Octachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #205) 40 µg/mL in Nonane	3 mL
CIL-EC-4199-1.2	2,3,3',4,4',5,5',6-Octachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #205) 40 µg/mL in Nonane	1.2 mL
CIL-EC-4900-3	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #206) 40 µg/mL in Nonane	3 mL

PCB standards and standard mixtures

	Code	Product	Unit
	CIL-EC-4900-1.2	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #206) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1419-3	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #208) 40 µg/mL in Nonane	3 mL
	CIL-EC-1419-1.2	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #208) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1410-3	Decachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC# 209) 40 µg/mL in Nonane	3 mL
	CIL-EC-1410-1.2	Decachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC# 209) 40 µg/mL in Nonane	1.2 mL
	CIL-EC-1410-10	Decachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC# 209) 40 µg/mL in Nonane	10 mL

Unlabelled certified PCB standards

	CIL-PCB-1-CS	2-Monochlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-3-CS	4-Monochlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-4-CS	2,2'-Dichlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-8-CS	2,4'-Dichlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-9-CS	2,5-Dichlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-10-CS	2,6'-Dichlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
New	CIL-PCB-11-CS	3,3'-Dichlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
New	CIL-PCB-12-CS	3,4-DIchlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-15-CS	4,4'-Dichlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-18-CS	2,2',5-Trichlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-19-CS	2,2',6-Trichlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-28-CS	2,4,4'-Trichlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-30-CS	2,4,6-Trichlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
New	CIL-PCB-31-CS	2,4',5-Trichlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-32-CS	2,4',6-Trichlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
New	CIL-PCB-33-CS	2',3,4-Trichlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
New	CIL-PCB-35-CS	3,3',4-Trichlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-37-CS	3,4,4'-Trichlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-38-CS	3,4,5-Trichlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-39-CS	3,4',5-Trichlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-44-CS	2,2',3,5'-Tetrachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-47-CS	2,2',4,4'-Tetrachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-49-CS	2,2',4.5'-Tetrachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-52-CS	2,2',5,5'-Tetrachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-54-CS	2,2',6,6'-Tetrachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
New	CIL-PCB-57-CS	2,3,3',5-Tetrachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-60-CS	2,3,4,4'-Tetrachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-66-CS	2,3',4,4'-Tetrachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-70-CS	2,3',4',5-Tetrachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-74-CS	2,4,4',5-Tetrachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-77-CS	3,3',4,4'-Tetrachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
New	CIL-PCB-78-CS	3,3',4,5-Tetrachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-79-CS	3,3',4,5'-Tetrachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-80-CS	3,3',5,5'-Tetrachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-81-CS	3,4,4',5-Tetrachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-85-CS	2,2',3,4,4'-Pentachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-87-CS	2,2',3,4,5'-Pentachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
New	CIL-PCB-95-CS	2,2',3,5',6-Pentachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-97-CS	2,2',3',4,5-Pentachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-99-CS	2,2',4,4',5-Pentachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-101-CS	2,2',4,5,5'-Pentachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-104-CS	2,2',4,6,6'-Pentachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-105-CS	2,3,3',4,4'-Pentachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL

	Code	Product	Unit
	CIL-PCB-110-CS	2,3,3',4',6-Pentachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-111-CS	2,3,3',5,5'-Pentachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
New	CIL-PCB-112-CS	2,3,3',5,6-Pentachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-114-CS	2,3,4,4',5-Pentachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-118-CS	2,3',4,4',5-Pentachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-123-CS	2',3,4,4',5-Pentachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-126-CS	3,3',4,4',5-Pentachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-127-CS	3,3',4,5,5'-Pentachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-128-CS	2,2',3,3',4,4'-Hexachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-138-CS	2,2',3,4,4',5'-Hexachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-141-CS	2,2',3,4,5,5'-Hexachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-146-CS	2,2',3,4',5,5'-Hexachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-149-CS	2,2',3,4',5',6-Hexachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-151-CS	2,2',3,5,5',6-Hexachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-153-CS	2,2',4,4',5,5'-Hexachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-155-CS	2,2',4,4',6,6'-Hexachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-156-CS	2,3,3',4,4',5-Hexachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-157-CS	2,3,3',4,4',5'-Hexachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-158-CS	2,3,3',4,4',6-Hexachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-159-CS	2,3,3',4,5,5'-Hexachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
New	CIL-PCB-162-CS	2,3,3',4',5,5'-Hexachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-167-CS	2,3',4,4',5,5'-Hexachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-169-CS	3,3',4,4',5,5'-Hexachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-170-CS	2,2',3,3',4,4',5-Heptachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-172-CS	2,2',3,3',4,5,5'-Heptachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
New	CIL-PCB-174-CS	2,2',3,3',4,5,6'-Heptachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-177-CS	2,2',3,3',4',5,6-Heptachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-178-CS	2,2',3,3',5,5',6-Heptachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-180-CS	2,2',3,4,4',5,5'-Heptachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-187-CS	2,2',3,4',5,5',6-Heptachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-188-CS	2,2',3,4',5,6,6'-Heptachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-189-CS	2,3,3',4,4',5,5'-Heptachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-194-CS	2,2',3,3',4,4',5,5'-Octachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-195-CS	2,2',3,3',4,4',5,6-Octachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-196-CS	2,2',3,3',4,4',5',6-Octachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
New	CIL-PCB-198-CS	2,2',3,3',4,5,5',6-Octachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
New	CIL-PCB-199-CS	2,2',3,3',4,5,6,6'-Octachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-201-CS	2,2',3,3',4,5,5',6'-Octachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-202-CS	2,2',3,3',5,5',6,6'-Octachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-203-CS	2,2',3,4,4',5,5',6-Octachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-205-CS	2,3,3',4,4',5,5',6-Octachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-206-CS	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-208-CS	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
	CIL-PCB-209-CS	Decachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL

Unlabelled PCB standards

CIL-ULM-1710-1.2	Biphenyl (unlabelled) 50 µg/mL in Nonane	1.2 mL
CIL-PCB-1	2-Monochlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-1-C	2-Monochlorobiphenyl	5 mg
CIL-PCB-2	3-Monochlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-2-C	3-Monochlorobiphenyl	5 mg

Code	Product	Unit
CIL-PCB-3	4-Monochlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-3-C	4-Monochlorobiphenyl	5 mg
CIL-PCB-4	2,2'-Dichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-4-C	2,2'-Dichlorobiphenyl	5 mg
CIL-PCB-5	2,3-Dichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-5-C	2,3-Dichlorobiphenyl	5 mg
CIL-PCB-6	2,3'-Dichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-6-C	2,3'-Dichlorobiphenyl	5 mg
CIL-PCB-7	2,4-Dichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-7-C	2,4-Dichlorobiphenyl	5 mg
CIL-PCB-8	2,4'-Dichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-8-C	2,4'-Dichlorobiphenyl	5 mg
CIL-PCB-9	2,5-Dichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-9-C	2,5-Dichlorobiphenyl	5 mg
CIL-PCB-10	2,6-Dichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-10-C	2,6-Dichlorobiphenyl	5 mg
CIL-PCB-11	3,3'-Dichlorobiphenyl 35 µg/mL Isooctane	1 mL
CIL-PCB-11-C	3,3'-Dichlorobiphenyl	5 mg
CIL-PCB-12	3,4-Dichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-12-C	3,4-Dichlorobiphenyl	5 mg
CIL-PCB-13	3,4'-Dichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-13-C	3,4'-Dichlorobiphenyl	5 mg
CIL-PCB-14	3,5-Dichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-14-C	3,5-Dichlorobiphenyl	5 mg
CIL-PCB-15	4,4'-Dichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-15-C	4,4'-Dichlorobiphenyl	5 mg
CIL-PCB-16	2,2',3-Trichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-16-C	2,2',3-Trichlorobiphenyl	5 mg
CIL-PCB-17	2,2',4-Trichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-17-C	2,2',4-Trichlorobiphenyl	5 mg
CIL-PCB-18	2,2',5-Trichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-18-C	2,2',5-Trichlorobiphenyl	5 mg
CIL-PCB-19	2,2',6-Trichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-19-C	2,2',6-Trichlorobiphenyl	5 mg
CIL-PCB-20	2,3,3'-Trichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-20-C	2,3,3'-Trichlorobiphenyl	5 mg
CIL-PCB-21	2,3,4-Trichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-21-C	2,3,4-Trichlorobiphenyl	5 mg
CIL-PCB-22	2,3,4'-Trichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-22-C	2,3,4'-Trichlorobiphenyl	5 mg
CIL-PCB-23	2,3,5-Trichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-23-C	2,3,5-Trichlorobiphenyl	5 mg
CIL-PCB-24	2,3,6-Trichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-24-C	2,3,6-Trichlorobiphenyl	5 mg
CIL-PCB-25	2,3',4-Trichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-25-C	2,3',4-Trichlorobiphenyl	5 mg
CIL-PCB-26	2,3',5-Trichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-26-C	2,3',5-Trichlorobiphenyl	5 mg
CIL-PCB-27	2,3',6-Trichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-27-C	2,3',6-Trichlorobiphenyl	5 mg
CIL-PCB-28	2,4,4'-Trichlorobiphenyl 35 µg/mL in Isooctane	1 mL

Code	Product	Unit
CIL-PCB-28-C	2,4,4'-Trichlorobiphenyl	5 mg
CIL-PCB-29	2,4,5-Trichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-29-C	2,4,5-Trichlorobiphenyl	5 mg
CIL-PCB-30	2,4,6-Trichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-30-C	2,4,6-Trichlorobiphenyl	5 mg
CIL-PCB-31	2,4',5-Trichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-31-C	2,4',5-Trichlorobiphenyl	5 mg
CIL-PCB-32	2,4',6-Trichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-32-C	2,4',6-Trichlorobiphenyl	5 mg
CIL-PCB-33	2',3,4-Trichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-33-C	2',3,4-Trichlorobiphenyl	5 mg
CIL-PCB-34	2',3,5-Trichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-34-C	2',3,5-Trichlorobiphenyl	5 mg
CIL-PCB-35	3,3',4-Trichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-35-C	3,3',4-Trichlorobiphenyl	5 mg
CIL-PCB-36	3,3',5-Trichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-36-C	3,3',5-Trichlorobiphenyl	5 mg
CIL-PCB-37	3,4,4'-Trichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-37-C	3,4,4'-Trichlorobiphenyl	5 mg
CIL-PCB-38	3,4,5-Trichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-38-C	3,4,5-Trichlorobiphenyl	5 mg
CIL-PCB-39	3,4',5-Trichlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-39-C	3,4',5-Trichlorobiphenyl	5 mg
CIL-PCB-40	2,2',3,3'-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-40-C	2,2',3,3'-Tetrachlorobiphenyl	5 mg
CIL-PCB-41	2,2',3,4-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-41-C	2,2',3,4-Tetrachlorobiphenyl	5 mg
CIL-PCB-42	2,2',3,4'-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-42-C	2,2',3,4'-Tetrachlorobiphenyl	5 mg
CIL-PCB-43	2,2',3,5-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-43-C	2,2',3,5-Tetrachlorobiphenyl	5 mg
CIL-PCB-44	2,2',3,5'-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-44-C	2,2',3,5'-Tetrachlorobiphenyl	5 mg
CIL-PCB-45	2,2',3,6-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-45-C	2,2',3,6-Tetrachlorobiphenyl	5 mg
CIL-PCB-46	2,2',3,6'-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-46-C	2,2',3,6'-Tetrachlorobiphenyl	5 mg
CIL-PCB-47	2,2',4,4'-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-47-C	2,2',4,4'-Tetrachlorobiphenyl	5 mg
CIL-PCB-48	2,2',4,5-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-48-C	2,2',4,5-Tetrachlorobiphenyl	5 mg
CIL-PCB-49	2,2',4,5'-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-49-C	2,2',4,5'-Tetrachlorobiphenyl	5 mg
CIL-PCB-50	2,2',4,6-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-50-C	2,2',4,6-Tetrachlorobiphenyl	5 mg
CIL-PCB-51	2,2',4,6'-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-51-C	2,2',4,6'-Tetrachlorobiphenyl	5 mg
CIL-PCB-52	2,2',5,5'-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-52-C	2,2',5,5'-Tetrachlorobiphenyl	5 mg
CIL-PCB-53	2,2',5,6'-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-53-C	2,2',5,6'-Tetrachlorobiphenyl	5 mg

Code	Product	Unit
CIL-PCB-54	2,2',6,6'-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-54-C	2,2',6,6'-Tetrachlorobiphenyl	5 mg
CIL-PCB-55	2,3,3',4-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-55-C	2,3,3',4-Tetrachlorobiphenyl	5 mg
CIL-PCB-56	2,3,3',4'-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-56-C	2,3,3',4'-Tetrachlorobiphenyl	5 mg
CIL-PCB-57	2,3,3',5-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-57-C	2,3,3',5-Tetrachlorobiphenyl	5 mg
CIL-PCB-58	2,3,3',5-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-58-C	2,3,3',5-Tetrachlorobiphenyl	5 mg
CIL-PCB-59	2,3,3',6-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-59-C	2,3,3',6-Tetrachlorobiphenyl	5 mg
CIL-PCB-60	2,3,4,4'-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-60-C	2,3,4,4'-Tetrachlorobiphenyl	5 mg
CIL-PCB-61	2,3,4,5-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-61-C	2,3,4,5-Tetrachlorobiphenyl	5 mg
CIL-PCB-62	2,3,4,6-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-62-C	2,3,4,6-Tetrachlorobiphenyl	5 mg
CIL-PCB-63	2,3,4',5-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-63-C	2,3,4',5-Tetrachlorobiphenyl	5 mg
CIL-PCB-64	2,3,4',6-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-64-C	2,3,4',6-Tetrachlorobiphenyl	5 mg
CIL-PCB-65	2,3,5,6-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-65-C	2,3,5,6-Tetrachlorobiphenyl	5 mg
CIL-PCB-66	2,3',4,4'-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-66-C	2,3',4,4'-Tetrachlorobiphenyl	5 mg
CIL-PCB-67	2,3',4,5-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-67-C	2,3',4,5-Tetrachlorobiphenyl	5 mg
CIL-PCB-68	2,3',4,5'-Tetrachlorobiphenyl 35 µg/mL im Isooctane	1 mL
CIL-PCB-68-C	2,3',4,5'-Tetrachlorobiphenyl	5 mg
CIL-PCB-69	2,3',4,6-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-69-C	2,3',4,6-Tetrachlorobiphenyl	5 mg
CIL-PCB-70	2,3',4',5-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-70-C	2,3',4',5-Tetrachlorobiphenyl	5 mg
CIL-PCB-71	2,3',4',6-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-71-C	2,3',4',6-Tetrachlorobiphenyl	5 mg
CIL-PCB-72	2,3',5,5'-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-72-C	2,3',5,5'-Tetrachlorobiphenyl	5 mg
CIL-PCB-73	2,3',5',6-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-73-C	2,3',5',6-Tetrachlorobiphenyl	5 mg
CIL-PCB-74	2,4,4',5-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-74-C	2,4,4',5-Tetrachlorobiphenyl	5 mg
CIL-PCB-75	2,4,4',6-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-75-C	2,4,4',6-Tetrachlorobiphenyl	5 mg
CIL-PCB-76	2',3,4,5-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-76-C	2',3,4,5-Tetrachlorobiphenyl	5 mg
CIL-PCB-77	3,3',4,4'-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-77-C	3,3',4,4'-Tetrachlorobiphenyl	5 mg
CIL-PCB-78	3,3',4,5-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-78-C	3,3',4,5-Tetrachlorobiphenyl	5 mg
CIL-PCB-79	3,3',4,5'-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL

Code	Product	Unit
CIL-PCB-79-C	3,3',4,5'-Tetrachlorobiphenyl	5 mg
CIL-PCB-80	3,3',5,5'-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-80-C	3,3',5,5'-Tetrachlorobiphenyl	5 mg
CIL-PCB-81	3,4,4',5-Tetrachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-81-C	3,4,4',5-Tetrachlorobiphenyl	5 mg
CIL-PCB-82	2,2',3,3',4-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-82-C	2,2',3,3',4-Pentachlorobiphenyl	5 mg
CIL-PCB-83	2,2',3,3',5-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-83-C	2,2',3,3',5-Pentachlorobiphenyl	5 mg
CIL-PCB-84	2,2',3,3',6-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-84-C	2,2',3,3',6-Pentachlorobiphenyl	5 mg
CIL-PCB-85	2,2',3,4,4'-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-85-C	2,2',3,4,4'-Pentachlorobiphenyl	5 mg
CIL-PCB-86	2,2',3,4,5-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-86-C	2,2',3,4,5-Pentachlorobiphenyl	5 mg
CIL-PCB-87	2,2',3,4,5'-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-87-C	2,2',3,4,5'-Pentachlorobiphenyl	5 mg
CIL-PCB-88	2,2',3,4,6-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-88-C	2,2',3,4,6-Pentachlorobiphenyl	5 mg
CIL-PCB-89	2,2',3,4,6'-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-89-C	2,2',3,4,6'-Pentachlorobiphenyl	5 mg
CIL-PCB-90	2,2',3,4',5-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-90-C	2,2',3,4',5-Pentachlorobiphenyl	5 mg
CIL-PCB-91	2,2',3,4',6-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-91-C	2,2',3,4',6-Pentachlorobiphenyl	5 mg
CIL-PCB-92	2,2',3,5,5'-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-92-C	2,2',3,5,5'-Pentachlorobiphenyl	5 mg
CIL-PCB-93	2,2',3,5,6-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-93-C	2,2',3,5,6-Pentachlorobiphenyl	5 mg
CIL-PCB-94	2,2',3,5,6'-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-94-C	2,2',3,5,6'-Pentachlorobiphenyl	5 mg
CIL-PCB-95	2,2',3,5',6-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-95-C	2,2',3,5',6-Pentachlorobiphenyl	5 mg
CIL-PCB-96	2,2',3,6,6'-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-96-C	2,2',3,6,6'-Pentachlorobiphenyl	5 mg
CIL-PCB-97	2,2',3',4,5-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-97-C	2,2',3',4,5-Pentachlorobiphenyl	5 mg
CIL-PCB-98	2,2',3',4,6-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-98-C	2,2',3',4,6-Pentachlorobiphenyl	5 mg
CIL-PCB-99	2,2',4,4',5-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-99-C	2,2',4,4',5-Pentachlorobiphenyl	5 mg
CIL-PCB-100	2,2',4,4',6-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-100-C	2,2',4,4',6-Pentachlorobiphenyl	5 mg
CIL-PCB-101	2,2',4,5,5'-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-101-C	2,2',4,5,5'-Pentachlorobiphenyl	5 mg
CIL-PCB-102	2,2',4,5,6'-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-102-C	2,2',4,5,6'-Pentachlorobiphenyl	5 mg
CIL-PCB-103	2,2',4,5',6-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-103-C	2,2',4,5',6-Pentachlorobiphenyl	5 mg
CIL-PCB-104	2,2',4,6,6'-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-104-C	2,2',4,6,6'-Pentachlorobiphenyl	5 mg

Code	Product	Unit
CIL-PCB-105	2,3,3',4,4'-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-105-C	2,3,3',4,4'-Pentachlorobiphenyl	5 mg
CIL-PCB-106	2,3,3',4,5-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-106-C	2,3,3',4,5-Pentachlorobiphenyl	5 mg
CIL-PCB-107	2,3,3',4',5-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-107-C	2,3,3',4',5-Pentachlorobiphenyl	5 mg
CIL-PCB-108	2,3,3',4,5'-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-108-C	2,3,3',4,5'-Pentachlorobiphenyl	5 mg
CIL-PCB-109	2,3,3',4,6-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-109-C	2,3,3',4,6-Pentachlorobiphenyl	5 mg
CIL-PCB-110	2,3,3',4',6-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-110-C	2,3,3',4',6-Pentachlorobiphenyl	5 mg
CIL-PCB-111	2,3,3',5,5'-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-111-C	2,3,3',5,5'-Pentachlorobiphenyl	5 mg
CIL-PCB-112	2,3,3',5,6-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-112-C	2,3,3',5,6-Pentachlorobiphenyl	5 mg
CIL-PCB-113	2,3,3',5',6-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-113-C	2,3,3',5',6-Pentachlorobiphenyl	5 mg
CIL-PCB-114	2,3,4,4',5-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-114-C	2,3,4,4',5-Pentachlorobiphenyl	5 mg
CIL-PCB-115	2,3,4,4',6-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-115-C	2,3,4,4',6-Pentachlorobiphenyl	5 mg
CIL-PCB-116	2,3,4,5,6-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-116-C	2,3,4,5,6-Pentachlorobiphenyl	5 mg
CIL-PCB-117	2,3,4',5,6-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-117-C	2,3,4',5,6-Pentachlorobiphenyl	5 mg
CIL-PCB-118	2,3',4,4',5-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-118-C	2,3',4,4',5-Pentachlorobiphenyl	5 mg
CIL-PCB-119	2,3',4,4',6-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-119-C	2,3',4,4',6-Pentachlorobiphenyl	5 mg
CIL-PCB-120	2,3',4,5,5'-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-120-C	2,3',4,5,5'-Pentachlorobiphenyl	5 mg
CIL-PCB-121	2,3',4,5',6-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-121-C	2,3',4,5',6-Pentachlorobiphenyl	5 mg
CIL-PCB-122	2',3,3',4,5-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-122-C	2',3,3',4,5-Pentachlorobiphenyl	5 mg
CIL-PCB-123	2',3,4,4',5-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-123-C	2',3,4,4',5-Pentachlorobiphenyl	5 mg
CIL-PCB-124	2',3,4,5,5'-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-124-C	2',3,4,5,5'-Pentachlorobiphenyl	5 mg
CIL-PCB-125	2',3,4,5,6'-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-125-C	2',3,4,5,6'-Pentachlorobiphenyl	5 mg
CIL-PCB-126	3,3',4,4',5-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-126-C	3,3',4,4',5-Pentachlorobiphenyl	5 mg
CIL-PCB-127	3,3',4,5,5'-Pentachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-127-C	3,3',4,5,5'-Pentachlorobiphenyl	5 mg
CIL-PCB-128	2,2',3,3',4,4'-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-128-C	2,2',3,3',4,4'-Hexachlorobiphenyl	5 mg
CIL-PCB-129	2,2',3,3',4,5-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-129-C	2,2',3,3',4,5-Hexachlorobiphenyl	5 mg
CIL-PCB-130	2,2',3,3',4,5'-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL

Code	Product	Unit
CIL-PCB-130-C	2,2',3,3',4,5'-Hexachlorobiphenyl	5 mg
CIL-PCB-131	2,2',3,3',4,6-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-131-C	2,2',3,3',4,6-Hexachlorobiphenyl	5 mg
CIL-PCB-132	2,2',3,3',4,6'-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-132-C	2,2',3,3',4,6'-Hexachlorobiphenyl	5 mg
CIL-PCB-133	2,2',3,3',5,5'-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-133-C	2,2',3,3',5,5'-Hexachlorobiphenyl	5 mg
CIL-PCB-134	2,2',3,3',5,6-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-134-C	2,2',3,3',5,6-Hexachlorobiphenyl	5 mg
CIL-PCB-135	2,2',3,3',5,6'-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-135-C	2,2',3,3',5,6'-Hexachlorobiphenyl	5 mg
CIL-PCB-136	2,2',3,3',6,6'-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-136-C	2,2',3,3',6,6'-Hexachlorobiphenyl	5 mg
CIL-PCB-137	2,2',3,4,4',5-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-137-C	2,2',3,4,4',5-Hexachlorobiphenyl	5 mg
CIL-PCB-138	2,2',3,4,4',5'-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-138-C	2,2',3,4,4',5'-Hexachlorobiphenyl	5 mg
CIL-PCB-139	2,2',3,4,4',6-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-139-C	2,2',3,4,4',6-Hexachlorobiphenyl	5 mg
CIL-PCB-140	2,2',3,4,4',6'-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-140-C	2,2',3,4,4',6'-Hexachlorobiphenyl	5 mg
CIL-PCB-141	2,2',3,4,5,5'-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-141-C	2,2',3,4,5,5'-Hexachlorobiphenyl	5 mg
CIL-PCB-142	2,2',3,4,5,6-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-142-C	2,2',3,4,5,6-Hexachlorobiphenyl	5 mg
CIL-PCB-143	2,2',3,4,5,6'-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-143-C	2,2',3,4,5,6'-Hexachlorobiphenyl	5 mg
CIL-PCB-144	2,2',3,4,5',6-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-144-C	2,2',3,4,5',6-Hexachlorobiphenyl	5 mg
CIL-PCB-145	2,2',3,4,6,6'-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-145-C	2,2',3,4,6,6'-Hexachlorobiphenyl	5 mg
CIL-PCB-146	2,2',3,4',5,5'-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-146-C	2,2',3,4',5,5'-Hexachlorobiphenyl	5 mg
CIL-PCB-147	2,2',3,4',5,6-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-147-C	2,2',3,4',5,6-Hexachlorobiphenyl	5 mg
CIL-PCB-148	2,2',3,4',5,6'-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-148-C	2,2',3,4',5,6'-Hexachlorobiphenyl	5 mg
CIL-PCB-149	2,2',3,4',5',6-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-149-C	2,2',3,4',5',6-Hexachlorobiphenyl	5 mg
CIL-PCB-150	2,2',3,4',6,6'-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-150-C	2,2',3,4',6,6'-Hexachlorobiphenyl	5 mg
CIL-PCB-151	2,2',3,5,5',6-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-151-C	2,2',3,5,5',6-Hexachlorobiphenyl	5 mg
CIL-PCB-152	2,2',3,5,6,6'-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-152-C	2,2',3,5,6,6'-Hexachlorobiphenyl	5 mg
CIL-PCB-153	2,2',4,4',5,5'-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-153-C	2,2',4,4',5,5'-Hexachlorobiphenyl	5 mg
CIL-PCB-154	2,2',4,4',5,6'-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-154-C	2,2',4,4',5,6'-Hexachlorobiphenyl	5 mg
CIL-PCB-155	2,2',4,4',6,6'-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-155-C	2,2',4,4',6,6'-Hexachlorobiphenyl	5 mg

Code	Product	Unit
CIL-PCB-156	2,3,3',4,4',5-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-156-C	2,3,3',4,4',5-Hexachlorobiphenyl	5 mg
CIL-PCB-157	2,3,3',4,4',5'-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-157-C	2,3,3',4,4',5'-Hexachlorobiphenyl	5 mg
CIL-PCB-158	2,3,3',4,4',6-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-158-C	2,3,3',4,4',6-Hexachlorobiphenyl	5 mg
CIL-PCB-159	2,3,3',4,5,5'-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-159-C	2,3,3',4,5,5'-Hexachlorobiphenyl	5 mg
CIL-PCB-160	2,3,3',4,5,6-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-160-C	2,3,3',4,5,6-Hexachlorobiphenyl	5 mg
CIL-PCB-161	2,3,3',4,5',6-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-161-C	2,3,3',4,5',6-Hexachlorobiphenyl	5 mg
CIL-PCB-162	2,3,3',4',5,5'-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-162-C	2,3,3',4',5,5'-Hexachlorobiphenyl	5 mg
CIL-PCB-163	2,3,3',4',5,6-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-163-C	2,3,3',4',5,6-Hexachlorobiphenyl	5 mg
CIL-PCB-164	2,3,3',4',5',6-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-164-C	2,3,3',4',5',6-Hexachlorobiphenyl	5 mg
CIL-PCB-165	2,3,3',5,5',6-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-165-C	2,3,3',5,5',6-Hexachlorobiphenyl	5 mg
CIL-PCB-166	2,3,4,4',5,6-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-166-C	2,3,4,4',5,6-Hexachlorobiphenyl	5 mg
CIL-PCB-167	2,3',4,4',5,5'-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-167-C	2,3',4,4',5,5'-Hexachlorobiphenyl	5 mg
CIL-PCB-168	2,3',4,4',5',6-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-168-C	2,3',4,4',5',6-Hexachlorobiphenyl	5 mg
CIL-PCB-169	3,3',4,4',5,5'-Hexachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-169-C	3,3',4,4',5,5'-Hexachlorobiphenyl	5 mg
CIL-PCB-170	2,2',3,3',4,4',5-Heptachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-170-C	2,2',3,3',4,4',5-Heptachlorobiphenyl	5 mg
CIL-PCB-171	2,2',3,3',4,4',6-Heptachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-171-C	2,2',3,3',4,4',6-Heptachlorobiphenyl	5 mg
CIL-PCB-172	2,2',3,3',4,5,5'-Heptachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-172-C	2,2',3,3',4,5,5'-Heptachlorobiphenyl	5 mg
CIL-PCB-173	2,2',3,3',4,5,6-Heptachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-173-C	2,2',3,3',4,5,6-Heptachlorobiphenyl	5 mg
CIL-PCB-174	2,2',3,3',4,5,6'-Heptachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-174-C	2,2',3,3',4,5,6'-Heptachlorobiphenyl	5 mg
CIL-PCB-175	2,2',3,3',4,5',6-Heptachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-175-C	2,2',3,3',4,5',6-Heptachlorobiphenyl	5 mg
CIL-PCB-176	2,2',3,3',4,6,6'-Heptachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-176-C	2,2',3,3',4,6,6'-Heptachlorobiphenyl	5 mg
CIL-PCB-177	2,2',3,3',4',5,6-Heptachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-177-C	2,2',3,3',4',5,6-Heptachlorobiphenyl	5 mg
CIL-PCB-178	2,2',3,3',5,5',6-Heptachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-178-C	2,2',3,3',5,5',6-Heptachlorobiphenyl	5 mg
CIL-PCB-179	2,2',3,3',5,6,6'-Heptachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-179-C	2,2',3,3',5,6,6'-Heptachlorobiphenyl	5 mg
CIL-PCB-180	2,2',3,4,4',5,5'-Heptachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-180-C	2,2',3,4,4',5,5'-Heptachlorobiphenyl	5 mg
CIL-PCB-181	2,2',3,4,4',5,6-Heptachlorobiphenyl 35 µg/mL in Isooctane	1 mL

Code	Product	Unit
CIL-PCB-181-C	2,2',3,4,4',5,6-Heptachlorobiphenyl	5 mg
CIL-PCB-182	2,2',3,4,4',5,6'-Heptachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-182-C	2,2',3,4,4',5,6'-Heptachlorobiphenyl	5 mg
CIL-PCB-183	2,2',3,4,4',5,6'-Heptachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-183-C	2,2',3,4,4',5,6'-Heptachlorobiphenyl	5 mg
CIL-PCB-184	2,2',3,4,4',6,6'-Heptachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-184-C	2,2',3,4,4',6,6'-Heptachlorobiphenyl	5 mg
CIL-PCB-185	2,2',3,4,5,5',6-Heptachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-185-C	2,2',3,4,5,5',6-Heptachlorobiphenyl	5 mg
CIL-PCB-186	2,2',3,4,5,6,6'-Heptachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-186-C	2,2',3,4,5,6,6'-Heptachlorobiphenyl	5 mg
CIL-PCB-187	2,2',3,4',5,5',6-Heptachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-187-C	2,2',3,4',5,5',6-Heptachlorobiphenyl	5 mg
CIL-PCB-188	2,2',3,4',5,6,6'-Heptachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-188-C	2,2',3,4',5,6,6'-Heptachlorobiphenyl	5 mg
CIL-PCB-189	2,3,3',4,4',5,5'-Heptachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-189-C	2,3,3',4,4',5,5'-Heptachlorobiphenyl	5 mg
CIL-PCB-190	2,3,3',4,4',5,6-Heptachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-190-C	2,3,3',4,4',5,6-Heptachlorobiphenyl	5 mg
CIL-PCB-191	2,3,3',4,4',5',6-Heptachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-191-C	2,3,3',4,4',5',6-Heptachlorobiphenyl	5 mg
CIL-PCB-192	2,3,3',4,5,5,6'-Heptachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-192-C	2,3,3',4,5,5,6'-Heptachlorobiphenyl	5 mg
CIL-PCB-193	2,3,3',4',5,5',6-Heptachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-193-C	2,3,3',4',5,5',6-Heptachlorobiphenyl	5 mg
CIL-PCB-194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-194-C	2,2',3,3',4,4',5,5'-Octachlorobiphenyl	5 mg
CIL-PCB-195	2,2',3,3',4,4',5,6-Octachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-195-C	2,2',3,3',4,4',5,6-Octachlorobiphenyl	5 mg
CIL-PCB-196	2,2',3,3',4,4',5',6-Octachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-196-C	2,2',3,3',4,4',5',6-Octachlorobiphenyl	5 mg
CIL-PCB-197	2,2',3,3',4,4',6,6'-Octachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-197-C	2,2',3,3',4,4',6,6'-Octachlorobiphenyl	5 mg
CIL-PCB-198	2,2',3,3',4,5,5',6-Octachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-198-C	2,2',3,3',4,5,5',6-Octachlorobiphenyl	5 mg
CIL-PCB-199	2,2',3,3',4,5,6,6'-Octachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-199-C	2,2',3,3',4,5,6,6'-Octachlorobiphenyl	5 mg
CIL-PCB-200	2,2',3,3',4,5',6,6'-Octachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-200-C	2,2',3,3',4,5',6,6'-Octachlorobiphenyl	5 mg
CIL-PCB-201	2,2',3,3',4,5,5',6'-Octachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-201-C	2,2',3,3',4,5,5',6'-Octachlorobiphenyl	5 mg
CIL-PCB-202	2,2',3,3',5,5',6,6'-Octachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-202-C	2,2',3,3',5,5',6,6'-Octachlorobiphenyl	5 mg
CIL-PCB-203	2,2',3,4,4',5,5',6-Octachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-203-C	2,2',3,4,4',5,5',6-Octachlorobiphenyl	5 mg
CIL-PCB-204	2,2',3,4,4',5,6,6'-Octachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-204-C	2,2',3,4,4',5,6,6'-Octachlorobiphenyl	5 mg
CIL-PCB-205	2,3,3',4,4',5,5',6-Octachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-205-C	2,3,3',4,4',5,5',6-Octachlorobiphenyl	5 mg
CIL-PCB-206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-206-C	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	5 mg

PCB standards and standard mixtures

Code	Product	Unit
CIL-PCB-207	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-207-C	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	5 mg
CIL-PCB-208	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-208-C	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	5 mg
CIL-PCB-209	Decachlorobiphenyl 35 µg/mL in Isooctane	1 mL
CIL-PCB-209-C	Decachlorobiphenyl	5 mg

U.S. EPA Method 1668A/B standard mixtures

CIL-EC-4976 Method 1668A PCB Calibration Solutions [CS1 - CS5] 5 x 0.2 mL

Solvent: Nonane

All concentrations are in ng/mL (ppb)

Native Toxics/LOC Congeners	**CS0.2**	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**
2-MonoCB	0.2	1.0	5.0	50	400	2000
4-MonoCB	0.2	1.0	5.0	50	400	2000
2,2'-DiCB	0.2	1.0	5.0	50	400	2000
4,4'-DiCB	0.2	1.0	5.0	50	400	2000
2,2',6-TriCB	0.2	1.0	5.0	50	400	2000
3,4,4'-TriCB	0.2	1.0	5.0	50	400	2000
2,2',6,6'-TetraCB	0.2	1.0	5.0	50	400	2000
3,3',4,4'-TetraCB	0.2	1.0	5.0	50	400	2000
3,4,4',5-TetraCB	0.2	1.0	5.0	50	400	2000
2,2',4,6,6'-PentaCB	0.2	1.0	5.0	50	400	2000
2,3,3'4,4'-PentaCB	0.2	1.0	5.0	50	400	2000
2,3,4,4',5-PentaCB	0.2	1.0	5.0	50	400	2000
2,3',4,4',5-PentaCB	0.2	1.0	5.0	50	400	2000
2',3,4,4',5-PentaCB	0.2	1.0	5.0	50	400	2000
3,3',4,4',5-PentaCB	0.2	1.0	5.0	50	400	2000
2,2',4,4',6,6'-HexaCB	0.2	1.0	5.0	50	400	2000
2,3,3',4,4',5-HexaCB	0.2	1.0	5.0	50	400	2000
2,3,3',4,4',5'-HexaCB	0.2	1.0	5.0	50	400	2000
2,3',4,4',5,5'-HexaCB	0.2	1.0	5.0	50	400	2000
3,3',4,4',5,5'-HexaCB	0.2	1.0	5.0	50	400	2000
2,2',3,4',5,6,6'-HeptaCB	0.2	1.0	5.0	50	400	2000
2,3,3',4,4',5,5'-HeptaCB	0.2	1.0	5.0	50	400	2000
2,2',3,3',5,5',6,6'-OctaCB	0.2	1.0	5.0	50	400	2000
2,3,3',4,4',5,5',6-OctaCB	0.2	1.0	5.0	50	400	2000
2,2',3,3',4,4',5,5',6-NonaCB	0.2	1.0	5.0	50	400	2000
2,2',3,3',4,5,5',6,6'-NonaCB	0.2	1.0	5.0	50	400	2000
DecaCB	0.2	1.0	5.0	50	400	2000
^{13}C-Labelled Toxics/LOC	**CS0.2**	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**
2-MonoCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
4-MonoCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
2,2'-DiCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
4,4'-DiCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
2,2',6-TriCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
3,4,4'-TriCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
2,2',6,6'-TetraCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
2,2',4,6,6'-PentaCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
2,2',4,4',6,6'-HexaCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
2,2',3,4',5,6,6'-HeptaCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
2,2',3,3',5,5',6,6'-OctaCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
2,3,3',4,4',5,5',6-OctaCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
2,2',3,3',4,4',5,5',6-NonaCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
2,2',3,3',4,5,5',6,6'-NonaCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
DecaCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
^{13}C-Labelled Clean-Up	**CS0.2**	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**
2,4,4'-TriCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
2,3,3',5,5'-PentaCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
2,2',3,3',5,5',6-HeptaCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
^{13}C-Labelled Injection Internal	**CS0.2**	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**
2,5-DiCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
2,2',5,5'-TetraCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
2,2',4,5,5'-PentaCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
2,2',3,4,4',5'-HexaCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100
2,2',3,3',4,4',5,5'-OctaCB ($^{13}C_{12}$,99%)	100	100	100	100	100	100

CIL-EC-4976-0.2 Method 1668A High Sensitivity Calibration Solution [CS0.2] (not included in EC-4976) 0.2 mL

	Code	Product	Unit
	CIL-EC-4976-1	Method 1668A PCB Calibration Solutions [CS1]	0.2 mL
	CIL-EC-4976-2	Method 1668A PCB Calibration Solutions [CS2]	0.2 mL
	CIL-EC-4976-3	Method 1668A Calibration Verfication Solution [CS3]	0.2 mL
New	CIL-EC-4976-3-4	Method 1668A Calibration Verfication Solution [CS3]	4 x 0.2mL
	CIL-EC-4976-4	Method 1668A PCB Calibration Solutions [CS4]	0.2 mL
	CIL-EC-4976-5	Method 1668A PCB Calibration Solutions [CS5]	0.2 mL
	CIL-EC-4977	Method 1668A Labelled Toxics/LOC/Window Defining Solution	1.2 mL

Solvent: Nonane

Labelled PCBs	IUPAC#	Concentration
2-MonoCB ($^{13}C_{12}$,99%)	1L	1000 ng/mL
4-MonoCB ($^{13}C_{12}$,99%)	3L	1000 ng/mL
2,2'-DiCB ($^{13}C_{12}$,99%)	4L	1000 ng/mL
4,4'-DiCB ($^{13}C_{12}$,99%)	15L	1000 ng/mL
2,2',6-TriCB ($^{13}C_{12}$,99%)	19L	1000 ng/mL
3,4,4'-TriCB ($^{13}C_{12}$,99%)	37L	1000 ng/mL
2,2',6,6'-TetraCB ($^{13}C_{12}$,99%)	54L	1000 ng/mL
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77L	1000 ng/mL
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81L	1000 ng/mL
2,2',4,6,6'-PentaCB ($^{13}C_{12}$,99%)	104L	1000 ng/mL
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105L	1000 ng/mL
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114L	1000 ng/mL
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118L	1000 ng/mL
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123L	1000 ng/mL
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	126L	1000 ng/mL
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	155L	1000 ng/mL
2,2',4,4',6,6'-HexaCB ($^{13}C_{12}$,99%)	156L	1000 ng/mL
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157L	1000 ng/mL
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167L	1000 ng/mL
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169L	1000 ng/mL
2,2',3,4',5,6,6'-HeptaCB ($^{13}C_{12}$,99%)	188L	1000 ng/mL
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189L	1000 ng/mL
2,2',3,3',5,5',6,6'-OctaCB ($^{13}C_{12}$,99%)	202L	1000 ng/mL
2,3,3',4,4',5,5',6-OctaCB ($^{13}C_{12}$,99%)	205L	1000 ng/mL
2,2',3,3',4,4',5,5',6-NonaCB ($^{13}C_{12}$,99%)	206L	1000 ng/mL
2,2',3,3',4,5,5',6,6'-NonaCB ($^{13}C_{12}$,99%)	208L	1000 ng/mL
DecaCB ($^{13}C_{12}$,99%)	209L	1000 ng/mL

New	CIL-EC-4977-5	Method 1668A Labelled Toxics/LOC/Window Defining Solution	5 mL
	CIL-EC-4978	Method 1668A Labelled Clean-up Standard Solution	1.2 mL

Solvent: Nonane

Labelled PCBs	IUPAC#	Concentration
2,4,4'-TriCB ($^{13}C_{12}$,99%)	28L	1.0 µg/mL
2,3,3',5,5'-PentaCB ($^{13}C_{12}$,99%)	111L	1.0 µg/mL
2,2',3,3',5,5',6-HeptaCB ($^{13}C_{12}$,99%)	178L	1.0 µg/mL

	CIL-EC-4979	Method 1668A Labelled Injection Internal Standard Solution	1.2 mL

Solvent: Nonane

Labelled PCBs	IUPAC#	Concentration
2,5-DiCB ($^{13}C_{12}$,99%)	9L	5.0 µg/mL
2,2',5,5'-TetraCB ($^{13}C_{12}$,99%)	52L	5.0 µg/mL
2,2',4,5,5'-PentaCB ($^{13}C_{12}$,99%)	101L	5.0 µg/mL
2,2',3,4,4',5'-HexaCB ($^{13}C_{12}$,99%)	138L	5.0 µg/mL
2,2',3,3',4,4',5,5'-OctaCB ($^{13}C_{12}$,99%)	194L	5.0 µg/mL

PCB standards and standard mixtures

Code	Product	Unit
CIL-EC-4989	Native 1668A Native Toxics/LOC Solution	1.2 mL

Solvent: Nonane

Unlabelled PCBs	IUPAC#	Concentration
2-MonoCB	1	2.0 µg/mL
4-MonoCB	3	2.0 µg/mL
2,2'-DiCB	4	2.0 µg/mL
4,4'-DiCB	15	2.0 µg/mL
2,2',6-TriCB	19	2.0 µg/mL
3,4,4'-TriCB	37	2.0 µg/mL
2,2',6,6'-TetraCB	54	2.0 µg/mL
3,3',4,4'-TetraCB	77	2.0 µg/mL
3,4,4',5-TetraCB	81	2.0 µg/mL
2,2',4,6,6'-PentaCB	104	2.0 µg/mL
2,3,3',4,4'-PentaCB	105	2.0 µg/mL
2,3,4,4',5-PentaCB	114	2.0 µg/mL
2,3',4,4',5-PentaCB	118	2.0 µg/mL
2',3,4,4',5-PentaCB	123	2.0 µg/mL
3,3',4,4',5-PentaCB	126	2.0 µg/mL
2,2',4,4',6,6'-HexaCB	155	2.0 µg/mL
2,3,3',4,4',5-HexaCB	156	2.0 µg/mL
2,3,3',4,4',5'-HexaCB	157	2.0 µg/mL
2,3',4,4',5,5'-HexaCB	167	2.0 µg/mL
3,3',4,4',5,5'-HexaCB	169	2.0 µg/mL
2,2',3,4',5,6,6'-HeptaCB	188	2.0 µg/mL
2,3,3',4,4',5,5'-HeptaCB	189	2.0 µg/mL
2,2',3,3',5,5',6,6'-OctaCB	202	2.0 µg/mL
2,3,3',4,4',5,5',6-OctaCB	205	2.0 µg/mL
2,2',3,3',4,4',5,5',6-NonaCB	206	2.0 µg/mL
2,2',3,3',4,5,5',6,6'-NonaCB	208	2.0 µg/mL
DecaCB	209	2.0 µg/mL

EN-1948-4 PCB standards

CIL-EC-5380	EN-1948-4 WHO PCB Calibration Series	6 x 0.2 mL

Solvent: Nonane

All concentrations are in ng/mL

Native WHO PCBs	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CS6**
PCB #81	0,1	1	10	50	200	800
PCB #77	0,1	1	10	50	200	800
PCB #126	0,1	1	10	50	200	800
PCB #169	0,1	1	10	50	200	800
PCB #105	0,1	1	10	50	200	800
PCB #114	0,1	1	10	50	200	800
PCB #118	0,6	6	60	300	1200	4800
PCB #123	0,1	1	10	50	200	800
PCB #156	0,1	1	10	50	200	800
PCB #157	0,1	1	10	50	200	800
PCB #167	0,1	1	10	50	200	800
PCB #189	0,1	1	10	50	200	800
Sampling Standards	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CS6**
^{13}C PCB #60	10	10	10	10	10	10
^{13}C PCB #127	10	10	10	10	10	10
^{13}C PCB #159	10	10	10	10	10	10
Extraction Standards	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CS6**
^{13}C PCB #81	10	10	10	10	10	10
^{13}C PCB #77	10	10	10	10	10	10
^{13}C PCB #126	10	10	10	10	10	10
^{13}C PCB #169	10	10	10	10	10	10
^{13}C PCB #105	10	10	10	10	10	10
^{13}C PCB #114	10	10	10	10	10	10
^{13}C PCB #118	10	10	10	10	10	10
^{13}C PCB #123	10	10	10	10	10	10
^{13}C PCB #156	10	10	10	10	10	10
^{13}C PCB #157	10	10	10	10	10	10
^{13}C PCB #167	10	10	10	10	10	10
^{13}C PCB #189	10	10	10	10	10	10
Recovery Standards	CS1	CS2	CS3	CS4	CS5	CS6
^{13}C PCB #70	10	10	10	10	10	10
^{13}C PCB #111	10	10	10	10	10	10
^{13}C PCB #170	10	10	10	10	10	10

CIL-EC-5380-CS1	EN-1948-4 WHO PCB Calibration Series [CS1]	0.2 mL
CIL-EC-5380-CS2	EN-1948-4 WHO PCB Calibration Series [CS2]	0.2 mL
CIL-EC-5380-CS3	EN-1948-4 WHO PCB Calibration Series [CS3]	0.2 mL
CIL-EC-5380-CS4	EN-1948-4 WHO PCB Calibration Series [CS4]	0.2 mL
CIL-EC-5380-CS5	EN-1948-4 WHO PCB Calibration Series [CS5]	0.2 mL
CIL-EC-5380-CS6	EN-1948-4 WHO PCB Calibration Series [CS6]	0.2 mL

Code	Product	Unit

CIL-EC-5370 — EN-1948-4 PCB sampling standard — 1.2 mL

Solvent: Nonane

Labelled PCB	IUPAC#	Concentration
2,3,4,4'-TetraCB ($^{13}C_{12}$,99%)	60	100 ng/mL
3,3',4,5,5'-PentaCB ($^{13}C_{12}$,99%)	127	100 ng/mL
2,3,3',4,5,5'-HexaCB ($^{13}C_{12}$,99%)	159	100 ng/mL

New CIL-EC-5370-1/10X-10 — EN-1948-4 PCB sampling standard (1/10 concentration) — 10 mL

Solvent: Nonane

Labelled PCB	IUPAC#	Concentration
2,3,4,4'-TetraCB ($^{13}C_{12}$,99%)	60	10 ng/mL
3,3',4,5,5'-PentaCB ($^{13}C_{12}$,99%)	127	10 ng/mL
2,3,3',4,5,5'-HexaCB ($^{13}C_{12}$,99%)	159	10 ng/mL

CIL-EC-5372 — EN-1948-4 WHO PCB extraction standard — 1.2 mL

Solvent: Nonane

Labelled PCB	IUPAC#	Concentration
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	100 ng/mL
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77	100 ng/mL
3,3'4,4',5-PentaCB($^{13}C_{12}$,99%)	126	100 ng/mL
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	100 ng/mL
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	100 ng/mL
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114	100 ng/mL
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	100 ng/mL
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123	100 ng/mL
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	100 ng/mL
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	100 ng/mL
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167	100 ng/mL
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	100 ng/mL

CIL-EC-5372-1/10X-10 — EN-1948-4 WHO PCB extraction standard — 10 mL

Solvent: Nonane

Labelled PCB	IUPAC#	Concentration
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	10 ng/mL
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77	10 ng/mL
3,3'4,4',5-PentaCB($^{13}C_{12}$,99%)	126	10 ng/mL
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	10 ng/mL
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	10 ng/mL
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114	10 ng/mL
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	10 ng/mL
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123	10 ng/mL
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	10 ng/mL
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	10 ng/mL
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167	10 ng/mL
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	10 ng/mL

CIL-EC-5371 — EN-1948-4 PCB recovery standard — 1.2 mL

Solvent: Nonane

Labelled PCB	IUPAC#	Concentration
2,3',4',5-TetraCB ($^{13}C_{12}$,99%)	70	100 ng/mL
2,3,3',5,5'-PentaCB ($^{13}C_{12}$,99%)	111	100 ng/mL
2,2',3,3',4,4',5-HeptaCB ($^{13}C_{12}$,99%)	170	100 ng/mL

CIL-EC-5385 — EN-1948-4 Marker PCB Calibration Series — 6 x 0.2 mL

Solvent: Nonane

All concentrations are in pg/µL

Native Marker PCBs	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CS6**
PCB #28	0,1	1	10	100	500	5000
PCB #52	0,1	1	10	100	500	5000
PCB #101	0,1	1	10	100	500	5000
PCB #153	0,1	1	10	100	500	5000
PCB #138	0,1	1	10	100	500	5000
PCB #180	0,1	1	10	100	500	5000
Sampling Standards	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CS6**
^{13}C PCB #60	10	10	10	10	10	10
^{13}C PCB #127	10	10	10	10	10	10
^{13}C PCB #159	10	10	10	10	10	10
Extraction Standards	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CS6**
^{13}C PCB #28	100	100	100	100	100	100
^{13}C PCB #52	100	100	100	100	100	100
^{13}C PCB #101	100	100	100	100	100	100
^{13}C PCB #153	100	100	100	100	100	100
^{13}C PCB #138	100	100	100	100	100	100
^{13}C PCB #180	100	100	100	100	100	100
Recovery Standards	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CS6**
^{13}C PCB #70	10	10	10	10	10	10
^{13}C PCB #111	10	10	10	10	10	10
^{13}C PCB #170	10	10	10	10	10	10

CIL-EC-5385-CS1 — EN-1948-4 Marker PCB Calibration Series [CS1] — 0.2 mL

PCB standards and standard mixtures

Code	Product	Unit
CIL-EC-5385-CS2	EN-1948-4 Marker PCB Calibration Series [CS2]	0.2 mL
CIL-EC-5385-CS3	EN-1948-4 Marker PCB Calibration Series [CS3]	0.2 mL
CIL-EC-5385-CS4	EN-1948-4 Marker PCB Calibration Series [CS4]	0.2 mL
CIL-EC-5385-CS5	EN-1948-4 Marker PCB Calibration Series [CS5]	0.2 mL
CIL-EC-5385-CS6	EN-1948-4 Marker PCB Calibration Series [CS6]	0.2 mL
CIL-EC-5379	EN-1948-4 Marker PCB extraction standard	1.2 mL

Solvent: Nonane

Labelled PCB	IUPAC#	Concentration
2,4,4'-TriCB ($^{13}C_{12}$,99%)	28	1000 ng/mL
2,2',5,5'-TetraCB ($^{13}C_{12}$,99%)	52	1000 ng/mL
2,2',4,5,5'-PentaCB ($^{13}C_{12}$,99%)	101	1000 ng/mL
2,2',3,4,4',5-HexaCB($^{13}C_{12}$,99%)	138	1000 ng/mL
2,2',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	153	1000 ng/mL
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	1000 ng/mL

New	CIL-EC-5379-5X1.2	EN-1948-4 Marker PCB extraction standard	5 x 1.2 mL
	CIL-EC-5379-1/10X-10	EN-1948-4 Marker PCB extraction standard	10 mL

Solvent: Nonane

Labelled PCB	IUPAC#	Concentration
2,4,4'-TriCB ($^{13}C_{12}$,99%)	28	100 ng/mL
2,2',5,5'-TetraCB ($^{13}C_{12}$,99%)	52	100 ng/mL
2,2',4,5,5'-PentaCB ($^{13}C_{12}$,99%)	101	100 ng/mL
2,2',3,4,4',5-HexaCB($^{13}C_{12}$,99%)	138	100 ng/mL
2,2',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	153	100 ng/mL
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	100 ng/mL

Japanese Industrial Standard (JIS) Methods K0311 and K0312 standard mixtures

CIL-EC-5033... JIS PCB Calibration Solutions — Each

Solvent: Nonane

All concentrations are in ng/mL

Unlabelled PCBs	**IUPAC#**	**CS0.1**	**CS0.25**	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**
3,3',4,4'-TetraCB	77	0.1	0.25	1	5	25	100	500
3,4,4',5-TetraCB	81	0.1	0.25	1	5	25	100	500
2,3,3',4,4'-PentaCB	105	0.1	0.25	1	5	25	100	500
2,3,4,4',5-PentaCB	114	0.1	0.25	1	5	25	100	500
2,3',4,4',5-PentaCB	118	0.1	0.25	1	5	25	100	500
2',3,4,4',5-PentaCB	123	0.1	0.25	1	5	25	100	500
3,3',4,4',5-PentaCB	126	0.1	0.25	1	5	25	100	500
2,3,3',4,4',5-HexaCB	156	0.1	0.25	1	5	25	100	500
2,3,3',4,4',5'-HexaCB	157	0.1	0.25	1	5	25	100	500
2,3',4,4',5,5'-HexaCB	167	0.1	0.25	1	5	25	100	500
3,3',4,4',5,5'-HexaCB	169	0.1	0.25	1	5	25	100	500
2,2',3,3',4,4',5-HeptaCB	170	0.1	0.25	1	5	25	100	500
2,2',3,4,4',5,5'-HeptaCB	180	0.1	0.25	1	5	25	100	500
2,3,3',4,4',5,5'-HeptaCB	189	0.1	0.25	1	5	25	100	500

Labelled PCBs	**IUPAC#**	**CS0.1**	**CS0.25**	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77	10	10	10	10	10	10	10
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	10	10	10	10	10	10	10
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	10	10	10	10	10	10	10
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	10	10	10	10	10	10	10
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	126	10	10	10	10	10	10	10
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	10	10	10	10	10	10	10
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167	10	10	10	10	10	10	10
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	10	10	10	10	10	10	10
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	10	10	10	10	10	10	10

CIL-EC-5033	JIS PCB Calibration Solutions : low concentrations [CS1-CS5]	5 x 0.2 mL
CIL-EC-5033-1	JIS PCB Calibration Solution: low concentration [CS1]	0.2 mL
CIL-EC-5033-2	JIS PCB Calibration Solution: low concentration [CS2]	0.2 mL
CIL-EC-5033-3	JIS PCB Calibration Solution: low concentration [CS3]	0.2 mL
CIL-EC-5033-4	JIS PCB Calibration Solution: low concentration [CS4]	0.2 mL
CIL-EC-5033-5	JIS PCB Calibration Solution: low concentration [CS5]	0.2 mL
CIL-EC-4970-A	JIS PCB Type 1 Syringe Standard Solution	3 mL

Solvent: Nonane

Labelled PCB	IUPAC#	Concentration
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	2 µg/mL

	Code	Product	Unit
New	CIL-EC-5323-H-E	Modified JiS PCB Extended Calibration Solutions [CS0.4H-CS6H]	7 x 0.2 mL

Solvent: Nonane/Isooctane

All concentrations are in ng/mL (ppb)

Unlabelled PCBs	IUPAC	CS0.4H	CS1H	CS2H	CS3H	CS4H	CS5H	CS6H
3,4,4',5-TetraCB	81	0.1	0.25	1	5	20	100	500
3,3',4,4'-TetraCB	77	0.1	0.25	1	5	20	100	500
3,3',4,4',5-PentaCB	126	0.1	0.25	1	5	20	100	500
3,3',4,4',5,5'-HexaCB	169	0.1	0.25	1	5	20	100	500
2',3,4,4',5-PentaCB	123	0.1	0.25	1	5	20	100	500
2,3',4,4',5-PentaCB	118	0.1	0.25	1	5	20	100	500
2,3,3',4,4'-PentaCB	105	0.1	0.25	1	5	20	100	500
2,3,4,4',5-PentaCB	114	0.1	0.25	1	5	20	100	500
2,3',4,4',5,5'-HexaCB	167	0.1	0.25	1	5	20	100	500
2,3,3',4,4',5-HexaCB	156	0.1	0.25	1	5	20	100	500
2,3,3',4,4',5'-HexaCB	157	0.1	0.25	1	5	20	100	500
2,3,3',4,4',5,5'-HeptaCB	189	0.1	0.25	1	5	20	100	500
2,2',3,3',4,4',5-HeptaCB	170	0.1	0.25	1	5	20	100	500
2,2',3,4,4',5,5'-HeptaCB	180	0.1	0.25	1	5	20	100	500

Labelled PCBs	IUPAC	CS0.4H	CS1H	CS2H	CS3H	CS4H	CS5H	CS6H
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	10	10	10	10	10	10	10
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77	10	10	10	10	10	10	10
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	126	10	10	10	10	10	10	10
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	10	10	10	10	10	10	10
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123	10	10	10	10	10	10	10
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	20	20	20	20	20	20	20
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	20	20	20	20	20	20	20
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114	10	10	10	10	10	10	10
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167	10	10	10	10	10	10	10
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	20	20	20	20	20	20	20
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	10	10	10	10	10	10	10
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	10	10	10	10	10	10	10
2,2',3,3',4,4',5-HeptaCB ($^{13}C_{12}$,99%)	170	10	10	10	10	10	10	10
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	10	10	10	10	10	10	10
2,3',4',5-TetraCB ($^{13}C_{12}$,99%)	70	10	10	10	10	10	10	10
2,3,3',5,5'-PentaCB ($^{13}C_{12}$,99%)	111	10	10	10	10	10	10	10
2,2',3,4,4',5'-HexaCB ($^{13}C_{12}$,99%)	138	10	10	10	10	10	10	10
2,2',3,3',5,5',6-HeptaCB ($^{13}C_{12}$,99%)	178	10	10	10	10	10	10	10
3,3',4,5'-TetraCB ($^{13}C_{12}$,99%)	79	10	10	10	10	10	10	10

New	CIL-EC-5323-CS0.4H	Modified JiS PCB Extended Calibration Solution [CS0.4]	0.2 mL
New	CIL-EC-5323-H	Modified JiS PCB Calibration Solutions [CS1H-CS5H]	5 x 0.2 mL
New	CIL-EC-5323-CS1H	Modified JiS PCB Extended Calibration Solution [CS1]	0.2 mL
New	CIL-EC-5323-CS2H	Modified JiS PCB Extended Calibration Solution [CS2]	0.2 mL
New	CIL-EC-5323-CS3H	Modified JiS PCB Extended Calibration Solution [CS3]	0.2 mL
New	CIL-EC-5323-CS4H	Modified JiS PCB Extended Calibration Solution [CS4]	0.2 mL
New	CIL-EC-5323-CS5H	Modified JiS PCB Extended Calibration Solution [CS5]	0.2 mL
New	CIL-EC-5323-CS6H	Modified JiS PCB Extended Calibration Solution [CS6]	0.2 mL
New	CIL-EC-5324	Modified JiS PCB Cleanup Spike	1.2 mL

Solvent: Nonane

Labelled PCBs	IUPAC#	Concentration
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	50 ng/mL
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77	50 ng/mL
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123	50 ng/mL
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	100 ng/mL
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114	50 ng/mL
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	100 ng/mL
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	126	50 ng/mL
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167	50 ng/mL
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	100 ng/mL
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	50 ng/mL
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	50 ng/mL
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	50 ng/mL
2,2',3,3',4,4',5-HeptaCB ($^{13}C_{12}$,99%)	170	50 ng/mL
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	50 ng/mL

New	CIL-EC-5325	Modified JIS PCB Syringe Spike ($^{13}C_{12}$,99%)	1.2 mL

Solvent: Nonane

^{13}C-Labelled PCBs	IUPAC#	Concentration
$^{13}C_{12}$-2,3',4',5-Tetrachlorobiphenyl	70	50 ng/mL
$^{13}C_{12}$-2,3,3',5,5'-Pentachlorobiphenyl	111	50 ng/mL
$^{13}C_{12}$-2,2',3,4,4',5'- Hexachlorobiphenyl	138	50 ng/mL
$^{13}C_{12}$-2,2',3,3',5,5',6-Heptachlorobiphenyl	178	50 ng/mL

	Code	Product	Unit
New	CIL-EC-5325-0.2X	Modified JIS PCB Syringe Spike ($^{13}C_{12}$,99%) Solvent: Nonane	10 mL

^{13}C-Labeled PCBs	IUPAC#	Concentration
$^{13}C_{12}$-2,3',4',5-Tetrachlorobiphenyl	70	10 ng/mL
$^{13}C_{12}$-2,3,3',5,5'-Pentachlorobiphenyl	111	10 ng/mL
$^{13}C_{12}$-2,2',3,4,4',5'- Hexachlorobiphenyl	138	10 ng/mL
$^{13}C_{12}$-2,2',3,3',5,5',6-Heptachlorobiphenyl	178	10 ng/mL

New	CIL-EC-5325-20X	Modified JIS PCB Syringe Spike ($^{13}C_{12}$,99%) Solvent: Nonane	1.2 mL

^{13}C-Labeled PCBs	IUPAC#	Concentration
$^{13}C_{12}$-2,3',4',5-Tetrachlorobiphenyl	70	1000 ng/mL
$^{13}C_{12}$-2,3,3',5,5'-Pentachlorobiphenyl	111	1000 ng/mL
$^{13}C_{12}$-2,2',3,4,4',5'- Hexachlorobiphenyl	138	1000 ng/mL
$^{13}C_{12}$-2,2',3,3',5,5',6-Heptachlorobiphenyl	178	1000 ng/mL

New	CIL-EC-5326	Modified JiS PCB Sampling Spike Solvent: Nonane	1.2 mL

Labelled PCB	**IUPAC#**	**Concentration**
3,3',4,5'-TetraCB ($^{13}C_{12}$,99%)	79	50 ng/mL

	CIL-EC-5360	Modified JIS PCB Alt A Extended Calibration Solutions [CS0.4H-CS6H] (unlabeled/$^{13}C^{12}$,99%) Solvent: Nonane	7 x 0.2 mL

All concentrations are in ng/mL

Unlabelled PCBs	**IUPAC #**	**CS0.4H**	**CS1H**	**CS2H**	**CS3H**	**CS4H**	**CS5H**	**CS6H**
3,4,4',5-TetraCB	81	0.1	0.25	1	5	20	100	500
3,3',4,4'-TetraCB	77	0.1	0.25	1	5	20	100	500
3,3',4,4',5-PentaCB	126	0.1	0.25	1	5	20	100	500
3,3',4,4',5,5'-HexaCB	169	0.1	0.25	1	5	20	100	500
2',3,4,4',5-PentaCB	123	0.1	0.25	1	5	20	100	500
2,3',4,4',5-PentaCB	118	0.2	0.5	2	10	40	200	1000
2,3,3',4,4'-PentaCB	105	0.2	0.5	2	10	40	200	1000
2,3,4,4',5-PentaCB	114	0.1	0.25	1	5	20	100	500
2,3',4,4',5,5'-HexaCB	167	0.1	0.25	1	5	20	100	500
2,3,3',4,4',5-HexaCB	156	0.2	0.5	2	10	40	200	1000
2,3,3',4,4',5'-HexaCB	157	0.1	0.25	1	5	20	100	500
2,3,3',4,4',5,5'-HeptaCB	189	0.1	0.25	1	5	20	100	500
2,2',3,3',4,4',5-HeptaCB	170	0.1	0.25	1	5	20	100	500
2,2',3,4,4',5,5'-HeptaCB	180	0.1	0.25	1	5	20	100	500

Labelled PCBs	**IUPAC #**	**CS0.4H**	**CS1H**	**CS2H**	**CS3H**	**CS4H**	**CS5H**	**CS6H**
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	10	10	10	10	10	10	10
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77	10	10	10	10	10	10	10
3,3',4,4',5-PentaCB($^{13}C_{12}$,99%)	126	10	10	10	10	10	10	10
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	10	10	10	10	10	10	10
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123	10	10	10	10	10	10	10
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	20	20	20	20	20	20	20
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	20	20	20	20	20	20	20
2,3,4,4',5-PentaCB($^{13}C_{12}$,99%)	114	10	10	10	10	10	10	10
2,3',4,4',5,5'-HexaCB($^{13}C_{12}$,99%)	167	10	10	10	10	10	10	10
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	20	20	20	20	20	20	20
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	10	10	10	10	10	10	10
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	10	10	10	10	10	10	10
2,2',3,3',4,4',5-HeptaCB ($^{13}C_{12}$,99%)	170	10	10	10	10	10	10	10
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	10	10	10	10	10	10	10
2,3',4',5-TetraCB ($^{13}C_{12}$,99%)	70	10	10	10	10	10	10	10
2,3,3',5,5'-PentaCB ($^{13}C_{12}$,99%)	111	10	10	10	10	10	10	10
2,2',3,4,4',5'-HexaCB ($^{13}C_{12}$,99%)	138	10	10	10	10	10	10	10
2,2',3,3',5,5',6-HeptaCB ($^{13}C_{12}$,99%)	178	10	10	10	10	10	10	10
3,3',4,5'-TetraCB ($^{13}C_{12}$,99%)	79	10	10	10	10	10	10	10

CIL-EC-5360-CS0.4H	Modified JIS PCB alt A Extended Calibration Solution [CS0.4H]	0.2 mL
CIL-EC-5360-CS1H	Modified JIS PCB alt A Extended Calibration Solution [CS1H]	0.2 mL
CIL-EC-5360-CS2H	Modified JIS PCB alt A Extended Calibration Solution [CS2H]	0.2 mL
CIL-EC-5360-CS3H	Modified JIS PCB alt A Extended Calibration Solution [CS3H]	0.2 mL
CIL-EC-5360-CS4H	Modified JIS PCB alt A Extended Calibration Solution [CS4H]	0.2 mL
CIL-EC-5360-CS5H	Modified JIS PCB alt A Extended Calibration Solution[CS5H]	0.2 mL
CIL-EC-5360-CS6H	Modified JIS PCB alt A Extended Calibration Solution[CS6H]	0.2 mL

	Code	Product	Unit
New	CIL-EC-5418	Modified JIS PCB alternative calibration solutions [CS1H-CS5H]	5 x 0.2 mL

Solvent: Nonane

All concentrations are in ng/mL (ppb)

Unlabelled PCBs	IUPAC#	CS0.4	CS1	CS2	CS3	CS4	CS5	CS6
3,4,4',5-TetraCB	81	0.1	0.25	1	5	20	100	500
3,3',4,4'-TetraCB	77	0.1	0.25	1	5	20	100	500
3,3',4,4',5-PentaCB	126	0.1	0.25	1	5	20	100	500
3,3',4,4',5,5'-HexaCB	169	0.1	0.25	1	5	20	100	500
2',3,4,4',5-PentaCB	123	0.1	0.25	1	5	20	100	500
2,3',4,4',5-PentaCB	118	0.2	0.5	2	10	40	200	1000
2,3,3',4,4'-PentaCB	105	0.2	0.5	2	10	40	200	1000
2,3,4,4',5-PentaCB	114	0.1	0.25	1	5	20	100	500
2,3',4,4',5,5'-HexaCB	167	0.1	0.25	1	5	20	100	500
2,3,3',4,4',5-HexaCB	156	0.2	0.5	2	10	40	200	1000
2,3,3',4,4',5'-HexaCB	157	0.1	0.25	1	5	20	100	500
2,3,3',4,4',5,5'-HeptaCB	189	0.1	0.25	1	5	20	100	500

Labelled PCBs	IUPAC#	CS0.4	CS1	CS2	CS3	CS4	CS5	CS6
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	4	10	10	10	10	10	10
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77	4	10	10	10	10	10	10
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	126	4	10	10	10	10	10	10
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	4	10	10	10	10	10	10
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123	4	10	10	10	10	10	10
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	8	20	20	20	20	20	20
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	8	20	20	20	20	20	20
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114	4	10	10	10	10	10	10
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167	4	10	10	10	10	10	10
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	8	20	20	20	20	20	20
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	4	10	10	10	10	10	10
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	4	10	10	10	10	10	10
2,2',3,3',4,4',5-HeptaCB ($^{13}C_{12}$,99%)	170	4	10	10	10	10	10	10
2,3',4',5-TetraCB ($^{13}C_{12}$,99%)	70	4	10	10	10	10	10	10
2,3,3',5,5'-PentaCB ($^{13}C_{12}$,99%)	111	4	10	10	10	10	10	10
2,2',3,4,4',5'-HexaCB ($^{13}C_{12}$,99%)	138	4	10	10	10	10	10	10
3,3',4,5'-TetraCB ($^{13}C_{12}$,99%)	79	4	10	10	10	10	10	10

New	CIL-EC-5418-CS0.4H	Modified JIS PCB alternative calibration solution [CS0.4H]	0.2 mL
New	CIL-EC-5418-CS1H	Modified JIS PCB alternative calibration solution [CS1H]	0.2 mL
New	CIL-EC-5418-CS2H	Modified JIS PCB alternative calibration solution [CS2H]	0.2 mL
New	CIL-EC-5418-CS3H	Modified JIS PCB alternative calibration solution [CS3H]	0.2 mL
New	CIL-EC-5418-CS4H	Modified JIS PCB alternative calibration solution [CS4H]	0.2 mL
New	CIL-EC-5418-CS5H	Modified JIS PCB alternativet calibration solution [CS5H]	0.2 mL
New	CIL-EC-5418-CS6H	Modified JIS PCB alternative calibration solution [CS6H]	0.2 mL
New	CIL-EC-5419	Modified JIS PCB alternate B cleanup solution	1.2 mL

Solvent: Nonane

Labelled PCBs	IUPAC#	Concentration
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	50 ng/mL
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77	50 ng/mL
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123	50 ng/mL
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	100 ng/mL
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114	50 ng/mL
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	100 ng/mL
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	126	50 ng/mL
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167	50 ng/mL
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	100 ng/mL
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	50 ng/mL
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	50 ng/mL
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	50 ng/mL

New	CIL-EC-5420	Modified JIS PCB alternate B syringe spike	1.2 mL

Solvent: Nonane

Labelled PCBs	IUPAC#	Concentration
2,3',4',5-TetraCB ($^{13}C_{12}$,99%)	70	50 ng/mL
2,3,3',5,5'-PentaCB ($^{13}C_{12}$,99%)	111	50 ng/mL
2,2',3,4,4',5'-HexaCB ($^{13}C_{12}$,99%)	138	50 ng/mL
2,2',3,3',4,4',5-HeptaCB ($^{13}C_{12}$,99%)	170	50 ng/mL

Code	Product	Unit

WHO PCB mixtures

CIL-EC-4939 — WHO Coplanar & mono-ortho PCBs &PCB-170/180 Calibration Set — 5 x 0.2 mL

Solvent: Nonane

All concentrations are in ng/mL (ppb)

Unlabelled PCBs	IUPAC#	CS1	CS2	CS3	CS4	CS5
3,3',4,4'-TetraCB	77	1.0	5.0	25	100	500
3,4,4',5-TetraCB	81	1.0	5.0	25	100	500
2,3,3',4,4'-PentaCB	105	1.0	5.0	25	100	500
2,3,4,4',5-PentaCB	114	1.0	5.0	25	100	500
2,3',4,4',5-PentaCB	118	1.0	5.0	25	100	500
2',3,4,4',5-PentaCB	123	1.0	5.0	25	100	500
3,3',4,4',5-PentaCB	126	1.0	5.0	25	100	500
2,3,3',4,4',5-HexaCB	156	1.0	5.0	25	100	500
2,3,3',4,4',5'-HexaCB	157	1.0	5.0	25	100	500
2,3',4,4',5,5'-HexaCB	167	1.0	5.0	25	100	500
3,3',4,4',5,5'-HexaCB	169	1.0	5.0	25	100	500
2,2',3,3',4,4',5-HeptaCB	170	1.0	5.0	25	100	500
2,2',3,4,4',5,5'-HeptaCB	180	1.0	5.0	25	100	500
2,3,3',4,4',5,5'-HeptaCB	189	1.0	5.0	25	100	500

Labelled PCBs	IUPAC#	CS1	CS2	CS3	CS4	CS5
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77	100	100	100	100	100
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	100	100	100	100	100
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	100	100	100	100	100
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114	100	100	100	100	100
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	100	100	100	100	100
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123	100	100	100	100	100
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	126	100	100	100	100	100
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	100	100	100	100	100
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	100	100	100	100	100
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167	100	100	100	100	100
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	100	100	100	100	100
2,2',3,3',4,4',5-HeptaCB ($^{13}C_{12}$,99%)	170	100	100	100	100	100
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	100	100	100	100	100
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	100	100	100	100	100

CIL-EC-4939-1	WHO Coplanar & mono-ortho PCBs & PCB-170, 180 Calibration Solution [CS1]	200 µL
CIL-EC-4939-2	WHO Coplanar & mono-ortho PCBs & PCB-170, 180 Calibration Solution [CS2]	200 µL
CIL-EC-4939-3	WHO Coplanar & mono-ortho PCBs & PCB-170, 180 Calibration Solution [CS3]	200 µL
CIL-EC-4939-4	WHO Coplanar & mono-ortho PCBs & PCB-170, 180 Calibration Solution [CS4]	200 µL
CIL-EC-4939-5	WHO Coplanar & mono-ortho PCBs & PCB-170, 180 Calibration Solution [CS5]	200 µL

CIL-EC-5186 — World Health Organization PCBs + PCB-170 + PCB-180 + Syringe PCB Calibration Solution [CS1 - CS5] — 5 x 0.2 mL

Solvent: Nonane

All concentrations are in ng/mL

Unlabelled PCBs	IUPAC#	CS1	CS2	CS3	CS4	CS5
3,3',4,4'-TetraCB	77	0.5	2	10	50	250
3,4,4',5-TetraCB	81	0.5	2	10	50	250
3,3',4,4',5-PentaCB	126	0.5	2	10	50	250
3,3',4,4',5,5'-HexaCB	169	0.5	2	10	50	250
2',3,4,4',5-PentaCB	123	0.5	2	10	50	250
2,3',4,4',5-PentaCB	118	0.5	2	10	50	250
2,3,3',4,4'-PentaCB	105	0.5	2	10	50	250
2,3,4,4',5-PentaCB	114	0.5	2	10	50	250
2,3',4,4',5,5'-HexaCB	167	0.5	2	10	50	250
2,3,3',4,4',5-HexaCB	156	0.5	2	10	50	250
2,3,3',4,4',5'-HexaCB	157	0.5	2	10	50	250
2,3,3',4,4',5,5'-HeptaCB	189	0.5	2	10	50	250
2,2',3,4,4',5,5'-HeptaCB	180	0.5	2	10	50	250
2,2',3,3',4,4',5-HeptaCB	170	0.5	2	10	50	250

Labelled PCBs	IUPAC#	CS1	CS2	CS3	CS4	CS5
3,3',4,5'-TetraCB ($^{13}C_{12}$,99%)	79	10	10	10	10	10
2,3',4',5-TetraCB ($^{13}C_{12}$,99%)	70	10	10	10	10	10
2,3,3',5,5'-PentaCB ($^{13}C_{12}$,99%)	111	10	10	10	10	10
2,2',3,4,4',5-HexaCB ($^{13}C_{12}$,99%)	138	10	10	10	10	10
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77	10	10	10	10	10
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	10	10	10	10	10
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	126	10	10	10	10	10
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	10	10	10	10	10
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123	10	10	10	10	10
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	10	10	10	10	10
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	10	10	10	10	10
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114	10	10	10	10	10
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167	10	10	10	10	10
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	10	10	10	10	10
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	10	10	10	10	10
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	10	10	10	10	10
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	10	10	10	10	10
2,2',3,3',4,4',5-HeptaCB ($^{13}C_{12}$,99%)	170	10	10	10	10	10

Code	Product	Unit
CIL-EC-5186-CS1	World Health Organization PCBs + PCB-170 + PCB-180 + Syringe PCB Calibration Solution [CS1]	0.2 mL
CIL-EC-5186-CS2	World Health Organization PCBs + PCB-170 + PCB-180 + Syringe PCB Calibration Solution [CS2]	0.2 mL
CIL-EC-5186-CS3	World Health Organization PCBs + PCB-170 + PCB-180 + Syringe PCB Calibration Solution [CS3]	0.2 mL
CIL-EC-5186-CS4	World Health Organization PCBs + PCB-170 + PCB-180 + Syringe PCB Calibration Solution [CS4]	0.2 mL
CIL-EC-5186-CS5	World Health Organization PCBs + PCB-170 + PCB-180 + Syringe PCB Calibration Solution [CS5]	0.2 mL
CIL-EC-5044	WHO PCB+PCB-170+PCB-180 Calibration Solutions [CS1-CS5] (unlabelled/$^{13}C_{12}$,99%)	5 x 0.2 mL

Solvent: Nonane

All concentrations are in ng/mL

Unlabelled PCBs	IUPAC #	CS1	CS2	CS3	CS4	CS5
3,3',4,4'-TetraCB	77	0.4	2	10	40	200
3,4,4',5-TetraCB	81	0.4	2	10	40	200
3,3',4,4',5-PentaCB	126	0.4	2	10	40	200
3,3',4,4',5,5'-HexaCB	169	0.4	2	10	40	200
2,3,3',4,4'-PentaCB	105	0.4	2	10	40	200
2,3,4,4',5-PentaCB	114	0.4	2	10	40	200
2,3',4,4',5-PentaCB	118	0.4	2	10	40	200
2',3,4,4',5-PentaCB	123	0.4	2	10	40	200
2,3,3',4,4',5-HexaCB	156	0.4	2	10	40	200
2,3,3',4,4',5'-HexaCB	157	0.4	2	10	40	200
2,3',4,4',5,5'-HexaCB	167	0.4	2	10	40	200
2,3,3',4,4',5,5'-HeptaCB	189	0.4	2	10	40	200
2,2',3,4,4',5,5'-HeptaCB	180	0.4	2	10	40	200
2,2',3,3',4,4',5-HeptaCB	170	0.4	2	10	40	200

Labelled PCBs	IUPAC #	CS1	CS2	CS3	CS4	CS5
2,3',4',5-TetraCB ($^{13}C_{12}$,99%)	70	20	20	20	20	20
3,3',4,5'-TetraCB ($^{13}C_{12}$,99%)	79	20	20	20	20	20
2,3,3',5,5'-PentaCB($^{13}C_{12}$,99%)	111	20	20	20	20	20
2,2',3,4,4',5'-HexaCB ($^{13}C_{12}$,99%)	138	20	20	20	20	20
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77	20	20	20	20	20
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	20	20	20	20	20
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	126	20	20	20	20	20
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	20	20	20	20	20
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	20	20	20	20	20
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114	20	20	20	20	20
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	20	20	20	20	20
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123	20	20	20	20	20
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	20	20	20	20	20
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	20	20	20	20	20
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167	20	20	20	20	20
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	20	20	20	20	20
22,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	20	20	20	20	20
,2',3,3',4,4',5-HeptaCB ($^{13}C_{12}$,99%)	170	20	20	20	20	20

New	CIL-EC-5044-CS1	WHO PCB+PCB-170+PCB-180 Calibrations Solution [CS1] (unlabelled/$^{13}C_{12}$,99%)	0.2 mL
New	CIL-EC-5044-CS2	WHO PCB+PCB-170+PCB-180 Calibrations solutions [CS2] (unlabelled/$^{13}C_{12}$,99%)	0.2 mL
New	CIL-EC-5044-CS3	WHO PCB+PCB-170+PCB-180 Calibrations Solutions [CS3] (unlabelled/$^{13}C_{12}$,99%)	0.2 mL
New	CIL-EC-5044-CS4	WHO PCB+PCB-170+PCB-180 Calibrations solutions [CS4] (unlabelled/$^{13}C_{12}$,99%)	0.2 mL
New	CIL-EC-5044-CS5	WHO PCB+PCB-170+PCB-180 Calibrations solutions [CS5] (unlabelled/$^{13}C_{12}$,99%)	0.2 mL

Code	Product	Unit
CIL-EC-5315	World Health Organization PCBs + PCB-170 + PCB-180 + Syringe Low Calibration Solution [CS1 - CS5] Solvent: Nonane All concentrations are in ng/mL	5 x 0.2 mL

Unlabelled PCBs	IUPAC #	CS1	CS2	CS3	CS4	CS5
3,3',4,4'-TetraCB	77	0.2	1	5	20	100
3,4,4',5-TetraCB	81	0.2	1	5	20	100
2,3,3',4,4'-PentaCB	105	0.2	1	5	20	100
2,3,4,4',5-PentaCB	114	0.2	1	5	20	100
2,3',4,4',5-PentaCB	118	0.2	1	5	20	100
2',3,4,4',5-PentaCB	123	0.2	1	5	20	100
3,3',4,4',5-PentaCB	126	0.2	1	5	20	100
2,3,3',4,4',5-HexaCB	156	0.2	1	5	20	100
2,3,3',4,4',5'-HexaCB	157	0.2	1	5	20	100
2,3',4,4',5,5'-HexaCB	167	0.2	1	5	20	100
3,3',4,4',5,5'-HexaCB	169	0.2	1	5	20	100
2,3,3',4,4',5,5'-HeptaCB	189	0.2	1	5	20	100
2,2',3,4,4',5,5'-HeptaCB	180	0.2	1	5	20	100
2,2',3,3',4,4',5-HeptaCB	170	0.2	1	5	20	100

Labelled PCBs	IUPAC #	CS1	CS2	CS3	CS4	CS5
3,3',4,5'-TetraCB ($^{13}C_{12}$,99%)	79	10	10	10	10	10
2,3',4',5-TetraCB ($^{13}C_{12}$,99%)	70	10	10	10	10	10
2,3,3',5,5'-PentaCB ($^{13}C_{12}$,99%)	111	10	10	10	10	10
2,2',3,4,4',5'-HexaCB ($^{13}C_{12}$,99%)	138	10	10	10	10	10
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77	10	10	10	10	10
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	10	10	10	10	10
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	10	10	10	10	10
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114	10	10	10	10	10
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	10	10	10	10	10
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123	10	10	10	10	10
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	126	10	10	10	10	10
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	10	10	10	10	10
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	10	10	10	10	10
2,3',4,4',5,5'-HexaCB($^{13}C_{12}$,99%)	167	10	10	10	10	10
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	10	10	10	10	10
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	10	10	10	10	10
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	10	10	10	10	10
2,2',3,3',4,4',5-HeptaCB ($^{13}C_{12}$,99%)	170	10	10	10	10	10

CIL-EC-5315-1	World Health Organization PCBs + PCB-170 + PCB-180 + Syringe Low Calibration Solution [CS1]	0.2 mL
CIL-EC-5315-2	World Health Organization PCBs + PCB-170 + PCB-180 + Syringe Low Calibration Solution [CS2]	0.2 mL
CIL-EC-5315-3	World Health Organization PCBs + PCB-170 + PCB-180 + Syringe Low Calibration Solution [CS3]	0.2 mL
CIL-EC-5315-4	World Health Organization PCBs + PCB-170 + PCB-180 + Syringe Low Calibration Solution [CS4]	0.2 mL
CIL-EC-5315-5	World Health Organization PCBs + PCB-170 + PCB-180 + Syringe Low Calibration Solution [CS5]	0.2 mL

Code	Product	Unit
CIL-EC-5396	CO-PCB Calibration Solutions [CS1-CS6]	6 x 0.2 mL

Solvent: Nonane

All concentrations are in ng/mL

Unlabelled PCBs	IUPAC #	CS1	CS2	CS3	CS4	CS5	CS6
3,4,4',5-TetraCB	81	0,2	0,5	2	10	50	200
3,3',4,4'-TetraCB	77	0,2	0,5	2	10	50	200
3,3',4,4',5-PentaCB	126	0,2	0,5	2	10	50	200
3,3',4,4',5,5'-HexaCB	169	0,2	0,5	2	10	50	200
2',3,4,4',5-PentaCB	123	0,2	0,5	2	10	50	200
2,3',4,4',5-PentaCB	118	0,2	0,5	2	10	50	200
2,3,3',4,4'-PentaCB	105	0,2	0,5	2	10	50	200
2,3,4,4',5-PentaCB	114	0,2	0,5	2	10	50	200
2,3',4,4',5,5'-HexaCB	167	0,2	0,5	2	10	50	200
2,3,3',4,4',5-HexaCB	156	0,2	0,5	2	10	50	200
2,3,3',4,4',5'-HexaCB	157	0,2	0,5	2	10	50	200
2,3,3',4,4',5,5'-HeptaCB	189	0,2	0,5	2	10	50	200
2,2',3,3',4,4',5-HeptaCB	170	0,2	0,5	2	10	50	200
2,2',3,4,4',5,5'-HeptaCB	180	0,2	0,5	2	10	50	200

Labelled PCBs	IUPAC #	CS1	CS2	CS3	CS4	CS5	CS6
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	10	10	10	10	10	10
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77	10	10	10	10	10	10
3,3',4,4',5-PentaCB($^{13}C_{12}$,99%)	126	10	10	10	10	10	10
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	10	10	10	10	10	10
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123	10	10	10	10	10	10
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	10	10	10	10	10	10
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	10	10	10	10	10	10
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114	10	10	10	10	10	10
2,3',4,4',5,5'-HexaCB($^{13}C_{12}$,99%)	167	10	10	10	10	10	10
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	10	10	10	10	10	10
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	10	10	10	10	10	10
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	10	10	10	10	10	10
2,2',3,3',4,4',5-HeptaCB ($^{13}C_{12}$,99%)	170	10	10	10	10	10	10
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	10	10	10	10	10	10
2,3',4',5-TetraCB ($^{13}C_{12}$,99%)	70	10	10	10	10	10	10
2,3,3',5,5'-PentaCB ($^{13}C_{12}$,99%)	111	10	10	10	10	10	10
2,2',3,4,4',5'-HexaCB ($^{13}C_{12}$,99%)	138	10	10	10	10	10	10
2,2',3,3',5,5',6-HeptaCB ($^{13}C_{12}$,99%)	178	10	10	10	10	10	10
3,3',4,5'-TetraCB ($^{13}C_{12}$,99%)	79	10	10	10	10	10	10

CIL-EC-5396-CS1	CO-PCB Calibration Solution [CS1]	0.2 mL
CIL-EC-5396-CS2	CO-PCB Calibration Solution [CS2]	0.2 mL
CIL-EC-5396-CS3	CO-PCB Calibration Solution [CS3]	0.2 mL
CIL-EC-5396-CS4	CO-PCB Calibration Solution [CS4]	0.2 mL
CIL-EC-5396-CS5	CO-PCB Calibration Solution [CS5]	0.2 mL
CIL-EC-5396-CS6	CO-PCB Calibration Solution [CS6]	0.2 mL

CIL-EC-4937	World Health Organization Coplanar & Mono-Ortho PCBs	3 mL

Solvent: Nonane

Labelled PCBs	IUPAC#	Concentration
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77	1.0 µg/mL
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	1.0 µg/mL
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	1.0 µg/mL
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114	1.0 µg/mL
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	1.0 µg/mL
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123	1.0 µg/mL
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	126	1.0 µg/mL
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	1.0 µg/mL
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	1.0 µg/mL
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167	1.0 µg/mL
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	1.0 µg/mL
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	1.0 µg/mL

CIL-EC-4995	World Health Organization Coplanar & Mono-Ortho PCBs & 170/180	1.2 mL

Solvent: Nonane

Labelled PCBs	IUPAC#	Concentration
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77	1.0 µg/mL
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	1.0 µg/mL
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	1.0 µg/mL
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114	1.0 µg/mL
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	1.0 µg/mL
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123	1.0 µg/mL
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	126	1.0 µg/mL
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	1.0 µg/mL
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	1.0 µg/mL
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167	1.0 µg/mL
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	1.0 µg/mL
2,2',3,3',4,4',5-HeptaCB ($^{13}C_{12}$,99%)	170	1.0 µg/mL
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	1.0 µg/mL
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	1.0 µg/mL

	Code	Product	Unit
New	CIL-EC-4995/5-1.2	World Health Organization Coplanar & Mono-Ortho PCBs & 170/180 Solvent: Nonane	1.2 mL

Labelled PCBs	IUPAC#	Concentration
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77	200 ng/mL
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	200 ng/mL
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	200 ng/mL
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114	200 ng/mL
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	200 ng/mL
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123	200 ng/mL
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	126	200 ng/mL
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	200 ng/mL
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	200 ng/mL
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167	200 ng/mL
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	200 ng/mL
2,2',3,3',4,4',5-HeptaCB ($^{13}C_{12}$,99%)	170	200 ng/mL
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	200 ng/mL
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	200 ng/mL

New	CIL-EC-4995/50-1.2	World Health Organization Coplanar & Mono-Ortho PCBs & 170/180 Solvent: Nonane	1.2 mL

Labelled PCBs	IUPAC#	Concentration
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77	20 ng/mL
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	20 ng/mL
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	20 ng/mL
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114	20 ng/mL
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	20 ng/mL
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123	20 ng/mL
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	126	20 ng/mL
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	20 ng/mL
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	20 ng/mL
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167	20 ng/mL
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	20 ng/mL
2,2',3,3',4,4',5-HeptaCB ($^{13}C_{12}$,99%)	170	20 ng/mL
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	20 ng/mL
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	20 ng/mL

CIL-EC-5045	World Health Organization PCBs + PCB-170 + PCB-180 Clean-Up Standard Solvent: Nonane	1.2 mL

Labelled PCBs	IUPAC#	Concentration
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77	2000 ng/mL
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	2000 ng/mL
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	2000 ng/mL
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114	2000 ng/mL
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	2000 ng/mL
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123	2000 ng/mL
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	126	2000 ng/mL
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	2000 ng/mL
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	2000 ng/mL
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167	2000 ng/mL
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	2000 ng/mL
2,2',3,3',4,4',5-HeptaCB ($^{13}C_{12}$,99%)	170	2000 ng/mL
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	2000 ng/mL
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	2000 ng/mL

CIL-EC-5047	PCB Sampling Spike ($^{13}C_{12}$,99%) Solvent: Nonane	1.2 mL

Labelled PCB	IUPAC#	Concentration
3,3',4,5'-TetraCB ($^{13}C_{12}$,99%)	79	2000 ng/mL

CIL-EC-5180	PCB Sampling Spike ($^{13}C_{12}$,99%) Solvent: Nonane	1.2 mL

Labelled PCB	IUPAC#	Concentration
3,3',4,5'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%)	79	100 ng/mL

CIL-EC-5181	PCB Syringe Spike ($^{13}C_{12}$,99%) Solvent: Nonane	1.2 mL

Labelled PCBs	IUPAC#	Concentration
2,3',4',5-TetraCB ($^{13}C_{12}$,99%)	70	100 ng/mL
2,3,3',5,5'-PentaCB ($^{13}C_{12}$,99%)	111	100 ng/mL
2,2',3,4,4',5'-HexaCB ($^{13}C_{12}$,99%)	138	100 ng/mL

CIL-EC-5181-10X-1.2	PCB Syringe Spike ($^{13}C_{12}$,99%) Solvent: Nonane	1.2 mL

Labelled PCBs	IUPAC#	Concentration
2,3',4',5-TetraCB ($^{13}C_{12}$,99%)	70	1000 ng/mL
2,3,3',5,5'-PentaCB ($^{13}C_{12}$,99%)	111	1000 ng/mL
2,2',3,4,4',5'-HexaCB ($^{13}C_{12}$,99%)	138	1000 ng/mL

Code	Product	Unit
CIL-EC-5397	CO-PCB Syringe Spike ($^{13}C_{12}$,99%) Solvent: Nonane	1.2 mL

Labelled PCB	IUPAC #	Concentration
2,3',4',5-TetraCB ($^{13}C_{12}$,99%)	70	20 ng/mL
2,3,3',5,5'-PentaCB ($^{13}C_{12}$,99%)	111	20 ng/mL
2,2',3,4,4',5'-HexaCB ($^{13}C_{12}$,99%)	138	20 ng/mL
2,2',3,3',5,5',6-HeptaCB ($^{13}C_{12}$,99%)	178	20 ng/mL

Code	Product	Unit
CIL-EC-4935	World Health Organization Coplanar & Mono-Ortho PCBs Solvent: Isooctane	1.2 mL

Unlabelled PCBs	IUPAC#	Concentration
3,3',4,4'-TetraCB	77	2.0 µg/mL
3,4,4',5-TetraCB	81	2.0 µg/mL
2,3,3',4,4'-PentaCB	105	2.0 µg/mL
2,3,4,4',5-PentaCB	114	2.0 µg/mL
2,3',4,4',5-PentaCB	118	2.0 µg/mL
2',3,4,4',5-PentaCB	123	2.0 µg/mL
3,3',4,4',5-PentaCB	126	2.0 µg/mL
2,3,3',4,4',5-HexaCB	156	2.0 µg/mL
2,3,3',4,4',5'-HexaCB	157	2.0 µg/mL
2,3',4,4',5,5'-HexaCB	167	2.0 µg/mL
3,3',4,4',5,5'-HexaCB	169	2.0 µg/mL
2,3,3',4,4',5,5'-HeptaCB	189	2.0 µg/mL

Code	Product	Unit
CIL-EC-4935-A	World Health Organization Coplanar & Mono-Ortho PCBs Solvent: Isooctane	3 mL

Unlabelled PCBs	IUPAC#	Concentration
3,3',4,4'-TetraCB	77	1.0 µg/mL
3,4,4',5-TetraCB	81	1.0 µg/mL
2,3,3',4,4'-PentaCB	105	1.0 µg/mL
2,3,4,4',5-PentaCB	114	1.0 µg/mL
2,3',4,4',5-PentaCB	118	1.0 µg/mL
2',3,4,4',5-PentaCB	123	1.0 µg/mL
3,3',4,4',5-PentaCB	126	1.0 µg/mL
2,3,3',4,4',5-HexaCB	156	1.0 µg/mL
2,3,3',4,4',5'-HexaCB	157	1.0 µg/mL
2,3',4,4',5,5'-HexaCB	167	1.0 µg/mL
3,3',4,4',5,5'-HexaCB	169	1.0 µg/mL
2,3,3',4,4',5,5'-HeptaCB	189	1.0 µg/mL

Code	Product	Unit
CIL-EC-5000	World Health Organization Coplanar & Mono-Ortho PCBs & 170/180 Solvent: Isooctane	1.2 mL

Unlabelled PCBs	IUPAC#	Concentration
3,3',4,4'-TetraCB	77	2.0 µg/mL
3,4,4',5-TetraCB	81	2.0 µg/mL
2,3,3',4,4'-PentaCB	105	2.0 µg/mL
2,3,4,4',5-PentaCB	114	2.0 µg/mL
2,3',4,4',5-PentaCB	118	2.0 µg/mL
2',3,4,4',5-PentaCB	123	2.0 µg/mL
3,3',4,4',5-PentaCB	126	2.0 µg/mL
2,3,3',4,4',5-HexaCB	156	2.0 µg/mL
2,3,3',4,4',5'-HexaCB	157	2.0 µg/mL
2,3',4,4',5,5'-HexaCB	167	2.0 µg/mL
3,3',4,4',5,5'-HexaCB	169	2.0 µg/mL
2,2',3,3',4,4',5-HeptaCB	170	2.0 µg/mL
2,2',3,4,4',5,5'-HeptaCB	180	2.0 µg/mL
2,3,3',4,4',5,5'-HeptaCB	189	2.0 µg/mL

Code	Product	Unit
New CIL-EC-5000-1/2X	World Health Organization Coplanar & Mono-Ortho PCBs & 170/180 Solvent: Isooctane	1.2 mL

Unlabelled PCBs	IUPAC#	Concentration
3,3',4,4'-TetraCB	77	1.0 µg/mL
3,4,4',5-TetraCB	81	1.0 µg/mL
2,3,3',4,4'-PentaCB	105	1.0 µg/mL
2,3,4,4',5-PentaCB	114	1.0 µg/mL
2,3',4,4',5-PentaCB	118	1.0 µg/mL
2',3,4,4',5-PentaCB	123	1.0 µg/mL
3,3',4,4',5-PentaCB	126	1.0 µg/mL
2,3,3',4,4',5-HexaCB	156	1.0 µg/mL
2,3,3',4,4',5'-HexaCB	157	1.0 µg/mL
2,3',4,4',5,5'-HexaCB	167	1.0 µg/mL
3,3',4,4',5,5'-HexaCB	169	1.0 µg/mL
2,2',3,3',4,4',5-HeptaCB	170	1.0 µg/mL
2,2',3,4,4',5,5'-HeptaCB	180	1.0 µg/mL
2,3,3',4,4',5,5'-HeptaCB	189	1.0 µg/mL

Code	Product	Unit

Dioxin-like PCB RH12 standard mixtures

New CIL-EC-5421-H-E — DL-PCB RH12 extended calibration solutions [CS0.4H-CS6H] — 7 x 0.2 mL

Solvent: Nonane

All concentrations are in ng/mL (ppb)

Unlabelled PCBs	IUPAC	CS0.4	CS1	CS2	CS3	CS4	CS5	CS6
3,4,4',5-TetraCB	81	0.1	0.25	1	5	20	100	500
3,3',4,4'-TetraCB	77	0.1	0.25	1	5	20	100	500
2',3,4,4',5-PentaCB	123	0.1	0.25	1	5	20	100	500
2,3',4,4',5-PentaCB	118	0.2	0.5	2	10	40	200	1000
2,3,4,4',5-PentaCB	114	0.1	0.25	1	5	20	100	500
2,3,3',4,4'-PentaCB	105	0.2	0.5	2	10	40	200	1000
3,3',4,4',5-PentaCB	126	0.1	0.25	1	5	20	100	500
2,3',4,4',5,5'-HexaCB	167	0.1	0.25	1	5	20	100	500
2,3,3',4,4',5-HexaCB	156	0.2	0.5	2	10	40	200	1000
2,3,3',4,4',5'-HexaCB	157	0.1	0.25	1	5	20	100	500
2,2',3,4,4',5,5'-HeptaCB	180	0.1	0.25	1	5	20	100	500
3,3',4,4',5,5'-HexaCB	169	0.1	0.25	1	5	20	100	500
2,2',3,3',4,4',5-HeptaCB	170	0.1	0.25	1	5	20	100	500
2,3,3',4,4',5,5'-HeptaCB	189	0.1	0.25	1	5	20	100	500

Labelled PCBs	IUPAC	CS0.4	CS1	CS2	CS3	CS4	CS5	CS6
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	10	10	10	10	10	10	10
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77	10	10	10	10	10	10	10
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123	10	10	10	10	10	10	10
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	20	20	20	20	20	20	20
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114	10	10	10	10	10	10	10
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	20	20	20	20	20	20	20
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	126	10	10	10	10	10	10	10
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167	10	10	10	10	10	10	10
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	20	20	20	20	20	20	20
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	10	10	10	10	10	10	10
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	10	10	10	10	10	10	10
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	10	10	10	10	10	10	10
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	10	10	10	10	10	10	10
2,3',4',5-TetraCB ($^{13}C_{12}$,99%)	70	10	10	10	10	10	10	10
3,3',4,5,5'-PentaCB ($^{13}C_{12}$,99%)	127	10	10	10	10	10	10	10
2,2',3,3',4,4'-HexaCB ($^{13}C_{12}$,99%)	128	10	10	10	10	10	10	10
2,2',3,3',4,4',5-HeptaCB ($^{13}C_{12}$,99%)	170	10	10	10	10	10	10	10
2,3,4,4'-TetraCB ($^{13}C_{12}$,99%)	60	10	10	10	10	10	10	10
2,3,3',5,5'-PentaCB ($^{13}C_{12}$,99%)	111	10	10	10	10	10	10	10
2,3,3',4,5,5'-HexaCB ($^{13}C_{12}$,99%)	159	10	10	10	10	10	10	10

New CIL-EC-5421-H — DL-PCB RH12 calibration solution [CS1H-CS5H] — 5 x 0.2 mL

New CIL-EC-5421-CS0.4H — DL-PCB RH12 extended calibration solution [CS0.4H] — 0.2 mL

New CIL-EC-5421-CS1H — DL-PCB RH12 calibration solution [CS1H] — 0.2 mL

New CIL-EC-5421-CS2H — DL-PCB RH12 calibration solution [CS2H] — 0.2 mL

New CIL-EC-5421-CS3H — DL-PCB RH12 calibration solution [CS3H] — 0.2 mL

New CIL-EC-5421-CS4H — DL-PCB RH12 calibration solution [CS4H] — 0.2 mL

New CIL-EC-5421-CS5H — DL-PCB RH12 calibration solution [CS5H] — 0.2 mL

New CIL-EC-5421-CS6H — DL-PCB RH12 extended calibration solution [CS6H] — 0.2 mL

New CIL-EC-5422 — DL-PCB RH12 Extraction Spike — 1.2 mL

Solvent: Nonane

Labelled PCBs	IUPAC#	Concentration
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	100 ng/mL
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77	100 ng/mL
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123	100 ng/mL
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	200 ng/mL
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114	100 ng/mL
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	200 ng/mL
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	126	100 ng/mL
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167	100 ng/mL
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	200 ng/mL
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	100 ng/mL
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	100 ng/mL
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	100 ng/mL
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	100 ng/mL

New CIL-EC-5424 — DL-PCB RH12 Sampling Spike — 1.2 mL

Solvent: Nonane

Labelled PCBs	IUPAC#	Concentration
2,3,4,4'-TetraCB ($^{13}C_{12}$,99%)	60	100 ng/mL
2,3,3',5,5'-PentaCB ($^{13}C_{12}$,99%)	111	100 ng/mL
2,3,3',4,5,5'-HexaCB ($^{13}C_{12}$,99%)	159	100 ng/mL

	Code	Product	Unit
New	CIL-EC-5423	DL-PCB RH12 Syringe Spike	1.2 mL

Solvent: Nonane

Labelled PCBs	IUPAC#	Concentration
2,3',4',5-TetraCB ($^{13}C_{12}$,99%)	70	100 ng/mL
3,3',4,5,5'-PentaCB ($^{13}C_{12}$,99%)	127	100 ng/mL
2,2',3,3',4,4'-HexaCB ($^{13}C_{12}$,99%)	128	100 ng/mL
2,2',3,3',4,4',5-HeptaCB ($^{13}C_{12}$,99%)	170	100 ng/mL

WHO "Non-Dioxin-like" marker PCB standard mixtures

	Code	Product	Unit
	CIL-EC-4058	PCB Mixture	3 mL

Solvent: Nonane

Labelled PCBs	IUPAC#	Concentration
2,4,4'-TriCB ($^{13}C_{12}$,99%)	28	5 µg/mL
2,2',5,5'-TetraCB ($^{13}C_{12}$,99%)	52	5 µg/mL
2,2',4,5,5'-PentaCB ($^{13}C_{12}$,99%)	101	5 µg/mL
2,2',3,4,4',5'-HexaCB ($^{13}C_{12}$,99%)	138	5 µg/mL
2,2',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	153	5 µg/mL
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	5 µg/mL
DecaCB ($^{13}C_{12}$,99%)	209	5 µg/mL

	Code	Product	Unit
	CIL-EC-5179	Unlabelled PCB Mixture	1.2 mL

Solvent: Isooctane

Unlabelled PCBs	IUPAC#	Concentration
2,4,4'-TriCB	28	5 µg/mL
2,2',5,5'-TetraCB	52	5 µg/mL
2,2',4,5,5'-PentaCB	101	5 µg/mL
2,2',3,4,4',5-HexaCB	138	5 µg/mL
2,2',4,4',5,5'-HexaCB	153	5 µg/mL
2,2',3,4,4',5,5'-HeptaCB	180	5 µg/mL
DecaCB	209	5 µg/mL

Rapid PCB screening standard mixtures

	Code	Product	Unit
New	CIL-EC-5448	Rapid PCB Screening Calibration Solutions [CS1-CS4] (Unlabelled/$^{13}C_{12}$,99%)	4 x 0.2mL

Solvent: Nonane

All concentrations are in ng/mL

Unlabelled Compounds	IUPAC#	CS1	CS2	CS3	CS4
2,4,4'-TriB	28	1	5	10	50
2,2',5-TriB	18	1	5	10	50
2,2',3,5'-TetraCB	44	1	5	10	50
2,3',4',5-TetraCB	70	1	5	10	50
2,2',5,5'-TetraCB	52	1	5	10	50
2,2',4,5,5'-PentaCB	101	1	5	10	50
2,3,3',4',6-PentaCB	110	1	5	10	50
2,3',4,4',5-PentaCB	118	1	5	10	50
2,2',3,4',5',6-HexaCB	149	1	5	10	50
2,2',3,4,4',5'-HexaCB	138	1	5	10	50
2,2',4,4',5,5'-HexaCB	153	1	5	10	50
2,2',3,4,4',5,5'-HeptaCB	180	1	5	10	50
2,2',3,4',5,5',6-HeptaCB	187	1	5	10	50

^{13}C-Labelled Compounds	IUPAC#	CS1	CS2	CS3	CS4
2,4,4'-TriCB ($^{13}C_{12}$,99%)	28L	10	10	10	10
2,3',4',5-TetraCB ($^{13}C_{12}$,99%)	70L	10	10	10	10
2,2',5,5'-TetraCB ($^{13}C_{12}$,99%)	52L	10	10	10	10
2,2',4,5,5'-PentaCB ($^{13}C_{12}$,99%)	101L	10	10	10	10
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118L	10	10	10	10
2,2',3,4,4',5'-HexaCB ($^{13}C_{12}$,99%)	138L	10	10	10	10
2,2',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	153L	10	10	10	10
2,2',3,4,5,5'-HexaCB ($^{13}C_{12}$,99%)	141L	10	10	10	10
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180L	10	10	10	10

	Code	Product	Unit
New	CIL-EC-5448-CS1	Rapid PCB Screening Calibration Solutions CS1 (unlabelled/$^{13}C_{12}$,99%)	0.2 mL
New	CIL-EC-5448-CS2	Rapid PCB Screening Calibration Solutions CS2 (unlabelled/$^{13}C_{12}$,99%)	0.2 mL
New	CIL-EC-5448-CS3	Rapid PCB Screening Calibration Solutions CS3 (unlabelled/$^{13}C_{12}$,99%)	0.2 mL
New	CIL-EC-5448-CS4	Rapid PCB Screening Calibration Solutions CS4 (unlabelled/$^{13}C_{12}$,99%)	0.2 mL
New	CIL-EC-5450	Rapid PCB Screening Syringe Spike ($^{13}C_{12}$,99%)	1.2 mL

Solvent: Nonane

^{13}C-Labelled Compounds	IUPAC#	Concentration
2,3',4',5-TetraCB ($^{13}C_{12}$,99%)	70L	2000 ng/mL
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118L	2000 ng/mL
2,2',3,4,5,5'-HexaCB ($^{13}C_{12}$,99%)	141L	2000 ng/mL

PCB standards and standard mixtures

	Code	Product	Unit
New	CIL-EC-5453	Rapid PCB Screening Native PAR Solution (unlabelled)	0.5 mL

Solvent: Isooctane

Unlabelled Compounds	IUPAC#	Concentration
2,4,4'-TriCB	28	1000 ng/mL
2,2',5-TriCB	18	1000 ng/mL
2,2',3,5'-TetraCB	44	1000 ng/mL
2,3',4',5-TetraCB	70	1000 ng/mL
2,2',5,5'-TetraCB	52	1000 ng/mL
2,2',4,5,5'-PentaCB	101	1000 ng/mL
2,3,3',4',6-PentaCB	110	1000 ng/mL
2,3',4,4',5-PentaCB	118	1000 ng/mL
2,2',3,4',5',6-HexaCB	149	1000 ng/mL
2,2',3,4,4',5'-HexaCB	138	1000 ng/mL
2,2',4,4',5,5'-HexaCB	153	1000 ng/mL
2,2',3,4,4',5,5'-HeptaCB	180	1000 ng/mL
2,2',3,4',5,5',6-HeptaCB	187	1000 ng/mL

Mono-deca plus predominant PCB standard mixtures

CIL-EC-5414	Mono-Deca + Predominant PCB calibration series [CS1-CS5]	5 x 0.2 mL

Solvent: Nonane

All concentrations are in ng/mL

Native PCBs	**PCB#**	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**
4-MonoCB	3	4	20	100	500	2000
2,4'-DiCB	8	4	20	100	500	2000
2,4,4'-TriCB	28	2	10	50	250	1000
2,2',5,5'-TetraCB	52	2	10	50	250	1000
2,2',4,5,5'-PentaCB	101	2	10	50	250	1000
2,3',4,4',5-PentaCB	118	2	10	50	250	1000
2,3,4,4',5- PentaCB	114	2	10	50	250	1000
2,2',4,4',5,5'-HexaCB	153	2	10	50	250	1000
2,2',3,4,4',5'-HexaCB	138	2	10	50	250	1000
2,2',3,4,4',5,5'-HeptaCB	180	2	10	50	250	1000
2,2',3,3',4,4',5,5'-OctaCB	194	4	20	100	500	2000
2,2',3,3',4,4',5,5',6-NonaCB	206	4	20	100	500	2000
2,2',3,3',4,4',5,5',6,6'-DecaCB	209	4	20	100	500	2000
Cleanup Standards						
^{13}C 4-MonoCB	3	100	100	100	100	100
^{13}C 2,4'-DiCB	8	100	100	100	100	100
^{13}C 2,4,4'-TriCB	28	100	100	100	100	100
^{13}C 2,2',5,5'-TetraCB	52	100	100	100	100	100
^{13}C 2,2',4,5,5'-PentaCB	101	100	100	100	100	100
^{13}C 2,3',4,4',5-PentaCB	118	100	100	100	100	100
^{13}C 2,3,4,4',5- PentaCB	114	100	100	100	100	100
^{13}C 2,2',4,4',5,5'-HexaCB	153	100	100	100	100	100
^{13}C 2,2',3,4,4',5'-HexaCB	138	100	100	100	100	100
^{13}C 2,2',3,4,4',5,5'-HeptaCB	180	100	100	100	100	100
^{13}C 2,2',3,3',4,4',5,5'-OctaCB	194	100	100	100	100	100
^{13}C 2,2',3,3',4,4',5,5',6-NonaCB	206	100	100	100	100	100
^{13}C 2,2',3,3',4,4',5,5',6,6'-DecaCB	209	100	100	100	100	100
Syringe Standards						
^{13}C 2,4',6-TriCB	32	100	100	100	100	100
^{13}C 2,3',4',5-TetraCB	70	100	100	100	100	100
^{13}C 3,3',4,5,5'-PentaCB	127	100	100	100	100	100
^{13}C 2,2',3,3',4,4'-HexCB	128	100	100	100	100	100
^{13}C 2,2',3,3',4,4',5-HeptaCB	170	100	100	100	100	100

CIL-EC-5414-CS1	Mono-Deca + Predominant PCB Calibration Series [CS1]	0.2 mL
CIL-EC-5414-CS2	Mono-Deca + Predominant PCB Calibration Series [CS2]	0.2 mL
CIL-EC-5414-CS3	Mono-Deca + Predominant PCB Calibration Series [CS3]	0.2 mL
CIL-EC-5414-CS4	Mono-Deca + Predominant PCB Calibration Series [CS4]	0.2 mL
CIL-EC-5414-CS5	Mono-Deca + Predominant PCB Calibration Series [CS5]	0.2 mL
CIL-EC-5411	Mono-Deca + Predominant PCB Cleanup Spike	1.2 mL

Solvent: Nonane

Labelled PCBs	IUPAC#	Concentration
4-MonoCB ($^{13}C_{12}$,99%)	3	2000 ng/mL
2,4'-DiCB ($^{13}C_{12}$,99%)	8	2000 ng/mL
2,4,4'-TriCB ($^{13}C_{12}$,99%)	28	2000 ng/mL
2,2',5,5'-TetraCB ($^{13}C_{12}$,99%)	52	2000 ng/mL
2,2',4,5,5'-PentaCB ($^{13}C_{12}$,99%)	101	2000 ng/mL
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	2000 ng/mL
2,3,4,4',5- PentaCB ($^{13}C_{12}$,99%)	114	2000 ng/mL
2,2',4,4',5,5'-HexaCB($^{13}C_{12}$,99%)	153	2000 ng/mL
2,2',3,4,4',5'-HexaCB ($^{13}C_{12}$,99%)	138	2000 ng/mL
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	2000 ng/mL
2,2',3,3',4,4',5,5'-OctaCB ($^{13}C_{12}$,99%)	194	2000 ng/mL
2,2',3,3',4,4',5,5',6-NonaCB ($^{13}C_{12}$,99%)	206	2000 ng/mL
2,2',3,3',4,4',5,5',6,6'-DecaCB ($^{13}C_{12}$,99%)	209	2000 ng/mL

Code	Product	Unit
CIL-EC-5415	Mono-Deca + Predominant PCB Syringe Spike	1.2 mL

Solvent: Nonane

Labelled PCBs	IUPAC#	Concentration
^{13}C 2,4',6-TriCB($^{13}C_{12}$,99%)	32	2000 ng/mL
^{13}C 2,3',4',5-TetraCB($^{13}C_{12}$,99%)	70	2000 ng/mL
^{13}C 3,3',4,5,5'-PentaCB ($^{13}C_{12}$,99%)	127	2000 ng/mL
^{13}C 2,2',3,3',4,4'-HexCB ($^{13}C_{12}$,99%)	128	2000 ng/mL
^{13}C 2,2',3,3',4,4',5-HeptaCB ($^{13}C_{12}$,99%)	170	2000 ng/mL

CIL-EC-5412	Mono-Deca + Predominant PCB Native Spike	1.2 mL

Solvent: Nonane

Unlabelled PCBs	IUPAC#	Concentration
4-MonoCB	3	2000 ng/mL
2,4'-DiCB	8	2000 ng/mL
2,4,4'-TriCB	28	2000 ng/mL
2,2',5,5'-TetraCB	52	2000 ng/mL
2,2',4,5,5'-PentaCB	101	2000 ng/mL
2,3',4,4',5-PentaCB	118	2000 ng/mL
2,3,4,4',5- PentaCB	114	2000 ng/mL
2,2',4,4',5,5'-HexaCB	153	2000 ng/mL
2,2',3,4,4',5'-HexaCB	138	2000 ng/mL
2,2',3,4,4',5,5'-HeptaCB	180	2000 ng/mL
2,2',3,3',4,4',5,5'-OctaCB	194	2000 ng/mL
2,2',3,3',4,4',5,5',6-NonaCB	206	2000 ng/mL
2,2',3,3',4,4',5,5',6,6'-DecaCB	209	2000 ng/mL

CIL-EC-4189-A	Mono-Deca PCB Mixture	3 mL

Solvent: Nonane

Labelled PCBs	IUPAC#	Concentration
4-MonoCB ($^{13}C_{12}$,99%)	3	1.0 µg/mL
4,4'-DiCB ($^{13}C_{12}$,99%)	15	1.0 µg/mL
2,4,4'-TriCB ($^{13}C_{12}$,99%)	28	1.0 µg/mL
2,2',5,5'-TetraCB ($^{13}C_{12}$,99%)	52	1.0 µg/mL
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	1.0 µg/mL
2,2',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	153	1.0 µg/mL
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	1.0 µg/mL
2,2',3,3',4,4',5,5'-OctaCB ($^{13}C_{12}$,99%)	194	1.0 µg/mL
2,2',3,3',4,5,5',6,6'-NonaCB ($^{13}C_{12}$,99%)	208	1.0 µg/mL
DecaCB ($^{13}C_{12}$,99%)	209	1.0 µg/mL

New CIL-EC-5087	Toxic and Predominant PCB Spiking Standard	10 mL

Solvent: Methanol

Labelled PCBs	IUPAC#	Concentration
2,4,4'-TriCB ($^{13}C_{12}$,99%)	28	7.5 ng/mL
2,4',6-TriCB ($^{13}C_{12}$,99%)	32	7.5 ng/mL
2,2,5,5'-TetraCB ($^{13}C_{12}$,99%)	52	7.5 ng/mL
2,3',4',5-TetraCB ($^{13}C_{12}$,99%)	70	7.5 ng/mL
2,2',4,5,5'-PentaCB ($^{13}C_{12}$,99%)	101	7.5 ng/mL
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	7.5 ng/mL
2,3,3',5,5'-PentaCB ($^{13}C_{12}$,99%)	111	7.5 ng/mL
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	7.5 ng/mL
2,2',3,3',4,4'-HexaCB ($^{13}C_{12}$,99%)	128	7.5 ng/mL
2,2',3,4,4',5'-HexaCB ($^{13}C_{12}$,99%)	138	7.5 ng/mL
2,2',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	153	7.5 ng/mL
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	7.5 ng/mL
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	7.5 ng/mL
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167	7.5 ng/mL
2,2',3,3',4,4',5-HeptaCB ($^{13}C_{12}$,99%)	170	7.5 ng/mL
2,2',3,3',5,5',6-HeptaCB ($^{13}C_{12}$,99%)	178	7.5 ng/mL
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	7.5 ng/mL
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	7.5 ng/mL
2,2',3,3',4,4',5,5'-OctaCB ($^{13}C_{12}$,99%)	194	7.5 ng/mL
2,2',3,3',4,4',5,5',6-NonaCB ($^{13}C_{12}$,99%)	206	7.5 ng/mL
DecaCB ($^{13}C_{12}$,99%)	209	7.5 ng/mL

Code	Product	Unit
CIL-EC-5085	Toxic and predominant PCB PAR Solution	1.2 mL

Solvent: Nonane

Unlabelled PCBs	IUPAC#	Concentration
2,2',5-TriCB	18	250 ng/mL
2,4,4'-TriCB	28	250 ng/mL
2,2',3,5'-TetraCB	44	250 ng/mL
2,2',4,5'-TetraCB	49	250 ng/mL
2,2',5,5'-TetraCB	52	250 ng/mL
2,3',4,4'-TetraCB	66	250 ng/mL
2,4,4',5-TetraCB	74	250 ng/mL
2,2',3,4,5'-PentaCB	87	250 ng/mL
2,2',4,4',5-PentaCB	99	250 ng/mL
2,2',4,5,5'-PentaCB	101	250 ng/mL
2,3,3',4,4'-PentaCB	105	250 ng/mL
2,3,3',4',6-PentaCB	110	250 ng/mL
2,3',4,4',5-PentaCB	118	250 ng/mL
2,2',3,3',4,4'-HexaCB	128	250 ng/mL
2,2',3,4,4',5-HexaCB	138	250 ng/mL
2,2',3,4',5,5'-HexaCB	146	250 ng/mL
2,2',3,4',5',6-HexaCB	149	250 ng/mL
2,2',3,5,5',6-HexaCB	151	250 ng/mL
2,2',4,4',5,5'-HexaCB	153	250 ng/mL
2,3,3',4,4',5-HexaCB	156	250 ng/mL
2,3,3',4,4',5'-HexaCB	157	250 ng/mL
2,3,3',4,4',6-HexaCB	158	250 ng/mL
2,3',4,4',5,5'-HexaCB	167	250 ng/mL
2,2',3,3',4,4',5-HeptaCB	170	250 ng/mL
2,2',3,3',4,5,5'-HeptaCB	172	250 ng/mL
2,2',3,3',4',5,6-HeptaCB	177	250 ng/mL
2,2',3,3',5,5',6-HeptaCB	178	250 ng/mL
2,2',3,4,4',5,5'-HeptaCB	180	250 ng/mL
2,2',3,4,4',5',6-HeptaCB	183	250 ng/mL
2,2',3,4',5,5',6-HeptaCB	187	250 ng/mL
2,3,3',4,4',5,5'-HeptaCB	189	250 ng/mL
2,2',3,3',4,4',5,5'-OctaCB	194	250 ng/mL
2,2',3,3',4,4',5,6-OctaCB	195	250 ng/mL
2,2',3,3',4,4',5',6-OctaCB	196	250 ng/mL
2,2',3,3',4,5,5',6'-OctaCB	199	250 ng/mL
2,2',3,4,4',5,5',6-OctaCB	203	250 ng/mL
2,2',3,3',4,4',5,5',6-NonaCB	206	250 ng/mL
DecaCB	209	250 ng/mL

Code	Product	Unit

CDC PCB Standard Mixtures

CIL-EC-5366 CDC PCB Calibration Solutions [CS1-CS10] (unlabelled/$^{13}C_{12}$) in Nonane — 10 x 0.5 mL

Solvent: Nonane

All concentrations are in ng/mL

Unlabelled PCBs	IUPAC #	CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8	CS9	CS10
2,2',5-TriCB	18	0,2	0,5	1	2,5	10	75	100	500		
2,4,4'-TriCB	28	0,2	0,5	1	2,5	10	75	100	500		
2,2',3,5'-TetraCB	44	0,2	0,5	1	2,5	10	75	100	500		
2,2',4,5'-TetraCB	49	0,2	0,5	1	2,5	10	75	100	500		
2,2',5,5'-TetraCB	52	0,2	0,5	1	2,5	10	75	100	500		
2,3',4,4'-TetraCB	66	0,2	0,5	1	2,5	10	75	100	500		
2,4,4',5-TetraCB	74	0,2	0,5	1	2,5	10	75	100	500		
2,2',3,4,5'-PentaCB	87	0,2	0,5	1	2,5	10	75	100	500		
2,2',4,4',5-PentaCB	99	0,2	0,5	1	2,5	10	75	100	500		
2,2',4,5,5'-PentaCB	101	0,2	0,5	1	2,5	10	75	100	500		
2,3,3',4,4'-PentaCB	105	0,2	0,5	1	2,5	10	75	100	500		
2,3,3',4',6-PentaCB	110	0,2	0,5	1	2,5	10	75	100	500		
2,3,4,4',5-PentaCB	114	0,2	0,5	1	2,5	10	75	100	500		
2,3',4,4',5-PentaCB	118	0,2	0,5	1	2,5	10	75	100	500	3000	7500
2',3,4,4',5-PentaCB	123	0,2	0,5	1	2,5	10	75	100	500		
2,2',3,3',4,4'-HexaCB	128	0,2	0,5	1	2,5	10	75	100	500		
2,2',3,4,4',5'-HexaCB	138	0,1	0,25	0,5	1,25	5	37,5	50	250	1500	3750
2,2',3,4',5,5'-HexaCB	146	0,2	0,5	1	2,5	10	75	100	500		
2,2',3,4',5',6-HexaCB	149	0,2	0,5	1	2,5	10	75	100	500		
2,2',3,5,5',6-HexaCB	151	0,2	0,5	1	2,5	10	75	100	500		
2,2',4,4',5,5'-HexaCB	153	0,2	0,5	1	2,5	10	75	100	500	3000	7500
2,3,3',4,4',5-HexaCB	156	0,2	0,5	1	2,5	10	75	100	500		
2,3,3',4,4',5'-HexaCB	157	0,2	0,5	1	2,5	10	75	100	500		
2,3,3',4,4',6-HexaCB	158	0,1	0,25	0,5	1,25	5	37,5	50	250	1500	3750
2,3',4,4',5,5'-HexaCB	167	0,2	0,5	1	2,5	10	75	100	500		
2,2',3,3',4,4',5-HeptaCB	170	0,2	0,5	1	2,5	10	75	100	500	3000	7500
2,2',3,3',4,5,5'-HeptaCB	172	0,2	0,5	1	2,5	10	75	100	500		
2,2',3,3',4',5,6-HeptaCB	177	0,2	0,5	1	2,5	10	75	100	500		
2,2',3,3',5,5',6-HeptaCB	178	0,2	0,5	1	2,5	10	75	100	500		
2,2',3,4,4',5,5'-HeptaCB	180	0,2	0,5	1	2,5	10	75	100	500	3000	7500
2,2',3,4,4',5',6-HeptaCB	183	0,2	0,5	1	2,5	10	75	100	500		
2,2',3,4',5,5',6-HeptaCB	187	0,2	0,5	1	2,5	10	75	100	500	3000	7500
2,3,3',4,4',5,5'-HeptaCB	189	0,2	0,5	1	2,5	10	75	100	500		
2,2',3,3',4,4',5,5'-OctaCB	194	0,2	0,5	1	2,5	10	75	100	500		
2,2',3,3',4,4',5,6-OctaCB	195	0,2	0,5	1	2,5	10	75	100	500		
2,2',3,3',4,4',5',6-OctaCB	196	0,1	0,25	0,5	1,25	5	37,5	50	250		
2,2',3,3',4,5,5',6'-OctaCB	201	0,2	0,5	1	2,5	10	75	100	500		
2,2',3,4,4',5,5',6-OctaCB	203	0,1	0,25	0,5	1,25	5	37,5	50	250		
2,2',3,3',4,4',5,5',6-NonaCB	206	0,2	0,5	1	2,5	10	75	100	500		
DecaCB	209	0,2	0,5	1	2,5	10	75	100	500		

Labelled compounds	IUPAC #	CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8	CS9	CS10
1,2,3,4-TetraCDD ($^{13}C_6$,99%)		25	25	25	25	25	25	25	25	25	25
2,2',3,3',4,5,5',6,6'-NonaCB ($^{13}C_{12}$,99%)	208	100	100	100	100	100	100	100	100	100	100
3,3',4,4'-TetraCDE ($^{13}C_{12}$,99%)	77	75	75	75	75	75	75	75	75	75	75
2,2',3,4,4',6-HexaCDE ($^{13}C_{12}$,99%)	139	75	75	75	75	75	75	75	75	75	75
2,4,4'-TriCB ($^{13}C_{12}$,99%)	28	75	75	75	75	75	75	75	75	75	75
2,2',5,5'-TetraCB ($^{13}C_{12}$,99%)	52	75	75	75	75	75	75	75	75	75	75
2,2',4,5,5'-PentaCB ($^{13}C_{12}$,99%)	101	75	75	75	75	75	75	75	75	75	75
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	75	75	75	75	75	75	75	75	75	75
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114	75	75	75	75	75	75	75	75	75	75
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	75	75	75	75	75	75	75	75	75	75
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123	75	75	75	75	75	75	75	75	75	75
2,2',3,3',4,4'-HexaCB ($^{13}C_{12}$,99%)	128	75	75	75	75	75	75	75	75	75	75
2,2',3,4,4',5'-HexaCB ($^{13}C_{12}$,99%)	138	75	75	75	75	75	75	75	75	75	75
2,2',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	153	75	75	75	75	75	75	75	75	75	75
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	75	75	75	75	75	75	75	75	75	75
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	75	75	75	75	75	75	75	75	75	75
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167	75	75	75	75	75	75	75	75	75	75
2,2',3,3',4,4',5-HeptaCB ($^{13}C_{12}$,99%)	170	75	75	75	75	75	75	75	75	75	75
2,2',3,3',5,5',6-HeptaCB ($^{13}C_{12}$,99%)	178	75	75	75	75	75	75	75	75	75	75
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	75	75	75	75	75	75	75	75	75	75
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	75	75	75	75	75	75	75	75	75	75
2,2',3,3',4,4',5,5'-OctaCB ($^{13}C_{12}$,99%)	194	75	75	75	75	75	75	75	75	75	75
2,2',3,3',4,4',5,5',6-NonaCB ($^{13}C_{12}$,99%)	206	75	75	75	75	75	75	75	75	75	75
DecaCB ($^{13}C_{12}$,99%)	209	75	75	75	75	75	75	75	75	75	75

CDE = chlorodiphenyl ether

CIL-EC-5366-CS1	CDC PCB Calibration Solution [CS1]	0.5 mL
CIL-EC-5366-CS10	CDC PCB Calibration Solution [CS10]	0.5 mL
CIL-EC-5366-CS2	CDC PCB Calibration Solution [CS2]	0.5 mL
CIL-EC-5366-CS3	CDC PCB Calibration Solution [CS3]	0.5 mL
CIL-EC-5366-CS4	CDC PCB Calibration Solution [CS4]	0.5 mL
CIL-EC-5366-CS5	CDC PCB Calibration Solution [CS5]	0.5 mL
CIL-EC-5366-CS6	CDC PCB Calibration Solution [CS6]	0.5 mL
CIL-EC-5366-CS7	CDC PCB Calibration Solution [CS7]	0.5 mL
CIL-EC-5366-CS8	CDC PCB Calibration Solution [CS8]	0.5 mL
CIL-EC-5366-CS9	CDC PCB Calibration Solution [CS9]	0.5 mL

PCB standards and standard mixtures

Code	Product	Unit
CIL-EC-5367	CDC PCB Spiking Standard	10 mL

Solvent: Methanol

Labelled PCB	IUPAC#	Concentration
2,4,4'-TriCB ($^{13}C_{12}$,99%)	28	7.5 ng/mL
2,2',5,5'-TetraCB ($^{13}C_{12}$,99%)	52	7.5 ng/mL
2,2',4,5,5'-PentaCB ($^{13}C_{12}$,99%)	101	7.5 ng/mL
2',3,4,4',5-PentaCB($^{13}C_{12}$,99%)	123	7.5 ng/mL
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	7.5 ng/mL
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114	7.5 ng/mL
2,2',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	153	7.5 ng/mL
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	7.5 ng/mL
2,2',3,3',5,5',6-HeptaCB ($^{13}C_{12}$,99%)	178	7.5 ng/mL
2,2',3,4,4',5'-HexaCB($^{13}C_{12}$,99%)	138	7.5 ng/mL
2,2',3,3',4,4'-HexaCB ($^{13}C_{12}$,99%)	128	7.5 ng/mL
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167	7.5 ng/mL
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	7.5 ng/mL
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	7.5 ng/mL
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	7.5 ng/mL
2,2',3,3',4,4',5-HeptaCB ($^{13}C_{12}$,99%)	170	7.5 ng/mL
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	7.5 ng/mL
2,2',3,3',4,4',5,5'-OctaCB ($^{13}C_{12}$,99%)	194	7.5 ng/mL
2,2',3,3',4,4',5,5',6-NonaCB ($^{13}C_{12}$,99%)	206	7.5 ng/mL
DecaCB ($^{13}C_{12}$,99%)	209	7.5 ng/mL

Isotope labelled PCB standard mixtures

CIL-EC-4937	World Health Organization Coplanar & Mono-Ortho PCBs	3 mL

Solvent: Nonane

Labelled PCBs	IUPAC#	Concentration
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77	1.0 µg/mL
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	1.0 µg/mL
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	1.0 µg/mL
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114	1.0 µg/mL
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	1.0 µg/mL
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123	1.0 µg/mL
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	126	1.0 µg/mL
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	1.0 µg/mL
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	1.0 µg/mL
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167	1.0 µg/mL
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	1.0 µg/mL
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	1.0 µg/mL

CIL-EC-4995	World Health Organization Coplanar & Mono-Ortho PCBs & 170/180	1.2 mL

Solvent: Nonane

Labelled PCBs	IUPAC#	Concentration
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77	1.0 µg/mL
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	1.0 µg/mL
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	1.0 µg/mL
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114	1.0 µg/mL
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	1.0 µg/mL
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123	1.0 µg/mL
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	126	1.0 µg/mL
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	1.0 µg/mL
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	1.0 µg/mL
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167	1.0 µg/mL
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	1.0 µg/mL
2,2',3,3',4,4',5-HeptaCB ($^{13}C_{12}$,99%)	170	1.0 µg/mL
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	1.0 µg/mL
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	1.0 µg/mL

CIL-EC-5045	World Health Organization PCBs + PCB-170 + PCB-180 Clean-Up Standard	1.2 mL

Solvent: Nonane

Labelled PCBs	IUPAC#	Concentration
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77	2000 ng/mL
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	2000 ng/mL
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	2000 ng/mL
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114	2000 ng/mL
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	2000 ng/mL
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123	2000 ng/mL
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	126	2000 ng/mL
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	2000 ng/mL
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	2000 ng/mL
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167	2000 ng/mL
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	2000 ng/mL
2,2',3,3',4,4',5-HeptaCB ($^{13}C_{12}$,99%)	170	2000 ng/mL
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	2000 ng/mL
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	2000 ng/mL

Code	Product	Unit
CIL-EC-4070	Coplanar PCB Mixture Solvent: Nonane	3 mL

Labelled PCBs	IUPAC#	Concentration
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77	5 µg/mL
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	126	5 µg/mL
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	5 µg/mL

Code	Product	Unit
CIL-EC-4187	Coplanar PCB Standard Solution Solvent: Nonane	3 mL

Labelled PCBs	IUPAC#	Concentration
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77	1.0 µg/mL
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	1.0 µg/mL
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	126	1.0 µg/mL
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	1.0 µg/mL

Code	Product	Unit
CIL-EC-4188	Mono-Ortho PCB Mixture Solvent: Nonane	3 mL

Labelled PCBs	IUPAC#	Concentration
2,3,3',4,4'-PentaCB ($^{13}C_{12}$,99%)	105	1.0 µg/mL
2,3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	114	1.0 µg/mL
2,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	118	1.0 µg/mL
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	123	1.0 µg/mL
2,3,3',4,4',5-HexaCB ($^{13}C_{12}$,99%)	156	1.0 µg/mL
2,3,3',4,4',5'-HexaCB ($^{13}C_{12}$,99%)	157	1.0 µg/mL
2,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	167	1.0 µg/mL
2,3,3',4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	189	1.0 µg/mL

Code	Product	Unit
CIL-EC-4060	PCB Mixture Solvent: Nonane	1.2 mL

Labelled PCBs	IUPAC#	Concentration
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77	10 µg/mL
2,2',4,5,5'-PentaCB ($^{13}C_{12}$,99%)	101	10 µg/mL
2,2',3,4,5,5'-HexaCB ($^{13}C_{12}$,99%)	141	10 µg/mL
2,2',3,3',5,5',6-HeptaCB ($^{13}C_{12}$,99%)	178	10 µg/mL

Code	Product	Unit
CIL-EC-4938	PBC Mixture-A Solvent: Nonane	3 mL

Labelled PCBs	IUPAC#	Concentration
3,3',4,4'-TetraCB ($^{13}C_{12}$,99%)	77	1.0 µg/mL
3,4,4',5-TetraCB ($^{13}C_{12}$,99%)	81	1.0 µg/mL
2',3,4,4',5-PentaCB ($^{13}C_{12}$,99%)	$_{12}$3	1.0 µg/mL
3,3',4,4',5-PentaCB ($^{13}C_{12}$,99%)	$_{12}$6	1.0 µg/mL
3,3',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	169	1.0 µg/mL
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	1.0 µg/mL

Code	Product	Unit
CIL-EC-4058	PCB Mixture Solvent: Nonane	3 mL

Labelled PCBs	IUPAC#	Concentration
2,4,4'-TriCB ($^{13}C_{12}$,99%)	28	5 µg/mL
2,2',5,5'-TetraCB ($^{13}C_{12}$,99%)	52	5 µg/mL
2,2',4,5,5'-PentaCB ($^{13}C_{12}$,99%)	101	5 µg/mL
2,2',3,4,4',5'-HexaCB ($^{13}C_{12}$,99%)	138	5 µg/mL
2,2',4,4',5,5'-HexaCB ($^{13}C_{12}$,99%)	153	5 µg/mL
2,2',3,4,4',5,5'-HeptaCB ($^{13}C_{12}$,99%)	180	5 µg/mL
DecaCB ($^{13}C_{12}$,99%)	209	5 µg/mL

Code	Product	Unit
CIL-EC-5047	PCB Sampling Spike ($^{13}C_{12}$,99%) Solvent: Nonane	1.2 mL

Labelled PCB	IUPAC#	Concentration
3,3',4,5'-TetraCB ($^{13}C_{12}$,99%)	79	2000 ng/mL

Code	Product	Unit
CIL-EC-5180	PCB Sampling Spike ($^{13}C_{12}$,99%) Solvent: Nonane	1.2 mL

Labelled PCB	IUPAC#	Concentration
3,3',4,5'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%)	79	100 ng/mL

Code	Product	Unit
CIL-EC-5157-5	^{13}C-Labeled PCB Standard (PCB-70 & PCB-170) ($^{13}C_{12}$,99%) Solvent: Nonane	5 mL

Labelled PCBs	IUPAC#	Concentration
2,3',4',5-TetraCB ($^{13}C_{12}$,99%)	70	2 ng/mL
2,2',3,3',4,4',5-HeptaCB ($^{13}C_{12}$,99%)	170	2 ng/mL

Code	Product	Unit
CIL-EC-5181	PCB Syringe Spike ($^{13}C_{12}$,99%) Solvent: Nonane	1.2 mL

Labelled PCBs	IUPAC#	Concentration
2,3',4',5-TetraCB ($^{13}C_{12}$,99%)	70	100 ng/mL
2,3,3',5,5'-PentaCB ($^{13}C_{12}$,99%)	111	100 ng/mL
2,2',3,4,4',5'-HexaCB ($^{13}C_{12}$,99%)	138	100 ng/mL

PCB standards and standard mixtures

Code	Product	Unit
CIL-EC-5181-10X-1.2	PCB Syringe Spike ($^{13}C_{12}$,99%) Solvent: Nonane	1.2 mL

Labelled PCBs	IUPAC#	Concentration
2,3',4',5-TetraCB ($^{13}C_{12}$,99%)	70	1000 ng/mL
2,3,3',5,5'-PentaCB ($^{13}C_{12}$,99%)	111	1000 ng/mL
2,2',3,4,4',5'-HexaCB ($^{13}C_{12}$,99%)	138	1000 ng/mL

New	CIL-EC-5163	PCB Mixture (PCB-70/111/138/170) Solvent: Nonane	1.2 mL

Labelled PCBs	IUPAC#	Concentration
2,3',4',5-TetraCB ($^{13}C_{12}$,99%)	70	1000 ng/mL
2,3,3',5,5'-PentaCB ($^{13}C_{12}$,99%)	111	1000 ng/mL
2,2',3,4,4',5'-HexaCB ($^{13}C_{12}$,99%)	138	1000 ng/mL
2,2',3,3',4,4',5-HeptaCB ($^{13}C_{12}$,99%)	170	1000 ng/mL

New	CIL-EC-5350	POPS Pesticides HRMS (PCB) Syringe Spike Solvent: Nonane	1.2 mL

Labelled PCBs	IUPAC#	Concentration
4,4'-DiCB ($^{13}C_{12}$,99%)	15	100 ng/mL
2,3',4',5-TetraCB ($^{13}C_{12}$,99%)	70	100 ng/mL

New	CIL-EC-5350-L	POPS Pesticides LRMS (PCB) Syringe Spike Solvent: Nonane	1.2 mL

Labelled PCBs	IUPAC#	Concentration
4,4'-DiCB ($^{13}C_{12}$,99%)	15	1000 ng/mL
2,3',4',5-TetraCB ($^{13}C_{12}$,99%)	70	1000 ng/mL

Unlabelled PCB standard mixtures

CIL-EC-4133	DSJ PCB Mixture Solvent: Isooctane	1 mL

Unlabelled PCBs	IUPAC#	Concentration
2,2',4-TriCB	17	0.5 µg/mL
2,2',5-TriCB	18	2.0 µg/mL
2,4,4'-TriCB	28	2.0 µg/mL
2,4',5-TriCB	31	1.5 µg/mL
2',3,4-TriCB	33	2.0 µg/mL
2,2',3,5'-TetraCB	44	2.0 µg/mL
2,2',4,5'-TetraCB	49	2.0 µg/mL
2,2',5,5'-TetraCB	52	2.0 µg/mL
2,3',4',5-TetraCB	70	2.0 µg/mL
2,4,4',5-TetraCB	74	2.0 µg/mL
2,2',3,3',4-PentaCB	82	0.5 µg/mL
2,2',3,4,5'-PentaCB	87	2.0 µg/mL
2,2',3,5',6-PentaCB	95	1.0 µg/mL
2,2',4,4',5-PentaCB	99	2.0 µg/mL
2,2',4,5,5'-PentaCB	101	2.0 µg/mL
2,3,3',4,4'-PentaCB	105	0.5 µg/mL
2,3,3',4',6-PentaCB	110	2.0 µg/mL
2,3',4,4',5-PentaCB	118	2.0 µg/mL
2,2',3,3',4,4'-HexaCB	128	2.0 µg/mL
2,2',3,3',4,6'-HexaCB	132	1.0 µg/mL
2,2',3,4,4',5'-HexaCB	138	2.0 µg/mL
2,2',3,4',5',6-HexaCB	149	2.0 µg/mL
2,2',3,5,5',6-HexaCB	151	2.0 µg/mL
2,2',4,4',5,5'-HexaCB	153	2.0 µg/mL
2,3,3',4,4',5-HexaCB	156	2.0 µg/mL
2,3,3',4,4',6-HexaCB	158	0.5 µg/mL
3,3',4,4',5,5'-HexaCB	169	2.0 µg/mL
2,2',3,3',4,4',5-HeptaCB	170	2.0 µg/mL
2,2',3,3',4,4',6-HeptaCB	171	2.0 µg/mL
2,2',3,3',4',5,6-HeptaCB	177	2.0 µg/mL
2,2',3,4,4',5,5'-HeptaCB	180	2.0 µg/mL
2,2',3,4,4',5',6-HeptaCB	183	2.0 µg/mL
2,2',3,4',5,5',6-HeptaCB	187	2.0 µg/mL
2,3,3',4,4',5',6-HeptaCB	191	2.0 µg/mL
2,2',3,3',4,4',5,5'-OctaCB	194	2.0 µg/mL
2,2',3,3',4,4',5,6-OctaCB	195	2.0 µg/mL
2,2',3,3',4,5,5',6'-OctaCB	199	1.5 µg/mL
2,3,3',4,4',5,5',6-OctaCB	205	2.0 µg/mL
2,2',3,3',4,4',5,5',6-NonaCB	206	2.0 µg/mL
2,2',3,3',4,5,5',6,6'-NonaCB	208	2.0 µg/mL
DecaCB	209	2.0 µg/mL

	Code	Product	Unit
New	CIL-EC-5433	Comprehensive Native PCB Mixture (unlabelled)	1.2 mL

Solvent: Isooctane

Unlabelled PCBs	IUPAC#	Concentration
2-MonoCB	1	2000 ng/mL
4-MonoCB	3	2000 ng/mL
2,2'-DiCB	4	2000 ng/mL
2,4'-DiCB	8	2000 ng/mL
2,5-DiCB	9	2000 ng/mL
2,6-DiCB	10	2000 ng/mL
3,3'-DiCB	11	2000 ng/mL
3,4-DiCB	12	2000 ng/mL
4,4'-DiCB	15	2000 ng/mL
2,2',5-TriCB	18	1000 ng/mL
2,2',6-TriCB	19	1000 ng/mL
2,4,4'-TriCB	28	1000 ng/mL
2,4',5-TriCB	31	1000 ng/mL
2',3,4-TriCB	33	1000 ng/mL
3,3',4-TriCB	35	1000 ng/mL
3,4,4'-TriCB	37	1000 ng/mL
3,4,5-TriCB	38	1000 ng/mL
2,2',3,5'-TetraCB	44	1000 ng/mL
2,2',4,5'-TetraCB	49	1000 ng/mL
2,2',5,5'-TetraCB	52	1000 ng/mL
2,2',6,6'-TetraCB	54	1000 ng/mL
2,3,3',5-TetraCB	57	1000 ng/mL
2,3',4,4'-TetraCB	66	1000 ng/mL
2,3',4',5-TetraCB	70	1000 ng/mL
2,4,4',5-TetraCB	74	1000 ng/mL
3,3',4,4'-TetraCB	77	1000 ng/mL
3,3',4,5-TetraCB	78	1000 ng/mL
3,3',4,5'-TetraCB	79	1000 ng/mL
3,4,4',5-TetraCB	81	1000 ng/mL
2,2',3,4,5'-PentaCB	87	1000 ng/mL
2,2',3,5',6-PentaCB	95	1000 ng/mL
2,2',4,4',5-PentaCB	99	1000 ng/mL
2,2',4,5,5'-PentaCB	101	1000 ng/mL
2,2',4,6,6'-PentaCB	104	1000 ng/mL
2,3,3',4,4'-PentaCB	105	1000 ng/mL
2,3,3',4',6-PentaCB	110	1000 ng/mL
2,3,3',5,5'-PentaCB	111	1000 ng/mL
2,3,4,4',5-PentaCB	114	1000 ng/mL
2,3',4,4',5-PentaCB	118	1000 ng/mL
2',3,4,4',5-PentaCB	123	1000 ng/mL
3,3',4,4',5-PentaCB	126	1000 ng/mL
2,2',3,4,4',5'-HexaCB	138	1000 ng/mL
2,2',3,4',5',6-HexaCB	149	1000 ng/mL
2,2',4,4',5,5'-HexaCB	153	1000 ng/mL
2,2',4,4',6,6'-HexaCB	155	1000 ng/mL
2,3,3',4,4',5-HexaCB	156	1000 ng/mL
2,3,3',4,4',5'-HexaCB	157	1000 ng/mL
2,3,3',4',5,5'-HexaCB	162	1000 ng/mL
2,3',4,4',5,5'-HexaCB	167	1000 ng/mL
3,3',4,4',5,5'-HexaCB	169	1000 ng/mL
2,2',3,3',4,4',5-HeptaCB	170	1000 ng/mL
2,2',3,3',4,5,6'-HeptaCB	174	1000 ng/mL
2,2',3,3',5,5',6-HeptaCB	178	1000 ng/mL
2,2',3,4,4',5,5'-HeptaCB	180	1000 ng/mL
2,2',3,4',5,5',6-HeptaCB	187	1000 ng/mL
2,2',3,4',5,6,6'-HeptaCB	188	1000 ng/mL
2,3,3',4,4',5,5'-HeptaCB	189	1000 ng/mL
2,2',3,3',4,4',5,5'-OctaCB	194	1000 ng/mL
2,2',3,3',4,4',5,6-OctaCB	195	1000 ng/mL
2,2',3,3',4,5,6,6'-OctaCB	199	1000 ng/mL
2,2',3,3',5,5',6,6'-OctaCB	202	1000 ng/mL
2,2',3,4,4',5,5',6-OctaCB	203	1000 ng/mL
2,3,3',4,4',5,5',6-OctaCB	205	1000 ng/mL
2,2',3,3',4,4',5,5',6-NonaCB	206	1000 ng/mL
2,2',3,3',4,5,5',6,6'-NonaCB	208	1000 ng/mL
DecaCB	209	1000 ng/mL

	Code	Product	Unit
New	CIL-EC-5434	Fully Resolved Native Mono-Deca PCB Mixture (unlabelled)	1.2 mL

Solvent: Isooctane

Unlabelled PCBs	IUPAC#	Concentration
2-MonoCB	1	2000 ng/mL
4-MonoCB	3	2000 ng/mL
2,4'-DiCB	8	2000 ng/mL
2,5-DiCB	9	2000 ng/mL
2,6-DiCB	10	2000 ng/mL
3,4-DiCB	12	2000 ng/mL
4,4'-DiCB	15	2000 ng/mL
2,2',5-TriCB	18	1000 ng/mL
2,2',6-TriCB	19	1000 ng/mL
2',3,4-TriCB	33	1000 ng/mL
3,3',4-TriCB	35	1000 ng/mL
3,4,4'-TriCB	37	1000 ng/mL
3,4,5-TriCB	38	1000 ng/mL
2,2',3,5'-TetraCB	44	1000 ng/mL
2,2',5,5'-TetraCB	52	1000 ng/mL
2,2',6,6'-TetraCB	54	1000 ng/mL
2,3,3',5-TetraCB	57	1000 ng/mL
2,4,4',5-TetraCB	74	1000 ng/mL
3,3',4,4'-TetraCB	77	1000 ng/mL
3,3',4,5-TetraCB	78	1000 ng/mL
3,3',4,5'-TetraCB	79	1000 ng/mL
3,4,4',5-TetraCB	81	1000 ng/mL
2,2',4,4',5-PentaCB	99	1000 ng/mL
2,2',4,6,6'-PentaCB	104	1000 ng/mL
2,3,4,4',5-PentaCB	114	1000 ng/mL
2,3',4,4',5-PentaCB	118	1000 ng/mL
2',3,4,4',5-PentaCB	123	1000 ng/mL
3,3',4,4',5-PentaCB	126	1000 ng/mL
2,2',4,4',5,5'-HexaCB	153	1000 ng/mL
2,2',4,4',6,6'-HexaCB	155	1000 ng/mL
2,3,3',4,4',5-HexaCB	156	1000 ng/mL
2,3,3',4,4',5'-HexaCB	157	1000 ng/mL
2,3,3',4',5,5'-HexaCB	162	1000 ng/mL
2,3',4,4',5,5'-HexaCB	167	1000 ng/mL
3,3',4,4',5,5'-HexaCB	169	1000 ng/mL
2,2',3,4',5,6,6'-HeptaCB	188	1000 ng/mL
2,3,3',4,4',5,5'-HeptaCB	189	1000 ng/mL
2,2',3,3',4,4',5,5'-OctaCB	194	1000 ng/mL
2,2',3,3',4,4',5,6-OctaCB	195	1000 ng/mL
2,2',3,3',5,5',6,6'-OctaCB	202	1000 ng/mL
2,3,3',4,4',5,5',6-OctaCB	205	1000 ng/mL
2,2',3,3',4,4',5,5',6-NonaCB	206	1000 ng/mL
2,2',3,3',4,5,5',6,6'-NonaCB	208	1000 ng/mL
DecaCB	209	1000 ng/mL

Code	Product	Unit
CIL-EC-5085	Toxic and predominant PCB PAR Solution	1.2 mL

Solvent: Nonane

Unlabelled PCBs	IUPAC#	Concentration
2,2',5-TriCB	18	250 ng/mL
2,4,4'-TriCB	28	250 ng/mL
2,2',3,5'-TetraCB	44	250 ng/mL
2,2',4,5'-TetraCB	49	250 ng/mL
2,2',5,5'-TetraCB	52	250 ng/mL
2,3',4,4'-TetraCB	66	250 ng/mL
2,4,4',5-TetraCB	74	250 ng/mL
2,2',3,4,5'-PentaCB	87	250 ng/mL
2,2',4,4',5-PentaCB	99	250 ng/mL
2,2',4,5,5'-PentaCB	101	250 ng/mL
2,3,3',4,4'-PentaCB	105	250 ng/mL
2,3,3',4',6-PentaCB	110	250 ng/mL
2,3',4,4',5-PentaCB	118	250 ng/mL
2,2',3,3',4,4'-HexaCB	128	250 ng/mL
2,2',3,4,4',5-HexaCB	138	250 ng/mL
2,2',3,4',5,5'-HexaCB	146	250 ng/mL
2,2',3,4',5',6-HexaCB	149	250 ng/mL
2,2',3,5,5',6-HexaCB	151	250 ng/mL
2,2',4,4',5,5'-HexaCB	153	250 ng/mL
2,3,3',4,4',5-HexaCB	156	250 ng/mL
2,3,3',4,4',5'-HexaCB	157	250 ng/mL
2,3,3',4,4',6-HexaCB	158	250 ng/mL
2,3',4,4',5,5'-HexaCB	167	250 ng/mL
2,2',3,3',4,4',5-HeptaCB	170	250 ng/mL
2,2',3,3',4,5,5'-HeptaCB	172	250 ng/mL
2,2',3,3',4',5,6-HeptaCB	177	250 ng/mL
2,2',3,3',5,5',6-HeptaCB	178	250 ng/mL
2,2',3,4,4',5,5'-HeptaCB	180	250 ng/mL
2,2',3,4,4',5',6-HeptaCB	183	250 ng/mL
2,2',3,4',5,5',6-HeptaCB	187	250 ng/mL
2,3,3',4,4',5,5'-HeptaCB	189	250 ng/mL
2,2',3,3',4,4',5,5'-OctaCB	194	250 ng/mL
2,2',3,3',4,4',5,6-OctaCB	195	250 ng/mL
2,2',3,3',4,4',5',6-OctaCB	196	250 ng/mL
2,2',3,3',4,5,5',6'-OctaCB	199	250 ng/mL
2,2',3,4,4',5,5',6-OctaCB	203	250 ng/mL
2,2',3,3',4,4',5,5',6-NonaCB	206	250 ng/mL
DecaCB	209	250 ng/mL

CIL-EC-4935	World Health Organization Coplanar & Mono-Ortho PCBs	1.2 mL

Solvent: Isooctane

Unlabelled PCBs	IUPAC#	Concentration
3,3',4,4'-TetraCB	77	2.0 µg/mL
3,4,4',5-TetraCB	81	2.0 µg/mL
2,3,3',4,4'-PentaCB	105	2.0 µg/mL
2,3,4,4',5-PentaCB	114	2.0 µg/mL
2,3',4,4',5-PentaCB	118	2.0 µg/mL
2',3,4,4',5-PentaCB	123	2.0 µg/mL
3,3',4,4',5-PentaCB	126	2.0 µg/mL
2,3,3',4,4',5-HexaCB	156	2.0 µg/mL
2,3,3',4,4',5'-HexaCB	157	2.0 µg/mL
2,3',4,4',5,5'-HexaCB	167	2.0 µg/mL
3,3',4,4',5,5'-HexaCB	169	2.0 µg/mL
2,3,3',4,4',5,5'-HeptaCB	189	2.0 µg/mL

CIL-EC-4935-A	World Health Organization Coplanar & Mono-Ortho PCBs	3 mL

Solvent: Isooctane

Unlabelled PCBs	IUPAC#	Concentration
3,3',4,4'-TetraCB	77	1.0 µg/mL
3,4,4',5-TetraCB	81	1.0 µg/mL
2,3,3',4,4'-PentaCB	105	1.0 µg/mL
2,3,4,4',5-PentaCB	114	1.0 µg/mL
2,3',4,4',5-PentaCB	118	1.0 µg/mL
2',3,4,4',5-PentaCB	123	1.0 µg/mL
3,3',4,4',5-PentaCB	126	1.0 µg/mL
2,3,3',4,4',5-HexaCB	156	1.0 µg/mL
2,3,3',4,4',5'-HexaCB	157	1.0 µg/mL
2,3',4,4',5,5'-HexaCB	167	1.0 µg/mL
3,3',4,4',5,5'-HexaCB	169	1.0 µg/mL
2,3,3',4,4',5,5'-HeptaCB	189	1.0 µg/mL

Code	Product	Unit
CIL-EC-5000	World Health Organization Coplanar & Mono-Ortho PCBs & 170/180	1.2 mL

Solvent: Isooctane

Unlabelled PCBs	IUPAC#	Concentration
3,3',4,4'-TetraCB	77	2.0 µg/mL
3,4,4',5-TetraCB	81	2.0 µg/mL
2,3,3',4,4'-PentaCB	105	2.0 µg/mL
2,3,4,4',5-PentaCB	114	2.0 µg/mL
2,3',4,4',5-PentaCB	118	2.0 µg/mL
2',3,4,4',5-PentaCB	123	2.0 µg/mL
3,3',4,4',5-PentaCB	126	2.0 µg/mL
2,3,3',4,4',5-HexaCB	156	2.0 µg/mL
2,3,3',4,4',5'-HexaCB	157	2.0 µg/mL
2,3',4,4',5,5'-HexaCB	167	2.0 µg/mL
3,3',4,4',5,5'-HexaCB	169	2.0 µg/mL
2,2',3,3',4,4',5-HeptaCB	170	2.0 µg/mL
2,2',3,4,4',5,5'-HeptaCB	180	2.0 µg/mL
2,3,3',4,4',5,5'-HeptaCB	189	2.0 µg/mL

Code	Product	Unit
CIL-EC-4986	Non-Ortho Native PCB Solution	1.2 mL

Solvent: Isooctane

Unlabelled PCBs	IUPAC#	Concentration
3,3',4,4'-TetraCB	77	10 µg/mL
3,4,4',5-TetraCB	81	10 µg/mL
3,3',4,4',5-PentaCB	126	10 µg/mL
3,3',4,4',5,5'-HexaCB	169	10 µg/mL

Code	Product	Unit
CIL-EC-4987	Mono-Ortho Native PCB Solution	1.2 mL

Solvent: Isooctane

Unlabelled PCBs	IUPAC#	Concentration
2,3,3',4,4'-PentaCB	105	10000 ng/mL
2,3,4,4',5-PentaCB	114	10000 ng/mL
2,3',4,4',5-PentaCB	118	10000 ng/mL
2',3,4,4',5-PentaCB	123	10000 ng/mL
2,3,3',4,4',5-HexaCB	156	10000 ng/mL
2,3,3',4,4',5'-HexaCB	157	10000 ng/mL
2,3',4,4',5,5'-HexaCB	167	10000 ng/mL
2,3,3',4,4',5,5'-HeptaCB	189	10000 ng/mL

	Code	Product	Unit
New	CIL-EC-4987/100	Mono-Ortho Native PCB Solution	100 µL

Solvent: Isooctane

Unlabelled PCBs	IUPAC#	Concentration
2,3,3',4,4'-PentaCB	105	100 ng/mL
2,3,4,4',5-PentaCB	114	100 ng/mL
2,3',4,4',5-PentaCB	118	100 ng/mL
2',3,4,4',5-PentaCB	123	100 ng/mL
2,3,3',4,4',5-HexaCB	156	100 ng/mL
2,3,3',4,4',5'-HexaCB	157	100 ng/mL
2,3',4,4',5,5'-HexaCB	167	100 ng/mL
2,3,3',4,4',5,5'-HeptaCB	189	100 ng/mL

Code	Product	Unit
CIL-EC-5179	Unlabelled PCB Mixture	1.2 mL

Solvent: Isooctane

Unlabelled PCBs	IUPAC#	Concentration
2,4,4'-TriCB	28	5 µg/mL
2,2',5,5'-TetraCB	52	5 µg/mL
2,2',4,5,5'-PentaCB	101	5 µg/mL
2,2',3,4,4',5-HexaCB	138	5 µg/mL
2,2',4,4',5,5'-HexaCB	153	5 µg/mL
2,2',3,4,4',5,5'-HeptaCB	180	5 µg/mL
DecaCB	209	5 µg/mL

Code	Product	Unit
CIL-EC-7438	Unlabelled PCB Mixture PCBs 77/101/141/178	1.2 mL

Solvent: Nonane

Unlabelled PCBs	IUPAC#	Concentration
3,3',4,4'-TetraCB	77	10 µg/mL
2,2',4,5,5'-PentaCB	101	10 µg/mL
2,2',3,4,5,5'-HexaCB	141	10 µg/mL
2,2',3,3',5,5',6-HeptaCB	178	10 µg/mL

Code	Product	Unit

PCB window defining mixture

CIL-EC-1430 PCB Window Defining Mixture (For use with DB-5 type GC/MS columns) — 5 mL

Solvent: Isooctane

Unlabelled PCBs	IUPAC#	Concentration
Biphenyl	0	2.5 µg/mL
2-MonoCB	1	2.5 µg/mL
4-MonoCB	3	2.5 µg/mL
2,6-DiCB	10	2.5 µg/mL
4,4'-DiCB	15	2.5 µg/mL
Note: #30 is 2nd tri eluter		
2,4,6-TriCB	30	2.5 µg/mL
3,4,4'-TriCB	37	2.5 µg/mL
2,2',6,6'-TetraCB	54	2.5 µg/mL
3,3',4,4'-TetraCB	77	2.5 µg/mL
2,2',4,6,6'-PentaCB	104	2.5 µg/mL
3,3',4,4',5-PentaCB	126	2.5 µg/mL
2,2',4,4',6,6'-HexaCB	155	2.5 µg/mL
3,3',4,4',5,5'-HexaCB	169	2.5 µg/mL
2,2',3,4',5,6,6'-HeptaCB	188	2.5 µg/mL
2,3,3',4,4',5,5'-HeptaCB	189	2.5 µg/mL
2,2',3,3',5,5',6,6'-OctaCB	202	2.5 µg/mL
Note: #194 is 2nd to last octa eluter		
2,2',3,3',4,4',5,5'-OctaCB	194	2.5 µg/mL
2,2',3,3',4,5,5',6,6'-NonaCB	208	2.5 µg/mL
2,2',3,3',4,4',5,5',6-NonaCB	208	2.5 µg/mL
DecaCB	209	2.5 µg/mL

Isotope labelled mixed bromo/chlorobiphenyl standards

CIL-ECB-5269	3,4-Dichloro-3',4',5'-tribromobiphenyl ($^{13}C_{12}$,99%) 40 µg/mL in Nonane	3 mL
CIL-ECB-5270	3,4-Dibromo-3',4'-dichlorobiphenyl ($^{13}C_{12}$,99%) 40 µg/mL in Nonane	3 mL
CIL-ECB-5271	3,4-Dibromo-3',4',5'-trichlorobiphenyl ($^{13}C_{12}$,99%) 40 µg/mL in Nonane	3 mL
CIL-ECB-5291	4'-Bromo-3,3',4,5-tetrachlorobiphenyl ($^{13}C_{12}$,99%) 40 µg/mL in Nonane	3 mL
CIL-ECB-5292	4'-Bromo-2,3',4,5-tetrachlorobiphenyl ($^{13}C_{12}$,99%) 40 µg/mL in Nonane	3 mL
CIL-ECB-5293	4'-Bromo-2,3,3',4-tetrachlorobiphenyl ($^{13}C_{12}$,99%) 40 µg/mL in Nonane	3 mL
CIL-ECB-5294	4'-Bromo-2,3,3',4,5-pentachlorobiphenyl ($^{13}C_{12}$,99%) 40 µg/mL in Nonane	3 mL
CIL-ECB-5339	4'-Bromo-3,3',4,5,5'-pentachlorobiphenyl ($^{13}C_{12}$,99%) 40 µg/mL in Nonane	3 mL

Unlabelled mixed bromo/chloro PCB standards

Mixed bromo/chloro biphenyls are thought to be produced by incinerator combustion and as by-products of BDE production. CIL has started a programme to synthesise this class of compounds to assist researchers in initial studies in this field.

CIL-PCBB-5272-CS	3,4-Dichloro-3',4',5'-tribromobiphenyl (unlabelled) 100 µg/mL in Isoocctane	1.2 mL
CIL-PCBB-5273	3,4-Dibromo-3',4'-dichlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
CIL-PCBB-5274	3,4-Dibromo-3',4',5'-trichlorobiphenyl 100 µg/mL in Isooctane	1.2 mL
CIL-PCBB-5295	4'-Bromo-3,3',4,5-tetrachlorobiphenyl 100 µg/mL in iso-Octane	1.2 mL
CIL-PCBB-5296	4'-Bromo-2,3',4,5-tetrachlorobiphenyl 100 µg/mL in iso-Octane	1.2 mL
CIL-PCBB-5297	4'-Bromo-2,3,3',4-tetrachlorobiphenyl 100 µg/mL in iso-Octane	1.2 mL
CIL-PCBB-5298	4'-Bromo-2,3,3',4,5-pentachlorobiphenyl 100 µg/mL in iso-Octane	1.2 mL
CIL-PCBB-5340-CS	4'-Bromo-3,3',4,5,5'-pentachlorobiphenyl 100 µg/mL in Isooctane	1.2 mL

Mixed bromo/chlorobiphenyl standard mixtures

CIL-ECB-5390 PXB Calibration Solutions [CS1-CS5] — 5 x 0.2 mL

Solvent: Nonane

All concentrations are in ng/mL

Unlabelled Compounds	CS1	CS2	CS3	CS4	CS5
4'-Bromo-2,3',4,5-TetraCB	2	10	50	200	200
4'-Bromo-2,3,3',4-TetraCB	2	10	50	200	200
4'-Bromo-2,3,3',4,5-PentaCB	2	10	50	200	200
4'-Bromo-3,3',4,5,5'-PentaCB	2	10	50	200	1000
3,4-Dichloro-3',4',5'-TriBB	4	20	100	400	2000
^{13}C-Labelled Compounds	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**
4'-Bromo-3,3',4,5-TetraCB ($^{13}C_{12}$,99%)	100	100	100	100	100
4'-Bromo-2,3',4,5-TetraCB ($^{13}C_{12}$,99%)	100	100	100	100	100
4'-Bromo-2,3,3',4-TetraCB ($^{13}C_{12}$,99%)	100	100	100	100	100
4'-Bromo-2,3,3',4,5-PentaCB ($^{13}C_{12}$,99%)	100	100	100	100	100
4'-Bromo-3,3',4,5,5'-PentaCB ($^{13}C_{12}$,99%)	100	100	100	100	100
3,4-Dichloro-3',4',5'-TriBB ($^{13}C_{12}$,99%)	100	100	100	100	100
2,2',3,4,5,5'-HexaCDE ($^{13}C_{12}$,99%)	100	100	100	100	100

PCB standards and standard mixtures

	Code	Product	Unit
	CIL-ECB-5390-CS1	PXB Calibration Solution [CS1]	0.2 mL
	CIL-ECB-5390-CS2	PXB Calibration Solution [CS2]	0.2 mL
	CIL-ECB-5390-CS3	PXB Calibration Solution [CS3]	0.2 mL
	CIL-ECB-5390-CS4	PXB Calibration Solution [CS4]	0.2 mL
	CIL-ECB-5390-CS5	PXB Calibration Solution [CS5]	0.2 mL
New	CIL-ECB-5389	PXB Clean-up Spike (13C12,99%) Solvent: Nonane 4'-Bromo-3,3',4,5-TetraCB ($^{13}C_{12}$,99%) .....1000 ng/mL 4'-Bromo-2,3',4,5-TetraCB ($^{13}C_{12}$,99%) .....1000 ng/mL 4'-Bromo-2,3,3',4-TetraCB ($^{13}C_{12}$,99%) .....1000 ng/mL 4'-Bromo-2,3,3',4,5-PentaCB ($^{13}C_{12}$,99%) .....1000 ng/mL 4'-Bromo-3,3',4,5,5'-PentaCB ($^{13}C_{12}$,99%).....1000 ng/mL 3,4-Dichloro-3',4',5'-TriBB ($^{13}C_{12}$,99%) .....2000 ng/mL	1.2 mL
	CIL-EO-5388	PXB Syringe Standard ($^{13}C_{12}$,99%) Solvent: Nonane 2,2',3,4,5,5'-HexaCDE ($^{13}C_{12}$,99%)..... 1000 ng/mL	1.2 mL
New	CIL-ECB-5387	PXB Native PAR Solution Solvent: Nonane 4'-Bromo-3,3',4,5-TetraCB..... 1000 ng/mL 4'-Bromo-2,3',4,5-TetraCB..... 1000 ng/mL 4'-Bromo-2,3,3',4-TetraCB..... 1000 ng/mL 4'-Bromo-2,3,3',4,5-PentaCB ..... 1000 ng/mL 4'-Bromo-3,3',4,5,5'-PentaCB ..... 1000 ng/mL 3,4-Dichloro-3',4',5'-TriBB ..... 2000 ng/mL	0.5 mL

Hydroxy-PCBs

	CIL-OHCB-5114-1.2	4'-Hydroxy-3,3',4,5'-tetrachlorobiphenyl ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
	CIL-OHCB-5115-1.2	4-Hydroxy-2,3,3',4',5-pentachlorobiphenyl ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
	CIL-OHCB-5117-1.2	4-Hydroxy-2,2',3,4',5,5'-hexachlorobiphenyl ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
New	CIL-OHCB-5118-1.2	3'-Hydroxy-2,2',3,4,4',5'-hexachlorobiphenyl ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
New	CIL-OHCB-5124-1.2	4'-Hydroxy-2,2',3,3',4,5,5'-heptachlorobiphenyl ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL

Methoxy-PCBs

	CIL-MEOCB-5109-1.2	2,3,3',4',5-Pentachloro-4-methoxybiphenyl (unlabelled) 50 µg/mL in Nonane	1.2 mL
	CIL-MEOCB-5111-1.2	2,2',3,4',5,5'-Hexachloro-4-methoxybiphenyl (unlabelled) 50 µg/mL in Nonane	1.2 mL
	CIL-MEOCB-5135-1.2	2,2',3,4',5,5',6-Heptachloro-4-methoxybiphenyl (unlabelled) 50 µg/mL in Nonane	1.2 mL

Unlabelled methyl sulfone PCB standards

Methyl Sulfone derivatives of polychlorinated biphenyls ($MeSO_2$-PCBs) are known to be primary metabolic products of PCBs. These are persistent, lipophilic compounds which accumulate in the lung, liver and kidney tissues of mammals exposed to PCBs.

	CIL-MSCB-4027	3-$MeSO_2$-4-Me-2',3',4',5,5'-Penta-CB (internal standard) 40 µg/mL in Nonane	1.2 mL
	CIL-MSCB-4007	3-$MeSO_2$-2,2',4',5-TetraCB 40 µg/mL in Nonane	1.2 mL
	CIL-MSCB-4008	4-$MeSO_2$-2,2',4',5-TetraCB 40 µg/mL in Nonane	1.2 mL
	CIL-MSCB-4043	4-$MeSO_2$-2,2',4',5,6-PentaCB 40 µg/mL in Nonane	1.2 mL
	CIL-MSCB-4009	3-$MeSO_2$-2,2',4',5,5'-PentaCB 40 µg/mL in Nonane	1.2 mL
	CIL-MSCB-4010	4-$MeSO_2$-2,2',4',5,5'-PentaCB 40 µg/mL in Nonane	1.2 mL
	CIL-MSCB-4012	4-$MeSO_2$-2,3,3',4',6-PentaCB 40 µg/mL in Nonane	1.2 mL
	CIL-MSCB-4044	3-$MeSO_2$-2,2',3',4',5,6-HexaCB 40 µg/mL in Nonane	1.2 mL
	CIL-MSCB-4013	3-$MeSO_2$-2,2',4',5,5',6-HexaCB 40 µg/mL in Nonane	1.2 mL
	CIL-MSCB-4015	3-$MeSO_2$-DDE 40 µg/mL in Nonane	1.2 mL
	CIL-MSCB-4045	4-$MeSO_2$-2,2',3,3',4',6-HexaCB 40 µg/mL in Nonane	1.2 mL

Brominated flame retardant standards

Isotope Labelled Brominated Diphenyl Ether (BDE) Standards

Generally used as flame retardants, Brominated Diphenyl Ethers (BDEs) have become chemicals of significant environmental concern. BDEs may be generally considered as persistent and highly lipophilic substances, similar to well known environmental contaminants such as polychlorinated biphenyls (PCBs).

In 1996, Cambridge Isotope Laboratories (CIL) first introduced Chlorinated and Brominated Diphenyl Ether analytical standards. Since then, additional studies in Europe, Canada, Japan, and the United States have significantly increased interest in these products and enabled CIL to extend its flame-retardant offerings.

U.S. EPA Method 1614 Standard Mixtures

The United States EPA has developed a standardized test method for analysis of Brominated Diphenyl Ethers in multiple matrices by High Resolution GC / MS. CIL worked closely with the EPA and their contracting laboratories to develop standard mixtures specifically for use in Method 1614.

RoHS BDE Standard Mixtures

The Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (2002 / 95 /EC), commonly referred to as the Restriction of Hazardous Substances Directive (RoHS) was adopted in February 2003 in Europe and took effect in July 2006. This directive restricts the use of several types of hazardous materials in the manufacture of various types of electronic and electrical equipment. CIL worked with laboratories in the European Union to develop standards for analysis of brominated diphenyl ethers under the RoHS guidelines.

Brominated Flame Retardant Standards and Standard Mixtures

Following regulatory restrictions and voluntary removal of Brominated Diphenyl Ether (BDE) products from many flame retardant applications, new brominated compounds have been developed as replacements for BDEs. As monitoring of these possible environmental pollutants increased, CIL developed several labelled and unlabelled standards to allow accurate analysis of these new-use Brominated Flame Retardant (BFR) compounds. CIL further developed a series of standard mixtures which include a combination of BDEs and other BFRs in comprehensive mixtures.

Isotope labelled and unlabelled BDE Metabolites

Researchers have suggested that BDE body burdens are not completely represented by measurements of BDEs in tissue or milk.

Analytical data indicates that the liver hydrolyzes BDEs in its attempts to expel them. BDE toxicity is still being established, but there is a likelihood that BDE metabolites have similar or greater toxicity than the parent BDEs. CIL has been producing both unlabelled and $^{13}C_{12}$ Methoxy- and Hydroxy-BDEs. These items represent some of the BDE metabolites available from CIL; please contact LGC Standards for more information on these compounds.

Isotope labelled brominated diphenyl ether (BDE) standards

	Code	Product	Unit
	CIL-CLM-1587-1.2	Diphenyl ether ($^{13}C_{12}$,99%) (BDE-0) 50 µg/mL in Nonane	1.2 mL
	CIL-EO-4999	4-Monobromodiphenyl ether ($^{13}C_{12}$,99%) (BDE 3) 50 µg/mL in Nonane	1.2 mL
	CIL-EO-5001	4,4'-Dibromodiphenyl ether ($^{13}C_{12}$,99%) (BDE 15) 50 µg/mL in Nonane	1.2 mL
	CIL-EO-5002	2,4,4'-Tribromodiphenyl ether ($^{13}C_{12}$,99%) (BDE 28) 50 µg/mL in Nonane	1.2 mL
	CIL-EO-4982	2,2',4,4'-Tetrabromodiphenyl ether ($^{13}C_{12}$,99%) (BDE-47) 50 µg/mL in Nonane	1.2 mL
	CIL-EO-1439	3,3',4,4'-Tetrabromodiphenyl ether ($^{13}C_{12}$,99%) (BDE-77) 50 µg/mL in Nonane	1.2 mL
	CIL-EO-4983	2,2',4,4',5-Pentabromodiphenyl ether ($^{13}C_{12}$,99%) (BDE-99) 50 µg/mL in Nonane	1.2 mL
	CIL-EO-4993	2,2',4,4',6-Pentabromodiphenyl ether ($^{13}C_{12}$,99%) (BDE-100) 50 µg/mL in Nonane	1.2 mL
	CIL-EO-5034	2,3',4,4',5-Pentabromodiphenyl ether ($^{13}C_{12}$,99%) (BDE-118) 50 µg/mL in Nonane	1.2 mL
	CIL-EO-4930	3,3',4,4',5-Pentabromodiphenyl ether ($^{13}C_{12}$,99%) (BDE-126) 50 µg/mL in Nonane	1.2 mL
	CIL-EO-5035	2,2',3,4,4',5'-Hexabromodiphenyl ether ($^{13}C_{12}$,99%) (BDE-138) 50 µg/mL in Nonane	1.2 mL
	CIL-EO-5165	2,2',3,4,4',6-Hexabromodiphenyl ether ($^{13}C_{12}$,99%) (BDE-139) 50 µg/mL in Nonane	1.2 mL
	CIL-EO-4984	2,2',4,4',5,5'-Hexabromodiphenyl ether ($^{13}C_{12}$,99%) (BDE-153) 50 µg/mL in Nonane	1.2 mL
	CIL-EO-5161	2,2',4,4',5,6'-Hexabromodiphenyl ether ($^{13}C_{12}$,99%) (BDE-154) 50 µg/mL in Nonane	1.2 mL
New	CIL-EO-5413	2,2',4,4',6,6'-Hexabromodiphenyl ether ($^{13}C_{12}$,99%) (BDE-155) 50 µg/mL in Nonane	1.2 mL
	CIL-EO-4985	2,2',3,4,4',5',6-Heptabromodiphenyl ether ($^{13}C_{12}$,99%) (BDE-183) 50 µg/mL in Nonane	1.2 mL
New	CIL-EO-5376	2,3,3',4,4',5,6-Heptabromodiphenyl ether ($^{13}C_{12}$,99%) (BDE-190) 50 µg/mL in Nonane	1.2 mL

Isotope labelled brominated diphenyl ether (BDE) standards

	Code	Product	Unit
	CIL-EO-5337	2,2',3,3',4,4',6,6'-Octabromodiphenyl ether ($^{13}C_{12}$,99%) (BDE-197) 50 µg/mL in Nonane	1.2 mL
	CIL-EO-5377	2,2',3,4,4',5,6,6'-Octabromodiphenyl ether ($^{13}C_{12}$,99%) (BDE-203) 50 µg/mL in Nonane	1.2 mL
New	CIL-EO-5355	2,2',3,4,4',5,6,6'-Octabromodiphenyl ether ($^{13}C_{12}$,99%) (BDE-204) 50 µg/mL in Nonane	1.2 mL
	CIL-EO-5362	2,3,3',4,4',5,5',6-Octabromodiphenyl ether ($^{13}C_{12}$,99%) (BDE-205) 50 µg/mL in Nonane	1.2 mL
	CIL-EO-5240	2,2',3,3',4,4',5,5',6-Nonabromodiphenyl ether ($^{13}C_{12}$,99%) (BDE-206) 50 µg/mL in Nonane	1.2 mL
	CIL-EO-5241	2,2',3,3',4,4',5,6,6'-Nonabromodiphenyl ether ($^{13}C_{12}$,99%) (BDE-207) 50 µg/mL in Nonane	1.2 mL
	CIL-EO-5242	2,2',3,3',4,5,5',6,6'-Nonabromodiphenyl ether ($^{13}C_{12}$,99%) (BDE-208) 50 µg/mL in Nonane	1.2 mL
	CIL-EO-5003	Decabromodiphenyl ether ($^{13}C_{12}$,99%) (BDE-209) 50 µg/mL in n-Nonane	1.2 mL

Unlabelled brominated diphenyl ether (BDE) standards

	CIL-ULM-6782-1.2	Diphenyl ether (BDE-0) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-1-CS	2-Monobromodiphenyl ether (BDE-1) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-2-CS	3-Monobromodiphenyl ether (BDE-2) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-3-CS	4-Monobromodiphenyl ether (BDE-3) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-7-CS	2,4-Dibromodiphenyl ether (BDE-7) (unlabelled) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-8-CS	2,4'-Dibromodiphenyl ether (BDE-8) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-10-CS	2,6-Dibromodiphenyl ether (BDE-10) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-11-CS	3,3'-Dibromodiphenyl ether (BDE-11) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-12-CS	3,4-Dibromodiphenyl ether (BDE-12) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-13-CS	3,4'-Dibromodiphenyl ether (BDE-13) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-15-CS	4,4'-Dibromodiphenyl ether (BDE-15) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-17-CS	2,2',4-Tribromodiphenyl ether (BDE-17) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-25-CS	2,3',4-Tribromodiphenyl ether (BDE-25) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-28-CS	2,4,4'-Tribromodiphenyl ether (BDE-28) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-30-CS	2,4,6-Tribromodiphenyl ether (BDE-30) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-32-CS	2,4',6-Tribromodiphenyl ether (BDE-32) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-33-CS	2',3,4-Tribromodiphenyl ether (BDE-33) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-35-CS	3,3',4-Tribromodiphenyl ether (BDE-35) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-37-CS	3,4,4'-Tribromodiphenyl ether (BDE-37) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-47-CS	2,2',4,4'-Tetrabromodiphenyl ether (BDE-47) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-49-CS	2,2',4,5'-Tetrabromodiphenyl ether (BDE-49) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-51-CS	2,2',4,6'-Tetrabromodiphenyl ether (BDE-51) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-66-CS	2,3',4,4'-Tetrabromodiphenyl ether (BDE-66) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-71-CS	2,3',4',6-Tetrabromodiphenyl ether (BDE-71) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-75-CS	2,4,4',6-Tetrabromodiphenyl ether (BDE-75) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-77-CS	3,3',4,4'-Tetrabromodiphenyl ether (BDE-77) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-79-CS	3,3',4,5'-Tetrabromodiphenyl ether (BDE-79) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-85-CS	2,2',3,4,4'-Pentabromodiphenyl ether (BDE-85) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-99-CS	2,2',4,4',5-Pentabromodiphenyl ether (BDE-99) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-100-CS	2,2',4,4',6-Pentabromodiphenyl ether (BDE-100) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-105-CS	2,3,3',4,4'-Pentabromodiphenyl ether (BDE-105) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-116-CS	2,3,4,5,6-Pentabromodiphenyl ether (BDE-116) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-118-CS	2,3',4,4',5-Pentabromodiphenyl ether (BDE-118) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-119-CS	2,3',4,4',6-Pentabromodiphenyl ether (BDE-119) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-120-CS	2,3',4,5,5'-Pentabromodiphenyl ether (BDE-120) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-126-CS	3,3',4,4',5-Pentabromodiphenyl ether (BDE-126) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-128-CS	2,2',3,3',4,4'-Hexabromodiphenyl ether (BDE-128) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-138-CS	2,2',3,4,4',5'-Hexabromodiphenyl ether (BDE-138) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-139-CS	2,2',3,4,4',6-Hexabromodiphenyl ether (BDE-139) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-140-CS	2,2',3,4,4',6'-Hexabromodiphenyl ether (BDE-140) 50 µg/mL in Nonane	1.2 mL
New	CIL-BDE-148-CS	2,2',3,4',5,6'-Hexabromodiphenyl ether (BDE-148) 50 µg/mL in Nonane	1.2 mL

	Code	Product	Unit
	CIL-BDE-153-CS	2,2',4,4',5,5'-Hexabromodiphenyl ether (BDE-153) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-154-CS	2,2',4,4',5,6'-Hexabromodiphenyl ether (BDE-154) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-155-CS	2,2',4,4',6,6'-Hexabromodiphenyl ether (BDE-155) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-166-CS	2,3,4,4',5,6-Hexabromodiphenyl ether (BDE-166) 50 µg/mL in Nonane	1.2 mL
New	CIL-BDE-175-CS	2,2',3,3',4,5',6-Heptabromodiphenyl ether (BDE-175) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-181-CS	2,2',3,4,4',5,6-Heptabromodiphenyl ether (BDE-181) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-183-CS	2,2',3,4,4',5',6-Heptabromodiphenyl ether (BDE-183) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-190-CS	2,3,3',4,4',5,6-Heptabromodiphenyl ether (BDE-190) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-197-CS	2,2',3,3',4,4',6,6'-Octabromodiphenyl ether (BDE-197) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-203-CS	2,2',3,4,4',5,5',6-Octabromodiphenyl ether (BDE-203) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-204-CS	2,2',3,4,4',5,6,6'-Octabromodiphenyl ether (BDE-204) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-205-CS	2,3,3',4,4',5,5',6-Octabromodiphenyl ether (BDE-205) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-206-CS	2,2',3,3',4,4',5,5',6-Nonabromodiphenyl ether (BDE-206) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-207-CS	2,2',3,3',4,4',5,6,6'-Nonabromodiphenyl ether (BDE-207) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-208-CS	2,2',3,3',4,5,5',6,6'-Nonabromodiphenyl ether (BDE-208) 50 µg/mL in Nonane	1.2 mL
	CIL-BDE-209-CS	Decabromodiphenyl ether (BDE-209) 50 µg/mL in Nonane	1.2 mL

Isotope labelled polybrominated biphenyl (PBB) standards

	CIL-EB-5055	3,3',4,4'-Tetrabromobiphenyl ($^{13}C_{12}$,99%) (PBB-77) 40 µg/mL in Nonane	3 mL
	CIL-EB-5056	3,3',4,4',5-Pentabromobiphenyl ($^{13}C_{12}$,99%) (PBB-126) 40 µg/mL in Nonane	3 mL
New	CIL-EB-5162	2,2',4,4',5,5'-Hexabromobiphenyl (PBB-153) ($^{13}C_{12}$,99%) 40 µg/mL in Nonane	3 mL
	CIL-EB-5106	2,3,3',4,4',5-Hexabromobiphenyl ($^{13}C_{12}$,99%) (PBB-157) 40 µg/mL in Nonane	3 mL
New	CIL-EB-5439	Decabromobiphenyl ($^{13}C_{12}$,99%) 40 µg/mL in Nonane	3 mL

Unlabelled polybrominated biphenyl (PBB) standards

	CIL-PBB-77-CS	3,3',4,4'-Tetrabromobiphenyl (PBB-77) 100 µg/mL in Isooctane	1.2 mL
New	CIL-PBB-126	3,3',4,4',5-Pentabromobiphenyl (unlabelled) 100 ug/mL in Isooctane	1.2 mL
	CIL-PBB-153-CS	2,2',4,4',5,5'-Hexabromobiphenyl (PBB-153) 100 µg/mL in Isooctane	1.2 mL
	CIL-PBB-157-CS	2,3,3',4,4',5-Hexabromobiphenyl (PBB-157) 100 µg/mL in Isooctane	1.2 mL
New	CIL-PBB-209-CS	Decabromobiphenyl (PBB-209) 100 µg/mL in Isooctane	1.2 mL

BDE technical mixtures

	CIL-EO-4958-1.2	Bromkal 70-5 Diphenyl Ether Technical Mixture 50 µg/mL in Methanol	1.2 mL
	CIL-EO-5031	PentaBDE Technical Mix (DE-71) 50 µg/mL in Methanol	1.2 mL
	CIL-EO-5030	OctaBDE Technical Mix (DE-79) 50 µg/mL in Methanol	1.2 mL
	CIL-EO-5060	DecaBDE Technical Mix (Saytex 102E) 10 µg/mL in Methanol	10 mL

Tetrabromobisphenol A (TBBPA) and hexabromocyclododecane (HBCD) standards

	CIL-CLM-4694-1.2	Tetrabromobisphenol A (ring-$^{13}C_{12}$,99%) 50 µg/mL in Methanol	1.2 mL
New	CIL-ULM-8734-1.2	Tetrabromobisphenol A (unlabelled) 50 µg/mL in Methanol	1.2 mL
	CIL-ULM-6236-1.2	Dimethyl tetrabromobisphenol A (unlabelled) 50 µg/mL in Nonane	1.2 mL
	CIL-CLM-7102-1.2	Hexabromocyclododecane (mix of alpha, beta and gamma isomers) ($^{13}C_{12}$,99%) 50 µg/mL in Toluene	1.2 mL
	CIL-CLM-7922-0.5	alpha-Hexabromocyclododecane ($^{13}C_{12}$,99%) 50 µg/mL in Toluene	0.5 mL
	CIL-ULM-4834-1.2	alpha-Hexabromocyclododecane (unlabelled) 50 µg/mL in Toluene	1.2 mL
	CIL-CLM-7923-1.2	beta-Hexabromocyclododecane ($^{13}C_{12}$,99%) 50 µg/mL in Toluene	1.2 mL
	CIL-ULM-4835-1.2	beta-Hexabromocyclododecane (unlabelled) 50 µg/mL in Toluene	1.2 mL
	CIL-CLM-7924-1.2	gamma-Hexabromocyclododecane ($^{13}C_{12}$,99%) 50 µg/mL in Toluene	1.2 mL
	CIL-ULM-4836-1.2	gamma-Hexabromocyclododecane (unlabelled) 50 µg/mL in Toluene	1.2 mL

Other flame retardant standards

New	CIL-CLM-8569-1.2	Dechlorane Plus Syn® ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7886-1.2	Dechlorane Plus® syn-Isomer (unlabelled) 50 µg/mL in Nonane	1.2 mL
New	CIL-CLM-8588-1.2	Dechlorane Plus® anti-Isomer ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL

Isotope labelled brominated diphenyl ether (BDE) standards

	Code	Product	Unit
	CIL-ULM-7887-1.2	Dechlorane Plus® anti-Isomer (unlabelled) 50 µg/mL in Nonane	1.2 mL
	CIL-ULM-7777-1.2	Dechlorane Plus® Technical Product (unlabelled) 100 µg/mL in Nonane	1.2 mL
New	CIL-ULM-7375-2X1.2	1,2-Bis(pentabromophenyl)ethane (unlabelled) 25 µg/mL in Toluene (chemical purity 96%)	2 x 1.2 mL
	CIL-ULM-7595-1.2	1,2-Bis(2,4,6-tribromophenoxy)ethane (unlabelled) 50 µg/mL in Nonane	1.2 mL
	CIL-CLM-8006-1.2	Tetrachlorobisphenol A (ring-$^{13}C_{12}$,99%) 50 µg/mL in Methanol	1.2 mL
	CIL-ULM-7606-1.2	Tetrachlorobisphenol A (unlabelled) 50 µg/mL in Methanol	1.2 mL

Hydroxy-BDEs

	CIL-OHBDE-5190-1.2	6-Hydroxy-2,2',4,4'-tetrabromodiphenyl ether ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
	CIL-OHBDE-5206-1.2	6-Hydroxy-2,2',4,4'-tetrabromodiphenyl ether (unlabelled) 50 µg/mL in Nonane	1.2 mL
	CIL-OHBDE-5191-1.2	2-Hydroxy-2',4,4',5',6-pentabromodiphenyl ether ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
	CIL-OHBDE-5212-1.2	4'-Hydroxy-2,2',4,5'-tetrabromodiphenyl ether (unlabelled) 50 µg/mL in Nonane	1.2 mL
	CIL-OHBDE-5214-1.2	6'-Hydroxy-2,2',4,5'-tetrabromodiphenyl ether (unlabelled) 50 µg/mL in Nonane	on request
New	CIL-OHBDE-5228-1.2	6-Hydroxy-2,2',4,4',5-pentabromodiphenyl ether 50 µg/mL in Nonane	1.2 mL

Methoxy-BDEs

	CIL-MEOBDE-5153-1.2	2'-Methoxy-2,3',4,5'-tetrabromodiphenylether 50 µg/mL in Nonane	1.2 mL
	CIL-MEOBDE-5205-1.2	6-Methoxy-2,2',4,4'-tetrabromodiphenyl ether 50 µg/mL in Nonane	1.2 mL

U.S. EPA Method 1614 standard mixtures

CIL-EO-5279 — Method 1614 Calibration Solutions [CS1-CS5] — 5 x 0.2 mL

Solvent: Nonane

All concentrations are in ng/mL

Native BDEs	BDE#	CS1	CS2	CS3	CS4	CS5
2,4,4'-TriBDE	28	1	5	50	500	2500
2,2',4,4'-TetraBDE	47	1	5	50	500	2500
2,2',4,4',5-PentaBDE	99	1	5	50	500	2500
2,2',4,4',6-PentaBDE	100	1	5	50	500	2500
2,2',4,4',5,5'-HexaBDE	153	1	5	50	500	2500
2,2',4,4',5,6'-HexaBDE	154	1	5	50	500	2500
2,2',3,4,4',5',6-HeptaBDE	183	1	5	50	500	2500
DecaBDE	209	10	50	500	5000	25000
Labelled BDEs	**BDE#**	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**
2,4,4'-TriBDE ($^{13}C_{12}$,99%)	28L	100	100	100	100	100
2,2',4,4'-TetraBDE ($^{13}C_{12}$,99%)	47L	100	100	100	100	100
2,2',4,4',5-PentaBDE ($^{13}C_{12}$,99%)	99L	100	100	100	100	100
2,2',4,4',6-PentaBDE ($^{13}C_{12}$,99%)	100L	100	100	100	100	100
2,2',4,4',5,5'-HexaBDE ($^{13}C_{12}$,99%)	153L	100	100	100	100	100
2,2',4,4',5,6'-HexaBDE ($^{13}C_{12}$,99%)	154L	100	100	100	100	100
2,2',3,4,4',5',6-HeptaBDE ($^{13}C_{12}$,99%)	183L	100	100	100	100	100
DecaBDE ($^{13}C_{12}$,99%)	209L	1000	1000	1000	1000	1000
Labelled Clean-up	**BDE#**	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**
2,2',3,4,4',6-HexaBDE ($^{13}C_{12}$,99%)	139L	100	100	100	100	100
Labelled Injection Internal	**BDE#**	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**
2,2',5,5'-TetraCB ($^{13}C_{12}$,99%)	PCB-52L	100	100	100	100	100
2,2',3,4,4',5'-HexaCB ($^{13}C_{12}$,99%)	PCB-138L	100	100	100	100	100

CIL-EO-5279-CS1	Method 1614 Calibration Solution [CS1]	0.2 mL
CIL-EO-5279-CS2	Method 1614 Calibration Solution [CS2]	0.2 mL
CIL-EO-5279-CS3	Method 1614 Calibration Solution [CS3]	0.2 mL
CIL-EO-5279-CS4	Method 1614 Calibration Solution [CS4]	0.2 mL
CIL-EO-5279-CS5	Method 1614 Calibration Solution [CS5]	0.2 mL

Code	Product	Unit
CIL-EO-5277	Method 1614 Labelled Surrogate Stock Solution	1.2 mL

Solvent: Nonane

Labelled BDEs	BDE#	Concentration
2,4,4'-TriBDE ($^{13}C_{12}$,99%)	28L	1 µg/mL
2,2',4,4'-TetraBDE ($^{13}C_{12}$,99%)	47L	1 µg/mL
2,2',4,4',5-PentaBDE ($^{13}C_{12}$,99%)	99L	1 µg/mL
2,2',4,4',6-PentaBDE ($^{13}C_{12}$,99%)	100L	1 µg/mL
2,2',4,4',5,5'-HexaBDE ($^{13}C_{12}$,99%)	153L	1 µg/mL
2,2',4,4',5,6'-HexaBDE ($^{13}C_{12}$,99%)	154L	1 µg/mL
2,2',3,4,4',5',6-HeptaBDE ($^{13}C_{12}$,99%)	183L	1 µg/mL
DecaBDE ($^{13}C_{12}$,99%)	209L	10 µg/mL

Code	Product	Unit
CIL-EO-5276	Method 1614 Labelled Clean-Up Stock Solution	1.2 mL

Solvent: Nonane

Labelled BDE	BDE#	Concentration
2,2',3,4,4',6-HexaBDE ($^{13}C_{12}$,99%)	139L	1 µg/mL

Code	Product	Unit
CIL-EO-5275	Method 1614 Labelled Injection Internal Stock Solution	1.2 mL

Solvent: Nonane

Labelled PCBs	IUPAC#	Concentration
2,2',5,5'-TetraCB ($^{13}C_{12}$,99%)	52L	5 µg/mL
2,2',3,4,4',5'-HexaCB ($^{13}C_{12}$,99%)	138L	5 µg/mL

Code	Product	Unit
CIL-EO-5278	Method 1614 Native PAR Stock Solution	1.2 mL

Solvent: Nonane

Unlabelled BDEs	BDE#	Concentration
2,4,4'-TriBDE	28	1 µg/mL
2,2',4,4'-TetraBDE	47	1 µg/mL
2,2',4,4',5-PentaBDE	99	1 µg/mL
2,2',4,4',6-PentaBDE	100	1 µg/mL
2,2',4,4',5,5'-HexaBDE	153	1 µg/mL
2,2',4,4',5,6'-HexaBDE	154	1 µg/mL
2,2',3,4,4',5',6-HeptaBDE	183	1 µg/mL
DecaBDE	209	10 µg/mL

RoHS standards

From 1st July 2006 the use of Pb, Cd, Hg, Cr(VI) and certain polybrominated flame retardants in electric and electronic devices will be banned unless no technical substitute exists. This is a requirement of the Directive 2002/95/EC on the “Reduction of the use of certain hazardous substances in electrical and electronic equipment” (RoHS) and currently limit values of 1 g/kg (0.1 %) are being discussed.

Code	Product	Unit
CIL-EO-5402	ROHS PBDE Calibration Solution [CS1-CS5] (Unlabelled/$^{13}C_{12}$,99%)	5 x 0.2 mL

Solvent: Nonane

All concentrations are in ng/mL

Unlabelled Congener	BDE#	CS1	CS2	CS3	CS4	CS5
4-MonoBDE	3	1	5	20	100	500
2,4-DiBDE	7	1	5	20	100	500
4,4'-DiBDE	15	1	5	20	100	500
2,2',4-TriBDE	17	1	5	20	100	500
2,4,4'-TriBDE	28	1	5	20	100	500
2,2',4,4'-TetraBDE	47	1	5	20	100	500
2,2',4,5'-TetraBDE	49	1	5	20	100	500
2,3',4,4'-TetraBDE	66	1	5	20	100	500
2,3',4',6-TetraBDE	71	1	5	20	100	500
3,3',4,4'-TetraBDE	77	1	5	20	100	500
2,2',3,4,4'-PentaBDE	85	1	5	20	100	500
2,2',4,4',5-PentaBDE	99	1	5	20	100	500
2,2',4,4',6-PentaBDE	100	1	5	20	100	500
2,3',4,4',6-PentaBDE	119	1	5	20	100	500
3,3',4,4',5-PentaBDE	126	1	5	20	100	500
2,2',3,4,4',5'-HexaBDE	138	2	10	40	200	1000
2,2',4,4',5,5'-HexaBDE	153	2	10	40	200	1000
2,2',4,4',5,6'-HexaBDE	154	2	10	40	200	1000
2,2',4,4',6,6'-HexaBDE	155	2	10	40	200	1000
2,3,4,4',5,6-HexaBDE	166	2	10	40	200	1000
2,2',3,4,4',5,6-HeptaBDE	181	2	10	40	200	1000
2,2',3,4,4',5',6-HeptaBDE	183	2	10	40	200	1000
2,3,3',4,4',5,6-HeptaBDE	190	2	10	40	200	1000
2,2',3,4,4',5,5',6-OctaBDE	203	2	10	40	200	1000
2,3,3',4,4',5,5',6-OctaBDE	205	2	10	40	200	1000
2,2',3,3',4,4',5,5',6-NonaBDE	206	5	25	100	500	2500
2,2',3,3',4,4',5,6,6'-NonaBDE	207	5	25	100	500	2500
DecaBDE	209	5	25	100	500	2500

$^{13}C_{12}$-Labelled Congener	BDE#	CS1	CS2	CS3	CS4	CS5
4-MonoBDE ($^{13}C_{12}$,99%)	3	100	100	100	100	100
4,4'-DiBDE ($^{13}C_{12}$,99%)	15	100	100	100	100	100
2,4,4'-TriBDE ($^{13}C_{12}$,99%)	28	100	100	100	100	100
2,2',4,4'-TetraBDE ($^{13}C_{12}$,99%)	47	100	100	100	100	100
2,2',4,4',5-PentaBDE ($^{13}C_{12}$,99%)	99	100	100	100	100	100
2,2',3,4,4',5-HexaBDE ($^{13}C_{12}$,99%)	138	200	200	200	200	200
2,2',4,4',5,5'-HexaBDE ($^{13}C_{12}$,99%)	153	200	200	200	200	200
2,2',4,4',5,6'-HexaBDE ($^{13}C_{12}$,99%)	154	200	200	200	200	200
2,2',3,4,4',5',6-HeptaBDE ($^{13}C_{12}$,99%)	183	200	200	200	200	200
2,2',3,4,4',5,6,6'-OctaBDE ($^{13}C_{12}$,99%)	204	200	200	200	200	200
2,2',3,3',4,4',5,6,6'-NonaBDE ($^{13}C_{12}$,99%)	207	500	500	500	500	500
DecaBDE ($^{13}C_{12}$,99%)	209	500	500	500	500	500

CIL-EO-5402-CS1	ROHS PBDE Calibration Solution [CS1]	0.2 mL
CIL-EO-5402-CS2	ROHS PBDE Calibration Solution [CS2]	0.2 mL
CIL-EO-5402-CS3	ROHS PBDE Calibration Solution [CS3]	0.2 mL
CIL-EO-5402-CS4	ROHS PBDE Calibration Solution [CS4]	0.2 mL
CIL-EO-5402-CS5	ROHS PBDE Calibration Solution [CS5]	0.2 mL
CIL-EO-5403	ROHS PBDE Clean-up Spike ($^{13}C_{12}$,99%)	1.2 mL

Solvent: Nonane

Component	BDE#	Concentration (ng/mL)
4-MonoBDE ($^{13}C_{12}$,99%)	3	100
4,4'-DiBDE ($^{13}C_{12}$,99%)	15	100
2,4,4'-TriBDE ($^{13}C_{12}$,99%)	28	100
2,2',4,4'-TetraBDE ($^{13}C_{12}$,99%)	47	100
2,2',4,4',5-PentaBDE ($^{13}C_{12}$,99%)	99	100
2,2',4,4',5,5'-HexaBDE ($^{13}C_{12}$,99%)	153	200
2,2',4,4',5,6'-HexaBDE ($^{13}C_{12}$,99%)	154	200
2,2',3,4,4',5',6-HeptaBDE ($^{13}C_{12}$,99%)	183	200
2,2',3,4,4',5,6,6'-OctaBDE ($^{13}C_{12}$,99%)	204	200
2,2',3,3',4,4',5,6,6'-NonaBDE ($^{13}C_{12}$,99%)	207	500
DecaBDE ($^{13}C_{12}$,99%)	209	500

CIL-EO-5404	ROHS PBDE Syringe Spike ($^{13}C_{12}$,99%)	1.2 mL

Solvent: Nonane

2,2',3,4,4',5-HexaBDE ($^{13}C_{12}$,99%) (BDE 138) ..... 200 ng/mL

Code	Product	Unit

CIL-EO-5405 ROHS PBDE Native PAR Spike — 1.2 mL

Solvent: Nonane

Component	BDE#	Concentration (ng/mL)
4-MonoBDE	3	1000
2,4-DiBDE	7	1000
4,4'-DiBDE	15	1000
2,2',4-TriBDE	17	1000
2,4,4'-TriBDE	28	1000
2,2',4,4'-TetraBDE	47	1000
2,2',4,5'-TetraBDE	49	1000
2,3',4,4'-TetraBDE	66	1000
2,3',4',6-TetraBDE	71	1000
3,3',4,4'-TetraBDE	77	1000
2,2',3,4,4'-PentaBDE	85	1000
2,2',4,4',5-PentaBDE	99	1000
2,2',4,4',6-PentaBDE	100	1000
2,3',4,4',6-PentaBDE	119	1000
3,3',4,4',5-PentaBDE	126	1000
2,2',3,4,4',5'-HexaBDE	138	2000
2,2',4,4',5,5'-HexaBDE	153	2000
2,2',4,4',5,6'-HexaBDE	154	2000
2,2',4,4',6,6'-HexaBDE	155	2000
2,3,4,4',5,6-HexaBDE	166	2000
2,2',3,4,4',5,6-HeptaBDE	181	2000
2,2',3,4,4',5',6-HeptaBDE	183	2000
2,3,3',4,4',5,6-HeptaBDE	190	2000
2,2',3,4,4',5,5',6-OctaBDE	203	2000
2,3,3',4,4',5,5',6-OctaBDE	205	2000
2,2',3,3',4,4',5,5',6-NonaBDE	206	5000
2,2',3,3',4,4',5,6,6'-NonaBDE	207	5000
DecaBDE	209	5000

CIL-EO-5425 RoHS Screening PBDE Calibration Solutions [CS1-CS3] (unlabelled/$^{13}C_{12}$,99%) — 3 x 0.2 mL

Solvent: Nonane

All concentrations are in ng/mL

Unlabelled Congener	**BDE#**	**CS1**	**CS2**	**CS3**
4,4'-DiBDE	15	0.02	0.1	1
2,4,4'-TriBDE	28	0.02	0.1	1
2,2',4,4'-TetraBDE	47	0.02	0.1	1
2,2',4,4',5-PentaBDE	99	0.02	0.1	1
2,2',4,4',5,5'-HexaBDE	153	0.02	0.1	1
2,2',4,4',5,6'-HexaBDE	154	0.02	0.1	1
2,2',3,4,4',5',6-HeptaBDE	183	0.02	0.1	1
2,2',3,3',4,4',6,6'-OctaBDE	197	0,05	0.25	2.5
2,2',3,3',4,4',5,5',6-NonaBDE	206	0.1	0.5	5
2,2',3,3',4,4',5,6,6'-NonaBDE	207	0,05	0.25	2.5
2,2',3,3',4,5,5',6,6'-NonaBDE	208	0,05	0.25	2.5
DecaBDE	209	0.5	2.5	25

$^{13}C_{12}$-Labelled Congener	**BDE#**	**CS1**	**CS2**	**CS3**
4,4'-DiBDE ($^{13}C_{12}$,99%)	15	0.1	0.1	0.1
2,4,4'-TriBDE ($^{13}C_{12}$,99%)	28	0.1	0.1	0.1
2,2',4,4'-TetraBDE ($^{13}C_{12}$,99%)	47	0.1	0.1	0.1
2,2',4,4',5-PentaBDE ($^{13}C_{12}$,99%)	99	0.1	0.1	0.1
2,2',4,4',5,5'-HexaBDE ($^{13}C_{12}$,99%)	153	0.1	0.1	0.1
2,2',4,4',5,6'-HexaBDE ($^{13}C_{12}$,99%)	154	0.1	0.1	0.1
2,2',3,4,4',5',6-HeptaBDE ($^{13}C_{12}$,99%)	183	0.1	0.1	0.1
2,2',3,3',4,4',6,6'-OctaBDE ($^{13}C_{12}$,99%)	197	0.25	0.25	0.25
2,2',3,3',4,4',5,5',6-NonaBDE ($^{13}C_{12}$,99%)	206	0.5	0.5	0.5
2,2',3,3',4,4',5,6,6'-NonaBDE ($^{13}C_{12}$,99%)	207	0.25	0.25	0.25
2,2',3,3',4,5,5',6,6'-NonaBDE($^{13}C_{12}$,99%)	208	0.25	0.25	0.25
DecaBDE ($^{13}C_{12}$,99%)	209	2.5	2.5	2.5

New CIL-EO-5425-CS1 RoHS Screening PBDE Calibration Solutions [CS1] (unlabelled/$^{13}C_{12}$,99%) — 0.2 mL

New CIL-EO-5425-CS2 RoHS Screening PBDE Calibration Solutions [CS2] (unlabelled/$^{13}C_{12}$,99%) — 0.2 mL

New CIL-EO-5425-CS3 RoHS Screening PBDE Calibration Solutions [CS3] (unlabelled/$^{13}C_{12}$,99%) — 0.2 mL

CIL-EO-5426 RoHS Screening PBDE Clean-Up Spike ($^{13}C_{12}$,99%) — 1.2 mL

Solvent: Nonane

Component	BDE#	Concentration
2,4,4'-TriBDE ($^{13}C_{12}$,99%)	28	1 µg/mL
2,2',4,4',5-PentaBDE ($^{13}C_{12}$,99%)	99	1 µg/mL
2,2',3,4,4',5',6-HeptaBDE ($^{13}C_{12}$,99%)	183	1 µg/mL
2,2',3,3',4,4',5,5',6-NonaBDE ($^{13}C_{12}$,99%)	206	5 µg/mL
2,2',3,3',4,5,5',6,6'-NonaBDE ($^{13}C_{12}$,99%)	08	2.5 µg/mL
DecaBDE ($^{13}C_{12}$,99%)	209	25 µg/mL

CIL-EO-5427 RoHS Screening PBDE Syringe Spike ($^{13}C_{12}$,99%) — 1.2 mL

Solvent: Nonane

Component	BDE#	Concentration
2,2',3,3',4,4',5,6,6'-NonaBDE ($^{13}C_{12}$,99%)	207	2:5 µg/mL

RoHS standards

Code	Product	Unit
CIL-EO-5428	RoHS Screening PBDE Native PAR Spike (unlabelled)	1.2 mL

Solvent: Nonane

Component	BDE#	Concentration
4,4'-DiBDE	15	1 µg/mL
2,4,4'-TriBDE	28	1 µg/mL
2,2',4,4'-TetraBDE	47	1 µg/mL
2,2',4,4',5-PentaBDE	99	1 µg/mL
2,2',4,4',5,5'-HexaBDE	153	1 µg/mL
2,2',4,4',5,6'-HexaBDE	154	1 µg/mL
2,2',3,4,4',5',6-HeptaBDE	183	1 µg/mL
2,2',3,3',4,4',6,6'-OctaBDE	197	2.5 µg/mL
2,2',3,3',4,4',5,5',6-NonaBDE	206	5 µg/mL
2,2',3,3',4,5,5',6,6'-NonaBDE	208	2.5 µg/mL
DecaBDE	209	25 µg/mL

Brominated diphenyl ether (BDE) standard mixtures

Code	Product	Unit
CIL-EO-5104	Brominated Diphenyl Ether Calibration Solutions [CS1-CS6]	6 x 0.2 mL

Solvent: Nonane

All concentrations are in ng/mL

Unlabelled BDEs	BDE#	CS1	CS2	CS3	CS4	CS5	CS6
2-MonoBDE	1	0.2	1	5	25	100	500
3-MonoBDE	2	0.2	1	5	25	100	500
4-MonoBDE	3	0.2	1	5	25	100	500
2,4-DiBDE	7	0.2	1	5	25	100	500
2,4'-DiBDE	8	0.2	1	5	25	100	500
2,6-DiBDE	10	0.2	1	5	25	100	500
3,3'-DiBDE	11	0.2	1	5	25	100	500
3,4-DiBDE	12	0.2	1	5	25	100	500
3,4'-DiBDE	13	0.2	1	5	25	100	500
4,4'-DiBDE	15	0.2	1	5	25	100	500
2,2',4-TriBDE	17	0.2	1	5	25	100	500
2,3',4-TriBDE	25	0.2	1	5	25	100	500
2,4,4'-TriBDE	28	0.2	1	5	25	100	500
2,4,6-TriBDE	30	0.2	1	5	25	100	500
2,4',6-TriBDE	32	0.2	1	5	25	100	500
2',3,4-TriBDE	33	0.2	1	5	25	100	500
3,3',4-TriBDE	35	0.2	1	5	25	100	500
3,4,4'-TriBDE	37	0.2	1	5	25	100	500
2,2',4,4'-TetraBDE	47	0.2	1	5	25	100	500
2,2',4,5'-TetraBDE	49	0.2	1	5	25	100	500
2,3',4,4'-TetraBDE	66	0.2	1	5	25	100	500
2,3',4',6-TetraBDE	71	0.2	1	5	25	100	500
2,4,4',6-TetraBDE	75	0.2	1	5	25	100	500
3,3',4,4'-TetraBDE	77	0.2	1	5	25	100	500
2,2',3,4,4'-PentaBDE	85	0.3	1.5	7.5	37.5	150	750
2,2',4,4',5-PentaBDE	99	0.3	1.5	7.5	37.5	150	750
2,2',4,4',6-PentaBDE	100	0.3	1.5	7.5	37.5	150	750
2,3,4,5,6-PentaBDE	116	0.3	1.5	7.5	37.5	150	750
2,3',4,4',5-PentaBDE	118	0.3	1.5	7.5	37.5	150	750
2,3',4,4',6-PentaBDE	119	0.3	1.5	7.5	37.5	150	750
3,3',4,4',5-PentaBDE	126	0.3	1.5	7.5	37.5	150	750
2,2',3,4,4',5'-HexaBDE	138	0.6	3	15	75	300	1500
2,2',4,4',5,5'-HexaBDE	153	0.4	2	10	50	200	1000
2,2',4,4',5,6'-HexaBDE	154	0.4	2	10	50	200	1000
2,2',4,4',6,6'-HexaBDE	155	0.4	2	10	50	200	1000
2,3,4,4',5,6-HexaBDE	166	0.4	2	10	50	200	1000
2,2',3,4,4',5,6-HeptaBDE	181	0.5	2.5	12.5	62.5	250	1250
2,2',3,4,4',5',6-HeptaBDE	183	0.5	2.5	12.5	62.5	250	1250
2,3,3',4,4',5,6-HeptaBDE	190	0.5	2.5	12.5	62.5	250	1250
Labelled BDEs	**BDE#**	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CS6**
4-MonoBDE ($^{13}C_{12}$,99%)	3	100	100	100	100	100	100
4,4'-DiBDE ($^{13}C_{12}$,99%)	15	100	100	100	100	100	100
2,4,4'-TriBDE ($^{13}C_{12}$,99%)	28	100	100	100	100	100	100
2,2',4,4'-TetraBDE ($^{13}C_{12}$,99%)	47	100	100	100	100	100	100
3,3',4,4'-TetraBDE ($^{13}C_{12}$,99%)	77	100	100	100	100	100	100
2,2',4,4',5-PentaBDE ($^{13}C_{12}$,99%)	99	150	150	150	150	150	150
2,2',4,4',6-PentaBDE ($^{13}C_{12}$,99%)	100	150	150	150	150	150	150
2,3',4,4',5-PentaBDE ($^{13}C_{12}$,99%)	118	150	150	150	150	150	150
3,3',4,4',5-PentaBDE ($^{13}C_{12}$,99%)	126	150	150	150	150	150	150
2,2',4,4',5,5'-HexaBDE ($^{13}C_{12}$,99%)	153	200	200	200	200	200	200
2,2',3,4,4',5',6-HeptaBDE ($^{13}C_{12}$,99%)	183	250	250	250	250	250	250

	Code	Product	Unit
	CIL-EO-5104-1	Brominated Diphenyl Ether Calibration Solution [CS1]	0.2 mL
	CIL-EO-5104-2	Brominated Diphenyl Ether Calibration Solution [CS2]	0.2 mL
New	CIL-EO-5104-2-6	Brominated Diphenyl Ether Calibration Solution [CS2-CS6]	5 x 0.2 mL
	CIL-EO-5104-3	Brominated Diphenyl Ether Calibration Solution [CS3]	0.2 mL
	CIL-EO-5104-4	Brominated Diphenyl Ether Calibration Solution [CS4]	0.2 mL
	CIL-EO-5104-5	Brominated Diphenyl Ether Calibration Solution [CS5]	0.2 mL
New	CIL-EO-5104-6	Brominated Diphenyl Ether Calibration Solutions [CS5]	0.2 mL

Code	Product	Unit
CIL-EO-5100	Polybrominated Diphenyl Ether Surrogate Spiking Solution	1.2 mL

Solvent: Nonane

Labelled BDEs	BDE#	Concentration
4-MonoBDE ($^{13}C_{12}$,99%)	3	100 ng/mL
4,4'-DiBDE ($^{13}C_{12}$,99%)	15	100 ng/mL
2,4,4'-TriBDE ($^{13}C_{12}$,99%)	28	100 ng/mL
2,2',4,4'-TetraBDE ($^{13}C_{12}$,99%)	47	100 ng/mL
2,2',4,4',5-PentaBDE ($^{13}C_{12}$,99%)	99	150 ng/mL
2,2',4,4',6-PentaBDE ($^{13}C_{12}$,99%)	100	150 ng/mL
2,3',4,4',5-PentaBDE ($^{13}C_{12}$,99%)	118	150 ng/mL
2,2',4,4',5,5'-HexaBDE ($^{13}C_{12}$,99%)	153	200 ng/mL
2,2',3,4,4',5',6-HeptaBDE ($^{13}C_{12}$,99%)	183	250 ng/mL

Code	Product	Unit
EO-5100-10x-0.5	Polybrominated Diphenyl Ether Surrogate Spiking Stock Solution	0.5 mL

Solvent: Nonane

Labelled BDEs	BDE#	Concentration
4-MonoBDE ($^{13}C_{12}$,99%)	3	1000 ng/mL
4,4'-DiBDE ($^{13}C_{12}$,99%)	15	1000 ng/mL
2,4,4'-TriBDE ($^{13}C_{12}$,99%)	28	1000 ng/mL
2,2',4,4'-TetraBDE ($^{13}C_{12}$,99%)	47	1000 ng/mL
2,2',4,4',5-PentaBDE ($^{13}C_{12}$,99%)	99	1500 ng/mL
2,2',4,4',6-PentaBDE ($^{13}C_{12}$,99%)	100	1500 ng/mL
2,3',4,4',5-PentaBDE ($^{13}C_{12}$,99%)	118	1500 ng/mL
2,2',4,4',5,5'-HexaBDE ($^{13}C_{12}$,99%)	153	2000 ng/mL
2,2',3,4,4',5',6-HeptaBDE ($^{13}C_{12}$,99%)	183	2500 ng/mL

Code	Product	Unit
CIL-EO-5101	Polybrominated Diphenyl Ether Performance Standard Solution	1.2 mL

Solvent: Nonane

Labelled BDEs	BDE#	Concentration
3,3',4,4'-TetraBDE ($^{13}C_{12}$,99%)	77	100 ng/mL
3,3',4,4',5-PentaBDE ($^{13}C_{12}$,99%)	126	150 ng/mL

Code	Product	Unit
CIL-EO-5101-10X-1.2	Polybrominated Diphenyl Ether Performance Standard Stock (10x) Solution	1.2 mL

Solvent: Nonane

Labelled BDEs	BDE#	Concentration
3,3',4,4'-TetraBDE ($^{13}C_{12}$,99%)	77	1000 ng/mL
3,3',4,4',5-PentaBDE ($^{13}C_{12}$,99%)	126	1500 ng/mL

Code	Product	Unit
CIL-EO-5103	Polybrominated Diphenyl Ether Predominant Congener Mixture	1.2 mL

Solvent : Nonane

Unlabelled BDEs	BDE#	Concentration
2,2',4-TriBDE	17	2.5 µg/mL
2,4,4'-TriBDE	28	2.5 µg/mL
2,2',4,4'-TetraBDE	47	2.5 µg/mL
2,3',4,4'-TetraBDE	66	2.5 µg/mL
2,3',4',6-TetraBDE	71	2.5 µg/mL
2,2',3,4,4'-PentaBDE	85	2.5 µg/mL
2,2',4,4',5-PentaBDE	99	2.5 µg/mL
2,2',4,4',6-PentaBDE	100	2.5 µg/mL
2,2',3,4,4',5'-HexaBDE	138	3.75 µg/mL
2,2',4,4',5,5'-HexaBDE	153	2.5 µg/mL
2,2',4,4',5,6'-HexaBDE	154	2.5 µg/mL
2,2',3,4,4',5',6-HeptaBDE	183	2.5 µg/mL
2,3,3',4,4',5,6-HeptaBDE	190	2.5 µg/mL
DecaBDE	209	10.0 µg/mL

Code	Product	Unit
CIL-EO-5113	Polybrominated Diphenyl Ether PAR Solution (unlabelled) Solvent: Nonane	0.5 mL

Unlabelled Congeners	BDE#	Concentration
2-MonoBDE	1	100 ng/mL
3-MonoBDE	2	100 ng/mL
4-MonoBDE	3	100 ng/mL
2,4-DiBDE	7	100 ng/mL
2,4'-DiBDE	8	100 ng/mL
2,6-DiBDE	10	100 ng/mL
3,3'-DiBDE	11	100 ng/mL
3,4-DiBDE	12	100 ng/mL
3,4'-DiBDE	13	100 ng/mL
4,4'-DiBDE	15	100 ng/mL
2,2',4-TriBDE	17	100 ng/mL
2,3',4-TriBDE	25	100 ng/mL
2,4,4'-TriBDE	28	100 ng/mL
2,4,6-TriBDE	30	100 ng/mL
2,4',6-TriBDE	32	100 ng/mL
2',3,4-TriBDE	33	100 ng/mL
3,3',4-TriBDE	35	100 ng/mL
3,4,4'-TriBDE	37	100 ng/mL
2,2',4,4'-TetraBDE	47	100 ng/mL
2,2',4,5'-TetraBDE	49	100 ng/mL
2,3',4,4'-TetraBDE	66	100 ng/mL
2,3',4',6-TetraBDE	71	100 ng/mL
2,4,4',6-TetraBDE	75	100 ng/mL
3,3',4,4'-TetraBDE	77	100 ng/mL
2,2',3,4,4'-PentaBDE	85	150 ng/mL
2,2',4,4',5-PentaBDE	99	150 ng/mL
2,2',4,4',6-PentaBDE	100	150 ng/mL
2,3,4,5,6-PentaBDE	116	150 ng/mL
2,3',4,4',5-PentaBDE	118	150 ng/mL
2,3',4,4',6-PentaBDE	119	150 ng/mL
3,3',4,4',5-PentaBDE	126	150 ng/mL
2,2',3,4,4',5'-HexaBDE	138	300 ng/mL
2,2',4,4',5,5'-HexaBDE	153	200 ng/mL
2,2',4,4',5,6'-HexaBDE	154	200 ng/mL
2,2',4,4',6,6'-HexaBDE	155	200 ng/mL
2,3,4,4',5,6-HexaBDE	166	200 ng/mL
2,2',3,4,4',5,6-HeptaBDE	181	250 ng/mL
2,2',3,4,4',5',6-HeptaBDE	183	250 ng/mL
2,3,3',4,4',5,6-HeptaBDE	190	250 ng/mL

Code	Product	Unit
CIL-EO-5113-7.5X-0.5	Polybrominated Diphenyl Ether PAR Solution (7.5X stock) Solvent: Nonane	0.5 mL

Unlabelled Congeners	BDE#	Concentration
2-MonoBDE	1	750 ng/mL
3-MonoBDE	2	750 ng/mL
4-MonoBDE	3	750 ng/mL
2,4-DiBDE	7	750 ng/mL
2,4'-DiBDE	8	750 ng/mL
2,6-DiBDE	10	750 ng/mL
3,3'-DiBDE	11	750 ng/mL
3,4-DiBDE	12	750 ng/mL
3,4'-DiBDE	13	750 ng/mL
4,4'-DiBDE	15	750 ng/mL
2,2',4-TriBDE	17	750 ng/mL
2,3',4-TriBDE	25	750 ng/mL
2,4,4'-TriBDE	28	750 ng/mL
2,4,6-TriBDE	30	750 ng/mL
2,4',6-TriBDE	32	750 ng/mL
2',3,4-TriBDE	33	750 ng/mL
3,3',4-TriBDE	35	750 ng/mL
3,4,4'-TriBDE	37	750 ng/mL
2,2',4,4'-TetraBDE	47	750 ng/mL
2,2',4,5'-TetraBDE	49	750 ng/mL
2,3',4,4'-TetraBDE	66	750 ng/mL
2,3',4',6-TetraBDE	71	750 ng/mL
2,4,4',6-TetraBDE	75	750 ng/mL
3,3',4,4'-TetraBDE	77	750 ng/mL
2,2',3,4,4'-PentaBDE	85	1125 ng/mL
2,2',4,4',5-PentaBDE	99	1125 ng/mL
2,2',4,4',6-PentaBDE	100	1125 ng/mL
2,3,4,5,6-PentaBDE	116	1125 ng/mL
2,3',4,4',5-PentaBDE	118	1125 ng/mL
2,3',4,4',6-PentaBDE	119	1125 ng/mL
3,3',4,4',5-PentaBDE	126	1125 ng/mL
2,2',3,4,4',5'-HexaBDE	138	2250 ng/mL
2,2',4,4',5,5'-HexaBDE	153	1500 ng/mL
2,2',4,4',5,6'-HexaBDE	154	1500 ng/mL
2,2',4,4',6,6'-HexaBDE	155	1500 ng/mL
2,3,4,4',5,6-HexaBDE	166	1500 ng/mL
2,2',3,4,4',5,6-HeptaBDE	181	1875 ng/mL
2,2',3,4,4',5',6-HeptaBDE	183	1875 ng/mL
2,3,3',4,4',5,6-HeptaBDE	190	1875 ng/mL

Code	Product	Unit
CIL-EO-5099	Polybrominated Diphenyl Ether Analytical Standard Solution	1.2 mL

Solvent: Nonane

Unlabelled BDEs	BDE#	Concentration
2-MonoBDE	1	100 ng/mL
3-MonoBDE	2	100 ng/mL
4-MonoBDE	3	100 ng/mL
2,4-DiBDE	7	100 ng/mL
2,4'-DiBDE	8	100 ng/mL
2,6-DiBDE	10	100 ng/mL
3,3'-DiBDE	11	100 ng/mL
3,4-DiBDE	12	100 ng/mL
3,4'-DiBDE	13	100 ng/mL
4,4'-DiBDE	15	100 ng/mL
2,2',4-TriBDE	17	100 ng/mL
2,3',4-TriBDE	25	100 ng/mL
2,4,4'-TriBDE	28	100 ng/mL
2,4,6-TriBDE	30	100 ng/mL
2,4',6-TriBDE	32	100 ng/mL
2',3,4-TriBDE	33	100 ng/mL
3,3',4-TriBDE	35	100 ng/mL
3,4,4'-TriBDE	37	100 ng/mL
2,2',4,4'-TetraBDE	47	100 ng/mL
2,2',4,5'-TetraBDE	49	100 ng/mL
2,3',4,4'-TetraBDE	66	100 ng/mL
2,3',4',6-TetraBDE	71	100 ng/mL
2,4,4',6-TetraBDE	75	100 ng/mL
3,3',4,4'-TetraBDE	77	100 ng/mL
2,2',3,4,4'-PentaBDE	85	150 ng/mL
2,2',4,4',5-PentaBDE	99	150 ng/mL
2,2',4,4',6-PentaBDE	100	150 ng/mL
2,3,4,5,6-PentaBDE	116	150 ng/mL
2,3',4,4',5-PentaBDE	118	150 ng/mL
2,3',4,4',6-PentaBDE	119	150 ng/mL
3,3',4,4',5-PentaBDE	126	150 ng/mL
2,2',3,4,4',5'-HexaBDE	138	300 ng/mL
2,2',4,4',5,5'-HexaBDE	153	200 ng/mL
2,2',4,4',5,6'-HexaBDE	154	200 ng/mL
2,2',4,4',6,6'-HexaBDE	155	200 ng/mL
2,3,4,4',5,6-HexaBDE	166	200 ng/mL
2,2',3,4,4',5,6-HeptaBDE	181	250 ng/mL
2,2',3,4,4',5',6-HeptaBDE	183	250 ng/mL
2,3,3',4,4',5,6-HeptaBDE	190	250 ng/mL

Labelled BDEs	BDE#	Concentration
4-MonoBDE ($^{13}C_{12}$,99%)	3	100 ng/mL
4,4'-DiBDE($^{13}C_{12}$,99%)	15	100 ng/mL
2,4,4'-TriBDE ($^{13}C_{12}$,99%)	28	100 ng/mL
2,2',4,4'-TetraBDE ($^{13}C_{12}$,99%)	47	100 ng/mL
3,3',4,4'-TetraBDE ($^{13}C_{12}$,99%)	77	100 ng/mL
2,2',4,4',5-PentaBDE ($^{13}C_{12}$,99%)	99	150 ng/mL
2,2',4,4',6-PentaBDE ($^{13}C_{12}$,99%)	100	150 ng/mL
2,3',4,4',5-PentaBDE ($^{13}C_{12}$,99%)	118	150 ng/mL
3,3',4,4',5-PentaBDE ($^{13}C_{12}$,99%)	126	150 ng/mL
2,2',4,4',5,5'-HexaBDE($^{13}C_{12}$,99%)	153	200 ng/mL
2,2',3,4,4',5',6-HeptaBDE ($^{13}C_{12}$,99%)	183	250 ng/mL

	Code	Product	Unit
New	CIL-EO-5319-A	CDC BFR Multi-Analyte Calibration Solution [CS1-CS10]	10 x 0.5 mL

Solvent: Nonane

All concentrations are in ng/mL

Native BDEs	IUPAC#	CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8	CS9	CS10
2,2',4-TriBDE	17	0.2	0.5	1	5	10	50	100	500	1000	2000
2,4,4'-TriBDE	28	0.2	0.5	1	5	10	50	100	500	1000	2000
2,2',4,4'-TetraBDE	47	0.2	0.5	1	5	10	50	100	500	1000	2000
2,3',4,4'-TetraBDE	66	0.2	0.5	1	5	10	50	100	500	1000	2000
2,2',4,4',6-PentaBDE	100	0.2	0.5	1	5	10	50	100	500	1000	2000
2,2',4,4',5-PentaBDE	99	0.2	0.5	1	5	10	50	100	500	1000	2000
2,2',3,4,4'-PentaBDE	85	0.2	0.5	1	5	10	50	100	500	1000	2000
2,2',4,4',5,6'-HexaBDE	154	0.2	0.5	1	5	10	50	100	500	1000	2000
2,2',4,4',5,5'-HexaBDE	153	0.2	0.5	1	5	10	50	100	500	1000	2000
2,2',3,4,4',5',6-HeptaBDE	183	0.2	0.5	1	5	10	50	100	500	1000	2000
2,2',3,3',4,4',5,6'-OctaBDE	196	0.2	0.5	1	5	10	50	100	500	1000	2000
2,2',3,3',4,4',6,6'-OctaBDE	197	0.2	0.5	1	5	10	50	100	500	1000	2000
2,2',3,4,4',5,5',6-OctaBDE	203	0.2	0.5	1	5	10	50	100	500	1000	2000
2,2',3,3',4,4',5,5',6-NonaBDE	206	0.2	0.5	1	5	10	50	100	500	1000	2000
2,2',3,3',4,4',5,6,6'-NonaBDE	207	0.2	0.5	1	5	10	50	100	500	1000	2000
2,2',3,3',4,5,5',6,6'-NonaBDE	208	0.2	0.5	1	5	10	50	100	500	1000	2000
DecaBDE	209	0.2	0.5	1	5	10	50	100	500	1000	2000
2,2',4,4',5,5'-Hexabromobiphenyl	153	0.2	0.5	1	5	10	50	100	500	1000	2000
Hexabromobenzene		0.2	0.5	1	5	10	50	100	500	1000	2000
1,2-(Bispentabromophenyl)ethane		0.2	0.5	1	5	10	50	100	500	1000	2000
1,2-Bis(2,4,6-Tribromophenoxy)ethane		0.2	0.5	1	5	10	50	100	500	1000	2000
gamma-Hexabromocyclododecane		0.2	0.5	1	5	10	50	100	500	1000	2000

^{13}C-Labelled Compounds	IUPAC#.	CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8	CS9	CS10
1,2,3,4-TCDD ($^{13}C_{12}$,99%)		25	25	25	25	25	25	25	25	25	25
2,2',3,3',4,5,5',6,6'-NonaCB ($^{13}C_{12}$,99%)	208	100	100	100	100	100	100	100	100	100	100
2,4,4'-TriBDE ($^{13}C_{12}$,99%)	28	75	75	75	75	75	75	75	75	75	75
2,2',4,4'-TetraBDE ($^{13}C_{12}$,99%)	47	75	75	75	75	75	75	75	75	75	75
3,3',4,4'-TetraBDE ($^{13}C_{12}$,99%)	77	75	75	75	75	75	75	75	75	75	75
2,2',4,4',6-PentaBDE ($^{13}C_{12}$,99%)	100	75	75	75	75	75	75	75	75	75	75
2,2',4,4',5-PentaBDE ($^{13}C_{12}$,99%)	99	75	75	75	75	75	75	75	75	75	75
2,2',4,4',5,6'-HexaBDE ($^{13}C_{12}$,99%)	154	75	75	75	75	75	75	75	75	75	75
2,2',4,4',5,5'-HexaBDE ($^{13}C_{12}$,99%)	153	75	75	75	75	75	75	75	75	75	75
2,2',3,4,4',6-HexaBDE ($^{13}C_{12}$,99%)	139	75	75	75	75	75	75	75	75	75	75
2,2',3,4,4',5',6-HeptaBDE ($^{13}C_{12}$,99%)	183	75	75	75	75	75	75	75	75	75	75
2,2',3,3',4,4',6,6'-OctaBDE ($^{13}C_{12}$,99%)	197	75	75	75	75	75	75	75	75	75	75
2,2',3,4,4',5,5',6-OctaBDE ($^{13}C_{12}$,99%)	203	75	75	75	75	75	75	75	75	75	75
2,2',3,3',4,4',5,5',6-NonaBDE ($^{13}C_{12}$,99%)	206	75	75	75	75	75	75	75	75	75	75
2,2',3,3',4,4',5,6,6'-NonaBDE ($^{13}C_{12}$,99%)	207	75	75	75	75	75	75	75	75	75	75
2,2',3,3',4,5,5',6,6'-NonaBDE ($^{13}C_{12}$,99%)	208	75	75	75	75	75	75	75	75	75	75
DecaBDE ($^{13}C_{12}$,99%)	209	500	500	500	500	500	500	500	500	500	500
2,2',4,4',5,5'-Hexabromobiphenyl ($^{13}C_{12}$,99%)	153	75	75	75	75	75	75	75	75	75	75
Hexabromobenzene ($^{13}C_{6}$,99%)		75	75	75	75	75	75	75	75	75	75
1,2-(Bispentabromophenyl)ethane ($^{13}C_{14}$,99%)		75	75	75	75	75	75	75	75	75	75
1,2-Bis(2,4,6-Tribromophenoxy)ethane($^{13}C_{12}$,99%)		75	75	75	75	75	75	75	75	75	75
gamma-Hexabromocyclododecane ($^{13}C_{12}$,99%)		75	75	75	75	75	75	75	75	75	75

New	CIL-EO-5319-A-CS1	CDC BFR Multi-Analyte Calibration Solution [CS1]	0.5 mL
New	CIL-EO-5319-A-CS2	CDC BFR Multi-Analyte Calibration Solution [CS2]	0.5 mL
New	CIL-EO-5319-A-CS3	CDC BFR Multi-Analyte Calibration Solution [CS3]	0.5 mL
New	CIL-EO-5319-A-CS4	CDC BFR Multi-Analyte Calibration Solution [CS4]	0.5 mL
New	CIL-EO-5319-A-CS5	CDC BFR Multi-Analyte Calibration Solution [CS5]	0.5 mL
New	CIL-EO-5319-A-CS6	CDC BFR Multi-Analyte Calibration Solution [CS6]	0.5 mL
New	CIL-EO-5319-A-CS7	CDC BFR Multi-Analyte Calibration Solution [CS7]	0.5 mL
New	CIL-EO-5319-A-CS8	CDC BFR Multi-Analyte Calibration Solution [CS8]	0.5 mL
New	CIL-EO-5319-A-CS9	CDC BFR Multi-Analyte Calibration Solution [CS9]	0.5 mL
New	CIL-EO-5319-A-CS10	CDC BFR Multi-Analyte Calibration Solution [CS10]	0.5 mL
New	CIL-EO-5320-A	BFR Multi-analyte Spiking Solution	10 mL

Solvent: Methanol

Labelled compound	BDE/PBB#	Concentration
2,4,4'-TriBDE ($^{13}C_{12}$,99%)	28	7.5 ng/mL
2,2',4,4'-TetraBDE ($^{13}C_{12}$,99%)	47	7.5 ng/mL
2,2',4,4',6-PentaBDE ($^{13}C_{12}$,99%)	100	7.5 ng/mL
2,2',4,4',5-PentaBDE ($^{13}C_{12}$,99%)	99	7.5 ng/mL
2,2',4,4',5,6'-HexaBDE ($^{13}C_{12}$,99%)	154	7.5 ng/mL
2,2',4,4',5,5'-HexaBDE ($^{13}C_{12}$,99%)	153	7.5 ng/mL
2,2',3,4,4',5',6-HeptaBDE ($^{13}C_{12}$,99%)	183	7.5 ng/mL
2,2',3,3',4,4',6,6'-OctaBDE ($^{13}C_{12}$,99%)	197	7.5 ng/mL
2,2',3,3',4,4',5,5',6-NonaBDE ($^{13}C_{12}$,99%)	206	7.5 ng/mL
2,2',3,3',4,4',5,6,6'-NonaBDE ($^{13}C_{12}$,99%)	207	7.5 ng/mL
DecaBDE ($^{13}C_{12}$,99%)	209	50 ng/mL
2,2',4,4',5,5'-HexaBB ($^{13}C_{12}$,99%)	153	7.5 ng/mL
Hexabromobenzene ($^{13}C_{6}$,99%)		7.5 ng/mL
1,2-Bis(pentabromophenyl)ethane ($^{13}C_{14}$,99%)		7.5 ng/mL
1,2-Bis(2,4,6-Tribromophenoxy)ethane ($^{13}C_{6}$,99%)		7.5 ng/mL
gamma-Hexabromocyclododecane ($^{13}C_{12}$,99%)		7.5 ng/mL

New	CIL-EO-5320-A-5X10ML	BFR Multi-analyte Spiking Solution	5 x 10 mL

Code	Product	Unit
CIL-EO-5169	BFR Recovery Spiking Solution Solvent: 88% Hexane, 2% Dodecane, 10% Nonane Labelled Compounds BDE/PBB# Concentration 1,2,3,4-TetraCDD (^{13}C6,99%) .... 2.5 ng/mL 3,3',4,4'-TetraBDE ($^{13}C_{12}$,99%).....77 ..... 7.5 ng/mL 2,2',3,4,4',6-HexaBDE ($^{13}C_{12}$,99%).....139 ..... 7.5 ng/mL 2,2',3,3',4,5,5',6,6'-NonaCB ($^{13}C_{12}$,99%) .....208 ..... 10 ng/mL	10 mL

Polycyclic aromatic hydrocarbons (PAH)

Carbon-13 labelled polycyclic aromatic hydrocarbons (PAH) standards

Cambridge Isotope Laboratories, in cooperation with Cerilliant Corporation, is pleased to offer ^{13}C-labeled Polycyclic Aromatic Hydrocarbons (PAHs), as a superior alternative to deuterated standards. Although CIL has traditionally produced high-quality deuterated PAH analogs, some analysts have observed back-exchange of proton for deuterium under harsh extraction conditions and in certain matrices. If precise quantitation is required, or complete recovery information is needed, the non-exchangeable ^{13}C isotope label is the right standard to use.

Deuterium Back-Exchange

While analysts have been using Deuterated PAH standards for years, labile deuterons are susceptible to back-exchange. The phenomenon is particularly likely to occur in acidic or catalytic matrices, when the importance of a reliable internal standard is greatest.

Deuterium-labeled PAH Metabolites are even more susceptible to the phenomena of back-exchange and loss of protons /deuterons in the mass spectrometer

ISO Accreditation

Adding to our list of firsts in the field of PAH reference standards, CIL is pleased to announce the availability of the first ^{13}C PAH parent compound standards manufactured under ISO/ IEC 17025 and ISO Guide 34 accreditation.

Cerilliant Corporation, CIL's longtime collaborator for ^{13}C PAH standards, has received accreditation under ISO Guide 34 for Reference Material Producers, as well as ISO/IEC 17025 for Testing and Calibration Laboratories.

	Code	Product	Unit
	CIL-CLM-1643-1.2	Acenaphthene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-2477-1.2	Acenaphthylene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-1333-1.2	Anthracene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-3602-1.2	Benzo[a]anthracene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-3599-1.2	Benzo[b]fluoranthene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-3756-1.2	Benzo[k]fluoranthene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-1364-1.2	Benzo[ghi]perylene ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-2722-1.2	Benzo[a]pyrene ($^{13}C_4$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-6170-1.2	Benzo[e]pyrene (9,10,11,12-$^{13}C_4$,99%) 100 µg/mL in Nonane	1.2 mL
New	CIL-CLM-8267-1.2	1-Chloropyrene ($^{13}C_6$,99%) 50 ug/mL in Toluene	1.2 mL
	CIL-CLM-3757-1.2	Chrysene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-3598-1.2	Dibenz[a,h]anthracene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-3835-1.2	Dibenzo[a,e]pyrene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-3774-A	Dibenzo[a,i]pyrene ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
	CIL-CLM-3597-1.2	Fluoranthene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-3596-1.2	Fluorene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4860-1.2	6-Hydroxychrysene ($^{13}C_6$,99%) Mix of labelling 50 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-6890-1.2	3-Hydroxydibenz[a,h]anthracene (ring-$^{13}C_6$,99%) 50 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-4859-1.2	3-Hydroxyphenanthrene (ring-$^{13}C_6$,99%) 50 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-3600-1.2	Indeno[1,2,3-cd]pyrene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-3621-1.2	2-Methylnaphthalene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-1332-1.2	Naphthalene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-2451-1.2	Phenanthrene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL

Polycyclic aromatic hydrocarbons (PAH)

Code	Product	Unit
CIL-CLM-3601-1.2	Pyrene ($^{13}C_3$,99%) 100 µg/mL in Nonane	1.2 mL

Deuterated polycyclic aromatic hydrocarbon (PAH) standards

	CIL-DLM-108-1.2	Acenaphthene (D_{10},98%) 200 µg/mL in Isooctane	1.2 mL
	CIL-DLM-108-0.1	Acenaphthene (D_{10},98%)	0.1 g
	CIL-DLM-108-1	Acenaphthene (D_{10},98%)	1 g
	CIL-DLM-108-5	Acenaphthene (D_{10},98%)	5 g
	CIL-DLM-2204-1.2	Acenaphthylene (D_8,98%) 200 µg/mL in Isooctane	1.2 mL
	CIL-DLM-2204-0.1	Acenaphthylene (D_8,98%)	0.1 g
	CIL-DLM-849-0.1	Acridine (D_9,98%)	0.1 g
	CIL-DLM-849-0.5	Acridine (D_9,98%)	0.5 g
	CIL-DLM-102-1.2	Anthracene (D_{10},98%) 200 µg/mL in Isooctane	1.2 mL
	CIL-DLM-102-1	Anthracene (D_{10},98%)	1 g
	CIL-DLM-102-5	Anthracene (D_{10},98%)	5 g
	CIL-DLM-610-1.2	Benzo[a]anthracene (D_{12},98%) 200 µg/mL in Isooctane	1.2 mL
	CIL-DLM-610-0.1	Benzo[a]anthracene (D_{12},98%)	0.1 g
	CIL-DLM-2136-1.2	Benzo[b]fluoranthene (D_{12},98%) 200 µg/mL in Isooctane	1.2 mL
	CIL-DLM-2136-0.01	Benzo[b]fluoranthene (D_{12},98%)	0.01 g
	CIL-DLM-1923-1.2	Benzo[k]fluoranthene (D_{12},98%) 200 µg/mL in Isooctane	1.2 mL
	CIL-DLM-1923-0.01	Benzo[k]fluoranthene (D_{12},98%)	0.01 g
	CIL-DLM-2135-1.2	Benzo[ghi]perylene (D_{12},98%) 200 µg/mL in Toluene-d_8	1.2 mL
	CIL-DLM-2135-0.01	Benzo[ghi]perylene (D_{12},98%)	0.01 g
	CIL-DLM-258-1.2	Benzo[a]pyrene (D_{12},98%) 200 µg/mL in Isooctane	1.2 mL
	CIL-DLM-258-0.01	Benzo[a]pyrene (D_{12},98%)	0.01 g
	CIL-DLM-258-0.05	Benzo[a]pyrene (D_{12},98%)	0.05 g
	CIL-DLM-258-0.1	Benzo[a]pyrene (D_{12},98%)	0.1 g
	CIL-DLM-257-1.2	Benzo[e]pyrene (D_{12},98%) 200 µg/mL in Isooctane	1.2 mL
	CIL-DLM-257-0.01	Benzo[e]pyrene (D_{12},98%)	0.01 g
New	CIL-DLM-2005-1.2	2-Chloronaphthalene (D_7,98%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-2005-0.01	2-Chloronaphthalene (D_7,98%)	0.01 g
	CIL-DLM-2005-0.1	2-Chloronaphthalene (D_7,98%)	0.1 g
	CIL-DLM-261-1.2	Chrysene (D_{12},98%) 200 µg/mL in Toluene-D_8	1.2 mL
	CIL-DLM-261-0.1	Chrysene (D_{12},98%)	0.1 g
	CIL-DLM-261-1	Chrysene (D_{12},98%)	1 g
	CIL-DLM-2715-1.2	Coronene (D_{12},97%) 200 µg/mL in Benzene	1.2 mL
New	CIL-DLM-2715-0.01	Coronene (D12,97%)	0.01 g
	CIL-DLM-2715-0.1	Coronene (D_{12},97%)	0.1 g
	CIL-DLM-3843-1.2	Dibenzo[a,j]acridine (D_{13},98%) 50 µg/mL in Toluene-D_8	1.2 mL
	CIL-DLM-677-1.2	Dibenzo[a,h]anthracene (D_{14},97%) 200 µg/mL in Toluene-D_8	1.2 mL
	CIL-DLM-677-0.1	Dibenzo[a,h]anthracene (D_{14},97%)	0.1 g
	CIL-DLM-3841-1.2	7H-Dibenzo[c,g]carbazole (D_{12},98%) 50 µg/mL in Toluene-D_8	1.2 ml
	CIL-DLM-3740-1.2	Dibenzo[a,i]pyrene (D_{14},98%) 200 µg/mL in Toluene-D8	1.2 mL
	CIL-DLM-2845-1.2	9,10-Dimethylanthracene (D_{14},98%) 50 µg/mL in Toluene-D_8	1.2 mL
	CIL-DLM-2852-1.2	1,6-Dimethylnaphthalene (D_{12},98%) 50 µg/mL in Toluene-D_8	1.2 mL
	CIL-DLM-2854-1.2	1,8-Dimethylnaphthalene (D_{12},98%) 50 µg/mL in Toluene-D_8	1.2 mL
	CIL-DLM-2853-1.2	2,6-Dimethylnaphthalene (D_{12},98%) 50 µg/mL in Toluene-D_8	1.2 mL
	CIL-DLM-4304-10	Ethylbenzene (D_{10},99%)	10 g
	CIL-DLM-2140-1.2	Fluoranthene (D_{10},98%) 200 µg/mL in Isooctane	1.2 mL
	CIL-DLM-2140-0.1	Fluoranthene (D_{10},98%)	0.1 g
	CIL-DLM-1123-1.2	Fluorene (D_{10},98%) 200 µg/mL in Isooctane	1.2 mL
	CIL-DLM-1123-0.1	Fluorene (D_{10},98%)	0.1 g

	Code	Product	Unit
	CIL-DLM-1123-1	Fluorene (D_{10},98%)	1 g
	CIL-DLM-2148-1.2	Indeno[1,2,3-cd]pyrene (D_{12},98%) 200 µg/mL in Isooctane	1.2 mL
	CIL-DLM-2148-0.01	Indeno[1,2,3-cd]pyrene (D_{12},98%)	0.01 g
	CIL-DLM-3842-1.2	5-Methylchrysene (methyl-D_3,98%) 50 µg/mL in Toluene-D_8	1.2 mL
	CIL-DLM-1607-1	1-Methylnaphthalene (D_{10},98%)	1 g
	CIL-DLM-1322-1.2	2-Methylnaphthalene (D_{10},98%) 200 µg/mL in Isooctane	1.2 mL
	CIL-DLM-365-1.2	Naphthalene (D_8,99%) 200 µg/mL in Isooctane	1.2 mL
	CIL-DLM-365-1	Naphthalene (D_8,99%)	1 g
	CIL-DLM-365-5	Naphthalene (D_8,99%)	5 g
	CIL-DLM-365-10	Naphthalene (D_8,99%)	10 g
	CIL-DLM-3875-10	Naphthalene (D_8,99.5%)	10 g
	CIL-DLM-3836-1.2	5-Nitroacenphthene (D_9,98 %) 50 µg/mL in Toluene-D_8	1.2 mL
	CIL-DLM-4712-1.2	9-Nitroanthracene (D_9,98%) 50 µg/mL in Toluene-D_8 (Chemical purity: 87%)	1.2 mL
	CIL-DLM-3839-1.2	6-Nitrochrysene (D_{11},98%) 50 µg/mL in Toluene-D_8	1.2 mL
	CIL-DLM-4711-1.2	3-Nitrofluoranthene (D_9,98%) 50 µg/mL in Toluene-D_8	1.2 mL
	CIL-DLM-3837-1.2	2-Nitrofluorene (D_9,98%) 50 µg/mL in Toluene-D_8	1.2 mL
	CIL-DLM-1528-1.2	1-Nitropyrene (D_9,98%) 50 µg/mL in Toluene-D_8	1.2 mL
	CIL-DLM-366-1.2	Perylene (D_{12},98%) 200 µg/mL in Toluene-D_8	1.2 mL
	CIL-DLM-366-0.1	Perylene (D_{12},98%)	0.1 g
	CIL-DLM-366-1	Perylene (D_{12},98%)	1 g
	CIL-DLM-371-1.2	Phenanthrene (D_{10},98%) 200 µg/mL in Isooctane	1.2 mL
	CIL-DLM-371-0.1	Phenanthrene (D_{10},98%)	0.1 g
	CIL-DLM-371-1	Phenanthrene (D_{10},98%)	1 g
	CIL-DLM-155-1.2	Pyrene (D_{10},98%) 200 µg/mL in Isooctane	1.2 mL
	CIL-DLM-155-0.1	Pyrene (D_{10},98%)	0.1 g
	CIL-DLM-155-0.5	Pyrene (D_{10},98%)	0.5 g
	CIL-DLM-601-0.1	Triphenylene (D_{12},98%)	0.1 g
	CIL-DLM-601-1	Triphenylene (D_{12},98%)	1 g

Unlabelled polycyclic aromatic hydrocarbon (PAH) standards

	CIL-ULM-7413-1.2	Acenaphthene (unlabelled) 200 µg/mL Isooctane	1.2 mL
	CIL-ULM-7422-1.2	Acenaphthylene (unlabelled) 200 µg/mL in Isooctane	1.2 mL
	CIL-ULM-7412-1.2	Anthracene (unlabelled) 200 µg/mL in Isooctane	1.2 mL
	CIL-ULM-2415-1.2	Benzo[a]anthracene (unlabelled) 1000 µg/mL in Methanol	1.2 mL
New	CIL-ULM-2415-I-1.2	Benz[a]anthracene (unlabelled) 200 µg/mL in Isooctane	1.2 mL
	CIL-ULM-2415-0.1	Benzo[a]anthracene (unlabelled)	0.1 g
	CIL-ULM-2416-1.2	Benzo[b]fluoranthene (unlabelled) 1000 µg/mL in Acetone	1.2 mL
	CIL-ULM-2416-0.1	Benzo[b]fluoranthene (unlabelled)	0.1 g
New	CIL-ULM-8155-25	Benzo[c]phenanthrene (unlabelled)	25 mg
	CIL-ULM-2411-25	Benzo[j]fluoranthene (unlabelled)	25 mg
	CIL-ULM-2417-0.1	Benzo[k]fluoranthene (unlabelled)	0.1 g
	CIL-ULM-2418-1.2	Benzo[g,h,i]perylene (unlabelled) 1000 µg/mL in Methylene chloride	1.2 mL
	CIL-ULM-2418-25	Benzo[g,h,i]perylene (unlabelled)	25 mg
New	CIL-ULM-2418-0.1	Benzo[g,h,i]perylene (unlabelled)	0.1 g
	CIL-ULM-2412-0.1	Benzo[a]pyrene (unlabelled)	0.1 g
New	CIL-ULM-8717-1.2	Benzo[a]pyrene (unlabelled) 200 µg/mL in Isooctane	1.2 mL
New	CIL-ULM-7423-1.2	Benzo[e]pyrene (unlabelled) 200 µg/mL in Isooctane	1.2 mL
New	CIL-ULM-8269-1.2	9-Chloroanthracene (unlabelled) 50 µg/mL in Toluene	1.2 mL
New	CIL-ULM-8270-1.2	9-Chlorophenanthrene (unlabelled) 50 µg/mL in Toluene	1.2 mL
New	CIL-ULM-8268-1.2	1-Chloropyrene (unlabelled) 50 µg/mL in Toluene	1.2 mL
	CIL-ULM-7424-1.2	Chrysene (unlabelled) 200 µg/mL in Toluene	1.2 mL

Polycyclic aromatic hydrocarbons (PAH)

	Code	Product	Unit
New	CIL-ULM-6576-1.2	Coronene (unlabelled) 200 µg/mL in Benzene	1.2 mL
	CIL-ULM-6891-0.01	Cyclopenta[c,d]pyrene (unlabelled)	0.01 g
	CIL-ULM-3884-25	Dibenzo[a,j]acridine (unlabelled)	25 mg
	CIL-ULM-2422-1.2	Dibenzo[a,h]anthracene (unlabelled) 1000 µg/mL in Methylene chloride	1.2 mL
	CIL-ULM-2422-0.1	Dibenzo[a,h]anthracene (unlabelled)	0.1 g
	CIL-ULM-3885-1.2	7H-Dibenzo[c,g]carbazole (unlabelled) 50 µg/mL in Toluene	1.2 mL
	CIL-ULM-6671-1.2	Dibenzo[a,e]fluoranthene (unlabelled) 200 µg/mL in Toluene	1.2 mL
	CIL-ULM-1226-0.01	Dibenzo[a,e]pyrene (unlabelled)	10 mg
New	CIL-ULM-1227-0.01	Dibenzo[a,h]pyrene (unlabelled)	10 mg
	CIL-ULM-2423-1.2	Dibenzo[a,i]pyrene (unlabelled) 200 µg/mL in Toluene	1.2 mL
	CIL-ULM-1253-1.2	Dibenzo[a,l]pyrene (unlabelled) 200 µg/mL in Toluene	1.2 mL
	CIL-ULM-1253-25	Dibenzo[a,l]pyrene (unlabelled)	25 mg
	CIL-ULM-7421-1.2	Fluoranthene (unlabelled) 200 µg/mL in Isooctane	1.2 mL
	CIL-ULM-7414-1.2	Fluorene (unlabelled) 200 µg/mL in Isooctane	1.2 mL
	CIL-ULM-6234-1.2	9,10-Dimethylanthracene (unlabeled) 50 µg/mL in Toluene	1.2 mL
	CIL-ULM-6182-1.2	1,6-Dimethylnaphthalene (unlabelled) 50 µg/mL in Toluene	1.2 mL
	CIL-ULM-6181-1.2	1,8-Dimethylnaphthalene (unlabelled) 50 µg/mL in Toluene	1.2 mL
	CIL-ULM-7271-1.2	2,6-Dimethylnaphthalene 50 µg/mL in Toluene	1.2 mL
	CIL-ULM-7552-1.2	6-Hydroxychrysene (unlabelled) 50 µg/mL in Acetonitrile	1.2 mL
New	CIL-ULM-8464-1.2	2-Hydroxyphenanthrene (unlabelled) 50 µg/mL in Toluene	1.2 mL
	CIL-ULM-7446-1.2	3-Hydroxyphenanthrene (unlabelled) 50 µg/mL in Acetonitrile	1.2 mL
New	CIL-ULM-7954-1.2	9-Hydroxyphenanthrene (unlabelled) 50 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-2426-1.2	Indeno[1,2,3-cd]pyrene (unlabelled) 1000 µg/mL in Methylene chloride	1.2 mL
	CIL-ULM-2426-25	Indeno[1,2,3-c,d]pyrene (unlabelled)	25 mg
	CIL-ULM-6235-1.2	5-Methylchrysene (unlabelled) 50 µg/mL in Toluene	1.2 mL
	CIL-ULM-7416-1.2	2-Methylnaphthalene (unlabelled) 200 µg/mL in Isooctane	1.2 mL
	CIL-ULM-7425-1.2	Naphthalene (unlabelled) 200 µg/mL in Isooctane	1.2 mL
New	CIL-ULM-8365-1.2	9-Nitroanthracene (unlabelled) 50 µg/mL in Toluene	1.2 mL
	CIL-ULM-3881-1.2	6-Nitrochrysene 50 µg/mL in Toluene	1.2 mL
	CIL-ULM-6600-1.2	3-Nitrofluoroanthene (unlabelled) 50 µg/mL in Toluene	1.2 mL
	CIL-ULM-3883-1.2	2-Nitrofluorene (unlabelled) 50 µg/mL in Toluene	1.2 mL
	CIL-ULM-3978-1.2	1-Nitropyrene (unlabelled) 50 µg/mL in Toluene	1.2 mL
	CIL-ULM-7426-1.2	Perylene (unlabelled) 200 µg/mL in Isooctane	1.2 mL
	CIL-ULM-7427-1.2	Phenanthrene (unlabelled) 200 µg/mL in Isooctane	1.2 mL
	CIL-ULM-7417-1.2	Pyrene (unlabelled) 200 µg/mL in Toluene	1.2 mL
	CIL-ULM-7428-1.2	p-Terphenyl (unlabelled) 200 µg/mL in Isooctane	1.2 mL

Isotope labelled PAH standard mixtures

CIL-ES-4087 — US EPA 16 PAH Cocktail (^{13}C,99%) — 1.2 mL

5 µg/mL of each analyte in Nonane

- Acenaphthene ($^{13}C_6$,99%)
- Acenaphthylene ($^{13}C_6$,99%)
- Anthracene ($^{13}C_6$,99%)
- Benz(a)anthracene ($^{13}C_6$,99%)
- Benzo(b)fluoranthene ($^{13}C_6$,99%)
- Benzo(k)fluoranthene ($^{13}C_6$,99%)
- Benzo(ghi)perylene ($^{13}C12$,99%)
- Benzo(a)pyrene ($^{13}C_6$,99%)
- Chrysene ($^{13}C_6$,99%)
- Dibenz(ah)anthracene ($^{13}C_6$,99%)
- Fluoranthene ($^{13}C_6$,99%)
- Fluorene ($^{13}C_6$,99%)
- Indeno(1,2,3-cd)pyrene ($^{13}C_6$,99%)
- Naphthalene ($^{13}C_6$,99%)
- Phenanthrene ($^{13}C_6$,99%)
- Pyrene ($^{13}C_6$,99%)

CIL-ES-2528 — PAH Cocktail for CARB 429 method — 1 mL

100 µg/mL of each analyte in Benzene (D_6,99.6%)

- Acenaphthene (D_{10},98%)
- Acenaphthylene (D_8,98%)
- Anthracene (D_{10},98%)
- Benz(a)anthracene (D_{12},98%)
- Benzo(b)fluoranthene (D_{12},98%)
- Benzo(k)fluoranthene (D_{12},98%)
- Benzo(ghi)perylene (D_{12},99%)
- Benzo(a)pyrene (D_{12},98%)
- Chrysene (D_{12},98%)
- Dibenz(ah)anthracene (D_{14},98%)
- Fluoranthene (D_{10},98%)
- Fluorene (D_{10},98%)
- Indeno(1,2,3-cd)pyrene (D_{12},98%)
- Naphthalene (D_8,98%)
- Phenanthrene (D_{10},98%)
- Pyrene (D_{10},98%)

Code	Product	Unit
CIL-ES-2044	PAH Surrogate Cocktail 200 µg/mL of each analyte in 50% Methylene chloride (D_2,99.9%) and 50% Methanol (D_2,99.8%). Acenaphthylene (D_8,98%) Benzo(ghi)perylene (D_{12},99%) Benzo(a)pyrene (D_{12},98%) Fluoranthene (D_{10},98%) Naphthalene (D_8,98%) Phenanthrene (D_{10},98%) Pyrene (D_{10},98%)	1 mL
CIL-ES-5386	PAH-SIM Recovery Standard Mixture (D,98%), 1 mg/mL in Methylene chloride Solvent: Methylene chloride-D_2 2-Methylnaphthalene-D_{10} ..... 1 mg/mL Anthracene-D_{10} ..... 1 mg/mL p-Terphenyl-D_{14} ..... 1 mg/mL Benzo[e]pyrene-D_{12}..... 1 mg/mL	1.2 mL
CIL-ES-2043	'EEC Six' PAH Cocktail 1 µg/mL of each analyte in Benzene (D_6,99.6%) Benzo(b)fluoranthene (D_{12},98%) Benzo(k)fluoranthene (D_{12},98%) Benzo(ghi)perylene (D_{12},98%) Benzo(a)pyrene (D_{12},98%) Indeno(1,2,3-cd)pyrene (D_{12},98%) Fluoranthene (D_{10},98%)	1 mL
New CIL-ES-5164	PAH Surrogate Standard Mix 200 µg/mL of each analyte in 10% Iso-octane / 90% Toluene Naphthalene (D_8,98%) Phenanthrene (D_{10},98%) Benzo(b)fluoranthene (D_{12},98%) Benzo(ghi)perylene (D_{12},99%) Dibenz(ah)anthracene (D_{14},98%) Acenaphthene (D_{10},98%) Pyrene (D_{10},98%) Perylene (D_{12},98%) Benz(a)anthracene (D_{12},98%) Fluoranthene (D_{10},98%) Benzo(a)pyrene (D_{12},98%) Indeno(1,2,3-cd)pyrene (D_{12},98%) Acenaphthylene (D_8,98%) Fluorene (D_{10},98%) Benzo(k)fluoranthene (D_{12},98%) Chrysene (D_{12},98%)	10 mL
New CIL-ES-5438	PAH Native Standard Mixture (unlabelled) Solvent: 90% Toluene/ 10% Isooctane Naphthalene ..... 200 µg/mL Benz[a]anthracene..... 200 µg/mL Phenanthrene ..... 200 µg/mL Fluoranthene..... 200 µg/mL Benzo[b]fluoranthene..... 200 µg/mL Benzo[a]pyrene..... 200 µg/mL Benzo[g,h,i]perylene ..... 200 µg/mL Indeno[1,2,3-cd]pyrene ..... 200 µg/mL Dibenz[a,h]anthracene..... 200 µg/mL Acenaphthylene ..... 200 µg/mL Acenaphthene..... 200 µg/mL Fluorene..... 200 µg/mL Pyrene..... 200 µg/mL Benzo[k]fluoranthene ..... 200 µg/mL Perylene..... 200 µg/mL Chrysene..... 200 µg/mL	1.2 mL

Polychlorinated naphthalene (PCN) standards

Isotope labelled polychlorinated naphthalene (PCN) standards

Code	Product	Unit
CIL-ECN-5240	1,2,3,4-Tetrachloronaphthalene ($^{13}C_{10}$,99%) (Chemical purity: 96%) 10 µg/mL in Isooctane	1.2 mL
CIL-ECN-5241	1,3,5,7-Tetrachloronaphthalene ($^{13}C_{10}$,99%) 10 µg/mL in Isooctane	1.2 mL
CIL-ECN-5250	1,2,3,5,7-Pentachloronaphthalene ($^{13}C_{10}$,99%) 10 µg/mL in Isooctane	1.2 mL
CIL-ECN-5260	1,2,3,4,5,7-Hexachloronaphthalene ($^{13}C_{10}$,99%) 10 µg/mL in Isooctane	1.2 mL
CIL-ECN-5261	1,2,3,5,6,7-Hexachloronaphthalene ($^{13}C_{10}$,98%) 10 µg/mL in Isoocctane (contains 0.2% native)	1.2 mL
CIL-ECN-5270	1,2,3,4,5,6,7-Heptachloronaphthalene ($^{13}C_{10}$,98%) 10 µg/mL in Isooctane (contains 2% native)	1.2 mL
CIL-ECN-5280	Octachloronaphthalene ($^{13}C_{10}$,99%) 10 µg/mL in Isooctane	1.2 mL

Unlabelled polychlorinated naphthalene (PCN) standards

CIL-ECN-2610	1-Chloronaphthalene 100 µg/mL in Nonane (Chemical purity: 90%, 10% 2-Monochloronaphthalene)	1 mL
CIL-ECN-2611	2-Chloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2620	1,2-Dichloronaphthalene 100 µg/mL in Nonane (Chemical purity: 92%)	1 mL
CIL-ECN-2621	1,4-Dichloronaphthalene 100 µg/mL in Nonane (Chemical purity: 92%)	1 mL
CIL-ECN-2622	1,5-Dichloronaphthalene 100 µg/mL in Nonane (Chemical purity: 91%)	1 mL
CIL-ECN-2623	1,8-Dichloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2624	2,3-Dichloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2630	1,2,3-Trichloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2640	1,2,3,4-Tetrachloronaphthalene 100 µg/ml in Nonane	1 mL
CIL-ECN-2642	1,2,5,6-Tetrachloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2641	1,3,5,7-Tetrachloronaphthalene 100 µg/mL in Nonane	1 mL

Substituted benzothiophenes

Code	Product	Unit
CIL-ECN-2643	2,3,6,7-Tetrachloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2652	1,2,3,4,6-Pentachloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2651	1,2,3,5,7-Pentachloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2650	1,2,3,5,8-Pentachloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2653	1,2,3,6,7-Pentachloronaphthalene 100 µg/mL in Nonane (Chemical purity: 96%)	1 mL
CIL-ECN-2660	1,2,3,4,6,7-Hexachloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2663	1,2,3,5,6,7-Hexachloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2664	1,2,3,5,6,8-Hexachloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2662	1,2,3,5,7,8-Hexachloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2665	1,2,3,6,7,8-Hexachloronaphthalene 100 µg/mL in Nonane (Chemical purity: 97%)	1 mL
CIL-ECN-2666	1,2,4,5,6,8-Hexachloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2661	1,2,4,5,7,8-Hexachloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2670	1,2,3,4,5,6,7-Heptachloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2671	1,2,3,4,5,6,8-Heptachloronaphthalene 100 µg/mL in Nonane	1 mL
CIL-ECN-2680	Octachloronaphthalene 100 µg/mL in Nonane	1 mL

Polychlorinated naphthalene (PCN) standard mixtures

CIL-ECN-5102	Tetra-Octa PCN Mixture Solvent: Isooctane 1,2,3,4-Tetrachloronaphthalene ($^{13}C_{10}$,99%) ..... 1.0 µg/mL 1,3,5,7-Tetrachloronaphthalene ($^{13}C_{10}$,99%) ..... 1.0 µg/mL 1,2,3,5,7-Pentachloronaphthalene ($^{13}C_{10}$,99%) ..... 1.0 µg/mL 1,2,3,5,6,7-Hexachloronaphthalene ($^{13}C_{10}$,98%) ..... 1.0 µg/mL 1,2,3,4,5,6,7-Heptachloronaphthalene ($^{13}C_{10}$,98%) ..... 1.0 µg/mL Octachloronaphthalene ($^{13}C_{10}$,99%) ..... 1.0 µg/mL	1.2 mL
CIL-ECN-5178	Tetra-Octa PCN Mixture Solvent: Nonane 1,2,3,4-Tetrachloronaphthalene ..... 1 µg/mL 1,3,5,7-Tetrachloronaphthalene ..... 1 µg/mL 1,2,3,5,7-Pentachloronaphthalene ..... 1 µg/mL 1,2,3,5,6,7-Hexachloronaphthalene ..... 1 µg/mL 1,2,3,4,5,6,7-Heptachloronaphthalene ..... 1 µg/mL Octachloronaphthalene ..... 1 µg/mL	1.2 mL

Halowax technical mixtures

CIL-ECN-1000	Halowax 1000 100 µg/mL in Hexane	2 mL
CIL-ECN-1013	Halowax 1013 100 µg/mL in Hexane	2 mL
CIL-ECN-1051	Halowax 1051 100 µg/mL in Hexane	2 mL

Substituted benzothiophenes

Subsituted dibenzothiophenes, sulfur analogues of the chlorinated dibenzofurans, are of interest to analysts due to their remarkable similarities to the chlorinated dioxin class of compounds. A very high mass resolution is necessary to distinguish a chlorinated dibenzothiophene from a chlorinated dioxin. This fact, coupled with the lack of commercially available pure isomers of these sulfur-containing compounds, has led to some speculation that in certain cases, compounds being quantitated as dioxins were, in reality, dibenzothiophenes.

Code	Product	Unit
CIL-ET-4025	2,3,7,8-Tetrachlorodibenzothiophene (unlabelled) 50 µg/mL in Nonane	1.2 mL
CIL-DLM-4308-1.2	Benzo[b]naphtho[2,1-d]thiophene (D_{10},96%) 100 µg/mL in Benzene	1.2 mL
CIL-ULM-7430-1.2	Benzo[b]napthhol[2,1-d]-thiophene (unlabelled) 100 µg/mL in Benzene	1.2 mL

Priority pollutant standard mixtures

Chlorobenzene and Chlorophenol Standard Mixtures

Owing to the sheer volume of use in commercial products, Halogenated Benzenes and Phenols remain among the largest contributors to environmental contamination. The standards listed here are in routine use in many laboratories around the world.

U.S. EPA Method 1653a

U.S EPA method 1653A is used for the determination of Pollutants in Pulp and Paper industry wastewater. This revision was promulgated in 1997, superseding the earlier method 1653. While still used primarily for the determination of Chlorophenolic compounds, Revision A incorporates several changes to the analytical procedure, including the use of specially formulated standard mixtures applicable to this revision.

U.S. EPA CIP DMC Standard Mixtures

EPA's Contract Laboratory Program (CLP) has developed methods for the analysis of volatile and semi-volatile compounds which utilize isotopically labelled internal standards. These Deuterated Monitoring Compounds (DMCs) have been added to strengthen the analysis by providing sample-by-sample internal standard addition. CIL's CLP DMC standard mixtures are designed to match requirements of the OLC and SOM test methods.

U.S. EPA Method 1624/1625

CIL maintains a full suite of standards used for the analysis of volatile and semi-volatile organic compounds by US EPA Method 1624/1625.

Isotope labelled chlorobenzene & chlorophenol mixtures

Code	Product	Unit
CIL-EM-1724-A	Chlorobenzene Cocktail Solution Mono, Di, Tri Isomers ($^{13}C_6$,99%) 100 µg/mL of each analyte in Isooctane Chlorobenzene ($^{13}C_6$,99%) 1,2,4-Trichlorobenzene ($^{13}C_6$,99%) 1,4-Dichlorobenzene ($^{13}C_6$,99%)	1.2 mL
CIL-EM-1724-B	Chlorobenzene Cocktail Solution Mono, Di, Tri Isomers ($^{13}C_6$, 99%) 100 µg/mL of each analyte in Methanol Chlorobenzene ($^{13}C_6$,99%) 1,2,4-Trichlorobenzene ($^{13}C_6$,99%) 1,4-Dichlorobenzene ($^{13}C_6$,99%)	1.2 mL
CIL-EM-1725-A	Chlorobenzene Cocktail Solution Tetra, Penta, Hexa Isomers ($^{13}C_6$,99%) 100 µg/mL of each analyte in Isooctane 1,2,4,5-Tetrachlorobenzene ($^{13}C_6$,99%) Hexachlorobenzene ($^{13}C_6$,99%) Pentachlorobenzene ($^{13}C_6$,99%)	1.2 mL
CIL-EM-1725-B	Chlorobenzene Cocktail Solution Tetra, Penta, Hexa Isomers ($^{13}C_6$,99%) 100 µg/mL of each analyte in Methanol 1,2,4,5-Tetrachlorobenzene ($^{13}C_6$,99%) Hexachlorobenzene ($^{13}C_6$,99%) Pentachlorobenzene ($^{13}C_6$,99%)	1.2 mL
CIL-ES-5401	Mono-Hexa Chlorobenzene Solution ($^{13}C_6$,99%) 500 µg/mL in Toluene Solvent: Nonane Chlorobenzene ($^{13}C_6$,99%) ..... 500 µg/mL 1,2,3,4-Tetrachlorobenzene ($^{13}C_6$,99%)... 500 µg/mL 1,4-Dichlorobenzene ($^{13}C_6$,99%) ..... 500 µg/mL Pentachlorobenzene ($^{13}C_6$,99%)..... 500 µg/mL 1,2,3-Trichlorobenzene ($^{13}C_6$,99%)..... 500 µg/mL Hexachlorobenzene ($^{13}C_6$,99%)..... 500 µg/mL	1.2 mL
CIL-ES-5406	Mono-Hexa Chlorobenzene Solution (unlabelled) Solvent: Toluene Chlorobenzene ..... 500 µg/mL 1,2,3,4-Tetrachlorobenzene..... 500 µg/mL 1,4-Dichlorobenzene..... 500 µg/mL Pentachlorobenzene ..... 500 µg/mL 1,2,3-Trichlorobenzene..... 500 µg/mL Hexachlorobenzene ..... 500 µg/mL	1.2 mL
CIL-EM-1726-A	Chlorophenol Cocktail Solution Mono, Di, Tri Isomers ($^{13}C_6$,99%) 100 µg/mL of each analyte in Isooctane 4-Chlorophenol ($^{13}C_6$,99%) 2,4,6-Trichlorophenol ($^{13}C_6$,99%) 2,4-Dichlorophenol ($^{13}C_6$,99%)	1.2 mL
CIL-EM-1726-B	Chlorophenol Cocktail Solution Mono, Di, Tri Isomers ($^{13}C_6$,99%) 100 µg/mL of each analyte in Methanol 4-Chlorophenol ($^{13}C_6$,99%) 2,4,6-Trichlorophenol ($^{13}C_6$,99%) 2,4-Dichlorophenol ($^{13}C_6$,99%)	1.2 mL
CIL-EM-1727-A	Chlorophenol Cocktail Solution Tri, Tetra, Penta Isomers ($^{13}C_6$,99%) 100 µg/mL of each analyte in Isooctane 2,4,5-Trichlorophenol ($^{13}C_6$,99%) Pentachlorophenol ($^{13}C_6$,99%) 2,3,4,5-Tetrachlorophenol ($^{13}C_6$,99%)	1.2 mL

Priority pollutant standard mixtures

Code	Product	Unit
CIL-EM-1727-B	Chlorophenol Cocktail Solution Tri, Tetra, Penta Isomers ($^{13}C_6$,99%) 100 µg/mL of each analyte in Methanol 2,4,5-Trichlorophenol ($^{13}C_6$,99%) 2,3,4,5-Tetrachlorophenol ($^{13}C_6$,99%) Pentachlorophenol ($^{13}C_6$,99%)	1.2 mL

U.S. EPA Method 1653A standard mixtures

CIL-EM-4173 — US EPA Method 1653A Labelled Chlorophenolic Derivatives Mixture — 2 x 1 mL

Vial 1 (Methanol)

2,4-Dichlorophenol ($^{13}C_6$,99%) ..... 250 µg/mL
4-Chloroguaiacol ($^{13}C_6$,99%) ..... 250 µg/mL
4,5-Dichlorocatechol (ring-$^{13}C_6$,99%)..... 250 µg/mL
4,5,6-Trichloroguaiacol ($^{13}C_6$,99%) ..... 250 µg/mL
Pentachlorophenol ($^{13}C_6$,99%)..... 250 µg/mL
3,4,5,6-Tetrachloroguaiacol ($^{13}C_6$,99%)..... 250 µg/mL
3,4,5,6-Tetrachlorocatechol (ring-$^{13}C_6$,99%)..... 250 µg/mL
3,4,5-Trichlorophenol (unlabelled) (I.S.) ..... 250 µg/mL

Vial 2 (Acetone)

5-Chlorovanillin (ring-$^{13}C_6$,99%)..... 250 µg/mL

CIL-EM-4181 — Regulated Chlorophenolics Mixture-1 — 1 mL

Solvent: Methanol

Pentachlorophenol..... 1000 µg/mL
Tetrachloroguaiacol ..... 1000 µg/mL
3,4,5-Trichlorocatechol ..... 1000 µg/mL
3,4,5-Trichloroguaiacol ..... 500 µg/mL
4,5,6-Trichloroguaiacol ..... 500 µg/mL
2,4,6-Trichlorophenol..... 500 µg/mL
Tetrachlorocatechol ..... 1000 µg/mL
2,3,4,6-Tetrachlorophenol..... 500 µg/mL
3,4,6-Trichlorocatechol ..... 1000 µg/mL
3,4,6-Trichloroguaiacol ..... 500 µg/mL
2,4,5-Trichlorophenol ..... 500 µg/mL

CIL-EM-4182 — US EPA Method 1653A Regulated Chlorophenolics Mixture-2 — 1 mL

Solvent: Acetone

Trichlorosyringol..... 500 µg/mL

CIL-EM-4183 — Method 1653A Other Chlorophenolics Mixture-1 — 1 mL

Solvent: Methanol

4-Chlorocatechol..... 250 µg/mL
4-Chlorophenol ..... 250 µg/mL
3,6-Dichlorocatechol ..... 500 µg/mL
3,4-Dichloroguaiacol ..... 500 µg/mL
4,6-Dichloroguaiacol ..... 500 µg/mL
2,6-Dichlorophenol..... 500 µg/mL
4-Chloroguaiacol ..... 250 µg/mL
3,4-Dichlorocatechol ..... 500 µg/mL
4,5-Dichlorocatechol ..... 500 µg/mL
4,5-Dichloroguaiacol ..... 500 µg/mL
2,4-Dichlorophenol ..... 500 µg/mL

CIL-EM-4184 — Method 1653A Other Chorophenolics Mixture-2 — 1 mL

Solvent: Acetone

2-Chlorosyringealdehyde ..... 500 µg/mL
5-Chlorovanillin ..... 500 µg/mL
6-Chlorovanillin ..... 500 µg/mL
2,6-Dichlorosyringealdehyde..... 1000 µg/mL
5,6-Dichlorovanillin..... 1000 µg/mL

CIL-EM-4185 — Set of Regulated Chlorophenolics Mixtures — 2 x 1 mL

1 Ampoule Each: EM-4181 and EM-4182

CIL-EM-4186 — Set of Other Chlorophenolics Mixtures — 2 x 1 mL

1 Ampoule Each: EM-4183 and EM-4184

CIL-EM-4180 — Set of all Chlorophenolic Mixes Mixtures — 4 x 1 mL

1 Ampoule Each: EM-4181, EM-4182, EM-4183 and EM-4184

U.S. EPA Method 1653 standard mixtures

CIL-EM-4018 — US EPA Method 1653 Unlabelled Chlorophenolic Cocktail — 1 mL

Solvent: Acetone

4-Chloroguaiacol..... 250 µg/mL
3,4-Dichloroguaiacol ..... 500 µg/mL
4,5-Dichloroguaiacol ..... 500 µg/mL
4,6-Dichloroguaiacol ..... 500 µg/mL
3,4,5-Trichloroguaiacol ..... 500 µg/mL
3,4,6-Trichloroguaiacol ..... 500 µg/mL
4,5,6-Trichloroguaiacol ..... 500 µg/mL
Tetrachloroguaiacol ..... 1000 µg/mL

CIL-EM-4028 — Instrument Performance Standard — 1 mL

Solvent: Acetone

2,2'-Difluorobiphenyl ..... 5000 µg/mL

Code	Product	Unit

U.S. EPA CLP DMC standard mixtures

CIL-ES-5037 — CLP Semi-Volatiles DMC Stock Solution — 1.2 mL

Solvent: Methylene chloride

Phenol-D_5	2000 µg/mL	Dimethylphthalate-D_6	2000 µg/mL
Bis-(2-chloroethyl)ether-D_8	2000 µg/mL	Acenaphthylene-D_8	2000 µg/mL
2-Chlorophenol-D_4	2000 µg/mL	4-Nitrophenol-D_4	2000 µg/mL
4-Methylphenol-D_8	2000 µg/mL	Fluorene-D_{10}	2000 µg/mL
Nitrobenzene-D_5	2000 µg/mL	4,6-Dinitro-2-methylphenol-D_2	2000 µg/mL
2-Nitrophenol-D_4	2000 µg/mL	Anthracene-D_{10}	2000 µg/mL
2,4-Dichlorophenol-D_3	2000 µg/mL	Pyrene-D_{10}	2000 µg/mL
4-Chloroaniline-D_4	2000 µg/mL	Benzo[a]pyrene-D_{12}	2000 µg/mL

CIL-ES-5038 — CLP Volatiles DMC Stock Solutions — set

1 ampoule each of

ES-5038-1

ES-5038-2

CIL-ES-5038-1 — CLP Volatiles Non-Ketone DMC Stock Solution — 1 mL

Solvent: Methanol-D_4

Vinyl chloride-D_3	100 µg/mL	1,2-Dichloropropane-D_6	100 µg/mL
Chloroethane-D_5	100 µg/mL	Toluene-D_8	100 µg/mL
1,1-Dichloroethene-D_2	100 µg/mL	trans-1,3-Dichloropropene-D_4	100 µg/mL
Chloroform-D_1	100 µg/mL	Bromoform-D_1	100 µg/mL
1,2-Dichloroethane-D_4	100 µg/mL	1,1,2,2-Tetrachloroethane-D_2	100 µg/mL
Benzene-D_6	100 µg/mL	1,2-Dichlorobenzene-D_4	100 µg/mL

CIL-ES-5038-2 — CLP Volatiles Ketone DMC Stock Solution — 0.5 mL

Solvent: Methanol-d_4

2-Butanone-D_5	200 µg/mL	2-Hexanone-D_8	200 µg/mL

CIL-ES-5038-10X — CLP Volatiles DMC Stock Solution (10x concentration) — set

1 ampoule each of

ES-5038-1-10x (10x concentration of ES-5038-1)
ES-5038-2-10x (10x concentration of ES-5038-2)

New **CIL-ES-5038-2-10X-0.5** — CLP Volatiles Ketone DMC 10 x Stock Solution — 0.5 mL

Solvent: Methanol-d_4

2-Butanone-D_5	2000 µg/mL	2-Hexanone-D_8	2000 µg/mL

New **CIL-ES-5038-1-10X-1** — CLP Volatile non-Ketone DMC 10x Stock Solution — 1 mL

Solvent: Methanol-D_4

Vinyl chloride-D_3	1000 µg/mL	1,2-Dichloropropane-D_6	1000 µg/mL
Chloroethane-D_5	1000 µg/mL	Toluene-D_8	1000 µg/mL
1,1-Dichloroethene-D_2	1000 µg/mL	trans-1,3-Dichloropropene-D_4	1000 µg/mL
Chloroform-D_1	1000 µg/mL	Bromoform-D_1	1000 µg/mL
1,2-Dichloroethane-D_4	1000 µg/mL	1,1,2,2-Tetrachloroethane-D_2	1000 µg/mL
Benzene-D_6	1000 µg/mL	1,2-Dichlorobenzene-D_4	1000 µg/mL

New **CIL-ES-5286** — CIP SOM volatiles Non-Ketone DMC Stock Solution — 1 mL

Solvent: Methanol-OD

Vinyl chloride (D_3,98%)	100 µg/mL
Chloroethane (D_5,98%)	100 µg/mL
1,1-Dichloroethylene (2,2-D_2,98%)	100 µg/mL
Chloroform (D,99.8%)	100 µg/mL
1,2-Dichloroethane (D_4,99%)	100 µg/mL
Benzene (D_6,99.5%)	100 µg/mL
1,2-Dichloropropane (D_6,98%)	100 µg/mL
Toluene (D_8,99.5%)	100 µg/mL
1,3-Dichloropropene (D_4,98%) cis/trans mix	100 µg/mL
1,1,2,2-Tetrachloroethane (D_2,99.6%)	100 µg/mL
1,2-Dichlorobenzene (D_4,99%)	100 µg/mL

New **CIL-ES-5286-10X** — CIP SOM volatiles Non-Ketone DMC 10X Stock Solution — 1 mL

Solvent: Methanol-OD

Vinyl chloride (D_3,98%)	1000 µg/mL
Chloroethane (D_5,98%)	1000 µg/mL
1,1-Dichloroethylene (2,2-D_2,98%)	1000 µg/mL
Chloroform (D,99.8%)	1000 µg/mL
1,2-Dichloroethane (D_4,99%)	1000 µg/mL
Benzene (D_6,99.5%)	1000 µg/mL
1,2-Dichloropropane (D_6,98%)	1000 µg/mL
Toluene (D_8,99.5%)	1000 µg/mL
1,3-Dichloropropene (D_4,98%) cis/trans mix	1000 µg/mL
1,1,2,2-Tetrachloroethane (D_2,99.6%)	1000 µg/mL
1,2-Dichlorobenzene (D_4,99%)	1000 µg/mL

New **CIL-ES-5287** — CIP SOM volatiles Ketone DMC Stock Solution — 0.5 mL

Solvent: Methanol-OD

2-Butanone (1,1,1,3,3-D_5,98%)	500 µg/mL	2-Hexanone (1,1,1,3,3-D_5,98%)	500 µg/mL

Priority pollutant standard mixtures

	Code	Product	Unit
New	CIL-ES-5287-10X	CIP SOM volatiles Ketone DMC 10X Stock Solution Solvent: Methanol-OD 2-Butanone (1,1,1,3,3-D_5,98%)..... 5000 µg/mL 2-Hexanone (1,1,1,3,3-D_5,98%)..... 5000 µg/mL	0.5 mL
New	CIL-ES-5288	CIP SOM volatiles 1,4-Dioxane DMC Stock Solution Solvent: Methanol-OD 1,4-Dioxane (p-Dioxane) (D_8,99%) ..... 1250 µg/mL	1 mL
New	CIL-ES-5288-10X	CIP SOM volatiles 1,4-Dioxane 10X DMC Stock Solution Solvent: Methanol-OD 1,4-Dioxane (p-Dioxane) (D_8,99%) ..... 12500 µg/mL	1 mL

U.S. EPA Methods 1624/1625 standard mixtures

CIL-ES-2036 — Acid Extractables Mixture-3 — 1 mL

Solvent: Benzene (D_6,99.6%)

(EPA 222A) 4-Chloro-3-methylphenol (2,6-D_2,98%) ..... 5000 µg/mL
(EPA 224A) 2-Chlorophenol (3,4,5,6-D_4,99%) ..... 5000 µg/mL
(EPA 231A) 2,4-Dichlorophenol (3,5,6-D_3,98%)..... 5000 µg/mL
(EPA 234A) 2,4-Dimethylphenol (3,5,6-D_3,98%)..... 5000 µg/mL
(EPA 260A) 4,6-Dinitro-2-methylphenol (3,5-D_2,98%)..... 5000 µg/mL
(EPA 259A) 2,4-Dinitrophenol (3,5,6-D_3,98%)..... 5000 µg/mL
(EPA 257A) 2-Nitrophenol (3,4,5,6-D_4,98%) ..... 5000 µg/mL
(EPA 258A) 4-Nitrophenol (2,3,5,6-D_4,98%) ..... 5000 µg/mL
(EPA 264A) Pentachlorophenol ($^{13}C_6$,99%)..... 5000 µg/mL
(EPA 265A) Phenol (2,3,4,5,6-D_5,98%)..... 5000 µg/mL
(EPA 631A) 4,5-Trichlorophenol (3,6-D_2,98%)..... 5000 µg/mL
(EPA 221A) 2,4,6-Trichlorophenol (3,5-D_2,98%)..... 5000 µg/mL

CIL-ES-2022-A — Base Neutrals Mixture-4.1 — 1 mL

Solvent: Benzene (D_6,99.6%)

(EPA 277B) Acenaphthylene (D_8,98%) ..... 5000 µg/mL
(EPA 274B) Benzo[b]fluoranthene (D_{12},98%)..... 5000 µg/mL
(EPA 279B) Benzo[ghi]perylene (D_{12},98%) ..... 5000 µg/mL
(EPA 273B) Benzo[a]pyrene (D_{12},98%)..... 5000 µg/mL
(EPA 242B) bis(2-Chloroisopropyl)ether (D_{12},95%)..... 5000 µg/mL
(EPA 226B) 1,3-Dichlorobenzene (D_4,98%)..... 5000 µg/mL
(EPA 235B) 2,4-Dinitrotoluene (3,5,6-D_3,98%)..... 5000 µg/mL
(EPA 231B) Fluoranthene (D_{10},98%)..... 5000 µg/mL
(EPA 252B) Hexachloro-1,3-butadiene ($^{13}C_4$,98%) ..... 5000 µg/mL
(EPA 253B) Hexachlorocyclopentadiene (random-$^{13}C_4$,99%)*..... 5000 µg/mL
(EPA 281B) Phenanthrene (D_{10},98%) ..... 5000 µg/mL

*NOTE: Hexachlorocyclopentadiene decomposes upon exposure to light and is usually not observed.

CIL-ES-2002 — Base Neutrals Mixture-4.3 — 1 mL

Solvent: Benzene (D_6,99.6%)

(EPA 241B) 4-Bromophenyl phenyl ether (phenyl-D_5,98%) ..... 5000 µg/mL
(EPA 220B) 2-Chloronaphthalene (D_7,98%)..... 5000 µg/mL
(EPA 240B) 4-Chlorophenyl phenyl ether (phenyl-D_5,98%)..... 5000 µg/mL
(EPA 268B) Di-n-butyl phthalate (3,4,5,6-D_4,99%)..... 5000 µg/mL
(EPA 270B) Diethyl phthalate (3,4,5,6-D_4,99%) ..... 5000 µg/mL
(EPA 269B) Di-n-octyl phthalate (3,4,5,6-D_4,99%) ..... 5000 µg/mL
(EPA 209B) Hexachlorobenzene ($^{13}C_6$,99%)..... 5000 µg/mL
(EPA 212B) Hexachloroethane (1-^{13}C,99%)..... 5000 µg/mL
(EPA 254B) Isophorone (3-methyl-D_3 ;2,4,4,6,6-D_5;98%) ..... 5000 µg/mL
(EPA 208B) 1,2,4-Trichlorobenzene (3,5,6-D_3,98%) ..... 5000 µg/mL

CIL-ES-2041-A — Base Neutrals Dilution Mixture-5 — 10 mL

Sovent: Benzene (D_6,99.6%)

(EPA 602B) 2-Aminonaphthalene (ring-D_7,98%)..... 500 µg/mL
(EPA 205B) Benzidine (ring-D_8,98%) ..... 500 µg/mL
(EPA 511B) Di-n-butylamine (D_{18},98%)..... 500 µg/mL
(EPA 228B) 3,3,-Dichlorobenzidine (ring-D_6,98%) ..... 500 µg/mL
(EPA 607B) Diphenylamine (D_{10},98%) ..... 500 µg/mL
(EPA 237B) 1,2-Diphenylhydrazine (D_{10},98%) ..... 500 µg/mL
(EPA 603B) 2-Methylpyridine (D_7,98%) ..... 500 µg/mL
(EPA 262B) N-Nitrosodiphenylamine (2,2',4,4',6,6'-D_6,98%)..... 500 µg/mL

CIL-ES-2026 — Base Neutrals Mixture-5.2 — 1 mL

Solvent: Benzene (D_6,99.6%)

(EPA 628B) Carbazole-NH (D_8,98%) ..... 5 µg/mL
(EPA 261B) N-Nitrosodimethylamine (dimethyl-D_6,98%) ..... 5 µg/mL
(EPA 263B) N-Nitrosodi-n-propylamine (dipropyl-D_{14},98%) ..... 5 µg/mL

CIL-ES-2025-A — Base Neutrals Dilution Mixture-5.1 — set

Contains one ampoule each of ES-2026 and ES-2041-A

Code	Product	Unit
CIL-ES-2003	Base Neutrals Mixture-6.2	2 x 1 mL
	Solvent: in 50% Benzene (D_6,99.6%) and 50% Methylene chloride (D_2,99.9%)	
	(EPA 201B) Acenaphthene (D_{10},99%) ... 2500 µg/mL	
	(EPA 278B) Anthracene (D_{10},98%) ... 2500 µg/mL	
	(EPA 275B) Benzo[k]fluoranthene (D_{12},98%) ... 2500 µg/mL	
	(EPA 218B) Bis(2-chloroethyl) ether (D_8,98%) ... 2500 µg/mL	
	(EPA 276B) Chrysene (D_{12},98%) ... 2500 µg/mL	
	(EPA 280B) Fluorene (D_{10},98%) ... 2500 µg/mL	
	(EPA 255B) Naphthalene (D_8,99%) ... 2500 µg/mL	
	(EPA 284B) Pyrene (D_{10},98%) ... 2500 µg/mL	
CIL-ES-2004	Base Neutrals Mixture-6.3	1 mL
	Solvent: Benzene (D_6,99.6%)	
	(EPA 272B) Benz[a]anthracene (D_{12},98%) ... 5000 µg/mL	
	(EPA 267B) Butyl Benzyl phthalate (3,4,5,6-D_4,99%) ... 5000 µg/mL	
	(EPA 243B) Bis(2-chloroethoxy)methane (D_8,98%) ... 5000 µg/mL	
	(EPA 266B) Bis(2-ethylhexyl) phthalate (3,4,5,6-D_4,99%) ... 5000 µg/mL	
	(EPA 282B) Dibenz[ah]anthracene (D_{14},98%) ... 5000 µg/mL	
	(EPA 225B) 1,2-Dichlorobenzene (D_4,98%) ... 5000 µg/mL	
	(EPA 227B) 1,4-Dichlorobenzene (D_4,98%) ... 5000 µg/mL	
	(EPA 271B) Dimethyl phthalate (3,4,5,6-D_4,99%) ... 5000 µg/mL	
	(EPA 236B) 2,6-Dinitrotoluene (methyl-D_3,98%) ... 5000 µg/mL	
	(EPA 256B) Nitrobenzene (D_5,99%) ... 5000 µg/mL	
	(EPA 629B) 1,2,3-Trichlorobenzene (4,5,6-D_3,98%) ... 5000 µg/mL	
CIL-ES-2032	Purgeables/Volatiles Mixture-E.1	1 mL
	Solvent: Methanol (D_4,99.8%)	
	(EPA 206V) Carbon tetrachloride (^{13}C,99%) ... 50 µg/mL	
	(EPA 207V) Chlorobenzene (D_5,99%) ... 50 µg/mL	
	(EPA 223V) Chloroform (^{13}C,99%) ... 50 µg/mL	
	(EPA 213V) 1,1-Dichloroethane (2,2,2-D_3,98%) ... 50 µg/mL	
	(EPA 229V) 1,1-Dichloroethylene (2,2-D_2,98%) ... 50 µg/mL	
	(EPA 244V) Methylene chloride (D_2,99.9%) ... 50 µg/mL	
	(EPA 232V) 1,2-Dichloropropane (D_6,98%) ... 50 µg/mL	
	(EPA 214V) 1,1,2-Trichloroethane ($^{13}C_2$,99%) ... 50 µg/mL	
CIL-ES-2006	Purgeables/Volatiles Mixture-F	1 mL
	Solvent: Methanol (D_4, 99.8%)	
	(EPA 204V) Benzene (D_6,99.6%) ... 50 µg/mL	
	(EPA 247V) Bromoform (^{13}C,99%) ... 50 µg/mL	
	(EPA 210V) 1,2-Dichloroethane (D_4,99%) ... 50 µg/mL	
	(EPA 238V) Ethylbenzene (D_{10},98%) ... 50 µg/mL	
	(EPA 215V) 1,1,2,2-Tetrachloroethane (D_2,99.6%) ... 50 µg/mL	
	(EPA 286V) Toluene (D_8,99.6%) ... 50 µg/mL	
	(EPA 211V) 1,1,1-Trichloroethane (2,2,2-D_3,98%) ... 50 µg/mL	
New CIL-ES-2007-A	Purgeables/Volatiles Mixture-G	1 mL
	Solvent: Methanol (D_4,99.8%)	
	(EPA 616V) Acetone (D_6,99.9%) ... 250 µg/mL	
	(EPA 203V) Acrylonitrile (D_3,99%) ... 250 µg/mL	
	(EPA 246V) Bromomethane (D_3,99.5%) ... 250 µg/mL	
	(EPA 614V) 2-Butanone (4,4,4-D_3,98%) ... 250 µg/mL	
	(EPA 216V) Chloroethane (D_5,98%) ... 250 µg/mL	
	(EPA 245V) Chloromethane (D_3,99%) ... 250 µg/mL	
	(EPA 615V) Diethyl Ether (D_{10},99%) ... 250 µg/mL	
	(EPA 288V) Vinyl Chloride (D_3,98%) ... 250 µg/mL	
CIL-ES-2008	Purgeables/Volatiles Mixture-H	1 mL
	Solvent: Methanol (D_4,99.8%)	
	(EPA 248V) Bromodichloromethane (^{13}C,99%) ... 50 µg/mL	
	(EPA 251V) Chlorodibromomethane (^{13}C,99%) ... 50 µg/mL	
	(EPA 30V) 1,2-Dichloroethylene (1,2-D_2,98%) ... 50 µg/mL	
	(EPA 33V) 1,3-Dichloropropene (D_4,98%) ... 50 µg/mL	
	(EPA 627V) 1,4-Dioxane (D_8,99%) ... 50 µg/mL	
	(EPA 285V) Tetrachloroethylene ($^{13}C_2$,99%) ... 50 µg/mL	
	(EPA 287V) 1,1,2-Trichloroethylene ($^{13}C_2$,99%) ... 50 µg/mL	
CIL-ES-2033	Semi-Volatiles Mixture-1/Appendix C	1 mL
	Solvent: Benzene (D_6,99.6%)	
	(EPA 617B) n-Decane (D_{22},98%) ... 5000 µg/mL	
	(EPA 605B) Dibenzofuran (D_8,98%) ... 5000 µg/mL	
	(EPA 604B) Dibenzothiophene (D_8,98%) ... 5000 µg/mL	
	(EPA 612B) Biphenyl (D_{10},98%) ... 5000 µg/mL	
	(EPA 608B) Diphenyl ether (phenyl-D_{10},98%) ... 5000 µg/mL	
	(EPA 606B) n-Dodecane (D_{26},98%) ... 5000 µg/mL	
	(EPA 621B) n-Eicosane (D_{42},98%) ... 5000 µg/mL	
	(EPA 619B) n-Hexadecane (D_{34},98%) ... 5000 µg/mL	
	(EPA 613B) 2-(4-Methylphenyl)propane (D_{14},98%) ... 5000 µg/mL	
	(EPA 610B) Styrene (2,3,4,5,6-D_5,98%) ... 5000 µg/mL	
	(EPA 609B) α-Terpineol (D_3,98%) ... 5000 µg/mL	
	(EPA 623B) n-Tetracosane (D_{50},98%) ... 5000 µg/mL	
	(EPA 626B) n-Triacontane (D_{62},98%) ... 5000 µg/mL	

Code	Product	Unit
CIL-ES-2042	EPA 1624/1625 Standards Kit Contains 1 ampoule of each of the following: ES-2036 Acid Extractables Mixture-3 ES-2022-A Base Neutrals Mixture-4.1 ES-2002 Base Neutrals Mixture-4.3 ES-2025-A Base Neutrals Mixture-5.1 (ES-2041-A and ES-2026) ES-2003 Base Neutrals Mixture-6.2 ES-2004 Base Neutrals Mixture-6.3 ES-2032 Purgeables/Volatiles Mixture-E.1 ES-2006 Purgeables/Volatiles Mixture-F ES-2007-A Purgeables/Volatiles Mixture-G ES-2008 Purgeables/Volatiles Mixture-H ES-2033 Semi-Volatiles Mixture-1/Appendix C	set

Priority pollutants, endocrine disruptor and chemical contaminant standards

Pharmaceutical and Personal Care Product (PPCP) Standards

Concern about environmental and human exposure to Pharmaceuticals and Personal Care Products (PPCPs) has grown significantly.

This classification encompasses a broad range of chemicals, ranging from antibiotics to hormones to pesticides. One common theme among these groups is the need for high-quality isotopically labelled standards to strengthen the analysis of PPCPs in difficult matrices such as sewage sludge and wastewater. CIL, with guidance from leading laboratories around the world, has been working diligently to produce representative standards for the analysis of PPCPs.

Food and Drinking Water analysis Standards

Increased attention to possible contamination of food and water has caused analysts to broaden the scope of trace food and water testing by Isotope Dilution Mass Spectrometry. Of particular interest are veterinary antibiotics used to improve the health of feed animals, ranging from shrimp to poultry to cattle. Human antibiotics, pharmaceuticals, and hormones that are not removed during wastewater treatment are also of interest, as is the routine analysis of POPs, pesticides, and other industrial contaminants that have entered the food and water supply.

Phthalate and Phthalate Metabolite Standards

Phthalates continue to be a growing environmental concern, especially as more is learned about the effect of continued exposure on the environment and the human body. Phthalate diesters are ubiquitous in the laboratory environment, so many analysts are now examining phthalate monoesters and metabolites of phthalate monoesters to reduce background interferences.

Adipate esters are also anticipated to be of interest to exposure analysts; please inquire if you are interested in additional adipate standards.

Perfluorinated Compound (PFC) Standards

From stain-resistant textiles to non-stick surface coatings and much more, Poly- and Perfluorinated compounds (PFCs) are nearly ubiquitous chemicals in the environment. CIL offers several new labelled and unlabelled Perfluorinated Carboxylic Acid standards (PFCAs) in this catalog. CIL will be continuously adding to our offerings, so we recommend visiting our website for product updates in this rapidly growing field

Nitrosamine Standards

Nitrosamine compounds are contaminants that may be found in food and tobacco products, and some have been classified as carcinogenic. While efforts have been made to reduce the levels of nitrosamines in commercial products, the need to monitor trace levels of this pollutant has prompted CIL to expand our offerings of labelled and unlabelled Nitrosamine standards.

Endocrine Disrupting Compounds and Xenoestrogen Standards

CIL is committed to supporting the analysis of Endocrine Disrupting Compounds (EDCs) using Isotope Dilution Mass Spectrometry. If you require an EDC not listed, please contact us to discuss preparation.

Halogenated and Substituted Benzene and Phenol Standards

Many industrial and consumer products are composed of chemicals that contain halogenated or substituted benzene or phenol functional groups. Resistant to decomposition and metabolism, these chemicals may persist even after the parent molecule has undergone partial decomposition, or they may exist as a product or an industrial byproduct. The increased use of brominated compounds is expected to lead to more brominated benzenes and phenols in the environment, and the continued presence of chlorinated compounds ensures that chlorinated benzenes and phenols will be found in the environment for years to come.

Personal care product (PPCP) standards

	Code	Product	Unit
	CIL-DLM-183-1.2	Benzophenone (D_{10},98%) 100 µg/mL in Nonane	1.2 mL
New	CIL-ULM-8303-1.2	Benzophenone (unlabelled) 100 ug/mL in Nonane	1.2 mL
	CIL-CLM-8285-1.2	n-Butyl paraben (ring-$^{13}C_6$,99%) 1 mg/mL in Methanol	1.2 mL
New	CIL-ULM-8287-1.2	n-Butyl paraben (unlabelled) 1 mg/mL in Methanol	1.2 mL
	CIL-DLM-4762-1.2	DEET (N,N-Diethyl-m-toluamide) (dimethyl-D_6,98%) 100 µg/mL in Dichloromethane	1.2 mL
New	CIL-DLM-4762-D-1.2	DEET (N,N-Diethyl-m-toluamide) (dimethyl-D_6, 98%) 100 µg/mL in Dioxane	1.2 mL
	CIL-ULM-7975-1.2	DEET (N,N-Diethyl-m-toluamide) (unlabelled) 100 µg/ml in Dichloromethane	1.2 mL
New	CIL-ULM-7975-D-1.2	DEET (N,N-Diethyl-m-toluamide) (unlabelled) 100 µg/mL in Dioxane	1.2 mL
	CIL-CLM-8008-1.2	Hexachlorophene ($^{13}C_{13}$,99%) 50 µg/mL in Methanol	1.2 mL
	CIL-ULM-8009-1.2	Hexachlorophene (unlabelled) 50 µg/mL in Methanol	1.2 mL
New	CIL-CLM-4745-1.2	4-Hydroxybenzoic acid (ring-$^{13}C_6$,99%) 1 mg/mL in Methanol	1.2 mL
New	CIL-ULM-8251-1.2	4-Hydroxybenzoic acid (unlabelled) 1 mg/mL in Methanol	1.2 mL
New	CIL-CLM-8249-1.2	Methyl paraben (Methyl-4-hydroxybenzoate) (ring-$^{13}C_6$,99%) 1 mg/mL in Methanol	1.2 mL
New	CIL-ULM-8250-1.2	Methyl paraben (Methyl-4-hydroxybenzoate) (unlabelled) 1 mg/mL in Methanol	1.2 mL
	CIL-CLM-7885-1.2	Methyl triclosan (ring-$^{13}C_{12}$, 99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7884-1.2	Methyl triclosan (unlabelled) 100 µg/mL in Nonane	1.2 mL
New	CIL-CLM-8525-1.2	Oxybenzone (phenyl-$^{13}C_6$,99%) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-ULM-8531-1.2	Oxybenzone (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-7286-1.2	3,4,4'-Trichlorocarbanilide (Triclocarban) (4'-chlorophenyl-$^{13}C_6$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-7968-1.2	3,4,4'-Trichlorocarbanilide (Triclocarban) (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-6779-1.2	Triclosan (2',4,4'-Trichloro-2-hydroxydiphenyl ether) ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-6935-1.2	Triclosan (2',4,4'-Trichloro-2-hydroxydiphenyl ether) (unlabelled) 100 µg/mL in Nonane	1.2 mL

Sex and steroidal hormone standards

New	CIL-DLM-2607-0.1	Cholesterol (2,2,3,4,4,6-D_6,97-98%)	0.1 g
New	CIL-DLM-2218-0.1MG	Cortisol (9,11,12,12-D_4,98%)	0.1 mg
New	CIL-DLM-2218-A-1.2	Cortisol (9,11,12,12-D_4,98%) 100 µg/mL in Methylene chloride	1.2 mL
New	CIL-ULM-7823-A-1.2	Cortisol (unlabelled) 100 µg/mL in Dichloromethane	1.2 mL
New	CIL-DLM-8049-0.005	Dehydroepiandrosterone (DHEA) (2,2,3,4,4,6-D_6,99%) chemical purity 97%	5 mg
	CIL-DLM-170-1.2	Diethylstilbestrol (cis/trans mix) (ring-3,3',5,5'-diethyl-1,1,1',1'-D_8,98%) 100 µg/mL in Dichloromethane-D_2	1.2 mL
New	CIL-DLM-170-D-1.2	Diethylstilbestrol (cis/trans mix) (ring-3,3',5,5'-diethyl-1,1,1',1'-D_8,98%) 100 µg/mL in Dioxane	1.2 mL
	CIL-ULM-7921-1.2	Diethylstilbestrol (cis/trans mix) (unlabelled) 100 µg/mL in Dichloromethane	1.2 mL
New	CIL-ULM-7921-D-1.2	Diethylstilbestrol (cis/trans Mix) (unlabelled) 100 µg/mL in Dioxane	1.2 mL
New	CIL-CLM-7936-0.1MG	DL-Estradiol (13,14,15,16,17,18-$^{13}C_6$,99%)	0.1 mg
	CIL-CLM-7936-1.2	DL-Estradiol (13,14,15,16,17,18-$^{13}C_6$,99%) 100 µg/mL in Methanol	1.2 mL
	CIL-CLM-803-1.2	Estradiol (3,4-$^{13}C_2$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-7449-1.2	Estradiol (unlabelled) 100 µg/mL in Acetronitrile	1.2 mL
New	CIL-DLM-8583	Estriol (2,4,16,17-D_4,98%)	on request
New	CIL-ULM-8218	Estriol (unlabelled)	1.2 mL
	CIL-ULM-8218-1.2	Estriol (unlabelled) 100 µg/mL in p-Dioxane	1.2 mL
New	CIL-CLM-7935-0.1MG	DL-Estrone (13,14,15,16,17,18-$^{13}C_6$,99%)	0.1 mg
New	CIL-CLM-7935-1.2	DL-Estrone (13,14,15,16,17,18-$^{13}C_6$,99%) 100 µg/mL in Methanol	1.2 mL
	CIL-CLM-673-1.2	Estrone (3,4-$^{13}C_2$,90%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-3375-1.2	Ethynylestradiol (20,21-$^{13}C_2$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-7211-1.2	Ethynylestradiol (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-CLM-8012-0.1MG	2-Hydroxyestradiol (13,14,15,16,17,18-$^{13}C_6$,99%)	0.1 mg

Priority pollutants, endocrine disruptor and chemical contaminant standards

	Code	Product	Unit
New	CIL-ULM-8135-0.1MG	2-Hydroxyestradiol (unlabelled)	0.1 mg
New	CIL-CLM-8011-0.1MG	2-Hydroxyestrone (13,14,15,16,17,18-$^{13}C_6$,99%)	0.1 mg
New	CIL-ULM-8134-0.1MG	2-Hydroxyestrone (unlabelled)	0.1 mg
New	CIL-CLM-8016-0.1MG	DL-2-Hydroxyestrone-3-methyl ether (13,14,15,16,17,18-$^{13}C_6$,99%)	0.1 mg
New	CIL-ULM-8133-0.1MG	2-Hydroxyestrone-3-methyl ester (unlabelled)	0.1 mg
New	CIL-CLM-8013-0.1MG	DL-4-Hydroxyestrone (13,14,15,16,17,18-$^{13}C_6$,99%)	0.1 mg
New	CIL-ULM-8261-0.1MG	4-Hydroxyestrone (unlabelled)	0.1 mg
New	CIL-CLM-8015-0.1MG	DL-2-Methoxyestradiol (13,14,15,16,17,18-$^{13}C_6$,99%)	0.1 mg
New	CIL-ULM-8137-0.1MG	2-Methoxyestradiol (unlabelled)	0.1 mg
New	CIL-CLM-8014-0.1MG	DL-2-Methoxyestrone (13,14,15,16,17,18-$^{13}C_6$,99%)	0.1 mg
New	CIL-ULM-8263-0.1MG	2-Methoxyestrone (unlabelled)	0.1 mg
New	CIL-CLM-8017-0.1MG	DL-4-Methoxyestrone (13,14,15,16,17,18-$^{13}C_6$,99%)	0.1 mg
New	CIL-ULM-8262-0.1MG	4-Methoxyestrone (unlabelled)	0.1 mg
New	CIL-DLM-3979-5	19-Nortestosterone (16,16,17-D_3,98%)	5 mg
	CIL-DLM-6909-1.2	Progesterone (2,2,6,6,17,21,21,21-D_8,96%) 100 µg/mL in p-Dioxane	1.2 mL
	CIL-ULM-8219-1.2	Progesterone (unlabelled) 100 ug/mL in p-Dioxane	1.2 mL
	CIL-DLM-8085-1.2	Testosterone (D_5,98%) 100 ug/mL in Methylene chloride	1.2 mL
New	CIL-DLM-8085-D-1.2	Testosterone (D_5,98%) 100 µg/mL in p-Dioxane	1.2 mL
New	CIL-DLM-683-1.2	Testosterone (1,2-D_2,98%) 100 µg/mL in Methylene chloride	1.2 mL
	CIL-ULM-8081-1.2	Testosterone (unlabelled) 100 µg/mL in Methylene chloride	1.2 mL
New	CIL-ULM-8081-D-1.2	Testosterone (unlabelled) 100 µg/mL in p-Dioxane	1.2 mL
New	CIL-CLM-6725-0.1MG	L-Thyroxine (Thyrosine-ring-$^{13}C_6$,99%), chemical purity 90%	0.1 mg

Prescription and non-prescription drug standards

	CIL-CNLM-3726-1.2	Acetaminophen (acetyl-$^{13}C_2$,99%; ^{15}N,98%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-7629-1.2	Acetaminophen (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-DLM-3008-1.2	Amitriptyline:HCl ((N,N-dimethyl-D_6,98%) 100 µg/mL in Methanol	1.2 mL
New	CIL-ULM-8350-1.2	Amitriptyline:HCl (unlabelled) 100 µg/mL in Methanol	1.2 mL
	CIL-CLM-514-1.2	Caffeine (trimethyl-$^{13}C_3$, 99%) 100 µg/mL in Methanol	1.2 mL
New	CIL-ULM-7653-1.2	Caffeine (unlabelled) 100 µg/mL in Methanol	1.2 mL
	CIL-DLM-2806-1.2	Carbamazepine (D_{10},98%) 100 µg/mL in Acetonitrile-D_3	1.2 mL
	CIL-ULM-6581-1.2	Carbamazepine (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-DLM-1287-1.2	Clonidine (D_4,98%) 100 µg/mL in Methanol	1.2 mL
New	CIL-ULM-8349-1.2	Clonidine (unlabelled) 100 µg/mL in Methanol	1.2 mL
New	CIL-CNLM-411-1.2	5,5-Diphenylhydantoin (2-^{13}C,99%; 1,3-$^{15}N_2$,98%) 100 µg/mL in Methanol	1.2 mL
New	CIL-ULM-8533-1.2	5,5-Diphenylhydantoin (unlabelled) 100 µg/mL in Methanol	1.2 mL
	CIL-DLM-8221-1.2	Gemfibrozil (2,2-dimethyl-D_6,98%) 100 µg/mL in Dioxane	1.2 mL
	CIL-ULM-8225-1.2	Gemfibrozil (unlabelled) 100 ug/mL in Dioxane	1.2 mL
	CIL-CLM-6943-1.2	Ibuprofen (propionic-$^{13}C_3$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-7275-1.2	Ibuprofen (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-DLM-3035-1.2	Imipramine:HCl (D_4,98%) 100 µg/mL in Methanol	1.2 mL
	CIL-CDLM-7665-1.2	Naproxen (methyl-^{13}C,99%; methyl-D_3,98%) 100 µg/mL in Acetonitrile	1.2 mL

	Code	Product	Unit
	CIL-ULM-7709-1.2	Naproxen (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-DLM-3039-1MG	Phenylbutazone (diphenyl-D_{10},98%)	1 mg
	CIL-ULM-7378-1.2	Phenylbutazone (unlabelled)	1.2 mL
New	CIL-CLM-7892	Resorcinol ($^{13}C_6$,99%)	on request
New	CIL-CLM-8370-1.2	Thiabendazole (ring-$^{13}C_6$,99%) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-ULM-8371-1.2	Thiabendazole (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-DLM-6861-1.2	Warfarin (phenyl-D_5,98%) 100 µg/mL in Acetonitrile-D_3	1.2 mL
	CIL-ULM-7242-1.2	Warfarin (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL

Veterinary and human antibiotic standards

New	CIL-CLM-7407-1MG	Amoxicillin $3H_2O$ (phenyl-$^{13}C_6$,99%)	1 mg
New	CIL-DLM-119-1.2	Chloramphenicol (D_5,98%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-6687-1.2	(+/-)-Chloramphenicol (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CNLM-7539-1.2	Ciprofloxacin (2,3,carboxyl-$^{13}C_3$, 99%; quinoline-^{15}N, 98%) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-ULM-7710-1.2	Ciprofloxacin (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-3672-1.2	Erythromycin (N,N-dimethyl-$^{13}C_2$,~90%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-4322-1.2	Erythromycin (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-3045-1.2	Sulfamethazine (phenyl-$^{13}C_6$,90%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-7220-1.2	Sulfamethazine (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-6944-1.2	Sulfamethoxazole (ring-$^{13}C_6$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-7527-1.2	Sulfamethoxazole (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-CLM-7988-A-1.2	Trimethoprim ($^{13}C_3$,99%) 50 µg/mL in Methanol	1.2 mL
New	CIL-ULM-7989-A-1.2	Trimethoprim (unlabelled) 50 µg/ml in Methanol	1.2 mL

Food and drinking water analysis standards

	CIL-CLM-813-1.2	Acrylamide (1,2,3-$^{13}C_3$,99%) (+100 ppm Hydroquinone) 1000 µg/mL in Methanol	1.2 mL
	CIL-DLM-821-0.1	Acrylamide (2,3,3-D_3,98%)	0.1 g
	CIL-DLM-821-0.25	Acrylamide (2,3,3-D_3,98%)	0.25 g
	CIL-ULM-6721-1.2	Acrylamide (unlabelled) (+100 ppm Hydroquinone 100 µg/mL in Methanol	1.2 mL
	CIL-DLM-7170-1.2	1-Aminohydantoin hydrochloride (5,5-D_2,98%) (AHD) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-7188-1.2	1-Aminohydantoin hydrochloride (unlabelled) 100 µg/mL in Methanol	1.2 mL
	CIL-DLM-7171-1.2	3-Amino-2-oxazolidone (AOZ) (ring-D_4,98%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-7189-1.2	3-Amino-2-oxazolidone (AOZ) (unlabelled) 100 µg/mL in Methanol	1.2 mL
New	CIL-DLM-3008-1.2	Amitriptyline:HCl ((N,N-dimethyl-D_6,98%) 100 µg/mL in Methanol	1.2 mL
New	CIL-ULM-8350-1.2	Amitriptyline:HCl (unlabelled) 100 µg/mL in Methanol	1.2 mL
New	CIL-CLM-8589-1.2	Ammelide (ring-$^{13}C_3$,99%) 100 µg/mL in Water/Diethylamine (80/20 v/v)	1.2 mL
New	CIL-ULM-8590-1.2	Ammelide (unlabelled) 100 µg/mL in Water/Diethylamine (80/20 v/v)	1.2 mL
	CIL-CLM-4748-1.2	1,6-Anhydro-beta-d-glucose (Levoglucosan) (U-$^{13}C_6$,98%) 100 µg/mL in DMSO	1.2 mL
	CIL-ULM-8000-1.2	1,6-Anhydro-beta-d-glucose (Levoglucosan) (unlabelled) 100 µg/mL in DMSO	1.2 mL
New	CIL-DLM-119-1.2	Chloramphenicol (D_5,98%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-6687-1.2	(+/-)-Chloramphenicol (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-DLM-4633-1.2	3-Chloro-1,2-propanediol (propane-D_5,98%) 1 mg/mL in Methanol	1.2 mL
	CIL-DLM-4633-0.1	3-Chloro-1,2-propandiol (propane-D_5,98%) (contains 10% 2-Chloro-1,3-propandiole)	0.1 g
	CIL-CNLM-4661-1.2	Cyanuric acid (U-$^{13}C_3$, 99%; U-$^{15}N_3$, 98%+) 100 µg/mL in Water	1.2 mL
New	CIL-CNLM-4661-10X-1.2	Cyanuric acid (90%+ chemical purity) (U-$^{13}C_3$,99%; U-$^{15}N_3$,98%+) 1000 µg/mL in Water	1.2 mL
	CIL-ULM-8157-1.2	Cyanuric acid 100 µg/mL in Water	1.2 mL
New	CIL-DLM-1632-1.2	Diethylene glycol (D_8,98%) 1 mg/mL in Methanol	1.2 mL
New	CIL-ULM-8235-1.2	Diethylene glycol (unlabelled) 1 mg/mL in methanol	1.2 mL
New	CIL-CLM-8316-1.2	Desethylisopropylhyroxyatrazine (Ammeline) (ring-$^{13}C_6$,99%) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-ULM-8323-1.2	Desethylisopropylhyroxyatrazine (Ammeline) (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CNLM-8150-1.2	Melamine ($^{13}C_3$,99%; Amino-$^{15}N_3$,98%) 100 µg/mL in Water	1.2 mL

Priority pollutants, endocrine disruptor and chemical contaminant standards

	Code	Product	Unit
New	CIL-CNLM-8150-10X-1.2	Melamine ($^{13}C_3$,99%; amino-$^{15}N_3$,98%) 1000 µg/mL in Water	1.2 mL
	CIL-ULM-8156-1.2	Melamine (unlabelled) 100 µg/mL in Water	1.2 mL
	CIL-DLM-4412-25	(-)-Menthol (1,2,6,6-D_4,98%)	25 mg
	CIL-DLM-4766-1.2	2-Methylisoborneol (2-methyl-D_3,98%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-7172-1.2	5-(4-Morpholinylmethyl)-3-amino-2-oxazolidinone (AMOZ) (4,4,5,5',5,'-D_5,98%) 100 µg/mL in Acetonitrile-D_3	1.2 mL
	CIL-ULM-7190-1.2	5-(4-Morpholinylmethyl)-3-amino-2-oxazolidinone (AMOZ) (unlabelled) 100 µg/mL in Methanol	1.2 mL
	CIL-CDLM-7279-S	N-Nitrosodimethylamine ($^{13}C_2$,99%;D_6,98%) 1 mg/mL in Methylene chloride-D_2	1 mL
	CIL-OLM-7310-1.2	Perchloric acid sodium salt ($^{18}O_4$,90%+) 100 µg/mL in Water	1.2 mL
	CIL-ULM-7312-1.2	Perchloric acid sodium salt (unlabelled) 100 µg/mL in Water	1.2 mL
	CIL-CLM-3733-1.2	2-Phenylphenol (phenyl-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7396-1.2	2-Phenylphenol (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-3748-1.2	4-Phenylphenol (phenyl-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
New	CIL-OLM-8283-1.2	Potassium bromate ($^{18}O_3$,98%) 100 µg/mL in Water (90-95% chemical purity)	1.2 mL
New	CIL-ULM-8451-1.2	Potassium bromate (unlabelled) 100 µg/mL in Water	1.2 mL
	CIL-CNLM-7221-1.2	Semicarbazide hydrochloride (SEM) (^{13}C,99%; $^{15}N_2$,98%) 100 µg/mL in Methanol	1.2 mL
	CIL-ULM-7187-1.2	Semicarbazide hydrochloride (SEM) (unlabelled) 100 µg/mL in Methanol	1.2 mL
	CIL-DLM-6083-1.2	2,4,6-Trichloroanisole (D_5,98%) 1 mg/mL in Methanol-D_4	1.2 mL
	CIL-ULM-7999-1.2	2,4,6-Trichloroanisole 1 mg/mL in Methanol	1.2 mL
	CIL-DLM-2080-1.2	1,2,3-Trichloropropane (D_5,98%) (Chemical purity 95%) 1000 µg/mL in Methanol	1.2 mL
	CIL-ULM-6911-1.2	1,2,3-Trichloropropane (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	CIL-CLM-6779-1.2	Triclosan (2',4,4'-Trichloro-2-hydroxydiphenyl ether) ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-6935-1.2	Triclosan (2',4,4'-Trichloro-2-hydroxydiphenyl ether) (unlabelled) 100 µg/mL in Nonane	1.2 mL

Phthalate & phthalate metabolite standards

Phthalates are emerging as a growing environmental concern, especially as more is learned about the effect of continued exposure on the environment and the human body. Phthalate diesters are ubiquitous in the laboratory environment, so many analysts are now examining phthalate monoesters and metabolites of phthalate monoesters to reduce background interferences. Adipate esters are also anticipated to be of interest to exposure analysts and additional adipate standards are expected to be made available.

	CIL-DLM-1369-1.2	Benzyl butyl phthalate (ring-D_4,98%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4675-1.2	Bis(2-ethylhexyl) adipate (adipate-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-6566-1.2	Bis(2-ethylhexyl) adipate (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-1368-1.2	Bis(2-ethylhexyl) phthalate (ring-D_4,98%) 100 µg/mL in Nonane	1.2 mL
New	CIL-ULM-6241-1.2	Bis(2-ethylhexyl) phthalate (unlabelled) 1000 µg/mL in Nonane	1.2 mL
	CIL-DLM-1367-1.2	Di-n-butyl phthalate (ring-D_4,98%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4670-1.2	Dicyclohexyl phthalate (ring-1,2-$^{13}C_2$; dicarboxyl-$^{13}C_2$,99%) 100 µg/mL in Nonane	1.2 mL
New	CIL-ULM-8785-1.2	Dicyclohexyl phthalate (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-1629-1.2	Diethyl phthalate (ring-D_4,98%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-6174-1.2	Diethyl phthalate (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-1366-1.2	Dimethyl phthalate (ring-D_4,98%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-6783-1.2	Dimethyl phthalate (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4669-1.2	Di-n-hexyl phthalate (ring-1,2-$^{13}C_2$; dicarboxyl-$^{13}C_2$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7434-1.2	Di-n-hexyl phthalate (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-1630-1.2	Di-n-octyl phthalate (ring-D_4,98%) 100 µg/mL in in Nonane	1.2 mL
	CIL-ULM-6129-1.2	Di-n-octyl phthalate (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4668-1.2	Di-n-pentyl phthalate (ring-1,2-$^{13}C_2$; dicarboxyl-$^{13}C_2$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7433-1.2	Di-n-pentyl phthalate (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4671-1.2	Di-n-propyl phthalate (ring-1,2-$^{13}C_2$; dicarboxyl-$^{13}C_2$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4591-1.2	Monobenzyl phthalate (ring-1,2-$^{13}C_2$,99%; dicarboxyl-$^{13}C_2$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-6149-1.2	Monobenzyl phthalate (unlabelled) 100 µg/mL in tert Butyl methyl ether	1.2 mL

	Code	Product	Unit
	CIL-CLM-4590-1.2	Mono-n-butyl phthalate (ring-1,2-$^{13}C_2$; dicarboxyl-$^{13}C_2$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-6148-1.2	Mono-n-butyl phthalate (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-CLM-8148-1.2	Mono-(5-carboxy-2-ethylpentyl) phthalate (DEHP Metabolite V) ($^{13}C_4$,99%) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-ULM-8149-1.2	Mono-(5-carboxy-2-ethylpentyl) phthalate (unlabelled) (DEHP Metabolite V) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-CLM-8232	Mono-[(3-carboxymethyl)hexyl]phthalate (DEHP metabolite IV) (ring-1,2-$^{13}C_2$; dicarboxyl-$^{13}C_4$,99%)	on request
New	CIL-ULM-8233-1.2	Mono-(2-Carboxymethylhexyl) phthalate (DEHP metabolite IV) 100 µg/mL in Methylene chloride	1.2 mL
	CIL-CLM-6847-1.2	Mono(3-carboxypropyl)phthalate (ring-1,2-$^{13}C_2$, dicarboxyl-$^{13}C_2$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-6848-1.2	Mono(3-carboxypropyl)phthalate (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-4592-1.2	Monocyclohexyl phthalate (ring-1,2-$^{13}C_2$, dicarboxyl-$^{13}C_2$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-7394-1.2	Monocyclohexyl phthalate (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-4584-1.2	Mono-2-ethylhexyl phthalate (ring-1,2-$^{13}C_2$; dicarboxyl-$^{13}C_2$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-4583-1.2	Mono-2-ethylhexylphthalate (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-6641-1.2	Mono-(2-ethyl-5-hydroxyhexyl) phthalate (DEHP Metabolite IX) (ring-1,2-$^{13}C_2$; dicarboxyl-$^{13}C_2$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-4662-1.2	Mono-(2-ethyl-5-hydroxyhexyl)phthalate (DEHP Metabolite IX) (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-6640-1.2	Mono-(2-ethyl-5-oxohexyl) phthalate (DEHP Metabolite VI) ($^{13}C_4$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-4663-1.2	Mono-(2-ethyl-5-oxohexyl) phthalate (DEHP Metabolite VI) (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-4586-1.2	Monoethyl phthalate (ring-1,2-$^{13}C_2$; dicarboxyl-$^{13}C_2$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-4585-1.2	Monoethylphthalate (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-7919-1.2	Monoisobutyl phthalate (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-ULM-4652-1.2	Mono-isodecylphthalate (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-4587-1.2	Monoisononyl phthalate (ring-1,2-$^{13}C_2$; dicarboxyl-$^{13}C_2$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-4651-1.2	Mono-isononylphthalate (unlablelled) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-ULM-7395-1.2	Monoisopropyl phthalate (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-6071-1.2	Monomethyl phthalate (ring-1,2-$^{13}C_2$; dicarboxyl-$^{13}C_2$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-6697-1.2	Monomethyl phthalate (unlabelled) 100 µg/mL Acetonitrile	1.2 mL
	CIL-CLM-4589-1.2	Mono-n-octyl phthalate (ring-1,2-$^{13}C_2$; dicarboxyl-$^{13}C_2$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-4593-1.2	Mono-n-octyl phthalate (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-7393-1.2	Mono-n-pentyl phthalate (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-ULM-8301-1.2	Phthalic acid (unlabelled) 100 µg/mL in Nonane	1.2 mL

Nonylphenol and nonylphenol metabolites

New	CIL-CLM-8356-1.2	4-(1,3-Dimethyl-1-ethylpentyl) phenol (ring-$^{13}C_6$,99%)	1.2 mL
New	CIL-ULM-8360-1.2	4-(1,3-Dimethyl-1-ethylpentyl) phenol (unlabelled)	1.2 mL
New	CIL-CLM-8357-1.2	4-(1,4-Dimethyl-1-ethylpentyl) phenol (unlabelled)	1.2 mL
New	CIL-ULM-8361-1.2	4-(1,4-Dimethyl-1-ethylpentyl) phenol (unlabelled)	1.2 mL
New	CIL-CLM-8359-1.2	4-(1-Ethyl-1-methylhexyl) phenol (ring-$^{13}C_6$,99%)	1.2 mL
New	CIL-ULM-8363-1.2	4-(1-Ethyl-1-methylhexyl) phenol (unlabelled)	1.2 mL
	CIL-CLM-4306-1.2	p-n-Nonylphenol (ring-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-4559-1.2	p-n-Nonylphenol (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4307-1.2	p-n-Nonylphenol diethoxylate (ring-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-4521-1.2	p-n-Nonylphenol diethoxylate (unlabelled) 100 µg/mL in Nonane	1.2 mL
New	CIL-ULM-4521-SA-5X-1.2	p-n-Nonylphenol diethoxylate (unlabelled) 500 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-4512-1.2	p-n-Nonylphenol monoethoxylate (ring-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-4520-1.2	p-n-Nonylphenol monoethoxylate (unlabelled) 100 µg/mL in Nonane	1.2 mL

Priority pollutants, endocrine disruptor and chemical contaminant standards

	Code	Product	Unit
New	CIL-ULM-4520-SA-5X-1.2	p-n-Nonylphenol monoethoxylate (unlabelled) 500 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-4516-1.2	p-n-Nonylphenol triethoxylate (ring-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ES-4157	Set of p-Nonylphenol/Ethoxlates (ring-$^{13}C_6$,99%) Each set contains one 1.2 mL ampoule of CLM 4306-1.2 CLM 4512-1.2 CLM 4307-1.2 CLM 4157-1.2	4 x 1.2 mL
	CIL-ULM-6560-1.2	p-Nonylphenol-technical grade (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7146-1.2	Nonylphenol monoethoxylate-branched isomers (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7147-1.2	Nonylphenol diethoxylate-branched isomers (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-4688-1.2	Nonylphenoxyacetic acid (ring/chain isomers) (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-4690-1.2	p-Nonylphenoxyethoxyacetic acid (unlabelled) 100 µg/mL in Nonane	1.2 mL
New	CIL-CLM-8358-1.2	4-(1,1,5-Trimethylhexyl) phenol (ring-$^{13}C_6$,99%)	1.2 mL
New	CIL-ULM-8362-1.2	4-(1,1,5-Trimethylhexyl) phenol (unlabelled)	1.2 mL

Perfluorinated compounds

New	CIL-CLM-8340-1.2	Perfluorohexanoic acid (PFHxA), sodium salt ($^{13}C_6$,99%) 50 µg/mL in Methanol	1.2 mL
New	CIL-ULM-8342-1.2	Perfluorohexanoic acid (PFHxA), sodium salt (unlabelled) 50 µg/mL in Methanol	1.2 mL
	CIL-CLM-8005-1.2	Perfluorooctanoic acid (PFOA) ($^{13}C_8$,99%) 50 µg/mL in Methanol	1.2 mL
	CIL-ULM-7451-1.2	Perfluorooctanoic acid (PFOA) (unlabelled) 50 µg/mL in Methanol	1.2 mL
	CIL-CLM-8060-1.2	Perfluorononanoic acid ($^{13}C_9$,99%) 50 µg/mL in Methanol	1.2 mL
	CIL-ULM-8066-1.2	Perfluorononanoic acid (PFNA) (unlabelled) 50 µg/mL in Methanol	1.2 mL
New	CIL-CLM-8172-1.2	Perfluorodecanoic acid (PFDA) ($^{13}C_9$,99%) 50 ug/mL in Methanol	1.2 mL
New	CIL-ULM-8067-1.2	Perfluorodecanoic acid (PFDA) (unlabelled) 50 ug/mL in Methanol	1.2 mL
New	CIL-CLM-8240-1.2	Perfluoroundecanoic acid ($^{13}C_9$) 50 µg/mL in Methanol	1.2 mL
New	CIL-ULM-8084-1.2	Perfluoroundecanoic acid (unlabelled) 50 µg/mL in Methanol	1.2 mL

Nitrosamine standards

	CIL-DLM-7779-S	N-Nitrodimethylamine (dimethyl-D_6,98%) 1 mg/mL in Methylene chloride-D2	1 mL
	CIL-ULM-7780-S	N-Nitrodimethylamine (unlabelled) 1 mg/mL in Methylene chloride	1 mL
	CIL-ULM-7168-1.2	NAB (Nitrosoanabasine) (unlabelled) 0.5 mg/mL in Acetonitrile	1.2 mL
	CIL-ULM-7207-1.2	NAT (Nitrosoanatabine) (unlabelled) 2000 µg/mL in Acetonitrile	1.2 mL
	CIL-DLM-7982-S	N-Nitrosodiethylamine (D_{10},98%) 1 mg/mL in Methylene chloride-D_2	1 mL
	CIL-ULM-7984-1.2	N-Nitrosodiethylamine (unlabelled) 1 mg/mL in Methylene chloride	1.2 mL
	CIL-CDLM-7279-S	N-Nitrosodimethylamine ($^{13}C_2$,99%;D_6,98%) 1 mg/mL in Methylene chloride-D_2	1 mL
	CIL-DLM-2130-S	N-Nitrosodimethylamine (2,2',4,4',6,6'-D_6,98%) 1000 µg/mL in Methylene chloride-D_2	1 mL
	CIL-NLM-7647-S	N-Nitrosodimethylamine ($^{15}N_2$,98%) 1 mg/mL in Methylene chloride	1 mL
	CIL-DLM-3098-S	N-Nitrosodiphenylamine (2,2',4,4',6,6'-D_6,98%) 1000 µg/mL in Methylene chloride-D_2	1 mL
New	CIL-ULM-7219-1.2	N-Nitrosodiphenylamine (unlabelled) 1 mg/mL in Methylene chloride	1.2 mL
	CIL-DLM-2131-S	N-Nitroso-di-n-propylamine (D_{14},98%) 1000 µg/mL in Methylene chloride	1 mL
	CIL-ULM-6637-S	N-Nitroso-di-n-propylamine (unlabelled) 1000 µg/mL in Methylene chloride	1.2 mL
	CIL-DLM-8254-1.2	N-Nitrosomorpholine (D_8,98%) 1 mg/mL in Methylene chloride-D_2	1.2 mL
New	CIL-ULM-8255-1.2	N-Nitrosomorpholine (unlabelled) 1 mg/mL in Methylene chloride	1.2 mL
	CIL-DLM-8252-1.2	N-Nitrosopyrrolidone (D_8,98%) 1 mg/mL in Methylene chloride-D_2	1.2 mL
New	CIL-ULM-8253-1.2	N-Nitrosopyrrolidone 1 mg/mL in Methylene chloride	1.2 mL
	CIL-CLM-4555-1.2	NNK (Nicotine-derived nitrosamine ketone) (1,2',3',4',5',6'-$^{13}C_6$,99%) 100 µg/mL in Nonane/Ethanol (9:1)	1.2 mL
	CIL-CLM-4557-1.2	NNN (N-Nitrosonornicotine) (2,2',3,4,5,6-$^{13}C_6$,99%) 100 µg/mL in Nonane/Ethanol (9:1)	1.2 mL

Tobacco metabolite and flavoring standards

In addition to the compounds listed below, CIL is involved in ongoing programs to create standards for the analysis of tobacco products and the chemicals it produces when burned.

	CIL-CLM-6023-1.2	4-Methylumbelliferone (2,3,4-methyl-$^{13}C_4$,99%) 100 µg/mL in Acetonitrile	1.2 mL

	Code	Product	Unit
	CIL-ULM-7309-1.2	4-Methylumbelliferone (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-7168-1.2	NAB (Nitrosoanabasine) (unlabelled) 0.5 mg/mL in Acetonitrile	1.2 mL
	CIL-ULM-7207-1.2	NAT (Nitrosoanatabine) (unlabelled) 2000 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-4555-1.2	NNK (Nicotine-derived nitrosamine ketone) (1,2',3',4',5',6'-$^{13}C_6$,99%) 100 µg/mL in Nonane/Ethanol (9:1)	1.2 mL
	CIL-CLM-4557-1.2	NNN (N-Nitrosonornicotine) (2,2',3,4,5,6-$^{13}C_6$,99%) 100 µg/mL in Nonane/Ethanol (9:1)	1.2 mL
	CIL-DLM-4412-25	(-)-Menthol (1,2,6,6-D_4,98%)	25 mg

Halogenated and substituted benzene and phenol standards

Many industrial and consumer products are composed of chemicals that contain halogenated or substituted benzene, or phenol functional groups. Resistant to decomposition and metabolism, these chemicals may persist even after the parent molecule has undergone partial decomposition, or they may exist as a product or industrial byproduct. The increased use of brominated compounds is expected to lead to more brominated benzenes and phenols in the environment, and the continued presence of chlorinated compounds ensures that chlorinated benzenes and phenols will be found in the environment for years to come.

	Code	Product	Unit
	CIL-CLM-2268-1.2	4-Bromophenol ($^{13}C_6$,99%) 100 µg/mL in Toluene	1.2 mL
	CIL-ULM-6917-1.2	4-Bromophenol (unlabelled) 100 µg/mL in Toluene	1.2 mL
	CIL-CLM-1913-1.2	4-Chlorophenol ($^{13}C_6$,99%) 100 µg/mL in Toluene	1.2 mL
	CIL-ULM-7420-1.2	4-Chlorophenol (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-6058-1.2	2,4-Dibromophenol ($^{13}C_6$,99%) 100 µg/mL in Toluene	1.2 mL
	CIL-CLM-8007-1.2	2,6-Dibromophenol ($^{13}C_6$,99%) 100 µg/mL in Toluene	1.2 mL
	CIL-ULM-7603-1.2	2,6-Dibromophenol (unlabelled) 100 µg/mL in Toluene	1.2 mL
	CIL-ULM-6918-1.2	2,4-Dibromophenol (unlabelled) 100 µg/mL in Toluene	1.2 mL
	CIL-CLM-126-1.2	1,2-Dichlorobenzene ($^{13}C_6$,99%) 100 µg/mL in Isooctane	1.2 mL
	CIL-ULM-7415-1.2	1,2-Dichlorobenzene (unlabelled) 100 µg/mL in Toluene	1.2 mL
	CIL-CLM-4484-1.2	1,3-Dichlorobenzene ($^{13}C_6$,99%) 100 ug/mL in Isooctane	1.2 mL
	CIL-ULM-7431-1.2	1,3-Dichlorobenzene (unlabelled) 100 µg/mL in Isooctane	1.2 mL
New	CIL-DLM-1359-0.5	2,4-Dichlorophenol (ring-D_3,98%)	0.5 g
	CIL-ULM-6822-1.2	2,4-Dichlorophenol (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-1365-1.2	2,5-Dichlorophenol ($^{13}C_6$,99%) 100 µg/mL in Methanol	1.2 mL
	CIL-CLM-1921-1.2	Hexabromobenzene ($^{13}C_6$,99%) 100 µg/mL in Toluene	1.2 mL
	CIL-ULM-7607-1.2	Hexabromobenzene (unlabelled) 100 µg/mL in Toluene	1.2 mL
	CIL-CLM-1959-1.2	Pentabromophenol ($^{13}C_6$,98%) 100 µg/mL in Toluene	1.2 mL
	CIL-ULM-6922-1.2	Pentabromophenol (unlabelled) 100 µg/mL in Toluene	1.2 mL
	CIL-CLM-8003-1.2	Pentachloroanisole ($^{13}C_6$,99%) 100 µg/mL in Toluene	1.2 mL
	CIL-ULM-7605-1.2	Pentachloroanisol (unlabelled) 100 µg/mL in Toluene	1.2 mL
	CIL-CLM-2050-1.2	Pentachlorobenzene ($^{13}C_6$,99%) 100 µg/mL in Isooctane	1.2 mL
	CIL-ULM-7234-1.2	Pentachlorobenzene (unlabelled) 100 µg/mL in Isooctane	1.2 mL
	CIL-CLM-1955-1.2	Pentachloronitrobenzene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-661-1.2	Pentachlorophenol ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-6894-1.2	Pentachlorophenol (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-1996-1.2	2,3,4,5-Tetrabromophenol ($^{13}C_6$,99%) 100 µg/mL in Toluene	1.2 mL
	CIL-ULM-6778-1.2	2,3,4,5-Tetrabromophenol (unlabelled) 100 µg/mL in Toluene	1.2 mL
	CIL-CLM-1982-1.2	1,2,3,4-Tetrachlorobenzene ($^{13}C_6$,99%) 100 µg/mL in Isooctane	1.2 mL
	CIL-ULM-6195-1.2	1,2,3,4-Tetrachlorobenzene 100 µg/mL (unlabelled) in Isooctane	1.2 mL
New	CIL-ULM-7599-1.2	1,2,3,5-Tetrachlorobenzene (unlabelled) 100 µg/mL in Isooctane	1.2 mL
New	CIL-ULM-7598-1.2	1,2,4,5-Tetrachlorobenzene (unlabelled) 100 µg/mL in Isooctane	1.2 mL
	CIL-CLM-8006-1.2	Tetrachlorobisphenol A (ring-$^{13}C_{12}$,99%) 50 µg/mL in Methanol	1.2 mL
	CIL-ULM-7606-1.2	Tetrachlorobisphenol A (unlabelled) 50 µg/mL in Methanol	1.2 mL
New	CIL-CLM-7488	2,3,4-Tribromophenol ($^{13}C_6$,99%)	on request
	CIL-CLM-6151-1.2	2,4,5-Tribromophenol ($^{13}C_6$,99%) 100 µg/mL in Toluene	1.2 mL
	CIL-ULM-6084-1.2	2,4,5-Tribromophenol (unlabelled) 100 µg/mL in Toluene	1.2 mL
	CIL-CLM-6743-1.2	2,4,6-Tribromophenol ($^{13}C_6$,99%) 100 µg/mL in Toluene	1.2 mL

Priority pollutants, endocrine disruptor and chemical contaminant standards

	Code	Product	Unit
New	CIL-DLM-7506	2,4,6-Tribromophenol (3,5-D2, 98%)	on request
New	CIL-ULM-4210-1.2	2,4,6-Tribromophenol (unlabelled) 100 µg/mL in Toluene	1.2 mL
	CIL-CLM-1836-1.2	3,4,5-Tribromophenol ($^{13}C_6$,98%) 100 µg/mL in Toluene	1.2 mL
New	CIL-CLM-513-SI-1.2	2,4,5-Trichlorophenol ($^{13}C_6$,99%) 100 µg/mL in Isooctane	1.2 mL
	CIL-ULM-7525-1.2	2,4,5-Trichlorophenol (unlabeled) 100 ug/ml in Methanol	1.2 mL
	CIL-CLM-1804-SI-1.2	2,4,6-Trichlorophenol ($^{13}C_6$,99%) 100 µg/mL in Isooctane	1.2 mL
New	CIL-ULM-7600-1.2	2,4,6-Trichlorophenol (unlabelled) 100 µg/mL in Methanol	1.2 mL

Endocrine disrupting compounds and xenoestrogen standards

CIL is committed to supporting the analysis of Endocrine Disrupting Compounds (EDCs) using Isotope Dilution Mass Spectrometry. If you require an EDC not listed, please contact us to discuss preparation.

	CIL-CLM-1643-1.2	Acenaphthene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-108-1.2	Acenaphthene (D_{10},98%) 200 µg/mL in Isooctane	1.2 mL
	CIL-ULM-7413-1.2	Acenaphthene (unlabelled) 200 µg/mL Isooctane	1.2 mL
	CIL-CLM-3727-1.2	Alachlor (ring-$^{13}C_6$,98%) 100 µg/mL in Nonane (Chemical purity 96%)	1.2 mL
	CIL-CLM-4725-1.2	Aldrin ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-1333-1.2	Anthracene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-102-1.2	Anthracene (D_{10},98%) 200 µg/mL in Isooctane	1.2 mL
	CIL-ULM-7412-1.2	Anthracene (unlabelled) 200 µg/mL in Isooctane	1.2 mL
	CIL-CLM-3737-1.2	Atrazine (ring-$^{13}C_3$,99%) 100 µg/mL in Nonane	1.2 mL
New	CIL-CLM-3737-D-1.2	Atrazine (ring-$^{13}C_3$,99%) 100 µg/mL in Dioxane	1.2 mL
	CIL-CLM-3602-1.2	Benzo[a]anthracene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-610-1.2	Benzo[a]anthracene (D_{12},98%) 200 µg/mL in Isooctane	1.2 mL
	CIL-ULM-2415-1.2	Benzo[a]anthracene (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	CIL-CLM-2722-1.2	Benzo[a]pyrene ($^{13}C_4$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-258-1.2	Benzo[a]pyrene (D_{12},98%) 200 µg/mL in Isooctane	1.2 mL
New	CIL-ULM-7423-1.2	Benzo[e]pyrene (unlabelled) 200 µg/mL in Isooctane	1.2 mL
	CIL-CLM-3599-1.2	Benzo[b]fluoranthene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-2136-1.2	Benzo[b]fluoranthene (D_{12},98%) 200 µg/mL in Isooctane	1.2 mL
	CIL-ULM-2416-1.2	Benzo[b]fluoranthene (unlabelled) 1000 µg/mL in Acetone	1.2 mL
	CIL-CLM-3756-1.2	Benzo[k]fluoranthene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-1923-1.2	Benzo[k]fluoranthene (D_{12},98%) 200 µg/mL in Isooctane	1.2 mL
	CIL-DLM-183-1.2	Benzophenone (D_{10},98%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-1369-1.2	Benzyl butyl phthalate (ring-D_4,98%) 100 µg/mL in Nonane	1.2 mL
New	CIL-ULM-6241-1.2	Bis(2-ethylhexyl) phthalate (unlabelled) 1000 µg/mL in Nonane	1.2 mL
	CIL-CLM-4675-1.2	Bis(2-ethylhexyl) adipate (adipate-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-1368-1.2	Bis(2-ethylhexyl) phthalate (ring-D_4,98%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4325-1.2	Bisphenol A (ring-$^{13}C_{12}$,99%) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-DLM-1839-0.1	Bisphenol A (D_{16},98%)	0.1 g
	CIL-ULM-7106-1.2	Bisphenol A (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-8654-1.2	2,4'-Bisphenol A (2-(2-Hydroxyphenyl)-2-(4-hydroxyphenyl)propane) (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-4674-1.2	n-Butyl benzene (ring-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4682-1.2	Carbaryl (ring-$^{13}C_6$, 99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4792-1.2	trans-Chlordane (gamma) ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
New	CIL-ULM-2419-1.2	cis-Chlordane (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4814-1.2	Chlordecone (Kepone®) ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-2301-1.2	Chlordecone (Kepone®) (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4758-1.2	Chlordene ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7443-1.2	Chlordene (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-4360-1.2	Chlorpyrifos (diethyl-D_{10},99%) 100 µg/mL in Nonane	1.2 mL

Code	Product	Unit
CIL-CLM-3757-1.2	Chrysene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-DLM-261-1.2	Chrysene (D_{12},98%) 200 µg/mL in Toluene-D_8	1.2 mL
CIL-ULM-7424-1.2	Chrysene (unlabelled) 200 µg/mL in Toluene	1.2 mL
CIL-DLM-4461-1.2	Daidzein (3',5',8-D_3,97%) 60 µg/mL in Acetonitrile-D_3	2 x 1.2 mL
CIL-ULM-4459-1.2	Daidzein (unlabelled) 60 µg/mL in Acetonitrile	1.2 mL
CIL-DLM-1148-1.2	Diazinon (diethyl-D_{10},98%) 100 µg/mL in Nonane	1.2 mL
CIL-DLM-2943-1.2	2,6-Di-(tert-butyl)-4-methylphenol (BHT) (D_{21},98%) 100 µg/mL in Nonane	1.2 mL
CIL-DLM-3533-1.2	4,4'-DDD (ring-D_8,98%) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-4693-1.2	2,4'-DDE (ring-$^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-6251-1.2	2,4'-DDE (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-1627-1.2	4,4'-DDE (ring-$^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-4692-1.2	2,4'-DDT (ring-$^{13}C_{12}$, 99 %) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-6134-1.2	2,4'-DDT (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-1281-1.2	4,4'-DDT (ring-$^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-6135-1.2	4,4'-DDT (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-DLM-1669-0.1	2,4-Dichlorophenol (ring-D_3,OD,98%)	0.1 g
CIL-CLM-1858-1.2	2,4-D (2,4-Dichlorophenoxyacetic acid) (ring-$^{13}C_6$,99%) 100 µg/mL in Acetonitrile	1.2 mL
CIL-CLM-4726-1.2	Dieldrin ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7230-1.2	Dieldrin (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-DLM-1629-1.2	Diethyl phthalate (ring-D_4,98%) 100 µg/mL in Nonane	1.2 mL
CIL-DLM-1367-1.2	Di-n-butyl phthalate (ring-D_4,98%) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-4669-1.2	Di-n-hexyl phthalate (ring-1,2-$^{13}C_2$; dicarboxyl-$^{13}C_2$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7434-1.2	Di-n-hexyl phthalate (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-4668-1.2	Di-n-pentyl phthalate (ring-1,2-$^{13}C_2$; dicarboxyl-$^{13}C_2$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7433-1.2	Di-n-pentyl phthalate (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-4671-1.2	Di-n-propyl phthalate (ring-1,2-$^{13}C_2$; dicarboxyl-$^{13}C_2$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-6025-1.2	Endosulfan I ($^{13}C_9$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-DLM-2862-1.2	Endosulfan I (D_4,97%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7447-1.2	Endosulfan I (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-6026-1.2	Endosulfan II ($^{13}C_9$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7448-1.2	Endosulfan II (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-4782-1.2	Endrin ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7444-1.2	Endrin (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-4815-50	Endrin aldehyde ($^{13}C_{12}$,99%)	50 µg
CIL-CLM-4816-50	Endrin ketone ($^{13}C_{12}$,99%)	50 µg
CIL-DLM-4460-1.2	Genistein (3',5',6,8-D_4,95%) 100 µg/mL in Acetonitrile	1.2 mL
CIL-ULM-4458-1.2	Genistein (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
CIL-CLM-2482-1.2	alpha-HCH (alpha-BHC) ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-3623-1.2	beta-HCH (beta-BHC) ($^{13}C_6$,99%) 50 µg/mL in Nonane	2 x 1.2 mL
CIL-CLM-1282-1.2	gamma-HCH (Lindane) ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-4759-1.2	Heptachlor ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-2424-1.2	Heptachlor (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-4734-1.2	cis-Heptachlor epoxide (isomer B) ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-2425-1.2	cis-Heptachlor epoxide (isomer B) (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-351-1.2	Hexachlorobenzene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-3600-1.2	Indeno[1,2,3-cd]pyrene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-DLM-2148-1.2	Indeno[1,2,3-cd]pyrene (D_{12},98%) 200 µg/mL in Isooctane	1.2 mL
CIL-CLM-4727-1.2	Isodrin ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7442-1.2	Isodrin (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-DLM-4476-1.2	Malathion (D_{10},99%) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-4683-1.2	Methoxychlor (ring-$^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL

	Code	Product	Unit
	CIL-ULM-7440-1.2	Methoxychlor (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-3712-1.2	Metolachlor (ring-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7314-1.2	Metolachlor (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4813-1.2	Mirex ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-2427-1.2	Mirex (unlabelled) 100 µg/mL in Nonane	1.2 mL
New	CIL-CLM-8232	Mono-[(3-carboxymethyl)hexyl]phthalate (DEHP metabolite IV) (ring-1,2-$^{13}C_2$; dicarboxyl-$^{13}C_4$,99%)	on request
	CIL-CLM-3913-S	4-Nitrotoluene (ring-$^{13}C_6$,99%) 1000 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-3891-1.2	4-Nitrotoluene (unlabelled) 1000 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-4811-1.2	cis-Nonachlor ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4735-1.2	trans-Nonachlor ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7229-1.2	trans-Nonachlor (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4306-1.2	p-n-Nonylphenol (ring-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-4559-1.2	p-n-Nonylphenol (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4512-1.2	p-n-Nonylphenol monoethoxylate (ring-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-4520-1.2	p-n-Nonylphenol monoethoxylate (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4729-1.2	Oxychlordane ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-6139-1.2	Oxychlordane (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-2970-1.2	Parathion-ethyl (diethyl-D_{10},98%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-2970-0.01	Parathion-ethyl (diethyl-D10,98%)	10 mg
	CIL-ULM-8144-1.2	Parathion 100 µg/mL in Nonane	1.2 mL
New	CIL-CLM-7930-1.2	Parlar 26 (2-endo,3-exo,5-endo,6-exo,8,8,10,10-Octachlorobornane) (U-$^{13}C_{10}$,99%) 10 µg/mL in Nonane	1.2 mL
New	CIL-ULM-7828-1.2	Parlar 26 (2-endo,3-exo,5-endo,6-exo,8,8,10,10-Octachlorobornane) (unlabelled) 10 µg/mL in Nonane	1.2 mL
New	CIL-CLM-8705-1.2	Parlar 32 (2,2,5-endo,6-exo,8,9,10-Heptachlorobornane) ($^{13}C_{10}$,99%) 10 µg/mL in Nonane	1.2 mL
New	CIL-ULM-8665-1.2	Parlar 32 (2,2,5-endo,6-exo,8,9,10-Heptachlorobornane) (unlabelled) 10 µg/mL in Nonane	1.2 mL
New	CIL-CLM-7931-1.2	Parlar 50 (2-endo,3-exo,5-endo,6-exo,8,8,9,10,10-Nonachlorobornane) (U-$^{13}C_{10}$, 99%) 10 µg/mL in Nonane	1.2 mL
New	CIL-ULM-7829-1.2	Parlar 50 (2-endo,3-exo,5-endo,6-exo,8,8,9,10,10-Nonachlorobornane) (unlabelled) 10 µg/mL in Nonane	1.2 mL
New	CIL-CLM-7932-1.2	Parlar 62 (2-endo,2-exo,5-endo,5-exo,8,9,9,10,10-Nonachlorobornane) (U-$^{13}C_{10}$,99%) 10 µg/mL in Nonane	1.2 mL
New	CIL-ULM-7830-1.2	Parlar 62 (2-endo,2-exo,5-endo,5-exo,8,9,9,10,10-Nonachlorobornane) (unlabelled) 10 µg/mL in Nonane	1.2 mL
New	CIL-CLM-8720-1.2	Parlar 69 (2,2,5,5,6-exo,8,9,9,10,10-Decachlorobornane) ($^{13}C_{10}$,99%) 10 µg/mL in Nonane	1.2 mL
New	CIL-ULM-8768-1.2	Parlar 69 (2,2,5,5,6-exo,8,9,9,10,10-Decachlorobornane) (unlabelled) 10 µg/mL in Nonane	1.2 mL
New	CIL-CLM-8721-1.2	Parlar 70 (2,2,3-exo,5,5,8,9,9,10,10-Decachlorobornane) ($^{13}C_{10}$,99%) 10 µg/mL in Nonane	1.2 mL
New	CIL-ULM-8769-1.2	Parlar 70 (2,2,3-exo,5,5,8,9,9,10,10-Decachlorobornane) (unlabelled) 10 µg/mL in Nonane	1.2 mL
	CIL-EC-1404-3	3,3',4,4'-Tetrachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #77) 40 µg/mL in Nonane	3 mL
	CIL-EC-1425-3	3,3',4,4',5-Pentachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #126) 40 µg/mL in Nonane	3 mL
	CIL-EC-1416-3	3,3',4,4',5,5'-Hexachlorobiphenyl ($^{13}C_{12}$,99%) (IUPAC #169) 40 µg/mL in Nonane	3 mL
	CIL-CLM-2050-1.2	Pentachlorobenzene ($^{13}C_6$,99%) 100 µg/mL in Isooctane	1.2 mL
	CIL-ULM-7234-1.2	Pentachlorobenzene (unlabelled) 100 µg/mL in Isooctane	1.2 mL
	CIL-CLM-1955-1.2	Pentachloronitrobenzene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
New	CIL-ULM-7597-1.2	Pentachloronitrobenzene (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-661-1.2	Pentachlorophenol ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-6894-1.2	Pentachlorophenol (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-7322-1.2	cis-Permethrin (phenoxy-$^{13}C_6$,99%) 50 µg/mL in Nonane	1.2 mL
New	CIL-ULM-8526-1.2	cis-Permethrin (unlabelled) 50 µg/mL in Nonane	1.2 mL
	CIL-CLM-7323-1.2	trans-Permethrin (phenoxy-$^{13}C_6$,99%) 50 µg/mL in Nonane	1.2 mL
	CIL-CLM-2451-1.2	Phenanthrene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-371-1.2	Phenanthrene (D_{10},98%) 200 µg/mL in Isooctane	1.2 mL

	Code	Product	Unit
	CIL-ULM-7427-1.2	Phenanthrene (unlabelled) 200 µg/mL in Isooctane	1.2 mL
	CIL-CLM-3739-1.2	Simazine (ring-$^{13}C_3$,99%) 100 µg/mL in Methanol	1.2 mL
	CIL-CLM-4694-1.2	Tetrabromobisphenol A (ring-$^{13}C_{12}$,99%) 50 µg/mL in Methanol	1.2 mL
New	CIL-ULM-8734-1.2	Tetrabromobisphenol A (unlabelled) 50 µg/mL in Methanol	1.2 mL
	CIL-ED-900	2,3,7,8-Tetrachlorodibenzo-p-dioxin ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
	CIL-ED-901	2,3,7,8-Tetrachlorodibenzo-p-dioxin 50 µg/mL in Nonane	4 x 1.2 mL
	CIL-CLM-4551-1.2	2,4,5-Trichlorophenoxyacetic acid (2,4,5-T) (ring-$^{13}C_6$,99%) 100 µg/mL in Methylene chloride	1.2 mL
	CIL-ULM-7213-1.2	2,4,5-Trichlorophenoxyacetic acid (2,4,5-T) (unlabelled) 100 µg/mL in Methylene chloride	1.2 mL
	CIL-DLM-4479-1.2	Trifluralin (di-n-propyl-D_{14},98%) 100 µg/mL in Nonane	1.2 mL

Isotope labelled chlorinated diphenyl ether standards

New	CIL-EO-4907	2,3',4,5'-Tetrachlorodiphenyl ether ($^{13}C_{12}$,99%) 50 µg/mL in n-Nonane	1.2 mL
New	CIL-EO-1449	3,3',4,4'-Tetrachlorodiphenyl ether (TetraCDE) ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
New	CIL-EO-1480	2,2',3,3',4,4'-Hexachlorodiphenyl ether (HexaCDE) ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
	CIL-EO-1469	2,3,3',4,4',5-Hexachlorodiphenyl ether ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
New	CIL-EO-5051	2,2',3,4,5,5'-Hexachlorodiphenyl ether ($^{13}C_{12}$,99%) 50 µg/mL in n-Nonane	1.2 mL
	CIL-EO-1489	2,2',3,3',4,4',5,5'-Octachlorobiphenyl ether ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL

Unlabelled chlorinated diphenyl ether standards

	CIL-EO-4119	4-Monochlorodiphenyl ether (unlabelled) 50 µg/mL in Nonane	1.2 mL
New	CIL-EO-1448	3,3',4,4'-Tetrachlorobiphenyl ether (unlabelled) 50 µg/mL in n-Nonane	1.2 mL
New	CIL-EO-5066	2,2',3,4,5,5'-Hexachlorodiphenyl ether (unlabelled) 50 µg/mL in n-Nonane	1.2 mL
New	CIL-EO-1488	2,2',3,3',4,4',5,5'-Octachlorodiphenyl ether (OctaCDE) (unlabelled) 50 µg/mL in Nonane	1.2 mL

Other industrial chemicals

	CIL-DLM-183-1.2	Benzophenone (D_{10},98%) 100 µg/mL in Nonane	1.2 mL
New	CIL-ULM-8303-1.2	Benzophenone (unlabelled) 100 ug/mL in Nonane	1.2 mL
	CIL-CLM-4325-1.2	Bisphenol A (ring-$^{13}C_{12}$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-7106-1.2	Bisphenol A (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-8654-1.2	2,4'-Bisphenol A (2-(2-Hydroxyphenyl)-2-(4-hydroxyphenyl)propane) (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-4674-1.2	n-Butyl benzene (ring-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4695-1.2	1,2-Dibromo-3-chloropropane ($^{13}C_3$,99%) 100 µg/mL in Methanol	1.2 mL
	CIL-ULM-6583-1.2	1,2-Dibromo-3-chloropropane (unlabelled) 100 µg/mL in Methanol	1.2 mL
	CIL-CLM-6144-1.2	1,1-Dichloroethylene (random-^{13}C,99%) (stabilised with Hydroquinone) 100 µg/mL in Methanol	1.2 mL
	CIL-ULM-7214-1.2	1,1-Dichloroethylene (stabilized with hydroquinone) 100 µg/mL in Methanol	1.2 mL
	CIL-CLM-6145-1.2	1,2-Dichloroethylene ($^{13}C_1$,99%) (cis/trans mix) (stabilised with hydroquinone) 100 µg/mL in Methanol	1.2 mL
	CIL-ULM-7215-1.2	1,2-Dichloroethylene (cis/trans mix) (stabilised with hydroquinone) (unlabelled) 100 µg/mL in Methanol	1.2 mL
	CIL-CLM-1305-1.2	2,4-Dichlorophenol ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-3374-1.2	Epichlorohydrin ($^{13}C_3$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-DLM-1008-1	Epichlorohydrin (D_5,98%)	1 g
New	CIL-ULM-7403-1.2	Epichlorhydrin (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-8008-1.2	Hexachlorophene ($^{13}C_{13}$,99%) 50 µg/mL in Methanol	1.2 mL
	CIL-ULM-8009-1.2	Hexachlorophene (unlabelled) 50 µg/mL in Methanol	1.2 mL
New	CIL-CLM-4745-1.2	4-Hydroxybenzoic acid (ring-$^{13}C_6$,99%) 1 mg/mL in Methanol	1.2 mL
New	CIL-ULM-8251-1.2	4-Hydroxybenzoic acid (unlabelled) 1 mg/mL in Methanol	1.2 mL
	CIL-CLM-4694-1.2	Tetrabromobisphenol A (ring-$^{13}C_{12}$,99%) 50 µg/mL in Methanol	1.2 mL
New	CIL-ULM-8734-1.2	Tetrabromobisphenol A (unlabelled) 50 µg/mL in Methanol	1.2 mL
	CIL-CLM-8006-1.2	Tetrachlorobisphenol A (ring-$^{13}C_{12}$,99%) 50 µg/mL in Methanol	1.2 mL
	CIL-ULM-7606-1.2	Tetrachlorobisphenol A (unlabelled) 50 µg/mL in Methanol	1.2 mL
	CIL-DLM-7136-1.2	Tributyltin chloride (D_{27},98%) 100 µg/mL in Methylene chloride-D_2	1.2 mL

Priority pollutants, endocrine disruptor and chemical contaminant standards

	Code	Product	Unit
	CIL-ULM-8061-1.2	Tributyltin chloride 100 µg/mL in Methylene chloride	1.2 mL
	CIL-CLM-6185-1.2	1,1,1-Trichloroethane (2-^{13}C,99%) 100 µg/mL in Methanol	1.2 mL
	CIL-ULM-6709-1.2	1,1,1-Trichloroethane (unlabelled) 100 µg/mL in Methanol	1.2 mL
	CIL-DLM-2080-1.2	1,2,3-Trichloropropane (D_5,98%) (Chemical purity 95%) 1000 µg/mL in Methanol	1.2 mL
	CIL-ULM-6911-1.2	1,2,3-Trichloropropane (unlabelled) 1000 µg/mL in Methanol	1.2 mL

Explosive standards

	CIL-CLM-1519-S	1,3-Dinitrobenzene ($^{13}C_6$,99%) 1000 µg/mL in Acetonitrile	1 mL
New	CIL-CLM-1519-0.1	1,3-Dinitrobenzene ($^{13}C_6$,99%)	0.1 g
	CIL-ULM-3850-1.2	1,3-Dinitrobenzene 1000 µg/mL in Acetonitrile	1.2 mL
New	CIL-DLM-299-10	2,4-Dinitrophenol (ring-D_3,98%) (contains 0.35 mg/mL deuterium) 1000 µg/mL in D_2O	10 mL
	CIL-DLM-2207-S	2,4-Dinitrotoluene (ring-D_3,98%) 1000 µg/mL in Acetonitrile	1 mL
	CIL-ULM-3888-S	2,4,Dinitrotoluene (unlabelled) 1000 µg/mL in Acetonitrile	1.2 mL
	CIL-DLM-1939-S	2,6-Dinitrotoluene (methyl-D_3,98%) 1000 µg/mL in Acetonitrile	1 mL
	CIL-ULM-3889-S	2,6-Dinitrotoluene (unlabelled) 1000 µg/mL in Acetonitrile	1 mL
	CIL-CNLM-7963-S	HMX ($^{13}C_4$,99%; ring-$^{15}N_4$,98%) 1 mg/mL in Acetonitrile	1 mL
	CIL-ULM-7969-S	HMX (unlabelled) 1 mg/mL in Acetonitrile	1 mL
	CIL-CLM-675-S	Nitrobenzene ($^{13}C_6$,99%) 1000 µg/ml in Acetonitrile	1 mL
New	CIL-CLM-675-0.25	Nitrobenzene ($^{13}C_6$,99%)	0.25 g
New	CIL-CLM-675-0.5	Nitrobenzene ($^{13}C_6$,99%)	0.5 g
	CIL-ULM-3892-1.2	Nitrobenzene (unlabelled) 1000 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-3893-S	Nitroglycerin (Trinitroglycerol) 1000 µg/mL in Acetonitrile	1 mL
	CIL-CLM-3912-S	2-Nitrotoluene (ring-$^{13}C_6$,99%) 1000 µg/mL in Acetonitrile	1 mL
	CIL-ULM-3890-1.2	2-Nitrotoluene (unlabelled) 1000 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-3913-S	4-Nitrotoluene (ring-$^{13}C_6$,99%) 1000 µg/mL in Acetonitrile	1.2 mL
New	CIL-CLM-3913-0	4-Nitrotoluene (ring-$^{13}C_6$,99%)	on request
	CIL-ULM-3891-1.2	4-Nitrotoluene (unlabelled) 1000 µg/mL in Acetonitrile	1.2 mL
	CIL-CNLM-7987-S	RDX ($^{13}C_3$, 99%; $^{15}N_3$, 98%) 1 mg/mL in Acetonitrile	1 mL
	CIL-ULM-3847-S	RDX (unlabelled) 1000 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-3848-S	1,3,5-Trinitrobenzene ($^{13}C_6$,99%) 1000 µg/mL in Acetonitril	1.2 mL
	CIL-ULM-3849-1.2	1,3,5-Trinitrobenzene (unlabelled) 1000 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-3849-1.2	1,3,5-Trinitrobenzene (unlabelled) 1000 µg/mL in Acetonitrile	1.2 mL
	CIL-CNLM-3643-S	2,4,6-Trinitrotoluene ($^{15}N_3$,98%;$^{13}C_7$,99%) 1000 µg/mL in Benzene wetted with H_2O 33% by weight	1.2 mL
	CIL-ULM-3845-S	2,4,6-Trinitrotoluene (unlabelled) 1000 µg/mL in Acetonitrile	1.2 mL

Individual n-alkane standards

CIL-DLM-1213-1	n-Pentane (D_{12},98%)	1 g
CIL-DLM-1213-5	n-Pentane (D_{12},98%)	5 g
CIL-DLM-139-1	n-Hexane (D_{14},99%)	1 g
CIL-DLM-139-5	n-Hexane (D_{14},99%)	5 g
CIL-DLM-423-1	n-Heptane (D_{16},98%)	1 g
CIL-DLM-423-5	n-Heptane (D_{16},98%)	5 g
CIL-DLM-50-1	n-Octane (D_{18},99%)	1 g
CIL-DLM-50-5	n-Octane (D_{18},99%)	5 g
CIL-DLM-2438-1	n-Nonane (D_{20},98%)	1 g
CIL-DLM-2438-5	n-Nonane (D_{20},98%)	5 g
CIL-DLM-133-1	n-Decane (D_{22},99%)	1 g
CIL-DLM-133-5	n-Decane (D_{22},99%)	5 g
CIL-DLM-338-1	n-Dodecane (D_{26},98%)	1 g
CIL-DLM-338-5	n-Dodecane (D_{26},98%)	5 g
CIL-DLM-1354-0.5	n-Tridecane (D_{28},98%)	0.5 g

	Code	Product	Unit
	CIL-DLM-670-1	n-Tetradecane (D_{30},98%)	1 g
	CIL-DLM-670-5	n-Tetradecane (D_{30},98%)	5 g
	CIL-DLM-1283-1	n-Pentadecane (D_{32},98%)	1 g
	CIL-DLM-1283-5	n-Pentadecane (D_{32},98%)	5 g
	CIL-DLM-203-0.1	n-Hexadecane (D_{34},98%)	0.1 g
	CIL-DLM-203-5	n-Hexadecane (D_{34},98%)	5 g
	CIL-DLM-1342-5	n-Heptadecane (D_{36},98%)	5 g
	CIL-DLM-1346-0.1	n-Nonadecane (D_{40},98%)	0.1 g
	CIL-DLM-1346-1	n-Nonadecane (D_{40},98%)	1 g
	CIL-DLM-2208-0.5	n-Eicosane (D_{42},98%)	0.5 g
	CIL-DLM-2208-1	n-Eicosane (D_{42},98%)	1 g
	CIL-DLM-3336-1	n-Tricosane (D_{48},98%)	1 g
	CIL-DLM-2209-0.5	n-Tetracosane (D_{50},98%)	0.5 g
	CIL-DLM-2210-0.5	n-Triacontane (D_{62},98%)	0.5 g
	CIL-DLM-2724-1	n-Dotriacontane (D_{66},98%)	1 g
	CIL-DLM-2634-1	n-Hexatriacontane (D_{74},98%)	1 g

Priority pollutant standdards

	CIL-CLM-1643-1.2	Acenaphthene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7413-1.2	Acenaphthene (unlabelled) 200 µg/mL Isooctane	1.2 mL
	CIL-CLM-2477-1.2	Acenaphthylene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7422-1.2	Acenaphthylene (unlabelled) 200 µg/mL in Isooctane	1.2 mL
	CIL-DLM-9-10	Acetone (D_6,99,9%)	10 g
	CIL-DLM-9-25	Acetone (D_6,99,9%)	25 g
	CIL-CLM-856-0.1	Acrylonitrile ($^{13}C_3$,99%) (inhibited with 0.1% 4-methoxyphenol)	0.1 g
	CIL-DLM-820-1	Acrylonitrile (D_3,98%) (inhibited with 0.1% 4-methoxyphenol)	1 g
	CIL-DLM-820-5	Acrylonitrile (D_3,98%) (inhibited with 0.1% 4-methoxyphenol)	5 g
	CIL-CLM-4725-1.2	Aldrin ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7441-1.2	Aldrin (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-2030-1.2	2-Aminonaphthalene (ring-D_7,98%) 1000 µg/mL in Benzene	1.2 mL
New	CIL-DLM-7658	1-Amino-2-propanol (D_9,98%)	1.2 mL
	CIL-CLM-714-0.1	Aniline ($^{13}C_6$,99%)	0.1 g
	CIL-CLM-714-0.25	Aniline ($^{13}C_6$,99%)	0.25 g
	CIL-DLM-862-1	Aniline (ring-D_5,98%)	1 g
	CIL-DLM-862-5	Aniline (ring-D_5,98%)	5 g
	CIL-DLM-106-5	Aniline (D_7,98%)	5 g
	CIL-CLM-1333-1.2	Anthracene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7412-1.2	Anthracene (unlabelled) 200 µg/mL in Isooctane	1.2 mL
	CIL-CLM-3602-1.2	Benzo[a]anthracene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
New	CIL-ULM-2415-I-1.2	Benz[a]anthracene (unlabelled) 200 µg/mL in Isooctane	1.2 mL
	CIL-CLM-182-0.1	Benzene ($^{13}C_6$,99%)	0.1 g
	CIL-CLM-182-0.5	Benzene ($^{13}C_6$,99%)	0.5 g
	CIL-DLM-1101-5	Benzene (D_1,98%)	5 g
New	CIL-DLM-256	Benzene (D_5,98%)	on request
	CIL-DLM-1-5	Benzene (D_6,99.6%)	5 g
	CIL-DLM-1-10	Benzene (D_6,99.6%)	10 g
	CIL-DLM-1-25	Benzene (D_6,99.6%)	25 g
	CIL-DLM-1-50	Benzene (D_6,99.6%)	50 g
	CIL-CDLM-629-0.1	Benzene ($^{13}C_6$,99%;D_6,98%)	0.1 g
	CIL-DLM-1338-1.2	Benzidine (ring-D_8,98%) 100 µg/mL in Toluene	1.2 mL
	CIL-DLM-122-1	Benzoic acid (ring-D_5,98%)	1 g

	Code	Product	Unit
	CIL-DLM-122-5	Benzoic acid (ring-D_5,99%)	5 g
	CIL-CLM-2722-1.2	Benzo[a]pyrene ($^{13}C_4$,99%) 100 µg/mL in Nonane	1.2 mL
New	CIL-ULM-8717-1.2	Benzo[a]pyrene (unlabelled) 200 µg/mL in Isooctane	1.2 mL
	CIL-CLM-3599-1.2	Benzo[b]fluoranthene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-3756-1.2	Benzo[k]fluoranthene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-1364-1.2	Benzo[ghi]perylene ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-2418-1.2	Benzo[g,h,i]perylene (unlabelled) 1000 µg/mL in Methylene chloride	1.2 mL
	CIL-DLM-1663-1	1,4-Benzoquinone (D_4,98%)	1 g
	CIL-DLM-1369-1.2	Benzyl butyl phthalate (ring-D_4,98%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-1369-0.1	Butyl benzyl phthalate (ring-D_4,98%)	0.1 g
	CIL-DLM-494-1	Biphenyl (D_{10},98%)	1 g
	CIL-DLM-494-5	Biphenyl (D_{10},99%)	5 g
	CIL-ULM-1710-1.2	Biphenyl (unlabelled) 50 µg/mL in Nonane	1.2 mL
	CIL-ULM-1710-0.5	Biphenyl (unlabelled)	0.5 g
	CIL-DLM-1945-0.1	Bis(2-chloroethoxy) methane (chloroethoxy-D_8,98%)	0.1 g
	CIL-DLM-2004-0.05	Bis(2-chloroethyl) ether (D_8,98%)	0.05 g
	CIL-DLM-2004-0.1	Bis(2-chloroethyl) ether (D_8,98%)	0.1 g
New	CIL-DLM-2138	Bis(2-chloroisopropyl) ether (D_{12},95%)	1 g
New	CIL-ULM-3693	Bis(2-chloroisopropyl) ether (unlabelled)	on request
	CIL-CLM-4325-1.2	Bisphenol A (ring-$^{13}C_{12}$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-7106-1.2	Bisphenol A (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-8654-1.2	2,4'-Bisphenol A (2-(2-Hydroxyphenyl)-2-(4-hydroxyphenyl)propane) (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-DLM-1368-1.2	Bis(2-ethylhexyl) phthalate (ring-D_4,98%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-1368-0.1	Bis(2-ethylhexyl) phthalate (ring-D_4,98%)	0.1 g
	CIL-DLM-1368-0.25	Bis(2-ethylhexyl) phthalate (ring-D_4,98%)	0.25 g
	CIL-CLM-871-0.5	Bromobenzene ($^{13}C_6$,99%)	0.5 g
	CIL-DLM-398-5	Bromobenzene (D_5,99%)	5 g
	CIL-DLM-398-10	Bromobenzene (D_5,99%)	10 g
	CIL-DLM-398-25	Bromobenzene (D_5,99%)	25 g
	CIL-DLM-872-0.1	Bromochloromethane (D_2,98%)	0.1 g
New	CIL-CLM-2090-1	Bromodichloromethane (^{13}C,99%) (stabilized with K_2CO_3)	1 g
New	CIL-ULM-8480	Bromodichloromethane (unlabelled)	on request
	CIL-DLM-874-10	Bromoethane (D_5,98%)	10 g
	CIL-DLM-103-1	2-Bromoethanol (1,1,2,2-D_4,98%)	1 g
	CIL-DLM-103-5	2-Bromoethanol (1,1,2,2-D_4,98%)	5 g
	CIL-CLM-726-0.1	Bromoform (^{13}C,99%) (stabilised with copper wire)	0.1 g
	CIL-DLM-400-10	Bromoform (D,99,5%) (stabilised with copper wire)	10 g
	CIL-EO-4999	4-Monobromodiphenyl ether ($^{13}C_{12}$,99%) (BDE 3) 50 µg/mL in Nonane	1.2 mL
	CIL-DLM-1947-0.1	4-Bromophenylphenyl ether (phenyl-D_5,98%)	0.1 g
	CIL-DLM-1910-0.1	2-Butanone (methyl ethyl ketone) (4,4,4-D_3,98%)	0.1 g
	CIL-DLM-1910-1	2-Butanone (methyl ethyl ketone) (4,4,4-D_3,98%)	1 g
	CIL-DLM-663-0.1	2-Butanone (methyl ethyl ketone) (1,1,1,3,3-D_5,98%)	0.1 g
	CIL-DLM-663-1	2-Butanone (methyl ethyl ketone) (1,1,1,3,3-D_5,98%)	1 g
	CIL-DLM-663-5	2-Butanone (methyl ethyl ketone) (1,1,1,3,3-D_5,98%)	5 g
	CIL-DLM-2134-0.1	Carbazole (D_8,98%)	0.1 g
	CIL-CLM-731-0.1	Carbon tetrachloride (^{13}C,99%)	0.1 g
	CIL-CLM-731-0.5	Carbon tetrachloride (^{13}C,99%)	0.5 g
	CIL-CLM-731-1	Carbon tetrachloride (^{13}C,99%)	1 g
	CIL-CLM-1520-1	Catechol ($^{13}C_6$,99%)	1 mg
	CIL-DLM-1912-5	Catechol (D_6,98%)	5 g

	Code	Product	Unit
	CIL-DLM-263-1	Chlorobenzene (D_5,99%)	1 g
	CIL-DLM-263-5	Chlorobenzene (D_5,99%)	5 g
	CIL-CLM-2284-1	4-Chlorocatechol (13C6,99%)	1 mg
New	CIL-ULM-1701-0.1	4-Chlorocatechol (unlabelled) (Chemical purity: 90-95%)	0.1 g
	CIL-CLM-8087-1.2	cis-Chlordane ($^{13}C_{10}$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-2419-25	cis-Chlordane (unlabelled)	25 mg
	CIL-CLM-4792-1.2	trans-Chlordane (gamma) ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-2420-25	trans-Chlordane (unlabelled)	25 mg
New	CIL-CLM-2091	Chlorodibromomethane (^{13}C,99%)	on request
	CIL-DLM-1171-5	Chloroethane (D_5,98%)	5 g
	CIL-CLM-262-0.1	Chloroform (^{13}C,99%)	0.1 g
	CIL-CLM-262-0.5	Chloroform (^{13}C,99%)	0.5 g
	CIL-CLM-262-1	Chloroform (^{13}C,99%)	1 g
	CIL-DLM-7-50	Chloroform (D,99.8%)	50 g
	CIL-DLM-7-100	Chloroform (D,99.8%)	100 g
New	CIL-ULM-1705-0.1	4-Chloroguaiacol (unlabelled) (Chemical purity: 85-90%)	0.1 g
	CIL-DLM-2037-1	Chloroiodomethane (D_2,98%) (stabilised with copper wire)	1 g
	CIL-DLM-2205-0.01	4-Chloro-3-methylphenol (ring-2,6-D_2,98%)	0.01 g
	CIL-DLM-2205-0.1	4-Chloro-3-methylphenol (ring-2,6-D_2,98%)	0.1 g
New	CIL-DLM-2005-1.2	2-Chloronaphthalene (D7,98%) 100 µg/mL in Nonane 2-Chloronaphthalene (D_7,98%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-2005-0.01	2-Chloronaphthalene (D_7,98%)	0.01 g
	CIL-DLM-2005-0.1	2-Chloronaphthalene (D_7,98%)	0.1 g
	CIL-CLM-1559-1	4-Chloronitrobenzene ($^{13}C_6$,99%)	1 mg
	CIL-DLM-1638-0.1	2-Chlorophenol (ring-D_4,99%)	0.1 g
	CIL-DLM-1638-0.25	2-Chlorophenol (ring-D_4,99%)	0.25 g
	CIL-DLM-1930-0.1	4-Chlorophenyl phenyl ether (phenyl-D_5,98%)	0.1 g
	CIL-ULM-2421-0.1	4-Chlorophenyl phenyl ether (unlabelled)	0.1 g
	CIL-DLM-3014-1	2-Chloropropene (D_5,98%)	1 g
	CIL-DLM-3014-5	2-Chloropropene (D_5,98%)	5 g
	CIL-DLM-3016-5	o-Cresol (D_8,98%)	5 g
	CIL-DLM-3017-5	p-Cresol (D_8,98%)	5 g
New	CIL-CLM-7341	p-Cresol (ring-$^{13}C_6$, 99%)	1.2 mL
	CIL-CLM-6999-1.2	2,4'-DDD (ring-$^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
	CIL-ULM-7450-1.2	2,4'-DDD (unlabelled) 50 µg/mL in Nonane	1.2 mL
	CIL-CLM-7100-1.2	4,4'-DDD (ring-$^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-3533-1.2	4,4'-DDD (ring-D_8,98%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7216-1.2	4,4'-DDD (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4693-1.2	2,4'-DDE (ring-$^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-6251-1.2	2,4'-DDE (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-1627-1.2	4,4'-DDE (ring-$^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-1627-5	4,4'-DDE (ring-$^{13}C_{12}$,99%)	5 mg
	CIL-ULM-6137-1.2	4,4'-DDE (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4692-1.2	2,4'-DDT (ring-$^{13}C_{12}$, 99 %) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-6134-1.2	2,4'-DDT (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-1281-1.2	4,4'-DDT (ring-$^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-1281-5	4,4'-DDT (ring-$^{13}C_{12}$,99%)	5 mg
	CIL-ULM-6135-1.2	4,4'-DDT (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-1386-1	Decalin (D_{18},99%) (cis/trans mixture)	1 g
	CIL-DLM-1386-5	Decalin (D_{18},99%) (cis/trans mixture)	5 g
	CIL-DLM-1843-5	trans-Decalin (D_{18},98%)	5 g

	Code	Product	Unit
	CIL-CLM-3598-1.2	Dibenz[a,h]anthracene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-677-1.2	Dibenzo[a,h]anthracene (D_{14},97%) 200 µg/mL in Toluene-D_8	1.2 mL
	CIL-DLM-677-0.1	Dibenzo[a,h]anthracene (D_{14},97%)	0.1 g
	CIL-ULM-2422-1.2	Dibenzo[a,h]anthracene (unlabelled) 1000 µg/mL in Methylene chloride	1.2 mL
	CIL-ULM-2422-0.1	Dibenzo[a,h]anthracene (unlabelled)	0.1 g
	CIL-CLM-1544-1.2	Dibenzo-p-dioxin ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
	CIL-ULM-1711-1.2	Dibenzo-p-dioxin (unlabelled) 50 µg/mL in Nonane	1.2 mL
	CIL-ULM-1711-0.01	Dibenzo-p-dioxin (unlabelled)	0.01 g
	CIL-CLM-1561-1.2	Dibenzofuran ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
	CIL-DLM-2276-0.05	Dibenzofuran (D_8,98%)	0.05 g
	CIL-ULM-1712-1.2	Dibenzofuran 50 µg/mL in Nonane	1.2 mL
	CIL-ULM-1712-0.05	Dibenzofuran (unlabelled)	0.05 g
	CIL-DLM-2206-0.1	Dibenzothiophene (D_8,98%)	0.1 g
	CIL-CLM-1340-0.1	1,4-Dibromobenzene ($^{13}C_6$,99%)	0.1 g
	CIL-DLM-341-5	1,4-Dibromobenzene (D_4,98%)	5 g
	CIL-DLM-1367-1.2	Di-n-butyl phthalate (ring-D_4,98%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-1367-0.1	Di-n-butyl phthalate (ring-D_4,98%)	0.1 g
	CIL-DLM-1367-0.25	Di-n-butyl phthalate (ring-D_4,98%)	0.25 g
	CIL-CLM-735-1	3,4-Dichloroaniline ($^{13}C_6$,99%)	1 mg
	CIL-DLM-158-1	1,2-Dichlorobenzene (D_4,98%)	1 g
	CIL-DLM-158-5	1,2-Dichlorobenzene (D_4,98%)	5 g
	CIL-CLM-4484-1.2	1,3-Dichlorobenzene ($^{13}C_6$,99%) 100 ug/mL in Isooctane	1.2 mL
	CIL-CLM-1518-1	1,4-Dichlorobenzene ($^{13}C_6$,99%)	1 mg
	CIL-DLM-268-5	1,4-Dichlorobenzene (D_4,98%)	5 g
	CIL-DLM-3022-1.2	3,3'-Dichlorobenzidine (ring-D_6,98%) 1000 µg/mL in Benzene	1.2 mL
New	CIL-ULM-1702-0.1	4,5-Dichlorocatechol (unlabelled) (chemical purity: 95-99%)	0.1 g
	CIL-DLM-1934-0.1	1,1-Dichloroethane (2,2,2-D_3,98%)	0.1 g
	CIL-DLM-1934-0.25	1,1-Dichloroethane (2,2,2-D_3,98%)	0.25 g
	CIL-DLM-18-1	1,2-Dichloroethane (D_4,99%)	1 g
	CIL-DLM-18-5	1,2-Dichloroethane (D_4,99%)	5 g
	CIL-DLM-1935-0.1	1,1-Dichloroethylene (2,2-D_2,98%) (inhibited with hydroquinone)	0.1 g
	CIL-DLM-1935-1	1,1-Dichloroethylene (2,2-D_2,98%) (inhibited with hydroquinone)	1 g
	CIL-DLM-1936-0.1	1,2-Dichloroethylene (1,2-D_2,98%) (cis/trans mixture)	0.1 g
	CIL-DLM-1936-1	1,2-Dichloroethylene (1,2-D_2,98%) (cis/trans mixture)	1 g
	CIL-DLM-1359-0.1	2,4-Dichlorophenol (ring-D_3,98%)	0.1 g
	CIL-DLM-1669-0.1	2,4-Dichlorophenol (ring-D_3,OD,98%)	0.1 g
	CIL-DLM-1937-0.1	1,2-Dichloropropane (D_6,98%)	0.1 g
New	CIL-DLM-1937-0.25	1,2-Dichloropropane (D_6,98%)	0.25 g
	CIL-DLM-2112-1.2	1,3-Dichloro-2-propanol (D_5,98%) 1 mg/mL in Methanol	1.2 mL
	CIL-ULM-8092-1.2	1,3-Dichloro-2-propanol (unlabelled) 1 mg/mL in Methanol	1.2 mL
	CIL-DLM-1938-0.1	1,3-Dichloropropene (D_4,98%) (cis/trans mixture)	0.1 g
New	CIL-ULM-1700-0.1	5,6-Dichlorovanillin (unlabelled)	0.1 g
	CIL-CLM-4726-1.2	Dieldrin ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7230-1.2	Dieldrin (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-1592-1	Diethyl ether (D_{10},99%)	1 g
	CIL-DLM-1592-5	Diethyl ether (D_{10},99%)	5 g
	CIL-DLM-1629-1.2	Diethyl phthalate (ring-D_4,98%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-1629-0.1	Diethyl phthalate (ring-D_4,98%)	0.1 g
	CIL-DLM-1629-0.25	Diethyl phthalate (ring-D_4,98%)	0.25 g
	CIL-CLM-1006-0.5	Diiodomethane (^{13}C,99%) (stabilised with copper wire)	0.5 g
	CIL-DLM-3190-1	N,N-Dimethylaniline (D_{11},98%)	1 g

	Code	Product	Unit
	CIL-CLM-503-0.5	N,N-Dimethylformamide (carbonyl-^{13}C,99%)	0.5 g
	CIL-CLM-503-1	N,N-Dimethylformamide (carbonyl-^{13}C,99%)	1 g
	CIL-DLM-3073-0.1	2,4-Dimethylphenol (ring-D_3,98%)	0.1 g
	CIL-DLM-3073-0.25	2,4-Dimethylphenol (ring-D_3,98%)	0.25 g
	CIL-DLM-1366-1.2	Dimethyl phthalate (ring-D_4,98%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-1366-0.1	Dimethyl phthalate (ring-D_4,98%)	0.1 g
	CIL-DLM-3024-5	1,3-Dinitrobenzene (D_4,98%)	5 g
	CIL-DLM-3173-0.1	4,6-Dinitro-2-methylphenol (3,5-D_2,98%)	0.1 g
New	CIL-DLM-299-10	2,4-Dinitrophenol (ring-D_3,98%) (contains 0.35 mg/mL deuterium) 1000 µg/mL in D_2O	10 mL
	CIL-DLM-2207-S	2,4-Dinitrotoluene (ring-D_3,98%) 1000 µg/mL in Acetonitrile	1 mL
	CIL-DLM-1939-S	2,6-Dinitrotoluene (methyl-D_3,98%) 1000 µg/mL in Acetonitrile	1 mL
	CIL-DLM-1630-1.2	Di-n-octyl phthalate (ring-D_4,98%) 100 µg/mL in in Nonane	1.2 mL
	CIL-DLM-1630-0.1	Di-n-octyl phthalate (ring-D_4,98%)	0.1 g
	CIL-ULM-6129-1.2	Di-n-octyl phthalate (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-28-SM-1.2	1,4-Dioxane (p-Dioxane) (D_8,98%) 1 mg/mL in Methanol	1.2 mL
	CIL-DLM-28-5	1,4-Dioxane (D_8,99%)	5 g
	CIL-DLM-28-10	1,4-Dioxane (D_8,99%)	10 g
	CIL-DLM-28-25	1,4-Dioxane (D_8,99%)	25 g
	CIL-ULM-7840-1.2	1,4-Dioxane (p-Dioxane) 1 mg/mL in Methanol	1.2 mL
	CIL-DLM-2133-0.1	Diphenylamine (diphenyl-D_{10},98%)	0.1 g
	CIL-CLM-1587-1.2	Diphenyl ether ($^{13}C_{12}$,99%) (BDE-0) 50 µg/mL in Nonane	1.2 mL
	CIL-DLM-2211-0.1	Diphenyl ether (D_{10},98%)	0.1 g
	CIL-DLM-3026-0.05	1,2-Diphenylhydrazine (diphenyl-D_{10},98%)	0.05 g
	CIL-DLM-3026-0.1	1,2-Diphenylhydrazine (diphenyl-D_{10},98%)	0.1 g
	CIL-DLM-2943-1.2	2,6-Di-(tert-butyl)-4-methylphenol (BHT) (D_{21},98%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-411-5	Durene (1,2,4,5-tetramethylbenzene) (D_{14},98%)	5 g
	CIL-CLM-6025-1.2	Endosulfan I ($^{13}C_9$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-2862-1.2	Endosulfan I (D_4,97%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7447-1.2	Endosulfan I (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-6026-1.2	Endosulfan II ($^{13}C_9$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7448-1.2	Endosulfan II (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-7531-1.2	Endosulfan sulfate ($^{13}C_9$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7990-1.2	Endosulfan sulfate (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4782-1.2	Endrin ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7444-1.2	Endrin (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4815-50	Endrin aldehyde ($^{13}C_{12}$,99%)	50 µg
	CIL-CLM-3374-1.2	Epichlorohydrin ($^{13}C_3$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-DLM-1008-1	Epichlorohydrin (D_5,98%)	1 g
New	CIL-ULM-7403-1.2	Epichlorhydrin (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-DLM-686-5	Ethylbenzene (ethyl-D_5,98%)	5 g
	CIL-DLM-199-10	Ethylbenzene (D_{10},98%)	10 g
	CIL-DLM-4304-10	Ethylbenzene (D_{10},99%)	10 g
	CIL-CLM-3597-1.2	Fluoranthene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-2140-1.2	Fluoranthene (D_{10},98%) 200 µg/mL in Isooctane	1.2 mL
	CIL-DLM-2140-0.1	Fluoranthene (D_{10},98%)	0.1 g
	CIL-ULM-7421-1.2	Fluoranthene (unlabelled) 200 µg/mL in Isooctane	1.2 mL
	CIL-CLM-3596-1.2	Fluorene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-1123-1.2	Fluorene (D_{10},98%) 200 µg/mL in Isooctane	1.2 mL
	CIL-DLM-1123-0.1	Fluorene (D_{10},98%)	0.1 g
	CIL-DLM-1123-1	Fluorene (D_{10},98%)	1 g
	CIL-ULM-7414-1.2	Fluorene (unlabelled) 200 µg/mL in Isooctane	1.2 mL

	Code	Product	Unit
	CIL-CLM-810-1	Guaiacol (ring-$^{13}C_6$,99%)	1 mg
	CIL-CLM-2482-1.2	alpha-HCH (alpha-BHC) ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7232-1.2	alpha-HCH (alpha-BHC) (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-3623-1.2	beta-HCH (beta-BHC) ($^{13}C_6$,99%) 50 µg/mL in Nonane	2 x 1.2 mL
	CIL-ULM-6132-1.2	beta-HCH (beta-BHC) (unlabelled) 50 µg/mL Nonane	2 x 1.2 mL
	CIL-ULM-6132-SM-1.2	beta-HCH (beta-BHC) (unlabelled) 100 µg/mL in Methanol	1.2 mL
	CIL-CDLM-624-1.2	gamma-HCH (Lindane) ($^{13}C_6$,99%;D_6,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-1282-1.2	gamma-HCH (Lindane) ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-6133-1.2	gamma-HCH (Lindane) (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-6133-SM-1.2	gamma-HCH (Lindane) (unlabelled) 100 µg/mL in Methanol	1.2 mL
	CIL-CLM-3648-1.2	delta-HCH ($^{13}C_6$ 99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7233-1.2	delta-HCH (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4759-1.2	Heptachlor ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-2424-1.2	Heptachlor (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-2424-0.1	Heptachlor (unlabelled)	0.1 g
	CIL-CLM-4734-1.2	cis-Heptachlor epoxide (isomer B) ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-2425-1.2	cis-Heptachlor epoxide (isomer B) (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-2425-0.1	Heptachlor epoxide (unlabelled)	0.1 g
	CIL-ULM-7869-1.2	trans-Heptachlor epoxide (isomer A) (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-351-1.2	Hexachlorobenzene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-351-0.01	Hexachlorobenzene ($^{13}C_6$,99%)	0.01 g
	CIL-ULM-6130-1.2	Hexachlorobenzene (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-2145-1.2	Hexachloro-1,3-butadiene ($^{13}C_4$,99%) 100 µg/mL in Isooctane	1.2 mL
	CIL-CLM-2145-0.01	Hexachloro-1,3-butadiene ($^{13}C_4$,99%)	0.01 g
	CIL-CLM-2003-0.1	Hexachloroethane (1-^{13}C,99%)	0.1 g
	CIL-CLM-2003-0.5	Hexachloroethane (1-^{13}C,99%)	0.5 g
	CIL-ULM-6074-60	1,2,4,5,7,8-Hexachloroxanthene (unlabelled)	60 µg
	CIL-CLM-2110-5	Hexachlorocyclopentadiene ($^{13}C_4$,99%)	5 mg
	CIL-CLM-2110-10	Hexachlorocyclopentadiene ($^{13}C_4$,99%)	10 mg
	CIL-DLM-277-0.1	Hexanoic acid (D_{11},98%)	0.1 g
	CIL-DLM-277-1	Hexanoic acid (D_{11},98%)	1 g
New	CIL-DLM-1522-1	Hydrochinone (ring-D_4,98%)	1 g
New	CIL-ULM-2-4X25	Isootane (unlabelled)	4 x 25 mL
	CIL-DLM-1943-0.1	Isophorone (3-methyl-D_3; 2,4,4,6,6-D_5,98%)	0.1 g
	CIL-CLM-7864-1.2	Leucomalachite green (phenyl-$^{13}C_6$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-7870-1.2	Leucomalachite green (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-DLM-24-5	Methanol (D_4,99.8%)	5 g
	CIL-DLM-24-10	Methanol (D_4,99.8%)	10 g
	CIL-DLM-24-25	Methanol (D_4,99.8%)	25 g
	CIL-CLM-1593-0.25	Methylene chloride (^{13}C,99%)	0.25 g
	CIL-CLM-1593-0.5	Methylene chloride (^{13}C,99%)	0.5 g
	CIL-DLM-23-5	Methylene chloride (D_2,99.9%)	5 g
	CIL-DLM-23-10	Methylene chloride (D_2,99.9%)	10 g
	CIL-DLM-23-25	Methylene chloride (D_2,99.9%)	25 g
	CIL-DLM-2277-1	2-(4-Methylphenyl) propane (D_{14},98%)	1 g
	CIL-CLM-1332-1.2	Naphthalene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-365-1.2	Naphthalene (D_8,99%) 200 µg/mL in Isooctane	1.2 mL
	CIL-DLM-365-1	Naphthalene (D_8,99%)	1 g
	CIL-DLM-365-5	Naphthalene (D_8,99%)	5 g

	Code	Product	Unit
	CIL-DLM-365-10	Naphthalene (D_8,99%)	10 g
	CIL-DLM-3875-10	Naphthalene (D_8,99.5%)	10 g
	CIL-ULM-7425-1.2	Naphthalene (unlabelled) 200 µg/mL in Isooctane	1.2 mL
	CIL-CLM-675-S	Nitrobenzene ($^{13}C_6$,99%) 1000 µg/ml in Acetonitrile	1 mL
	CIL-DLM-294-5	Nitrobenzene (D_5,99%)	5 g
	CIL-DLM-294-10	Nitrobenzene (D_5,99%)	10 g
	CIL-ULM-3892-1.2	Nitrobenzene (unlabelled) 1000 µg/mL in Acetonitrile	1.2 mL
	CIL-DLM-7779-S	N-Nitrodimethylamine (dimethyl-D_6,98%) 1 mg/mL in Methylene chloride-D2	1 mL
	CIL-ULM-7780-S	N-Nitrodimethylamine (unlabelled) 1 mg/mL in Methylene chloride	1 mL
	CIL-DLM-295-0.1	2-Nitrophenol (ring-D_4,98%)	0.1 g
	CIL-DLM-295-0.25	2-Nitrophenol (ring-D_4,98%)	0.25 g
	CIL-DLM-296-0.1	4-Nitrophenol (ring-D_4,98%)	0.1 g
	CIL-DLM-296-0.25	4-Nitrophenol (ring-D_4,98%)	0.25 g
	CIL-DLM-7982-S	N-Nitrosodiethylamine (D_{10},98%) 1 mg/mL in Methylene chloride-D_2	1 mL
	CIL-ULM-7984-1.2	N-Nitrosodiethylamine (unlabelled) 1 mg/mL in Methylene chloride	1.2 mL
	CIL-CDLM-7279-S	N-Nitrosodimethylamine ($^{13}C_2$,99%;D_6,98%) 1 mg/mL in Methylene chloride-D_2	1 mL
	CIL-NLM-7647-S	N-Nitrosodimethylamine ($^{15}N_2$,98%) 1 mg/mL in Methylene chloride	1 mL
	CIL-DLM-2130-S	N-Nitrosodimethylamine (2,2',4,4',6,6'-D_6,98%) 1000 µg/mL in Methylene chloride-D_2	1 mL
	CIL-DLM-3098-S	N-Nitrosodiphenylamine (2,2',4,4',6,6'-D_6,98%) 1000 µg/mL in Methylene chloride-D_2	1 mL
	CIL-DLM-3098-0.01	N-Nitrosodiphenylamine (2,2',4,4',6,6'-D_6,98%)	0.01 g
	CIL-DLM-2131-S	N-Nitroso-di-n-propylamine (D_{14},98%) 1000 µg/mL in Methylene chloride	1 mL
New	CIL-DLM-2131-0.05	N-Nitrosodi-n-propylamine (D_{14},98%)	50 mg
	CIL-ULM-6637-S	N-Nitroso-di-n-propylamine (unlabelled) 1000 µg/mL in Methylene chloride	1.2 mL
	CIL-DLM-8254-1.2	N-Nitrosomorpholine (D_8,98%) 1 mg/mL in Methylene chloride-D_2	1.2 mL
New	CIL-ULM-8255-1.2	N-Nitrosomorpholine (unlabelled) 1 mg/mL in Methylene chloride	1.2 mL
	CIL-DLM-8252-1.2	N-Nitrosopyrrolidone (D_8,98%) 1 mg/mL in Methylene chloride-D_2	1.2 mL
New	CIL-ULM-8253-1.2	N-Nitrosopyrrolidone 1 mg/mL in Methylene chloride	1.2 mL
New	CIL-ULM-2323-4X25	n-Nonane	4 x 25 mL
	CIL-CLM-6680-1.2	Octachlorostyrene ($^{13}C_8$,99%) 100 µg/mL in Isooctane	1.2 mL
	CIL-ULM-1709-1.2	Octachlorostyrene (unlabelled) 100 µg/mL in Isooctane	1.2 mL
New	CIL-CLM-7930-1.2	Parlar 26 (2-endo,3-exo,5-endo,6-exo,8,8,10,10-Octachlorobornane) (U-$^{13}C_{10}$,99%) 10 µg/mL in Nonane	1.2 mL
New	CIL-ULM-7828-1.2	Parlar 26 (2-endo,3-exo,5-endo,6-exo,8,8,10,10-Octachlorobornane) (unlabelled) 10 µg/mL in Nonane	1.2 mL
New	CIL-CLM-8705-1.2	Parlar 32 (2,2,5-endo,6-exo,8,9,10-Heptachlorobornane) ($^{13}C_{10}$,99%) 10 µg/mL in Nonane	1.2 mL
New	CIL-ULM-8665-1.2	Parlar 32 (2,2,5-endo,6-exo,8,9,10-Heptachlorobornane) (unlabelled) 10 µg/mL in Nonane	1.2 mL
New	CIL-CLM-8719-1.2	Parlar 39 (2,2,3-exo,5-endo,6-exo,8,9,10-Octachlorobornane) ($^{13}C_{10}$,99%) 10 µg/mL in Nonane	1.2 mL
New	CIL-ULM-8767-1.2	Parlar 39 (2,2,3-exo,5-endo,6-exo,8,9,10-Octachlorobornane) (unlabelled) 10 µg/mL in Nonane	1.2 mL
New	CIL-CLM-7931-1.2	Parlar 50 (2-endo,3-exo,5-endo,6-exo,8,8,9,10,10-Nonachlorobornane) (U-$^{13}C_{10}$, 99%) 10 µg/mL in Nonane	1.2 mL
New	CIL-ULM-7829-1.2	Parlar 50 (2-endo,3-exo,5-endo,6-exo,8,8,9,10,10-Nonachlorobornane) (unlabelled) 10 µg/mL in Nonane	1.2 mL
New	CIL-CLM-7932-1.2	Parlar 62 (2-endo,2-exo,5-endo,5-exo,8,9,9,10,10-Nonachlorobornane) (U-$^{13}C_{10}$,99%) 10 µg/mL in Nonane	1.2 mL
New	CIL-ULM-7830-1.2	Parlar 62 (2-endo,2-exo,5-endo,5-exo,8,9,9,10,10-Nonachlorobornane) (unlabelled) 10 µg/mL in Nonane	1.2 mL
New	CIL-CLM-8720-1.2	Parlar 69 (2,2,5,5,6-exo,8,9,9,10,10-Decachlorobornane) ($^{13}C_{10}$,99%) 10 µg/mL in Nonane	1.2 mL
New	CIL-ULM-8768-1.2	Parlar 69 (2,2,5,5,6-exo,8,9,9,10,10-Decachlorobornane) (unlabelled) 10 µg/mL in Nonane	1.2 mL
New	CIL-CLM-8721-1.2	Parlar 70 (2,2,3-exo,5,5,8,9,9,10,10-Decachlorobornane) ($^{13}C_{10}$,99%) 10 µg/mL in Nonane	1.2 mL
New	CIL-ULM-8769-1.2	Parlar 70 (2,2,3-exo,5,5,8,9,9,10,10-Decachlorobornane) (unlabelled) 10 µg/mL in Nonane	1.2 mL
	CIL-CLM-2050-1.2	Pentachlorobenzene ($^{13}C_6$,99%) 100 µg/mL in Isooctane	1.2 mL

	Code	Product	Unit
	CIL-CLM-1955-1.2	Pentachloronitrobenzene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-661-1.2	Pentachlorophenol ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-661-0.01	Pentachlorophenol ($^{13}C_6$,99%)	0.01 g
	CIL-ULM-6894-1.2	Pentachlorophenol (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-OLM-7310-1.2	Perchloric acid sodium salt ($^{18}O_4$,90%+) 100 µg/mL in Water	1.2 mL
	CIL-ULM-7312-1.2	Perchloric acid sodium salt (unlabelled) 100 µg/mL in Water	1.2 mL
	CIL-CLM-2451-1.2	Phenanthrene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-371-1.2	Phenanthrene (D_{10},98%) 200 µg/mL in Isooctane	1.2 mL
	CIL-DLM-371-0.1	Phenanthrene (D_{10},98%)	0.1 g
	CIL-DLM-371-1	Phenanthrene (D_{10},98%)	1 g
	CIL-ULM-7427-1.2	Phenanthrene (unlabelled) 200 µg/mL in Isooctane	1.2 mL
	CIL-CLM-216-0.1	Phenol ($^{13}C_6$,99%)	0.1 g
	CIL-DLM-695-1	Phenol (ring-D_5,98%)	1 g
	CIL-DLM-695-5	Phenol (ring-D_5,98%)	5 g
	CIL-DLM-370-5	Phenol (D_6,98%)	5 g
	CIL-DLM-3039	Phenylbutazone (diphenyl-D_{10},98%)	
	CIL-ULM-7378-1.2	Phenylbutazone (unlabelled)	1.2 mL
	CIL-CLM-3733-1.2	2-Phenylphenol (phenyl-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7396-1.2	2-Phenylphenol (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-3748-1.2	4-Phenylphenol (phenyl-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-3040-0.5	Phthalic acid (carboxyl-^{13}C,99%)	0.5 g
	CIL-DLM-787-5	Phthalic acid (ring-D4,98%)	5 g
	CIL-DLM-1293-0.1	2-Picoline (D_7,98%) (2-Methylpyridine)	0.1 g
	CIL-DLM-1293-1	2-Picoline (D_7,98%) (2-Methylpyridine)	1 g
	CIL-DLM-1541-1	3-Picoline (3-Methylpyridine) (D_7,98%)	1 g
	CIL-DLM-1294-1	4-Picoline (4-Methylpyridine) (D_7,98%)	1 g
	CIL-DLM-1067-5	1,2-Propylene Oxide (D_6,98%)	5 g
	CIL-CLM-3601-1.2	Pyrene ($^{13}C_3$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-155-1.2	Pyrene (D_{10},98%) 200 µg/mL in Isooctane	1.2 mL
	CIL-DLM-155-0.1	Pyrene (D_{10},98%)	0.1 g
	CIL-DLM-155-0.5	Pyrene (D_{10},98%)	0.5 g
	CIL-ULM-7417-1.2	Pyrene (unlabelled) 200 µg/mL in Toluene	1.2 mL
	CIL-DLM-1158-0.1	Quinoline (D_7,98%)	0.1 g
	CIL-DLM-1158-1	Quinoline (D_7,98%)	1 g
	CIL-DLM-3322-0.5	trans-Stilbene (D_{12},98%)	0.5 g
	CIL-DLM-1083-5	Styrene (vinyl-D_3,98%) (stabilised with BHT)	5 g
	CIL-DLM-809-5	Styrene (ring-D_5,98%) (stabilised with BHT)	5 g
New	CIL-DLM-380-1.2	Styrene (D_8,98%) (stabilized with BHT) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-380-1	Styrene (D_8,98%) (stabilised with BHT)	1 g
	CIL-DLM-380-5	Styrene (D_8,98%) (stabilised with BHT)	5 g
	CIL-DLM-1088-1	Terephthalic acid (ring-D_4,98%)	1 g
	CIL-DLM-1088-5	Terephthalic acid (ring-D_4,98%)	5 g
	CIL-DLM-450-1	o-Terphenyl (D_{14},98%)	1 g
	CIL-DLM-450-5	o-Terphenyl (D_{14},98%)	5 g
	CIL-DLM-382-1.2	p-Terphenyl (D_{14},98%) 200 µg/mL in Isooctane	1.2 mL
	CIL-DLM-382-1	p-Terphenyl (D_{14},98%)	1 g
	CIL-DLM-382-5	p-Terphenyl (D_{14},98%)	5 g
	CIL-ULM-7428-1.2	p-Terphenyl (unlabelled) 200 µg/mL in Isooctane	1.2 mL
	CIL-DLM-2279-0.1	alpha-Terpineol (propyl methyl-D_3,98%)	0.1 g
	CIL-DLM-2279-0.5	alpha-Terpineol (propyl methyl-D_3,98%)	0.5 g
	CIL-CLM-585-5	1,2,4,5-Tetrachlorobenzene ($^{13}C_6$,99%)	5 mg

	Code	Product	Unit
	CIL-CLM-585-0.1	1,2,4,5-Tetrachlorobenzene ($^{13}C_6$,99%)	0.1 g
	CIL-DLM-1177-1	1,2,4,5-Tetrachlorobenzene (D_2,98%)	1 g
	CIL-DLM-1177-5	1,2,4,5-Tetrachlorobenzene (D_2,98%)	5 g
	CIL-ULM-1704-0.1	3,4,5,6-Tetrachlorocatechol (unlabelled)	0.1 g
	CIL-ED-900	2,3,7,8-Tetrachlorodibenzo-p-dioxin ($^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
	CIL-ED-901	2,3,7,8-Tetrachlorodibenzo-p-dioxin 50 µg/mL in Nonane	4 x 1.2 mL
	CIL-DLM-35-5	1,1,2,2-Tetrachloroethane (D_2,99.6%)	5 g
	CIL-DLM-35-10	1,1,2,2-Tetrachloroethane (D_2,99.6%)	10 g
	CIL-CLM-1965-0.1	Tetrachloroethylene (1,2-$^{13}C_2$,99%)	0.1 g
New	CIL-ULM-1708-0.1	3,4,5,6-Tetrachloroguaiacol (unlabelled)	0.1 g
	CIL-ULM-2428-0.1	2,3,4,5-Tetrachlorophenol (unlabelled)	0.1 g
	CIL-ULM-2429-0.1	2,3,4,6-Tetrachlorophenol (unlabelled)	0.1 g
	CIL-ULM-2430-0.1	2,3,5,6-Tetrachlorophenol (unlabelled)	0.1 g
	CIL-DLM-2053-0.1	cis-1,2,3,6-Tetrahydrophthalic anhydride (3,3,4,5,6,6-D_6,98%)	0.1 g
	CIL-DLM-2054-0.1	1,2-cis-1,2,3,6-Tetrahydrophthalimide (3,3,4,5,6,6-D_6,98%)	0.1 g
New	CIL-CLM-6069-0.1	Toluene (ring-$^{13}C_6$,99%)	0.1 g
	CIL-CLM-309-0.5	Toluene (methyl-^{13}C,99%)	0.5 g
	CIL-CLM-309-1	Toluene (methyl-^{13}C,99%)	1 g
	CIL-DLM-1175-1	Toluene (methyl-D_3,98%)	1 g
	CIL-DLM-1175-5	Toluene (methyl-D_3,98%)	5 g
	CIL-DLM-1176-1	Toluene (ring-D_5,98%)	1 g
	CIL-DLM-1176-5	Toluene (ring-D_5,98%)	5 g
	CIL-DLM-5-5	Toluene (D_8,99.6%)	5 g
	CIL-DLM-5-10	Toluene (D_8,99.6%)	10 g
	CIL-DLM-5-25	Toluene (D_8,99.6%)	25 g
	CIL-DLM-7136-1.2	Tributyltin chloride (D_{27},98%) 100 µg/mL in Methylene chloride-D_2	1.2 mL
	CIL-ULM-8061-1.2	Tributyltin chloride 100 µg/mL in Methylene chloride	1.2 mL
	CIL-DLM-6083-1.2	2,4,6-Trichloroanisole (D_5,98%) 1 mg/mL in Methanol-D_4	1.2 mL
	CIL-DLM-6083-0.1	2,4,6-Trichloroanisole (D_5,98%)	0.1 g
	CIL-ULM-7999-1.2	2,4,6-Trichloroanisole 1 mg/mL in Methanol	1.2 mL
	CIL-DLM-1972-0.1	1,2,3-Trichlorobenzene (D_3,98%)	0.1 g
	CIL-DLM-1178-0.1	1,2,4-Trichlorobenzene (D_3,98%)	0.1 g
	CIL-DLM-1178-1	1,2,4-Trichlorobenzene (D_3,98%)	1 g
	CIL-DLM-1178-5	1,2,4-Trichlorobenzene (D_3,98%)	5 g
New	CIL-DLM-799-1	1,3,5-Trichlorobenzene (D3,98%)	1 g
	CIL-ULM-1703-0.1	3,4,5-Trichlorocatechol (unlabelled) (chemical purity: 95%)	0.1 g
	CIL-DLM-1974-0.1	1,1,1-Trichloroethane (2,2,2-D_3,98%)	0.1 g
	CIL-DLM-1974-1	1,1,1-Trichloroethane (2,2,2-D_3,98%)	1 g
	CIL-CLM-2075-0.1	1,1,2-Trichloroethane ($^{13}C_2$,99%)	0.1 g
	CIL-DLM-1975-0.1	1,1,2-Trichloroethane (1,2,2-D_3,98%)	0.1 g
	CIL-DLM-1975-0.5	1,1,2-Trichloroethane (1,2,2-D_3,98%)	0.5 g
	CIL-CLM-129-0.1	Trichloroethylene ($^{13}C_2$,99%)	0.1 g
	CIL-DLM-3049-1	Trichloroethylene (D,98%)	1 g
	CIL-CLM-513-1	2,4,5-Trichlorophenol ($^{13}C_6$,99%) 100 µg/mL in Methanol	1 mL
	CIL-DLM-2143-0.1	2,4,5-Trichlorophenol (ring-D_2,98%)	0.1 g
	CIL-CLM-1804-1	2,4,6-Trichlorophenol ($^{13}C_6$,99%) 100 µg/mL in Methanol	1 mL
	CIL-DLM-3093-0.01	2,4,6-Trichlorophenol (ring-D_2,98%)	0.01 g
	CIL-DLM-3093-0.1	2,4,6-Trichlorophenol (ring-D_2,98%)	0.1 g
	CIL-DLM-2080-0.1	1,2,3-Trichloropropane (D_5,98%) (chemical purity: 95%)	0.1 g
New	CIL-DLM-7663	Triethanolamine (D_{15},98%)	1 mg
	CIL-DLM-167-1.2	Vinyl chloride (D_3,98%) 50 µg/mL in Methanol-OD	1.2 mL

Code	Product	Unit
CIL-DLM-808-5	o-Xylene (D_{10},98%)	5 g
CIL-DLM-2398-5	m-Xylene (D_{10},98%)	5 g
CIL-DLM-313-5	p-Xylene (D_{10},98%)	5 g

Pesticide and chemical weapon standards

Pesticide Standards

CIL continues to add to our already extensive inventory of isotopically labeled standards for pesticide and pesticide metabolite analysis. As a result of this development over the past few years, we can now present our standards by category, including: Organochlorine, Organophosphorous, Carbamate, Triazine, or Pyrethroid pesticide standards. You can still find our complete listing as well if you wish to scan through the comprehensive array of standards.

Chlorinated Cyclodiene Pesticide Standards

Chlorinated Cyclodiene Pesticides account for seven of the compounds governed by the Stockholm Convention. While production and use of these compounds is stringently regulated if not banned outright, their widespread use for decades and persistence in the environment ensures their presence in the environment and biota for years to come. CIL offers a comprehensive selection of the individual standards, as well as a growing list of convenient mixes.

Organochlorine Pesticide Standards

Organochlorinated Pesticides, like Chlorinated Cyclodiene Pesticides, are heavily represented in the list of compounds governed by the Stockholm Convention. Also like Chlorinated Cyclodiene Pesticides, their widespread use for decades and persistence in the environment ensures their presence in the environment and biota for years to come. Organophosphate (OP), Pyrethroid and Carbamate Pesticides As man's quest for less toxic (to larger species) and less environmentally persistent pesticides expands, the need for new testing has expanded as well. CIL continues to prepare and provide standards for the analysis of alternative and minor pesticides and herbicides.

Triazine Herbicide and Metabolite Standards

Atrazine is one of the most widely used herbicides in the world. In recent years, studies on the correlation of physical and reproductive disorders in frogs with Atrazine exposure have been a controversial topic. With CIL's comprehensive collection of carefully purified and prepared standards of Atrazine and its many metabolites, researchers should have some powerful tools to refine their investigations.

Toxaphene Standards

CIL has put considerable effort into developing the first set of 13C-labeled Toxaphene standards! Listed by Parlar congener#, our labeled and unlabeled standard offerings continue to grow, so keep an eye on our website and future product announcements for more details. Our new POPs Toxaphene mixtures are ideal for researchers interested in primary investigations of the most prevalent congeners.

Pesticide Standard Mixtures

New applications and increased testing by Isotope Dilution MS have led to the development of several new pesticides mixtures being offered for the first time in this catalog. Our new Expanded POPs pesticide calibration series and related spiking mixtures contain all pesticides listed as Stockholm Convention POPs compounds, including the recently added Kepone (aka Chlordecone), HCHs (including Lindane), Pentachlorobenzene, and Endosulfan I and II. These new solutions allow analysts to use preformulated mixtures for detection and quantification of the complete series of these important POPs compounds.

Chemical Weapon Metabolite Standards

Often quite similar to metabolites of common pesticides, Chemical Weapons metabolite standards assist researchers determine potential contamination from dangerous compounds such as nerve agents and other toxic chemicals. Several metabolites, degradation byproducts and more are represented in this section.

Individual chlorinated cyclodiene pesticide standards

Code	Product	Unit
CIL-CLM-4725-1.2	Aldrin ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7441-1.2	Aldrin (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-8087-1.2	cis-Chlordane ($^{13}C_{10}$,99%) 100 µg/mL in Acetonitrile	1.2 mL
CIL-ULM-2419-25	cis-Chlordane (unlabelled)	25 mg
CIL-CLM-4792-1.2	trans-Chlordane (gamma) ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL

Code	Product	Unit
CIL-ULM-2420-1.2	trans-Chlordane (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-4814-1.2	Chlordecone (Kepone®) ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-2301-1.2	Chlordecone (Kepone®) (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-4758-1.2	Chlordene ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7443-1.2	Chlordene (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-4726-1.2	Dieldrin ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7230-1.2	Dieldrin (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-6025-1.2	Endosulfan I ($^{13}C_9$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-DLM-2862-1.2	Endosulfan I (D_4,97%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7447-1.2	Endosulfan I (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-6026-1.2	Endosulfan II ($^{13}C_9$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-7531-1.2	Endosulfan sulfate ($^{13}C_9$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7990-1.2	Endosulfan sulfate (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-4782-1.2	Endrin ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7444-1.2	Endrin (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-4815-50	Endrin aldehyde ($^{13}C_{12}$,99%)	50 µg
CIL-CLM-4816-50	Endrin ketone ($^{13}C_{12}$,99%)	50 µg
CIL-CLM-4759-1.2	Heptachlor ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-2424-1.2	Heptachlor (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-4734-1.2	cis-Heptachlor epoxide (isomer B) ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-2425-1.2	cis-Heptachlor epoxide (isomer B) (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7869-1.2	trans-Heptachlor epoxide (isomer A) (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-4727-1.2	Isodrin ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7442-1.2	Isodrin (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-4813-1.2	Mirex ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-2427-1.2	Mirex (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-4811-1.2	cis-Nonachlor ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7445-1.2	cis-Nonachlor (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-4735-1.2	trans-Nonachlor ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7229-1.2	trans-Nonachlor (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-4729-1.2	Oxychlordane ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-6139-1.2	Oxychlordane (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-6139-SM-1.2	Oxychlordane (unlabelled) 100 µg/mL in Methanol	1.2 mL

Organochlorine (OC) pesticide and metabolite standards

CIL-CLM-4725-1.2	Aldrin ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7441-1.2	Aldrin (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-8087-1.2	cis-Chlordane ($^{13}C_{10}$,99%) 100 µg/mL in Acetonitrile	1.2 mL
CIL-ULM-2419-25	cis-Chlordane (unlabelled)	25 mg
CIL-CLM-4792-1.2	trans-Chlordane (gamma) ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-2420-25	trans-Chlordane (unlabelled)	25 mg
CIL-CLM-4814-1.2	Chlordecone (Kepone®) ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-2301-1.2	Chlordecone (Kepone®) (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-2301-0.1	Chlordecone (Kepone®) (unlabelled)	0.1 g
CIL-CLM-4758-1.2	Chlordene ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7443-1.2	Chlordene (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-6999-1.2	2,4'-DDD (ring-$^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
CIL-ULM-7450-1.2	2,4'-DDD (unlabelled) 50 µg/mL in Nonane	1.2 mL
CIL-CLM-7100-1.2	4,4'-DDD (ring-$^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-DLM-3533-1.2	4,4'-DDD (ring-D_8,98%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7216-1.2	4,4'-DDD (unlabelled) 100 µg/mL in Nonane	1.2 mL

Code	Product	Unit
CIL-CLM-4693-1.2	2,4'-DDE (ring-$^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-6251-1.2	2,4'-DDE (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-1627-1.2	4,4'-DDE (ring-$^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-1627-5	4,4'-DDE (ring-$^{13}C_{12}$,99%)	5 mg
CIL-ULM-6137-1.2	4,4'-DDE (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-4692-1.2	2,4'-DDT (ring-$^{13}C_{12}$, 99 %) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-6134-1.2	2,4'-DDT (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-1281-1.2	4,4'-DDT (ring-$^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-1281-5	4,4'-DDT (ring-$^{13}C_{12}$,99%)	5 mg
CIL-ULM-6135-1.2	4,4'-DDT (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-816-1.2	Dichlorane (2,6-Dichloro-4-nitroaniline) (ring-$^{13}C_6$,99%) 100 µg/mL in Acetonitrile	1.2 mL
CIL-CLM-4726-1.2	Dieldrin ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7230-1.2	Dieldrin (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-6025-1.2	Endosulfan I ($^{13}C_9$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-DLM-2862-1.2	Endosulfan I (D_4,97%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7447-1.2	Endosulfan I (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-6026-1.2	Endosulfan II ($^{13}C_9$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7448-1.2	Endosulfan II (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-7531-1.2	Endosulfan sulfate ($^{13}C_9$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7990-1.2	Endosulfan sulfate (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-4782-1.2	Endrin ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7444-1.2	Endrin (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-4815-50	Endrin aldehyde ($^{13}C_{12}$,99%)	50 µg
CIL-CLM-4816-50	Endrin ketone ($^{13}C_{12}$,99%)	50 µg
CIL-CLM-2482-1.2	alpha-HCH (alpha-BHC) ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7232-1.2	alpha-HCH (alpha-BHC) (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-3623-1.2	beta-HCH (beta-BHC) ($^{13}C_6$,99%) 50 µg/mL in Nonane	2 x 1.2 mL
CIL-ULM-6132-1.2	beta-HCH (beta-BHC) (unlabelled) 50 µg/mL Nonane	2 x 1.2 mL
CIL-ULM-6132-SM-1.2	beta-HCH (beta-BHC) (unlabelled) 100 µg/mL in Methanol	1.2 mL
CIL-CDLM-624-1.2	gamma-HCH (Lindane) ($^{13}C_6$,99%;D_6,99%) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-1282-1.2	gamma-HCH (Lindane) ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-6133-1.2	gamma-HCH (Lindane) (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-6133-SM-1.2	gamma-HCH (Lindane) (unlabelled) 100 µg/mL in Methanol	1.2 mL
CIL-CLM-3648-1.2	delta-HCH ($^{13}C_6$ 99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7233-1.2	delta-HCH (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-4759-1.2	Heptachlor ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-2424-1.2	Heptachlor (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-2424-0.1	Heptachlor (unlabelled)	0.1 g
CIL-CLM-4734-1.2	cis-Heptachlor epoxide (isomer B) ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-2425-1.2	cis-Heptachlor epoxide (isomer B) (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-2425-0.1	Heptachlor epoxide (unlabelled)	0.1 g
CIL-ULM-7869-1.2	trans-Heptachlor epoxide (isomer A) (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-351-1.2	Hexachlorobenzene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-6130-1.2	Hexachlorobenzene (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-4727-1.2	Isodrin ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7442-1.2	Isodrin (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-4683-1.2	Methoxychlor (ring-$^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
CIL-ULM-7440-1.2	Methoxychlor (unlabelled) 100 µg/mL in Nonane	1.2 mL
CIL-CLM-4813-1.2	Mirex ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL

	Code	Product	Unit
	CIL-CLM-2078-1	Mirex ($^{13}C_8$,99%) 200 µg/mL in Toluene	1 mL
	CIL-ULM-2427-1.2	Mirex (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-2427-SM-1.2	Mirex (unlabelled) 100 µg/mL in Methanol	1.2 mL
	CIL-ULM-2427-0.1	Mirex (unlabelled)	0.1 g
	CIL-CLM-4811-1.2	cis-Nonachlor ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7445-1.2	cis-Nonachlor (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4735-1.2	trans-Nonachlor ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7229-1.2	trans-Nonachlor (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4729-1.2	Oxychlordane ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-6139-1.2	Oxychlordane (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-6139-SM-1.2	Oxychlordane (unlabelled) 100 µg/mL in Methanol	1.2 mL

Organophosphorous pesticide metabolites

	CIL-DLM-6000-1.2	Acephate (D_6,98%) 100 µg/mL in Acetonitrile-D_3	1.2 mL
	CIL-ULM-7263-1.2	Acephate (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CDNLM-6786-1.2	Aminomethylphosphonic acid (AMPA) (^{13}C, 99%; ^{15}N,98%; methylene-D_2,98%) 100 µg/mL in Water	1.2 mL
	CIL-DLM-4360-1.2	Chlorpyrifos (diethyl-D_{10},99%) 100 µg/mL in Nonane	1.2 mL
New	CIL-ULM-7489-1.2	Chloropyrifos (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-7153	Chlorpyrifos methyl (dimethyl-D_6,98%)	on request
	CIL-DLM-1148-1.2	Diazinon (diethyl-D_{10},98%) 100 µg/mL in Nonane	1.2 mL
New	CIL-ULM-6575-S-10X-1.2	Diazinon (unlabelled) 1000 ug/mL in Nonane	1.2 mL
	CIL-DLM-2829-0.01	Dichlorvos (dimethyl-D_6,98%)	10 mg
	CIL-ULM-7217-1.2	Dichlorvos (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-4852-1.2	O,O-Diethyl hydrogen thiophosphate potassium salt (diethyl-D_{10},98%) 100 µg/mL in Methanol	1.2 mL
	CIL-DLM-7151-1.2	Dimethoate (O,O-dimethyl-D_6,98%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-7972-1.2	Dimethoate (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-ULM-4617-1.2	O,O-Dimethyl thiophosphate sodium salt (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	CIL-ULM-6089	O,S-Dimethyl hydrogen thiophosphate sodium salt (unlabelled)	on request
New	CIL-DLM-7183	Disulfoton (O,O-diethyl-D_{10},98%)	on request
New	CIL-CLM-6090	Ethyl hydrogen dimethylamidophosphate sodium salt ($^{13}C_4$,99%)	on request
	CIL-ULM-6091-1.2	Ethyl hydrogen dimethylamidophosphate sodium salt (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	CIL-DLM-6098-1.2	Ethyl hydrogen methylphosphonate (ethyl-D_5,98%) 100 µg/mL in Methanol	1.2 mL
	CIL-DLM-2878-0.01	Fenitrothion (O,O-dimethyl-D_6,98%)	10 mg
	CIL-CLM-4545-1.2	Fonofos (ring-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-6694-1.2	Fonofos (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CNLM-4666-1.2	Glyphosate (2-^{13}C,99%; ^{15}N,98%) 100 µg/mL in Water	1.2 mL
New	CIL-CNLM-4666-10	Glyphosate (2-^{13}C,99%; ^{15}N,98%) 100 µg/mL in Water	10 mL
	CIL-ULM-6876-1.2	Glyphosate (unlabelled) 100 µg/mL in Water	1.2 mL
	CIL-DLM-4476-1.2	Malathion (D_{10},99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-8122-1.2	Malathion 100 µg/mL in Nonane	1.2 mL
New	CIL-DLM-7149	Methamidophos (dimethyl-D_6,98%)	on request
	CIL-DLM-6196-1.2	Methylphosphonic acid (methyl-D_3,98%) 100 µg/mL in Methanol	1.2 mL
	CIL-CDLM-6100-1.2	Methylphosphonic acid (^{13}C, 99%; methyl-D_3, 98%) 100 µg/mL in Methanol	1.2 mL
New	CIL-DLM-7150-1.2	Oxydemeton methyl (di-O-methyl-D_6,98%) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-ULM-8579-1.2	Oxydemeton methyl (Chemical purity 95%) (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-DLM-2970-1.2	Parathion-ethyl (diethyl-D_{10},98%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-8144-1.2	Parathion 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4544-1.2	Phorate (diethoxy-$^{13}C_4$, 99%) 100 µg/mL in Acetonitrile	1.2 mL

Pesticide and chemical weapon standards

	Code	Product	Unit
New	CIL-ULM-7567-1.2	Phorate (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-DLM-4667-1.2	Phosmet (dimethyl-D_6,98%) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-ULM-8454-1.2	Phosmet (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-CLM-4543	Terbufos (diethoxy-$^{13}C_4$,99%)	on request
	CIL-CLM-6620-1.2	1,2,2-Trimethylpropyl hydrogen methylphosphonate (trimethylpropyl-$^{13}C_6$,99%) 100 µg/mL in Methanol	1.2 mL

Carbamate pesticide and metabolite standards

New	CIL-CLM-7140	Bendiocarb ($^{13}C_3$,99%)	on request
New	CIL-ULM-8638	Bendiocarb (unlabelled)	on request
	CIL-CLM-4682-1.2	Carbaryl (ring-$^{13}C_6$, 99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-8096-1.2	Carbaryl (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-1911-1.2	Carbofuran (ring-$^{13}C_6$,99%) 100 µg/mL in p-Dioxane	1.2 mL
	CIL-ULM-7419-1.2	Carbofuran (unlabelled) 200 µg/mL in p-Dioxane	1.2 mL
New	CIL-CLM-1859-1.2	Carbofuran phenol (ring-$^{13}C_6$,99%) 200 µg/mL in Methanol	2 x 1.2 mL
	CIL-ULM-6875-1.2	Carbofuran phenol (unlabelled) 200 µg/mL in Methanol	1.2 mL
New	CIL-CNLM-7148-1.2	Methomyl (acetohydroxamate-$^{13}C_2$,99%;^{15}N,98%) 100 µg/mL in Methanol	1.2 mL
New	CIL-ULM-8639-1.2	Methomyl (unlabelled) 100 µg/mL in Methanol	1.2 mL
New	CIL-DLM-7141	Propoxur (isopropyl-D_7,98%)	on request

Pyrethroid pesticide and metabolite standards

	CIL-CLM-7293-1.2	Cyfluthrin (mix of stereoisomers) (phenoxy-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7454-1.2	Cyfluthrin (mix of stereoisomers) (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-7292-1.2	Cypermethrin (mix of stereoisomers) (phenoxy-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7453-1.2	Cypermethrin (mix of stereoisomers) (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CDLM-6002-1.2	DCCA (3-(2,2-Dichlorovinyl)-2,2-dimethyl-1-cyclopropane) carboxylic acid ($^{13}C_2$, 99%; 1-D,98%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-7303-1.2	DCCA (3-(2,2-Dichlorovinyl)-2,2-dimethyl-1-Cyclopropane) carboxylic acid (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-7389-1.2	4-Fluoro-3-phenoxybenzoic acid ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7391-1.2	4-Fluoro-3-phenoxybenzoic acid (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-7322-1.2	cis-Permethrin (phenoxy-$^{13}C_6$,99%) 50 µg/mL in Nonane	1.2 mL
New	CIL-ULM-8526-1.2	cis-Permethrin (unlabelled) 50 µg/mL in Nonane	1.2 mL
	CIL-CLM-7323-1.2	trans-Permethrin (phenoxy-$^{13}C_6$,99%) 50 µg/mL in Nonane	1.2 mL
New	CIL-ULM-8527-1.2	trans-Permethrin (unlabelled) 50 µg/mL in Nonane	1.2 mL
	CIL-CLM-4542-1.2	3-Phenoxybenzoic acid (phenoxy-$^{13}C_6$,99%) (Permethrin metabolite) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4542-SA-1.2	3-Phenoxybenzoic acid (phenoxy-$^{13}C_6$,99%) (Permethrin metabolite) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-6781-1.2	3-Phenoxybenzoic acid (unlabelled) (Permethrin metabolite) 100 µg/mL in Nonane	1.2 mL
New	CIL-ULM-6781-SA-1.2	3-Phenoxybenzoic acid (unlabelled) (Permethrin metabolite) 100 µg/mL in Acetonitrile	1.2 mL

Triazine herbicide and metabolite standards

	CIL-CLM-3737-1.2	Atrazine (ring-$^{13}C_3$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-1149-1.2	Atrazine (ethylamine-D_5,98%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7235-1.2	Atrazine (unlabelled) 100 µg/mL in Nonane	1.2 mL
New	CIL-ULM-7235-D-1.2	Atrazine (unlabelled) 100 µg/mL in p-Dioxan	1.2 mL
	CIL-CLM-3894-1.2	Atrazine mercapturate (ring-$^{13}C_3$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-7346-1.2	Atrazine mercapturate (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-CLM-8311-1.2	Atrazinethiol (ring-$^{13}C_3$,99%) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-ULM-8318-1.2	Atrazinethiol (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-CLM-8313-1.2	Atrazine-desethyl (ring-$^{13}C_3$,99%) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-ULM-8320-1.2	Atrazine-desethyl (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-7528-1.2	Atrazine-desethyl-desisopropyl (ring-$^{13}C_3$,99%) 100 µg/mL in Acetonitrile	1.2 mL

	Code	Product	Unit
	CIL-ULM-8001-1.2	Atrazine-desethyl-desisopropyl 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-CLM-8316-1.2	Desethylisopropylhyroxyatrazine (Ammeline) (ring-$^{13}C_6$,99%) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-ULM-8323-1.2	Desethylisopropylhyroxyatrazine (Ammeline) (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-CLM-8315-1.2	Atrazine-desethylhydroxy (ring-$^{13}C_3$,99%) 100 µg/mL in 80% H_2O/Diethylamine	1.2 mL
New	CIL-ULM-8322-1.2	Atrazine-desethylhydroxy (unlabelled) 100 µg/mL in 80% H_2O/Diethylamine	1.2 mL
New	CIL-CLM-8312-1.2	Atrazine-desisopropyl (ring-$^{13}C_3$,99%) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-ULM-8319-1.2	Atrazine-desisopropyl (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-CLM-8314-1.2	Atrazine-desisopropylhydroxy (ring-$^{13}C_3$,99%) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-ULM-8321-1.2	Atrazine-desisopropylhydroxy (unlabelled) 100 µg/mL in 80% Water/20% Diethylamine	1.2 mL
New	CIL-CLM-8310-1.2	Atrazine-hydroxy (ring-$^{13}C_3$,99%) 100 µg/mL in 80% H_2O/Diethylamine	1.2 mL
New	CIL-ULM-8317-1.2	Hydroxyatrazine (unlabelled) 100 µg/mL in 80% H_2O/Diethylamine	1.2 mL
	CIL-CLM-3738-1.2	Propazine (ring-$^{13}C_3$,99%) 100 µg/mL in Methanol	1.2 mL
	CIL-CLM-3739-1.2	Simazine (ring-$^{13}C_3$,99%) 100 µg/mL in Methanol	1.2 mL
New	CIL-ULM-7893-1.2	Simazine (unlabelled) 100 µg/mL in Methanol	1.2 mL

Camphechlor (Toxphene) congeners

New	CIL-CLM-7930-1.2	Parlar 26 (2-endo,3-exo,5-endo,6-exo,8,8,10,10-Octachlorobornane) (U-$^{13}C_{10}$,99%) 10 µg/mL in Nonane	1.2 mL
New	CIL-ULM-7828-1.2	Parlar 26 (2-endo,3-exo,5-endo,6-exo,8,8,10,10-Octachlorobornane) (unlabelled) 10 µg/mL in Nonane	1.2 mL
New	CIL-CLM-7931-1.2	Parlar 50 (2-endo,3-exo,5-endo,6-exo,8,8,9,10,10-Nonachlorobornane) (U-$^{13}C_{10}$, 99%) 10 µg/mL in Nonane	1.2 mL
New	CIL-ULM-7829-1.2	Parlar 50 (2-endo,3-exo,5-endo,6-exo,8,8,9,10,10-Nonachlorobornane) (unlabelled) 10 µg/mL in Nonane	1.2 mL
New	CIL-CLM-7932-1.2	Parlar 62 (2-endo,2-exo,5-endo,5-exo,8,9,9,10,10-Nonachlorobornane) (U-$^{13}C_{10}$,99%) 10 µg/mL in Nonane	1.2 mL
New	CIL-ULM-7830-1.2	Parlar 62 (2-endo,2-exo,5-endo,5-exo,8,9,9,10,10-Nonachlorobornane) (unlabelled) 10 µg/mL in Nonane	1.2 mL
New	CIL-CLM-8705-1.2	Parlar 32 (2,2,5-endo,6-exo,8,9,10-Heptachlorobornane) ($^{13}C_{10}$,99%) 10 µg/mL in Nonane	1.2 mL
New	CIL-ULM-8665-1.2	Parlar 32 (2,2,5-endo,6-exo,8,9,10-Heptachlorobornane) (unlabelled) 10 µg/mL in Nonane	1.2 mL
New	CIL-CLM-8719-1.2	Parlar 39 (2,2,3-exo,5-endo,6-exo,8,9,10-Octachlorobornane) ($^{13}C_{10}$,99%) 10 µg/mL in Nonane	1.2 mL
New	CIL-ULM-8767-1.2	Parlar 39 (2,2,3-exo,5-endo,6-exo,8,9,10-Octachlorobornane) (unlabelled) 10 µg/mL in Nonane	1.2 mL
New	CIL-CLM-8720-1.2	Parlar 69 (2,2,5,5,6-exo,8,9,9,10,10-Decachlorobornane) ($^{13}C_{10}$,99%) 10 µg/mL in Nonane	1.2 mL
New	CIL-ULM-8768-1.2	Parlar 69 (2,2,5,5,6-exo,8,9,9,10,10-Decachlorobornane) (unlabelled) 10 µg/mL in Nonane	1.2 mL
New	CIL-CLM-8721-1.2	Parlar 70 (2,2,3-exo,5,5,8,9,9,10,10-Decachlorobornane) ($^{13}C_{10}$,99%) 10 µg/mL in Nonane	1.2 mL
New	CIL-ULM-8769-1.2	Parlar 70 (2,2,3-exo,5,5,8,9,9,10,10-Decachlorobornane) (unlabelled) 10 µg/mL in Nonane	1.2 mL

Individual pesticide standards and pesticide metabolite standards

	CIL-DLM-6000-1.2	Acephate (D_6,98%) 100 µg/mL in Acetonitrile-D_3	1.2 mL
	CIL-ULM-7263-1.2	Acephate (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-3727-1.2	Alachlor (ring-$^{13}C_6$,98%) 100 µg/mL in Nonane (Chemical purity 96%)	1.2 mL
	CIL-CLM-3687-1.2	Alachlor acetylcysteine adduct (ring-$^{13}C_6$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-4725-1.2	Aldrin ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7441-1.2	Aldrin (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-3737-1.2	Atrazine (ring-$^{13}C_3$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-1149-1.2	Atrazine (ethylamine-D_5,98%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-1149-5	Atrazine (ethylamine-D_5,98%)	5 mg
	CIL-ULM-7235-1.2	Atrazine (unlabelled) 100 µg/mL in Nonane	1.2 mL
New	CIL-ULM-7235-D-1.2	Atrazine (unlabelled) 100 µg/mL in p-Dioxan	1.2 mL
New	CIL-CLM-8313-1.2	Atrazine-desethyl (ring-$^{13}C_3$,99%) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-ULM-8320-1.2	Atrazine-desethyl (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-CLM-8315-1.2	Atrazine-desethylhydroxy (ring-$^{13}C_3$,99%) 100 µg/mL in 80% H_2O/Diethylamine	1.2 mL

	Code	Product	Unit
New	CIL-ULM-8322-1.2	Atrazine-desethylhydroxy (unlabelled) 100 µg/mL in 80% H_2O/Diethylamine	1.2 mL
New	CIL-CLM-8312-1.2	Atrazine-desisopropyl (ring-$^{13}C_3$,99%) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-ULM-8319-1.2	Atrazine-desisopropyl (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-CLM-8314-1.2	Atrazine-desisopropylhydroxy (ring-$^{13}C_3$,99%) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-ULM-8321-1.2	Atrazine-desisopropylhydroxy (unlabelled) 100 µg/mL in 80% Water/20% Diethylamine	1.2 mL
New	CIL-CLM-8310-1.2	Atrazine-hydroxy (ring-$^{13}C_3$,99%) 100 µg/mL in 80% H_2O/Diethylamine	1.2 mL
New	CIL-ULM-8317-1.2	Hydroxyatrazine (unlabelled) 100 µg/mL in 80% H_2O/Diethylamine	1.2 mL
	CIL-CLM-3894-1.2	Atrazine mercapturate (ring-$^{13}C_3$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-7346-1.2	Atrazine mercapturate (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-CLM-8311-1.2	Atrazinethiol (ring-$^{13}C_3$,99%) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-ULM-8318-1.2	Atrazinethiol (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-CLM-7140	Bendiocarb ($^{13}C_3$,99%)	on request
	CIL-DLM-7152	Bensulide (isoproxy-D_{14},98%)	on request
	CIL-CLM-3741-1.2	Bromoxynil (ring-$^{13}C_6$,99%) 50 µg/mL in Nonane	2 x 1.2 mL
	CIL-ULM-6205-1.2	Bromoxynil (unlabelled) 50 µg/mL in Nonane	1.2 mL
	CIL-CLM-4682-1.2	Carbaryl (ring-$^{13}C_6$, 99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-8096-1.2	Carbaryl (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-1911-1.2	Carbofuran (ring-$^{13}C_6$,99%) 100 µg/mL in p-Dioxane	1.2 mL
	CIL-ULM-7419-1.2	Carbofuran (unlabelled) 200 µg/mL in p-Dioxane	1.2 mL
New	CIL-CLM-1859-1.2	Carbofuran phenol (ring-$^{13}C_6$,99%) 200 µg/mL in Methanol	2 x 1.2 mL
	CIL-ULM-6875-1.2	Carbofuran phenol (unlabelled) 200 µg/mL in Methanol	1.2 mL
	CIL-CLM-8087-1.2	cis-Chlordane ($^{13}C_{10}$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-2419-25	cis-Chlordane (unlabelled)	25 mg
	CIL-CLM-4792-1.2	trans-Chlordane (gamma) ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-2420-25	trans-Chlordane (unlabelled)	25 mg
	CIL-CLM-4758-1.2	Chlordene ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7443-1.2	Chlordene (unlabelled) 100 µg/mL in Nonane	1.2 mL
New	CIL-CLM-6759	4-Chloro-2-hydroxymethylphenoxyacetic acid (HMCPA) (ring-$^{13}C_6$,99%)	on request
New	CIL-CLM-6758	4-Chloro-2-methylphenoxyacetic acid (MCPA) (ring-$^{13}C_6$,99%)	on request
	CIL-CLM-1913-1.2	4-Chlorophenol ($^{13}C_6$,99%) 100 µg/mL in Toluene	1.2 mL
	CIL-ULM-7420-1.2	4-Chlorophenol (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-3760-0.01	Chlorotoluron (N,N-dimethyl-D_6,98%)	0.01 g
	CIL-DLM-4360-1.2	Chlorpyrifos (diethyl-D_{10},99%) 100 µg/mL in Nonane	1.2 mL
New	CIL-ULM-7489-1.2	Chloropyrifos (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-7153	Chlorpyrifos methyl (dimethyl-D_6,98%)	on request
	CIL-CLM-7293-1.2	Cyfluthrin (mix of stereoisomers) (phenoxy-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7454-1.2	Cyfluthrin (mix of stereoisomers) (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-7292-1.2	Cypermethrin (mix of stereoisomers) (phenoxy-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7453-1.2	Cypermethrin (mix of stereoisomers) (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-6999-1.2	2,4'-DDD (ring-$^{13}C_{12}$,99%) 50 µg/mL in Nonane	1.2 mL
	CIL-ULM-7450-1.2	2,4'-DDD (unlabelled) 50 µg/mL in Nonane	1.2 mL
	CIL-CLM-7100-1.2	4,4'-DDD (ring-$^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-3533-1.2	4,4'-DDD (ring-D_8,98%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7216-1.2	4,4'-DDD (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4693-1.2	2,4'-DDE (ring-$^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-6251-1.2	2,4'-DDE (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-1627-1.2	4,4'-DDE (ring-$^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-1627-5	4,4'-DDE (ring-$^{13}C_{12}$,99%)	5 mg
	CIL-ULM-6137-1.2	4,4'-DDE (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4692-1.2	2,4'-DDT (ring-$^{13}C_{12}$, 99 %) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-6134-1.2	2,4'-DDT (unlabelled) 100 µg/mL in Nonane	1.2 mL

	Code	Product	Unit
	CIL-CLM-1281-1.2	4,4'-DDT (ring-$^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-1281-5	4,4'-DDT (ring-$^{13}C_{12}$,99%)	5 mg
	CIL-ULM-6135-1.2	4,4'-DDT (unlabelled) 100 µg/mL in Nonane	1.2 mL
New	CIL-CLM-8316-1.2	Desethylisopropylhyroxyatrazine (Ammeline) (ring-$^{13}C_6$,99%) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-ULM-8323-1.2	Desethylisopropylhyroxyatrazine (Ammeline) (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-DLM-1148-1.2	Diazinon (diethyl-D_{10},98%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-1148-5	Diazinon (diethyl-D_{10},98%)	5 mg
New	CIL-ULM-6575-S-10X-1.2	Diazinon (unlabelled) 1000 ug/mL in Nonane	1.2 mL
	CIL-CLM-816-1.2	Dichlorane (2,6-Dichloro-4-nitroaniline) (ring-$^{13}C_6$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-1858-1.2	2,4-D (2,4-Dichlorophenoxyacetic acid) (ring-$^{13}C_6$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-DLM-1146-5	2,4-D (2,4-Dichlorophenoxyacetic acid) (ring-D_3,98%)	5 mg
	CIL-ULM-7418-1.2	2,4-D (2,4-Dichlorophenoxyacetic acid) (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CDLM-6002-1.2	DCCA (3-(2,2-Dichlorovinyl)-2,2-dimethyl-1-cyclopropane) carboxylic acid ($^{13}C_2$, 99%; 1-D,98%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-7303-1.2	DCCA (3-(2,2-Dichlorovinyl)-2,2-dimethyl-1-Cyclopropane) carboxylic acid (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-3722-1.2	Dichlorprop (ring-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7313-1.2	Dichlorprop (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-2829-0.01	Dichlorvos (dimethyl-D_6,98%)	10 mg
	CIL-ULM-7217-1.2	Dichlorvos (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4726-1.2	Dieldrin ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7230-1.2	Dieldrin (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-4852-1.2	O,O-Diethyl hydrogen thiophosphate potassium salt (diethyl-D_{10},98%) 100 µg/mL in Methanol	1.2 mL
New	CERERD-155	O,O-Dimethyl hydrogen dithiophosphate (unlabelled) 1000 µg/mL in Methanol	1.2 mL
New	CIL-ULM-4617-1.2	O,O-Dimethyl thiophosphate sodium salt (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	CIL-ULM-6089	O,S-Dimethyl hydrogen thiophosphate sodium salt (unlabelled)	on request
	CIL-DLM-4762-1.2	DEET (N,N-Diethyl-m-toluamide) (dimethyl-D_6,98%) 100 µg/mL in Dichloromethane	1.2 mL
New	CIL-DLM-4762-D-1.2	DEET (N,N-Diethyl-m-toluamide) (dimethyl-D_6, 98%) 100 µg/mL in Dioxane	1.2 mL
	CIL-ULM-7975-1.2	DEET (N,N-Diethyl-m-toluamide) (unlabelled) 100 µg/ml in Dichloromethane	1.2 mL
New	CIL-ULM-7975-D-1.2	DEET (N,N-Diethyl-m-toluamide) (unlabelled) 100 µg/mL in Dioxane	1.2 mL
	CIL-DLM-7151-1.2	Dimethoate (O,O-dimethyl-D_6,98%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-7972-1.2	Dimethoate (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-3373-1.2	Dinocap (ring-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
New	CIL-DLM-7183	Disulfoton (O,O-diethyl-D_{10},98%)	on request
	CIL-CLM-6025-1.2	Endosulfan I ($^{13}C_9$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-2862-1.2	Endosulfan I (D_4,97%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7447-1.2	Endosulfan I (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-6026-1.2	Endosulfan II ($^{13}C_9$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7448-1.2	Endosulfan II (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-7531-1.2	Endosulfan sulfate ($^{13}C_9$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7990-1.2	Endosulfan sulfate (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4782-1.2	Endrin ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7444-1.2	Endrin (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4815-50	Endrin aldehyde ($^{13}C_{12}$,99%)	50 µg
	CIL-CLM-4816-50	Endrin ketone ($^{13}C_{12}$,99%)	50 µg
	CIL-DLM-2878-0.01	Fenitrothion (O,O-dimethyl-D_6,98%)	10 mg
	CIL-CLM-7389-1.2	4-Fluoro-3-phenoxybenzoic acid ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7391-1.2	4-Fluoro-3-phenoxybenzoic acid (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4545-1.2	Fonofos (ring-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-6694-1.2	Fonofos (unlabelled) 100 µg/mL in Nonane	1.2 mL

	Code	Product	Unit
	CIL-CNLM-4666-1.2	Glyphosate (2-^{13}C,99%; ^{15}N,98%) 100 µg/mL in Water	1.2 mL
New	CIL-CNLM-4666-10	Glyphosate (2-^{13}C,99%; ^{15}N,98%) 100 µg/mL in Water	10 mL
	CIL-ULM-6876-1.2	Glyphosate (unlabelled) 100 µg/mL in Water	1.2 mL
	CIL-CLM-2482-1.2	alpha-HCH (alpha-BHC) ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7232-1.2	alpha-HCH (alpha-BHC) (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-3623-1.2	beta-HCH (beta-BHC) ($^{13}C_6$,99%) 50 µg/mL in Nonane	2 x 1.2 mL
	CIL-ULM-6132-1.2	beta-HCH (beta-BHC) (unlabelled) 50 µg/mL Nonane	2 x 1.2 mL
	CIL-ULM-6132-SM-1.2	beta-HCH (beta-BHC) (unlabelled) 100 µg/mL in Methanol	1.2 mL
	CIL-CDLM-624-1.2	gamma-HCH (Lindane) ($^{13}C_6$,99%;D_6,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-1282-1.2	gamma-HCH (Lindane) ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-6133-1.2	gamma-HCH (Lindane) (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-6133-SM-1.2	gamma-HCH (Lindane) (unlabelled) 100 µg/mL in Methanol	1.2 mL
	CIL-CLM-3648-1.2	delta-HCH ($^{13}C_6$ 99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7233-1.2	delta-HCH (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4759-1.2	Heptachlor ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-2424-1.2	Heptachlor (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-2424-0.1	Heptachlor (unlabelled)	0.1 g
	CIL-CLM-4734-1.2	cis-Heptachlor epoxide (isomer B) ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-2425-1.2	cis-Heptachlor epoxide (isomer B) (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-2425-0.1	Heptachlor epoxide (unlabelled)	0.1 g
	CIL-CLM-351-1.2	Hexachlorobenzene ($^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-6130-1.2	Hexachlorobenzene (unlabelled) 100 µg/mL in Nonane	1.2 mL
New	CIL-DLM-8512-1.2	Imidacloprid (4,4,5,5-D_4,98%) 100 µg/mL in Methanol	1.2 mL
New	CIL-ULM-8513-1.2	Imidacloprid (unlabelled) 100 µg/mL in Methanol	1.2 mL
	CIL-CLM-4727-1.2	Isodrin ($^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7442-1.2	Isodrin (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4814-1.2	Chlordecone (Kepone®) ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-2301-1.2	Chlordecone (Kepone®) (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-2301-0.1	Chlordecone (Kepone®) (unlabelled)	0.1 g
	CIL-DLM-4476-1.2	Malathion (D_{10},99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-8122-1.2	Malathion 100 µg/mL in Nonane	1.2 mL
New	CIL-DLM-7149	Methamidophos (dimethyl-D_6,98%)	on request
New	CIL-CNLM-7148-1.2	Methomyl (acetohydroxamate-$^{13}C_2$,99%;^{15}N,98%) 100 µg/mL in Methanol	1.2 mL
New	CIL-ULM-8639-1.2	Methomyl (unlabelled) 100 µg/mL in Methanol	1.2 mL
	CIL-CLM-4683-1.2	Methoxychlor (ring-$^{13}C_{12}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7440-1.2	Methoxychlor (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-DLM-6196-1.2	Methylphosphonic acid (methyl-D_3,98%) 100 µg/mL in Methanol	1.2 mL
	CIL-CLM-3712-1.2	Metolachlor (ring-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7314-1.2	Metolachlor (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4813-1.2	Mirex ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-2078-1	Mirex ($^{13}C_8$,99%) 200 µg/mL in Toluene	1 mL
	CIL-ULM-2427-1.2	Mirex (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-2427-SM-1.2	Mirex (unlabelled) 100 µg/mL in Methanol	1.2 mL
	CIL-ULM-2427-0.1	Mirex (unlabelled)	0.1 g
	CIL-CLM-4811-1.2	cis-Nonachlor ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7445-1.2	cis-Nonachlor (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4735-1.2	trans-Nonachlor ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7229-1.2	trans-Nonachlor (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4729-1.2	Oxychlordane ($^{13}C_{10}$,99%) 100 µg/mL in Nonane	1.2 mL

	Code	Product	Unit
	CIL-ULM-6139-1.2	Oxychlordane (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-6139-SM-1.2	Oxychlordane (unlabelled) 100 µg/mL in Methanol	1.2 mL
New	CIL-DLM-7150-1.2	Oxydemeton methyl (di-O-methyl-D_6,98%) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-ULM-8579-1.2	Oxydemeton methyl (Chemical purity 95%) (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-4538-1.2	Oxypyrimidine (methyl-4,5,6-$^{13}C_4$, 99%) (diazinon metabolite) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-7432-1.2	Oxypyrimidine (unlabelled) (diazinon metabolite) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-DLM-2970-1.2	Parathion-ethyl (diethyl-D_{10},98%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-8144-1.2	Parathion 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-7322-1.2	cis-Permethrin (phenoxy-$^{13}C_6$,99%) 50 µg/mL in Nonane	1.2 mL
New	CIL-ULM-8526-1.2	cis-Permethrin (unlabelled) 50 µg/mL in Nonane	1.2 mL
	CIL-CLM-7323-1.2	trans-Permethrin (phenoxy-$^{13}C_6$,99%) 50 µg/mL in Nonane	1.2 mL
New	CIL-ULM-8527-1.2	trans-Permethrin (unlabelled) 50 µg/mL in Nonane	1.2 mL
	CIL-CLM-3733-1.2	2-Phenylphenol (phenyl-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7396-1.2	2-Phenylphenol (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-3748-1.2	4-Phenylphenol (phenyl-$^{13}C_6$,99%) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4542-1.2	3-Phenoxybenzoic acid (phenoxy-$^{13}C_6$,99%) (Permethrin metabolite) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-4542-SA-1.2	3-Phenoxybenzoic acid (phenoxy-$^{13}C_6$,99%) (Permethrin metabolite) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-ULM-6781-1.2	3-Phenoxybenzoic acid (unlabelled) (Permethrin metabolite) 100 µg/mL in Nonane	1.2 mL
New	CIL-ULM-6781-SA-1.2	3-Phenoxybenzoic acid (unlabelled) (Permethrin metabolite) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-4544-1.2	Phorate (diethoxy-$^{13}C_4$, 99%) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-ULM-7567-1.2	Phorate (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-DLM-4667-1.2	Phosmet (dimethyl-D_6,98%) 100 µg/mL in Acetonitrile	1.2 mL
New	CIL-ULM-8454-1.2	Phosmet (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-3738-1.2	Propazine (ring-$^{13}C_3$,99%) 100 µg/mL in Methanol	1.2 mL
New	CIL-DLM-7141	Propoxur (isopropyl-D_7,98%)	on request
	CIL-CLM-3739-1.2	Simazine (ring-$^{13}C_3$,99%) 100 µg/mL in Methanol	1.2 mL
New	CIL-ULM-7893-1.2	Simazine (unlabelled) 100 µg/mL in Methanol	1.2 mL
New	CIL-DLM-380-1.2	Styrene (D_8,98%) (stabilized with BHT) 100 µg/mL in Nonane	1.2 mL
New	CIL-CLM-4543	Terbufos (diethoxy-$^{13}C_4$,99%)	on request
	CIL-CLM-4551-1.2	2,4,5-Trichlorophenoxyacetic acid (2,4,5-T) (ring-$^{13}C_6$,99%) 100 µg/mL in Methylene chloride	1.2 mL
	CIL-ULM-7213-1.2	2,4,5-Trichlorophenoxyacetic acid (2,4,5-T) (unlabelled) 100 µg/mL in Methylene chloride	1.2 mL
	CIL-DLM-4479-1.2	Trifluralin (di-n-propyl-D_{14},98%) 100 µg/mL in Nonane	1.2 mL
	CIL-ULM-7236-1.2	Trifluralin (unlabelled) 100 µg/mL in Nonane	1.2 mL
	CIL-CLM-6620-1.2	1,2,2-Trimethylpropyl hydrogen methylphosphonate (trimethylpropyl-$^{13}C_6$,99%) 100 µg/mL in Methanol	1.2 mL
	CIL-DLM-6861-1.2	Warfarin (phenyl-D_5,98%) 100 µg/mL in Acetonitrile-D_3	1.2 mL
	CIL-ULM-7242-1.2	Warfarin (unlabelled) 100 µg/mL in Acetonitrile	1.2 mL

Code	Product	Unit

Pesticide standard mixtures

New CIL-ES-5464 — Expanded POPS Pesticides Calibration Solutions [CS1-CS6] (unlabelled/^{13}C,99%) — 6 x 0.2 mL

Solvent: Nonane

All concentrations are in ng/mL (ppb)

Unlabelled compounds	CS1	CS2	CS3	CS4	CS5	CS6
Hexachlorobenzene	0.4	2	10	40	200	800
Pentachlorobenzene	0.4	2	10	40	200	800
Aldrin	0.4	2	10	40	200	800
Dieldrin	0.4	2	10	40	200	800
Endrin	0.4	2	10	40	200	800
4,4'-DDT	0.4	2	10	40	200	800
4,4'-DDE	0.4	2	10	40	200	800
4,4'-DDD	0.4	2	10	40	200	800
2,4'-DDT	0.4	2	10	40	200	800
2,4'-DDE	0.4	2	10	40	200	800
2,4'-DDD	0.4	2	10	40	200	800
trans-Chlordane (gamma)	0.4	2	10	40	200	800
cis-Chlordane (alpha)	0.4	2	10	40	200	800
trans-Nonachlor	0.4	2	10	40	200	800
cis-Nonachlor	0.4	2	10	40	200	800
Oxychlordane	0.4	2	10	40	200	800
Heptachlor	0.4	2	10	40	200	800
trans-Heptachlor epoxide (A isomer)	0.4	2	10	40	200	800
cis-Heptachlor epoxide (B isomer)	0.4	2	10	40	200	800
Mirex	0.4	2	10	40	200	800
Kepone (Chlordecone)	0.4	2	10	40	200	800
alpha-BHC (alpha-HCH)	0.4	2	10	40	200	800
beta-BHC (beta-HCH)	0.4	2	10	40	200	800
gamma-BHC (gamma-HCH) (Lindane)	0.4	2	10	40	200	800
delta-BHC (delta-HCH)	0.4	2	10	40	200	800
Endosulfan I	0.4	2	10	40	200	800
Endosulfan II	0.4	2	10	40	200	800

Labelled compounds	CS1	CS2	CS3	CS4	CS5	CS6
Hexachlorobenzene ($^{13}C_6$,99%)	20	20	20	20	20	20
Pentachlorobenzene ($^{13}C_6$,99%)	20	20	20	20	20	20
Aldrin ($^{13}C_{12}$,99%)	20	20	20	20	20	20
Endrin ($^{13}C_{12}$,99%)	20	20	20	20	20	20
Dieldrin ($^{13}C_{12}$,99%)	20	20	20	20	20	20
4,4'-DDT ($^{13}C_{12}$,99%)	20	20	20	20	20	20
4,4'-DDE ($^{13}C_{12}$,99%)	20	20	20	20	20	20
4,4'-DDD ($^{13}C_{12}$,99%)	20	20	20	20	20	20
2,4'-DDT ($^{13}C_{12}$,99%)	20	20	20	20	20	20
2,4'-DDE ($^{13}C_{12}$,99%)	20	20	20	20	20	20
2,4'-DDD ($^{13}C_{12}$,99%)	20	20	20	20	20	20
trans-Chlordane (gamma) ($^{13}C_{10}$,99%)	20	20	20	20	20	20
trans-Nonachlor ($^{13}C_{10}$,99%)	20	20	20	20	20	20
cis-Nonachlor ($^{13}C_{10}$,99%)	20	20	20	20	20	20
Oxychlordane ($^{13}C_{10}$,99%)	20	20	20	20	20	20
Heptachlor ($^{13}C_{10}$,99%)	20	20	20	20	20	20
cis-Heptachlor epoxide ($^{13}C_{10}$,99%)	20	20	20	20	20	20
Mirex ($^{13}C_{10}$,99%)	20	20	20	20	20	20
Kepone (Chlordecone) ($^{13}C_{10}$,99%)	20	20	20	20	20	20
alpha-BHC (alpha-HCH) ($^{13}C_6$,99%)	20	20	20	20	20	20
beta-BHC (beta-HCH) ($^{13}C_6$,99%)	20	20	20	20	20	20
gamma-BHC (gamma-HCH) (Lindane) ($^{13}C_6$,99%)	20	20	20	20	20	20
Delta-BHC (delta-HCH) ($^{13}C_6$,99%)	20	20	20	20	20	20
Endosulfan I ($^{13}C_9$,99%)	20	20	20	20	20	20
Endosulfan II ($^{13}C_9$,99%)	20	20	20	20	20	20
Syringe standard						
4,4'-DiCB ($^{13}C_{12}$,99%) (PCB 15)	20	20	20	20	20	20
2,3',4',5-TeCB ($^{13}C_{12}$,99%) (PCB 70)	20	20	20	20	20	20
Sampling standard						
Isodrin ($^{13}C_{12}$,99%)	20	20	20	20	20	20

New CIL-ES-5464-CS1 — Expanded POPS Pesticides Calibration Solutions [CS1] (unlabelled/^{13}C,99%) — 0.2 mL

New CIL-ES-5464-CS2 — Expanded POPS Pesticides Calibration Solutions [CS2] (unlabelled/^{13}C,99%) — 0.2 mL

New CIL-ES-5464-CS3 — Expanded POPS Pesticides Calibration Solutions [CS3] (unlabelled/^{13}C,99%) — 0.2 mL

New CIL-ES-5464-CS4 — Expanded POPS Pesticides Calibration Solutions [CS4] (unlabelled/^{13}C,99%) — 0.2 mL

New CIL-ES-5464-CS5 — Expanded POPS Pesticides Calibration Solutions [CS5] (unlabelled/^{13}C,99%) — 0.2 mL

New CIL-ES-5464-CS6 — Expanded POPS Pesticides Calibration Solutions [CS6] (unlabelled/^{13}C,99%) — 0.2 mL

	Code	Product	Unit
New	CIL-ES-5465	Expanded POPS Pesticides Cleanup Spike (^{13}C,99%)	1.2 mL

Solvent: Nonane

Labelled compound	Concentration
Hexachlorobenzene ($^{13}C_6$,99%)	100 ng/mL
Pentachlorobenzene ($^{13}C_6$,99%)	100 ng/mL
Aldrin ($^{13}C_{12}$,99%)	100 ng/mL
Dieldrin ($^{13}C_{12}$99%)	100 ng/mL
Endrin ($^{13}C_{12}$,99%)	100 ng/mL
4,4'-DDT ($^{13}C_{12}$,99%)	100 ng/mL
4,4'-DDE ($^{13}C_{12}$,99%)	100 ng/mL
4,4'-DDD ($^{13}C_{12}$,99%)	100 ng/mL
2,4'-DDT ($^{13}C_{12}$,99%)	100 ng/mL
2,4'-DDE ($^{13}C_{12}$99%)	100 ng/mL
2,4'-DDD ($^{13}C_{12}$99%)	100 ng/mL
trans-Chlordane (gamma) ($^{13}C_{10}$,99%)	100 ng/mL
trans-Nonachlor ($^{13}C_{10}$,99%)	100 ng/mL
cis-Nonachlor ($^{13}C_{10}$,99%)	100 ng/mL
Oxychlordane ($^{13}C_{10}$99%)	100 ng/mL
Heptachlor ($^{13}C_{10}$,99%)	100 ng/mL
cis-Heptachlor epoxide (B isomer) ($^{13}C_{10}$,99%)	100 ng/mL
Mirex ($^{13}C_{10}$,99%)	100 ng/mL
Kepone (Chlordecone) ($^{13}C_{10}$,99%)	100 ng/mL
alpha-BHC (alpha-HCH) ($^{13}C_6$,99%)	100 ng/mL
beta-BHC (beta-HCH) ($^{13}C_6$,99%)	100 ng/mL
gamma-BHC (gamma-HCH) (Lindane) ($^{13}C_6$,99%)	100 ng/mL
delta-BHC (delta-HCH) ($^{13}C_6$,99%)	100 ng/mL
Endosulfan I ($^{13}C_9$,99%)	100 ng/mL
Endosulfan II ($^{13}C_9$,99%)	100 ng/mL

New	CIL-ES-5465-X5	Expanded POPS Pesticides Cleanup Spike (^{13}C,99%) (5X Stock)	1.2 mL

Solvent: Nonane

Labelled compound	Concentration
Hexachlorobenzene ($^{13}C_6$,99%)	500 ng/mL
Pentachlorobenzene ($^{13}C_6$,99%)	500 ng/mL
Aldrin ($^{13}C_{12}$,99%)	500 ng/mL
Dieldrin ($^{13}C_{12}$99%)	500 ng/mL
Endrin ($^{13}C_{12}$,99%)	500 ng/mL
4,4'-DDT ($^{13}C_{12}$,99%)	500 ng/mL
4,4'-DDE ($^{13}C_{12}$,99%)	500 ng/mL
4,4'-DDD ($^{13}C_{12}$,99%)	500 ng/mL
2,4'-DDT ($^{13}C_{12}$,99%)	500 ng/mL
2,4'-DDE ($^{13}C_{12}$99%)	500 ng/mL
2,4'-DDD ($^{13}C_{12}$99%)	500 ng/mL
trans-Chlordane (gamma) ($^{13}C_{10}$,99%)	500 ng/mL
trans-Nonachlor ($^{13}C_{10}$,99%)	500 ng/mL
cis-Nonachlor ($^{13}C_{10}$,99%)	500 ng/mL
Oxychlordane ($^{13}C_{10}$99%)	500 ng/mL
Heptachlor ($^{13}C_{10}$,99%)	500 ng/mL
cis-Heptachlor epoxide (B isomer) ($^{13}C_{10}$,99%)	500 ng/mL
Mirex ($^{13}C_{10}$,99%)	500 ng/mL
Kepone (Chlordecone) ($^{13}C_{10}$,99%)	500 ng/mL
alpha-BHC (alpha-HCH) ($^{13}C_6$,99%)	500 ng/mL
beta-BHC (beta-HCH) ($^{13}C_6$,99%)	500 ng/mL
gamma-BHC (gamma-HCH) (Lindane) ($^{13}C_6$,99%)	500 ng/mL
delta-BHC (delta-HCH) ($^{13}C_6$,99%)	500 ng/mL
Endosulfan I ($^{13}C_9$,99%)	500 ng/mL
Endosulfan II ($^{13}C_9$,99%)	500 ng/mL

New	CIL-ES-5466	Expanded POPS Pesticides Sampling Spike (^{13}C,99%) in Nonane	1.2 mL

Solvent: Nonane

Isodrin ($^{13}C_{12}$,99%) ..... 1000 ng/mL

New	CIL-EC-5350	POPS Pesticides HRMS (PCB) Syringe Spike	1.2 mL

Solvent: Nonane

Labelled PCBs	IUPAC#	Concentration
4,4'-DiCB ($^{13}C_{12}$,99%)	15	100 ng/mL
2,3',4',5-TetraCB ($^{13}C_{12}$,99%)	70	100 ng/mL

New	CIL-EC-5350-L	POPS Pesticides LRMS (PCB) Syringe Spike	1.2 mL

Solvent: Nonane

Labelled PCBs	IUPAC#	Concentration
4,4'-DiCB ($^{13}C_{12}$,99%)	15	1000 ng/mL
2,3',4',5-TetraCB ($^{13}C_{12}$,99%)	70	1000 ng/mL

	Code	Product	Unit
New	CIL-ES-5467	Expanded POPS Pesticides PAR Solution (unlabelled) in Nonane	1.2 mL

Solvent: Nonane

HCB	1000 ng/mL	cis-Nonachlor	1000 ng/mL
Pentachlorobenzene	1000 ng/mL	Oxychlordane	1000 ng/mL
Aldrin	1000 ng/mL	Heptachlor	1000 ng/mL
Dieldrin	1000 ng/mL	trans-Heptachlor epoxide	1000 ng/mL
Endrin	1000 ng/mL	cis-Heptachlor epoxide	1000 ng/mL
p,p'-DDT	1000 ng/mL	Mirex	1000 ng/mL
p,p'-DDE	1000 ng/mL	Kepone (Chlordecone)	1000 ng/mL
p,p'-DDD	1000 ng/mL	alpha-HCH	1000 ng/mL
o,p'-DDT	1000 ng/mL	beta-HCH	1000 ng/mL
o,p'-DDE	1000 ng/mL	gamma-HCH	1000 ng/mL
o,p'-DDD	1000 ng/mL	delta-HCH	1000 ng/mL
trans-Chlordane	1000 ng/mL	Endosulfan 1	1000 ng/mL
cis-Chlordane	1000 ng/mL	Endosulfan 2	1000 ng/mL
trans-Nonachlor	1000 ng/mL		

	CIL-ES-5345	POPS Toxaphene calibration solution [CS1-CS5] (unlabelled/$^{13}C_{10}$,99%)	5 x 0.2 mL

Solvent: Nonane

All concentrations in ng/mL

Component	CS1	CS2	CS3	CS4	CS5
Parlar-26	10	30	100	300	1000
Parlar-50	10	30	100	300	1000
Parlar-62	10	30	100	300	1000
trans-Chlordane-$^{13}C_{10}$	1	1	1	1	1

	CIL-ES-5345-CS1	POPS Toxaphene calibration solution [CS1]	0.2 mL
	CIL-ES-5345-CS2	POPS Toxaphene calibration solution [CS2]	0.2 mL
	CIL-ES-5345-CS3	POPS Toxaphene calibration solution [CS3]	0.2 mL
	CIL-ES-5345-CS4	POPS Toxaphene calibration solution [CS4]	0.2 mL
	CIL-ES-5345-CS5	POPS Toxaphene calibration solution [CS5]	0.2 mL
	CIL-ES-5352-L	POPS Toxaphene surrogate solution with PCB syringe ($^{13}C_{10}$,99%)	1.2 mL

Solvent: Nonane

trans-Chlordane (gamma)-$^{13}C_{10}$ ..... 1 µg/mL

New	CIL-ES-5353	Predominant Bioaccumulative Toxaphene Congeners (Parlar 26, 50 and 62)	1.2 mL

Solvent: Nonane

Parlar 26 ..... 2000 ng/mL Parlar 50 ..... 2000 ng/mL Parlar 62 ..... 2000 ng/mL

Code	Product	Unit
CIL-ES-5348	POPS Pesticides Calibration Solution [CS1-CS6] (unlabelled/^{13}C,99%)	6 x 0.2 mL

Solvent: Nonane

All concentrations in ng/mL

Unlabelled component	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CS6**
Hexachlorobenzene	0.4	2	10	40	200	800
Aldrin	0.4	2	10	40	200	800
Dieldrin	0.4	2	10	40	200	800
Endrin	0.4	2	10	40	200	800
4,4'-DDT	0.4	2	10	40	200	800
4,4'-DDE	0.4	2	10	40	200	800
4,4'-DDD	0.4	2	10	40	200	800
2,4'-DDT	0.4	2	10	40	200	800
2,4'-DDE	0.4	2	10	40	200	800
2,4'-DDD	0.4	2	10	40	200	800
trans-Chlordane (gamma)	0.4	2	10	40	200	800
cis-Chlordane (alpha)	0.4	2	10	40	200	800
trans-Nonachlor	0.4	2	10	40	200	800
cis-Nonachlor	0.4	2	10	40	200	800
Oxychlordane	0.4	2	10	40	200	800
Heptachlor	0.4	2	10	40	200	800
trans-Heptachlor Epoxide	0.4	2	10	40	200	800
cis-Heptachlor Epoxide	0.4	2	10	40	200	800
Mirex	0.4	2	10	40	200	800
alpha-BHC	0.4	2	10	40	200	800
beta-BHC	0.4	2	10	40	200	800
Lindane	0.4	2	10	40	200	800
delta-BHC	0.4	2	10	40	200	800

^{13}C-Labelled component	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CS6**
Hexachlorobenzene ($^{13}C_6$,99%)	20	20	20	20	20	20
Aldrin ($^{13}C_{12}$,99%)	20	20	20	20	20	20
Dieldrin-$^{13}C_{12}$	20	20	20	20	20	20
Endrin ($^{13}C_{12}$,99%)	20	20	20	20	20	20
4,4'-DDT ($^{13}C_{12}$,99%)	20	20	20	20	20	20
4,4'-DDE ($^{13}C_{12}$,99%)	20	20	20	20	20	20
4,4'-DDD ($^{13}C_{12}$,99%)	20	20	20	20	20	20
2,4'-DDT ($^{13}C_{12}$,99%)	20	20	20	20	20	20
2,4'-DDE ($^{13}C_{12}$,99%)	20	20	20	20	20	20
2,4'-DDD ($^{13}C_{12}$,99%)	20	20	20	20	20	20
trans-Chlordane (gamma) ($^{13}C_{10}$,99%)	20	20	20	20	20	20
trans-Nonachlor ($^{13}C_{10}$,99%)	20	20	20	20	20	20
cis-Nonachlor ($^{13}C_{10}$,99%)	20	20	20	20	20	20
Oxychlordane ($^{13}C_{10}$,99%)	20	20	20	20	20	20
Heptachlor ($^{13}C_{10}$,99%)	20	20	20	20	20	20
cis-Heptachlor Epoxide ($^{13}C_{10}$,99%)	20	20	20	20	20	20
Mirex ($^{13}C_{10}$,99%)	20	20	20	20	20	20
alpha-BHC ($^{13}C_6$,99%)	20	20	20	20	20	20
beta-BHC ($^{13}C_6$,99%)	20	20	20	20	20	20
Lindane ($^{13}C_6$,99%)	20	20	20	20	20	20
delta-BHC ($^{13}C_6$,99%)	20	20	20	20	20	20
4,4'-DiCB ($^{13}C_{12}$,99%) (PCB-15)	20	20	20	20	20	20
2,3',4',5-TetraCB ($^{13}C_{12}$,99%) (PCB-70)	20	20	20	20	20	20

CIL-ES-5348-CS1	POPS Pesticides Calibration Solution [CS1] (unlabelled/^{13}C,99%)	0.2 mL
CIL-ES-5348-CS2	POPS Pesticides Calibration Solution [CS2] (unlabelled/^{13}C,99%)	0.2 mL
CIL-ES-5348-CS3	POPS Pesticides Calibration Solution [CS3] (unlabelled/^{13}C,99%)	0.2 mL
CIL-ES-5348-CS4	POPS Pesticides Calibration Solution [CS3] (unlabelled/^{13}C,99%)	0.2 mL
CIL-ES-5348-CS5	POPS Pesticides Calibration Solution [CS5] (unlabelled/^{13}C,99%)	0.2 mL
CIL-ES-5348-CS6	POPS Pesticides Calibration Solution [CS6] (unlabelled/^{13}C,99%)	0.2 mL

CIL-ES-5349	POPS Pesticides HRMS HCH clean-up spike (^{13}C,99%)	1.2 mL

Solvent: Nonane

alpha-BHC ($^{13}C_6$,99%)	100 ng/mL
Hexachlorobenzene ($^{13}C_6$,99%)	100 ng/mL
Lindane ($^{13}C_6$,99%)	100 ng/mL
beta-BHC ($^{13}C_6$,99%)	100 ng/mL
delta-BHC ($^{13}C_6$,99%)	100 ng/mL
Heptachlor ($^{13}C_{10}$,99%)	100 ng/mL
Aldrin ($^{13}C_{12}$,99%)	100 ng/mL
Oxychlordane ($^{13}C_{10}$,99%)	100 ng/mL
cis-Heptachlor epoxide ($^{13}C_{10}$,99%)	100 ng/mL
2,4'-DDE ($^{13}C_{12}$,99%)	100 ng/mL
trans-Chlordane (gamma) ($^{13}C_{10}$,99%)	100 ng/mL
trans-Nonachlor($^{13}C_{10}$,99%)	100 ng/mL
4,4'-DDE ($^{13}C_{12}$,99%)	100 ng/mL
Dieldrin ($^{13}C_{12}$,99%)	100 ng/mL
2,4'-DDD ($^{13}C_{12}$,99%)	100 ng/mL
Endrin ($^{13}C_{12}$,99%)	100 ng/mL
2,4'-DDT ($^{13}C_{12}$,99%)	100 ng/mL
cis-Nonachlor ($^{13}C_{10}$,99%)	100 ng/mL
4,4'-DDD ($^{13}C_{12}$,99%)	100 ng/mL
4,4'-DDT($^{13}C_{12}$,99%)	100 ng/mL
Mirex ($^{13}C_{10}$,99%)	100 ng/mL

Code	Product	Unit
CIL-ES-5349-L	POPS pesticides HRMS HCH clean-up spike (^{13}C,99%) Solvent: Nonane	0.5 mL

alpha-BHC ($^{13}C_6$,99%) ..... 1000 ng/mL
Hexachlorobenzene ($^{13}C_6$,99%) ..... 1000 ng/mL
Lindane ($^{13}C_6$,99%) ..... 1000 ng/mL
beta-BHC ($^{13}C_6$,99%) ..... 1000 ng/mL
delta-BHC ($^{13}C_6$,99%) ..... 1000 ng/mL
Heptachlor ($^{13}C_{10}$,99%) ..... 1000 ng/mL
Aldrin ($^{13}C_{12}$,99%) ..... 1000 ng/mL
Oxychlordane ($^{13}C_{10}$,99%) ..... 1000 ng/mL
cis-Heptachlor epoxide ($^{13}C_{10}$,99%) ..... 1000 ng/mL
2,4'-DDE ($^{13}C_{12}$,99%) ..... 1000 ng/mL
trans-Chlordane (gamma) ($^{13}C_{10}$,99%) .. 1000 ng/mL
trans-Nonachlor($^{13}C_{10}$,99%) ..... 1000 ng/mL
4,4'-DDE ($^{13}C_{12}$,99%) ..... 1000 ng/mL
Dieldrin ($^{13}C_{12}$,99%) ..... 1000 ng/mL
2,4'-DDD ($^{13}C_{12}$,99%) ..... 1000 ng/mL
Endrin ($^{13}C_{12}$,99%) ..... 1000 ng/mL
2,4'-DDT ($^{13}C_{12}$,99%) ..... 1000 ng/mL
cis-Nonachlor ($^{13}C_{10}$,99%) ..... 1000 ng/mL
4,4'-DDD ($^{13}C_{12}$,99%) ..... 1000 ng/mL
4,4'-DDT ($^{13}C_{12}$,99%) ..... 1000 ng/mL
Mirex($^{13}C_{10}$,99%) ..... 1000 ng/mL

CIL-ES-5400	POPS Clean-up Spike (^{13}C,99%) Solvent: Nonane	1.2 mL

Hexachlorobenzene ($^{13}C_6$,99%) ..... 200 ng/mL
Aldrin ($^{13}C_{12}$,99%) ..... 200 ng/mL
Dieldrin ($^{13}C_{12}$,99%) ..... 200 ng/mL
Endrin ($^{13}C_{12}$,99%) ..... 200 ng/mL
4,4'-DDT ($^{13}C_{12}$,99%) ..... 200 ng/mL
4,4'-DDE ($^{13}C_{12}$,99%) ..... 200 ng/mL
4,4'-DDD ($^{13}C_{12}$,99%) ..... 200 ng/mL
2,4'-DDT ($^{13}C_{12}$,99%) ..... 200 ng/mL
2,4'-DDE ($^{13}C_{12}$,99%) ..... 200 ng/mL
2,4'-DDD ($^{13}C_{12}$,99%) ..... 200 ng/mL
trans-Chlordane (gamma) ($^{13}C_{10}$,99%) .... 200 ng/mL
trans-Nonachlor ($^{13}C_{10}$,99%) ..... 200 ng/mL
cis-Nonachlor ($^{13}C_{10}$,99%) ..... 200 ng/mL
Oxychlordane ($^{13}C_{10}$,99%) ..... 200 ng/mL
Heptachlor ($^{13}C_{10}$,99%) ..... 200 ng/mL
cis-Heptachlor Epoxide ($^{13}C_{10}$,99%) ..... 200 ng/mL
Mirex ($^{13}C_{10}$,99%) ..... 200 ng/mL
alpha-BHC ($^{13}C_{10}$,99%) ..... 200 ng/mL
beta-BHC ($^{13}C_{10}$,99%) ..... 200 ng/mL
Lindane (gamma-BHC) ($^{13}C_6$,99%) ..... 200 ng/mL
delta-BHC ($^{13}C_6$,99%) ..... 200 ng/mL

CIL-ES-5399	POPS PAR Solution Solvent: Nonane	1.2 mL

Hexachlorobenzene ..... 200 ng/mL
Aldrin ..... 200 ng/mL
Dieldrin ..... 200 ng/mL
Endrin ..... 200 ng/mL
4,4'-DDT ..... 200 ng/mL
4,4'-DDE ..... 200 ng/mL
4,4'-DDD ..... 200 ng/mL
2,4'-DDT ..... 200 ng/mL
2,4'-DDE ..... 200 ng/mL
2,4'-DDD ..... 200 ng/mL
trans-Chlordane (gamma) ..... 200 ng/mL
cis-Chlordane (alpha) ..... 200 ng/mL
trans-Nonachlor ..... 200 ng/mL
cis-Nonachlor ..... 200 ng/mL
Oxychlordane ..... 200 ng/mL
Heptachlor ..... 200 ng/mL
trans-Heptachlor Epoxide ..... 200 ng/mL
cis-Heptachlor Epoxide ..... 200 ng/mL
Mirex ..... 200 ng/mL
alpha-BHC ..... 200 ng/mL
beta-BHC ..... 200 ng/mL
Lindane (gamma-BHC) ..... 200 ng/mL
Delta-BHC ..... 200 ng/mL

CIL-ES-5399-10X-0.5	POPS PAR Solution Solvent: Nonane	0.5 mL

Hexachlorobenzene ..... 2000 ng/mL
Aldrin ..... 2000 ng/mL
Dieldrin ..... 2000 ng/mL
Endrin ..... 2000 ng/mL
4,4'-DDT ..... 2000 ng/mL
4,4'-DDE ..... 2000 ng/mL
4,4'-DDD ..... 2000 ng/mL
2,4'-DDT ..... 2000 ng/mL
2,4'-DDE ..... 2000 ng/mL
2,4'-DDD ..... 2000 ng/mL
trans-Chlordane (gamma) ..... 2000 ng/mL
cis-Chlordane (alpha) ..... 2000 ng/mL
trans-Nonachlor ..... 2000 ng/mL
cis-Nonachlor ..... 2000 ng/mL
Oxychlordane ..... 2000 ng/mL
Heptachlor ..... 2000 ng/mL
trans-Heptachlor Epoxide ..... 2000 ng/mL
cis-Heptachlor Epoxide ..... 2000 ng/mL
Mirex ..... 2000 ng/mL
alpha-BHC ..... 2000 ng/mL
beta-BHC ..... 2000 ng/mL
Lindane (gamma-BHC) ..... 2000 ng/mL
Delta-BHC ..... 2000 ng/mL

Code	Product	Unit
CIL-ES-5341	POPS Pesticide, non-toxaphene, non-HCH, calibration solution [CS1-CS5] (unlabelled/^{13}C,99%)	5 x 0.2 mL

Solvent: Nonane

All concentrations in ng/mL

Unlabelled component	CS1	CS2	CS3	CS4	CS5
Hexachlorobenzene	0.05	0.15	0.5	1.5	5
Aldrin	0.5	1.5	5	15	50
Dieldrin	0.1	0.3	1	3	10
Endrin	0.5	1.5	5	15	50
4,4'-DDT	0.5	1.5	5	15	50
4,4'-DDE	0.1	0.3	1	3	10
4,4'-DDD	0.5	1.5	5	15	50
2,4'-DDT	0.5	1.5	5	15	50
2,4'-DDE	0.1	0.3	1	3	10
2,4'-DDD	0.5	1.5	5	15	50
trans-Chlordane (gamma)	0.05	0.15	0.5	1.5	5
cis-Chlordane (alpha)	0.05	0.15	0.5	1.5	5
trans-Nonachlor	0.05	0.15	0.5	1.5	5
cis-Nonachlor	0.05	0.15	0.5	1.5	5
Oxychlordane	0.5	1.5	5	15	50
Heptachlor	0.1	0.3	1	3	10
trans-Heptachlor Epoxide	0.1	0.3	1	3	10
cis-Heptachlor Epoxide	0.1	0.3	1	3	10
Mirex	0.1	0.3	1	3	10

^{13}C-Labelled component	CS1	CS2	CS3	CS4	CS5
Hexachlorobenzene ($^{13}C_6$,99%)	1	1	1	1	1
Aldrin ($^{13}C_{12}$,99%)	10	10	10	10	10
Dieldrin ($^{13}C_{12}$,99%)	2	2	2	2	2
Endrin ($^{13}C_{12}$,99%)	10	10	10	10	10
4,4'-DDT ($^{13}C_{12}$,99%)	10	10	10	10	10
4,4'-DDE ($^{13}C_{12}$,99%)	2	2	2	2	2
4,4'-DDD($^{13}C_{12}$,99%)	10	10	10	10	10
2,4'-DDT ($^{13}C_{12}$,99%)	10	10	10	10	10
2,4'-DDE ($^{13}C_{12}$,99%)	2	2	2	2	2
2,4'-DDD ($^{13}C_{12}$,99%)	10	10	10	10	10
trans-Chlordane (gamma) ($^{13}C_{10}$,99%)	1	1	1	1	1
trans-Nonachlor ($^{13}C_{10}$,99%)	1	1	1	1	1
cis-Nonachlor ($^{13}C_{10}$,99%)	1	1	1	1	1
Oxychlordane ($^{13}C_{10}$,99%)	10	10	10	10	10
Heptachlor ($^{13}C_{10}$,99%)	2	2	2	2	2
cis-Heptachlor Epoxide ($^{13}C_{10}$,99%)	2	2	2	2	2
Mirex ($^{13}C_{10}$,99%)	2	2	2	2	2

CIL-ES-5341-CS1	POPS Pesticide, non-toxaphene, non-HCH, calibration solution [CS1]	0.2 mL
CIL-ES-5341-CS2	POPS Pesticide, non-toxaphene, non-HCH, calibration solution [CS2]	0.2 mL
CIL-ES-5341-CS3	POPS Pesticide, non-toxaphene, non-HCH, calibration solution [CS3]	0.2 mL
CIL-ES-5341-CS4	POPS Pesticide, non-toxaphene, non-HCH, calibration solution [CS4]	0.2 mL
CIL-ES-5341-CS5	POPS Pesticide, non-toxaphene, non-HCH, calibration solution [CS5]	0.2 mL

CIL-ES-5342	POPS Pesticide, non-toxaphene, non-HCH, HRMS clean-up spike (^{13}C,99%)	1.2 mL

Solvent: Nonane

Hexachlorobenzene ($^{13}C_6$,99%)	10 ng/mL	Dieldrin ($^{13}C_{12}$,99%)	20 ng/mL
Heptachlor ($^{13}C_{10}$,99%)	20 ng/mL	2,4'-DDD ($^{13}C_{12}$,99%)	100 ng/mL
Aldrin ($^{13}C_{12}$,99%)	100 ng/mL	Endrin ($^{13}C_{12}$,99%)	100 ng/mL
Oxychlordane ($^{13}C_{10}$,99%)	100 ng/mL	2,4'-DDT ($^{13}C_{12}$,99%)	100 ng/mL
cis-Heptachlor epoxide ($^{13}C_{10}$,99%)	20 ng/mL	cis-Nonachlor ($^{13}C_{10}$,99%)	10 ng/mL
2,4'-DDE ($^{13}C_{12}$,99%)	20 ng/mL	4,4'-DDD ($^{13}C_{12}$,99%)	100 ng/mL
trans-Chlordane (gamma) ($^{13}C_{10}$,99%)	10 ng/mL	4,4'-DDT($^{13}C_{12}$,99%)	100 ng/mL
trans-Nonachlor ($^{13}C_{10}$,99%)	10 ng/mL	Mirex ($^{13}C_{10}$,99%)	20 ng/mL
4,4'-DDE ($^{13}C_{12}$,99%)	20 ng/mL		

CIL-ES-5343	POPS HRMS HCH calibration solution [CS1-CS5] (unlabelled/$^{13}C_6$,99%)	5 x 0.2 mL

Solvent: Nonane

All concentrations in ng/mL

Component	CS1	CS2	CS3	CS4	CS5
alpha-BHC	0.1	0.3	1	3	10
beta-BHC	0.1	0.3	1	3	10
Lindane	0.1	0.3	1	3	10
delta-BHC	0.1	0.3	1	3	10
alpha-BHC ($^{13}C_6$,99%)	2	2	2	2	2
beta-BHC ($^{13}C_6$,99%)	2	2	2	2	2
Lindane ($^{13}C_6$,99%)	2	2	2	2	2
delta-BHC ($^{13}C_6$,99%)	2	2	2	2	2

CIL-ES-5343-CS1	POPS HRMS HCH calibration solution [CS1]	0.2 mL
CIL-ES-5343-CS2	POPS HRMS HCH calibration solution [CS2]	0.2 mL
CIL-ES-5343-CS3	POPS HRMS HCH calibration solution [CS3]	0.2 mL
CIL-ES-5343-CS4	POPS HRMS HCH calibration solution [CS4]	0.2 mL
CIL-ES-5343-CS5	POPS HRMS HCH calibration solution [CS5]	0.2 mL

	Code	Product	Unit
	CIL-ES-5344	POPS HRMS HCH clean-up spike ($^{13}C_6$,99%) Solvent: Nonane alpha-BHC (alpha-HCH) ($^{13}C_6$,99%)..... 20 ng/mL Lindane ($^{13}C_6$,99%)..... 20 ng/mL beta-BHC (beta-HCH) ($^{13}C_6$,99%)..... 20 ng/mL delta-BHC (delta-HCH) ($^{13}C_6$,99%)..... 20 ng/mL	1.2 mL
New	CIL-ES-5344-50X-0.5	POPS HRMS HCH clean-up spike ($^{13}C_6$,99%) Solvent: Nonane alpha-BHC (alpha-HCH) ($^{13}C_6$,99%)..... 1000 ng/mL Lindane ($^{13}C_6$,99%)..... 1000 ng/mL beta-BHC (beta-HCH) ($^{13}C_6$,99%)..... 1000 ng/mL delta-BHC (delta-HCH) ($^{13}C_6$,99%)..... 1000 ng/mL	0.5 mL
New	CIL-ES-5019-A	Persistent pesticide calibration solutions [CS1-CS10] Solvent: Nonane All concentrations are in ng/mL	10 x 0.25 mL

Unlabelled Component	CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8	CS9	CS10
Hexachlorobenzene	1.0	2.5	10	355	100	300	500	1000		
beta-BHC	1.0	2.5	10	355	100	300	500	1000		
Lindane	1.0	2.5	10	355	100	300	500	1000		
cis-Heptachlor Epoxide	1.0	2.5	10	355	100	300	500	1000		
Oxychlordane	1.0	2.5	10	355	100	300	500	1000		
trans-Nonachlor	1.0	2.5	10	355	100	300	500	1000		
4,4'-DDE	1.0	2.5	10	355	100	300	500	1000	3000	6000
Dieldrin	1.0	2.5	10	355	100	300	500	1000		
2,4'-DDT	1.0	2.5	10	355	100	300	500	1000	3000	6000
4,4'-DDT	1.0	2.5	10	355	100	300	500	1000		
Mirex	1.0	2.5	10	355	100	300	500	1000		
Dechlorane Plus Syn	1.0	2.5	10	355	100	300	500	1000		
Dechlorane Plus Anti	1.0	2.5	10	355	100	300	500	1000		

^{13}C-Labelled Component	CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8	CS9	CS10
Hexachlorobenzene (13C6,99%)	75	75	75	75	75	75	75	75	75	75
Dieldrin (13C12,99%)	75	75	75	75	75	75	75	75	75	75
beta-BHC (13C6,99%)	75	75	75	75	75	75	75	75	75	75
Lindane (13C6,99%)	75	75	75	75	75	75	75	75	75	75
cis-Heptachlor Epoxide (13C10,99%)	75	75	75	75	75	75	75	75	75	75
Oxychlordane (13C10,99%)	75	75	75	75	75	75	75	75	75	75
trans-Nonachlor (13C10,99%)	75	75	75	75	75	75	75	75	75	75
Mirex (13C10,99%)	75	75	75	75	75	75	75	75	75	75
2,4'-DDT (13C12,99%)	75	75	75	75	75	75	75	75	75	75
4,4'-DDT (13C12,99%)	75	75	75	75	75	75	75	75	75	75
4,4'-DDE (13C12,99%)	150	150	150	150	150	150	150	150	150	150
1,2,3,4-TCDD (13C6,99%)	25	25	25	25	25	25	25	25	25	25
2,2',3,3',4,5,5',6,6'-NonaCB (13C12,99%)	100	100	100	100	100	100	100	100	100	100
3,3',4,4'-TetraBDE (13C12,99%)	75	75	75	75	75	75	75	75	75	75
2,2',3,4,4',6-HexaBDE (13C12,99%)	75	75	75	75	75	75	75	75	75	75

New	CIL-ES-5019-A-CS1-8	Persistent Pesticide Calibration Solutions [CS1-CS8]	8 x 0.25 mL
New	CIL-ES-5019-A-CS2	Persistent pesticide calibration solutions [CS2]	0.25 mL
New	CIL-ES-5019-A-CS3	Persistent pesticide calibration solutions [CS3]	0.25 mL
New	CIL-ES-5019-A-CS4	Persistent pesticide calibration solutions [CS4]	0.25 mL
New	CIL-ES-5019-A-CS5	Persistent pesticide calibration solutions [CS5]	0.25 mL
New	CIL-ES-5019-A-CS6	Persistent pesticide calibration solutions [CS6]	0.25 mL
New	CIL-ES-5019-A-CS7	Persistent pesticide calibration solutions [CS7]	0.25 mL
New	CIL-ES-5019-A-CS9	Persistent pesticide calibration solutions [CS9]	0.25 mL
New	CIL-ES-5019-A-CS10	Persistent pesticide calibration solutions [CS10]	0.25 mL
New	CIL-ES-5019-A-CS9-CS10	Persistent Pesticide Calibration Solutions [CS9-CS10]	2 x 0.25 mL
New	CIL-ES-5019-A-CS11	Persistent pesticide calibration solutions [CS11]	0.25 mL
	CIL-ES-5020	Persistent Pesticide Reconstituting Solution (^{13}C,99%) Solvent: Nonane	10 x 1 mL

Labelled Compound	IUPAC#	Concentration
3,4,4'-TriCB ($^{13}C_{12}$,99%)	37	100 ng/mL
2,2',3,3',4,5,5',6,6'-NonaCB ($^{13}C_{12}$,99%)	208	100 ng/mL
1,2,3,4-TCDD ($^{13}C_6$,99%)		25 ng/mL
2,3,7,8-TCDD ($^{13}C_{12}$,99%)		25 ng/mL

	CIL-ES-5020-1ML	Persistent Pesticide Reconstituting Solution (^{13}C,99%) Solvent: Nonane	1 mL

Labelled Compound	IUPAC#	Concentration
3,4,4'-TriCB ($^{13}C_{12}$,99%)	37	100 ng/mL
2,2',3,3',4,5,5',6,6'-NonaCB ($^{13}C_{12}$,99%)	208	100 ng/mL
1,2,3,4-TCDD ($^{13}C_6$,99%)		25 ng/mL
2,3,7,8-TCDD ($^{13}C_{12}$,99%)		25 ng/mL

	CIL-ES-5321	Multi-Analyte Recovery Spiking Standard Solvent: 88% hexane/2% dodecane/10% nonane 1,2,3,4-TCDD ($^{13}C_6$, 99%) .....2.5 ng/mL 2,2',3,3',4,5,5',6,6'-NonaCB ($^{13}C_{12}$,99%) (PCB-208) .....10 ng/mL 3,3',4,4'-TetraBDE ($^{13}C_{12}$,99%) (BDE-77).....7.5 ng/mL 2,2',3,4,4',6-HexaBDE ($^{13}C_{12}$,99%) (BDE-139).....7.5 ng/mL	10 mL

	Code	Product	Unit
	CIL-ES-5021	Persistent Pesticide Spiking Solution (^{13}C,99%) Solvent: Nonane Hexachlorobenzene ($^{13}C_6$,99%)..... 100 ng/mL Dieldrin ($^{13}C_{12}$,99%)..... 100 ng/mL beta-HCH ($^{13}C_6$,99%)..... 100 ng/mL Lindane (γ-HCH) ($^{13}C_6$,99%)..... 100 ng/mL Heptachlor epoxide, B isomer ($^{13}C_{10}$,99%)..... 100 ng/mL Oxychlordane ($^{13}C_{10}$,99%)..... 100 ng/mL trans-Nonachlor ($^{13}C_{10}$,99%)..... 100 ng/mL Mirex ($^{13}C_{10}$,99%)..... 100 ng/mL 2,4'-DDT ($^{13}C_{12}$,99%)..... 100 ng/mL 4,4'-DDT ($^{13}C_{12}$,99%)..... 100 ng/mL 4,4'-DDE ($^{13}C_{12}$,99%)..... 250 ng/mL	2.5 mL
New	CIL-ES-5177-500X-N-0.5	Persistent Pesticide Spiking Solution (^{13}C,99%) Solvent: Nonane Hexachlorobenzene ($^{13}C_6$,99%)..... 5000 ng/mL Dieldrin ($^{13}C_{12}$,99%)..... 5000 ng/mL beta-HCH ($^{13}C_6$,99%)..... 5000 ng/mL Lindane (γ-HCH) ($^{13}C_6$,99%)..... 5000 ng/mL Heptachlor epoxide, B isomer ($^{13}C_{10}$,99%)..... 5000 ng/mL Oxychlordane ($^{13}C_{10}$,99%)..... 5000 ng/mL trans-Nonachlor ($^{13}C_{10}$,99%)..... 5000 ng/mL Mirex ($^{13}C_{10}$,99%)..... 5000 ng/mL 2,4'-DDT ($^{13}C_{12}$,99%)..... 5000 ng/mL 4,4'-DDT ($^{13}C_{12}$,99%)..... 5000 ng/mL 4,4'-DDE ($^{13}C_{12}$,99%)..... 12.500 ng/mL	0.5 mL
New	CIL-ES-5177-5X10	Persistent Pesticide Spiking Solution (^{13}C,99%) Solvent: Methanol Hexachlorobenzene ($^{13}C_6$,99%)..... 10 ng/mL Dieldrin ($^{13}C_{12}$,99%)..... 10 ng/mL beta-HCH ($^{13}C_6$,99%)..... 10 ng/mL Lindane (γ-HCH) ($^{13}C_6$,99%)..... 10 ng/mL Heptachlor epoxide, B isomer ($^{13}C_{10}$,99%)..... 10 ng/mL Oxychlordane ($^{13}C_{10}$,99%)..... 10 ng/mL trans-Nonachlor ($^{13}C_{10}$,99%)..... 10 ng/mL Mirex ($^{13}C_{10}$,99%)..... 10 ng/mL 2,4'-DDT ($^{13}C_{12}$,99%)..... 10 ng/mL 4,4'-DDT ($^{13}C_{12}$,99%)..... 10 ng/mL 4,4'-DDE ($^{13}C_{12}$,99%)..... 2.5 ng/mL	5 x 10 mL
	CIL-ES-5261-1.2	Persistent Organic Pollutants Clean-Up Spike (^{13}C,99%) Solvent: Nonane Hexachlorobenzene ($^{13}C_6$,99%)..... 1 µg/mL alpha-HCH ($^{13}C_6$,99%)..... 1 µg/mL beta-HCH ($^{13}C_6$,99%)..... 1 µg/mL Lindane (γ-HCH) ($^{13}C_6$,99%)..... 1 µg/mL Aldrin ($^{13}C_{12}$,99%)..... 1 µg/mL Dieldrin ($^{13}C_{12}$,99%)..... 1 µg/mL Endrin ($^{13}C_{12}$,99%)..... 1 µg/mL trans-Chlordane ($^{13}C_{10}$,99%)..... 1 µg/mL Oxychlordane ($^{13}C_{10}$,99%)..... 1 µg/mL trans-Nonachlor ($^{13}C_{10}$,99%)..... 1 µg/mL Heptachlor ($^{13}C_{10}$,99%)..... 1 µg/mL Heptachlor epoxide, B isomer ($^{13}C_{10}$,99%)..... 1 µg/mL 4,4'-DDT (ring-$^{13}C_{12}$,99%)..... 1 µg/mL 4,4'-DDE (ring-$^{13}C_{12}$,99%)..... 1 µg/mL 4,4'-DDD (ring-$^{13}C_{12}$,99%)..... 1 µg/mL	1.2 mL

Pesticide and chemical weapon standards

	Code	Product	Unit
New	CIL-ES-5442	CDC POPS (W/ Parlars) Calibration Solutions [CS1-CS9] Solvent: Nonane All concentrations are in ng/mL (ppb)	9 x 0.2 mL

Unlabelled Compounds	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CS6**	**CS7**	**CS8**	**CS9**
Parlar	26	2.5	5	10	30	100	300	1000	
Parlar	50	2.5	5	10	30	100	300	1000	
Parlar	62	2.5	5	10	30	100	300	1000	
Hexachlorobenzene	2.5	5	10	30	100	300	1000		
beta-BHC (beta-HCH)	2.5	5	10	30	100	300	1000		
Lindane	2.5	5	10	30	100	300	1000		
Aldrin	2.5	5	10	30	100	300	1000		
cis-Heptachlor epoxide (B isomer)	2.5	5	10	30	100	300	1000		
Oxychlordane	2.5	5	10	30	100	300	1000		
trans-Nonachlor	2.5	5	10	30	100	300	1000		
4,4'-DDE	0.2	0.5	1	2.5	10	75	1000	3000	7500
Dieldrin	2.5	5	10	30	100	300	1000		
Endrin	2.5	5	10	30	100	300	1000		
Isodrin	2.5	5	10	30	100	300	1000		
2,4'-DDT	2.5	5	10	30	100	300	1000	3000	7500
4,4'-DDT	2.5	5	10	30	100	300	1000		
Mirex	2.5	5	10	30	100	300	1000		
alpha-BHC (alpha-HCH)	2.5	5	10	30	100	300	1000		
cis-Chlordane (a)	2.5	5	10	30	100	300	1000		
trans-Chlordane (γ)	2.5	5	10	30	100	300	1000		
2,4'-DDE	2.5	5	10	30	100	300	1000		
cis-Nonachlor	2.5	5	10	30	100	300	1000		
Methoxychlor	2.5	5	10	30	100	300	1000		
Pentachloroanisole	2.5	5	10	30	100	300	1000		
Octachlorostyrene	2.5	5	10	30	100	300	1000		

Labelled Compounds	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CS6**	**CS7**	**CS8**	**CS9**
1,2,3,4-TCDD ($^{13}C_6$,99%)	25	25	25	25	25	25	25	25	25
2,2',3,3',4,5,5',6,6'-NonaCB ($^{13}C_{12}$,99%) (PCB 208)	100	100	100	100	100	100	100	100	100
3,3',4,4'-TetraBDE ($^{13}C_{12}$,99%) (PCB 77)	75	75	75	75	75	75	75	75	75
2,2',3,4,4',6-HexaBDE ($^{13}C_{12}$,99%) (BDE 139)	75	75	75	75	75	75	75	75	75
Parlar 26 (U-$^{13}C_{10}$,99%)	75	75	75	75	75	75	75	75	75
Parlar 50 (U-$^{13}C_{10}$,99%)	75	75	75	75	75	75	75	75	75
Parlar 62 (U-$^{13}C_{10}$,99%)	75	75	75	75	75	75	75	75	75
Hexachlorobenzene ($^{13}C_6$,99%)	75	75	75	75	75	75	75	75	75
beta-HCH ($^{13}C_6$,99%)	75	75	75	75	75	75	75	75	75
Lindane ($^{13}C_6$,99%)	75	75	75	75	75	75	75	75	75
Aldrin ($^{13}C_{12}$,99%)	75	75	75	75	75	75	75	75	75
cis-Heptachlor epoxide (B isomer) ($^{13}C_{10}$,99%)	75	75	75	75	75	75	75	75	75
Oxychlordane ($^{13}C_{10}$,99%)	75	75	75	75	75	75	75	75	75
trans-Nonachlor ($^{13}C_{10}$,99%)	75	75	75	75	75	75	75	75	75
4,4'-DDE ($^{13}C_{12}$,99%)	150	150	150	150	150	150	150	150	150
Dieldrin ($^{13}C_{12}$,99%)	75	75	75	75	75	75	75	75	75
Endrin ($^{13}C_{12}$,99%)	75	75	75	75	75	75	75	75	75
Isodrin ($^{13}C_{12}$,99%)	75	75	75	75	75	75	75	75	75
2,4'-DDT ($^{13}C_{12}$,99%)	75	75	75	75	75	75	75	75	75
4,4'-DDT ($^{13}C_{12}$,99%)	75	75	75	75	75	75	75	75	75
Mirex ($^{13}C_{10}$,99%)	75	75	75	75	75	75	75	75	75
alpah-HCH ($^{13}C_6$,99%)	75	75	75	75	75	75	75	75	75
trans-Chlordane (gamma) ($^{13}C_{10}$,99%)	75	75	75	75	75	75	75	75	75
2,4'-DDE ($^{13}C_{12}$,99%)	75	75	75	75	75	75	75	75	75
cis-Nonachlor ($^{13}C_{10}$,99%)	75	75	75	75	75	75	75	75	75
Methoxychlor ($^{13}C_{12}$,99%)	75	75	75	75	75	75	75	75	75
Pentachloroanisole ($^{13}C_6$,99%)	75	75	75	75	75	75	75	75	75
Octachlorostyrene ($^{13}C_8$,99%)	75	75	75	75	75	75	75	75	75

New	CIL-ES-5442-CS1	CDC POPS (W/ Parlars) Calibration Solutions [CS1]	0.2 mL
New	CIL-ES-5442-CS2	CDC POPS (W/ Parlars) Calibration Solutions [CS2]	0.2 mL
New	CIL-ES-5442-CS3	CDC POPS (W/ Parlars) Calibration Solutions [CS3]	0.2 mL
New	CIL-ES-5442-CS4	CDC POPS (W/ Parlars) Calibration Solutions [CS4]	0.2 mL
New	CIL-ES-5442-CS5	CDC POPS (W/ Parlars) Calibration Solutions [CS5]	0.2 mL
New	CIL-ES-5442-CS6	CDC POPS (W/ Parlars) Calibration Solutions [CS6]	0.2 mL
New	CIL-ES-5442-CS7	CDC POPS (W/ Parlars) Calibration Solutions [CS7]	0.2 mL
New	CIL-ES-5442-CS8	CDC POPS (W/ Parlars) Calibration Solutions [CS8]	0.2 mL
New	CIL-ES-5442-CS9	CDC POPS (W/ Parlars) Calibration Solutions [CS9]	0.2 mL

Chemical weapon metabolite standards

	CIL-CDNLM-6786-1.2	Aminomethylphosphonic acid (AMPA) (^{13}C, 99%; ^{15}N,98%; methylene-D_2,98%) 100 µg/mL in Water	1.2 mL
	CIL-CLM-6096-1.2	Cyclohexyl hydrogen methylphosphonate (cyclohexyl-$^{13}C_6$,99%) 100 µg/mL in Methanol	1.2 mL
	ERC-034	Cyclohexyl methylphosphonic acid (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	ERD-117	O,O-Diethyl hydrogen dithiophosphate potassium salt (unlabelled) 1000 µg/mL in Methanol	1.2 mL
New	CERERD-155	O,O-Dimethyl hydrogen dithiophosphate (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	CERERD-118	Diethyl hydrogen phosphate 1000 µg/mL(as free acid)	1.2 mL
	CIL-DLM-4852-1.2	O,O-Diethyl hydrogen thiophosphate potassium salt (diethyl-D_{10},98%) 100 µg/mL in Methanol	1.2 mL
	ERD-119	O,O-Diethyl hydrogen thiophosphate potassium salt 1000 µg/mL (unlabelled) in Methanol	1.2 mL

	Code	Product	Unit
	ERD-086	Diisopropyl methyl phosphonate (D_{14},98%) 1000 µg/mL in Methanol	1.2 mL
	ERD-083	Diisopropyl methyl phosphonate (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	ERD-121	Dimethyl hydrogen phosphate (unlabelled) 1000 µg/mL in Methanol	1.2 mL
New	CIL-ULM-4617-1.2	O,O-Dimethyl thiophosphate sodium salt (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	CIL-ULM-6089	O,S-Dimethyl hydrogen thiophosphate sodium salt (unlabelled)	on request
	ERD-085	1,4-Dithiane (D_4,98%) 1000 µg/mL in Methanol	1.2 mL
	ERD-087	1,4-Dithiane (unlabelled) 1000 µg/mL in Methanol	1.2 mL
New	CIL-CLM-6090	Ethyl hydrogen dimethylamidophosphate sodium salt ($^{13}C_4$,99%)	on request
	CIL-ULM-6091-1.2	Ethyl hydrogen dimethylamidophosphate sodium salt (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	CIL-DLM-6098-1.2	Ethyl hydrogen methylphosphonate (ethyl-D_5,98%) 100 µg/mL in Methanol	1.2 mL
	ERE-024	Ethyl methylphosphonic acid (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	CIL-CLM-4874-1.2	1,5-Bis(2-hydroxyethyl thio)-n-pentane (bis-2-hydroxyethyl-$^{13}C_4$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-4872-1.2	1,4-Bis(2-hydroxyethyl thio) butane (bis-2-hydroxyethyl-$^{13}C_4$,99%) 100 µg/mL in Acetonitrile	1.2 mL
	ERI-015	Isopropyl methylphosphonic acid (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	ERI-017	Isopropyl methylphosphonic acid (D_7,98%) 1000 µg/mL in Methanol	1.2 mL
	CIL-DLM-6196-1.2	Methylphosphonic acid (methyl-D_3,98%) 100 µg/mL in Methanol	1.2 mL
	CIL-CDLM-6100-1.2	Methylphosphonic acid (^{13}C, 99%; methyl-D_3, 98%) 100 µg/mL in Methanol	1.2 mL
	ERM-038	Methylphosphonic acid (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	ERP-083	Pinacolyl methylphosphonic acid (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	CIL-CLM-6106-1.2	Ricinine (ring-$^{13}C_5$,99%; cyano-^{13}C,99%) 100 µg/mL in Acetonitrile	1.2 mL
	CIL-CLM-4806-1.2	Thiodiglycol ($^{13}C_4$,99%) 100 µg/mL in Methanol	1.2 mL
	ERT-054	Thiodiglycol (D_8,98%) 1000 µg/mL in Methanol	1.2 mL
	ERT-053	Thiodiglycol (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	ERT-052	Thiodiglycol sulfoxide (unlabelled) 1000 µg/mL in Methanol	1.2 mL
	CIL-CLM-6620-1.2	1,2,2-Trimethylpropyl hydrogen methylphosphonate (trimethylpropyl-$^{13}C_6$,99%) 100 µg/mL in Methanol	1.2 mL

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Establish and maintain EPA method proficiency
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ULTRAcheck® true values are provided in a separate, sealed envelope. Data obtained using the ULTRAcheck® blind sample can be immediately compared against true values supplied. Complete instructions are included with each sample.

Inorganic blind QC samples for drinking water analysis

	Code	Product	Unit
	U-QCI-706A	ULTRAcheck® Metals 1 11 Analytes Sb ..... 6 - 50 µg/L As..... 25 - 150 µg/L Ba ..... 500 - 3000 µg/L Be ..... 1 - 10 µg/L Cd.....2 - 50 µg/L Cr .....10 - 200 µg/L Cu.....50 - 2000 µg/L Pb.....5 - 100 µg/L Ni ..... 10 - 500 µg/L Se ..... 10 - 100 µg/L Tl..... 2 - 10 µg/L Dilute 10 mL of sample to 1 L for final working test sample.	20 mL
	U-QCI-706B	ULTRAcheck® Metals 2 4 Analytes B ..... 400 - 2000 Mn..... 20 - 1000 µg/L Mo .....5 - 150 µg/L Zn .....400 - 3000 µg/L Dilute 10 mL of sample to 1 L for final working test sample.	20 mL
	U-QCI-706C	ULTRAcheck® Mercury 1 Analyte Hg ..... 0.25 - 10 µg/L Dilute 1 mL of sample to 1 L for final working test sample.	5 mL
New	U-QCI-717	ULTRAcheck Corrosivity 5 Analytes Sample consists of two solutions. Alkalinity as $CaCO_3$ ..... 25-200 mg/L Hardness as $CaCO_3$ ..... 75-375 mg/L pH .....5-10 units Total filterable residue..... 200-450 mg/L Sodium..... 12-24 mg/L Dilute10 mL of each solution to 1 L in the same flask for final working test sample.	2 x 20 mL
New	U-QCI-757	ULTRAcheck Anions 4 Analytes Sample consists of two solutions. Fluoride..... 1-8 mg/L Nitrate as N..... 3-10 mg/L Nitrite as N ..... 0.4-2.0 mg/L Orthophosphate as P ..... 0.5-5.5 mg/L Dilute 10 mL of each solution to 1 L in the same flask for final working test sample.	2 x 20 mL
	U-QCI-718	ULTRAcheck® Sulfate / TOC 2 Analytes Sulfate..... 6 - 500 mg/L Total organic carbon (TOC)..... 0.9 - 5 mg/L Dilute 10 mL of sample to 1L for final working test sample.	20 mL
New	U-QCI-787	ULTRAcheck® WS Inorganic Disinfection By-Products 4 Analytes Sample consists of two solutions Bromate ..... 7-50 µg/L Bromide ..... 75-500 µg/L Chlorate ..... 60-180 µg/L Chlorite..... 100-1000 µg/L Dilute 10 mL of each solution to 1 L in the same flask for final working test sample.	kit
New	U-QCI-786	ULTRAcheck WS Residual Free Chlorine Residual free chlorine..... 0.5-3.0 mg/L Dilute 10 mL of sample to 1 L for final working test sample.	20 mL

ULTRAcheck® blind, quality control check standards

	Code	Product	Unit
New	U-QCI-795	ULTRAcheck WS Turbidity Turbidity .....0.5-8 NTU Dilute 10 mL of sample to 200 mL for final working test sample.	20 mL
	U-QCI-756	ULTRAcheck® Free Cyanide 1 Analyte free cyanide ..... 0.1 - 0.5 mg/L Dilute 10 mL of sample to 1 L for final working test sample.	20 mL
New	U-QCI-701	ULTRAcheck® Metals 18 Analytes Sample consists of two solutions. Aluminum (Al) .....40-2000 µg/L Antimony (Sb) .....4-500 µg/L Arsenic (As) .....4-500 µg/L Barium (Ba).....20-2000 µg/L Beryllium (Be) .....4-500 µg/L Cadmium (Cd) .....4-500 µg/L Calcium (Ca) ..... 30-75 mg/L Chromium (Cr) ..... 40-2000 µg/L Copper (Cu)..... 40-2000 µg/L Iron (Fe)..... 40-2000 µg/L Lead (Pb)..... 2-250 µg/L Manganese (Mn) .. 40-2000 µg/L Mercury (Hg) .....2-20 µg/L Nickel (Ni) .....40-2000 µg/L Delenium (Se).....4-500 µg/L Silver (Ag) .....4-500 µg/L Thallium (Tl).....4-500 µg/L Zinc (Zn).....100-1000 µg/L Dilutr 10 mL of QCI-701A and 1 mL of QCI-701B to 2 L in the same flask for final working test sample.	kit
	U-QCI-710	ULTRAcheck® Minerals 9 Analytes Alkalinity as $CaCO_3$ ..... 100 - 600 mg/L pH .....5 - 10 units Conductivity ..... 500 - 2500 µmhos K ..... 2 - 330 mg/L Na ..... 50 - 300 mg/L Chloride.....10 - 250 mg/L Sulfate.....3 - 400 mg/L Fluoride .....1 - 10 mg/L Nitrate as N .....1 - 14 mg/L Ready-to-use whole volume standard.	500 mL
	U-QCI-720	ULTRAcheck® Hardness 3 Analytes Calcium, soluble compounds as Ca .....10 - 150 mg/L Magnesium .....5 - 50 mg/L Total hardness as $CaCO_3$.....45 - 575 mg/L Ready-to-use whole volume standard.	500 mL
	U-QCI-712	ULTRAcheck® ICR Minerals 5 Analytes Calcium, soluble compounds as Ca .....10 - 150 mg/L Alkalinity as $CaCO_3$ .....25 - 200 mg/L pH .....5 - 10 units Total hardness as $CaCO_3$.....50 - 500 mg/L Bromide .....1 - 10 mg/L Ready-to-use whole volume standard.	500 mL
	U-QCI-731	ULTRAcheck® Total Organic Carbon 1 Analyte Total organic carbon (TOC)..... 0.5 - 50 mg/L One 10 mL ampule to be diluted to 2 L.	10 mL
	U-QCI-750	ULTRAcheck® Cyanide 3 Analytes free cyanide ..... 0.02 - 0.5 mg/L Complex cyanide ..... 0.02 - 0.5 mg/L Total cyanide..... 0.04 - 1.0 mg/L Dilute 10 mL of sample to 2 L for final working test sample.	10 mL
	U-QCI-711	ULTRAcheck® Solids 3 Analytes Non-filterable residue (total suspended solids).....20 - 200 mg/L Filterable residue (total dissolved solids).....50 - 5000 mg/L Total solids.....70 - 5200 mg/L Ready-to-use whole volume standard.	500 mL
	U-QCI-751	ULTRAcheck® Nitrite Nitrite as N .....0.1 - 1.0 mg/L Dilute 10 mL of sample to 1 L for final working test sample.	10 mL
	U-QCI-780	ULTRAcheck® Total Residual Chlorine Total residual chlorine..... 0.3 - 5 mg/L Dilute 10 mL of sample to 2 L for final working test sample.	10 mL
	U-QCI-790	ULTRAcheck® Turbidity Turbidity .....0.3 - 40 NTU Dilute 10 mL of sample to 1 L of final working test sample.	10 mL

Code	Product	Unit
U-QCI-761	ULTRAcheck® Total Organic Halides 1 Analyte Total organic halides ..... 5 - 200 µg/L One 2 mL ampoule to be diluted to 2 L.	2 mL

Organic blind QC samples for drinking water analysis

New U-QCM-115 — ULTRAcheck WS Regulated VOCs — 2 mL

21 Analytes

Benzene	2.5 - 20 µg/L	Ethylbenzene	2 - 20 µg/L
Carbon tetrachloride	2.5 - 20 µg/L	Styrene	2 - 20 µg/L
Chlorobenzene	2 - 50 µg/L	Tetrachloroethene	2 - 20 µg/L
1,2-Dichlorobenzene	5 - 20 µg/L	Toluene	2 - 20 µg/L
1,4-Dichlorobenzene	2.5 - 20 µg/L	1,2,4-Trichlorobenzene	2 - 20 µg/L
1,2-Dichloroethane	2 - 20 µg/L	1,1,1-Trichloroethane	2 - 20 µg/L
1,1-Dichloroethene	2 - 20 µg/L	1,1,2-Trichloroethane	2 - 20 µg/L
cis-1,2-Dichloroethene	2 - 50 µg/L	Trichloroethene	2 - 20 µg/L
trans-1,2-Dichloroethene	2 - 50 µg/L	Vinyl chloride	1 - 50 µg/L
Dichloromethane	5 - 20 µg/L	Xylenes (total)	2 - 50 µg/L
1,2-Dichloropropane	2.5 - 20 µg/L		

Dilute 20 µL of sample to 100 mL for final working test sample.

New U-QCM-116 — ULTRAcheck® WS Unregulated VOCs — 2 mL

30 Analytes

2 - 50 µg/L of each analyte

Bromobenzene	2-Chlorotoluene	1,1-Dichloropropene	1,1,2,2-Tetrachloroethane
Bromochloromethane	4-Chlorotoluene	cis-1,3-Dichloropropene	1,2,3-Trichlorobenzene
bromomethane	Dibromomethane	trans-1,3-Dichloropropene	Trichlorofluoromethane
n-Butylbenzene	1,3-Dichlorobenzene	Hexachlorobutadiene	1,2,3-Trichloropropane
sec-Butylbenzene	Dichlorodifluoromethane	Isopropylbenzene	1,2,4-Trimethylbenzene
tert-Butylbenzene	1,1-Dichloroethane	4-Isopropyltoluene	1,3,5-Trimethylbenzene
Chloroethane	1,3-Dichloropropane	n-Propylbenzene	
Chloromethane	2,2-Dichloropropane	1,1,1,2-Tetrachloroethane	

Dilute 20 µL of sample to 100 mL for final working test sample.

New U-QCM-125 — ULTRAcheck® Trihalomethanes — 2 mL

5 Analytes

Bromodichloromethane	10 - 50 µg/L	Dibromochloromethane	10 - 50 µg/L
Bromoform	10 - 50 µg/L	Total trihalomethanes	40-150 µg/L
Chloroform	10 - 50 µg/L		

Dilute 20 µL of sample to 100 mL for final working test sample.

U-QCM-211 — ULTRAcheck® WS Pesticides 1 — 2 mL

11 Analytes

Aldrin	0.1 - 10 µg/L	Hexachlorocyclopentadiene	0.1 - 10 µg/L
Dieldrin	0.1 - 10 µg/L	Lindane (gamma-BHC)	0.1 - 10 µg/L
Endrin	0.1 - 10 µg/L	Methoxychlor	0.1 - 10 µg/L
Heptachlor	0.1 - 10 µg/L	Propachlor	0.1 - 10 µg/L
Heptachlor epoxide - isomer B	0.1 - 10 µg/L	Trifluralin	0.1 - 10 µg/L
Hexachlorobenzene	0.1 - 10 µg/L		

Dilute 5 µL of sample to 100 mL for final working test sample.

U-QCM-212 — ULTRAcheck® WS Pesticides 2 — 2 mL

3 Analytes

Alachlor	0.1 - 10 µg/L
Atrazine	0.1 - 10 µg/L
Simazine	0.1 - 10 µg/L

Dilute 1 mL of sample to 1L for final working test sample.

U-QCM-251 — ULTRAcheck® WS Carbamates — 2 mL

6 Analytes

Aldicarb	0.1 - 10 µg/L	Carbofuran	0.1 - 10 µg/L
Aldicarb sulfone	0.1 - 10 µg/L	Methomyl	0.1 - 10 µg/L
Aldicarb sulfoxide	0.1 - 10 µg/L	Oxamyl	0.1 - 10 µg/L

Dilute 1 mL of sample to 100 mL for final working test sample.

U-QCM-501 — ULTRAcheck® WS Herbicides — 2 mL

8 Analytes

2,4-D	0.1 - 10 µg/L	Dicamba	0.1 - 10 µg/L
Silvex (2,4,5-TP)	0.1 - 10 µg/L	Dinoseb	0.1 - 10 µg/L
Acifluorfen	0.1 - 10 µg/L	Pentachlorophenol	0.1 - 10 µg/L
Dalapon	0.1 - 10 µg/L	Picloram	0.1 - 10 µg/L

Dilute 1 mL of sample to 1 L for final working test sample.

U-QCM-230 — ULTRAcheck® Chlordane — 2 mL

1 Analyte

Chlordane ..... 0.1 - 10 µg/L

Dilute 1 mL of sample to 1 L for final working test sample.

Code	Product	Unit
U-QCM-220	ULTRAcheck® Toxaphene 1 Analyte Toxaphene ..... 0.1 - 10 µg/L Dilute 1 mL of sample to 1 L for final working test sample.	2 mL
U-QCM-260	ULTRAcheck® Regulated SOCs 3 Analytes Diquat (corrected from dibromide) ..... 0.1 - 500 µg/L Endothall ..... 0.1 - 500 µg/L Glyphosate ..... 0.1 - 500 µg/L Dilute 1 mL of sample to 1 L for final working test sample.	2 mL
U-QCM-249	ULTRAcheck® PCB Screening 1 Analyte Aroclor 1260 (PCB 1260) ..... 0.1 - 10 µg/L Dilute 1 mL of sample to 1 L for final working test sample.	2 mL
U-QCM-312	ULTRAcheck® WS Phthalate and Adipate 2 Analytes Bis(2-ethylhexyl) adipate ..... 0.1 - 200 µg/L Bis(2-ethylhexyl)phthalate ..... 0.1 - 200 µg/L Dilute 1 mL of sample to 1 L for final working test sample.	2 mL
U-QCM-550	ULTRAcheck® WS Disinfection By-Products 6 Analytes Bromochloroacetic acid ..... 0.1 - 100 µg/L Dibromoacetic acid ..... 0.1 - 100 µg/L Dichloroacetic acid ..... 0.1 - 100 µg/L Bromoacetic acid ..... 0.1 - 100 µg/L Chloroacetic acid ..... 0.1 - 100 µg/L Trichloroacetic acid ..... 0.1 - 100 µg/L Dilute 1 mL of sample to 100 mL for final working test sample.	2 mL
U-QCM-311	ULTRAcheck® WS PAH 1 Analyte Benzo(a)pyrene ..... 0.1 - 200 µg/L Dilute 1 mL of sample to 1 L for final working test sample.	2 mL
U-QCM-551	ULTRAcheck® WS Chloral Hydrate 1 Analyte Chloral hydrate ..... 0.1 - 100 µg/L Dilute 1 mL of sample to 100 mL for final working test sample.	2 mL
U-QCM-111	ULTRAcheck® WS Regulated VOCs 23 Analytes Benzene ..... 1 - 20 µg/L Carbon tetrachloride ..... 1 - 20 µg/L Chlorobenzene ..... 1 - 20 µg/L 1,2-Dichlorobenzene ..... 1 - 20 µg/L 1,4-Dichlorobenzene ..... 1 - 20 µg/L 1,2-Dichloroethane ..... 1 - 20 µg/L 1,1-Dichloroethene ..... 1 - 20 µg/L cis-1,2-Dichloroethene ..... 1 - 20 µg/L trans-1,2-Dichloroethene ..... 1 - 20 µg/L 1,2-Dichloropropane ..... 1 - 20 µg/L Ethylbenzene ..... 1 - 20 µg/L Methylene chloride (Dichloromethane) ..... 1 - 20 µg/L Styrene ..... 1 - 20 µg/L Tetrachloroethene ..... 1 - 20 µg/L Toluene ..... 1 - 20 µg/L 1,2,4-Trichlorobenzene ..... 1 - 20 µg/L 1,1,1-Trichloroethane ..... 1 - 20 µg/L 1,1,2-Trichloroethane ..... 1 - 20 µg/L Trichloroethene ..... 1 - 20 µg/L Vinyl chloride ..... 1 - 20 µg/L o-Xylene ..... 1 - 20 µg/L m-Xylene ..... 1 - 20 µg/L p-Xylene ..... 1 - 20 µg/L Dilute 5 µL of sample to 100 mL for final working test sample.	2 mL
U-QCM-112	ULTRAcheck® WS Unregulated VOCs 29 Analytes Bromobenzene ..... 1 - 20 µg/L Bromomethane ..... 1 - 20 µg/L n-Butylbenzene ..... 1 - 20 µg/L sec-Butylbenzene ..... 1 - 20 µg/L tert-Butylbenzene ..... 1 - 20 µg/L Chloroethane ..... 1 - 20 µg/L Chloroform ..... 1 - 20 µg/L Chloromethane ..... 1 - 20 µg/L 2-Chlorotoluene ..... 1 - 20 µg/L 4-Chlorotoluene ..... 1 - 20 µg/L Dibromomethane ..... 1 - 20 µg/L 1,3-Dichlorobenzene ..... 1 - 20 µg/L 1,1-Dichloroethane ..... 1 - 20 µg/L 1,3-Dichloropropane ..... 1 - 20 µg/L 2,2-Dichloropropane ..... 1 - 20 µg/L 1,1-Dichloropropene ..... 1 - 20 µg/L trans-1,3-Dichloropropene ..... 1 - 20 µg/L cis-1,3-Dichloropropene ..... 1 - 20 µg/L Hexachlorobutadiene ..... 1 - 20 µg/L Isopropylbenzene ..... 1 - 20 µg/L 4-Isopropyltoluene ..... 1 - 20 µg/L n-Propylbenzene ..... 1 - 20 µg/L 1,1,1,2-Tetrachloroethane ..... 1 - 20 µg/L 1,1,2,2-Tetrachloroethane ..... 1 - 20 µg/L 1,2,3-Trichlorobenzene ..... 1 - 20 µg/L Trichlorofluoromethane ..... 1 - 20 µg/L 1,2,3-Trichloropropane ..... 1 - 20 µg/L 1,2,4-Trimethylbenzene ..... 1 - 20 µg/L 1,3,5-Trimethylbenzene ..... 1 - 20 µg/L Dilute 5 µL of sample to 100 mL for final working test sample.	2 mL

Code	Product	Unit

U-QCM-120 ULTRAcheck® Trihalomethanes — 2 mL

4 Analytes

Bromodichloromethane	1 - 20 µg/L	Chloroform	1 - 20 µg/L
Bromoform	1 - 20 µg/L	Dibromochloromethane	1 - 20 µg/L

Dilute 5 µl of sample to 10 mL for final working test sample.

U-QCM-130 ULTRAcheck® EDB / DBCP — 2 mL

2 Analytes

1,2-Dibromo-3-chloropropane (DBCP)	1 - 20 µg/L
1,2-Dibromoethane (EDB)	1 - 20 µg/L

Dilute 5 µL of sample to 100 mL for final working test sample.

U-QCM-110 ULTRAcheck® Volatiles — 2 mL

20 - 30 Analytes from the following list:

Benzene	1 - 20 µg/L	1,1-Dichloropropene	1 - 20 µg/L
Bromochloromethane	1 - 20 µg/L	Ethylbenzene	1 - 20 µg/L
Bromoform	1 - 20 µg/L	Isopropylbenzene	1 - 20 µg/L
n-Butylbenzene	1 - 20 µg/L	4-Isopropyltoluene	1 - 20 µg/L
sec-Butylbenzene	1 - 20 µg/L	Methylene chloride (Dichloromethane)	1 - 20 µg/L
tert-Butylbenzene	1 - 20 µg/L	n-Propylbenzene	1 - 20 µg/L
Carbon tetrachloride	1 - 20 µg/L	Styrene	1 - 20 µg/L
Chlorobenzene	1 - 20 µg/L	1,1,1,2-Tetrachloroethane	1 - 20 µg/L
Chloroform	1 - 20 µg/L	1,1,2,2-Tetrachloroethane	1 - 20 µg/L
2-Chlorotoluene	1 - 20 µg/L	Tetrachloroethene	1 - 20 µg/L
4-Chlorotoluene	1 - 20 µg/L	Toluene	1 - 20 µg/L
Dibromochloromethane	1 - 20 µg/L	1,2,4-Trichlorobenzene	1 - 20 µg/L
1,2-Dibromo-3-chloropropane (DBCP)	1 - 20 µg/L	1,1,1-Trichloroethane	1 - 20 µg/L
1,2-Dibromoethane (EDB)	1 - 20 µg/L	1,1,2-Trichloroethane	1 - 20 µg/L
Dibromomethane	1 - 20 µg/L	Trichloroethene	1 - 20 µg/L
1,2-Dichlorobenzene	1 - 20 µg/L	1,2,4-Trimethylbenzene	1 - 20 µg/L
1,3-Dichlorobenzene	1 - 20 µg/L	1,3,5-Trimethylbenzene	1 - 20 µg/L
1,4-Dichlorobenzene	1 - 20 µg/L	Vinyl chloride	1 - 20 µg/L
1,2-Dichloroethane	1 - 20 µg/L	o-Xylene	1 - 20 µg/L
1,1-Dichloroethene	1 - 20 µg/L	m-Xylene	1 - 20 µg/L
cis-1,2-Dichloroethene	1 - 20 µg/L	p-Xylene	1 - 20 µg/L
trans-1,2-Dichloroethene	1 - 20 µg/L		

Dilute 5 µL of sample to 100 mL for final working test sample.

U-QCM-310 ULTRAcheck® Semi-Volatiles — 2 mL

10 - 15 Analytes

Acenaphthylene	1 - 20 µg/L	Di-n-butyl phthalate	1 - 20 µg/L
Anthracene	1 - 20 µg/L	Diethyl phthalate	1 - 20 µg/L
Benzo(a)anthracene	1 - 20 µg/L	Dimethyl phthalate	1 - 20 µg/L
Benzo(b)fluoranthene	1 - 20 µg/L	Fuorene	1 - 20 µg/L
Benzo(j)fluoranthene	1 - 20 µg/L	Hexachlorobenzene	1 - 20 µg/L
Benzo(ghi)perylene	1 - 20 µg/L	Hexachlorocyclopentadiene	1 - 20 µg/L
Benzo(a)pyrene	1 - 20 µg/L	Indeno(1,2,3-cd)pyrene	1 - 20 µg/L
Bis(2-ethoxyethyl) phthalate	1 - 20 µg/L	Pentachlorophenol	1 - 20 µg/L
Bis(2-ethylhexyl)phthalate	1 - 20 µg/L	Phenanthrene	1 - 20 µg/L
Butyl benzyl phthalate	1 - 20 µg/L	Pyrene	1 - 20 µg/L
Dibenz(a,h)anthracene	1 - 20 µg/L		

Dilute 1 mL of sample to 1 L for final working test sample.

U-QCM-210 ULTRAcheck® Pesticides — 2 mL

8 - 12 Analytes

Alachlor	0.1 - 10 µg/L	Dieldrin	0.1 - 10 µg/L
Aldrin	0.1 - 10 µg/L	Endosulfan I	0.1 - 10 µg/L
Atrazine	0.1 - 10 µg/L	Endosulfan II	0.1 - 10 µg/L
alpha-BHC (alpha-HCH)	0.1 - 10 µg/L	Endosulfan sulfate	0.1 - 10 µg/L
beta-BHC (beta-HCH)	0.1 - 10 µg/L	Endrin	0.1 - 10 µg/L
delta-BHC (delta-HCH)	0.1 - 10 µg/L	Endrin aldehyde	0.1 - 10 µg/L
gamma-BHC (Lndane)	0.1 - 10 µg/L	Heptachlor	0.1 - 10 µg/L
4,4'-DDD	0.1 - 10 µg/L	Heptachlor epoxide - isomer B	0.1 - 10 µg/L
4,4'-DDT	0.1 - 10 µg/L	Methoxychlor	0.1 - 10 µg/L
4,4'-DDE	0.1 - 10 µg/L		

Dilute 1 mL of sample to 1 L for final working test sample.

U-QCM-250 ULTRAcheck® Carbamate Pesticides — 2 mL

5 - 7 Analytes

Aldicarb	0.1 - 10 µg/L	Carbofuran	0.1 - 10 µg/L
Aldicarb sulfoxide	0.1 - 10 µg/L	Methomyl	0.1 - 10 µg/L
Aldicarb sulfone	0.1 - 10 µg/L	Propoxur	0.1 - 10 µg/L
Carbaryl (Sevin)	0.1 - 10 µg/L		

Dilute 1 mL of sample to 1 L for final working test sample.

U-QCM-213 ULTRAcheck® WS Pesticides 3 — 2 mL

4 Analytes

Butachlor	0.1 - 10 µg/L	Metribuzin	0.1 - 10 µg/L
Metolachlor	0.1 - 10 µg/L	Prometon	0.1 - 10 µg/L

Dilute 1 mL of sample to 1 L for final working test sample.

ULTRAcheck® blind, quality control check standards

Code	Product	Unit
U-QCM-500	ULTRAcheck® Herbicides 4 - 7 Analytes 2,4-D ..... 0.1 - 10 µg/L Dalapon ..... 0.1 - 10 µg/L 2,4-DB ..... 0.1 - 10 µg/L Dinoseb ..... 0.1 - 10 µg/L MCPA ..... 0.1 - 10 µg/L MCPP ..... 0.1 - 10 µg/L Silvex (2,4,5-TP) ..... 0.1 - 10 µg/L 2,4,5-T ..... 0.1 - 10 µg/L Dilute 1 mL of sample to 1 L for final working test sample.	2 mL

Inorganic blind QC samples for non-potable water analysis

Code	Product	Unit
U-QCI-705A	ULTRAcheck® Trace Metals 1 13 Analytes Al ..... 130 - 4000 µg/L As ..... 70 - 900 µg/L Cd ..... 8 - 750 µg/L Cr ..... 17 - 1000 µg/L Co ..... 28 - 1000 µg/L Cu ..... 18 - 900 µg/L Fe ..... 30 - 4000 µg/L Pb ..... 70 - 3000 µg/L Mn ..... 70 - 4000 µg/L Ni ..... 80 - 3000 µg/L Se ..... 90 - 2000 µg/L V ..... 200 - 10000 µg/L Zn ..... 30 - 2000 µg/L Dilute 10 mL of sample to 1 L for final working test sample.	20 mL
U-QCI-705B	ULTRAcheck® Trace Metals 2 7 Analytes Sb ..... 95 - 900 µg/L Be ..... 8 - 900 µg/L Mo ..... 24 - 600 µg/L Ag ..... 26 - 600 µg/L Sr ..... 4 - 300 µg/L Tl ..... 60 - 900 µg/L Ti ..... 35 - 300 µg/L Dilute 10 mL of sample to 1 L for final working test sample.	20 mL
U-QCI-705C	ULTRAcheck® Mercury 1 Analyte Hg ..... 0.25 - 15 µg/L Dilute 1 mL of sample to 1 L for final working test sample.	5 mL
U-QCI-715	ULTRAcheck® Minerals 11 Analytes Ca ..... 3.5 - 110 mg/L Mg ..... 0.9 - 40 mg/L K ..... 2.6 - 40 mg/L Na ..... 7 - 100 mg/L Chloride ..... 35 - 250 mg/L Fluoride ..... 0.2 - 4 mg/L Sulfate ..... 5 - 125 mg/L Specific conductance ..... 50 - 1050 µmhos/cm Total dissolved solids ..... 30 - 650 mg/L Alkalinity as CaCO3 ..... 10 - 120 mg/L Total hardness as CaCO3 ..... 45 - 350 mg/L Sample consist of two solutions. Dilute 10 mL of each solution to 1 L in the same flask for final working test sample.	2 x 20 mL
New U-QCI-745	ULTRAcheck® WP Nutrients 5 Analytes Sample consists of two solutions. Ammonia as N ..... 0.65-19 mg/L Nitrate as N ..... 0.25-40 mg/L Orthophosphate as P ..... 0.5-5.5 mg/L Total kjeldahl nitrogen as N ..... 1.5-35 mg/L Total phosphorus as P ..... 0.5-10 mg/L Dilute 10 mL of each solution to 1 L in separate flasks for final working test samples.	kit
U-QCI-735	ULTRAcheck® Demands Total organic carbon (TOC) ..... 6 - 100 mg/L Chemical oxygen demand COD) ..... 15 - 250 mg/L 5-day biochemical oxygen demand (BOD) ..... 15 - 250 mg/L Carbonaceous biochemical oxygen demand (CBOD) .... 15 - 250 mg/L	20 mL
U-QCI-770	ULTRAcheck® Oil & Grease Total oil and grease ..... 8 - 50 mg/L One 10 mL ampoule to be diluted to 1 L.	10 mL
New U-QCI-765	ULTRAcheck® WP Total Phenolics Total phenolics ..... 0.06-5 mg/L Dilute 10 mL of sample to 1 L for final working test sample.	20 mL
New U-QCI-713	ULTRAcheck® pH pH ..... 5-10 Ready-to-use, whole volume standard.	250 mL
New U-QCI-785	ULTRAcheck® WP Total Residual Chlorine Total residual chlorine ..... 0.5-3.0 mg/L Dilute 10 mL of sample to 1 L for final working test sample.	20 mL
U-QCI-755	ULTRAcheck® Complex Cyanide 1 Analyte Complex cyanide ..... 0.03 - 1.0 mg/L Dilute 10 mL of sample to 1 L for final working test sample.	20 mL

Code	Product	Unit
U-QCI-716	ULTRAcheck® Non-Filterable Residue 1 Analyte Non-filterable residue (total suspended solids) .....23 - 100 mg/L Add 500 mg of sample to 1 L of water for final working test sample.	1 g
New U-QCI-700	ULTRAcheck® Trace Metals 22 Analytes Sample consists of two solutions. Aluminum (Al) ..... 100-1000 µg/L Antimony (Sb) ..... 20-250 µg/L Arsenic (As) ..... 20-250 µg/L Barium (Ba) ..... 100-1000 µg/L Beryllium (Be) ..... 20-250 µg/L Boron (B) ..... 100-1000 µg/L Cadmium (Cd) ..... 20-250 µg/L Chromium (Cr) ..... 100-1000 µg/L Cobalt (Co) ..... 100-1000 µg/L Copper (Cu) ..... 100-1000 µg/L Iron (Fe) ..... 100-1000 µg/L Lead (Pb) ..... 100-1000 µg/L Manganese (Mn) ..... 100-1000 µg/L Mercury (Hg) ..... 2-20 µg/L Molybdenum (Mo) ..... 100-1000 µg/L Nickel (Ni) ..... 100-1000 µg/L Selenium (Se) ..... 20-250 µg/L Silver (Ag) ..... 20-250 µg/L Strontium (Sr) ..... 100-1000 µg/L Thallium (Tl) ..... 20-250 µg/L Vanadium (V) ..... 100-1000 µg/L Zinc (Zn) ..... 100-1000 µg/L Dilute 10 mL of QCI-700A and 1 mL of QCI-700B to 1 L in the same flask for final working test sample.	kit
U-QCI-710	ULTRAcheck® Minerals 9 Analytes Alkalinity as $CaCO_3$ ..... 100 - 600 mg/L pH .....5 - 10 units Conductivity ..... 500 - 2500 µmhos K ..... 2 - 330 mg/L Na ..... 50 - 300 mg/L Chloride ..... 10 - 250 mg/L Sulfate ..... 3 - 400 mg/L Fluoride ..... 1 - 10 mg/L Nitrate as N ..... 1 - 14 mg/L Ready-to-use whole volume standard.	500 mL
U-QCI-720	ULTRAcheck® Hardness 3 Analytes Calcium, soluble compounds as Ca .....10 - 150 mg/L Magnesium .....5 - 50 mg/L Total hardness as $CaCO_3$.....45 - 575 mg/L Ready-to-use whole volume standard.	500 mL
U-QCI-750	ULTRAcheck® Cyanide 3 Analytes free cyanide ..... 0.02 - 0.5 mg/L Complex cyanide ..... 0.02 - 0.5 mg/L Total cyanide ..... 0.04 - 1.0 mg/L Dilute 10 mL of sample to 2 L for final working test sample.	10 mL
U-QCI-760	ULTRAcheck® Phenolics Total phenolics ..... 0.02-0.5 mg/L One 10 mL amoule to be diluted to 2 L.	10 mL
U-QCI-780	ULTRAcheck® Total Residual Chlorine Total residual chlorine ..... 0.3 - 5 mg/L Dilute 10 mL of sample to 2 L for final working test sample.	10 mL
U-QCI-740	ULTRAcheck® Nutrients Each Kit contains two ampules, vials, or bottles Vial 1 Ammonia as N ..... 1 - 20 mg/L Nitrate as N ..... 1 - 20 mg/L Orthophosphate as P ..... 1 - 10 mg/L Vial 2 Total kjeldahl nitrogen as N ..... 1 - 20 mg/L Total phosphous as P ..... 1 - 10 mg/L Two 10 mL ampoules to be diluted to 2 L each.	kit
U-QCI-711	ULTRAcheck® Solids 3 Analytes Non-filterable residue (total suspended solids) .....20 - 200 mg/L Filterable residue (total dissolved solids).....50 - 5000 mg/L Total solids .....70 - 5200 mg/L Ready-to-use whole volume standard.	500 mL
New U-QCI-702	ULTRAcheck® Cations 4 Analytes Calcium (Ca) ..... 20-200 mg/L Magnesium (Mg) ..... 20-200 mg/L Potassium (K) ..... 10-100 mg/L Sodium (Na) ..... 20-250 mg/L Dilute 10 mL of sample to 1 L for final working test sample.	10 mL

ULTRAcheck® blind, quality control check standards

Code	Product	Unit
U-QCI-761	ULTRAcheck® Total Organic Halides 1 Analyte Total organic halides..... 5 - 200 µg/L One 2 mL ampoule to be diluted to 2 L.	2 mL

Organic blind QC samples for non-potable water analysis

Suitable for the EPA 600, 8000, and CLP Methods

New U-QCM-105 — ULTRAcheck® Volatile Halocarbons — 2 mL

11 Analytes

Bromodichloromethane	8-115 µg/L	1,2-Dichloroethane	10-150 µg/L
Bromoform	11-100 µg/L	Methylene chloride	10-125 µg/L
Carbon tetrachloride	10-140 µg/L	Tetrachloroethene	10-150 µg/L
Chlorobenzene	10-120 µg/L	1,1,1-Trichloroethane	10-90 µg/L
Chloroform	12-95 µg/L	Trichloroethene	10-95 µg/L
Dibromochloromethane	11-140 µg/L		

Dilute 20 µL of sample to 100 mL for final working test sample.

New U-QCM-106 — ULTRAcheck® Volatile Aromatics — 2 mL

6 Analytes

Benzene	8-120 µg/L	1,4-Dichlorobenzene	8-115 µg/L
1,2-Dichlorobenzene	8-100 µg/L	Ethylbenzene	9-100 µg/L
1,3-dichlorobenzene	9-125 µg/L	Toluene	7-100 µg/L

Dilute 20 µL of sample to 100 mL for final working test sample.

New U-QCM-205 — ULTRAcheck® Pesticides — 2 mL

7 Analytes

Aldrin	0.5-15 µg/L	4,4'-DDE	2-10 µg/L	Heptachlor epoxide	1-10 µg/L
Dieldrin	1-13 µg/L	4,4'-DDT	1-10 µg/L		
4,4'-DDD	2-10 µg/L	Heptachlor	1-10 µg/L		

Dilute 1 mL of sample to 1 L for final working test sample.

U-QCM-230 — ULTRAcheck® Chlordane — 2 mL

1 Analyte

Chlordane ..... 0.1 - 10 µg/L

Dilute 1 mL of sample to 1 L for final working test sample.

New U-QCM-276 — ULTRAcheck® PCBs — 2 mL

1-13 µg/L; the Aroclor used is randomly selected from the following list:

Aroclor 1016/1242
Aroclor 1232
Aroclor 1248
Aroclor 1254
Aroclor 1260

Dilute 1 mL of solution to 1 L in for final working test sample.

U-QCM-100 — ULTRAcheck® Volatiles — 2 mL

18 - 20 Analytes from the following list :

Benzene	5 - 20 µg/L	trans-1,2-Dichloroethene	5 - 20 µg/L
Bromodichloromethane	5 - 20 µg/L	1,2-Dichloropropane	5 - 20 µg/L
Bromoform	5 - 20 µg/L	Ethylbenzene	5 - 20 µg/L
Carbon tetrachloride	5 - 20 µg/L	Methylene chloride (dichloromethane)	5 - 20 µg/L
Chlorobenzene	5 - 20 µg/L	4-Methyl-2-pentanone (MIBK)	5 - 20 µg/L
Chloroform	5 - 20 µg/L	1,1,2,2-Tetrachloroethane	5 - 20 µg/L
Dibromochloromethane	5 - 20 µg/L	Tetrachloroethene	5 - 20 µg/L
1,2-Dichlorobenzene	5 - 20 µg/L	Toluene	5 - 20 µg/L
1,3-Dichlorobenzene	5 - 20 µg/L	1,1,1-Trichloroethane	5 - 20 µg/L
1,4-Dichlorobenzene	5 - 20 µg/L	1,1,2-Trichloroethane	5 - 20 µg/L
1,2-Dichloroethane	5 - 20 µg/L	Trichloroethene	5 - 20 µg/L
1,1-Dichloroethene	5 - 20 µg/L		

Final working sample: 5 - 20 µg/L of each analyte.

U-QCM-300 — ULTRAcheck® Base/Neutrals — 2 mL

14 - 19 Analytes from the following list:

Acenaphthene	10 - 200 µg/L	1,4-Dichlorobenzene	10 - 200 µg/L
Anthracene	10 - 200 µg/L	Diethyl phthalate	10 - 200 µg/L
Benz[a]anthracene	10 - 200 µg/L	Dimethyl phthalate	10 - 200 µg/L
Benzo[b]fluoranthene	10 - 200 µg/L	2,4-Dinitrotoluene	10 - 200 µg/L
Benzo[ghi]perylene	10 - 200 µg/L	Di-n-octyl phthalate	10 - 200 µg/L
Benzo[a]pyrene	10 - 200 µg/L	Fluoranthene	10 - 200 µg/L
Bis(2-ethylhexyl)phthalate	10 - 200 µg/L	Hexachlorobenzene	10 - 200 µg/L
4-Bromophenyl phenyl ether	10 - 200 µg/L	Isophorone	10 - 200 µg/L
Butyl benzyl phthalate	10 - 200 µg/L	Naphthalene	10 - 200 µg/L
Chrysene	10 - 200 µg/L	Nitrobenzene	10 - 200 µg/L
Dibenz(a,h)anthracene	10 - 200 µg/L	Phenanthrene	10 - 200 µg/L
Dibenzofuran	10 - 200 µg/L	Pyrene	10 - 200 µg/L
1,2-Dichlorobenzene	10 - 200 µg/L	1,2,4-Trichlorobenzene	10 - 200 µg/L

Final working sample: 10 - 200 µg/L of each analyte.

Code	Product	Unit

U-QCM-400 — ULTRAcheck® Acids — 2 mL

5 - 8 Analytes from the following list:

4-Chloro-3-methylphenol	10 - 200 µg/L	2-Nitrophenol	10 - 200 µg/L
2-Chlorophenol	10 - 200 µg/L	4-Nitrophenol	10 - 200 µg/L
o-Cresol (2-Methylphenol)	10 - 200 µg/L	Pentachlorophenol	10 - 200 µg/L
2,4-Dichlorophenol	10 - 200 µg/L	Phenol	10 - 200 µg/L
2,4-Dimethylphenol	10 - 200 µg/L	2,4,6-Trichlorophenol	10 - 200 µg/L

Final working sample: 10 - 200 µg/L of each analyte.

U-QCM-200 — ULTRAcheck® Pesticides — 2 mL

9 - 14 Analytes from the following list

Aldrin	0.1 - 10 µg/L	Endosulfan I	0.1 - 10 µg/L
alpha-BHC (alpha-HCH)	0.1 - 10 µg/L	Endosulfan II	0.1 - 10 µg/L
beta-BHC (beta-HCH)	0.1 - 10 µg/L	Endosulfan sulfate	0.1 - 10 µg/L
delta-BHC (delta-HCH)	0.1 - 10 µg/L	Endrin	0.1 - 10 µg/L
gamma-BHC (Lindane)	0.1 - 10 µg/L	Endrin aldehyde	0.1 - 10 µg/L
4,4'-DDD	0.1 - 10 µg/L	Heptachlor	0.1 - 10 µg/L
4,4'-DDT	0.1 - 10 µg/L	Heptachlor epoxide - isomer B	0.1 - 10 µg/L
4,4'-DDE	0.1 - 10 µg/L	Methoxychlor	0.1 - 10 µg/L
Dieldrin	0.1 - 10 µg/L		

Final working sample: 0.1- 10 µg/L of each analyte.

U-QCM-220 — ULTRAcheck® Toxaphene — 2 mL

1 Analyte

Toxaphene ..... 0.1 - 10 µg/L

Dilute 1 mL of sample to 1 L for final working test sample.

U-QCM-240 — ULTRAcheck® PCBs — 2 mL

1 - 2 Analytes from the following list:

Aroclor 1016 (PCB 1016)	0.1 - 10 µg/L	Aroclor 1248 (PCB 1248)	0.1 - 10 µg/L
Aroclor 1221 (PCB 1221)	0.1 - 10 µg/L	Aroclor 1254 (PCB 1254)	0.1 - 10 µg/L
Aroclor 1232 (PCB 1232)	0.1 - 10 µg/L	Aroclor 1260 (PCB 1260)	0.1 - 10 µg/L
Aroclor 1242 (PCB 1242)	0.1 - 10 µg/L		

Final working sample: 0.1 - 10 µg/L of each analyte.

U-QCK-900 — ULTRAcheck® Waste Water Series Kit — kit

Each Kit contains 1 x 2 mL each of the following:

Volatiles	U-QCM-100	Chlordane	U-QCM-230	Acids	U-QCM-400
Pesticides	U-QCM-200	PCBs	U-QCM-240		
Toxaphene	U-QCM-220	Base/Neutrals	U-QCM-300		

Blind QC samples for underground storage tanks, hydrocarbon fuels and TPH

U-QCM-600 — ULTRAcheck® Gasoline — 2 mL

1 Analyte

Gasoline (regular unleaded) ..... 0.1 - 5 mg/L

Final working sample: 0.1 - 5 mg/L.

U-QCM-610 — ULTRAcheck® Diesel Oil — 2 mL

Diesel fuel #2 ..... 0.1 - 5 mg/L

Final working sample: 0.1 - 5 ml/L.

U-QCM-630 — ULTRAcheck® TPH In Water — 250 mL

Without fatty acids

Total petroleum hydrocarbons ..... 10 - 200 mg/L

U-QCM-140 — ULTRAcheck® BETX — 2 mL

4 Analytes

Benzene	1 - 200 µg/L	m-Xylene	1 - 200 µg/L
Ethylbenzene	1 - 200 µg/L	p-Xylene	1 - 200 µg/L
Toluene	1 - 200 µg/L	o-Xylene	1 - 200 µg/L

Final working sample: 1 - 200 µg/L of each analyte.

U-QCM-620 — ULTRAcheck® Gasoline Additives — 2 mL

4 Analytes

tert-Butylmethyl ether (MTBE)	10 - 2000 µg/L	Dibromomethane	10 - 2000 µg/L
1,2-Dibromoethane (EDB)	10 - 2000 µg/L	1,2-Dichloroethane	10 - 2000 µg/L

Final working sample: 10 - 200 µg/mL of each analyte.

U-QCM-631 — ULTRAcheck® TPH In Water w/ Fatty Acids — 250 mL

With fatty acids

Total petroleum hydrocarbons ..... 10 - 200 mg/L
Dodecanoic acid (Lauric acid) .....100 mg/L

Code	Product	Unit

Blind QC samples for aroclors

U-QCM-241	ULTRAcheck® Aroclor 1242 in Transformer Oil 1 Analyte Aroclor 1242 (PCB 1242)..... 10 - 50 mg/kg	5 mL
U-QCM-242	ULTRAcheck® Aroclor 1242 in Transformer Oil 1 Analyte Aroclor 1242 (PCB 1242)..... 51 - 500 mg/kg	5 mL
U-QCM-243	ULTRAcheck® Aroclor 1248 in Transformer Oil 1 Analyte Aroclor 1248 (PCB 1248)..... 10 - 50 mg/kg	5 mL
U-QCM-244	ULTRAcheck® Aroclor 1248 in Transformer Oil 1 Analyte Aroclor 1248 (PCB 1248)..... 51 - 500 mg/kg	5 mL
U-QCM-245	ULTRAcheck® Aroclor 1254 in Transformer Oil 1 Analyte Aroclor 1254 (PCB 1254)..... 10 - 50 mg/kg	5 mL
U-QCM-246	ULTRAcheck® Aroclor 1254 in Transformer Oil 1 Analyte Aroclor 1254 (PCB 1254)..... 51 - 500 mg/kg	5 mL
U-QCM-247	ULTRAcheck® Aroclor 1260 in Transformer Oil 1 Analyte Aroclor 1260 (PCB 1260)..... 10 - 50 mg/kg	5 mL
U-QCM-248	ULTRAcheck® Aroclor 1260 in Transformer Oil 1 Analyte Aroclor 1260 (PCB 1260)..... 51 - 500 mg/kg	5 mL
U-QCM-249	ULTRAcheck® PCB Screening 1 Analyte Aroclor 1260 (PCB 1260)..... 0.1 - 10 µg/L Dilute 1 mL of sample to 1 L for final working test sample.	2 mL
U-QCM-240	ULTRAcheck® PCBs 1 - 2 Analytes from the following list: Aroclor 1016 (PCB 1016)..... 0.1 - 10 µg/L Aroclor 1221 (PCB 1221)..... 0.1 - 10 µg/L Aroclor 1232 (PCB 1232)..... 0.1 - 10 µg/L Aroclor 1242 (PCB 1242)..... 0.1 - 10 µg/L Aroclor 1248 (PCB 1248)..... 0.1 - 10 µg/L Aroclor 1254 (PCB 1254)..... 0.1 - 10 µg/L Aroclor 1260 (PCB 1260)..... 0.1 - 10 µg/L Final working sample: 0.1 - 10 µg/L of each analyte.	2 mL
New U-QCM-276	ULTRAcheck® PCBs 1-13 µg/L; the Aroclor used is randomly selected from the following list: Aroclor 1016/1242 Aroclor 1232 Aroclor 1248 Aroclor 1254 Aroclor 1260 Dilute 1 mL of solution to 1 L in for final working test sample.	2 mL

EPA 500 Methods

Analysis of finished drinking waters and raw source water

The EPA 500 methods are designed to identify and quantify organic compounds in municipal drinking water. This series consists of twenty-nine methods for the detection of volatile organic compounds (VOCs), pesticides, and synthetic organic compounds (SOC). These methods are cited under the Safe Drinking Water Act (SWDA).

ULTRA Scientific has prepared a series of VOC, pesticide, and SOC reference standards for the 500 series methods as well as the necessary surrogate and internal standards. Each analyte in a reference standard is pre-analysed, with most analytes being >99% pure. All solvents are of the highest quality available. All solutions are gravimetrically prepared to a precision of ± 0.5%. A certificate showing the actual weights used is supplied with each mixture.

Code	Product	Unit

EPA Method 501

Trihalomethanes in drinking waters

Method 501 is a purge and trap method for measurements of total trihalomethanes using GC/ECD. These standards may be used for methods 501.1, 501.2, and 501.3.

Recommended standards

Calibration standards: U-THM-501N
U-THM-511
U-THM-521

U-THM-501N-1	Trihalomethanes Mixture 100 µg/mL of each analyte in Methanol. Bromodichloromethane Bromoform Chloroform Dibromochloromethane	1 mL
U-THM-501N	Trihalomethanes Mixture	4 x 1 mL
U-THM-511-1	Trihalomethanes Mixture 200 µg/mL of each analyte in Methanol. Bromodichloromethane Bromoform Chloroform Dibromochloromethane	1 mL
U-THM-511	Trihalomethanes Mixture	4 x 1 mL
U-THM-521-1	Trihalomethane Mixtures 5000 µg/mL of each analyte in Methanol. Bromodichloromethane Bromoform Chloroform Dibromochloromethane	1 mL
U-THM-521	EPA Method 501 Trihalomethane Mixture	4 x 1 mL
U-THK-501	Trihalomethanes Kit Bromodichloromethane Solution (100 µg/mL in Methanol) ..... U-HC-010 (1 x 1 mL) Bromoform Solution (100 µg/mL in Methanol)..... U-HC-020 (1 x 1 mL) Chloroform Solution (100 µg/mL in Methanol)..... U-HC-080 (1 x 1 mL) Dibromochloromethane Solution (100 µg/mL in Methanol) ..... U-HC-100 (1 x 1 mL) Trihalomethanes Mixture (100 µg/mL in Methanol) ..... U-THM-501N (1 x 1 mL)	kit

EPA Method 502.2

Volatile organic compounds in water

Method 502.2 is an enhanced and expanded version 502.1. It is a purge and trap GC method, but uses a capillary column to effect a more efficient separation. Detection is carried our using a photoionization detector in series with either an electrolytic conductivity or microcoulometric detector, allowing determination of all sixty analytes of interest.

Recommended standards

Calibration standards: U-DWM-580
U-DWM-588
Internal standard: U-STM-240N

Code	Product	Unit
U-DWM-580-1	VOC Mixture 200 µg/mL of each analyte in Methanol.	1 mL

Bromochloromethane	n-Butylbenzene
Bromodichloromethane	sec-Butylbenzene
Bromoform	tert-Butylbenzene
Carbon tetrachloride	Ethylbenzene
Chloroform	Isopropylbenzene
Dibromochloromethane	4-Isopropyltoluene
Dibromomethane	Naphthalene
Methylene chloride	n-Propylbenzene
1,2-Dibromoethane	Styrene
1,1-Dichloroethane	Toluene
1,2-Dichloroethane	1,2,4-Trimethylbenzene
1,1-Dichloroethene	1,3,5-Trimethylbenzene
cis-1,2-Dichloroethene	o-Xylene
trans-1,2-Dichloroethene	m-Xylene
1,1,1,2-Tetrachloroethane	p-Xylene
1,1,2,2-Tetrachloroethane	Bromobenzene
Tetrachloroethene	Chlorobenzene
1,1,1-Trichloroethane	2-Chlorotoluene
1,1,2-Trichloroethane	4-Chlorotoluene
Trichloroethene	1,2-Dichlorobenzene
1,2-Dibromo-3-chloropropane	1,3-Dichlorobenzene
1,2-Dichloropropane	1,4-Dichlorobenzene
1,3-Dichloropropane	1,2,3-Trichlorobenzene
2,2-Dichloropropane	1,2,4-Trichlorobenzene
1,1-Dichloropropene	Bromomethane
cis-1,3-Dichloropropene	Chloroethane
trans-1,3-Dichloropropene	Chloromethane
Hexachlorobutadiene	Dichlorodifluoromethane
1,2,3-Trichloropropane	Trichlorofluoromethane
Benzene	Vinyl chloride

U-DWM-580	VOC Mixture	4 x 1 mL
U-DWM-588-1	VOC Mixture 2000 µg/mL of each analyte in Methanol.	1 mL

Bromochloromethane	n-Butylbenzene
Bromodichloromethane	sec-Butylbenzene
Bromoform	tert-Butylbenzene
Carbon tetrachloride	Ethylbenzene
Chloroform	Isopropylbenzene
Dibromochloromethane	4-Isopropyltoluene
Dibromomethane	Naphthalene
Methylene chloride	n-Propylbenzene
1,2-Dibromoethane	Styrene
1,1-Dichloroethane	Toluene
1,2-Dichloroethane	1,2,4-Trimethylbenzene
1,1-Dichloroethene	1,3,5-Trimethylbenzene
cis-1,2-Dichloroethene	o-Xylene
trans-1,2-Dichloroethene	m-Xylene
1,1,1,2-Tetrachloroethane	p-Xylene
1,1,2,2-Tetrachloroethane	Bromobenzene
Tetrachloroethene	Chlorobenzene
1,1,1-Trichloroethane	2-Chlorotoluene
1,1,2-Trichloroethane	4-Chlorotoluene
Trichloroethene	1,2-Dichlorobenzene
1,2-Dibromo-3-chloropropane	1,3-Dichlorobenzene
1,2-Dichloropropane	1,4-Dichlorobenzene
1,3-Dichloropropane	1,2,3-Trichlorobenzene
2,2-Dichloropropane	1,2,4-Trichlorobenzene
1,1-Dichloropropene	Bromomethane
cis-1,3-Dichloropropene	Chloroethane
trans-1,3-Dichloropropene	Chloromethane
Hexachlorobutadiene	Dichlorodifluoromethane
1,2,3-Trichloropropane	Trichlorofluoromethane
Benzene	Vinyl chloride

U-DWM-588	VOC Mixture	4 x 1 mL
U-STM-240N-1	Internal Standard Mixture 2000 µg/mL of each analyte in Methanol	1 mL

2-Bromo-1-chloropropane	Fluorobenzene

U-STM-240N	Internal Standard Mixture	4 x 1 mL

Code	Product	Unit
U-DWM-583-1	VOC Mixture 200 µg/mL of each analyte in Methanol. Benzene Bromobenzene Bromochloromethane Bromodichloromethane Bromoform n-Butylbenzene sec-Butylbenzene tert-Butylbenzene Carbon tetrachloride Chlorobenzene Chloroform 2-Chlorotoluene 4-Chlorotoluene Dibromochloromethane 1,2-Dibromo-3-chloropropane 1,2-Dibromoethane Dibromomethane 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethene cis-1,2-Dichloroethene trans-1,2-Dichloroethene 1,2-Dichloropropane 1,3-Dichloropropane 2,2-Dichloropropane 1,1-Dichloropropene cis-1,3-Dichloropropene trans-1,3-Dichloropropene Ethylbenzene Hexachlorobutadiene Isopropylbenzene 4-Isopropyltoluene Methylene chloride Naphthalene n-Propylbenzene Styrene 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Tetrachloroethene Toluene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,1,1-Trichloroethane 1,1,2-Trichloroethane Trichloroethene 1,2,3-Trichloropropane 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene o-Xylene m-Xylene p-Xylene	1 mL
U-DWM-583	VOC Mixture	4 x 1 mL
U-DWM-589N-1	VOC Mixture 2000 µg/mL of each analyte in Methanol. Benzene Bromobenzene Bromochloromethane Bromodichloromethane Bromoform n-Butylbenzene sec-Butylbenzene tert-Butylbenzene Carbon tetrachloride Chlorobenzene Chloroform 2-Chlorotoluene 4-Chlorotoluene Dibromochloromethane 1,2-Dibromo-3-chloropropane 1,2-Dibromoethane Dibromomethane 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethene cis-1,2-Dichloroethene trans-1,2-Dichloroethene 1,2-Dichloropropane 1,3-Dichloropropane 2,2-Dichloropropane 1,1-Dichloropropene cis-1,3-Dichloropropene trans-1,3-Dichloropropene Ethylbenzene Hexachlorobutadiene Isopropylbenzene 4-Isopropyltoluene Methylene chloride Naphthalene n-Propylbenzene Styrene 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Tetrachloroethene Toluene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,1,1-Trichloroethane 1,1,2-Trichloroethane Trichloroethene 1,2,3-Trichloropropane 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene o-Xylene m-Xylene p-Xylene	1 mL
U-DWM-589N	VOC Mixture	4 x 1 mL
U-DWM-584-1	VOC Gas Mixture 200 µg/mL of each analyte in Methanol. Bromomethane Chloroethane Chloromethane Dichlorodifluoromethane Trichlorofluoromethane Vinyl chloride	1 mL
U-DWM-584	VOC Gas Mixture	4 x 1 mL
U-DWM-544-1	VOC Gas Mixture 2000 µg/mL of each analyte in Methanol. Bromomethane Chloroethane Chloromethane Dichlorodifluoromethane Trichlorofluoromethane Vinyl chloride	1 mL
U-DWM-544	VOC Gas Mixture	4 x 1 mL
U-STM-460-1	Internal Standard Mixture 2000 µg/mL of each analyte in Methanol 2-Bromo-1-chloropropane 1-Chloro-2-fluorobenzene	1 mL
U-STM-460	Internal Standard Mixture	4 x 1 mL
U-STS-190-1	2-Bromo-1-chloropropane 2000 µg/mL in Methanol	1 mL
U-STS-190	2-Bromo-1-chloropropane 2000 µg/mL in Methanol	4 x 1 mL

Code	Product	Unit
U-STS-450-1	1-Chloro-2-fluorobenzene 2000 µg/mL in Methanol	1 mL
U-STS-450	1-Chloro-2-fluorobenzene 2000 µg/mL in Methanol	4 x 1 mL
U-STS-200-1	1,4-Dichlorobutane 2000 µg/mL in Methanol	1 mL
U-STS-200	1,4-Dichlorobutane 2000 µg/mL in Methanol	4 x 1 mL
U-STS-160-1	Fluorobenzene 2000 µg/mL in Methanol	1 mL
U-STS-160	Fluorobenzene 2000 µg/mL in Methanol	4 x 1 mL
New U-DWM-596-1	VOC Mixture with MTBE 55 analytes 2000 µg/mL of each analyte in Methanol	1 mL

Benzene
Bromobenzene
Bromochloromethane
Bromodichloromethane
Bromoform
n-Butylbenzene
sec-Butylbenzene
tert-Butylbenzene
tert-Butyl methyl ether
Carbon tetrachloride
Chlorobenzene
Chloroform
2-Chlorotoluene
4-Chlorotoluene
Dibromochloromethane
1,2-Dibromo-3-chloropropane
1,2-Dibromoethane
Dibromomethane
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-dichlorobenzene
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
cis-1,2-Dichloroethene
trans-1,2-Dichloroethene
1,2-Dichloropropane
1,3-Dichloropropane
2,2-Dichloropropane
1,1-Dichloropropene
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
dthylbenzene
Hexachlorobutadiene
Isopropylbenzene
4-isopropyltoluene
Methylene chloride
Naphthalene
n-propylbenzene
Styrene
1,1,1,2-Tetrachloroethane
1,1,2,2-tetrachloroethane
Tetrachloroethene
Toluene
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
1,2,3-Trichloropropane
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
o-Xylene
m-Xylene
p-Xylene

New U-DWM-596	VOC Mixture with MTBE	4 x 1 mL
U-DWM-540-1	Haloalkanes Mixture 200 µg/mL of each analyte in Methanol.	1 mL

Bromochloromethane
Bromodichloromethane
Bromoform
Bromomethane
Carbon tetrachloride
Chloroethane
Chloroform
Chloromethane
Dibromochloromethane
1,2-Dibromo-3-chloropropane
1,2-Dibromoethane
Dibromomethane
Dichlorodifluoromethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
cis-1,2-Dichloroethene
trans-1,2-Dichloroethene
1,2-Dichloropropane
1,3-Dichloropropane
2,2-Dichloropropane
1,1-Dichloropropene
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Hexachlorobutadiene
Methylene chloride
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Trichlorofluoromethane
1,2,3-Trichloropropane
Vinyl chloride

U-DWM-540	Haloalkanes Mixture	4 x 1 mL
U-DWM-510-1	Halomethanes Mixture 200 µg/mL of each analyte in Methanol.	1 mL

Bromochloromethane	Bromomethane	Chloromethane	Dichlorodifluoromethane
Bromodichloromethane	Carbon tetrachloride	Dibromochloromethane	Methylene chloride
Bromoform	Chloroform	Dibromomethane	Trichlorofluoromethane

U-DWM-510	Halomethanes Mixture	4 x 1 mL
U-DWM-520-1	Haloethanes Mixture 200 µg/mL of each analyte in Methanol.	1 mL

Chloroethane
1,2-Dibromoethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
cis-1,2-Dichloroethene
trans-1,2-Dichloroethene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Vinyl chloride

U-DWM-520	Haloethanes Mixture	4 x 1 mL

Code	Product	Unit
U-DWM-530-1	Halopropanes Mixture 200 µg/mL of each analyte in Methanol. 1,2-Dibromo-3-chloropropane, 1,2-Dichloropropane, 1,3-Dichloropropane, 2,2-Dichloropropane, 1,1-Dichloropropene, cis-1,3-Dichloropropene, trans-1,3-Dichloropropene, Hexachlorobutadiene, 1,2,3-Trichloropropane	1 mL
U-DWM-530	Halopropanes Mixture	4 x 1 mL
U-DWM-550-1	Aromatic Hydrocarbons Mixture 200 µg/mL of each analyte in Methanol. Benzene, n-Butylbenzene, sec-Butylbenzene, tert-Butylbenzene, Ethylbenzene, Isopropylbenzene, 4-Isopropyltoluene, Naphthalene, n-Propylbenzene, Styrene, Toluene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, m-Xylene, o-Xylene, p-Xylene	1 mL
U-DWM-550	Aromatic Hydrocarbons Mixture	4 x 1 mL
U-DWM-560-1	Aromatic Halocarbons Mixture 200 µg/mL of each analyte in Methanol. Bromobenzene, Chlorobenzene, 2-Chlorotoluene, 4-Chlorotoluene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene	1 mL
U-DWM-560	Aromatic Halocarbons Mixture	4 x 1 mL
U-DWM-570-1	Aromatics Mixture 200 µg/mL of each analyte in Methanol. Benzene, Bromobenzene, n-Butylbenzene, sec-Butylbenzene, tert-Butylbenzene, Chlorobenzene, 2-Chlorotoluene, 4-Chlorotoluene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Ethylbenzene, Isopropylbenzene, 4-Isopropyltoluene, Naphthalene, n-Propylbenzene, Styrene, Toluene, 1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, m-Xylene, o-Xylene, p-Xylene	1 mL
U-DWM-570	Aromatics Mixture	4 x 1 mL

EPA Method 503.1

Volatile aromatics and unsaturated organic compounds

Method 503.1 is applicable for the determination of volatile aromatic and unsaturated compounds. It is purge and trap method, using GC with a high temperature photoionization detector.

Recommended standards

Calibration standard: U-DWM-503
Internal standard: U-STS-220N

U-DWM-503-1	Aromatics & Alkenes Mixture 200 µg/mL of each analyte in Methanol. Benzene, Bromobenzene, n-Butylbenzene, sec-Butylbenzene, tert-Butylbenzene, Chlorobenzene, 2-Chlorotoluene, 4-Chlorotoluene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Ethylbenzene, Hexachlorobutadiene, Isopropylbenzene, 4-Isopropyltoluene, Naphthalene, n-Propylbenzene, Styrene, Tetrachloroethene, Toluene, 1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene, Trichloroethene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, m-Xylene, o-Xylene, p-Xylene	1 mL
U-DWM-503	Aromatics & Alkenes Mixture	4 x 1 mL
U-STS-220N-1	alpha,alpha,alpha-Trifluorotoluene 2000 µg/mL in Methanol	1 mL
U-STS-220N	alpha,alpha,alpha-Trifluorotoluene 2000 µg/mL in Methanol	4 x 1 mL
U-STS-221-1	alpha,alpha,alpha-Trifluorotoluene 200 µg/mL in Methanol	1 mL
U-STS-221	alpha,alpha,alpha-Trifluorotoluene 200 µg/mL in Methanol	4 x 1 mL
U-DWM-550-1	Aromatic Hydrocarbons Mixture 200 µg/mL of each analyte in Methanol. Benzene, n-Butylbenzene, sec-Butylbenzene, tert-Butylbenzene, Ethylbenzene, Isopropylbenzene, 4-Isopropyltoluene, Naphthalene, n-Propylbenzene, Styrene, Toluene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, m-Xylene, o-Xylene, p-Xylene	1 mL
U-DWM-550	Aromatic Hydrocarbons Mixture	4 x 1 mL
U-DWM-563-1	Halocarbons Mixture 200 µg/mL of each analyte in Methanol. Bromobenzene, Chlorobenzene, 2-Chlorotoluene, 4-Chlorotoluene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Hexachlorobutadiene, Tetrachloroethene, 1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene, Trichloroethene	1 mL

Code	Product	Unit
U-DWM-563	Halocarbons Mixture	4 x 1 mL

EPA Method 504, 504.1

EDB, DBCP, and 123TCP

Method 504 is used to measure low concentrations of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB). It is an extraction method, using GC with a capture column and electron capture detector. Method 504.1 adds 1,2,3-trichloropropane to the analyte list.

Recommended Standards

Method 504

Calibration Standards: U-DWM-504N
U-HCM-812

Method 504.1

Calibration Standard: U-DWM-514

Code	Product	Unit
U-DWM-504N-1	DBCP-EDB Mixture 200 µg/mL of each analyte in Methanol. 1,2-Dibromo-3-chloropropane 1,2-Dibromoethane	1 mL
U-DWM-504N	DBCP-EDB Mixture	4 x 1 mL
U-HCM-812-1	DBCP/EDB Mixture 2000 µg/mL of each analyte in Methanol 1,2-Dibromo-3-chloropropane 1,2-Dibromoethane	1 mL
U-HCM-812	DBCP-EDB Mixture	4 x 1 mL
U-DWM-514-1	EPA Method 504.1 Mixture 200 µg/mL of each analyte in Methanol 1,2-Dibromo-3-chloropropane 1,2,3-Trichloropropane 1,2-Dibromoethane	1 mL
U-DWM-514	EPA Method 504.1 Mixture	4 x 1 mL

EPA Method 505

Organohalide pesticides and aroclors

Method 505 is used to analyse for organohalide pesticides and commercial PCBs. It is a microextraction method, using GC with a capillary column and electron capture detector.

Recommended standards

Calibration standards: U-PPM-505D
U-PPM-505E

Code	Product	Unit
U-PPM-505D-1	Organochlorine Pesticides Mixture 12 Analytes in Acetone Alachlor 50 µg/mL Aldrin 20 µg/mL Atrazine 500 µg/mL gamma-BHC (Lindane) 20 µg/mL Dieldrin 20 µg/mL Endrin 20 µg/mL Heptachlor 20 µg/mL Heptachlor epoxide - isomer B 20 µg/mL Hexachlorobenzene 10 µg/mL Hexachlorocyclopentadiene 20 µg/mL Methoxychlor 200 µg/mL Simazine 100 µg/mL	1 mL
U-PPM-505D	Organochlorine Pesticides Mixture	4 x 1 mL
U-PPM-505E-1	Organochlorine Pesticides Mixture 16 Analytes in Acetone Alachlor 10 µg/mL Atrazine 250 µg/mL Simazine 250 µg/mL Methoxychlor 5 µg/mL Aldrin 1 µg/mL alpha-Chlordane 1 µg/mL gamma-Chlordane 1 µg/mL Dieldrin 1 µg/mL Endrin 1 µg/mL gamma-HCH (Lindane) 1 µg/mL Heptachlor 1 µg/mL Heptachlor epoxide - isomer B 1 µg/mL Hexachlorobenzene 1 µg/mL Hexachlorocyclopentadiene 1 µg/mL cis-Nonachlor 1 µg/mL trans-Nonachlor 1 µg/mL	1 mL
U-PPM-505E	Organochlorine Pesticides Mixture	4 x 1 mL
U-PP-150-1	Chlordane 100 µg/mL in Methanol	1 mL
U-PP-150	Chlordane 100 µg/mL in Methanol	4 x 1 mL
U-PP-270-1	Toxaphene 100 µg/mL in Methanol	1 mL
U-PP-270	Toxaphene 100 µg/mL in Methanol	4 x 1 mL
U-PP-280-1	Aroclor 1016 100 µg/mL in Methanol	1 mL
U-PP-280	Aroclor 1016 100 µg/mL in Methanol	4 x 1 mL
U-PP-290-1	Aroclor 1221 100 µg/mL in Methanol	1 mL

Code	Product	Unit
U-PP-290	Aroclor 1221 100 µg/mL in Methanol	4 x 1 mL
U-PP-300-1	Aroclor 1232 100 µg/mL in Methanol	1 mL
U-PP-300	Aroclor 1232 100 µg/mL in Methanol	4 x 1 mL
U-PP-310-1	Aroclor 1242 100 µg/mL in Methanol	1 mL
U-PP-310	Aroclor 1242 100 µg/mL in Methanol	4 x 1 mL
U-PP-340-1	Aroclor 1248 100 µg/mL in Methanol	1 mL
U-PP-340	Aroclor 1248 100 µg/mL in Methanol	4 x 1 mL
U-PP-350-1	Aroclor 1254 100 µg/mL in Methanol	1 mL
U-PP-350	Aroclor 1254 100 µg/mL in Methanol	4 x 1 mL
U-PP-360-1	Aroclor 1260 100 µg/mL in Methanol	1 mL
U-PP-360	Aroclor 1260 100 µg/mL in Methanol	4 x 1 mL

EPA Method 506

Phthalate and adipate

Method 606 is an extraction method, using GC with a capillary column and a photoionization detector.

Recommended standards

Calibration standard: U-PSM-506

U-PSM-506-1	Phthalates Mixture 1000 µg/mL of each analyte in iso-Octane (2,2,4-Trimethylpentane) Bis(2-ethylhexyl) adipate Bis(2-ethylhexyl) phthalate Butyl benzyl phthalate Di-n-butyl phthalate Diethyl phthalate Dimethyl phthalate Di-n-octyl phthalate	1 mL
U-PSM-506	Phthalates Mixture	4 x 1 mL
U-PSM-516-1	Phthalates Mixture 7 Analytes in Methanol Bis(2-ethylhexyl) adipate..... 1200 µg/mL Bis(2-ethylhexyl)phthalate..... 250 µg/mL Butyl benzyl phthalate..... 250 µg/mL Di-n-butyl phthalate..... 100 µg/mL Diethyl phthalate ..... 100 µg/mL Dimethyl phthalate ..... 100 µg/mL Di-n-octyl phthalate ..... 650 µg/mL	1 mL
U-PSM-516	Phthalates Mixture	4 x 1 mL

EPA Method 507

Nitrogen and phosphorus containing pesticides

Method 507 is used to determine nitrogen and phosphorous containing pesticides. It is an extraction method, using GC with a capillary column and a Nitrogen-Phophorous detector.

Recommended standards

Calibration standards: U-NPM-101
U-NPM-102
U-NPM-103
U-NPM-104A
U-NPM-105
U-NPM-109
Internal standard: U-PPS-110
Surrogate standard: U-PPS-100

U-NPM-101-1	Pesticides Mixture 1 1000 µg/mL of each analyte in Methyl tert-butyl ether (MTBE) Ametryn, Disulfoton, Merphos Cycloate, Fenamiphos, Prometon	1 mL
U-NPM-101	Pesticides Mixture 1	4 x 1 mL
U-NPM-102-1	Pesticides Mixture 2 1000 µg/mL of each analyte in Methyl tert-butyl ether (MTBE) Atrazine, Ethoprop (Ethoprofos), Propazine Diphenamid, Mevinphos (Phosdrin), Terbutryn EPTC, Prometryn, Triadimefon	1 mL
U-NPM-102	Pesticides Mixture 2	4 x 1 mL
U-NPM-103-1	Pesticides Mixture 3 1000 µg/mL of each analyte in Methyl tert-butyl ether (MTBE) Butachlor, Metolachlor, Norflurazon Carboxin, Metribuzin, Terbufos Diazinon, MGK-264 (mixed, total), Vernolate	1 mL

EPA 500 Methods

Code	Product	Unit
U-NPM-103	Pesticides Mixture 3	4 x 1 mL
U-NPM-104A-1	Pesticides Mixture 4 1000 µg/mL of each analyte in Acetone Alachlor, Atraton, Bromacil, Butylate, Chlorpropham, Hexazinone, Molinate, Pronamide, Tetrachlorvinphos (Stirofos), Tricyclazole	1 mL
U-NPM-104A	Pesticides Mixture 4	4 x 1 mL
U-NPM-105-1	Pesticides Mixture 5 1000 µg/mL of each analyte in Methyl tert-butyl ether (MTBE) Dichlorvos, Fenarimol, Fluridone, Napropamide, Pebulate, Simetryn, Tebuthiuron, Terbacil	1 mL
U-NPM-105	Pesticides Mixture 5	4 x 1 mL
U-NPM-109-1	Pesticides Mixture 7 1000 µg/mL in of each analyte Acetone Simazine, Methyl paraoxon	1 mL
U-NPM-109	Pesticides Mixture 7	4 x 1 mL
U-PPS-100-1	1,3-Dimethyl-2-nitrobenzene 250 µg/mL in Methyl tert-butyl ether (MTBE)	1 mL
U-PPS-100	1,3-Dimethyl-2-nitrobenzene 250 µg/mL in Methyl tert-butyl ether (MTBE)	4 x 1 mL
U-PPS-110-1	Triphenyl phosphate (TPP) 500 µg/mL in Methyl tert-butyl ether (MTBE)	1 mL
U-PPS-110	Triphenyl phosphate (TPP) 500 µg/mL in Methyl tert-butyl ether (MTBE)	4 x 1 mL
New U-NPM-507-1	Laboratory Performance Check Solution 6 Analytes in Methyl tert-butyl ether Atrazine ..... 150 ng/mL Bromacil ..... 5000 ng/mL Prometon ..... 300 ng/mL Vernolate ..... 50 ng/mL 1,3-Dimethyl-2-nitrobenzene ..... 2500 ng/mL Triphenyl phosphate (TPP) ..... 2500 ng/mL	1 mL
New U-NPM-507	Laboratory Performance Check Solution	4 x 1 mL
U-NPM-106-1	Pesticides Mixture 6 1000 µg/mL of each analyte in Methyl tert-butyl ether (MTBE) Propachlor, Trifluralin, Benefin (benfluralin), Profluralin, Isopropalin, Pendimethalin, Oxadiazon, Oxyfluorfen	1 mL
U-NPM-106	Pesticides Mixture 6	4 x 1 mL
U-NPM-107A-1	Simazine 1000 µg/mL in Acetone	1 mL
U-NPM-107A	Simazine 1000 µg/mL in Acetone	4 x 1 mL
U-NPM-108-1	DEF 1000 µg/mL in Methyl tert.-butyl ether (MTBE)	1 mL
U-NPM-108	DEF 1000 µg/mL in Methyl tert-butyl ether (MTBE)	4 x 1 mL

EPA Method 508, 508.1

Chlorinated pesticides

Method 508 and 508.1 are used to determine chlorinated pesticides. They are extraction methods, using GC with a capillary column and electron capture detector.

Recommended standards

Method 508

Calibration standards:	U-PPM-508B U-PPM-508D
Internal standard:	U-PPS-130
Surrogate standard:	U-PPS-120

Method 508.1

Calibration standards:	U-PPM-508F U-PPM-508G
Internal standard:	U-PPS-132
Surrogate standard:	U-PPS-420

U-PPM-508B-1	Organochlorine Pesticides Mixture 1000 µg/mL of each analyte in Methyl tert-butyl ether (MTBE) Aldrin alpha-BHC (alpha-HCH) beta-BHC (beta-HCH) delta-BHC (delta-HCH) gamma-BHC (lindane) 4,4'-DDD 4,4'-DDE 4,4'-DDT Dieldrin Endosulfan I Endosulfan II Endosulfan sulfate Endrin Endrin aldehyde Heptachlor Heptachlor epoxide - isomer B Methoxychlor	1 mL

Code	Product	Unit
U-PPM-508B	Organochlorine Pesticides Mixture	4 x 1 mL
U-PPM-508D-1	Organochlorine Pesticides Mixture 12 Analytes in Methyl tert-butyl ether (MTBE) alpha-Chlordane ..... 1000 µg/mL gamma-Chlordane ..... 1000 µg/mL Chlorobenzilate ..... 1000 µg/mL Chloroneb ..... 1000 µg/mL Chlorothalonil ..... 1000 µg/mL Chlorpyrifos ..... 1000 µg/mL DCPA (Dacthal) ..... 1000 µg/mL Etridiazole ..... 1000 µg/mL Hexachlorobenzene ..... 1000 µg/mL Propachlor ..... 1000 µg/mL Trifluralin ..... 1000 µg/mL Permethrins (mixed isomers,total) ..... 2000 µg/mL	1 mL
U-PPM-508D	Organochlorine Pesticides Mixture	4 x 1 mL
U-PPS-240-1	Toxaphene 2500 µg/mL in Acetone	1 mL
U-PPS-240	Toxaphene 2500 µg/mL in Acetone	4 x 1 mL
U-PPS-120-1	4,4'-Dichlorobiphenyl 500 µg/mL in Methyl tert-butyl ether (MTBE)	1 mL
U-PPS-120	4,4'-Dichlorobiphenyl 500 µg/mL in Methyl tert-butyl ether (MTBE)	4 x 1 mL
U-PPS-130-1	Pentachloronitrobenzene 100 µg/mL in Methyl tert-butyl ether (MTBE)	1 mL
U-PPS-130	Pentachloronitrobenzene 100 µg/mL in Methyl tert-butyl ether (MTBE)	4 x 1 mL
U-EPA-1165	Cyanazine 1000 µg/mL in Methanol	1 mL
U-PPM-508-1	Laboratory Performance Check Solution 4 Analytes in Methyl tert-butyl ether (MTBE) delta-BHC (delta-HCH) ..... 40 ng/ml Chlorothalonil ..... 50 ng/ml Chlorpyrifos ..... 2 ng/ml DCPA (Dacthal) ..... 50 ng/ml	1 mL
U-PPM-508	Laboratory Performance Check Solution	4 x 1 mL
U-PPM-508F-1	Method 508.1 Organochlorine Pesticide Mixture 100 µg/mL of each analyte in Ethyl acetate Aldrin alpha-BHC (alpha-HCH) beta-BHC (beta-HCH) delta-BHC (delta-HCH) gamma-BHC (Lindane) 4,4'-DDD 4,4'-DDE 4,4'-DDT Dieldrin Endosulfan I Endosulfan II Endosulfan sulfate Endrin Endrin aldehyde Heptachlor Heptachlor epoxide - isomer B Methoxychlor	1 mL
U-PPM-508F	Method 508.1 Organochlorine Pesticide Mixture	4 x 1 mL
U-PPM-508G-1	Method 508.1 Organochlorine Pesticide Mixture 19 Analytes in Ethyl acetate Alachlor ..... 100 µg/mL Atrazine ..... 100 µg/mL Butachlor ..... 100 µg/mL alpha-Chlordane ..... 100 µg/mL gamma-Chlordane ..... 100 µg/mL Chlorobenzilate ..... 100 µg/mL Chloroneb ..... 100 µg/mL Chlorothalonil ..... 100 µg/mL Cyanazine ..... 100 µg/mL DCPA (Dacthal) ..... 100 µg/mL Etridiazole ..... 100 µg/mL Hexachlorobenzene ..... 100 µg/mL Hexachlorocyclopentadiene ..... 100 µg/mL Metolachlor ..... 100 µg/mL Metribuzin ..... 100 µg/mL Permethrins (mixed isomers,total) ..... 200 µg/mL Propachlor ..... 100 µg/mL Simazine ..... 100 µg/mL Trifluralin ..... 100 µg/mL	1 mL
U-PPM-508G	Method 508.1 Organochlorine Pesticide Mixture	4 x 1 mL
U-ISM-451-1	Pesticide Degradation Check Solution 1 µg/mL of each analyte in Ethyl acetate 4,4'-DDT Endrin	1 mL
U-ISM-451	Pesticide Degradation Check Solution	4 x 1 mL
U-PPS-132-1	Pentachloronitrobenzene 1000 µg/mL in Ethyl acetate	1 mL
U-PPS-132	Pentachloronitrobenzene 1000 µg/mL in Ethyl acetate	4 x 1 mL
U-PPS-420-1	4,4'-Dibromobiphenyl 1000 µg/mL in Ethyl acetate	1 mL
U-PPS-420	4,4'-Dibromobiphenyl 1000 µg/mL in Ethyl acetate	4 x 1 mL

EPA Method 508A

Polychlorinated biphenyls

Method 508A is used to screen for PCBs. It is an extraction method, using GC with either a packed or a capillary column, and an electron capture detector.

U-PPS-141-1	Aroclor 1260 Stock 1000 µg/mL in Methanol	1 mL
U-PPS-141	Aroclor 1260 Stock 1000 µg/mL in Methanol	4 x 1 mL
U-PPS-150-1	Decachlorobiphenyl 1000 µg/mL in Toluene	1 mL

Code	Product	Unit
U-PPS-150	Decachlorobiphenyl 1000 µg/mL in Toluene	4 x 1 mL

EPA Method 515.1 and 515.2

Chlorinated acids

Methods 515.1 and 515.2 are used to determine chlorinated acids. They are extraction followed by derivatisation methods, using GC with a capillary column and electron capture detector.

Recommended standards

Method 515.1

Calibration standard:	U-HBM-5155A
Internal standard:	U-PPS-170
Surrogate standard:	U-PPS-160

Method 515.2

Calibration standards:	U-HBM-5152A U-HBM-5153A
Internal standard:	U-PPS-172
Surrogate standard:	U-PPS-162

U-HBM-5155A-1	Chlorinated Herbicides Mixture 16 Analytes in Methyl tert-butyl ether (MTBE)	1 mL

Acifluorfen	100 µg/mL	3,5-Dichlorobenzoic acid	100 µg/mL
Bentazon	200 µg/mL	Dichlorprop	300 µg/mL
Chloramben	100 µg/mL	Dinoseb	200 µg/mL
2,4-D	200 µg/mL	4-Nitrophenol	100 µg/mL
Dalapon	1300 µg/mL	Pentachlorophenol	100 µg/mL
2,4-DB	800 µg/mL	Picloram	100 µg/mL
Tetrachloroterephthalic acid	100 µg/mL	Silvex (2,4,5-TP)	100 µg/mL
Dicamba	100 µg/mL	2,4,5-T	100 µg/mL

U-HBM-5155A	Chlorinated Herbicides Mixture	4 x 1 mL
U-HBM-5155M-1	Chlorinated Herbicides Mixture 16 Analytes in Methyl tert-butyl ether (MTBE)	1 mL

Acifluorfen methyl ester	100 µg/mL	Methyl-3,5-Dichlorobenzoate	100 µg/mL
Bentazon methyl derivative	200 µg/mL	Dichlorprop methyl ester	300 µg/mL
Chloramben methyl ester	100 µg/mL	Dinoseb methyl ether	200 µg/mL
2,4-D methyl ester	200 µg/mL	4-nitroanisole	100 µg/mL
Dalapon methyl ester	1300 µg/mL	Pentachloroanisole	100 µg/mL
2,4-DB methyl ester	800 µg/mL	Picloram methyl ester	100 µg/mL
DCPA (dacthal)	100 µg/mL	Silvex methyl ester	100 µg/mL
Dicamba methyl ester	100 µg/mL	2,4,5-T methyl ester	100 µg/mL

U-HBM-5155M	Chlorinated Herbicides Mixture	4 x 1 mL
U-PPS-160-1	DCAA (2,4-Dichlorophenylacetic acid) 100 µg/mL in Methyl tert-butyl ether (MTBE)	1 mL
U-PPS-160	DCAA (2,4-Dichlorophenylacetic acid) 100 µg/mL in Methyl tert.-butyl ether (MTBE)	4 x 1 mL
U-PPS-161-1	DCAA methyl ester 100 µg/mL in Methyl tert-butyl ether (MTBE)	1 mL
U-PPS-161	DCAA methyl ester 100 µg/mL in Methyl tert.-butyl ether (MTBE)	4 x 1 mL
U-PPS-170-1	4,4'-Dibromooctafluorobiphenyl 100 µg/mL in Methyl tert-butyl ether (MTBE)	1 mL
U-PPS-170	4,4'-Dibromooctafluorobiphenyl 100 µg/mL in Methyl tert-butyl ether (MTBE)	4 x 1 mL
U-HBM-5154A-1	SDWA Herbicides Mixture 6 Analytes in Methanol	1 mL

2,4-D	200 µg/mL	Dinoseb	200 µg/mL	Pentachlorophenol	100 µg/mL
Dalapon	1300 µg/mL	Silvex (2,4,5-TP)	100 µg/mL	Picloram	100 µg/mL

U-HBM-5154A	SDWA Herbicides Mixture	4 x 1 mL
U-HBM-5154M-1	SDWA Methylated Herbicides Mixture 6 Analytes in Methanol	1 mL

2,4-D methyl ester	200 µg/mL	Silvex methyl ester	100 µg/mL
Dalapon methyl ester	1300 µg/mL	Pentachloroanisole	100 µg/mL
Dinoseb methyl ether	200 µg/mL	Picloram methyl ester	100 µg/mL

U-HBM-5154M	SDWA Methylated Herbicides Mixture	4 x 1 mL
U-HBM-5152A-1	Chlorinated Herbicides Mixture 6 Analytes in Methanol	1 mL

Tetrachloroterephthalic acid	100 µg/mL	Dinoseb	200 µg/mL
3,5-Dichlorobenzoic acid	500 µg/mL	Pentachlorophenol	100 µg/mL
Dichlorprop	100 µg/mL	2,4,5-T	100 µg/mL

U-HBM-5152A	Chlorinated Herbicides Mixture	4 x 1 mL

Code	Product	Unit
U-HBM-5152M-1	Chlorinated Herbicides Mixture 6 Analytes in Methanol DCPA (Dacthal) ..... 100 µg/mL Methyl-3,5-dichlorobenzoate..... 500 µg/mL Dichlorprop methyl ester..... 100 µg/mL Dinoseb methyl ether ..... 200 µg/mL Pentachloroanisole ..... 100 µg/mL 2,4,5-T methyl ester ..... 100 µg/mL	1 mL
U-HBM-5152M	Chlorinated Herbicides Mixture	4 x 1 mL
U-HBM-5153A-1	Chlorinated Herbicide Acids Mixture B 7 Analytes in Methanol Acifluorfen..... 200 µg/mL Bentazon..... 1000 µg/mL 2,4-D ..... 100 µg/mL 2,4-DB .....1000 µg/mL Dicamba .....300 µg/mL Picloram .....300 µg/mL Silvex (2,4,5-TP)..... 100 µg/mL	1 mL
U-HBM-5153A	Chlorinated Herbicide Acids Mixture B	4 x 1 mL
U-HBM-5153M-1	Chlorinated Herbicides Mixture 7 Analytes in Methanol Acifluorfen methyl ester ..... 200 µg/mL Bentazon methyl derivative..... 1000 µg/mL 2,4-D methyl ester ..... 100 µg/mL 2,4-DB methyl ester ..... 1000 µg/mL Dicamba methyl ester ..... 300 µg/mL Picloram methyl ester ..... 300 µg/mL Silvex methyl ester..... 100 µg/mL	1 mL
U-HBM-5153M	Chlorinated Herbicides Mixture	4 x 1 mL
U-PPM-515A-1	Laboratory Performance Check Solution 5 Analytes in Methyl tert-Butyl ether/Methanol DCAA (2,4-Dichlorophenylacetic acid) ...5000 ng/mL 4,4'-Dibromooctafluorobiphenyl .....2500 ng/mL 3,5-Dichlorobenzoic acid .....6000 ng/mL Dinoseb..... 40 ng/mL 4-Nitrophenol ..... 16000 ng/mL	1 mL
U-PPM-515A	Laboratory Performance Check Solution	4 x 1 mL
U-PPM-515M-1	Laboratory Performance Check Solution 5 Analytes in Methyl tert-butyl ether/Methanol Methyl-3,5-Dichlorobenzoate .....600 ng/mL Dinoseb methyl ether.....4 ng/mL 4-Nitroanisole.....1600 ng/mL DCAA methyl ester ..... 500 ng/mL 4,4'-Dibromooctafluorobiphenyl ..... 250 ng/mL	1 mL
U-PPM-515M	Laboratory Performance Check Solution	4 x 1 mL
U-PPS-162-1	DCAA (2,4-Dichlorophenylacetic acid) 5000 µg/mL in Methanol	1 mL
U-PPS-162	DCAA (2,4-Dichlorophenylacetic acid) 5000 µg/mL in Methanol	4 x 1 mL
U-PPS-163-1	DCAA methyl ester 5000 µg/mL in Methanol	1 mL
U-PPS-163	DCAA methyl ester 5000 µg/mL in Methanol	4 x 1 mL
U-PPS-172-1	4,4'-Dibromooctafluorobiphenyl 5000 µg/mL in Methanol	1 mL
U-PPS-172	4,4'-Dibromooctafluorobiphenyl 5000 µg/mL in Methanol	4 x 1 mL

EPA Method 515.3

Chlorinated acids

Method 515.3 is used to determine chlorinated acids. It is an extraction followed by derivatization method, using GC with a capillary column and electron capture detector.

Recommended standards

Calibration standards:	U-HBM-5156A U-HBM-5156M
Internal standard:	U-PPS-174
Surrogate standard:	U-PPS-167 U-PPS-168

	Code	Product	Unit
New	U-HBM-5156A-1	Chlorinated Herbicides Mixture 16 Analytes in Acetone Acifluorfen..... 5 µg/mL Bentazon..... 10 µg/mL Chloramben ..... 5 µg/mL 2,4-D ..... 10 µg/mL Dalapon ..... 10 µg/mL 2,4-DB..... 10 µg/mL Dacthal acid metabolites ..... 5 µg/mL Dicamba ..... 5 µg/mL 3,5-Dichlorobenzoic acid..... 5 µg/mL Dichlorprop..... 10 µg/mL Dinoseb..... 10 µg/mL 4-Nitrophenol ..... 10 µg/mL Pentachlorophenol ..... 1 µg/mL Picloram ..... 10 µg/mL Silvex (2,4,5-TP) ..... 2.5 µg/mL 2,4,5-T..... 2.5 µg/mL	1 mL
New	U-HBM-5156A	Chlorinated Herbicides Mixture	4 x 1 mL
New	U-HBM-5156M-1	Methylated Chlorinated Herbicides Mixture	1 mL
New	U-HBM-5156M	Methylated Chlorinated Herbicides Mixture	4 x 1 mL
New	U-PPS-167-1	DCAA (2,4-Dichlorophenylacetic acid) 1000 µg/mL in Acetone	1 mL
New	U-PPS-167	DCAA (2,4-Dichlorophenylacetic acid) 1000 µg/mL in Acetone	4 x 1 mL

EPA 500 Methods

	Code	Product	Unit
New	U-PPS-168-1	DCAA methyl ester 1000 µg/mL in Acetone	1 mL
New	U-PPS-168	DCAA methyl ester 1000 µg/mL in Acetone	4 x 1 mL
New	U-PPS-174-1	4,4'-Dibromooctafluorobiphenyl 2000 µg/mL in Methyl tert-butyl ether	1 mL
New	U-PPS-174	4,4'-Dibromooctafluorobiphenyl 2000 µg/mL in Methyl tert-butyl ether	4 x 1 mL

EPA Method 515.4

Chlorinated acids

Method 515.4 is used to determine chlorinated acids. It is an extraction followed by derivatization method, using fast GC with a capillary column and electron capture detector.

Recommended standards

Calibration standard:	HBM-5157A
Internal standard:	PPS-174
Surrogate standards:	PPS-167
	PPS-168

New	U-HBM-5157A-1	Chlorinated Herbicides Mixture 16 Analytes in Acetone	1 mL

Acifluorfen	5 µg/mL	3,5-Dichlorobenzoic acid	5 µg/mL
Bentazon	10 µg/mL	Dichlorprop	10 µg/mL
Chloramben	5 µg/mL	Dinoseb	10 µg/mL
2,4-D	10 µg/mL	Pentachlorophenol	1 µg/mL
Dalapon	10 µg/mL	Picloram	5 µg/mL
2,4-DB	10 µg/mL	silvex (2,4,5-TP)	2.5 µg/mL
Dacthal acid metabolites	5 µg/mL	2,4,5-T	2.5 µg/mL
Dicamba	5 µg/mL	Quinclorac	5 µg/mL

New	U-HBM-5157A	Chlorinated Herbicides Mixture	4 x 1 mL
New	U-PPS-167-1	DCAA (2,4-Dichlorophenylacetic acid) 1000 µg/mL in Acetone	1 mL
New	U-PPS-167	DCAA (2,4-Dichlorophenylacetic acid) 1000 µg/mL in Acetone	4 x 1 mL
New	U-PPS-168-1	DCAA methyl ester 1000 µg/mL in Acetone	1 mL
New	U-PPS-168	DCAA methyl ester 1000 µg/mL in Acetone	4 x 1 mL
New	U-PPS-174-1	4,4'-Dibromooctafluorobiphenyl 2000 µg/mL in Methyl tert-butyl ether	1 mL
New	U-PPS-174	4,4'-Dibromooctafluorobiphenyl 2000 µg/mL in Methyl tert-butyl ether	4 x 1 mL

EPA Method 521

Nitrosamines

Method 521 is used to determine nitrosamines. It uses solid phase extraction and GC/MS.

Recommended standards

Calibration standard:	U-US-113N
Internal standard:	U-IST-770
Surrogate standard:	U-IST-760

	U-US-113N	Nitrosamines Mixture 2000 µg/mL of each analyte in Methylene chloride.	1 mL

N-Nitrosodi-n-butylamine	N-Nitrosomethylethylamine
N-Nitrosodiethylamine	N-Nitrosomorpholine
N-Nitrosodimethylamine	N-Nitrosopiperidine
N-Nitrosodiphenylamine	N-Nitrosopyrrolidine
N-Nitrosodi-n-propylamine	

	U-US-113N-4	Nitrosamines Mixture	4 x 1 mL
New	U-IST-760-1	N-Nitrosodimethylamine-d6 1000 µg/mL in Methylene chloride	1 mL
New	U-IST-760	N-Nitrosodimethylamine-d6 1000 µg/mL in Methylene chloride	4 x 1 mL
New	U-IST-770-1	N-Nitrosodi-n-propylamine-d14 1000 µg/mL in Methylene chloride	1 mL
New	U-IST-770	N-Nitrosodi-n-propylamine-d14 1000 µg/mL in Methylene chloride	4 x 1 mL

EPA Method 524.2

Purgeable organic compounds

Method 524.2 is a purge and trap GC/MS method allowing determination of all VOCs using capillary column.

Recommended standards

Calibration standards:	U-DWM-580
	U-DWM-588
	U-DWM-592
Internal & Surrogate standard:	U-STM-320N

Code	Product	Unit
U-DWM-580-1	VOC Mixture	1 mL

200 µg/mL of each analyte in Methanol.

Bromochloromethane	n-Butylbenzene
Bromodichloromethane	sec-Butylbenzene
Bromoform	tert-Butylbenzene
Carbon tetrachloride	Ethylbenzene
Chloroform	Isopropylbenzene
Dibromochloromethane	4-Isopropyltoluene
Dibromomethane	Naphthalene
Methylene chloride	n-Propylbenzene
1,2-Dibromoethane	Styrene
1,1-Dichloroethane	Toluene
1,2-Dichloroethane	1,2,4-Trimethylbenzene
1,1-Dichloroethene	1,3,5-Trimethylbenzene
cis-1,2-Dichloroethene	o-Xylene
trans-1,2-Dichloroethene	m-Xylene
1,1,1,2-Tetrachloroethane	p-Xylene
1,1,2,2-Tetrachloroethane	Bromobenzene
Tetrachloroethene	Chlorobenzene
1,1,1-Trichloroethane	2-Chlorotoluene
1,1,2-Trichloroethane	4-Chlorotoluene
Trichloroethene	1,2-Dichlorobenzene
1,2-Dibromo-3-chloropropane	1,3-Dichlorobenzene
1,2-Dichloropropane	1,4-Dichlorobenzene
1,3-Dichloropropane	1,2,3-Trichlorobenzene
2,2-Dichloropropane	1,2,4-Trichlorobenzene
1,1-Dichloropropene	Bromomethane
cis-1,3-Dichloropropene	Chloroethane
trans-1,3-Dichloropropene	Chloromethane
Hexachlorobutadiene	Dichlorodifluoromethane
1,2,3-Trichloropropane	Trichlorofluoromethane
Benzene	Vinyl chloride

U-DWM-580	VOC Mixture	4 x 1 mL
U-DWM-588-1	VOC Mixture	1 mL

2000 µg/mL of each analyte in Methanol.

Bromochloromethane	n-Butylbenzene
Bromodichloromethane	sec-Butylbenzene
Bromoform	tert-Butylbenzene
Carbon tetrachloride	Ethylbenzene
Chloroform	Isopropylbenzene
Dibromochloromethane	4-Isopropyltoluene
Dibromomethane	Naphthalene
Methylene chloride	n-Propylbenzene
1,2-Dibromoethane	Styrene
1,1-Dichloroethane	Toluene
1,2-Dichloroethane	1,2,4-Trimethylbenzene
1,1-Dichloroethene	1,3,5-Trimethylbenzene
cis-1,2-Dichloroethene	o-Xylene
trans-1,2-Dichloroethene	m-Xylene
1,1,1,2-Tetrachloroethane	p-Xylene
1,1,2,2-Tetrachloroethane	Bromobenzene
Tetrachloroethene	Chlorobenzene
1,1,1-Trichloroethane	2-Chlorotoluene
1,1,2-Trichloroethane	4-Chlorotoluene
Trichloroethene	1,2-Dichlorobenzene
1,2-Dibromo-3-chloropropane	1,3-Dichlorobenzene
1,2-Dichloropropane	1,4-Dichlorobenzene
1,3-Dichloropropane	1,2,3-Trichlorobenzene
2,2-Dichloropropane	1,2,4-Trichlorobenzene
1,1-Dichloropropene	Bromomethane
cis-1,3-Dichloropropene	Chloroethane
trans-1,3-Dichloropropene	Chloromethane
Hexachlorobutadiene	Dichlorodifluoromethane
1,2,3-Trichloropropane	Trichlorofluoromethane
Benzene	Vinyl chloride

U-DWM-588	VOC Mixture	4 x 1 mL
U-DWM-592-1	VOC Mixture	1 mL

2000 µg/mL of each analyte in Methanol.

Acetone	2-Hexanone
Acrylonitrile	Methacrylonitrile
Allyl chloride	Methyl acrylate
2-Butanone (MEK)	Methyl iodide (Iodomethane)
Carbon disulfide	Methyl methacrylate
Chloroacetonitrile	4-Methyl-2-pentanone (MIBK)
1-Chlorobutane	tert-Butylmethyl ether (MTBE)
trans-1,4-Dichloro-2-butene	Nitrobenzene
1,1-Dichloro-2-propanone	2-Nitropropane
Diethyl ether	Pentachloroethane
Ethyl methacrylate	Propionitrile
Hexachloroethane	Tetrahydrofuran (THF)

U-DWM-592	VOC Mixture	4 x 1 mL

Code	Product	Unit
U-STS-110N-1	4-Bromofluorobenzene 2000 µg/mL in Methanol	1 mL
U-STS-110N	4-Bromofluorobenzene 2000 µg/mL in Methanol	4 x 1 mL
U-STM-320N-1	Internal Standard Mixture 2000 µg/mL of each analyte in Methanol. 4-Bromofluorobenzene Fluorobenzene 1,2-Dichlorobenzene-D_4	1 mL
U-STM-320N	Internal Standard Mixture	4 x 1 mL
U-DWM-583-1	VOC Mixture 200 µg/mL of each analyte in Methanol. Benzene Bromobenzene Bromochloromethane Bromodichloromethane Bromoform n-Butylbenzene sec-Butylbenzene tert-Butylbenzene Carbon tetrachloride Chlorobenzene Chloroform 2-Chlorotoluene 4-Chlorotoluene Dibromochloromethane 1,2-Dibromo-3-chloropropane 1,2-Dibromoethane Dibromomethane 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethene cis-1,2-Dichloroethene trans-1,2-Dichloroethene 1,2-Dichloropropane 1,3-Dichloropropane 2,2-Dichloropropane 1,1-Dichloropropene cis-1,3-Dichloropropene trans-1,3-Dichloropropene Ethylbenzene Hexachlorobutadiene Isopropylbenzene 4-Isopropyltoluene Methylene chloride Naphthalene n-Propylbenzene Styrene 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Tetrachloroethene Toluene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,1,1-Trichloroethane 1,1,2-Trichloroethane Trichloroethene 1,2,3-Trichloropropane 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene o-Xylene m-Xylene p-Xylene	1 mL
U-DWM-583	VOC Mixture	4 x 1 mL
U-DWM-589N-1	VOC Mixture 2000 µg/mL of each analyte in Methanol. Benzene Bromobenzene Bromochloromethane Bromodichloromethane Bromoform n-Butylbenzene sec-Butylbenzene tert-Butylbenzene Carbon tetrachloride Chlorobenzene Chloroform 2-Chlorotoluene 4-Chlorotoluene Dibromochloromethane 1,2-Dibromo-3-chloropropane 1,2-Dibromoethane Dibromomethane 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethene cis-1,2-Dichloroethene trans-1,2-Dichloroethene 1,2-Dichloropropane 1,3-Dichloropropane 2,2-Dichloropropane 1,1-Dichloropropene cis-1,3-Dichloropropene trans-1,3-Dichloropropene Ethylbenzene Hexachlorobutadiene Isopropylbenzene 4-Isopropyltoluene Methylene chloride Naphthalene n-Propylbenzene Styrene 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Tetrachloroethene Toluene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,1,1-Trichloroethane 1,1,2-Trichloroethane Trichloroethene 1,2,3-Trichloropropane 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene o-Xylene m-Xylene p-Xylene	1 mL
U-DWM-589N	VOC Mixture	4 x 1 mL
U-DWM-584-1	VOC Gas Mixture 200 µg/mL of each analyte in Methanol. Bromomethane Chloromethane Trichlorofluoromethane Chloroethane Dichlorodifluoromethane Vinyl chloride	1 mL
U-DWM-584	VOC Gas Mixture	4 x 1 mL
U-DWM-544-1	VOC Gas Mixture 2000 µg/mL of each analyte in Methanol. Bromomethane Chloromethane Trichlorofluoromethane Chloroethane Dichlorodifluoromethane Vinyl chloride	1 mL

	Code	Product	Unit
	U-DWM-544	VOC Gas Mixture	4 x 1 mL
	U-STS-210-1	1,2-Dichlorobenzene-D_4 2000 µg/mL in Methanol	1 mL
	U-STS-210	1,2-Dichlorobenzene-D_4 2000 µg/mL in Methanol	4 x 1 mL
New	U-STM-590-1	Surrogate Standard Mixture 2000 µg/mL of each analyte in Methanol 4-Bromofluorobenzene1,2-Dichlorobenzene-D_4	1 mL
New	U-STM-590	Surrogate Standard Mixture	4 x 1 mL
	U-STS-160-1	Fluorobenzene 2000 µg/mL in Methanol	1 mL
	U-STS-160	Fluorobenzene 2000 µg/mL in Methanol	4 x 1 mL
	U-STM-250N-1	Internal Standard Mixture 2000 µg/mL of each analyte in Methanol. 1,2-Dichlorobenzene-D_4 Fluorobenzene	1 mL
	U-STM-250N	Internal Standard Mixture	4 x 1 mL
	U-EPA-2044N-1	Volatile Organic Contaminants Mixture 1 (VOC-1) 50 µg/mL of each analyte in Methanol. Bromobenzene 4-Chlorotoluene 1,2-Dibromo-3-chloropropane 1,2-Dibromoethane Dibromomethane 2,2-Dichloropropane 1,1-Dichloropropene Styrene p-Xylene	1 mL
	U-EPA-2044N	Volatile Organic Contaminants Mixture 1 (VOC-1)	4 x 1 mL
	U-EPA-2045N-1	Volatile Organic Contaminants Mixture 2 (VOC-2) 50 µg/mL of each analyte in Methanol. Bromochloromethane 2-Chlorotoluene cis-1,2-Dichloroethene 1,3-Dichloropropane 1,1,1,2-Tetrachloroethane 1,2,3-Trichloropropane o-Xylene	1 mL
	U-EPA-2045N	Volatile Organic Contaminants Mixture 2 (VOC-2)	4 x 1 mL
New	U-DWM-596-1	VOC Mixture with MTBE 55 analytes 2000 µg/mL of each analyte in Methanol Benzene Bromobenzene Bromochloromethane Bromodichloromethane Bromoform n-Butylbenzene sec-Butylbenzene tert-Butylbenzene tert-Butyl methyl ether Carbon tetrachloride Chlorobenzene Chloroform 2-Chlorotoluene 4-Chlorotoluene Dibromochloromethane 1,2-Dibromo-3-chloropropane 1,2-Dibromoethane Dibromomethane 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-dichlorobenzene 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethene cis-1,2-Dichloroethene trans-1,2-Dichloroethene 1,2-Dichloropropane 1,3-Dichloropropane 2,2-Dichloropropane 1,1-Dichloropropene cis-1,3-Dichloropropene trans-1,3-Dichloropropene dthylbenzene Hexachlorobutadiene Isopropylbenzene 4-isopropyltoluene Methylene chloride Naphthalene n-propylbenzene Styrene 1,1,1,2-Tetrachloroethane 1,1,2,2-tetrachloroethane Tetrachloroethene Toluene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,1,1-Trichloroethane 1,1,2-Trichloroethane Trichloroethene 1,2,3-Trichloropropane 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene o-Xylene m-Xylene p-Xylene	1 mL
New	U-DWM-596	VOC Mixture with MTBE	4 x 1 mL
	U-EPA-2043N-1	Discretionary Aromatic Volatiles Mixture (VOB) 50 µg/mL of each analyte in Methanol. n-Butylbenzene sec-Butylbenzene tert-Butylbenzene Hexachlorobutadiene Isopropylbenzene 4-Isopropyltoluene Naphthalene n-Propylbenzene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene	1 mL
	U-EPA-2043N	Discretionary Aromatic Volatiles Mixture (VOB)	4 x 1 mL

Code	Product	Unit
U-DWM-540-1	Haloalkanes Mixture	1 mL

200 µg/mL of each analyte in Methanol.

Bromochloromethane	1,2-Dichloropropane
Bromodichloromethane	1,3-Dichloropropane
Bromoform	2,2-Dichloropropane
Bromomethane	1,1-Dichloropropene
Carbon tetrachloride	cis-1,3-Dichloropropene
Chloroethane	trans-1,3-Dichloropropene
Chloroform	Hexachlorobutadiene
Chloromethane	Methylene chloride
Dibromochloromethane	1,1,1,2-Tetrachloroethane
1,2-Dibromo-3-chloropropane	1,1,2,2-Tetrachloroethane
1,2-Dibromoethane	Tetrachloroethene
Dibromomethane	1,1,1-Trichloroethane
Dichlorodifluoromethane	1,1,2-Trichloroethane
1,1-Dichloroethane	Trichloroethene
1,2-Dichloroethane	Trichlorofluoromethane
1,1-Dichloroethene	1,2,3-Trichloropropane
cis-1,2-Dichloroethene	Vinyl chloride
trans-1,2-Dichloroethene	

U-DWM-540	Haloalkanes Mixture	4 x 1 mL
U-DWM-570-1	Aromatics Mixture	1 mL

200 µg/mL of each analyte in Methanol.

Benzene	4-Chlorotoluene	Naphthalene	1,3,5-Trimethylbenzene
Bromobenzene	1,2-Dichlorobenzene	n-Propylbenzene	m-Xylene
n-Butylbenzene	1,3-Dichlorobenzene	Styrene	o-Xylene
sec-Butylbenzene	1,4-Dichlorobenzene	Toluene	p-Xylene
tert-Butylbenzene	Ethylbenzene	1,2,3-Trichlorobenzene	
Chlorobenzene	Isopropylbenzene	1,2,4-Trichlorobenzene	
2-Chlorotoluene	4-Isopropyltoluene	1,2,4-Trimethylbenzene	

U-DWM-570	Aromatics Mixture	4 x 1 mL
U-DWM-550-1	Aromatic Hydrocarbons Mixture	1 mL

200 µg/mL of each analyte in Methanol.

Benzene	Ethylbenzene	n-Propylbenzene	1,3,5-Trimethylbenzene
n-Butylbenzene	Isopropylbenzene	Styrene	m-Xylene
sec-Butylbenzene	4-Isopropyltoluene	Toluene	o-Xylene
tert-Butylbenzene	Naphthalene	1,2,4-Trimethylbenzene	p-Xylene

U-DWM-550	Aromatic Hydrocarbons Mixture	4 x 1 mL
U-DWM-560-1	Aromatic Halocarbons Mixture	1 mL

200 µg/mL of each analyte in Methanol.

Bromobenzene	4-Chlorotoluene	1,4-Dichlorobenzene
Chlorobenzene	1,2-Dichlorobenzene	1,2,3-Trichlorobenzene
2-Chlorotoluene	1,3-Dichlorobenzene	1,2,4-Trichlorobenzene

U-DWM-560	Aromatic Halocarbons Mixture	4 x 1 mL
U-DWM-510-1	Halomethanes Mixture	1 mL

200 µg/mL of each analyte in Methanol.

Bromochloromethane	Bromomethane	Chloromethane	Dichlorodifluoromethane
Bromodichloromethane	Carbon tetrachloride	Dibromochloromethane	Methylene chloride
Bromoform	Chloroform	Dibromomethane	Trichlorofluoromethane

U-DWM-510	Halomethanes Mixture	4 x 1 mL
U-DWM-520-1	Haloethanes Mixture	1 mL

200 µg/mL of each analyte in Methanol.

Chloroethane	1,1,1,2-Tetrachloroethane
1,2-Dibromoethane	1,1,2,2-Tetrachloroethane
1,1-Dichloroethane	Tetrachloroethene
1,2-Dichloroethane	1,1,1-Trichloroethane
1,1-Dichloroethene	1,1,2-Trichloroethane
cis-1,2-Dichloroethene	Trichloroethene
trans-1,2-Dichloroethene	Vinyl chloride

U-DWM-520	Haloethanes Mixture	4 x 1 mL
U-DWM-530-1	Halopropanes Mixture	1 mL

200 µg/mL of each analyte in Methanol.

1,2-Dibromo-3-chloropropane	cis-1,3-Dichloropropene
1,2-Dichloropropane	trans-1,3-Dichloropropene
1,3-Dichloropropane	Hexachlorobutadiene
2,2-Dichloropropane	1,2,3-Trichloropropane
1,1-Dichloropropene	

U-DWM-530	Halopropanes Mixture	4 x 1 mL

Code	Product	Unit

EPA Method 525.1

Organic compounds

Method 525.1 is used to determine synthetic organic compounds (SOCs). It is a liquid-solid extraction method, using GC/MS with a capillary column.

Recommended standards

Calibration standards: U-PM-525A, U-PPM-525C, U-PSM-525, U-RPCM-525, U-EPA-1161

Internal & Surrogate standard: U-ISM-310

	Code	Product	Unit
	U-PM-525A-1	PAH Mixture 100 µg/mL of each analyte in Acetone Acenaphthylene, Anthracene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(ghi)perylene, Benzo(a)pyrene, Chrysene, Dibenzo(a,h)anthracene, Fluorene, Indeno(1,2,3-cd)pyrene, Phenanthrene, Pyrene	1 mL
	U-PM-525A	PAH Mixture	4 x 1 mL
New	U-PM-525B-1	PAH Mixture 50 µg/mL of each analyte in Acetone Acenaphthylene, Anthracene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(ghi)perylene, Benzo(a)pyrene, Chrysene, Dibenzo(a,h)anthracene, Fluorene, Indeno(1,2,3-cd)pyrene, Phenanthrene, Pyrene	1 mL
New	U-PM-525B	PAH Mixture	4 x 1 mL
	U-PPM-525C-1	Organochlorine Pesticides Mixture 100 µg/mL of each analyte in Acetone Alachlor, Aldrin, Atrazine, alpha-chlordane, gamma-chlordane, gamma-BHC (Lindane), Endrin, Heptachlor, Heptachlor epoxide - isomer B, Methoxychlor, trans-Nonachlor, Simazine	1 mL
	U-PPM-525C	Organochlorine Pesticides Mixture	4 x 1 mL
	U-PPM-525D-1	Organochlorine Pesticides Mixture 500 µg/mL in Acetone list of compounds see U-PPM-525C-1	1 mL
	U-PPM-525D	Organochlorine Pesticides Mixture	4 x 1 mL
New	U-PPM-525F-1	Drinking Water Pesticides Mixture 14 Analytes 100 µg/mL of each analyte in Acetone Alachlor, Aldrin, Atrazine, Dieldrin, Endrin, Heptachlor, Heptachlor epoxide - isomer B, Hexachlorobenzene, Hexachlorocyclopentadiene, Lindane (gamma-BHC), Methoxychlor, propachlor, Simazine, Trifluralin	1 mL
New	U-PPM-525F	Drinking Water Pesticides Mixture	4 x 1 mL
	U-PSM-525-1	Extractables Mixture 9 Analytes in Acetone Bis(2-ethylhexyl) adipate ..... 100 µg/mL Bis(2-ethylhexyl) phthalate ..... 100 µg/mL Butyl benzyl phthalate ..... 100 µg/mL Di-n-butyl phthalate ..... 100 µg/mL Diethyl phthalate ..... 100 µg/mL Dimethyl phthalate ..... 100 µg/mL Hexachlorobenzene ..... 100 µg/mL Hexachlorocyclopentadiene ..... 100 µg/mL Pentachlorophenol ..... 400 µg/mL	1 mL
	U-PSM-525	Extractables Mixture	4 x 1 mL
	U-PSM-525A-1	Extractables Mixture 500 µg/mL in Acetone list of compounds see U-PSM-525-1	1 mL
	U-PSM-525A	Extractables Mixture	4 x 1 mL

Code	Product	Unit
U-RPCM-525-1	PCB Mixture 100 µg/mL of each analyte in Acetone 2-Chlorobiphenyl; 2,3-Dichlorobiphenyl; 2,4,5-Trichlorobiphenyl; 2,2',4,4'-Tetrachlorobiphenyl; 2,2',3',4,6-Pentachlorobiphenyl; 2,2',4,4',5,6'-Hexachlorobiphenyl; 2,2',3,3',4,4',6-Heptachlorobiphenyl; 2,2',3,3',4,5',6,6'-Octachlorobiphenyl	1 mL
U-RPCM-525	PCB Mixture	4 x 1 mL
U-RPCM-525A-1	PCB Mixture 500 µg/mL in Acetone list of compounds see U-RPCM-525-1	1 mL
U-RPCM-525A	PCB Mixture	4 x 1 mL
U-PPS-240-1	Toxaphene 2500 µg/mL in Acetone	1 mL
U-PPS-240	Toxaphene 2500 µg/mL in Acetone	4 x 1 mL
U-ISM-310-1	Internal & Surrogate Standard Solution 500 µg/mL of each analyte in Acetone Acenaphthene-D_{10}; Chrysene-D_{12}; Perylene-D_{12}; Phenanthrene-D_{10}	1 mL
U-ISM-310	Internal & Surrogate Standard Solution	4 x 1 mL
U-IST-341-1	Decafluorotriphenylphosphine 100 µg/mL in Methylene chloride	1 mL
U-IST-341	Decafluorotriphenylphosphine 100 µg/mL in Methylene chloride	4 x 1 mL
U-47995N-1	Decafluorotriphenylphosphine 1000 µg/mL in Acetone	1 mL
U-47995N	Decafluorotriphenylphosphine 1000 µg/mL in Acetone	4 x 1 mL
U-IST-370-1	Pyrene-D_{10} 500 µg/mL in Acetone	1 mL
U-IST-370	Pyrene-D_{10} 500 µg/mL in Acetone	4 x 1 mL
U-SVM-500-1	SDWA SOCs Mixture 6 Analytes in Acetone Benzo(a)pyrene ..... 500 µg/mL Bis(2-ethylhexyl) adipate..... 500 µg/mL Bis(2-ethylhexyl) phthalate..... 500 µg/mL Hexachlorobenzene ..... 500 µg/mL Hexachlorocyclopentadiene ..... 500 µg/mL Pentachlorophenol ..... 2000 µg/mL	1 mL
U-SVM-500	SDWA SOCs Mixture	4 x 1 mL
U-ATS-161-1	p-Terphenyl-D_{14} 500 µg/mL in Methylene chloride	1 mL
U-ATS-161	p-Terphenyl-D_{14} 500 µg/mL in Methylene chloride	4 x 1 mL
U-DWM-525K-C	EPA Method 525.1 Kit PAH Mixture (100 µg/mL in Acetone) .....U-PM-525A (1 x 1 mL) Extractables Mixture (in Acetone).....U-PSM-525 (1 x 1 mL) PCB Mixture (100 µg/mL in Acetone) .....U-RPCM-525 (1 x 1 mL) Organochlorine Pesticides Mixture (100 µg/mL in Acetone).....U-PPM-525C (1 x 1 mL) Toxaphene Solution (1000 µg/mL in Methanol).....U-EPA-1161 (1 x 1 mL) Internal & Surrogate Standard Solution (500 µg/mL in Acetone) .....U-ISM-310 (1 x 1 mL)	kit

EPA Method 525.2

Organic compounds

Method 525.2 is used to determine synthetic organic compounds (SOCs). It is a liquid-solid extraction method, using GC/MS with a capillary column.

Recommended standards

Calibration standards:	U-SVM-525 U-PPM-525E U-NPM-525C U-NPM-525B U-PPS-240 U-NPM-108B
Internal & Surrogate standards:	U-ISM-510 U-ISM-511X

Code	Product	Unit
U-SVM-525-1	Semi-Volatile Mixture 100 µg/mL of each analyte in Acetone	1 mL

Acenaphthylene
Anthracene
Benzo(a)anthracene
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzo(ghi)perylene
Benzo(a)pyrene
Butyl benzyl phthalate
2-Chlorobiphenyl
Chrysene
Dibenzo(a,h)anthracene
2,3-Dichlorobiphenyl
Bis(2-ethylhexyl) adipate
Bis(2-ethylhexyl)phthalate
Diethyl phthalate
Dimethyl phthalate
Di-n-butyl phthalate
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Fluorene
Hexachlorobenzene
2,2',4,4',5,6'-Hexachlorobiphenyl
2,2',3,3',4,4',6-Heptachlorobiphenyl
Hexachlorocyclopentadiene
Indeno(1,2,3-cd)pyrene
Isophorone
2,2',3,3',4,5',6,6'-Octachlorobiphenyl
2,2',3',4,6-Pentachlorobiphenyl
Phenanthrene
Pyrene
2,2',4,4'-Tetrachlorobiphenyl
2,4,5-Trichlorobiphenyl
Pentachlorophenol

U-SVM-525	Semi-Volatile Mixture	4 x 1 mL
U-PPM-525E-1	Organochlorine Pesticide Mixture 100 µg/mL of each analyte in Acetone	1 mL

Alachlor
Aldrin
alpha-Chlordane
alpha-BHC (alpha-HCH)
Atrazine
beta-BHC (beta-HCH)
Chlorobenzilate
Chlorothalonil
Chloroneb
DCPA (Dacthal)
delta-BHC (delta-HCH)
4,4'-DDD
4,4'-DDT
4,4'-DDE
Dieldrin
Endosulfan I
Endosulfan II
Endosulfan sulfate
Endrin
Endrin aldehyde
Etridiazole
gamma-Chlordane
Heptachlor
Heptachlor epoxide - isomer B
gamma-BHC (Lindane)
Methoxychlor
trans-Nonachlor
Permethrins (mixed isomers,total)
Simazine

U-PPM-525E	Organochlorine Pesticide Mixture	4 x 1 mL
U-PPS-240-1	Toxaphene 2500 µg/mL in Acetone	1 mL
U-PPS-240	Toxaphene 2500 µg/mL in Acetone	4 x 1 mL
U-NPM-525C-1	Nitrogen/Phosphorus Pesticide Mixture 100 µg/mL of each analyte in Acetone	1 mL

Alachlor	Cyanazine	Mevinphos (Phosdrin)	Propazine
Ametryn	Dichlorvos	MGK-264 (mixed, total)	Simetryn
Atraton	Diphenamid	Molinate	Tetrachlorvinphos (Stirofos)
Atrazine	EPTC	Napropamide	Tebuthiuron
Bromacil	Ethoprop (Ethoprofos)	Norflurazon	Terbacil
Butachlor	Fenarimol	Pebulate	Terbutryn
Butylate	Fluridone	Prometon	Triadimefon
Chlorpropham	Hexazinone	Prometryn	Tricyclazole
Chlorpyrifos	Methyl paraoxon	Pronamide	Trifluralin
Cycloate	Metolachlor	Propachlor	Vernolate

U-NPM-525C	Nitrogen/Phosphorus Pesticide Mixture	4 x 1 mL
U-NPM-525B-1	Nitrogen/Phosphorus Pesticide Mixture 100 µg/mL of each analyte in Acetone	1 mL

Carboxin	Disulfoton	Merphos
Diazinon	Fenamiphos	Terbufos

U-NPM-525B	Nitrogen/Phosphorus Pesticide Mixture	4 x 1 mL
U-DWK-5252	EPA Method 525.2 Kit	kit

Semi-Volatile Mixture (100 µg/mL in Acetone) ..... U-SVM-525 (1 x 1 mL)
Organochlorine Pesticide Mixture (100 µg/mL in Acetone) ..... U-PPM-525E (1 x 1 mL)
Nitrogen/Phosphorous Pesticide Mixture (100 µg/mL in Acetone) ..... U-NPM-525C (1 x 1 mL)
Nitrogen/Phosphorous Pesticide Mixture (100 µg/mL in Acetone) ..... U-NPM-525B (1 x 1 mL)
Toxaphene Solution (2500 µg/mL in Acetone) ..... U-PPS-240 (1 x 1 mL)
DEF Solution (500 µg/mL in Acetone) ..... U-NPM-108B (1 x 1 mL)
Internal & Surrogate Std. Fortification Solution (500 µg/mL in Acetone) ..... U-ISM-510 (1 x 1 mL)
GC/MS Performance Check Solution (1000 µg/mL in Acetone) ..... U-GCM-160A (1 x 1 mL)

U-GCM-160A-1	GC/MS Performance Check Solution 1000 µg/mL of each analyte in Acetone	1 mL

Decafluorotriphenylphosphine
Endrin
4,4'-DDT

U-GCM-160A	GC/MS Performance Check Solution	4 x 1 mL

EPA 500 Methods

Code	Product	Unit
U-ISM-510-1	Internal & Surrogate Standard Fortification Solution 500 µg/mL of each analyte in Acetone Acenaphthene-D_{10}, Perylene-D_{12}, Phenanthrene-D_{10}, Triphenyl phosphate (TPP), Chrysene-D_{12}, Pyrene-D_{10}, 1,3-Dimethyl-2-nitrobenzene	1 mL
U-ISM-510	Internal & Surrogate Standard Fortification Solution	4 x 1 mL
U-ISM-520-1	Internal Standard Solution 500 µg/mL of each analyte in Acetone Acenaphthene-D_{10}, Phenanthrene-D_{10}, Chrysene-D_{12}	1 mL
U-ISM-520	Internal Standard Solution	4 x 1 mL
U-ISM-530-1	Surrogate Standard Fortification Solution 500 µg/mL of each analyte in Acetone 1,3-Dimethyl-2-nitrobenzene, Triphenyl phosphate (TPP), Perylene-D_{12}, Pyrene-D_{10}	1 mL
U-ISM-530	Surrogate Standard Fortification Solution	4 x 1 mL
U-IST-341-1	Decafluorotriphenylphosphine 100 µg/mL in Methylene chloride	1 mL
U-IST-341	Decafluorotriphenylphosphine 100 µg/mL in Methylene chloride	4 x 1 mL
U-47995N-1	Decafluorotriphenylphosphine 1000 µg/mL in Acetone	1 mL
U-47995N	Decafluorotriphenylphosphine 1000 µg/mL in Acetone	4 x 1 mL
U-NPM-108B-1	DEF 500 µg/mL in Acetone	1 mL
U-NPM-108B	DEF 500 µg/mL in Acetone	4 x 1 mL
U-SVM-500-1	SDWA SOCs Mixture 6 Analytes in Acetone Benzo(a)pyrene ..... 500 µg/mL Bis(2-ethylhexyl) adipate..... 500 µg/mL Bis(2-ethylhexyl) phthalate..... 500 µg/mL Hexachlorobenzene ..... 500 µg/mL Hexachlorocyclopentadiene ..... 500 µg/mL Pentachlorophenol ..... 2000 µg/mL	1 mL
U-SVM-500	SDWA SOCs Mixture	4 x 1 mL
New U-ISM-511X	Internal & Surrogate Standard Fortification Solution Shooters® 7 Analytes 50 µg/mL of each analyte in Acetone Acenaphthene-d10, Perylene-d12, Phenanthrene-d10, Triphenylphosphate, Chrysene-d12, Pyrene-d10, 1,3-Dimethyl-2-nitrobenzene	25 mL

EPA Method 526

Organic Compounds

Method 526 is used to determine SOCs. It is a solid phase extraction method, using GC/MS with a capillary column.

Recommended standards

Calibration standard: U-SVM-526
Surrogate standard: U-ISM-690
Internal standard: U-ISM-520

Code	Product	Unit
New U-SVM-526-1	Method 526 Calibration Mixture 11 Analytes 200 µg/mL of each analyte in Ethyl acetate Acetochlor, 2,4-dichlorophenol, Fonofos, Terbufos, Cyanazine, 1,2-Diphenylhydrazine, Nitrobenzene, 2,4,6-Trichlorophenol, diazinon, disulfoton, Prometon	1 mL
New U-SVM-526	Method 526 Calibration Mixture	4 x 1 mL
New U-ISM-690-1	Surrogate Standard Mixture 2 Analytes 500 µg/mL of each analyte in Acetone 1,3-Dimethyl-2-nitrobenzene, Triphenylphosphate	1 mL
New U-ISM-690	Surrogate Standard Mixture	4 x 1 mL
U-ISM-520-1	Internal Standard Solution 500 µg/mL of each analyte in Acetone Acenaphthene-D_{10}, Phenanthrene-D_{10}, Chrysene-D_{12}	1 mL
U-ISM-520	Internal Standard Solution	4 x 1 mL

Code	Product	Unit

EPA Method 527

Pesticides and flame retardants

Method 527 is used to determine selected pesticides and flame retardants. It is a solid phase extraction method, using GC/ MS with a capillary column.

Recommended standards

Calibration standards:	U-PPM-527A U-PPM-527B U-PPM-527C
Surrogate standard:	U-ISM-710
Internal standard:	U-ISM-520

U-PPM-527A-1	Method 527 Pesticide Mixture 1				1 mL
	500 µg/mL of each analyte in Ethyl Acetate				
	Atrazine	Esfenvalerate	Mirex	Prometryn	
	Bifenthrin	Fenvalerate	Nitrofen	Propazine	
	Bromacil	Hexazinone	Norflurazon	Thiobencarb	
	Esbiol	Kepone	Oxychlordane	Vinclozolin	
U-PPM-527A	Method 527 Pesticide Mixture 1				4 x 1 mL
U-PPM-527B-1	Method 527 Pesticide Mixture 2				1 mL
	500 µg/mL of each analyte in Ethyl acetate				
	Chlorpyrifos	Malathion	Terbufos sulfone		
	Dimethoate	Parathion			
U-PPM-527B	Method 527 Pesticide Mixture 2				4 x 1 mL
U-PPM-527C-1	Method 527 PBDE Mixture				1 mL
	500 µg/mL of each analyte in Ethyl acetate				
	2,2',4,4'-Tetrabromodiphenyl ether		2,2',4,4',5,5'-Hexabromobiphenyl		
	2,2',4,4',5-Pentabromodiphenyl ether		2,2',4,4',5,5'-Hexabromodiphenyl		
	2,2',4,4',6-Pentabromodiphenyl ether				
U-PPM-527C	Method 527 PBDE Mixture				4 x 1 mL
U-ISM-520-1	Internal Standard Solution				1 mL
	500 µg/mL of each analyte in Acetone				
	Acenaphthene-D_{10}	Phenanthrene-D_{10}	Chrysene-D_{12}		
U-ISM-520	Internal Standard Solution				4 x 1 mL
U-ISM-710-1	Surrogate Standard Mixture				1 mL
	500 µg/mL of each analyte in Acetone				
	1,3-Dimethyl-2-nitrobenzene		Triphenylphosphate		
	Perylene-d_{12}				
U-ISM-710	Surrogate Standard Mixture				4 x 1 mL

EPA Method 529

Explosives and related compounds

EPA METHOD 529 provides procedures for the determination of explosives and related compounds in finished drinking water. The method is applicable to untreated source waters and other types of water samples.

Recommended standards

Calibration standard:	U-NAIM-529A
Surrogate standards:	U-IST-705 U-IST-706 U-IST-210
Internal standard:	U-IST-704

U-NAIM-529A-1	Recommended Method 529 Calibration Standard		1 mL
	100 µg/mL of each analyte in ethyl acetate		
	2-Amino-4,6-dinitrotoluene	Nitrobenzene	
	4-Amino-2,6-dinitrotoluene	2-Nitrotoluene	
	3,5-Dinitroaniline	3-Nitrotoluene	
	m-Dinitrobenzene	4-Nitrotoluene	
	2,4-dinitrotoluene	1,3,5-Trinitrobenzene	
	2,6-Dinitrotoluene	Tetryl	
	RDX	2,4,6-Trinitrotoluene (TNT)	
U-NAIM-529A	Recommended Method 529 Calibration Standard		4 x 1 mL

EPA 500 Methods

Code	Product	Unit
U-NAIM-529B-1	Method 529 Analyte Fortification Standard 100 µg/mL of each analyte in Methanol 2-Amino-4,6-dinitrotoluene 4-Amino-2,6-dinitrotoluene 3,5-Dinitroaniline m-Dinitrobenzene 2,4-dinitrotoluene 2,6-Dinitrotoluene RDX Nitrobenzene 2-Nitrotoluene 3-Nitrotoluene 4-Nitrotoluene 1,3,5-Trinitrobenzene Tetryl 2,4,6-Trinitrotoluene (TNT)	1 mL
U-NAIM-529B	Method 529 Analyte Fortification Standard	4 x 1 mL
	Recommended Method 529 Internal and Surrogate Standards	
U-IST-704-1	3,4-Dinitrotoluene 2000 µg/mL in Ethyl acetate	1 mL
U-IST-704	3,4-Dinitrotoluene 2000 µg/mL in Ethyl acetate	4 x 1 mL
U-IST-705-1	1,3,5-Trimethyl-2-nitrobenzene 1000 µg/mL in Methanol	1 mL
U-IST-705	1,3,5-Trimethyl-2-nitrobenzene 1000 µg/mL in Methanol	4 x 1 mL
U-IST-706-1	1,2,4-Trimethyl-5-nitrobenzene 1000 µg/mL in Methanol	1 mL
U-IST-706	1,2,4-Trimethyl-5-nitrobenzene 1000 µg/mL in Methanol	4 x 1 mL
U-IST-210-1	Nitrobenzene-D_5 1000 µg/mL in Methylene chloride	1 mL
U-IST-210	Nitrobenzene-D_5 1000 µg/mL in Methylene chloride	4 x 1 mL

EPA Method 531.1, 531.2

N-Methylcarbamoyloximes and N-methylcarbamates

Method 531.1 and 531.2 are used to measure N-methylcarbamoyloximes and N-methylcarbamates. It uses direct injection of the sample on to a HPLC, with post-column derivatisation and a fluorescence detector.

	Code	Product	Unit
	U-PPM-530-1	Carbamate Pesticide Mixture (531.1) 100 µg/mL of each analyte in Methanol Aldicarb Aldicarb sulfone Aldicarb sulfoxide Carbaryl Carbofuran 3-Hydroxycarbofuran Methiocarb Methomyl Oxamyl Propoxur	1 mL
	U-PPM-530	Carbamate Pesticide Mixture (531.1)	4 x 1 mL
New	U-PPM-530C-1	Carbamate Pesticides Mixture (531.2) 11 Analytes 100 µg/mL of each analyte in Methanol Aldicarb Aldicarb sulfone aldicarb sulfoxide Carbaryl Carbofuran 1-Naphthol 3-hydroxycarbofuran Methiocarb Methomyl Oxamyl Propoxur (Baygon)	1 mL
New	U-PPM-530C	Carbamate Pesticides Mixture (531.2)	4 x 1 mL
	U-PPM-530B-1	Carbamyl Pesticides Mixture 100 µg/mL of each analyte in Methanol Carbofuran Oxamyl	1 mL
	U-PPM-530B	Carbamyl Pesticides Mixture	4 x 1 mL
	U-PPM-831-1	Carbamates Mixture 100 µg/mL of each analyte in Methanol Aldicarb Aldicarb sulfone Carbaryl Carbofuran Dioxacarb 3-Hydroxycarbofuran Methiocarb Methomyl Promecarb Propoxur	1 mL
	U-PPM-831	Carbamates Mixture	4 x 1 mL
	U-PPM-531-1	Laboratory Performance Check Solution 4 Analytes in Methanol Aldicarb sulfoxide..... 100 µg/mL 3-Hydroxycarbofuran..... 2 µg/mL Methiocarb ..... 20 µg/mL BDMC..... 10 µg/mL	1 mL
	U-PPM-531	Laboratory Performance Check Solution	4 x 1 mL
	U-PPS-180-1	BDMC 100 µg/mL in Methanol	1 mL
	U-PPS-180	BDMC 100 µg/mL in Methanol	4 x 1 mL

	Code	Product	Unit

EPA Method 532

Phenylurea compounds

Method 532 is used to determine phenylurea pesticides. It is a solid phase extraction method, using HPLC with a UV detector

Recommended standards

Calibration standard U-PPM-532
Surrogate standard U-PPM-532A

New	U-PPM-532-1	Pesticides Mixture 8 Analytes 200 µg/mL of each analyte in Methanol/Acetone Diflubenzuron, Fluometuron, Propanil, Tebuthiuron Diuron, Linuron, Siduron, Thidiazuron	1 mL
New	U-PPM-532	Pesticides Mixture	4 x 1 mL
New	U-PPM-532A-1	Pesticides Mixture 2 Analytes 500 µg/mL of each analyte in Methanol/Acetonitrile Carbazole, Monuron	1 mL
New	U-PPM-532A	Pesticides Mixture	4 x 1 mL

EPA Method 535

Chloroacetanilide and other acetamide herbicide degradates

Method 535 is used to determine the ethanesulfonic acid (ESA) and oxanilic acid (OA) degradates of the chloroacetanilide and other acetamide herbicides. It uses solid phase extraction and GC/MS.

Recommended standards

Calibration standard: U-PPM-535
Internal standard: U-PPS-450
Surrogate standard: U-PPS-440

New	U-PPM-535	UCMR Acetanilide Pesticide Degradates Mixture	4 x 1 mL
New	U-PPM-535-1	UCMR Acetanilide Pesticide Degradates Mixture 6 Analytes in Methanol Acetochlor ESA ..... 20 µg/mL, Alachlor ESA .....20 µg/mL, Metolachlor ESA..... 80 µg/mL Acetochlor OA ..... 40 µg/mL, Alachlor OA .....40 µg/mL, Metolachlor OA..... 10 µg/mL	1 mL
New	U-PPS-440-1	Dimethachlor ESA 20 µg/mL in Methanol	1 mL
New	U-PPS-440	Dimethachlor ESA 20 µg/mL in Methanol	4 x 1 mL
New	U-PPS-450-1	Butachlor ESA 20 µg/mL in Methanol	1 mL
New	U-PPS-450	Butachlor ESA 20 µg/mL in Methanol	4 x 1 mL

EPA Method 547

Glyphosate

Method 547 is used to determine glyphosate. It uses direct injection of the sample on HPLC, with post-column derivatisation an a fluorescence detector.

	U-PPS-190-1	Glyphosate 100 µg/mL in Water	1 mL
	U-PPS-190	Glyphosate 100 µg/mL in Water	4 x 1 mL

EPA Method 548, 548.1

Endothall

Method 548 is used to determine endothall. It is a derivatisation following by liquid-solid extraction method, using GC with a capillary column an an electron capture detector. Method 548.1 is the GC/MS version of the method.

Recommended standards

Method 548

Calibration standard: U-PPS-210
Internal standard: U-PPS-220

Method 548.1

Calibration standard: U-PPS-211
Internal standard: U-ATS-111

	U-PPS-210-1	Endothall 50 µg/mL in Water	1 mL

EPA 500 Methods

Code	Product	Unit
U-PPS-210	Endothall 50 µg/mL in Water	4 x 1 mL
U-PPS-211-1	Endothall 50 µg/mL in Methanol	1 mL
U-PPS-211	Endothall 50 µg/mL in Methanol	4 x 1 mL
U-PPS-220-1	Endosulfan I 10 µg/mL in Methyl tert-butyl ether	1 mL
U-PPS-220	Endosulfan I 10 µg/mL in Methyl tert-butyl ether	4 x 1 mL
U-ATS-111-1	Acenaphthene-D_{10} 500 µg/mL in Methanol	1 mL
U-ATS-111	Acenaphthene-D_{10} 500 µg/mL in Methanol	4 x 1 mL
U-PPS-280-1	Dimethyl endothall 50 µg/mL in Methanol	1 mL
U-PPS-280	Dimethyl endothall 50 µg/mL in Methanol	4 x 1 mL

EPA Method 549.2

Diquat and paraquat

Method 549.2 is used to determine diquat and paraquat. It is a liquid-solid extraction method, using HPLC and a UV detector.

Recommended standards

Calibration standard: U-PPM-549

U-PPM-549-1	Diquat & Paraquat Mixture 1000 µg/ml of each analyte in water Diquat (corrected from dibromide) Paraquat (corrected from dichloride)	1 mL
U-PPM-549	Diquat & Paraquat Mixture	4 x 1 mL

EPA Method 550,550.1

Polycyclic aromatic hydrocarbons

Method 550 is used to determine polycyclic aromatic hydrocarbons. It is a liquid-liquid extraction method, using HPLC and couples fluorescence and UV detectors. Method 550.1 used liquid-solid extraction.

Recommended standards

Calibration standard: U-PM-551

Internal standards: U-PPS-270
U-PPS-271

U-PM-551-1 — PAH Fortification Mixture — 1 mL

16 Analytes in Acetonitrile

Acenaphthene	1000 µg/mL	Benzo(a)anthracene	1 µg/mL
Acenaphthylene	1000 µg/mL	Benzo(b)fluoranthene	1 µg/mL
Anthracene	62.5 µg/mL	Benzo(k)fluoranthene	1 µg/mL
Chrysene	62.5 µg/mL	Benzo(ghi)perylene	5 µg/mL
Fluorene	100 µg/mL	Benzo(a)pyrene	5 µg/mL
Naphthalene	1000 µg/mL	Dibenzo(a,h)anthracene	12 µg/mL
Phenanthrene	50 µg/mL	Fluoranthene	3 µg/mL
Pyrene	62.5 µg/mL	Indeno(1,2,3-cd)pyrene	12 µg/mL

U-PM-551	PAH Fortification Mixture	4 x 1 mL
U-PPS-270-1	4,4'-Difluorobiphenyl 100 µg/mL in Acetonitrile	1 mL
U-PPS-270	4,4'-Difluorobiphenyl 100 µg/mL in Acetonitrile	4 x 1 mL
U-PPS-271-1	4,4'-Difluorobiphenyl 2000 µg/mL in Acetone	1 mL
U-PPS-271	4,4'-Difluorobiphenyl 2000 µg/mL in Acetone	4 x 1 mL

EPA Method 551.1

Chlorination disinfection by-products and chlorinated solvents, and halogenated pesticides and herbicides

Method 551.1 is used to determine chlorination disinfection by-products and chlorinated solvents. It is an extraction method, using GC with capillary column and an electron capture detector.

Recommended standards

Calibration standards: U-HCM-551D
U-PPM-551B
U-EPA-1244
U-PST-1535S

Internal standard: U-STS-113

Surrogate standard: U-IST-152

Code	Product	Unit
U-HCM-551D-1	Disinfection By-products and Chlorinated Solvent Mixture 2000 µg/mL of each analyte in Acetone Bromochloroacetonitrile, Bromodichloromethane, Bromoform, Carbon tetrachloride, Chloroform, Chloropicrin, Dibromoacetonitrile, Dibromochloromethane, 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, Dichloroacetonitrile, 1,1-Dichloro-2-propanone, Trichloroacetonitrile, Tetrachloroethene, 1,1,1-Trichloroethane, Trichloroethene, 1,1,1-Trichloro-2-propanone, 1,1,2-Trichloroethane, 1,2,3-Trichloropropane	1 mL
U-HCM-551D	Disinfection By-products and Chlorinated Solvents Mixture	4 x 1 mL
U-HCM-551B-1	Disinfection By-products Mixture 5000 µg/mL of each analyte in Acetone Bromochloroacetonitrile, Chloropicrin, Dibromoacetonitrile, Dichloroacetonitrile, 1,1-Dichloro-2-propanone, Trichloroacetonitrile, 1,1,1-Trichloro-2-propanone	1 mL
U-HCM-551B	Disinfection By-products Mixture	4 x 1 mL
U-PPM-551B-1	Pesticides Mixture 100 µg/mL of each analyte in Acetone Alachlor, Atrazine, gamma-BHC (Lindane), Bromacil, Cyanazine, Endrin, Endrin aldehyde, Endrin ketone, Heptachlor, Heptachlor epoxide - isomer B, Hexachlorobenzene, Hexachlorocyclopentadiene, Methoxychlor, Metolachlor, Simazine, Trifluralin	1 mL
U-PPM-551B	Pesticides Mixture	4 x 1 mL
U-EPA-1244	Chloral hydrate 1000 µg/mL in Methanol	1 mL
U-IST-152-1	Decafluorobiphenyl 1000 µg/mL in Acetone	1 mL
U-IST-152	Decafluorobiphenyl 1000 µg/mL in Acetone	4 x 1 mL
U-STS-113-1	4-Bromofluorobenzene 1000 µg/mL in Acetone	1 mL
U-STS-113	4-Bromofluorobenzene 1000 µg/mL in Acetone	4 x 1 mL
U-HCM-551E-1	Trihalomethanes and Chlorinated Solvents Mixture Solvent: Acetone Alachlor ... 83 µg/mL gamma-HCH (Lindane) ... 0.2 µg/mL Bromacil ... 83 µg/mL Bromodichloromethane ... 30 µg/mL Endrin ... 30 µg/mL Hexachlorocyclopentadien ... 20 µg/mL Trichloroethene ... 30 µg/mL	1 mL
U-HCM-551E	Trihalomethanes and Chlorinated Solvents Mixture	4 x 1 mL

Code	Product	Unit

EPA Methods 552, 552.1, 552.2 and 552.3

Haloacetic acids and dapalon

Method 552, 552.1 and 552.2 and 553.3 are used to determine halogenated acetic acids. They are ion exchange liquid-solid extraction followed by GC methods, using a capillary column and electron capture detector.

Recommended standards

Method 552

Calibration standard:	U-PHM-552A
Internal standard:	U-PPS-250
Surrogate standards:	U-PPS-261
	U-PPS-290

Method 552.1

Calibration standard:	U-PHM-5521A
Internal standard:	U-PPS-251
Surrogate standard:	U-PPS-300

Method 552.2

Calibration standards:	U-PHM-5523A
	PHM-5524A
Internal standard:	U-PPS-251
Surrogate standard:	U-PPS-390

Method 552.3

Calibration standard:	U-PHM-5524A
Internal standard:	U-PPS-251
Surrogate standard:	U-PPS-430

Code	Product	Unit
U-PHM-552A	Haloacetic Acids Mixture 1000 µg/mL of each analyte in Methyl tert-butyl ether (MTBE) Chloroacetic acid; Bromoacetic acid; Dichloroacetic acid; Bromochloroacetic acid; Trichloroacetic acid; Dibromoacetic acid; 2,4-Dichlorophenol; 2,4,6-Trichlorophenol	1 mL
New U-PHM-552A-4	Haloacetic Acids Mixture	4 x 1 mL
U-PHM-552M	Methylated Haloacetic Acids Mixture 1000 µg/mL of each analyte in Methyl tert-butyl ether (MTBE) Methyl chloroacetate; Methyl dibromoacetate; Methyl dichloroacetate; Methyl bromochloroacetate; Methyl trichloroacetate; 2,4-Dichloroanisole; Methyl bromoacetate; 2,4,6-Trichloroanisole	1 mL
New U-PHM-552M-4	Methylated Haloacetic Acids Mixture	4 x 1 mL
U-PHM-5522A-1	ICR Methylated Haloacetic Acids Mixture 11 Analytes in Methyl tert-butyl ether (MTBE) Chloroacetic acid ..... 3000 µg/mL Chlorodibromoacetic acid ..... 2000 µg/mL Dichloroacetic acid ..... 3000 µg/mL Trichloroacetic acid ..... 1000 µg/mL Bromoacetic acid ..... 2000 µg/mL Bromochloroacetic acid ..... 2000 µg/mL Bromodichloroacetic acid ..... 2000 µg/mL Dibromoacetic acid ..... 1000 µg/mL Tribromoacetic acid ..... 1000 µg/mL Dalapon ..... 2000 µg/mL 2-Bromopropionic acid ..... 1000 µg/mL	1 mL
U-PHM-5522A	ICR Methylated Haloacetic Acids Mixture	4 x 1 mL
New U-PHM-5522M-1	ICR Methylated Haloacetic Acids Mixture	1 mL
New U-PHM-5522M	ICR Methylated Haloacetic Acids Mixture	4 x 1 mL
U-PHM-5521A-1	Haloacetic Acids Mixture 7 Analytes in Methyl tert-butyl ether (MTBE) Chloroacetic acid ..... 3000 µg/mL Dichloroacetic acid ..... 3000 µg/mL Trichloroacetic acid ..... 1000 µg/mL Bromoacetic acid ..... 2000 µg/mL Bromochloroacetic acid ..... 2000 µg/mL Dibromoacetic acid ..... 1000 µg/mL Dalapon ..... 2000 µg/mL	1 mL
U-PHM-5521A	Haloacetic Acids Mixture	4 x 1 mL
U-PHM-5521M-1	Methylated Haloacetic Acids Mixture 7 Analytes in Methyl tert-butyl ether (MTBE) Methyl chloroacetate ..... 3000 µg/mL Methyl dichloroacetate ..... 3000 µg/mL Methyl trichloroacetate ..... 1000 µg/mL Methyl bromoacetate ..... 2000 µg/mL Methyl bromochloroacetate ..... 2000 µg/mL Methyl dibromoacetate ..... 1000 µg/mL Dalapon methyl ester ..... 2000 µg/mL	1 mL
U-PHM-5521M	Methylated Haloacetic Acids Mixture	4 x 1 mL

Code	Product	Unit
U-PHM-5523A-1	Haloacetic Acid Mixture 11 Analytes in Methyl tert-butyl ether (MTBE) Chloroacetic acid ..... 600 µg/mL Chlorodibromoacetic acid ..... 1000 µg/mL Dichloroacetic acid ..... 600 µg/mL Trichloroacetic acid..... 200 µg/mL Bromoacetic acid ..... 400 µg/mL Bromochloroacetic acid ..... 400 µg/mL Bromodichloroacetic acid..... 400 µg/mL Dibromoacetic acid ..... 200 µg/mL Tribromoacetic acid ..... 2000 µg/mL Dalapon..... 400 µg/mL 2,3-Dibromopropionic acid..... 1000 µg/mL	1 mL
U-PHM-5523A	Haloacetic Acid Mixture	4 x 1 mL
U-PHM-5524A-1	Haloacetic Acid Mixture 10 Analytes in Methyl tert-butyl ether (MTBE) Chloroacetic acid ..... 600 µg/mL Chlorodibromoacetic acid ..... 1000 µg/mL Dichloroacetic acid ..... 600 µg/mL Trichloroacetic acid..... 200 µg/mL Bromoacetic acid ..... 400 µg/mL Bromochloroacetic acid ..... 400 µg/mL Bromodichloroacetic acid..... 400 µg/mL Dibromoacetic acid ..... 200 µg/mL Tribromoacetic acid ..... 2000 µg/mL Dalapon..... 400 µg/mL	1 mL
U-PHM-5524A	Haloacetic Acid Mixture	4 x 1 mL
U-PHM-5524M-1	Methylated Haloacetic Acids Mixture 10 Analytes in Methyl tert-butyl ether (MTBE) Methyl chloroacetate..... 600 µg/mL Methyl chlorodibromoacetate..... 1000 µg/mL Methyl dichloroacetate..... 600 µg/mL Methyl trichloroacetate..... 200 µg/mL Methyl bromoacetate ..... 400 µg/mL Methyl bromochloroacetate..... 400 µg/mL Methyl bromodichloroacetate..... 400 µg/mL Methyl dibromoacetate..... 200 µg/mL Methyl tribromoacetate..... 2000 µg/mL Dalapon methyl ester ..... 400 µg/mL	1 mL
U-PHM-5524M	Methylated Haloacetic Acids Mixture	4 x 1 mL
U-PPS-261-1	3,5-Dichlorobenzoic acid 1000 µg/mL in Methyl tert-butyl ether	1 mL
U-PPS-261	3,5-Dichlorobenzoic acid 1000 µg/mL in Methyl tert-butyl ether	4 x 1 mL
U-PPS-262-1	Methyl-3,5-dichlorobenzoate 1000 µg/mL in Methyl tert-butyl ether	1 mL
U-PPS-262	Methyl-3,5-dichlorobenzoate 1000 µg/mL in Methyl tert-butyl ether	4 x 1 mL
U-PPS-290-1	2,3-Dichloropropanoic acid 1000 µg/mL in Methyl tert-butyl ether	1 mL
U-PPS-290	2,3-Dichloropropanoic acid 1000 µg/mL in Methyl tert-butyl ether	4 x 1 mL
U-PPS-300-1	2-Bromopropionic acid 1000 µg/mL in Methyl tert-butyl ether	1 mL
U-PPS-300	2-Bromopropionic acid 1000 µg/mL in Methyl tert.-butyl ether	4 x 1 mL
U-PPS-301-1	Methyl-2-bromopropanoate 1000 µg/mL in Methyl tert-butyl ether	1 mL
U-PPS-301	Methyl-2-bromopropanoate 1000 µg/mL in Methyl tert-butyl ether	4 x 1 mL
U-PPS-390-1	2,3-Dibromopropionic acid 1000 µg/mL in Methyl tert-butyl ether	1 mL
U-PPS-390	2,3-Dibromopropionic acid 1000 µg/mL in Methyl tert-butyl ether	4 x 1 mL
New U-PPS-430-1	2-Bromobutanoic acid 1000 µg/mL in Methyl tert-butyl ether	1 mL
New U-PPS-430	2-Bromobutanoic acid 1000 µg/mL in Methyl tert-butyl ether	4 x 1 mL
U-PPS-250-1	1,2,3-Trichloropropane 1000 µg/mL in Methanol	1 mL
U-PPS-250	1,2,3-Trichloropropane 1000 µg/mL in Methanol	4 x 1 mL
U-PPS-251-1	1,2,3-Trichloropropane 1000 µg/mL in Methyl tert-butyl ether	1 mL
U-PPS-251	1,2,3-Trichloropropane 1000 µg/mL in Methyl tert-butyl ether	4 x 1 mL

EPA Method 554

Carbonyl compounds

Method 554 is used to determine carbonyl compounds. It is derivatisation followed by an HPLC method.

Recommended standards

Calibration standard: U-ALD-554

U-ALD-554-1	Carbonyl Compounds Mixture 1000 µg/mL of each analyte in Methanol Formaldehyde, Acetaldehyde, Propanal, Butanal, Pentanal (Valeraldehyde), Hexanal, Heptanal, Octanal, Nonanal, Decanal, Cyclohexanone, Crotonaldehyde	1 mL
U-ALD-554	Carbonyl Compounds Mixture	4 x 1 mL
U-ALD-554D-1	Derivatised Carbonyl Compounds Mixture 1000 µg/ml of each analyte in Methanol/Acetonitrile (4:1) Formaldehyde-DNPH, Acetaldehyde-DNPH, Propanal-DNPH, Butanal-DNPH, Pentanal-DNPH, Hexanal-DNPH, Heptanal-DNPH, Octanal-DNPH, Nonanal-DNPH, Decanal-DNPH, Cyclohexanone-DNPH, Crotonaldehyde-DNPH	1 mL

EPA 600 Methods

Code	Product	Unit
U-ALD-554D	Derivatised Carbonyl Compounds Mixture	4 x 1 mL

EPA Method 555

Chlorinated acids

Method 555 is used to determine chlorinated acids. It is an extraction followed by an HPLC method.

Recommended standards

Calibration standards: U-HBM-555A
U-HBM-555B

U-HBM-555A-1	Chlorinated Acids Mixture A 1000 µg/mL of each analyte in Acetonitrile Acifluorfen, Chloramben, Dicamba, Picloram Bentazon, 2,4-D, Dichlorprop, Silvex (2,4,5-TP)	1 mL
U-HBM-555A	Chlorinated Acids Mixture A	4 x 1 mL
U-HBM-555B-1	Chlorinated Acids Mixture B 1000 µg/mL of each analyte in Acetonitrile 2,4-DB, MCPA 3,5-Dichlorobenzoic acid, MCPP 4-Nitrophenol, Pentachlorophenol Dinoseb, 2,4,5-T	1 mL
U-HBM-555B	Chlorinated Acids Mixture B	4 x 1 mL

EPA Methods 556, 556.1

Carbonyl compounds

Method 556 and 556.1 are used to determine carbonyl compounds. They are a derivatisation followed by GC/ECD methods.

Recommended standards

Calibration standard: U-ALD-556A
Internal standard: U-PPS-400
Surrogate standard: U-PPS-410

New U-ALD-556X	Aldehydes Mixture 100 µg/mL of each analyte in Acetonitrile/Water Formaldehyde, Pentanal (Valeraldehyde), Nonanal, Glyoxal Acetaldehyde, Hexanal, Decanal, Methyl glyoxal Propanal, Heptanal, Cyclohexanone Butanal, Octanal, Benzaldehyde	2 mL
U-PPS-400-1	1,2-Dibromopropane 10000 µg/mL in Hexane	1 mL
U-PPS-400	1,2-Dibromopropane 10000 µg/mL in Hexane	4 x 1 mL
U-PPS-410-1	2',4',5'-Trifluoroacetophenone 10000 µg/mL in Acetonitrile	1 mL
U-PPS-410	2',4',5'-Trifluoroacetophenone 10000 µg/mL in Acetonitrile	4 x 1 mL

EPA 600 Methods

Analysis of organic compounds in industrial and municipal waste water discharges.

The 600 series methods are designed for monitoring organic pollutatants in industrial and municipal discharges under the Clean Water Act.
ULTRA Scientific has prepared a series reference standards for the 60 series methods as well as the necessary surrogate and internal standards. Each analyte in a reference standard is pre-analysed, with most analytes being >99% pure. All solvents are of the highest quality available. All solutions are gravimetrically prepared to a precision of ±0.5%. A certificate showing the actual weights used is supplied with each mixture.

Code	Product	Unit

EPA Method 601

Purgeable halocarbons

Method 601 is a purge and trap method for determining purgeable halocarbons using an electrolytic conductivity (Hall) detector.

Recommended standards

Calibration standards: U-HCM-601
U-HC-070

Surrogate standard: U-STM-290N

Code	Product	Unit
U-HCM-601-1	Purgeable Halocarbon Mixture 100 µg/mL of each analyte in Methanol. Bromodichloromethane, Bromoform, Bromomethane, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, Dibromochloromethane, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Dichlorodifluoromethane, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethene, trans-1,2-Dichloroethene, 1,2-Dichloropropane, cis-1,3-Dichloropropene, trans-1,3-Dichloropropene, Methylene chloride, 1,1,2,2-Tetrachloroethane, Tetrachloroethene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Trichloroethene, Trichlorofluoromethane, Vinyl chloride	1 mL
U-HCM-601	Purgeable Halocarbon Mixture	4 x 1 mL
U-HC-070-1	2-Chloroethylvinyl ether 100 µg/mL in Methanol	1 mL
U-HC-070	2-Chloroethylvinyl ether 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1016	2-Chloroethylvinyl ether 5000 µg/mL in Methanol	1 mL
U-HCM-601G-1	Purgeable Gas Mixture 100 µg/mL of each analyte in Methanol. Bromomethane, Chloroethane, Chloromethane, Dichlorodifluoromethane, Vinyl chloride	1 mL
U-HCM-601G	Purgeable Gas Mixture	4 x 1 mL
U-STM-290N-1	Surrogate Standard Mixture 2000 µg/mL of each analyte in Methanol Bromochloromethane, 2-Bromo-1-chloropropane, 1,4-Dichlorobutane	1 mL
U-STM-290N	Surrogate Standard Mixture	4 x 1 mL
U-STM-291-1	Surrogate Standard Mixture 20000 µg/mL of each analyte in Methanol. Bromochloromethane, 2-Bromo-1-chloropropane, 1,4-Dichlorobutane	1 mL
U-STM-291	Surrogate Standard Mixture	4 x 1 mL
U-HCM-621-1	Purgeable Halocarbon & Aromatics Mixture 200 µg/mL of each analyte in Methanol. Benzene, Bromodichloromethane, Bromoform, Carbon tetrachloride, Chlorobenzene, Chloroform, Dibromochloromethane, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethene, trans-1,2-Dichloroethene, 1,2-Dichloropropane, cis-1,3-Dichloropropene, trans-1,3-Dichloropropene, Ethylbenzene, Methylene chloride, 1,1,2,2-Tetrachloroethane, Tetrachloroethene, Toluene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Trichloroethene	1 mL
U-HCM-621	Purgeable Halocarbon & Aromatics Mixture	4 x 1 mL
U-DWM-584-1	VOC Gas Mixture 200 µg/mL of each analyte in Methanol. Bromomethane, Chloroethane, Chloromethane, Dichlorodifluoromethane, Trichlorofluoromethane, Vinyl chloride	1 mL
U-DWM-584	VOC Gas Mixture	4 x 1 mL
U-DWM-544-1	VOC Gas Mixture 2000 µg/mL of each analyte in Methanol. Bromomethane, Chloroethane, Chloromethane, Dichlorodifluoromethane, Trichlorofluoromethane, Vinyl chloride	1 mL
U-DWM-544	VOC Gas Mixture	4 x 1 mL
U-EPA-2041N-1	Volatiles Mixture 1 50 µg/mL of each analyte in Methanol Carbon tetrachloride, Chlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichloroethane, 1,1-Dichloroethene, trans-1,2-Dichloroethene, 1,2-Dichloropropane, Ethylbenzene, Tetrachloroethene, 1,1,2-Trichloroethane	1 mL
U-EPA-2041N	Volatiles Mixture 1	4 x 1 mL
U-EPA-2141N-1	Volatiles Mixture 1 500 µg/mLof each analyte in Acetone Carbon tetrachloride, Chlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichloroethane, 1,1-Dichloroethene, trans-1,2-Dichloroethene, 1,2-Dichloropropane, Ethylbenzene, Tetrachloroethene, 1,1,2-Trichloroethane	1 mL

EPA 600 Methods

Code	Product	Unit
U-EPA-2141N	Volatiles Mixture 1	4 x 1 mL
U-EPA-2042N-1	Volatiles Mixture 2 50 µg/mL of each analyte in Methanol Benzene, Chloroform, 1,1-Dichloroethane, Toluene Bromodichloromethane, Dibromochloromethane, Methylene chloride, 1,1,1-Trichloroethane Bromoform, 1,2-Dichlorobenzene, 1,1,2,2-Tetrachloroethane, Trichloroethene	1 mL
U-EPA-2042N	Volatiles Mixture 2	4 x 1 mL
U-EPA-2142N-1	Volatiles Mixture 2 500 µg/mL of each analyte in Methanol Benzene, Chloroform, 1,1-Dichloroethane, Toluene Bromodichloromethane, Dibromochloromethane, Methylene chloride, 1,1,1-Trichloroethane Bromoform, 1,2-Dichlorobenzene, 1,1,2,2-Tetrachloroethane, Trichloroethene	1 mL
U-EPA-2142N	Volatiles Mixture 2	4 x 1 mL
U-STS-180-1	Bromochloromethane 2000 µg/mL in Methanol	1 mL
U-STS-180	Bromochloromethane 2000 µg/mL in Methanol	4 x 1 mL
U-STS-190-1	2-Bromo-1-chloropropane 2000 µg/mL in Methanol	1 mL
U-STS-190	2-Bromo-1-chloropropane 2000 µg/mL in Methanol	4 x 1 mL
U-STS-200-1	1,4-Dichlorobutane 2000 µg/mL in Methanol	1 mL
U-STS-200	1,4-Dichlorobutane 2000 µg/mL in Methanol	4 x 1 mL
U-EPA-100-1	Performance Check Mixture 200 µg/mL of each analyte in Methanol Benzene, 1,4-Dichlorobenzene, 1,1-Dichloroethene, Trichloroethene Carbon tetrachloride, 1,2-Dichloroethane, 1,1,1-Trichloroethane, Vinyl chloride	1 mL
U-EPA-100	Performance Check Mixture	4 x 1 mL
U-HCK-601	Purgeable Halocarbons Kit	kit

Bromodichloromethane (100 µg/mL in Methanol) ..... U-HC-010 (1 x 1 mL)
Bromoform (100 µg/mL in Methanol) ..... U-HC-020 (1 x 1 mL)
Bromomethane (100 µg/mL in Methanol) ..... U-HC-030 (1 x 1 mL)
Carbon Tetrachloride (100 µg/mL in Methanol) ..... U-HC-040 (1 x 1 mL)
Chlorobenzene (100 µg/mL in Methanol) ..... U-HC-050 (1 x 1 mL)
Chloroethane (100 µg/mL in Methanol) ..... U-HC-060 (1 x 1 mL)
2-Chloroethylvinyl Ether (100 µg/mL in Methanol) ..... U-HC-070 (1 x 1 mL)
Chloroform (100 µg/mL in Methanol) ..... U-HC-080 (1 x 1 mL)
Chloromethane (100 µg/mL in Methanol) ..... U-HC-090 (1 x 1 mL)
Dibromochloromethane (100 µg/mL in Methanol) ..... U-HC-100 (1 x 1 mL)
1,2-Dichlorobenzene (100 µg/mL in Methanol) ..... U-HC-110 (1 x 1 mL)
1,3-Dichlorobenzene (100 µg/mL in Methanol) ..... U-HC-120 (1 x 1 mL)
1,4-Dichlorobenzene (100 µg/mL in Methanol) ..... U-HC-130 (1 x 1 mL)
Dichlorodifluoromethane (100 µg/mL in Methanol) ..... U-HC-140 (1 x 1 mL)
1,1-Dichloroethane (100 µg/mL in Methanol) ..... U-HC-150 (1 x 1 mL)
1,2-Dichloroethane (100 µg/mL in Methanol) ..... U-HC-160 (1 x 1 mL)
1,1-Dichloroethene (100 µg/mL in Methanol) ..... U-HC-170 (1 x 1 mL)
trans-1,2-Dichloroethene (100 µg/mL in Methanol) ..... U-HC-180 (1 x 1 mL)
1,2-Dichloropropane (100 µg/mL in Methanol) ..... U-HC-190 (1 x 1 mL)
cis-1,3-Dichloropropene (100 µg/mL in Methanol) ..... U-HC-200 (1 x 1 mL)
trans-1,3-Dichloropropene (100 µg/mL in Methanol) ..... U-HC-210 (1 x 1 mL)
Methylene Chloride (100 µg/mL in Methanol) ..... U-HC-220 (1 x 1 mL)
1,1,2,2-Tetrachloroethane (100 µg/mL in Methanol) ..... U-HC-230 (1 x 1 mL)
Tetrachloroethene (100 µg/mL in Methanol) ..... U-HC-240 (1 x 1 mL)
1,1,1-Trichloroethane (100 µg/mL in Methanol) ..... U-HC-250 (1 x 1 mL)
1,1,2-Trichloroethane (100 µg/mL in Methanol) ..... U-HC-260 (1 x 1 mL)
Trichloroethene (100 µg/mL in Methanol) ..... U-HC-270 (1 x 1 mL)
Trichlorofluoromethane (100 µg/mL in Methanol) ..... U-HC-280 (1 x 1 mL)
Vinyl Chloride (100 µg/mL in Methanol) ..... U-HC-290 (1 x 1 mL)
Purgeable Halocarbon Mixture (100 µg/mL in Methanol) ..... U-HCM-601 (1 x 1 mL)

EPA Method 602

Purgeable aromatics

Method 602 is a purge and trap method for determining purgeable aromatics, using a PID.

Recommended standards

Calibration standard: U-AMM-602N
Internal & Surrogate standard: U-STS-220N

U-AMM-602N-1	Purgeable Aromatics Mixture 100 µg/mL of each analyte in Methanol. Benzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, Toluene Chlorobenzene, 1,3-Dichlorobenzene, Ethylbenzene	1 mL
U-AMM-602N	Purgeable Aromatics Mixture	4 x 1 mL

Code	Product	Unit
U-AMM-622-1	Purgeable Aromatics Mixture 200 µg/mL of each analyte in Methanol. Benzene, Chlorobenzene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Ethylbenzene, Toluene, o-Xylene, m-Xylene, p-Xylene, tert-Butylmethyl ether (MTBE)	1 mL
U-AMM-622	Purgeable Aromatics Mixture	4 x 1 mL
U-SCA-100-1	WIP VOA Standard (California) 2000 µg/mL of each analyte in Methanol Benzene, Chlorobenzene, Ethylbenzene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Toluene, o-Xylene, m-Xylene, p-Xylene, tert-Butylmethyl ether (MTBE)	1 mL
U-SCA-100	WIP VOA Standard (California)	4 x 1 mL
U-STS-221-1	alpha,alpha,alpha-Trifluorotoluene 200 µg/mL in Methanol	1 mL
U-STS-221	alpha,alpha,alpha-Trifluorotoluene 200 µg/mL in Methanol	4 x 1 mL
U-STS-220N-1	alpha,alpha,alpha-Trifluorotoluene 2000 µg/mL in Methanol	1 mL
U-STS-220N	alpha,alpha,alpha-Trifluorotoluene 2000 µg/mL in Methanol	4 x 1 mL
U-AMK-602	Purgeable Aromatics Kit Purgeable Aromatics Mixture (100 µg/mL in Methanol) ..... U-AMM-602N (1 x 1 mL) Toluene (100 µg/mL in Methanol)..... U-AM-160 (1 x 1 mL) Ethylbenzene (100 µg/mL in Methanol)..... U-AM-150 (1 x 1 mL) 1,4-Dichlorobenzene (100 µg/mL in Methanol)..... U-HC-130 (1 x 1 mL) 1,3-Dichlorobenzene (100 µg/mL in Methanol)..... U-HC-120 (1 x 1 mL) 1,2-Dichlorobenzene (100 µg/mL in Methanol)..... U-HC-110 (1 x 1 mL) Chlorobenzene (100 µg/mL in Methanol) ..... U-HC-050 (1 x 1 mL) Benzene (100 µg/mL in Methanol)..... U-AM-100 (1 x 1 mL)	kit

EPA Method 603

Acrolein and acrylonitrile

Method 603 is a purge and trap method for determining arcolein and acrylonitrile, using a flame ionisation detector.

Recommended standards

Calibration standard: U-AMN-603

U-AMN-603-1	Acrolein-Acrylonitrile Mixture 100 µg/mL of each analyte in Methanol Acrolein, Acrylonitrile	1 mL
U-AMN-603	Acrolein-Acrylonitrile Mixture	4 x 1 mL
U-AMN-623-1	Acrolein-Acrylonitrile Mixture 2000 µg/mL of each analyte in Methanol Acrolein, Acrylonitrile	1 mL
U-AMN-623	Acrolein-Acrylonitrile Mixture	4 x 1 mL
U-AMN-613-1	Acrolein-Acrylonitrile Mixture 1000 µg/mL of each analyte in Water Acrolein, Acrylonitrile	1 mL
U-AMN-613	Acrolein-Acrylonitrile Mixture	4 x 1 mL
U-AMN-803-1	Acrolein-Acrylonitrile Mixture 10000 µg/mL of each analyte in Water Acrolein, Acrylonitrile	1 mL
U-AMN-803	Acrolein-Acrylonitrile Mixture	4 x 1 mL

Code	Product	Unit

EPA Method 604

Phenols

Method 604 is used to measure phenols. Samples are extracted, then concentrated in a Kuderna-Danish apparatus. Quantitation is by GC/FID, or the extract is derivatised and determined by GC/ECD.

Recommended standards

Calibration standards:	US-107N EPA-2008N
Internal & Surrogate standards:	IST-251 IST-261 IST-271

Code	Product	Unit
U-EPA-2008N-1	Acids Mixture 100 µg/mL of each analyte in Methanol 4-Chloro-3-methylphenol, 2-Chlorophenol, 2,4-Dichlorophenol, 2,4-Dimethylphenol, 2,4-Dinitrophenol, 2-Methyl-4,6-dinitrophenol, 2-Nitrophenol, 4-Nitrophenol, Pentachlorophenol, Phenol, 2,4,6-Trichlorophenol	1 mL
U-EPA-2008N	Acids Mixture	4 x 1 mL
U-US-107N	Phenols Mixture 2000 µg/mL of each analyte in Methylene Chloride. 4-Chloro-3-methylphenol, 2-Chlorophenol, 2,4-Dichlorophenol, 2,4-Dimethylphenol, 2,4-Dinitrophenol, 2-Methyl-4,6-dinitrophenol, 2-Nitrophenol, 4-Nitrophenol, Pentachlorophenol, Phenol, 2,4,6-Trichlorophenol	1 mL
U-US-107N-4	Phenols Mixture	4 x 1 mL
U-PHM-604-1	Phenols Mixture 20 µg/mL of each analyte in Methanol. 4-Chloro-3-methylphenol, 2-Chlorophenol, 2,4-Dichlorophenol, 2,4-Dimethylphenol, 2-Methyl-4,6-dinitrophenol, 2,4-Dinitrophenol, 2-Nitrophenol, 4-Nitrophenol, Pentachlorophenol, Phenol, 2,4,6-Trichlorophenol	1 mL
U-PHM-604	Phenols Mixture	4 x 1 mL
New U-PHM-624	Phenols Mixture	4 x 1 mL
U-ISM-290N-1	Acids Surrogate Standard Mixture 2000 µg/mL of each analyte in Methanol 2-Fluorophenol, Phenol-D_5, 2,4,6-Tribromophenol	1 mL
U-ISM-290N	Acids Surrogate Standard Mixture	4 x 1 mL
U-PHK-604A	Phenols Kit 4-Chloro-3-methylphenol (100 µg/mL in Methanol) ..... U-PH-100 (1 x 1 mL) 2-Chlorophenol (100 µg/mL in Methanol) ..... U-PH-110 (1 x 1 mL) 2,4-Dichlorophenol (100 µg/mL in Methanol) ..... U-PH-120 (1 x 1 mL) 2,4-Dimethylphenol (100 µg/mL in Methanol) ..... U-PH-130 (1 x 1 mL) 2,4-Dinitrophenol (1000 µg/mL in Methanol) ..... U-PH-140 (1 x 1 mL) 2-Methyl-4,6-Dinitrophenol (1000 µg/mL in Methanol) ..... U-PH-150 (1 x 1 mL) 2-Nitrophenol (100 µg/mL in Methanol) ..... U-PH-160 (1 x 1 mL) 4-Nitrophenol (100 µg/mL in Methanol) ..... U-PH-170 (1 x 1 mL) Pentachlorophenol (1000 µg/mL in Methanol) ..... U-PH-180 (1 x 1 mL) Phenol (100 µg/mL in Methanol) ..... U-PH-190 (1 x 1 mL) 2,4,6-Trichlorophenol (100 µg/mL in Methanol) ..... U-PH-200 (1 x 1 mL) Acids Mixture (GAC) (100 µg/mL in Methanol) ..... U-EPA-2008N (1 x 1 mL)	kit
U-XY-0126-1	Phenols Mixture 11 Analytes in Methanol 4-Chloro-3-methylphenol ..... 2500 µg/mL 2-Chlorophenol ..... 500 µg/mL 2,4-Dichlorophenol ..... 500 µg/mL 2,4-Dimethylphenol ..... 500 µg/mL 2-Methyl-4,6-dinitrophenol ..... 2500 µg/mL 2,4-Dinitrophenol ..... 1500 µg/mL 2-Nitrophenol ..... 500 µg/mL 4-Nitrophenol ..... 2500 µg/mL Pentachlorophenol ..... 2500 µg/mL Phenol ..... 600 µg/mL 2,4,6-Trichlorophenol ..... 500 µg/mL	1 mL
U-XY-0126	Phenols Mixture	4 x 1 mL
U-IST-251-1	2-Fluorophenol 2000 µg/mL in Methanol	1 mL
U-IST-251	2-Fluorophenol 2000 µg/mL in Methanol	4 x 1 mL
U-IST-261-1	Pentafluorophenol 2000 µg/mL in Methanol	1 mL

Code	Product	Unit
U-IST-261	Pentafluorophenol 2000 µg/mL in Methanol	4 x 1 mL
U-IST-271-1	Phenol-D_5 2000 µg/mL in Methanol	1 mL
U-IST-271	Phenol-D_5 2000 µg/mL in Methanol	4 x 1 mL
U-ATS-181-1	2,4,6-Tribromophenol 2000 µg/mL in Methanol	1 mL
U-ATS-181	2,4,6-Tribromophenol 2000 µg/mL in Methanol	4 x 1 mL

EPA Method 605

Benzidines

Method 605 is an HPLC method for benzidines, using electrochemical detector.

U-US-105N	Benzidines Mixture 2000 µg/mL of each analyte in Methanol. Benzidine 3,3'-Dichlorobenzidine	1 mL
U-US-105N-4	Benzidines Mixture	4 x 1 mL

EPA Method 606

Phthalates

Method 606 is used to measure phthalates. Samples are extracted, then concentrated in a Kuderna-Danish apparatus and then quantitated by GC/ECD.

Recommended standards

Calibration standard: U-PSM-606

U-PSM-606-1	Phthalates Mixture 100 µg/mL of each analyte in Methanol Bis(2-ethylhexyl)phthalate, Diethyl phthalate Butyl benzyl phthalate, Dimethyl phthalate Di-n-butyl phthalate, Di-n-octyl phthalate	1 mL
U-PSM-606	Phthalates Mixture	4 x 1 mL
U-PSM-806-1	Phthalates Mixture 1000 µg/mL of each analyte in Isooctane. Bis(2-ethylhexyl)phthalate, Diethyl phthalate Butyl benzyl phthalate, Dimethyl phthalate Di-n-butyl phthalate, Di-n-octyl phthalate	1 mL
U-PSM-806	Phthalates Mixture	4 x 1 mL
U-EPA-2037N-1	Phthalate Esters Mixture 6 Analytes in Acetone Bis(2-ethylhexyl)phthalate ..... 50 µg/mL Butyl benzyl phthalate ..... 10 µg/mL Dimethyl phthalate ..... 25 µg/mL Di-n-butyl phthalate ..... 25 µg/mL Diethyl phthalate ..... 25 µg/mL Di-n-octyl phthalate ..... 50 µg/mL	1 mL
U-EPA-2037N	Phthalate Esters Mixture	4 x 1 mL
U-PSK-606	Phthalates Kit Bis(2-ethylhexyl)phthalate (100 µg/mL in Methanol) ..... U-PS-100 (1 x 1 mL) Butyl benzyl phthalate (100 µg/mL in Methanol) ..... U-PS-110 (1 x 1 mL) Di-n-butyl phthalate (100 µg/mL in Methanol) ..... U-PS-120 (1 x 1 mL) Diethyl phthalate (100 µg/mL in Methanol) ..... U-PS-130 (1 x 1 mL) Dimethyl phthalate (100 µg/mL in Methanol) ..... U-PS-140 (1 x 1 mL) Di-n-octyl phthalate (100 µg/mL in Methanol) ..... U-PS-150 (1 x 1 mL) Phthalates mixture (100 µg/mL in Methanol) ..... U-PSM-606 (1 x 1 mL)	kit

EPA Method 607

Nitrosamines

Method 607 is used to measure nitrosamines. Samples are extracted, concentrated in a Kuderna-Danish apparatus, then quantitated with GC and nitrogen-phosphorous detector.

U-NSM-807-1	Nitrosamines Mixture 2000 µg/mL of each analyte in Methanol N-Nitrosodimethylamine, N-Nitrosodi-n-propylamine N-Nitrosodiphenylamine	1 mL
U-NSM-807	Nitrosamines Mixture	4 x 1 mL

Code	Product	Unit

EPA Method 608, 608.1 and 608.2

Organochlorine pesticides and PCBs

Method 608 is used to measure organochlorine pesticides and PCBs, using extraction followed by GC/ECD. Method 608.1 and 608.2 include additional analytes.

Recommended standards

Calibration standards: U-PPM-608B, U-PPM-608E, U-PPM-608F

Surrogate standards: U-ISM-320, U-ISM-301

Code	Product	Unit
U-PPM-608B-1	Organochlorine Pesticide Mixture 20 µg/mL of each analyte in Methanol Endosulfan II, Endosulfan sulfate, Endrin, Endrin aldehyde, Heptachlor, Aldrin, alpha-BHC (alpha-HCH), beta-BHC (beta-HCH), Delta-BHC (delta-HCH), gamma-BHC (Lindane), 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, Dieldrin, Endosulfan I, Heptachlor epoxide - isomer B	1 mL
U-PPM-608B	Organochlorine Pesticide Mixture	4 x 1 mL
U-ISM-320-1	Pesticides Surrogate Standard Spiking Solution 200 µg/mL of each analyte in Acetone 2,4,5,6-Tetrachloro-m-xylene, Decachlorobiphenyl	1 mL
U-ISM-320	Pesticides Surrogate Standard Spiking Solution	4 x 1 mL
U-ISM-301-1	Pesticides Surrogate Standard Mixture 200 µg/mL of each analyte in Acetone Dibutyl chlorendate, 2,4,5,6-Tetrachloro-m-xylene	1 mL
U-ISM-301	Pesticides Surrogate Standard Mixture	4 x 1 mL
U-PPM-608D-1	Organochlorine Pesticides Mixture 16 Analytes in Methanol Aldrin ... 200 µg/mL alpha-BHC (alpha-HCH) ... 200 µg/mL beta-BHC (beta-HCH) ... 200 µg/mL delta-BHC (delta-HCH) ... 200 µg/mL gamma-BHC (Lindane) ... 200 µg/mL 4,4'-DDD ... 100 µg/mL 4,4'-DDE ... 200 µg/mL 4,4'-DDT ... 600 µg/mL Dieldrin ... 200 µg/mL Endosulfan I ... 200 µg/mL Endosulfan II ... 200 µg/mL Endosulfan sulfate ... 200 µg/mL Endrin ... 200 µg/mL Endrin aldehyde ... 200 µg/mL Heptachlor ... 200 µg/mL Heptachlor epoxide - isomer B ... 200 µg/mL	1 mL
U-PPM-608D	Organochlorine Pesticides Mixture	4 x 1 mL
U-PP-150-1	Chlordane 100 µg/mL in Methanol	1 mL
U-PP-150	Chlordane 100 µg/mL in Methanol	4 x 1 mL
U-PP-270-1	Toxaphene 100 µg/mL in Methanol	1 mL
U-PP-270	Toxaphene 100 µg/mL in Methanol	4 x 1 mL
U-PP-280-1	Aroclor 1016 100 µg/mL in Methanol	1 mL
U-PP-280	Aroclor 1016 100 µg/mL in Methanol	4 x 1 mL
U-PP-290-1	Aroclor 1221 100 µg/mL in Methanol	1 mL
U-PP-290	Aroclor 1221 100 µg/mL in Methanol	4 x 1 mL
U-PP-300-1	Aroclor 1232 100 µg/mL in Methanol	1 mL
U-PP-300	Aroclor 1232 100 µg/mL in Methanol	4 x 1 mL
U-PP-310-1	Aroclor 1242 100 µg/mL in Methanol	1 mL
U-PP-310	Aroclor 1242 100 µg/mL in Methanol	4 x 1 mL
U-PP-340-1	Aroclor 1248 100 µg/mL in Methanol	1 mL
U-PP-340	Aroclor 1248 100 µg/mL in Methanol	4 x 1 mL
U-PP-350-1	Aroclor 1254 100 µg/mL in Methanol	1 mL
U-PP-350	Aroclor 1254 100 µg/mL in Methanol	4 x 1 mL
U-PP-360-1	Aroclor 1260 100 µg/mL in Methanol	1 mL
U-PP-360	Aroclor 1260 100 µg/mL in Methanol	4 x 1 mL

Code	Product	Unit
U-PPM-608C-1	Organochlorine Pesticide Mixture	1 mL

Solvent: Methanol

Aldrin	20 µg/mL	Endosulfan I	20 µg/mL
alpha-BHC (alpha-HCH)	20 µg/mL	Endosulfan II	100 µg/mL
beta-BHC (beta-HCH)	20 µg/mL	Endosulfan sulfate	100 µg/mL
Delta-BHC (delta-HCH)	20 µg/mL	Endrin	100 µg/mL
gamma-BHC (Lindane)	20 µg/mL	Endrin aldehyde	20 µg/mL
4,4'-DDD	100 µg/mL	Heptachlor	20 µg/mL
4,4'-DDE	20 µg/mL	Heptachlor epoxide - isomer B	20 µg/mL
4,4'-DDT	100 µg/mL	Methoxychlor	20 µg/mL
Dieldrin	20 µg/mL		

U-PPM-608C	Organochlorine Pesticide Mixture	4 x 1 mL
U-EPA-2101N-1	Chlorinated Hydrocarbon Pesticides Mixture	1 mL

6 Analytes in Acetone

Aldrin	100 µg/mL	4,4'-DDE	100 µg/mL	Dieldrin	100 µg/mL
4,4'-DDD	500 µg/mL	4,4'-DDT	500 µg/mL	Heptachlor	100 µg/mL

U-EPA-2101N	Chlorinated Hydrocarbon Pesticides Mixture	4 x 1 mL
U-EPA-2004N-1	Toxaphene 50 µg/mL in Methanol	1 mL
U-EPA-2004N	Toxaphene 50 µg/mL in Methanol	4 x 1 mL
U-US-102BN	Organochlorine Pesticide Mixture	1 mL

2000 µg/mL of each analyte in Hexane/Toluene (1:1)

Aldrin	Dieldrin
alpha-BHC (alpha-HCH)	Endosulfan I
beta-BHC (beta-HCH)	Endosulfan II
delta-BHC (delta-HCH)	Endosulfan sulfate
gamma-BHC (Lindane)	Endrin
4,4'-DDD	Endrin aldehyde
4,4'-DDE	Heptachlor
4,4'-DDT	Heptachlor epoxide - isomer B

U-US-102BN-4	Organochlorine Pesticide Mixture	4 x 1 mL
U-PPK-608B	Organochlorine Pesticides Kit	kit

Aldrin (100 µg/mL in Methanol)	U-PP-100 (1 x 1 mL)
alpha-BHC (100 µg/mL in Methanol)	U-PP-110 (1 x 1 mL)
beta-BHC (100 µg/mL in Methanol)	U-PP-120 (1 x 1 mL)
delta-BHC (100 µg/mL in Methanol)	U-PP-130 (1 x 1 mL)
gamma-BHC (100 µg/mL in Methanol)	U-PP-140 (1 x 1 mL)
Chlordane (100 µg/mL in Methanol)	U-PP-150 (1 x 1 mL)
4,4'-DDD (100 µg/mL in Methanol)	U-PP-160 (1 x 1 mL)
4,4'-DDE (100 µg/mL in Methanol)	U-PP-170 (1 x 1 mL)
4,4'-DDT (100 µg/mL in Methanol)	U-PP-180 (1 x 1 mL)
Dieldrin (100 µg/mL in Methanol)	U-PP-190 (1 x 1 mL)
Endosulfan I (100 µg/mL in Methanol)	U-PP-200 (1 x 1 mL)
Endosulfan II (100 µg/mL in Methanol)	U-PP-210 (1 x 1 mL)
Endosulfan sulfate (100 µg/mL in Methanol)	U-PP-220 (1 x 1 mL)
Endrin (100 µg/mL in Methanol)	U-PP-230 (1 x 1 mL)
Endrin aldehyde (100 µg/mL in Methanol)	U-PP-240 (1 x 1 mL)
Heptachlor (100 µg/mL in Methanol)	U-PP-250 (1 x 1 mL)
Heptachlor epoxide (Isomer B) (100 µg/mL in	U-PP-261 (1 x 1 mL)
Toxaphene (100 µg/mL in Methanol)	U-PP-270 (1 x 1 mL)
Aroclor 1016 (100 µg/mL in Methanol)	U-PP-280 (1 x 1 mL)
Aroclor 1221 (100 µg/mL in Methanol)	U-PP-290 (1 x 1 mL)
Aroclor 1232 (100 µg/mL in Methanol)	U-PP-300 (1 x 1 mL)
Aroclor 1242 (100 µg/mL in Methanol)	U-PP-310 (1 x 1 mL)
Aroclor 1248 (100 µg/mL in Methanol)	U-PP-340 (1 x 1 mL)
Aroclor 1254 (100 µg/mL in Methanol)	U-PP-350 (1 x 1 mL)
Aroclor 1260 (100 µg/mL in Methanol)	U-PP-360 (1 x 1 mL)
Organochlorine Pesticides Mixture (20 µg/mL in Methanol)	U-PPM-608B (1 x 1 mL)

New	U-PPM-608G-1	Waste Water Pesticides Mixture	1 mL

7 Analytes

100 µg/mL of each analyte in Acetone

Aldrin	Dieldrin
4,4'-DDD	Heptachlor
4,4'-DDE	Heptachlor epoxide - isomer B
4,4'-DDT	

New	U-PPM-608G	Waste Water Pesticides Mixture	4 x 1 mL
	U-PPM-608E-1	Organochlorine Pesticides Mixture	1 mL

7 Analytes in iso-Octane (2,2,4-Trimethylpentane)

Chlorobenzilate	200 µg/mL	Etridiazole	40 µg/mL
Chloroneb	40 µg/mL	Pentachloronitrobenzene	60 µg/mL
Chloropropylate	200 µg/mL	Propachlor	1000 µg/mL
1,2-Dibromo-3-chloropropane	40 µg/mL		

U-PPM-608E	Organochlorine Pesticides Mixture	4 x 1 mL

EPA 600 Methods

Code	Product	Unit
U-PPM-608F-1	Organochlorine Pesticides Mixture 5 Analytes in Hexane Chlorothalonil ..... 1 µg/mL DCPA (Dacthal) ..... 3 µg/mL Dichloran ..... 2 µg/mL Methoxychlor ..... 40 µg/mL Permethrins (mixed isomers,total) ..... 400 µg/mL	1 mL
U-PPM-608F	Organochlorine Pesticides Mixture	4 x 1 mL

EPA Method 609

Nitroaromatics and isophorone

Method 609 is used to measure nitroaromatics and isophorone. Samples are extracted, concentrated in a Kuderna-Danish apparatus, then quantitated with GC/FID and GC/ECD.

U-NAIM-609-1	Nitroaromatics and Isophorone Mixture 100 µg/mL of each analyte in Methanol 2,4-Dinitrotoluene, 2,6-Dinitrotoluene, Isophorone, Nitrobenzene	1 mL
U-NAIM-609	Nitroaromatics and Isophorone Mixture	4 x 1 mL

EPA Method 610

Polynuclear aromatic hydrocarbons

Method 610 is used to measure polynuclear aromatic hydrocarbons, using extraction followed by either GC/FID or HPLC using a UV or a fluorescence detector.

Recommended standards

Calibration standards: U-US-106N
U-PM-611

U-PM-610-1	PAH Mixture 20 µg/mL of each analyte in Methylene chloride (Dichloromethane) Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(ghi)perylene, Benzo(a)pyrene, Chrysene, Dibenzo(a,h)anthracene, Fluoranthene, Fluorene, Indeno(1,2,3-cd)pyrene, Naphthalene, Phenanthrene, Pyrene	1 mL
U-PM-610	PAH Mixture	4 x 1 mL
New U-PM-611-1	PAH Mixture 100 µg/mL of each analyte in Methylene chloride (Dichloromethane) Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(ghi)perylene, Benzo(a)pyrene, Chrysene, Dibenzo(a,h)anthracene, Fluoranthene, Fluorene, Indeno(1,2,3-cd)pyrene, Naphthalene, Phenanthrene, Pyrene	1 mL
New U-PM-611	PAH Mixture	4 x 1 mL
U-US-106N	PAH Mixture 2000 µg/mL of each analyte in Methylene chloride/Benzene (1:1) Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(ghi)perylene, Benzo(a)pyrene, Chrysene, Dibenzo(a,h)anthracene, Fluoranthene, Fluorene, Indeno(1,2,3-cd)pyrene, Naphthalene, Phenanthrene, Pyrene	1 mL
U-US-106N-4	PAH Mixture	4 x 1 mL
U-PK-610	PAH Kit Acenaphthene Solution (100 µg/mL in Methanol) ..... U-P-610 (1 x 1 mL) Acenaphthylene Solution (100 µg/mL in Methanol) ..... U-P-620 (1 x 1 mL) Anthracene Solution (100 µg/mL in Methylene chloride) ..... U-P-630 (1 x 1 mL) Benzo(a)anthracene Solution (100 µg/mL in Methylene ..... U-P-640 (1 x 1 mL) Benzo(a)pyrene Solution (100 µg/mL in Methylene chloride) ..... U-P-650 (1 x 1 mL) Benzo(b)fluoranthene Solution (100 µg/mL in Methylene chloride) ..... U-P-660 (1 x 1 mL) Benzo(ghi)perylene Solution (100 µg/mL in Methylene chlroride) ..... U-P-670 (1 x 1 mL) Benzo(k)fluoranthene Solution (100 µg/mL in Methylene chloride) ..... U-P-680 (1 x 1 mL) Chrysene Solution (100 µg/mL in Methylene chloride) ..... U-P-690 (1 x 1 mL) Dibenzo(a,h)anthracene Solution (100 µg/mL in Methylene chloride) ..... U-P-700 (1 x 1 mL) Fluoranthene Solution (100 µg/mL in Methylene chloride) ..... U-P-710 (1 x 1 mL) Fluorene Solution (100 µg/mL in Methanol) ..... U-P-720 (1 x 1 mL) Indeno(1,2,3-cd)pyrene Solution (100 µg/mL in Methylene chloride) ..... U-P-730 (1 x 1 mL) Naphthalene Solution (100 µg/mL in Methanol) ..... U-P-740 (1 x 1 mL) Phenanthrene Solution (100 µg/mL in Methylene chloride) ..... U-P-750 (1 x 1 mL) Pyrene Solution (100 µg/mL in Methylene chloride) ..... U-P-760 (1 x 1 mL) PAH Mixture (20 µg/mL in Methylene chloride) ..... U-PM-610 (1 x 1 mL)	kit

Code	Product	Unit
U-PM-612-1	PAH MIxture 16 Analytes in Methylene Chloride Acenaphthene 100 µg/mL Acenaphthylene 200 µg/mL Anthracene 100 µg/mL Benzo(a)anthracene 100 µg/mL Benzo(b)fluoranthene 200 µg/mL Benzo(k)fluoranthene 100 µg/mL Benzo(ghi)perylene 200 µg/mL Benzo(a)pyrene 100 µg/mL Chrysene 100 µg/mL Dibenzo(a,h)anthracene 200 µg/mL Fluoranthene 200 µg/mL Fluorene 200 µg/mL Indeno(1,2,3-cd)pyrene 100 µg/mL Naphthalene 1000 µg/mL Phenanthrene 100 µg/mL Pyrene 100 µg/mL	1 mL
U-PM-612	PAH MIxture	4 x 1 mL
U-PM-613A-1	PAH Mixture Solvent: Acetonitrile Acenaphthene 100 µg/mL Acenaphthylene 100 µg/mL Anthracene 100 µg/mL Benzo(a)anthracene 10 µg/mL Benzo(b)fluoranthene 10 µg/mL Benzo(k)fluoranthene 5 µg/mL Benzo(ghi)perylene 10 µg/mL Benzo(a)pyrene 10 µg/mL Chrysene 10 µg/mL Dibenzo(a,h)anthracene 10 µg/mL Fluoranthene 10 µg/mL Fluorene 100 µg/mL Indeno(1,2,3-cd)pyrene 10 µg/mL Naphthalene 100 µg/mL Phenanthrene 100 µg/mL Pyrene 10 µg/mL	1 mL
U-PM-613A	PAH Mixture	4 x 1 mL
U-EPA-2138N-1	Polynuclear Aromatic Hydrocarbons Mixture 1 8 Analytes in Acetonitrile Acenaphthene 1000 µg/mL Anthracene 1000 µg/mL Benzo(k)fluoranthene 50 µg/mL Chrysene 100 µg/mL Fluorene 1000 µg/mL Indeno(1,2,3-cd)pyrene 100 µg/mL Naphthalene 1000 µg/mL Pyrene 100 µg/mL	1 mL
U-EPA-2138N	Polynuclear Aromatic Hydrocarbons Mixture 1	4 x 1 mL
U-EPA-2139N-1	Polynuclear Aromatic Hydrocarbons Mixture 2 8 Analytes in Acetonitrile Acenaphthylene 1000 µg/mL Benzo(a)anthracene 100 µg/mL Benzo(b)fluoranthene 100 µg/mL Benzo(ghi)perylene 100 µg/mL Benzo(a)pyrene 100 µg/mL Dibenzo(a,h)anthracene 100 µg/mL Fluoranthene 100 µg/mL Phenanthrene 1000 µg/mL	1 mL
U-EPA-2139N	Polynuclear Aromatic Hydrocarbons Mixture 2	4 x 1 mL
U-EPA-2038N-1	Polynuclear Aromatic Hydrocarbons Mixture 1 (PNA-1) 7 Analytes in Acetonitrile Acenaphthene 100 µg/mL Anthracene 100 µg/mL Benzo(k)fluoranthene 5 µg/mL Chrysene 10 µg/mL Indeno(1,2,3-cd)pyrene 10 µg/mL Naphthalene 100 µg/mL Pyrene 10 µg/mL	1 mL
U-EPA-2038N	Polynuclear Aromatic Hydrocarbons Mixture 1 (PNA-1)	4 x 1 mL
U-EPA-2039N-1	Polynuclear Aromatic Hydrocarbons Mixture 2 10 µg/ml of each analyte in Acetonitrile Acenaphthylene 10 µg/mL Benzo(a)anthracene 10 µg/mL Benzo(b)fluoranthene 10 µg/mL Benzo(ghi)perylene 10 µg/mL Benzo(a)pyrene 10 µg/mL Dibenzo(a,h)anthracene 10 µg/mL Fluoranthene 10 µg/mL Phenanthrene 10 µg/mL	1 mL
U-EPA-2039N	Polynuclear Aromatic Hydrocarbons Mixture 2	4 x 1 mL

EPA Method 611

Haloethers

Method 611 is use to measure haloethers. Samples are extracted, concentrated in a Kuderna-Danish apparatus, then quantitated with an electrolytic conductivity detector.

U-EPA-2014N-1	Haloethers Mixture (HAL) 100 µg/ml of each analyte in Acetone Bis(2-chloroethyl) ether 100 µg/mL Bis(2-chloroethoxy) methane 100 µg/mL Bis(2-chloroisopropyl) ether 100 µg/mL 4-Bromophenyl phenyl ether 100 µg/mL 4-Chlorophenyl phenyl ether 100 µg/mL	1 mL
U-EPA-2014N	Haloethers Mixture (HAL)	4 x 1 mL

Code	Product	Unit

EPA Method 612

Chlorinated hydrocarbons

Method 612 is used to measure chlorinated hydrocarbons, using extraction followed by GC/ECD.

Recommended standards

Calibration standard: U-CHM-622

U-CHM-622-1	Chlorinated Hydrocarbons Mixture 9 Analytes in iso-Octane (2,2,4-Trimethylpentane) 2-Chloronaphthalene ..... 400 µg/mL 1,2-Dichlorobenzene ..... 200 µg/mL 1,3-Dichlorobenzene ..... 200 µg/mL 1,4-Dichlorobenzene ..... 400 µg/mL 1,2,4-Trichlorobenzene ..... 40 µg/mL Hexachlorobenzene ..... 1 µg/mL Hexachlorobutadiene ..... 1 µg/mL Hexachlorocyclopentadiene ..... 1 µg/mL Hexachloroethane ..... 1 µg/mL	1 mL
U-CHM-622	Chlorinated Hydrocarbons Mixture	4 x 1 mL
U-CHM-612-1	Chlorinated Hydrocarbons Mixture 100 µg/mL of each analyte in Methanol/Methylene chloride (1:1) 2-Chloronaphthalene 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Hexachlorobenzene Hexachlorobutadiene Hexachlorocyclopentadiene Hexachloroethane 1,2,4-Trichlorobenzene	1 mL
U-CHM-612	Chlorinated Hydrocarbons Mixture	4 x 1 mL
U-CHK-612	Chlorinated Hydrocarbons Kit 2-Chloronaphthalene (100 µg/mL in Methylene chloride) ..... U-CH-110 (1 x 1 mL) 1,2-Dichlorobenzene (100 µg/mL in Methanol) ..... U-HC-110 (1 x 1 mL) 1,3-Dichlorobenzene (100 µg/mL in Methanol) ..... U-HC-120 (1 x 1 mL) 1,4-Dichlorobenzene (100 µg/mL in Methanol) ..... U-HC-130 (1 x 1 mL) Hexachlorobenzene (100 µg/mL in Methylene chloride) ..... U-CH-151 (1 x 1 mL) Hexachlorobutadiene (100 µg/mL in Methanol) ..... U-CH-160 (1 x 1 mL) Hexachlorocyclopentadiene (100 µg/mL in Methanol) ..... U-CH-170 (1 x 1 mL) Hexachloroethane (100 µg/mL in Methanol) ..... U-CH-180 (1 x 1 mL) 1,2,4-Trichlorobenzene (100 µg/mL in Methanol) ..... U-CH-190 (1 x 1 mL) Chlorinated Hydrocarbons Mixture (100 µg/mL in Methanol) ..... U-CHM-612 (1 x 1 mL)	kit

EPA Method 613

2,3,7,8-TCDD

Method 613 is used to measure 2,3,7,8-tetrachlorodibenzo-p-dioxin, using extraction followed by capillary column GC/MS.

U-RPE-029S	2,3,7,8-Tetrachlorodibenzo-p-dioxin 10 µg/mL in Toluene	1 mL

EPA Method 614, 614.1

Organophosphorus pesticides

Method 614 and 614.1 are used to measure organophosphorus pesticides. Samples are extracted, then quantitated using GC/NPD.

Recommended standards

Calibration standards: U-SPM-614
U-SPM-624

U-SPM-614-1	Organophosphorus Pesticides Mixture 200 µg/mL of each analyte in Acetone Azinphos-methyl Demeton (total, mixed isomers) Diazinon Disulfoton Ethion Malathion Parathion (ethyl) Methyl parathion	1 mL
U-SPM-614	Organophosphorus Pesticides Mixture	4 x 1 mL
U-SPM-624-1	Organophosphorus Pesticides Mixture 4 Analytes in Hexane Dioxathion ..... 10 µg/mL Terbufos ..... 4 µg/mL EPN ..... 200 µg/mL Ethion ..... 100 µg/mL	1 mL
U-SPM-624	Organophosphorus Pesticides Mixture	4 x 1 mL

Code	Product	Unit

EPA Method 615

Chlorinated herbicides

Method 615 is used to measure chlorinated herbicides. Samples are extracted, derivatised, and quantitated on GC/ECD.

Recommended standards

Calibration standard: U-HBM-8150A

U-HBM-8150A-1	Chlorinated Herbicides Mixture 10 Analytes in Methanol 2,4-D ..... 100 µg/mL; Dicamba .....10 µg/mL; MCPA ..... 10000 µg/mL Dalapon ..... 250 µg/mL; Dichlorprop .....100 µg/mL; MCPP ..... 10000 µg/mL 2,4-DB..... 100 µg/mL; Dinoseb .....50 µg/mL; Silvex (2,4,5-TP)..... 10 µg/mL	1 mL
U-HBM-8150A	Chlorinated Herbicides Mixture	4 x 1 mL
U-HBM-8150M-1	Methylated Chlorinated Herbicides Mixture 10 Analytes in Methanol 2,4-D methyl ester ..... 100 µg/mL; Dinoseb methyl ether ..... 50 µg/mL Dalapon methyl ester..... 250 µg/mL; MCPA methyl ester ..... 10000 µg/mL 2,4-DB methyl ester..... 100 µg/mL; MCPP methyl ester ..... 10000 µg/mL Dicamba methyl ester..... 10 µg/mL; Silvex methyl ester..... 10 µg/mL Dichlorprop methyl ester..... 100 µg/mL; 2,4,5-T methyl ester ..... 10 µg/mL	1 mL
U-HBM-8150M	Methylated Chlorinated Herbicides Mixture	4 x 1 mL
U-PPS-171-1	4,4'-Dibromooctafluorobiphenyl 250 µg/mL in Acetone	1 mL
U-PPS-171	4,4'-Dibromooctafluorobiphenyl 250 µg/mL in Acetone	4 x 1 mL
U-PPS-165-1	2,4-Dichlorophenylacetic acid (DCAA) 100 µg/mL in Acetone	1 mL
U-PPS-165	2,4-Dichlorophenylacetic acid (DCAA) 100 µg/mL in Acetone	4 x 1 mL
U-PPS-166-1	DCAA methyl ester 100 µg/mL in Acetone	1 mL
U-PPS-166	DCAA methyl ester 100 µg/mL in Acetone	4 x 1 mL

EPA Method 619

Triazine pesticides

Method 619 is used to measure triazine pesticides. Samples are extracted, then quantitated using GC/NPD.

U-NPM-619-1	Triazine Pesticides Mixture 100 µg/mL in of each analyte in Acetone Ametryn; Prometon; Secbumeton; Terbuthylazine Atraton; Prometryn; Simetryn; Terbutryn Atrazine; Propazine; Simazine	1 mL
U-NPM-619	Triazine Pesticides Mixture	4 x 1 mL

EPA Method 622

Organophosphorus pesticides

Method 622 is used to measure organophosphorus pesticides. Samples are extracted, then quantitated using GC/NPD or GC/FPD.

Recommended standards

Calibration standards: U-SPM-622A
U-SPM-622B
U-SPM-622C
U-SPM-622D

U-SPM-622A-1	Organophosphorus Pesticides Mixture 10 Analytes in Hexane Fensulfothion ..... 150 µg/mL; Disulfoton ..... 20 µg/mL Azinphos-methyl ..... 150 µg/mL; Trichloronate ..... 15 µg/mL Coumaphos ..... 150 µg/mL; Fenthion ..... 10 µg/mL Demeton (total, mixed isomers)..... 25 µg/mL; Tokuthion ..... 50 µg/mL Phorate ..... 15 µg/mL	1 mL
U-SPM-622A	Organophosphorus Pesticides Mixture	4 x 1 mL
U-SPM-622B-1	Organophosphorous Pesticides Mixture 3 Analytes in Hexane Dichlorvos ..... 10 µg/mL; Tetrachlorvinphos (Stirofos)..... 500 µg/mL Mevinphos (Phosdrin)..... 30 µg/mL	1 mL
U-SPM-622B	Organophosphorus Pesticides Mixture	4 x 1 mL

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Code	Product	Unit
U-SPM-622C-1	Organophosphorus Pesticides Mixture 7 Analytes in Hexane Ethoprop (Ethoprofos) ..... 25 µg/mL Methyl parathion ..... 30 µg/mL Fenchlorphos (Ronnel) ..... 30 µg/mL Chlorpyrifos-methyl ..... 30 µg/mL Chlorpyrifos ..... 30 µg/mL Merphos ..... 25 µg/mL Diazinon ..... 60 µg/mL	1 mL
U-SPM-622C	Organophosphorus Pesticides Mixture	4 x 1 mL
U-SPM-622D-1	Naled 10 µg/mL in Hexane	1 mL
U-SPM-622D	Naled 10 µg/mL in Hexane	4 x 1 mL

EPA Method 624

Purgeables

Method 624 is a GC/MS method for purgeables

Recommended standards

Calibration standards: U-PMX-110, U-HC-070

Surrogate standard: U-STM-290N

Code	Product	Unit
U-PMX-100-1	Purgeable Mixture 20 µg/mL of each analyte in Methanol. Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, Dibromochloromethane, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethene, trans-1,2-Dichloroethene, 1,2-Dichloropropane, cis-1,3-Dichloropropene, trans-1,3-Dichloropropene, Ethylbenzene, Methylene chloride, 1,1,2,2-Tetrachloroethane, Tetrachloroethene, Toluene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Trichloroethene, Trichlorofluoromethane, Vinyl chloride	1 mL
U-PMX-100	Purgeable Mixture	4 x 1 mL
U-PMX-110-1	Purgeable Mixture 100 µg/mL of each analyte in Methanol. Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, Dibromochloromethane, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethene, trans-1,2-Dichloroethene, 1,2-Dichloropropane, cis-1,3-Dichloropropene, trans-1,3-Dichloropropene, Ethylbenzene, Methylene chloride, 1,1,2,2□Tetrachloroethane, Tetrachloroethene, Toluene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Trichloroethene, Trichlorofluoromethane, Vinyl chloride	1 mL
U-PMX-110	Purgeable Mixture	4 x 1 mL
U-STM-290N-1	Surrogate Standard Mixture 2000 µg/mL of each analyte in Methanol Bromochloromethane, 2-Bromo-1-chloropropane, 1,4-Dichlorobutane	1 mL
U-STM-290N	Surrogate Standard Mixture	4 x 1 mL
U-STM-291-1	Surrogate Standard Mixture 20000 µg/mL of each analyte in Methanol. Bromochloromethane, 2-Bromo-1-chloropropane, 1,4-Dichlorobutane	1 mL
U-STM-291	Surrogate Standard Mixture	4 x 1 mL
U-STM-390-1	Surrogate Standard Mixture 20000 µg/mL of each analyte in Methanol 4-Bromofluorobenzene, Fluorobenzene, Pentafluorobenzene	1 mL
U-STM-390	Surrogate Standard Mixture	4 x 1 mL
U-HC-070-1	2-Chloroethylvinyl ether 100 µg/mL in Methanol	1 mL
U-HC-070	2-Chloroethylvinyl ether 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1016	2-Chloroethylvinyl ether 5000 µg/mL in Methanol	1 mL
U-PMX-160-1	Purgeable Mixture 2000 µg/mL of each analyte in Methanol. Benzene, Bromodichloromethane, Bromoform, Carbon tetrachloride, Chlorobenzene, Chloroform, Dibromochloromethane, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethene, trans-1,2-Dichloroethene, 1,2-Dichloropropane, cis-1,3-Dichloropropene, trans-1,3-Dichloropropene, Ethylbenzene, Methylene chloride, 1,1,2,2-Tetrachloroethane, Tetrachloroethene, Toluene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Trichloroethene	1 mL

Code	Product	Unit
U-PMX-160	Purgeable Mixture	4 x 1 mL
U-XY-0115-1	Purgeable A Mixture 200 µg/mL of each analyte in Methanol. Carbon tetrachloride, Dibromochloromethane, 1,2-Dichloropropane, 1,1,2-Trichloroethane Chlorobenzene, 1,1-Dichloroethane, Methylene chloride, Trichloroethene Chloroform, 1,1-Dichloroethene, Tetrachloroethene	1 mL
U-XY-0115	Purgeable A Mixture	4 x 1 mL
U-XY-0116-1	Purgeable B Mixture 200 µg/mL of each analyte in Methanol. Benzene, 1,2-Dichloroethane, trans-1,3-Dichloropropene, Toluene Bromodichloromethane, trans-1,2-Dichloroethene, Ethylbenzene, 1,1,1-Trichloroethane Bromoform, cis-1,3-Dichloropropene, 1,1,2,2-Tetrachloroethane, Trichlorofluoromethane	1 mL
U-XY-0116	Purgeable B Mixture	4 x 1 mL
U-DWM-544-1	VOC Gas Mixture 2000 µg/mL of each analyte in Methanol. Bromomethane, Chloromethane, Trichlorofluoromethane Chloroethane, Dichlorodifluoromethane, Vinyl chloride	1 mL
U-DWM-544	VOC Gas Mixture	4 x 1 mL
U-DWM-584-1	VOC Gas Mixture 200 µg/mL of each analyte in Methanol. Bromomethane, Chloromethane, Trichlorofluoromethane Chloroethane, Dichlorodifluoromethane, Vinyl chloride	1 mL
U-DWM-584	VOC Gas Mixture	4 x 1 mL
U-EPA-2041N-1	Volatiles Mixture 1 50 µg/mL of each analyte in Methanol Carbon tetrachloride, 1,4-Dichlorobenzene, trans-1,2-Dichloroethene, Tetrachloroethene Chlorobenzene, 1,2-Dichloroethane, 1,2-Dichloropropane, 1,1,2-Trichloroethane 1,3-Dichlorobenzene, 1,1-Dichloroethene, Ethylbenzene	1 mL
U-EPA-2041N	Volatiles Mixture 1	4 x 1 mL
U-EPA-2141N-1	Volatiles Mixture 1 500 µg/mLof each analyte in Acetone Carbon tetrachloride, 1,4-Dichlorobenzene, trans-1,2-Dichloroethene, Tetrachloroethene Chlorobenzene, 1,2-Dichloroethane, 1,2-Dichloropropane, 1,1,2-Trichloroethane 1,3-Dichlorobenzene, 1,1-Dichloroethene, Ethylbenzene	1 mL
U-EPA-2141N	Volatiles Mixture 1	4 x 1 mL
U-EPA-2042N-1	Volatiles Mixture 2 50 µg/mL of each analyte in Methanol Benzene, Chloroform, 1,1-Dichloroethane, Toluene Bromodichloromethane, Dibromochloromethane, Methylene chloride, 1,1,1-Trichloroethane Bromoform, 1,2-Dichlorobenzene, 1,1,2,2-Tetrachloroethane, Trichloroethene	1 mL
U-EPA-2042N	Volatiles Mixture 2	4 x 1 mL
U-EPA-2142N-1	Volatiles Mixture 2 500 µg/mL of each analyte in Methanol Benzene, Chloroform, 1,1-Dichloroethane, Toluene Bromodichloromethane, Dibromochloromethane, Methylene chloride, 1,1,1-Trichloroethane Bromoform, 1,2-Dichlorobenzene, 1,1,2,2-Tetrachloroethane, Trichloroethene	1 mL
U-EPA-2142N	Volatiles Mixture 2	4 x 1 mL
U-PMK-624	EPA Method 624 Kit Purgeable Mixture (100 µg/mL in Methanol)..... U-PMX-110 (1 x 1 mL) 2-Chloroethylvinyl ether (100 µg/mL in Methanol)..... U-HC-070 (1 x 1 mL) Surrogate Standard Mixture (2000 µg/mL in Methanol)..... U-STM-290N (1 x 1 mL) 4-Bromofluorobenzene (2000 µg/mL in Methanol)..... U-STS-110N (1 x 1 mL)	kit
U-STS-180-1	Bromochloromethane 2000 µg/mL in Methanol	1 mL
U-STS-180	Bromochloromethane 2000 µg/mL in Methanol	4 x 1 mL
U-STS-190-1	2-Bromo-1-chloropropane 2000 µg/mL in Methanol	1 mL
U-STS-190	2-Bromo-1-chloropropane 2000 µg/mL in Methanol	4 x 1 mL
U-STS-110N-1	4-Bromofluorobenzene 2000 µg/mL in Methanol	1 mL
U-STS-110N	4-Bromofluorobenzene 2000 µg/mL in Methanol	4 x 1 mL
U-STS-200-1	1,4-Dichlorobutane 2000 µg/mL in Methanol	1 mL
U-STS-200	1,4-Dichlorobutane 2000 µg/mL in Methanol	4 x 1 mL
U-STS-120-1	1,2-Dichloroethane-D_4 2000 µg/mL in Methanol	1 mL

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Code	Product	Unit
U-STS-120	1,2-Dichloroethane-D_4 2000 µg/mL in Methanol	4 x 1 mL
U-STS-130-1	1,4-Difluorobenzene 2000 µg/mL in Methanol	1 mL
U-STS-130	1,4-Difluorobenzene 2000 µg/mL in Methanol	4 x 1 mL
U-STS-150-1	Ethylbenzene-D_{10} 2000 µg/mL in Methanol	1 mL
U-STS-150	Ethylbenzene-D_{10} 2000 µg/mL in Methanol	4 x 1 mL
U-STS-160-1	Fluorobenzene 2000 µg/mL in Methanol	1 mL
U-STS-160	Fluorobenzene 2000 µg/mL in Methanol	4 x 1 mL
U-STS-170-1	Pentafluorobenzene 2000 µg/mL in Methanol	1 mL
U-STS-170	Pentafluorobenzene 2000 µg/mL in Methanol	4 x 1 mL

EPA Method 625

Base/Neutrals and acids

Method 625 is a GC/MS method for extractables.

Recommended standards

Calibration standards: U-625-MA
U-PHM-604
U-PPM-625B

U-625-MA-1	Base/Neutral Extractables Mixture 20 µg/mL of each analyte in Methanol. Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(ghi)perylene Benzo(a)pyrene Bis(2-chloroethoxy)methane Bis(2-chloroethyl) ether Bis(2-chloroisopropyl) ether Bis(2-ethylhexyl)phthalate 4-Bromophenyl phenyl ether Butyl benzyl phthalate 2-Chloronaphthalene 4-Chlorophenyl phenyl ether Chrysene Dibenzo(a,h)anthracene Di-n-butyl phthalate 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 3,3'-Dichlorobenzidine Diethyl phthalate Dimethyl phthalate 2,4-Dinitrotoluene 2,6-Dinitrotoluene Di-n-octyl phthalate Fluoranthene Fluorene Hexachlorobenzene Hexachlorobutadiene Hexachloroethane Indeno(1,2,3-cd)pyrene Isophorone Naphthalene Nitrobenzene N-Nitrosodi-n-propylamine Phenanthrene Pyrene 1,2,4-Trichlorobenzene	1 mL
U-625-MA	Base/Neutral Extractables Mixture	4 x 1 mL
U-PHM-604-1	Phenols Mixture 20 µg/mL of each analyte in Methanol. 4-Chloro-3-methylphenol 2-Chlorophenol 2,4-Dichlorophenol 2,4-Dimethylphenol 2-Methyl-4,6-dinitrophenol 2,4-Dinitrophenol 2-Nitrophenol 4-Nitrophenol Pentachlorophenol Phenol 2,4,6-Trichlorophenol	1 mL
U-PHM-604	Phenols Mixture	4 x 1 mL
U-ISM-560-1	Semi-Volatiles Internal Standard Mixture 2000 µg/mL of each analyte in Methylene chloride. Acenaphthene-D_{10} Chrysene-D_{12} 1,4-Dichlorobenzene-D_4 Naphthalene-D_8 Perylene-D_{12} Phenanthrene-D_{10}	1 mL
U-ISM-560	Semi-Volatiles Internal Standard Mixture	4 x 1 mL
U-US-108N	Semi-Volatiles Internal Standard Mixture 4000 µg/mL of each analyte in Methylene chloride. Acenaphthene-D_{10} Chrysene-D_{12} 1,4-Dichlorobenzene-D_4 Naphthalene-D_8 Perylene-D_{12} Phenanthrene-D_{10}	1 mL
New U-US-108N-4	Semi-Volatiles Internal Standard Mixture	4 x 1 mL

Code	Product	Unit
U-SVM-102-1	Base/Neutral Extractables Mixture	1 mL

2000 µg/mL in Methylene chloride/Benzene/Acetonitrile (2:2:1).

Acenaphthene	1,4-Dichlorobenzene
Acenaphthylene	Diethyl phthalate
Anthracene	Dimethyl phthalate
Azobenzene	2,4-Dinitrotoluene
Benzo(a)anthracene	2,6-Dinitrotoluene
Benzo(b)fluoranthene	Di-n-octyl phthalate
Benzo(k)fluoranthene	Fluoranthene
Benzo(ghi)perylene	Fluorene
Benzo(a)pyrene	Hexachlorobenzene
Bis(2-chloroethyl) ether	Hexachlorobutadiene
Bis(2-chloroethoxy)methane	Hexachlorocyclopentadiene
Bis(2-ethylhexyl)phthalate	Hexachloroethane
Bis(2-chloroisopropyl) ether	Indeno(1,2,3-cd)pyrene
4-bromophenyl phenyl ether	Isophorone
Butyl benzyl phthalate	Naphthalene
2-Chloronaphthalene	Nitrobenzene
4-Chlorophenyl phenyl ether	N-Nitrosodimethylamine
Chrysene	N-Nitrosodi-n-propylamine
Dibenzo(a,h)anthracene	N-Nitrosodiphenylamine
Di-n-butyl phthalate	Phenanthrene
1,2-Dichlorobenzene	Pyrene
1,3-Dichlorobenzene	1,2,4-Trichlorobenzene

U-SVM-102	Base/Neutral Extractables Mixture	4 x 1 mL
U-PPM-625B-1	Pesticides Extractables Mixture	1 mL

20 µg/mL of each analyte in Methanol

Aldrin	Dieldrin
beta-BHC (beta-HCH)	Endosulfan sulfate
delta-BHC (delta-HCH)	Endrin aldehyde
4,4'-DDD	Heptachlor
4,4'-DDE	Heptachlor epoxide - isomer B
4,4'-DDT	

U-PPM-625B	Pesticides Extractables Mixture	4 x 1 mL
U-EPA-2008N-1	Acids Mixture	1 mL

100 µg/mL of each analyte in Methanol

4-Chloro-3-methylphenol	2-Nitrophenol
2-Chlorophenol	4-Nitrophenol
2,4-Dichlorophenol	Pentachlorophenol
2,4-Dimethylphenol	Phenol
2,4-Dinitrophenol	2,4,6-Trichlorophenol
2-Methyl-4,6-dinitrophenol	

U-EPA-2008N	Acids Mixture	4 x 1 mL
U-EPA-2010N-1	GC/MS Base/Neutrals Mixture 1	1 mL

1000 µg/mL of each analyte in Methanol

Benzo(a)anthracene	2,6-Dinitrotoluene
Benzo(k)fluoranthene	Di-n-octyl phthalate
Bis(2-chloroethoxy)methane	Hexachlorobenzene
Bis(2-chloroethyl) ether	Hexachlorobutadiene
2-Chloronaphthalene	Isophorone
Di-n-butyl phthalate	N-Nitrosodi-n-propylamine
1,2-Dichlorobenzene	Phenanthrene
1,3-Dichlorobenzene	Pyrene
Diethyl phthalate	1,2,4-Trichlorobenzene
2,4-Dinitrotoluene	

U-EPA-2010N	GC/MS Base/Neutrals Mixture 1	4 x 1 mL
U-EPA-2011N-1	GC/MS Base/Neutrals Mixture 2	1 mL

100 µg/mL of each analyte in Acetone

Acenaphthene	Chrysene
Anthracene	Dibenzo(a,h)anthracene
Benzo(b)fluoranthene	1,4-Dichlorobenzene
Benzo(ghi)perylene	Dimethyl phthalate
Benzo(a)pyrene	Fluoranthene
Bis(2-ethylhexyl)phthalate	Fluorene
4-Bromophenyl phenyl ether	Hexachloroethane
Butyl benzyl phthalate	Naphthalene
4-Chlorophenyl phenyl ether	Nitrobenzene

U-EPA-2011N	GC/MS Base/Neutrals Mixture 2	4 x 1 mL
U-SVK-625A	EPA Method 625 Kit	kit

Base/Neutral Extractables Mixture (20 µg/mL in Methanol) ..... U-625-MA (1 x 1 mL)
Phenols Mixture (20 µg/mL in Methanol)..... U-PHM-604 (1 x 1 mL)
Base/Neutrals Surrogate Standard Mixture (1000 µg/mL in Methylene chloride)..... U-ISM-280N (1 x 1 mL)
Acids Surrogate Standard Mixture (2000 µg/mL in Methanol)..... U-ISM-290N (1 x 1 mL)
Semi-Volatiles Internal Standard Mixture (4000 µg/mL in Methylene chloride)..... U-US-108N (1 x 1 mL)

Code	Product	Unit
U-US-109K	High Concentration GC/MS Kit	kit

Base/Neutrals Mixture #1 (2000 µg/mL in Methylene chloride) ..... U-US-100N (1 x 1 mL)
Base/Neutrals Mixture #2 (2000 µg/mL in Methylene chloride) ..... U-US-101N (1 x 1 mL)
Organochloride Pesticide Mixture (2000 µg/mL in Hexane/Toluene (1:1)) ..... U-US-102BN (1 x 1 mL)
Toxic Substances Mixture #1 (2000 µg/mL in Methylene chloride) ..... U-US-103N (1 x 1 mL)
Toxic Substances Mixture #2 (2000 µg/mL in Methylene chloride) ..... U-US-104N (1 x 1 mL)
Benzidines Mixture (2000 µg/mL in Methanol) ..... U-US-105N (1 x 1 mL)
PAH Mixture (2000 µg/mL in Methylene chloride/Benzene) ..... U-US-106N (1 x 1 mL)
Phenols Mixture (2000 µg/mL in Methylene chloride) ..... U-US-107N (1 x 1 mL)
Semi-Volatiles Internal Standard Mixture (4000 µg/mL in Methylene chloride) ..... U-US-108N (1 x 1 mL)

U-US-100N	Base/Neutrals Mixture 1	1 mL

2000 µg/mL of each analyte in Methylene chloride.

Bis(2-chloroethoxy)methane	Diethyl phthalate
Bis(2-chloroethyl) ether	Dimethyl phthalate
Bis(2-ethylhexyl)phthalate	Di-n-butyl phthalate
Bis(2-chloroisopropyl) ether	Di-n-octyl phthalate
4-Bromophenyl phenyl ether	N-Nitrosodimethylamine
Butyl benzyl phthalate	N-Nitrosodi-n-propylamine
4-Chlorophenyl phenyl ether	N-Nitrosodiphenylamine

U-US-101N	Base/Neutrals Mixture 2	1 mL

2000 µg/mL of each analyte in Methylene chloride.

Azobenzene	Hexachlorobenzene
2-Chloronaphthalene	Hexachlorobutadiene
1,2-Dichlorobenzene	Hexachlorocyclopentadiene
1,3-Dichlorobenzene	Hexachloroethane
1,4-Dichlorobenzene	Isophorone
2,4-Dinitrotoluene	Nitrobenzene
2,6-Dinitrotoluene	1,2,4-Trichlorobenzene

U-US-101N-4	Base/Neutrals Mixture 2	4 x 1 mL
U-US-103N	Toxic Substances Mixture 1	1 mL

2000 µg/mL of each analyte in Methylene chloride.

Benzoic acid	p-Cresol (4-Methylphenol)
o-Cresol (2-Methylphenol)	2,4,5-Trichlorophenol

U-US-103N-4	Toxic Substances Mixture 1	4 x 1 mL
U-US-104N	Toxic Substances Mixture 2	1 mL

2000 µg/mL of each analyte in Methylene chloride.

Aniline	4-Chloroaniline	2-Methylnaphthalene	3-Nitroaniline
Benzyl alcohol	Dibenzofuran	2-Nitroaniline	4-Nitroaniline

U-US-104N-4	Toxic Substances Mixture 2	4 x 1 mL
U-US-105N	Benzidines Mixture	1 mL

2000 µg/mL of each analyte in Methanol.

Benzidine	3,3'-Dichlorobenzidine

U-US-105N-4	Benzidines Mixture	4 x 1 mL
U-US-106N	PAH Mixture	1 mL

2000 µg/mL of each analyte in Methylene chloride/Benzene (1:1)

Acenaphthene	Benzo(b)fluoranthene	Chrysene	Indeno(1,2,3-cd)pyrene
Acenaphthylene	Benzo(k)fluoranthene	Dibenzo(a,h)anthracene	Naphthalene
Anthracene	Benzo(ghi)perylene	Fluoranthene	Phenanthrene
Benzo(a)anthracene	Benzo(a)pyrene	Fluorene	Pyrene

U-US-106N-4	PAH Mixture	4 x 1 mL
U-US-107N	Phenols Mixture	1 mL

2000 µg/mL of each analyte in Methylene Chloride.

4-Chloro-3-methylphenol	2-Nitrophenol
2-Chlorophenol	4-Nitrophenol
2,4-Dichlorophenol	Pentachlorophenol
2,4-Dimethylphenol	Phenol
2,4-Dinitrophenol	2,4,6-Trichlorophenol
2-Methyl-4,6-dinitrophenol	

U-US-107N-4	Phenols Mixture	4 x 1 mL
U-US-102BN	Organochlorine Pesticide Mixture	1 mL

2000 µg/mL of each analyte in Hexane/Toluene (1:1)

Aldrin	Dieldrin
alpha-BHC (alpha-HCH)	Endosulfan I
beta-BHC (beta-HCH)	Endosulfan II
delta-BHC (delta-HCH)	Endosulfan sulfate
gamma-BHC (Lindane)	Endrin
4,4'-DDD	Endrin aldehyde
4,4'-DDE	Heptachlor
4,4'-DDT	Heptachlor epoxide - isomer B

U-US-102BN-4	Organochlorine Pesticide Mixture	4 x 1 mL

	Code	Product	Unit
	U-US-136	Method 625 Additions Mixture 2000 µg/mL of each analyte in Methylene chloride Acetophenone, n-Decane, n-Octadecane, alpha-Terpineol Carbazole, 2,3-Dichloroaniline, Pyridine	1 mL
New	U-US-136-4	Method 625 Additions Mixture	4 x 1 mL
	U-SVM-110-1	Base/Neutral Extractables Mixture 500 µg/mL of each analyte in Methylene chloride Acenaphthylene Benzo[b]fluoranthene Bis(2-chloroethyl) ether Bis(2-ethylhexyl)phthalate Bis(2-chloroisopropyl) ether 4-Bromophenyl phenyl ether Di-n-butyl phthalate 1,4-Dichlorobenzene 3,3'-Dichlorobenzidine Dimethyl phthalate 2,6-dinitrotoluene Nitrobenzene	1 mL
	U-SVM-110	Base/Neutral Extractables Mixture	4 x 1 mL
	U-SVM-111-1	Base/Neutral Extractables Mixture 500 µg/mL of each analyte in Methylene chloride Acenaphthene Anthracene Benzo(a)anthracene Bis(2-chloroethoxy)methane Chrysene Dibenzo(a,h)anthracene 1,2-Dichlorobenzene 1,3-Dichlorobenzene Diethyl phthalate 2,4-Dinitrotoluene Fluorene Hexachlorobenzene Hexachlorobutadiene Naphthalene Pyrene	1 mL
	U-SVM-111	Base/Neutral Extractables Mixture	4 x 1 mL
	U-SVM-112-1	Base/Neutral Extractables Mixture 500 µg/mL of each analyte in Methylene chloride Azobenzene Butyl benzyl phthalate 2-Chloronaphthalene Fluoranthene Hexachlorocyclopentadiene Hexachloroethane Isophorone N-Nitrosodi-n-propylamine N-Nitrosodiphenylamine Phenanthrene 1,2,4-Trichlorobenzene	1 mL
	U-SVM-112	Base/Neutral Extractables Mixture	4 x 1 mL
	U-SVM-113-1	Base/Neutrals Extractables Mixture 500 µg/mL of each analyte in Methylene chloride Benzidine Benzo(k)fluoranthene Benzo(ghi)perylene Benzo[a]pyrene 4-Chlorophenyl phenyl ether Di-n-octyl phthalate Indeno(1,2,3-cd)pyrene N-Nitrosodimethylamine	1 mL
	U-SVM-113	Base/Neutrals Extractables Mixture	4 x 1 mL
New	U-PPM-608G-1	Waste Water Pesticides Mixture 7 Analytes 100 µg/mL of each analyte in Acetone Aldrin 4,4'-DDD 4,4'-DDE 4,4'-DDT Dieldrin Heptachlor Heptachlor epoxide - isomer B	1 mL
New	U-PPM-608G	Waste Water Pesticides Mixture	4 x 1 mL
	U-XY-0120-1	Base/Neutrals A Mix 12 Analytes in Methanol/Methylene chloride Acenaphthylene ..... 200 µg/mL Benzo(b)fluoranthene ..... 100 µg/mL Bis(2-chloroethyl) ether..... 200 µg/mL Bis(2-chloroisopropyl) ether..... 200 µg/mL Bis(2-ethylhexyl)phthalate..... 200 µg/mL 4-Bromophenyl phenyl ether..... 200 µg/mL Di-n-butyl phthalate ..... 200 µg/mL 1,4-Dichlorobenzene..... 200 µg/mL 3,3'-Dichlorobenzidine..... 200 µg/mL Dimethyl phthalate ..... 200 µg/mL 2,6-Dinitrotoluene..... 200 µg/mL Nitrobenzene..... 200 µg/mL	1 mL
	U-XY-0120	Base/Neutrals A Mix	4 x 1 mL
	U-XY-0121-1	Base/Neutrals B Mix 15 Analytes in Methanol/Methylene chloride Acenaphthene..... 200 µg/mL Anthracene ..... 200 µg/mL Benzo(a)anthracene ..... 100 µg/mL Bis(2-chloroethoxy)methane..... 200 µg/mL Chrysene ..... 100 µg/mL Dibenzo(a,h)anthracene ..... 100 µg/mL 1,2-Dichlorobenzene..... 200 µg/mL 1,3-Dichlorobenzene..... 200 µg/mL Diethyl phthalate ..... 200 µg/mL 2,4-Dinitrotoluene..... 200 µg/mL Fluorene..... 200 µg/mL Hexachlorobenzene ..... 200 µg/mL Hexachlorobutadiene ..... 200 µg/mL Naphthalene..... 200 µg/mL Pyrene..... 100 µg/mL	1 mL
	U-XY-0121	Base/Neutrals B Mix	4 x 1 mL

Code	Product	Unit
U-XY-0122-1	Base/Neutrals C Mix 11 Analytes in Methanol/Methylene chloride Azobenzene ... 200 µg/mL Butyl benzyl phthalate ... 200 µg/mL 2-Chloronaphthalene ... 200 µg/mL Fluoranthene ... 100 µg/mL Hexachlorocyclopentadiene ... 200 µg/mL Hexachloroethane ... 200 µg/mL Isophorone ... 200 µg/mL N-Nitrosodiphenylamine ... 200 µg/mL N-Nitrosodi-n-propylamine ... 200 µg/mL Phenanthrene ... 200 µg/mL 1,2,4-Trichlorobenzene ... 200 µg/mL	1 mL
U-XY-0122	Base/Neutrals C Mix	4 x 1 mL
U-XY-0126-1	Phenols Mixture 11 Analytes in Methanol 4-Chloro-3-methylphenol ... 2500 µg/mL 2-Chlorophenol ... 500 µg/mL 2,4-Dichlorophenol ... 500 µg/mL 2,4-Dimethylphenol ... 500 µg/mL 2-Methyl-4,6-dinitrophenol ... 2500 µg/mL 2,4-Dinitrophenol ... 1500 µg/mL 2-Nitrophenol ... 500 µg/mL 4-Nitrophenol ... 2500 µg/mL Pentachlorophenol ... 2500 µg/mL Phenol ... 600 µg/mL 2,4,6-Trichlorophenol ... 500 µg/mL	1 mL
U-XY-0126	Phenols Mixture	4 x 1 mL
U-XY-0127-1	Aroclors Mixture 20 µg/mL of each analyte in Methanol Aroclor 1016 (PCB 1016) Aroclor 1232 (PCB 1232) Aroclor 1248 (PCB 1248) Aroclor 1260 (PCB 1260)	1 mL
U-XY-0127	Aroclors Mixture	4 x 1 mL
U-XY-0128-1	Aroclors Mixture 20 µg/mL of each analyte in Methanol Aroclor 1221 (PCB 1221) Aroclor 1242 (PCB 1242) Aroclor 1254 (PCB 1254)	1 mL
U-XY-0128	Aroclors Mixture	4 x 1 mL
U-PPM-608B-1	Organochlorine Pesticide Mixture 20 µg/mL of each analyte in Methanol Endosulfan II Endosulfan sulfate Endrin Endrin aldehyde Heptachlor Aldrin alpha-BHC (alpha-HCH) beta-BHC (beta-HCH) Delta-BHC (delta-HCH) gamma-BHC (Lindane) 4,4'-DDD 4,4'-DDE 4,4'-DDT Dieldrin Endosulfan I Heptachlor epoxide - isomer B	1 mL
U-PPM-608B	Organochlorine Pesticide Mixture	4 x 1 mL
U-TCLP-533-1	TCLP Pesticides Spiking Mixture 2 Analytes in Methanol Chlordane ... 2000 µg/mL Toxaphene ... 4000 µg/mL	1 mL
U-TCLP-533	TCLP Pesticides Spiking Mixture	4 x 1 mL
U-ISM-280N-1	Base/Neutrals Surrogate Standard Mixture 1000 µg/mL of each analyte in Methylene chloride 2-Fluorobiphenyl Nitrobenzene-D_5 p-Terphenyl-D_{14}	1 mL
U-ISM-280N	Base/Neutrals Surrogate Standard Mixture	4 x 1 mL
U-ISM-290N-1	Acids Surrogate Standard Mixture 2000 µg/mL of each analyte in Methanol 2-Fluorophenol Phenol-D_5 2,4,6-Tribromophenol	1 mL
U-ISM-290N	Acids Surrogate Standard Mixture	4 x 1 mL
U-IST-100-1	Aniline-D_5 1000 µg/mL in Methylene chloride	1 mL
U-IST-100	Aniline-D_5 1000 µg/mL in Methylene chloride	4 x 1 mL
U-IST-110-1	Anthracene-D_{10} 1000 µg/mL in Methylene chloride	1 mL
U-IST-110	Anthracene-D_{10} 1000 µg/mL in Methylene chloride	4 x 1 mL
U-IST-120-1	Benzo(a)anthracene-D_{12} 1000 µg/mL in Methylene chloride	1 mL
U-IST-120	Benzo(a)anthracene-D_{12} 1000 µg/mL in Methylene chloride	4 x 1 mL
U-IST-130-1	4,4'-Dibromobiphenyl 1000 µg/mL in Methylene chloride	1 mL
U-IST-130	4,4'-Dibromobiphenyl 1000 µg/mL in Methylene chloride	4 x 1 mL
U-IST-140-1	4,4'-Dibromooctafluorobiphenyl 1000 µg/mL in Methylene chloride	1 mL
U-IST-140	4,4'-Dibromooctafluorobiphenyl 1000 µg/mL in Methylene chloride	4 x 1 mL
U-IST-150-1	Decafluorobiphenyl 1000 µg/mL in Methylene chloride	1 mL
U-IST-150	Decafluorobiphenyl 1000 µg/mL in Methylene chloride	4 x 1 mL

Code	Product	Unit
U-IST-160-1	2,2'-Difluorobiphenyl 1000 µg/mL in Methylene chloride	1 mL
U-IST-160	2,2'-Difluorobiphenyl 1000 µg/mL in Methylene chloride	4 x 1 mL
U-IST-170-1	4-Fluoroaniline 1000 µg/mL in Methylene chloride	1 mL
U-IST-170	4-Fluoroaniline 1000 µg/mL in Methylene chloride	4 x 1 mL
U-IST-180-1	1-Fluoronaphthalene 1000 µg/mL in Methylene chloride	1 mL
U-IST-180	1-Fluoronaphthalene 1000 µg/mL in Methylene chloride	4 x 1 mL
U-IST-190-1	2-Fluoronaphthalene 1000 µg/mL in Methylene chloride	1 mL
U-IST-190	2-Fluoronaphthalene 1000 µg/mL in Methylene chloride	4 x 1 mL
U-IST-250-1	2-Fluorophenol 1000 µg/mL in Methylene chloride	1 mL
U-IST-250	2-Fluorophenol 1000 µg/mL in Methylene chloride	4 x 1 mL
U-IST-200-1	Naphthalene-D_8 1000 µg/mL in Methylene chloride	1 mL
U-IST-200	Naphthalene-D_8 1000 µg/mL in Methylene chloride	4 x 1 mL
U-IST-210-1	Nitrobenzene-D_5 1000 µg/mL in Methylene chloride	1 mL
U-IST-210	Nitrobenzene-D_5 1000 µg/mL in Methylene chloride	4 x 1 mL
U-IST-220-1	2,3,4,5,6-Pentafluorobiphenyl 1000 µg/mL in Methylene chloride	1 mL
U-IST-220	2,3,4,5,6-Pentafluorobiphenyl 1000 µg/mL in Methylene chloride	4 x 1 mL
U-IST-260-1	Pentafluorophenol 1000 µg/mL in Methylene chloride	1 mL
U-IST-260	Pentafluorophenol 1000 µg/mL in Methylene chloride	4 x 1 mL
U-IST-230-1	Phenanthrene-D_{10} 1000 µg/mL in Methylene chloride	1 mL
U-IST-230	Phenanthrene-D_{10} 1000 µg/mL in Methylene chloride	4 x 1 mL
U-IST-240-1	Pyridine-D_5 1000 µg/mL in Methylene chloride	1 mL
U-IST-240	Pyridine-D_5 1000 µg/mL in Methylene chloride	4 x 1 mL
U-IST-270-1	Phenol-D_5 1000 µg/mL in Methylene chloride	1 mL
U-IST-270	Phenol-D_5 1000 µg/mL in Methylene chloride	4 x 1 mL
U-GCM-100K	GC/MS Tuning Kit Decafluorotriphenylphosphine (DFTPP) (1000 µg/mL in Methylene chloride)..... U-47995N (1 x 1 mL) Benzidine Solution (2000 µg/mL in Methylene chloride)..... U-GCS-110 (1 x 1 mL) Pentachlorophenol Solution (1000 µg/mL in Methylene chloride) ..... U-GCS-120 (1 x 1 mL) Base/Neutrals Test Mixture (in Methylene chloride)..... U-GCM-130 (1 x 1 mL) Acids Test Mixture (1000 µg/mL in Methylene chloride)..... U-GCM-140 (1 x 1 mL)	kit
U-GCM-130-1	Base/Neutrals Test Mixture 2 Analytes in Methylene chloride Benzidine ..... 2000 µg/mL Decafluorotriphenylphosphine ..... 1000 µg/mL	1 mL
U-GCM-130	Base/Neutrals Test Mixture	4 x 1 mL
U-GCM-140-1	Acids Test Mixture 1000 µg/mL of each analyte in Methylene chloride Pentachlorophenol Decafluorotriphenylphosphine	1 mL
U-GCM-140	Acids Test Mixture	4 x 1 mL
U-IST-341-1	Decafluorotriphenylphosphine 100 µg/mL in Methylene chloride	1 mL
U-IST-341	Decafluorotriphenylphosphine 100 µg/mL in Methylene chloride	4 x 1 mL
U-47995N-1	Decafluorotriphenylphosphine 1000 µg/mL in Acetone	1 mL
U-47995N	Decafluorotriphenylphosphine 1000 µg/mL in Acetone	4 x 1 mL
U-GCS-110-1	Benzidine 2000 µg/mL in Methylene chloride	1 mL
U-GCS-110	Benzidine 2000 µg/mL in Methylene chloride	4 x 1 mL
U-GCS-120-1	Pentachlorophenol 1000 µg/mL in Methylene chloride	1 mL
U-GCS-120	Pentachlorophenol 1000 µg/mL in Methylene chloride	4 x 1 mL

EPA Method 629

U-EPA-1165	Cyanazine 1000 µg/mL in Methanol	1 mL

EPA Method 630, 630.1

U-EPA-1012	Carbon disulfide 5000 µg/mL in Methanol	1 mL

EPA Method 631

New	U-PST-1285M100A01	Carbendazim 100 µg/mL in Methanol	1 mL

Code	Product	Unit

EPA Method 632

U-PPM-632A-1	Carbamate Pesticides Mixture 100 µg/ml of each analyte in Methanol Aminocarb, Barban, Carbaryl, Carbofuran, Chlorpropham, Diuron, Fenuron, Fluometuron, Linuron, Methiocarb, Methomyl, Mexacarbate, Monuron, Neburon, Oxamyl, Propham, Propoxur, Siduron, SWEP	1 mL
U-PPM-632A	Carbamate Pesticides Mixture	4 x 1 mL

EPA Method 632.1

U-PPM-632B-1	Carbamate Pesticides Mixture 100 µg/mL of each analyte in Acetonitrile/Acetone (9:1) Napropamide, Propanil	1 mL
U-PPM-632B	Carbamate Pesticides Mixture	4 x 1 mL

EPA Method 633

U-NPM-633-1	Organonitrogen Pesticides Mixture 100 µg/mL of each analyte in Acetone Bromacil, Deet, Hexazinone, Metribuzin, Terbacil, Triadimefon, Tricyclazole	1 mL
U-NPM-633	Organonitrogen Pesticides Mixture	4 x 1 mL

EPA Method 635

U-EPA-1168	Rotenone 1000 µg/mL in Methanol	1 mL

EPA Method 636

U-EPA-1169	Bensulide 1000 µg/mL in Methanol	1 mL

EPA Method 638

U-EPA-1170	Oryzalin 1000 µg/mL in Methanol	1 mL

EPA Method 639

U-EPA-1171	Bendiocarb 1000 µg/mL in Methanol	1 mL

EPA Method 640

U-EPA-1172	2-Mercaptobenzothiazole 1000 µg/mL in Methanol	1 mL

EPA Method 641

U-EPA-1173	Thiabendazole 1000 µg/mL in Methanol	1 mL

EPA Method 642

U-EPA-1174	Bentazone 1000 µg/mL in Methanol	1 mL

EPA Method 644

U-EPA-1175	Picloram 1000 µg/mL in Methanol	1 mL

EPA Method 1311

Toxicity characteristic leaching procedure (TCLP)

The TCLP is designed to determine the mobility of both organic and inorganic analytes present in liquid, solid, and multiphasic wastes.

Recommended Standards

Calibration standards: U-TCLP-500, U-TCLP-511N, U-TCLP-520N, U-TCLP-530BN, U-TCLP-540

U-TCLP-500-1	TCLP Volatiles Mixture 1000 µg/mL of each analyte in Methanol Benzene, 2-Butanone (MEK), Carbon tetrachloride, Chlorobenzene, Chloroform, 1,4-Dichlorobenzene, 1,2-Dichloroethane, 1,1-Dichloroethene, Tetrachloroethene, Trichloroethene, Vinyl chloride	1 mL
U-TCLP-500	TCLP Volatiles Mixture	4 x 1 mL

Code	Product	Unit
U-TCLP-540-1	TCLP Herbicides Spiking Mixture 2000 µg/mL of each analyte in Methanol 2,4-D; Silvex (2,4,5-TP)	1 mL
U-TCLP-540	TCLP Herbicides Spiking Mixture	4 x 1 mL
U-TCLP-540M-1	TCLP Methylated Herbicides Spiking Mixture 2000 µg/mL of each analyte in Methanol 2,4-D methyl ester; Silvex methyl ester	1 mL
U-TCLP-540M	TCLP Methylated Herbicides Spiking Mixture	4 x 1 mL
U-TCLP-511N-1	TCLP Base/Neutrals Mixture 1000 µg/mL of each analyte in Acetone 2,4-Dinitrotoluene; Hexachlorobutadiene; Hexachloroethane; Pyridine Hexachlorobenzene; 1,4-Dichlorobenzene; Nitrobenzene	1 mL
U-TCLP-511N	TCLP Base/Neutrals Mixture	4 x 1 mL
U-TCLP-520N-1	TCLP Acids Mixture 1000 µg/mL of each analyte in Methanol o-Cresol (2-Methylphenol); Pentachlorophenol m-Cresol (3-Methylphenol); 2,4,5-Trichlorophenol p-Cresol (4-Methylphenol); 2,4,6-Trichlorophenol	1 mL
U-TCLP-520N	TCLP Acids Mixture	4 x 1 mL
U-TCLP-530BN-1	TCLP Pesticides Mixture 5 Analytes in Methanol gamma-BHC (Lindane) ... 100 µg/mL; Endrin ... 100 µg/mL Heptachlor ... 100 µg/mL; Methoxychlor ... 1000 µg/mL Heptachlor epoxide - isomer B ... 100 µg/mL	1 mL
U-TCLP-530BN	TCLP Pesticides Mixture	4 x 1 mL
U-TCLP-512-1	TCLP Semi-Volatile Spiking Mixture 2000 µg/mL of each analyte in Methylene chloride o-Cresol (2-Methylphenol); Hexachloroethane m-Cresol (3-Methylphenol); Nitrobenzene p-Cresol (4-Methylphenol); Pentachlorophenol 1,4-Dichlorobenzene; Pyridine 2,4-Dinitrotoluene; 2,4,5-Trichlorophenol Hexachlorobenzene; 2,4,6-Trichlorophenol Hexachlorobutadiene	1 mL
U-TCLP-512	TCLP Semi-Volatile Spiking Mixture	4 x 1 mL
U-TCLP-531-1	TCLP Pesticides Spiking Mixture 7 Analytes in Methanol Chlordane ... 2000 µg/ml; gamma-BHC (Lindane) ... 2000 µg/ml Endrin ... 2000 µg/ml; Methoxychlor ... 2000 µg/ml Heptachlor ... 2000 µg/ml; Toxaphene ... 4000 µg/ml Heptachlor epoxide - isomer B ... 2000 µg/ml	1 mL
U-TCLP-531	TCLP Pesticides Spiking Mixture	4 x 1 mL
U-TCLP-532-1	TCLP Pesticides Spiking Mixture 2000 µg/mL of each analyte in Methanol Endrin; gamma-BHC (Lindane) Heptachlor; Methoxychlor Heptachlor epoxide - isomer B	1 mL
U-TCLP-532	TCLP Pesticides Spiking Mixture	4 x 1 mL
U-TCLP-533-1	TCLP Pesticides Spiking Mixture 2 Analytes in Methanol Chlordane ... 2000 µg/mL; Toxaphene ... 4000 µg/mL	1 mL
U-TCLP-533	TCLP Pesticides Spiking Mixture	4 x 1 mL

EPA Method 1664, 1664A

Oil and Grease, and Total

Petroleum Hydrocarbons Method 1664 is a gravimetric method allowing determination of n-hexane extractable material (HEM) in surface and saline waters, and in industrial and domestic aqueous wastes. Extractable materials that may be determined are relatively non-volatile hydrocarbons, vegetable oils, animal fats, waxes, soaps, greases, and related materials.

	Code	Product	Unit
New	U-RGO-101X	EPA Method 1664 Precision, Accuracy, & Recovery Standard 4000 µg/mL of each analyte in Acetone n-Hexadecane; Stearic acid	100 mL

Code	Product	Unit
New U-RGO-102X	Method 1664 Precision, Accuracy and Recovery Standard 2000 µg/mL of each analyte in Acetone n-Hexadecane Stearic acid	100 mL

EPA 8000 Methods

Reference materials for monitoring organic pollutants in ground water

The 8000 series are used for monitoring organic pollutants in ground water as prescribed in the Resource Conservation and Recovery Act.

ULTRA Scientific has prepared a series reference standards for the 8000 series methods as well as the necessary surrogate and internal standards. Each component in a reference standard is pre-analysed, with most analytes being >99% pure. All solvents are of the highest quality available. All solutions are gravimetrically prepared to a precision of ±0.5%. A certificate showing the actual weights used is supplied with each mixture.

Code	Product	Unit

EPA Method 8010B

Volatile halocarbons

Method 8010B is used to determine volatile halogenated organic pollutants using either purge or trap or direct injection and an electrolytic conductivity (Hall) detector.

Recommended standards

Calibration standards: U-HCM-801, U-HC-070, U-HC-491

Surrogate standard: U-STM-401

Code	Product	Unit
U-HCM-801-1	Halogenated Volatiles Mixture 100 µg/mL of each analyte in Methanol. Allyl chloride Bromodichloromethane Bromoform Bromomethane Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane Dibromochloromethane 1,2-Dibromo-3-chloropropane 1,2-Dibromoethane Dibromomethane 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene trans-1,4-Dichloro-2-butene Dichlorodifluoromethane 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethene trans-1,2-Dichloroethene 1,2-Dichloropropane cis-1,3-Dichloropropene trans-1,3-Dichloropropene Methyl iodide (Iodomethane) Methylene chloride 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Tetrachloroethene 1,1,1-Trichloroethane 1,1,2-Trichloroethane Trichloroethene Trichlorofluoromethane 1,2,3-Trichloropropane Vinyl chloride	1 mL
U-HCM-801	Halogenated Volatiles Mixture	4 x 1 mL
U-HC-070-1	2-Chloroethylvinyl ether 100 µg/mL in Methanol	1 mL
U-HC-070	2-Chloroethylvinyl ether 100 µg/mL in Methanol	4 x 1 mL
U-EPA-1016	2-Chloroethylvinyl ether 5000 µg/mL in Methanol	1 mL
U-HC-491-1	Chloroprene 100 µg/mL in Methanol	1 mL
U-HC-491	Chloroprene 100 µg/mL in Methanol	4 x 1 mL
U-DWM-544-1	VOC Gas Mixture 2000 µg/mL of each analyte in Methanol. Bromomethane Chloromethane Trichlorofluoromethane Chloroethane Dichlorodifluoromethane Vinyl chloride	1 mL
U-DWM-544	VOC Gas Mixture	4 x 1 mL
U-STM-401-1	Internal & Surrogate Standard Mixture 1500 µg/mL of each analyte in Methanol 4-Bromochlorobenzene 4-Bromofluorobenzene Bromochloromethane	1 mL
U-STM-401	Internal & Surrogate Standard Mixture	4 x 1 mL

Code	Product	Unit

EPA Method 8011

Dibromoethane and dibromochloropropane

1,2-Dibromoethane and 1,2-Dibromo-3-chloropropane using microextraction and capillary column GC with an ECD.

Recommended standards

Calibration standard: U-DWM-504N
U-HCM-812

U-DWM-504N-1	DBCP-EDB Mixture 200 µg/mL of each analyte in Methanol. 1,2-Dibromo-3-chloropropane 1,2-Dibromoethane	1 mL
U-DWM-504N	DBCP-EDB Mixture	4 x 1 mL
U-HCM-812-1	DBCP/EDB Mixture 2000 µg/mL of each analyte in Methanol 1,2-Dibromo-3-chloropropane 1,2-Dibromoethane	1 mL
U-HCM-812	DBCP-EDB Mixture	4 x 1 mL

EPA Method 8015C

Nonhalogenated volatile organic pollutants

Method 8015C is used to determine volatile nonhalogenated organics, using either purge and trap or direct injection, and a flame ionization detector (FID).

Recommended standards

Calibration standard: U-NVM-8015A
U-NVM-8015B

Internal standard: U-STM-580

New	U-NVM-8015A-1	Non-Halogenated Volatiles Mixture 18 Analytes 2000 µg/mL of each analyte in Water Acetone Acetonitrile Allyl alcohol 1-Butanol (n-butyl alcohol) tert-Butyl alcohol (2-Methyl-2-propanol) Diethyl ether 1,4-Dioxane Ethanol Ethyl acetate Ethylene glycol Isobutyl alcohol (2-Methyl-1-propanol) Isopropyl alcohol (2-propanol) Methanol 2-Butanone (MEK) 4-Methyl-2-pentanone (MIBK) 2-Pentanone 1-Propanol (n-Propyl alcohol) Propionitrile	1 mL
New	U-NVM-8015A	Non-Halogenated Volatiles Mixture	4 x 1 mL
New	U-NVM-8015B-1	Non-Halogenated Volatiles Mixture 4 Analytes 2000 µg/mL of each analyte in Methanol N-Nitrosodi-n-butylamine 2-Picoline Pyridine o-Toluidine	1 mL
New	U-NVM-8015B	Non-Halogenated Volatiles Mixture	4 x 1 mL
New	U-SAK-100-1	GRO Mixture 5 Analytes 2000 µg/mL of each analyte in Methanol n-Hexane (C6) n-Heptane (C7) n-Octane (C8) n-Nonane (C9) n-Decane (C10)	1 mL
New	U-SAK-100	GRO Mixture	4 x 1 mL
New	U-STM-580-1	Internal Standard Mixture 3 Analytes 2000 µg/mL of each analyte in Water 2-Chloroacrylonitrile Hexafluoro-2-propanol Hexafluoro-2-methyl-2-propanol	1 mL
New	U-STM-580	Internal Standard Mixture	4 x 1 mL
	U-NVM-8115-1	Method 8015A Non-Halogenated Volatiles Mixture 2000 µg/mL of each analyte in Methanol. Diethyl ether Ethyl alcohol (Ethanol) 2-Butanone (MEK) 4-Methyl-2-pentanone (MIBK)	1 mL
	U-NVM-8115	Method 8015A Non-Halogenated Volatiles Mixture	4 x 1 mL

EPA 8000 Methods

Code	Product	Unit
U-NVM-8015-1	Non-Halogenated Volatiles Mixture 100 µg/mL of each analyte in Methanol. Acetonitrile, Acrylamide, 2-butanone (MEK), Diethyl ether, 1,4-Dioxane, Ethyl alcohol (Ethanol), Ethyl methacrylate, Isobutyl alcohol, Methacrylonitrile, Methyl methacrylate, 4-Methyl-2-pentanone (MIBK), Propionitrile	1 mL
U-NVM-8015	Non-Halogenated Volatiles Mixture	4 x 1 mL
New U-UST-200-1	DRO Mixture (EPA/Wisconsin) 10 Analytes 2000 µg/mL of each analyte in Methylene chloride n-Decane (C10), n-Dodecane (C12), n-Tetradecane (C14), n-Hexadecane (C16), n-Octadecane (C18), n-Eicosane (C20), n-Docosane (C22), n-Tetracosane (C24), n-Hexacosane (C26)	1 mL
New U-UST-200	DRO Mixture (EPA/Wisconsin)	4 x 1 mL

EPA Method 8020A

Aromatic volatiles

Method 8020A is used to determine volatile aromatic organic compounds using either purge and trap or direct injection and a PID.

Recommended standards

Calibration standard: U-AMM-802
Internal and Surrogate standard: U-STM-510

U-AMM-802-1	Aromatic Volatiles Mixture 100 µg/mL of each analyte in Methanol. Benzene, Chlorobenzene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Ethylbenzene, Styrene, Toluene, m-Xylene, o-Xylene, p-Xylene	1 mL
U-AMM-802	Aromatic Volatiles Mixture	4 x 1 mL
U-AMM-812-1	Aromatic Volatiles Mixture 2000 µg/mL of each analyte in Methanol Benzene, Chlorobenzene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Ethylbenzene, Toluene, o-Xylene, m-Xylene, p-Xylene	1 mL
U-AMM-812	Aromatic Volatiles Mixture	4 x 1 mL
U-STS-440-1	Methyl tert-butyl ether 2000 µg/mL in Methanol	1 mL
U-STS-440	Methyl tert-butyl ether 2000 µg/mL in Methanol	4 x 1 mL
U-STM-510-1	Surrogate Standard Mixture 2000 µg/mL of each analyte in Methanol 4-Bromofluorobenzene, alpha,alpha,alpha-Trifluorotoluene, 4-Bromochlorobenzene, 1,4-Difluorobenzene, Fluorobenzene	1 mL
U-STM-510	Surrogate Standard Mixture	4 x 1 mL
U-UST-141-1	Revised PVOC Mixture (California) 1000 µg/mL of each analyte in Methanol. Benzene, Ethylbenzene, tert-Butylmethyl ether (MTBE), Toluene, o-Xylene, m-Xylene, p-Xylene	1 mL
U-UST-141	Revised PVOC Mixture (California)	4 x 1 mL
U-STM-410-1	Internal Standard Mixture 2000 µg/mL of each analyte in Methanol 4-Bromofluorobenzene, alpha,alpha,alpha-Trifluorotoluene	1 mL
U-STM-410	Internal Standard Mixture	4 x 1 mL
U-STM-420-1	Surrogate Standard Mixture 2000 µg/mL of each analyte in Methanol 4-Bromochlorobenzene, 1,4-Difluorobenzene, Fluorobenzene	1 mL
U-STM-420	Surrogate Standard Mixture	4 x 1 mL
U-STS-221-1	alpha,alpha,alpha-Trifluorotoluene 200 µg/mL in Methanol	1 mL
U-STS-221	alpha,alpha,alpha-Trifluorotoluene 200 µg/mL in Methanol	4 x 1 mL
U-STS-220N-1	alpha,alpha,alpha-Trifluorotoluene 2000 µg/mL in Methanol	1 mL

Code	Product	Unit
U-STS-220N	alpha,alpha,alpha-Trifluorotoluene 2000 µg/mL in Methanol	4 x 1 mL

EPA Method 8021B

Halogenated and aromatic volatile organics

Method 8021B is used to determine aromatic and halogenated volatiles using either purge and trap, headspace, vacuum distillation, or direct injection. Detection is carried out with a PID and ELCD in series.

Recommended standards

Calibration standards:	U-DWM-588 U-HCM-822A U-HC-070 U-HC-491
Surrogate standard:	U-STM-431
Internal standard:	U-STM-240N

U-DWM-580-1	VOC Mixture 200 µg/mL of each analyte in Methanol.	1 mL

Bromochloromethane
Bromodichloromethane
Bromoform
Carbon tetrachloride
Chloroform
Dibromochloromethane
Dibromomethane
Methylene chloride
1,2-Dibromoethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
cis-1,2-Dichloroethene
trans-1,2-Dichloroethene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
1,2-Dibromo-3-chloropropane
1,2-Dichloropropane
1,3-Dichloropropane
2,2-Dichloropropane
1,1-Dichloropropene
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Hexachlorobutadiene
1,2,3-Trichloropropane
Benzene
n-Butylbenzene
sec-Butylbenzene
tert-Butylbenzene
Ethylbenzene
Isopropylbenzene
4-Isopropyltoluene
Naphthalene
n-Propylbenzene
Styrene
Toluene
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
o-Xylene
m-Xylene
p-Xylene
Bromobenzene
Chlorobenzene
2-Chlorotoluene
4-Chlorotoluene
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
Bromomethane
Chloroethane
Chloromethane
Dichlorodifluoromethane
Trichlorofluoromethane
Vinyl chloride

U-DWM-580	VOC Mixture	4 x 1 mL
U-DWM-588-1	VOC Mixture 2000 µg/mL of each analyte in Methanol.	1 mL

Bromochloromethane
Bromodichloromethane
Bromoform
Carbon tetrachloride
Chloroform
Dibromochloromethane
Dibromomethane
Methylene chloride
1,2-Dibromoethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
cis-1,2-Dichloroethene
trans-1,2-Dichloroethene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
1,2-Dibromo-3-chloropropane
1,2-Dichloropropane
1,3-Dichloropropane
2,2-Dichloropropane
1,1-Dichloropropene
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Hexachlorobutadiene
1,2,3-Trichloropropane
Benzene
n-Butylbenzene
sec-Butylbenzene
tert-Butylbenzene
Ethylbenzene
Isopropylbenzene
4-Isopropyltoluene
Naphthalene
n-Propylbenzene
Styrene
Toluene
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
o-Xylene
m-Xylene
p-Xylene
Bromobenzene
Chlorobenzene
2-Chlorotoluene
4-Chlorotoluene
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
Bromomethane
Chloroethane
Chloromethane
Dichlorodifluoromethane
Trichlorofluoromethane
Vinyl chloride

	Code	Product	Unit
	U-DWM-588	VOC Mixture	4 x 1 mL
New	U-HCM-822A-1	Halogenated Volatiles Mixture 6 Analytes 2000 µg/mL of each analyte in Methanol Allyl chloride; 2-Chloroethanol Benzyl chloride; Chloromethyl methyl ether Bis(2-chloroisopropyl) ether; 1,3-Dichloro-2-propanol	1 mL
New	U-HCM-822A	Halogenated Volatiles Mixture	4 x 1 mL
	U-HC-070-1	2-Chloroethylvinyl ether 100 µg/mL in Methanol	1 mL
	U-HC-070	2-Chloroethylvinyl ether 100 µg/mL in Methanol	4 x 1 mL
	U-EPA-1016	2-Chloroethylvinyl ether 5000 µg/mL in Methanol	1 mL
	U-HC-491-1	Chloroprene 100 µg/mL in Methanol	1 mL
	U-HC-491	Chloroprene 100 µg/mL in Methanol	4 x 1 mL
	U-STM-431-1	Surrogate Standard Mixture 1500 µg/mL of each analyte in Methanol 4-Bromochlorobenzene; 1,4-Dichlorobutane	1 mL
	U-STM-431	Surrogate Standard Mixture	4 x 1 mL
	U-STM-240N-1	Internal Standard Mixture 2000 µg/mL of each analyte in Methanol 2-Bromo-1-chloropropane; Fluorobenzene	1 mL
	U-STM-240N	Internal Standard Mixture	4 x 1 mL
New	U-DWM-596-1	VOC Mixture with MTBE 55 analytes 2000 µg/mL of each analyte in Methanol Benzene; 2,2-Dichloropropane Bromobenzene; 1,1-Dichloropropene Bromochloromethane; cis-1,3-Dichloropropene Bromodichloromethane; trans-1,3-Dichloropropene Bromoform; dthylbenzene n-Butylbenzene; Hexachlorobutadiene sec-Butylbenzene; Isopropylbenzene tert-Butylbenzene; 4-isopropyltoluene tert-Butyl methyl ether; Methylene chloride Carbon tetrachloride; Naphthalene Chlorobenzene; n-propylbenzene Chloroform; Styrene 2-Chlorotoluene; 1,1,1,2-Tetrachloroethane 4-Chlorotoluene; 1,1,2,2-tetrachloroethane Dibromochloromethane; Tetrachloroethene 1,2-Dibromo-3-chloropropane; Toluene 1,2-Dibromoethane; 1,2,3-Trichlorobenzene Dibromomethane; 1,2,4-Trichlorobenzene 1,2-Dichlorobenzene; 1,1,1-Trichloroethane 1,3-Dichlorobenzene; 1,1,2-Trichloroethane 1,4-dichlorobenzene; Trichloroethene 1,1-Dichloroethane; 1,2,3-Trichloropropane 1,2-Dichloroethane; 1,2,4-Trimethylbenzene 1,1-Dichloroethene; 1,3,5-Trimethylbenzene cis-1,2-Dichloroethene; o-Xylene trans-1,2-Dichloroethene; m-Xylene 1,2-Dichloropropane; p-Xylene 1,3-Dichloropropane	1 mL
New	U-DWM-596	VOC Mixture with MTBE	4 x 1 mL

Code	Product	Unit
U-DWM-583-1	VOC Mixture	1 mL

200 µg/mL of each analyte in Methanol.

Benzene	2,2-Dichloropropane
Bromobenzene	1,1-Dichloropropene
Bromochloromethane	cis-1,3-Dichloropropene
Bromodichloromethane	trans-1,3-Dichloropropene
Bromoform	Ethylbenzene
n-Butylbenzene	Hexachlorobutadiene
sec-Butylbenzene	Isopropylbenzene
tert-Butylbenzene	4-Isopropyltoluene
Carbon tetrachloride	Methylene chloride
Chlorobenzene	Naphthalene
Chloroform	n-Propylbenzene
2-Chlorotoluene	Styrene
4-Chlorotoluene	1,1,1,2-Tetrachloroethane
Dibromochloromethane	1,1,2,2-Tetrachloroethane
1,2-Dibromo-3-chloropropane	Tetrachloroethene
1,2-Dibromoethane	Toluene
Dibromomethane	1,2,3-Trichlorobenzene
1,2-Dichlorobenzene	1,2,4-Trichlorobenzene
1,3-Dichlorobenzene	1,1,1-Trichloroethane
1,4-Dichlorobenzene	1,1,2-Trichloroethane
1,1-Dichloroethane	Trichloroethene
1,2-Dichloroethane	1,2,3-Trichloropropane
1,1-Dichloroethene	1,2,4-Trimethylbenzene
cis-1,2-Dichloroethene	1,3,5-Trimethylbenzene
trans-1,2-Dichloroethene	o-Xylene
1,2-Dichloropropane	m-Xylene
1,3-Dichloropropane	p-Xylene

U-DWM-583	VOC Mixture	4 x 1 mL
U-DWM-589N-1	VOC Mixture	1 mL

2000 µg/mL of each analyte in Methanol.

Benzene	2,2-Dichloropropane
Bromobenzene	1,1-Dichloropropene
Bromochloromethane	cis-1,3-Dichloropropene
Bromodichloromethane	trans-1,3-Dichloropropene
Bromoform	Ethylbenzene
n-Butylbenzene	Hexachlorobutadiene
sec-Butylbenzene	Isopropylbenzene
tert-Butylbenzene	4-Isopropyltoluene
Carbon tetrachloride	Methylene chloride
Chlorobenzene	Naphthalene
Chloroform	n-Propylbenzene
2-Chlorotoluene	Styrene
4-Chlorotoluene	1,1,1,2-Tetrachloroethane
Dibromochloromethane	1,1,2,2-Tetrachloroethane
1,2-Dibromo-3-chloropropane	Tetrachloroethene
1,2-Dibromoethane	Toluene
Dibromomethane	1,2,3-Trichlorobenzene
1,2-Dichlorobenzene	1,2,4-Trichlorobenzene
1,3-Dichlorobenzene	1,1,1-Trichloroethane
1,4-Dichlorobenzene	1,1,2-Trichloroethane
1,1-Dichloroethane	Trichloroethene
1,2-Dichloroethane	1,2,3-Trichloropropane
1,1-Dichloroethene	1,2,4-Trimethylbenzene
cis-1,2-Dichloroethene	1,3,5-Trimethylbenzene
trans-1,2-Dichloroethene	o-Xylene
1,2-Dichloropropane	m-Xylene
1,3-Dichloropropane	p-Xylene

U-DWM-589N	VOC Mixture	4 x 1 mL
U-DWM-584-1	VOC Gas Mixture	1 mL

200 µg/mL of each analyte in Methanol.

Bromomethane	Chloromethane	Trichlorofluoromethane
Chloroethane	Dichlorodifluoromethane	Vinyl chloride

U-DWM-584	VOC Gas Mixture	4 x 1 mL
U-DWM-544-1	VOC Gas Mixture	1 mL

2000 µg/mL of each analyte in Methanol.

Bromomethane	Chloromethane	Trichlorofluoromethane
Chloroethane	Dichlorodifluoromethane	Vinyl chloride

U-DWM-544	VOC Gas Mixture	4 x 1 mL
U-AMK-8021	EPA Method 8021B Kit	kit

VOC Mixture (2000 µg/mL in Methanol) ..... U-DWM-588 (1 x 1 mL)
2-Chloroethylvinyl Ether (100 µg/mL in Methanol)..... U-HC-070 (1 x 1 mL)
Chloroprene (100 µg/mL in Methanol)..... U-HC-491 (1 x 1 mL)
Halogenated Volatiles Mixture (2000 µg/mL in Methanol)..... U-HCM-822 (1 x 1 mL)
Internal Standard Mixture (2000 µg/mL in Methanol) ..... U-STM-240N (1 x 1 mL)
Surrogate Standard Mixture (1500 µg/mL in Methanol)..... U-STM-431 (1 x 1 mL)

Code	Product	Unit

EPA Method 8030A

Acrolein and acrylonitrile

U-AMN-603-1	Acrolein-Acrylonitrile Mixture 100 µg/mL of each analyte in Methanol Acrolein Acrylonitrile	1 mL
U-AMN-603	Acrolein-Acrylonitrile Mixture	4 x 1 mL
U-AMN-623-1	Acrolein-Acrylonitrile Mixture 2000 µg/mL of each analyte in Methanol Acrolein Acrylonitrile	1 mL
U-AMN-623	Acrolein-Acrylonitrile Mixture	4 x 1 mL
U-AMN-613-1	Acrolein-Acrylonitrile Mixture 1000 µg/mL of each analyte in Water Acrolein Acrylonitrile	1 mL
U-AMN-613	Acrolein-Acrylonitrile Mixture	4 x 1 mL
U-AMN-803-1	Acrolein-Acrylonitrile Mixture 10000 µg/mL of each analyte in Water Acrolein Acrylonitrile	1 mL
U-AMN-803	Acrolein-Acrylonitrile Mixture	4 x 1 mL

EPA Method 8031

U-AMN-813-1	Acrylonitrile 1000 µg/mL in Methanol	1 mL
U-AMN-813	Acrylonitrile 1000 µg/mL in Methanol	4 x 1 mL

EPA Method 8032A

U-AMN-823-1	Acrylamide 1000 µg/mL in Methanol	1 mL
U-AMN-823	Acrylamide 1000 µg/mL in Methanol	4 x 1 mL
U-PS-140-1	Dimethyl phthalate 100 µg/mL in Methanol	1 mL
U-PS-140	Dimethyl phthalate 100 µg/mL in Methanol	4 x 1 mL

EPA Method 8033

U-NV-110-1	Acetonitrile 100 µg/mL in Methanol	1 mL
U-NV-110	Acetonitrile 100 µg/mL in Methanol	4 x 1 mL

EPA Method 8041

Phenols

Method 8041 is used to measure phenols. Samples are extracted, then concentrated in a Kuderna-Danish apparatus. Quantitation is by GC/FID or the extract is derivatised and determined by GC with an ECD.

Recommended standards

Calibration standards:	U-PHM-814 U-PHM-824
Surrogate standard:	U-IST-620
Internal standard:	U-ISM-610

U-PHM-814-1	Phenols Mixture 2000 µg/mL of each analyte in Isopropanol. 4-Chloro-3-methylphenol o-Cresol (2-Methylphenol) 2,4-Dichlorophenol 2-Methyl-4,6-dinitrophenol 2-Nitrophenol 4-Nitrophenol Pentachlorophenol Phenol 2,4,6-Trichlorophenol	1 mL
U-PHM-814	Phenols Mixture	4 x 1 mL
U-PHM-824-1	Phenols Mixture 2000 µg/mL of each analyte in Isopropanol. 2-Chlorophenol m-Cresol (3-Methylphenol) p-Cresol (4-Methylphenol) 2,6-Dichlorophenol 2,4-Dimethylphenol 2,4-Dinitrophenol Dinoseb 2,3,4,6-Tetrachlorophenol 2,4,5-Trichlorophenol	1 mL
U-PHM-824	Phenols Mixture	4 x 1 mL

Code	Product	Unit
U-PHM-844-1	Phenols Mixture 2000 µg/mL of each analyte in Isopropanol. 2-Cyclohexyl-4,6-dinitrophenol; 2,3,5,6-Tetrachlorophenol; 2,3,4,5-Tetrachlorophenol	1 mL
U-PHM-844	Phenols Mixture	4 x 1 mL
U-ISM-610-1	Internal Standard Mixture 1000 µg/mL of each analyte in Isopropanol (Isopropyl alcohol) 2,5-Dibromotoluene; 2,2',5,5'-Tetrabromobiphenyl	1 mL
U-ISM-610	Internal Standard Mixture	4 x 1 mL
U-IST-620-1	2,4-Dibromophenol 1000 µg/mL in Isopropanol	1 mL
U-IST-620	2,4-Dibromophenol 1000 µg/mL in Isopropanol	4 x 1 mL
U-ISM-380-1	Surrogate Standard Mixture 2000 µg/mL of each analyte in Isopropanol (Isopropyl alcohol) 2-Fluorophenol; 2,4,6-Tribromophenol	1 mL
U-ISM-380	Surrogate Standard Mixture	4 x 1 mL
U-PHM-834A-1	Phenols Mixture 100 µg/mL of each analyte in Isopropanol (Isopropyl alcohol) Dinoseb; 4-Chloro-3-methylphenol; 2-Chlorophenol; o-Cresol (2-Methylphenol); m-Cresol (3-Methylphenol); p-Cresol (4-Methylphenol); 2-Cyclohexyl-4,6-dinitrophenol; 2,4-Dichlorophenol; 2,6-Dichlorophenol; 2,4-Dimethylphenol; 2-Methyl-4,6-dinitrophenol; 2,4-Dinitrophenol; 2-Nitrophenol; 4-Nitrophenol; Pentachlorophenol; Phenol; 2,3,4,5-Tetrachlorophenol; 2,3,4,6-Tetrachlorophenol; 2,3,5,6-Tetrachlorophenol; 2,4,6-Trichlorophenol; 2,4,5-Trichlorophenol	1 mL
U-PHM-834A	Phenols Mixture	4 x 1 mL
U-PHM-804-1	Phenols Mixture 100 µg/mL of each analyte in Methanol 4-Chloro-3-methylphenol; 2-Chlorophenol; m-Cresol (3-Methylphenol); o-Cresol (2-Methylphenol); p-Cresol (4-Methylphenol); 2,4-Dichlorophenol; 2,6-Dichlorophenol; 2,4-Dimethylphenol; 2-Methyl-4,6-dinitrophenol; 2,4-Dinitrophenol; 2-Nitrophenol; 4-Nitrophenol; Pentachlorophenol; Phenol; 2,3,4,6-Tetrachlorophenol; 2,4,5-Trichlorophenol; 2,4,6-Trichlorophenol	1 mL
U-PHM-804	Phenols Mixture	4 x 1 mL
U-IST-251-1	2-Fluorophenol 2000 µg/mL in Methanol	1 mL
U-IST-251	2-Fluorophenol 2000 µg/mL in Methanol	4 x 1 mL
U-IST-261-1	Pentafluorophenol 2000 µg/mL in Methanol	1 mL
U-IST-261	Pentafluorophenol 2000 µg/mL in Methanol	4 x 1 mL
U-IST-271-1	Phenol-D_5 2000 µg/mL in Methanol	1 mL
U-IST-271	Phenol-D_5 2000 µg/mL in Methanol	4 x 1 mL
U-ATS-181-1	2,4,6-Tribromophenol 2000 µg/mL in Methanol	1 mL
U-ATS-181	2,4,6-Tribromophenol 2000 µg/mL in Methanol	4 x 1 mL

EPA Method 8061A

Phthalate esters

Method 8061 is used to measure phthalates. Samples are extracted, then quantitated with capillary GC/ECD.

Recommended standards

Calibration standard: U-PSM-806
Surrogate standard: U-ISM-390
Internal standard: U-IST-400

U-PSM-606-1	Phthalates Mixture 100 µg/mL of each analyte in Methanol Bis(2-ethylhexyl)phthalate; Butyl benzyl phthalate; Di-n-butyl phthalate; Diethyl phthalate; Dimethyl phthalate; Di-n-octyl phthalate	1 mL
U-PSM-606	Phthalates Mixture	4 x 1 mL

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Code	Product	Unit
U-PSM-806-1	Phthalates Mixture 1000 µg/mL of each analyte in Isooctane. Bis(2-ethylhexyl)phthalate; Butyl benzyl phthalate; Di-n-butyl phthalate; Diethyl phthalate; Dimethyl phthalate; Di-n-octyl phthalate	1 mL
U-PSM-806	Phthalates Mixture	4 x 1 mL
U-PSM-826-1	Phthalates Mixture 1000 µg/mL of each analyte in iso-Octane (2,2,4-Trimethylpentane) Bis(2-n-butoxyethyl) phthalate; Bis(2-ethoxyethyl) phthalate; Bis(2-ethylhexyl)phthalate; Bis(2-methoxyethyl) phthalate; Bis(4-methyl-2-pentyl) phthalate; Butyl benzyl phthalate; Dicyclohexyl phthalate; 2-ethylhexyl hexyl phthalate; Diamyl phthalate; Diethyl phthalate; Dihexyl phthalate; Diisobutyl phthalate; Dimethyl phthalate; Dinonyl phthalate; Di-n-octyl phthalate; Di-n-butyl phthalate	1 mL
U-PSM-826	Phthalates Mixture	4 x 1 mL
U-EPA-2037N-1	Phthalate Esters Mixture 6 Analytes in Acetone Bis(2-ethylhexyl)phthalate ..... 50 µg/mL; Butyl benzyl phthalate ..... 10 µg/mL; Dimethyl phthalate ..... 25 µg/mL; Di-n-butyl phthalate ..... 25 µg/mL; Diethyl phthalate ..... 25 µg/mL; Di-n-octyl phthalate ..... 50 µg/mL	1 mL
U-EPA-2037N	Phthalate Esters Mixture	4 x 1 mL
U-ISM-390-1	Surrogate Standard Mixture 500 µg/mL of each analyte in Acetone Dibenzyl phthalate; Diphenyl isophthalate; Diphenyl phthalate	1 mL
U-ISM-390	Surrogate Standard Mixture	4 x 1 mL
U-IST-400-1	Benzyl benzoate 5000 µg/mL in Hexane	1 mL
U-IST-400	Benzyl benzoate 5000 µg/mL in Hexane	4 x 1 mL
U-PSK-8061	EPA Method 8061A Kit Phthalates Mixture (1000 µg/mL in iso-Octane) ..... U-PSM-806 (1 x 1 mL) Surrogate Standard Mixture (500 µg/mL in Acetone) ..... U-ISM-390 (1 x 1 mL) Benzyl benzoate (5000 µg/mL in Hexane) ..... U-IST-400 (1 x 1 mL)	kit

EPA Method 8070A

Nitrosamines

Method 8070A is used to measure nitrosamines. Samples are quantitated by GC/NPD.

Recommended standards

Calibration standards: U-NSM-807
U-IST-400

U-NSM-807-1	Nitrosamines Mixture 2000 µg/mL of each analyte in Methanol N-Nitrosodimethylamine; N-Nitrosodiphenylamine; N-Nitrosodi-n-propylamine	1 mL
U-NSM-807	Nitrosamines Mixture	4 x 1 mL

Code	Product	Unit

EPA Method 8080A

Organochlorine pesticides and PCBs

Method 8080A is used to measure organochlorine pesticides and PCBs using extraction followed by GC/ECD. Method 8080A has been deleted from the

current revision of SW-846 (Update III).

Recommended standards

Calibration standards: U-PPM-808B
U-US-112B
Surrogate standard: U-ISM-320

Code	Product	Unit
U-PPM-808B-1	Organochlorine Pesticides Mixture 17 Analytes in Hexane/Toluene (1:1)	1 mL
U-PPM-808B	Organochlorine Pesticides Mixture	4 x 1 mL
U-US-112B	Organochlorine Pesticide Mixture 2000 µg/mL of each analyte in Acetone	1 mL
U-US-112B-4	Organochlorine Pesticide Mixture	4 x 1 mL
U-PP-151-1	Chlordane 100 µg/mL in Hexane	1 mL
U-PP-151	Chlordane 100 µg/mL in Hexane	4 x 1 mL
U-PP-271-1	Toxaphene 100 µg/mL in Hexane	1 mL
U-PP-271	Toxaphene 100 µg/mL in Hexane	4 x 1 mL
U-PP-281-1	Aroclor 1016 100 µg/mL in Hexane	1 mL
U-PP-281	Aroclor 1016 100 µg/mL in Hexane	4 x 1 mL
U-PP-291-1	Aroclor 1221 100 µg/mL in Hexane	1 mL
U-PP-291	Aroclor 1221 100 µg/mL in Hexane	4 x 1 mL
U-PP-301-1	Aroclor 1232 100 µg/mL in Hexane	1 mL
U-PP-301	Aroclor 1232 100 µg/mL in Hexane	4 x 1 mL
U-PP-311-1	Aroclor 1242 100 µg/mL in Hexane	1 mL
U-PP-311	Aroclor 1242 100 µg/mL in Hexane	4 x 1 mL
U-PP-341-1	Aroclor 1248 100 µg/mL in Hexane	1 mL
U-PP-341	Aroclor 1248 100 µg/mL in Hexane	4 x 1 mL
U-PP-351-1	Aroclor 1254 100 µg/mL in Hexane	1 mL
U-PP-351	Aroclor 1254 100 µg/mL in Hexane	4 x 1 mL
U-PP-361-1	Aroclor 1260 100 µg/mL in Hexane	1 mL
U-PP-361	Aroclor 1260 100 µg/mL in Hexane	4 x 1 mL
U-PPM-608C-1	Organochlorine Pesticide Mixture Solvent: Methanol	1 mL
U-PPM-608C	Organochlorine Pesticide Mixture	4 x 1 mL

U-PPM-808B-1:

Aldrin	250 µg/mL	Endosulfan I	250 µg/mL
alpha-BHC (alpha-HCH)	250 µg/mL	Endosulfan II	250 µg/mL
Beta-BHC (beta-HCH)	250 µg/mL	Endosulfan sulfate	250 µg/mL
delta-BHC (delta-HCH)	250 µg/mL	Endrin	250 µg/mL
Gamma-BHC (Lindane)	250 µg/mL	Endrin aldehyde	250 µg/mL
4,4'-DDD	250 µg/mL	Heptachlor	250 µg/mL
4,4'-DDE	250 µg/mL	Heptachlor epoxide - isomer B	250 µg/mL
4,4'-DDT	250 µg/mL	Methoxychlor	1000 µg/mL
Dieldrin	250 µg/mL		

U-US-112B:

Aldrin	Endosulfan I
alpha-BHC (alpha-HCH)	Endosulfan II
beta-BHC (beta-HCH)	Endosulfan sulfate
delta-BHC (delta-HCH)	Endrin
gamma-BHC (Lindane)	Endrin aldehyde
4,4'-DDD	Heptachlor
4,4'-DDE	Heptachlor epoxide - isomer B
4,4'-DDT	Methoxychlor
Dieldrin	

U-PPM-608C-1:

Aldrin	20 µg/mL	Endosulfan I	20 µg/mL
alpha-BHC (alpha-HCH)	20 µg/mL	Endosulfan II	100 µg/mL
beta-BHC (beta-HCH)	20 µg/mL	Endosulfan sulfate	100 µg/mL
Delta-BHC (delta-HCH)	20 µg/mL	Endrin	100 µg/mL
gamma-BHC (Lindane)	20 µg/mL	Endrin aldehyde	20 µg/mL
4,4'-DDD	100 µg/mL	Heptachlor	20 µg/mL
4,4'-DDE	20 µg/mL	Heptachlor epoxide - isomer B	20 µg/mL
4,4'-DDT	100 µg/mL	Methoxychlor	20 µg/mL
Dieldrin	20 µg/mL		

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Code	Product	Unit
U-PPM-828-1	Organochlorine Pesticides Mixture 250 µg/mL of each analyte in iso-Octane (2,2,4-Trimethylpentane) 2,4'-DDD 2,4'-DDE 2,4'-DDT	1 mL
U-PPM-828	Organochlorine Pesticides Mixture	4 x 1 mL
New U-PPM-838-1	Organochlorine Pesticides Mixture 6 Analytes 1000 µg/mL of each analyte in Acetone 2,4'-DDD 2,4'-DDE 2,4'-DDT 4,4'-DDD 4,4'-DDE 4,4'-DDT	1 mL
New U-PPM-838	Organochlorine Pesticides Mixture	4 x 1 mL
U-ISM-450-1	Pesticide Degradation Check Solution 2 Analytes in iso-Octane (2,2,4-Trimethylpentane) Endrin ..... 1 µg/mL 4,4'-DDT .....2 µg/mL	1 mL
U-ISM-450	Pesticide Degradation Check Solution	4 x 1 mL
U-ISM-320-1	Pesticides Surrogate Standard Spiking Solution 200 µg/mL of each analyte in Acetone 2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl	1 mL
U-ISM-320	Pesticides Surrogate Standard Spiking Solution	4 x 1 mL

EPA Method 8081B

Organochlorine pesticides and PCBs

Method 8081B is used to measure organochlorine pesticides and PCBs using extraction followed by capillary GC/ECD.

Recommended standards

Calibration standards:	U-PPM-808C U-PPM-808F
Surrogate standard:	U-ISM-320
Internal standards:	U-PPS-351 U-PPS-133

Code	Product	Unit
U-PPM-808C-1	Organochlorine Pesticide Mixture 1000 µg/mL of each analyte in Hexane/Toluene (1:1) Aldrin, alpha-BHC (alpha-HCH), beta-BHC (beta-HCH), Delta-BHC (delta-HCH), gamma-BHC (Lindane), alpha-Chlordane, gamma-Chlordane, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, Dieldrin, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin aldehyde, Endrin ketone, Heptachlor, Heptachlor epoxide - isomer B, Methoxychlor	1 mL
U-PPM-808C	Organochlorine Pesticide Mixture	4 x 1 mL
U-PPM-808F-1	Organochlorine Pesticide Mixture 1000 µg/mL of each analyte in Hexane/Toluene (1:1) Chlorobenzilate, Diallate (total), 1,2-Dibromo-3-chloropropane, Hexachlorobenzene, Hexachlorocyclopentadiene, Isodrin	1 mL
U-PPM-808F	Organochlorine Pesticide Mixture	4 x 1 mL
U-ISM-320-1	Pesticides Surrogate Standard Spiking Solution 200 µg/mL of each analyte in Acetone 2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl	1 mL
U-ISM-320	Pesticides Surrogate Standard Spiking Solution	4 x 1 mL
U-PPS-133-1	Pentachloronitrobenzene 5000 µg/mL in Acetone	1 mL
U-PPS-133	Pentachloronitrobenzene 5000 µg/mL in Acetone	4 x 1 mL
U-PPS-351-1	1-Bromo-2-nitrobenzene 5000 µg/mL in Acetone	1 mL
U-PPS-351	1-Bromo-2-nitrobenzene 5000 µg/mL in Acetone	4 x 1 mL
U-PPK-8081	EPA Method 8081B Kit Organochlorine Pesticides Mixture (1000 µg/mL in Hexane/Toluene (1:1)) ..... U-PPM-808C (1 x 1 mL) Organochlorine Pesticides Mixture (1000 µg/mL in Hexane/Toluene (1:1)) ..... U-PPM-808F (1 x 1 mL) Pesticides Surrogate Standard Spiking Solution (200 µg/mL in Acetone) ..... U-ISM-320 (1 x 1 mL) 1-Bromo-2-nitrobenzene (5000 µg/mL in Acetone) ..... U-PPS-351 (1 x 1 mL)	kit

	Code	Product	Unit
	U-ISM-321X	Pesticides Surrogate Standards Spiking Solution 0.2 µg/mL of each analyte in Acetone 2,4,5,6-Tetrachloro-m-xylene; Decachlorobiphenyl	100 mL
	U-PPM-808G-1	Organochlorine Pesticides Mixture 1000 µg/mL of each analyte in Hexane/Toluene (1:1) Alachlor; Captafol; Chloroneb; Chloropropylate; Chlorothalonil; DCPA (Dacthal); Dichlone; Dicofol (Kelthane); Etridiazole; Mirex; Nitrofen; trans-Nonachlor; Pentachloronitrobenzene; Permethrins (mixed isomers,total); Perthane; Propachlor; Trifluralin	1 mL
	U-PPM-808G	Organochlorine Pesticides Mixture	4 x 1 mL
	U-PPM-608C-1	Organochlorine Pesticide Mixture Solvent: Methanol Aldrin 20 µg/mL; alpha-BHC (alpha-HCH) 20 µg/mL; beta-BHC (beta-HCH) 20 µg/mL; Delta-BHC (delta-HCH) 20 µg/mL; gamma-BHC (Lindane) 20 µg/mL; 4,4'-DDD 100 µg/mL; 4,4'-DDE 20 µg/mL; 4,4'-DDT 100 µg/mL; Dieldrin 20 µg/mL; Endosulfan I 20 µg/mL; Endosulfan II 100 µg/mL; Endosulfan sulfate 100 µg/mL; Endrin 100 µg/mL; Endrin aldehyde 20 µg/mL; Heptachlor 20 µg/mL; Heptachlor epoxide - isomer B 20 µg/mL; Methoxychlor 20 µg/mL	1 mL
	U-PPM-608C	Organochlorine Pesticide Mixture	4 x 1 mL
New	U-PPM-838-1	Organochlorine Pesticides Mixture 6 Analytes 1000 µg/mL of each analyte in Acetone 2,4'-DDD; 2,4'-DDE; 2,4'-DDT; 4,4'-DDD; 4,4'-DDE; 4,4'-DDT	1 mL
New	U-PPM-838	Organochlorine Pesticides Mixture	4 x 1 mL
	U-PPM-828-1	Organochlorine Pesticides Mixture 250 µg/mL of each analyte in iso-Octane (2,2,4-Trimethylpentane) 2,4'-DDD; 2,4'-DDE; 2,4'-DDT	1 mL
	U-PPM-828	Organochlorine Pesticides Mixture	4 x 1 mL
	U-ISM-450-1	Pesticide Degradation Check Solution 2 Analytes in iso-Octane (2,2,4-Trimethylpentane) Endrin 1 µg/mL; 4,4'-DDT 2 µg/mL	1 mL
	U-ISM-450	Pesticide Degradation Check Solution	4 x 1 mL
	U-CLP-200N-1	Pesticides Matrix Spiking Solution 6 Analytes in Methanol Heptachlor 2000 µg/mL; Aldrin 2000 µg/mL; Dieldrin 5000 µg/mL; Endrin 5000 µg/mL; 4,4'-DDT 5000 µg/mL; gamma-HCH (Lindane) 2000 µg/mL	1 mL
	U-CLP-200N	Pesticides Matrix Spiking Solution	4 x 1 mL
	U-PP-151-1	Chlordane 100 µg/mL in Hexane	1 mL
	U-PP-151	Chlordane 100 µg/mL in Hexane	4 x 1 mL
	U-PP-271-1	Toxaphene 100 µg/mL in Hexane	1 mL
	U-PP-271	Toxaphene 100 µg/mL in Hexane	4 x 1 mL
	U-HPCK-2F	Halowax 1000 100 µg/mL in Hexane	2 mL
	U-HPCK-2G	Halowax 1001 100 µg/mL in Hexane	2 mL
	U-HPCK-2E	Halowax 1013 100 µg/mL in Hexane	2 mL
	U-HPCK-2C	Halowax 1051 100 µg/mL in Hexane	2 mL
	U-HPCK-2D	Halowax 1099 100 µg/mL in Hexane	2 mL
New	U-PST-990M100A01	Carbophenothion 100 µg/mL in Methanol	1 mL
New	U-PST-190M100A01	Dichloran 100 µg/mL in Methanol	1 mL
	U-PPS-360	4-Chloro-2-nitrobenzotrifluoride 1000 µg/mL in Acetone	4 x 1 mL
	U-PPS-360-1	4-Chloro-2-nitrobenzotrifluoride 1000 µg/mL in Acetone	1 mL

Code	Product	Unit

EPA Method 8082A

Polychlorinated biphenyls (PCBs)

Method 8082A is used to determine the concentrations of polychlorinated biphenyls (PCBs) as Aroclors, or as individual PCB congeners in extracts from solid and aqueous matrices. Open tubular capillary columns are employed with electron capture detectors (ECD) or electrolytic conductivity detectors (ELCD).

Recommended standards

Calibration standard: U-PPM-8082

U-RPCM-8082-1	PCB Congeners Mixture 100 µg/mL analytes in iso-Octane (2,2,4-Trimethylpentane) 2-Chlorobiphenyl 2,3-Dichlorobiphenyl 2,2',5-Trichlorobiphenyl 2,4',5-Trichlorobiphenyl 2,2',3,5'-Tetrachlorobiphenyl 2,2',5,5'-Tetrachlorobiphenyl 2,3',4,4'-Tetrachlorobiphenyl 2,2',3,4,5'-Pentachlorobiphenyl 2,2',4,5,5'-Pentachlorobiphenyl 2,3,3',4',6-Pentachlorobiphenyl 2,2',3,4,4',5'-Hexachlorobiphenyl 2,2',3,4,5,5'-Hexachlorobiphenyl 2,2',3,5,5',6-Hexachlorobiphenyl 2,2',4,4',5,5'-Hexachlorobiphenyl 2,2',3,3',4,4',5-Heptachlorobiphenyl 2,2',3,4,4',5,5'-Heptachlorobiphenyl 2,2',3,4,4',5',6-Heptachlorobiphenyl 2,2',3,4',5,5',6-Heptachlorobiphenyl 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	1 mL
U-RPCM-8082	PCB Congeners Mixture	4 x 1 mL
U-PPM-8082-1	Method 8082 Calibration Mixture 1000 µg/mL of each analyte in iso-Octane (2,2,4-Trimethylpentane) Aroclor 1016 (PCB 1016) Aroclor 1260 (PCB 1260)	1 mL
U-PPM-8082	Method 8082 Calibration Mixture	4 x 1 mL
U-PPS-150-1	Decachlorobiphenyl 1000 µg/mL in Toluene	1 mL
U-PPS-150	Decachlorobiphenyl 1000 µg/mL in Toluene	4 x 1 mL
U-IST-440-1	2,4,5,6-Tetrachloro-m-xylene 2000 µg/mL in Acetone	1 mL
U-IST-440	2,4,5,6-Tetrachloro-m-xylene 2000 µg/mL in Acetone	4 x 1 mL
U-PP-282-1	Aroclor 1016 100 µg/mL in iso-Octane	1 mL
U-PP-282	Aroclor 1016 100 µg/mL in iso-Octane	4 x 1 mL
U-PP-292-1	Aroclor 1221 100 µg/mL in iso-Octane	1 mL
U-PP-292	Aroclor 1221 100 µg/mL in iso-Octane	4 x 1 mL
U-PP-302-1	Aroclor 1232 100 µg/mL in iso-Octane	1 mL
U-PP-302	Aroclor 1232 100 µg/mL in iso-Octane	4 x 1 mL
U-PP-312-1	Aroclor 1242 100 µg/mL in iso-Octane	1 mL
U-PP-312	Aroclor 1242 100 µg/mL in iso-Octane	4 x 1 mL
U-PP-342-1	Aroclor 1248 100 µg/mL in iso-Octane	1 mL
U-PP-342	Aroclor 1248 100 µg/mL in iso-Octane	4 x 1 mL
U-PP-352-1	Aroclor 1254 100 µg/mL in iso-Octane	1 mL
U-PP-352	Aroclor 1254 100 µg/mL in iso-Octane	4 x 1 mL
U-PP-362-1	Aroclor 1260 100 µg/mL in iso-Octane	1 mL
U-PP-362	Aroclor 1260 100 µg/mL in iso-Octane	4 x 1 mL
U-PP-372-1	Aroclor 1262 100 µg/mL in iso-Octane	1 mL
U-PP-372	Aroclor 1262 100 µg/mL in iso-Octane	4 x 1 mL
U-PP-382-1	Aroclor 1268 100 µg/mL in iso-Octane	1 mL
U-PP-382	Aroclor 1268 100 µg/mL in iso-Octane	4 x 1 mL

EPA Method 8091

Nitroaromatics and cyclic ketones

Method 8091 is used to measure nitroaromatics and cyclic ketones. Samples are extracted, then quantitated with GC/NPD and GC/ECD.

U-NAIM-809B-1	Composite Stock Solution 40 µg/mL of each analyte in iso-Octane (2,2,4-Trimethylpentane) 1,4-Dinitrobenzene 2,4-Dinitrotoluene 2,6-Dinitrotoluene 1,4-Naphthoquinone Nitrobenzene Pentachloronitrobenzene	1 mL
U-NAIM-809B	Composite Stock Solution	4 x 1 mL

Code	Product	Unit
U-IST-630-1	1-Chloro-3-nitrobenzene 1000 µg/mL in Acetone	1 mL
U-IST-630	1-Chloro-3-nitrobenzene 1000 µg/mL in Acetone	4 x 1 mL
U-EPA-1125	Hexachlorobenzene 1000 µg/mL in Acetone	1 mL

EPA Method 8095

Explosives

Method 8095 is used to measure explosives, using extraction followed by capillary GC/ECD.

Recommended standards

Calibration standards: U-NAIM-8095A
U-NAIM-8095B
Surrogate standards: U-IST-701
U-IST-702

New	U-NAIM-8095A-1	Method 8095 Calibration Standard A 10 Analytes 1 µg/mL of each analyte in in Acetonitrile 1,3-Dinitrobenzene 2,6-Dinitrotoluene 2,4-dinitrotoluene 1,3,5-Trinitrobenzene 2,4,6-Trinitrotoluene RDX 4-Amino-2,6-dinitrotoluene 2-Amino-4,6-dinitrotoluene Tetryl HMX	1 mL
New	U-NAIM-8095A	Method 8095 Calibration Standard A	4 x 1 mL
New	U-NAIM-8095B-1	Method 8095 Calibration Standard B 7 Analytes in Acetonitrile Nitrobenzene ..... 5 µg/mL 3-Nitrotoluene ..... 5 µg/mL 2-Nitrotoluene ..... 5 µg/mL 4-Nitrotoluene.....5 µg/mL Nitroglycerine .....5 µg/mL PETN.....5 µg/mL 3,5-Dinitroaniline..... 1 µg/mL	1 mL
New	U-NAIM-8095B	Method 8095 Calibration Standard B	4 x 1 mL
New	U-IST-701-1	3,4-Dinitrotoluene 250 µg/mL in Acetonitrile	1 mL
New	U-IST-701	3,4-Dinitrotoluene 250 µg/mL in Acetonitrile	4 x 1 mL
New	U-IST-702-1	2-Methyl-4-nitroaniline 250 µg/mL in Acetonitrile	1 mL
New	U-IST-702	2-Methyl-4-nitroaniline 250 µg/mL in Acetonitrile	4 x 1 mL

EPA Method 8100

Polynuclear aromatic hydrocarbons

Method 8100 is used to measure polynuclear aromatic hydrocarbons, using extraction followed by GC/FID. Either packed or capillary columns may be used.

Recommended standards

Calibration standard: U-PM-810
Surrogate standards: U-IST-180
U-ATS-140

	U-PM-810-1	PAH Mixture 16 Analytes in Methylene chloride Acenaphthene..... 1000 µg/mL Acenaphthylene ..... 1000 µg/mL Anthracene ..... 1000 µg/mL Benzo(a)anthracene ..... 100 µg/mL Benzo(b)fluoranthene ..... 100 µg/mL Benzo(k)fluoranthene ..... 50 µg/mL Benzo(ghi)perylene..... 100 µg/mL Benzo(a)pyrene ..... 100 µg/mL Chrysene..... 100 µg/mL Dibenzo(a,h)anthracene ..... 100 µg/mL Fluoranthene..... 100 µg/mL Fluorene..... 1000 µg/mL Indeno(1,2,3-cd)pyrene..... 100 µg/mL Naphthalene..... 1000 µg/mL Phenanthrene ..... 1000 µg/mL Pyrene..... 100 µg/mL	1 mL
	U-PM-810	PAH Mixture	4 x 1 mL
	U-PM-613A-1	PAH Mixture Solvent: Acetonitrile Acenaphthene..... 100 µg/mL Acenaphthylene ..... 100 µg/mL Anthracene ..... 100 µg/mL Benzo(a)anthracene ..... 10 µg/mL Benzo(b)fluoranthene ..... 10 µg/mL Benzo(k)fluoranthene ..... 5 µg/mL Benzo(ghi)perylene..... 10 µg/mL Benzo(a)pyrene ..... 10 µg/mL Chrysene..... 10 µg/mL Dibenzo(a,h)anthracene ..... 10 µg/mL Fluoranthene..... 10 µg/mL Fluorene..... 100 µg/mL Indeno(1,2,3-cd)pyrene..... 10 µg/mL Naphthalene..... 100 µg/mL Phenanthrene ..... 100 µg/mL Pyrene..... 10 µg/mL	1 mL
	U-PM-613A	PAH Mixture	4 x 1 mL

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Code	Product	Unit
U-PM-811-1	PAH Mixture 1000 µg/mL of each analyte in Methylene chloride (Dichloromethane) Benzo(j)fluoranthene Dibenzo(a,h)acridine Dibenzo(a,j)acridine 7H-Dibenzo(c,g) carbazole Dibenzo(a,e)pyrene Dibenzo(a,h)pyrene Dibenzo(a,i)pyrene 3-Methylcholanthrene	1 mL
U-PM-811	PAH Mixture	4 x 1 mL
U-IST-180-1	1-Fluoronaphthalene 1000 µg/mL in Methylene chloride	1 mL
U-IST-180	1-Fluoronaphthalene 1000 µg/mL in Methylene chloride	4 x 1 mL
U-ATS-140-1	2-Fluorobiphenyl 2000 µg/mL in Methylene chloride	1 mL
U-ATS-140	2-Fluorobiphenyl 2000 µg/mL in Methylene chloride	4 x 1 mL

EPA Method 8111

Haloethers

Method 8111 is used to measure haloethers. Samples are extracted, then quantitated using GC with an FID or ELCD.

Recommended standards

Calibration standard: U-EPA-2014N
Surrogate standard: U-IST-641
Internal standard: U-IST-131

Code	Product	Unit
U-EPA-2014N-1	Haloethers Mixture (HAL) 100 µg/ml of each analyte in Acetone Bis(2-chloroethyl) ether ..... 100 µg/mL Bis(2-chloroethoxy) methane ..... 100 µg/mL Bis(2-chloroisopropyl) ether ..... 100 µg/mL 4-Bromophenyl phenyl ether ..... 100 µg/mL 4-Chlorophenyl phenyl ether ..... 100 µg/mL	1 mL
U-EPA-2014N	Haloethers Mixture (HAL)	4 x 1 mL
U-IST-641-1	2,4-Dichlorodiphenyl ether 1000 µg/mL in Acetone	1 mL
U-IST-641	2,4-Dichlorodiphenyl ether 1000 µg/mL in Acetone	4 x 1 mL
U-IST-131-1	4,4'-Dibromobiphenyl 1000 µg/mL in iso-Octane	1 mL
U-IST-131	4,4'-Dibromobiphenyl 1000 µg/mL in iso-Octane	4 x 1 mL

EPA Method 8121

Chlorinated hydrocarbons

Methods 8120 and 8121 are used to measure chlorinated hydrocarbons, using extraction followed by capillary column GC/ECD.

Recommended standards

Calibration standard: U-CHM-842A
Internal standard: U-IST-420
Surrogate standard: U-ISM-411

Code	Product	Unit
U-CHM-842A-1	Chlorinated Hydrocarbons Mixture 22 Analytes in Hexane 2-Chloronaphthalene ..... 2000 µg/mL 1,2-Dichlorobenzene ..... 1000 µg/mL 1,3-Dichlorobenzene ..... 1000 µg/mL 1,4-Dichlorobenzene ..... 1000 µg/mL Benzal chloride ..... 100 µg/mL Benzotrichloride ..... 100 µg/mL Benzyl chloride ..... 100 µg/mL alpha-BHC (alpha-HCH) ..... 100 µg/mL beta-BHC (beta-HCH) ..... 100 µg/mL delta-BHC (delta-HCH) ..... 100 µg/mL gamma-BHC (Lindane) ..... 100 µg/mL 1,2,3,4-Tetrachlorobenzene ..... 100 µg/mL 1,2,3,5-Tetrachlorobenzene ..... 100 µg/mL 1,2,4,5-Tetrachlorobenzene ..... 100 µg/mL 1,2,3-Trichlorobenzene ..... 100 µg/mL 1,2,4-Trichlorobenzene ..... 100 µg/mL 1,3,5-Trichlorobenzene ..... 100 µg/mL Hexachlorobenzene ..... 10 µg/mL Hexachlorobutadiene ..... 10 µg/mL Hexachlorocyclopentadiene ..... 10 µg/mL Hexachloroethane ..... 10 µg/mL Pentachlorobenzene ..... 10 µg/mL	1 mL
U-CHM-842A	Chlorinated Hydrocarbons Mixture	4 x 1 mL
U-ISM-411-1	Surrogate Standard Mixture 3 Analytes in Acetone 1,4-Dichloronaphthalene ..... 10 µg/mL 2,3,4,5,6-Pentachlorotoluene ..... 1 µg/mL alpha,2,6-Trichlorotoluene ..... 1 µg/mL	1 mL
U-ISM-411	Surrogate Standard Mixture	4 x 1 mL
U-IST-420-1	1,3,5-Tribromobenzene 50 µg/mL in Acetone	1 mL
U-IST-420	1,3,5-Tribromobenzene 50 µg/mL in Acetone	4 x 1 mL

Code	Product	Unit

EPA Method 8141B

Organophosphorus pesticides

Method 8141A is used to measure organophosphorus pesticides using extraction. Quantitation is carried out on GC, using either a NPD, a FPD, or an ELCD.

Recommended standards

Calibration standards:	U-SPM-824
	U-SPM-834
	U-SPM-844A
	U-SPM-854
	U-SPM-864
	U-SPM-874
	U-SPM-884
Internal standard:	U-PPS-350
Surrogate standards:	U-ISM-570
	U-PPS-360

	Code	Product	Unit
	U-SPM-824-1	Organophosphorus Pesticide Mixture 200 µg/mL of each analyte in Hexane/Acetone Guthion (Azinphos methyl) Bolstar (Sulprofos) Chlorpyrifos Coumaphos Demeton (total, mixed isomers) Diazinon Dichlorvos Disulfoton Ethoprop (Ethoprofos) Fensulfothion Fenthion Merphos Methyl parathion Mevinphos (Phosdrin) Naled Phorate Fenchlorphos (Ronnel) Tetrachlorvinphos (Stirofos) Tokuthion Trichloronate	1 mL
	U-SPM-824	Organophosphorus Pesticide Mixture	4 x 1 mL
	U-SPM-834-1	Organophosphorus Pesticide Mixture 200 µg/mL of each analyte in Hexane/Acetone (1:1) Dimethoate, Malathion, Parathion (ethyl), TEPP EPN, Monocrotophos, Sulfotepp	1 mL
	U-SPM-834	Organophosphorus Pesticide Mixture	4 x 1 mL
	U-SPM-844A-1	Organophosphorus Pesticides Mixture 200 µg/mL of each analyte in Hexane/Acetone (1:1) Carbophenothion (Trithion) Chlorfenvinphos Dioxathion Ethion Famphur Azinphos-ethyl Leptophos Phosmet Phosphamidon Terbufos	1 mL
	U-SPM-844A	Organophosphorus Pesticides Mixture	4 x 1 mL
New	U-SPM-854-1	Organophosphorus Pesticides Mixture 9 Analytes 200 µg/mL of each analyte in Hexane/Acetone Aspon, Dichlofenthion, Fonofos Chlorpyrifos methyl, Dicrotophos, Thionazin Crotoxyphos, Fenitrothion, Trichlorfon	1 mL
New	U-SPM-854	Organophosphorus Pesticides Mixture	4 x 1 mL
New	U-SPM-884-1	Carbamates and Related Compounds Mixture 10 Analytes 200 µg/mL in Hexane/Acetone Bendiocarb ..... Pebulate Butylate ..... o-Phenylenediamine EPTC ..... Propham Methiocarb ..... Prosulfocarb Molinate ..... Triallate	1 mL
New	U-SPM-884	Carbamates and Related Compounds Mixture	4 x 1 mL
New	U-SPM-874-1	Triazine Herbicides Mixture 2 Analytes 200 µg/mL of each analyte in Hexane/Acetone Atrazine, Simazine	1 mL
New	U-SPM-874	Triazine Herbicides Mixture	4 x 1 mL
New	U-SPM-864-1	Industrial Chemicals Mixture 2 Analytes 200 µg/mL of each anaylte in Hexane/Acetone Hexamethyl phosphoramide (HMPA), Tri-o-cresyl phosphate (TOCP)	1 mL

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	Code	Product	Unit
New	U-SPM-864	Industrial Chemicals Mixture	4 x 1 mL
	U-ISM-570-1	Surrogate Standard Mixture 1000 µg/mL of each analyte in Acetone Tributyl phosphate; Triphenyl phosphate (TPP)	1 mL
	U-ISM-570	Surrogate Standard Mixture	4 x 1 mL
	U-PPS-350-1	1-Bromo-2-nitrobenzene 1000 µg/mL in Acetone	1 mL
	U-PPS-350	1-Bromo-2-nitrobenzene 1000 µg/mL in Acetone	4 x 1 mL
	U-PPS-360-1	4-Chloro-2-nitrobenzotrifluoride 1000 µg/mL in Acetone	1 mL
	U-PPS-360	4-Chloro-2-nitrobenzotrifluoride 1000 µg/mL in Acetone	4 x 1 mL

EPA Method 8150B, 8151

Chlorinated herbicides

Method 8150B and 8151 are used to measure chlorinated herbicides using extraction followed by derivatisation. Quantitation is carried out by GC/ECD.

Recommended standards

Method 8150B

Calibration standard:	U-HBM-8150A
Internal standards:	U-PPS-171 U-PPS-173
Surrogate standards:	U-PPS-165 U-PPS-164X

Method 8151A

Calibration standard:	U-HBM-8151A
Internal standard:	U-PPS-171
Surrogate standard:	U-PPS-165

	Code	Product	Unit
	U-HBM-8150A-1	Chlorinated Herbicides Mixture 10 Analytes in Methanol 2,4-D ..... 100 µg/mL; Dicamba ..... 10 µg/mL; MCPA ..... 10000 µg/mL Dalapon ..... 250 µg/mL; Dichlorprop ..... 100 µg/mL; MCPP ..... 10000 µg/mL 2,4-DB ..... 100 µg/mL; Dinoseb ..... 50 µg/mL; Silvex (2,4,5-TP) ..... 10 µg/mL	1 mL
	U-HBM-8150A	Chlorinated Herbicides Mixture	4 x 1 mL
	U-HBM-8150M-1	Methylated Chlorinated Herbicides Mixture 10 Analytes in Methanol 2,4-D methyl ester ..... 100 µg/mL; Dinoseb methyl ether ..... 50 µg/mL Dalapon methyl ester ..... 250 µg/mL; MCPA methyl ester ..... 10000 µg/mL 2,4-DB methyl ester ..... 100 µg/mL; MCPP methyl ester ..... 10000 µg/mL Dicamba methyl ester ..... 10 µg/mL; Silvex methyl ester ..... 10 µg/mL Dichlorprop methyl ester ..... 100 µg/mL; 2,4,5-T methyl ester ..... 10 µg/mL	1 mL
	U-HBM-8150M	Methylated Chlorinated Herbicides Mixture	4 x 1 mL
	U-HBM-8151A-1	Chlorinated Herbicide Mixture Solvent: Methanol Acifluorfen ..... 100 µg/mL; Dichlorprop ..... 100 µg/mL Bentazon ..... 100 µg/mL; Dinoseb ..... 100 µg/mL Chloramben ..... 100 µg/mL; MCPA ..... 10000 µg/mL 2,4-D ..... 100 µg/mL; MCPP ..... 10000 µg/mL Dalapon ..... 100 µg/mL; 4-Nitrophenol ..... 100 µg/mL 2,4-DB ..... 100 µg/mL; Pentachlorophenol ..... 100 µg/mL DCPA (dacthal) ..... 100 µg/mL; Picloram ..... 100 µg/mL Dicamba ..... 100 µg/mL; Silvex (2,4,5-TP) ..... 100 µg/mL 3,5-Dichlorobenzoic acid ..... 100 µg/mL; 2,4,5-T ..... 100 µg/mL	1 mL
	U-HBM-8151A	Chlorinated Herbicide Mixture	4 x 1 mL
New	U-HBM-8151M-1	Chlorinated Methylated Herbicides Mixture	1 mL
New	U-HBM-8151M	Chlorinated Methylated Herbicides Mixture	4 x 1 mL
	U-EPA-2015N-1	Chlorophenoxy Herbicides Mixture 5 µg/mL in of each analyte in Acetonitrile 2,4-D; Silvex (2,4,5-TP)	1 mL
	U-EPA-2015N	Chlorophenoxy Herbicides Mixture	4 x 1 mL
	U-HBM-8153A-1	Chlorinated Herbicides Mixture 200 µg/mL of each analyte in Methanol 2,4-D; Dicamba; MCPA; 2,4,5-T Dalapon; Dichlorprop; MCPP 2,4-DB; Dinoseb; Silvex (2,4,5-TP)	1 mL
	U-HBM-8153A	Chlorinated Herbicides Mixture	4 x 1 mL

Code	Product	Unit
U-HBM-8152M-1	Methylated Chlorinated Herbicides Mixture 20 µg/mL of each analyte in Hexane 2,4-D methyl ester Dalapon methyl ester 2,4-DB methyl ester Dicamba methyl ester Dichlorprop methyl ester Dinoseb methyl ether Silvex methyl ester 2,4,5-T methyl ester	1 mL
U-HBM-8152M	Methylated Chlorinated Herbicides Mixture	4 x 1 mL
U-HBM-815A-1	Chlorinated Herbicide Mixture 100 µg/mL of each analyte in Methanol 2,4-D Silvex (2,4,5-TP) 2,4,5-T	1 mL
U-HBM-815A	Chlorinated Herbicide Mixture	4 x 1 mL
U-HBM-815M-1	Methylated Chlorinated Herbicides Mixture 100 µg/mL of each analyte in Methanol 2,4-D methyl ester Silvex methyl ester 2,4,5-T methyl ester	1 mL
U-HBM-815M	Methylated Chlorinated Herbicides Mixture	4 x 1 mL
U-PPS-171-1	4,4'-Dibromooctafluorobiphenyl 250 µg/mL in Acetone	1 mL
U-PPS-171	4,4'-Dibromooctafluorobiphenyl 250 µg/mL in Acetone	4 x 1 mL
U-PPS-165-1	2,4-Dichlorophenylacetic acid (DCAA) 100 µg/mL in Acetone	1 mL
U-PPS-165	2,4-Dichlorophenylacetic acid (DCAA) 100 µg/mL in Acetone	4 x 1 mL
U-PPS-166-1	DCAA methyl ester 100 µg/mL in Acetone	1 mL
U-PPS-166	DCAA methyl ester 100 µg/mL in Acetone	4 x 1 mL
U-PPS-164X	DCAA (2,4-Dichlorophenylacetic acid) 2 µg/mL in Methanol	25 mL
U-PPS-173-1	4,4'-Dibromooctafluorobiphenyl 1 µg/mL in Methanol	1 mL
U-PPS-173	4,4'-Dibromooctafluorobiphenyl 1 µg/mL in Methanol	4 x 1 mL

EPA Method 8240B

Volatiles halocarbons

Method 8240B is a GC/MS method for the determination of volatile organic compounds in a variety of solid waste matrices.Method 8240B has been deleted from the current revision of SW-846 (Update III).

Recommended standards

Calibration standards:	U-PMX-130 U-PMX-141A U-DWM-584 U-HC-070 U-HC-491 U-NV-240B
Internal standard:	U-STM-270N
Surrogate standard:	U-STM-260N

Code	Product	Unit
U-PMX-130-1	Volatiles Mixture 200 µg/mL of each analyte in Methanol. Acetone Benzene Bromodichloromethane Bromoform 2-Butanone (MEK) Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroform Dibromochloromethane trans-1,4-Dichloro-2-butene 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethene trans-1,2-Dichloroethene 1,2-Dichloropropane cis-1,3-Dichloropropene trans-1,3-Dichloropropene Ethyl alcohol (Ethanol) Ethylbenzene 2-Hexanone Methyl iodide (Iodomethane) 4-Methyl-2-pentanone (MIBK) Methylene chloride Styrene 1,1,2,2-Tetrachloroethane Tetrachloroethene Toluene 1,1,1-Trichloroethane 1,1,2-Trichloroethane Trichloroethene o-Xylene m-Xylene p-Xylene	1 mL
U-PMX-130	Volatiles Mixture	4 x 1 mL

	Code	Product	Unit
	U-PMX-141A-1	Volatiles Mixture 200 µg/mL of each analyte in Methanol. Acetonitrile, Allyl alcohol, Allyl chloride, Benzyl chloride, Bis-(2-chloroethyl)sulfide, 2-Chloroethanol, 3-Chloropropionitrile, 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, Dibromomethane, 1,3-Dichloro-2-propanol, 1,2:3,4-Diepoxybutane, 1,4-Dioxane, Epichlorohydrin, Ethyl methacrylate, 2-Hydroxypropionitrile, Isobutyl alcohol, Malononitrile, Methacrylonitrile, Methyl methacrylate, Pentachloroethane, 2-Picoline, Propargyl alcohol, beta-Propiolactone, Propionitrile, n-Propylamine, Pyridine, 1,1,1,2-Tetrachloroethane, 1,2,3-Trichloropropane	1 mL
	U-PMX-141A	Volatiles Mixture	4 x 1 mL
	U-NVM-8241-1	Non-Halogenated Volatiles Mixture 100 µg/mL of each analyte in Methanol. Acetone, Carbon disulfide, 2-Hexanone	1 mL
	U-NVM-8241	Non-Halogenated Volatiles Mixture	4 x 1 mL
	U-DWM-584-1	VOC Gas Mixture 200 µg/mL of each analyte in Methanol. Bromomethane, Chloromethane, Trichlorofluoromethane, Chloroethane, Dichlorodifluoromethane, Vinyl chloride	1 mL
	U-DWM-584	VOC Gas Mixture	4 x 1 mL
	U-DWM-544-1	VOC Gas Mixture 2000 µg/mL of each analyte in Methanol. Bromomethane, Chloromethane, Trichlorofluoromethane, Chloroethane, Dichlorodifluoromethane, Vinyl chloride	1 mL
	U-DWM-544	VOC Gas Mixture	4 x 1 mL
New	U-STM-262-1	Surrogate Standard Mixture 3 Analytes 2500 µg/mL of each analyte in Methanol 4-Bromofluorobenzene, 1,2-Dichloroethane-D_4, Toluene-D_8	1 mL
New	U-STM-262	Surrogate Standard Mixture	4 x 1 mL
	U-STM-260N-1	Surrogate Standard Mixture 1000 µg/mL of each analyte in Methanol. 4-Bromofluorobenzene, 1,2-Dichloroethane-D_4, Toluene-D_8	1 mL
	U-STM-260N	Surrogate Standard Mixture	4 x 1 mL
New	U-STM-272-1	Volatiles Internal Standard Spiking Solution 3 Analytes 2500 µg/mL of eacha analyte in Methanol Bromochloromethane, Chlorobenzene-D_5, 1,4-Difluorobenzene	1 mL
New	U-STM-272	Volatiles Internal Standard Spiking Solution	4 x 1 mL
	U-STM-270N-1	Internal Standard Mixture 1000 µg/mL of each analyte in Methanol Bromochloromethane, Chlorobenzene-D_5, 1,4-Difluorobenzene	1 mL
	U-STM-270N	Internal Standard Mixture	4 x 1 mL
	U-CLP-110-1	Volatiles Calibration Check Compounds Mixture 2000 µg/mL of each analyte in Methanol. Chloroform, 1,2-Dichloropropane, Toluene, 1,1-Dichloroethene, Ethylbenzene, Vinyl chloride	1 mL
	U-CLP-110	Volatiles Calibration Check Compounds Mixture	4 x 1 mL
	U-HC-070-1	2-Chloroethylvinyl ether 100 µg/mL in Methanol	1 mL
	U-HC-070	2-Chloroethylvinyl ether 100 µg/mL in Methanol	4 x 1 mL
	U-HC-491-1	Chloroprene 100 µg/mL in Methanol	1 mL
	U-HC-491	Chloroprene 100 µg/mL in Methanol	4 x 1 mL
	U-NV-240B-1	Vinyl acetate 100 µg/mL in Acetonitrile	1 mL
	U-NV-240B	Vinyl acetate 100 µg/mL in Acetonitrile	4 x 1 mL
	U-STS-111-1	4-Bromofluorobenzene 25 µg/mL in Methanol	1 mL

Code	Product	Unit
U-STS-111	4-Bromofluorobenzene 25 µg/mL in Methanol	4 x 1 mL
U-STS-112-1	4-Bromofluorobenzene 2500 µg/mL in Methanol	1 mL
U-STS-112	4-Bromofluorobenzene 2500 µg/mL in Methanol	4 x 1 mL
U-STS-110N-1	4-Bromofluorobenzene 2000 µg/mL in Methanol	1 mL
U-STS-110N	4-Bromofluorobenzene 2000 µg/mL in Methanol	4 x 1 mL
U-CLP-102-1	Volatiles Matrix Spiking Solution 2500 µg/mL of each analyte in Methanol Benzene, 1,1-Dichloroethene, Toluene, Chlorobenzene, Trichloroethene	1 mL
U-CLP-102	Volatiles Matrix Spiking Solution	4 x 1 mL
U-CLP-100N-1	Volatiles Matrix Spiking Solution 1000 µg/mL of each analyte in Methanol. Benzene, 1,1-Dichloroethene, Trichloroethene, Chlorobenzene, Toluene	1 mL
U-CLP-100N	Volatiles Matrix Spiking Solution	4 x 1 mL
U-CLP-120-1	Volatiles System Performance Check Mixture 2000 µg/mL of each analyte in Methanol. Bromoform, 1,1-Dichloroethane, Chlorobenzene, 1,1,2,2-Tetrachloroethane, Chloromethane	1 mL
U-CLP-120	Volatiles System Performance Check Mixture	4 x 1 mL

EPA Method 8260B

Volatile organic compounds

Method 8260B is a capillary column GC/MS method for volatile organics using purge and trap or direct injection.

Recommended standards

Calibration standards: U-DWM-588, U-PMX-144, U-PMX-145, U-PMX-146, U-NVM-826, U-AMN-623, U-HC-070, U-HC-491, U-NV-240B, U-EPA-1244
Internal standard: U-STM-520
Surrogate standard: U-STM-530

U-DWM-580-1	VOC Mixture 200 µg/mL of each analyte in Methanol. Bromochloromethane, Bromodichloromethane, Bromoform, Carbon tetrachloride, Chloroform, Dibromochloromethane, Dibromomethane, Methylene chloride, 1,2-Dibromoethane, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethene, cis-1,2-Dichloroethene, trans-1,2-Dichloroethene, 1,1,1,2-Tetrachloroethane, 1,1,2,2-Tetrachloroethane, Tetrachloroethene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Trichloroethene, 1,2-Dibromo-3-chloropropane, 1,2-Dichloropropane, 1,3-Dichloropropane, 2,2-Dichloropropane, 1,1-Dichloropropene, cis-1,3-Dichloropropene, trans-1,3-Dichloropropene, Hexachlorobutadiene, 1,2,3-Trichloropropane, Benzene, n-Butylbenzene, sec-Butylbenzene, tert-Butylbenzene, Ethylbenzene, Isopropylbenzene, 4-Isopropyltoluene, Naphthalene, n-Propylbenzene, Styrene, Toluene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, o-Xylene, m-Xylene, p-Xylene, Bromobenzene, Chlorobenzene, 2-Chlorotoluene, 4-Chlorotoluene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene, Bromomethane, Chloroethane, Chloromethane, Dichlorodifluoromethane, Trichlorofluoromethane, Vinyl chloride	1 mL

Code	Product	Unit
U-DWM-580	VOC Mixture	4 x 1 mL
U-DWM-588-1	VOC Mixture 2000 µg/mL of each analyte in Methanol. Bromochloromethane Bromodichloromethane Bromoform Carbon tetrachloride Chloroform Dibromochloromethane Dibromomethane Methylene chloride 1,2-Dibromoethane 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethene cis-1,2-Dichloroethene trans-1,2-Dichloroethene 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Tetrachloroethene 1,1,1-Trichloroethane 1,1,2-Trichloroethane Trichloroethene 1,2-Dibromo-3-chloropropane 1,2-Dichloropropane 1,3-Dichloropropane 2,2-Dichloropropane 1,1-Dichloropropene cis-1,3-Dichloropropene trans-1,3-Dichloropropene Hexachlorobutadiene 1,2,3-Trichloropropane Benzene n-Butylbenzene sec-Butylbenzene tert-Butylbenzene Ethylbenzene Isopropylbenzene 4-Isopropyltoluene Naphthalene n-Propylbenzene Styrene Toluene 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene o-Xylene m-Xylene p-Xylene Bromobenzene Chlorobenzene 2-Chlorotoluene 4-Chlorotoluene 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene Bromomethane Chloroethane Chloromethane Dichlorodifluoromethane Trichlorofluoromethane Vinyl chloride	1 mL
U-DWM-588	VOC Mixture	4 x 1 mL
U-STM-530-1	Surrogate Standard Mixture 2500 µg/mL of each analyte in Methanol 4-Bromofluorobenzene Dibromofluoromethane 1,2-Dichloroethane-D_4 Toluene-D_8	1 mL
U-STM-530	Surrogate Standard Mixture	4 x 1 mL
U-STM-520-1	Internal Standard Mixture 2500 µg/mL of each analyte in Methanol. Chlorobenzene-D_5 1,4-Dichlorobenzene-D_4 Fluorobenzene	1 mL
U-STM-520	Internal Standard Mixture	4 x 1 mL
U-PMX-144-1	Volatiles Mixture 2000 µg/mL of each analyte in Methanol Acetonitrile Allyl alcohol Carbon disulfide 2-Chloroethanol 3-Chloropropionitrile Crotonaldehyde 1,3-Dichloro-2-propanol 1,2:3,4-Diepoxybutane Epichlorohydrin Ethyl methacrylate 2-Hydroxypropionitrile Malononitrile Methacrylonitrile Methyl methacrylate Propargyl alcohol beta-Propiolactone Propionitrile	1 mL
U-PMX-144	Volatiles Mixture	4 x 1 mL
U-PMX-145-1	Volatiles Mixture 2000 µg/mL of each analyte in Methanol Bis-(2-chloroethyl)sulfide Hexachloroethane Nitrobenzene N-Nitrosodi-n-butylamine Pentachloroethane 2-Picoline Pyridine o-Toluidine	1 mL
U-PMX-145	Volatiles Mixture	4 x 1 mL
U-PMX-146-1	Volatiles Mixture 2000 µg/mL of each analyte in Methanol Allyl chloride Benzyl chloride cis-1,4-Dichloro-2-butene trans-1,4-Dichloro-2-butene Methyl iodide (Iodomethane) 2-Nitropropane n-Propylamine	1 mL
U-PMX-146	Volatiles Mixture	4 x 1 mL

Code	Product	Unit
U-NVM-826-1	Volatiles Mixture 2000 µg/mL of each analyte in Water. Acetone, 2-Butanone (MEK), n-Butyl alcohol, tert-Butanol, Diethyl ether, 1,4-Dioxane, Ethyl acetate, Ethyl alcohol (Ethanol), 2-Hexanone, Isobutyl alcohol, Isopropyl alcohol (Isopropanol), Methanol, 4-Methyl-2-pentanone (MIBK), 1-Propanol, 2-Pentanone	1 mL
U-NVM-826	Volatiles Mixture	4 x 1 mL
U-HC-070-1	2-Chloroethylvinyl ether 100 µg/mL in Methanol	1 mL
U-HC-070	2-Chloroethylvinyl ether 100 µg/mL in Methanol	4 x 1 mL
U-HC-491-1	Chloroprene 100 µg/mL in Methanol	1 mL
U-HC-491	Chloroprene 100 µg/mL in Methanol	4 x 1 mL
U-NV-240B-1	Vinyl acetate 100 µg/mL in Acetonitrile	1 mL
U-NV-240B	Vinyl acetate 100 µg/mL in Acetonitrile	4 x 1 mL
U-EPA-1244	Chloral hydrate 1000 µg/mL in Methanol	1 mL
U-AMN-603-1	Acrolein-Acrylonitrile Mixture 100 µg/mL of each analyte in Methanol Acrolein, Acrylonitrile	1 mL
U-AMN-603	Acrolein-Acrylonitrile Mixture	4 x 1 mL
U-AMN-623	Acrolein-Acrylonitrile Mixture	4 x 1 mL
U-AMN-623-1	Acrolein-Acrylonitrile Mixture 2000 µg/mL of each analyte in Methanol Acrolein, Acrylonitrile	1 mL
U-DWK-8260	EPA Method 8260B Kit Acrolein-Acrylonitrile Mixture (2000 µg/mL in Methanol) ..... U-AMN-623 (1 x 1 mL) VOC Mixture (2000 µg/mL in Methanol) ..... U-DWM-588 (1 x 1 mL) Chloral hydrate (1000 µg/mL in Methanol) ..... U-EPA-1244 (1 x 1 mL) 2-Chloroethylvinyl ether (100 µg/mL in Methanol) ..... U-HC-070 (1 x 1 mL) Chloroprene (100 µg/mL in Methanol) ..... U-HC-491 (1 x 1 mL) Vinyl acetate (100 µg/mL in Acetonitrile) ..... U-NV-240B (1 x 1 mL) EPA Method 8260 Mixture (2000 µg/mL in Water) ..... U-NVM-826 (1 x 1 mL) Volatiles Mixture (2000 µg/mL in Methanol) ..... U-PMX-144 (1 x 1 mL) Volatiles Mixture (2000 µg/mL in Methanol) ..... U-PMX-145 (1 x 1 mL) Volatiles Mixture (2000 µg/mL in Methanol) ..... U-PMX-146 (1 x 1 mL) Internal Standard Mixture (2500 µg/mL in Methanol) ..... U-STM-520 (1 x 1 mL) Method 8260A Surrogate Standard Mixture (2500 µg/mL in Methanol) ..... U-STM-530 (1 x 1 mL)	kit
U-DWM-583-1	VOC Mixture 200 µg/mL of each analyte in Methanol. Benzene, Bromobenzene, Bromochloromethane, Bromodichloromethane, Bromoform, n-Butylbenzene, sec-Butylbenzene, tert-Butylbenzene, Carbon tetrachloride, Chlorobenzene, Chloroform, 2-Chlorotoluene, 4-Chlorotoluene, Dibromochloromethane, 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, Dibromomethane, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethene, cis-1,2-Dichloroethene, trans-1,2-Dichloroethene, 1,2-Dichloropropane, 1,3-Dichloropropane, 2,2-Dichloropropane, 1,1-Dichloropropene, cis-1,3-Dichloropropene, trans-1,3-Dichloropropene, Ethylbenzene, Hexachlorobutadiene, Isopropylbenzene, 4-Isopropyltoluene, Methylene chloride, Naphthalene, n-Propylbenzene, Styrene, 1,1,1,2-Tetrachloroethane, 1,1,2,2-Tetrachloroethane, Tetrachloroethene, Toluene, 1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Trichloroethene, 1,2,3-Trichloropropane, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, o-Xylene, m-Xylene, p-Xylene	1 mL
U-DWM-583	VOC Mixture	4 x 1 mL

Code	Product	Unit
U-DWM-589N-1	VOC Mixture 2000 µg/mL of each analyte in Methanol. Benzene, Bromobenzene, Bromochloromethane, Bromodichloromethane, Bromoform, n-Butylbenzene, sec-Butylbenzene, tert-Butylbenzene, Carbon tetrachloride, Chlorobenzene, Chloroform, 2-Chlorotoluene, 4-Chlorotoluene, Dibromochloromethane, 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, Dibromomethane, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethene, cis-1,2-Dichloroethene, trans-1,2-Dichloroethene, 1,2-Dichloropropane, 1,3-Dichloropropane, 2,2-Dichloropropane, 1,1-Dichloropropene, cis-1,3-Dichloropropene, trans-1,3-Dichloropropene, Ethylbenzene, Hexachlorobutadiene, Isopropylbenzene, 4-Isopropyltoluene, Methylene chloride, Naphthalene, n-Propylbenzene, Styrene, 1,1,1,2-Tetrachloroethane, 1,1,2,2-Tetrachloroethane, Tetrachloroethene, Toluene, 1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Trichloroethene, 1,2,3-Trichloropropane, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, o-Xylene, m-Xylene, p-Xylene	1 mL
U-DWM-589N	VOC Mixture	4 x 1 mL
U-CLP-102-1	Volatiles Matrix Spiking Solution 2500 µg/mL of each analyte in Methanol Benzene, Chlorobenzene, 1,1-Dichloroethene, Trichloroethene, Toluene	1 mL
U-CLP-102	Volatiles Matrix Spiking Solution	4 x 1 mL
U-CLP-100N-1	Volatiles Matrix Spiking Solution 1000 µg/mL of each analyte in Methanol. Benzene, Chlorobenzene, 1,1-Dichloroethene, Toluene, Trichloroethene	1 mL
U-CLP-100N	Volatiles Matrix Spiking Solution	4 x 1 mL
U-CLP-110-1	Volatiles Calibration Check Compounds Mixture 2000 µg/mL of each analyte in Methanol. Chloroform, 1,1-Dichloroethene, 1,2-Dichloropropane, Ethylbenzene, Toluene, Vinyl chloride	1 mL
U-CLP-110	Volatiles Calibration Check Compounds Mixture	4 x 1 mL
U-STS-111-1	4-Bromofluorobenzene 25 µg/mL in Methanol	1 mL
U-STS-111	4-Bromofluorobenzene 25 µg/mL in Methanol	4 x 1 mL
U-STS-112-1	4-Bromofluorobenzene 2500 µg/mL in Methanol	1 mL
U-STS-112	4-Bromofluorobenzene 2500 µg/mL in Methanol	4 x 1 mL
U-STS-110N-1	4-Bromofluorobenzene 2000 µg/mL in Methanol	1 mL
U-STS-110N	4-Bromofluorobenzene 2000 µg/mL in Methanol	4 x 1 mL
U-STM-540-1	Internal & Surrogate Standard Mixture 2500 µg/mL of each analyte in Methanol Chlorobenzene-D_5, 1,4-Dichlorobenzene-D_4, Fluorobenzene, 4-Bromofluorobenzene, Dibromofluoromethane, 1,2-Dichloroethane-D_4, Toluene-D_8	1 mL
U-STM-540	Internal & Surrogate Standard Mixture	4 x 1 mL
U-STM-541-1	Internal & Surrogate Standard Mixture 5000 µg/mL of each analyte in Methanol Chlorobenzene-D_5, 1,4-Dichlorobenzene-D_4, Fluorobenzene, 4-Bomofluorobenzene, Dibromofluoromethane, 1,2-Dichloroethane-D_4	1 mL
U-STM-541	Internal & Surrogate Standard Mixture	4 x 1 mL
U-CLP-120-1	Volatiles System Performance Check Mixture 2000 µg/mL of each analyte in Methanol. Bromoform, Chlorobenzene, Chloromethane, 1,1-Dichloroethane, 1,1,2,2-Tetrachloroethane	1 mL

Code	Product	Unit
U-CLP-120	Volatiles System Performance Check Mixture	4 x 1 mL
U-DWM-584-1	VOC Gas Mixture 200 µg/mL of each analyte in Methanol. Bromomethane, Chloromethane, Trichlorofluoromethane, Chloroethane, Dichlorodifluoromethane, Vinyl chloride	1 mL
U-DWM-584	VOC Gas Mixture	4 x 1 mL
U-DWM-544-1	VOC Gas Mixture 2000 µg/mL of each analyte in Methanol. Bromomethane, Chloromethane, Trichlorofluoromethane, Chloroethane, Dichlorodifluoromethane, Vinyl chloride	1 mL
U-DWM-544	VOC Gas Mixture	4 x 1 mL
U-DWM-826-1	VOC Mixture 53 Analytes 200 µg/mL of each analyte in Methanol Bromodichloromethane, Bromoform, Carbon tetrachloride, Chloroform, Dibromochloromethane, Dibromomethane, Methylene chloride, 1,2-Dibromoethane, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethene, cis-1,2-Dichloroethene, trans-1,2-Dichloroethene, 1,1,1,2-Tetrachloroethane, 1,1,2,2-Tetrachloroethane, Tetrachloroethene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Trichloroethene, 1,2-Dibromo-3-chloropropane, 1,2-Dichloropropane, 1,3-Dichloropropane, 2,2-Dichloropropane, 1,1-Dichloropropene, cis-1,3-Dichloropropene, trans-1,3-Dichloropropene, Hexachlorobutadiene, 1,2,3-Trichloropropane, Benzene, n-Butylbenzene, sec-Butylbenzene, tert-Butylbenzene, Ethylbenzene, Isopropylbenzene, Isopropyltoluene, Naphthalene, n-Propylbenzene, Styrene, Toluene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, o-Xylene, m-Xylene, p-Xylene, Bromobenzene, Chlorobenzene, 2-Chlorotoluene, 4-Chlorotoluene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene	1 mL
U-DWM-826	VOC Mixture	4 x 1 mL
U-DWM-826A-1	VOC Mixture 2000 mg/mL in Methanol list of analytes see U-DWM-826-1	1 mL
U-DWM-826A	VOC Mixture	4 x 1 mL
U-STM-330N-1	Surrogate Standard Mixture 2000 µg/mL of each analyte in Methanol. 4-Bromofluorobenzene, Dibromofluoromethane, Toluene-D_8	1 mL
U-STM-330N	Surrogate Standard Mixture	4 x 1 mL
U-STM-341N-1	Internal Standard Mixture 2000 µg/mL of each analyte in Methanol. Chlorobenzene-D_5, 1,4-Dichlorobenzene-D_4, 1,4-Difluorobenzene, Pentafluorobenzene	1 mL
U-STM-341N	Internal Standard Mixture	4 x 1 mL

EPA Method 8270D

Semi-volatiles organic compounds and appendix IX semi-volatiles

Method 8270D is a capillary column GC/MS method for semi-volatile organics using a capillary column.

Recommended standards

Calibration standards:	U-US-121K
Internal standard:	U-US-108N
Surrogate standards:	U-ISM-280N U-ISM-290N U-ISM-333X

Code	Product	Unit
U-US-121K	EPA Method 8270D Calibration Standards Kit	kit

Toxic Substances Mixture #2 (2000 µg/mL in Methylene chloride) ..... U-US-104N (1 x 1 mL)
PAH Mixture (2000 µg/mL in Methylene chloride/Benzene) ..... U-US-106N (1 x 1 mL)
Phenols Mixture (2000 µg/mL in Methylene chloride) ..... U-US-107N (1 x 1 mL)
Semi-Volatiles Internal Standard Mixture (4000 µg/mL in Methylene chloride) ..... U-US-108N (1 x 1 mL)
Ethers and Phthalates Mixture (2000 µg/mL in Methylene chloride) ..... U-US-110 (1 x 1 mL)
Chlorinated Hydrocarbons Mixture (2000 µg/mL in Methylene chloride) ..... U-US-111 (1 x 1 mL)
Organochlorine Pesticides Mixture (2000 µg/mL in Acetone) ..... U-US-112B (1 x 1 mL)
Nitrosamines Mixture (2000 µg/mL in Methylene chloride) ..... U-US-113N (1 x 1 mL)
Base/Neutrals Mixture #3 (2000 µg/mL in Methylene chloride) ..... U-US-114 (1 x 1 mL)
Base/Neutrals Mixture #4 (2000 µg/mL in Methylene chloride) ..... U-US-115 (1 x 1 mL)
PAH Mixture #2 (2000 µg/mL in Methylene chloride/Benzene ..... U-US-116N (1 x 1 mL)
Phenols Mixture #2 (2000 µg/mL in Methylene chloride) ..... U-US-117N (1 x 1 mL)
Pesticides Mixture (2000 µg/mL in Methylene chloride) ..... U-US-118 (1 x 1 mL)
Organophosphorous Pesticides Mixture (2000 µg/mL in Methylene chloride) ..... U-US-119 (1 x 1 mL)
Pyridines Mixture (2000 µg/mL in Acetone) ..... U-US-120AN (1 x 1 mL)

New	U-SVK-8270	EPA Method 8270D Kit	kit

Each kit contains seventeen ampules:

EPA Method 8270C Calibration Standards Kit ..... U-US-121K (kit)
Base/Neutrals Surrogate Standard Mixture ..... U-ISM-280N-1 (1 x 1 mL)
Acids Surrogate Standard Mixture ..... U-ISM-290N-1 (1 x 1 mL)

	U-SVM-8270-1	OMNIprep™ Semi-Volatiles Mix 1	1 mL

64 Analytes

1000 µg/mL of each analyte in Methylene chloride/Benzene (3:1)

Acenaphthene
Acenaphthylene
Anthracene
Benzo(a)anthracene
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzo(ghi)perylene
Benzo(a)pyrene
Carbazole
Chrysene
Dibenzo(a,h)anthracene
Fluoranthene
Fluorene
Indeno(1,2,3-cd)pyrene
Naphthalene
Phenanthrene
Pyrene
Azobenzene
4-Chloroaniline
2-Chloronaphthalene
4-Chloro-3-methylphenol
Dibenzofuran
1,4-Dichlorobenzene
2,4-Dichlorophenol
2-Methyl-4,6-dinitrophenol
2,4-Dinitrophenol
2,4-dinitrotoluene
2,6-Dinitrotoluene
Hexachlorobenzene
Hexachloroethane
Pentachlorophenol
2-Nitrophenol
4-Nitrophenol
2-Nitroaniline
3-Nitroaniline
4-Nitroaniline
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
Bis(2-chloroethyl) ether
Bis(2-chloroethoxy)methane
Bis(2-ethylhexyl)phthalate
4-Bromophenyl phenyl ether
Butyl benzyl phthalate
4-Chlorophenyl phenyl ether
2-Chlorophenol
Di-n-butyl phthalate
1,2-Dichlorobenzene
1,3-Dichlorobenzene
Diethyl phthalate
2,4-Dimethylphenol
Dimethyl phthalate
Di-n-octyl phthalate
Hexachlorobutadiene
Hexachlorocyclopentadiene
Isophorone
2-Methylnaphthalene
Nitrobenzene
N-Nitrosodimethylamine
N-Nitrosodi-n-propylamine
1,2,4-Trichlorobenzene
o-Cresol (2-Methylphenol)
p-Cresol (4-Methylphenol)
Bis(2-chloroisopropyl) ether
Phenol

U-SVM-8270	OMNIprep™ Semi-Volatiles Mix 1	4 x 1 mL
U-SVM-8271-1	OMNIprep™ Semi-Volatiles Mix 2	1 mL

35 Analytes

1000 µg/mL in Methylene chloride

Acetophenone
2-Acetylaminofluorene
4-Aminobiphenyl
Aniline
Benzyl alcohol
2,6-Dichlorophenol
p-(Dimethylamino)azobenzene
7,12-Dimethylbenzo(a)anthracene
m-Dinitrobenzene
Dinoseb
Diphenylamine
Ethyl methanesulfonate
Hexachloropropene
Isosafrole
3-Methylcholanthrene
Methyl methanesulfonate
m-Cresol (3-Methylphenol)
1-Naphthylamine
2-Naphthylamine
N-Nitrosodi-n-butylamine
N-Nitrosodiethylamine
N-Nitrosomethylethylamine
N-Nitrosomorpholine
N-Nitrosopiperidine
N-Nitrosopyrrolidine
5-Nitro-o-toluidine
Pentachlorobenzene
Pentachloroethane
Pentachloronitrobenzene
Phenacetin
Safrole
1,2,4,5-Tetrachlorobenzene
2,3,4,6-Tetrachlorophenol
o-Toluidine
1,3,5-Trinitrobenzene

U-SVM-8271	OMNIprep™ Semi-Volatiles Mix 2	4 x 1 mL

Code	Product	Unit
U-US-111	Chlorinated Hydrocarbons Mixture	1 mL
	2000 µg/mL of each analyte in Methylene chloride.	
	2-Chloronaphthalene 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Hexachlorobenzene Hexachlorobutadiene Hexachlorocyclopentadiene Hexachloroethane Hexachloropropene Pentachlorobenzene Pentachloroethane 1,2,4,5-Tetrachlorobenzene 1,2,4-Trichlorobenzene	
U-US-111-4	Chlorinated Hydrocarbons Mixture	4 x 1 mL
U-US-114	Base/Neutrals Mixture 3	1 mL
	2000 µg/mL of each analyte in Methylene chloride.	
	2-Acetylaminofluorene 4-Aminobiphenyl 3,3'-Dichlorobenzidine p-(Dimethylamino)azobenzene 3,3'-Dimethylbenzidine α,α-Dimethylphenethylamine Diphenylamine 1-Naphthylamine 2-Naphthylamine 5-Nitro-o-toluidine Phenacetin p-Phenylenediamine o-Toluidine	
U-US-114-4	Base/Neutrals Mixture 3	4 x 1 mL
U-US-115	Base/Neutrals Mixture 4	1 mL
	2000 µg/mL of each analyte in Methylene chloride.	
	Acetophenone m-Dinitrobenzene 2,4-Dinitrotoluene 2,6-Dinitrotoluene Ethyl methanesulfonate Isophorone Isosafrole Methyl methanesulfonate 1,4-Naphthoquinone Nitrobenzene Pentachloronitrobenzene Safrole 1,3,5-Trinitrobenzene	
U-US-115-4	Base/Neutrals Mixture 4	4 x 1 mL
U-US-110	Ethers and Phthalates Mixture	1 mL
	2000 µg/mL of each analyte in Methylene chloride.	
	Bis(2-chloroethoxy) methane Bis(2-chloroethyl) ether Bis(2-chloroisopropyl) ether Bis(2-ethylhexyl) phthalate 4-Bromophenyl phenyl ether Butyl benzyl phthalate 4-Chlorophenyl phenyl ether Di-n-butyl phthalate Diethyl phthalate Dimethyl phthalate Di-n-octyl phthalate	
U-US-110-4	Ethers and Phthalates Mixture	4 x 1 mL
U-US-104N	Toxic Substances Mixture 2	1 mL
	2000 µg/mL of each analyte in Methylene chloride.	
	Aniline Benzyl alcohol 4-Chloroaniline Dibenzofuran 2-Methylnaphthalene 2-Nitroaniline 3-Nitroaniline 4-Nitroaniline	
U-US-104N-4	Toxic Substances Mixture 2	4 x 1 mL
U-US-113N	Nitrosamines Mixture	1 mL
	2000 µg/mL of each analyte in Methylene chloride.	
	N-Nitrosodi-n-butylamine N-Nitrosodiethylamine N-Nitrosodimethylamine N-Nitrosodiphenylamine N-Nitrosodi-n-propylamine N-Nitrosomethylethylamine N-Nitrosomorpholine N-Nitrosopiperidine N-Nitrosopyrrolidine	
U-US-113N-4	Nitrosamines Mixture	4 x 1 mL
U-US-106N	PAH Mixture	1 mL
	2000 µg/mL of each analyte in Methylene chloride/Benzene (1:1)	
	Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(ghi)perylene Benzo(a)pyrene Chrysene Dibenzo(a,h)anthracene Fluoranthene Fluorene Indeno(1,2,3-cd)pyrene Naphthalene Phenanthrene Pyrene	
U-US-106N-4	PAH Mixture	4 x 1 mL
U-US-107N	Phenols Mixture	1 mL
	2000 µg/mL of each analyte in Methylene Chloride.	
	4-Chloro-3-methylphenol 2-Chlorophenol 2,4-Dichlorophenol 2,4-Dimethylphenol 2,4-Dinitrophenol 2-Methyl-4,6-dinitrophenol 2-Nitrophenol 4-Nitrophenol Pentachlorophenol Phenol 2,4,6-Trichlorophenol	
U-US-107N-4	Phenols Mixture	4 x 1 mL

Code	Product	Unit
U-US-112B	Organochlorine Pesticide Mixture	1 mL
	2000 µg/mL of each analyte in Acetone	
	Aldrin alpha-BHC (alpha-HCH) beta-BHC (beta-HCH) delta-BHC (delta-HCH) gamma-BHC (Lindane) 4,4'-DDD 4,4'-DDE 4,4'-DDT Dieldrin Endosulfan I Endosulfan II Endosulfan sulfate Endrin Endrin aldehyde Heptachlor Heptachlor epoxide - isomer B Methoxychlor	
U-US-112B-4	Organochlorine Pesticide Mixture	4 x 1 mL
U-US-116N	PAH Mixture 2	1 mL
	2000 µg/mL of each analyte in Methylene chloride/Benzene (1:1)	
	7,12-Dimethylbenz(a)anthracene 3-Methylcholanthrene	
U-US-116N-4	PAH Mixture 2	4 x 1 mL
U-US-117N	Phenols Mixture 2	1 mL
	2000 µg/mL of each analyte in Methylene chloride.	
	m-Cresol (3-Methylphenol) o-Cresol (2-Methylphenol) p-Cresol (4-Methylphenol) 2,6-Dichlorophenol Dinoseb (DNBP) Hexachlorophene 2,3,4,6-Tetrachlorophenol 2,4,5-Trichlorophenol	
U-US-117N-4	Phenols Mixture 2	4 x 1 mL
U-US-119	Organophosphorus Pesticides Mixture	1 mL
	2000 µg/mL of each analyte in Methylene chloride	
	Dimethoate Disulfoton Famphur Methyl parathion Parathion (ethyl) Phorate Sulfotepp Thionazin O,O,O-Triethyl phosphorothioate	
U-US-119-4	Organophosphorus Pesticides Mixture	4 x 1 mL
U-US-120AN	Pyridines Mixture	1 mL
	2000 µg/mL of each analyte in Acetone.	
	Methapyrilene 4-Nitroquinoline-1-oxide 2-Picoline Pyridine	
U-US-120AN-4	Pyridines Mixture	4 x 1 mL
U-US-118	Pesticides Mixture	1 mL
	2000 µg/mL of each analyte in Methylene chloride	
	Aramite (total) Chlorobenzilate Diallate (total) Isodrin Kepone Pronamide	
U-US-118-4	Pesticides Mixture	4 x 1 mL
U-SVM-120A-1	Semi-Volatiles Mixture 1	1 mL
	2000 µg/mL of each analyte in Methylene chloride	
	Aniline Benzyl alcohol Bis(2-chloroethyl) ether Bis(2-chloroisopropyl) ether 2-Chlorophenol 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Hexachloroethane o-Cresol (2-Methylphenol) p-Cresol (4-Methylphenol) N-Nitrosodimethylamine N-Nitrosodi-n-propylamine Phenol 2-Picoline	
U-SVM-120A	Semi-Volatiles Mixture 1	4 x 1 mL
U-SVM-121-1	Semi-Volatiles Mixture 2	1 mL
	2000 µg/mL of each analyte in Methylene chloride	
	Benzidine Benzo(a)anthracene Bis(2-ethylhexyl)phthalate Butyl benzyl phthalate Chrysene 3,3'-Dichlorobenzidine p-(Dimethylamino)azobenzene Pyrene	
U-SVM-121	Semi-Volatiles Mixture 2	4 x 1 mL
U-SVM-122-1	Semi-Volatiles Mixture 3	1 mL
	2000 µg/mL of each analyte in Methylene chloride	
	Acetophenone Benzoic acid Bis(2-chloroethoxy)methane 4-Chloroaniline 4-Chloro-3-methylphenol 2,4-Dichlorophenol 2,6-Dichlorophenol alpha,alpha-Dimethylphenethylamine 2,4-Dimethylphenol Hexachlorobutadiene Isophorone 2-Methylnaphthalene Naphthalene Nitrobenzene 2-Nitrophenol N-Nitrosodi-n-butylamine N-Nitrosopiperidine 1,2,4-Trichlorobenzene	

Code	Product	Unit
U-SVM-122	Semi-Volatiles Mixture 3	4 x 1 mL
U-SVM-123-1	Semi-Volatiles Mixture 4	1 mL

2000 µg/mL of each analyte in Methylene chloride

Benzo(b)fluoranthene	7,12-Dimethylbenz(a)anthracene
Benzo(k)fluoranthene	Di-n-octyl phthalate
Benzo(ghi)perylene	Indeno(1,2,3-cd)pyrene
Benzo(a)pyrene	3-Methylcholanthrene
Dibenzo(a,h)anthracene	Dibenzo(a,j)acridine

U-SVM-123	Semi-Volatiles Mixture 4	4 x 1 mL
U-SVM-124-1	Semi-Volatiles Mixture 5	1 mL

2000 µg/mL of each analyte in Methylene chloride

Acenaphthene	Hexachlorocyclopentadiene
Acenaphthylene	1-Naphthylamine
1-Chloronaphthalene	2-Naphthylamine
2-Chloronaphthalene	2-Nitroaniline
4-Chlorophenyl phenyl ether	3-Nitroaniline
Dibenzofuran	4-Nitroaniline
Diethyl phthalate	4-Nitrophenol
Dimethyl phthalate	Pentachlorobenzene
2,4-Dinitrophenol	1,2,4,5-Tetrachlorobenzene
2,4-Dinitrotoluene	2,3,4,6-Tetrachlorophenol
2,6-Dinitrotoluene	2,4,6-Trichlorophenol
Fluorene	2,4,5-Trichlorophenol

U-SVM-124	Semi-Volatiles Mixture 5	4 x 1 mL
U-SVM-125-1	Semi-Volatiles Mixture 6	1 mL

2000 µg/mL of each analyte in Methylene chloride

4-Aminobiphenyl	Fluoranthene
Anthracene	Hexachlorobenzene
4-Bromophenyl phenyl ether	Pentachlorophenol
Di-n-butyl phthalate	Phenanthrene
2-Methyl-4,6-dinitrophenol	

U-SVM-125	Semi-Volatiles Mixture 6	4 x 1 mL
U-SVM-126-1	Semi-Volatiles Mixture 7	1 mL

2000 µg/mL of each analyte in Methylene chloride

Aramite (total)	Dimethoate	Kepone	Silvex (2,4,5-TP)
Chlorobenzilate	Dinoseb	Methyl parathion	Sulfotepp
Diallate (total)	Disulfoton	Parathion (ethyl)	Thionazin
2,4-D	Famphur	Phorate	

U-SVM-126	Semi-Volatiles Mixture 7	4 x 1 mL
U-SVM-127-1	Semi-Volatiles Mixture 8	1 mL

2000 µg/mL of each analyte in Methylene chloride

3,3'-Dimethylbenzidine	N-Nitrosopyrrolidine
4-Nitroquinoline-1-oxide	5-Nitro-o-toluidine
N-Nitrosodiethylamine	p-Phenylenediamine
N-Nitrosomethylethylamine	o-Toluidine
N-Nitrosomorpholine	

U-SVM-127	Semi-Volatiles Mixture 8	4 x 1 mL
U-SVM-128-1	Semi-Volatiles Mixture 9	1 mL

2000 µg/mL of each analyte in Methylene chloride

Diphenylamine	Pentachloronitrobenzene
1,2-Diphenylhydrazine	Phenacetin
N-Nitrosodiphenylamine	Pronamide

U-SVM-128	Semi-Volatiles Mixture 9	4 x 1 mL
U-SVM-129-1	Semi-Volatiles Mixture 10	1 mL

2000 µg/mL of each analyte in Methylene chloride

2-Acetylaminofluorene	Isosafrole
m-Dinitrobenzene	Methapyrilene
Hexachlorophene	1,4-Naphthoquinone
Hexachloropropene	Safrole
O,O,O-Triethyl phosphorothioate	Isodrin

U-SVM-129	Semi-Volatiles Mixture 10	4 x 1 mL

10 Analytes

2000 µg/mL of each analyte in Methylene chloride

2-Acetylaminofluorene	Isosafrole
m-Dinitrobenzene	Methapyrilene
Hexachlorophene	1,4-Naphthoquinone
Hexachloropropene	Safrole
O,O,O-Triethyl phosphorothioate	Isodrin

New U-SVM-140-1	Semi-Volatiles Mixture #12	1 mL

	Code	Product	Unit
New	U-SVM-140	Semi-Volatiles Mixture #12 19 Analytes 2000 µg/mL of each analyte in Methylene chloride Acetophenone, 2-Naphthylamine, 4-Aminobiphenyl, N-Nitrosodi-n-butylamine, 1-Chloronaphthalene, N-Nitrosopiperidine, Dibenz[a,j]acridine, Pentachlorobenzene, p-Dimethylaminoazobenzene, Pentachloronitrobenzene, 7,12-Dimethylbenz[a]anthracene, Phenacetin, α,α-Dimethylphenethylamine, 2-Picoline, Diphenylamine, Pronamide, 3-Methylcholanthrene, 1,2,4,5-Tetrachlorobenzene, 1-Naphthylamine	4 x 1 mL
	U-SVM-131-1	Semi-Volatiles Mixture 11 2000 µg/mL of each analyte in Methylene chloride Ethyl methanesulfonate, 1,3,5-Trinitrobenzene, Methyl methanesulfonate	1 mL
	U-SVM-131	Semi-Volatiles Mixture 11	4 x 1 mL
	U-SVK-8271	EPA Method 8270D Calibration Standards Kit Semi-Volatiles Mixture #1 (2000 µg/mL in Methylene chloride)..... U-SCM-120A (1 x 1 mL) Semi-Volatiles Mixture #2 (2000 µg/mL in Methylene chloride)..... U-SCM-121 (1 x 1 mL) Semi-Volatiles Mixture #3 (2000 µg/mL in Methylene chloride)..... U-SCM-122 (1 x 1 mL) Semi-Volatiles Mixture #4 (2000 µg/mL in Methylene chloride)..... U-SCM-123 (1 x 1 mL) Semi-Volatiles Mixture #5 (2000 µg/mL in Methylene chloride)..... U-SCM-124 (1 x 1 mL) Semi-Volatiles Mixture #6 (2000 µg/mL in Methylene chloride)..... U-SCM-125 (1 x 1 mL) Semi-Volatiles Mixture #7 (2000 µg/mL in Methylene chloride)..... U-SCM-126 (1 x 1 mL) Semi-Volatiles Mixture #8 (2000 µg/mL in Methylene chloride)..... U-SCM-127 (1 x 1 mL) Semi-Volatiles Mixture #9 (2000 µg/mL in Methylene chloride)..... U-SCM-128 (1 x 1 mL) Semi-Volatiles Mixture #10 (2000 µg/mL in Methylene chloride)..... U-SCM-129 (1 x 1 mL) Semi-Volatiles Mixture #11 (2000 µg/mL in Methylene chloride)..... U-SCM-131 (1 x 1 mL)	kit
	U-ISM-560-1	Semi-Volatiles Internal Standard Mixture 2000 µg/mL of each analyte in Methylene chloride. Acenaphthene-D_{10}, Naphthalene-D_8, Chrysene-D_{12}, Perylene-D_{12}, 1,4-Dichlorobenzene-D_4, Phenanthrene-D_{10}	1 mL
	U-ISM-560	Semi-Volatiles Internal Standard Mixture	4 x 1 mL
	U-US-108N	Semi-Volatiles Internal Standard Mixture 4000 µg/mL of each analyte in Methylene chloride. Acenaphthene-D_{10}, Naphthalene-D_8, Chrysene-D_{12}, Perylene-D_{12}, 1,4-Dichlorobenzene-D_4, Phenanthrene-D_{10}	1 mL
New	U-US-108N-4	Semi-Volatiles Internal Standard Mixture	4 x 1 mL
	U-ISM-280N-1	Base/Neutrals Surrogate Standard Mixture 1000 µg/mL of each analyte in Methylene chloride 2-Fluorobiphenyl, Nitrobenzene-D_5, p-Terphenyl-D_{14}	1 mL
	U-ISM-280N	Base/Neutrals Surrogate Standard Mixture	4 x 1 mL
	U-ISM-290N-1	Acids Surrogate Standard Mixture 2000 µg/mL of each analyte in Methanol 2-Fluorophenol, Phenol-D_5, 2,4,6-Tribromophenol	1 mL
	U-ISM-290N	Acids Surrogate Standard Mixture	4 x 1 mL
	U-ISM-430-1	Internal Standard Mixture 2000 µg/mL of each analyte in Methylene chloride 1-Fluoronaphthalene, p-Terphenyl-D_{14}	1 mL
	U-ISM-430	Internal Standard Mixture	4 x 1 mL
	U-CLP-301-1	Base/Neutrals Matrix Spiking Solution 1000 µg/mL of each analyte in Acetone Acenaphthene, N-Nitrosodi-n-propylamine, 1,4-Dichlorobenzene, Pyrene, 2,4-Dinitrotoluene, 1,2,4-Trichlorobenzene	1 mL
	U-CLP-301	Base/Neutrals Matrix Spiking Solution	4 x 1 mL
	U-CLP-300N-1	Base/Neutrals Matrix Spiking Solution 1000 µg/mL of each analyte in Methylene chloride Acenaphthene, N-Nitrosodi-n-propylamine, 1,4-Dichlorobenzene, Pyrene, 2,4-Dinitrotoluene, 1,2,4-Trichlorobenzene	1 mL
	U-CLP-300N	Base/Neutrals Matrix Spiking Solution	4 x 1 mL

	Code	Product	Unit
New	U-CLP-401-1	**Acids Matrix Spiking Solution** 5 Analytes 1500 µg/mL of each analyte in Methanol 4-Chloro-3-methylphenol; Pentachlorophenol; 2-Chlorophenol; Phenol; 4-Nitrophenol	1 mL
New	U-CLP-401	**Acids Matrix Spiking Solution**	4 x 1 mL
	U-CLP-400N-1	**Acids Matrix Spiking Solution** 2000 µg/mL of each analyte in Methanol 4-Chloro-3-methylphenol; Pentachlorophenol; 2-Chlorophenol; Phenol; 4-Nitrophenol	1 mL
	U-CLP-400N	**Acids Matrix Spiking Solution**	4 x 1 mL
	U-CLP-310-1	**Base/Neutrals Calibration Check Mixture** 1000 µg/mL of each analyte in Methylene chloride. Acenaphthene; Fluoranthene; Benzo(a)pyrene; Hexachlorobutadiene; 1,4-Dichlorobenzene; N-Nitrosodiphenylamine; Di-n-octyl phthalate	1 mL
	U-CLP-310	**Base/Neutrals Calibration Check Mixture**	4 x 1 mL
	U-CLP-311-1	**Base/Neutrals Calibration Check Compounds Mixture** 2000 µg/mL of each analyte in Methylene chloride Acenaphthene; Fluoranthene; Benzo(a)pyrene; Hexachlorobutadiene; 1,4-Dichlorobenzene; N-Nitrosodiphenylamine; Di-n-octyl phthalate	1 mL
	U-CLP-311	**Base/Neutrals Calibration Check Compounds Mixture**	4 x 1 mL
	U-CLP-410-1	**Acids Calibration Check Mixture** 2000 µg/mL of each analyte in Methanol. 4-Chloro-3-methylphenol; Pentachlorophenol; 2,4-Dichlorophenol; Phenol; 2-Nitrophenol; 2,4,6-Trichlorophenol	1 mL
	U-CLP-410	**Acids Calibration Check Mixture**	4 x 1 mL
	U-CLP-411-1	**Acids Calibration Check Compounds Mixture** 2000 µg/mL of each analyte in Methylene chloride 4-Chloro-3-methylphenol; Pentachlorophenol; 2,4-Dichlorophenol; Phenol; 2-Nitrophenol; 2,4,6-Trichlorophenol	1 mL
	U-CLP-411	**Acids Calibration Check Compounds Mixture**	4 x 1 mL
	U-CLP-320-1	**System Performance Check Mixture** 1000 µg/mL of each analyte in Methylene chloride 2,4-Dinitrophenol; 4-Nitrophenol; Hexachlorocyclopentadiene; N-Nitrosodi-n-propylamine	1 mL
	U-CLP-320	**System Performance Check Mixture**	4 x 1 mL
	U-ISM-333X	**Semi-Volatile Surrogate Standard Mixture** 6 Analytes in Methanol 2-Fluorobiphenyl ..... 100 µg/mL; Phenol-D_5 ..... 200 µg/mL 2-Fluorophenol ..... 200 µg/mL; p-Terphenyl-D_{14} ..... 100 µg/mL Nitrobenzene-D_5 ..... 100 µg/mL; 2,4,6-Tribromophenol ..... 200 µg/mL	100 mL
New	U-ISM-333X-25	**Semi-Volatile Surrogate Standard Mixture**	25 mL
	U-CLP-351X	**Semi Volatiles Matrix Spiking Solution** 2000 µg/mL of each analyte in Methanol 4-Chloro-3-methylphenol; Pentachlorophenol; 2-Chlorophenol; Phenol; 4-Nitrophenol	25 mL
New	U-ISM-333XC	**Semi-Volatile Surrogate Standard Mixture with Indicator** 6 Analytes in Methanol 2-Fluorobiphenyl ..... 100 µg/mL; 2,4,6-Tribromophenol ..... 200 µg/mL Nitrobenzene-D_5 ..... 100 µg/mL; 2-Fluorophenol ..... 200 µg/mL p-terphenyl-D_{14} ..... 100 µg/mL; Phenol-D_5 ..... 200 µg/mL pH indicator red - yellow pH ..... 3.2 - 4.4	100 mL
New	U-ISM-333XC-25	**Semi-Volatile Surrogate Standard Mixture with Indicator**	25 mL

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Code	Product	Unit
U-ISM-331-1	Surrogate Standard Mixture 4000 µg/mL of each analyte in Methylene chloride 2-Fluorobiphenyl; Nitrobenzene-D_5; p-Terphenyl-D_{14} 2-Fluorophenol; Phenol-D_5; 2,4,6-Tribromophenol	1 mL
U-ISM-331	Surrogate Standard Mixture	4 x 1 mL
U-ISM-332-1	Semi-Volatiles Surrogate Standard Mixture 4000 µg/mL of each analyte in Methylene chloride 2-Fluorobiphenyl; Nitrobenzene-D_5; p-Terphenyl-D_{14} 2-Fluorophenol; Phenol-D_5; 2,4,6-Tribromophenol	1 mL
U-ISM-332	Semi-Volatiles Surrogate Standard Mixture	4 x 1 mL
U-ISM-320-1	Pesticides Surrogate Standard Spiking Solution 200 µg/mL of each analyte in Acetone 2,4,5,6-Tetrachloro-m-xylene; Decachlorobiphenyl	1 mL
U-ISM-320	Pesticides Surrogate Standard Spiking Solution	4 x 1 mL
U-ISM-300-1	Pesticides Surrogate Standard Mixture 2000 µg/mL of each analyte in Hexane/Toluene (1:1) Dibutyl chlorendate; 2,4,5,6-Tetrachloro-m-xylene	1 mL
U-ISM-300	Pesticides Surrogate Standard Mixture	4 x 1 mL
U-ISM-321X	Pesticides Surrogate Standards Spiking Solution 0.2 µg/mL of each analyte in Acetone 2,4,5,6-Tetrachloro-m-xylene; Decachlorobiphenyl	100 mL
U-ISM-450-1	Pesticide Degradation Check Solution 2 Analytes in iso-Octane (2,2,4-Trimethylpentane) Endrin ..... 1 µg/mL; 4,4'-DDT ..... 2 µg/mL	1 mL
U-ISM-450	Pesticide Degradation Check Solution	4 x 1 mL
U-STS-280N-1	Dibutyl chlorendate 2000 µg/mL in Methanol	1 mL
U-STS-280N	Dibutyl chlorendate 2000 µg/mL in Methanol	4 x 1 mL
U-IST-440-1	2,4,5,6-Tetrachloro-m-xylene 2000 µg/mL in Acetone	1 mL
U-IST-440	2,4,5,6-Tetrachloro-m-xylene 2000 µg/mL in Acetone	4 x 1 mL
U-CLP-200N-1	Pesticides Matrix Spiking Solution 6 Analytes in Methanol Heptachlor ..... 2000 µg/mL; Endrin ..... 5000 µg/mL Aldrin ..... 2000 µg/mL; 4,4'-DDT ..... 5000 µg/mL Dieldrin ..... 5000 µg/mL; gamma-HCH (Lindane) ..... 2000 µg/mL	1 mL
U-CLP-200N	Pesticides Matrix Spiking Solution	4 x 1 mL
U-IST-341-1	Decafluorotriphenylphosphine 100 µg/mL in Methylene chloride	1 mL
U-IST-341	Decafluorotriphenylphosphine 100 µg/mL in Methylene chloride	4 x 1 mL
U-47995N-1	Decafluorotriphenylphosphine 1000 µg/mL in Acetone	1 mL
U-47995N	Decafluorotriphenylphosphine 1000 µg/mL in Acetone	4 x 1 mL
U-GCM-150-1	Semi-Volatiles GC/MS Tuning Standard 1000 µg/mL of each analyte in Methylene chloride Decafluorotriphenylphosphine; Pentachlorophenol Benzidine; 4,4'-DDT	1 mL
U-GCM-150	Semi-Volatiles GC/MS Tuning Standard	4 x 1 mL

EPA Methods 8280B & 8290A

Polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs)

EPA Methods 8280B and 8290A are high resolution GC methods. Method 8280B uses low-resolution mass spectrometry for detection (HRGC/LRMS), while 8290A uses high-resolution mass spectrometry (HRGC/HRMS) to quantitate the compounds of interest.

	Code	Product	Unit
New	U-RPE-065M	Chlorinated Dibenzo-p-dioxins Mixture 5 Analytes 10 µg/mL of each analyte in Toluene 2,3,7,8-Tetrachlorodibenzo-p-dioxin; 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin 1,2,3,7,8-Pentachlorodibenzo-p-dioxin; Octachlorodibenzo-p-dioxin 1,2,3,4,7,8-hexachlorodibenzo-p-dioxin	1 mL

	Code	Product	Unit
New	U-RPE-045M	Chlorinated Dibenzofurans Mixture 5 Analytes 10 µg/mL of each analyte in Toluene 2,3,7,8-Tetrachlorodibenzofuran; 1,2,3,7,8-Pentachlorodibenzofuran; 1,2,3,4,7,8-Hexachlorodibenzofuran; 1,2,3,4,6,7,8-Heptachlorodibenzofuran; Octachlorodibenzofuran	1 mL
	U-RPE-029S	2,3,7,8-Tetrachlorodibenzo-p-dioxin 10 µg/mL in Toluene	1 mL
	U-RPE-056S	1,2,3,7,8-Pentachlorodibenzo-p-dioxin 50 µg/mL in Toluene	1 mL
	U-RPE-058S	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin 50 µg/mL in Toluene	1 mL
	U-RPE-063S	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin 50 µg/mL in Toluene	1 mL
	U-RPE-017S	Octachlorodibenzo-p-dioxin 50 µg/mL in Toluene	1 mL
	U-RPE-037S	2,3,7,8-Tetrachlorodibenzofuran 50 µg/mL in Toluene	1 mL
	U-RPE-042S	1,2,3,7,8-Pentachlorodibenzofuran 50 µg/mL in Toluene	1 mL
	U-RPE-043S	1,2,3,4,7,8-Hexachlorodibenzofuran 50 µg/mL in Toluene	1 mL
	U-RPE-044S	1,2,3,4,6,7,8-Heptachlorodibenzofuran 50 µg/mL in Toluene	1 mL
	U-RPE-019S	Octachlorodibenzofuran 50 µg/mL in Toluene	1 mL

EPA Method 8310

Polynuclear aromatic hydrocarbons

Method 8310 is used to measure polynuclear aromatic hydrocarbons by HPLC.

Recommended standards

Calibration standards: U-PM-831A

U-PM-831A-1	PAH Mixture Solvent: Acetonitrile/Methanol (9:1) Acenaphthene 1000 µg/mL; Acenaphthylene 500 µg/mL; Anthracene 20 µg/mL; Benzo(a)anthracene 50 µg/mL; Benzo(b)fluoranthene 20 µg/mL; Benzo(k)fluoranthene 20 µg/mL; Benzo(ghi)perylene 80 µg/mL; Benzo(a)pyrene 50 µg/mL; Chrysene 50 µg/mL; Dibenzo(a,h)anthracene 200 µg/mL; Fluoranthene 50 µg/mL; Fluorene 100 µg/mL; Indeno(1,2,3-cd)pyrene 50 µg/mL; Naphthalene 500 µg/mL; Phenanthrene 40 µg/mL; Pyrene 100 µg/mL	1 mL
U-PM-831A	PAH Mixture	4 x 1 mL
U-PM-613A-1	PAH Mixture Solvent: Acetonitrile Acenaphthene 100 µg/mL; Acenaphthylene 100 µg/mL; Anthracene 100 µg/mL; Benzo(a)anthracene 10 µg/mL; Benzo(b)fluoranthene 10 µg/mL; Benzo(k)fluoranthene 5 µg/mL; Benzo(ghi)perylene 10 µg/mL; Benzo(a)pyrene 10 µg/mL; Chrysene 10 µg/mL; Dibenzo(a,h)anthracene 10 µg/mL; Fluoranthene 10 µg/mL; Fluorene 100 µg/mL; Indeno(1,2,3-cd)pyrene 10 µg/mL; Naphthalene 100 µg/mL; Phenanthrene 100 µg/mL; Pyrene 10 µg/mL	1 mL
U-PM-613A	PAH Mixture	4 x 1 mL
U-PM-831-1	PAH Mixture 500 µg/mL of each analyte in Acetonitrile/Acetone/Toluene (6:3:1) Acenaphthene; Acenaphthylene; Anthracene; Benzo(a)anthracene; Benzo(b)fluoranthene; Benzo(k)fluoranthene; Benzo(ghi)perylene; Benzo(a)pyrene; Chrysene; Dibenzo(a,h)anthracene; Fluoranthene; Fluorene; Indeno(1,2,3-cd)pyrene; Naphthalene; Phenanthrene; Pyrene	1 mL
U-PM-831	PAH Mixture	4 x 1 mL

EPA Method 8315A

Formaldehyde and acetaldehyde

Method 8315 is used to measure formaldehyde and acetaldehyde by HPLC.

Recommended standards

Calibration standard: U-ALD-8315

U-ALD-100-1	Aldehydes Mixture 1000 µg/mL of each analyte in Water Acetaldehyde; Formaldehyde	1 mL
U-ALD-100	Aldehydes Mixture	4 x 1 mL

EPA 8000 Methods

	Code	Product	Unit
New	U-ALD-8315-1	Carbonyl Compounds Mixture 20 Analytes 100 µg/mL of each analyte in Acetonitrile Acetaldehyde, Acetone, Acrolein, Benzaldehyde, Butanal (Butyraldehyde), Crotonaldehyde, Cyclohexanone, Decanal, 2,5-Dimethylbenzaldehyde, Formaldehyde, Heptanal, Hexanal (Hexaldehyde), Isovaleraldehyde, Nonanal, Octanal, Pentanal (Valeraldehyde), Propanal (Propionaldehyde), o-Tolualdehyde, m-Tolualdehyde, p-Tolualdehyde	1 mL
New	U-ALD-8315	Carbonyl Compounds Mixture	4 x 1 mL
New	U-ALD-8315D-1	Derivatized Carbonyl Compounds Mixture 20 Analytes 100 µg/mL of each analyte in Acetonitrile Acetaldehyde-DNPH, Acetone-DNPH, Acrolein-DNPH, Benzaldehyde-DNPH, Butanal-DNPH, Crotonaldehyde-DNPH, Cyclohexanone-DNPH, Decanal-DNPH, 2,5-Dimethylbenzaldehyde-DNPH, Formaldehyde-DNPH, Heptanal-DNPH, Hexanal-DNPH, Isovaleraldehyde-DNPH, Nonanal-DNPH, Octanal-DNPH, Pentanal-DNPH, Propanal-DNPH, m-Tolualdehyde-DNPH, o-Tolualdehyde-DNPH, p-Tolualdehyde-DNPH	1 mL
New	U-ALD-8315D	Derivatized Carbonyl Compounds Mixture	4 x 1 mL

EPA Method 8318A

N-Methyl carbamates

Method 8318 is used to determine N-methyl carbamates by HPLC.

U-PPM-831-1	Carbamates Mixture 100 µg/mL of each analyte in Methanol Aldicarb, Aldicarb sulfone, Carbaryl, Carbofuran, Dioxacarb, 3-Hydroxycarbofuran, Methiocarb, Methomyl, Promecarb, Propoxur	1 mL
U-PPM-831	Carbamates Mixture	4 x 1 mL
New	U-PPM-831A-1	Carbamates Mixture 6 Analytes 100 µg/mL in Methanol Bendiocarb, Formetanate hydrochloride, Metolcarb, Mexacarbate, Oxamyl, Thiodicarb	1 mL
New	U-PPM-831A	Carbamates Mixture	4 x 1 mL

EPA Method 8330A

Nitroaromatics and nitramines (explosives)

Method 8330A is used to measure explosives by HPLC.

Recommended standards

Calibration standards: U-NAIM-833A
U-NAIM-833B

U-NAIM-833B-1	Intermediate Stock Solution 2 1000 µg/mL of each analyte in Acetonitrile 2,6-Dinitrotoluene, 2-Nitrotoluene, 3-Nitrotoluene, 4-Nitrotoluene, Tetryl, 2-Amino-4,6-dinitrotoluene, 4-Amino-2,6-dinitrotoluene	1 mL
U-NAIM-833B	Intermediate Stock Solution 2	4 x 1 mL
U-NAIM-833A-1	Intermediate Stock Solution 1 1000 µg/mL of each analyte in Acetonitrile Octogen (HMX), Hexogen (RDX), 1,3,5-Trinitrobenzene, 1,3-Dinitrobenzene, Nitrobenzene, 2,4,6-Trinitrotoluene (TNT), 2,4-Dinitrotoluene	1 mL
U-NAIM-833A	Intermediate Stock Solution 1	4 x 1 mL

Code	Product	Unit
U-NAIM-833E-1	Combined Stock Solution 1000 µg/mL of each analyte in Acetonitrile Octogen (HMX) Hexogen (RDX) 1,3,5-Trinitrobenzene 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene (TNT) 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 3-Nitrotoluene 4-Nitrotoluene Tetryl 2-Amino-4,6-dinitrotoluene 4-Amino-2,6-dinitrotoluene	1 mL
U-NAIM-833E	Combined Stock Solution	4 x 1 mL
U-IST-590-1	3,4-Dinitrotoluene 1000 µg/mL in Methanol	1 mL
U-IST-590	3,4-Dinitrotoluene 1000 µg/mL in Methanol	4 x 1 mL
U-IST-600-1	1,2-Dinitrobenzene 1000 µg/mL in Methanol	1 mL
U-IST-600	1,2-Dinitrobenzene 1000 µg/mL in Methanol	4 x 1 mL
U-EPA-1193	4-Amino-2,6-dinitrotoluene 1000 µg/mL in Acetonitrile	1 mL
U-EPA-1192	2-Amino-4,6-dinitrotoluene 1000 µg/mL in Acetonitrile	1 mL
U-EPA-1113	1,3-Dinitrobenzene 5000 µg/mL in Methanol	1 mL
U-EPA-1221	Octogen (HMX) 1000 µg/mL in Acetonitrile	1 mL
U-EPA-1227	2-Nitrotoluene 1000 µg/mL in Acetonitrile	1 mL
U-EPA-1228	3-Nitrotoluene 1000 µg/mL in Acetonitrile	1 mL
U-EPA-1229	4-Nitrotoluene 1000 µg/mL in Acetonitrile	1 mL
U-EPA-1233	Hexogen (RDX) 1000 µg/mL in Acetonitrile	1 mL
U-EPA-1237	Tetryl 1000 µg/mL in Acetonitrile	1 mL
U-EPA-1243	2,4,6-Trinitrotoluene 1000 µg/mL in Acetonitrile	1 mL
U-NAI-140-1	1,3-Dinitrobenzene 100 µg/mL in Methanol	1 mL
U-NAI-100-1	2,4-Dinitrotoluene 100 µg/mL in Methanol	1 mL
U-NAI-110-1	2,6-Dinitrotoluene 100 µg/mL in Methanol	1 mL
U-NAI-130-1	Nitrobenzene 100 µg/mL in Methanol	1 mL
U-NAI-170-1	1,3,5-Trinitrobenzene 100 µg/mL in Methanol	1 mL

EPA Method 8332

Nitroglycerin

Method 8332 is used to measure nitroglycerin by HPLC.

New	U-NAI-270-1	Nitroglycerin 10 µg/mL in Acetonitrile	1 mL
New	U-NAI-270	Nitroglycerin 10 µg/mL in Acetonitrile	4 x 1 mL

EPA Method 8410

Semi-volatile organics

Method 8410 is used to measure semi-volatile organics by GC/FTIR. Used to complement Method 8270C

	U-ISM-430-1	Internal Standard Mixture 2000 µg/mL of each analyte in Methylene chloride 1-Fluoronaphthalene p-Terphenyl-D_{14}	1 mL
	U-ISM-430	Internal Standard Mixture	4 x 1 mL

EPA Method 8430

Bis(2-chloroethyl) ether and hydrolysis compounds

Method 8430 is used to determine bis(2-chloroethyl) ether and its hydrolysis compounds by GC/FTIR.

New	U-BECM-843-1	Bis(2-chloroethyl) Ether and Hydrolysis Compounds Mixture 5 Analytes 1000 µg/mL of each analyte in Water Bis(2-chloroethyl) ether (BCEE) 2-Chloroethanol (CE) 2-(2-Chloroethoxy)ethanol (2CEE) Diethylene glycol (DEG) Ethylene glycol (EG)	1 mL
New	U-BECM-843	Bis(2-chloroethyl) Ether and Hydrolysis Compounds Mixture	4 x 1 mL

	Code	Product	Unit

EPA Method 8440

Total recoverable petroleum hydrocarbons

Method 8440 is used to measure total recoverable petroleum hydrocarbons (TRPHs) by IR.

New	U-RGO-100-1	Method 8440 Calibration Oil Component % v/v: n-Hexadecane 37.5 %; Component % v/v: Isooctane 37.5 %; Component % v/v: Chlorobenzene 25.0 %	1 mL
New	U-RGO-100	Method 8440 Calibration Oil	4 x 1 mL

Combustion element analyser standards

Elemental standards - Sulfur standards

ASTM D5453 - Total sulfur by UV fluorescence (low)

	Code	Product	Unit
New	U-PANAL0211	ASTM D5453 - Total sulfur by UV fluorescence kit (low) Each kit contains: **Description. Concentration** Ampoule 1.... Toluene....Solvent blank Ampoule 2.... Butylsulfide (as S) in Toluene.... 1.0 mg/L Ampoule 3.... Butylsulfide (as S) in Toluene.... 2.5 mg/L Ampoule 4.... Butylsulfide (as S) in Toluene.... 5.0 mg/L Ampoule 5.... Butylsulfide (as S) in Toluene.... 7.5 mg/L Ampoule 6.... Butylsulfide (as S) in Toluene.... 10.0 mg/L	6 x 2 mL
New	U-PANAL0211-1	ASTM D5453 - Toluene (blank)	2 mL
New	U-PANAL0211-2	ASTM D5453 - Butyl sulfide (as S) - 1 mg/L in Toluene	2 mL
New	U-PANAL0211-3	ASTM D5453 - Butyl sulfide (as S) - 2.5 mg/L in Toluene	2 mL
New	U-PANAL0211-4	ASTM D5453 - Butyl sulfide (as S) - 5 mg/L in Toluene	2 mL
New	U-PANAL0211-5	ASTM D5453 - Butyl sulfide (as S) - 7.5 mg/L in Toluene	2 mL
New	U-PANAL0211-6	ASTM D5453 - Butyl sulfide (as S) - 10 mg/L in Toluene	2 mL

ASTM D5453 - Total sulfur by UV fluorescence (medium)

New	U-PANAL0212	ASTM D5453 - Total sulfur by UV fluorescence kit (medium) Each kit contains: **Description. Concentration** Ampoule 1.... Toluene....Solvent blank Ampoule 2.... Butylsulfide (as S) in Toluene.... 5.0 mg/L Ampoule 3.... Butylsulfide (as S) in Toluene.... 25 mg/L Ampoule 4.... Butylsulfide (as S) in Toluene .... 50 mg/L Ampoule 5.... Butylsulfide (as S) in Toluene.... 100 mg/L Ampoule 6.... Butylsulfide (as S) in Toluene.... 200 mg/L	6 x 2 mL
New	U-PANAL0212-1	ASTM D5453 - Toluene (blank)	2 mL
New	U-PANAL0212-2	ASTM D5453 - Butyl sulfide (as S) - 5 mg/L in Toluene	2 mL
New	U-PANAL0212-3	ASTM D5453 - Butyl sulfide (as S) - 25 mg/L in Toluene	2 mL
New	U-PANAL0212-4	ASTM D5453 - Butyl sulfide (as S) - 50 mg/L in Toluene	2 mL
New	U-PANAL0212-5	ASTM D5453 - Butyl sulfide (as S) - 100 mg/L in Toluene	2 mL
New	U-PANAL0212-6	ASTM D5453 - Butyl sulfide (as S) - 200 mg/L in Toluene	2 mL

ASTM D5453 - Total sulfur by UV fluorescence (high)

New	U-PANAL0213	ASTM D5453 - Total sulfur by UV fluorescence kit (high) Each kit contains: **Description. Concentration** Ampoule 1.... Toluene....Solvent blank Ampoule 2.... Butylsulfide (as S) in Toluene.... 100 mg/L Ampoule 3.... Butylsulfide (as S) in Toluene.... 250 mg/L Ampoule 4.... Butylsulfide (as S) in Toluene.... 500 mg/L Ampoule 5.... Butylsulfide (as S) in Toluene.... 750 mg/L Ampoule 6.... Butylsulfide (as S) in Toluene.... 1000 mg/L	6 x 2 mL
New	U-PANAL0213-1	ASTM D5453 - Toluene (blank)	2 mL
New	U-PANAL0213-2	ASTM D5453 - Butyl sulfide (as S) - 100 mg/L in Toluene	2 mL
New	U-PANAL0213-3	ASTM D5453 - Butyl sulfide (as S) - 250 mg/L in Toluene	2 mL

	Code	Product	Unit
New	U-PANAL0213-4	ASTM D5453 - Butyl sulfide (as S) - 500 mg/L in Toluene	2 mL
New	U-PANAL0213-5	ASTM D5453 - Butyl sulfide (as S) - 750 mg/L in Toluene	2 mL
New	U-PANAL0213-6	ASTM D5453 - Butyl sulfide (as S) - 1000 mg/L in Toluene	2 mL

ASTM D5453 - Total sulfur by UV fluorescence (low)

U-PANAL0214	ASTM D5453 - Total sulfur by UV fluorescence kit (low) Each kit contains: **Description. Concentration** Ampoule 1 ... Isooctane ..... Solvent blank Ampoule 2 ... Butylsulfide (as S) in Isooctane .....1.0 mg/L Ampoule 3 ... Butylsulfide (as S) in Isooctane .....2.5 mg/L Ampoule 4 ... Butylsulfide (as S) in Isooctane .....5.0 mg/L Ampoule 5 ... Butylsulfide (as S) in Isooctane .....7.5 mg/L Ampoule 6 ... Butylsulfide (as S) in Isooctane .....10.0 mg/L	6 x 2 mL
U-PANAL0214-1	ASTM D5453 - Isooctane (blank)	2 mL
U-PANAL0214-2	ASTM D5453 - Butyl sulfide (as S) - 1.0 mg/L in Isooctane	2 mL
U-PANAL0214-3	ASTM D5453 - Butyl sulfide (as S) - 2.5 mg/L in Isooctane	2 mL
U-PANAL0214-4	ASTM D5453 - Butyl sulfide (as S) - 5.0 mg/L in Isooctane	2 mL
U-PANAL0214-5	ASTM D5453 - Butyl sulfide (as S) - 7.5 mg/L in Isooctane	2 mL
U-PANAL0214-6	ASTM D5453 - Butyl sulfide (as S) - 10 mg/L in Isooctane	2 mL

ASTM D5453 - Total sulfur by UV fluorescence (medium)

U-PANAL0215	ASTM D5453 - Total sulfur by UV fluorescence kit (medium) Each kit contains: **Description. Concentration** Ampoule 1 ... Isooctane ..... Solvent blank Ampoule 2 ... Butylsulfide (as S) in Isooctane .....5.0 mg/L Ampoule 3 ... Butylsulfide (as S) in Isooctane .....25 mg/L Ampoule 4 ... Butylsulfide (as S) in Isooctane .....50 mg/L Ampoule 5 ... Butylsulfide (as S) in Isooctane .....100 mg/L Ampoule 6 ... Butylsulfide (as S) in Isooctane .....200 mg/L	6 x 2 mL
New U-PANAL0215-1	ASTM D5453 - Isooctane (blank)	2 mL
New U-PANAL0215-2	ASTM D5453 - Butyl sulfide (as S) - 5 mg/L in Isooctane	2 mL
U-PANAL0215-3	ASTM D5453 - Butyl sulfide (as S) - 25 mg/L in Isooctane	2 mL
U-PANAL0215-4	ASTM D5453 - Butyl sulfide (as S) - 50 mg/L in Isooctane	2 mL
U-PANAL0215-5	ASTM D5453 - Butyl sulfide (as S) - 100 mg/L in Isooctane	2 mL
U-PANAL0215-6	ASTM D5453 - Butyl sulfide (as S) - 200 mg/L in Isooctane	2 mL

ASTM D5453 - Total sulfur by UV fluorescence (high)

U-PANAL0216	ASTM D5453 - Total sulfur by UV fluorescence kit (high) Each kit contains: **Description. Concentration** Ampoule 1 ... Isooctane ..... Solvent blank Ampoule 2 ... Butylsulfide (as S) in Isooctane .....100 mg/L Ampoule 3 ... Butylsulfide (as S) in Isooctane .....250 mg/L Ampoule 4 ... Butylsulfide (as S) in Isooctane .....500 mg/L Ampoule 5 ... Butylsulfide (as S) in Isooctane .....750 mg/L Ampoule 6 ... Butylsulfide (as S) in Isooctane .....1000 mg/L	6 x 2 mL
New U-PANAL0216-1	ASTM D5453 - Isooctane (blank)	2 mL
New U-PANAL0216-2	ASTM D5453 - Butyl sulfide (as S) - 100 mg/L in Isooctane	2 mL
U-PANAL0216-3	ASTM D5453 - Butyl sulfide (as S) - 250 mg/L in Isooctane	2 mL
U-PANAL0216-4	ASTM D5453 - Butyl sulfide (as S) - 500 mg/L in Isooctane	2 mL
U-PANAL0216-5	ASTM D5453 - Butyl sulfide (as S) - 750 mg/L in Isooctane	2 mL
U-PANAL0216-6	ASTM D5453 - Butyl sulfide (as S) - 1000 mg/L in Isooctane	2 mL

ASTM D3120, D3246 & D3961 sulfur by oxidative microcoulometry

	Code	Product	Unit
New	U-PANAL0217	ASTM D3120, D3246, D3961 Sulfur by oxidatative microcoulometry kit Each kit contains: **Description. Concentration** Ampoule 1.... Isooctane .....Solvent blank Ampoule 2.... Butylsulfide (as S) in Isooctane ..... 1.0 mg/L Ampoule 3.... Butylsulfide (as S) in Isooctane ..... 10 mg/L Ampoule 4.... Butylsulfide (as S) in Isooctane ..... 40 mg/L Ampoule 5.... Butylsulfide (as S) in Isooctane ..... 75 mg/L Ampoule 6.... Butylsulfide (as S) in Isooctane ..... 100 mg/L	6 x 2 mL
New	U-PANAL0217-1	ASTM D3120, D3246 and D3961 - Isooctane (blank)	2 mL
New	U-PANAL0217-2	ASTM D3120, D3246 and D3961 - Butyl sulfide (as S) - 1 mg/L in Isooctane	2 mL
New	U-PANAL0217-3	ASTM D3120, D3246 and D3961 - Butyl sulfide (as S) - 10 mg/L in Isooctane	2 mL
New	U-PANAL0217-4	ASTM D3120, D3246 and D3961 - Butyl sulfide (as S) - 40 mg/L in Isooctane	2 mL
New	U-PANAL0217-5	ASTM D3120, D3246 and D3961 - Butyl sulfide (as S) - 75 mg/L in Isooctane	2 mL
New	U-PANAL0217-6	ASTM D3120, D3246 and D3961 - Butyl sulfide (as S) - 100 mg/L in Isooctane	2 mL

Dibenzothiophene (as S)

New	U-PANAL0194	Dibenzothiophene -1 mg/L in Xylene	10 mL
New	U-PANAL0195	Dibenzothiophene - 5 mg/L in Xylene	10 mL
New	U-PANAL0196	Dibenzothiophene - 10 mg/L in Xylene	10 mL

Ultra low sulfur standards kit

New	U-PANAL0227	Ultra low sulfur standard kit Each kit contains: **Description. Concentration** Ampoule 1.... Toluene.....Solvent blank Ampoule 2.... Butylsulfide (as S) in Toluene..... 50 µg/L Ampoule 3.... Butylsulfide (as S) in Toluene..... 100 µg/L Ampoule 4.... Butylsulfide (as S) in Toluene..... 200 µg/L Ampoule 5.... Butylsulfide (as S) in Toluene..... 500 µg/L Ampoule 6.... Butylsulfide (as S) in Toluene..... 1000 µg/L	6 x 2 mL
New	U-PANAL0227-1	Toluene (blank)	2 mL
New	U-PANAL0227-2	Butyl sulfide (as S) - 50 µg/L in Toluene	2 mL
New	U-PANAL0227-3	Butyl sulfide (as S) - 100 µg/L in Toluene	2 mL
New	U-PANAL0227-4	Butyl sulfide (as S) - 200 µg/L in Toluene	2 mL
New	U-PANAL0227-5	Butyl sulfide (as S) - 500 µg/L in Toluene	2 mL
New	U-PANAL0227-6	Butyl sulfide (as S) - 1000 µg/L in Toluene	2 mL

Elemental standards - Nitrogen standards

ASTM D4629 - Trace nitrogen by chemiluminescence kit (low)

	Code	Product	Unit
New	U-PANAL0218	ASTM D4629 Trace nitrogen by chemiluminescence Kit (low) Each kit contains: **Description. Concentration** Ampoule 1.... Isooctane .....Solvent blank Ampoule 2.... Pyridine (as N) in Isooctane..... 1 mg/L Ampoule 3.... Pyridine (as N) in Isooctane..... 2 mg/L Ampoule 4.... Pyridine (as N) in Isooctane..... 5 mg/L Ampoule 5.... Pyridine (as N) in Isooctane..... 10 mg/L Ampoule 6.... Pyridine (as N) in Isooctane..... 20 mg/L	6 x 2 mL
New	U-PANAL0218-1	ASTM D4629 - Isooctane (blank)	2 mL
New	U-PANAL0218-2	ASTM D4629 - Pyridine (as N) - 1 mg/L in Isooctane	2 mL
New	U-PANAL0218-3	ASTM D4629 - Pyridine (as N) - 2 mg/L in Isooctane	2 mL
New	U-PANAL0218-4	ASTM D4629 - Pyridine (as N) - 5 mg/L in Isooctane	2 mL
New	U-PANAL0218-5	ASTM D4629 - Pyridine (as N) - 10 mg/L in Isooctane	2 mL
New	U-PANAL0218-6	ASTM D4629 - Pyridine (as N) - 20 mg/L in Isooctane	2 mL

	Code	Product	Unit

ASTM D4629 - Trace nitrogen by chemiluminescence (medium)

New	U-PANAL0219	ASTM D4629 Trace nitrogen by chemiluminescence Kit (medium) Each kit contains: **Description. Concentration** Ampoule 1 ... Isooctane ..... Solvent blank Ampoule 2 ... Pyridine (as N) in Isooctane .....50 mg/L Ampoule 3 ... Pyridine (as N) in Isooctane .....100 mg/L Ampoule 4 ... Pyridine (as N) in Isooctane .....200 mg/L Ampoule 5 ... Pyridine (as N) in Isooctane .....500 mg/L Ampoule 6 ... Pyridine (as N) in Isooctane .....1000 mg/L	6 x 2 mL
New	U-PANAL0219-1	ASTM D4629 - Isooctane (blank)	2 mL
New	U-PANAL0219-2	ASTM D4629 - Pyridine (as N) - 50 mg/L in Isooctane	2 mL
New	U-PANAL0219-3	ASTM D4629 - Pyridine (as N) - 100 mg/L in Isooctane	2 mL
New	U-PANAL0219-4	ASTM D4629 - Pyridine (as N) - 200 mg/L in Isooctane	2 mL
New	U-PANAL0219-5	ASTM D4629 - Pyridine (as N) - 500 mg/L in Isooctane	2 mL
New	U-PANAL0219-6	ASTM D4629 - Pyridine (as N) - 1000 mg/L in Isooctane	2 mL

ASTM D4629 - Trace nitrogen by chemiluminescence (high)

New	U-PANAL0220	ASTM D4629 Trace nitrogen by chemiluminescence Kit Each kit contains: **Description. Concentration** Ampoule 1 ... Isooctane ..... Solvent blank Ampoule 2 ... Pyridine (as N) in Isooctane .....500 mg/L Ampoule 3 ... Pyridine (as N) in Isooctane .....1000 mg/L Ampoule 4 ... Pyridine (as N) in Isooctane .....2000 mg/L Ampoule 5 ... Pyridine (as N) in Isooctane .....5000 mg/L Ampoule 6 ... Pyridine (as N) in Isooctane .....10000 mg/L	6 x 2 mL
New	U-PANAL0220-1	ASTM D4629 - Isooctane (blank)	2 mL
New	U-PANAL0220-2	ASTM D4629 - Pyridine (as N) - 500 mg/L in Isooctane	2 mL
New	U-PANAL0220-3	ASTM D4629 - Pyridine (as N) - 1000 mg/L in Isooctane	2 mL
New	U-PANAL0220-4	ASTM D4629 - Pyridine (as N) - 2000 mg/L in Isooctane	2 mL
New	U-PANAL0220-5	ASTM D4629 - Pyridine (as N) - 5000 mg/L in Isooctane	2 mL
New	U-PANAL0220-6	ASTM D4629 - Pyridine (as N) - 10000 mg/L in Isooctane	2 mL

ASTM D5762 - Trace nitrogen by chemiluminescence

New	U-PANAL0221	ASTM D5762 Trace Nitrogen by Chemiluminescence Kit Each kit contains: **Description. Concentration** Ampoule 1 ... Toluene..... Solvent blank Ampoule 2 ... Acridine (as N) in Toluene.....1 mg/L Ampoule 3 ... Acridine (as N) in Toluene.....5 mg/L Ampoule 4 ... Acridine (as N) in Toluene.....10 mg/L Ampoule 5 ... Acridine (as N) in Toluene.....50 mg/L Ampoule 6 ... Acridine (as N) in Toluene.....100 mg/L	6 x 2 mL
New	U-PANAL0221-1	ASTM D5762 - Toluene (blank)	2 mL
New	U-PANAL0221-2	ASTM D5762 - Pyridine (as N) - 1 mg/L in Toluene	2 mL
New	U-PANAL0221-3	ASTM D5762 - Pyridine (as N) - 5 mg/L in Toluene	2 mL
New	U-PANAL0221-4	ASTM D5762 - Pyridine (as N) - 10 mg/L in Toluene	2 mL
New	U-PANAL0221-5	ASTM D5762 - Pyridine (as N) - 50 mg/L in Toluene	2 mL
New	U-PANAL0221-6	ASTM D5762 - Pyridine (as N) - 100 mg/L in Toluene	2 mL

Benzonitrile (as N)

New	U-PANAL0175	Benzonitrile (as N) - 1 mg/L in Toluene	5 x 2 mL
New	U-PANAL0169	Benzonitrile (as N) - 10 mg/L in Toluene	5 x 2 mL
New	U-PANAL0170	Benzonitrile (as N) - 50 mg/L in Toluene	5 x 2 mL
New	U-PANAL0180	Benzonitrile (as N) - 100 mg/L in Toluene	5 x 2 mL
New	U-PANAL0183	Benzonitrile (as N) - 200 mg/L in Toluene	5 x 2 mL
New	U-PANAL0181	Benzonitrile (as N) - 500 mg/L in Toluene	5 x 2 mL
New	U-PANAL0179	Benzonitrile (as N) - 1000 mg/L in Toluene	5 x 2 mL
New	U-PANAL0186	Benzonitrile (as N) - 2000 mg/L in Toluene	5 x 2 mL

Combustion element analyser standards

	Code	Product	Unit
New	U-PANAL0187	Benzonitrile (as N) - 5000 mg/L in Toluene	5 x 2 mL

Benzonitrile (as N) kit (low)

New	U-PANAL0237	Benzonitrile (as N) kit (low)	4 x 2 mL

Each kit contains:

Description.		Concentration
Ampoule 1....	Toluene	Solvent blank
Ampoule 2....	Benzonitrile (as N) in Toluene	1 mg/L
Ampoule 3....	Benzonitrile (as N) in Toluene	5 mg/L
Ampoule 4....	Benzonitrile (as N) in Toluene	10 mg/L

Benzonitrile (as N) kit (high)

New	U-PANAL0238	Benzonitrile (as N) kit (high)	4 x 2 mL

Each kit contains:

Description.		Concentration
Ampoule 1....	Benzonitrile (as N) in Toluene	100 mg/L
Ampoule 2....	Benzonitrile (as N) in Toluene	200 mg/L
Ampoule 3....	Benzonitrile (as N) in Toluene	500 mg/L
Ampoule 4....	Benzonitrile (as N) in Toluene	1000 mg/L

Ultra low nitrogen Standards

New	U-PANAL0228	Ultra low nitrogen standard kit	6 x 2 mL

Each kit contains:

Description.		Concentration
Ampoule 1....	Toluene	Solvent blank
Ampoule 2....	Pyridine (as N) in Toluene	50 µg/L
Ampoule 3....	Pyridine (as N) in Toluene	100 µg/L
Ampoule 4....	Pyridine (as N) in Toluene	200 µg/L
Ampoule 5....	Pyridine (as N) in Toluene	500 µg/L
Ampoule 6....	Pyridine (as N) in Toluene	1000 µg/L

New	U-PANAL0228-1	Toluene (blank)	2 mL
New	U-PANAL0228-2	Pyridine (as N) - 50 µg/L in Toluene	2 mL
New	U-PANAL0228-3	Pyridine (as N) - 100 µg/L in Toluene	2 mL
New	U-PANAL0228-4	Pyridine (as N) - 200 µg/L in Toluene	2 mL
New	U-PANAL0228-5	Pyridine (as N) - 500 µg/L in Toluene	2 mL
New	U-PANAL0228-6	Pyridine (as N) - 1000 µg/L in Toluene	2 mL

Total nitrogen (TN) water applications standards kit (low)

New	U-PANAL0225	Ammonium sulfate (as N) + Sodium nitrate (as N) - kit	6 x 10 mL

Each kit contains:

Description.		Concentration
Ampoule 1	Water	Solvent blank
Ampoule 2	Ammonium sulfate (as N) in Water	0.5 mg/L
	Sodium nitrate (as N) in Water	0.5 mg/L
Ampoule 3	Ammonium sulfate (as N) in Water	1.0 mg/L
	Sodium nitrate (as N) in Water	1.0 mg/L
Ampoule 4	Ammonium sulfate (as N) in Water	2.5 mg/L
	Sodium nitrate (as N) in Water	2.5 mg/L
Ampoule 5	Ammonium sulfate (as N) in Water	5.0 mg/L
	Sodium nitrate (as N) in Water	5.0 mg/L
Ampoule 6	Ammonium sulfate (as N) in Water	12.5 mg/L
	Sodium nitrate (as N) in Water	12.5 mg/L

Total nitrogen (TN) water applications standards kit (medium)

New	U-PANAL0226	Ammonium sulfate (as N) + Sodium nitrate (as N) - kit	6 x 10 mL

Each kit contains:

Description.		Concentration
Ampoule 1	Water	Solvent blank
Ampoule 2	Ammonium sulfate (as N) in Water	5.0 mg/L
	Sodium nitrate (as N) in Water	5.0 mg/L
Ampoule 3	Ammonium sulfate (as N) in Water	12.05 mg/L
	Sodium nitrate (as N) in Water	12.5 mg/L
Ampoule 4	Ammonium sulfate (as N) in Water	25.0 mg/L
	Sodium nitrate (as N) in Water	25.0 mg/L
Ampoule 5	Ammonium sulfate (as N) in Water	37.5 mg/L
	Sodium nitrate (as N) in Water	37.5 mg/L
Ampoule 6	Ammonium sulfate (as N) in Water	50.0 mg/L
	Sodium nitrate (as N) in Water	50.0 mg/L

Elemental standards - Carbon standards

	Code	Product	Unit
New	U-PANAL0241	Potassium hydrogen phthalate	50 g
New	U-PANAL0171	Sodium carbonate	50 g
New	U-PANAL0172	Sodium hydrogen carbonate	50 g

Elemental standards - Chlorine standards

Chlorocyclohexane (as Cl)

	Code	Product	Unit
New	U-PANAL0155	Chlorocyclohexane (as Cl) - 0.05 % (w/v) in Hexane	5 x 2 mL
New	U-PANAL0156	Chlorocyclohexane (as Cl) - 0.1 % (w/v) in Hexane	5 x 2 mL
New	U-PANAL0157	Chlorocyclohexane (as Cl) - 0.5 % (w/v) in Hexane	5 x 2 mL
New	U-PANAL0158	Chlorocyclohexane (as Cl) - 1.0 % (w/v) in Hexane	5 x 2 mL
New	U-PANAL0159	Chlorocyclohexane (as Cl) - 3 % (w/v) in Hexane	5 x 2 mL

ASTM D4929 (B) organic chloride in crude oil

New	U-PANAL0223	ASTM D4929 (B) Organic chloride in crude Oil Kit Each kit contains: **Description. — Concentration** Ampoule 1 ... Isooctane ..... Solvent blank Ampoule 2 ... Chlorobenzene (as Cl) in Isooctane .....5 mg/L Ampoule 3 ... Chlorobenzene (as Cl) in Isooctane .....10 mg/L Ampoule 4 ... Chlorobenzene (as Cl) in Isooctane .....25 mg/L Ampoule 5 ... Chlorobenzene (as Cl) in Isooctane .....50 mg/L Ampoule 6 ... Chlorobenzene (as Cl) in Isooctane .....100 mg/L	6 x 2 mL

ASTM D5808 organic chlorine in hydrocarbons

New	U-PANAL0224	ASTM D5808 Organic chloride in hydrocarbons Kit Each kit contains: **Description. — Concentration** Ampoule 1 ... Methanol ..... Solvent blank Ampoule 2 ... Trichlorophenol (as Cl) in Isooctane.....1 mg/L Ampoule 3 ... Trichlorophenol (as Cl) in Isooctane.....5 mg/L Ampoule 4 ... Trichlorophenol (as Cl) in Isooctane.....10 mg/L Ampoule 5 ... Trichlorophenol (as Cl) in Isooctane.....15 mg/L Ampoule 6 ... Trichlorophenol (as Cl) in Isooctane.....25 mg/L	6 x 2 mL

Aldrin (as Cl)

New	U-PANAL0097	Hexane (blank)	5 x 2 mL
New	U-PANAL0095	Aldrin (as Cl) standard kit Each kit contains: **Description..... — Concentration** Ampoule 1-5 .....Hexane ..... Solvent blank Ampoule 6 -10 .....Aldrin (as Cl) in Hexane .....5.0 mg/L	10 x 2 mL
New	U-PANAL0230	Aldrin (as Cl) - 10 mg/L in Hexane	5 x 2 mL
New	U-PANAL0096	Aldrin (as Cl) - 50 mg/L in Hexane	5 x 2 mL
New	U-PANAL0131	Aldrin (as Cl) - 100 mg/L in Hexane	5 x 2 mL
New	U-PANAL0229	Standard Aldrin (as Cl) Set Each kit contains: **Description. — Concentration** Ampoule 1 ... Hexane ..... Solvent blank Ampoule 2 ... Aldrin (as Cl) in Hexane.....0.1 mg/L Ampoule 3 ... Aldrin (as Cl) in Hexane.....0.5 mg/L Ampoule 4 ... Aldrin (as Cl) in Hexane.....1.0 mg/L	4 x 2 mL

AOX standard

New	U-PANAL0094	AOX standard (p-Chlorophenol) - 200 mg Cl/L in Water	20 mL

POX standard

New	U-PANAL0102	POX standard (Dichloromethane) - 100 mg/L in Ethanol	10 mL

Combustion element analyser standards

	Code	Product	Unit
	TOX standard		
New	U-PANAL0239	TOX standard (Trichlorophenol) - 10 mg Cl/L in Methanol	5 x 2 mL
	TX/TS standard beech leaves		
New	U-PANAL0027	TX/TS standard beech leaves - real world matrix	30 g
	2 mM Sodium chloride reference		
New	U-PANAL0101	Sodium chloride - 2 mM/L in Water	100 mL
	Elemental standards - Sulfur and nitrogen mixed standards		
New	U-PANAL0222	Sulfur & Nitrogen Mixed standards Kit Each kit contains:	6 x 2 mL

Description		Concentration
Ampoule 1	Isooctane	Solvent blank
Ampoule 2	Pyridine (as N) in Isooctane	1 mg/L
	Thiophene (as S) in Isooctane	1 mg/L
Ampoule 3	Pyridine (as N) in Isooctane	5 mg/L
	Thiophene (as S) in Isooctane	5 mg/L
Ampoule 4	Pyridine (as N) in Isooctane	10 mg/L
	Thiophene (as S) in Isooctane	10 mg/L
Ampoule 5	Pyridine (as N) in Isooctane	50 mg/L
	Thiophene (as S) in Isooctane	50 mg/L
Ampoule 6	Pyridine (as N) in Isooctane	100 mg/L
	Thiophene (as S) in Isooctane	100 mg/L

New	U-PANAL0222-1	Isooctane (blank)	2 mL
New	U-PANAL0222-2	Thiophene (as S) + Pyridine (as N) - 1 mg/L in Isooctane	2 mL
New	U-PANAL0222-3	Thiophene (as S) + Pyridine (as N) - 1 mg/L in Isooctane	2 mL
New	U-PANAL0222-4	Thiophene (as S) + Pyridine (as N) - 10 mg/L in Isooctane	2 mL
New	U-PANAL0222-5	Thiophene (as S) + Pyridine (as N) - 50 mg/L in Isooctane	2 mL
New	U-PANAL0222-6	Thiophene (as S) + Pyridine (as N) - 100 mg/L in Isooctane	2 mL

Elemental combustion analyzer reagents

Electrolyte Cl

	Code	Product	Unit
New	U-PANAL0153	Electrolyte Cl - 75% (v/v) in Water	250 mL

Electrolyte with perchlorate

New	U-PANAL0152	Electrolyte with Perchlorate - 75 % in water (v/v)	250 mL

KCl Saturated with AgCl

New	U-PANAL0013	KCl Saturated with AgCl - 3 mol/L in Water	250 mL

Phosphoric acid (15% v/v)

New	U-PANAL0188	Phosphoric acid - 15% (v/v) in Water	100 mL

Sodium sulfate anhydrous

New	U-PANAL0084	Sodium Sulfate anhydrous - > 99.9 %	25 g

Iodine

New	U-PANAL0087	Iodine - > 99.9 %	10 g

Agar-Agar

New	U-PANAL0099	Agar-Agar > 99.9 %	25 g

Potassium nitrate

New	U-PANAL0100	Potassium nitrate > 99.9 %	50 g

Potassium iodide

New	U-PANAL0103	Potassium iodide > 99.9 %	25 g

Sodium azide

New	U-PANAL0104	Sodium Azide > 99.9 %	25 g

Ammonium sulfate

New	U-PANAL0167	Ammonium sulfate > 99.9 %	50 g

Sodium persulfate

New	U-PANAL0242	Sodium persulfate - > 99.9 %	250 g

Sodium hydroxide

New	U-PANAL0243	Sodium hydroxide - > 99.9 %	50 g

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- Tribulus Terrestris
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Elemental analysis

Code	Product	Unit
	LGC4000 - LGC4002 Produced in collaboration with the Micro and Chemical Methods Group of the Analytical Division of the Royal Society of Chemistry.	
LGC4001	Dibenzothiophene - Sulfur Certified value S ..... 17.6 %	2 x 500 mg
LGC4002	Acetanilide - Carbon, hydrogen, nitrogen Certified values C ..... 71.14 % H.....6.73 % N ..... 10.33 %	1 g
NIST-141d	Acetanilide - Carbon, hydrogen, nitrogen and oxygen Certified values C ..... 71.089 % N.....10.363 % H ..... 6.711 % O .....11.837 %	2 g
New LGC4003	Benzoic acid - Oxygen Certified value O ..... 26.24 %	1 g
LGC4004	4-Chlorobenzoic acid - Chlorine Certified value Cl ..... 22.65 %	1 g
LGC4008	4-Bromobenzoic acid - Bromine Certified value Br ..... 39.75 %	1 g
LGC4009	2-Iodobenzoic acid - Iodine Certified value I..... 51.17 %	1 g
NIST-142	Anisic acid - Methoxyl Certified value CH_3O^-..... 20.40 %	2 g
NIST-143d	Cystine - Carbon, hydrogen, nitrogen, oxygen and sulfur Certified values C ..... 29.99 % N.....11.66 % S ..... 26.69 % H ..... 5.03 % O .....26.63 %	2 g
NIST-148	Nicotinic acid - Carbon, hydrogen and nitrogen Certified values C ..... 58.54 % H.....4.09 % N ..... 11.38 %	2 g
NIST-2141	Urea - Nitrogen Certified value N ..... 46.635 %	2 g
NIST-2143	p-Fluorobenzoic acid - Fluorine Certified value F..... 13.54 %	2 g
NIST-2144	m-Chlorobenzoic acid - Chlorine Certified value Cl ..... 22.62 %	2 g
NIST-1216	Carbon modified silica - Carbon Certified values Level I C ..... 0.7 % Level II C ..... 9.06 % Level III C ..... 17.04 %	set

Stoichiometry

	Code	Product	Unit
New	NIST-84L	Potassium hydrogen phthalate - Acidmetric value Certified purity.....99.9934% ± 0.0076%	60 g
	NIST-350b	Benzoic acid - Acidmetric value This Standard Reference Material® (SRM®) consists of highly purified benzoic acid (C_6H_5COOH). NIST-350b is intended for use in acidimetric standardization. The certified values are based on the results of determinations from 12 randomly selected bottles from the entire lot of NIST-350b. Each determination was obtained by coulometric acidimetric titration to the inflection point (pH ca. 8.15). $w_{C6H5COOH}$ .....9.9978 % ± 0.0044 % v_{H+} .....188 40 mol kg^{-1} ± 0.000 26 mol kg^{-1}	30 g
	NIST-973	Boric acid - Acidimetric standard This Standard Reference Material (SRM®) is certified as a chemical of known assay and is intended for use as a primary acidimetric standard. The SRM consists of highly purified boric acid (H_3BO_3) in a 100 g bottle. $w_{C6H5COOH}$ ..... 100.009 % ± 0.010 %	100 g
	NIST-723d	2-Amino-2-(hydroxymethyl)-1,3-propanediol (THAM, Tris) - Acidimetric standard Certified value (mass fraction) for Tris, acidimetric assay Tris.....99.924 % ± 0.036 %	50 g
	NIST-136f	Potassium dichromate - Oxidimetric value Certified purity.....99.9954 %	60 g
	NIST-351a	Sodium carbonate - Acidimetric standard This Standard Reference Material (SRM®) is certified as a chemical of known assay and is intended for use as a primary acidimetric standard. The SRM consists of highly purified sodium carbonate (Na2CO3) in a 50 g unit. Certified purity.....99.970 %	50 g
	NIST-987	Strontium carbonate - Assay/isotopic composition Certified values Purity.....99.98 % ^{87}Sr ..... 7.0015 % ^{84}Sr.....0.5574 % ^{88}Sr.....82.5845 % ^{86}Sr ..... 9.8566 %	1 g
	NIST-999b	Potassium chloride - Assay values Certified purity KCl .....99.977 % K..... 52.4379 % Cl .....47.5519 % Indicative values for Br, alkalinity	30 g
	NIST-RM 8040	Sodium oxalate - Reductometric This Reference Material (RM) was prepared to provide material of uniform, high purity for use as a working standard for oxidation-reduction reactions. Reference value Reductometric assay (mass fraction) .....99.951 % ± 0.038 %	60 g
New	NIM-GBW06103B	Sodium chloride - Assay standard for chloride Certified value for purity is given	50 g
	NCS GC76210	Benzene Certified purity.....99.95 %	5 mL
New	NIM-GBW06106C	Potassium hydrogen phthalate - Purity Certified purity.....99.988 %	50 g
New	NIM-GBW06107C	Sodium oxalate Certified purity.....99.7 %	50 g
New	NIM-GBW06108A	Zinc oxide - Complexometric standard Certified value is given in the certificate	50 g
New	NIM-GBW06109A	Potassium chloride - Assay standard for chloride Certified values for Cl and K are given in the certificate	50 g
New	NIM-GBW06110C	Potassium iodate - Oxidimetry Certified purity.....99.97 % (as oxidation of potassium iodate)	50 g
New	NIM-GBW06105D	Potassium dichromate - Oxidimetry Certified purity.....99.979 % (as oxidation of potassium dichromate)	50 g

Pure substances

Code	Product	Unit
RS 1	Silicium dioxide, > 99,99%, mean particle size 150µm	100 g

Certified values

Al 8.7 ± 0.7 µg/g	Ge < 1 µg/g	Ni < 0.2 µg/g
As < 0.1 µg/g	Hg < 0.05 µg/g	Pb < 0.15 µg/g
Ca 0.42 ± 0.09 µg/g	K 0.48 ± 0.27 µg/g	Ti 1.3 ± 0.4 µg/g
Cd < 0.05 µg/g	Li 0.25 ± 0.14 µg/g	Zn < 1.3 µg/g
Cr 0.062 ± 0.021 µg/g	Mg < 0.5 µg/g	Zr < 0.1 µg/g
Cu < 0.1 µg/g	Mn < 0.2 µg/g	
Fe 0.62 ± 0.12 µg/g	Na < 2 µg/g	

RS 2	Aluminium oxide, 99,76%	100 g

Certified values

H_2O 0.22 %	Cr < 1.5 µg/g	Mn < 1.5 µg/g
As (< 0.5) µg/g	Cu < 2.5 µg/g	Mo (< 1) µg/g
B (< 5) µg/g	Fe 3.3 ± 1.6 µg/g	Na < 15 µg/g
Be (< 0.2) µg/g	Ga (< 2) µg/g	Ni < 10 µg/g
Ca 3.1 ± 0.4 µg/g	In (< 0.5) µg/g	Si < 20 µg/g
Cd (< 0.5) µg/g	K (< 5) µg/g	Sn (< 1) µg/g
Ce (< 0.1) µg/g	La (< 0.3) µg/g	Ti < 2 µg/g
Cl (< 10) µg/g	Li < 1 µg/g	V (< 1) µg/g
Co < 1 µg/g	Mg < 3 µg/g	Zr 3.2 ± 1.3 µg/g

(Values in parenthesis are indicative values)

RS 3	Calcium carbonate, 99,79%	100 g

Certified values

CO_2 43.95 %	K (< 30) µg/g	Si (< 20) µg/g
H_2O 0.13 %	La (< 0.5) µg/g	Sn (< 1) µg/g
Al (< 5) µg/g	Mg 183 ± 5 µg/g	Sr 173 ± 8 µg/g
B (< 0.2) µg/g	Mn 3.0 ± 0.5 µg/g	Ti (< 0.5) µg/g
Ba 45.3 ± 1.7 µg/g	Na 47.5 ± 2.7 µg/g	Zn < 2 µg/g
Cd (< 0.5) µg/g	Ni (< 3) µg/g	Zr (< 0.2) µg/g
Ga (< 1.5) µg/g	Pb (< 0.1) µg/g	

(Values in parenthesis are indicative values)

RS 4	Nickel 99,995%, chips (weight 2 - 4mg per chip)	100 g

Certified values

Ag < 1	Ga < 0.2 µg/g	S (< 2) µg/g
Al < 1 µg/g	Hg (< 1) µg/g	Sb < 0.2 µg/g
As < 0.5 µg/g	In (< 0.2) µg/g	Se < 1 µg/g
B (< 2) µg/g	Mg < 0.8 µg/g	Si (< 2) µg/g
C 9.4 ± 2.0 µg/g	Mn < 0.5 µg/g	Sn < 0.3 µg/g
Ca < 1 µg/g	Mo (< 0.2) µg/g	Te (< 0.2) µg/g
Cd < 0.2 µg/g	N 2.5 ± 1.0 µg/g	Tl < 0.2 µg/g
Co < 1 µg/g	Na (< 1) µg/g	V (< 0.2) µg/g
Cr < 0.5 µg/g	Ni 99.995 ± 0.003%	W (< 0.1) µg/g
Cu < 2 µg/g	O (29) µg/g	Zn < 4 µg/g
Fe 4.2 ± 1.6 µg/g	Pb < 1 µg/g	

(Values in parenthesis are indicative values)

RS 5	Nickel oxide, powder with 5 µm - 20 µm particle size	100 g

Certified values

H_2O 0.015 %	Ga < 0.5 µg/g	Sb (< 0.1) µg/g
Ag < 1 µg/g	In (< 1) µg/g	Se < 1 µg/g
Al (< 15) µg/g	K < 2 µg/g	Si (< 5) µg/g
As < 0.2 µg/g	Li (< 2) µg/g	Sn (< 1) µg/g
Ba < 1 µg/g	Mg < 1 µg/g	Sr (< 1) µg/g
C 14 ± 8 µg/g	Mn < 1 µg/g	Te (< 0.2) µg/g
Ca 2.2 ± 0.9 µg/g	Mo < 5 µg/g	Ti (< 2) µg/g
Cd < 0.2 µg/g	Na < 2 µg/g	Tl (< 0.5) µg/g
Co < 2 µg/g	Ni 78.57 ± 0.06%	V < 1 µg/g
Cr 16.1 ± 2.0 µg/g	O 21.41 ± 0.06%	W (< 1) µg/g
Cu 1.53 ± 0.18 µg/g	Pb < 2 µg/g	Zn 3.4 ± 0.7 µg/g
Fe 41 ± 7 µg/g	S (4) µg/g	Zr (< 1) µg/g

(Values in parenthesis are indicative values)

RS 6A	Magnesium oxide 100 µm - 350 µm particle size	100 g

Certified values

H_2O 110 µg/g	Cr 9.2 µg/g	Pb (< 5) µg/g
Al 45 ± 9 µg/g	Cu (< 6) µg/g	Sr 2.0 µg/g
Ba (< 10) µg/g	Fe 72 µg/g	Ti 1.3 µg/g
C (< 50) µg/g	Mg 60.19 %	V 8.4 µg/g
Ca 994 ± 93 µg/g	Mn 5.4 µg/g	Zn (< 6) µg/g
Ce — µg/g	Mo (< 10) µg/g	Zr (< 20) µg/g
Co (< 5) µg/g	Ni 3.9 µg/g	

(Values in parenthesis are indicative values)

Code	Product	Unit
RS 6B	Magnesium oxide 50 µm - 100 µm particle size Certified values H_2O ..... 283 µg/g Al..... 49 ± 8 µg/g Ba .....(< 20) µg/g C .....(< 210) µg/g Ca ..... 956 ± 149 µg/g Co .....(< 5) µg/g Cr ..... 8.1 µg/g Cu..... (< 6) µg/g Fe .....71 µg/g Mg ..... 60.17 % Mn .....5.2 µg/g Mo ..... (< 10) µg/g Ni .....3.3 µg/g Pb ..... (< 5) µg/g Sr ..... 2.1 µg/g Ti..... 1.2 µg/g V ..... 7.8 µg/g Zn.....(< 6) µg/g Zr.....(< 105) µg/g (Values in parenthesis are indicative values)	100 g

Organo-metallic compounds

Code	Product	Unit
NIST-1051b	Barium cyclohexanebutyrate - Barium Certified value Ba .....28.7 %	5 g
NIST-1052b	Bis(1-phenyl-1,3-butanediono) oxovanadium (IV) - Vanadium Certified value V .....13.01 %	5 g
NIST-1053a	Cadmium cyclohexanebutyrate - Cadmium Certified value Cd .....24.8 %	5 g
NIST-1057b	Dibutyltin bis (2-ethylhexanoate) - Tin Certified value Sn .....22.95 %	5 g
NIST-1065b	Nickel cyclohexanebutyrate - Nickel Certified value Ni .....13.89 %	5 g
NIST-1066A	Octaphenylcyclotetrasiloxane - Silicon Certified value Si.....14.14 %	5 g
NIST-1069b	Sodium cyclohexanebutyrate - Sodium Certified value Na .....12.0 %	5 g
NIST-1073b	Zinc cyclohexanebutyrate - Zinc Certified value Zn.....16.66 %	5 g
NIST-1075a	Aluminium 2-ethylhexanoate - Aluminium Certified value Al.....8.07 %	5 g
NIST-1077a	Silver 2-ethylhexanoate - Silver Certified value Ag .....42.60 %	5 g
NIST-1078b	Tris (1-phenyl-1,3-butanediono) chromium (III) - Chromium Certified value Cr .....9.6 %	5 g
NIST-1079b	Tris (1-phenyl-1,3-butanediono) iron (III) - Iron Certified value Fe.....10.45 %	5 g
NIST-1080a	Bis (1-phenyl-1,3-butanediono) copper (II) - Copper Certified value Cu .....16.37 %	5 g

Isotopes

	Code	Product	Unit
New	ERM-AE701	Calcium-41 - Isotopes	8 x 25 mL

Ca in 0.6 M HNO3 / Isotope amount ratio n(^{41}Ca)/n(^{40}Ca)

Material number	Certified value
AE701/1	1.011 4 x 10-^{6}
AE701/2	1.023 5 x 10-^{7}
AE701/3	1.018 1 x 10-^{8}
AE701/4	1.047 9 x 10-^{9}
AE701/5	1.052 0 x 10-^{10}
AE701/6	1.091 3 x 10-^{11}
AE701/7	1.054 9 x 10-^{12}
AE701/8	1.052 4 x 10-^{13}

New ERM-AE641 — Chloride - Isotopes — 4-5 mL

Cl in water	Certified value
amount content mol (^{35}Cl) x g^{-1} (solution)	1.895 9 x 10-^{5}
amount ratio n (^{37}Cl)/n(^{35}Cl)	0.319 77

New ERM-AE642 — Chloride-37 - Isotopes — 4-5 mL

Cl in water	Certified value
amount content mol (^{37}Cl) x g^{-1} (solution)	4.375 x 10-^{6}
amount ratio n (^{35}Cl)/n(^{37}Cl)	0.019 14

New ERM-AE633 — Copper - Isotopes — 4-5 mL

Cu in 1 M nitric acid	Certified value
amount content mol (^{63}Cu) x g^{-1} (solution)	5.998 x 10-^{6}
amount ration n (^{65}Cu)/n(^{63}Cu)	0.445 63

New ERM-AE647 — Copper-63 - Isotopes — 4 mL

Cu in 1 M subboiled nitric acid	Certified value
amount content mol (^{63}Cu) x g^{-1} (solution)	1.349 74 x 10-^{4}
amount ratio n (^{65}Cu)/n(^{63}Cu)	0.445 60

New ERM-AE637 — Magnesium - Isotopes — 5 mL

Mg in 0.2 M subboiled nitric acid	Certified value
amount content mol (^{24}Mg) x g^{-1} (solution)	7.9137 x 10-^{7}
amount rations of Mg n (^{26}Mg)/n(^{24}Mg)	0.139 68
n (^{25}Mg)/n(^{24}Mg)	0.126 86

New ERM-AE638 — Magnesium-26 - Isotopes — 5 mL

Mg in 0.1 M subboiled nitric acid	Certified value
amount content mol (^{26}Mg) x g^{-1} (solution)	8.574 x 10-^{7}
amount rations of Mg n (^{24}Mg)/n(^{26}Mg)	0.003 104
n (^{25}Mg)/n(^{26}Mg)	0.001 084

ERM-AE639 — Mercury - Isotopes — Amp.

5 mL of solution

Hg in a solution of 0.5 M HCl + 0.05 % (m/v) $K_2Cr_2O_7$

	Certified values[1)]	U[2)]
mol (^{202}Hg) · g^{-1} (solution)	1.1891 · 10-^{8}	0.0050 · 10-^{8}
n(^{196}Hg)/n(^{202}Hg)	0.004972	0.000046
n(^{198}Hg)/n(^{202}Hg)	0.3306	0.0021
n(^{199}Hg)/n(^{202}Hg)	0.5619	0.0028
n(^{200}Hg)/n(^{202}Hg)	0.7705	0.0028
n(^{201}Hg)/n(^{202}Hg)	0.44126	0.00088
n(^{204}Hg)/n(^{202}Hg)	0.23027	0.00075

[1)] The values of the Hg isotope ratios are traceable to the SI via the values of the Tl isotope ratios of the isotopic reference material NIST SRM 997. The Hg content of this natural isotopic spike is traceable to Hg amount content measurements based on gravimetry, whereby a mass of pure substance (Hg2Cl2) was weighed and corrections were made for impurities.

[2)] Estimated expanded uncertainty U with a coverage factor k=2, corresponding to a level of confidence of about 95 %, as defined in the Guide to the Expression of Uncertainty in Measurement (GUM), ISO, 1995.

Code	Product	Unit

ERM-AE640 — Mercury - Isotopes — Amp.

5 mL of solution

Hg in a solution of 0.5 M HCl + 0.05 % (m/v) $K_2Cr_2O_7$

	Certified values[1)]	U[2)]
mol (^{202}Hg) · g^{-1} (solution)	$1.471 \cdot 10^{-8}$	$0.011 \cdot 10^{-8}$
n(^{196}Hg)/n(^{202}Hg)	0.00001809	0.00000038
n(^{198}Hg)/n(^{202}Hg)	0.000623	0.000011
n(^{199}Hg)/n(^{202}Hg)	0.001603	0.000016
n(^{200}Hg)/n(^{202}Hg)	0.005499	0.000034
n(^{201}Hg)/n(^{202}Hg)	0.013351	0.000052
n(^{204}Hg)/n(^{202}Hg)	0.002595	0.000021

1) The values of the Hg isotope ratios are traceable to the SI via the values of the Tl isotope ratios of the isotopic reference material NIST SRM 997. The Hg content of this natural isotopic spike is traceable to Hg amount content measurements based on gravimetry, whereby a mass of pure substance (Hg2Cl2) was weighed and corrections were made for impurities.

2) Estimated expanded uncertainty U with a coverage factor k=2, corresponding to a level of confidence of about 95 %, as defined in the Guide to the Expression of Uncertainty in Measurement (GUM), ISO, 1995.

New ERM-AE649 — Thallium - Isotopes — 4-5 mL

Tl in 1 M nitric acid

		Certified value
amount content	mol (^{205}Tl) x g^{-1} (solution)	$8.368\ 8 \times 10^{-7}$
amount ratio	n (^{203}Tl)/n(^{205}Tl)	0.418 91

ERM-AE101 — Boric acid (BAM-I001) - Isotopic composition — 30 mL

Certified values

Isotope amount ratio 0.28197 (40)
n(^{10}B)/n(^{11}B)

Amount fraction x 100
n(^{10}B)/n(B)..... 21.995 (24)
n(^{11}B)/n(B)..... 78.005 (24)

Mass fraction x 100
m(^{10}B)/m(B)..... 20.411 (22)
m(^{11}B)/m(B)..... 79.589 (22)

Molar mass
M(B) in g·mol^{-1} 10.79015 (24)

The uncertainties are given in parenthesis and apply to the last two digits of the value.

ERM-AE102 — Boric acid (BAM-I002) - Isotopic composition — 30 mL

Certified values

Isotope amount ratio 0.42485 (60)
n(^{10}B)/n(^{11}B)

Amount fraction x 100
n(^{10}B)/n(B)..... 29.817 (30)
n(^{11}B)/n(B)..... 70.183 (30)

Mass fraction x 100
m(^{10}B)/m(B)..... 27.871 (28)
m(^{11}B)/m(B)..... 72.129 (28)

Molar mass
M(B) in g·mol^{-1} 10.71222 (30)

The uncertainties are given in parenthesis and apply to the last two digits of the value.

ERM-AE103 — Boric acid (BAM-I003) - Isotopic composition — 30 mL

Certified values

Isotope amount ratio 0.9895 (14)
n(^{10}B)/n(^{11}B)

Amount fraction x 100
n(^{10}B)/n(B)..... 49.737 (34)
n(^{11}B)/n(B)..... 50.263 (34)

Mass fraction x 100
m(^{10}B)/m(B)..... 47.368 (34)
m(^{11}B)/m(B)..... 52.632 (34)

Molar mass
M(B) in g·mol^{-1} 10.51374 (34)

The uncertainties are given in parenthesis and apply to the last two digits of the value.

Code	Product	Unit
ERM-AE104	Boric acid (BAM-I004) - Isotopic composition Certified values Isotope amount ratio ..... 0.45966 (62) $n(^{10}B)/n(^{11}B)$ Amount fraction x 100 $n(^{10}B)/n(B)$..... 31.491 (29) $n(^{11}B)/n(B)$..... 68.509 (29) Mass fraction x 100 $m(^{10}B)/m(B)$ ..... 29.481 (28) $m(^{11}B)/m(B)$ ..... 70.519 (28) Molar mass $M(B)$ in $g \cdot mol^{-1}$ ..... 10.69554 (29) The uncertainties are given in parenthesis and apply to the last two digits of the value.	30 mL
NIST-951a	Boric acid - Boron isotopes Certified values Abundance ratio $^{10}B/^{11}B$..... 0.2473 ^{10}B .....19.827 % ^{11}B..... 80.173 %	2 g
NIST-952	Boric acid - Assay/isotopic composition Certified values Purity..... 99.97 % Abundance ratio $^{10}B/^{11}B$..... 18.80 ^{10}B .....94.949 % ^{11}B..... 5.051 %	250 mg
NIST-979	Chromium nitrate - Isotopic composition Certified values ^{50}Cr ..... 4.345 % ^{53}Cr.....9.501 % ^{52}Cr ..... 83.789 % ^{54}Cr.....2.365 %	250 mg
NIST-994	Gallium metal - Isotopic composition Certified values Abundance ratio $^{69}Ga/^{71}Ga$..... 1.50676 ^{69}Ga ..... 60.1079 % ^{71}Ga.....39.8921 %	250 mg
NIST-981	Lead metal, natural - Isotopic composition Certified values ^{204}Pb ..... 1.4255 % ^{207}Pb.....22.0833 % ^{206}Pb ..... 24.1442 % ^{208}Pb.....52.3470 %	1 g
NIST-980	Magnesium - Isotopic composition	250 mg
NIST-986	Nickel - Isotopic composition Certified values ^{58}Ni..... 68.076886 % ^{61}Ni .....1.139894 % ^{64}Ni..... 0.925546 % ^{60}Ni..... 26.223146 % ^{62}Ni .....3.634528 %	500 mg
NIST-984	Rubidium chloride - Assay/isotopic composition Certified values Purity..... 99.90 % Abundance ratio $^{85}Rb/^{87}Rb$ 2.593	250 mg
New LGC7330	Selenomethionine enriched with 76Se Assessed value ^{76}Se Isotopic abundance.....99.8 +0.2 / -3.1 % (m/m)	10 mg
NIST-977	Sodium bromide - Isotopic composition Certified values Abundance ratio $^{79}Br/^{81}Br$ ..... 1.02784 ^{79}Br.....50.686 % ^{81}Br..... 49.314 %	250 mg
NIST-975a	Sodium chloride - Isotopic composition Certified values Absolute abundance ratio $^{35}Cl/^{37}Cl$ ..... 3.1279 ± 0.0047 Isotopic composition ^{35}Cl ..... 75.774 ± 0.028 atom% ^{37}Cl.....24.226 ± 0.028 atom% Atomic weight .....35.45265 ± 0.00055	250 mg

Code	Product	Unit
NIST-978a	Silver nitrate - Assay/isotopic composition Certified values Purity.....99.99 % Abundance ratio $^{107}Ag/^{109}Ag$ ..... 1.07638 ^{107}Ag ..... 51.8392 % ^{109}Ag.....48.1608 %	250 mg
NIST-987	Strontium carbonate - Assay/isotopic composition Certified values Purity.....99.98 % ^{87}Sr ..... 7.0015 % ^{84}Sr.....0.5574 % ^{88}Sr.....82.5845 % ^{86}Sr ..... 9.8566 %	1 g
NIST-997	Thallium metal - Isotopic composition Certified values Abundance ratio $^{205}Tl/^{203}Tl$..... 2.38714 ^{203}Tl.....29.5235 % ^{205}Tl ..... 70.4765 %	0.25 g
NIST-RM 8573	L-Glutamic acid - Carbon-13 and nitrogen-15 isotopes (USGS40) This reference materials is intended to aid in normalizing isotope-amount ratio data as well as developing and validating methods for measuring the relative difference in carbon and nitrogen isotope-amounts ratios in biological materials. It should be used in conjuction with NIST-RM 8574. Please ask for futher details.	1 g
NIST-RM 8574	L-Glutamic acid - Carbon-13 and nitrogen-15 isotopes (USGS41) This reference materials is intended to aid in normalizing isotope-amount ratio data as well as developing and validating methods for measuring the relative difference in carbon and nitrogen isotope-amounts ratios in biological materials. It should be used in conjuction with NIST-RM 8573. Please ask for futher details.	0.5 g
IAEA-305	Ammonium sulphate - Nitrogen-15 2 x 100 mg of Ammonium sulfate $(^{15}NH_4)_2SO_4$ in solid, crystalline form Assessed values IAEA-305A ^{15}N.....39.8 per mille IAEA-305B ^{15}N.....375.3 per mille	unit
IAEA-311	Ammonium sulphate - Nitrogen-15 Assessed value ^{15}N.....2.05 %	100 mg
IAEA-303	Sodium bicarbonate - Carbon-13 Assessed values Solution A ^{13}C..... 93.3 activity/mL Solution B ^{13}C..... 466 activity/mL	2 x 3 mL
IAEA-304	Oxygen-18 labelled water Two Oxygen-18 labelled water samples (A and B) prepared from oxygen-18 enriched water and diluted with distilled water Sample A Assessed value:..... ^{18}O ..... 251.7δD_{VSMOW*} Sample B Assessed value:..... ^{18}O ..... 502.5δD_{VSMOW*} *The isotopic compositions are given in parts per thousand difference from isotope ratio standard Vienna Standard Mean Ocean Water (VSMOW).	2 x 10 mL

High purity inorganic chemicals

LGC Standards is commited to providing the highest-purity inorganic chemicals for the most demanding applications from MV Laboratories. Their core technology is the development and application of synthetic methods for the removal of trace impurities on the part-per-million range. They are able to do this without the use of zone refining, sublimation, or other techniques that typically add costs to the manufacturing process. This technology, combined with an expertise in inorganic synthesis, allows cost-effective production of hundreds of compounds with purities from 99.99% up to 99.9999%. As a global leader in the production of chemicals of ultra-high-purity inorganic chemicals for chemical analysis and synthesis, crystal growth, nanotechnology, special ceramics, and photonics research and development, MV Laboratories provides our customers with materials and services second to none. They remove trace impurities down to the sub-ppm range and employ the best quality control standards in the industry to guarantee the purity of their wide range of chemicals. Analytical documentation is created for each product test performed. MV Laboratories is dedicated to offering the most comprehensive certificate of analysis available on the market today.

Custom synthesis: MV Laboratories can prepare hundreds of inorganic materials, used in a variety of applications, in quantities ranging from a few gram to hundred of kilograms, including:

Hydrogen hexachloroplatinate, 99.999%	Fuel cell applications
Ammonium hexafluorotitanate, 99.99%	Nanotechnology
Hydrogen tetrachloroaurate hydrate, 99.999%	Catalysis
Tellurium dioxide, 99.999%	Crystal growth
Ytterbium chloride hexahydrate, 99.999%	Fiber optics
Yttrium oxide, 99.999%	Lasers
Indium oxide, 99.999%	Photovoltaics

	Code	Product	Unit
New	MV-AL50DF1173-LG0010	Aluminum chloride hexahydrate, 99.999%	10 g
New	MV-AL50DF1173-LG0050	Aluminum chloride hexahydrate, 99.999%	50 g
New	MV-AL50DS3073-LG0025	Aluminum nitrate nonahydrate, 99.999%	25 g
New	MV-AL50DS3073-LG0100	Aluminum nitrate nonahydrate, 99.999%	100 g
New	MV-AL50DX1083-LG0025	Aluminum oxide, 99.999%	25 g
New	MV-AL50DX1083-LG0100	Aluminum oxide, 99.999%	100 g
New	MV-AL55BX0000-LG0025	Aluminum shot, 99.9995%	25 g
New	MV-AL55BX0000-LG0100	Aluminum shot, 99.9995%	100 g
New	MV-NH50DX1171-LG0025	Ammonium chloride, 99.999%	25 g
New	MV-NH50DX1171-LG0100	Ammonium chloride, 99.999%	100 g
New	MV-NH50DX4251-LG0025	Ammonium dighydrogen phosphate, 99.999%	25 g
New	MV-NH50DX4251-LG0100	Ammonium dighydrogen phosphate, 99.999%	100 g
New	MV-NH40DX4381-LG0001	Ammonium hexachloroosmate, 99.99%	1 g
New	MV-NH40DX4381-LG0005	Ammonium hexachloroosmate, 99.99%	5 g
New	MV-NH45DX4421-LG0001	Ammonium hexachlororhodate, 99.995%	1 g
New	MV-NH45DX4421-LG0005	Ammonium hexachlororhodate, 99.995%	5 g
New	MV-NH40DX4431-LG0001	Ammonium hexachlororuthenate(IV), 99.99%	1 g

	Code	Product	Unit
New	MV-NH40DX4431-LG0005	Ammonium hexachlororuthenate(IV), 99.99%	5 g
New	MV-NH40DX4511-LG0025	Ammonium hexafluorotitanate, 99.99%	25 g
New	MV-NH40DX4511-LG0100	Ammonium hexafluorotitanate, 99.99%	100 g
New	MV-NH50DX4481-LG0025	Ammonium hexafluorosilicate, 99.999%	25 g
New	MV-NH50DX4481-LG0100	Ammonium hexafluorosilicate, 99.999%	100 g
New	MV-NH50DX4591-LG0025	Ammonium hydrogen fluoride, 99.999%	25 g
New	MV-NH50DX4591-LG0100	Ammonium hydrogen fluoride, 99.999%	100 g
New	MV-NH48DX4761-LG0010	Ammonium metavanadate, 99.999%	10 g
New	MV-NH48DX4761-LG0050	Ammonium metavanadate, 99.999%	50 g
New	MV-NH50DX3421-LG0025	Ammonium molybdate, 99.999%	25 g
New	MV-NH50DX3421-LG0100	Ammonium molybdate, 99.999%	100 g
New	MV-NH50DX3071-LG0025	Ammonium nitrate, 99.999%	25 g
New	MV-NH50DX3071-LG0100	Ammonium nitrate, 99.999%	100 g
New	MV-NH50DX3161-LG0010	Ammonium sulfate, 99.999%	10 g
New	MV-NH50DX3161-LG0050	Ammonium sulfate, 99.999%	50 g
New	MV-NH40DX5011-LG0001	Ammonium tetrachloroplatinate(II), 99.99%	1 g
New	MV-NH40DX5011-LG0005	Ammonium tetrachloroplatinate(II), 99.99%	5 g
New	MV-NH45DX5101-LG0001	Ammonium tetrathiomolybdate, 99.995%	1 g
New	MV-NH45DX5101-LG0005	Ammonium tetrathiomolybdate, 99.995%	5 g
New	MV-BA45DY4652-LG0025	Barium hydroxide hydrate, 99.995%	25 g
New	MV-BA45DY4652-LG0100	Barium hydroxide hydrate, 99.995%	100 g
New	MV-BE50DX5262-LG0005	Beryllium acetate basic, 99.999%	5 g
New	MV-BE50DX5262-LG0025	Beryllium acetate basic, 99.999%	25 g
New	MV-BX50DX5173-LG0025	Boric acid, 99.999%	25 g
New	MV-BX50DX5173-LG0100	Boric acid, 99.999%	100 g
New	MV-CA50DX3062-LG0010	Calcium carbonate, 99.999%	10 g
New	MV-CA50DX3062-LG0050	Calcium carbonate, 99.999%	50 g
New	MV-CA45DX4652-LG0010	Calcium hydroxide, 99.995%	10 g
New	MV-CA45DX4652-LG0050	Calcium hydroxide, 99.995%	50 g
New	MV-CS50DX3061-LG0010	Cesium carbonate, 99.999%	10 g

	Code	Product	Unit
New	MV-CS50DX3061-LG0050	Cesium carbonate, 99.999%	50 g
New	MV-CS50DX1171-LG0010	Cesium chloride, 99.999%	10 g
New	MV-CS50DX1171-LG0050	Cesium chloride, 99.999%	50 g
New	MV-CS50DX1531-LG0010	Cesium iodide, 99.999%	10 g
New	MV-CS50DX1531-LG0050	Cesium iodide, 99.999%	50 g
New	MV-CS20DX3161-LG0005	Cesium sulfate, 99.995%	5 g
New	MV-CS20DX3161-LG0025	Cesium sulfate, 99.995%	25 g
New	MV-CR40DS3073-LG0010	Chromium nitrate nonahydrate, 99.99%	10 g
New	MV-CR40DS3073-LG0050	Chromium nitrate nonahydrate, 99.99%	50 g
New	MV-CR50DS3073-LG0005	Chromium nitrate nonahydrate, 99.999%	5 g
New	MV-CR50DS3073-LG0025	Chromium nitrate nonahydrate, 99.999%	25 g
New	MV-CO50DX0000-LG0010	Cobalt powder, 99.999%	10 g
New	MV-CO50DX0000-LG0050	Cobalt powder, 99.999%	50 g
New	MV-CU58BX0000-LG0025	Copper shot, 99.9995%	25 g
New	MV-CU58BX0000-LG0100	Copper shot, 99.9995%	100 g
New	MV-CU50DX1531-LG0010	Copper(I) iodide, 99.999%	10 g
New	MV-CU50DX1531-LG0050	Copper(I) iodide, 99.999%	50 g
New	MV-PT40HX5692-LG0001	trans-Dichlorodiammineplatinum(II), 99.99%	1 g
New	MV-PT40HX5692-LG0005	trans-Dichlorodiammineplatinum(II), 99.99%	5 g
New	MV-GA50DX1083-LG0010	Gallium oxide, 99.999%	10 g
New	MV-GA50DX1083-LG0050	Gallium oxide, 99.999%	50 g
New	MV-AU40DX1173-LG0001	Gold chloride, 99.99%	1 g
New	MV-AU40DX1173-LG0005	Gold chloride, 99.99%	5 g
New	MV-AU50BX0000-LG0001	Gold shot, 99.999%	1 g
New	MV-AU50BX0000-LG0005	Gold shot, 99.999%	5 g
New	MV-HF40DX1084-LG0001	Hafnium oxide, 99.99%	1 g
New	MV-HF40DX1084-LG0005	Hafnium oxide, 99.99%	5 g
New	MV-HX50DY4401-LG0001	Hydrogen hexachloroplatinate(IV) hydrate, 99.999%	1 g
New	MV-HX50DY4401-LG0005	Hydrogen hexachloroplatinate(IV) hydrate, 99.999%	5 g
New	MV-HX50DY4991-LG0001	Hydrogen tetrachloroaurate hydrate, 99.999%	1 g

	Code	Product	Unit
New	MV-HX50DY4991-LG0005	Hydrogen tetrachloroaurate hydrate, 99.999%	5 g
New	MV-IN40DZ3013-LG0010	Indium acetate anhydrous, 99.99%	10 g
New	MV-IN40DZ3013-LG0050	Indium acetate anhydrous, 99.99%	50 g
New	MV-IN50DX1083-LG0010	Indium oxide, 99.999%	10 g
New	MV-IN50DX1083-LG0050	Indium oxide, 99.999%	50 g
New	MV-IN50BX0000-LG0025	Indium shot, 99.999%	25 g
New	MV-IN50BX0000-LG0100	Indium shot, 99.999%	100 g
New	MV-FE45GX0000-LG0025	Iron granules, 99.995%	25 g
New	MV-FE45GX0000-LG0100	Iron granules, 99.995%	100 g
New	MV-FE55DS3073-LG0010	Iron nitrate nonohydrate, 99.9995%	10 g
New	MV-FE55DS3073-LG0050	Iron nitrate nonohydrate, 99.9995%	50 g
New	MV-FE40DX1083-LG0025	Iron oxide, 99.99%	25 g
New	MV-FE40DX1083-LG0100	Iron oxide, 99.99%	100 g
New	MV-FE50DX1083-LG0010	Iron oxide, 99.999%	10 g
New	MV-FE50DX1083-LG0050	Iron oxide, 99.999%	50 g
New	MV-LA50DX1083-LG0025	Lanthanum oxide, 99.999%	25 g
New	MV-LA50DX1083-LG0100	Lanthanum oxide, 99.999%	100 g
New	MV-LI50DX3061-LG0025	Lithium carbonate, 99.999%	25 g
New	MV-LI50DX3061-LG0100	Lithium carbonate, 99.999%	100 g
New	MV-LI40DX1091-LG0005	Lithium fluoride, 99.99%	5 g
New	MV-LI40DX1091-LG0025	Lithium fluoride, 99.99%	25 g
New	MV-LI50DX3071-LG0010	Lithium nitrate, 99.999%	10 g
New	MV-LI50DX3071-LG0050	Lithium nitrate, 99.999%	50 g
New	MV-LU50DX1083-LG0001	Lutetium oxide, 99.999%	1 g
New	MV-LU50DX1083-LG0005	Lutetium oxide, 99.999%	5 g
New	MV-MG50DF3072-LG0010	Magnesium nitrate hexahydrate, 99.999%	10 g
New	MV-MG50DF3072-LG0050	Magnesium nitrate hexahydrate, 99.999%	50 g
New	MV-MG55DF3072-LG0010	Magnesium nitrate hexahydrate, 99.9995%	10 g
New	MV-MG55DF3072-LG0050	Magnesium nitrate hexahydrate, 99.9995%	50 g
New	MV-MG48DX1082-LG0010	Magnesium oxide, 99.995%	10 g

	Code	Product	Unit
New	MV-MG48DX1082-LG0050	Magnesium oxide, 99.995%	50 g
New	MV-MN50DD3012-LG0010	Manganese acetate tetrahydrate, 99.999%	10 g
New	MV-MN50DD3012-LG0050	Manganese acetate tetrahydrate, 99.999%	50 g
New	MV-MN40DX1082-LG0010	Manganese(II) oxide, 99.99%	10 g
New	MV-MN40DX1082-LG0050	Manganese(II) oxide, 99.99%	50 g
New	MV-MN40DX1084-LG0005	Manganese(IV) oxide, 99.99%	5 g
New	MV-MN40DX1084-LG0025	Manganese(IV) oxide, 99.99%	25 g
New	MV-MO40DX1086-LG0005	Molybdenum oxide, 99.99%	5 g
New	MV-MO40DX1086-LG0025	Molybdenum oxide, 99.99%	25 g
New	MV-NI40DX0000-LG0025	Nickel powder, 99.99%	25 g
New	MV-NI40DX0000-LG0100	Nickel powder, 99.99%	100 g
New	MV-NI50DX0000-LG0025	Nickel powder, 99.999%	25 g
New	MV-NI50DX0000-LG0100	Nickel powder, 99.999%	100 g
New	MV-PD50DX1172-LG0001	Palladium chloride, 99.999%	1 g
New	MV-PD50DX1172-LG0005	Palladium chloride, 99.999%	5 g
New	MV-PD40GX0000-LG0001	Palladium granules, 99.99%	1 g
New	MV-PD40GX0000-LG0005	Palladium granules, 99.99%	5 g
New	MV-PD50DX0000-LG0001	Palladium powder, 99.999%	1 g
New	MV-PD50DX0000-LG0005	Palladium powder, 99.999%	5 g
New	MV-PD50DX1082-LG0001	Palladium(II) oxide, 99.999%	1 g
New	MV-PD50DX1082-LG0005	Palladium(II) oxide, 99.999%	5 g
New	MV-PT50DX0000-LG0001	Platinum powder, 99.999%	1 g
New	MV-PT50DX0000-LG0005	Platinum powder, 99.999%	5 g
New	MV-KX50DX1351-LG0010	Potassium bromide, 99.999%	10 g
New	MV-KX50DX1351-LG0050	Potassium bromide, 99.999%	50 g
New	MV-KX50DX1171-LG0025	Potassium chloride, 99.999%	25 g
New	MV-KX50DX1171-LG0100	Potassium chloride, 99.999%	100 g
New	MV-KX40DX1091-LG0025	Potassium fluoride, 99.99%	25 g
New	MV-KX40DX1091-LG0100	Potassium fluoride, 99.99%	100 g
New	MV-KX40DX1081-LG0100	Potassium hydroxide, 99.99%	100 g

	Code	Product	Unit
New	MV-KX40DX1081-LG0500	Potassium hydroxide, 99.99%	500 g
New	MV-KX50DX1531-LG0025	Potassium iodide, 99.999%	25 g
New	MV-KX50DX1531-LG0100	Potassium iodide, 99.999%	100 g
New	MV-KX50DX3071-LG0025	Potassium nitrate, 99.999%	25 g
New	MV-KX50DX3071-LG0100	Potassium nitrate, 99.999%	100 g
New	MV-KX40DX5011-LG0001	Potassium tetrachloroplatinate, 99.99%	1 g
New	MV-KX40DX5011-LG0005	Potassium tetrachloroplatinate, 99.99%	5 g
New	MV-RE45DX0000-LG0001	Rhenium powder, 99.995%	1 g
New	MV-RE45DX0000-LG0005	Rhenium powder, 99.995%	5 g
New	MV-RH40DY1173-LG0001	Rhodium chloride hydrate, 99.99%	1 g
New	MV-RH40DY1173-LG0005	Rhodium chloride hydrate, 99.99%	5 g
New	MV-RB28DX1171-LG0010	Rubidium chloride, 99.8%	10 g
New	MV-RB28DX1171-LG0050	Rubidium chloride, 99.8%	50 g
New	MV-RB30DF1171-LG0010	Rubidium chloride, 99.9%	10 g
New	MV-RB30DF1171-LG0050	Rubidium chloride, 99.9%	50 g
New	MV-RB40DX1171-LG0010	Rubidium chloride, 99.99%	10 g
New	MV-RB40DX1171-LG0050	Rubidium chloride, 99.99%	50 g
New	MV-RU38DY1173-LG0001	Ruthenium chloride hydrate, 99.98%	1 g
New	MV-RU38DY1173-LG0005	Ruthenium chloride hydrate, 99.98%	5 g
New	MV-RU20DX1173-LG0001	Ruthenium chloride, anhydrous, 99%	1 g
New	MV-RU20DX1173-LG0005	Ruthenium chloride, anhydrous, 99%	5 g
New	MV-SC40DX1083-LG0001	Scandium oxide, 99.99%	1 g
New	MV-SC40DX1083-LG0005	Scandium oxide, 99.99%	5 g
New	MV-SC50DX1083-LG0001	Scandium oxide, 99.999%	1 g
New	MV-SC50DX1083-LG0005	Scandium oxide, 99.999%	5 g
New	MV-SE50DX5244-LG0025	Selenious acid, 99.999%	25 g
New	MV-SE50DX5244-LG0100	Selenious acid, 99.999%	100 g
New	MV-SI50DX1084-LG0025	Silicon dioxide, 99.999%	25 g
New	MV-SI50DX1084-LG0100	Silicon dioxide, 99.999%	100 g
New	MV-AG55DX1351-LG0005	Silver bromide, 99.999%	5 g

	Code	Product	Unit
New	MV-AG55DX1351-LG0025	Silver bromide, 99.999%	25 g
New	MV-AG50KX1171-LG0001	Silver chloride, 100 mesh, 99.9999%	1 g
New	MV-AG50KX1171-LG0005	Silver chloride, 100 mesh, 99.9999%	5 g
New	MV-NA50DX3061-LG0025	Sodium carbonate, 99.999%	25 g
New	MV-NA50DX3061-LG0100	Sodium carbonate, 99.999%	100 g
New	MV-NA50DX1171-LG0025	Sodium chloride, 99.999%	25 g
New	MV-NA50DX1171-LG0100	Sodium chloride, 99.999%	100 g
New	MV-NA50DX3071-LG0025	Sodium nitrate, 99.999%	25 g
New	MV-NA50DX3071-LG0100	Sodium nitrate, 99.999%	100 g
New	MV-NA50DX3161-LG0010	Sodium sulfate, 99.999%	10 g
New	MV-NA50DX3161-LG0050	Sodium sulfate, 99.999%	50 g
New	MV-NA50DE5131-LG0005	Sodium thiosulfate pentahydrate, 99.999%	5 g
New	MV-NA50DE5131-LG0025	Sodium thiosulfate pentahydrate, 99.999%	25 g
New	MV-TE40DX1084-LG0010	Tellurium dioxide, 99.999%	10 g
New	MV-TE40DX1084-LG0050	Tellurium dioxide, 99.999%	50 g
New	MV-TE50DX1084-LG0010	Tellurium dioxide, 99.999%	10 g
New	MV-TE50DX1084-LG0050	Tellurium dioxide, 99.999%	50 g
New	MV-TE50DX0000-LG0010	Tellurium powder, 99.999%	10 g
New	MV-TE50DX0000-LG0050	Tellurium powder, 99.999%	50 g
New	MV-PT50DY5592-LG0001	Tetraamineplatinum chloride hydrate, 99.999%	1 g
New	MV-PT50DY5592-LG0005	Tetraamineplatinum chloride hydrate, 99.999%	5 g
New	MV-PT50DX5612-LG0001	Tetraamineplatinum nitrate, 99.999%	1 g
New	MV-PT50DX5612-LG0005	Tetraamineplatinum nitrate, 99.999%	5 g
New	MV-TL50DX3071-LG0005	Thallium nitrate, 99.999%	5 g
New	MV-TL50DX3071-LG0025	Thallium nitrate, 99.999%	25 g
New	MV-TI50DX1084-LG0010	Titanium oxide, 99.999%	10 g
New	MV-TI50DX1084-LG0050	Titanium oxide, 99.999%	50 g
New	MV-YB50DX1173-LG0010	Ytterbium chloride hexahydrate, 99.999%	10 g
New	MV-YB50DX1173-LG0050	Ytterbium chloride hexahydrate, 99.999%	50 g
New	MV-YB40DX1083-LG0010	Ytterbium oxide, 99.99%	10 g

	Code	Product	Unit
New	MV-YB40DX1083-LG0050	Ytterbium oxide, 99.99%	50 g
New	MV-YX50DX1083-LG0010	Yttrium oxide, 99.999%	10 g
New	MV-YX50DX1083-LG0050	Yttrium oxide, 99.999%	50 g
New	MV-ZN50DX1082-LG0025	Zinc oxide, 99.999%	25 g
New	MV-ZN50DX1082-LG0100	Zinc oxide, 99.999%	100 g
New	MV-ZR40DX1174-LG0010	Zirconyl chloride octahydrate, 99.99%	10 g
New	MV-ZR40DX1174-LG0050	Zirconyl chloride octahydrate, 99.99%	50 g

Physical property standards

LGC Standards

Excellence through measurement

Reference nanomaterials from LGC Standards

LGC Standards has introduced a range of reference nanomaterials to aid research and testing into the applications and impacts of nanotechnology.

Nanomaterials are now used in a wide range of applications from food packaging and sunscreens to surface coatings and sports equipment. With the increasing presence of nanomaterials in new products, there has been a substantial increase in research into their manufacture, characterisation and applications and this has been matched by growth in demand for characterised reference materials

Master samples of the NM-series reference nanomaterials are stored in the nanomaterials repository of the European Commission's Joint Research Centre (JRC). The JRC distributes these master samples for use by EU Member States' authorities and in the OECD's Working Party on Manufactured Nanomaterials programme. The materials have been characterised using OECD recommended test methods and may serve as:

- Performance standard materials for testing and test method development
- Control materials for safety testing
- Testing materials for reference result and predictive toxicity testing

The series of reference nanomaterials have been selected based on their industrial and commercial importance and include:

Carbon nanotubes

Silver nanoparticles

Titanium dioxide

Cerium oxide

Zinc oxide

Silicon dioxide

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LGC Standards

Excellence through measurement

Thermal properties

Enthalpy and heat capacity

Code	Product	Unit
LGC2601	Indium - DSC calibration standard This certified reference material is intended for use in the calibration of differential scanning calorimeters and similar instruments. Certified values Enthalpy of fusion ..... 3.296 kJ/mol Melting temperature ..... 156.61 °C	500 mg
LGC2603	Naphthalene - DSC calibration standard This certified reference material is intended for use in the calibration of differential scanning calorimeters and similar instruments. Certified values Enthalpy of fusion ..... 18.923 kJ/mol Melting temperature ..... 80.23 °C	500 mg
LGC2604	Benzil - DSC calibration standard This certified reference material is intended for use in the calibration of differential scanning calorimeters and similar instruments. Certified values Enthalpy of fusion ..... 23.26 kJ/mol Melting temperature ..... 94.85 °C	500 mg
LGC2605	Acetanilide - DSC calibration standard This certified reference material is intended for use in the calibration of differential scanning calorimeters and similar instruments. Certified values Enthalpy of fusion ..... 21.793 kJ/mol Melting temperature ..... 114.34 °C	500 mg
LGC2606	Benzoic acid - DSC calibration standard This certified reference material is intended for use in the calibration of differential scanning calorimeters and similar instruments. Certified values Enthalpy of fusion ..... 17.98 kJ/mol Melting temperature ..... 122.35 °C	500 mg
LGC2607	Diphenylacetic acid - DSC calibration standard This certified reference material is intended for use in the calibration of differential scanning calorimeters and similar instruments. Certified values Enthalpy of fusion ..... 31.16 kJ/mol Melting temperature ..... 147.19 °C	500 mg
LGC2608	Lead - DSC calibration standard This certified reference material is intended for use in the calibration of differential scanning calorimeters and similar instruments. Certified values Enthalpy of fusion ..... 4.765 kJ/mol Melting temperature ..... 327.47 °C	500 mg
LGC2609	Tin - DSC calibration standard This certified reference material is intended for use in the calibration of differential scanning calorimeters and similar instruments. Certified values Enthalpy of fusion ..... 7.187 kJ/mol Melting temperature ..... 231.92 °C	500 mg
LGC2610	Biphenyl - DSC calibration standard This certified reference material is intended for use in the calibration of differential scanning calorimeters and similar instruments. Certified Values Enthalpy of fusion ..... 18.60 kJ/mol Melting temperature ..... 68.93 °C	500 mg
LGC2611	Zinc - DSC calibration standard This certified reference material is intended for use in the calibration of differential scanning calorimeters and similar instruments. Certified values Enthalpy of fusion ..... 7.103 kJ/mol Melting temperature ..... 419.53 °C	500 mg
LGC2612	Aluminium - DSC calibration standard This certified reference material is intended for use in the calibration of differential scanning calorimeters and similar instruments. Certified values Enthalpy of fusion ..... 10.827 kJ/mol Melting temperature ..... 660.33 °C	500 mg

Thermal properties

Code	Product	Unit
LGC2613	**Phenyl salicylate - DSC calibration standard** This certified reference material is intended for use in the calibration of differential scanning calorimeters and similar instruments. Certified values Enthalpy of fusion ..... 19.18 kJ/mol Melting temperature ..... 41.79 °C	500 mg
LGC2013	**DSC purity set** A series of mixtures of benzil in biphenyl intended for evaluating various features of the DSC technique (e.g. bias, repeatability, applicable impurity range) when the technique is used for determining the impurity content of organic compounds.. Certified values Total impurity (mole %) / Uncertainty (mole %) / Total impurity (mole %) / Uncertainty (mole %) 0.1 ..... 0.1 2.1 ..... 0.2 1.1 ..... 0.2 2.6 ..... 0.2 1.6 ..... 0.2 3.1 ..... 0.2	6 x 500 mg
NIST-2232	**Indium - DSC calibration standard** DSC calibration standard Certified values Enthalpy of fusion ..... 28.51 J/g Melting temperature ..... 156.5985 °C	1 g
NIST-2235	**Bismuth - DSC calibration standard** Certified values Enthalpy of fusion ..... 53.146 J/g Fusion temperature ..... 544.556 K	1.5 g
NIST-2225	**Mercury - DSC calibration standard** Certified values Enthalpy of fusion ..... 11.469 kJ/mol Melting temperature ..... 234.30 K	2.5 g
NIST-705A	**Polystyrene - Heat capacity and molecular weight** Molecular weight (MW) values, measured using various techniques, and limiting viscosity (LV) numbers. Certified values M_n by membrane osmometry ..... 170,900 g/mol LV in benzene (25 °C) ..... 74.3 mL/g M_W by light scattering ..... 179,300 g/mol LV in benzene (25 °C) ..... 74.5 mL/g M_W by sedimentation equilibrium ..... 189,800 g/mol LV in cyclohexane (25 °C) ..... 35.4 mL/g For heat capacity please ask for detailed list	5 g
NIST-720	**Synthetic sapphire - Enthalpy and heat capacity** Relative enthalpy and heat capacity from 10 to 2250 K	15 g
NIST-781D2	**Molybdenum - Enthalpy and heat capacity** Relative enthalpy and heat capacity from 273.15 to 2800 K	Each
NIST-1514	**Thermal analysis purity set** Set of 4 x 0.5 g A set of materials containing pure phenacetin and phenacetin doped with nominal 0.7, 2 and 5 mol percent of p-aminobezoic acid	set (4)

Melting, freezing and triple points

LGC2411	**Phenyl salicylate - Melting point** This certified reference material is intended for use in checking and calibrating apparatus used for determining melting points of samples in glass tubes. Certified values Thermodynamic melting point ..... 41.50 °C Dynamic melting points (0.2 °C/min heating rate): Onset of melting ..... 41.55 °C Meniscus point ..... 41.70 °C Liquefaction point ..... 41.85 °C	500 mg
LGC2401	**4-Nitrotoluene - Melting point** This certified reference material is intended for use in checking and calibrating apparatus used for determining melting points of samples in glass tubes. Certified values Dynamic melting points (0.2 °C/min heating rate): Onset of melting ..... 51.36 °C Meniscus point ..... 51.58 °C Liquefaction point ..... 51.71 °C	2 x 250 mg

Code	Product	Unit
LGC2402	Naphthalene - Melting point This certified reference material is intended for use in checking and calibrating apparatus used for determining melting points of samples in glass tubes. Certified values Thermodynamic melting point .....80.11 °C Dynamic melting points (0.2 °C/min heating rate): Onset of melting ..... 80.20 °C Meniscus point..... 80.37 °C Liquefaction point..... 80.71 °C	2 x 250 mg
LGC2403	Benzil - Melting point This certified reference material is intended for use in checking and calibrating apparatus used for determining melting points of samples in glass tubes. Certified values Thermodynamic melting point .....94.55 °C Dynamic melting points (0.2 °C/min heating rate): Onset of melting ..... 94.43 °C Meniscus point..... 94.77 °C Liquefaction point..... 95.08 °C	500 mg
LGC2404	Acetanilide - Melting point This certified reference material is intended for use in checking and calibrating apparatus used for determining melting points of samples in glass tubes. Certified values Thermodynamic melting point .....113.94 °C Dynamic melting points (0.2 °C/min heating rate): Onset of melting ..... 113.46 °C Meniscus point..... 113.88 °C Liquefaction point..... 114.27 °C	500 mg
LGC2405	Benzoic acid - Melting point This certified reference material is intended for use in checking and calibrating apparatus used for determining melting points of samples in glass tubes. Certified values Dynamic melting point (0.2 °C/min heating rate) Onset of melting ..... 121.80 °C Meniscus point..... 122.10 °C Liquefaction point..... 122.37 °C	2 x 250 mg
LGC2406	Diphenylacetic acid - Melting point This certified reference material is intended for use in checking and calibrating apparatus used for determining melting points of samples in glass tubes.^ Certified values Thermodynamic melting point .....147.05 °C Dynamic melting points (0.2 °C/min heating rate): Onset of melting ..... 147.12 °C Meniscus point..... 147.21 °C Liquefaction point..... 147.29 °C	2 x 250 mg
LGC2407	Anisic acid - Melting point This certified reference material is intended for use in checking and calibrating apparatus used for determining melting points of samples in glass tubes. Certified values Thermodynamic melting point .....183.09 °C Dynamic melting points (0.2 °C/min heating rate): Onset of melting ..... 183.11 °C Meniscus point..... 183.29 °C Liquefaction point..... 183.72 °C	500 mg
LGC2408	2-Chloroanthraquinone - Melting point This certified reference material is intended for use in checking and calibrating apparatus used for determining melting points of samples in glass tubes. Certified values Thermodynamic melting point .....209.12 °C Dynamic melting points (0.2 °C/min heating rate): Onset of melting ..... 209.18 °C Meniscus point..... 209.50 °C Liquefaction point..... 209.78 °C	500 mg
New NIM-GBW13232C	Naphthalene - Melting point Certified values Capilary melting point (completely melted, 0.20 °C/min).....80.58 ± 0.11 °C Capilary melting point (completely melted, 1.0 °C/min).....81.09 ± 0.20 °C Melting point (F = 1, ΔT= 0) .....80.24 ± 0.05 °C	2 g

	Code	Product	Unit
	LGC2409	Carbazole - Melting point This certified reference material is intended for use in checking and calibrating apparatus used for determining melting points of samples in glass tubes. Certified values Thermodynamic melting point..... 245.4 °C Dynamic melting points (0.2 °C/min heating rate): Onset of melting..... 244.71 °C Meniscus point..... 244.23 °C Liquefaction point..... 245.58 °C	2 x 250 mg
	NCS AS93109	Azobenzene - Melting point Certified melting point..... 68.34 °C	2 g
	NCS AS93110	Methylprotocatechuic - Melting point Certified melting point..... 81.85 °C	2 g
	NCS AS93111	Acetanil - Melting point Certified melting point..... 114.55 °C	2 g
New	NIM-GBW13233B	Benzoic acid - Melting point Certified values Capilary melting point (completely melted, 0.20 °C/min).....122.85 ± 0.11 °C Capilary melting point (completely melted, 1.0 °C/min).....123.37 ± 0.20 °C Melting point (F = 1, ΔT = 0) .....122.35 ± 0.05 °C	2 g
	NCS AS93112	p-Acetophenetidine - Melting point Certified melting point..... 134.96 °C	2 g
New	NIM-GBW13234C	1,6-Adipic acid - Melting point Certified values Capilary melting point (completely melted, 0.20 °C/min).....152.55 ± 0.11 °C Capilary melting point (completely melted, 1.0 °C/min).....153.16 ± 0.20 °C Melting point(F = 1, ΔT = 0) .....151.63 ± 0.05 °C	2 g
	NCS AS93113	Albexan - Melting point Certified melting point..... 164.70 °C	2 g
New	NIM-GBW13235B	Anisic acid - Melting point Certified values Capilary melting point (completely melted, 0.20 °C/min).....184.15 ± 0.11 °C Capilary melting point (completely melted, 1.0 °C/min).....184.74 ± 0.20 °C Melting point (F = 1, ΔT = 0) .....183.36 ± 0.05 °C	2 g
	NCS AS93114	Amber acid - Melting point Certified melting point..... 184.02 °C	2 g
	NCS AS93115	Sulfadimidine - Melting point Certified melting point..... 198.32 °C	2 g
	NCS AS93116	Cyanoguanidine - Melting point Certified melting point..... 208.62 °C	2 g
New	NIM-GBW13236B	Anthracene - Melting point Certified values Capilary melting point (completely melted, 0.20 °C/min).....216.51 ± 0.11 °C Capilary melting point (completely melted, 1.0 °C/min).....217.11 ± 0.20 °C Melting point (F = 1, ΔT = 0) .....216.07 ± 0.05 °C	2 g
	NCS AS93117	Saccharin - Melting point Certified melting point..... 228.41 °C	2 g
	NCS AS93118	Coffeine - Melting point Certified melting point..... 236.26 °C	2 g
	NIM-GBW13237B	p-Nitrobenzoic acid - Melting point Certified values Capilary melting point (completely melted, 0.20 °C/min).....240.57 ± 0.11 °C Capilary melting point (completely melted, 1.0˚C/min) .....241.33 ± 0.20 °C Melting point (F = 1, ΔT = 0) .....239.58 ± 0.05 °C	2 g
New	NIM-GBW13231C	4-Nitrotoluene - Melting point Certified values Capilary melting point (completely melted, 0.20 °C/min).....52.01 ± 0.11 °C Capilary melting point (completely melted, 1.0 °C/min).....52.56 ± 0.20 °C Melting point (F = 1, ΔT = 0) .....51.58 ± 0.05 °C	2 g
	NCS AS93119	Chocolax - Melting point Certified melting point..... 261.43 °C	2 g

Code	Product	Unit
NIM-GBW13238C	Anthraquinone - Melting point Certified values Capilary melting point (completely melted, 0.20 °C/min).....285.15 ± 0.11 °C Capilary melting point (completely melted, 1.0 °C/min).....285.69 ± 0.20 °C Melting point (F = 1, ΔT = 0).....284.62 ± 0.05 °C	2 g
NIST-741a	Tin - Freezing point For use in defining fixed points of the International Temperature Scale of 1990 (ITS-90). Certified freezing point.....231.928 °C	200 g
NIST-743	Mercury - Triple point For use in defining fixed points of the International Temperature Scale of 1990 (ITS-90). Certified triple point..... -38.8344 °C	680 g
NIST-1745	Indium - Freezing point For use in defining fixed points of the International Temperature Scale of 1990 (ITS-90). Certified freezing point.....156.5985 °C	200 g
NIST-1746	Silver - Freezing point For use in defining fixed points of the International Temperature Scale of 1990 (ITS-90). Certified freezing point.....961.78 °C	300 g
NIST-1747	Tin - Freezing point A fixed point device for use in the realisation of the International Temperature Scale of 1990 (ITS-90). Certified freezing point.....231.928 °C	cell
NIST-1748	Zinc - Freezing point A fixed point device for use in the realisation of the International Temperature Scale of 1990 (ITS-90). Certified freezing point.....419.527 °C	cell
NIST-740a	Zinc - Freezing point For use in defining fixed points of the International Temperature Scale of 1990 (ITS-90). Certified freezing point.....419.527 °C	200 g
NIST-45d	Copper - Freezing point Moderate purity material for use in preparing reference point devices and for calibrating thermometers, thermocouples and other temperature measuring devices. Certified freezing point.....1084.6 °C	450 g
NIST-49e	Lead - Freezing point Moderate purity material for use in preparing reference point devices and for calibrating thermometers, thermocouples and other temperature measuring devices. Certified freezing point.....327.453 °C	600 g
NIST-742	Alumina - Melting point Moderate purity material for use in preparing reference point devices and for calibrating thermometers, thermocouples and other temperature measuring devices. Certified melting point.....2052 °C	10 g
NIST-1968	Gallium - Melting point/triple point A fixed-point device for use in the realisation of internationally accepted secondary reference points and/or triple points. They are not intended for calibration of differential scanning calorimeters. Certified melting point/triple point .....29.7646 °C	unit
NIST-1751	Gallium - Melting point This Standard Reference Material (SRM®) is intended primarily for use as one of the defining fixed points of the International Temperature Scale of 1990 (ITS-90). The melting point is realised as the plateau temperature of the melting curve of slowly-melting, high-purity (mass fraction ≥ 99.9999 % pure) gallium. Certified melting-point temperature ..... 29.764 6 °C ± 0.000 07 °C	200 g
NIST-1969	Rubidium - Melting point/triple point A fixed-point device for use in the realisation of internationally accepted secondary reference points and/or triple points. They are not intended for calibration of differential scanning calorimeters. Certified melting point/triple point .....39.30 °C	unit
NIST-1970	Succinonitrile - Melting point/triple point A fixed-point device for use in the realisation of internationally accepted secondary reference points and/or triple points. They are not intended for calibration of differential scanning calorimeters. Certified melting point/triple point .....58.0642 °C	unit
NIST-1971	Indium - Melting point/triple point A fixed-point device for use in the realisation of internationally accepted secondary reference points and/or triple points. They are not intended for calibration of differential scanning calorimeters. Certified melting point/triple point .....156.598 °C	60 g

Thermal properties

Code	Product	Unit
NIST-1972	1,3-Dioxolan-2-one (ethylene carbonate) - Melting point/triple point A fixed-point device for use in the realisation of internationally accepted secondary reference points and/or triple points. They are not intended for calibration of differential scanning calorimeters. Certified melting point/triple point ..... 36.3143 °C	60 g

Flash point

ERM-FC032	n-Nonane The certified value was determined by the Abel closed cup method described in the Institute of Petroleum Standard IP170/95 and also published as British Standard BS2000:Part 170: 1995. The certified value is corrected to standard barometric pressure at 0°C. Certified value Non-equilibrium flash point ..... 32.5 °C	100 mL
ERM-FC033	n-Decane The certified value was determined by the Abel closed cup method described in the Institute of Petroleum Standard IP170/95 and also published as British Standard BS2000:Part 170: 1995. The certified value is corrected to standard barometric pressure at 0°C. Certified value Non-equilibrium flash point ..... 50 °C	100 mL
LGC2000	Diethyl phthalate This certified reference material is intended for use in checking and calibrating apparatus used for determining flash point by closed cup equilibrium methods. The certified value was determined from the results of an interlaboratory study, where the participants used IP/304 Pensky-Martens Closed Cup or IP/303 Setaflash methods. Certified value Equilibrium closed cup flash point ..... 159.0 °C	500 mL

Combustion calorimetry

NIST-39J	Benzoic acid - Heat of combustion Certified value.....26.434 MJ/kg	30 g
NIST-1656	Thianthrene - Heat of combustion Certified value.....33.480 MJ/kg	30 g
NIST-1657	Synthetic refuse-derived fuel - Heat of combustion Certified values HHV* (dry).....13.87 ± 0.25 MJ/kg Dry ash..... 20.34 ± 0.54 wt% HHV* (dry, ash free).....17.40 ± 0.30 MJ/kg *HHV (Higher heating value) is the synonym for gross calorific value.	100 g
NIST-2151	Nicotinic acid - Heat of combustion Certified value.....22.184 MJ/kg	25 g
NIST-2152	Urea Certified value.....10.536 MJ/kg	25 g
NIST-2682b	Coal (sub-bituminous) - Sulphur, mercury and heat of combustion Certified values S ..... 0.4917 % Hg..... 108.8 µg/kg Indicative values for chlorine, ash content, gross calorific value	50 g

Solution calorimetry

NIST-1655	Potassium chloride - water solution calorimetry Intended for use in verifying or comparing results obtained by calorimeters measuring enthalpies of endothermic solution processes. Certified value Heat of solution (absorbed) .....235.86 J/g	30 g

Thermal conductivity

IRMM-440A	Resin bonded fibre board (300 x 300 x 35 mm) - Thermal conductivity Certified value for thermal conductivity between -10°C and +50 °C	board
IRMM-440B	Resin bonded fibre board (500 x 500 x 35 mm) - Thermal conductivity Certified value for thermal conductivity between -10°C and +50 °C	board
IRMM-440C	Resin bonded fibre board (600 x 600 x 35 mm) - Thermal conductivity Certified value for thermal conductivity between -10°C and +50 °C	board
IRMM-440D	Resin bonded fibre board (1000 x 1000 x 35 mm) - Thermal conductivity Certified value for thermal conductivity between -10°C and +50 °C	board

Code	Product	Unit
NIST-RM 8420	Electrolytic iron rod 0.64 cm (D) x 5.0 cm Thermal conductivity and electrical resistivity as a function of temperature (2-1000 K)	rod
BCR-724A	Glass-ceramic - Thermal diffusivity, thermal conductivity Rod in container (diam.= 13.0 mm height > 18 mm) Thermal diffusivity, α Certified value [m²/s ·10-^{6}] $\alpha = 4.406 - 1.351.10^{-2} \cdot T + 2.133 \cdot 10^{-5} \cdot T^2 - 1.541 \cdot 10^{-8} \cdot T^3 + 4.147 \cdot 10^{-12} T^4$ Uncertainty:6.1% Thermal conductivity, λ Certified value [W/(m·K)] $\lambda = 2.332 + 515.1/T$ Uncertainty:6.5%	rod
BCR-724B	Glass-ceramic - Thermal diffusivity, thermal conductivity Rod in container (diam.= 13.9 mm height > 21 mm) Thermal diffusivity, α Certified value [m²/s ·10-^{6}] $\alpha = 4.406 - 1.351.10^{-2} \cdot T + 2.133 \cdot 10^{-5} \cdot T^2 - 1.541 \cdot 10^{-8} \cdot T^3 + 4.147 \cdot 10^{-12} T^4$ Uncertainty:6.1% Thermal conductivity, λ Certified value [W/(m·K)] $\lambda = 2.332 + 515.1/T$ Uncertainty:6.5%	rod
BCR-724C	Glass-ceramic - Thermal diffusivity, thermal conductivity Rod in container (diam.= 25.9 mm height > 22 mm) Thermal diffusivity, α Certified value [m²/s ·10-^{6}] $\alpha = 4.406 - 1.351.10^{-2} \cdot T + 2.133 \cdot 10^{-5} \cdot T^2 - 1.541 \cdot 10^{-8} \cdot T^3 + 4.147 \cdot 10^{-12} T^4$ Uncertainty:6.1% Thermal conductivity, λ Certified value [W/(m·K)] $\lambda = 2.332 + 515.1/T$ Uncertainty:6.5%	rod
BCR-724D	Glass-ceramic - Thermal diffusivity, thermal conductivity Rod in container (diam.= 26.9 mm height > 22 mm) Thermal diffusivity, α Certified value [m²/s ·10-^{6}] $\alpha = 4.406 - 1.351.10^{-2} \cdot T + 2.133 \cdot 10^{-5} \cdot T^2 - 1.541 \cdot 10^{-8} \cdot T^3 + 4.147 \cdot 10^{-12} T^4$ Uncertainty:6.1% Thermal conductivity, λ Certified value [W/(m·K)] $\lambda = 2.332 + 515.1/T$ Uncertainty:6.5%	rod
BCR-724E	Glass-ceramic - Thermal diffusivity, thermal conductivity Rod in container (diam.= 50.7 mm height > 25 mm) Thermal diffusivity, α Certified value [m²/s ·10-^{6}] $\alpha = 4.406 - 1.351.10^{-2} \cdot T + 2.133 \cdot 10^{-5} \cdot T^2 - 1.541 \cdot 10^{-8} \cdot T^3 + 4.147 \cdot 10^{-12} T^4$ Uncertainty:6.1% Thermal conductivity, λ Certified value [W/(m·K)] $\lambda = 2.332 + 515.1/T$ Uncertainty:6.5%	rod

Code	Product	Unit
Thermal expansion		
NIST-731L1	Borosilicate glass 6.4 mm x 51 mm Certified values for thermal expansion as a function of temperature (80-680 K)	5 cm
NIST-731L2	Borosilicate glass 6.4 mm x 102 mm Certified values for thermal expansion as a function of temperature (80-680 K)	10 cm
NIST-731L3	Borosilicate glass 6.4 mm x 152 mm Certified values for thermal expansion as a function of temperature (80-680 K)	15 cm
NIST-738	Stainless steel Certified values for thermal expansion as a function of temperature (293-780 K)	51 x 6.4 mm
Thermal resistance		
NIST-1449	Fumed silica board 60 cm x 60 cm x 2.54 cm Certified values for thermal resistance as a function of density and pressure	board
NIST-1459	Fumed silica board 30 cm x 30 cm x 2.45 cm Certified values for thermal resistance as a function of density and pressure	board
NIST-1452	Fibrous glass blanket for high precison measurements - Thermal resistance This Standard Reference Material (SRM®) is intended for use in evaluation of a guarded hot plate (GHP) or the calibration of a heat flow meter (HFM). It is supplied as a fibrous glass batt of nominal dimensions 60 x 60 x 2.54 cm. Each unit of NIST-1452 is a individually characterised specimen.	Each
Glass liquid temperature		
NIST-773	Soda-lime-silica 2.5 cm x 2.5 cm x 0.6 cm Intended for checking test methods and for calibrating equipment used to determine the liquidus temperature of glass by the gradient furnace method per ASTM C 829. A (boat) Certified value..... 988 °C B (perforated plate) Certified value..... 991 °C	65 g
NIST-1416	Aluminosilicate glass - Liquidus temperature Certified value for the gradient liquidus temperature is 1147 ± 4 °C	250 g
Temperature measuring devices		
NIST-1967	Platinum thermocouple Platinum wire 0.51 mm diameter and 1 m long Intended for use as a standard reference thermoelement for calibration of base-metal and noble-metal thermocouple materials (-197 °C - 1768 °C)	Each
NIST-1749	Gold vs. Platinum Thermocouple Thermometer Certified Thermometer for the range 0°C to 1000°C on the International Temperature Scale of 1990.	Each
NIST-1750	Standard Platinum Resistance Themometer Certified Thermometer for the range 13.8033 K to 429.7485 K on the International Temperature Scale of 1990.	capsule

Particles and surface properties

Particle size

	Code	Product	Unit
New	ERM-FD100	Colloidal silica in water - Particle size ERM-FD100 is a certified reference material and consists of colloidal silica nanoparticles suspended in a water-based solution. It is available in 10 mL pre-scored amber glass ampoules containing approximately 9 mL of suspension. The intended use is to check the performance of instruments and/or methods that characterise the particle size distribution of nanoparticles (particle size ranging from approximately 1 nm to approximately 100 nm) suspended in a liquid medium. Equivalent spherical diameter Certified value / Uncertainty Intensity-weighted harmonic mean diameter [1] ..... 19.0 nm ..... 0.6 nm Intensity-based modal Stokes diameter [2] ..... 20.1 nm ..... 1.3 nm Number-based modal diameter [3] ..... 19.4 nm ..... 1.3 nm Intensity-weighted mean diameter [4] ..... 21.8 nm ..... 0.7 nm [1] As obtained by dynamic light scattering according to ISO 22412:2008 (cumulants method). [2] As obtained by centrifuge liquid sedimentation according to ISO 13318-1:2001 (line-start method); density 2.3 g/cm3. [3] As obtained by electron microscopy (transmission electron microscopy/scanning electron microscopy). Indicative values for equivalent spherical diameter, volume-weighted mean and Zeta Potential.	Amp.
		BCR-066 - BCR-132 For these materials the distribution is expressed as a curve of the cumulative mass of particles undersize versus particle size. In the case of particles of less than 90 µm diameter their size is expressed as the equivalent Stokes' diameter determined from the settling rate of the particles in a viscous fluid. For larger particles the equivalent volume diameter determined by sieving was preferred.	
	BCR-066	Quartz - Stokes' diameter Certified value Stokes' diameter ..... 0.35 - 3.50 µm	10 g
	BCR-067	Quartz - Stokes' diameter Certified values Stokes' diameter ..... 2.4 - 32 µm	10 g
	BCR-068	Quartz - Volume diameter Certified values Volume diameter ..... 160 - 630 µm	100 g
	BCR-069	Quartz - Stokes' diameter Certified values Stokes' diameter ..... 14 - 90 µm	10 g
	BCR-070	Quartz - Stokes' diameter Certified values Stokes' diameter ..... 1.2 - 20 µm	10 g
	BCR-130	Quartz - Volume diameter Certified values Volume diameter ..... 50 - 220 µm	50 g
	BCR-131	Quartz - Volume diameter Certified value Volume diameter ..... 480 - 1800 µm	200 g
	BCR-132	Quartz - Volume diameter Certified value Volume diameter ..... 1400 - 5000 µm	700 g
	BCR-165	Latex spheres, nominal 2 µ Average particle diameter..... 2.223 ± 0.013 µm Each vial contains 2 mL of an aqueous suspension of latex spheres at a mass concentration of about 0.2 g/L About 0.5% of the particles are agglomerated doublets..	vial
	BCR-166	Latex spheres, nominal 4.8 µ Each vial contains 2 mL of an aqueous suspension of latex spheres at a mass concentration of about 0.2 g/L. About 0.5% of the particles are agglomerated doublets. Average particle diameter ..... 4.821 ± 0.019 µm	vial
	BCR-167	Latex spheres, nominal 9.6 µ Each vial contains 2 mL of an aqueous suspension of latex spheres at a mass concentration of about 1.4 g/L. About 0.5% of the particles are agglomerated doublets. Average particle diameter..... 9.475 ± 0.018 µm	vial

Code	Product	Unit
New IRMM-304	Suspension of colloidal silica nanoparticles IRMM-304 is a quality control material of silica nanoparticles suspended in an aqueous solution. Information values (not certified) are assigned for frequency analysis and cumulant method using dynamic light scattering according to ISO 22412, as well as disc sedimentation according to ISO 13318. IRMM-304 is available in 10 mL pre-scored amber glass ampoules containing approximately 9 mL of suspension. The suspending medium is water-based and contains a small amount of NaOH as a stabilising agent. The nominal relative particle mass fraction in the suspension is 0.25 %.	Amp.
	NIST-659 - NIST-RM 8010 These materials are for evaluating and calibrating specific types of particle size measuring instruments, including light scattering, electrical zone flow-through counters, optical and scanning electron microscopes, sedimentation systems and wire cloth sieving devices.	
NIST-659	Silicon nitride - Particle size Certified value Particle size ..... 0.2 - 10 µm	set
NIST-1021	Glass beads - Particle size This Standard Reference Material (SRM®) is intended for use in the evaluation and calibration of equipment used to measure particle size distributions (PSD) in the 2 µm to 12 µm diameter range. Typical methods for PSD determination would be laser light scattering (LLS), electrical sensing zone (ESZ), and sedimentation. Each unit of NIST-1021 consists of a single bottle containing approximately 4 g of solid spherical soda-lime glass beads. Certified value Particle size ..... 2 - 12 µm	4 g
NIST-1003c	Glass beads - Particle size Certified value Particle size ..... 18.9 - 43.3 µm	28 g
NIST-1004b	Glass beads - Particle size Certified value Particle size ..... 40 - 150 µm	43 g
NIST-1017b	Glass beads - Particle size Certified value Particle size ..... 100 - 400 µm	70 g
NIST-1018b	Glass beads - Particle size Certified value Particle size ..... 220 - 750 µm	87 g
NIST-1019b	Glass beads - Particle size Certified value Particle size ..... 750 - 2450 µm	200 g
NIST-1690	Polystyrene (0.5 wt. % in water) - Particle size Certified value Particle size ..... 0.895 µm	5 mL
NIST-1691	Polystyrene (0.5 wt. % in water) - Particle size Certified value Particle size ..... 0.269 µm	5 mL
NIST-1961	Polystyrene (0.5 wt. % in water) - Particle size Certified value Particle size ..... 29.64 µm	5 mL
NIST-1963a	Polystyrene (0.5 wt. % in water) - Particle size This Standard Reference Material (SRM®) is intended for the calibration/validation of particle sizing instruments, including electron microscopes, differential mobility analysers, scanning surface inspection systems, and other light scattering instruments. A unit of NIST-1963a consists of 5 mL of polystyrene spheres in deionized filtered (0.2 µm pore size) water. Certified value Modal sphere diameter ..... 101.8 ± 1.1 nm	5 mL
NIST-1964	Polystyrene (0.5 wt. % in water) - Particle size This Standard Reference Material (SRM®) is intended for the calibration/validation of particle sizing instruments, including electron microscopes, differential mobility analysers, scanning surface inspection systems, and other light scattering instruments. A unit of NIST-1964 consists of 5 mL of polystyrene spheres in deionized filtered (0.2 µm pore size) water. Certified value Modal sphere diameter ..... 60.39 ± 0.63 nm	5 mL
NIST-1965	Polystyrene - Particle size This Standard reference material is intended for use as an optical microscopy measurement standard and teaching tool. Certified value Hexagonal array..... 9.94 µm Unordered clusters .....9.89 µm	slide

	Code	Product	Unit
New	NIST-RM 8988	Titanium dioxide powder - Particle size distribution This Reference Material (RM) is intended for use in the evaluation and calibration of equipment used to measure particle size distributions (PSDs) in the 0.1 µm to 0.5 Mm particle diameter range. The PSD values were measured using laser light scattering (LLS) and X-ray disc centrifugation (XDC), two common methods for PSD determination. A unit of RM 8988 consists of a single bottle containing approximately 6 g of rutile titanium dioxide powder. The cumulative mass distribution was determined using both LLS and XDC techniques. For detailed information about the reference values please ask for the certificate.	6 g
	NIST-1978	Zirconium oxide - Particle size Certified value Particle size ..... 0.33 – 2.19 µm	5 g
	NIST-1982	Zirconia thermal spray powder - Particle size Certified value Particle size ..... 10 - 150 µm	10 g
	NIST-1984	Thermal spray powder - Particle size distribution This Standard Reference Material® (SRM®) is primarily intended for use in the calibration of equipment used to measure particle size distributions (PSD) in the 9 µm to 30 µm range. NIST-1984 consists of a single bottle containing approximately 14 g of tungsten carbide/cobalt powder. Certified PSD Values by scanning electron microscopy (SEM)	14 g

Cumulative Mass Fraction (%)	Certified Diameter (µm)	Uncertainty (µm)
10	10.3	0.9
25	13.2	0.9
50	17.1	2.2
75	21.3	1.6
90	26.3	0.9

	Code	Product	Unit
	NIST-1985	Thermal spray powder - Particle size distribution This Standard Reference Material (SRM) is intended primarily for use in the calibration of equipment used to measure particle size distributions (PSD) in the 18 µm to 55 µm range. NIST-1985 consists of a single bottle containing approximately 14 g of tungsten carbide/cobalt powder. Certified PSD Values by scanning electron microscopy (SEM)	14 g

Cumulative Mass Fraction (%)	Certified Diameter (µm)	Uncertainty (µm)
10	20.2	1.2
25	27.1	1.7
50	36.1	0.8
75	44.2	2.1
90	50.1	2.5

	Code	Product	Unit
	NIST-RM 8010	Sand - Particle size Reference value Particle size ..... 30 - 325 µm	3 x 150 g
	NIST-RM 8011	Gold nanoparticles - Particle size (10 nm diameter) This Reference Material (RM) is intended primarily to evaluate and qualify methodology and/or instrument performance related to the physical/dimensional characterization of nanoscale particles used in pre-clinical biomedical research. The RM may also be useful in the development and evaluation of in vitro assays designed to assess the biological response (e.g., cytotoxity, hemolysis) of nanomaterials, and for use in interlaboratory test comparisons. NIST-RM 8011 consists of nominally 5 mL of citrate-stabilized Au nanoparticles in an aqueous suspension, supplied in hermetically sealed pre-scored glass ampoules sterilized by gamma irradiation. A unit consists of two 5 mL ampoules. The suspension contains primary particles (monomers) and a small percentage of clusters of primary particles. Reference values	2 x 5 mL

Technique	**Analyte**	**Form Particle Size (nm)**
Atomic Force Microscopy	dry, deposited on substrate	8.5 ± 0.3
Scanning Electron Microscopy	dry, deposited on substrate	9.9 ± 0.1
Transmission Electron Microscopy	dry, deposited on substrate	8.9 ± 0.1
Differential Mobility Analysis	dry, aerosol	11.3 ± 0.1
Dynamic Light Scattering	liquid suspension	13.5 ± 0.1
Small-Angle X-ray Scattering	liquid suspension	9.1 ± 1.8

Information values for chemical and electrochemical properties.

Code	Product	Unit
NIST-RM 8012	Gold nanoparticles - Particle size (30 nm diameter) This Reference Material (RM) is intended primarily to evaluate and qualify methodology and/or instrument performance related to the physical/dimensional characterization of nanoscale particles used in pre-clinical biomedical research. The RM may also be useful in the development and evaluation of in vitro assays designed to assess the biological response (e.g., cytotoxity, hemolysis) of nanomaterials, and for use in interlaboratory test comparisons. NIST-RM 8012 consists of nominally 5 mL of citrate-stabilized Au nanoparticles in an aqueous suspension, supplied in hermetically sealed pre-scored glass ampoules sterilized by gamma irradiation. A unit consists of two 5 mL ampoules. The suspension contains primary particles (monomers) and a small percentage of clusters of primary particles. Reference values **Technique / Analyte / Form Particle Size (nm)** Atomic Force Microscopy ..... dry, deposited on substrate ..... 24.9 ± 1.1 Scanning Electron Microscopy ..... dry, deposited on substrate ..... 26.9 ± 0.1 Transmission Electron Microscopy ..... dry, deposited on substrate ..... 27.6 ± 2.1 Differential Mobility Analysis ..... dry, aerosol ..... 28.4 ± 1.1 Dynamic Light Scattering ..... liquid suspension 173º scattering angle (backscatter) .... 28.6 ± 0.9 90º scattering angle .... 26.5 ± 3.6 Small-Angle X-ray Scattering ..... liquid suspension ..... 24.9 ± 1.2 Information values for chemical and electrochemical properties.	2 x 5 mL
NIST-RM 8013	Gold nanoparticles - Particle size (60 nm diameter) This Reference Material (RM) is intended primarily to evaluate and qualify methodology and/or instrument performance related to the physical/dimensional characterization of nanoscale particles used in pre-clinical biomedical research. The RM may also be useful in the development and evaluation of in vitro assays designed to assess the biological response (e.g., cytotoxity, hemolysis) of nanomaterials, and for use in interlaboratory test comparisons. NIST-RM 8013 consists of nominally 5 mL of citrate-stabilized Au nanoparticles in an aqueous suspension, supplied in hermetically sealed pre-scored glass ampoules sterilized by gamma irradiation. A unit consists of two 5 mL ampoules. The suspension contains primary particles (monomers) and a small percentage of clusters of primary particles. Reference values **Technique / Analyte / Form Particle Size (nm)** Atomic Force Microscopy ..... dry, deposited on substrate ..... 55.4 ± 0.3 Scanning Electron Microscopy ..... dry, deposited on substrate ..... 54.9 ± 0.4 Transmission Electron Microscopy ..... dry, deposited on substrate ..... 56.0 ± 0.5 Differential Mobility Analysis ..... dry, aerosol ..... 65.3 ± 1.5 Dynamic Light Scattering ..... liquid suspension 173º scattering angle (backscatter) .... 56.6 ± 1.4 90º scattering angle .... 55.3 ± 8.3 Small-Angle X-ray Scattering ..... liquid suspension ..... 53.2 ± 5.3 Information values for chemical and electrochemical properties.	2 x 5 mL
AEA1001	Aerosol fibre analogue shape standard (aqueous suspension) Reference values: Particles per vial 1.0 x 10^7, Particle length 3.09 µm, Particle width 1.67 µm, Particle depth 0.96 µm, Indicative aerodynamic diameter – motion perpendicular to major axis 2.89 µm, Indicative aerodynamic diameter – motion parallel to major axis 3.14 µm.	10 mL
NIST-RM 8631a	Medium Test Dust (MTD) A unit of Reference Material NIST-RM 8631A, an ISO Medium Test Dust (MTD), consists of 20 g of a natural mineral dust that is heterogeneous in composition and polydisperse with respect to size. RM 8631a is intended to be used as a secondary material for calibrating particle sizing instruments, especially optical particle counters, when used in conjunction with either of two published standard methods. RM 8631a can be used in conjunction with either the National Fluid Power Association method (NFPA) method NFPA/T2.9.11 R1-1998 "Hydraulic Fluid Power - Calibration of Liquid Automatic Particle Counters" or the International Standards Organization method ISO 11171:1999 "Hydraulic Fluid Power - Calibration of Liquid Automatic Particle Counters". Using either of these two methods, the particle concentration of RM 8631a at each diameter will be determined by calibration against NIST Standard Reference Material NIST-2806A, Medium Test Dust (MTD) in Hydraulic Fluid.	20 g
	NIST-RM 8632 For use in preparing suspensions in other types of oil, further information on request. This material is intended for use in calibrating the response of particle sizing instrumentation, including optical counters, in accordance with National Fluid Power Association (NFPA) and ISO standard methods for determining particle contamination in oils.	
NIST-RM 8632	Ultrafine Test Dust	20 g

Particle size calibration standards from Whitehouse Scientific

Whitehouse Scientific has been producing precision glass microspheres for calibration for 25 years and is the highest ranking European certification laboratory for primary methods of particle size analysis. Having filled over 1 million bottles using a unique 100 stage spinning riffler system, they are now the world's leading manufacturer of single-shot glass microsphere standards.
The references, nearly all NIST traceable range in size from 0.1µm - 5.0mm and are available as single sizes or broad distribution standards.

Whether calibrating a particle sizing instrument or any aperture in the range 0.1 - 10,000 microns, Whitehouse Scientific has a standard for every application.

Code	Product	Unit
Polydisperse particle standards		
WS-PS180	Polydisperse particle standard - Nominal size: 0.1 - 1 µm	0.01 g
WS-PS181	Polydisperse particle standard - Nominal size: 0.1 - 1 µm	0.02 g
WS-PS190	Polydisperse particle standard - Nominal size: 1 - 10 µm	0.025 g
WS-PS191	Polydisperse particle standard - Nominal size: 1 - 10 µm	0.05 g
WS-PS192	Polydisperse particle standard - Nominal size: 1 - 10 µm	0.10 g
WS-PS193	Polydisperse particle standard - Nominal size: 1 - 10 µm	0.25 g
WS-PS194	Polydisperse particle standard - Nominal size: 1 - 10 µm	0.50 g
WS-PS200	Polydisperse particle standard - Nominal size: 3 - 30 µm	0.025 g
WS-PS201	Polydisperse particle standard - Nominal size: 3 - 30 µm	0.05 g
WS-PS202	Polydisperse particle standard - Nominal size: 3 - 30 µm	0.10 g
WS-PS203	Polydisperse particle standard - Nominal size: 3 - 30 µm	0.25 g
WS-PS204	Polydisperse particle standard - Nominal size: 3 - 30 µm	0.50 g
WS-PS205	Polydisperse particle standard - Nominal size: 3 - 30 µm	1 g
WS-PS211	Polydisperse particle standard - Nominal size: 10 - 100 µm	0.05 g
WS-PS212	Polydisperse particle standard - Nominal size: 10 - 100 µm	0.10 g
WS-PS213	Polydisperse particle standard - Nominal size: 10 - 100 µm	0.25 g
WS-PS214	Polydisperse particle standard - Nominal size: 10 - 100 µm	0.50 g
WS-PS215	Polydisperse particle standard - Nominal size: 10 - 100 µm	1 g
WS-PS222	Polydisperse particle standard - Nominal size: 50 - 350 µm	0.10 g
WS-PS223	Polydisperse particle standard - Nominal size: 50 - 350 µm	0.25 g
WS-PS224	Polydisperse particle standard - Nominal size: 50 - 350 µm	0.50 g
WS-PS225	Polydisperse particle standard - Nominal size: 50 - 350 µm	1 g
WS-PS226	Polydisperse particle standard - Nominal size: 50 - 350 µm	2.5 g
WS-PS227	Polydisperse particle standard - Nominal size: 50 - 350 µm	5 g
WS-PS232	Polydisperse particle standard - Nominal size: 150 - 650 µm	0.25 g
WS-PS233	Polydisperse particle standard - Nominal size: 150 - 650 µm	0.50 g
WS-PS234	Polydisperse particle standard - Nominal size: 150 - 650 µm	1 g
WS-PS235	Polydisperse particle standard - Nominal size: 150 - 650 µm	2.5 g
WS-PS236	Polydisperse particle standard - Nominal size: 150 - 650 µm	5 g
WS-PS237	Polydisperse particle standard - Nominal size: 150 - 650 µm	7 g
WS-PS240	Polydisperse particle standard - Nominal size: 500 - 2000 µm	7 g
NIST traceable monodisperse particle standards		
WS-MS0009	Monodisperse particle standard (9.18 µm)	0.1 g
WS-MS0012	Monodisperse particle standard (11.58 µm)	0.1 g
WS-MS0023	Monodisperse particle standard (22.81 µm)	0.1 g
WS-MS0026	Monodisperse particle standard (25.6 µm)	0.1 g
WS-MS0028	Monodisperse particle standard (28.41 µm)	0.15 g
WS-MS0031	Monodisperse particle standard (31.33 µm)	0.15 g
WS-MS0036	Monodisperse particle standard (35.65 µm)	0.2 g
WS-MS0037	Monodisperse particle standard (37.36 µm)	0.2 g
WS-MS0038	Monodisperse particle standard (38.38 µm)	0.2 g
WS-MS0040	Monodisperse particle standard (40.15 µm)	0.2 g
WS-MS0042	Monodisperse particle standard (42.68 µm)	0.2 g
WS-MS0049	Monodisperse particle standard (49.21 µm)	0.2 g
WS-MS0053	Monodisperse particle standard (52.47 µm)	0.2 g
WS-MS0056	Monodisperse particle standard (56.28 µm)	0.2 g
WS-MS0060	Monodisperse particle standard (59.63 µm)	0.2 g
WS-MS0064	Monodisperse particle standard (63.86 µm)	0.2 g
WS-MS0065	Monodisperse particle standard (65.02 µm)	0.2 g

Particles and surface properties

Code	Product	Unit
WS-MS0066	Monodisperse particle standard (66.29 µm)	0.2 g
WS-MS0071	Monodisperse particle standard (70.89 µm)	0.2 g
WS-MS0074	Monodisperse particle standard (73.8 µm)	0.2 g
WS-MS0076	Monodisperse particle standard (76.39 µm)	0.2 g
WS-MS0083	Monodisperse particle standard (83.43 µm)	0.2 g
WS-MS0090	Monodisperse particle standard (89.8 µm)	0.2 g
WS-MS0091	Monodisperse particle standard (91.21 µm)	0.2 g
WS-MS0114	Monodisperse particle standard (114.4 µm)	0.3 g
WS-MS0128	Monodisperse particle standard (127.5 µm)	0.3 g
WS-MS0156	Monodisperse particle standard (155.8 µm)	0.3 g
WS-MS0177	Monodisperse particle standard (177 µm)	0.3 g
WS-MS0180	Monodisperse particle standard (180 µm)	0.3 g
WS-MS0193	Monodisperse particle standard (192.8 µm)	0.4 g
WS-MS0197	Monodisperse particle standard (197.3 µm)	0.4 g
WS-MS0201	Monodisperse particle standard (200.9 µm)	0.4 g
WS-MS0210	Monodisperse particle standard (210.6 µm)	0.4 g
WS-MS0225	Monodisperse particle standard (224.8 µm)	0.4 g
WS-MS0236	Monodisperse particle standard (236.2 µm)	0.5 g
WS-MS0259	Monodisperse particle standard (258.6 µm)	0.6 g
WS-MS0269	Monodisperse particle standard (268.5 µm)	0.6 g
WS-MS0292	Monodisperse particle standard (292.5 µm)	0.8 g
WS-MS0298	Monodisperse particle standard (297.9 µm)	0.8 g
WS-MS0305	Monodisperse particle standard (304.6 µm)	0.8 g
WS-MS0315	Monodisperse particle standard (315.3 µm)	1 g
WS-MS0362	Monodisperse particle standard (361.6 µm)	1 g
WS-MS0406	Monodisperse particle standard (405.9 µm)	1.5 g
WS-MS0451	Monodisperse particle standard (451 µm)	2 g
WS-MS0555	Monodisperse particle standard (555 µm)	2.5 g
WS-MS0589	Monodisperse particle standard (589 µm)	2.5 g

Image analysis standards

WS-XX015	Image analysis standard - Calibration range: 50 - 250 µm	50 g
WS-XX025	Image analysis standard - Calibration range: 170 - 710 µm	100 g
WS-XX030	Image analysis standard - Calibration range: 500 - 2000 µm	200 g
WS-XX035	Image analysis standard - Calibration range: 1400 - 5000 µm	500 g

NIST traceable sieve standards

WS-SS391	Sieve standard - For sieve size: 20 µm Mesh 635	Calibration range.....18.8 - 23.7 µm	5 x 0.8 g
WS-SS392	Sieve standard - For sieve size: 25 µm Mesh 500	Calibration range.....21.7 - 30.2 µm	5 x 0.8 g
WS-SS393	Sieve standard - For sieve size: 32 µm Mesh 450	Calibration range.....27.8 - 34.1 µm	1 x 1 g
WS-SS394	Sieve standard - For sieve size: 36, 38, 40 µm Mesh 400	Calibration range.....33.5 - 41.6 µm	5 x 1 g
WS-SS395	Sieve standard - For sieve size: 45, 50 µm Mesh 325	Calibration range.....42.0 - 50.8 µm	5 x 1 g
WS-SS396	Sieve standard - For sieve size: 53, 56 µm Mesh 270	Calibration range.....48.4 - 59.5 µm	5 x 1 g
WS-SS397	Sieve standard - For sieve size: 63 µm Mesh 230	Calibration range.....56.6 - 70.4 µm	5 x 1 g
WS-SS398	Sieve standard - For sieve size: 71, 75, 80 µm Mesh 200	Calibration range.....67.1 - 82.8 µm	5 x 1 g

Code	Product	Unit
WS-SS399	Sieve standard - For sieve size: 90 µm Mesh ....170 Calibration range....78.8 - 97.6 µm	5 x 1 g
WS-SS400	Sieve standard - For sieve size: 100, 106, 112 µm Mesh ....140 Calibration range....91.4 - 117 µm	5 x 1 g
WS-SS401	Sieve standard - For sieve size: 125 µm Mesh ....120 Calibration range....112 - 139 µm	5 x 1 g
WS-SS402	Sieve standard - For sieve size: 140, 150, 160 µm Mesh ....100 Calibration range....134 - 167 µm	5 x 2.5 g
WS-SS403	Sieve standard - For sieve size: 180 µm Mesh ....80 Calibration range....161 - 199 µm	5 x 2.5 g
WS-SS404	Sieve standard - For sieve size: 200, 212, 224 µm Mesh ....70 Calibration range....191 - 237 µm	5 x 2.5 g
WS-SS405	Sieve standard - For sieve size: 250, 280 µm Mesh ....60 Calibration range....226 - 281 µm	5 x 2.5 g
WS-SS406	Sieve standard - For sieve size: 300, 315 µm Mesh ....50 Calibration range....270 - 333 µm	5 x 2.5 g
WS-SS407	Sieve standard - For sieve size: 355 µm Mesh ....45 Calibration range....322 - 398 µm	5 x 2.5 g
WS-SS408	Sieve standard - For sieve size: 400, 425, 450 µm Mesh ....40 Calibration range....377 - 470 µm	5 x 2.5 g
WS-SS409	Sieve standard - For sieve size: 500 µm Mesh ....35 Calibration range....440 - 557 µm	5 x 2.5 g
WS-SS410	Sieve standard - For sieve size: 560, 600, 630 µm Mesh ....30 Calibration range....526 - 657 µm	5 x 2.5 g
WS-SS411	Sieve standard - For sieve size: 710 µm Mesh ....25 Calibration range....658 - 809 µm	5 x 2.5 g
WS-SS412	Sieve standard - For sieve size: 800, 850, 900 µm Mesh ....20 Calibration range....774 - 951 µm	5 x 2.5 g
WS-SS413	Sieve standard - For sieve size: 1000 µm Mesh ....18 Calibration range....910 - 1106 µm	5 x 7 g
WS-SS414	Sieve standard - For sieve size: 1120, 1180, 1250 µm Mesh ....16 Calibration range....1091- 1335 µm	5 x 10 g
WS-SS415	Sieve standard - For sieve size: 1400, 1550 µm Mesh ....14 Calibration range....1292 - 1609 µm	5 x 15 g
WS-SS416	Sieve standard - For sieve size: 1600, 1700, 1800 µm Mesh ....12 Calibration range....1515 - 1866 µm	5 x 15 g
WS-SS417	Sieve standard - For sieve size: 2000 µm Mesh ....10 Calibration range....1836 - 2236 µm	5 x 20 g
WS-SS418	Sieve standard - For sieve size: 2240, 2360, 2500 µm Mesh ....8 Calibration range....2148 - 2661 µm	5 x 20 g
WS-SS419	Sieve standard - For sieve size: 2800, 3150 µm Mesh ....7 Calibration range....2555 - 3232 µm	5 x 25 g
WS-SS420	Sieve standard - For sieve size: 3350, 3550 µm Mesh ....6 Calibration range....3072 - 3783 µm	5 x 25 g

General purpose glass microspheres

WS-GP0042	General purpose glass microspheres - Sieve fraction: 38 - 45 µm	100 g
WS-GP0049	General purpose glass microspheres - Sieve fraction: 45 - 53 µm	100 g
WS-GP0069	General purpose glass microspheres - Sieve fraction: 63 - 75 µm	100 g
WS-GP0083	General purpose glass microspheres - Sieve fraction: 75 - 90 µm	100 g
WS-GP0098	General purpose glass microspheres - Sieve fraction: 90 - 106 µm	100 g
WS-GP0116	General purpose glass microspheres - Sieve fraction: 106 - 125 µm	200 g
WS-GP0138	General purpose glass microspheres - Sieve fraction: 125 - 150 µm	200 g
WS-GP0165	General purpose glass microspheres - Sieve fraction: 150 - 180 µm	200 g
WS-GP0196	General purpose glass microspheres - Sieve fraction: 180 - 212 µm	200 g

Code	Product	Unit
WS-GP0231	General purpose glass microspheres - Sieve fraction: 212 - 250 µm	200 g
WS-GP0275	General purpose glass microspheres - Sieve fraction: 250 - 300 µm	200 g
WS-GP0328	General purpose glass microspheres - Sieve fraction: 300 - 355 µm	200 g
WS-GP0335	General purpose glass microspheres - Sieve fraction: 315 - 355 µm	200 g
WS-GP0375	General purpose glass microspheres - Sieve fraction: 350 - 400 µm	200 g
WS-GP0390	General purpose glass microspheres - Sieve fraction: 355 - 425 µm	200 g
WS-GP0463	General purpose glass microspheres - Sieve fraction: 425 - 500 µm	200 g
WS-GP0475	General purpose glass microspheres - Sieve fraction: 450 - 500 µm	200 g
WS-GP0530	General purpose glass microspheres - Sieve fraction: 500 - 560 µm	200 g
WS-GP0550	General purpose glass microspheres - Sieve fraction: 500 - 600 µm	200 g
WS-GP0580	General purpose glass microspheres - Sieve fraction: 560 - 600 µm	200 g
WS-GP0615	General purpose glass microspheres - Sieve fraction: 600 - 630 µm	200 g
WS-GP0650	General purpose glass microspheres - Sieve fraction: 600 - 710 µm	200 g
WS-GP0780	General purpose glass microspheres - Sieve fraction: 710 - 850 µm	200 g
WS-GP0925	General purpose glass microspheres - Sieve fraction: 850 - 1000 µm	200 g
WS-GP1090	General purpose glass microspheres - Sieve fraction: 1000 - 1180 µm	400 g
WS-GP1150	General purpose glass microspheres - Sieve fraction: 1120 - 1180 µm	400 g
WS-GP1215	General purpose glass microspheres - Sieve fraction: 1180 - 1250 µm	400 g
WS-GP1325	General purpose glass microspheres - Sieve fraction: 1250 - 1400 µm	400 g
WS-GP1500	General purpose glass microspheres - Sieve fraction: 1400 - 1600 µm	400 g
WS-GP1550	General purpose glass microspheres - Sieve fraction: 1400 - 1700 µm	400 g
WS-GP1700	General purpose glass microspheres - Sieve fraction: 1600 - 1800 µm	400 g
WS-GP1750	General purpose glass microspheres - Sieve fraction: 1700 - 1800 µm	400 g
WS-GP1900	General purpose glass microspheres - Sieve fraction: 1800 - 2000 µm	400 g
WS-GP2200	General purpose glass microspheres - Sieve fraction: 2000 - 2240 µm	400 g
WS-GP3000	General purpose glass microspheres - Sieve fraction: 2800 - 3200 µm	400 g
WS-GP3455	General purpose glass microspheres - Sieve fraction: 3360 - 3550 µm	400 g
WS-GP3775	General purpose glass microspheres - Sieve fraction: 3350 - 4000 µm	400 g

General purpose basalt microspheres

WS-BM0083	General purpose basalt microspheres - Sieve fraction: 75 - 90 µm	100 g
WS-BM0098	General purpose basalt microspheres - Sieve fraction: 90 - 106 µm	100 g
WS-BM0116	General purpose basalt microspheres - Sieve fraction: 106 - 125 µm	100 g
WS-BM0138	General purpose basalt microspheres - Sieve fraction: 125 - 150 µm	100 g
WS-BM0165	General purpose basalt microspheres - Sieve fraction: 150 - 180 µm	100 g
WS-BM0196	General purpose basalt microspheres - Sieve fraction: 180 - 212 µm	100 g
WS-BM0231	General purpose basalt microspheres - Sieve fraction: 212 - 250 µm	100 g
WS-BM0275	General purpose basalt microspheres - Sieve fraction: 250 - 300 µm	100 g
WS-BM0328	General purpose basalt microspheres - Sieve fraction: 300 - 355 µm	100 g
WS-BM0390	General purpose basalt microspheres - Sieve fraction: 355 - 425 µm	100 g
WS-BM0463	General purpose basalt microspheres - Sieve fraction: 425 - 500 µm	100 g
WS-BM0550	General purpose basalt microspheres - Sieve fraction: 500 - 600 µm	100 g
WS-BM0650	General purpose basalt microspheres - Sieve fraction: 600 - 710 µm	100 g
WS-BM0780	General purpose basalt microspheres - Sieve fraction: 710 - 850 µm	100 g
WS-BM0925	General purpose basalt microspheres - Sieve fraction: 800 - 1000 µm	100 g
WS-BM1090	General purpose basalt microspheres - Sieve fraction: 1000 - 1200 µm	100 g
WS-BM1300	General purpose basalt microspheres - Sieve fraction: 1200 - 1400 µm	100 g
WS-BM1500	General purpose basalt microspheres - Sieve fraction: 1400 - 1600 µm	100 g
WS-BM1700	General purpose basalt microspheres - Sieve fraction: 1600 - 1800 µm	100 g
WS-BM1900	General purpose basalt microspheres - Sieve fraction: 1800 - 2000 µm	100 g
WS-BM2200	General purpose basalt microspheres - Sieve fraction: 2000 - 2400 µm	100 g

Code	Product	Unit
Surface area		
BCR-169	alpha-Alumina - Specific surface area (BET) Certified value Specific surface area (BET)..... 0.104 m^2/g	60 g
BCR-170	alpha-Alumina - Specific surface area (BET) Certified value Specific surface area (BET)..... 1.05 m^2/g	60 g
BCR-171	Alumina - Specific surface area (BET) Certified value Specific surface area (BET)..... 2.95 m^2/g	50 g
BCR-172	Quartz - Specific surface area (BET) Certified value Specific surface area (BET)..... 2.56 m^2/g	10 g
BCR-173	Titania - Specific surface area (BET) Certified value Specific surface area (BET)..... 8.23 m^2/g	46 g
BCR-175	Tungsten - Specific surface area (BET) Certified value Specific surface area (BET)..... 0.181 m^2/g	200 g
NIST-1900	Silicon nitride - Specific surface area Intended for use in the calibration of BET instruments used to measure specific surface area (SSA) in the range 0.1 m^2/g to 1000 m^2/g. Certified values Specific surface area (BET) multipoint ..... 2.85 m^2/g Specific surface area (BET) single point ..... 2.79 m^2/g	4 g
Micropore volume and width		
BCR-704	Faujasite type zeolite Adsorption of argon at the temperature of liquid argon (87K) on a microporous material (faujasite type zeolite) according to DIN 66135-4.	10 g
BCR-705	Linde type A zeolite Adsorption of argon at the temperature of liquid argon (87 K) on a microporous material (Linde type A zeolite) according to DIN 66135-4.	10 g
	BAM-PM-101 - 104 and ERM-FD107 These reference materials are intended for the calibration and checking of instruments for the determination of the specific surface area, the specific pore volume, and the pore radius (pore width) by means of the gas adsorption method according DIN 66131 (replaced by DIN ISO 9277), DIN 66134, and DIN 66135-Part 4.	
BAM-PM-101	Quartz powder with small specific surface area CRMs for the gas adsorption method Sorptive: Kryton BET-Specific surface area (m^2/g) .....0,177 ± 0,014	10 g
BAM-PM-102	Alumina powder with small specific surface area CRMs for the gas adsorption method Sorptive: Nitrogen BET-Specific surface area (m^2/g) .....5.41 ± 0.24	10 g
BAM-PM-104	Mesoporous alumina powder CRMs for the gas adsorption method Sorptive: Nitrogen BET-Specific surface area (m^2/g) .....79.8 ± 2.0 Specific pore volume (cm^3/g) p/po=0.99.....0.210 ± 0.009 Mean pore radius (nm) .....5.31 ± 0.24 Most frequent pore radius (nm) .....3.23 ± 0.23	10 g
ERM-FD107	Microporous zeolite (Faujasite type)(BAM-P107) Pellets CRMs for the gas adsorption method Sorptive: Nitrogen Specific micropore volume (cm^3/g).....0.217 ± 0.002 Median pore width (nm)..... 0.86 ± 0.02	10 g

Code	Product	Unit

ERM-FD120 — Porous alumina - beads (BAM-PM-120) — 15 g

This reference material is intended for the calibration and checking of porosimeters by means of the whole pressure volume curves of the Hg intrusion method.

Certified values

Pore volume at 100 MPa ..... 545.0 ± 12.2 mm^3/g	Pore volume at 395 MPa ..... 548.1 ± 13.1 mm^3/g
Pore volume at 195 MPa ..... 546.7 ± 12.7 mm^3/g	Mean pore diameter d_{50} ..... 228.0 ± 5.9 nm
Pore volume at 200 MPa ..... 546.8 ± 12.7 mm3/g	Most frequent pore diameter $d_{p.m}$ ..... 232.2 ± 8.8 nm

ERM-FD121 — Porous glass - beads (BAM-PM-121) — 12 g

This reference material is intended for the calibration and checking of porosimeters by means of the whole pressure volume curves of the Hg intrusion method.

Certified values

Pore volume at 100 MPa ..... 425.0 ± 47.1 mm^3/g	Pore volume at 395 MPa ..... 624.6 ± 13.4 mm^3/g
Pore volume at 195 MPa ..... 621.9 ± 12.9 mm^3/g	Mean pore diameter d_{50} ..... 15.1 ± 0.2 nm
Pore volume at 200 MPa ..... 621.9 ± 12.9 mm^3/g	Most frequent pore diameter $d_{p.m}$ ..... 15.3 ± 0.2nm

ERM-FD122 — Porous glass - beads (BAM-PM-122) — 10 g

This reference material is intended for the calibration and checking of porosimeters by means of the whole pressure volume curves of the Hg intrusion method.

Certified values

Pore volume at 100 MPa ..... 919.7 ± 16.8 mm^3/g	Pore volume at 395 MPa ..... 924.4 ± 17.2 mm^3/g
Pore volume at 195 MPa ..... 922.5 ± 17.5 mm^3/g	Mean pore diameter d_{50} ..... 139.0 ± 3.7 nm
Pore volume at 200 MPa ..... 922.6 ± 17.5 mm^3/g	Most frequent pore diameter $d_{p.m}$ ..... 140.2 ± 3.9 nm

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Certified values

Pore volume at 100 MPa ..... 919.7 ± 16.8 mm^3/g	Pore volume at 395 MPa ..... 924.4 ± 17.2 mm^3/g
Pore volume at 195 MPa ..... 922.5 ± 17.5 mm^3/g	Mean pore diameter d_{50} ..... 139.0 ± 3.7 nm
Pore volume at 200 MPa ..... 922.6 ± 17.5 mm^3/g	Most frequent pore diameter $d_{p.m}$ ..... 140.2 ± 3.9 nm

BAM-P127 — Porous alumina - pellets of alumina — 10 g

This reference material is intended for the calibration and checking of porosimeters by means of the whole pressure volume curves of the Hg intrusion method.

Certified values

Pore volume at 50 MPa ..... 69.4 ± 8.0 mm^3/g	Pore volume at 395 MPa ..... 638.6 ± 21.6 mm^3/g
Pore volume at 100 MPa ..... 625.4 ± 13.6 mm^3/g	Mean pore diameter d_{50} ..... 24.2 ± 1.0 nm
Pore volume at 195 MPa ..... 637.1 ± 14.4mm^3/g	Most frequent pore diameter $d_{p.m}$ ..... 23.9 ± 2.8 nm

NIST-1917 — Alumina - Specific pore volume — 10 g

This SRM®/CRM jointly developed and certified by NIST and BAM is intended for use in calibrating and monitoring the performance of mercury porosimeters. The SRM®/CRM unit consists of a single bottle containing approximately 10 g of alumina beads.

Certified properties:

A) Pressure-volume curve (mercury intrusion curve) between 0.1 MPa and 400 MPa
B) Diameter-volume curve (cumulative pore volume curve) between 3.7 nm and 14708 nm
C) Pore volume values at selected intrusion pressure points; (ii) Values for the pore diameter

Certified pore volume values at selected intrusion pressures and certified pore diameter

Property	x	U	2s	Unit
Specific Pore Volume at 50 MPa	69.4	1.5	8.0	$mm^3\ g^{-1}$
Specific Pore Volume at 100 MPa	625.4	2.5	13.6	$mm^3\ g^{-1}$
Specific Pore Volume at 195 MPa	637.1	2.6	14.4	$mm^3 \cdot g^{-1}$
Specific Pore Volume at 395 MPa	638.6	3.9	21.6	$mm^3 \cdot g^{-1}$
Mean Pore Diameter d_{50}	24.2	0.2	1.0	nm
Most Frequent Pore Diameter $d_{p,m}$	23.9	0.5	2.8	nm

x - mean of the laboratory means (certified value)
U - expanded uncertainty (coverage factor 2)
s - standard deviation of the certified value
Note: all certified pore volumes are normalized values V'p = Vp(pHg) - Vp(0.1 MPa)

NIST-1918 — Silica-alumina - Specific pore volume — 12 g

This Standard Reference Material® (SRM®) is intended for use in the calibration of mercury porosimeter intrusion analytical instruments. A unit of NIST-1918 consists of one vial containing approximately 12 g of an extruded silica-alumina compound.

Certified values

Mean Pore Diameter..... 8.847 ± 0.363 nm
Median Pore Diameter..... 8.503 ± 0.218 nm
Total Intruded Volume ..... 0.547 ± 0.018 mm^3 /g

Code	Product	Unit

Particle flow

BCR-116	Limestone powders The flow of powders or granulated materials under the force of gravity affects the design and operation of silos used for their bulk storage. The European Federation of Chemical Engineering (EFCE) therefore developed a test method, based on the Jenike Shear Cell, to determine the shear strength of powders under different compaction and loading conditions. The complexity of this method is such that errors due to poor technique can easily arise. This CRM has therefore been produced with which laboratories can verify both their equipment and experimental technique. It is certified for shear stress as a function of normal applied stress for four different powder compaction stresses.	3.2 kg

Microhardness

	NIST-1893 - NIST-2830 These materials are intended for use in calibrating and checking the performance of microhardness testers and may be used in conjunction with ASTM E384.	
NIST-1894a	Bright copper - Hardness (Vickers) This Standard Reference Material® (SRM®) is intended primarily for use in calibrating Vickers-type microhardness testers and is certified for mean Vickers hardness values (HV) at loads of 0.245 N, 0.49 N, and 0.98 N (0.025 kgf, 0.050 kgf, and 0.100 kgf, respectively). NIST-1894a consists of a 1.35 cm square test block of electrodeposited bright copper, approximately 1750 µm thick, on an AISI 1010 steel substrate, mounted in a thermosetting epoxy. Five indentations were made on the SRM's polished surface for each load. Hardness values are reported in Gigapascal (GPa) and kgf/mm2. The SRM® was individually measured and bears a serial number imprinted on the side of the epoxy mount.	Each
NIST-1895	Bright nickel - Hardness (Knoop) Load 0.245, 0.490, 0.981N Certified value Hardness (nominal) ..... 600 kg/mm^2	Each
NIST-1896a	Bright nickel - Hardness (Vickers) Load 0.245, 0.490, 0.981N Certified value Hardness (nominal) ..... 600 kg/mm^2	Each
NIST-1905	Bright nickel - Hardness (Knoop) Load 2.943 Certified value Hardness (nominal) ..... 600 kg/mm^2	Each
NIST-1906	Bright nickel - Hardness (Knoop) Load 4.905N Certified value Hardness (nominal) ..... 600 kg/mm^2	Each
NIST-1907	Bright nickel - Hardness (Knoop) Load 9.81N Certified value Hardness (nominal) ..... 600 kg/mm^2	Each
NIST-1908	Bright nickel - Hardness (Vickers) This Standard Reference Material® (SRM®) is intended primarily for use in calibrating Vickers-type microhardness testers and is certified for mean Vickers hardness values (HV) at a load of 2.943 N (0.300 kgf). NIST-1908 consists of a 1.35 cm square test block of electrodeposited bright nickel, approximately 750 µm thick, on an AISI 1010 steel substrate, mounted in a thermosetting epoxy. Five indentations were made on the polished surface of the SRM®. Hardness value is reported in gigapascal (GPa) and kgf/mm2. The SRM® was individually measured and bears a serial number imprinted on the side of the epoxy mount.	Each
NIST-1909	Bright nickel - Hardness (Vickers) This Standard Reference Material® (SRM®) is intended primarily for use in calibrating Vickers-type microhardness testers and is certified for mean Vickers hardness values (HV) at a load of 9.81 N (1.000 kgf). NIST-1909 consists of a 1.35 cm square test block of electrodeposited bright nickel, approximately 750 µm thick, on an AISI 1010 steel substrate, mounted in a thermosetting epoxy. Five indentations were made on the polished surface of the SRM® . Hardness value is reported in gigapascal (GPa) and kgf/mm2. The SRM® was individually measured and bears a serial number imprinted on the side of the epoxy mount.	Each
NIST-2798A	Bright nickel - Hardness (Vickers) This Standard Reference Material (SRM®) is intended primarily for use in calibrating Vickers-type microhardness testers and is certified for mean Vickers hardness values (HV) at a load of 4.905 N (0.500 kgf). NIST-2798a consists of a 1.35 cm square test block of electrodeposited bright nickel, approximately 750 µm thick, on an AISI 1010 steel substrate, mounted in a thermosetting epoxy. Five indentations were made on the polished surface of the SRM®. Hardness value is reported in gigapascal (GPa) and kgf/mm2. The SRM® was individually measured and bears a serial number imprinted on the side of the epoxy mount.	Each
NIST-2830	Ceramic silicon nitride - Hardness (Knoop) Load 19.6N Certified value Hardness (nominal) ..... 1500 kg/mm^2	Each

Particles and surface properties

Code	Product	Unit
NIST-2831	Vickers Hardness of Ceramics and Hardmetals This Standard Reference Material (SRM®) is intended for use in the calibration of all hardness and microhardness testing machines whereby a Vickers indentation is made and then measured with a microscope. The SRM has five NIST-made indents in the middle of a polished face certified for the individual diagonal lengths, the average diagonal length, and the average hardness value for indentations made at a load of 9.8 N (1 kgf). A unit of NIST-2831 consists of a 25 mm D × 9.5 mm disc that has a nominal hardness of approximately 15.0 GPa (1530 kgf/mm^2) packaged in a wooden box. Each unit is individually certified and bears a serial number scribed on the opposite (bottom) face of the disc. Vickers hardness is calculated as $HV = \alpha P/d^2$, where P is the indentation load, d is the average diagonal size [(d1 + d2)/2], and α is the indenter constant, which, for an ideal Vickers indenter is 1.8544. If P is in units of Newton, and d is in units of meters, then HV will be in units of N/m^2 or Pa. A conversion factor of 1×10^{-9} may be used to convert HV to units of GPa. In this certificate, older traditional units of hardness expressed as kgf/mm^2 are also included in parenthesis for the convenience of users.	Each

Surface roughness

NIST-2073a	Electroless-nickel coated steel This Standard Reference Material® is certified for roughness average R_a and surface spatial wavelengh, D, and is intended for use as a standard for the calibration of stylus instruments that are used to measure surface roughness. 2.4 cm x 3.3 cm Certified values Roughness average R_a..... 3.0 μm Wavelength D ..... 99.099 μm	Each
NIST-2074	Electroless-nickel coated steel This Standard Reference Material® is certified for roughness average R_a and surface spatial wavelengh, D, and is intended for use as a standard for the calibration of stylus instruments that are used to measure surface roughness. 2.4 cm x 3.3 cm Certified values Roughness average R_a..... 1.0 μm Wavelength D ..... 40 μm	Each
NIST-2075	Electroless-nickel coated steel This Standard Reference Material® is certified for roughness average R_a and surface spatial wavelengh, D, and is intended for use as a standard for the calibration of stylus instruments that are used to measure surface roughness. 2.4 cm x 3.3 cm Certified values Roughness average R_a..... 1.0 μm Wavelength D ..... 800 μm	Each
NIST-RM 8457	Ultra high molecular weight polyethylene This Reference Material (RM), is intended for evaluations of cross-linking induced by radiation exposure, such as used to improve wear characteristics. Each unit of NIST-RM 8457 consists of 10 cubes of ultra high molecular weight polyetheylene (UHMWPE) of nominal dimension 0.5 cm. The cubes are sized for measurement of cross-link density by swelling. The material as supplied has not been irradiated, however. Reference values Cube dimension Dimension (cm) Surface roughness (μm) Faces normal to bar direction .....0.4919 ± 0.005 .....5.5 ± 0.6 Faces perpendicular to bar direction .....0.5017 ± 0.006	10 cubes

Surface tension

	GUM 11.1 - GUM 11.3 Reference materials certified by the Physical Chemistry Division of the Central Office of Measures (GUM), Warsaw. They are intended for the calibration and checking tensiometers. All standards are supplied with a certificate showing value of surface tension with an uncertainty 0.1 mN/m and value of density with an uncertainty of 0.1 kg/m^3 . Decimal values are given in the certificate.	
GUM 11.1	Isooctane Certified value Surface tension.....18 mN/m at 20 ºC	30 mL
GUM 11.2	Benzene Certified value Surface tension.....28 mN/m at 20 ºC	30 mL
GUM 11.3	Glycerol Certified value Surface tension.....63 mN/m at 20 ºC	30 mL

Code	Product	Unit

Depth profiling

BCR-261T — Tantalum pentoxide on tantalum foil — 2x4 foils

The material consists of two sets of 4 rectangular foils of 5 x 10 mm^2 of both oxide thicknesses. The oxide layers are grown by anodic oxidation evenly on both sides of the foils.

Certified values

Areal density of oxygen atoms

	Certified values [10^{21} m^{-2}]	Uncertainty [10^{21} m^{-2}]
Oxide thickness n		
30 nm material (nominal)	1.72	0.07
100 nm material (nominal)	5.40	0.12

	Certified ratio [dimensionless]	Uncertainty [dimensionless]
Oxide thickness ratio (n_{30}/n_{100})	0.321	0.013

NIST-2134 — Arsenic in silicon - Depth profile — Each

This Standard Reference Material® (SRM®) is intended for use in calibrating secondary ion response to minor and trace levels of arsenic in a silicon matrix by the analytical technique of secondary ion mass spectrometry (SIMS). NIST-2134 is intended for calibrating the response of a SIMS instrument for arsenic in a silicon matrix under a specific set of instrumental conditions. It may also be used by a laboratory as a transfer standard for the calibration of working standards of arsenic in silicon. This SRM consists of a 1 cm x 1 cm single crystal silicon substrate that has been ion implanted with the isotope ^{75}As at a nominal energy of 100 keV.
NIST-2134 is certified for the retained dose of 75 As atoms. The dose is expressed in units of arsenic mass per unit area. Additional noncertified information about the concentration of arsenic atoms as a function of depth below the surface is provided by SIMS.
The total retained dose of ^{75}As atoms was determined by instrumental neutron activation analysis.

Certified Retained Dose of ^{75} As.....0.09120 µg/cm^2 ± 0.00035 µg/cm^2

Using a value of 74.9216 g/mol for the isotopic mass of ^{75}As, the retained dose is equivalent to 7.330 × 10^{14} atoms/cm 2 ± 0.028 × 10^{14} atoms/cm^2

NIST-2135C — Nickel-chromium thin film - Depth profile — Each

Intended for calibrating equipment used to measure sputtered depth and erosion rates in surface analysis.

Total thickness

Certified values

Cr..... 206.3 µg/cm^2 Ni.....197.4 µg/cm^2

Single layer thickness

Certified values

Cr..... 41.3 µg/cm^2 Ni.....49.4 µg/cm^2

NIST-2137 — Boron implant in silicon - Depth profile — Each

Intended for calibrating the secondary ion response to minor and trace element levels in a silicon matrix.

Certified value

B-10 ..... 1.018 x 10^{15} atoms/cm^2

Length calibration and lateral resolution

BAM-L200 — Nanoscale stripe pattern for length calibration and testing of lateral resolution — Each

Stripe pattern, dimensions: 10.8 mm x 4 mm x approx. 5 mm

Please ask for further details

Thickness

BAM-L100 — Titanium (Ti) Aluminium (Al) multilayer on 100Cr6 steel substrate - disc (30 mm x 5 mm) — disc

Total layer thickness..... individually certified for each CRM

BAM-L101 — Titanium dioxide (TiO2) Silicon dioxide (SiO2) multilayer on BK7 glass - plate (30 mm x 30 mm x 1 mm) — plate

Total layer thickness..... individually certified for each CRM

BAM-L102 — Titanium nitride (TiN) single layer - disc (30 mm x 5 mm) — disc

Layer thickness..... individually certified for each CRM

BAM-L103 — Vanadium nitride (VN) single layer - disc (30 mm x 5 mm) — disc

Layer thickness..... individually certified for each CRM

BAM-L104 — Titanium carbide (TiC) single layer- disc (30 mm x 5 mm) — disc

Layer thickness..... individually certified for each CRM

BAM-L105 — Vanadium carbide (VC) single layer- disc (30 mm x 5 mm) — disc

Layer thickness..... individually certified for each CRM

Particles and surface properties

Code	Product	Unit
	NIST-1358B - NIST-1364B These NIST Standard Reference Materials® are suitable for calibrating instruments used in the measurement of organics and nonmagnetic inorganic coatings on steel. They consist of fine grained copper of varying thicknesses electrodeposited onto low carbon steel substrates having the properties of AISI 1010 steel. These uniform coatings are then overplated with a thin protective layer of chromium and the total coating thickness is then certified.	
NIST-1358b	Copper and chromium on steel - Coating thickness 45 mm × 45 mm coupons	set (4)
NIST-1359b	Copper and chromium on steel - Coating thickness 45 mm × 45 mm coupons	set (4)
NIST-1361b	Copper and chromium on steel - Coating thickness 45 mm × 45 mm coupons	set (4)
NIST-1362b	Copper and chromium on steel - Coating thickness 45 mm × 45 mm coupons	set (4)
NIST-1363b	Copper and chromium on steel - Coating thickness 45 mm × 45 mm coupons	set (4)
NIST-1364b	Copper and chromium on steel - Coating thickness 45 mm × 45 mm coupons	set (4)
NIST-2321	Tin-lead alloy on copper Intended for calibrating X-ray fluorescence equipment. Each unit, which consists of a plate of an electroplated tin-lead alloy coating on a copper substrate, is individually certified for composition and mass per unit area.	Each

Abrasive wear

NIST-1857	D-2 Tool steel 0.78 x 2.5 x 7.6 cm Certified for the ASTM G65 abrasion test	2 blocks

Reference Nanomaterials

LGC Standards introduces reference nanomaterials range

LGC Standards has introduced the NM series reference nanomaterials to aid research and testing into the applications and impacts of nanotechnology.

One of the most comprehensive nanomaterial research programmes is being carried out by the Organisation for Economic Co-operation and Development's (OECD) Working Party on Manufactured Nanomaterials (WPMN). This programme focuses on the implications of the use of nanomaterials for human health and environment safety, focusing on testing and assessment methods. Master samples of the NM-series reference nanomaterials are stored in the nanomaterials repository of the European Commission's Joint Research Centre (JRC). The JRC distributes these master samples for use by EU Member States' authorities and in the OECD's Working Party on Manufactured Nanomaterials programme.

The NM nanomaterials available from LGC Standards encompass the OECD WPMN priority list of nanomaterials. These materials have been selected based on commercial importance and have been characterised using OECD recommended test methods and may serve as:

- Performance standard materials for testing and test method development
- Control materials for safety testing
- Testing materials for reference result and predictive toxicity testing

The materials have been produced from a selected homogenised master batch of raw material and sub-sampled under Good Laboratory Practice (GLP) conditions. The homogeneity and stability of all the samples follow the principles of ISO Guide 34 and are continuously monitored for stability under an isochronous monitoring study scheme.

Reference data

The NM nanomaterials are supplied with a Material Information Sheet. Available information includes material identification data such as CAS number, structural formula/molecular structure, composition (including degree of purity, known impurities or additives), basic morphology and surface chemistry.

Extensive data on the endpoints tested is being collated to provide further information on the material's Physical-Chemical Properties and Material Characterization, Environmental Fate and Mammalian Toxicology.

REACH applications:

The EU REACH regulations covering the Registration, Evaulation, Authorisation, and Restriction of Chemical Substances applies to nanomaterials.

As stated in the REACH guidance, registration dossiers should include "Available information from assessments carried out under other international and national programmes (...). Deviations from such assessments shall be justified". For nanomaterials an important source of assessments is those carried out by the Organisation for Economic Co-operation and Development's Working Party on Manufactured Nanomaterials, using these NM series products.

	Code	Product	Unit
New	NM-101	Titanium dioxide (anatase, uncoated) Particle characterisation methods Primary crystal size according to Scherrer 8 nm Primary crystal size according to XRD determination 6 nm Specific surface area according to BET 320 m²/g	2000 mg
New	NM-102	Titanium dioxide (anatase, uncoated) Particle characterisation methods Primary crystal size according to Scherrer 22 nm Primary crystal size according to XRD determination 20 nm Specific surface area according to BET 90 m²/g	500 mg
New	NM-103	Titanium dioxide (hydrophobic, rutile) Particle characterisation methods Primary crystal size according to Scherrer 20 nm Primary crystal size according to XRD determination 20 nm Specific surface area according to BET 60 m²/g	2000 mg
New	NM-104	Titanium dioxide (hydrophilic, rutile) Particle characterisation methods Primary crystal size according to Scherrer 20 nm Primary crystal size according to XRD determination 20 nm Specific surface area according to BET 60 m²/g	500 mg
New	NM-105	Titanium dioxide (rutile-anatase) Particle characterisation methods Primary crystal size according to Scherrer 21 nm Primary crystal size according to XRD determination 22 nm Specific surface area according to BET 61 m²/g	250 mg

	Code	Product	Unit
New	NM-110	Zinc oxide (uncoated) Particle characterisation methods Primary crystal size according to Horiba Light scattering 70-200 nm Primary crystal size according to XRD determination 41.5 nm Specific surface area according to BET 13 m²/g	2000 mg
New	NM-111	Zinc oxide (coated triethoxycaprylylsilane) Particle characterisation methods Particle size < 200 nm (mean ca. 130 nm, range about 90 to 190 nm analyzed by Horiba Light Scattering) Primary crystal size according to XRD determination 33.8 nm Specific surface area according to BET 16 m²/g	2000 mg
New	NM-200	Synthetic amorphous silica (PR-A-02) Particle characterisation methods Primary particles in the 10-25 nm range, particles aggregated Primary crystal size by TEM 20 nm Specific surface area according to BET 230 m²/g	500 mg
New	NM-201	Synthetic amorphous silica (PR-B-01) Particle characterisation methods Primary particles in the 10-25 nm range, particles aggregated Primary crystal size by TEM 20 nm	500 mg
New	NM-202	Synthetic amorphous silica (PY-AB-03) Particle characterisation methods Primary particles in the 10-25 nm range, particles aggregated Primary crystal size by TEM 20 nm	500 mg
New	NM-203	Synthetic amorphous silica (PY-A-04) Particle characterisation methods Primary particles in the 5-30 nm range, particles aggregated Primary crystal size by TEM 20 nm Specific surface area according to BET 226 m²/g	500 mg
New	NM-204	Synthetic amorphous silica (PR-A-05) Particle characterisation methods Primary particles in the 10-25 nm range, particles aggregated Primary crystal size by TEM 20 nm Specific surface area according to BET 144 m²/g	2000 mg
New	NM-211	Cerium (IV) oxide (precipitated, uncoated, cubic) Particle characterisation methods Primary crystal size according to Scherrer 10.3 nm Specific surface area according to BET 66 m²/g	500 mg
New	NM-212	Cerium (IV) oxide (precipitated, uncoated, cubic) Particle characterisation methods Primary crystal size according to Scherrer 33 nm Specific surface area according to BET 28 m²/g	500 mg
New	NM-300K	Silver (< 20 nm) Particle characterisation methods Solid Contents: 10.16 weight % Particle size: 15 nm; D90 <20nm (90% < 20nm)	2000 mg
New	NM-300KDIS	Ag - dispersant The material corresponds to the matrix/media/vehicle of NM 300K including all components, but without silver and serves as control material.	1000 mg
New	NM-302	Silver rods Particle characterisation methods Solid contents: 8.3 weight % Particles size 50nm diameter, elongated, rods	2000 mg
New	NM-400	Multi-walled carbon nanotubes Particle characterisation methods Average diameter: 9.5 nm Average length: 1.5 µm Specific surface area according to BET 280 m²/g	250 mg
New	NM-401	Multi-walled carbon nanotubes Particle characterisation methods Average diameter 10-30 nm Length 5-15 µm Specific surface area according to BET 300 m^2/g	150 mg

Code	Product	Unit
New NM-402	Multi-walled carbon nanotubes Particle characterisation methods Average diameter: 5-15 nm Length: 0.1 - 10 µm Specific surface area according to BET 50-300 m²/g	250 mg

Optical properties

Molecular absorption and luminescence

Code	Product	Unit
ERM-FB012	IR wavelength standard - Polystyrene in hexane This certified reference material is intended for use in the verification and calibration of infra-red spectrometers, within the range of spectral bandwidths quoted Certified values IR wavelength positions of four peaks (3026.0, 1601.1, 1028.8 and 698.0 cm^{-1}).	5 x 1 mL
ERM-FB020	UV-Visible wavelength standard for HPLC detectors - Holmium/neodymium oxides solution The certified reference material is intended for use in the verification and calibration of the wavelength scale of ultra-violet/visible HPLC detectors. Certified values UV/visible wavelength location of 7 peaks in the spectral range 241 to 797 nm at four spectral bandwidths (1, 4, 7 and 10 nm).	2 x 3 mL
ERM-FB021	UV-Visible absorbance standard for HPLC detectors - Sodium nitrate/cobalt chloride/nickel chloride solution This certified reference material is intended for checking the linearity of the absorbance scales of UV/Visible HPLC detectors Certified values 7 standard + 1 blank UV/visible absorbance for four wavelengths (299, 395, 512 and 719 nm) at 4 bandwidths (1, 4, 7, and 10 nm).	8 x 3 mL
NIST-931f	Liquid filters UV-visible absorbance at 4 wavelengths (302, 395, 512 and 678 nm).	set (12)

Liquid Filter	Nominal Wavelength (nm)			
	302	395	512	678
Level I	0.2925 ± 0.0016	0.3108 ± 0.0017	0.3011 ± 0.0017	0.1169 ± 0.0012
Level II	0.5969 ± 0.0028	0.6223 ± 0.0029	0.5917 ± 0.0029	0.2344 ± 0.0018
Level III	0.9668 ± 0.0043	0.9328 ± 0.0042	0.8969 ± 0.0042	0.3517 ± 0.0024

Code	Product	Unit
NIST-935a	Potassium dichromate - UV UV absorbance at 5 wavelengths (235, 257, 313, 345, and 350 nm).	15 g
New NIST-1935A	Potassium dichromate solution/UV absorbance standard This Standard Reference Material® (SRM®) is intended for use as a reference standard for verifying the accuracy of the absorbance scale of absorption spectrometers that can provide an effective bandpass of 2 nm or less at 235 nm, 257 nm, 313 nm, and 350 nm. A unit of NIST-1935a contains five blank solutions and five sample solutions, for a total of ten ampoules. The nominal absorbances referred to the blank, span a range of 0.3 to 0.9 absorbance units over the four certified wavelengths for a 10 mm pathlength cuvette. Approximately 10 mL of each solution is flame-sealed into an individual glass ampoule, which has been pre-scored for easy opening. The blank and sample solutions are packaged in separate trays. Certified net apparent absorbance for NIST-1935a at 22 °C ± 2 °C and for a 10.00 mm pathlength Certified Value of Apparent Absorbance at Indicated Wavelength 235 nm..... 0.7455 ± 0.0040 313 nm .....0.2905 ± 0.0032 257 nm..... 0.8680 ± 0.0050 350 nm .....0.6456 ± 0.0034	set (10)
GUM 9D.1	Estrofol film film - Wavenumber standard for infrared range This reference material from the Central Office of Measures (Poland) is intended for use in the calibration of the wave number scale of spectrophotometers in the infrared (IR) spectral region from 400 cm^{-1} to 4000 cm^{-1} (21 peaks). GUM 9.D1 consists of two cards made of transparent poly(ethylene terephthalate) film 6 mm and 50 mm thick, in holders.	set (2)
NIST-1921b	Polystyrene film - IR transmission wavelength This Standard Reference Material® (SRM®) is intended primarily for use in calibrating the wavelength (wavenumber) scale of spectrophotometers in the infrared (IR) spectral region from 3.2 µm to 18.5 µm (540 cm-1 to 3125 cm-1). SRM 192lb is a matt finish polystyrene film approximately 38 µm thick with a 25 mm diameter exposed area, centered 38 mm from the bottom of a cardboard holder, which is 5 cm × 11 cm × 0.2 cm in size.	card
NIST-2940	Relative intensity correction standard for fluorescence spectroscopy (Orange emission) 412 nm This Standard Reference Material® (SRM®) is intended for use for the evaluation and calibration of the relative spectral responsivity of steady-state fluorescence spectrometers with a continuous excitation source and for determining the day-to-day or instrument-to-instrument intensity variations of a single or similar fluorescence instrument(s), respectively. This SRM® is certified for the relative, corrected emission spectrum, E, in relative power units from emission wavelengths λ_{EM} = 500 nm to 800 nm at 1 nm wavelength intervals at a fixed excitation wavelength (λ_{EX}) of 412 nm.	contain.

	Code	Product	Unit
	NIST-2941	Relative intensity correction standard for fluorescence spectroscopy (Green emission) 427 nm This Standard Reference Material® (SRM®) is intended for use for the evaluation and calibration of the relative spectral responsivity of steady-state fluorescence spectrometers with a continuous excitation source and for determining the day-to-day or instrument-to-instrument intensity variations of a single or similar fluorescence instrument(s), respectively. This SRM® is certified for the relative, corrected emission spectrum, E, in relative power units from emission wavelengths λ_{EM} = 450 nm to 650 nm at 1 nm wavelength intervals at a fixed excitation wavelength (λ_{EX}) of 427 nm.	cuv. (1)
New	NIST-2942	Relative intensity correction standard for fluorescence spectroscopy (Ultraviolet emission) 310 nm This Standard Reference Material (SRM) is intended for use in the evaluation and calibration of the relative spectralresponsivity of steady-state fluorescence spectrometers with a continuous excitation source and for determining the day-to-day or instrument-to-instrument intensity variations of a single or similar fluorescence instrument(s), respectively. A unit of NIST-2942 consists of a single cuvette-shaped piece of solid glass. This SRM is certified for the relative, corrected emission spectrum, E, in relative energy unitsfrom emission wavelengths λEM = 320 nm to 430 nm at 1 nm wavelength intervals at a fixed excitation wavelength (λEX) of 310.1 nm.	Each
New	NIST-2943	Relative intensity correction standard for fluorescence spectroscopy (Blue emission) This Standard Reference Material® (SRM®) is intended for use in the evaluation and calibration of the relative spectral responsivity of steady-state fluorescence spectrometers with a continuous excitation source and for determining the day-to-day or instrument-to-instrument intensity variations of a single or similar fluorescence instrument(s), respectively. NIST-2943 is a copper-doped (mole fraction of 0.01 % Cu_2O) phosphate-matrix glass. A unit of NIST-2943 consists of a single cuvette-shaped piece of solid glass. Each piece is a rectangular solid block with standard cuvette dimensions 12.5 mm × 12.5 mm × 45.0 mm, with three of the four long faces optically polished and one long face, the top face and the bottom face ground to a frosted finish using a 400 grit polish. The serial number of each unit is etched on the top face. There are 17 units of NIST-2943 Sample Series with serial numbers Cu0xx through yy. This SRM is certified for the relative, corrected emission spectrum, E, in relative energy units from emission wavelengths λ_{EM} = 350 nm to 640 nm at 1 nm wavelength intervals at a fixed excitation wavelength (λ_{EX}) of 330.3 nm. Due to larger signal-to-noise levels near the peak maximum, the emission range from λ_{EM} = 380 nm to 560 nm is recommended as optimal for most instruments and applications. Note that this standard's certified values become reference values when used for spectral correction of fluorescence spectrometers with pulsed light sources.	Each
	NIST-2036	Near infrared wavelength/reflection standard This Standard Reference Material (SRM®) is a certified transfer standard intended for the verification and calibration of the wavelength/wavenumber scale of Near-Infrared (NIR) spectrometers operating in diffuse reflectance mode. NIST-2036 is a glass physically contacted with a piece of sintered polytetrafluoroethylene (PTFE). The combination of the rare earth oxide glass with a nearly ideal diffuse reflector provides reflection-absorption bands that range from approximately 15 % R to 40 % R. NIST-2036 is certified for the 10 % band fraction centroid of seven bands spanning the spectral region from 975 nm to 1946 nm (air wavelength). In addition, it is certified for the 10 % band fraction centroid location of the same seven bands in the spectral region from 10300 cm^{-1} to 5130 cm^{-1} at 8 cm^{-1} resolution (vacuum wavenumber).	Each
	NIST-2065	Ultraviolet-visible-near-infrared transmission wavelength/vacuum wavenumber standard This Standard Reference Material (SRM®) is a certified standard intended for the verification and calibration of the wavelenght/wavenumber scale of ultraviolet (UV)-Visible-Near-Infrared (NIR) spectrometers operating in transmission mode. NIST-2065 is certified for the location of seven absorbance bands (COG) in the spectral region from 10300 cm^{-1} to 5130 cm^{-1} at 4 cm^{-1} resolu tion. NIST-2065 is a glass consisting of a combination of rare earth oxides. The optical filter is 25 mm in diameter and 1.5 mm thick. Please ask for more details.	Each
	NIST-2517a	High resolution wavelength calibration reference Intended for wavelength calibration in the spectral region of 1510 nm to 1540 nm. NIST-2517a is a single-mode optical-fibre-coupled absorption cell containing acetylene ($^{12}C_2H_2$) gas at a pressure of 6.7 kPa (50 Torr). The absorption path length is 5 cm and the absorption lines are about 7 pm wide.	cell
	NIST-2241	Relative Intensity Correction Standard for Raman Spectroscop Using 785 nm Excitation NIST-2241 is a chromium-doped (0.02 mol % Cr_2O_3) sodium borosilicate matrix glass. One unit of this Standard Reference Material® consists of a glass slide that is approximately 10.7 mm in width × 30.4 mm in length × 2.0 mm in thickness, with one surface optically polished and the opposite surface ground to a frosted finish using a 400 grit polish. This Standard Reference Material® (SRM®) is a certified spectroscopic standard for the correction of the relative intensity of Raman spectra obtained with instruments employing 785 nm laser excitation. NIST-2241 consists of an optical glass that emits a broadband luminescence spectrum when excited with 785 nm laser radiation. The relative spectral intensity of the glass luminescence has been determined through the use of a white-light, uniform-source, integrating sphere that has been calibrated for its irradiance at NIST. The shape of the luminescence spectrum of this glass is described by a polynomial expression that relates the relative spectral intensity to the wavenumber (cm -1) expressed as the Raman shift from the excitation wavelength of 785 nm. This polynomial, together with a measurement of the luminescence spectrum of the standard, can be used to determine the spectral intensity-response correction that is unique to each Raman system. The resulting instrument-intensity-response correction may then be used to obtain Raman spectra that are instrument independent. This SRM® is intended for use in measurements over the range of 20 °C to 25 °C and with Raman systems that employ laser excitation at 785 nm. It may also be used for Raman excitation with lasers that range from 784 nm to 786 nm in excitation wavelength.	Each

Code	Product	Unit
NIST-2242	Relative Intensity Correction Standard for Raman Spectroscopy NIST-2242 is a certified spectroscopic standard for the correction of the relative intensity of Raman spectra obtained with instruments employing 532 nm laser excitation. It consists of an optical glass that emits a broadband luminescence spectrum when excited with 532 nm laser radiation. The relative spectral intensity of the glass luminescence has been determined through the use of a white-light, uniform-source, integrating sphere that has been calibrated for its irradiance at NIST. The shape of the luminescence spectrum of this glass is described by a polynomial expression that relates the relative spectral intensity to the wavenumber (cm^{-1}) expressed as the Raman shift from the excitation wavelength of 532 nm. This polynomial, together with a measurement of the luminescence spectrum of the standard, can be used to determine the spectral intensity-response correction that is unique to each Raman system. The resulting instrument-intensity-response correction may then be used to obtain Raman spectra that are instrument independent. This Standard Reference Material (SRM®) is intended for use in measurements over the range of 20 °C to 25 °C.	Each
NIST-2243	Relative Intensity Correction Standard for Raman Spectroscopy This Standard Reference Material (SRM®) is a certified spectroscopic standard for the correction of the relative intensity of Raman spectra obtained with instruments employing either 488 nm or 514.5 nm laser excitation. NIST-2243 consists of an optical glass that emits a broadband luminescence spectrum when excited with either of these two laser wavelengths. The relative spectral intensity of the glass luminescence, for each excitation wavelength, has been determined through the use of a white-light, uniform-source, integrating sphere that has been calibrated for its irradiance at NIST. The shape of the luminescence spectrum of this glass is described by a polynomial expression that relates the relative spectral intensity to the wavenumber (cm^{-1}) expressed as the Raman shift from the excitation laser wavelength. This polynomial, together with a measurement of the luminescence spectrum of the standard, can be used to determine the spectral intensity-response correction that is unique to each Raman system. The resulting instrument-intensity-response correction may then be used to obtain Raman spectra that are instrument independent.	Each
New NIST-2244	Relative Intensity Correction Standard for Raman Spectroscopy Using 1064 nm Excitation NIST-2244 is a certified spectroscopic standard for the correction of the relative intensity of Raman spectra obtained with instruments employing 785 nm laser excitation. NIST-2241 consists of an optical glass that emits a broadband luminescence spectrum when excited with 785 nm laser radiation. The relative spectral intensity of the glass luminescence has been determined through the use of a white-light, uniform-source, integrating sphere that has been calibrated for its irradiance at NIST. The shape of the luminescence spectrum of this glass is described by a polynomial expression that relates the relative spectral intensity to the wavenumber (cm^{-1}) expressed as the Raman shift from the excitation wavelength of 785 nm. This polynomial, together with a measurement of the luminescence spectrum of the standard, can be used to determine the spectral intensity-response correction that is unique to each Raman system. The resulting instrument-intensity-response correction may then be used to obtain Raman spectra that are instrument independent.	Each

Starna optical reference materials

Starna® optical reference materials produced by Starna Scientific are available from LGC Standards. Starna Scientific was one of the first reference material producers in the UK to receive accreditation to ISO guide 34. The company has over 30 years experience in the development and production of liquid-filled, heat sealed quartz cells with good long term stability and the optical properties needed to evaluate performance of UV-visible spectrophotometers. The range also includes robust solid glass filter materials for both absorbance and wavelength measurements. These certified reference materials (CRM) for the validation of wavelength accuracy, absorbance accuracy, stray light and resolution in the UV and visible regions, can be used in analytical, clinical and research laboratories. All of the Starna® CRMs are traceable to NIST primary standards. Brief descriptions of the types of products available are given below with more detailed product descriptions in the pages that follow.

Absorbance / transmission

Potassium dichromate - UV absorbance and linearity

The use of potassium dichromate solvated in perchloric acid is an established and recognised method for the validation of the absorbance scale of UV and visible spectrophotometers. Starna® provides sets of certified sealed cells covering absorbance values from 0.2 to 3.0 over the wavelength range from 235nm to 350nm. For the far UV, nicotinic acid is the recognised standard and covers from 210nm to 270nm.

STRM-0204060810	Potassium dichromate - UV absorbance and linearity Set of 6 cells Each set consists of one blank (0.001M perchloric acid) and five concentrations, with nominal values of 20 mg/L, 40 mg/L, 60 mg/L, 80 mg/L, and 100 mg/L.	set
STRM-0204060810-R	Recertification: Potassium dichromate - UV absorbance and linearity	set
STRM-02040608	Potassium dichromate - UV absorbance and linearity Set of 5 sets Each set consists of one blank (0.001M perchloric acid) and four concentrations, with nominal values of 20 mg/L, 40 mg/L, 60 mg/L and 80 mg/L.	set
STRM-02040608-R	Recertification: Potassium dichromate - UV absorbance and linearity	set
STRM-020406	Potassium dichromate - UV absorbance and linearity Set of 4 cells Each set consists of one blank (0.001M perchloric acid) and three concentrations, with nominal values of 20 mg/L, 40 mg/L and 60 mg/L.	set
STRM-020406-R	Recertification: Potassium dichromate - UV absorbance and linearity	set

Optical properties

Code	Product	Unit
STRM-0204	Potassium dichromate - UV absorbance and linearity Set of 3 cells Each set consists of one blank (0.001M perchloric acid) and two concentrations, with nominal values of 20 mg/L and 40 mg/L.	set
STRM-0204-R	Recertification: Potassium dichromate - UV absorbance and linearity	set
STRM-02	Potassium dichromate - UV absorbance and linearity Set of 2 cells Each set consists of one blank (0.001M perchloric acid) and a solution with a nominal value of 20 mg/L.	set
STRM-02-R	Recertification: Potassium dichromate - UV absorbance and linearity	set
STRM-04	Potassium dichromate - UV absorbance and linearity Set of 2 cells Each set consists of one blank (0.001M perchloric acid) and a solution with a nominal value of 40 mg/L.	set
STRM-04-R	Recertification: Potassium dichromate - UV absorbance and linearity	set
STRM-06	Potassium dichromate - UV absorbance and linearity Set of 2 cells Each set consists of one blank (0.001M perchloric acid) and a solution with a nominal value of 60 mg/L.	set
STRM-06-R	Recertification: Potassium dichromate - UV absorbance and linearity	set
STRM-08	Potassium dichromate - UV absorbance and linearity Set of 2 cells Each set consists of one blank (0.001M perchloric acid) and a solution with a nominal value of 80 mg/L.	set
STRM-08-R	Recertification: Potassium dichromate - UV absorbance and linearity	set
STRM-10	Potassium dichromate - UV absorbance and linearity Set of 2 cells Each set consists of one blank (0.001M perchloric acid) and a solution with a nominal value of 100 mg/L.	set
STRM-10-R	Recertification: Potassium dichromate - UV absorbance and linearity	set
STRM-60	Potassium dichromate - UV absorbance and linearity Set of 2 cells Each set consists of one blank (0.001M perchloric acid) and a solution with a nominal value of 600 mg/L.	set
STRM-60-R	Recertification: Potassium dichromate - UV absorbance and linearity	set

Neutral density filter - Visible absorbance and linearity

Schott NG-type glasses are used for the validation of the absorbance scale and linearity of spectrophotometers in the visible region. Starna® neutral density filters are available in sets covering nominal transmission values from from 0.1% to 90%.

STRM-D1D39N	Neutral density filter - Visible absorbance and linearity Set of 3 glass filters and a blank holder Consists of one blank holder and three filters with nominal values of 0.1 %T, 0.3 %T, and 90 %T.	set
STRM-D1D39N-R	Recertification: Neutral density filter - Visible absorbance and linearity	set
STRM-1N2N3N	Neutral density filter - Visible absorbance and linearity Set of 3 glass filters and a blank holder Consists of one blank holder and three filters with nominal values of 10 %T, 20 %T, and 30 %T.	set
STRM-1N2N3N-R	Recertification: Neutral density filter - Visible absorbance and linearity	set
STRM-N1N35N	Neutral density filter - Visible absorbance and linearity Set of 3 glass filters and a blank holder Consists of one blank holder and three filters with nominal values of 1 %T, 3 %T, and 50 %T.	set
STRM-N1N35N-R	Recertification: Neutral density filter - Visible absorbance and linearity	set
STRM-5N	Neutral density filter - Visible absorbance and linearity Set of 1 glass filter and a blank holder Consists of one blank holder and one filter with a nominal value 50 %T.	set
STRM-5N-R	Recertification: Neutral density filter - Visible absorbance and linearity	set

Far UV Absorbance/transmission

STRM-1A2A3A4A	Nicotinic acid - UV absorbance and linearity Set of 5 cells Each set consists of one blank (0.1M hydrochloric acid) and four increasing concentrations, with nominal values of 6 mg/L, 12 mg/L, 18 mg/L and 24 mg/L.	set
STRM-1A2A3A4A-R	Recertification: Nicotinic acid - UV absorbance and linearity	set

Code	Product	Unit

Wavelength

	Starna® sealed liquid references are available covering all wavelengths from the far UV to the visible. For the UV and visible, rare earth oxides like holmium oxide, didymium (a mixture of neodymium and praseodymium) and samarium solvated in perchloric acid are well recognised as suitable wavelength references.	
STRM-HL	Holmium oxide - UV and visible wavelength Description: Holmium oxide (4% m/v) in 10% v/v perchloric acid. Primary usage: Assessment of wavelength scale accuracy in both UV and visible regions. Useable range: 240 nm to 650 nm, instruments with spectral bandwidth of less than 3 nm. Physical configuration: Far UV quartz cells that have been permanently heat sealed. Consists of one sealed cell, with certified peak at spectral bandwidth values of 0.10 nm, 0.25 nm, 0.50 nm, 1.00 nm, 1.50 nm, 2.00 nm and 3.00 nm.	cell
STRM-HL-R	Recertification: Holmium oxide - UV and visible wavelength	cell
STRM-DL	Didymium (neodymium & praesodymium) - UV and visible wavelength Description: Didymium (neodymium praesodymium) in perchloric acid. Primary usage: Assessment of wavelength scale accuracy in both UV and visible regions. Useable range: 290 nm to 870 nm, instruments with spectral bandwidth of less than 5 nm. Physical configuration: Far UV quartz cells that have been permanently heat sealed. Consists of one sealed cell, with certified peak at spectral bandwidth values of 0.10 nm, 0.25 nm, 0.50 nm, 1.00 nm, 1.50 nm, 2.00 nm and 3.00 nm.	cell
STRM-DL-R	Recertification: Didymium (neodymium & praesodymium) - UV and visible wavelength	cell
STRM-SL	Samarium - UV and visible wavelength Description: Samarium (III) oxide in perchloric acid. Primary usage: Assessment of wavelength scale accuracy in both UV and visible regions. Useable range: 230 nm to 560 nm, instruments with spectral bandwidth of less than 5 nm. Physical configuration: Far UV quartz cells that have been permanently heat sealed. Consists of one sealed cell, with certified peak at spectral bandwidth values of 0.10 nm, 0.25 nm, 0.50 nm, 1.00 nm, 1.50 nm, 2.00 nm and 3.00 nm.	cell
STRM-SL-R	Recertification: Samarium - UV and visible wavelength	cell
STRM-HG	Holmium glass filter - UV and visible wavelength Description: Holmium glass filter. Primary usage: Assessment of wavelength scale accuracy in the UV and visible regions. Useable range: 270 nm to 640 nm, instruments with spectral bandwidth of less than 10 nm. Physical configuration: Glass filters 'stress free' mounted in anodised aluminium holder. Consists of one filter, 'stress free' mounted in a proprietary NIST design, with certified peak at spectral bandwidth values of 0.10 nm, 0.25 nm, 0.50 nm, 1.00 nm, 1.50 nm, 2.00 nm, and 3.00 nm.	filter
STRM-HG-R	Recertification: Holmium glass filter - UV and visible wavelength	filter
STRM-DG	Didymium glass - UV wavelength Description: Didymium glass filter. Primary usage: Assessment of wavelength scale accuracy in the visible/near infrared region. Useable range: 430 nm to 890 nm, instruments with spectral bandwidth of less than 10 nm. Physical configuration: Glass filters 'stress free' mounted in anodised aluminium holder. Consists of one filter, “stress free” mounted in a proprietary NIST design, with certified peak at spectral bandwidth values of 0.10 nm, 0.25 nm, 0.50 nm, 1.00 nm, 1.50 nm, 2.00 nm, and 3.00 nm.	filter
STRM-DG-R	Recertification: Didymium glass - UV wavelength	filter

Far UV wavelength

STRM-RE	Rare earth - UV and visible wavelength Description: Rare earth oxide in dilute sulphuric acid. Primary Usage: Assessment of wavelength scale accuracy in the UV region. Useable range: 200nm to 300nm, instruments with spectral bandwidth of less than 5nm. Physical Configuration: Far UV quartz cells that have been permanently heat sealed. Consists of one sealed cell, with certified peak at spectral bandpass values of 0.1 nm, 0.2 nm, 0.5 nm, 1.0 nm, 1.5 nm, 2.0 nm and 3.0 nm.	cell
STRM-RE-R	Recertification: Rare earth - UV and visible wavelength	cell

Code	Product	Unit

Stray light

Inorganic cut-off filters – UV stray light

This is a subtle source of error in UV and visible spectrophotometry. A variety of materials is available for measuring this parameter at several different wavelengths in the form of inorganic cut-off filters. They are designed with sharp cut-offs in transmissions at specified wavelengths which will enable any stray light to be measured.

Description: Materials with sharp cut-offs in transmission at specified wavelengths.

Primary usage: Detection of stray light in the UV region.

Useable range: 200 nm to 260 nm, depending on the material.

Physical configuration: Far UV quartz cells that have been permanently heat sealed.

STRM-AC	Inorganic cut-off filter (acetone) - UV stray light (cut-off at 326 nm)	set
STRM-AC-R	Recertification: Inorganic cut-off filter - UV stray light (cut-off at 326 nm)	set
STRM-KI	Inorganic cut-off filter (potassium iodide; 1% aqueous) - UV stray light (cut-off at 260 nm)	set
STRM-KI-R	Recertification: Inorganic cut-off filter - UV stray light (cut-off at 260 nm)	set
STRM-LC	Inorganic cut-off filter (lithium carbonate; saturated aqueous) - UV stray light (cut-off at 227 nm)	set
STRM-LC-R	Recertification: Inorganic cut-off filter - UV stray light (cut-off at 227 nm)	set
STRM-KC	Inorganic cut-off filter (potassium chloride; 1.2% aqueous) - UV stray light (cut-off at 200 nm)	set
STRM-KC-R	Recertification: Inorganic cut-off filter - UV stray light (cut-off at 200 nm)	set
STRM-SC	Inorganic cut-off filter (sodium chloride; 1% aqueous) - UV stray light (cut-off at 205 nm)	set
STRM-SC-R	Recertification: Inorganic cut-off filter - UV stray light (cut-off at 205 nm)	set
STRM-SI	Inorganic cut-off filter (sodium iodide; 1% aqueous) - UV stray light (cut-off at 260 nm)	set
STRM-SI-R	Recertification: Inorganic cut-off filter - UV stray light (cut-off at 260 nm)	set
STRM-SN	Inorganic cut-off filter (sodium nitrite; 5% aqueous) - UV stray light (cut-off at 390 nm)	set
STRM-SN-R	Recertification: Inorganic cut-off filter - UV stray light (cut-off at 390 nm)	set
STRM-AQ	Inorganic cut-off filter (water) - UV stray light (blank)	cell

Resolution

Accurate absorbance and wavelength measurements can only be achieved if due consideration is given to the resolution of the monochromator in use. In modern instruments with grating monochromators, the resolution relates directly to the slit chosen. The smaller the slit and its associated spectral bandwidth, the greater the resolution. Simple checks on the resolution power of a spectrophotometer with Starna® resolution CRMs such as benzene vapour or toluene in hexane will provide useful references. Benzene vapour is used to validate the resolution of instruments with bandpass less than 1nm. Even this material can be supplied heat sealed into a quartz cell. An alternative liquid reference, toluene in hexane, helps users to meet the recommendations of the current European Pharmacopoeia.

STRM-TX	Toluene in hexane - resolution Description: 0.020% v/v solution of toluene in hexane. Primary usage: Determination of spectral bandwidth in the UV region. Useable range: 265 nm to 270 nm, instruments with a spectral bandwidth of less than 3 nm. Physical configuration: Far UV quartz cells that have been permanently sealed. This formulation is described and used in the European Pharmacopoeia where the ratio of the peak maximum at 269 nm to the minimum at 266 nm gives a measure of the resolution of the instrument. Ratio table: SBW (nm): 0.5 1.0 1.5 2.0 3.0 Ratio: 2.5 2.1 1.6 1.4 1.0	set
STRM-TX-R	Recertification: Toluene in hexane - resolution	set
STRM-BZ	Benzene vapour Description: 0.1 mL benzene in the vapour state. Primary usage: Determination of spectral bandwidth in the UV region. Useable range: 230 nm to 270 nm, instruments with a spectral bandwidth of less than 1 nm. Physical configuration: Far UV quartz cells that have been permanently heat sealed. At spectral bandwidths less than 1 nm, the benzene vapour spectrum provides a useful reference that has characteristic features that may or may not be displayed – dependent upon the current spectrophotometer spectral bandwidth. Benzene vapour will not work well with a photodiode array spectrophotometer as this instrument type does not measure a continuum and the peaks will not be resolved well enough to be useable.	cell
STRM-BZ-R	Recertification: Benzene vapour	cell

Code	Product	Unit

Sets

The certified reference material sets have been assembled to make your verification task easier, and meet specific regulatory requirements.

In addition, set prices do offer price savings over the purchase of individual certified reference materials.

Code	Product	Unit
STRM-06HL	STRM-06 + STRM-HL STRM-06 Potassium dichromate - UV absorbance and linearity Set of 2 cells: Each set consists of one blank (0.001M perchloric acid) and a solution with a nominal value of 60 mg/L. STRM-HL Holmium oxide - UV and visible wavelength (Holmium oxide (4% m/v) in 10% v/v perchloric acid) Consists of one sealed cell, with certified peak at spectral bandwidth values of 0.10 nm, 0.25 nm, 0.50 nm, 1.00 nm, 1.50 nm, 2.00 nm and 3.00 nm.	set
STRM-06HL-R	Recertification: STRM-06 + STRM-HL	set
STRM-06DLKI	STRM-06 + STRM-DL + STRM-KI STRM-06 Potassium dichromate - UV absorbance and linearity Set of 2 cells: Each set consists of one blank (0.001M perchloric acid) and a solution with a nominal value of 60 mg/L. STRM-DL Didymium (neodymium & praesodymium) - UV and visible wavelength Didymium (neodymium praesodymium) in perchloric acid Consists of one sealed cell, with certified peak at spectral bandwidth values of 0.10 nm, 0.25 nm, 0.50 nm, 1.00 nm, 1.50 nm, 2.00 nm and 3.00 nm. STRM-KI Inorganic cut-off filter (potassium iodide; 1% aqueous) - UV stray light (cut-off at 260 nm)	set
STRM-06DLKI-R	Recertification: STRM-06 + STRM-DL + STRM-KI	set
STRM-06HLKI	STRM-06 + STRM-HL + STRM-KI STRM-06 Potassium dichromate - UV absorbance and linearity Set of 2 cells: Each set consists of one blank (0.001M perchloric acid) and a solution with a nominal value of 60 mg/L. STRM-HL Holmium oxide - UV and visible wavelength (Holmium oxide (4% m/v) in 10% v/v perchloric acid) Consists of one sealed cell, with certified peak at spectral bandwidth values of 0.10 nm, 0.25 nm, 0.50 nm, 1.00 nm, 1.50 nm, 2.00 nm and 3.00 nm. STRM-KI Inorganic cut-off filter (potassium iodide; 1% aqueous) - UV stray light (cut-off at 260 nm)	set
STRM-06HLKI-R	Recertification: STRM-06 + STRM-HL + STRM-KI	set
STRM-06HLSC	STRM-06 + STRM-HL + STRM-SC STRM-06 Potassium dichromate - UV absorbance and linearity Set of 2 cells: Each set consists of one blank (0.001M perchloric acid) and a solution with a nominal value of 60 mg/L. STRM-HL Holmium oxide - UV and visible wavelength (Holmium oxide (4% m/v) in 10 v/v perchloric acid) Consists of one sealed cell, with certified peak at spectral bandwidth values of 0.10 nm, 0.25 nm, 0.50 nm, 1.00 nm, 1.50 nm, 2.00 nm and 3.00 nm. STRM-SC Inorganic cut-off filter (sodium chloride; 1% aqueous) - UV stray light (cut-off at 205 nm)	set
STRM-06HLSC-R	Recertification: STRM-06 + STRM-HL + STRM-SC	set
STRM-06HLKIBZ	STRM-06 + STRM-HL + STRM-KI + STRM-BZ STRM-06 Potassium dichromate - UV absorbance and linearity Set of 2 cells: Each set consists of one blank (0.001M perchloric acid) and a solution with a nominal value of 60 mg/L. STRM-HL Holmium oxide - UV and visible wavelength (Holmium oxide (4% m/v) in 10% v/v perchloric acid) Consists of one sealed cell, with certified peak at spectral bandwidth values of 0.10 nm, 0.25 nm, 0.50 nm, 1.00 nm, 1.50 nm, 2.00 nm and 3.00 nm. STRM-KI Inorganic cut-off filter (potassium iodide; 1% aqueous) - UV stray light (cut-off at 260 nm) STRM-BZ Benzene vapour (0.1 mL benzene in the vapour state)	set
STRM-06HLKIBZ-R	Recertification: STRM-06 + STRM-HL + STRM-KI + STRM-BZ	set
STRM-06HLKIKC	STRM-06 + STRM-HL + STRM-KI + STRM-KC STRM-06 Potassium dichromate - UV absorbance and linearity Set of 2 cells: Each set consists of one blank (0.001M perchloric acid) and a solution with a nominal values of 60 mg/L. STRM-HL Holmium oxide - UV and visible wavelength (Holmium oxide (4% m/v) in 10% v/v perchloric acid) Consists of one sealed cell, with certified peak at spectral bandwidth values of 0.10 nm, 0.25 nm, 0.50 nm, 1.00 nm, 1.50 nm, 2.00 nm and 3.00 nm. STRM-KI Inorganic cut-off filter (potassium iodide; 1% aqueous) - UV stray light (cut-off at 260 nm) STRM-KC Inorganic cut-off filter (potassium chloride; 1.2% aqueous) - UV stray light (cut off at 200 nm)	set
STRM-06HLKIKC-R	Recertification: STRM-06 + STRM-HL + STRM-KI + STRM-KC	set

Code	Product		Unit
STRM-06KIKCTX	STRM-06 + STRM-KI + STRM-KC + STRM-TX		set
	STRM-06	Potassium dichromate - UV absorbance and linearity Set of 2 cells: Each set consists of one blank (0.001M perchloric acid) and a solution with a nominal value of 60 mg/L.	
	STRM-KI	Inorganic cut-off filter (potassium iodide; 1% aqueous) - UV stray light (cut-off at 260 nm)	
	STRM-KC	Inorganic cut-off filter (potassium chloride; 1.2% aqueous) - UV stray light (cut-off at 200 nm)	
	STRM-TX	Toluene in hexane - Resolution (0.020% v/v solution of toluene in hexane)	
STRM-06KIKCTX-R	Recertification: STRM-06 + STRM-KI + STRM-KC + STRM-TX		set
STRM-06HLKITX	STRM-06 + STRM-HL + STRM-KI + STRM-TX		set
	STRM-06	Potassium dichromate - UV absorbance and linearity Set of 2 cells: Each set consists of one blank (0.001M perchloric acid) and a solution with a nominal value of 60 mg/L.	
	STRM-HL	Holmium oxide - UV and visible wavelength (Holmium oxide (4% m/v) in 10% v/v perchloric acid) Consists of one sealed cell, with certified peak at spectral bandwidth values of 0.10 nm, 0.25 nm, 0.50 nm, 1.00 nm, 1.50 nm, 2.00 nm and 3.00 nm.	
	STRM-KI	Inorganic cut-off filter (potassium iodide; 1% aqueous) - UV stray light (cut-off at 260 nm)	
	STRM-TX	Toluene in hexane - Resolution (0.020% v/v solution of toluene in hexane)	
STRM-06HLKITX-R	Recertification: STRM-06 + STRM-HL + STRM-KI + STRM-TX		set
STRM-06HLKCBZ	STRM-06 + STRM-HL + STRM-KC + STRM-BZ		set
	STRM-06	Potassium dichromate - UV absorbance and linearity Set of 2 cells: Each set consists of one blank (0.001M perchloric acid) and a solution with a nominal value of 60 mg/L.	
	STRM-HL	Holmium oxide - UV and visible wavelength (Holmium oxide (4% m/v) in 10% v/v perchloric acid) consists of one sealed cell, with certified peak at spectral bandwidth values of 0.10 nm, 0.25 nm, 0.50 nm, 1.00 nm, 1.50 nm, 2.00 nm and 3.00 nm.	
	STRM-KC	Inorganic cut-off filter (potassium chloride; 1.2% aqueous) - UV stray light (cut-off at 200 nm)	
	STRM-BZ	Benzene vapour (0.1 mL benzene in the vapour state)	
STRM-06HLKCBZ-R	Recertification: STRM-06 + STRM-HL + STRM-KC + STRM-BZ		set
STRM-06SLLCBZ	STRM-06 + STRM-SL + STRM-LC + STRM-BZ		set
	STRM-06	Potassium dichromate - UV absorbance and linearity Set of 2 cells: Each set consists of one blank (0.001M perchloric acid) and a solution with a nominal value of 60 mg/L.	
	STRM-SL	Samarium - UV and visible wavelength (Samarium (III) oxide in perchloric acid) consists of one sealed cell, with certified peak at spectral bandwidth values of 0.10 nm, 0.25 nm, 0.50 nm, 1.00 nm, 1.50 nm, 2.00 nm and 3.00 nm.	
	STRM-LC	Inorganic cut-off filter (lithium carbonate; saturated aqueous) - UV stray light (cut off at 227 nm)	
	STRM-BZ	Benzene vapour (0.1 mL benzene in the vapour state)	
STRM-06SLLCBZ-R	Recertification: STRM-06 + STRM-SL + STRM-LC + STRM-BZ		set
STRM-06HLSLKC	STRM-06 + STRM-HL+ STRM-SL + STRM-KC		set
	STRM-06	Potassium dichromate - UV absorbance and linearity Set of 2 cells: Each set consists of one blank (0.001M perchloric acid) and a solution with a nominal value of 60 mg/L.	
	STRM-HL	Holmium oxide - UV and visible wavelength (Holmium oxide (4% m/v) in 10% v/v perchloric acid) Consists of one sealed cell, with certified peak at spectral bandwidth values of 0.10 nm,0.25 nm, 0.50 nm, 1.00 nm, 1.50 nm, 2.00 nm and 3.00 nm.	
	STRM-SL	Samarium - UV and visible wavelength (Samarium (III) oxide in perchloric acid) Consists of one sealed cell, with certified peak at spectral bandwidth values of 0.10 nm, 0.25 nm, 0.50 nm, 1.00 nm, 1.50 nm, 2.00 nm and 3.00 nm.	
	STRM-KC	Inorganic cut-off filter (potassium chloride; 1.2% aqueous) - UV stray light (cut-off at 200 nm)	
STRM-06HLSLKC-R	Recertification: STRM-06 + STRM-HL+ STRM-SL + STRM-KC		set
STRM-06HLKCSITX	UV single absorbance instrument spec. kit		set
	Each set consists on STRM-06 + STRM-HL + STRM-KC + STRM-SI + STRM-TX		
	STRM-06	Potassium dichromate - UV absorbance and linearity Set of 2 cells: Each set consists of one blank (0.001M perchloric acid) and a solution with a nominal value of 60 mg/L.	
	STRM-HL	Holmium oxide - UV and visible wavelength (Holmium oxide (4% m/v) in 10% v/v perchloric acid) Consists of one sealed cell, with certified peak at spectral bandwidth values of 0.10 nm,0.25 nm, 0.50 nm, 1.00 nm, 1.50 nm, 2.00 nm and 3.00 nm.	
	STRM-KC	Inorganic cut-off filter (potassium chloride; 1.2% aqueous) - UV stray light (cut-off at 200 nm)	
	STRM-SI	Inorganic cut-off filter (sodium iodide; 1% aqueous) - UV stray light (cut-off at 260 nm)	
	STRM-TX	Toluene in hexane - Resolution (0.020% v/v solution of toluene in hexane)	
STRM-06HLKCSITX-R	Recertification: UV single absorbance instrument spec. kit		set

Code	Product	Unit
STRM-0660HLKCSITX	UV and visible instrument spec. kit Each set consists on STRM-06 + STRM-60 + STRM-HL + STRM-KC + STRM-SI + STRM-TX STRM-06 Potassium dichromate - UV absorbance and linearity Set of 2 cells: Each set consists of one blank (0.001M perchloric acid) and a solution with a nominal value of 60 mg/L. STRM-60 Potassium dichromate - UV absorbance and linearity Set of 2 cells: Each set consists of one blank (0.001M perchloric acid) and a solution with a nominal value of 600 mg/L STRM-HL Holmium oxide - UV and visible wavelength (Holmium oxide (4% m/v) in 10% v/v perchloric acid) Consists of one sealed cell, with certified peak at spectral bandwidth values of 0.10 nm, 0.25 nm, 0.50 nm, 1.00 nm, 1.50 nm, 2.00 nm and 3.00 nm. STRM-KC Inorganic cut-off filter (potassium chloride; 1.2% aqueous) - UV stray light (cut-off at 200 nm) STRM-SI Inorganic cut-off filters (sodium iodide; 1% aqueous) - UV stray light (cut-off at 260 nm) STRM-TX Toluene in hexane - Resolution (0.020% v/v solution of toluene in hexane)	set
STRM-0660HLKCSITX-R	Recertification: UV and visible instrument spec. kit	set
STRM-06HLKCTX	Pharmacopoeia kit Each set consists on STRM-06 + STRM-HL + STRM-KC + STRM-TX STRM-06 Potassium dichromate - UV absorbance and linearity Set of 2 cells: Each set consists of one blank (0.001M perchloric acid) and a solution with a nominal value of 60 mg/L. STRM-HL Holmium oxide - UV and visible wavelength (Holmium oxide (4% m/v) in 10% v/v perchloric acid) Consists of one sealed cell, with certified peak at spectral bandwidth values of 0.10 nm, 0.25 nm, 0.50 nm, 1.00 nm, 1.50 nm, 2.00 nm and 3.00 nm. STRM-KC Inorganic cut-off filter (potassium chloride; 1.2% aqueous) - UV stray light (cut-off at 200 nm) STRM-TX Toluene in hexane - Resolution (0.020% v/v solution of toluene in hexane)	set
STRM-06HLKCTX-R	Recertification: Pharmacopoeia kit	set
STRM-0660HLKCTX/R/UG	Upgrade/recert. of pharmacopoeia kit (STRM-06HLKCTX) to E.P. 5.2 In version 5.2 of the Euro. Pharm., in section 2.2.25, they added an additional Absorbance verification using a 600 mg/l solution of potassium dichromate at 430 nm. The upgrade price adds this 600 mg/L reference to the existing Euro. Pharm. set, and re-certifies all the existing materials.	set
STRM-0660HLKCTX	E.P. 5.2 Pharmacopoeia kit Each set consists of STRM-06 + STRM-60 + STRM-HL + STRM-KC + STRM-TX STRM-06 Potassium dichromate - UV absorbance and linearity Set of 2 cells: Each set consists of one blank (0.001M perchloric acid) and a solution with a nominal value of 60 mg/L. STRM-60 Potassium dichromate - UV absorbance and linearity Set of 2 cells: Each set consists of one blank (0.001M perchloric acid) and a solution with a nominal value of 600 mg/L STRM-HL Holmium oxide - UV and visible wavelength (Holmium oxide (4% m/v) in 10% v/v perchloric acid) Consists of one sealed cell, with certified peak at spectral bandwidth values of 0.10 nm,0.25 nm, 0.50 nm, 1.00 nm, 1.50 nm, 2.00 nm and 3.00 nm. STRM-KC Inorganic cut-off filter (potassium chloride; 1.2% aqueous) - UV stray light (cut-off at 200 nm) STRM-TX Toluene in hexane - Resolution (0.020% v/v solution of toluene in hexane)	set
STRM-0660HLKCTX-R	Recertification: E.P. 5.2 Pharmacopoeia kit	set
STRM-1A2A3A4ARE	Far UV combination kit Each set consists on STRM-1A2A3A4A + STRM-RE	set
STRM-1A2A3A4ARE-R	Recertification: Far UV combination kit	set
STRM-020610HLKCTX	Single Box 3-point linearity full spec. kit (9 cells) Each set consists on STRM-02 + STRM-06 + STRM-10 + STRM-HL + STRM-KC + STRM-TX STRM-02 Potassium dichromate - UV absorbance and linearity Set of 2 cells: Each set consists of one blank (0.001M perchloric acid) and a solution with a nominal value of 20 mg/L. STRM-06 Potassium dichromate - UV absorbance and linearity Set of 2 cells: Each set consists of one blank (0.001M perchloric acid) and a solution with a nominal value of 60 mg/L. STRM-10 Potassium dichromate - UV absorbance and linearity Set of 2 cells: Each set consists of one blank (0.001M perchloric acid) and a solution with a nominal values of 100 mg/L. STRM-HL Holmium oxide - UV and visible wavelength (Holmium oxide (4% m/v) in 10% v/v perchloric acid) Consists of one sealed cell, with certified peak at spectral bandwidth values of 0.10 nm,0.25 nm, 0.50 nm, 1.00 nm, 1.50 nm, 2.00 nm and 3.00 nm. STRM-KC Inorganic cut-off filter (potassium chloride; 1.2% aqueous) - UV stray light (cut-off at 200 nm) STRM-TX Toluene in hexane - Resolution (0.020% v/v solution of toluene in hexane)	set

Optical properties

Code	Product	Unit
STRM-020610HLKCTX-R	Recertification: Single Box 3-point linearity full spec. kit (9 cells)	set

NIR

STRM-RM-NIR	Certified NIR wavelength reference for transmittance measurements Liquid reference material, permanently heat-fused sealed in a high quality far-uv quartz cuvette. Configuration Transmittance: 10 mm optical path length, both linear path optical window clear, opposed sides "grey" Certification: Complete with certificate of wavelengh values and associated expanded uncertainty, for 13 assigned peak values in the range 950 - 2550 nm.	cuv.
STRM-RM-NIR/T	Certified NIR wavelength reference for transmittance and trans-flectance measurements Liquid reference material, permanently heat-fused sealed in a high quality far-uv quartz cuvette. Configuration Transmittance/Trans-flectance: 5 mm or 10 mm optical path length, depending on orientation, In 5 mm configuration, rear window mirror coated to provide reflectance optical return - so path length effectively 2 x 4 = 10 mm Certification: Complete with certificate of wavelengh values and associated expanded uncertainty, for 13 assigned peak values in the range 950 - 2550 nm.	cuv.

Reference material for nucleic acid analysis

New	STDNACON260280	Wavelength accuracy in critical nucleic acid measurements - 260/280 nm measurement ratio This control material has been specifically designed to assure the wavelength accuracy in critical nucleic acid measurements. DNACON260/280 which suffers from none of the inherent stability problems associated with DNA has been created for use as a new reliable NIST traceable Quality Control Standard by clinical and bioscience laboratories analysing and evaluating the purity of a range of nucleic acids such as DNA, RNA, RNAi and ssDNA. It consists of a Far UV quartz cell which has been permanently sealed by heat fusion. It contains a solution of Starna DNACON 260/280, which has been designed to give a spectrophotometric 260/280 nm measurement ratio similar to that achieved when measuring pure DNA. This standard is produced in an ISO 17025 and ISO Guide 34 accredited environment, meeting the highest available regulatory standards.	cell

Refractive index

New	ERM-BD011	Orange juice This certified reference material is intended for use in the development, validation or quality control of analytical methods for the determination of degrees Brix or Refractive Index of sugar solutions and food extracts. Certified values Degrees Brix ..... 1.26 Refractive index.....1.3348	3 mL
New	ERM-BD012	Orange juice This certified reference material is intended for use in the development, validation or quality control of analytical methods for the determination of degrees Brix or Refractive Index of sugar solutions and food extracts. Certified values Degrees Brix ..... 12.72 Refractive index.....1.3521	3 mL
New	ERM-BD013	Orange juice This certified reference material is intended for use in the development, validation or quality control of analytical methods for the determination of degrees Brix or Refractive Index of sugar solutions and food extracts. Certified values Degrees Brix ..... 22.07 Refractive index.....1.3673	3 mL
New	ERM-BD014	Orange juice This certified reference material is intended for use in the development, validation or quality control of analytical methods for the determination of degrees Brix or Refractive Index of sugar solutions and food extracts. Certified values Degrees Brix ..... 55.55 Refractive index.....1.4320	3 mL
New	ERM-BD015	Orange juice This certified reference material is intended for use in the development, validation or quality control of analytical methods for the determination of degrees Brix or Refractive Index of sugar solutions and food extracts. Certified values Degrees Brix ..... 64.73 Refractive index.....1.4529	3 mL
	NIST-1822a	Refractive index standard Certified values	plate

Vacuum Wavelength (nm)	Refractive Index (n) at 22 °C	Vacuum Wavelength (nm)	Refractive Index (n) at 22 °C
480.1254	1.526132 ± 0.000016	546.2260	1.521629 ± 0.000016
501.7077	1.524468 ± 0.000016	587.7254	1.519535 ± 0.000016
508.7240	1.523971 ± 0.000016	644.0250	1.517277 ± 0.000016

Code	Product	Unit
NIST-1922	Liquid refractive index - Mineral oil Intended for use as a calibration material for refractometers, especially for the refractive index range applicable to solutions of sugar and water. Certified values are given for refractive indices at 6 wavelengths, in the visible light range, at 20°C and for the change in refractive index with respect to temperature.	30 mL
	PRG 7.21 - PRG 7.8 This group of liquid reference materials, produced by LGC Standards and certified by the Laboratory of Refractometry and Polarimetry of the Central Office of Measures (GUM), Warsaw, covers the wide range of refractive index from 1.333 (water) to 1.657 (1-Bromonaphthalene). The *n* values were determined on a Pulfrich refractometer, previously calibrated with solid Class 1 CRMs, for which values were established using goniometric procedures. All reference materials are supplied with a certificate. Certified values to 5 significant figures for the refractive index at λ = 589.3 nm, t = 20°C and associated uncertainties are given. Reference liquids are packed in glass ampoules (7.1, 7.2, 7.5, 7.6, 7.8) or plastic drop-bottles (7.11, 7.12, 7.20, 7.21).	
PRG 7.21	Water Refractive index.....1.333 at 20 °C	10 mL
PRG 7.1	2,2,4-Trimethylpentane Refractive index.....1.391 at 20 °C	10 mL
PRG 7.11	Methylsilicone oil Refractive index.....1.405 at 20 °C	10 mL
PRG 7.2	Methylcyclohexane Refractive index.....1.423 at 20 °C	10 mL
PRG 7.12	Silicone oil DC 556 Refractive index.....1.462 at 20 °C	10 mL
PRG 7.20	Paraffin oil Refractive index.....1.475 at 20 °C	10 mL
PRG 7.5	Toluene Refractive index.....1.496 at 20 °C	10 mL
PRG 7.6	Chlorobenzene Refractive index.....1.524 at 20 °C	10 mL
PRG 7.8	1-Bromonaphthalene Refractive index.....1.657 at 20 °C	10 mL
RPC18061	Refractive index liquids Refractive index range: 1.400-1.458 (interval 0.002)	30 x 7 mL
RPC18062	Refractive index liquids Refractive index range: 1.400-1.458 (interval 0.004)	15 x 7 mL
RPC18065	Refractive index liquids Refractive index range: 1.400-1.458 (interval 0.01)	6 x 7 mL
RPC1806X	Refractive index liquid Any individual standard* Refractive index range: 1.400-1.458 (interval 0.002)	7 mL
RPC1806Y	Refractive index liquid Any individual standard Refractive index range: 1.400-1.458 (interval 0.002)	30 mL
RPC18091	Refractive index liquids Refractive index range: 1.460-1.640 (interval 0.002)	91 x 7 mL
RPC18092	Refractive index liquids Refractive index range: 1.460-1.640 (interval 0.004)	46 x 7 mL
RPC18095	Refractive index liquids Refractive index range: 1.460-1.640 (interval 0.01)	19 x 7 mL
RPC1809X	Refractive index liquid Any individual standard* Refractive index range: 1.460-1.640 (interval 0.002)	7 mL
RPC1809Y	Refractive index liquid Any individual standard* Refractive index range: 1.460-1.640 (interval 0.002)	30 mL

Optical properties

Code	Product	Unit
RPC18121	Refractive index liquids Refractive index range: 1.642-1.700 (interval 0.002)	30 x 7 mL
RPC18122	Refractive index liquids Refractive index range: 1.642-1.700 (interval 0.004)	15 x 7 mL
RPC18125	Refractive index liquids Refractive index range: 1.642-1.700 (interval 0.01)	6 x 7 mL
RPC1812X	Refractive index liquids Any individual standard* Refractive index range: 1.642-1.700 (interval 0.002)	7 mL
RPC1812Y	Refractive index liquid Any individual standard* Refractive index range: 1.642-1.700 (interval 0.002)	30 mL
	*For individual standards please state in brackets after the catalogue number the refractive index required.	
	Please enquire at your local office about Brix liquid standards and Master Calibration standards.	

Optical rotation

New	NIST-17F	Sucrose - Optical rotation Intended for use as a saccharimetry standard in calibrating polarimetric systems. Certified purity.....99.956 ± 0.004 % Reference values are given for optical rotation, °Z at 546.2271 nm and specific rotation at 589.4400 nm.	60 g
	GUM 8.1	Sucrose (Saccharose) Certified values Optical rotation at 20 ºC 546 nm.....78.34 ° 589 nm ..... 66.52 °	100 g

Optical fibres

NIST-2520	Optical fibre diameter standard - Diameter Intended for calibrating video microscopes or gray-scale systems used for fibre geometry measurements. The material consists of bare fibre in aluminium housing. Each sample is individually calibrated.	unit
NIST-2522	Pin Guage for Optical Fibre Ferrul This Standard Reference Material (SRM®) is intended primarily for use in calibrating instruments which measure small diameter artifacts such as pin gages, used for optical fibre ferrule hole calibration. Each SRM is individually certified and consists of a 60 mm long steel wire.	Each
NIST-2523	Optical Fibre Ferrule Geometry This Standard Reference Material (SRM®) is intended primarily for use in calibrating instruments which measure small diameter artifacts such as optical fibre ferrules. Each SRM is individually certified and consists of a single ceramic optical fibre ferrule.	Each

Colour measurement

BCR-400	Red ceramic tile (Tomato paste colour) 100 mm x 100 mm A ceramic tile the colour of which is defined by Hunter L, a and b values. Each tile is individually certified. The tile is intended for the purpose of calibration and does not represent a standard tomato paste colour.	unit
	BCR-406A A reference for colorimeters and spectrophotometers measuring colour in reflection. The spectral reflectance is certified at 13 wavelengths between 400 nm and 1200 nm with a value higher than 93% between 450 nm and 800 nm. The specimens are circular plates 14 mm thick. One size available: 50mmD. One side is polished, and the other is mat.	
BCR-406A	Opal glass 50 mmD x 14 mm thick	disc

Photography

NIST-1010a	Microcopy resolution test chart Intended to be used to determine the resolving power of microcopy systems in the photographic industry. Designed to meet the general requirements for ISO test chart No. 2 as described in ISO 3334: 1989.	set
NIST-5001	Two-Dimensional Grid Photomask Standard This Standard Reference Material (SRM®) is intended primarily for calibrating high accuracy two dimensional (X-Y) photomask/reticle registration metrology tools such as the IPRO, the IPRO II and the Leica 2020 as well as older tools such as the Nicon 5i.	Each

Code	Product	Unit

Microscopy

NIST-2800	Microscope magnification standard This Standard Reference Material® (SRM®) is intended primarily for use in calibrating the magnification or scale of microscopes used to make dimensional measurements. These microscopes include optical and scanning electron microscopes, imaging in either transmission or reflection modes, and scanning probe microscopes. NIST-2800 consists of a pattern of parallel lines whose nominal distances from the centerline range from ± 1 µm to ± 5 mm. Certified values are given for the centre-to-centre distance of each line from the centreline; the linewidths are not certified. The pattern is printed in chrome on a fused-quartz substrate with nominal dimensions of 25 mm × 75 mm × 2.3 mm (1 in × 3 in × 0.09 in) using photomask production techniques.	Each

Ion activity

pH calibration

Code	Product	Unit
NIST-185h	Potassium hydrogen phthalate This Standard Reference Material (SRM) is intended for use in preparing solutions for calibrating electrodes for pH measuring systems. Certified value pH (25 °C)..... 4.003 Certified values of the pH at other temperatures are given in the CoA.	60 g
NIST-186g	pH Standards Potassium dihydrogen phosphate (186-I-g) Disodium hydrogen phosphate (186-II-g) NIST-186g is intended for use in preparing solutions for calibrating electrodes for pH measuring systems. NIST-186 g consists of two components, each prepared to ensure high purity and uniformity: KH_2PO_4, potassium dihydrogen phosphate (186-I-g) and Na_2HPO_4, disodium hydrogen phosphate (186-II-g). A unit of NIST-186g consists of 30 g of potassium dihydrogen phosphate (186-I-g) and 45 g of disodium hydrogen phosphate (186-II-g), each contained in its respective clear glass bottle.	set
New NIST-189C	Potassium tetroxalate dihydrate pH buffer This Standard Reference Material (SRM) is intended for use in preparing solutions for calibrating electrodes for pH measuring systems. Certified value	65 g

Temperature (°C)	pH(S)	Temperature (°C)	pH(S)	Temperature (°C)	pH(S)
5	1.666	25	1.677	45	1.700
10	1.667	30	1.682	50	1.707
15	1.669	37	1.690		
20	1.672	40	1.694		

NIST-187e	Sodium tetraborate decahydrate (Borax) This Standard Reference Material (SRM) is intended for use in preparing solutions for calibrating electrodes for pH measuring systems.	30 g
NIST-2193a	Calcium carbonate pH standard This Standard Reference Material® (SRM®) is intended for use in preparing solutions for calibrating electrodes for pH measuring systems at pH values above 11.0. This lot of calcium carbonate ($CaCO_3$) was selected for its low level of alkali metal impurities. However, this SRM® is certified ONLY as a pH standard, NOT as a pure substance. Before use for pH calibrations, a freshly filtered, saturated (at 25 °C) solution of $Ca(OH)_2$ must be prepared from NIST-2193a. The certified pH(S) and U of this solution as a function of temperature are given below.	30 g

t/°C	pH(S)	uc(measurement)	uc(y)	k	U
5	13.232	0.0030	0.0058	2.0	0.011
10	13.026	0.0025	0.0056	2.0	0.011
15	12.830	0.0025	0.0056	2.0	0.011
20	12.645	0.0024	0.0056	2.0	0.011
25	12.469	0.0024	0.0055	2.0	0.011
30	12.303	0.0071	0.0087	2.0	0.017
35	12.145	0.0071	0.0087	2.0	0.017
37	12.084	0.0071	0.0087	2.0	0.017
40	11.995	0.0071	0.0087	2.0	0.017
45	11.853	0.0072	0.0087	2.0	0.017
50	11.717	0.0074	0.0089	2.0	0.017

NIST-188	Potassium hydrogen tartrate Certified value pH (25 °C)..... 3.557 Other certified values of pH at different temperatures are given in the CoA.	60 g

Ion activity

	Code	Product	Unit
New	NIST-191D	pH Standard This Standard Reference Material® (SRM®) is intended for use in preparing solutions for calibrating electrodes for pH measuring systems. NIST-191d consists of two components, each prepared to ensure high purity and uniformity: sodium bicarbonate, $NaHCO_3$ (191d-I); and sodium carbonate, Na_2CO_3 (191d-II). A unit of NIST-191d consists of 25 g of sodium bicarbonate (191d-I) and 30 g of sodium carbonate (191d-II), each contained in its respective clear glass bottle. Certified value pH (25 °C)..... 10.014 Certified values of pH at 10 °C, 15 °C, 20 °C and 35 °C are given in the CoA.	set (2)
	NIST-RM 8040	Sodium oxalate - Reductometric This Reference Material (RM) was prepared to provide material of uniform, high purity for use as a working standard for oxidation-reduction reactions. Reference value Reductometric assay (mass fraction) .....99.951 % ± 0.038 %	60 g

Biological buffer systems

		NIST-2181 - NIST-2184 These materials are intended for use in preparing a standard solution for calibrating clinical instruments (e.g. blood pH measurements), in the physiologically important range of pH 7-8. They are based on a biological buffer system for clinical pH measurements and are certified for use as an admixture only. The pH values for the buffer solutions are certified at 0.05 and 0.08 M with respect to the free acid and the sodium salt admixture as a function of temperature. The certified temperature range is from 0-50 °C.	
		NIST-2181 - NIST-2184 Both materials are required to prepare a standard solution.	
	NIST-2181	HEPES free acid Certified values 0.05M pH (0-50 °C).....7.832-7.216 0.08M pH (0-50 °C).....7.853-7.222	60 g
	NIST-2182	HEPES Sodium Salt Certified values 0.05M pH (0-50 °C).....7.832-7.216 0.08M pH (0-50 °C).....7.853-7.222	60 g
		NIST-2183 and NIST-2184 Both materials are required to prepare a standard solution.	
	NIST-2183	MOPSO free acid Certified values 0.05M pH (0-50 °C).....7.260-6.528 0.08M pH (0-50 °C).....7.268-6.528	50 g
	NIST-2184	NaMOPSOate Certified values 0.05M pH (0-50 °C).....7.260-6.528 0.08M pH (0-50 °C).....7.268-6.524	50 g

pD calibration

	NIST-2185	Potassium hydrogen phthalate Certified value pD (25 °C)..... 4.518	60 g
New	NIST-2186II	Disodium Hydrogen Phosphate Required to prepare a standard solution. Certified value pD (25 °C)..... 7.428 Other certified values at different temperatures are given in the CoA.	30 g

Code	Product	Unit
NIST-2191A	Sodium bicarbonate Required to prepare a standard solution. Certified value pD (25 °C)..... 10.73 Other certified values at different temperatures are given in the CoA.	30 g
NIST-2192A	Sodium carbonate Required to prepare a standard solution. Certified value pD (25 °C)..... 10.732 Other certified values at different temperatures are given in the CoA.	30 g

Ion-selective electrode calibration

NIST-2201	Sodium chloride Certified values for activity coefficients, at 25°C, of the sodium and chloride ions at various concentrations and the related values of pNa and pCl.	125 g
NIST-2202	Potassium chloride Certified values for activity coefficients, at 25°C, of the potassium and chloride ions at various concentrations and the related values of pK and pCl.	160 g
NIST-2203	Potassium fluoride Certified values for activity coefficients, at 25°C, of the potassium and fluoride ions at various concentrations and the related value of pF.	125 g

Electrolytic conductivity

New	NIST-3198	KCl in n-propanol/de-ionised water Certified value Electrolytic conductivity (25 °C) ..... 5.31 µS/cm	500 mL
New	NIST-3190	HCl in de-ionised water Certified value Electrolytic conductivity (25 °C) ..... 25.32 µS/cm	500 mL
New	NIST-3191	KCl in de-ionised water Certified value Electrolytic conductivity (25 °C) ..... 98.64 µS/cm	500 mL
	NIST-3193	KCl in de-ionised water Certified value Electrolytic conductivity (25°C) ..... 996.70 µS/cm	8 x 50 mL
		GUM 5.1 - GUM 5.6 These Reference Materials have been certified by the Physical Chemistry Division of the Central Office of Measures in Poland. They are intended for calibration of conductivity cells or use in electrolytic conductivity measurement as a control sample. These RMs are certified in conformity with standard reference data published by the International Organisation of Legal Metrology (OIML). All Reference Materials are supplied with a certificate.	
	GUM 5.1	KCl solution Certified value Electrolytic conductivity..... 11.13 S/m at 25 ºC	100 mL
	GUM 5.2	KCl Solution Certified value Electrolytic conductivity..... 1.285 S/m at 25 ºC	100 mL
	GUM 5.3	KCl solution Certified value Electrolytic conductivity..... 0.1410 S/m at 25 ºC	100 mL
	GUM 5.4	KCl solution Certified value Electrolytic conductivity..... 0.01483 S/m at 25 °C	100 mL
	GUM 5.5	KCl solution Certified value Electrolytic conductivity..... 0.0720 S/m 25 °C	100 mL
	GUM 5.6	KCl solution Certified value Electrolytic conductivity..... 0.0293 S/m at 25 ºC	100 mL

Code	Product	Unit
Reagecon electrolytic conductivity standards		
Standard values		
REACSKC84	Conductivity standard 84 uS/cm Electrolytic conductivity..... 84 µS/cm at 25°C	500 mL
REACSKCS	Conductivity standard 147 uS/cm Electrolytic conductivity..... 147 µS/cm at 25°C	500 mL
REACSKCL	Conductivity standard 1413 Microsiemens/cm 25°C Electrolytic conductivity..... 1413 µS/cm at 25°C	500 mL
REACSKC12880	Conductivity standard Electrolytic conductivity..... 12880 µS/cm at 25°C	500 mL
REACSKC13	Conductivity standard 1.3 uS/cm Electrolytic conductivity..... 1.30 µS/cm at 25°C	250 mL
REACSKC136	Conductivity standard Electrolytic conductivity..... 1.30 µS/cm at 25°C	6 x 250 mL
REACSKC5	Conductivity standard Electrolytic conductivity..... 5 µS/cm at 25°C	500 mL
REACSKC10	Conductivity standard Electrolytic conductivity..... 10 µS/cm at 25°C	500 mL
REACSKC20	Conductivity standard 20 Microsiemens/cm 25°C Electrolytic conductivity..... 20 µS/cm at 25°C	500 mL
REACSKC50	Conductivity standard Electrolytic conductivity..... 50 µS/cm at 25°C	500 mL
REACSKC100	Conductivity standard Electrolytic conductivity..... 100 µS/cm at 25°C	500 mL
REACSKC200	Conductivity standard Electrolytic conductivity..... 200 µS/cm at 25°C	500 mL
REACSKC500	Conductivity standard 500 µS/cm at 25°C Electrolytic conductivity..... 500 µS/cm at 25°C	500 mL
REACSKC1000	Conductivity standard 1000 µS/cm at 25°C Electrolytic conductivity..... 1000 µS/cm at 25°C	500 mL
REACSKC5M	Conductivity standard 5000 uS/cm Electrolytic conductivity..... 5000 µS/cm at 25°C	500 mL
REACSKC10M	Conductivity standard Electrolytic conductivity..... 10000 µS/cm at 25°C	500 mL
REACSKC20M	Conductivity standard Electrolytic conductivity..... 20000 µS/cm at 25°C	500 mL
REACSKC50M	Conductivity standard Electrolytic conductivity..... 50000 µS/cm at 25°C	500 mL
REACSKC100M	Conductivity standard Electrolytic conductivity..... 100000 µS/cm at 25°C	500 mL
REACSKC150M	Conductivity standard Electrolytic conductivity..... 150000 µS/cm at 25°C	500 mL
REACSKC200M	Conductivity standard Electrolytic conductivity..... 200000 µS/cm at 25°C	500 mL
REACSKC300M	Conductivity standard Electrolytic conductivity..... 300000 µS/cm at 25°C	500 mL
REACSKC350M	Conductivity standard Electrolytic conductivity..... 350.000 µS/cm at 25°C	500 mL
REACSKC450M	Conductivity standard Electrolytic conductivity..... 450000 µS/cm at 25°C	500 mL
REACSKC500M	Conductivity standard Electrolytic conductivity..... 500000 µS/cm at 25°C	500 mL

Code	Product	Unit

Conductivity standards according to the European Pharmacopoeia (Chapter 2)

REAEP1330	Conductivity standard Electrolytic conductivity..... 1330 µS/cm at 20°C Resistivity..... 752 Ω·cm	500 mL
REAEP133	Conductivity standard Electrolytic conductivity..... 133 µS/cm at 20°C Resistivity..... 7519 Ω·cm	500 mL
REAEP266	Conductivity standard 26.6 µS/cm at 20°C Electrolytic conductivity..... 26.6 µS/cm at 20°C Resistivity..... 37594 Ω·cm	500 mL

Electrical properties

Electrical resistivity and conductivity

Code	Product	Unit
NIST-624	Lead-silica - dc Resistivity Intended for checking test methods and for calibrating equipment used to determine the dc volume resistivity of glass per ASTM C 657. Certified value: Resistivity Temperature $\log_{10}\rho$ 11.07 Ω·cm ..... 250°C $\log_{10}\rho$ 9.9 Ω·cm ..... 300°C $\log_{10}\rho$ 8.88 Ω·cm ..... 350°C	200 g
	NIST-2541 - NIST-2547 Single wafers intended for use as reference standards for sheet resistance and resistivity measurements utilising the four-point probe method.	
NIST-2541	Silicon chip - Resistivity 100 mm (D) x 0.625 mm Czochralski-grown, boron-doped silicon wafer with (100) crystallographic orientation. Certified value Resistivity..... 0.1 Ω-cm	unit
NIST-2546	Silicon chip - Resistivity 100 mm (D) x 0.625 mm Float zone silicon with (111) orientation and phosphorus-doped by the neutron transmutation doping process. Certified value Resistivity..... 100 Ω-cm	unit
NIST-RM 8420	Electrolytic iron rod 0.64 cm (D) x 5.0 cm Thermal conductivity and electrical resistivity as a function of temperature (2-1000 K)	rod

Superconducting critical current

NIST-1457	Niobium-titanium wire - Critical current 8.7 cm diameter spool Intended for checking the performance of measurement systems used in superconductor technology. It consists of 2.2 m of a multifilamentary niobium titanium, copper-stabilised superconducting wire wound in a single layer onto a spool with a core diameter of 8.7 cm. Certified values for critical current at 4.2 k and 0.2 µV/cm	Each

Dielectric constant

NIST-774	Lead-silica - Dielectric constant 5 cm x 5 cm x 2.5 cm Intended for checking methods used to determine dielectric constant and ac loss characteristics of insulating materials per ASTM D 150. Certified value: K ~7.47 at 100 Hz	Each

Viscosity

Viscosity of glass

Code	Product	Unit
	NIST-717A Intended for checking the performance of high temperature viscosity equipment (rotating cylinders) and low temperature viscosity equipment (fibre elongation, beam bending, parallel plates, etc).	
NIST-717a	Borosilicate Certified log_{10} viscosity values (1.00-4.50) versus temperature (1555-880 °C) Indicative values for softening point, annealing point, strain point	450 g

Viscosity fixpoints

	NIST-709 - NIST-717A Intended for calibration of equipment for the determination of the softening, annealing and strain points of glass.	
NIST-709	Extra dense lead Certified values Softening point..... 384 °C Annealing point.....328 °C Strain point..... 311 °C	500 g
NIST-714	Alkaline earth alumina silicate Certified values Softening point..... 908 °C Annealing point.....710 °C Strain point..... 662 °C	225 g
NIST-717a	Borosilicate Certified log_{10} viscosity values (1.00-4.50) versus temperature (1555-880 °C) Indicative values for softening point, annealing point, strain point	450 g

Viscosity oil standards

	PSL2700V01 - PSL2700V19 These standards are calibrated by the PSL Calibration ISO 17025 Accredited Laboratory. The standards will be supplied complete with UKAS calibration certificates and have direct traceability to NIST and other international laboratories. Uncertainties of measurement are stated on the calibration certificates. Long shelf lives are provided by using stable base oils.The viscosity oil standards are suitable for the calibration and verification of the following: • Glass Capillary viscometers • Automated Kinematic Viscometer Systems • Rotational/Cone & Plate Viscometers • Low Temperature Viscometer Systems • Cold Cranking Simulators • Flow Cups	
PSL2700V01	N4 - Viscosity oil standard Kinematic viscosity (nominal) 0.47 mm^2/s,cSt (20 °C) 0.45 mm^2/s,cSt (25 °C) 0.40 mm^2/s,cSt (40 °C) Dynamic viscosity (nominal) 0.31 mPa.s,cP (20 °C) 0.29 mPa.s,cP (25 °C) 0.26 mPa.s,cP (40°C)	500 mL
PSL2700V02	N8 - Viscosity oil standard Kinematic viscosity (nominal) 1. mm^2/s,cSt (20 °C) 0.89 mm^2/s,cSt (25 °C) 0.75 mm^2/s,cSt (40 °C) Dynamic viscosity (nominal) 0.77 mPa.s,cP (20 °C) 0.72 mPa.s,cP (25 °C) 0.56 mPa.s,cP (40 °C)	500 mL
PSL2700V03	N1.0 - Viscosity oil standard Kinematic viscosity (nominal) 1.3 mm^2/s,cSt (20 °C) 1.2 mm^2/s,cSt (25 °C) 0.97 mm^2/s,cSt (40 °C) Dynamic viscosity (nominal) 1.0 mPa.s,cP (20 °C) 0.93 mPa.s,cP (25 °C) 0.76 mPa.s,cP (40 °C)	500 mL
PSL2700V04	S3 - Viscosity oil standard Kinematic viscosity (nominal) 5.0 mm^2/s,cSt (20 °C) 2.9 mm^2/s,cSt (40 °C) 1.3 mm^2/s,cSt (100 °C) 4.4 mm^2/s,cSt (25 °C) 2.6 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 4.1 mPa.s,cP (20 °C) 2.4 mPa.s,cP (40 °C) 0.98 mPa.s,cP (100 °C) 3.6 mPa.s,cP (25 °C) 2.1 mPa.s,cP (50 °C)	500 mL

Code	Product			Unit
PSL2700V05	S6 - Viscosity oil standard			500 mL
	Kinematic viscosity (nominal)			
	11 mm^2/s,cSt (20 °C)	5.7 mm^2/s,cSt (40 °C)	1.9 mm^2/s,cSt (100 °C)	
	8.9 mm^2/s,cSt (25 °C)	4.6 mm^2/s,cSt (50 °C)		
	Dynamic viscosity (nominal)			
	8.8 mPa.s,cP (20 °C)	4.8 mPa.s,cP (40 °C)	1.5 mPa.s,cP (100 °C)	
	7.4 mPa.s,cP (25 °C)	3.7 mPa.s,cP (50 °C)		
PSL2700V06	N10 - Viscosity oil standard			500 mL
	Kinematic viscosity (nominal)			
	21 mm^2/s,cSt (20 °C)	10 mm^2/s,cSt (40 °C)	2.7 mm^2/s,cSt (100 °C)	
	17 mm^2/s,cSt (25 °C)	7.5 mm^2/s,cSt (50 °C)		
	Dynamic viscosity (nominal)			
	17 mPa.s,cP (20 °C)	9.0 mPa.s,cP (40 °C)	2.1 mPa.s,cP (100 °C)	
	14 mPa.s,cP (25 °C)	6.2 mPa.s,cP (50 °C)		
PSL2700V07	S20 - Viscosity oil standard			500 mL
	Kinematic viscosity (nominal)			
	47 mm^2/s,cSt (20 °C)	18 mm^2/s,cSt (40 °C)	4.0 mm^2/s,cSt (100 °C)	
	37 mm^2/s,cSt (25 °C)	13 mm^2/s,cSt (50 °C)		
	Dynamic viscosity (nominal)			
	40 mPa.s,cP (20 °C)	16 mPa.s,cP (40 °C)	3.2 mPa.s,cP (100 °C)	
	31 mPa.s,cP (25 °C)	11 mPa.s,cP (50 °C)		
PSL2700V08	N35 - Viscosity oil standard			500 mL
	Kinematic viscosity (nominal)			
	95 mm^2/s,cSt (20 °C)	32 mm^2/s,cSt (40 °C)	5.8 mm^2/s,cSt (100 °C)	
	72 mm^2/s,cSt (25 °C)	23 mm^2/s,cSt (50 °C)		
	Dynamic viscosity (nominal)			
	82 mPa.s,cP (20 °C)	27 mPa.s,cP (40 °C)	4.7 mPa.s,cP (100 °C)	
	62 mPa.s,cP (25 °C)	19 mPa.s,cP (50 °C)		
PSL2700V09	S60 - Viscosity oil standard			500 mL
	Kinematic viscosity (nominal)			
	160 mm^2/s,cSt (20 °C)	54 mm^2/s,cSt (40 °C)	7.7 mm^2/s,cSt (100 °C)	
	120 mm^2/s,cSt (25 °C)	35 mm^2/s,cSt (50 °C)		
	Dynamic viscosity (nominal)			
	140 mPa.s,cP (20 °C)	47 mPa.s,cP (40 °C)	6.3 mPa.s,cP (100 °C)	
	104 mPa.s,cP (25 °C)	30 mPa.s,cP (50 °C)		
PSL2700V10	N100 - Viscosity oil standard			500 mL
	Kinematic viscosity (nominal)			
	320 mm^2/s,cSt (20 °C)	97 mm^2/s,cSt (40 °C)	11.0 mm^2/s,cSt (100 °C)	
	230 mm^2/s,cSt (25 °C)	59 mm^2/s,cSt (50 °C)		
	Dynamic viscosity (nominal)			
	280 mPa.s,cP (20 °C)	84 mPa.s,cP (40 °C)	9.1 mPa.s,cP (100 °C)	
	200 mPa.s,cP (25 °C)	51 mPa.s,cP (50 °C)		
PSLN140	N140 - Viscosity oil standard			500 mL
	Kinematic viscosity (nominal)			
	400 mm^2/s,cSt (20 °C)	140 mm^2/s,cSt (40 °C)	18.0 mm^2/s,cSt (100 °C)	
	300 mm^2/s,cSt (25 °C)	90 mm^2/s,cSt (50 °C)		
	Dynamic viscosity (nominal)			
	350 mPa.s,cP (20 °C)	120 mPa.s,cP (40 °C)	15.0 mPa.s,cP (100 °C)	
	260 mPa.s,cP (25 °C)	77 mPa.s,cP (50 °C)		
PSL2700V11	S200 - Viscosity oil standard			500 mL
	Kinematic viscosity (nominal)			
	660 mm^2/s,cSt (20 °C)	180 mm^2/s,cSt (40 °C)	17 mm^2/s,cSt (100 °C)	
	460 mm^2/s,cSt (25 °C)	110 mm^2/s,cSt (50 °C)		
	Dynamic viscosity (nominal)			
	590 mPa.s,cP (20 °C)	150 mPa.s,cP (40 °C)	14 mPa.s,cP (100 °C)	
	410 mPa.s,cP (25 °C)	91 mPa.s,cP (50 °C)		
PSL2700V12	N350 - Viscosity oil standard			500 mL
	Kinematic viscosity (nominal)			
	1400 mm^2/s,cSt (20 °C)	310 mm^2/s,cSt (40 °C)	24 mm^2/s,cSt (100 °C)	
	920 mm^2/s,cSt (25 °C)	180 mm^2/s,cSt (50 °C)		
	Dynamic viscosity (nominal)			
	1200 mPa.s,cP (20 °C)	270 mPa.s,cP (40 °C)	20 mPa.s,cP (100 °C)	
	790 mPa.s,cP (25 °C)	150 mPa.s,cP (50 °C)		

Code	Product	Unit
PSL2700V12A	N415 - Viscosity oil standard Kinematic viscosity (nominal) 1900 mm^2/s,cSt (20 °C) 415 mm^2/s,cSt (40 °C) 34 mm^2/s,cSt (100 °C) 1240 mm^2/s,cSt (25 °C) 240 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 1630 mPa.s,cP (20 °C) 360 mPa.s,cP (40 °C) 28.0 mPa.s,cP (100 °C) 1065 mPa.s,cP (25 °C) 200 mPa.s,cP (50 °C)	500 mL
PSL2700V13	S600 - Viscosity oil standard Kinematic viscosity (nominal) 2400 mm^2/s,cSt (20 °C) 520 mm^2/s,cSt (40 °C) 35 mm^2/s,cSt (100 °C) 1600 mm^2/s,cSt (25 °C) 290 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 2100 mPa.s,cP (20 °C) 450 mPa.s,cP (40 °C) 29 mPa.s,cP (100 °C) 1400 mPa.s,cP (25 °C) 240 mPa.s,cP (50 °C)	500 mL
PSL2700V14	N1000 - Viscosity oil standard Kinematic viscosity (nominal) 4800 mm^2/s,cSt (20 °C) 940 mm^2/s,cSt (40 °C) 55 mm^2/s,cSt (100 °C) 3100 mm^2/s,cSt (25 °C) 520 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 4100 mPa.s,cP (20 °C) 800 mPa.s,cP (40°C) 45 mPa.s,cP (100 °C) 2700 mPa.s,cP (25 °C) 450 mPa.s,cP (50°C)	500 mL
PSLN1300	N1300 - Viscosity oil standard Kinematic viscosity (nominal) 6760 mm^2/s,cSt (20 °C) 1320 mm^2/s,cSt (40 °C) 77 mm^2/s,cSt (100 °C) 4365 mm^2/s,cSt (25 °C) 730 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 5775 mPa.s,cP (20 °C) 1120 mPa.s,cP (40 °C) 63.0 mPa.s,cP (100 °C) 3800 mPa.s,cP (25 °C) 630 mPa.s,cP (50 °C)	500 mL
PSL2700V15	S2000 - Viscosity oil standard Kinematic viscosity (nominal) 8600 mm^2/s,cSt (20 °C) 1700 mm^2/s,cSt (40 °C) 81 mm^2/s,cSt (100 °C) 5600 mm^2/s,cSt (25 °C) 880 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 7500 mPa.s,cP (20 °C) 1500 mPa.s,cP (40 °C) 68 mPa.s,cP (100 °C) 4800 mPa.s,cP (25 °C) 760 mPa.s,cP (50 °C)	500 mL
PSL2700V16	N4000 - Viscosity oil standard Kinematic viscosity (nominal) 18000 mm^2/s,cSt (20 °C) 3400 mm^2/s,cSt (40 °C) 130 mm^2/s,cSt (100 °C) 11000 mm^2/s,cSt (25 °C) 1700 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 16000 mPa.s,cP (20 °C) 2900 mPa.s,cP (40 °C) 112 mPa.s,cP (100 °C) 10000 mPa.s,cP (25 °C) 1500 mPa.s,cP (50 °C)	500 mL
PSL2700V17	S8000 - Viscosity oil standard Kinematic viscosity (nominal) 35000 mm^2/s,cSt (20 °C) 6700 mm^2/s,cSt (40 °C) 220 mm^2/s,cSt (100 °C) 22000 mm^2/s,cSt (25 °C) 3200 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 31000 mPa.s,cP (20 °C) 5900 mPa.s,cP (40 °C) 190 mPa.s,cP (100 °C) 20000 mPa.s,cP (25 °C) 2700 mPa.s,cP (50 °C)	500 mL
PSL2700V18	N15000 - Viscosity oil standard Kinematic viscosity (nominal) 65000 mm^2/s,cSt (20 °C) 13000 mm^2/s,cSt (40 °C) 370 mm^2/s,cSt (100 °C) 41000 mm^2/s,cSt (25 °C) 5800 mm^2/s,cSt (50 °C) Dynamic viscosity (nominal) 58000 mPa.s,cP (20 °C) 11000 mPa.s,cP (40 °C) 320 mPa.s,cP (100 °C) 37000 mPa.s,cP (25 °C) 5100 mPa.s,cP (50 °C)	500 mL
PSL2700V19	S30000-Viscosity oil standard Kinematic viscosity (nominal) 82000 mm^2/s,cSt (25 °C) 23000 mm^2/s,cSt (40 °C) 11000 mm^2/s,cSt (50 °C) 670 mm^2/s,cSt (100 °C) Dynamic viscosity (nominal) 74000 mPa.s,cP (25 °C) 21000 mPa.s,cP (40 °C) 9900 mPa.s,cP (50 °C) 580 mPa.s,cP (100 °C)	500 mL

Certified liquids for viscosity measurements in the European Pharmacopoeia

Newtonian liquids with a certified viscosity are supplied by Van Swinden Laboratorium BV and are distributed by LGC Standards.

Liquids are available with kinematic viscosities up to 48000 $mm^2 \cdot s^{-1}$ and certified at temperatures between 15°C and 140°C.

Viscosities are certified in $mm^2 \cdot s^{-1}$ (kinematic viscosity, v) or in mPa·s (dynamic viscosity,η)

1 mPa·s = 1 cps (centipoise) 1 $mm^2 \cdot s^{-1}$= 1 cst (centistoke)

Standard liquids are available from stock, in 250 ml packs and certified at 20°C to following viscosities:

v = 0,6 ; 1,0 ; 2,2; 4,9 ; 1; 20 ; 31 ; 56 ; 67 ; 85 ; 100 ; 132 ; 167 ; 217 ; 262; 340 ; 423 ; 537 ; 644 ; 783 ; 1000 ; 1260 ; 1800 ; 3650 ; 5075 ; 10175 ; 18400 ; 46500

η= 0,4 ; 1,0 ; 1,8; 4,0 ; 8,9 ; 17,0 ; 26,0 ; 48,0 ; 58,0 ; 74,0 ; 87,0 ; 116,0 ; 146,0 ; 191,0 ; 230,0 ; 300,0 ; 375,0 ; 474,0 ; 572,0 ; 700,0 ; 862,0 ; 1085 ; 1560 ; 3175 ; 4430 ; 8935 ; 16300 ; 41300

All viscosities are calibrated relative to the viscosity of pure water. Stated values are nominal values, certified values will not deviate more than 10% from the nominal value.

The uncertainty of the certified viscosities is at least 0.3% at the lowest viscosity, increasing up to 0.5% at 48000 $mm^2 \cdot s^{-1}$.

Shelf life

Standards up to 500 mPa·s are mineral oil based, and have a shelf life of 12 months from date of certification. Above 500 mPa·s Polyisobutylene is used; these materials have a shorter shelf life, and should be ordered as needed.

Liquids can be prepared and certified to any viscosity between 0.6 $mm^2 \cdot s^{-1}$ and 80,000 $mm^2 \cdot s^{-1}$.

The price depends on the viscosity required, the degree of precision between nominal viscosity required and certified viscosity achieved, and temperature of certification.

Additional charges are applied for extra certification temperatures and for certification of dynamic viscosity. Please ask for a quotation.

Liquids supplied by customers may be certified for viscosity, charges vary: please ask for a quotation.

Polymeric properties

Individual molecular weight polymer standards

	Code	Product	Unit
New	NIST-2881	Polystyrene - Absolute molecular mass distribution standard This Standard Reference Material® (SRM®) is intended for the calibration and the performance evaluation of instruments used to determine the average molecular mass and molecular mass distribution of synthetic polymers (where mass is taken to be relative to the mass of 12C). These methods include size exclusion chromatography (SEC) and mass spectrometry (MS). The fractional contribution of each oligomer from 1 % to 99 % of the cumulative molecular mass distribution (MMD) was certified. Please ask for details.	0.3 g
	NIST-2885	Polyethylene Certified value Molar Mass ..... 6.28×10^3 g/mol Intrinsic viscosity in 1,2,4-Trichlorobenzene at 130 °C ..... 22.3 mL/g	300 mg
	NIST-2886	Polyethylene Certified value Molar Mass ..... 87.0×10^3 g/mol Intrinsic viscosity in 1,2,4-Trichlorobenzene at 130 °C ..... 157.8 mL/g	300 mg
	NIST-2887	Polyethylene Certified value Molar Mass ..... 196.4×10^3 g/mol Intrinsic viscosity in 1,2,4-Trichlorobenzene at 130 °C ..... 279.9 mL/g	300 mg
	NIST-1482a	Polyethylene Certified values Mass-average molar mass ..... 13,600 g/mol Number-average molar mass ..... 11,400 g/mol Intrinsic viscosity ..... 40.1 mL/g	0.3 g

	Code	Product	Unit

Molecular weight and melt flow

	Code	Product	Unit
New	ERM-FA001	Polystyrene (amorphous) (originally certified as BAM-P01) Certified values Weight-average molecular weight (Mw)[1] ..... 87600 ± 2245 g/mol Intrinsic viscosity[2] ..... 42.37 ± 0.83 mL/g Indicative values for molar masses (M_w, M_n, M_z, M_p) [1] obtained by laser light scattering [2] obtained by viscometry using an UBBELOHDE viscometer according to DIN 51562–1	Each
New	ERM-FA002	Polystyrene (pellets) (originally certified as BAM-P02) Certified values Weight-average molecular weight (Mw)[1] ..... 205600 ± 3075 g/mol Intrinsic viscosity[2] ..... 68.38 ± 0.79 mL/g Indicative values for molar masses (M_w, M_n, M_z, M_p) [1] obtained by laser light scattering [2] obtained by viscometry using an UBBELOHDE viscometer according to DIN 51562–1	Each
New	ERM-FA003	PMMA (crystalline) (originally certified as BAM-P03) Certified values Weight-average molecular weight (Mw)[1] ..... 107050 ± 2500 g/mol Intrinsic viscosity[2] ..... 31.48 ± 1.21 mL/g Indicative values for molar masses (M_w, M_n, M_z, M_p) [1] obtained by laser light scattering [2] obtained by viscometry using an UBBELOHDE viscometer according to DIN 51562–1	Each
New	ERM-FA004	PEO (crystalline) (originally certified as BAM-P04) Certified values Weight-average molecular weight (Mw)[1] .....6065x ± 90 g/mol Intrinsic viscosity[2] ..... 14.28 ± 0.54 mL/g Indicative values for molar masses (M_w, M_n, M_z, M_p) [1] obtained by laser light scattering [2] obtained by viscometry using an UBBELOHDE viscometer according to DIN 51562–1	Each
New	ERM-FA005	Polystyrene (pellets) (originally certified as BAM-P05) Certified values Weight-average molecular weight (Mw)[1] ..... 349800 ± 9700 g/mol Intrinsic viscosity[2] ..... 104.28 ± 2.30 mL/g Indicative values for molar masses (M_w, M_n, M_z, M_p) [1] obtained by laser light scattering [2] obtained by viscometry using an UBBELOHDE viscometer according to DIN 51562–1	Each
New	ERM-FA006	PMMA (amorphous) (originally certified as BAM-P06) Certified values Weight-average molecular weight (Mw)[1] ..... 365500 ± 10800 g/mol Intrinsic viscosity[2] ..... 90.63 ± 1.05 mL/g Indicative values for molar masses (M_w, M_n, M_z, M_p) [1] obtained by laser light scattering [2] obtained by viscometry using an UBBELOHDE viscometer according to DIN 51562–1	Each
New	ERM-FA007	PMMA (crystalline) (originally certified as BAM-P07) Certified values Weight-average molecular weight (Mw)[1] ..... 360200 ± 9800 g/mol Intrinsic viscosity[2] ..... 84.80 ± 1.82 mL/g Indicative values for molar masses (M_w, M_n, M_z, M_p) [1] obtained by laser light scattering [2] obtained by viscometry using an UBBELOHDE viscometer according to DIN 51562–1	Each
New	ERM-FA008	PEO (crystalline) (originally certified as BAM-P08) Certified values Weight-average molecular weight (Mw)[1] ..... 11400 ± 150 g/mol Intrinsic viscosity[2] ..... 20.91 ± 1.12 mL/g Indicative values for molar masses (M_w, M_n, M_z, M_p) [1] obtained by laser light scattering [2] obtained by viscometry using an UBBELOHDE viscometer according to DIN 51562–1	Each
	NIST-705A	Polystyrene - Heat capacity and molecular weight Molecular weight (MW) values, measured using various techniques, and limiting viscosity (LV) numbers. Certified values M_n by membrane osmometry.....170,900 g/mol — LV in benzene (25 °C)..... 74.3 mL/g M_W by light scattering.....179,300 g/mol — LV in benzene (25 °C)..... 74.5 mL/g M_W by sedimentation equilibrium.....189,800 g/mol — LV in cyclohexane (25 °C)..... 35.4 mL/g For heat capacity please ask for our detailed list	5 g

Code	Product	Unit
NIST-706A	Polystyrene - Broad molecular weight distribution Certified values Mass-average molar mass (M_w) .....285,000 g/mol Indicative values for intrinsic viscosity in benzene at 25 °C and cyclohexane at 35 °C	18 g
NIST-1473b	Low density polyethylene resin This material is certified for melt flow rate using ASTM D 1238-00, Test Method for Flow Rates of Thermoplastics by Extrusion Plastometer Standard Test Condition 190/2.16. The flow rate of the melt was determined at 190.0 °C ± 0.1 °C and a load of 2.16 kg by procedure A of the ASTM method. A manually operated extrusion plastometer was used. Certified value Melt flow rate (FR) .....1.13 g/10 min	60 g
NIST-1474A	Polyethylene resin - Melt flow rate Certified for melt flow rate, FR-190/2.16, using ASTM Method D 1238-86 at 190 °C. Certified value Melt flow rate (FR) .....5.10 g/10 min	60 g
NIST-1475a	Polyethylene, linear - Melt flow rate Certified for melt flow rate, FR-190/2.16, using ASTM Method D 1238-90b, and Limiting viscosity (LV). Certified values Melt flow rate ..... 2.02 g/10 min Weight average MW (light scattering) ..... 52,000 g/mol Number average MW (size exclusion chromatography)..... 18,310 g/mol Weight average MW (size exclusion chromatography) ..... 53,070 g/mol Z-average MW (size exclusion chromatography) ..... 138,000 g/mol LV in 1-chloronaphthalene (130 °C) .....89.0 mL/g LV in 1,2,4-trichlorobenzene (130 °C) ..... 101.0 mL/g LV in decahydronapthalene (130 °C)..... 118.0 mL/g density .....0.97844 g/cm^3	50 g
NIST-1476a	Branched polyethylene resin - Melt flow rate This Standard Reference Material® (SRM®) is intended for use in calibration and performance evaluation of instruments used in polymer technology and science for the determination of the melt flow rate using ASTM Method D1238-00. It is supplied as white pellets of polyethylene. This material is certified for melt flow rate using ASTM Method D1238-00 condition 190/2.16. Under this condition the melt flow rate is 1.23 g/10 min with a standard deviation of 0.036 g/10 min and with 29 degrees of freedom. The certified measurement uncertainty is found to be 0.110 g/10 min and is expressed as a combined expanded uncertainty with a coverage factor k = 2, calculated in accordance with ISO and NIST Guides procedure.	12 g
NIST-1478	Polystyrene - narrow molecular weight distribution Certified values Number average MW (membrane osmometry).....35,800 g/mol Weight average MW (sedimentation equilibrium ultracentrifugation).....37,400 g/mol Limiting viscosity in toluene (25 °C).....23.06 mL/g	2 g
NIST-1479	Polystyrene - narrow molecular weight distribution Certified value Weight average MW (light scattering) .....1,050,000 g/mol	2 g
NIST-1484a	Polyethylene, linear - narrow molecular weight distribution Certified values Number-average MW (membrane osmometry).....100,500 g/mol Weight average MW (light scattering) .....119,600 g/mol Limiting viscosity in 1,2,4-trichlorobenzene (130 °C) ..... 197.9 mL/g Limiting viscosity in 1-chloronaphthalene (130 °C)..... 169.4 mL/g	300 mg
NIST-1487	Poly(methylmethacrylate) Certified values Weight-average molecular weight (sedimentation equilibrium ultracentrifugation).....63,000 g/mol Limiting viscosity number in tetrahydrofuran (25 °C).....7.9 mL/g	2 g
NIST-1488	Poly(methylmethacrylate) Certified values Number-average molecular weight (membrane osmometry) ..... 29,300 g/mol Limiting viscosity in tetrahydrofuran (25 °C) .....15.8 mL/g	2 g
NIST-1489	Poly(methylmethacrylate) Certified values Number-average molecular weight (membrane osmometry) ..... 115,000 g/mol Limiting viscosity in tetrahydrofuran (25 °C) .....37.4 mL/g	2 g
NIST-1496	Polyethylene gas pipe resin (unpigmented) Certified values Melt flow rate (FR-190/2.16, using ASTM Method D 1238-82)..... 0.26 g/10 min Intrinsic viscosity in 1,2,4-trichlorobenzene (140 °C).....210 mL/g	900 g

Code	Product	Unit
NIST-2491	Non-Newtonian polymer melt for rheology This Standard Reference Material® (SRM®) is intended primarily for use in calibration and performance evaluation of instruments used to determine the viscosity and first normal stress difference in steady shear, or to determine the dynamic mechanical storage and loss moduli and shift factors through time-temperature superposition. NIST-2491 consists of polydimethylsiloxane. The supplier identifies the polydimethylsiloxane as having a number average molecular mass of 308,000 g/mol. Certified values of the viscosity and first normal stress difference as functions of shear rate are given in the certificate at temperatures of 0 °C, 25 °C, and 50 °C, respectively. The expanded combined uncertainties in the certified values of the viscosity and first normal stress difference are also listed. The certified values of the storage modulus G' and loss modulus G" as functions of frequency at 0 °C, 10 °C, 20 °C, 30 °C, 40 °C, and 50 °C, respectively are also given in the certificate.	100 mL

Miscellaneous

Relative humidity

HM11 - HM90

Please specify the type of hygrometer to be used to enable the appropriate adapter to be supplied.

Code	Product	Unit
HM11	Relative humidity standard Nominal relative humidity..... 11 %	unit
HM22	Relative humidity standard Nominal relative humidity..... 22 %	unit
HM33	Relative humidity standard Nominal relative humidity..... 33 %	unit
HM54	Relative humidity standard Nominal relative humidity..... 54 %	unit
HM75	Relative humidity standard Nominal relative humidity..... 75 %	unit
HM80	Relative humidity standard Nominal relative humidity..... 80 %	unit
HM90	Relative humidity standard Nominal relative humidity..... 90 %	unit

Scanning electron microscope

	NIST-2069b	SEM Performance Standard Graphitised rayon fibres with smooth and uniform edges on a 12.5 mm diameter SEM specimen mount with a 3 mm peg. One edge of a single fibre is used as a clearly defined boundary across which the electron beam is scanned. The slope of the resultant detector signal waveform is a measure of the SEM performance that can be related to the resolution capability of the SEM.	Each
	NIST-RM 8091	Scanning Electron Microscope Sharpness Standard This Reference Material (RM) is intended primarily for use in checking the sharpness of scanning electron microscopes. It is supplied as a small (3mm x 2 mm) diced semiconductor chip. Please ask for further details.	Each
New	NIST-RM 8820	Scanning electron microscope scale calibration artifact Reference Material (RM) 8820 is primarily intended to be used for X and Y scale (or magnification) calibrations from less than 10 times magnifications to more than 100 000 times magnifications in scanning electron microscopes (SEMs). It was designed to provide good contrast at low and high electron landing energies (accelerating voltages). Beyond testing scale calibration, it can be used for non-linearity measurements, especially at lower than 10 000 times magnifications. It can also be used for optical and scanning probe and other types of microscopes. Most SEMs require a set of calibration structures of different sizes to cover the full range of possible magnifications. This Reference Material (in part using the ideas implemented in earlier NIST scale calibration artifacts) is designed to meet that need. A unit of RM 8820 consists of a 20 mm × 20 mm lithographically patterned silicon chip.	35-40 g

X-ray diffraction

New	NIST-640D	Silicon powder line position + line shape standard for powder diffraction This Standard Reference Material (SRM) is intended for use as a standard for calibration of diffraction line positions and line shapes, determined through powder diffractometry. A unit of NIST-640d consists of approximately 7.5 g of silicon powder bottled under argon. The certified lattice parameter for a temperature of 22.5 °C is 0.543 123 nm ± 0.000 008 nm	7.5 g
	NIST-656	Silicon nitride This Standard Reference Material (SRM®) consists of two powders intended for quantitative analysis of the α and β polymorphs of silicon nitride via powder diffraction methods. The powders are combinations of the α and β polymorphs; one is high in the α phase content (α 656), while the other contains a larger amount of the β polymorph (β 656).	2 x 10 g

Code	Product	Unit

NIST-674b — X-Ray powder diffraction intensity set — set

This Standard Reference Material (SRM®) consists of four oxide powders intended primarily for use as internal standards for quantitative X-ray diffraction analysis. The powders are ZnO (wurtzite structure), TiO_2 (rutile structure), Cr_2O_3 (corundum structure), and CeO_2 (fluorite structure). These four oxides offer a range of linear attenuations for Cu-Kα radiation: 279 cm^{-1}, 536 cm^{-1}, 912 cm^{-1}, and 2203 cm^{-1}, respectively, that allow the user to nominally match that of standard to the unknown in order to minimize the effects of microabsorption. A unit of NIST-674b consists of approximately 10 g of each powder, bottled in an argon atmosphere.

Certified values

Phase purity and uncertainty

Crystalline component	Phase Purity	Crystalline component	Phase Purity
ZnO	95.28 % ± 0.64 %	Cr_2O_3	95.91 % ± 0.60 %
TiO_2	89.47 % ± 0.62 %	CeO_2	91.36 % ± 0.55 %

NIST-675 — Mica x-ray diffraction — 7.5 g

Intended for use as an external or internal low 2 (large d-spacing) calibration standard for powder diffractometry.

Certified value..... d(001) 9.98104 Å (based on the average of 28 refined d values at 25 °C uncorrected for refraction)

NIST-1976a — Alumina plate - Instrument response Standard for X-Ray Powder Diffraction — disc

This Standard Reference Material (SRM®) consists of a sintered alumina disc intended for use in calibration of X-ray powder diffraction equipment with respect to line position and intensity as a function of 2Θ angle. The solid form of the SRM eliminates variability imposed by sample loading procedure from intensity measurements. A unit of NIST-1976a consists of a sintered alumina disc approximately 25.6 mm in diameter by 2.2 mm in thickness

Please ask for further details

NIST-1990 — Single Crystal Diffractometer Alignment Standard - Ruby Sphere — 3 spheres

Standard Reference Material (SRM®) 1990 is intended primarily for use as an alignment standard for single crystal diffractometry. One unit consists of three chromium-doped single crystal aluminum oxide (ruby) spheres. The spheres are nominally 152 mm in diameter with 1.3 mm sphericity. The spherical geometry was chosen to facilitate alignment and to avoid corrections for absorption. These spheres produce reflections at high angles for copper and molybdenum radiation. The space group is R3c.

Certified lattice parameters of NIST-1990 at 25 °C are:

a: 0.476080 nm ± 0.000029 nm
c: 1.299568 nm ± 0.000087 nm

NIST-1994 — Standard silicon single crystal wafer for crystalline orientation — unit

This Standard Reference Material (SRM®) is intended for use in the calibration of instruments (X-ray diffractometers) used to measure the crystal orientation of wafers relative to the crystal surface. The SRM unit consists of a 100-mm diameter silicon wafer. The crystal orientation of the (001) silicon crystal planes relative to the surface normal has been measured both parallel and perpendicular to an edge flat that is manufactured into the wafer.

New **NIST-1995** — Standard sapphire single crystal wafer for crystalline orientation — 50-mm wafer

This Standard Reference Material® (SRM®) is intended for use in the calibration of instruments (X-ray diffractometers) used to measure the crystal orientation of wafers relative to the crystal surface. NIST-1995 consists of a 50 mm diameter sapphire wafer. Certified values for crystal orientation. Please ask for details.

New **NIST-2000** — Calibration standard for high-resolution X-Ray Diffraction — block

This Standard Reference Material® (SRM®) provides the high-resolution X-ray diffraction (HRXRD) community with International System of Units (SI) traceable Si (220) d-spacing in transmission, surface-to-crystal-plane wafer miscut, and surface-to-Si (004) Bragg angle in reflection for our reference wavelength. A unit of NIST-2000 consists of 25 mm × 25 mm × 0.725 mm double-polished (100)-oriented, single-crystal Si specimens with a nominal 50 nm $Si_{0.85}Ge_{0.15}$ epitaxial layer and 25 nm Si cap. These certified values can be used to calibrate HRXRD instrumentation.

Certified values for d_{SRM}, ξ_{SRM}, φ_{SRM}, x_{SRM}, y_{SRM}, $\theta_{surface,SRM\ (004)}$

New **NIST-660B** — Line position and line shape standard for powder diffraction — 6 g

This Standard Reference Material (SRM) is intended for use in calibration of diffraction line positions and line shapes determined through powder diffractometry. A unit of NIST-660b consists of approximately 6 g of lanthanum hexaboride, LaB6, powder bottled under argon.

Certified lattice parameter for a temperature of 22.5 °C..... 0.415 689 nm ± 0.000 008 nm

Information values for peak positions computed for NIST660b using Cu Kα tadiation, λ = 0.154 059 29 nm

Density

NIST-211d — Toluene — 4 x 5 mL

Certified values

Temperature [°C]	Density [kg/m³]
15	871.476 ± 0.025
20	866.828 ± 0.025
25	862.170 ± 0.025

NIST-2214 — Isooctane (2, 2, 4-Trimethylpentane) - Density — 4 x 5 mL

Certified Values of NIST-2214 at three sample temperatures

Temperature °C	Density	Temperature °C	Density
15	695.969 ± 0.035 kg/m³	25	687.753 ± 0.035 kg/m³
20	691.872 ± 0.035 kg/m³		

Code	Product	Unit
	HDF01 - HDF-012 Certified densities were determined by means of hydrostatic weighing.	
HDF01	2,2,4-Trimethylpentane Temperature range 15-25 °C Certified value Liquid density (20 °C)..... 692 kg/m^3	10 mL
HDF02	Dodecane Temperature range 10-50 °C Certified value Liquid density (20 °C)..... 750 kg/m^3	10 mL
HDF04	Base lubricating oil approx. 8 mPa.s at 40°C Temperature range 15-50 °C Certified value Liquid density (20 °C)..... 868 kg/m^3	10 mL
HDF05	Base lubricating oil approx. 30 mPa s at 40°C Temperature range 15-50 °C Certified value Liquid density (20 °C)..... 870 kg/m^3	10 mL
HDF06	Base lubricating oil approx. 110 mPa s at 40°C Temperature range 15-50 °C Certified value Liquid density (20 °C)..... 882 kg/m^3	10 mL
HDF07	Lubricating oil A90 approx. 160 mPa s at 40°C Temperature range 15-50 °C Certified value Liquid density (20 °C)..... 887 kg/m^3	10 mL
HDF08	Ethanol in water approx. 41 % ABV Use of this material is not recommended unless required by fiscal authorities. Certified value Liquid density (20 °C)..... 948 kg/m^3	10 mL
HDF09	Ethanol in water approx. 11 % ABV Use of this material is not recommended unless required by fiscal authorities. Certified value Liquid density (20 °C)..... 985 kg/m^3	10 mL
HDF15	Water Certified value Liquid density (20°C)..... 998 kg/m^3	10 mL
HDF10	Dextrose in water approx. 10 % by weight Use of this material is not recommended unless required by fiscal authorities. Certified value Liquid density (20 °C)..... 1037 kg/m^3	10 mL
HDF13	Sodium bromide in water Temperature range 15-25 °C Certified value Liquid density (20 °C)..... 1264 kg/m^3	10 mL
HDF14	Caesium chloride in water approx. 47% by weight Certified value Liquid density (20°C)..... 1525 kg/m^3	10 mL
HDF12	Tetrachloroethylene Temperature range 15-50 °C Certified value Liquid density (20 °C)..... 1623 kg/m^3	10 mL
	GUM1.1 - GUM1.11 Liquid density standards certified by the Central Office of Measures (GUM). Intended for calibration and checking densimeters used for measuring density of liquids. Supplied with a certificate showing density values at temperatures from 20 °C to 50 °C, with an uncertainty 0.05 kg/m^3. Values for the first and second decimal place are given in the certificate for particular series.	

Code	Product	Unit
GUM 1.1	n-Hexane Certified value Density..... 659 kg/m³ at 20°C	10 mL
GUM 1.2	n-Heptane Certified value Density..... 683 kg/m³ at 20°C	10 mL
GUM 1.3	2,2,4-Trimethylpentane Certified value Density..... 691 kg/m³ at 20°C	10 mL
GUM 1.4	n-Nonane Certified value Density..... 717 kg/m³ at 20°C	10 mL
GUM 1.5	n-Octane Certifed value Density..... 702 kg/m³ at 20°C	10 mL
GUM 1.6	Methylcyclohexane Certified value Density..... 769 kg/m³ at 20°C	10 mL
GUM 1.7	Cyclohexane Certified value Density..... 778 kg/m³ at 20°C	10 mL
GUM 1.8	Toluene Certified value Density..... 866 kg/m³ at 20°C	10 mL
GUM 1.10	2,4-Dichlorotoluene Certified value Density..... 1249 kg/m³ at 20°C	10 mL
GUM 1.11	Tetrachloroethylene Certified value Density..... 1623 kg/m³ at 20°C	10 mL

Chemical resistance (durability) of glass

NIST-622 and NIST-623

These NIST Standard Reference Materials® are for checking test methods and calibrating equipment used to determine the resistance of glass containers to chemical attack. The values given represent the volume of fiftieth-normal sulphuric acid used to titrate to the methyl red end point of the alkaline extract from a crushed sample of glass after exposure to high purity water at 121 °C.

NIST-622	Soda lime silica (durability) Certified value Volume of 0.02N H_2SO_4 .....7.67 mL	2.2 kg
NIST-623	Borosilicate glass Certified value Volume of 0.02N H_2SO_4 .....0.34 mL	2.2 kg

Multi-test verification materials (MTVMs)

The Multi-Test Verification Materials (MTVMs) are unique because they enable a laboratory to use a single sample to validate different tests and instrumentation. Each unit is supplied with data for multiple types of internationally accepted test methods.

SS99850-0 — SETA MTVM Kerosine (Jet turbine fuel) — 500 mL

Test Name	ASTM-IP Method	Range	Amount/test
Distillation IBP	D86-IP123	140-180 °C	100 mL
Distillation 10 %	D86-IP123	159-188 °C	100 mL
Distillation 50 %	D86-IP123	192-218 °C	100 mL
Distillation 90 %	D86-IP123	220-247 °C	100 mL
Distillation FBP	D86-IP123	244-268 °C	100 mL
Distillation residue	D86-IP123	1.1-1.3 %vol	100 mL
Distillation loss	D86-IP123	0.4-0.7 %vol	100 mL
Flashpoint	IP170	35-60 °C	85 mL
Freezing point	D2386-IP16	–62 to -44°C	25 mL
Aromatics FIA	D1319-IP156	18.1-22.7 %vol	0.75 mL
Smoke point	D1322	20-25 mm	20 mL
Acid number	D3242-IP354	<0.100 mg KOH/g	100 mL
Mercaptans	D3227-IP342	0.0003 to 0.0100% (m/m)	40 mL

Miscellaneous

Code	Product	Unit
SS99851-0	SETA MTVM Gas oil	500 mL

Test Name	ASTM-IP Method	Range	Amount/test
Density at 15 °C	D1298-IP160	0.83-0.854 kg/L	200 mL
Distillation IBP	D86-IP123	160-190 °C	100 mL
Distillation 10 %	D86-IP123	200-242 °C	100 mL
Distillation 50 %	D86-IP123	260-290 °C	100mL
Distillation 90 %	D86-IP123	320-350 °C	100 mL
Distillation 95 %	D86-IP123	335-368 °C	100 mL
Distillation FBP	D86-IP123	350-385 °C	100 mL
Distillation residue	D86-IP123	1.25-1.42 %vol	100 mL
Distillation loss	D86-IP123	0.26-0.55 %vol	100 mL
Flashpoint	D93-IP34	56-80°C	75 mL
Cloud point	D2500-IP219	-17 to -4 °C	up to 38 mL
CFPP	IP309	-30.0 to -0 °C	45 mL
Pour point	D97-IP15	-33 to –6 °C	up to 38 mL
Kin. Visc. (40 °C)	D445-IP71	2.3-3.5 mm^2/s	up to 40 mL
Lubricity HFRR	D6079; IP450	271 to 512 µm	2 mL
Water Karl Fischer	D1744; IP438	23.4 to 63.9 mg/kg	5 mL

SS99852-0	SETA MTVM Fuel oil	500 mL

Test Name	ASTM-IP Method	Range	Amount/test
Density at 15 °C	D1298-IP160	0.94-0.994 kg/L	200 mL
Pour point	D97-IP15	–14 to 17 °C	up to 38 mL
Kin. Visc. (50 °C)	D445-IP71	150-1800 mm^2/s	up to 500 mL
Kin. Visc. (100 °C)	D445-IP71	20-95 mm^2/s	up to 500 mL
Micro carbon	D4530;IP398	0.10 to 30.0 %(m/m)	2 mL
Flash point	D93 (b) - IP34(b);	92.3 to 121.6 °C	75 mL

SS99853-0	SETA MTVM lubricating oil	500 mL

Test Name	ASTM-IP Method	Range	Amount/test
Kin. Visc. (40 °C)	D445-IP71	70-160 mm^2/s	up to 40 mL
Kin. Visc. (100 °C)	D445-IP71	10-19 mm^2/s	up to 40 mL
Viscosity index	D2270-IP226	139-180	up to 80 mL
Pour point	D97-IP15	–49.1 to –33.9 °C	38 mL
Flash point	D93-IP34	196-213 °C	75 mL
Cold cranking sim.	D5293;IP383	3062-6896 mPa.s	5 mL

SS99854-0	SETA MTVM motor gasoline	500 mL

Test Name	ASTM-IP Method	Range	Amount/test
Motor octane no.	D2700	83-90	
Research octane no.	D2699	96-101	
Density at 15 °C	D1298-IP160	0.71-0.763 kg/L	200 mL
Distillation IBP	D86-IP123	32.0-39.0 °C	100 mL
Distillation 70 °C	D86-IP123	15-36 %vol	100 mL
Distillation 100 °C	D86-IP123	36-58 %vol	100 mL
Distillation 150 °C	D86-IP123	75-90 %vol	100 mL
Distillation FBP	D86-IP123	175-205 °C	100mL
Aromatics FIA	D1319-IP156	19-42 %vol	0.75 mL
Olefins FIA	D1319-IP156	1.5-15 %vol	0.75 mL
Saturates FIA	D1319-IP156	42-72 %vol	0.75 mL
Vapour Pressure	D5191; IP394	50 to 85 kPa	3 mL

SS99856-0	SETA MTVM bitumen	500 mL

Test Name	ASTM-IP Method	Range	Amount/test
Softening point	IP58	37-54 °C	7.5 mL
Needle penetration	IP49	41-200 Pen	130 mL

Mechanical properties

ERM-FA013	Charpy specimens 30 J (bars)	set

A unit consists of five Charpy V-notch test pieces, which are rectangular steel bars of nominal dimensions 55 mm x 10 mm x 10 mm, with one V-notch, accurately machined to tolerances imposed in EN 10045-1 and ISO 148.

Absorbed energy (KV) at 20 ± 2 °C ..... 30J nominal

ERM-FA014	Charpy specimens 60 J (bars)	set

A unit consists of five Charpy V-notch test pieces, which are rectangular steel bars of nominal dimensions 55 mm x 10 mm x 10 mm, with one V-notch, accurately machined to tolerances imposed in EN 10045-1 and ISO 148.

Absorbed energy (KV) at 20 ± 2 °C ..... 60J nominal

ERM-FA015	Charpy specimens 80 J (bars)	set

A unit consists of five Charpy V-notch test pieces, which are rectangular steel bars of nominal dimensions 55 mm x 10 mm x 10 mm, with one V-notch, accurately machined to tolerances imposed in EN 10045-1 and ISO 148.

Absorbed energy (KV) at 20 ± 2 °C ..... 80J nominal

ERM-FA016	Charpy specimens 120 J (bars)	set

A unit consists of five Charpy V-notch test pieces, which are rectangular steel bars of nominal dimensions 55 mm x 10 mm x 10 mm, with one V-notch, accurately machined to tolerances imposed in EN 10045-1 and ISO 148.

Absorbed energy (KV) at 20 ± 2 °C ..... 120J nominal

Code	Product	Unit
ERM-FA415	Charpy specimens 150 J A unit consists of five Charpy V-notch test pieces, which are rectangular steel bars of nominal dimensions 55 mm x 10 mm x 10 mm, with one V-notch, accurately machined to tolerances imposed in EN 10045-1 and ISO 148. Absorbed energy (KV) at 20 ± 2 °C ..... 150J nominal	set
NIST-2092	Low-Energy Charpy V-Notch NIST-2092 is intended primarily for the verification of Charpy V-Notch machines in accordance with the current ASTM Standard E23.	set
NIST-2096	High Energy Charpy V-Notch NIST-2096 is intended primarily for the verification of Charpy V-Notch machines in accordance with the current ASTM Standard E23. For further details please ask for the current certificate	set
BCR-425	Nimonic 75 - Creep rate 150 mm long 14 mm diameter bars of Nimonic 75. Testing conditions: T = 600 °C, σ = 160 Mpa Certified values Creep rate at 400 h ..... 72 x 10^{-6}/h time to 4 % strain ..... 557 h time to 2 % strain .....278 h	set (3)
BCR-661A	Nimonic 75 for ambient air tensile properties The material is Nimonic 75 nickel base alloy. It will be issued in units of three bars each about 150 mm long x 14 mm diameter, sufficient for the manufacture of three test-pieces. Certified values for tensile properties according to EN10002-1 0.2% Proof stress $R_{p0.2}$ ..... 300 ± 7 MPa Elongation at fracture A ..... 40.9 ± 0.9 % 0.5% Proof stress $R_{p0.5}$ ..... 318 ± 7 MPa Reduction in area at fracture Z ..... 60 ± 4 % Tensile strength R_m ..... 750 ± 13 MPa	set (3)
BCR-661B	Nimonic 75 for ambient air tensile properties The material is Nimonic 75 nickel base alloy. It will be issued as one bar with about 500 mm long x 14 mm diameter. Certified values for tensile properties according to EN10002-1 0.2% Proof stress $R_{p0.2}$ ..... 300 ± 7 MPa Elongation at fracture A ..... 40.9 ± 0.9 % 0.5% Proof stress $R_{p0.5}$ ..... 318 ± 7 MPa Reduction in area at fracture Z ..... 60 ± 4 % Tensile strength R_m ..... 750 ± 13 MPa	rod
BCR-692	Scratch test reference material A reference material certified for critical loads for cohesive/adhesive failures during scratch testing (prEN 1071-3). The reference samples are (30x30x5) mm steel coupons coated with a diamond-like carbon coating (DLC)applied by plasma-assisted chemical vapour deposition. The coupons are distributed in a reusable plastic box containing desiccant.	coupons
NIST-2100	Fracture Toughness of Ceramics NIST-2100 is intended for verification of fracture toughness testing procedures and consists of a set of five hot-pressed silicon nitride flexure specimens cut from a single billet (plate) of material. This SRM may be used with any fracture toughness test method, but is optimized for beam bending testing configurations. The SRM may be used in conjunction with American Society of Testing and Materials (ASTM) fracture toughness standard C1421-99 (or the Provisional Standard PS070-97 which preceded it) [1]. This SRM may also be used with two International Organization for Standardization (ISO) standard tests under development by ISO Technical Committee TC 206, Fine Ceramics.	5 bars

Physico-chemical properties

Magnetic moment

NIST-762	Magnetic moment standard - Nickel disc This Standard Reference Material® (SRM®) is intended for use in the calibration of magnetometers (such as vibrating sample magnetometers) used in the measurement of the magnetic properties of materials. NIST-762 consists of a nickel disc nominally 6 mm in diameter with a thickness of 0.127 mm and a mass of 32 mg ± 1 mg. The NIST-762 lot was produced from rolled nickel sheet with a purity of 99.999 %. Discs were punched from the sheet. Before measurement, the discs were ultrasonically cleaned in acetone, then methyl alcohol. The certified value for specific magnetization, σ at 298 K and in an applied magnetic field of 398 kA/m (5000 oersted, Oe) with the magnetic field aligned parallel to the plane of the disc is: σ= 54.78 A m^2/kg ± 0.15 A m^2/kg (54.78 emu/g ± 0.15 emu/g)	6 mm dia.
NIST-764a	Magnetic susceptibility standard - Platinum cylinder This Standard Reference Material (SRM®) is intended for use in the calibration of magnetometers (such as vibrating sample magnetometers) used in the measurement of the magnetic properties of materials. NIST-764a consists of a platinum (Pt) cylinder with a nominal diameter of 3 mm, a nominal length of 3.42 mm, and a nominal mass of 620 mg. NIST-764a lot was produced by slicing a pure (99.99 %) platinum rod into 3.42 mm long pieces.	3 mm dia.
NIST-2853	Magnetic moment standard yttrium iron garnet sphere This Standard Reference Material (SRM®) is intended for use in calibrating of magnetometers (such as vibrating sample magnetometers) used in the measurement of the magnetic propterties of materials. NIST-2883 consists of a yttrium iron garnet (YIG) sphere with a nominal diameter of 1 mm and a nominal mass of 2.8 mg.	Each

Miscellaneous

Code	Product	Unit
NIST-772a	**Nickel sphere for magnetic moment** This Standard Reference Material (SRM) is intended for use in the calibration of magnetometers (such as vibrating sample magnetometers) used in the measurement of the magnetic properties of materials. SRM 772a consists of a nickel sphere 2.383 mm in diameter with a mass of 63.16 mg. The SRM 772a lot was produced from annealed nickel wire with a purity of 99.999 %. The wire was ground into spheres. The spheres were then ultrasonically cleaned in acetone and methyl alcohol and annealed at 1220 K in a dry hydrogen atmosphere for 2 h. The microstructure is equiaxed with an average grain size of about 100 µm. The certified value for magnetic moment, m, at 298 K and in an applied field of 398 kA/m (5000 Oe) is m = 3.47 mA•m^2 ± 0.01 mA•m^2 (3.47 emu ± 0.01 emu)	Each

Miscellaneous

Code	Product	Unit
NIST-953	**Cobalt in aluminium - Neutron density monitor wire** The standard is provided as a reference source of cobalt in aluminium alloy to serve as a neutron density monitor wire standard.	1 m
NIST-963a	**Fission track glass** This Standard Reference Material (SRM®) was produced and certified for use in uranium fission track analysis and monitoring neutron fluences. The SRM is made up of: four unirradiated glass wafers, two irradiated glass wafers, a muscovite mica and polycarbonate detectors.	set (6)
NIST-1082	**Cigarette ignition strength standard** This Standard Reference Material (SRM®) is intended for use by test laboratories to assess and control their testing of cigarette ignition strength in accordance with ASTM Standard Methods E 2187-04 (or ASTM E2187-02b). The SRM unit consists of one carton of cigarettes containing 10 packs of 20 cigarettes each. Certified value Measurand ..... ASTM Method ..... Certified Value and Expanded Uncertainty Ignition Strength (on 10 layers of filter paper) ..... E 2187-04(a) ..... 12.6 % ± 3.3 %	10 pck.
New NIST-1196	**Standard Cigarette for ignition resistance testing** This Standard Reference Material (SRM) is intended for use by test laboratories to test mattresses, upholstered furniture and its components, and thermal insulation for resistance to cigarette ignition in accordance with 16 CFR 1632 [1], 16 CFR 1634 (proposed) [2], and 16 CFR 1209 [3]. A unit of NIST-1196 consists of one carton of cigarettes containing 10 packs of 20 cigarettes each. **Certified values** **Measurand** — **Test method** — **Certified value and Expanded uncertainty** Ignition strength (on 6.35 mm brass plate plus 2 layers of filter paper) — ASTM E2187, modified per NIST TN 1627 [(a)] — 90.0 % ± 2.1 % [(a)] Standard Test Method for Measuring the Ignition Strength of Cigarettes, as modified in NIST Technical Note 1627, Modification of ASTM E 2187 for Measuring the Ignition Propensity of Conventional Cigarettes, June 2009. [1] CPSC 16 CFR 1632; Standard for Flammability of Mattresses and Mattress Pads; Consumer Product Safety Commission Part 1632; Office of the Federal Register. [2] CPSC 16 CFR 1634; Standard for Flammability of Residential Upholstered Furniture; Proposed Rule, Consumer Product Safety Commission Part 1634; Office of the Federal Register. [3] CPSC 16 CFR 1209; Interim Safety Standard for Cellulose Insulation; Consumer Product Safety Commission Part 1209; Office of the Federal Register.	10 pck.
NIST-1006d	**Smoke density chamber standard for non-flaming exposure condition** This Standard Reference Material consists of paper sheets, principally -cellulose, derived from wood chips. The SRM is intended primarily for checking the operation of smoke density chambers under non-flaming exposure conditions in accordance with the prescribed calibration and standardization techniques outlined in the American Society for Testing and Materials (ASTM) Standard Test Method E 662-95 “Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials”, and in National Fire Protection Association (NFPA) 258-1998, “Standard Research Test Method for Determining Smoke Generation of Solid Materials”. A unit consists of nine single layer sheets, each 172 mm x 254 mm x 1.65 mm thick. The certified value and expanded uncertainty [3] for maximum specific optical density of a single layer thickness is: Dm = 210 ± 18 (without correction for window deposit) Dm corr. = 193 ± 20	9 sheets
NIST-1810a	**Linerboard - Tape adhesion testing (sheet form)** This Standard Reference Material (SRM®) is intended to provide a uniform source of linerboard for use with ASTM D 2860 Standard Test Method for Adhesion of pressure-sensitive tape to fiberboard at 90 degree angle and constant stress. Each unit consists fo fifty 21.6 cm x 28 cm (8.5 in x 11 in) linerboard sheets of Mosinee 696-C paper, sealed in a moisture resistent foil-lined package.	50 each
NIST-2490	**Non-Newtonian Polymer Solution for Rheology - Polyisobutylene Dissolved in 2,6,10,14-Tetramethylpentadecane** Please ask for details	100 mL
NIST-2811	**Rockwell C Scale Hardness (High Range)** This Standard Reference Material (SRM®) is a transfer standard intended primarily for use in calibration and verification of the performance of Rockwell hardness equipment using the Rockwell C Hardness Scale (HRC).	Each
NIST-2812	**Rockwell C Scale Hardness (High Range)** This Standard Reference Material (SRM®) is a transfer standard intended primarily for use in calibration and verification of the performance of Rockwell hardness equipment using the Rockwell C Hardness Scale (HRC).	Each

	Code	Product	Unit
New	NIST-2910A	Calcium hydroxyapatite This Standard Reference Material is intended primarily for use in evaluating the physical and chemical properties of calcium apatites of biological, geological, and synthetic origin. The Ca/P molar ratio for SRM 2910a is consistent with the theoretical Ca/P molar ratio of 1.667 for calcium hydroxyapatite with a compositional formula of $Ca_{10}(PO_4)_6(OH)_2$. A unit of NIST-2910a consists of a 2 g bottle of Hydroxyapatite. Certified values Ca ..... 38.89 ± 0.85% Ca/P Molar Ratio..... 1.667 ± 0.037 P ..... 18.029 ± 0.071 % Reference values for X-ray diffraction measurements	2 g
	NIST-RM 8130	Coplanar waveguide calibration set This Reference Material (RM) is intended for use by industrial laboratories that wish to implement the procedure described in Part 1 of the NIST/Industrial MMIC Consortium´s "Proposed Procedures for Verifying Probe Station Integrity and On-wafer Measurement Accuracy" for the measurement of microwave probe station stability and for verifying the ability to repeat on-wafer microwave measurements performed at NIST.	Each
	NIST-RM 8458	Artificial flaw for eddy current nondestructive evaluation This Research Material (RM), the Capobianco, Dube, Fizer (CDF) notch, provides a reproducibility flaw of a known size and geometry that closely resembles an actual fatigue crack. It is intended to produce a response suitable for calibrating an eddy current nondestructive evaluation (NDE) system.	Each

Laboratory supplies

Filter

ULTRASep™ Filters

ULTRASep™ TSS Filters for Standard Methods 2540C and 2540D

ULTRASep™ TSS Filters are specifically designed to ensure compliance with the filter preparation requirements of Standard Methods 2540 C (Total Dissolved Solids Dried at 180°C) and Standard Methods 2540 D (Total Suspended Solids at 103-105°C). You can now easily differentiate the wrinkle side from the screen side of the filter, since we've made the wrinkle side visibly different. There is no guesswork for you! Now everyone can clearly see and easily determine which side needs to face up to ensure compliance.

These 1.5 µm binder-free, fast flowing, fine porosity borosilicate glass microfiber filters have been optimised to eliminate pin holing and minimize fibre shedding, two quality issues known to affect other brands of TSS filters. ULTRASep™ TSS Filters are readily available in the most popular sizes used in a wide variety of CoorsTek chemical-porcelain labware including Bitumen, Buchner, Gooch, Hirsch, and many other popular filter holders.

	Code	Product	Unit
New	U-SPE-01020	ULTRASep™ TSS Filters, 1.5 µm GMF, 1 mm (20 mm diameter) - Fits CoorsTek No. Gooch - 60148	100 pcs
New	U-SPE-01021	ULTRASep™ TSS Filters, 1.5 µm GMF, 1 mm (21 mm diameter) - Fits CoorsTek No. Gooch - 60148	100 pcs
New	U-SPE-01024	ULTRASep™ TSS Filters, 1.5 µm GMF, 1 mm (24 mm diameter) - Fits CoorsTek No. Gooch - 60151	100 pcs
New	U-SPE-01025	ULTRASep™ TSS Filters, 1.5 µm GMF, 1 mm (25 mm diameter) - Fits CoorsTek No. Hirsch - 60299	100 pcs
New	U-SPE-01042	ULTRASep™ TSS Filters, 1.5 µm GMF, 1 mm (42.5 mm diameter) - Fits CoorsTek No. Hirsch - 60301	100 pcs
New	U-SPE-01047	ULTRASep™ TSS Filters, 1.5 µm GMF, 1 mm (47 mm diameter) - Fits CoorsTek No. Hirsch - 60301	100 pcs
New	U-SPE-01055	ULTRASep™ TSS Filters, 1.5 µm GMF, 1 mm (55 mm diameter) - Fits CoorsTek No. Buchner - 60240	100 pcs

	Code	Product	Unit
	U-QCI-711	ULTRAcheck® Solids 3 Analytes Non-filterable residue (total suspended solids) .....20 - 200 mg/L Filterable residue (total dissolved solids).....50 - 5000 mg/L Total solids .....70 - 5200 mg/L Ready-to-use whole volume standard.	500 mL
	U-QCI-716	ULTRAcheck® Non-Filterable Residue 1 Analyte Non-filterable residue (total suspended solids) .....23 - 100 mg/L Add 500 mg of sample to 1 L of water for final working test sample.	1 g

ULTRASep™ SPE disc system for EPA Method 1664A, specifically designed for dirty water samples

Ultra Scientific have launched “The Dirty Water SPE”, ULTRASep™”, an SPE Disc system for EPA Method 1664A, specifically designed for dirty water samples. These discs can extract samples up to five times faster and distil and oven-dry samples three times faster - significantly increasing efficiency and reducing solvent costs in your laboratory.

New	U-SPE-4347	ULTRASep™ 47 mm Filters, Oil & Grease	50 pcs
New	U-SPE-4390	ULTRASep™ 90/100 mm Filters, Oil & Grease	50 pcs
New	U-SPE-4390H	ULTRASep™ 90 mm Filters, Oil & Grease	50 pcs
New	U-SPE-4447	ULTRASep™ 47 mm Pre-filters (5 µm), Oil & Grease - Polypropylene	25 pcs
New	U-SPE-4490	ULTRASep™ 90/100 mm Pre-filters (5 µm), Oil & Grease - Polypropylene	25 pcs
New	U-SPE-4490H	ULTRASep™ 90 mm Pre-filters (5 µm), Oil & Grease - Polypropylene	25 pcs
New	U-SPE-4521	ULTRASep™ Pipettes - transfer 15 mL	250 pcs
New	U-SPE-6524	ULTRASep™ Columns - Sodium sulfate, 10g	48 pcs
New	U-SPE-6547	ULTRASep™ 47 mm Pre-filters (5 µm), Oil & Grease - Glass macro	50 pcs
New	U-SPE-6590	ULTRASep™ 90/100 mm Pre-filters (5 µm), Oil & Grease - Glass macro	50 pcs
New	U-SPE-6590H	ULTRASep™ 90 mm Pre-filters (5 µm), Oil & Grease - Glass macro	50 pcs
New	U-SPE-6616	ULTRASep™ System Starter Kit - Apparatus, Consumables, 1664A Standards	Each
New	U-SPE-6631	ULTRASep™ 90 mm Filter Holder, 3000 XL	Each
New	U-SPEK-4000	ULTRASep™ 47 mm Oil & Grease Kit Each kit contains SPE-4347 ULTRASep™ 47 mm Filters, Oil & Grease 1 x 50 pcs SPE-4447 ULTRASep™ 47 mm Pre-filters (5 µm), Oil & Grease - Polypropylene 2 x 25 pcs	Each
New	U-SPEK-4090	ULTRASep™ 90/100 mm Oil & Grease Kit Each kit contains SPE-4390 ULTRASep™ 90/100 mm Filters, Oil & Grease 1 x 50 pcs SPE-4490 ULTRASep™ 90/100 mm Pre-filters (5 µm), Oil & Grease – Polypropylene 2 x 25 pcs	Each
New	U-SPEK-4090H	ULTRASep™ 90 mm Oil & Grease Kit Each kit contains SPE-4390H ULTRASep™ 90 mm Filters, Oil & Grease 1 x 50 pcs SPE-4490H ULTRASep™ 90/100 mm Pre-filters (5 µm), Oil & Grease – Polypropylene 2 x 25 pcs	Each
New	U-RGO-102X	Method 1664 Precision, Accuracy and Recovery Standard 2000 µg/mL of each analyte in Acetone n-Hexadecane Stearic acid	100 mL
New	U-RGO-101X	EPA Method 1664 Precision, Accuracy, & Recovery Standard 4000 µg/mL of each analyte in Acetone n-Hexadecane Stearic acid	100 mL
	U-QCI-770	ULTRAcheck® Oil & Grease Total oil and grease ..... 8 - 50 mg/L One 10 mL ampoule to be diluted to 1 L.	10 mL

eVol® hand-held automated analytical syringe

eVol® is the coupling of two precision devices:

a digitally controlled electronic drive and an XCHANGE® enabled analytical syringe.

The result is a digitally controlled positive displacement dispensing system that is programmable to reproducibly and accurately perform a wide variety of liquid handling procedures.

eVol® will improve your laboratory workflow and reporting confidence in many ways.

Key benefits

- The programmable digital drive means liquid handling procedures are user independent allowing more efficient workflow scheduling and a reduction in the re-analysis of incorrectly processed or false positive samples.
- XCHANGE® analytical syringes are easily and quickly changed allowing them to be dedicated to individual liquids to prevent possible cross-contamination of reagents.

Precise user-independent dispensing

Unlike air-displacement devices, such as pipettors, eVol® is the perfect solution for accurately aspirating and dispensing both aqueous and non-aqueous liquids.

eVol® features a familiar Touch Wheel user interface and a full-color screen. The clever menu allows all the functions to be accessed logically and quickly. The programming functions are intuitive and include help screens and prompts.

World's first user calibrated analytical syringe

To comply with your stringent laboratory standards (e.g. GLP, GMP, FDA) eVol® is easily calibrated to ensure accurate dispensing at all times. The gravimetric calibration procedure is simple, intuitive and can be performed at appropriate intervals. Calibration factors can be stored for up to ten XCHANGE® syringes and are quickly loaded when the syringe is changed.

Typical applications for eVol® include

- Preparation of calibration standards
- Addition of internal standards
- Precise dispensing of non-aqueous liquids
- Sample dilution

Only three XCHANGE® syringes are required to dispense liquid volumes covering the range from 200 nL to 500 µL.

Syringe capacity (µL)	Volume range (µL)
5	0.2 – 5
50	2 – 50
500	20 – 500

	Code	Product	Unit
New	SGE-2910000	eVol® automated analytical syringe starter kit Each Kit includes unit, charger, stand, 3 syringes: 5µL, 50µL and 500µL	kit
New	SGE-2910005	eVol® - Electronic syringe	Each

eVol® NMR Edition

eVol® NMR Edition is the world's first electronic syringe for NMR capillaries. It has been designed for the specific needs of NMR:

- Small sample quantities
- Requirement for very high levels of accuracy and reproducibility
- Alternative to high cost consumables
- Specialist samples and solvents

eVol® NMR Edition allows accurate manipulation of small volumes of NMR samples enabling dilution directly in the analysis tube - even in tubes with the smallest internal diameters.

eVol® facilitates in-tube sample mixing and enables recovery of precious samples allowing them to be stored in alternative vessels (such as inexpensive vials) rather than being left in valuable tubes. These tubes can now be emptied using eVol®, for washing and re-use.

eVol® benefits in NMR

- Facilitates small volume manipulation
- Operator independent accuracy, precision and reliability
- Increased speed of sample processing

New	SGE-2910100	eVol® NMR starter kit Each kit includes • eVol® - Automated analytical syringe • Manual, quick-start guide & support CD • Multi-country charger • Storage stand • 5 µL eVol® XCHANGE® syringe with 11.5 cm needle • 50 µL eVol® XCHANGE® syringe with 11.5 cm and 18 cm needles • 500 µL eVol® XCHANGE® syringe with 11.5 cm and 18 cm needles	kit

eVol® Accessories

New	SGE-2910010	eVol® Stand	Each
New	SGE-2910012	eVol® Charger	Each
New	SGE-2910030	eVol® Charging stand	Each
New	SGE-2910040	eVol® Replacement battery	Each

eVol® Syringes

New	SGE-2910020	5 µL eVol® Syringe	Each

Needle Length (mm)	Needle Gauge	Needle OD (mm)	Needle ID (mm)	Tip Style	Replacement Needle Part No.	Replacement Plunger Part No.
50	25	0.50	0.20	Bevel	SGE-036910	SGE-2910380

New	SGE-2910021	5 µL eVol® Syringe supplied without needle	Each
New	SGE-2910022	50 µL eVol® Syringe	Each

Needle Length (mm)	Needle Gauge	Needle OD (mm)	Needle ID (mm)	Tip Style	Replacement Needle Part No.	Replacement Plunger Part No.
50	25	0.50	0.20	Bevel	SGE-038110	SGE-2910382

New	SGE-2910023	50 µL eVol® Syringe supplied without needle	Each
New	SGE-2910024	500 µL eVol® Syringe	Each

Needle Length (mm)	Needle Gauge	Needle OD (mm)	Needle ID (mm)	Tip Style	Replacement Needle Part No.	Replacement Plunger Part No.
50	23	0.63	0.32	Bevel	SGE-039110	SGE-2910384

Replacement plungers for eVol® syringes

New	SGE-2910380	Replacement plunger for 5 µL eVol® syringe	Each
New	SGE-2910382	Replacement plunger for 50 µL eVol® syringe	Each
New	SGE-2910384	Replacement plunger for 500 µL eVol® syringe	Each

Code	Product	Unit

Replacement needles for 5 µL eVol® syringes

	Code	Product	Needle Length (mm)	Needle Gauge	Needle OD (mm)	Needle ID (mm)	Tip Style	Pack Size	Unit
New	SGE-036910	Replacement needles for 5 µL eVol® syringe	50	25	0.50	0.20	Bevel	5	5 needles
New	SGE-036912	Replacement needles for 5 µL eVol® syringe	51 (2'')	22	0.028	0.17	LC	5	5 needles
New	SGE-036914	Replacement needles for 5 µL eVol® syringe	50	23	0.63	0.11	Cone	5	5 needles
New	SGE-036916	Replacement needles for 5 µL eVol® syringe	70	25	0.50	0.20	Bevel	5	5 needles
New	SGE-036918	Replacement needles for 5 µL eVol® syringe	70	26	0.47	0.11	Cone	5	5 needles
New	SGE-036920	Replacement needles for 5 µL eVol® syringe	115	25	0.50		Bevel	2	2 needles
New	SGE-036922	Replacement needles for 5 µL eVol® syringe	115	25	0.50		Cone	2	2 needles

Replacement needles for 50 µL eVol® syringes

	Code	Product	Needle Length (mm)	Needle Gauge	Needle OD (mm)	Needle ID (mm)	Tip Style	Pack Size	Unit
New	SGE-038110	Replacement needles for 50 µL eVol® syringe	50	25	0.50	0.20	Bevel	5	5 needles
New	SGE-038030	Replacement needles for 50 µL eVol® syringe	70	25	0.50	0.20	Cone	2	2 needles
New	SGE-038130	Replacement needles for 50 µL eVol® syringe	70	25	0.50	0.20	Bevel	5	5 needles
New	SGE-038131	Replacement needles for 50 µL eVol® syringe	70	23	0.63	0.24	Bevel	5	5 needles
New	SGE-038270	Replacement needles for 50 µL eVol® syringe	70	22	0.0028´´	0.37	LC	5	5 needles
New	SGE-038430	Replacement needles for 50 µL eVol® syringe	70	25	0.50	0.20	Side Hole/Dome	2	2 needles
New	SGE-038530	Replacement needles for 50 µL eVol® syringe	70	25	0.50	0.20	Dome	2	2 needles
New	SGE-038161	Replacement needles for 50 µL eVol® syringe	115	23	0.63		Bevel	5	5 needles

	Code	Product	Unit
New	SGE-038138	Replacement needles for 50 µL eVol® syringe Needle Length (mm) / Needle Gauge / Needle OD (mm) / Tip Style / Pack Size 180 / 23 / 0.63 / Bevel / 2	2 needles
New	SGE-038060	Replacement needles for 50 µL eVol® syringe Needle Length (mm) / Needle Gauge / Needle OD (mm) / Tip Style / Pack Size 115 / 25 / 0.50 / Cone / 2	2 needles
New	SGE-038038	Replacement needles for 50 µL eVol® syringe Needle Length (mm) / Needle Gauge / Needle OD (mm) / Tip Style / Pack Size 180 / 23 / 0.63 / Cone / 2	2 needles

Replacement needles for 500 µL eVol® syringes

	Code	Product	Unit
New	SGE-039110	Replacement needles for 500 µL eVol® syringe Needle Length (mm) / Needle Gauge / Needle OD (mm) / Needle ID (mm) / Tip Style / Pack Size 50 / 23 / 0.63 / 0.32 / Bevel / 5	5 needles
New	SGE-039130	Replacement needles for 500 µL eVol® syringe Needle Length (mm) / Needle Gauge / Needle OD (mm) / Needle ID (mm) / Tip Style / Pack Size 70 / 23 / 0.63 / 0.32 / Bevel / 5	5 needles
New	SGE-039160	Replacement needles for 500 µL eVol® syringe Needle Length (mm) / Needle Gauge / Needle OD (mm) / Tip Style / Pack Size 115 / 23 / 0.63 / Bevel / 5	5 needles
New	SGE-039138	Replacement needles for 500 µL eVol® syringe Needle Length (mm) / Needle Gauge / Needle OD (mm) / Tip Style / Pack Size 180 / 23 / 0.63 / Bevel / 2	5 needles
New	SGE-039060	Replacement needles for 500 µL eVol® syringe Needle Length (mm) / Needle Gauge / Needle OD (mm) / Tip Style / Pack Size 115 / 23 / 0.63 / Cone / 5	5 needles
New	SGE-039038	Replacement needles for 500 µL eVol® syringe Needle Length (mm) / Needle Gauge / Needle OD (mm) / Tip Style / Pack Size 180 / 23 / 0.63 / Cone / 2	5 needles

We constantly add new products to our range, so please contact us to find out about new products and services and to make sure you are automatically kept up to date by subscribing to our free newsletter.

Just send an e-mail to: askus@lgcstandards.com

High purity solvents, acids and chromatography products

LGC Standards

Excellence through measurement

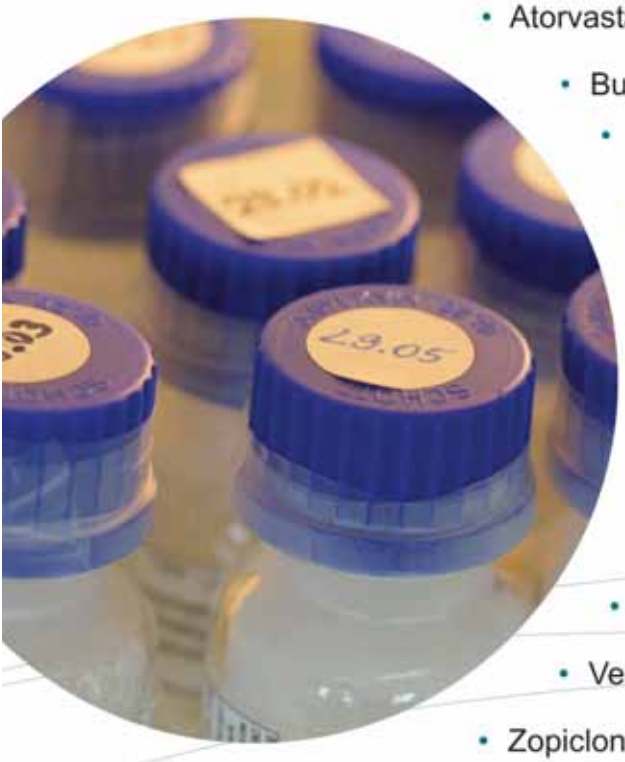
LGC Standards

Excellence through measurement

From Atorvastatin to Zopiclone - 2400 pharmaceutical impurities

LGC Standards offers 2400 reference standards for pharmaceutical impurities to support the pharmaceutical industry worldwide.

- Acknowledged by regulation authorities worldwide
- Impurities linked to the European Pharmacopoeia (EP) wherever possible
- Customised pharmaceutical impurities created on request
- Detailed certificates of analysis provided
- Additional documentation on request
- Assistance in finding the right material to suit your analyses



- Atorvastatin
- Bupropion
- Clopidogrel
- Esomeprazol
- Ibuprofen
- Naproxen
- Omeprazole
- Risperidone
- Sildenafil
- Steroid hormones
- Venlafaxine
- Zopiclone

Please contact your local LGC Standards office for further information, or visit **www.lgcstandards.com**

Introduction

Picograde® solvents for residue analysis

Picograde® solvents form the heart of the LGC Standards solvent range. Each batch undergoes rigorous testing in order to meet the demanding requirements of organic trace analysis every time.

Environmental analysts are now expected to detect trace levels of an increasingly wide range of organic environmental contaminants including pesticides, PAHs, PCBs, PCDDs/PCDFs etc. with the highest possible accuracy. Consequently even the lowest levels of impurity in the solvent can affect the precision of analytical results. Picograde® solvents are specifically tailored to this application.

Carefully selected raw materials are chemically pre-treated and then fractionated in glass in the absence of air. Distillation and filling are similarly carried out in air free conditions. The glass bottles are sterile and dust free and are rinsed with the appropriate solvent prior to filling. Caps used to seal the bottles are subjected to the same stringent cleaning processes. The specification of the solvent includes the determination of water content, residue on evaporation and a comprehensive gas chromatographic analysis.

To confirm the absence of contaminants samples of the solvent are concentrated to varying degrees and then analysed by gas chromatography. Flame ionisation and electron capture detectors (ECD) are used for the quantification of the contaminants. The specification of the Picograde® solvent guarantees that no signal due to contamination will be larger than the internal standard peak (10 pg/mL heptachlor-epoxide) in the retention time window from 1,4-dichlorobenzene to decachlorobiphenyl. The very high specification of the Picograde® solvents allows them to be used for residue analysis of trace quantities of organic contaminants right down to ppb and ppt levels.

Optigrade® - High purity solvents for HPLC

High performance liquid chromatography is now an essential analytical tool especially in the areas of research and development, pharmaceutical quality control and analysis in the food and environmental sectors. This technique demands the highest quality solvents to allow reproducible separations. The basic requirements include a high UV-transmission factor, low particle levels, slight acidity and alkalinity coupled with low levels of water and other non-volatile components. In addition there must be consistency between batches.

Solvents for isocratic analytical HPLC together with gradient grade quality solvents are included in the HPLC range. Gradient grade has the highest purity and is specially designed for use with gradient elution HPLC using reversed phase materials and UV or fluorescence detection. Quality assurance procedures allow LGC Standards to offer a consistently premium quality product. Each batch is checked to make sure that the solvent has the required high level of UV-transmission in the wavelength range 190-350 nm.

Solvents for LC/MS

The presence of alkali and alkaline earth metals in the mobile phase when using LC/MS can make the interpretation of the mass spectrum very difficult. LGC Standards offers solvents designed for this technique with extremely low levels of these metals, at 0.1 ppm and less.

Solvents for Ultra HPLC (UHPLC)

ULTRA HPLC (UHPLC) requires solvents of superior quality. A new range of high purity Optigrade® solvents from LGC Standards has been designed to allow high resolution and sensitivity. Such Ultra HPLC solvents combine the highest specification for: UV, low gradient shift, minimal peak impurities and lowest ionic background for MS detection. All Ultra HPLC solvents are micro filtered at 0.1 µm, have a residue following evaporation of max 1 ppm and are packed under inert gas for improved shelf life. Also available are selected buffers for mobile phase preparation and several blends of water and acetonitrile with formic acid, acetic acid and trifluoroacetic acid are offered.

Specialist solvents

- **Solvents for VOCs and aromatic hydrocarbons**

It has become increasingly necessary to be able to determine a range of organic compounds in environmental samples including volatile organic compounds (VOCs) and BTEX-aromatics. Various extraction techniques are used for the separation and concentration of organic trace constituents from the sample matrix and it is essential to use solvents with very low levels of contamination. LGC Standards can provide the solvents to meet these exacting requirements.

- **Solvents for GC headspace techniques**

Analysis of volatile organic impurities using the GC headspace technique has become an important quality control tool in pharmaceutical and food related industries. The International Conference on Harmonization of technical requirements for registration of pharmaceuticals for Human use (ICH) has issued recommendations concerning the safe levels of residual solvents in pharmaceutical compounds. These solvents are divided into 3 classes according to their toxicity. Limit values of residual solvents in pharmaceutical products are specified by the United States and European Pharmacopeia. The quality of the solvent used to dissolve the sample is of prime importance. It must be of the highest purity and show virtually no background signal with both polar and non polar GC capillary columns. The new headspace solvents are high boiling point solvents, specifically developed, analysed and packed for the headspace analysis of volatile solvent impurities.

- **Solvents for the analysis of nitrosamines**

When extracting trace levels of nitrosamines in samples it is important to use a solvent that is free of nitrosamine contamination. For this application LGC Standards has solvents with a maximum level of 0.1ppb of specific nitrosamines.

- **Solvents for the tobacco industry**

High purity acids

LGC Standards offers the most frequently used mineral acids for trace analysis: hydrochloric acid, nitric acid, hydrofluoric acid, sulfuric acid, perchloric acid and acetic acid. These are produced by sub-boiling distillation of very pure starting materials. This purification results in most metallic impurities reduced to (or bellow) ppb ranges. The acids are delivered in special bottles (long-term leached borosilicate glass or modified HDPE) which ensure minimum contamination of the acid from the material of the bottle.

Important note: Element concentrations are at the point of bottling. Concentrations of some elements may increase due to the storage container.

Reagents / Sorbents

	Code	Product	Unit
	SC-4592-A005	ICN-Alumina A - Super I (acid) (50 - 200 µm)	500 g
	SC-4568-A005	ICN Alumina B - Super I (basic) (50 - 200 µm)	500 g
	SC-4569-A005	ICN-Alumina B - Super I (50 - 200 µm) for dioxin analysis	500 g
	SC-4181-B005	Florisil® (Standard), 60 - 100 mesh (150 - 250 µm)	500 g
	SC-4181-S010	Florisil® (Standard), 60 - 100 mesh (150 - 250 µm)	10 kg
	SC-4182-B005	Florisil® PR for residue analysis, 60 - 100 mesh (150 - 250 µm)	500 g
	SC-4182-S010	Florisil® PR for residue analysis, 60 - 100 mesh (150 - 250 µm)	10 kg
	SC-4182-S020	Florisil® PR for residue analysis, 60 - 100 mesh (150 - 250 µm)	20 kg
	SC-9700-B005	Florisil® (Standard), 60 - 100 mesh (suitable for ISO 9377-2/H53)	500 g
New	SC-4183-B005	Florisil® (Standard), 100-200 mesh	500 g
New	SC-4183-S010	Florisil® (Standard), 100-200 mesh	10 kg
New	SC-4183-S020	Florisil® (Standard), 100-200 mesh	20 kg
	SC-9982-B010	Silica gel 60 (63 - 200 µm)	1 kg
	SC-9950-B005	Sodium sulfate anhydrous, for analysis (ACS), powder	500 g
	SC-9950-B025	Sodium sulfate anhydrous, for analysis (ACS), powder	2.5 kg
	SC-8024-B005	Sodium sulfate anhydrous, for analysis, in granular form	500 g
	SC-8024-B025	Sodium sulfate anhydrous, for analysis, in granular form	2.5 kg
	SC-8024-S025	Sodium sulfate anhydrous, for analysis, in granular form	25 kg
	SC-1024-B005	Sodium sulfate Picograde® anhydrous, for residue analysis (ACS), in granular form	500 g
	SC-1024-B025	Sodium sulfate Picograde® anhydrous, for residue analysis (ACS), in granular form	2.5 kg

Ion pair reagents

Code	Product	Unit
SC-5330-F025	1-Butanesulfonic acid sodium salt for HPLC	25 g
SC-5330-F100	1-Butanesulfonic acid sodium salt for HPLC	100 g
SC-5650-F025	1-Decanesulfonic acid sodium salt for HPLC	25 g
SC-5650-F100	1-Decanesulfonic acid sodium salt for HPLC	100 g
SC-5430-F025	1-Dodecanesulfonic acid sodium salt for HPLC	25 g
SC-5430-F100	1-Dodecanesulfonic acid sodium salt for HPLC	100 g
SC-5230-F025	1-Heptanesulfonic acid sodium salt for HPLC	25 g
SC-5230-F100	1-Heptanesulfonic acid sodium salt for HPLC	100 g
SC-5550-F025	1-Hexanesulfonic acid sodium salt for HPLC	25 g
SC-5550-F100	1-Hexanesulfonic acid sodium salt for HPLC	100 g
SC-5150-F025	1-Octanesulphonic acid sodium salt for HPLC	25 g
SC-5150-F100	1-Octanesulphonic acid sodium salt for HPLC	100 g
SC-5730-F025	1-Pentanesulfonic acid sodium salt for HPLC	25 g
SC-5730-F100	1-Pentanesulfonic acid sodium salt for HPLC	100 g

LC-MS additives

Code	Product	Unit
SO-9685-B001	Ammonium acetate UHPLC-MS Optigrade® CAS number 631-61-8 Assay (GC, on anhydrous basis) ..... 99 % min. Water (KF) .....0.1 % max. Filter test (1M in water) .....Passes test pH (1M in water) ..... 6.0-7.5 Transmission at 260 nm (1M in water)..... 96 % at 280 nm (1M in water)..... 98 % Chloride (Cl).....0.0005% max. Sulfate (SO_4).....001% max. Al.....1 ppm max. Ca .....5 ppm max. Fe.....1 ppm max. K .....5 ppm max. Mg.....1 ppm max. Na .....5 ppm max.	100 g
SO-9679-B001	Formic acid UHPLC-MS Optigrade® UN 1779 CAS number 64-18-6 Assay (T, on anhydrous basis) ..... 99 % min. Water (KF) ..... 1 % max. Residue after evaporation..... 0.001 %w/w max. Color (APHA) ..... 10 max. Gradient specification HPLC gradient at 254 nm - H. Peak 0.005 AU max. HPLC gradient at 254 nm - Drift 0.02 AU max. Transmission at 260 nm..... 15 % min. at 270 nm..... 83% min. at 280 nm..... 90 % min. at 300 nm..... 97% min. at 320 nm..... 98% min.	100 mL

Code	Product	Unit
SO-9668-B001	Trifluoroacetic acid UHPLC-MS Optigrade®	100 mL

UN 2699

CAS-Nr. 76-05-1

Assay (T) ..... 99.95-100 %

Water (KF) ..... 0-0.02 %

Residue after evaporation ..... 0-0.001 %w/w

Color (APHA) 0-10

Gradient specification

HPLC gradient 254 nm - H. Peak ..... 0-0.002 AU
HPLC gradient at 254 nm - Drift ..... 0-0.010 AU

Fluorescence at 254 nm (25%, as quinine) ..... 0-1 ppb
Fluorescence at 365 nm (25%, as quinine) ..... 0-1 ppb

Transmission

at 260 nm ..... 10-100 %
at 270 nm ..... 79-100 %
at 280 nm ..... 93-100 %
at 300 nm ..... 95-100 %
at 320 nm ..... 96-100 %

High purity solvents and acids

Acetic acid

Code	Product	Unit
HPA-0050-B010	Acetic acid for trace analysis min 99.5 % (glass bottle)	1 L

UN 2789

Assay	> 99.5 %	Chloride	< 0.4 ppm
Colour (APHA)	< 10	Phosphate	< 0.5 ppm
Residue	< 2 ppm	Sulfate	< 0.4 ppm

Ag	< 0.1 ppb	Cr	< 0.1 ppb	Ni	< 0.1 ppb
Al	< 0.1 ppb	Cu	< 0.1 ppb	Pb	< 0.1 ppb
As	< 0.1 ppb	Fe	< 0.5 ppb	Se	< 0.5 ppb
Ba	< 0.1 ppb	K	< 0.1 ppb	Sn	< 0.1 ppb
Be	< 0.1 ppb	Li	< 0.1 ppb	Sr	< 0.1 ppb
Bi	< 0.1 ppb	Mg	< 0.1 ppb	Th	< 0.1 ppb
Ca	< 0.5 ppb	Mn	< 0.1 ppb	Ti	< 0.1 ppb
Cd	< 0.1 ppb	Mo	< 0.1 ppb	V	< 0.1 ppb
Co	< 0.1 ppb	Na	< 0.5 ppb	Zn	< 0.5 ppb

Hydrochloric acid stored in glass bottles will see a rise in: Al, B, Ca, K, Mg, Mn, Na and Si.

Acetone

Code	Product	Unit
SO-2435-B010	Acetone HPLC Optigrade®	1 L
SO-2435-B025	Acetone HPLC Optigrade®	2.5 L
SO-2435-B040	Acetone HPLC Optigrade®	4 L

UN 1090

CAS-Nr. 67-64-1

C_3H_6O

Assay ..... 99.5% min.

Water ..... 0.5% max.

Non-volatile matter ..... 0.0005% max.

Filtered through 0.2 µm

1 L = 0.792 kg (at 20°C)

Specification

Transmission

at 330 nm ..... 10% min.
at 340 nm ..... 79% min.
at 350 nm ..... 89% min.
at 370 nm ..... 98% min.

SO-1142-B010	Acetone Picograde® for residue analysis	1 L
SO-1142-B025	Acetone Picograde® for residue analysis	2.5 L

Code	Product	Unit
SO-1142-B040	Acetone Picograde® for residue analysis	4 L

UN 1090

CAS number 67-64-1

C_3H_6O

Assay ..... 99.0% min.

Water .....0.5% max.

Non-volatile matter .....0.0005% max.

1 L = 0.792 kg (at 20°C)

Specification

GC/ECD
In the GC-ECD chromatogram there are no interfering single signals in the retention time interval between 1,4-dichlorobenzene and decachlorobiphenyl, by a 500-fold concentration greater than that, given by 10 pg/mL heptachlor-epoxide.

GC/FID
In the GC-FID chromatogram there are no interfering single signals in the retention time interval between n-octane (C8) and n-tetracontane (C40), by a 500-fold concentration greater than that, given by 50 ng/mL n-undecane (C11).

Acetonitrile

SO-9128-B010	Acetonitrile HPLC Optigrade® Gradient Grade	1 L
SO-9128-B025	Acetonitrile HPLC Optigrade® Gradient Grade	2.5 L
SO-9128-B040	Acetonitrile HPLC Optigrade® Gradient Grade	4 L

UN 1648

CAS-Nr. 75-05-8

C_2H_3N

Assay ..... 99.8% min.

Water .....0.02% max.

Non-volatile matter .....0.0003% max.

Gradientspecification (210 nm).....3.0 mAU max.

Fluorescence (as Quinine at 254 nm) .....1 ppb max.

Filtered through 0.2 µm

1 L = 0.783 kg (at 20°C)

Specification

Transmission

at 190 nm..... 20% min
at 193 nm..... 62% min
at 195 nm..... 76% min
at 210 nm..... 89% min
at 220 nm..... 98% min
at 230 nm..... 99% min

This solvent in glass bottles fulfills the specifications according to chapter 4 of the European Pharmacopoeia.

SO-9154-B010	Acetonitrile HPLC Optigrade® Super Gradient Grade	1 L
SO-9154-B025	Acetonitrile HPLC Optigrade® Super Gradient Grade	2.5 L

UN 1648

CAS-Nr. 75-05-8

C_2H_3N

Assay ..... 99.8% min.

Water .....0.02% max.

Non-volatile matter .....0.0003% max.

Gradient specification (210 nm).....3.0 mAE max.

Fluorescence (as Quinine at 254 nm) .....1 ppb max.

Filtered through 0.2 µm

1 L = 0.783 kg (at 20°C)

Specification

Transmission

at 190 nm 40% min
at 191 nm 50% min
at 193 nm 66% min
at 195 nm 83% min
at 200 nm 95% min
at 215 nm 98% min
at 230 nm 99% min

This solvent in glass bottles fulfills the specifications according to chapter 4 of the European Pharmacopoeia.

SO-2856-B010	Acetonitrile HPLC Optigrade®	1 L

Code	Product	Unit
SO-2856-B025	Acetonitrile HPLC Optigrade®	2.5 L
SO-2856-B040	Acetonitrile HPLC Optigrade®	4 L

UN 1648
CAS-Nr. 75-05-8
C_2H_3N
Assay ..... 99.8% min.
Water ..... 0.02% max.
Non-volatile matter..... 0.0003% max.
Filtered through 0.2 µm
1 L = 0.783 kg (at 20°C)
Specification
Transmission
at 190 nm ..... 10% min.
at 200 nm ..... 79% min.
at 210 nm ..... 89% min.
at 220 nm ..... 95% min.
at 230 nm ..... 98% min.
at 235 nm ..... 99% min.

SO-9184-B010	Acetonitrile HPLC Optigrade® (for analysis of PAHs and pesticides)	1 L
SO-9184-B025	Acetonitrile HPLC Optigrade® (for analysis of PAHs and pesticides)	2.5 L

UN 1648
CAS-Nr. 75-05-8
C_2H_3N
Assay ..... 99.8% min
Water ..... 0.02% max.
Non-volatile matter..... 0.0003% max.
Filtered through 0.2 µm
1 L = 0,783 kg (at 20°C)
Specification
Transmission
at 195 nm ..... 80% min.
at 200 nm ..... 96% min.
at 215 nm ..... 98% min.
at 230 nm ..... 99% min.

SO-9340-B010	Acetonitrile for LC-MS Optigrade®	1 L
SO-9340-B025	Acetonitrile for LC-MS Optigrade®	2.5 L

UN 1648
CAS-Nr. 75-05-8
C_2H_3N
Assay ..... 99.8% min
Water ..... 0.02% max.
Non-volatile matter..... 0.0003% max.
Filtered through 0.2 µm
1 L = 0.783 kg (at 20°C)
Specification
Ca .....0.1 ppm max.
K .....0.1 ppm max.
Mg .....0.1 ppm max.
Na .....0.1 ppm max.
Transmission
at 195 nm ..... 78 % min.
at 200 nm ..... 95 % min.
at 220 nm ..... 98 % min.
at 240 nm ..... 99 % min.

SO-9640-B010	Acetonitrile UHPLC-MS Optigrade®	1 L

Code	Product	Unit
SO-4680-B025	Acetonitrile 0.1 % formic acid UHPLC-MS Optigrade®	2.5 L

UN 1648

CAS number 75-05-8

C_2H_3N

Assay ..... 0.095-0.105 %

Water (KF) ..... 0.02 % max.

Purity of ACN (GC) ..... 99.97 % min.

Purity of formic acid ..... 99.0% min.

Gradient specification

HPLC gradient at 254 nm - H. Peak ..... 0.002 AU max.

Fluorescence at 254 nm (as quinine) ..... 0.5 ppb max.
Fluorescence at 365 nm (as quinine) ..... 0.5 ppb max.

Transmission

at 210 nm ..... 5 % min.
at 230 nm ..... 15 % min.
at 254 nm ..... 90 % min.

Al ..... 30 ppb max.
Ca ..... 100 ppb min.
Fe ..... 50 ppb min.
K ..... 100 ppb min.
Mg ..... 30 ppb min.
Na ..... 100 ppb min.

Microfiltered through 0.1 µm/bottled under inert gas

SO-4686-B025	Acetonitrile 0.1 % acetic acid UHPLC-MS Optigrade®	2.5 L

UN 1648

CAS number 75-05-8

C_2H_3N

Assay ..... 0.095-0.105 %

Purity of ACN (GC) ..... 99.97% min.

Purity of acetic acid (GC) ..... 99.9% min.

Gradient specification

HPLC gradient at 254 nm - H. Peak ..... 0.002 AU max.
HPLC gradient at 254 nm - Drift ..... 0.010 AU max.

Fluorescence at 254 nm (as quinine) ..... 0.5 ppb max.
Fluorescence at 365 nm (as quinine) ..... 0.5 ppb max.

Transmission

at 210 nm ..... 20 % min.
at 230 nm ..... 50 % min.
at 254 nm ..... 98 % min.

Al ..... 30 ppb max.
Ca ..... 100 ppb max.
Fe ..... 50 ppb max.
K ..... 100 ppb max.
Mg ..... 30 ppb max.
Na ..... 100 ppb max.

Microfiltered through 0.1 µm/bottled under inert gas

Code	Product	Unit
SO-4692-B025	Acetonitrile 0.1 % trifluoroacetic acid UHPLC-MS Optigrade®	2.5 L

UN 1648

CAS number 75-05-8

C_2H_3N

Assay ..... 0.095-0.105 %

Water (KF) ..... 0.02 % max.

Purity of ACN (GC) ..... 99.97 % min.

Purity of trifluoroacetic acid..... 99.95 % min.

Gradient specification

HPLC gradient at 254 nm - H. Peak .....0.0002 AU max.

Fluorescence at 254 nm (as quinine) .....0.5 ppb max.
Fluorescence at 365 nm (as quinine) .....0.5 ppb max.

Transmission

at 210 nm ..... 20 % min.
at 230 nm ..... 50 % min.
at 254 nm ..... 90 % min.

Al .....30 ppb max.
Ca .....100 ppb max.
Fe.....50 ppb max.
K .....100 ppb max.
Mg.....30 ppb max.
Na .....100 ppb max.

Microfiltered through 0.1 µm/bottled under inert gas

SO-9186-B025	Acetonitrile DNA. max. 0.001% water	2.5 L

UN 1648

CAS-Nr. 75-05-8

C_2H_3N

Assay ..... 99.9% min.

Water by Karl Fischer titration ..... 0.001% max.

Non-volatile matter..... 0.0005% max.

1 L = 0.783 kg (at 20°C)

SO-9180-B025	Acetonitrile DNA. max. 0.003% water	2.5 L

UN 1648

CAS-Nr. 75-05-8

C_2H_3N

Assay ..... 99.9% min.

Water by Karl Fischer titration ..... 0.003% max.

Non-volatile matter..... 0.0005% max.

1 L = 0.783 kg (at 20°C)

SO-1151-B010	Acetonitrile Picograde® for residue analysis	1 L
SO-1151-B025	Acetonitrile Picograde® for residue analysis	2.5 L
SO-1151-B040	Acetonitrile Picograde® for residue analysis	4 L

UN 1648

CAS-Nr. 75-05-8

C_2H_3N

Assay ..... 99.5% min.

Water ..... 0.02% max.

Non-volatile matter..... 0.001% max.

1 L = 0.783 kg (at 20°C)

Specification

GC/ECD
In the GC-ECD chromatogram there are no interfering single signals in the retention time interval between 1,4-dichlorobenzene and decachlorobiphenyl, by a 500-fold concentration greater than that, given by 10 pg/mL heptachlor-epoxide.

GC/FID
In the GC-FID chromatogram there are no interfering single signals in the retention time interval between n-octane (C8) and n-tetracontane (C40), by a 500-fold concentration greater than that, given by 50 ng/mL n-undecane (C11).

Code	Product	Unit

Ammonia solution

HPA-0070-B010 Ammonia solution for trace analysis (glass bottle) 1 L

UN 2672

Assay	> 21 %	Chloride	< 500 ppb
Colour (Hazen)	< 10	Phosphate	< 50 ppb
Carbonate	< 10 ppm	Sulfate	< 500 ppb

Al	< 0.5 ppb	Cu	< 0.5 ppb	Se	< 0.1 ppb
As	< 0.1 ppb	Fe	< 0.5 ppb	Ag	< 0.1 ppb
Ba	< 0.1 ppb	Pb	< 0.1 ppb	Na	< 0.5 ppb
Be	< 0.1 ppb	Li	< 0.1 ppb	Sr	< 0.1 ppb
Bi	< 0.1 ppb	Mg	< 0.2 ppb	Th	< 0.1 ppb
Cd	< 0.1 ppb	Mn	< 0.1 ppb	Sn	< 0.1 ppb
Ca	< 0.5 ppb	Mo	< 0.1 ppb	Ti	< 0.1 ppb
Cr	< 0.1 ppb	Ni	< 0.1 ppb	V	< 0.1 ppb
Co	< 0.1 ppb	K	< 0.2 ppb	Zn	< 0.2 ppb

Benzene

SO-1163-B010 Benzene Picograde® for residue analysis 1 L

SO-1163-B025 Benzene Picograde® for residue analysis 2.5 L

UN 1114

CAS-Nr.71-43-2

C_6H_6

Assay ..... 99.0% min.

Water .....0.05% max.

Non-volatile matter .....0.0005% max.

1 L = 0.871 kg (at 20°C)

Specification

GC/ECD
In the GC-ECD chromatogram there are no interfering single signals in the retention time interval between 1,4-dichlorobenzene and decachlorobiphenyl, by a 500-fold concentration greater than that, given by 10 pg/mL heptachlor-epoxide.

GC/FID
In the GC-FID chromatogram there are no interfering single signals in the retention time interval between n-octane (C8) and n-tetracontane (C40), by a 500-fold concentration greater than that, given by 50 ng/mL n-undecane (C11).

Benzyl alcohol

SO-9505-B005 Benzyl alcohol for the analysis of highly volatile halogenated compounds and EOX 500 mL

CAS-Nr. 100-51-6

C_7H_8O

Assay ..... 99.0% min.

Water .....0.1% max.

Non-volatile matter .....0.05% max.

1 L = 1.05 kg (at 20°C)

Specification

Highly volatile halogenated hydrocarbons
In the GC/ECD chromatogram there are no interfering single signals in the retention time interval between 1,1-dichloroethene and tribromomethane greater than that, given by 5 µg/L parathion-methyl.

BTEX for FID
In the GC-FID chromatogram the sum of the signals of BTEX-compounds is not greater than the signal, given by 10 µg/L n-Decane.

Coulometric determination of EOX gives a halogen content as chloride of less than 0.3 mg/L.

Carbon disulfide

SO-9056-B005 Carbon disulfide free from aromatic hydrocarbons 500 mL

UN 1131

CAS-Nr. 75-15-0

CS_2

Assay ..... 99.8% min.

Water .....0.03% max.

Non-volatile matter .....0.0005% max.

1 L = 1.261 kg (at 20°C)

Specification

BTEX for FID
In the GC-FID chromatogram the sum of the signals of BTEX-compounds is not greater than the signal, given by 10 µg/L n-Decane.

Code	Product	Unit

Chloroform

SO-4443-B010	Chloroform HPLC Optigrade® (alcohol-free. stabilised with amylene)	1 L
SO-4443-B025	Chloroform HPLC Optigrade® (alcohol-free. stabilised with amylene)	2.5 L
SO-4443-B040	Chloroform HPLC Optigrade® (alcohol-free. stabilised with amylene)	4 L

UN 1888
CAS-Nr. 67-66-3
$CHCl_3$
Assay ..... 99.9% min.
Water ..... 0.03% max.
Non-volatile matter..... 0.0002% max.
Filtered through 0.2 µm
1 L = 1.475 kg (at 20°C)
stabilized with 50 - 200 ppm Amylen
Specification
Transmission
at 245 nm ..... 10% min.
at 255 nm ..... 70% min.
at 260 nm ..... 89% min.
at 270 nm ..... 96% min.
at 290 nm ..... 98% min.

SO-1174-B010	Chloroform Picograde® for residue analysis (stabilised with 0.2-1.8 % ethanol)	1 L
SO-1174-B025	Chloroform Picograde® for residue analysis (stabilised with 0.2-1.8 % ethanol)	2.5 L
SO-1174-B040	Chloroform Picograde® for residue analysis (stabilised with 0.2-1.8 % ethanol)	4 L

UN 1888
CAS-Nr. 67-66-3
$CHCl_3$
Assay ..... 99.8% min.
Acid and phosgene (as HCl)..... 0.0005% max.
Non-volatile matter..... 0.0005% max.
1 L = 1.475 kg (at 20°C)
stabilized with 0.2 - 1.8% Ethanol
Specification
GC/ECD
In the GC-ECD chromatogram there are no interfering single signals in the retention time interval between 1,4-dichlorobenzene and decachlorobiphenyl, by a 500-fold concentration greater than that, given by 10 pg/mL heptachlor-epoxide.
GC/FID
In the GC-FID chromatogram there are no interfering single signals in the retention time interval between n-octane (C8) and n-tetracontane (C40), by a 500-fold concentration greater than that, given by 50 ng/mL n-undecane (C11).

Cyclohexane

SO-9052-B010	Cyclohexane HPLC Optigrade®	1 L
SO-9052-B025	Cyclohexane HPLC Optigrade®	2.5 L

UN 1145
CAS-Nr. 110-82-7
C_6H_{12}
Assay ..... 99,5% min.
Water ..... 0,02% max.
Non-volatile matter..... 0,0003% max.
Filtered through 0.2 µm
1 L = 0,779 kg (at 20°C)
Specification
Transmission
at 210 nm ..... 20% min.
at 220 nm ..... 48% min.
at 230 nm ..... 75% min.
at 245 nm ..... 94% min.
at 260 nm ..... 99% min.

SO-1179-B010	Cyclohexane Picograde® for residue analysis	1 L
SO-1179-B025	Cyclohexane Picograde® for residue analysis	2.5 L

Code	Product	Unit
SO-1179-B040	Cyclohexane Picograde® for residue analysis UN 1145 CAS-Nr. 110-82-7 C_6H_{12} Assay ..... 99.0% min. Water .....0.01% max. Non-volatile matter .....0.0005% max. 1 L = 0.779 kg (at 20°C) Specification GC/ECD In the GC-ECD chromatogram there are no interfering single signals in the retention time interval between 1,4-dichlorobenzene and decachlorobiphenyl, by a 500-fold concentration greater than that, given by 10 pg/mL heptachlor-epoxide. GC/FID In the GC-FID chromatogram there are no interfering single signals in the retention time interval between n-octane (C8) and n-tetracontane (C40), by a 500-fold concentration greater than that, given by 50 ng/mL n-undecane (C11).	4 L

Cyclopentane

SO-6157-B010	Cyclopentane HPLC Optigrade® UN 1146 CAS-Nr. 287-92-3 C_5H_{10} Assay ..... 75% min. Water .....0.005% max. Non-volatile matter .....0.0001% max. Filtered through 0.2 µm 1 L = 0.751 kg (at 20°C) Specification Transmission at 200 nm ..... 10% min. at 215 nm ..... 50% min. at 225 nm ..... 95% min. at 300 nm ..... 99% min.	1 L

n-Decane

SO-1182-B010	n-Decane Picograde® for residue analysis UN 2247 CAS-Nr. 124-18-5 $CH_3(CH_2)_8CH_3$ Assay ..... 97,0% min. Water .....0,01% max. Non-volatile matter .....0,0005% max. 1 L = 0,731 kg (at 20°C) Specification GC/ECD In the GC-ECD chromatogram there are no interfering single signals in the retention time interval between 1,4-dichlorobenzene and decachlorobiphenyl, by a 500-fold concentration greater than that, given by 10 pg/mL heptachlor-epoxide. GC/FID In the GC-FID chromatogram there are no interfering single signals in the retention time interval between n-octane (C8) and n-tetracontane (C40), by a 500-fold concentration greater than that, given by 50 ng/mL n-undecane (C11).	1 L

Dichloromethane

SO-4879-B010	Dichloromethane HPLC Optigrade® (stabilised with amylene)	1 L
SO-4879-B025	Dichloromethane HPLC Optigrade® (stabilised with amylene)	2.5 L

Code	Product	Unit
SO-4879-B040	Dichloromethane HPLC Optigrade® (stabilised with amylene) UN 1593 CAS-Nr. 75-09-2 CH_2Cl_2 Assay ..... 99.8% min. Water ..... 0.02% max. Non-volatile matter..... 0.0003% max. Filtered through 0.2 µm 1 L = 1.335 kg (at 20°C) stabilized with 60 - 100 ppm Amylene Specification Transmission at 233 nm ..... 10% min. at 240 nm ..... 70% min. at 254 nm ..... 98% min. at 280 nm ..... 99% min.	4 L
SO-1185-B010	Dichloromethane Picograde® for residue analysis (stabilised with amylene)	1 L
SO-1185-B025	Dichloromethane Picograde® for residue analysis (stabilised with amylene)	2.5 L
SO-1185-B040	Dichloromethane Picograde® for residue analysis (stabilised with amylene) UN 1593 CAS-Nr. 75-09-2 CH_2Cl_2 Assay ..... 99.5% min. Water ..... 0.02% max. Non-volatile matter..... 0.0002% max. 1 L = 1.335 kg (at 20°C) stabilized with 60 - 100 ppm amylene Specification GC/ECD In the GC-ECD chromatogram there are no interfering single signals in the retention time interval between 1.4-dichlorobenzene and decachlorobiphenyl. by a 500-fold concentration greater than that, given by 10 pg/mL heptachlor-epoxide. GC/FID In the GC-FID chromatogram there are no interfering single signals in the retention time interval between n-octane (C8) and n-tetracontane (C40). by a 500-fold concentration greater than that, given by 50 ng/mL n-undecane (C11).	4 L
SO-9800-B025	Dichloromethane nitrosamine-free	2.5 L
SO-9800-B040	Dichloromethane nitrosamine-free Specification N-Nitrosodimethylamine ..... 0.1 ppb max. N-Nitrosodiethylamine ..... 0.1 ppb max. N-Nitrosodi-n-propylamine ..... 0.1 ppb max. N-Nitrosodi-i-propylamine ..... 0.1 ppb max. N-Nitrosodi-n-butylamine ..... 0.1 ppb max. N-Nitrosopiperidine ..... 0.1 ppb max. N-Nitrosopyrrolidine ..... 0.1 ppb max. N-Nitrosomorpholine ..... 0.1 ppb max.	4 L

Diethyl ether

SO-9012-B010	Diethyl ether HPLC Optigrade® (stabilised with ethanol)	1 L

Code	Product	Unit
SO-9012-B025	Diethyl ether HPLC Optigrade® (stabilised with ethanol)	2.5 L

UN 1155
CAS-Nr. 60-29-7
$C_4H_{10}O$
Assay ..... 99.0% min.
Water .....0.01% max.
Non-volatile matter .....0.0005% max.
Peroxide.....5 ppm max.
Filtered through 0.2 µm
1 L = 0.713 kg (at 20°C)
stabilized with 2% Ethanol
Specification
Transmission
at 215 nm ..... 10% min.
at 230 nm ..... 50% min.
at 254 nm ..... 83% min.
at 270 nm ..... 91% min.
at 280 nm ..... 95% min.
at 300 nm ..... 99% min.

SO-2854-B010	Diethyl ether HPLC Optigrade® (not stabilised)	1 L
New SO-2854-B025	Diethyl ether HPLC Optigrade® (not stabilised)	2.5 L

UN 1155
CAS-Nr. 60-29-7
$C_4H_{10}O$
Assay ..... 99.0% min.
Water .....0.01% max.
Non-volatile matter .....0.0005% max.
Peroxide.....5 ppm max.
Filtered through 0.2 µm
1 L = 0.713 kg (at 20°C)
not stabilized
Specification
Transmission
at 215 nm ..... 10% min.
at 254 nm ..... 83% min.
at 280 nm ..... 95% min.

SO-1187-B010	Diethyl ether Picograde® for residue analysis (stabilised with 1.5-2.5 % ethanol)	1 L
SO-1187-B025	Diethyl ether Picograde® for residue analysis (stabilised with 1.5-2.5 % ethanol)	2.5 L

UN 1155
CAS-Nr. 60-29-7
$C_4H_{10}O$
Assay ..... 99.0% min.
Water .....0.1%max.
Non-volatile matter .....0.001%max.
Peroxide.....5 ppm max.
1 L = 0.6502 kg (at 20°C)
stabilized with 1.5 - 2.5% Ethanol
Specification
GC/ECD
In the GC-ECD chromatogram there are no interfering single signals in the retention time interval between 1,4-dichlorobenzene and decachlorobiphenyl, by a 500-fold concentration greater than that, given by 10 pg/mL heptachlor-epoxide.
GC/FID
In the GC-FID chromatogram there are no interfering single signals in the retention time interval between n-octane (C8) and n-tetracontane (C40), by a 500-fold concentration greater than that, given by 50 ng/mL n-undecane (C11).

N,N-Dimethylacetamide

SO-5407-B025	N,N-Dimethylacetamide HPLC Optigrade®	2.5 L

Code	Product	Unit
SO-5407-B040	N,N-Dimethylacetamide HPLC Optigrade®	4 L

CAS-Nr. 127-19-5

C_4H_9NO

Assay ..... 99.0% min.

Water ..... 0.03% max.

Non-volatile matter..... 0.0006% max.

Filtered through 0.2 µm

1 L = 0.937 kg (at 20°C)

Specification

Transmission

at 270 nm ..... 10% min.
at 280 nm ..... 50% min.
at 290 nm ..... 71% min.
at 310 nm ..... 89% min.
at 360 nm ..... 98% min.

SO-3240-B010	N,N-Dimethylacetamide Headspace Grade	1 L

CAS number 127-19-5

C_4H_9NO

Assay (GC, on anhydrous basis) ..... 99.99 % min.

Acidity (as acetic acid) ..... 0.05 % max.

Water (KF) ..... 0.03 % max.

UV cutoff wavelength ..... 190-268 nm

Transmission

at 268 nm ..... 10 % min.
at 275 nm ..... 55 % min.
at 300 nm ..... 85 % min.
at 350 nm ..... 98 % min.
at 400 nm ..... 99 % min.

Headspace test for O.V.I. ..... passes test

N,N-Dimethylformamide

SO-5356-B025	N,N-Dimethylformamide HPLC Optigrade®	2.5 L

UN 2265

CAS-Nr. 68-12-2

C_3H_7NO

Assay ..... 99.7% min.

Water ..... 0.05% max.

Non-volatile matter..... 0.0006% max.

Filtered through 0.2 µm

1 L = 0.951 kg (at 20°C)

Specification

Transmission

at 270 nm ..... 10% min.
at 275 nm ..... 50% min.
at 295 nm ..... 79% min.
at 310 nm ..... 89% min.
at 340 nm ..... 98% min.

SO-1189-B010	N,N-Dimethylformamide Picograde®	1 L
SO-1189-B025	N,N-Dimethylformamide Picograde®	2.5 L

UN 2265

CAS-Nr. 68-12-2

C_3H_7NO

Assay ..... 99.0% min.

Water ..... 0.2% max.

Non-volatile matter..... 0.001% max.

1 L = 0.951 kg (at 20°C)

Specification

GC/ECD
In the GC-ECD chromatogram there are no interfering single signals in the retention time interval between 1,4-dichlorobenzene and decachlorobiphenyl, by a 500-fold concentration greater than that, given by 10 pg/mL heptachlor-epoxide.

GC/FID
In the GC-FID chromatogram there are no interfering single signals in the retention time interval between n-octane (C8) and n-tetracontane (C40), by a 500-fold concentration greater than that, given by 50 ng/mL n-undecane (C11).

Code	Product	Unit
SO-3230-B010	N,N-Dimethylformamide Headspace Grade	1 L

UN 2265
CAS number 68-12-2
C_3H_7NO
Assay (GC, on anhydrous basis) ..... 99.99 % min.
Refractive index (20 °C)..... 1.430-1.440
Water (KF).....0.03 % max.
UV cutoff wavelength..... 190-268 nm
Transmission
at 270 nm..... 30 % min.
at 275 nm..... 60 % min.
at 300 nm..... 90 % min.
at 320 nm..... 97 % min.
Headspace test for O.V.I. .....passes test

1,3-Dimethyl-2-imidazolidinone (N,N'-Dimethylethyleneurea)

SO-3260-B005	1,3-Dimethyl-2-imidazolidinone (DMI) Headspace Grade	500 mL

Assay (GC, on anhydrous basis) ..... 99.5 % min.
Refractive index (20 °C)..... 1.470-1473
Water (KF).....0.1 % max.
UV cutoff wavelength..... 190-270 nm
Transmission
at 275 nm..... 40 % min.
at 300 nm..... 85 % min.
at 325 nm..... 95 % min.
at >350 nm..... 98 % min.
Headspace test for O.V.I. ..... passes test

Dimethylsulfoxide (DMSO)

SO-3210-B010	Dimethylsulfoxide Headspace Grade	1 L

CAS-Nr 67-68-5
Assay (GC, on anhydrous basis) ..... 99.99 % min.
Refractive index (20 °C)..... 1.477-1.480
Water (KF).....0.04 % max.
UV cutoff wavelength..... 190-265 nm
Transmission
at 268 nm..... 30 % min.
at 275 nm..... 60 % min.
at 300 nm..... 85 % min.
at 350 nm..... 95 % min.
at 400 nm..... 98 % min.
Headspace test for O.V.I. ..... passes test

1.4-Dioxan

SO-9002-B010	1.4-Dioxan HPLC Optigrade® (not stabilised)	1 L
SO-9002-B025	1.4-Dioxan HPLC Optigrade® (not stabilised)	2.5 L

UN 1165
CAS-Nr. 123-91-1
$C_4H_8O_2$
Assay..... 99.5% min.
Water.....0.05% max.
Non-volatile matter .....0.0002% max.
Filtered through 0.2 µm
1 L = 1.034 kg (at 20°C)
not stabilized
Specification
Transmission
at 225 nm..... 31% min.
at 250 nm..... 56% min.
at 270 nm..... 79% min.
at 280 nm..... 89% min.
at 295 nm..... 98% min.

Code	Product	Unit

Ethanol

SO-9063-B010	Ethanol HPLC Optigrade®	1 L
SO-9063-B025	Ethanol HPLC Optigrade®	2.5 L

UN 1170
CAS-Nr. 64-17-5
C_2H_5OH
Assay ..... 99.7% min.
Water ..... 0.1% max.
Non-volatile matter..... 0.0004% max.
Filtered through 0.2 µm
1 L = 0.789 kg (at 20°C)
Specification
Transmission
at 210 nm ..... 20% min.
at 240 nm ..... 79% min.
at 260 nm ..... 98% min.

2-Ethoxyethanol

SO-2925-B025	2-Ethoxyethanol HPLC Optigrade®	2.5 L

UN 1171
CAS-Nr. 110-80-5
$C_4H_{10}O_2$
Assay ..... 99.5% min.
Water ..... 0.08% max.
Non-volatile matter..... 0.0002% max.
Filtered through 0.2 µm
1 L = 0.932 kg (at 20°C)
Specification
Transmission
at 222 nm ..... 10% min.
at 225 nm ..... 18% min.
at 250 nm ..... 56% min.
at 300 nm ..... 98% min.

Ethyl acetate

SO-3442-B010	Ethyl acetate HPLC Optigrade®	1 L
SO-3442-B025	Ethyl acetate HPLC Optigrade®	2.5 L
SO-3442-B040	Ethyl acetate HPLC Optigrade®	4 L

UN 1173
CAS-Nr. 141-78-6
$CH_3COOC_2H_5$
Assay ..... 99.5% min.
Water ..... 0.05% max.
Non-volatile matter..... 0.0005% max.
Filtered through 0.2 µm
1 L = 0.897 kg (at 20°C)
Specification
Transmission
at 225 nm ..... 10% min.
at 260 nm ..... 79% min.
at 280 nm ..... 89% min.
at 300 nm ..... 98% min.

SO-9345-B010	Ethyl acetate for LC-MS Optigrade®	1 L

Code	Product	Unit
SO-9345-B025	Ethyl acetate for LC-MS Optigrade®	2.5 L

UN 1173
CAS-Nr. 141-78-6
$CH_3COOC_2H_5$
Assay ..... 99,5% min.
Water .....0,05% max.
Non-volatile matter .....0,0005% max.
Filtered through 0.2 µm
1 L = 0,897 kg (at 20°C)
Specification
Ca .....0,1 ppm max.
K .....0,1 ppm max.
Mg .....0,1 ppm max.
Na .....0,1 ppm max.
Transmission
at 260 nm ..... 70 % min.
at 280 nm ..... 99 % min.

SO-1191-B010	Ethyl acetate Picograde® for residue analysis	1 L
SO-1191-B025	Ethyl acetate Picograde® for residue analysis	2.5 L
SO-1191-B040	Ethyl acetate Picograde® for residue analysis	4 L

UN 1173
CAS-Nr. 141-78-6
$CH_3COOC_2H_5$
Assay ..... 99.0% min.
Water .....0.05% max.
Non-volatile matter .....0.0005% max.
1 L = 0.897 kg (at 20°C)
Specification
GC/ECD
In the GC-ECD chromatogram there are no interfering single signals in the retention time interval between 1,4-dichlorobenzene and decachlorobiphenyl, by a 500-fold concentration greater than that, given by 10 pg/mL heptachlor-epoxide.
GC/FID
In the GC-FID chromatogram there are no interfering single signals in the retention time interval between n-octane (C8) and n-tetracontane (C40), by a 500-fold concentration greater than that, given by 50 ng/mL n-undecane (C11).

n-Heptane

SO-5139-B010	n-Heptane HPLC Optigrade®	1 L
SO-5139-B025	n-Heptane HPLC Optigrade®	2.5 L
SO-5139-B040	n-Heptane HPLC Optigrade®	4 L

UN 1206
CAS-Nr. 142-82-5
C_7H_{16}
Assay ..... 95.0% min.
Water .....0.02% max.
Non-volatile matter .....0.0003% max.
Filtered through 0.2 µm
1 L = 0.685 kg (at 20°C)
Specification
Transmission
at 197 nm ..... 10% min.
at 210 nm ..... 39% min.
at 225 nm ..... 79% min.
at 254 nm ..... 98% min.

Code	Product	Unit
SO-1210-B025	n-Heptane Picograde® for residue analysis UN 1206 CAS-Nr. 142-82-5 C_7H_{16} Assay ..... 97.0% min. Water ..... 0.01% max. Non-volatile matter..... 0.0002% max. 1 L = 0.682 kg (at 20°C) Specification GC/ECD In the GC-ECD chromatogram there are no interfering single signals in the retention time interval between 1,4 dichlorobenzene and decachlorobiphenyl, by a 500 fold concentration greater than that, given by 10 pg/mL heptachlor-epoxide. GC/FID In the GC-FID chromatogram there are no interfering single signals in the retention time interval between n-octane (C8) and n-tetracontane (C40), by a 500 fold concentration greater than that, given by 50 ng/mL n-undecane (C11).	2.5 L

n-Hexane

SO-5167-B010	n-Hexane HPLC Optigrade®	1 L
SO-5167-B025	n-Hexane HPLC Optigrade®	2.5 L
SO-5167-B040	n-Hexane HPLC Optigrade® UN 1208 CAS-Nr. 110-54-3 C_6H_{14} Assay (of C_6-isomers) ..... 99.8% min. Water ..... 0.1% max. Non-volatile matter..... 0.0003% max. Filtered through 0.2 µm 1 L = 0.659 kg (at 20°C) Specification Transmission at 195 nm ..... 10% min. at 210 nm ..... 56% min. at 220 nm ..... 79% min. at 254 nm ..... 98% min. at 280 nm ..... 99% min. at 350 nm ..... 99% min.	4 L

SO-1244-B010	n-Hexane Picograde® for residue analysis	1 L
SO-1244-B025	n-Hexane Picograde® for residue analysis	2.5 L
SO-1244-B040	n-Hexane Picograde® for residue analysis UN 1208 CAS-Nr. 110-54-3 C_6H_{14} Assay (of C_6-isomers) ..... 97.0% min. Water ..... 0.01% max. Non-volatile matter..... 0.0002% max. PCBs (#28,52,77,81,101,105,114, 118,123,126,138,153,156,157,167, 169,180,189) ..... passes test 1 L = 0.659 kg (at 20°C) Specification GC/ECD In the GC-ECD chromatogram there are no interfering single signals in the retention time interval between 1,4-dichlorobenzene and decachlorobiphenyl, by a 500-fold concentration greater than that, given by 10 pg/mL heptachlor-epoxide. GC/FID In the GC-FID chromatogram there are no interfering single signals in the retention time interval between n-octane (C8) and n-tetracontane (C40), by a 500-fold concentration greater than that, given by 50 ng/mL n-undecane (C11).	4 L

SO-9500-B010	n-Hexane for the analysis of highly volatile halogenated hydrocarbons and EOX	1 L

Code	Product	Unit
SO-9500-B025	n-Hexane for the analysis of highly volatile halogenated hydrocarbons and EOX	2.5 L

UN 1208

CAS-Nr. 110-54-3

C_6H_{14}

Assay (of C_6-isomers) ..... 95.0% min.

Wasser/Water.....0.01% max.

Non-volatile matter .....0.0002% max.

1 L = 0.651 kg (at 20°C)

Specification

Highly volatile halogenated hydrocarbons/EOX
In the GC/ECD chromatorgram there are no interfering single signals in the retention time interval between 1,1-dichloroethene and tribromomethane greater than that, given by 5 µg/L parathion-methyl.

Coulometric determination of EOX gives a halogen content as chloride of less than 0.3 mg/L.

Iso-Hexane

SO-9043-B025	Iso-Hexane HPLC Optigrade®	2.5 L

UN 1208

CAS-Nr. 107-83-5

C_6H_{14}

Assay of C_6-isomers..... 95.0% min.

Water.....0.01% max.

Non-volatile matter .....0.0002% max.

1 L = 0.653 kg (at 20°C)

Specification

Transmission

at 195nm..... 10% min.
at 210nm..... 56% min.
at 217nm..... 63% min.
at 220nm..... 75% min.
at 245nm..... 95% min.

SO-1251-B025	Iso-Hexane Picograde® for residue analysis	2.5 L

UN 1208

CAS-Nr. 107-83-5

C_6H_{14}

Gehalt/Assay (of C_6-isomers)..... 95.0% min.

Water.....0.01% max.

Non-volatile matter .....0.0002% max.

1 L = 0.653 kg (at 20°C)

Specification

GC/ECD
In the GC-ECD chromatogram there are no interfering single signals in the retention time interval between 1,4-dichlorobenzene and decachlorobiphenyl, by a 500-fold concentration greater than that, given by 10 pg/mL heptachlor-epoxide.

GC/FID
In the GC-FID chromatogram there are no interfering single signals in the retention time interval between n-octane (C8) and n-tetracontane (C40), by a 500-fold concentration greater than that, given by 50 ng/mL n-undecane (C11).

Hydrochloric acid

HPA-0010-B010	Hydrochloric acid for trace analysis min. 36 % (glass bottle)	1 L

UN 1789

Assay	> 36 %	free chlorine	< 0.5 ppm
Residue	< 3 ppm	Phosphate	< 0.05 ppm
Colour (APHA)	< 10	Sulfite	< 0.5 ppm
Bromide	< 50 ppm	Sulfate	< 0.5 ppm

Ag	< 0.1 ppb	Cu	< 0.1 ppb	Sb	< 0.1 ppb
Al	< 0.5 ppb	Fe	< 1 ppb	Se	< 0.1 ppb
As	< 0.1 ppb	Hg	< 0.2 ppb	Sn	< 0.1 ppb
B	< 1 ppb	K	< 0.1 ppb	Sr	< 0.1 ppb
Ba	< 0.1 ppb	Li	< 0.1 ppb	Th	< 0.1 ppb
Be	< 0.1 ppb	Mg	< 0.5 ppb	Ti	< 0.1 ppb
Bi	< 0.1 ppb	Mn	< 0.1 ppb	U	< 0.1 ppb
Ca	< 0.5 ppb	Mo	< 0.1 ppb	V	< 0.1 ppb
Cd	< 0.1 ppb	Na	< 0.5 ppb	Zn	< 0.5 ppb
Co	< 0.1 ppb	Ni	< 0.1 ppb	Zr	< 0.1 ppb
Cr	< 0.1 ppb	Pb	< 0.1 ppb		

Hydrochloric acid stored in glass bottles will see a rise in: Al, B, Ca, K, Mg, Mn, Na and Si.

Code	Product	Unit

Hydrofluoric acid

HPA-0030-B010	Hydrofluoric acid for trace analysis min. 48 % (HDPE bottle)	1 L

UN 1790

Assay	> 48 %	Phosphate	< 0.1 ppm
Colour (HAZEN)	< 10	Sulfate	< 0.5 ppm
Chloride	< 1 ppm	Hexafluorosilicate	< 20 ppm

Ag	< 1 ppb	Cu	< 1 ppb	Pb	< 1 ppb
Al	< 1 ppb	Fe	< 1 ppb	Se	< 1 ppb
As	< 1 ppb	Hg	< 1 ppb	Si	< 1 ppb
Ba	< 1 ppb	K	< 1 ppb	Sn	< 1 ppb
Be	< 1 ppb	Li	< 1 ppb	Sr	< 1 ppb
Bi	< 1 ppb	Mg	< 1 ppb	Ti	< 1 ppb
Ca	< 1 ppb	Mn	< 1 ppb	V	< 1 ppb
Cd	< 1 ppb	Mo	< 1 ppb	Zn	< 1 ppb
Co	< 1 ppb	Na	< 1 ppb		
Cr	< 1 ppb	Ni	< 1 ppb		

Hydrofluoric acid stored in polyethylene bottles will see a rise in: Al, Ca, Fe, Na and Zn.

Methanol

SO-9510-B010	Methanol Purge & Trap	1 L

UN 1230

CAS-Nr. 67-56-1

CH_3OH

Assay	99,9% min.
Water	< 0.1%
Non-volatile matter	< 0,10%
2-Butanone (GC/MS; P&T)	< 10 µg/l
Other volatile impurities	passes tests

1 L = 0,792 kg (at 20°C)

SO-9260-B010	Methanol HPLC Optigrade® Gradient Grade	1 L
SO-9260-B025	Methanol HPLC Optigrade® Gradient Grade	2.5 L

UN 1230

CAS-Nr. 67-56-1

CH_3OH

Assay	99.9% min.
Water	0.05% max.
Non-volatile matter	0.0003% max.
Gradientspecification (235 nm)	0.002 AU max.
Gradientspecification (254 nm)	0.001 AU max.
Fluorescence (as Quinine at 254 nm)	1 ppb max.

Filtered through 0.2 µm

1 L = 0.792 kg (at 20°C)

Specification

Transmission

at 210 nm	37% min.
at 220 nm	56% min.
at 230 nm	76% min.
at 235 nm	83% min.
at 254 nm	97% min.
at 280 nm	99% min.

This solvent in glass bottles fulfills the specifications according to chapter 4 of the European Pharmacopoeia.

SO-3041-B010	Methanol HPLC Optigrade®	1 L
SO-3041-B025	Methanol HPLC Optigrade®	2.5 L

Code	Product	Unit
SO-3041-B040	Methanol HPLC Optigrade®	4 L

UN 1230
CAS-Nr. 67-56-1
CH_3OH
Assay ..... 99.9% min.
Water .....0.05% max.
Non-volatile matter .....0.0003% max.
Filtered through 0.2 µm
1 L = 0.792 kg (at 20°C)
Specification
Transmission
at 205 nm ..... 10% min.
at 220 nm ..... 56% min.
at 240 nm ..... 89% min.
at 254 nm ..... 96% min.
at 280 nm ..... 98% min.
at 350 nm ..... 99% min.
This solvent in glass bottles fulfills the specifications according to chapter 4 of the European Pharmacopoeia.

SO-9658-B010	Methanol UHPLC-MS Optigrade®	1 L
SO-9658-B025	Methanol UHPLC-MS Optigrade®	2.5 L

UN 1230
CAS number 67-56-1
CH_3OH
Assay (GC, on anhydrous basis) .....99.98 % min.
Water (KF) .....0.03% max.
Residue after evaporation..... 0.0001 %w/w max.
Acidity (as acetic acid) .....0.002 % max.
Alkalinity (as ammonia) .....0.0001 % max.
Color (APHA) .....5 max.
Gradient specification
HPLC gradient at 220 nm - Drift .....0.01 AU max.
HPLC gradient at 235 nm - Drift .....0.005 AU max.
HPLC gradient at 220 nm - H. Peak .....0.004 AU max.
HPLC gradient at 235 nm - H. Peak .....0.002 AU max.
Fluorescence at 254 nm (as quinine) .....0.5 ppb max.
Fluorescence at 365 nm (as quinine) .....0.3 ppb max.
1 L = 0.783 kg (at 20°C)
Transmission
at 210 nm .....40 % min.
at 220 nm .....65 % min.
at 230 nm .....80 % min.
at 260 nm .....98 % min.
Al .....20 ppb max.
Ca .....100 ppb max.
Fe .....20 ppb max.
K .....50 ppb max.
Mg .....20 ppb max.
Na .....100 ppb max.
Microfiltered through 0.1 µm/bottled under inert gas

SO-9356-B010	Methanol for LC-MS Optigrade®	1 L
SO-9356-B025	Methanol for LC-MS Optigrade®	2.5 L

UN 1230
CAS number 67-56-1
CH_3OH
Assay ..... 99.9% min.
Water .....0.05% max.
Non-volatile matter .....0.0003% max.
Filtered through 0.2 µm
1 L = 0.792 kg (at 20°C)
Ca .....0.1 ppm max.
K .....0.1 ppm max.
Mg .....0.1 ppm max.
Na .....0.1 ppm max.
Transmission
at 210 nm ..... 40 % min.
at 220 nm ..... 60 % min.
at 235 nm ..... 80 % min.
at 260 nm ..... 98 % min.

High purity solvents and acids

Code	Product	Unit
SO-1263-B010	Methanol Picograde® for residue analysis	1 L
SO-1263-B025	Methanol Picograde® for residue analysis	2.5 L
SO-1263-B040	Methanol Picograde® for residue analysis	4 L

UN 1230

CAS-Nr. 67-56-1

CH_3OH

Assay ..... 99.0% min.

Water ..... 0.1% max.

Non-volatile matter..... 0.0005% max.

1 L = 0.792 kg (at 20°C)

Specification

GC/ECD
In the GC-ECD chromatogram there are no interfering single signals in the retention time interval between 1,4-dichlorobenzene and decachlorobiphenyl, by a 500-fold concentration greater than that, given by 10 pg/mL heptachlor-epoxide.

GC/FID
In the GC-FID chromatogram there are no interfering single signals in the retention time interval between n-octane (C8) and n-tetracontane (C40), by a 500-fold concentration greater than that, given by 50 ng/mL n-undecane (C11).

2-Methoxyethanol

SO-9509-B010	2-Methoxyethanol for the analysis of highly volatile halogenated hydrocarbons	1 L

UN 1188

CAS-Nr. 109-86-4

$C_3H_8O_2$

Assay ..... 99.7% min.

Water ..... 0.08% max.

Non-volatile matter..... 0.0006% max.

1 L = 0.961 kg (at 20°C)

Highly volatile halogenated hydrocarbons
In the GC/ECD chromatorgram there are no interfering single signals in the retention time interval between 1,1-dichloroethene and tribromomethane greater than that, given by 5 µg/L parathion-methyl.

BTEX for FID
In the GC-FID chromatogram the sum of the signals of BTEX-compounds is not greater than the signal, given by 10 µg/L n-Decane.

Methyl-tert-butyl ether

SO-5398-B025	Methyl-tert-butylether HPLC Optigrade®	2.5 L

UN 2398

CAS-Nr. 1634-04-4

$C_5H_{12}O$

Assay ..... 99.7% min.

Water ..... 0.05% max.

Non-volatile matter..... 0.0006% max.

Filtered through 0.2 µm

1 L = 0.742 kg (at 20°C)

Specification

Transmission

at 225 nm ..... 32% min.
at 250 nm ..... 71% min.
at 300 nm ..... 89% min.

SO-1265-B010	Methyl-tert-butylether Picograde®	1 L

Code	Product	Unit
SO-1265-B025	Methyl-tert-butylether Picograde®	2.5 L

UN 2398

CAS-Nr. 1634-04-4

$C_5H_{12}O$

Assay ..... 99.8% min.

Water .....0.05% max.

Non-volatile matter .....0.0005% max.

1 L = 0.742 kg (at 20°C)

Specification

GC/ECD
In the GC-ECD chromatogram there are no interfering single signals in the retention time interval between 1,4-dichlorobenzene and decachlorobiphenyl, by a 500-fold concentration greater than that, given by 10 pg/mL heptachlor-epoxide.

GC/FID
In the GC-FID chromatogram there are no interfering single signals in the retention time interval between n-octane (C8) and n-tetracontane (C40), by a 500-fold concentration greater than that, given by 50 ng/mL n-undecane (C11).

Nitric acid

Code	Product	Unit
HPA-0020-B010	Nitric acid for trace analysis min 67 % (glass bottle)	1 L

UN 2031

Assay ..... > 67 %
Residue..... < 1 ppm
Chloride ..... < 0.08 ppm
Phosphate..... < 0.1 ppm
Sulfate..... < 0.5 ppm

Ag ..... < 0.1 ppb	Cu.....< 0.1 ppb	Pb ..... < 0.1 ppb
Al..... < 0.5 ppb	Fe .....< 0.5 ppb	Se ..... < 0.1 ppb
As..... < 0.1 ppb	Hg.....< 0.2 ppb	Sn ..... < 0.1 ppb
Ba ..... < 0.1 ppb	K.....< 0.2 ppb	Sr ..... < 0.1 ppb
Be ..... < 0.1 ppb	Li .....< 0.1 ppb	Th..... < 0.1 ppb
Bi..... < 0.1 ppb	Mg .....< 0.5 ppb	Ti..... < 0.1 ppb
Ca ..... < 0.5 ppb	Mn .....< 0.1 ppb	V ..... < 0.1 ppb
Cd ..... < 0.1 ppb	Mo .....< 0.1 ppb	Zn..... < 0.5 ppb
Co ..... < 0.1 ppb	Na.....< 0.5 ppb	
Cr ..... < 0.2 ppb	Ni.....< 0.1 ppb	

Nitric Acid stored in glass bottles will see a rise in: Al, B, Ca, K, Mg, Mn, Na and Si.

n-Nonane

Code	Product	Unit
SO-4436-B010	n-Nonane HPLC Optigrade®	1 L

UN 1920

CAS-Nr. 111-84-2

C_9H_{20}

Assay ..... 95% min.

Water .....0.01% max.

Non-volatile matter .....0.0003% max.

Filtered through 0.2 µm

1 L = 0.719 kg (at 20°C)

Specification

Transmission

at 200 nm..... 10% min.
at 225 nm..... 79% min.
at 250 nm..... 89% min.
at 300 nm..... 99% min.

Code	Product	Unit
SO-1271-B010	n-Nonane Picograde® for residue analysis	1 L

Code	Product	Unit
SO-1271-B025	n-Nonane Picograde® for residue analysis UN 1920 CAS-Nr. 111-84-2 C_9H_{20} Assay ..... 95.0% min. Water ..... 0.01% max. Non-volatile matter..... 0.0005% max. 1 L = 0.719 kg (at 20°C) Specification GC/ECD In the GC-ECD chromatogram there are no interfering single signals in the retention time interval between 1,4-dichlorobenzene and decachlorobiphenyl, by a 500-fold concentration greater than that, given by 10 pg/mL heptachlor-epoxide. GC/FID In the GC-FID chromatogram there are no interfering single signals in the retention time interval between decane (C10) and n-tetracontane (C40), by a 500-fold concentration greater than that, given by 50 ng/mL n-undecane (C11).	2.5 L

n-Octane

SO-1279-B010	n-Octane Picograde® for residue analysis UN 1262 CAS-Nr. 111-65-9 $CH_3(CH_2)_6CH_3$ Assay ..... 95.0% min. Water ..... 0.01% max. Non-volatile matter..... 0.0005% max. 1 L = 0.703 kg (at 20°C) Specification GC/ECD In the GC-ECD chromatogram there are no interfering single signals in the retention time interval between 1,4-dichlorobenzene and decachlorobiphenyl, by a 500-fold concentration greater than that, given by 10 pg/mL heptachlor-epoxide. GC/FID In the GC-FID chromatogram there are no interfering single signals in the retention time interval between n-octane (C8) and n-tetracontane (C40), by a 500-fold concentration greater than that, given by 50 ng/mL n-undecane (C11).	1 L

n-Pentane

SO-9081-B010	n-Pentane HPLC Optigrade® UN 1265 CAS-Nr. 109-66-0 C_5H_{12} Assay ..... 95.0% min. Water ..... 0.01% max. Non-volatile matter..... 0.001% max. Filtered through 0.2 µm 1 L = 0.626 kg (at 20°C) Specification Transmission at 200 nm ..... 10% min. at 210 nm ..... 20% min. at 215 nm ..... 50% min. at 225 nm ..... 89% min. at 240 nm ..... 98% min.	1 L
SO-1282-B010	n-Pentane Picograde® for residue analysis	1 L
SO-1282-B025	n-Pentane Picograde® for residue analysis	2.5 L

Code	Product	Unit
SO-1282-B040	n-Pentane Picograde® for residue analysis UN 1265 CAS-Nr. 109-66-0 C_5H_{12} Assay ..... 98.0% min. Water .....0.01% max. Non-volatile matter .....0.0005% max. 1 L = 0.626 kg (at 20°C) Specification GC/ECD In the GC-ECD chromatogram there are no interfering single signals in the retention time interval between 1,4-dichlorobenzene and decachlorobiphenyl, by a 500-fold concentration greater than that, given by 10 pg/mL heptachlor-epoxide. GC/FID In the GC-FID chromatogram there are no interfering single signals in the retention time interval between n-octane (C8) and n-tetracontane (C40), by a 500-fold concentration greater than that, given by 50 ng/mL n-undecane (C11).	4 L
SO-9501-B010	n-Pentane for the analysis of highly volatile halogenated hydrocarbons UN 1265 CAS-Nr. 109-66-0 C_5H_{12} Assay ..... 95.0% min. Water .....0.01% max. Non-volatile matter .....0.0005% max. 1 L = 0.632 kg (at 20°C) Specification Highly volatile halogenated hydrocarbons In the GC/ECD chromatogram there are no interfering single signals in the retention time interval between 1,1-dichloroethene and tribromomethane greater than that, given by 5 µg/L parathion-methyl.	1 L
SO-9610-B005	n-Pentane for the analysis of highly volatile halogenated hydrocarbons, aromatic hydrocarbons and EOX UN 1265 CAS-Nr. 109-66-0 C_5H_{12} Assay ..... 98.0% min. Water .....0.01% max. Non-volatile matter .....0.0005% max. 1 L = 0.626 kg (at 20°C) Specification Highly volatile halogenated hydrocarbons In the GC/ECD chromatorgram there are no interfering single signals in the retention time interval between 1,1-dichloroethene and tribromomethane greater than that, given by 5 µg/L parathion-methyl. BTEX for FID In the GC-FID chromatogram the sum of the signals of BTEX-compounds is not greater than the signal, given by 10 µg/L n-Decane. Coulometric determination of EOX gives a halogen content as chloride of less than 0.3 mg/L.	500 mL

Perchloric acid

HPA-0060-B010	Perchloric acid for trace analysis min 68 % (glass bottle) UN 1802 Assay ..... > 68 % Colour (APHA) ..... < 10 Phosphate ..... < 0.1 ppm Sulfate ..... < 5 ppm Total nitrogen ..... < 10 ppm Ag ..... < 0.1 ppb Al ..... < 0.5 ppb Ba ..... < 0.1 ppb Be ..... < 0.1 ppb Bi ..... < 0.1 ppb Ca ..... < 0.5 ppb Cd ..... < 0.1 ppb Co ..... < 0.1 ppb Cu ..... < 0.1 ppb Fe ..... < 0.5 ppb K ..... < 0.5 ppb Li ..... < 0.1 ppb Mg ..... < 0.5 ppb Mn ..... < 0.1 ppb Mo ..... < 0.1 ppb Na ..... < 0.5 ppb Ni ..... < 0.1 ppb Pb ..... < 0.1 ppb Sn ..... < 0.1 ppb Sr ..... < 0.1 ppb Th ..... < 0.1 ppb Tl ..... < 0.1 ppb V ..... < 0.5 ppb Zn ..... < 0.5 ppb Perchloric acid stored in glass bottles will see a rise in: Al, B, Ca, K, Mg, Mn, Na and Si.	1 L

Petroleum ether

SO-1320-B010	Petroleum ether Picograde® for residue analysis (30 - 60°C)	1 L
SO-1320-B025	Petroleum ether Picograde® for residue analysis (30 - 60°C)	2.5 L

Code	Product	Unit
SO-1320-B040	Petroleum ether Picograde® for residue analysis (30 - 60°C) UN 1268 CAS-Nr. 8032-32-4 Boiling point range ..... 30 - 60°C min. Water ..... 0.01% max. Non-volatile matter..... 0.0005% max. 1 L = 0.625...0.655 kg (at 20°C) Specification GC/ECD In the GC-ECD chromatogram there are no interfering single signals in the retention time interval between 1,4-dichlorobenzene and decachlorobiphenyl, by a 500-fold concentration greater than that, given by 10 pg/mL heptachlor-epoxide. GC/FID In the GC-FID chromatogram there are no interfering single signals in the retention time interval between n-octane (C8) and n-tetracontane (C40), by a 500-fold concentration greater than that, given by 50 ng/mL n-undecane (C11).	4 L
SO-9502-B010	Petroleum ether for the analysis of highly volatile halogenated hydrocarbons and EOX (40 - 60°C)	1 L
SO-9502-B025	Petroleum ether for the analysis of highly volatile halogenated hydrocarbons and EOX (40 - 60°C) UN 1268 CAS-Nr. 8032-32-4 Boiling point ..... 40 - 60°C min. Water ..... 0.01% max. Non-volatile matter..... 0.0005% max. 1 L = 0.625...0.655 kg (bei/at 20°C) Specification Highly volatile halogenated hydrocarbons/EOX In the GC/ECD chromatorgram there are no interfering single signals in the retention time interval between 1,1-dichloroethene and tribromomethane greater than that, given by 5 µg/L parathion-methyl. Coulometric determination of EOX gives a halogen content as chloride of less than 0.3 mg/L.	2.5 L

Propan-1-ol

SO-5351-B025	Propan-1-ol HPLC Optigrade® UN 1274 CAS-Nr. 71-23-8 $CH_3CH_2CH_2OH$ Assay ..... 99.8% min. Water ..... 0.05% max. Non-volatile matter..... 0.001% max. Filtered through 0.2 µm 1 L = 0.804 kg (at 20°C) Specification Transmission at 225 nm ..... 31% min. at 250 nm ..... 89% min. at 270 nm ..... 98% min. at 300 nm ..... 99% min.	2.5 L

Propan-2-ol

SO-3043-B010	Propan-2-ol HPLC Optigrade®	1 L
SO-3043-B025	Propan-2-ol HPLC Optigrade®	2.5 L

Code	Product	Unit
SO-3043-B040	Propan-2-ol HPLC Optigrade®	4 L

UN 1219
CAS-Nr. 67-63-0
C_3H_8O
Assay ..... 99.5% min.
Water .....0.05% max.
Non-volatile matter .....0.0006% max.
Filtered through 0.2 µm
1 L = 0.786 kg (at 20°C)
Specification
Transmission
at 205 nm ..... 10% min.
at 220 nm ..... 50% min.
at 230 nm ..... 71% min.
at 254 nm ..... 95% min.
at 350 nm ..... 98% min.

SO-9352-B010	Propan-2-ol for LC-MS Optigrade®	1 L
SO-9352-B025	Propan-2-ol for LC-MS Optigrade®	2.5 L

UN 1219
CAS number 67-63-0
C_3H_8O
Assay ..... 99.5% min.
Water .....0.05% max.
Non-volatile matter .....0.0006% max.
Filtered through 0.2 µm
1 L = 0.786 kg (at 20°C)
Ca .....0.1 ppm max.
K .....0.1 ppm max.
Mg .....0.1 ppm max.
Na .....0.1 ppm max.
Transmission
at 220 nm ..... 60 % min.
at 250 nm ..... 99 % min.

SO-1334-B010	Propan-2-ol Picograde® for residue analysis	1 L
SO-1334-B025	Propan-2-ol Picograde® for residue analysis	2.5 L
SO-1334-B040	Propan-2-ol Picograde® for residue analysis	4 L

UN 1219
CAS-Nr. 67-63-0
C_3H_8O
Assay ..... 99.5% min.
Water .....0.2% max.
Non-volatile matter .....0.0005% max.
1 L = 0.786 kg (at 20°C)
Specification
GC/ECD
In the GC-ECD chromatogram there are no interfering single signals in the retention time interval between 1,4-dichlorobenzene and decachlorobiphenyl, by a 500-fold concentration greater than that, given by 10 pg/mL heptachlor-epoxide.
GC/FID
In the GC-FID chromatogram there are no interfering single signals in the retention time interval between n-octane (C8) and n-tetracontane (C40), by a 500-fold concentration greater than that, given by 50 ng/mL n-undecane (C11).

SO-3044-B040	Propan-2-ol for the tobacco industry	4 L

contains
n-Heptadecan ..... 0.3 g/L
Ethanol..... 2.0 g/L

SO-3046-B040	Propan-2-ol for the tobacco industry	4 L

contains
n-Heptandecan ..... 0.8 g/L
Ethanol abs..... 4.0 g/L
Wasser ..... 0.1 %

High purity solvents and acids

Code	Product	Unit
SO-3047-B040	Propan-2-ol for the tobacco industry contains n-Heptandecan ..... 0.4 g/L Ethanol abs. ..... 2.0 g/ L	4 L

Sulfuric acid

HPA-0040-B010 Sulfuric acid min 95 % (glass bottle) 1 L

UN 1830

Assay ..... 95 %
Density ..... 1.83 g/mL
Colour (APHA) ..... < 10
Residue ..... < 2 ppm
Chloride ..... < 0.1 ppm
Phosphate ..... < 0.5 ppm
Nitrate ..... < 0.07 ppm

Ag	< 0.1 ppb	Fe	< 0.5 ppb	Se	< 5 ppb
Al	< 0.5 ppb	Hg	< 1 ppb	Sn	< 0.1 ppb
As	< 1 ppb	K	< 0.5 ppb	Sr	< 0.1 ppb
Ba	< 0.1 ppb	Li	< 0.1 ppb	Th	< 0.1 ppb
Be	< 0.1 ppb	Mg	< 0.5 ppb	Ti	< 1 ppb
Bi	< 0.1 ppb	Mn	< 0.1 ppb	U	< 0.1 ppb
Ca	< 0.5 ppb	Mo	< 0.1 ppb	V	< 0.1 ppb
Cd	< 0.1 ppb	Na	< 0.5 ppb	Zn	< 0.1 ppb
Co	< 0.1 ppb	Ni	< 0.1 ppb	Zr	< 0.1 ppb
Cr	< 0.1 ppb	Pb	< 0.1 ppb		
Cu	< 0.1 ppb	Sb	< 0.1 ppb		

Sulfuric acid stored in glass bottles will see a rise in: Al, B, Ca, K, Mg, Mn, Na and Si.

Tetrahydrofuran

SO-2858-B010 Tetrahydrofuran HPLC Optigrade® 1 L

SO-2858-B025 Tetrahydrofuran HPLC Optigrade® 2.5 L

SO-2858-B040 Tetrahydrofuran HPLC Optigrade® 4 L

UN 2056

CAS-Nr. 109-99-9

C_4H_8O

Assay ..... 99.8% min.
Water ..... 0.03% max.
Non-volatile matter ..... 0.0007% max.

Filtered through 0.2 µm

1 L = 0.887 kg (at 20°C)

not stabilized

Specification

Transmission

at 212 nm ..... 10% min.
at 225 nm ..... 31% min.
at 250 nm ..... 68% min.
at 300 nm ..... 98% min.

SO-9364-B010 Tetrahydrofuran for LC-MS Optigrade® 1 L

SO-9364-B025 Tetrahydrofuran for LC-MS Optigrade® 2.5 L

UN 2056

CAS number 109-99-9

C_4H_8O

Assay ..... 99.8% min.
Water ..... 0.03% max.
Non-volatile matter ..... 0.0007% max.

Filtered through 0.2 µm

1 L = 0.887 kg (at 20°C)

not stabilised

Ca ..... 0.1 ppm max.
K ..... 0.1 ppm max.
Mg ..... 0.1 ppm max.
Na ..... 0.1 ppm max.

Transmission

at 250 nm ..... 80 % min.
at 290 nm ..... 99 % min.

Toluene

SO-4483-B010 Toluene HPLC Optigrade® 1 L

SO-4483-B025 Toluene HPLC Optigrade® 2.5 L

Code	Product	Unit
SO-4483-B040	Toluene HPLC Optigrade®	4 L

UN 1294
CAS-Nr. 108-88-3
C_7H_8
Assay ..... 99.7% min.
Water .....0.03% max.
Non-volatile matter .....0.0005% max.
Filtered through 0.2 µm
1 L = 0.866 kg (at 20°C)
Specification
Transmission
at 285 nm ..... 10% min.
at 288 nm ..... 39% min.
at 300 nm ..... 70% min.
at 335 nm ..... 95% min.
at 350 nm ..... 98% min.

SO-1350-B010	Toluene Picograde® for residue analysis	1 L
SO-1350-B025	Toluene Picograde® for residue analysis	2.5 L
SO-1350-B040	Toluene Picograde® for residue analysis	4 L

UN 1294
CAS-Nr. 108-88-3
C_7H_8
Assay ..... 99.8% min.
Water .....0.02% max.
Non-volatile matter .....0.0005% max.
1 L = 0.866 kg (at 20°C)
Specification
GC/ECD
In the GC-ECD chromatogram there are no interfering single signals in the retention time interval between 1,4-dichlorobenzene and decachlorobiphenyl, by a 500-fold concentration greater than that, given by 10 pg/mL heptachlor-epoxide.
GC/FID
In the GC-FID chromatogram there are no interfering single signals in the retention time interval between decane (C10) and n-tetracontane (C40), by a 500-fold concentration greater than that, given by 50 ng/mL n-undecane (C11).

1,1,2-Trichloro-1,2,2-trifluoroethane

SO-9145-B025	1,1,2-Trichloro-1,2,2-trifluoroethane for IR-Spectroscopy	2.5 L

UN 3082
CAS-Nr. 76-13-1
$C_2Cl_3F_3$
Assay ..... 99,8% min.
Non-volatile matter .....2 mg/L max.
Water .....10 mg/kg max.
Hydrocarbons .....5 mg/kg max.
1 L = 1.57 kg (at 20°C)

2,2,4-Trimethylpentane

SO-6043-B010	2,2,4-Trimethylpentane HPLC Optigrade® (Isooctane)	1 L
SO-6043-B025	2,2,4-Trimethylpentane HPLC Optigrade® (Isooctane)	2.5 L

Code	Product	Unit
SO-6043-B040	2,2,4-Trimethylpentane HPLC Optigrade® (Isooctane) UN 1262 CAS-Nr. 540-84-1 C_8H_{18} Assay ..... 99.5% min. Water ..... 0.02% max. Non-volatile matter..... 0.0005% max. Filtered through 0.2 µm 1 L = 0.690 kg (at 20°C) Specification Transmission at 205 nm ..... 10% min. at 220 nm ..... 63% min. at 230 nm ..... 79% min. at 254 nm ..... 98% min.	4 L
SO-1364-B010	2,2,4-Trimethylpentane (Isooctane) Picograde® for residue analysis	1 L
SO-1364-B025	2,2,4-Trimethylpentane (Isooctane) Picograde® for residue analysis	2.5 L
SO-1364-B040	2,2,4-Trimethylpentane (Isooctane) Picograde® for residue analysis UN 1262 CAS-Nr. 540-84-1 C_8H_{18} Assay ..... 95.0% min. Water ..... 0.02% max. Non-volatile matter..... 0.0005% max. 1 L = 0.690 kg (at 20°C) Specification GC/ECD In the GC-ECD chromatogram there are no interfering single signals in the retention time interval between 1,4-dichlorobenzene and decachlorobiphenyl, by a 500-fold concentration greater than that, given by 10 pg/mL heptachlor-epoxide. GC/FID In the GC-FID chromatogram there are no interfering single signals in the retention time interval between decane (C10) and n-tetracontane (C40), by a 500-fold concentration greater than that, given by 50 ng/mL n-undecane (C11).	4 L

Water

SO-6795-B025	Water HPLC Optigrade®	2.5 L
SO-6795-B040	Water HPLC Optigrade® CAS-Nr. 7732-18-5 H_2O Specification Fluorescence at 254 nm (as Quinine).....0.1 ppb max. Fluorescence at 365 nm (as quinine) .....0.1 ppb max. Non-volatile matter.....1 mg/L max. Filtered through 0.2 µm pH ..... 5,0 - 8,0 This solvent in glass bottles fulfills the specifications according to chapter 4 of the European Pharmacopoeia.	4 L
SO-9662-B010	Water UHPLC-MS Optigrade®	1 L

	Code	Product	Unit
New	SO-9662-B025	Water UHPLC-MS Optigrade®	2.5 L

CAS number 7732-18-5

H_2O

Residue after evaporation..... 0.0001 %w/w max.

Acidity (as Acetic acid).....0.002 % max.

Alkalinity (as Ammonia).....0.00005 % max.

Resistivity (at manuf.)..... 18.2 Mohm*cm min.

Gradient specification

HPLC gradient at 210 nm - H. Peak.....0.002 AU max.
HPLC gradient at 254 nm - H. Peak.....0.0005 AU max.

Fluorescence at 254 nm (as quinine).....0.5 ppb max.
Fluorescence at 365 nm (as quinine).....0.5 ppb max.

TOC.....10 ppb max.

Filter test.....Passes test

Ca.....0.1 ppm max.
K.....0.1 ppm max.
Mg.....0.1 ppm max.
Na..... 0.1 ppm max.

Microfiltered through 0.1 µm/bottled under inert gas

SO-4661-B025	Water 0.1 % formic acid UHPLC-MS Optigrade®	2.5 L

Assay..... 0.095-0.105 %

Purity of formic acid (GC).....99.0 % min.

Gradient specification

HPLC gradient at 254 nm - H. Peak.....0.002 AU max.
HPLC gradient at 254 nm - Drift.....0.010 AU max.

Fluorescence at 254 nm (as quinine).....0.5 ppb max.
Fluorescence at 365 nm (as quinine)..... 0.5 ppb max.

Transmission

at 210 nm.....5 % min.
at 230 nm.....45% min.
at 254 nm.....99% min.

Al.....30 ppb max.
Ca.....100 ppb max.
Fe.....50 ppb max.
K.....100 ppb max.
Mg.....30 ppb max.
Na.....100 ppb max.

Microfiltered through 0.1 µm/bottled under inert gas

SO-4667-B025	Water 0.1 % acetic acid UHPLC-MS Optigrade®	2.5 L

Assay..... 0.095-0.105 %

pH..... 3.2-3.4

Purity of acetic acid (GC).....99.9 % min.

Gradient specification

HPLC gradient at 254 nm - H. Peak.....0.002 AU max.
HPLC gradient at 254 nm - Drift.....0.010 AU max.

Fluorescence at 254 nm (as quinine).....0.5 ppb max.
Fluorescence at 365 nm (as quinine).....0.5 ppb max.

Transmission

at 210 nm.....20 % min.
at 230 nm.....75 % min.
at 254 nm.....99 % min.

Al.....30 ppb max.
Ca.....100 ppb max.
Fe.....50 ppb max.
K.....100 ppb max.
Mg.....30 ppb max.
Na.....100 ppb max.

Microfiltered through 0.1 µm/bottled under inert gas

Trademarks

Code	Product	Unit
SO-4673-B025	Water 0.1 % trifluoroacetic acid UHPLC-MS Optigrade®	2.5 L
	Assay ..... 0.095-0.105 % Purity of trifluoroacetic acid (GC) ..... 99.95% min. Gradient specification HPLC gradient at 254 nm - H. Peak .....0.002 AU max. HPLC gradient at 254 nm - Drift .....0.010 AU max. Fluorescence at 254 nm (as quinine) ..... 0.5 ppb max. Fluorescence at 365 nm (as quinine) .....0.5 ppb max. Transmission at 210 nm ..... 25 % min. at 230 nm ..... 85% min. at 254 nm ..... 99% min. Al .....30 ppb max. Ca .....100 ppb max. Fe .....50 ppb max. K .....100 ppb max. Mg .....30 ppb max. Na .....100 ppb max. Microfiltered through 0.1 µm/bottled under inert gas	
SO-9368-B010	Water for LC-MS Optigrade®	1 L
SO-9368-B025	Water for LC-MS Optigrade®	2.5 L
	Specification Fluorescence (as Quinine at 450 nm). 1.10-7 g max. Non-volatile matter.....5 mg/L max. Filtered through 0.2 µm pH ..... 5,0 - 8,0 Ca .....0.1 ppm max. K .....0.1 ppm max. Mg .....0.1 ppm max. Na .....0.1 ppm max. Transmission at 200 nm - 400 nm..... 99 % min.	

Solvent mixtures

SO-9534-B040	Mixture Cyclohexane/Ethylacetate 1:1	4 L
	Specification GC/ECD In the GC-ECD chromatogram there are no interfering single signals in the retention time interval between 1,4-dichlorobenzene and decachlorobiphenyl, by a 500-fold concentration greater than that, given by 10 pg/mL heptachlor-epoxide. GC/FID In the GC-FID chromatogram there are no interfering single signals in the retention time interval between n-octane (C8) and n-tetracontane (C40), by a 500-fold concentration greater than that, given by 50 ng/mL n-undecane (C11).	

Trademarks

CERTAN®, **Promochem®**, **Optigrade®**, **Cyclotainer®**, **Picograde®** - LGC Standards GmbH

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Standard Reference Material®, **SRMs®** - NIST National Institute of Standards and Technology

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SpectroMembrane®, **SpectroPellet®**, **SpectroMicro® and Trimless™** - Chemplex Industries inc.

Bromkal - Chemische Fabrik Kalk GmbH.

DE-71® - Chemtura (Great Lakes Chemical Company).

DE-79® - Chemtura (Great Lakes Chemical Company).

Saytex® - Albemarle Corporation.

PESTANAL®, **OEKANAL®**, **VETRANAL®** - Sigma Aldrich

eVol®, **XCHANGE®** - SGE Analytical Science

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LGC Standards

Excellence through measurement

UKCCF
UK Chemical Calibration Facility

The UK Chemical Calibration Facility (UKCCF) at LGC

The UK Chemical Calibration Facility (UKCCF) at LGC has been set up to help organisations involved in chemical analysis make accurate and traceable measurements.

LGC's internationally recognised analytical scientists with a unique combination of state-of the-art chromatography and mass spectrometry methods, are able to offer a range of highly specialist calibration and measurement services and advice to:

- Calibration service providers
- Proficiency testing scheme organisers
- Reference material producers
- Standards and regulatory bodies
- Quality laboratories.

The facility is part of the UK's designated National Measurement Institute for chemical and bioanalytical measurements.

The UKCCF provides advice and solutions to a wide range of quality and measurement issues:

- Confirmation of product specification against standards and regulations;
- Independent verification of in-house quality control materials;
- Compliance with quality standards such as ISO/IEC 17025, GLP/GMP, ISO 9001, ISO 15189;
- Dispute resolution e.g. product specification and quality;
- Problem solving e.g. reliable identification of measurement bias;
- Credibility and confidence to compete in the international market place.

For further information, please contact:

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LGC Standards

Excellence through measurement

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