Cambridge Isotope Laboratories, Inc.

isotope.com

Standards for **Environmental, Food, Water** and **Exposure Analysis**

Solutions for a Greener World

Environmental Contaminant Standards from CIL

Joel Bradley, PhD
Chief Executive Officer

Cambridge Isotope Laboratories, Inc. (CIL) is pleased to present its newest catalog of isotopically labeled and unlabeled standards designed to optimize environmental, food, water, and exposure analyses.

For the past 35 years, CIL has been the world's leading supplier of isotope-labeled standards to leading environmental analytical laboratories. In that time there have been substantial changes in the nature of analytical standards, and the nature of stakeholders who rely on isotopically labeled standards for rigorous analysis using isotope dilution mass spectrometry (IDMS).

Perhaps the most significant change has been in the markets CIL serves. CIL's customer base was once dominated by a handful of labs using high-resolution gas chromatography–mass spectrometry (HRGC-MS) to measure, with increasingly lower quantitation limits, the presence of dioxins, PCBs, priority pollutants, and legacy pesticides such as DDT in soil, water, air, and biota. These important analyses continue, but the scope of work has expanded rapidly into areas such as food, drinking water, and human-exposure testing. Target analytes have expanded in all directions to include compounds that were of interest to only a few visionaries in the early 1980s. Flame retardants, organophosphate (OP) pesticides, and pharmaceutical and personal care products (PPCPs), just to name a few, were just coming on to the radar at the turn of the millennium and now represent a significant portion of CIL's product offerings in the trace and ultratrace analytical arena.

CIL's latest efforts include many novel developments on compounds that have been targeted for decades, such as polyaromatic compounds (PACs) and polychloronaphthalenes (PCNs), as well as compounds of emerging concern such as perfluorinated compounds (PFCs) and bisphenols (A, S, F, AF, E, P, AP and Z). CIL has also been developing many isotopically labeled standards for new-use pesticides, including several key neonicotinoid insecticides that are under investigation for potential contribution to colony collapse disorder (CCD) in honey bee populations, fipronil and pyrethroids used in indoor pest-control applications, and metabolites, byproducts, and decomposition products that are potential biomarkers.

So whether you analyze legacy POPs compounds or are studying compounds of emerging concern, CIL is committed to producing the critical standards needed by the global analytical community to discover, track, quantify, and, ultimately, help resolve contamination and exposure problems.

Joel C. Bradley, PhD
Chief Executive Officer

Table of Contents

Table of Contents

Table of Contents

A Few Words from the Environmental Products Team

Cambridge Isotope Laboratories, Inc. (CIL) is very pleased to present its latest catalog of "Standards for Environmental, Food, Water, and Exposure Analysis." As you may have noticed, the first new change in this catalog is the title itself. CIL recognizes that many organic contaminants are not only environmental pollutants, but may also be food and water contaminants, and ultimately compounds of concern in human exposure studies. As our product lines continue to grow, we find our standards being used not only as "environmental" contaminant standards, but increasingly in these interrelated applications and sample matrices. So whether you are testing PCBs in sediment, pesticides or dioxins and furans in food and feed, PPCPs in industrial effluent, flame retardants in house dust, or PAHs and tobacco metabolites in biomonitoring studies, you will find an extensive set of standards in the following pages to meet your analytical needs.

As new technologies and applications to study environmental, food, water, and exposure contaminants advance, CIL continues to maintain a leadership role working with researchers to develop new standards to meet the latest needs. With new instrumentation and extraction procedures allowing detection limits approaching attogram levels in some cases, the need for highly accurate isotope standards has never been greater. In this catalog you will find approximately 600 *new* standards for legacy and emerging compounds. A partial list of the recently developed projects includes:

- New combined dioxin/furan/PCB mixtures
- New ^{13}C-labeled PAHs, PAH metabolites, and PAH standard mixtures
- Expanded offering of ^{13}C-labeled and unlabeled PCNs and PCN mixtures
- Many new ^{13}C-labeled pesticides, including fipronil and neonicotinoid insecticides
- Augmented list of toxaphene congeners, and new EPA Method 8276 standard mixtures
- Expanded set of tobacco-specific nitrosamines
- PFOS and other PFCs
- New ^{13}C-labeled and unlabeled cyclic methyl siloxanes
- Bisphenol S and other bisphenol analogs
- Expanded phthalate monoester offerings
- New brominated, chlorinated, and phosphate flame retardants
- ^{13}C-labeled short-chain chlorinated paraffins
- Various biomarker compounds and metabolites for exposure analysis

You can find all of this valuable information and more online as well. CIL launched a new website in 2014 to provide a more user-friendly experience when searching for product information, placing orders and quote requests, and keeping up to date with the latest news and information from CIL. As part of the interactive approach, visitors to our website can immediately access updated product information and documentation, such as a certificate of analysis (CoA) and safety data sheets (SDS), and can also find real-time product availability as part of our e-commerce functionality. An online version of this catalog can be accessed in the "Literature Library" section of the "Sales and Technical Support" tab. The Literature Library also includes newsletters, application notes, and new product "Spotlights." Visit www.isotope.com to see more.

So please take a look through our new catalog and enjoy the information provided, as well as our newly expanded listings of "Standards for Environmental, Food, Water, and Exposure Analysis!"

Environmental Products Team

Ben Priest
Business Development Manager

Terry Grim
Regional Sales Manager – North America, Latin America and Japan

Kayla Meehan
Sales and Marketing Coordinator

Corporate Overview

CIL is the world leader in the separation and manufacture of stable (nonradioactive) isotopes and isotope-labeled compounds.

With over 400 employees and laboratories in four countries, CIL specializes in the process of labeling biochemical and organic compounds with highly enriched stable isotopes of carbon, hydrogen, nitrogen and oxygen. Our chemists substitute a common atom for a rare, highly valued isotopic component so that the final product can be readily measured or traced using mass spectrometry (MS) or nuclear magnetic resonance (NMR). CIL's products are utilized in laboratories, health care facilities, and medical, government and academic research centers worldwide. We are proud that CIL products have contributed to medical advancements in cancer research, new drug development, environmental and food analysis, genomics and proteomics, and medical diagnostic research.

CIL's vision began when it was founded in 1981 by Dr. Joel Bradley, an organic chemist from MIT. Drawing on a commitment to high-quality products, superior customer service, innovative new products and breadth of product lines, CIL quickly emerged as a leader in its field. CIL now produces more than 15,000 products and has ISO 13485, ISO/IEC 17025 and ISO Guide 34 quality systems, as well as cGMP production capabilities. The CIL group is comprised of five companies: Cambridge Isotope Laboratories, Inc. (CIL) and CIL Isotope Separations (CIS) in the United States; CIL Canada, Inc. in Montreal, Canada; Euriso-Top in Saclay, France; and ABX GmbH in Dresden, Germany.

CIL has worked closely with industry leaders and researchers to provide stable isotope-labeled tools needed for improved quantitation of complex systems. This has been particularly true in the last decade, when many innovative techniques for determining biomarkers for the presence, progression and monitoring of therapeutic response have emerged from the fields of MS-based proteomics and metabolomics.

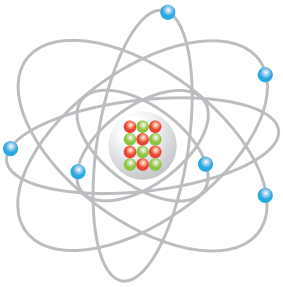
CIL takes great pride in being able to offer a wide range of NMR solvents with the highest isotopic enrichment and chemical purity. All NMR solvents undergo thorough quality-control testing during the manufacturing and packaging process to verify that product quality is maintained. Continuous improvement and high-quality standards make CIL the preferred supplier to synthesis groups and CROs/CMOs worldwide.

For more than 35 years, CIL has provided stable isotope-labeled standards for the analysis of organic contaminants using isotope dilution mass spectrometry (IDMS). The use of IDMS is widely accepted as an extremely accurate and robust analytical technique, yielding data of the highest quality. Through the years, CIL collaborations with leading researchers have led to development of novel products to help address new environment issues. From the early 1980s working with government laboratories to develop the first commercially available standards for use in the accurate determination of dioxins and furans in people exposed to Agent Orange, to the mid-1990s collaborating with groups around the world to develop new brominated diphenyl ether flame-retardant standards, to the recent development of of labeled standards for fipronil and neonicotinoid insecticides to assist researchers studying bee colony collapse disorder, CIL continually assists researchers studying important global issues.

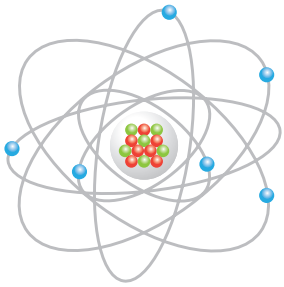
Dr. Bradley and the CIL executive team all share the same commitment to quality and service. CIL's experts collaborate with all of their customers to aid in pivotal research that is being conducted in laboratories worldwide. Our partnerships not only help to support our global reach, but allow us to bring forward innovative products to aid our customers' pursuit of scientific discovery.

What Is an Isotope?

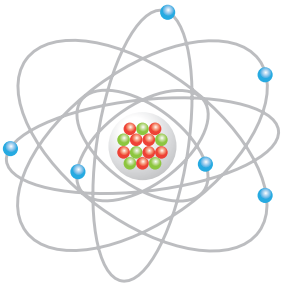
An isotope is any of two or more forms of a chemical element that has a different number of neutrons in the nucleus. There are 275 stable isotopes of the 81 nonradioactive elements, in addition to over 800 radioactive isotopes. Every element has known isotopic forms. Isotopes of a single element possess almost identical chemical properties.



Carbon-12
stable

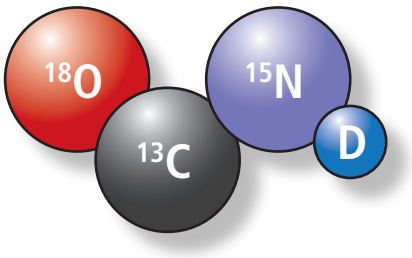


Carbon-13
stable



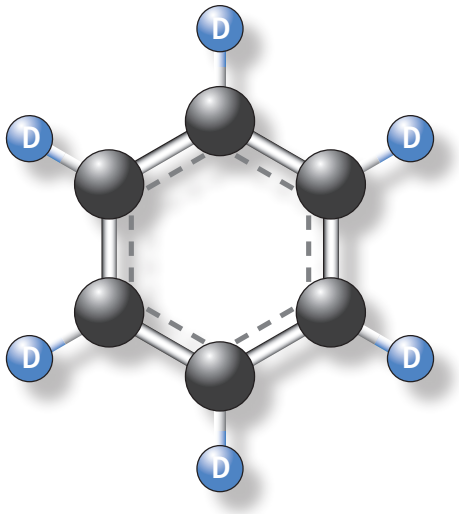
Carbon-14
unstable
(radioactive)

Proton Neutron Electron



Isotopic Enrichment

Isotopic enrichment is the average enrichment for each labeled atom in the molecule. It is not the percentage of molecules that are completely isotopically labeled. For instance, benzene (D_6, 99%) is not 99% C_6D_6 and 1% C_6H_6. Each of the six hydrogen atoms has a 99% chance of being a deuterium atom (^2H = D), and a 1% chance of being protium (^1H). Thus, $(99\%)^6$, or about 94% of the benzene molecules, will have a molecular mass that is six atomic mass units (amu) higher than native (unlabeled) benzene. About 6% will have a molecular mass that is 5 amu higher than native benzene. Theoretically, only $(1\%)^6$, or about 10^{-10}%, will have the molecular mass of native benzene.



Benzene (D_6, 99%)

Cambridge Isotope Laboratories, Inc. Facilities

CIL has state-of-the-art production facilities for cGMP and non-cGMP manufacturing at its locations in Andover and Tewksbury, Massachusetts.

CIL World Headquarters and cGMP Production Laboratories Tewksbury, MA USA

CIL moved into its new Tewksbury, Massachusetts, facility in the spring of 2013. As the new corporate headquarters, this facility houses the executive team, as well as sales, marketing, finance, regulatory affairs and cGMP production staff. In addition to corporate office space, the facility has a state-of-the-art cGMP suite, which includes production laboratories, dedicated isolation rooms, a dedicated analytical laboratory, a packaging laboratory and a development laboratory.

CIL Production Laboratories Andover, MA USA

CIL's primary production facility in Andover, Massachusetts, is dedicated to the manufacture of deuterated NMR solvents, stable isotope-labeled chemicals and gases, as well as specific cGMP products. This facility is home to operations staff and production and quality-control teams.

The formulations group has over 30 years' experience formulating highly purified labeled materials into high-quality quantitative solutions as analytical standards, either as single-component products or multi-component mixes and calibration solutions.

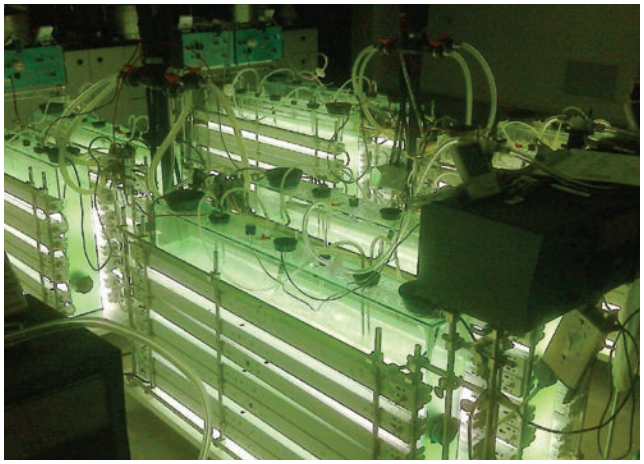
The quality-control lab is equipped with a wide array of instrumentation, including gas chromatograph/mass spectrometers (GC/MS), high-field NMRs, HPLCs and an FT-IR. CIL's chemistry laboratories are equipped with apparatus for both large-scale (50+ liters) and microscale chemistry, which includes equipment for high-pressure gas reactions, pH and temperature-controlled enzyme chemistry, high-resolution distillation processes, and catalytic reduction with both hydrogen and deuterium. The production laboratories are also equipped with analytical equipment for in-process testing, including GC-FID, GC-ECD and HPLC with UV, RI, ELSD and MS detectors. All of these resources allow CIL to consistently produce products with high chemical and isotopic purity.

CIL Isotope Separations, LLC (CIS)
Xenia, OH USA

CIL is the world leader in the separation of ^{13}C and ^{18}O. CIL separates both ^{13}C and ^{18}O at its Xenia, OH, facility and has the world's largest production capacity for both ^{13}C and ^{18}O. CIL also has the only nongovernmental D_2O enrichment columns in the world located at its CIS facility.

Euriso-Top
Saclay, France

Euriso-Top was founded in January 1991 by a group of researchers from the Commissariat à l'Energie Atomique (CEA). Euriso-Top is Europe's leading producer of deuterated NMR solvents, cGMP urea and stable isotope-labeled compounds. Its quality control and production laboratories are equipped with NMR, MS, HPLC, GC, IR and UV instruments.



CIL Canada, Inc.
Montreal, Canada

CIL Canada, Inc. is CIL's biotech laboratory facility, which produces carbohydrates, enriched media and amino acids for drug-discovery applications. CIL Canada specializes in algal biosynthesis, including spirulina, chlorella and a variety of other algal strains for NMR and proteomics applications.

ABX GmbH
Dresden, Germany

ABX is the world's leading supplier of ^{18}F positron emission tomography (PET) precursors, reagent kits and cassettes, including, but not limited to, kits for FDG, FLT, F-choline, NaF, F-Miso and FET. ABX specializes in the manufacture and development of chemicals for nuclear medicine, and its cGMP-approved laboratories, class 100 clean rooms and cGMP radiochemistry development hot lab uniquely position ABX to provide complete PET and SPECT chemistry solutions to radiochemists and radiopharmacists worldwide. ABX's radiochemistry hot lab is equipped with most of the leading commercial PET tracer synthesis boxes and allows ABX to assist customers with the optimization and development of new tracers.

Ordering Information

Placing an Order

Phone: 1.800.322.1174 (North America) or 1.978.749.8000 (International) Office hours are 8:00 a.m. to 5:30 p.m. Eastern Standard Time (EST)
Fax: 1.978.749.2768
Email: envsales@isotope.com (North America) intlsales@isotope.com (International)
E-commerce: Visit http://shop.isotope.com to request a quote, place orders, obtain product information or submit technical questions.

CIL products are continually updated on the website so be sure to visit http://shop.isotope.com for current information.

Please help us to expedite the shipment of your order by including the following information:

- Shipping address, including street
- Billing address
- Purchase order number or credit card information
- CIL catalog number and product name
- Quantity: mg (milligrams), g (grams), kg (kilograms), mL (milliliters), L (liters), etc., as applicable, including number of units
- Catalog price or CIL quotation number with date given
- Special instructions for packaging or shipping
- Your name, phone number and email address
- End user name, phone number and email address (if different)
- Preferred mode of shipping (e.g. FedEx or UPS)
- $50 minimum order

We do not require written confirmation of phone orders for established customers.

First-Time Orders

If ordering for the first time, please email or fax the following information on company letterhead to establish a line of credit with a copy of your order:

- A federal tax identification number
- Three credit/banking references

Also include your shipping address, billing address, phone, fax, email and URL address.

To expedite delivery of your first order, prepayment should be made by credit card or wire transfer in US funds.

Pricing Information and Terms of Sale

North American Orders

- All prices are in US dollars. Any importation costs for international orders are not included. Please consult our Customer Service Department for pricing information or packaging options.
- When stock is available and subdivision is possible, we will accept orders for smaller than catalog amounts. Please request a quotation as a quantity discount may apply.
- Please note that prices are subject to change without notice. Occasionally the inventory of some products listed may become depleted. Replacement of stock may be subject to a minimum order quantity.
- You may check stock and confirm prices by contacting the CIL Customer Service Department at 1.800.322.1174 (North America only) or envsales@isotope.com.
- CIL will be pleased to assist customers with firm written quotations. Most quotes are valid for 30-60 days. Longer terms may be granted by CIL upon request.
- Net 30 days from invoice date with prior credit approval. Past-due invoices will be subject to a 1.5% per month service charge; 18% per annum. We reserve the right to request payment in advance or COD terms on initial orders with CIL.
- We also accept VISA, MasterCard, American Express and university purchasing card orders.
- Shipping terms are FCA Andover, MA USA. Any damage to the package or product in transit is the buyer's responsibility to adjust with the carrier.
- Domestic shipping charges will be added to invoices (unless collect shipment is requested).

International Orders

- CIL has an extensive international sales network of over 33 representatives in 27 different countries.
- For international orders or quotations, please contact CIL International Sales at intlsales@isotope.com or +1.978.749.8000. For a complete distributor listing, please visit isotope.com.
- Representatives and agents are available to assist you with your requirements for our products. Please consult your local CIL representative for appropriate pricing and payment terms. Shipping charges and any applicable import duties and taxes will be added to orders placed with distributors.
- For direct orders, CIL generally requires prepayment in US dollars by an international bank check or bank wire transfer. We will be pleased to provide *pro forma* invoices upon request. Shipping charges will be added to direct orders. Any applicable import duties and taxes will be charged to the purchaser by the shipping company or customs agent.
- Shipping terms are FCA Andover, MA USA. Any damage to the package or product in transit is the buyer's responsibility to adjust with the carrier.

Shipping Information

USA

- Shipments within the United States will be sent via UPS, FedEx, or truck.
- Orders within the United States for in-stock items placed before 2 p.m. EST can ship the same day via FedEx.

Canada

- Canadian shipments will be sent via FedEx or truck.
- Please include the name of your customs broker.
- Orders to Canada for in-stock items will ship one to two working days after receipt of purchase order.
- There are handling charges for orders of hazardous materials shipped via FedEx.

International

- International shipments will be sent via FedEx or best method.
- CIL tries to be as cost effective as possible, but the carrier may assess additional charges.

We will accommodate your shipping instructions whenever it is feasible to do so. CIL reserves the right to change the method of transportation, if required, to comply with transportation regulations. Such a change would not alter your responsibility for payment of shipping charges. Additional shipping charges may apply.

Return Shipment Policy

Returns may be made within 30 days of shipment with prior approval from CIL. We reserve the right to impose restocking charges when a return is at the sole option of the buyer. The buyer is responsible for approving the quality and quantity of any product within the 30-day period stated above. If an error by CIL results in an incorrect or duplicate shipment, a replacement will be sent or the appropriate credit allowed. We typically request return of the original product. Product returns must reference the original purchase order number, CIL order number (e.g. DB-A1000), Returned Goods Authorization (RGA) number, and the date CIL authorized the return. Under no circumstances will credit or replacement be given for products without prior authorization by CIL.

Product Information

Documentation

A Certificate of Analysis (COA) and a Safety Data Sheet (SDS) are supplied with every shipment. Additional product information may be available upon request.

The chemical purity (CP) specification for CIL products is 98% unless otherwise indicated.

Limited Warranty

CIL represents that the products are, as of the date of shipment, as described in CIL's applicable product literature. CIL makes no other warranty, express or implied, with respect to its products, including any warranty of merchantability or fitness for any particular purpose. CIL's maximum liability for any reason shall be to replace any nonconforming product or refund the applicable purchase price.

Environmental Food, Water, and Exposure Products Information

There are potential hazards associated with the use of any chemical, and CIL's environmental, food, water and exposure analysis standards may require additional considerations. Customers are encouraged to consult standard safety references for the proper use and handling of CIL products. While every effort was made to ensure the information in this catalog is correct, users of CIL products are responsible for confirming product information.

Neat Standards

Neat/crystalline standards contain approximately the stated mass, as crystal sizes and static electricity may make it difficult to weigh exact milligram quantities. Stated weights should not be used to prepare quantitative standards. Material should be weighed 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.

Quantitative Solutions

Quantitative standard solutions are prepared to be within ± 2% of the stated concentration, unless otherwise stated on the COA. 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.

Chemical Purities

- Chemical purities of unlabeled/native standards are 97-99+% unless otherwise specified.
- Chemical purities of labeled standards are 95-99+% unless otherwise specified.

Isotopic Enrichment

Isotopic enrichments specifications for labeled standards are 98-99% for ^{13}C-labeled atoms, 97-98% for deuterium-labeled atoms, and 96% for ^{37}Cl-labeled atoms, unless otherwise specified (refer to product CoA for actual isotopic enrichment). Other isotopic enrichments such as ^{15}N and ^{18}O are on a case-by-case basis.

Solvents Used in Quantitative Solutions

For many years, virtually all of CIL's standards were prepared in nonane or isooctane, solvents that CIL buys in bulk as spectrophotometric grade, and then distills even further to make suitable for ultra-trace analysis.

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 MTBE, acetonitrile, methanol, and even water. Many of these standards are unstable in certain solvents, so CIL carefully chooses solvents that are optimal 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 to enable better 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.

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

CIL 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 instructions.

- CIL's expiration date becomes irrelevant once a standard has been opened and 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 they may be shipped with less than one year remaining when products have shorter shelf lives.

Environmental Food, Water, and Exposure Products Information *(continued)*

Additional Information

24-Hour Emergency Response

CIL and its direct subsidiary CIL Isotope Separations, LLC, are registered with Emergency Response CHEMTREC®. In the event of a chemical-transportation emergency, CHEMTREC® provides immediate advice for those at the scene of emergencies, then promptly contacts the shipper of the chemicals for more detailed assistance and appropriate follow-up. CHEMTREC® operates 24 hours a day, seven days a week to receive emergency calls. In the case of chemical-transportation emergencies, call one of the following numbers:

Continental United States: 1.800.424.9300
Outside of Continental USA: 1.703.527.3887 (this number may be called collect)

CHEMTREC is a registered trademark of American Chemistry Council, Inc.

Packaging Information

Solids

Solids are packaged in 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 some 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.

Quality Standards

ISO/IEC 17025


ACLASS
CERTIFICATE OF ACCREDITATION
ANSI-ASQ National Accreditation Board/ACLASS
Cambridge Isotope Laboratories, Inc.
50 Frontage Road
Andover, MA 01810
ISO/IEC 17025:2005
TESTING

Accreditation to ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories" addresses technical competency of the testing laboratory and specifically, a laboratory's ability to produce precise and accurate test and calibration data. While designed to be applicable to laboratories running third-party samples, accurate test results are critical to the proper characterization of reference materials and, therefore, relevant to reference material producers.

ISO Guide 34


ACLASS ANSI-ASQ National Accreditation Board/ACLASS

Accreditation to ISO Guide 34 "General Requirements for the Competence of Reference Material Producers" is designed to ensure competency in the manufacture of reference materials and assurance that international guidelines are followed in the production and assignment of material property values. Accreditation to ISO Guide 34 involves not only technical competence and good quality management practices but adds verification of critical production management specific to reference material producers.

Regulatory and Labeling Information

GHS Objectives

The objective of GHS (Globally Harmonized System of Classification and Labeling of Chemicals) is to create an internationally recognizable system for HazCom standards, establish a standard format for hazard communication and support the trade of chemicals for international exchange.

Material Safety Data Sheets (MSDS) are now referred to as Safety Data Sheets (SDS). The SDS functions as an MSDS for ISO, EU and ANSI requirements:

- Most comprehensive information source
- More hazards, including environmental hazards, are now included
- Provides advice and safety precautions
- Product focused; not workplace or task specific
- Written and supplied by manufacturer

Chemical manufacturers/importers/exporters are still responsible for providing information about the identities and hazards of chemicals. All employers using chemicals within their operations are still required to have a hazard communication program.

GHS Hazard Pictograms and Related Hazards Classes

		
Exploding Bomb • Explosives • Self-reactives • Organic peroxides	**Corrosion** • Skin corrosion/burns • Eye damage • Corrosive to metals	**Flame Over Circle** • Oxidizing gases • Oxidizing liquids • Oxidizing solids
		
Gas Cylinder • Gases under pressure	**Environment** • Aquatic toxicity	**Skull and Crossbones** • Acute toxicity (fatal or toxic)
		
Exclamation Point • Irritant (eye and skin) • Skin sensitizer • Acute toxicity • Narcotic effects • Respiratory tract irritant • Hazardous to ozone layer (nonmandatory)	**Health Hazard** • Carcinogen • Mutagenicty • Reproductive toxicity • Respiratory sensitizer • Target organ toxicity • Aspiration toxicity	**Flame** • Flammables • Pyrophorics • Self-heating • Emits flammable gas • Self-reactives • Organic peroxides

CIL Labels

Our labels include:

- Product name and description
- Health and safety information
- Lot-specific number
- Package size
- Pictograms for hazard recognition
- CAS numbers
- Storage information
- Packaging number
- Catalog number

Dioxins and furans are organic pollutants that can be found as byproducts in commercial organochloride pesticide formulations, chlorine-bleached pulp and paper products, and incineration of organic material in the presence of chlorine. Dioxins are persistent in the environment, bioaccumulate in humans and animals, and suspected to be teratogenic, mutagenic, and carcinogenic.

Dioxin and Furan Reference Standards Preparation

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 ^{13}C 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 five-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 ^{13}C analog. Finally, homogeneity is ensured 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%.

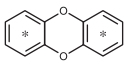
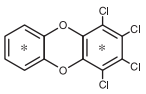
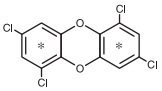
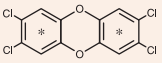
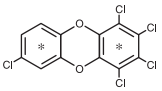
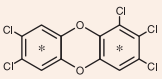
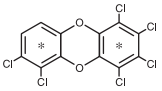
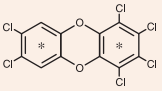
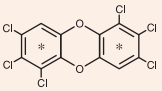
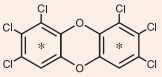
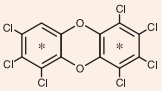
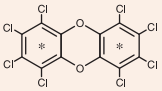
Unlabeled Chlorodioxin/Furan Standards for Elution Profiling

CIL offers the only set of all 136 tetra-octa chlorinated dioxin and furan congeners. These qualitative standards are available as ~25 ng/mL solutions in nonane and are used primarily for elution profiling and peak identification. Researchers can utilize this full suite of standards to help identify unknown peaks in their chromotograms and to fully assess samples in environmental forensic cases. Homolog group kits are available, as is a suite of all 136 congeners. See pages 24-25 for full product listings.

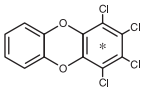
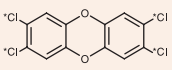
Brominated Dioxin and Furan Individual Standards

In an effort to counteract the effects of low-solubility common to many of the higher homolog brominated dioxins and furans, CIL and Cerilliant have reformulated many of these compounds in a cosolvent solution of 70% nonane with 30% toluene. And while most of the brominated dioxins and furans are already formulated at just 5 µg/mL, as detection limits continue to decrease with advances in instrumentation and cleanup procedures, CIL now offers these products as 1.2 mL units.

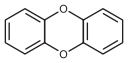
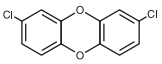
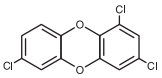
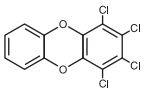
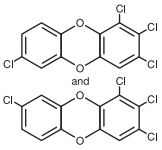
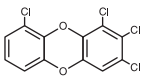
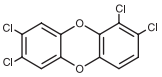
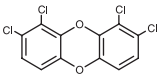
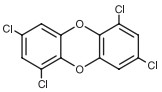
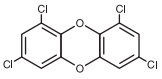
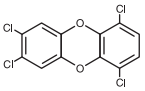
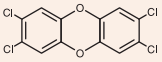
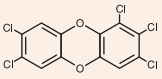
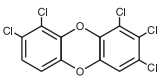
$^{13}C_{12}$-Labeled Chlorodioxin Standards

Catalog No.	Compound	Structure	Concentration	Amount
CLM-1544-1.2	Dibenzo-*p*-dioxin ($^{13}C_{12}$, 99%)		50 ± 5 µg/mL in nonane	1.2 mL
ED-911 ED-911-1	1,2,3,4-Tetrachlorodibenzo-*p*-dioxin ($^{13}C_{12}$, 99%)		50 ± 2.5 µg/mL in nonane 1 ± 0.05 µg/mL in nonane	1.2 mL 1.2 mL
ED-4198	1,3,6,8-Tetrachlorodibenzo-*p*-dioxin ($^{13}C_{12}$, 99%)		50 ± 5 µg/mL in nonane	1.2 mL
ED-900	2,3,7,8-Tetrachlorodibenzo-*p*-dioxin ($^{13}C_{12}$, 99%)		50 ± 2.5 µg/mL in nonane	1.2 mL
ED-4076	1,2,3,4,7-Pentachlorodibenzo-*p*-dioxin ($^{13}C_{12}$, 99%)		5 ± 0.5 µg/mL in nonane	1.2 mL
ED-955	1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin ($^{13}C_{12}$, 99%)		50 ± 2.5 µg/mL in nonane	1.2 mL
ED-4077	1,2,3,4,6,7-Hexachlorodibenzo-*p*-dioxin ($^{13}C_{12}$, 99%)		5 ± 0.5 µg/mL in nonane	1.2 mL
ED-946	1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin ($^{13}C_{12}$, 99%)		50 ± 2.5 µg/mL in nonane	1.2 mL
ED-966	1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin ($^{13}C_{12}$, 99%)		50 ± 2.5 µg/mL in 80% nonane/20% toluene	1.2 mL
ED-996	1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin ($^{13}C_{12}$, 99%)		50 ± 2.5 µg/mL in 80% nonane/20% toluene	1.2 mL
ED-972	1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin ($^{13}C_{12}$, 99%)		50 ± 2.5 µg/mL in nonane	1.2 mL
ED-981	Octachlorodibenzo-*p*-dioxin ($^{13}C_{12}$, 99%)		10 ± 0.5 µg/mL in nonane	4 × 1.2 mL

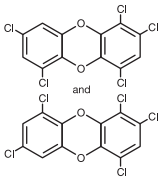
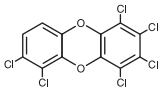
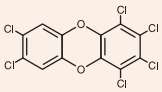
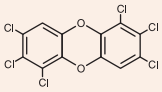
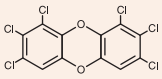
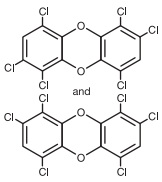
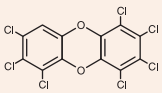
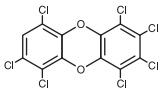
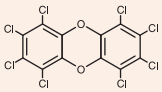
$^{13}C_6$- and $^{37}Cl_4$-Labeled Chlorodioxin Standards

Catalog No.	Compound	Structure	Concentration	Amount
ED-910	1,2,3,4-Tetrachlorodibenzo-*p*-dioxin ($^{13}C_6$, 99%)		50 ± 5 µg/mL in nonane	1.2 mL
ED-907	2,3,7,8-Tetrachlorodibenzo-*p*-dioxin ($^{37}Cl_4$, 96%)		50 ± 5 µg/mL in nonane	1.2 mL

Unlabeled Chlorodioxin Standards

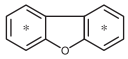
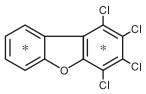
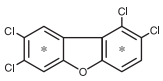
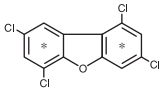
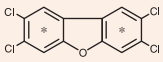
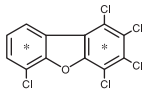
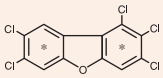
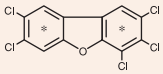
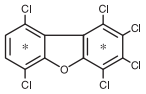
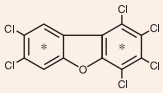
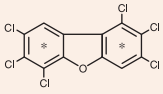
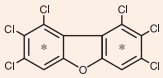
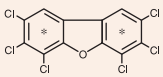
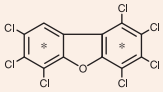
Catalog No.	Compound	Structure	Concentration	Amount
ULM-1711-1.2	Dibenzo-*p*-dioxin		50 ± 5 µg/mL in nonane	1.2 mL
ED-5568	2,8-Dichlorodibenzo-*p*-dioxin		50 ± 5 µg/mL in nonane	1.2 mL
ED-4090	1,3,7-Trichlorodibenzo-*p*-dioxin		50 ± 5 µg/mL in nonane	1.2 mL
ED-912	1,2,3,4-Tetrachlorodibenzo-*p*-dioxin		50 ± 2.5 µg/mL in nonane	1.2 mL
ED-905	1,2,3,7-Tetrachlorodibenzo-*p*-dioxin/ 1,2,3,8-Tetrachlorodibenzo-*p*-dioxin isomer pair		50 ± 5 µg/mL in nonane	1.2 mL
ED-948	1,2,3,9-Tetrachlorodibenzo-*p*-dioxin		50 ± 5 µg/mL in nonane	1.2 mL
ED-915	1,2,7,8-Tetrachlorodibenzo-*p*-dioxin		50 ± 5 µg/mL in nonane	1.2 mL
ED-916	1,2,8,9-Tetrachlorodibenzo-*p*-dioxin		50 ± 5 µg/mL in nonane	1.2 mL
ED-2518	1,3,6,8-Tetrachlorodibenzo-*p*-dioxin		50 ± 5 µg/mL in nonane	1.2 mL
ED-4061	1,3,7,9-Tetrachlorodibenzo-*p*-dioxin		50 ± 5 µg/mL in nonane	1.2 mL
ED-922	1,4,7,8-Tetrachlorodibenzo-*p*-dioxin		50 ± 5 µg/mL in nonane	1.2 mL
ED-901 ED-901-A ED-901-B ED-901-C ED-901-D	2,3,7,8-Tetrachlorodibenzo-*p*-dioxin		50 ± 2.5 µg/mL in nonane 10 ± 1 µg/mL in methanol 50 ± 5 µg/mL in DMSO crystalline solid 32 ± 4 pg/µL in DMSO (100 nM)	4 × 1.2 mL 1.2 mL 1.2 mL 1 mg 0.2 mL
ED-950 ED-950-C	1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin		50 ± 2.5 µg/mL in nonane crystalline solid	1.2 mL 1 mg
ED-924	1,2,3,8,9-Pentachlorodibenzo-*p*-dioxin		5 ± 0.5 µg/mL in nonane	1.2 mL

Unlabeled Chlorodioxin Standards

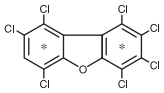
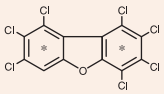
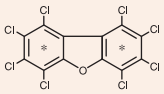
Catalog No.	Compound	Structure	Concentration	Amount
ED-927	1,2,4,6,8-Pentachlorodibenzo-*p*-dioxin/ 1,2,4,7,9-Pentachlorodibenzo-*p*-dioxin isomer pair		5 ± 0.5 µg/mL in nonane	1.2 mL
ED-932	1,2,3,4,6,7-Hexachlorodibenzo-*p*-dioxin		5 ± 0.5 µg/mL in nonane	1.2 mL
ED-961	1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin		50 ± 2.5 µg/mL in nonane	1.2 mL
ED-960 ED-960-C	1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin		50 ± 2.5 µg/mL in nonane crystalline solid	1.2 mL 1 mg
ED-969 ED-969-C	1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin		50 ± 2.5 µg/mL in nonane crystalline solid	1.2 mL 1 mg
ED-929	1,2,4,6,7,9-Hexachlorodibenzo-*p*-dioxin/ 1,2,4,6,8,9-Hexachlorodibenzo-*p*-dioxin isomer pair		5 ± 0.5 µg/mL in nonane	1.2 mL
ED-971	1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin		50 ± 2.5 µg/mL in nonane	1.2 mL
ED-976	1,2,3,4,6,7,9-Heptachlorodibenzo-*p*-dioxin		50 ± 5 µg/mL in nonane	1.2 mL
ED-980 ED-980-C	Octachlorodibenzo-*p*-dioxin		10 ± 0.5 µg/mL in nonane crystalline solid	4 × 1.2 mL 10 mg

Other isomers may be available on a special request basis; please inquire.

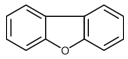
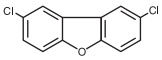
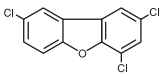
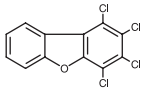
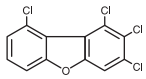
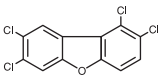
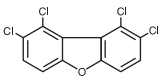
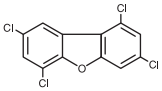
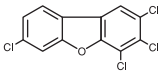
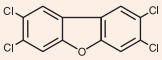
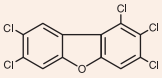
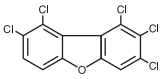
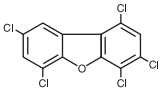
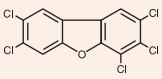
$^{13}C_{12}$-Labeled Chlorofuran Standards

Catalog No.	Compound	Structure	Concentration	Amount
CLM-1561-1.2	Dibenzofuran ($^{13}C_{12}$, 99%)		50 ± 5 µg/mL in nonane	1.2 mL
EF-920	1,2,3,4-Tetrachlorodibenzofuran ($^{13}C_{12}$, 99%)		50 ± 5 µg/mL in nonane	1.2 mL
EF-1438	1,2,7,8-Tetrachlorodibenzofuran ($^{13}C_{12}$, 99%)		50 ± 5 µg/mL in nonane	1.2 mL
EF-5009	1,3,6,8-Tetrachlorodibenzofuran ($^{13}C_{12}$, 99%)		50 ± 5 µg/mL in nonane	1.2 mL
EF-904	2,3,7,8-Tetrachlorodibenzofuran ($^{13}C_{12}$, 99%)		50 ± 2.5 µg/mL in nonane	1.2 mL
EF-5050	1,2,3,4,6-Pentachlorodibenzofuran ($^{13}C_{12}$, 99%)		50 ± 5 µg/mL in nonane	1.2 mL
EF-952	1,2,3,7,8-Pentachlorodibenzofuran ($^{13}C_{12}$, 99%)		50 ± 2.5 µg/mL in nonane	1.2 mL
EF-958	2,3,4,7,8-Pentachlorodibenzofuran ($^{13}C_{12}$, 99%)		50 ± 2.5 µg/mL in nonane	1.2 mL
EF-5052	1,2,3,4,6,9-Hexachlorodibenzofuran ($^{13}C_{12}$, 99%)		50 ± 5 µg/mL in nonane	1.2 mL
EF-963	1,2,3,4,7,8-Hexachlorodibenzofuran ($^{13}C_{12}$, 99%)		50 ± 2.5 µg/mL in nonane	1.2 mL
EF-985	1,2,3,6,7,8-Hexachlorodibenzofuran ($^{13}C_{12}$, 99%)		50 ± 2.5 µg/mL in nonane	1.2 mL
EF-986	1,2,3,7,8,9-Hexachlorodibenzofuran ($^{13}C_{12}$, 99%)		50 ± 2.5 µg/mL in nonane	1.2 mL
EF-987	2,3,4,6,7,8-Hexachlorodibenzofuran ($^{13}C_{12}$, 99%)		50 ± 2.5 µg/mL in nonane	1.2 mL
EF-974	1,2,3,4,6,7,8-Heptachlorodibenzofuran ($^{13}C_{12}$, 99%)		50 ± 2.5 µg/mL in nonane	1.2 mL

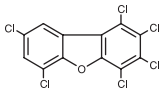
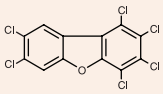
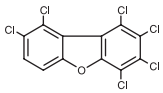
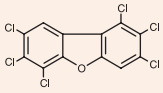
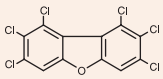
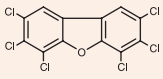
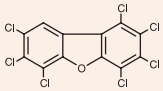
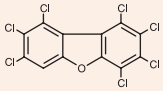
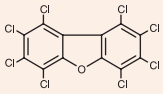
$^{13}C_{12}$-Labeled Chlorofuran Standards

Catalog No.	Compound	Structure	Concentration	Amount
EF-5054	1,2,3,4,6,8,9-Heptachlorodibenzofuran ($^{13}C_{12}$, 99%)		50 ± 5 µg/mL in nonane	1.2 mL
EF-988	1,2,3,4,7,8,9-Heptachlorodibenzofuran ($^{13}C_{12}$, 99%)		50 ± 2.5 µg/mL in nonane	1.2 mL
EF-983	Octachlorodibenzofuran ($^{13}C_{12}$, 99%)		50 ± 2.5 µg/mL in nonane	1.2 mL

Unlabeled Chlorofuran Standards

Catalog No.	Compound	Structure	Concentration	Amount
ULM-1712-1.2	Dibenzofuran		50 ± 5 µg/mL in nonane	1.2 mL
EF-1789	2,8-Dichlorodibenzofuran		50 ± 5 µg/mL in nonane	1.2 mL
EF-1793	2,4,8-Trichlorodibenzofuran		50 ± 5 µg/mL in nonane	1.2 mL
EF-921	1,2,3,4-Tetrachlorodibenzofuran		50 ± 5 µg/mL in nonane	1.2 mL
EF-4030	1,2,3,9-Tetrachlorodibenzofuran		50 ± 5 µg/mL in nonane	1.2 mL
EF-918	1,2,7,8-Tetrachlorodibenzofuran		50 ± 5 µg/mL in nonane	1.2 mL
EF-939	1,2,8,9-Tetrachlorodibenzofuran		50 ± 5 µg/mL in nonane	1.2 mL
EF-944	1,3,6,8-Tetrachlorodibenzofuran		50 ± 5 µg/mL in nonane	1.2 mL
EF-4031	2,3,4,7-Tetrachlorodibenzofuran		50 ± 5 µg/mL in nonane	1.2 mL
EF-903 EF-903-C	2,3,7,8-Tetrachlorodibenzofuran		50 ± 2.5 µg/mL in nonane crystalline solid	1.2 mL 1 mg
EF-953 EF-953-C	1,2,3,7,8-Pentachlorodibenzofuran		50 ± 2.5 µg/mL in nonane crystalline solid	1.2 mL 1 mg
EF-954	1,2,3,8,9-Pentachlorodibenzofuran		50 ± 5 µg/mL in nonane	1.2 mL
EF-942-50	1,3,4,6,8-Pentachlorodibenzofuran		50 ± 5 µg/mL in nonane	1.2 mL
EF-956 EF-956-C	2,3,4,7,8-Pentachlorodibenzofuran		50 ± 2.5 µg/mL in nonane crystalline solid	1.2 mL 1 mg

Unlabeled Chlorofuran Standards

Catalog No.	Compound	Structure	Concentration	Amount
EF-943-50	1,2,3,4,6,8-Hexachlorodibenzofuran		50 ± 5 µg/mL in nonane	1.2 mL
EF-964 EF-964-C	1,2,3,4,7,8-Hexachlorodibenzofuran		50 ± 2.5 µg/mL in nonane crystalline solid	1.2 mL 1 mg
EF-965	1,2,3,4,8,9-Hexachlorodibenzofuran		50 ± 5 µg/mL in nonane	1.2 mL
EF-962	1,2,3,6,7,8-Hexachlorodibenzofuran		50 ± 2.5 µg/mL in nonane	1.2 mL
EF-967	1,2,3,7,8,9-Hexachlorodibenzofuran		50 ± 2.5 µg/mL in nonane	1.2 mL
EF-968	2,3,4,6,7,8-Hexachlorodibenzofuran		50 ± 2.5 µg/mL in nonane	1.2 mL
EF-973	1,2,3,4,6,7,8-Heptachlorodibenzofuran		50 ± 2.5 µg/mL in nonane	1.2 mL
EF-975	1,2,3,4,7,8,9-Heptachlorodibenzofuran		50 ± 2.5 µg/mL in nonane	1.2 mL
EF-982 EF-982-C	Octachlorodibenzofuran		50 ± 2.5 µg/mL in nonane crystalline solid	1.2 mL 10 mg

Other isomers may be available on a special request basis; please inquire.

Unlabeled Chlorofuran Standards for Elution Profiling (Qualitative Solutions)

All concentrations are ~25 ng/mL in nonane

Catalog No.	Compound	Amount
JR-F01-25	1,2,3,4-TetraCDF	0.2 mL
JR-F02-25	1,2,3,6-TetraCDF	0.2 mL
JR-F03-25	1,2,3,7-TetraCDF	0.2 mL
JR-F04-25	1,2,3,8-TetraCDF	0.2 mL
JR-F05-25	1,2,3,9-TetraCDF	0.2 mL
JR-F06-25	1,2,4,6-TetraCDF	0.2 mL
JR-F07-25	1,2,4,7-TetraCDF	0.2 mL
JR-F08-25	1,2,4,8-TetraCDF	0.2 mL
JR-F09-25	1,2,4,9-TetraCDF	0.2 mL
JR-F10-25	1,2,6,7-TetraCDF	0.2 mL
JR-F11-25	1,2,6,8-TetraCDF	0.2 mL
JR-F12-25	1,2,6,9-TetraCDF	0.2 mL
JR-F13-25	1,2,7,8-TetraCDF	0.2 mL
JR-F14-25	1,2,7,9-TetraCDF	0.2 mL
JR-F15-25	1,2,8,9-TetraCDF	0.2 mL
JR-F16-25	1,3,4,6-TetraCDF	0.2 mL
JR-F17-25	1,3,4,7-TetraCDF	0.2 mL
JR-F18-25	1,3,4,8-TetraCDF	0.2 mL
JR-F19-25	1,3,4,9-TetraCDF	0.2 mL
JR-F20-25	1,3,6,7-TetraCDF	0.2 mL
JR-F21-25	1,3,6,8-TetraCDF	0.2 mL
JR-F22-25	1,3,6,9-TetraCDF	0.2 mL
JR-F23-25	1,3,7,8-TetraCDF	0.2 mL
JR-F24-25	1,3,7,9-TetraCDF	0.2 mL
JR-F25-25	1,4,6,7-TetraCDF	0.2 mL
JR-F26-25	1,4,6,8-TetraCDF	0.2 mL
JR-F27-25	1,4,6,9-TetraCDF	0.2 mL
JR-F28-25	1,4,7,8-TetraCDF	0.2 mL
JR-F29-25	1,6,7,8-TetraCDF	0.2 mL
JR-F30-25	2,3,4,6-TetraCDF	0.2 mL
JR-F31-25	2,3,4,7-TetraCDF	0.2 mL
JR-F32-25	2,3,4,8-TetraCDF	0.2 mL
JR-F33-25	2,3,6,7-TetraCDF	0.2 mL
JR-F34-25	2,3,6,8-TetraCDF	0.2 mL
JR-F35-25	2,3,7,8-TetraCDF	0.2 mL
JR-F36-25	2,4,6,7-TetraCDF	0.2 mL
JR-F37-25	2,4,6,8-TetraCDF	0.2 mL
JR-F38-25	3,4,6,7-TetraCDF	0.2 mL
JR-F39-25	1,2,3,4,6-PentaCDF	0.2 mL
JR-F40-25	1,2,3,4,7-PentaCDF	0.2 mL
JR-F41-25	1,2,3,4,8-PentaCDF	0.2 mL
JR-F42-25	1,2,3,4,9-PentaCDF	0.2 mL
JR-F43-25	1,2,3,6,7-PentaCDF	0.2 mL
JR-F44-25	1,2,3,6,8-PentaCDF	0.2 mL

Catalog No.	Compound	Amount
JR-F45-25	1,2,3,6,9-PentaCDF	0.2 mL
JR-F46-25	1,2,3,7,8-PentaCDF	0.2 mL
JR-F47-25	1,2,3,7,9-PentaCDF	0.2 mL
JR-F48-25	1,2,3,8,9-PentaCDF	0.2 mL
JR-F49-25	1,2,4,6,7-PentaCDF	0.2 mL
JR-F50-25	1,2,4,6,8-PentaCDF	0.2 mL
JR-F51-25	1,2,4,6,9-PentaCDF	0.2 mL
JR-F52-25	1,2,4,7,8-PentaCDF	0.2 mL
JR-F53-25	1,2,4,7,9-PentaCDF	0.2 mL
JR-F54-25	1,2,4,8,9-PentaCDF	0.2 mL
JR-F55-25	1,2,6,7,8-PentaCDF	0.2 mL
JR-F56-25	1,2,6,7,9-PentaCDF	0.2 mL
JR-F57-25	1,3,4,6,7-PentaCDF	0.2 mL
JR-F58-25	1,3,4,6,8-PentaCDF	0.2 mL
JR-F59-25	1,3,4,6,9-PentaCDF	0.2 mL
JR-F60-25	1,3,4,7,8-PentaCDF	0.2 mL
JR-F61-25	1,3,4,7,9-PentaCDF	0.2 mL
JR-F62-25	1,3,6,7,8-PentaCDF	0.2 mL
JR-F63-25	1,4,6,7,8-PentaCDF	0.2 mL
JR-F64-25	2,3,4,6,7-PentaCDF	0.2 mL
JR-F65-25	2,3,4,6,8-PentaCDF	0.2 mL
JR-F66-25	2,3,4,7,8-PentaCDF	0.2 mL
JR-F67-25	1,2,3,4,6,7-HexaCDF	0.2 mL
JR-F68-25	1,2,3,4,6,8-HexaCDF	0.2 mL
JR-F69-25	1,2,3,4,6,9-HexaCDF	0.2 mL
JR-F70-25	1,2,3,4,7,8-HexaCDF	0.2 mL
JR-F71-25	1,2,3,4,7,9-HexaCDF	0.2 mL
JR-F72-25	1,2,3,4,8,9-HexaCDF	0.2 mL
JR-F73-25	1,2,3,6,7,8-HexaCDF	0.2 mL
JR-F74-25	1,2,3,6,7,9-HexaCDF	0.2 mL
JR-F75-25	1,2,3,6,8,9-HexaCDF	0.2 mL
JR-F76-25	1,2,3,7,8,9-HexaCDF	0.2 mL
JR-F77-25	1,2,4,6,7,8-HexaCDF	0.2 mL
JR-F78-25	1,2,4,6,7,9-HexaCDF	0.2 mL
JR-F79-25	1,2,4,6,8,9-HexaCDF	0.2 mL
JR-F80-25	1,3,4,6,7,8-HexaCDF	0.2 mL
JR-F81-25	1,3,4,6,7,9-HexaCDF	0.2 mL
JR-F82-25	2,3,4,6,7,8-HexaCDF	0.2 mL
JR-F83-25	1,2,3,4,6,7,8-HeptaCDF	0.2 mL
JR-F84-25	1,2,3,4,6,7,9-HeptaCDF	0.2 mL
JR-F85-25	1,2,3,4,6,8,9-HeptaCDF	0.2 mL
JR-F86-25	1,2,3,4,7,8,9-HeptaCDF	0.2 mL
JR-F87-25	1,2,3,4,6,7,8,9-OctaCDF	0.2 mL

Unlabeled Chlorodioxin Standards for Elution Profiling (Qualitative Solutions)

All concentrations are ~25 ng/mL in nonane

Catalog No.	Compound	Amount
JR-D01-25	1,2,3,4-TetraCDD	0.2 mL
JR-D02-25	1,2,3,6-TetraCDD	0.2 mL
JR-D03-25	1,2,3,7-TetraCDD	0.2 mL
JR-D04-25	1,2,3,8-TetraCDD	0.2 mL
JR-D05-25	1,2,3,9-TetraCDD	0.2 mL
JR-D06-25	1,2,4,6-TetraCDD	0.2 mL
JR-D07-25	1,2,4,7-TetraCDD	0.2 mL
JR-D08-25	1,2,4,8-TetraCDD	0.2 mL
JR-D09-25	1,2,4,9-TetraCDD	0.2 mL
JR-D10-25	1,2,6,7-TetraCDD	0.2 mL
JR-D11-25	1,2,6,8-TetraCDD	0.2 mL
JR-D12-25	1,2,6,9-TetraCDD	0.2 mL
JR-D13-25	1,2,7,8-TetraCDD	0.2 mL
JR-D14-25	1,2,7,9-TetraCDD	0.2 mL
JR-D15-25	1,2,8,9-TetraCDD	0.2 mL
JR-D16-25	1,3,6,8-TetraCDD	0.2 mL
JR-D17-25	1,3,6,9-TetraCDD	0.2 mL
JR-D18-25	1,3,7,8-TetraCDD	0.2 mL
JR-D19-25	1,3,7,9-TetraCDD	0.2 mL
JR-D20-25	1,4,6,9-TetraCDD	0.2 mL
JR-D21-25	1,4,7,8-TetraCDD	0.2 mL
JR-D22-25	2,3,7,8-TetraCDD	0.2 mL
JR-D23-25	1,2,3,4,6-PentaCDD	0.2 mL
JR-D24-25	1,2,3,4,7-PentaCDD	0.2 mL
JR-D25-25	1,2,3,6,7-PentaCDD	0.2 mL

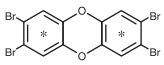
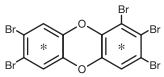
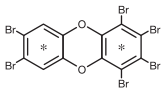
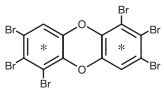
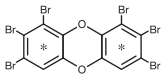
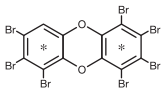
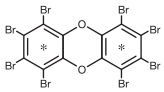
Catalog No.	Compound	Amount
JR-D26-25	1,2,3,6,8-PentaCDD	0.2 mL
JR-D27-25	1,2,3,6,9-PentaCDD	0.2 mL
JR-D28-25	1,2,3,7,8-PentaCDD	0.2 mL
JR-D29-25	1,2,3,7,9-PentaCDD	0.2 mL
JR-D30-25	1,2,3,8,9-PentaCDD	0.2 mL
JR-D31-25	1,2,4,6,7-PentaCDD	0.2 mL
JR-D32-25	1,2,4,6,8-PentaCDD	0.2 mL
JR-D33-25	1,2,4,6,9-PentaCDD	0.2 mL
JR-D34-25	1,2,4,7,8-PentaCDD	0.2 mL
JR-D35-25	1,2,4,7,9-PentaCDD	0.2 mL
JR-D36-25	1,2,4,8,9-PentaCDD	0.2 mL
JR-D37-25	1,2,3,4,6,7-HexaCDD	0.2 mL
JR-D38-25	1,2,3,4,6,8-HexaCDD	0.2 mL
JR-D39-25	1,2,3,4,6,9-HexaCDD	0.2 mL
JR-D40-25	1,2,3,4,7,8-HexaCDD	0.2 mL
JR-D41-25	1,2,3,6,7,8-HexaCDD	0.2 mL
JR-D42-25	1,2,3,6,7,9-HexaCDD	0.2 mL
JR-D43-25	1,2,3,6,8,9-HexaCDD	0.2 mL
JR-D44-25	1,2,3,7,8,9-HexaCDD	0.2 mL
JR-D45-25	1,2,4,6,7,9-HexaCDD	0.2 mL
JR-D46-25	1,2,4,6,8,9-HexaCDD	0.2 mL
JR-D47-25	1,2,3,4,6,7,8-HeptaCDD	0.2 mL
JR-D48-25	1,2,3,4,6,7,9-HeptaCDD	0.2 mL
JR-D49-25	1,2,3,4,6,7,8,9-OctaCDD	0.2 mL

Unlabeled Chlorodioxin and Chlorofuran Standard Kits for Elution Profiling

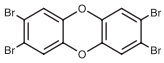
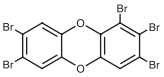
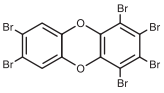
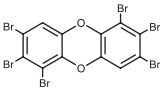
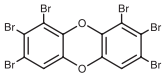
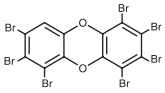
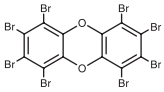
For convenience, CIL has bundled these standards by level of chlorination. Kits are available for tetra-through-hexa dioxins and tetra-through-hepta furans. A comprehensive kit containing all available standards is also available.

Catalog No.	Description	Contains	Amount
JR-TCDD-KIT	Comprehensive Tetrachlorodibenzo-*p*-dioxin Column Defining Kit	JR-D01-25 – JR-D22-25	1 Kit
JR-TCDF-KIT	Comprehensive Tetrachlorodibenzofuran Column Defining Kit	JR-F01-25 – JR-F38-25	1 Kit
JR-PECDD-KIT	Comprehensive Pentachlorodibenzo-*p*-dioxin Column Defining Kit	JR-D23-25 – JR-D36-25	1 Kit
JR-PECDF-KIT	Comprehensive Pentachlorodibenzofuran Column Defining Kit	JR-F39-25 – JR-F66-25	1 Kit
JR-HXCDD-KIT	Comprehensive Hexachlorodibenzo-*p*-dioxin Column Defining Kit	JR-D37-25 – JR-D46-25	1 Kit
JR-HXCDF-KIT	Comprehensive Hexachlorodibenzofuran Column Defining Kit	JR-F67-25 – JR-F82-25	1 Kit
JR-HPCDF-KIT	Comprehensive Heptachlorodibenzofuran Column Defining Kit	JR-F83-25 – JR-F86-25	1 Kit
JR-PCDD/F-KIT	Comprehensive Polychlorinated Dioxin and Furan Column Defining Kit (Includes all 136 "JR" dioxin and furan congeners)		1 Kit

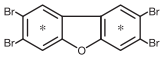
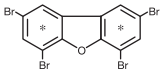
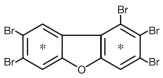
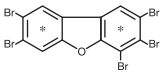
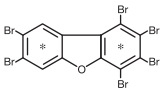
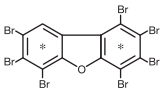
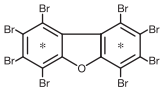
$^{13}C_{12}$-Labeled Bromodioxin Standards

	Catalog No.	Compound	Structure	Concentration	Amount
	ED-1440-1.2	2,3,7,8-Tetrabromodibenzo-*p*-dioxin ($^{13}C_{12}$, 99%)		5 ± 0.5 µg/mL in nonane	1.2 mL
	ED-1450-1.2	1,2,3,7,8-Pentabromodibenzo-*p*-dioxin ($^{13}C_{12}$, 99%)		5 ± 0.5 µg/mL in nonane	1.2 mL
NEW	ED-2534-A-1.2	1,2,3,4,7,8-Hexabromodibenzo-*p*-dioxin ($^{13}C_{12}$, 99%)		5 ± 0.5 µg/mL in 70% nonane/30% toluene	1.2 mL
NEW	ED-5237-A-1.2	1,2,3,6,7,8-Hexabromodibenzo-*p*-dioxin ($^{13}C_{12}$, 99%)		5 ± 0.5 µg/mL in 70% nonane/30% toluene	1.2 mL
NEW	ED-5238-A-1.2	1,2,3,7,8,9-Hexabromodibenzo-*p*-dioxin ($^{13}C_{12}$, 99%)		5 ± 0.5 µg/mL in 70% nonane/30% toluene	1.2 mL
	ED-5357-1.2	1,2,3,4,6,7,8-Heptabromodibenzo-*p*-dioxin ($^{13}C_{12}$, 99%)		5 ± 0.5 µg/mL in 70% nonane/30% toluene	1.2 mL
	ED-5089-1.2	Octabromodibenzo-*p*-dioxin ($^{13}C_{12}$, 99%)		5 ± 0.5 µg/mL in 70% nonane/30% toluene	1.2 mL

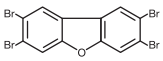
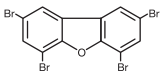
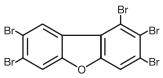
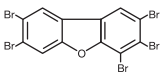
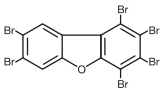
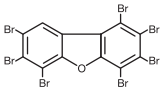
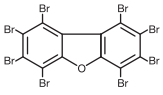
Unlabeled Bromodioxin Standards

	Catalog No.	Compound	Structure	Concentration	Amount
	ED-1441-1.2	2,3,7,8-Tetrabromodibenzo-*p*-dioxin		5 ± 0.5 µg/mL in nonane	1.2 mL
	ED-1451-1.2	1,2,3,7,8-Pentabromodibenzo-*p*-dioxin		5 ± 0.5 µg/mL in nonane	1.2 mL
NEW	ED-1462-A-1.2	1,2,3,4,7,8-Hexabromodibenzo-*p*-dioxin		5 ± 0.5 µg/mL in 70% nonane/30% toluene	1.2 mL
	ED-1465-1.2	1,2,3,6,7,8-Hexabromodibenzo-*p*-dioxin		5 ± 0.5 µg/mL in 70% nonane/30% toluene	1.2 mL
NEW	ED-1466-A-1.2	1,2,3,7,8,9-Hexabromodibenzo-*p*-dioxin		5 ± 0.5 µg/mL in 70% nonane/30% toluene	1.2 mL
	ED-5356-1.2	1,2,3,4,6,7,8-Heptabromodibenzo-*p*-dioxin		5 ± 0.5 µg/mL in 70% nonane/30% toluene	1.2 mL
	ED-1481-1.2	Octabromodibenzo-*p*-dioxin		5 ± 0.5 µg/mL in toluene	1.2 mL

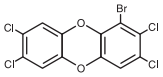
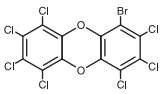
$^{13}C_{12}$-Labeled Bromofuran Standards

Catalog No.	Compound	Structure	Concentration	Amount
EF-1442-1.2	2,3,7,8-Tetrabromodibenzofuran ($^{13}C_{12}$, 99%)		5 ± 0.5 µg/mL in nonane	1.2 mL
EF-5082-1.2	2,4,6,8-Tetrabromodibenzofuran ($^{13}C_{12}$, 99%)		5 ± 0.5 µg/mL in nonane	1.2 mL
EF-1452-1.2	1,2,3,7,8-Pentabromodibenzofuran ($^{13}C_{12}$, 99%)		5 ± 0.5 µg/mL in nonane	1.2 mL
EF-1454-1.2	2,3,4,7,8-Pentabromodibenzofuran ($^{13}C_{12}$, 99%)		5 ± 0.5 µg/mL in nonane	1.2 mL
EF-1463-1.2	1,2,3,4,7,8-Hexabromodibenzofuran ($^{13}C_{12}$, 99%)		5 ± 0.5 µg/mL in nonane	1.2 mL
EF-5259-1.2	1,2,3,4,6,7,8-Heptabromodibenzofuran ($^{13}C_{12}$, 99%)		5 ± 0.5 µg/mL in 70% nonane/30% toluene	1.2 mL
EF-5266-1.2	Octabromodibenzofuran ($^{13}C_{12}$, 99%)		5 ± 0.5 µg/mL in 70% nonane/30% toluene	1.2 mL

Unlabeled Bromofuran Standards

Catalog No.	Compound	Structure	Concentration	Amount
EF-1443-1.2	2,3,7,8-Tetrabromodibenzofuran		5 ± 0.5 µg/mL in nonane	1.2 mL
NEW EF-5081-1.2	2,4,6,8-Tetrabromodibenzofuran		5 ± 0.5 µg/mL in nonane	1.2 mL
EF-1453-1.2	1,2,3,7,8-Pentabromodibenzofuran		5 ± 0.5 µg/mL in nonane	1.2 mL
EF-1455-1.2	2,3,4,7,8-Pentabromodibenzofuran		5 ± 0.5 µg/mL in nonane	1.2 mL
EF-1464-1.2	1,2,3,4,7,8-Hexabromodibenzofuran		5 ± 0.5 µg/mL in 70% nonane/30% toluene	1.2 mL
EF-1486-1.2	1,2,3,4,6,7,8-Heptabromodibenzofuran (CP 96%)		5 ± 0.5 µg/mL in 70% nonane/30% toluene	1.2 mL
EF-5263-1.2	Octabromodibenzofuran		5 ± 0.5 µg/mL in 70% nonane/30% toluene	1.2 mL

Unlabeled Mixed Bromo/Chlorodioxin Standards

	Catalog No.	Compound	Structure	Concentration	Amount
NEW	EBC-2501	1-Bromo-2,3,7,8-tetrachlorodibenzo-*p*-dioxin		50 ± 0.5 µg/mL in *n*-nonane	1.2 mL
NEW	EBC-2507-A-1.2	1-Bromo-2,3,4,6,7,8,9-heptachlorodibenzo-*p*-dioxin		5 ± 0.5 µg/mL in 70% nonane/30% toluene	1.2 mL

Dioxin and Furan Method Standards, Standard Mixtures and Reference Materials

Following the unprecedented release of dioxins and furans into the environment during the Seveso, Italy, industrial accident in 1976, regulatory agencies around the world initiated strict testing programs to monitor these toxic compounds. CIL and Cerilliant collaborated with the US EPA to prepare the first isotope dilution mass spectrometry (IDMS) standard mixtures for the analysis of PCDDs and PCDFs.

US 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 US 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 preformulated 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. Copies of these methods are available upon request.

Dioxin and Furan Plus PCB Standard Mixtures

CIL/Cerilliant have developed several mixtures that include the 2,3,7,8-containing dioxin and furan congeners, as well as the "toxic" PCB congeners. These mixtures have full calibration series and matching spiking solutions, so analysts can test these two commonly combined groups without having to manipulate several different standard sets.

Dioxin and Furan "Starter Kits"

CIL recognizes that starting up a dioxin and furan testing laboratory can be a daunting and expensive process. To assist laboratories that are just getting started, CIL offers "starter kits" to help procuring the standards needed for dioxin and furan testing much easier. These kits include all required standard mixtures, including calibration and spiking cocktails, for specific testing methods. There is no guesswork required for materials that will be needed to start the process, and a kit will typically test between 50-200 samples. Once the method is established, it will be clear which standards will be needed sooner and those that can be reordered later. Most standards last several years, so there is no concern for shelf life. In addition, the cost of the kits has been reduced significantly (when compared to purchasing all mixtures separately), easing the financial burden of setting up a new lab!

Reference Materials

In 2006, CIL completed an international interlaboratory study for the determination of many environmental pollutants in its three fish reference materials, as well as two reference materials for soil and sediment. In 2007, CIL conducted another interlaboratory study, this time evaluating dioxins, furans, and PCBs in a new fly ash reference material. In 2010, CIL launched yet another interlaboratory study to develop consensus values for priority pollutants in cod liver oil reference material.

Non-2,3,7,8-Containing Standard Mixtures

With the development of several ^{13}C-labeled "non-2,3,7,8" furan standards, CIL/Cerilliant can offer standard mixtures that contain the traditional 17 "2,3,7,8-containing" standards, as well as ^{13}C-labeled "non-2,3,7,8-containing" congeners. These standard mixtures allow researchers to use all 17 ^{13}C-labeled 2,3,7,8-containing standards as internal standards, while utilizing the labeled "non-2,3,7,8-containing" congeners as recovery/injection or cleanup standards.

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 offers a comprehensive set of labeled and unlabeled standards for PBDD/F analysis, including calibration series and corresponding spiking solutions containing tetra-octabromo congeners.

US EPA Method 1613 Standard Mixtures

Catalog No.	Compound	Amount
EDF-9999	Method 1613 Calibration Solutions [CS1-CS5]	Set of 5 × 0.2 mL in nonane
* EDF-9999-0.1	Method 1613 Calibration Solution [CS0.1]	0.2 mL in nonane
* EDF-9999-0.2	Method 1613 Calibration Solution [CS0.2]	0.2 mL in nonane
* EDF-9999-0.5	Method 1613 Calibration Solution [CS0.5]	0.2 mL in nonane
EDF-9999-1	Method 1613 Calibration Solution [CS1]	0.2 mL in nonane
EDF-9999-2	Method 1613 Calibration Solution [CS2]	0.2 mL in nonane
EDF-9999-3	Method 1613 Daily Calibration Check Standard [CS3]	0.2 mL in nonane
EDF-9999-3-4	Method 1613 Daily Calibration Check Standard [CS3]	Set of 4 × 0.2 mL in nonane
EDF-9999-4	Method 1613 Calibration Solution [CS4]	0.2 mL in nonane
EDF-9999-5	Method 1613 Calibration Solution [CS5]	0.2 mL in nonane

All concentrations are in ng/mL (ppb)

Unlabeled	*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
Labeled								
2,3,7,8-TetraCDD ($^{13}C_{12}$, 99%)	100	100	100	100	100	100	100	100
2,3,7,8-TetraCDF ($^{13}C_{12}$, 99%)	100	100	100	100	100	100	100	100
1,2,3,7,8-PentaCDD ($^{13}C_{12}$, 99%)	100	100	100	100	100	100	100	100
1,2,3,7,8-PentaCDF ($^{13}C_{12}$, 99%)	100	100	100	100	100	100	100	100
2,3,4,7,8-PentaCDF ($^{13}C_{12}$, 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
1,2,3,4,7,8-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
Cleanup								
2,3,7,8-TetraCDD ($^{37}Cl_4$, 96%)	0.05	0.1	0.25	0.5	2.0	10	40	200
Internal								
1,2,3,4-TetraCDD ($^{13}C_{12}$, 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

*NOTE: CS0.1, CS0.2, and CS0.5 are optional extensions of the Method 1613 Calibration Curve to extend the MDL and are not required by the method.

US EPA Method 1613 Standard Mixtures

Catalog No.	Compound	Amount
EDF-9999-A	Method 1613 Calibration Solutions (1/10 concentration) [CS1-CS5]	Set of 5 × 0.2 mL in nonane
EDF-9999-A-3	Method 1613 Calibration Check Standard (1/10 concentration) [CS3]	0.2 mL in nonane

All concentrations are in ng/mL (ppb)

Unlabeled	CS1	CS2	CS3	CS4	CS5
2,3,7,8-TetraCDD	0.05	0.2	1	4	20
2,3,7,8-TetraCDF	0.05	0.2	1	4	20
1,2,3,7,8-PentaCDD	0.25	1	5	20	100
1,2,3,7,8-PentaCDF	0.25	1	5	20	100
2,3,4,7,8-PentaCDF	0.25	1	5	20	100
1,2,3,4,7,8-HexaCDD	0.25	1	5	20	100
1,2,3,6,7,8-HexaCDD	0.25	1	5	20	100
1,2,3,7,8,9-HexaCDD	0.25	1	5	20	100
1,2,3,4,7,8-HexaCDF	0.25	1	5	20	100
1,2,3,6,7,8-HexaCDF	0.25	1	5	20	100
1,2,3,7,8,9-HexaCDF	0.25	1	5	20	100
2,3,4,6,7,8-HexaCDF	0.25	1	5	20	100
1,2,3,4,6,7,8-HeptaCDD	0.25	1	5	20	100
1,2,3,4,6,7,8-HeptaCDF	0.25	1	5	20	100
1,2,3,4,7,8,9-HeptaCDF	0.25	1	5	20	100
OctaCDD	0.5	2	10	40	200
OctaCDF	0.5	2	10	40	200
Labeled					
2,3,7,8-TetraCDD ($^{13}C_{12}$, 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-PentaCDD ($^{13}C_{12}$, 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-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
1,2,3,4,7,8-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-HeptaCDD ($^{13}C_{12}$, 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
OctaCDD ($^{13}C_{12}$, 99%)	20	20	20	20	20
Cleanup					
2,3,7,8-TetraCDD ($^{37}Cl_4$, 99%)	0.05	0.2	1	4	20
Internal					
1,2,3,4-TetraCDD ($^{13}C_{12}$, 99%)	10	10	10	10	10
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$, 99%)	10	10	10	10	10

EDF-9999-A is a set of calibration solutions with both labeled and unlabeled compounds at 1/10 the concentration of the corresponding calibration solution in EDF-9999.

EDF-1613-KIT	Method 1613 "Starter Kit"	1 Kit

Contains one each of the following items:

EDF-9999	Method 1613 Calibration Solutions [CS1-CS5]
EDF-8999(2X)	Method 1613 Labeled Compound Stock Solution
EDF-5999	Method 1613 Internal Standard Spiking Solution
EDF-7999	Method 1613 Precision and Recovery Standard Solution
EDF-6999	Method 1613 Cleanup Standard

US EPA Method 1613 Standard Mixtures

	Catalog No.	Compound	Amount
	EDF-8999	Method 1613 Labeled Compound Stock Solution	500 µL in nonane
	EDF-8999-4	Method 1613 Labeled Compound Stock Solution	Set of 4 × 500 µL in nonane
NEW	EDF-8999-5ML	Method 1613 Labeled Compound Stock Solution	5 mL in nonane

Labeled	(ng/mL)
2,3,7,8-TetraCDD ($^{13}C_{12}$, 99%)	100
2,3,7,8-TetraCDF ($^{13}C_{12}$, 99%)	100
1,2,3,7,8-PentaCDD ($^{13}C_{12}$, 99%)	100
1,2,3,7,8-PentaCDF ($^{13}C_{12}$, 99%)	100
2,3,4,7,8-PentaCDF ($^{13}C_{12}$, 99%)	100
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$, 99%)	100
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$, 99%)	100
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$, 99%)	100
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	100
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$, 99%)	100
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	100
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$, 99%)	100
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$, 99%)	100
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$, 99%)	100
OctaCDD ($^{13}C_{12}$, 99%)	200

	Catalog No.	Compound	Amount
	EDF-6999	Method 1613 Cleanup Standard	7.5 mL in nonane
	EDF-6999-10X	Method 1613 Cleanup Standard (10X concentration)	20 mL in nonane

Labeled	EDF-6999 (ng/mL)	EDF-6999-10X (ng/mL)
2,3,7,8-TetraCDD ($^{37}Cl_4$, 96%)	0.8	8

	Catalog No.	Compound	Amount
	EDF-5999	Method 1613 Internal Standard Spiking Solution	0.5 mL in nonane
NEW	EDF-5999-2.5ML	Method 1613 Internal Standard Spiking Solution	2.5 mL in nonane

Labeled	(ng/mL)
1,2,3,4-TetraCDD ($^{13}C_{12}$, 99%)	200
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$, 99%)	200

	Catalog No.	Compound	Amount
	EDF-7999	Method 1613 Precision and Recovery Standard Solution	200 µL in nonane
	EDF-7999-10X	Method 1613 Precision and Recovery Standard Solution (10X concentration)	1.2 mL in nonane

Unlabeled	EDF-7999 (ng/mL)	EDF-7999-10X (ng/mL)
2,3,7,8-TetraCDD	40	400
2,3,7,8-TetraCDF	40	400
1,2,3,7,8-PentaCDD	200	2000
1,2,3,7,8-PentaCDF	200	2000
2,3,4,7,8-PentaCDF	200	2000
1,2,3,4,7,8-HexaCDD	200	2000
1,2,3,6,7,8-HexaCDD	200	2000
1,2,3,7,8,9-HexaCDD	200	2000
1,2,3,4,7,8-HexaCDF	200	2000
1,2,3,6,7,8-HexaCDF	200	2000
1,2,3,7,8,9-HexaCDF	200	2000
2,3,4,6,7,8-HexaCDF	200	2000
1,2,3,4,6,7,8-HeptaCDD	200	2000
1,2,3,4,6,7,8-HeptaCDF	200	2000
1,2,3,4,7,8,9-HeptaCDF	200	2000
OctaCDD	400	4000
OctaCDF	400	4000

US EPA Method 1613 Standard Mixtures

Catalog No.	Compound	Amount
EDF-4141	Method 1613 Daily Calibration Plus Window Definer and Isomer Specificity Solution	200 µL in nonane

Daily Calibration	(ng/mL)
2,3,7,8-TetraCDD	10
2,3,7,8-TetraCDF	10
1,2,3,7,8-PentaCDD	50
1,2,3,7,8-PentaCDF	50
2,3,4,7,8-PentaCDF	50
1,2,3,4,7,8-HexaCDD	50
1,2,3,6,7,8-HexaCDD	50
1,2,3,7,8,9-HexaCDD	50
1,2,3,4,7,8-HexaCDF	50
1,2,3,6,7,8-HexaCDF	50
1,2,3,7,8,9-HexaCDF	50
2,3,4,6,7,8-HexaCDF	50
1,2,3,4,6,7,8-HeptaCDD (WD)	50
1,2,3,4,6,7,8-HeptaCDF (WD)	50
1,2,3,4,7,8,9-HeptaCDF (WD)	50
OctaCDD	100
OctaCDF	100
1,2,3,4-TetraCDD ($^{13}C_{12}$, 99%)	100
2,3,7,8-TetraCDD ($^{13}C_{12}$, 99%)	100
2,3,7,8-TetraCDD ($^{37}Cl_4$, 96%)	10
2,3,7,8-TetraCDF ($^{13}C_{12}$, 99%)	100
1,2,3,7,8-PentaCDD ($^{13}C_{12}$, 99%)	100
1,2,3,7,8-PentaCDF ($^{13}C_{12}$, 99%)	100
2,3,4,7,8-PentaCDF ($^{13}C_{12}$, 99%)	100
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$, 99%)	100
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$, 99%)	100
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$, 99%)	100
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$, 99%)	100
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	100
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$, 99%)	100
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	100
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$, 99%)	100
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$, 99%)	100
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$, 99%)	100
OctaCDD ($^{13}C_{12}$, 99%)	200

This standard allows three functions:
- Daily MS instrument calibration verification
- Daily TetraCDD column resolution
- Daily window definition

Window Defining	(ng/mL)
1,3,6,8-TetraCDD	10
1,2,8,9-TetraCDD	10
1,3,6,8-TetraCDF	10
1,2,8,9-TetraCDF	10
1,2,4,6,8/1,2,4,7,9-PentaCDD	50
1,2,3,8,9-PentaCDD	50
1,3,4,6,8-PentaCDF	50
1,2,3,8,9-PentaCDF	50
1,2,4,6,7,9/1,2,4,6,8,9-HexaCDD	50
1,2,3,4,6,8-HexaCDF	50
1,2,3,4,8,9-HexaCDF	50
1,2,3,4,6,7,9-HeptaCDD	50

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 Specificity	(ng/mL)
1,2,3,4-TetraCDD	10
1,2,3,7/1,2,3,8-TetraCDD	10
1,2,3,9-TetraCDD	10

2,3,7,8-TetraCDD Only Standard Mixture

Catalog No.	Compound	Amount
NEW ED-4159-CS1	Calibration Curve, 2,3,7,8 CS1 for 2,3,7,8-TCDD Only	1.2 mL in nonane

Unlabeled	(ng/mL)
2,3,7,8-TetraCDD	0.01
Labeled	
2,3,7,8-TetraCDD ($^{13}C_{12}$, 99%)	50
1,2,3,4-TetraCDD ($^{13}C_6$, 99%)	25

Performance Evaluation Reference Materials

Fish Tissue, Soil, and Sediment Reference Materials

CIL first introduced fish tissue reference material (RM) standards in the early 1990s to provide analytical laboratories testing dioxin, furan, and PCB congeners with much needed performance evaluation materials. At that time, these RMs were quite uncommon in the field of dioxin and PCB analysis, and they became very popular for their ability to help laboratories internally assess their quality-assurance processes.

Reference materials are widely used in analytical chemistry to provide immediate feedback about the quality and confidence of a laboratory's testing system. RMs can be used to demonstrate to quality auditors that a laboratory has control of their QA process and can show long-term trending by using the same RM over time.

The original "clean," "fortified," and "naturally contaminated" fish RMs were subsequently joined by natural matrix soil and sediment, cod liver oil, and even chicken egg RMs. CIL RMs often have consensus values for many other organic contaminants, including dioxins, furans, and PCBs, as well as PAHs, pesticides, flame retardants, and others. All of CIL's RM standards are run through an international interlaboratory study to determine consensus values with uncertainties.

	Catalog No.	Compound	Amount
	EDF-5183	Natural Matrix Reference Material (Soil)	10 g
	EDF-5184	Heavily Contaminated Sediment Reference Material	10 g
	EDF-2524	Clean Natural Matrix Reference Material (Fish)	10 g
	EDF-2525	Contaminated Natural Matrix Reference Material (Fish)	10 g
	EDF-2526	Fortified Natural Matrix Reference Material (Fish)	10 g
	EDF-4023	Set of 3 Fish (1 each of EDF-2524, EDF-2525, EDF-2526)	3 × 10 g
	EDF-5462	Fortified Cod Liver Oil Reference Material	10 g
	EDF-5463	Cod Liver Oil Reference Material	10 g
NEW	EDF-5491	Freeze-Dried Eggs Reference Material	6 g

Perfluorokerosene (PFK)

	Catalog No.	Compound	Amount
NEW	PFK-HIGH-0.1	Perfluorokerosene, High-Boiling Range (unlabeled)	0.1 g
NEW	PFK-HIGH-0.5	Perfluorokerosene, High-Boiling Range (unlabeled)	0.5 g
NEW	PFK-HIGH-1	Perfluorokerosene, High-Boiling Range (unlabeled)	1 g
NEW	PFK-LOW-0.25	Perfluorokerosene, Low-Boiling Range (unlabeled)	0.25 g
NEW	PFK-LOW-1	Perfluorokerosene, Low-Boiling Range (unlabeled)	1 g

US EPA Method 23 Standard Mixtures

Catalog No.	Compound	Amount
EDF-4052	Method 23 Calibration Solutions [CS1-CS5]	Set of 5 × 0.2 mL in nonane
EDF-4052-1	Method 23 Calibration Solution [CS1]	0.2 mL in nonane
EDF-4052-2	Method 23 Calibration Solution [CS2]	0.2 mL in nonane
EDF-4052-3	Method 23 Daily Calibration Check Standard [CS3]	0.2 mL in nonane
EDF-4052-4	Method 23 Calibration Solution [CS4]	0.2 mL in nonane
EDF-4052-5	Method 23 Calibration Solution [CS5]	0.2 mL in nonane

All concentrations are in pg/µL (ppb)

Unlabeled	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					
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					
2,3,7,8-TetraCDD ($^{37}Cl_4$, 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					
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 Recovery					
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$, 99%)	2.5	5	25	250	500

NEW	EDF-23-KIT	Method 23 "Starter Kit"	1 Kit

Contains one each of the following items:

EDF-4052	Method 23 Calibration Solutions [CS1-CS5]
EDF-4053	Method 23 Internal Standard Stock Solution
EDF-4054	Method 23 Surrogate Standard Stock Solution
EDF-4055	Method 23 Recovery Standard Stock Solution
EDF-5189	Method 23 Alternate Recovery Standard Stock Solution

US EPA Method 23 Standard Mixtures

Catalog No.	Compound	Amount
EDF-4053	Method 23 Internal Standard Stock Solution	1.2 mL in nonane

Labeled	(pg/µL)
2,3,7,8-TetraCDD ($^{13}C_{12}$, 99%)	1000
1,2,3,7,8-PentaCDD ($^{13}C_{12}$, 99%)	1000
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$, 99%)	1000
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$, 99%)	1000
OctaCDD ($^{13}C_{12}$, 99%)	2000
2,3,7,8-TetraCDF ($^{13}C_{12}$, 99%)	1000
1,2,3,7,8-PentaCDF ($^{13}C_{12}$, 99%)	1000
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	1000
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$, 99%)	1000

EDF-4054	Method 23 Surrogate Standard Stock Solution	1.2 mL in nonane

Labeled	(pg/µL)
2,3,7,8-TetraCDD ($^{37}Cl_4$, 96%)	1000
2,3,4,7,8-PentaCDF ($^{13}C_{12}$, 99%)	1000
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$, 99%)	1000
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$, 99%)	1000
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$, 99%)	1000

EDF-4055	Method 23 Recovery Standard Stock Solution	1.2 mL in nonane

Labeled	(pg/µL)
1,2,3,4-TetraCDD ($^{13}C_{12}$, 99%)	500
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$, 99%)	500

EDF-5189	Method 23 Alternate Recovery Standard Stock Solution	1.2 mL in nonane

Labeled	(pg/µL)
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$, 99%)	1000

US EPA Method 8290 Standard Mixtures

Catalog No.	Compound	Amount
EDF-5006	Method 8290 Calibration Solutions [HRCC1-HRCC5]	Set of 5 × 0.2 mL in nonane
EDF-5006-1	Method 8290 Calibration Solution [HRCC1]	0.2 mL in nonane
EDF-5006-2	Method 8290 Calibration Solution [HRCC2]	0.2 mL in nonane
EDF-5006-3	Method 8290 Continuing Calibration Check Standard [HRCC3]	0.2 mL in nonane
EDF-5006-4	Method 8290 Calibration Solution [HRCC4]	0.2 mL in nonane
EDF-5006-5	Method 8290 Calibration Solution [HRCC5]	0.2 mL in nonane

All concentrations are in pg/µL (ppb)

Unlabeled	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
1,2,3,6,7,8-HexaCDD	2.5	6.25	25	125	500
1,2,3,7,8,9-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-HexaCDF	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					
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
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$, 99%)	125	125	125	125	125
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$, 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					
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	EDF-8290-KIT	Method 8290 "Starter Kit"	1 Kit

Contains one each of the following items:

EDF-5006	Method 8290 Calibration Solutions [HRCC1-HRCC5]
EDF-5005	Method 8290 Sample Fortification Solution
ED-5004	Method 8290 Recovery Standard Solution
EDF-5008	Method 8290 Matrix Spiking Solution

US EPA Method 8290 Standard Mixtures

Catalog No.	Compound	Amount
EDF-5005	Method 8290 Sample Fortification Solution	1.2 mL in nonane

Labeled	(pg/µL)
2,3,7,8-TetraCDD ($^{13}C_{12}$, 99%)	100
2,3,7,8-TetraCDF ($^{13}C_{12}$, 99%)	100
1,2,3,7,8-PentaCDD ($^{13}C_{12}$, 99%)	100
1,2,3,7,8-PentaCDF ($^{13}C_{12}$, 99%)	100
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$, 99%)	250
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$, 99%)	250
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$, 99%)	250
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$, 99%)	250
OctaCDD ($^{13}C_{12}$, 99%)	500

ED-5004	Method 8290 Recovery Standard Solution	1.2 mL in nonane

Labeled	(pg/µL)
1,2,3,4-TetraCDD ($^{13}C_{12}$, 99%)	100
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$, 99%)	250

EDF-5008	Method 8290 Matrix Spiking Solution	1.2 mL in nonane
EDF-5008-50	Method 8290 Matrix Spiking Solution (1:50 dilution)	0.1 mL in nonane

Unlabeled	EDF-5008 (pg/µL)	EDF-5008-50 (pg/µL)
2,3,7,8-TetraCDD	100	2
2,3,7,8-TetraCDF	100	2
1,2,3,7,8-PentaCDD	250	5
1,2,3,7,8-PentaCDF	250	5
2,3,4,7,8-PentaCDF	250	5
1,2,3,4,7,8-HexaCDD	250	5
1,2,3,4,7,8-HexaCDF	250	5
1,2,3,6,7,8-HexaCDD	250	5
1,2,3,6,7,8-HexaCDF	250	5
1,2,3,7,8,9-HexaCDD	250	5
1,2,3,7,8,9-HexaCDF	250	5
2,3,4,6,7,8-HexaCDF	250	5
1,2,3,4,6,7,8-HeptaCDD	250	5
1,2,3,4,6,7,8-HeptaCDF	250	5
1,2,3,4,7,8,9-HeptaCDF	250	5
OctaCDD	500	10
OctaCDF	500	10

European Air Method EN-1948 Standard Mixtures

Catalog No.	Compound	Amount
EDF-4947	EN-1948 Calibration Solutions [CS1-CS5]	Set of 5 × 0.2 mL in nonane
EDF-4947-CS1	EN-1948 Calibration Solution [CS1]	0.2 mL in nonane
EDF-4947-CS2	EN-1948 Calibration Solution [CS2]	0.2 mL in nonane
EDF-4947-CS3	EN-1948 Calibration Solution [CS3]	0.2 mL in nonane
EDF-4947-CS4	EN-1948 Calibration Solution [CS4]	0.2 mL in nonane
EDF-4947-CS5	EN-1948 Calibration Solution [CS5]	0.2 mL in nonane

All concentrations are in pg/µL (ppb)

Unlabeled	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
Sampling					
1,2,3,7,8-PentaCDF ($^{13}C_{12}$, 99%)	100	100	100	100	100
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$, 99%)	100	100	100	100	100
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$, 99%)	100	100	100	100	100
Extraction					
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
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
1,2,3,4,7,8-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
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
OctaCDD ($^{13}C_{12}$, 99%)	200	200	200	200	200
OctaCDF ($^{13}C_{12}$, 99%)	200	200	200	200	200
Syringe					
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

NEW	EDF-1948-KIT	EN-1948 Dioxin/Furan "Starter Kit"	1 Kit

Contains one each of the following items:

EDF-4947	EN-1948 Calibration Solutions [CS1-CS5]
EF-4138	EN-1948 Sampling Standard Solution
EDF-4139	EN-1948 Extraction Standard Solution
ED-4140	EN-1948 Syringe Standard Solution
EDF-4175	EN-1948 Native Stock Response Factor Solution

European Air Method EN-1948 Standard Mixtures

Catalog No.	Compound	Amount
EF-4138	EN-1948 Sampling Standard Solution	1.2 mL in nonane
EF-4138-10	EN-1948 Sampling Standard Solution	2 × 5 mL in nonane

Labeled	(pg/µL)
1,2,3,7,8-PentaCDF ($^{13}C_{12}$, 99%)	100
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$, 99%)	100
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$, 99%)	200

EDF-4139	EN-1948 Extraction Standard Solution	1.2 mL in nonane
EDF-4139-10	EN-1948 Extraction Standard Solution	2 × 5 mL in nonane

Labeled	(pg/µL)
2,3,7,8-TetraCDD ($^{13}C_{12}$, 99%)	100
2,3,7,8-TetraCDF ($^{13}C_{12}$, 99%)	100
1,2,3,7,8-PentaCDD ($^{13}C_{12}$, 99%)	100
2,3,4,7,8-PentaCDF ($^{13}C_{12}$, 99%)	100
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$, 99%)	100
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$, 99%)	100
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$, 99%)	100
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	100
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	100
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$, 99%)	200
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$, 99%)	200
OctaCDD ($^{13}C_{12}$, 99%)	200
OctaCDF ($^{13}C_{12}$, 99%)	200

ED-4140	EN-1948 Syringe Standard Solution	1.2 mL in nonane

Labeled	(pg/µL)
1,2,3,4-TetraCDD ($^{13}C_{12}$, 99%)	400
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$, 99%)	400

EDF-4175	EN-1948 Native Stock Response Factor Solution	0.5 mL in nonane

Unlabeled	(ng/mL)
2,3,7,8-TetraCDD	1000
2,3,7,8-TetraCDF	1000
1,2,3,7,8-PentaCDD	1000
1,2,3,7,8-PentaCDF	1000
2,3,4,7,8-PentaCDF	1000
1,2,3,4,7,8-HexaCDD	1000
1,2,3,6,7,8-HexaCDD	1000
1,2,3,7,8,9-HexaCDD	4000
1,2,3,4,7,8-HexaCDF	1000
1,2,3,6,7,8-HexaCDF	1000
1,2,3,7,8,9-HexaCDF	1000
2,3,4,6,7,8-HexaCDF	1000
1,2,3,4,6,7,8-HeptaCDD	2000
1,2,3,4,6,7,8-HeptaCDF	2000
1,2,3,4,7,8,9-HeptaCDF	2000
OctaCDD	2000
OctaCDF	2000

JIS Methods K0311 and K0312 Dioxin/Furan Standard Mixtures

	Catalog No.	Compound	Amount
NEW	EDF-5327-H	Modified JIS Dioxin/Furan Calibration Solutions [CS1H-CS6H]	Set of 6 × 0.2 mL in nonane
NEW	EDF-5327-H-E	Modified JIS Dioxin/Furan Calibration Solutions [CS0.2H-CS7H]	Set of 8 × 0.2 mL in nonane
NEW	EDF-5327-CS0.2H	Modified JIS Dioxin/Furan Calibration Solution [CS0.2H]	0.2 mL in nonane
NEW	EDF-5327-CS1H	Modified JIS Dioxin/Furan Calibration Solution [CS1H]	0.2 mL in nonane
NEW	EDF-5327-CS2H	Modified JIS Dioxin/Furan Calibration Solution [CS2H]	0.2 mL in nonane
NEW	EDF-5327-CS3H	Modified JIS Dioxin/Furan Calibration Solution [CS3H]	0.2 mL in nonane
NEW	EDF-5327-CS4H	Modified JIS Dioxin/Furan Calibration Solution [CS4H]	0.2 mL in nonane
NEW	EDF-5327-CS5H	Modified JIS Dioxin/Furan Calibration Solution [CS5H]	0.2 mL in nonane
NEW	EDF-5327-CS6H	Modified JIS Dioxin/Furan Calibration Solution [CS6H]	0.2 mL in nonane
NEW	EDF-5327-CS7H	Modified JIS Dioxin/Furan Calibration Solution [CS7H]	0.2 mL in nonane

All concentrations are in ng/mL (ppb)

Unlabeled	CS0.2H	CS1H	CS2H	CS3H	CS4H	CS5H	CS6H	CS7H
2,3,7,8-TetraCDD	0.02	0.1	0.5	2.0	10	50	200	500
2,3,7,8-TetraCDF	0.02	0.1	0.5	2.0	10	50	200	500
1,3,6,8-TetraCDD	0.02	0.1	0.5	2.0	10	50	200	500
1,3,6,8-TetraCDF	0.02	0.1	0.5	2.0	10	50	200	500
1,3,7,9-TetraCDD	0.02	0.1	0.5	2.0	10	50	200	500
1,2,8,9-TetraCDD	0.02	0.1	0.5	2.0	10	50	200	500
1,2,7,8-TetraCDF	0.02	0.1	0.5	2.0	10	50	200	500
1,2,8,9-TetraCDF	0.02	0.1	0.5	2.0	10	50	200	500
1,2,3,7,8-PentaCDD	0.02	0.1	0.5	2.0	10	50	200	500
1,2,3,7,8-PentaCDF	0.02	0.1	0.5	2.0	10	50	200	500
2,3,4,7,8-PentaCDF	0.02	0.1	0.5	2.0	10	50	200	500
1,2,3,4,7,8-HexaCDD	0.04	0.2	1.0	4.0	20	100	400	1000
1,2,3,6,7,8-HexaCDD	0.04	0.2	1.0	4.0	20	100	400	1000
1,2,3,7,8,9-HexaCDD	0.04	0.2	1.0	4.0	20	100	400	1000
1,2,3,4,7,8-HexaCDF	0.04	0.2	1.0	4.0	20	100	400	1000
1,2,3,6,7,8-HexaCDF	0.04	0.2	1.0	4.0	20	100	400	1000
1,2,3,7,8,9-HexaCDF	0.04	0.2	1.0	4.0	20	100	400	1000
2,3,4,6,7,8-HexaCDF	0.04	0.2	1.0	4.0	20	100	400	1000
1,2,3,4,6,7,8-HeptaCDD	0.04	0.2	1.0	4.0	20	100	400	1000
1,2,3,4,6,7,8-HeptaCDF	0.04	0.2	1.0	4.0	20	100	400	1000
1,2,3,4,7,8,9-HeptaCDF	0.04	0.2	1.0	4.0	20	100	400	1000
OctaCDD	0.1	0.5	2.5	10	50	250	1000	2500
OctaCDF	0.1	0.5	2.5	10	50	250	1000	2500
Labeled								
1,2,3,4-TetraCDD ($^{13}C_{12}$, 99%)	10	10	10	10	10	10	10	10
1,2,3,4-TetraCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10	10	10
1,2,7,8-TetraCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10	10	10
1,3,6,8-TetraCDD ($^{13}C_{12}$, 99%)	10	10	10	10	10	10	10	10
1,3,6,8-TetraCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10	10	10
2,3,7,8-TetraCDD ($^{13}C_{12}$, 99%)	10	10	10	10	10	10	10	10
2,3,7,8-TetraCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10	10	10
1,2,3,4,7-PentaCDD ($^{13}C_{12}$, 99%)	10	10	10	10	10	10	10	10
1,2,3,7,8-PentaCDD ($^{13}C_{12}$, 99%)	10	10	10	10	10	10	10	10
1,2,3,7,8-PentaCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10	10	10
2,3,4,7,8-PentaCDF ($^{13}C_{12}$, 99%)	10	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	10
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$, 99%)	10	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	10
1,2,3,4,6,9-HexaCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10	10	10
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$, 99%)	10	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	10
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$, 99%)	10	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	10
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$, 99%)	10	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	10
1,2,3,4,6,8,9-HeptaCDF ($^{13}C_{12}$, 99%)	10	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	10
OctaCDD ($^{13}C_{12}$, 99%)	20	20	20	20	20	20	20	20
OctaCDF ($^{13}C_{12}$, 99%)	20	20	20	20	20	20	20	20

JIS Methods K0311 and K0312 Dioxin/Furan Standard Mixtures

	Catalog No.	Compound	Amount
NEW	EDF-5328	Modified JIS Dioxin/Furan Cleanup Spike	1.2 mL in nonane

Labeled	(ng/mL)
2,3,7,8-TetraCDD ($^{13}C_{12}$, 99%)	50
1,3,6,8-TetraCDD ($^{13}C_{12}$, 99%)	50
1,2,3,7,8-PentaCDD ($^{13}C_{12}$, 99%)	50
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$, 99%)	50
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$, 99%)	50
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$, 99%)	50
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$, 99%)	50
OctaCDD ($^{13}C_{12}$, 99%)	100
2,3,7,8-TetraCDF ($^{13}C_{12}$, 99%)	50
1,3,6,8-TetraCDF ($^{13}C_{12}$, 99%)	50
1,2,7,8-TetraCDF ($^{13}C_{12}$, 99%)	50
1,2,3,7,8-PentaCDF ($^{13}C_{12}$, 99%)	50
2,3,4,7,8-PentaCDF ($^{13}C_{12}$, 99%)	50
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$, 99%)	50
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	50
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	50
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$, 99%)	50
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$, 99%)	50
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$, 99%)	50
OctaCDF ($^{13}C_{12}$, 99%)	100

NEW	EDF-5329	Modified JIS Dioxin/Furan Syringe Spike	1.2 mL in nonane

Labeled	(ng/mL)
1,2,3,4-TetraCDD ($^{13}C_{12}$, 99%)	50
1,2,3,4,7-PentaCDD ($^{13}C_{12}$, 99%)	50
1,2,3,4,6,9-HexaCDF ($^{13}C_{12}$, 99%)	50
1,2,3,4,6,8,9-HeptaCDF ($^{13}C_{12}$, 99%)	50

JIS Methods K0311 and K0312 Dioxin/Furan Standard Mixtures

	Catalog No.	Compound	Amount
NEW	EDF-5331-L-E	Modified JIS Low Concentration Dioxin/Furan Calibration Solutions [CS0.2L-CS5L]	Set of 6 × 0.2 mL in nonane
NEW	EDF-5331-CS0.2L	Modified JIS Low Concentration Dioxin/Furan Calibration Solution [CS0.2L]	0.2 mL in nonane
NEW	EDF-5331-CS1L	Modified JIS Low Concentration Dioxin/Furan Calibration Solution [CS1L]	0.2 mL in nonane
NEW	EDF-5331-CS2L	Modified JIS Low Concentration Dioxin/Furan Calibration Solution [CS2L]	0.2 mL in nonane
NEW	EDF-5331-CS3L	Modified JIS Low Concentration Dioxin/Furan Calibration Solution [CS3L]	0.2 mL in nonane
NEW	EDF-5331-CS4L	Modified JIS Low Concentration Dioxin/Furan Calibration Solution [CS4L]	0.2 mL in nonane
NEW	EDF-5331-CS5L	Modified JIS Low Concentration Dioxin/Furan Calibration Solution [CS5L]	0.2 mL in nonane

All concentrations are in ng/mL (ppb)

Unlabeled	CS0.2L	CS1L	CS2L	CS3L	CS4L	CS5L
2,3,7,8-TetraCDD	0.02	0.1	0.5	2.0	10	50
1,3,6,8-TetraCDD	0.02	0.1	0.5	2.0	10	50
1,3,7,9-TetraCDD	0.02	0.1	0.5	2.0	10	50
1,2,8,9-TetraCDD	0.02	0.1	0.5	2.0	10	50
1,2,3,7,8-PentaCDD	0.02	0.1	0.5	2.0	10	50
1,2,3,4,7,8-HexaCDD	0.04	0.2	1.0	4.0	20	100
1,2,3,6,7,8-HexaCDD	0.04	0.2	1.0	4.0	20	100
1,2,3,7,8,9-HexaCDD	0.04	0.2	1.0	4.0	20	100
1,2,3,4,6,7,8-HeptaCDD	0.04	0.2	1.0	4.0	20	100
OctaCDD	0.1	0.5	2.5	10	50	250
2,3,7,8-TetraCDF	0.02	0.1	0.5	2.0	10	50
1,3,6,8-TetraCDF	0.02	0.1	0.5	2.0	10	50
1,2,7,8-TetraCDF	0.02	0.1	0.5	2.0	10	50
1,2,8,9-TetraCDF	0.02	0.1	0.5	2.0	10	50
1,2,3,7,8-PentaCDF	0.02	0.1	0.5	2.0	10	50
2,3,4,7,8-PentaCDF	0.02	0.1	0.5	2.0	10	50
1,2,3,4,7,8-HexaCDF	0.04	0.2	1.0	4.0	20	100
1,2,3,6,7,8-HexaCDF	0.04	0.2	1.0	4.0	20	100
2,3,4,6,7,8-HexaCDF	0.04	0.2	1.0	4.0	20	100
1,2,3,7,8,9-HexaCDF	0.04	0.2	1.0	4.0	20	100
1,2,3,4,6,7,8-HeptaCDF	0.04	0.2	1.0	4.0	20	100
1,2,3,4,7,8,9-HeptaCDF	0.04	0.2	1.0	4.0	20	100
OctaCDF	0.1	0.5	2.5	10	50	250
Labeled						
1,2,3,4-TetraCDD ($^{13}C_{12}$, 99%)	2.0	2.0	2.0	2.0	2.0	2.0
1,3,6,8-TetraCDD ($^{13}C_{12}$, 99%)	2.0	2.0	2.0	2.0	2.0	2.0
2,3,7,8-TetraCDD ($^{13}C_{12}$, 99%)	2.0	2.0	2.0	2.0	2.0	2.0
1,2,3,4,7-PentaCDD ($^{13}C_{12}$, 99%)	2.0	2.0	2.0	2.0	2.0	2.0
1,2,3,7,8-PentaCDD ($^{13}C_{12}$, 99%)	2.0	2.0	2.0	2.0	2.0	2.0
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$, 99%)	2.0	2.0	2.0	2.0	2.0	2.0
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$, 99%)	2.0	2.0	2.0	2.0	2.0	2.0
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$, 99%)	2.0	2.0	2.0	2.0	2.0	2.0
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$, 99%)	2.0	2.0	2.0	2.0	2.0	2.0
OctaCDD ($^{13}C_{12}$, 99%)	4.0	4.0	4.0	4.0	4.0	4.0
2,3,7,8-TetraCDF ($^{13}C_{12}$, 99%)	2.0	2.0	2.0	2.0	2.0	2.0
1,3,6,8-TetraCDF ($^{13}C_{12}$, 99%)	2.0	2.0	2.0	2.0	2.0	2.0
1,2,3,4-TetraCDF ($^{13}C_{12}$, 99%)	2.0	2.0	2.0	2.0	2.0	2.0
1,2,7,8-TetraCDF ($^{13}C_{12}$, 99%)	2.0	2.0	2.0	2.0	2.0	2.0
1,2,3,7,8-PentaCDF ($^{13}C_{12}$, 99%)	2.0	2.0	2.0	2.0	2.0	2.0
2,3,4,7,8-PentaCDF ($^{13}C_{12}$, 99%)	2.0	2.0	2.0	2.0	2.0	2.0
1,2,3,4,6,9-HexaCDF ($^{13}C_{12}$, 99%)	2.0	2.0	2.0	2.0	2.0	2.0
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$, 99%)	2.0	2.0	2.0	2.0	2.0	2.0
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	2.0	2.0	2.0	2.0	2.0	2.0
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	2.0	2.0	2.0	2.0	2.0	2.0
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$, 99%)	2.0	2.0	2.0	2.0	2.0	2.0
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$, 99%)	2.0	2.0	2.0	2.0	2.0	2.0
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$, 99%)	2.0	2.0	2.0	2.0	2.0	2.0
1,2,3,4,6,8,9-HeptaCDF ($^{13}C_{12}$, 99%)	2.0	2.0	2.0	2.0	2.0	2.0
OctaCDF ($^{13}C_{12}$, 99%)	4.0	4.0	4.0	4.0	4.0	4.0

JIS Methods K0311 and K0312 Dioxin/Furan Standard Mixtures

	Catalog No.	Compound	Amount
NEW	EDF-5332	Modified JIS Low Concentration Cleanup Spike	1.2 mL in nonane

Labeled	(ng/mL)
1,3,6,8-TetraCDD ($^{13}C_{12}$, 99%)	10
1,3,6,8-TetraCDF ($^{13}C_{12}$, 99%)	10
2,3,7,8-TetraCDD ($^{13}C_{12}$, 99%)	10
2,3,7,8-TetraCDF ($^{13}C_{12}$, 99%)	10
1,2,7,8-TetraCDF ($^{13}C_{12}$, 99%)	10
1,2,3,7,8-PentaCDD ($^{13}C_{12}$, 99%)	10
1,2,3,7,8-PentaCDF ($^{13}C_{12}$, 99%)	10
2,3,4,7,8-PentaCDF ($^{13}C_{12}$, 99%)	10
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$, 99%)	10
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$, 99%)	10
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$, 99%)	10
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$, 99%)	10
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	10
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$, 99%)	10
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	10
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$, 99%)	10
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$, 99%)	10
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$, 99%)	10
OctaCDD ($^{13}C_{12}$, 99%)	20
OctaCDF ($^{13}C_{12}$, 99%)	20

NEW	EDF-5333	Modified JIS Low Concentration Syringe Spike	1.2 mL in nonane

Labeled	(ng/mL)
1,2,3,4-TetraCDD ($^{13}C_{12}$, 99%)	10
1,2,3,4,7-PentaCDD ($^{13}C_{12}$, 99%)	10
1,2,3,4,6,9-HexaCDF ($^{13}C_{12}$, 99%)	10
1,2,3,4,6,8,9-HeptaCDF ($^{13}C_{12}$, 99%)	10

JIS Methods K0311 and K0312 Dioxin/Furan Standard Mixtures

Catalog No.	Compound	Amount
EDF-5187	JIS Dioxin/Furan Calibration Solutions [ST1-ST5]	Set of 5 × 0.2 mL in nonane
EDF-5187-ST1	JIS Dioxin/Furan Calibration Solution [ST1]	0.2 mL in nonane
EDF-5187-ST2	JIS Dioxin/Furan Calibration Solution [ST2]	0.2 mL in nonane
EDF-5187-ST3	JIS Dioxin/Furan Calibration Solution [ST3]	0.2 mL in nonane
EDF-5187-ST4	JIS Dioxin/Furan Calibration Solution [ST4]	0.2 mL in nonane
EDF-5187-ST5	JIS Dioxin/Furan Calibration Solution [ST5]	0.2 mL in nonane

All concentrations are in ng/mL (ppb)

Unlabeled	ST1	ST2	ST3	ST4	ST5
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
Labeled					
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

US EPA Method 8280 Standard Mixtures

Catalog No.	Compound	Amount
EDF-2519-A	Method 8280 Calibration Solutions [CC1-CC5]	Set of 5 × 0.2 mL in nonane
EDF-2519-1	Method 8280 Calibration Solution [CC1]	0.2 mL in nonane
EDF-2519-2	Method 8280 Calibration Solution [CC2]	0.2 mL in nonane
EDF-2519-3	Method 8280 Calibration and Verification Solution [CC3]	0.2 mL in nonane
EDF-2519-4	Method 8280 Calibration Solution [CC4]	0.2 mL in nonane
EDF-2519-5	Method 8280 Calibration Solution [CC5]	0.2 mL in nonane

All concentrations are in ng/µL (ppm)

Unlabeled	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-PentaCDF	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
2,3,4,7,8-PentaCDF	–	–	0.5	–	–
1,2,3,4,7,8-HexaCDF	–	–	1.25	–	–
1,2,3,6,7,8-HexaCDF	0.25	0.625	1.25	2.5	5.0
1,2,3,4,7,8-HexaCDD	–	–	1.25	–	–
1,2,3,6,7,8-HexaCDD	0.25	0.625	1.25	2.5	5.0
1,2,3,7,8,9-HexaCDD	–	–	1.25	–	–
2,3,4,6,7,8-HexaCDF	–	–	1.25	–	–
1,2,3,7,8,9-HexaCDF	–	–	1.25	–	–
1,2,3,4,7,8,9-HeptaCDF	–	–	1.25	–	–
1,2,3,4,6,7,8-HeptaCDF	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
OctaCDD	0.5	1.25	2.5	5.0	10.0
OctaCDF	0.5	1.25	2.5	5.0	10.0
Labeled					
2,3,7,8-TetraCDD ($^{13}C_{12}$, 99%)	0.5	0.5	0.5	0.5	0.5
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
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$, 99%)	1.0	1.0	1.0	1.0	1.0
OctaCDD ($^{13}C_{12}$, 99%)	1.0	1.0	1.0	1.0	1.0
1,2,3,4-TetraCDD ($^{13}C_{12}$, 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
2,3,7,8-TetraCDD ($^{37}Cl_4$, 96%)	–	–	0.25	–	–

NEW	EDF-8280-KIT	Method 8280 "Starter Kit" *	1 Kit

Contains one each of the following items:

EDF-2519-A	Method 8280 Calibration Solutions [CS1-CS5]
EDF-2520	Method 8280 Internal Standard Solution
ED-2521	Method 8280 Recovery Standard Solution
ED-2522	Method 8280 Cleanup Standard Solution
EDF-2523	Method 8280 Matrix Spiking Solution

*Modified Method 8280 "Starter Kit" also available

US EPA Method 8280 Standard Mixtures

Catalog No.	Compound	Amount
EDF-4095	Modified Method 8280 Calibration Solutions [CS1-CS5] (All 17 toxic congeners at all five levels)	Set of 5 × 0.2 mL in nonane
EDF-4095-1	Modified Method 8280 Calibration Standard [CS1]	0.2 mL in nonane
EDF-4095-2	Modified Method 8280 Calibration Standard [CS2]	0.2 mL in nonane
EDF-4095-3	Modified Method 8280 Calibration Standard [CS3]	0.2 mL in nonane
EDF-4095-4	Modified Method 8280 Calibration Standard [CS4]	0.2 mL in nonane
EDF-4095-5	Modified Method 8280 Calibration Standard [CS5]	0.2 mL in nonane

All concentrations are in ng/µL (ppm)

Unlabeled	CS1	CS2	CS3	CS4	CS5
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
Labeled					
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

EDF-2681	Supplemental Internal Standard Solution (not required by US EPA Method 8280)	1.2 mL in nonane

Labeled	(ng/µL)
1,2,3,7,8-PentaCDD ($^{13}C_{12}$, 99%)	5
1,2,3,7,8-PentaCDF ($^{13}C_{12}$, 99%)	5
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$, 99%)	5
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$, 99%)	10
OctaCDF ($^{13}C_{12}$, 99%)	10

US EPA Method 8280 Standard Mixtures

Catalog No.	Compound	Amount
EDF-2520	Method 8280 Internal Standard Solution	1.2 mL in nonane

Labeled	(ng/µL)
2,3,7,8-TetraCDD ($^{13}C_{12}$, 99%)	5
2,3,7,8-TetraCDF ($^{13}C_{12}$, 99%)	5
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$, 99%)	5
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$, 99%)	10
OctaCDD ($^{13}C_{12}$, 99%)	10

ED-2521	Method 8280 Recovery Standard Solution	1.2 mL in nonane

Labeled	(ng/µL)
1,2,3,4-TetraCDD ($^{13}C_{12}$, 99%)	5
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$, 99%)	5

ED-2522	Method 8280 Cleanup Standard Solution	1.2 mL in nonane

Labeled	(ng/µL)
2,3,7,8-TetraCDD ($^{37}Cl_4$, 96%)	5

EDF-2523	Method 8280 Matrix Spiking Solution	1.2 mL in nonane

Unlabeled	(ng/µL)
2,3,7,8-TetraCDD	2.5
2,3,7,8-TetraCDF	2.5
1,2,3,7,8-PentaCDF	6.25
1,2,3,7,8-PentaCDD	6.25
1,2,3,6,7,8-HexaCDF	6.25
1,2,3,6,7,8-HexaCDD	6.25
1,2,3,4,6,7,8-HeptaCDF	6.25
1,2,3,4,6,7,8-HeptaCDD	6.25
OctaCDD	12.5
OctaCDF	12.5

EDF-4096	Modified Method 8280 Matrix Spiking Solution (all 17 toxic congeners)	1.2 mL in nonane

Unlabeled	(ng/µL)
2,3,7,8-TetraCDD	2.5
2,3,7,8-TetraCDF	2.5
1,2,3,7,8-PentaCDD	6.25
1,2,3,7,8-PentaCDF	6.25
2,3,4,7,8-PentaCDF	6.25
1,2,3,4,7,8-HexaCDD	6.25
1,2,3,4,7,8-HexaCDF	6.25
1,2,3,6,7,8-HexaCDD	6.25
1,2,3,6,7,8-HexaCDF	6.25
1,2,3,7,8,9-HexaCDD	6.25
1,2,3,7,8,9-HexaCDF	6.25
2,3,4,6,7,8-HexaCDF	6.25
1,2,3,4,6,7,8-HeptaCDD	6.25
1,2,3,4,6,7,8-HeptaCDF	6.25
1,2,3,4,7,8,9-HeptaCDF	6.25
OctaCDD	12.5
OctaCDF	12.5

Dioxin and Furan Plus PCB Standard Mixtures

Catalog No.	Compound	Amount
EDF-5443	Two-Column Dioxin and Furan and PCB Calibration Solutions [CS1H-CS6H]	Set of 6 × 0.2 mL in nonane
EDF-5443-CS1H	Two-Column Dioxin and Furan and PCB Calibration Solution [CS1H]	0.2 mL in nonane
EDF-5443-CS2H	Two-Column Dioxin and Furan and PCB Calibration Solution [CS2H]	0.2 mL in nonane
EDF-5443-CS3H	Two-Column Dioxin and Furan and PCB Calibration Solution [CS3H]	0.2 mL in nonane
EDF-5443-CS4H	Two-Column Dioxin and Furan and PCB Calibration Solution [CS4H]	0.2 mL in nonane
EDF-5443-CS5H	Two-Column Dioxin and Furan and PCB Calibration Solution [CS5H]	0.2 mL in nonane
EDF-5443-CS6H	Two-Column Dioxin and Furan and PCB Calibration Solution [CS6H]	0.2 mL in nonane

All concentrations are in ng/mL (ppb)

Unlabeled	IUPAC	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	81	0.2	0.5	2.0	10	50	200
3,3′,4,4′-TetraCB	77	0.2	0.5	2.0	10	50	200
3,3′,4,4′,5-PentaCB	126	0.2	0.5	2.0	10	50	200
3,3′,4,4′,5,5′-HexaCB	169	0.2	0.5	2.0	10	50	200
2′,3,4,4′,5-PentaCB	123	0.2	0.5	2.0	10	50	200
2,3′,4,4′,5-PentaCB	118	0.2	0.5	2.0	10	50	200
2,3,3′,4,4′-PentaCB	105	0.2	0.5	2.0	10	50	200
2,3,4,4′,5-PentaCB	114	0.2	0.5	2.0	10	50	200
2,3′,4,4′,5,5′-HexaCB	167	0.2	0.5	2.0	10	50	200
2,3,3′,4,4′,5-HexaCB	156	0.2	0.5	2.0	10	50	200
2,3,3′,4,4′,5′-HexaCB	157	0.2	0.5	2.0	10	50	200
2,3,3′,4,4′,5,5′-HeptaCB	189	0.2	0.5	2.0	10	50	200
2,2′,3,3′,4,4′,5-HeptaCB	170	0.2	0.5	2.0	10	50	200
2,2′,3,4,4′,5,5′-HeptaCB	180	0.2	0.5	2.0	10	50	200

(continued on next page)

Dioxin and Furan Plus PCB Standard Mixtures

(continued from previous page)

All concentrations are in ng/mL (ppb)

Labeled	IUPAC	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
1,2,3,7,8,9-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-TetraCDF ($^{13}C_{12}$, 99%)		10	10	10	10	10	10
1,2,7,8-TetraCDF ($^{13}C_{12}$, 99%)		10	10	10	10	10	10
1,2,3,7,8-PentaCDF ($^{13}C_{12}$, 99%)		10	10	10	10	10	10
2,3,4,7,8-PentaCDF ($^{13}C_{12}$, 99%)		10	10	10	10	10	10
1,2,3,4,6-PentaCDF ($^{13}C_{12}$, 99%)		10	10	10	10	10	10
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$, 99%)		10	10	10	10	10	10
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)		10	10	10	10	10	10
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)		10	10	10	10	10	10
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$, 99%)		10	10	10	10	10	10
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$, 99%)		10	10	10	10	10	10
1,2,3,4,6,8,9-HeptaCDF ($^{13}C_{12}$, 99%)		10	10	10	10	10	10
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$, 99%)		10	10	10	10	10	10
OctaCDF ($^{13}C_{12}$, 99%)		20	20	20	20	20	20
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

Dioxin and Furan Plus PCB Standard Mixtures

Catalog No.	Compound	Amount
EDF-5444	Two-Column Dioxin and Furan and PCB Cleanup Spike	0.6 mL in nonane
NEW EDF-5444-C	Two-Column Dioxin and Furan and PCB Cleanup Spike with 1,3,6,8-TetraCDD	0.6 mL in nonane

Labeled	IUPAC	EDF-5444 (ng/mL)	EDF-5444-C (ng/mL)
1,3,6,8-TetraCDD ($^{13}C_{12}$, 99%)		–	1000
2,3,7,8-TetraCDD ($^{13}C_{12}$, 99%)		1000	1000
1,2,3,7,8-PentaCDD ($^{13}C_{12}$, 99%)		1000	1000
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$, 99%)		1000	1000
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$, 99%)		1000	1000
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$, 99%)		1000	1000
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$, 99%)		1000	1000
OctaCDD ($^{13}C_{12}$, 99%)		2000	2000
2,3,7,8-TetraCDF ($^{13}C_{12}$, 99%)		1000	1000
1,2,3,7,8-PentaCDF ($^{13}C_{12}$, 99%)		1000	1000
2,3,4,7,8-PentaCDF ($^{13}C_{12}$, 99%)		1000	1000
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$, 99%)		1000	1000
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)		1000	1000
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$, 99%)		1000	1000
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)		1000	1000
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$, 99%)		1000	1000
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$, 99%)		1000	1000
OctaCDF ($^{13}C_{12}$, 99%)		2000	2000
3,4,4′,5-TetraCB ($^{13}C_{12}$, 99%)	81	1000	1000
3,3′,4,4′-TetraCB ($^{13}C_{12}$, 99%)	77	1000	1000
3,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	126	1000	1000
3,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	169	1000	1000
2′,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	123	1000	1000
2,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	118	1000	1000
2,3,3′,4,4′-PentaCB ($^{13}C_{12}$, 99%)	105	1000	1000
2,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	114	1000	1000
2,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	167	1000	1000
2,3,3′,4,4′,5-HexaCB ($^{13}C_{12}$, 99%)	156	1000	1000
2,3,3′,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	157	1000	1000
2,3,3′,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	189	1000	1000
2,2′,3,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	180	1000	1000

EDF-5431	Two-Column Dioxin and Furan Syringe Spike	1.2 mL in nonane
EDF-5431-20X	Two-Column Dioxin and Furan Syringe Spike	1.2 mL in nonane

Labeled	EDF-5431 (ng/mL)	EDF-5431-20X (ng/mL)
1,2,7,8-TetraCDF ($^{13}C_{12}$, 99%)	50	1000
1,2,3,4,6-PentaCDF ($^{13}C_{12}$, 99%)	50	1000
1,2,3,4,6,7-HexaCDD ($^{13}C_{12}$, 99%)	50	1000
1,2,3,4,6,8,9-HeptaCDF ($^{13}C_{12}$, 99%)	50	1000

Dioxin and Furan Plus PCB Standard Mixtures

Catalog No.	Compound	Amount
EC-5325	Modified JIS PCB Syringe Spike	1.2 mL in nonane
EC-5325-0.2X	Modified JIS PCB Syringe Spike	10 mL in nonane
EC-5325-20X	Modified JIS PCB Syringe Spike	1.2 mL in nonane

Labeled	IUPAC	EC-5325 (ng/mL)	EC-5325-0.2X (ng/mL)	EC-5325-20X (ng/mL)
2,3′,4′,5-TetraCB ($^{13}C_{12}$, 99%)	70	50	10	1000
2,3,3′,5,5′-PentaCB ($^{13}C_{12}$, 99%)	111	50	10	1000
2,2′,3,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	138	50	10	1000
2,2′,3,3′,5,5′,6-HeptaCB ($^{13}C_{12}$, 99%)	178	50	10	1000

EC-5326	Modified JIS PCB Sampling Spike	1.2 mL in nonane
EC-5326-20X	Modified JIS PCB Sampling Spike	1.2 mL in nonane

Labeled	IUPAC	EC-5326 (ng/mL)	EC-5326-20X (ng/mL)
3,3′,4,5′-TetraCB ($^{13}C_{12}$, 99%)	79	50	1000

Dioxin and Furan Plus PCB Standard Mixtures

	Catalog No.	Compound	Amount
NEW	EDF-5524	Dioxin/Furan/CP-PCB Calibration Series [CDC1-CDC7]	Set of 7 × 0.25 mL in nonane
NEW	EDF-5524-0.1	Dioxin/Furan/CP-PCB Calibration Series [CDC0.1]	0.25 mL in nonane
NEW	EDF-5524-0.3	Dioxin/Furan/CP-PCB Calibration Series [CDC0.3]	0.25 mL in nonane
NEW	EDF-5524-1	Dioxin/Furan/CP-PCB Calibration Series [CDC1]	0.25 mL in nonane
NEW	EDF-5524-2	Dioxin/Furan/CP-PCB Calibration Series [CDC2]	0.25 mL in nonane
NEW	EDF-5524-3	Dioxin/Furan/CP-PCB Calibration Series [CDC3]	0.25 mL in nonane
NEW	EDF-5524-4	Dioxin/Furan/CP-PCB Calibration Series [CDC4]	0.25 mL in nonane
NEW	EDF-5524-5	Dioxin/Furan/CP-PCB Calibration Series [CDC5]	0.25 mL in nonane
NEW	EDF-5524-6	Dioxin/Furan/CP-PCB Calibration Series [CDC6]	0.25 mL in nonane
NEW	EDF-5524-7	Dioxin/Furan/CP-PCB Calibration Series [CDC7]	0.25 mL in nonane

All concentrations are in ng/mL (ppb)

Unlabeled	IUPAC	CDC0.1	CDC0.3	CDC1	CDC2	CDC3	CDC4	CDC5	CDC6	CDC7
2,3,7,8-TetraCDD		0.001	0.003	0.01	0.03	0.1	0.3	1	3	10
2,3,7,8-TetraCDF		0.001	0.003	0.01	0.03	0.1	0.3	1	3	10
1,2,3,7,8-PentaCDD		0.001	0.003	0.01	0.03	0.1	0.3	1	3	10
1,2,3,7,8-PentaCDF		0.001	0.003	0.01	0.03	0.1	0.3	1	3	10
2,3,4,7,8-PentaCDF		0.001	0.003	0.01	0.03	0.1	0.3	1	3	10
1,2,3,4,7,8-HexaCDD		0.001	0.003	0.01	0.03	0.1	0.3	1	3	10
1,2,3,4,7,8-HexaCDF		0.001	0.003	0.01	0.03	0.1	0.3	1	3	10
1,2,3,6,7,8-HexaCDD		0.01	0.03	0.1	0.3	1	3	10	30	100
1,2,3,6,7,8-HexaCDF		0.001	0.003	0.01	0.03	0.1	0.3	1	3	10
1,2,3,7,8,9-HexaCDD		0.001	0.003	0.01	0.03	0.1	0.3	1	3	10
1,2,3,7,8,9-HexaCDF		0.001	0.003	0.01	0.03	0.1	0.3	1	3	10
2,3,4,6,7,8-HexaCDF		0.001	0.003	0.01	0.03	0.1	0.3	1	3	10
1,2,3,4,6,7,8-HeptaCDD		0.01	0.03	0.1	0.3	1	3	10	30	100
1,2,3,4,6,7,8-HeptaCDF		0.01	0.03	0.1	0.3	1	3	10	30	100
1,2,3,4,7,8,9-HeptaCDF		0.001	0.003	0.01	0.03	0.1	0.3	1	3	10
OctaCDD		0.1	0.3	1	3	10	30	100	300	1000
OctaCDF		0.001	0.003	0.01	0.03	0.1	0.3	1	3	10
3,3′,4,4′-TetraCB	77	0.01	0.03	0.1	0.3	1	3	10	30	100
3,4,4′,5-TetraCB	81	0.01	0.03	0.1	0.3	1	3	10	30	100
3,3′,4,4′,5-PentaCB	126	0.01	0.03	0.1	0.3	1	3	10	30	100
3,3′,4,4′,5,5′-HexaCB	169	0.01	0.03	0.1	0.3	1	3	10	30	100
Labeled										
1,2,3,4-TetraCDD ($^{13}C_6$, 99%)		10	10	10	10	10	10	10	10	10
2,3,7,8-TetraCDD ($^{13}C_{12}$, 99%)		10	10	10	10	10	10	10	10	10
2,3,7,8-TetraCDF ($^{13}C_{12}$, 99%)		10	10	10	10	10	10	10	10	10
1,2,3,7,8-PentaCDD ($^{13}C_{12}$, 99%)		10	10	10	10	10	10	10	10	10
1,2,3,7,8-PentaCDF ($^{13}C_{12}$, 99%)		10	10	10	10	10	10	10	10	10
2,3,4,7,8-PentaCDF ($^{13}C_{12}$, 99%)		10	10	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	10	10
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$, 99%)		10	10	10	10	10	10	10	10	10
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$, 99%)		30	30	30	30	30	30	30	30	30
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)		10	10	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	10	10
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$, 99%)		10	10	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	10	10
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$, 99%)		30	30	30	30	30	30	30	30	30
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$, 99%)		30	30	30	30	30	30	30	30	30
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$, 99%)		10	10	10	10	10	10	10	10	10
OctaCDD ($^{13}C_{12}$, 99%)		100	100	100	100	100	100	100	100	100
OctaCDF ($^{13}C_{12}$, 99%)		10	10	10	10	10	10	10	10	10
3,3′,4,4′-TetraCB ($^{13}C_{12}$, 99%)	77	30	30	30	30	30	30	30	30	30
3,3′,5,5′-TetraCB ($^{13}C_{12}$, 99%)	80	30	30	30	30	30	30	30	30	30
3,4,4′,5-TetraCB ($^{13}C_{12}$, 99%)	81	30	30	30	30	30	30	30	30	30
3,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	126	30	30	30	30	30	30	30	30	30
3,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	169	30	30	30	30	30	30	30	30	30
1,2,3,4,6,8,9-HeptaCDF ($^{13}C_{12}$, 99%)		10	10	10	10	10	10	10	10	10

Dioxin and Furan Plus PCB Standard Mixtures

	Catalog No.	Compound	Amount
NEW	EDF-5525	Dioxin/Furan/CP-PCB Internal Standard	5.8 mL in methanol/nonane
NEW	EDF-5525-100X-1.2	Dioxin/Furan/CP-PCB Internal Standard 100X Stock	1.2 mL in methanol/nonane

Labeled	IUPAC	EDF-5525 (pg/µL)	EDF-5525-100X-1.2 (pg/µL)
2,3,7,8-TetraCDD ($^{13}C_{12}$, 99%)		0.5	50
2,3,7,8-TetraCDF ($^{13}C_{12}$, 99%)		0.5	50
1,2,3,7,8-PentaCDD ($^{13}C_{12}$, 99%)		0.5	50
1,2,3,7,8-PentaCDF ($^{13}C_{12}$, 99%)		0.5	50
2,3,4,7,8-PentaCDF ($^{13}C_{12}$, 99%)		0.5	50
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$, 99%)		0.5	50
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$, 99%)		0.5	50
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$, 99%)		1.5	150
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)		0.5	50
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$, 99%)		0.5	50
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$, 99%)		0.5	50
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)		0.5	50
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$, 99%)		1.5	150
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$, 99%)		1.5	150
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$, 99%)		0.5	50
OctaCDD ($^{13}C_{12}$, 99%)		5	500
OctaCDF ($^{13}C_{12}$, 99%)		0.5	50
3,3′,4,4′-TetraCB ($^{13}C_{12}$, 99%)	77	1.5	150
3,4,4′,5-TetraCB ($^{13}C_{12}$, 99%)	81	1.5	150
3,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	126	1.5	150
3,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	169	1.5	150

	Catalog No.	Compound	Amount
NEW	EDF-5526	Dioxin/Furan/CP-PCB Recovery Standard	5.8 mL in 88% hexane/ 10% nonane/2% dodecane
NEW	EDF-5526-100X-1.2	Dioxin/Furan/CP-PCB Recovery Standard 100X Stock	1.2 mL in 88% hexane/ 10% nonane/2% dodecane

Labeled	IUPAC	EDF-5526 (pg/µL)	EDF-5526-100X-1.2 (pg/µL)
1,2,3,4-TetraCDD ($^{13}C_{6}$, 99%)		0.5	50
3,3′,5,5′-TetraCB ($^{13}C_{12}$, 99%)	80	1.5	150
1,2,3,4,6,8,9-HeptaCDF ($^{13}C_{12}$, 99%)		0.5	50
2,4,6,8-TetraBDF ($^{13}C_{12}$, 99%)		1.0	100

Dioxin and Furan Plus PCB Standard Mixtures

	Catalog No.	Compound	Amount
NEW	EDF-5538	Dioxin/Furan/CP-PCB PAR Standard	10 mL in nonane/toluene/ isooctane

Unlabeled	IUPAC	(pg/µL)
2,3,7,8-TetraCDD		20
2,3,7,8-TetraCDF		20
1,2,3,7,8-PentaCDD		20
1,2,3,7,8-PentaCDF		20
2,3,4,7,8-PentaCDF		20
1,2,3,4,7,8-HexaCDD		20
1,2,3,4,7,8-HexaCDF		20
1,2,3,6,7,8-HexaCDD		200
1,2,3,6,7,8-HexaCDF		20
1,2,3,7,8,9-HexaCDD		20
1,2,3,7,8,9-HexaCDF		20
2,3,4,6,7,8-HexaCDF		20
1,2,3,4,6,7,8-HeptaCDD		200
1,2,3,4,6,7,8-HeptaCDF		200
1,2,3,4,7,8,9-HeptaCDF		20
OctaCDD		2000
OctaCDF		20
3,3′,4,4′-TetraCB	77	200
3,4,4′,5-TetraCB	81	200
3,3′,4,4′,5-PentaCB	126	200
3,3′,4,4′,5,5′-HexaCB	169	200

Dioxin and Furan Plus PCB Standard Mixtures

Catalog No.	Compound	Amount
EDF-4144	Internal Standard for Dioxin, Furan and PCB in Tissue	750 µL in nonane

Labeled	IUPAC	(ng/mL)
2,3,7,8-TetraCDD ($^{13}C_{12}$, 99%)		25.0
2,3,7,8-TetraCDF ($^{13}C_{12}$, 99%)		25.0
1,2,3,7,8-PentaCDD ($^{13}C_{12}$, 99%)		25.0
1,2,3,7,8-PentaCDF ($^{13}C_{12}$, 99%)		25.0
2,3,4,7,8-PentaCDF ($^{13}C_{12}$, 99%)		25.0
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$, 99%)		60.0
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$, 99%)		62.5
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$, 99%)		60.0
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)		62.5
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$, 99%)		60.0
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$, 99%)		62.5
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)		62.5
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$, 99%)		60.0
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$, 99%)		62.5
OctaCDD ($^{13}C_{12}$, 99%)		125
OctaCDF ($^{13}C_{12}$, 99%)		125
3,3′,4,4′-TetraCB ($^{13}C_{12}$, 99%)	77	24.0
3,4,4′,5-TetraCB ($^{13}C_{12}$, 99%)	81	24.0
3,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	126	36.0
3,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	169	48.0

EDF-4145	Recovery Standard for Dioxin, Furan and PCB in Tissue	750 µL in nonane

Labeled	IUPAC	(ng/mL)
1,2,3,4-TetraCDD ($^{13}C_{6}$, 99%)		25.0
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$, 99%)		62.5
3,3′,5,5′-TetraCB ($^{13}C_{12}$, 99%)	80	48.0

ES-5321	Multi-Analyte Recovery Spiking Standard	10 mL in 88% hexane/ 2% dodecane/10% nonane
NEW ES-5321-200X-1.2	Multi-Analyte Recovery Spiking Standard	1.2 mL in nonane

Labeled	IUPAC	ES-5321 (ng/mL)	ES-5321-200X-1.2 (ng/mL)
1,2,3,4-TetraCDD ($^{13}C_{6}$, 99%)		2.5	500
2,2′,3,3′,4,5,5′,6,6′-NonaCB ($^{13}C_{12}$, 99%)	208	10.0	2000
3,3′,4,4′-TetraBDE ($^{13}C_{12}$, 99%)	77	7.5	1500
2,2′,3,4,4′,6-HexaBDE ($^{13}C_{12}$, 99%)	139	7.5	1500

Dioxin and Furan Plus PCB Standard Mixtures

Catalog No.	Compound	Amount
EDF-5393	Dioxin Cleanup Spike	1.2 mL in nonane

Labeled	IUPAC	(ng/mL)
2,3,7,8-TetraCDD ($^{13}C_{12}$, 99%)		20
1,3,6,8-TetraCDD ($^{13}C_{12}$, 99%)		20
1,2,3,7,8-PentaCDD ($^{13}C_{12}$, 99%)		20
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$, 99%)		20
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$, 99%)		20
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$, 99%)		20
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$, 99%)		20
OctaCDD ($^{13}C_{12}$, 99%)		40
2,3,7,8-TetraCDF ($^{13}C_{12}$, 99%)		20
1,3,6,8-TetraCDF ($^{13}C_{12}$, 99%)		20
1,2,3,7,8-PentaCDF ($^{13}C_{12}$, 99%)		20
2,3,4,7,8-PentaCDF ($^{13}C_{12}$, 99%)		20
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$, 99%)		20
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)		20
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)		20
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$, 99%)		20
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$, 99%)		20
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$, 99%)		20
OctaCDF ($^{13}C_{12}$, 99%)		40
3,4,4′,5-TetraCB ($^{13}C_{12}$, 99%)	81	20
3,3′,4,4′-TetraCB ($^{13}C_{12}$, 99%)	77	20
3,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	126	20
3,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	169	20
2′,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	123	20
2,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	118	20
2,3,3′,4,4′-PentaCB ($^{13}C_{12}$, 99%)	105	20
2,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	114	20
2,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	167	20
2,3,3′,4,4′,5-HexaCB ($^{13}C_{12}$, 99%)	156	20
2,3,3′,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	157	20
2,3,3′,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	189	20
2,2′,3,3′,4,4′,5-HeptaCB ($^{13}C_{12}$, 99%)	170	20
2,2′,3,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	180	20

EF-5394	Dioxin Syringe Spike	1.2 mL in nonane
NEW EF-5394-0.5X	Dioxin Syringe Spike	1.2 mL in nonane

Labeled	EDF-5394 (ng/µL)	EDF-5394-0.5X (ng/µL)
1,2,7,8-TetraCDF ($^{13}C_{12}$, 99%)	20	10
1,2,3,4,6,9-HexaCDF ($^{13}C_{12}$, 99%)	20	10
1,2,3,4,6,8,9-HeptaCDF ($^{13}C_{12}$, 99%)	20	10

EDF-5395	Dioxin Sampling Spike	1.2 mL in nonane

Labeled	IUPAC	(ng/µL)
1,2,3,4-TetraCDF ($^{13}C_{12}$, 99%)		50
1,2,3,4-TetraCDD ($^{13}C_{12}$, 99%)		50
3,3′,4,5′-TetraCB ($^{13}C_{12}$, 99%)	79	50

Non-2,3,7,8-Containing Dioxin and Furan Standard Mixtures

Catalog No.	Compound	Amount
EDF-5392	Dioxin/Furan Calibration Solutions [CS1-CS6]	Set of 6 × 0.2 mL in nonane
EDF-5392-1	Dioxin/Furan Calibration Solution [CS1]	0.2 mL in nonane
EDF-5392-2	Dioxin/Furan Calibration Solution [CS2]	0.2 mL in nonane
EDF-5392-3	Dioxin/Furan Calibration Solution [CS3]	0.2 mL in nonane
EDF-5392-4	Dioxin/Furan Calibration Solution [CS4]	0.2 mL in nonane
EDF-5392-5	Dioxin/Furan Calibration Solution [CS5]	0.2 mL in nonane
EDF-5392-6	Dioxin/Furan Calibration Solution [CS6]	0.2 mL in nonane

All concentrations are in ng/mL (ppb)

Unlabeled	CS1	CS2	CS3	CS4	CS5	CS6
2,3,7,8-TetraCDD	0.1	0.5	2	10	50	200
1,3,6,8-TetraCDD	0.1	0.5	2	10	50	200
1,3,7,9-TetraCDD	0.1	0.5	2	10	50	200
1,2,8,9-TetraCDD	0.1	0.5	2	10	50	200
1,2,3,7,8-PentaCDD	0.1	0.5	2	10	50	200
1,2,3,4,7,8-HexaCDD	0.2	1	4	20	100	400
1,2,3,6,7,8-HexaCDD	0.2	1	4	20	100	400
1,2,3,7,8,9-HexaCDD	0.2	1	4	20	100	400
1,2,3,4,6,7,8-HeptaCDD	0.2	1	4	20	100	400
OctaCDD	0.5	2.5	10	50	250	1000
2,3,7,8-TetraCDF	0.1	0.5	2	10	50	200
1,3,6,8-TetraCDF	0.1	0.5	2	10	50	200
1,2,7,8-TetraCDF	0.1	0.5	2	10	50	200
1,2,8,9-TetraCDF	0.1	0.5	2	10	50	200
1,2,3,7,8-PentaCDF	0.1	0.5	2	10	50	200
2,3,4,7,8-PentaCDF	0.1	0.5	2	10	50	200
1,2,3,4,7,8-HexaCDF	0.2	1	4	20	100	400
1,2,3,6,7,8-HexaCDF	0.2	1	4	20	100	400
2,3,4,6,7,8-HexaCDF	0.2	1	4	20	100	400
1,2,3,7,8,9-HexaCDF	0.2	1	4	20	100	400
1,2,3,4,6,7,8-HeptaCDF	0.2	1	4	20	100	400
1,2,3,4,7,8,9-HeptaCDF	0.2	1	4	20	100	400
OctaCDF	0.5	2.5	10	50	250	1000
Cleanup						
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
1,2,3,7,8,9-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-TetraCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10
1,3,6,8-TetraCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10
1,2,3,7,8-PentaCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10
2,3,4,7,8-PentaCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10
OctaCDF ($^{13}C_{12}$, 99%)	20	20	20	20	20	20
Syringe						
1,2,7,8-TetraCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10
1,2,3,4,6-PentaCDF ($^{13}C_{12}$, 99%) (alternate)	10	10	10	10	10	10
1,2,3,4,6,9-HexaCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10
1,2,3,4,6,8,9-HeptaCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10
Sampling						
1,2,3,4-TetraCDD ($^{13}C_{12}$, 99%)	10	10	10	10	10	10
1,2,3,4-TetraCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10

Dioxin and Furan Food/Feed/QQQ Standard Mixtures

	Catalog No.	Compound	Amount
NEW	EDF-5554	Dioxin and Furan Food / Feed / QQQ Calibration Series [CS1-CS8] *	Set of 8 × 0.25 mL in nonane
NEW	EDF-5554-L	Dioxin and Furan Food / Feed / QQQ Calibration Series [CS1-CS7] *	Set of 7 × 0.25 mL in nonane
NEW	EDF-5554-H	Dioxin and Furan Food / Feed / QQQ Calibration Series [CS2-CS8] *	Set of 7 × 0.25 mL in nonane
NEW	EDF-5554-CS0.4	Dioxin and Furan Food / Feed / QQQ Calibration Series [CS0.4] *	0.25 mL in nonane
NEW	EDF-5554-CS0.2	Dioxin and Furan Food / Feed / QQQ Calibration Series [CS0.2] *	0.25 mL in nonane

Individual calibration solutions and user-defined combinations are available. Please inquire.

All concentrations are in pg/µL (ppb)

Unlabeled	CS0.2	CS0.4	CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
2,3,7,8-TetraCDD	0.01	0.02	0.05	0.1	0.5	2	5	25	50	200
2,3,7,8-TetraCDF	0.01	0.02	0.05	0.1	0.5	2	5	25	50	200
1,2,3,7,8-PentaCDD	0.01	0.02	0.05	0.1	0.5	2	5	25	50	200
1,2,3,7,8-PentaCDF	0.01	0.02	0.05	0.1	0.5	2	5	25	50	200
2,3,4,7,8-PentaCDF	0.01	0.02	0.05	0.1	0.5	2	5	25	50	200
1,2,3,4,7,8-HexaCDD	0.02	0.04	0.1	0.2	1	4	10	50	100	400
1,2,3,6,7,8-HexaCDD	0.02	0.04	0.1	0.2	1	4	10	50	100	400
1,2,3,7,8,9-HexaCDD	0.02	0.04	0.1	0.2	1	4	10	50	100	400
1,2,3,4,7,8-HexaCDF	0.02	0.04	0.1	0.2	1	4	10	50	100	400
1,2,3,6,7,8-HexaCDF	0.02	0.04	0.1	0.2	1	4	10	50	100	400
1,2,3,7,8,9-HexaCDF	0.02	0.04	0.1	0.2	1	4	10	50	100	400
2,3,4,6,7,8-HexaCDF	0.02	0.04	0.1	0.2	1	4	10	50	100	400
1,2,3,4,6,7,8-HeptaCDD	0.02	0.04	0.1	0.2	1	4	10	50	100	400
1,2,3,4,6,7,8-HeptaCDF	0.02	0.04	0.1	0.2	1	4	10	50	100	400
1,2,3,4,7,8,9-HeptaCDF	0.02	0.04	0.1	0.2	1	4	10	50	100	400
OctaCDD	0.05	0.1	0.25	0.5	2.5	10	25	125	250	1000
OctaCDF	0.05	0.1	0.25	0.5	2.5	10	25	125	250	1000
Extraction										
2,3,7,8-TetraCDD ($^{13}C_{12}$, 99%)	10	10	10	10	10	10	10	10	10	10
2,3,7,8-TetraCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10	10	10	10	10
1,2,3,7,8-PentaCDD ($^{13}C_{12}$, 99%)	10	10	10	10	10	10	10	10	10	10
1,2,3,7,8-PentaCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10	10	10	10	10
2,3,4,7,8-PentaCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10	10	10	10	10
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$, 99%)	20	20	20	20	20	20	20	20	20	20
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$, 99%)	20	20	20	20	20	20	20	20	20	20
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$, 99%)	20	20	20	20	20	20	20	20	20	20
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$, 99%)	20	20	20	20	20	20	20	20	20	20
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	20	20	20	20	20	20	20	20	20	20
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$, 99%)	20	20	20	20	20	20	20	20	20	20
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	20	20	20	20	20	20	20	20	20	20
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$, 99%)	20	20	20	20	20	20	20	20	20	20
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$, 99%)	20	20	20	20	20	20	20	20	20	20
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$, 99%)	20	20	20	20	20	20	20	20	20	20
OctaCDD ($^{13}C_{12}$, 99%)	50	50	50	50	50	50	50	50	50	50
OctaCDF ($^{13}C_{12}$, 99%)	50	50	50	50	50	50	50	50	50	50
Cleanup										
1,2,3,4-TetraCDD ($^{13}C_{6}$, 99%)	10	10	10	10	10	10	10	10	10	10
Injection										
1,2,3,4-TetraCDD ($^{13}C_{12}$, 99%)	10	10	10	10	10	10	10	10	10	10
1,2,3,4,6,9-HexaCDF ($^{13}C_{12}$, 99%)	20	20	20	20	20	20	20	20	20	20
1,2,3,4,6,8,9-HeptaCDF ($^{13}C_{12}$, 99%)	20	20	20	20	20	20	20	20	20	20

*In production; please inquire for final specifications.

Dioxin and Furan Food/Feed/QQQ Standard Mixtures

	Catalog No.	Compound	Amount
NEW	EDF-5555	Dioxin and Furan Food / Feed / QQQ Extraction Standard Solution *	1.2 mL in nonane
NEW	EDF-5555-10X	Dioxin and Furan Food / Feed / QQQ Extraction Standard Solution *	1.2 mL in nonane

Labeled	EDF-5555 (pg/µL)	EDF-5555-10X (pg/µL)
2,3,7,8-TetraCDD ($^{13}C_{12}$, 99%)	10	100
2,3,7,8-TetraCDF ($^{13}C_{12}$, 99%)	10	100
1,2,3,7,8-PentaCDD ($^{13}C_{12}$, 99%)	10	100
1,2,3,7,8-PentaCDF ($^{13}C_{12}$, 99%)	10	100
2,3,4,7,8-PentaCDF ($^{13}C_{12}$, 99%)	10	100
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$, 99%)	20	200
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$, 99%)	20	200
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$, 99%)	20	200
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$, 99%)	20	200
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	20	200
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$, 99%)	20	200
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	20	200
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$, 99%)	20	200
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$, 99%)	20	200
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$, 99%)	20	200
OctaCDD ($^{13}C_{12}$, 99%)	50	500
OctaCDF ($^{13}C_{12}$, 99%)	50	500

NEW	EDF-5556	Dioxin and Furan Food/Feed/QQQ Injection Standard Solution *	1.2 mL in nonane
NEW	EDF-5556-10X	Dioxin and Furan Food/Feed/QQQ Injection Standard Solution *	1.2 mL in nonane

Labeled	EDF-5556 (pg/µL)	EDF-5556-10X (pg/µL)
1,2,3,4-TetraCDD ($^{13}C_{12}$, 99%)	20	200
1,2,3,4,6,9-HexaCDF ($^{13}C_{12}$, 99%)	40	400
1,2,3,4,6,8,9-HeptaCDF ($^{13}C_{12}$, 99%)	40	400

NEW	EDF-5574	Dioxin and Furan Food/Feed/QQQ Cleanup Standard Solution *	1.2 mL in nonane
NEW	EDF-5574-10X	Dioxin and Furan Food/Feed/QQQ Cleanup Standard Solution *	1.2 mL in nonane

Labeled	EDF-5574 (pg/µL)	EDF-5574-10X (pg/µL)
1,2,3,4-TetraCDD ($^{13}C_{6}$, 99%)	20	200

NEW	EDF-5557	Dioxin and Furan Food/Feed/QQQ PAR Standard Solution *	1.2 mL in nonane

Unlabeled	(pg/µL)
2,3,7,8-TetraCDD	500
2,3,7,8-TetraCDF	500
1,2,3,7,8-PentaCDD	500
1,2,3,7,8-PentaCDF	500
2,3,4,7,8-PentaCDF	500
1,2,3,4,7,8-HexaCDD	1000
1,2,3,6,7,8-HexaCDD	1000
1,2,3,7,8,9-HexaCDD	1000
1,2,3,4,7,8-HexaCDF	1000
1,2,3,6,7,8-HexaCDF	1000
1,2,3,7,8,9-HexaCDF	1000
2,3,4,6,7,8-HexaCDF	1000

Unlabeled	(pg/µL)
1,2,3,4,6,7,8-HeptaCDD	1000
1,2,3,4,6,7,8-HeptaCDF	1000
1,2,3,4,7,8,9-HeptaCDF	1000
OctaCDD	2500
OctaCDF	2500

*In production; please inquire for final specifications.

Two-Column Dioxin and Furan Standard Mixtures

Catalog No.	Compound	Amount
EDF-5429-6H	Two-Column Dioxin and Furan Calibration Solutions [CS1H-CS6H]	Set of 6 × 0.2 mL in nonane
EDF-5429-7H	Two-Column Dioxin and Furan Calibration Solutions [CS1H-CS7H]	Set of 7 × 0.2 mL in nonane
EDF-5429-CS1H	Two-Column Dioxin and Furan Calibration Solution [CS1H]	0.2 mL in nonane
EDF-5429-CS2H	Two-Column Dioxin and Furan Calibration Solution [CS2H]	0.2 mL in nonane
EDF-5429-CS3H	Two-Column Dioxin and Furan Calibration Solution [CS3H]	0.2 mL in nonane
EDF-5429-CS4H	Two-Column Dioxin and Furan Calibration Solution [CS4H]	0.2 mL in nonane
EDF-5429-CS5H	Two-Column Dioxin and Furan Calibration Solution [CS5H]	0.2 mL in nonane
EDF-5429-CS6H	Two-Column Dioxin and Furan Calibration Solution [CS6H]	0.2 mL in nonane
EDF-5429-CS7H	Two-Column Dioxin and Furan Calibration Solution [CS7H]	0.2 mL in nonane
EDF-5429-CS8H	Two-Column Dioxin and Furan Calibration Solution [CS8H]	0.2 mL in nonane

All concentrations are in ng/mL (ppb)

Unlabeled	CS1H	CS2H	CS3H	CS4H	CS5H	CS6H	CS7H	CS8H
2,3,7,8-TetraCDF	0.1	0.5	2.0	10	50	200	500	1000
1,3,6,8-TetraCDF	0.1	0.5	2.0	10	50	200	500	1000
1,2,7,8-TetraCDF	0.1	0.5	2.0	10	50	200	500	1000
1,2,8,9-TetraCDF	0.1	0.5	2.0	10	50	200	500	1000
1,2,3,7,8-PentaCDF	0.1	0.5	2.0	10	50	200	500	1000
2,3,4,7,8-PentaCDF	0.1	0.5	2.0	10	50	200	500	1000
1,2,3,4,7,8-HexaCDF	0.2	1.0	4.0	20	100	400	1000	2000
1,2,3,6,7,8-HexaCDF	0.2	1.0	4.0	20	100	400	1000	2000
2,3,4,6,7,8-HexaCDF	0.2	1.0	4.0	20	100	400	1000	2000
1,2,3,7,8,9-HexaCDF	0.2	1.0	4.0	20	100	400	1000	2000
1,2,3,4,6,7,8-HeptaCDF	0.2	1.0	4.0	20	100	400	1000	2000
1,2,3,4,7,8,9-HeptaCDF	0.2	1.0	4.0	20	100	400	1000	2000
OctaCDF	0.5	2.5	10	50	250	1000	2500	5000
2,3,7,8-TetraCDD	0.1	0.5	2.0	10	50	200	500	1000
1,3,6,8-TetraCDD	0.1	0.5	2.0	10	50	200	500	1000
1,3,7,9-TetraCDD	0.1	0.5	2.0	10	50	200	500	1000
1,2,8,9-TetraCDD	0.1	0.5	2.0	10	50	200	500	1000
1,2,3,7,8-PentaCDD	0.1	0.5	2.0	10	50	200	500	1000
1,2,3,4,7,8-HexaCDD	0.2	1.0	4.0	20	100	400	1000	2000
1,2,3,6,7,8-HexaCDD	0.2	1.0	4.0	20	100	400	1000	2000
1,2,3,7,8,9-HexaCDD	0.2	1.0	4.0	20	100	400	1000	2000
1,2,3,4,6,7,8-HeptaCDD	0.2	1.0	4.0	20	100	400	1000	2000
OctaCDD	0.5	2.5	10	50	250	1000	2500	5000
Labeled								
2,3,7,8-TetraCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10	10	10
1,3,6,8-TetraCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10	10	10
1,2,7,8-TetraCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10	10	10
1,2,3,7,8-PentaCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10	10	10
2,3,4,7,8-PentaCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10	10	10
1,2,3,4,6-PentaCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10	10	10
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$, 99%)	10	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	10
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	10	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	10
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$, 99%)	10	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	10
1,2,3,4,6,8,9-HeptaCDF ($^{13}C_{12}$, 99%)	10	10	10	10	10	10	10	10
OctaCDF ($^{13}C_{12}$, 99%)	20	20	20	20	20	20	20	20
1,2,3,4-TetraCDD ($^{13}C_{12}$, 99%)	10	10	10	10	10	10	10	10
2,3,7,8-TetraCDD ($^{13}C_{12}$, 99%)	10	10	10	10	10	10	10	10
1,2,3,7,8-PentaCDD ($^{13}C_{12}$, 99%)	10	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	10
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$, 99%)	10	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	10
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$, 99%)	10	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	10
OctaCDD ($^{13}C_{12}$, 99%)	20	20	20	20	20	20	20	20

Two-Column Dioxin and Furan Standard Mixtures

Catalog No.	Compound	Amount
EDF-5430	Two-Column Dioxin and Furan Cleanup Spike	1.2 mL in nonane

Labeled	(ng/mL)
2,3,7,8-TetraCDF ($^{13}C_{12}$, 99%)	50
1,2,3,7,8-PentaCDF ($^{13}C_{12}$, 99%)	50
2,3,4,7,8-PentaCDF ($^{13}C_{12}$, 99%)	50
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$, 99%)	50
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	50
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	50
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$, 99%)	50
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$, 99%)	50
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$, 99%)	50
OctaCDF ($^{13}C_{12}$, 99%)	100
2,3,7,8-TetraCDD ($^{13}C_{12}$, 99%)	50
1,2,3,7,8-PentaCDD ($^{13}C_{12}$, 99%)	50
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$, 99%)	50
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$, 99%)	50
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$, 99%)	50
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$, 99%)	50
OctaCDD ($^{13}C_{12}$, 99%)	100

EDF-5431	Two-Column Dioxin and Furan Syringe Spike	1.2 mL in nonane
EDF-5431-20X	Two-Column Dioxin and Furan Syringe Spike	1.2 mL in nonane

Labeled	EDF-5431 (ng/mL)	EDF-5431-20X (ng/mL)
1,2,7,8-TetraCDF ($^{13}C_{12}$, 99%)	50	1000
1,2,3,4,6-PentaCDF ($^{13}C_{12}$, 99%)	50	1000
1,2,3,4,6,7-HexaCDD ($^{13}C_{12}$, 99%)	50	1000
1,2,3,4,6,8,9-HeptaCDF ($^{13}C_{12}$, 99%)	50	1000

NEW	ED-5432	Two-Column Dioxin and Furan Sampling Spike	1.2 mL in nonane

Labeled	(ng/mL)
1,2,3,4-TetraCDD ($^{13}C_{12}$, 99%)	50

Isotope-Labeled Dioxin and Furan Standard Mixtures

Catalog No.	Compound	Amount
EDF-4067	Tetra-OctaCDD and CDF Standard Solution (2,3,7,8-isomers)	1.2 mL in nonane
EDF-4067-A	Tetra-OctaCDD and CDF Standard Solution (2,3,7,8-isomers excluding 1,2,3,7,8,9-HexaCDD)	1.2 mL in nonane
EDF-5041	Non-2,3,7,8-Containing PCDF Cleanup Standard	1.2 mL in nonane
NEW EDF-5041-20	Non-2,3,7,8-Containing PCDF Cleanup Standard 1/20 Dilution	5 mL in nonane

Labeled	EDF-4067 (ng/mL)	EDF-4067-A (ng/mL)	EDF-5041 (ng/mL)	EDF-5041-20 (ng/mL)
2,3,7,8-TetraCDD ($^{13}C_{12}$, 99%)	1000	1000	2000	100
2,3,7,8-TetraCDF ($^{13}C_{12}$, 99%)	1000	1000	2000	100
1,2,3,7,8-PentaCDD ($^{13}C_{12}$, 99%)	1000	1000	2000	100
1,2,3,7,8-PentaCDF ($^{13}C_{12}$, 99%)	1000	1000	2000	100
2,3,4,7,8-PentaCDF ($^{13}C_{12}$, 99%)	1000	1000	2000	100
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$, 99%)	1000	1000	2000	100
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$, 99%)	1000	1000	2000	100
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$, 99%)	1000	–	2000	100
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$, 99%)	1000	1000	2000	100
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	1000	1000	2000	100
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$, 99%)	1000	1000	2000	100
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	1000	1000	2000	100
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$, 99%)	1000	1000	2000	100
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$, 99%)	1000	1000	2000	100
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$, 99%)	1000	1000	2000	100
OctaCDD ($^{13}C_{12}$, 99%)	1000	2000	4000	200
OctaCDF ($^{13}C_{12}$, 99%)	1000	2000	4000	200

EDF-5304	Dioxin and Furan Cleanup Spike	1.2 mL in nonane
EDF-5174-40X	1,3,6,8-TCDD/F Containing Cleanup Spike	1.2 mL in nonane

Labeled	EDF-5304 (ng/mL)	EDF-5174-40X (ng/mL)
1,3,6,8-TetraCDD ($^{13}C_{12}$, 99%)	1000	200
2,3,7,8-TetraCDD ($^{13}C_{12}$, 99%)	1000	200
1,2,3,7,8-PentaCDD ($^{13}C_{12}$, 99%)	1000	200
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$, 99%)	1000	200
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$, 99%)	1000	200
1,2,3,7,8,9-HexaCDD ($^{13}C_{12}$, 99%)	1000	200
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$, 99%)	1000	200
OctaCDD ($^{13}C_{12}$, 99%)	2000	400
1,3,6,8-TetraCDF ($^{13}C_{12}$, 99%)	1000	200
2,3,7,8-TetraCDF ($^{13}C_{12}$, 99%)	1000	200
1,2,3,7,8-PentaCDF ($^{13}C_{12}$, 99%)	1000	200
2,3,4,7,8-PentaCDF ($^{13}C_{12}$, 99%)	1000	200
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$, 99%)	1000	200
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	1000	200
1,2,3,7,8,9-HexaCDF ($^{13}C_{12}$, 99%)	1000	200
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	1000	200
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$, 99%)	1000	200
1,2,3,4,7,8,9-HeptaCDF ($^{13}C_{12}$, 99%)	1000	200
OctaCDF ($^{13}C_{12}$, 99%)	2000	400

Isotope-Labeled Dioxin and Furan Standard Mixtures

Catalog No.	Compound	Amount
EDF-4964-A	JIS Dioxin/Furan Type 1 Cleanup Standard Solution	0.5 mL in nonane

Labeled	(ng/mL)
2,3,7,8-TetraCDD ($^{13}C_{12}$, 99%)	2000
2,3,7,8-TetraCDF ($^{13}C_{12}$, 99%)	2000
1,2,3,7,8-PentaCDD ($^{13}C_{12}$, 99%)	2000
2,3,4,7,8-PentaCDF ($^{13}C_{12}$, 99%)	2000
1,2,3,4,7,8-HexaCDD ($^{13}C_{12}$, 99%)	2000
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$, 99%)	2000
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$, 99%)	2000
1,2,3,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	2000
2,3,4,6,7,8-HexaCDF ($^{13}C_{12}$, 99%)	2000
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$, 99%)	2000
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$, 99%)	2000
OctaCDD ($^{13}C_{12}$, 99%)	4000
OctaCDF ($^{13}C_{12}$, 99%)	4000

EDF-957	Carbon-13 Quantifying Cocktail (2,3,7,8-PCDD/PCDF isomers)	Set of 3 × 0.4 mL in nonane

Labeled	(ng/mL)
2,3,7,8-TetraCDD ($^{13}C_{12}$, 99%)	1000
2,3,7,8-TetraCDF ($^{13}C_{12}$, 99%)	1000
1,2,3,7,8-PentaCDD ($^{13}C_{12}$, 99%)	1000
1,2,3,7,8-PentaCDF ($^{13}C_{12}$, 99%)	1000
1,2,3,6,7,8-HexaCDD ($^{13}C_{12}$, 99%)	1000
1,2,3,4,7,8-HexaCDF ($^{13}C_{12}$, 99%)	1000
1,2,3,4,6,7,8-HeptaCDD ($^{13}C_{12}$, 99%)	1000
1,2,3,4,6,7,8-HeptaCDF ($^{13}C_{12}$, 99%)	1000
OctaCDD ($^{13}C_{12}$, 99%)	1000
OctaCDF ($^{13}C_{12}$, 99%)	1000

Unlabeled Dioxin and Furan Standard Mixtures

	Catalog No.	Compound	Amount
NEW	EDF-5493	Dioxin/Furan Native Mix All 17 2,3,7,8 Isomers + 1,3,6,8-TetraCDD/F + 1,3,7,9-TetraCDD	1.2 mL in nonane

Unlabeled	(ng/mL)
1,3,6,8-TetraCDD	1000
2,3,7,8-TetraCDD	1000
1,3,7,9-TetraCDD	1000
1,2,3,7,8-PentaCDD	1000
1,2,3,4,7,8-HexaCDD	2000
1,2,3,6,7,8-HexaCDD	2000
1,2,3,7,8,9-HexaCDD	2000
1,2,3,4,6,7,8-HeptaCDD	2000
OctaCDD	5000
1,3,6,8-TetraCDF	1000
2,3,7,8-TetraCDF	1000
1,2,3,7,8-PentaCDF	1000
2,3,4,7,8-PentaCDF	2000
1,2,3,4,7,8-HexaCDF	2000
1,2,3,6,7,8-HexaCDF	2000
1,2,3,7,8,9-HexaCDF	2000
2,3,4,6,7,8-HexaCDF	2000
1,2,3,4,7,8,9-HeptaCDF	2000
OctaCDF	5000

ED-906B-5	TCDD-HpCDD Standard Solution (B) (2,3,7,8 isomers)	1.2 mL in nonane
ED-906B-25	TCDD-HpCDD Standard Solution (B) (2,3,7,8 isomers)	1.2 mL in nonane

Unlabeled	ED-906B-5 (ng/mL)	ED-906B-25 (ng/mL)
2,3,7,8-TetraCDD	5000	25,000
1,2,3,7,8-PentaCDD	5000	25,000
1,2,3,4,7,8-HexaCDD	5000	25,000
1,2,3,6,7,8-HexaCDD	5000	25,000
1,2,3,7,8,9-HexaCDD	5000	25,000
1,2,3,4,6,7,8-HeptaCDD	5000	25,000

EF-909B-5	TCDF-HpCDF Standard Solution (B) (2,3,7,8 isomers)	1.2 mL in nonane
EF-909B-25	TCDF-HpCDF Standard Solution (B) (2,3,7,8 isomers)	1.2 mL in nonane

Unlabeled	ED-909B-5 (ng/mL)	ED-909B-25 (ng/mL)
2,3,7,8-TetraCDF	5000	25,000
1,2,3,7,8-PentaCDF	5000	25,000
2,3,4,7,8-PentaCDF	5000	25,000
1,2,3,4,7,8-HexaCDF	5000	25,000
1,2,3,6,7,8-HexaCDF	5000	25,000
1,2,3,7,8,9-HexaCDF	5000	25,000
2,3,4,6,7,8-HexaCDF	5000	25,000
1,2,3,4,6,7,8-HeptaCDF	5000	25,000
1,2,3,4,7,8,9-HeptaCDF	5000	25,000

Unlabeled Dioxin and Furan Standard Mixtures

Catalog No.	Compound	Amount
ED-4135	Chlorodioxin Mix – High	1 mL in nonane

Unlabeled	(ng/mL)
2-MonoCDD	5000
2,8-DiCDD	5000
2,3,7-TriCDD	5000
2,3,7,8-TetraCDD	5000
1,2,3,7,8-PentaCDD	5000
1,2,3,4,7,8-HexaCDD	5000
1,2,3,6,7,8-HexaCDD	5000
1,2,3,7,8,9-HexaCDD	5000
1,2,3,4,6,7,8-HeptaCDD	5000
OctaCDD	5000

EF-4134	Chlorodibenzofuran Mix – High	1 mL in nonane

Unlabeled	(ng/mL)
2-MonoCDF	5000
2,4-DiCDF	5000
2,4,6-TriCDF	5000
2,3,7,8-TetraCDF	5000
1,2,3,7,8-PentaCDF	5000
2,3,4,7,8-PentaCDF	5000
1,2,3,4,7,8-HexaCDF	5000
1,2,3,6,7,8-HexaCDF	5000
2,3,4,6,7,8-HexaCDF	5000
1,2,3,7,8,9-HexaCDF	5000
1,2,3,4,6,7,8-HeptaCDF	5000
1,2,3,4,7,8,9-HeptaCDF	5000
OctaCDF	5000

Window Defining Mixtures

Catalog No.	Compound	Amount
EDF-4147	PCDD/PentaCDF Window Defining and Isomer Specificity Mix (DB-5 and DB-225 Columns)	1.2 mL in nonane

Unlabeled	(ng/mL)
1,3,6,8-TetraCDD	200
1,2,8,9-TetraCDD	200
2,3,7,8-TetraCDD	200
2,3,7,8-TetraCDD ($^{13}C_{12}$, 99%)	200
1,2,3,7/1,2,3,8-TetraCDD	200
1,2,3,9-TetraCDD	200
1,3,6,8-TetraCDF	200
1,2,8,9-TetraCDF	200
2,3,7,8-TetraCDF	200
2,3,7,8-TetraCDF ($^{13}C_{12}$, 99%)	200
2,3,4,7-TetraCDF	200
1,2,3,9-TetraCDF	200
1,2,4,6,8/1,2,4,7,9-PentaCDD	200
1,2,3,8,9-PentaCDD	200
1,3,4,6,8-PentaCDF	200
1,2,3,8,9-PentaCDF	200
1,2,4,6,7,9/1,2,4,6,8,9-HexaCDD	200
1,2,3,4,6,7-HexaCDD	200
1,2,3,4,6,8-HexaCDF	200
1,2,3,4,8,9-HexaCDF	200
1,2,3,4,6,7,9-HeptaCDD	200
1,2,3,4,6,7,8-HeptaCDF	200
1,2,3,4,6,7,8-HeptaCDD	200
1,2,3,4,7,8,9-HeptaCDF	200

ED-1732-S	TCDD-HpCDD Window Defining Mixture (DB-5)	0.5 mL in nonane

Unlabeled	(ng/mL)
1,3,6,8-TetraCDD	800
1,2,8,9-TetraCDD	800
1,2,4,6,8/1,2,4,7,9-PentaCDD	800
1,2,3,8,9-PentaCDD	800
1,2,3,4,6,7-HexaCDD	800
1,2,4,6,7,9/1,2,4,6,8,9-HexaCDD	800
1,2,3,4,6,7,8-HeptaCDD	800
1,2,3,4,6,7,9-HeptaCDD	800

EF-1731-S	TCDF-HpCDF Window Defining Mixture (DB-5)	0.5 mL in nonane

Unlabeled	(ng/mL)
1,3,6,8-TetraCDF	800
1,2,8,9-TetraCDF	800
1,3,4,6,8-PentaCDF	800
1,2,3,8,9-PentaCDF	800
1,2,3,4,6,8-HexaCDF	800
1,2,3,4,8,9-HexaCDF	800
1,2,3,4,6,7,8-HeptaCDF	800
1,2,3,4,7,8,9-HeptaCDF	800

Column Performance Mixtures

Catalog No.	Compound	Amount
ED-908	TCDD Column Performance Solution Mixture	1.2 mL in nonane

Unlabeled	(ng/mL)
1,2,3,4-TetraCDD	10
1,2,3,7/1,2,3,8-TetraCDD	10
1,2,7,8-TetraCDD	10
1,4,7,8-TetraCDD	10
2,3,7,8-TetraCDD	10

ED-935-A	Modified TCDD Column Performance Check Solution	0.5 mL in nonane

Unlabeled	(ng/mL)
2,3,7,8-TetraCDD	100
1,2,3,4-TetraCDD	100
1,4,7,8-TetraCDD	100
1,2,3,7/1,2,3,8-TetraCDD	100
1,2,7,8-TetraCDD	200
2,3,7,8-TetraCDD ($^{13}C_{12}$, 99%)	250
2,3,7,8-TetraCDD ($^{37}Cl_4$, 96%)	7
1,2,3,4-TetraCDD ($^{13}C_{12}$, 99%)	500

Instrument Performance Mixture

	Catalog No.	Compound	Amount
NEW	ED-5461	1,2,3,4-TCDD Instrument Performance Check	0.1 mL in nonane

Unlabeled	(pg/mL)
1,2,3,4-TetraCDD	100
Labeled	
1,2,3,4-TetraCDD ($^{13}C_{12}$, 99%)	100

Bromodioxin/Furan Calibration Solutions

Catalog No.	Compound	Amount
EDF-5407	Bromodioxin/Furan Calibration Standard Solutions [CS1-CS5]	Set of 5 × 0.2 mL in nonane
EDF-5407-1	Bromodioxin/Furan Calibration Standard Solution [CS1]	0.2 mL in nonane
EDF-5407-2	Bromodioxin/Furan Calibration Standard Solution [CS2]	0.2 mL in nonane
EDF-5407-3	Bromodioxin/Furan Calibration Standard Solution [CS3]	0.2 mL in nonane
EDF-5407-4	Bromodioxin/Furan Calibration Standard Solution [CS4]	0.2 mL in nonane
EDF-5407-5	Bromodioxin/Furan Calibration Standard Solution [CS5]	0.2 mL in nonane

All concentrations are in ng/mL (ppb)

Unlabeled	CS1	CS2	CS3	CS4	CS5
2,3,7,8-TetraBDD	0.1	0.4	2.0	10	50
1,2,3,7,8-PentaBDD	0.2	0.8	4.0	20	100
1,2,3,4,7,8-HexaBDD	0.6	2.4	12.0	60	300
1,2,3,6,7,8-HexaBDD	0.6	2.4	12.0	60	300
1,2,3,7,8,9-HexaBDD	0.6	2.4	12.0	60	300
1,2,3,4,6,7,8-HeptaBDD	0.75	3.0	15.0	75	375
OctaBDD	1.0	4.0	20.0	100	500
2,3,7,8-TetraBDF	0.2	0.8	4.0	20	100
2,4,6,8-TetraBDF	0.2	0.8	4.0	20	100
1,2,3,7,8-PentaBDF	0.4	1.6	8.0	40	200
2,3,4,7,8-PentaBDF	0.4	1.6	8.0	40	200
1,2,3,4,7,8-HexaBDF	0.6	2.4	12.0	60	300
1,2,3,4,6,7,8-HeptaBDF	0.75	3.0	15.0	75	375
OctaBDF	1.0	4.0	20.0	100	500
Labeled					
2,3,7,8-TetraBDD ($^{13}C_{12}$, 99%)	20	20	20	20	20
1,2,3,7,8-PentaBDD ($^{13}C_{12}$, 99%)	20	20	20	20	20
1,2,3,4,7,8-HexaBDD ($^{13}C_{12}$, 99%)	50	50	50	50	50
1,2,3,6,7,8-HexaBDD ($^{13}C_{12}$, 99%)	50	50	50	50	50
1,2,3,7,8,9-HexaBDD ($^{13}C_{12}$, 99%)	50	50	50	50	50
1,2,3,4,6,7,8-HeptaBDD ($^{13}C_{12}$, 99%)	100	100	100	100	100
OctaBDD ($^{13}C_{12}$, 99%)	150	150	150	150	150
2,3,7,8-TetraBDF ($^{13}C_{12}$, 99%)	20	20	20	20	20
2,4,6,8-TetraBDF ($^{13}C_{12}$, 99%)	20	20	20	20	20
1,2,3,7,8-PentaBDF ($^{13}C_{12}$, 99%)	20	20	20	20	20
2,3,4,7,8-PentaBDF ($^{13}C_{12}$, 99%)	20	20	20	20	20
1,2,3,4,7,8-HexaBDF ($^{13}C_{12}$, 99%)	50	50	50	50	50
1,2,3,4,6,7,8-HeptaBDF ($^{13}C_{12}$, 99%)	100	100	100	100	100
OctaBDF ($^{13}C_{12}$, 99%)	150	150	150	150	150

Bromodioxin/Furan Standard Mixtures

Catalog No.	Compound	Amount
EDF-5408	Bromodioxin/Furan Cleanup Spike	0.5 mL in nonane

Labeled	(ng/mL)
2,3,7,8-TetraBDD ($^{13}C_{12}$, 99%)	100
1,2,3,7,8-PentaBDD ($^{13}C_{12}$, 99%)	100
1,2,3,4,7,8-HexaBDD ($^{13}C_{12}$, 99%)	250
1,2,3,6,7,8-HexaBDD ($^{13}C_{12}$, 99%)	250
1,2,3,4,6,7,8-HeptaBDD ($^{13}C_{12}$, 99%)	500
OctaBDD ($^{13}C_{12}$, 99%)	750
2,3,7,8-TetraBDF ($^{13}C_{12}$, 99%)	100
2,3,4,7,8-PentaBDF ($^{13}C_{12}$, 99%)	100
1,2,3,4,7,8-HexaBDF ($^{13}C_{12}$, 99%)	250
1,2,3,4,6,7,8-HeptaBDF ($^{13}C_{12}$, 99%)	500
OctaBDF ($^{13}C_{12}$, 99%)	750

EDF-5409-A	Bromodioxin/Furan Syringe Spike	1.2 mL in nonane:toluene

Labeled	(ng/mL)
1,2,3,7,8,9-HexaBDD ($^{13}C_{12}$, 99%)	500
1,2,3,7,8-PentaBDF ($^{13}C_{12}$, 99%)	200

EF-5410	Bromodioxin/Furan Sampling Spike	1.2 mL in nonane

Labeled	(ng/mL)
2,4,6,8-TetraBDF ($^{13}C_{12}$, 99%)	200

NEW EDF-5517	Bromodioxin/Furan Native PAR Solution	1.2 mL in nonane

Unlabeled	(ng/mL)
2,3,7,8-TetraBDD	50
1,2,3,7,8-PentaBDD	100
1,2,3,4,7,8-HexaBDD	300
1,2,3,6,7,8-HexaBDD	300
1,2,3,7,8,9-HexaBDD	300
1,2,3,4,6,7,8-HeptaBDD	375
OctaBDD	500
2,3,7,8-TetraBDF	100
2,4,6,8-TetraBDF	100
1,2,3,7,8-PentaBDF	200
2,3,4,7,8-PentaBDF	200
1,2,3,4,7,8-HexaBDF	300
1,2,3,4,6,7,8-HeptaBDF	375
OctaBDF	500

Bromodioxin/Furan Calibration Solutions

Catalog No.	Compound	Amount
EDF-5381	PBDD/F Calibration Solutions [CS1-CS7]	Set of 7 × 0.2 mL in nonane
EDF-5381-CS1	PBDD/F Calibration Solution [CS1]	0.2 mL in nonane
EDF-5381-CS2	PBDD/F Calibration Solution [CS2]	0.2 mL in nonane
EDF-5381-CS3	PBDD/F Calibration Solution [CS3]	0.2 mL in nonane
EDF-5381-CS4	PBDD/F Calibration Solution [CS4]	0.2 mL in nonane
EDF-5381-CS5	PBDD/F Calibration Solution [CS5]	0.2 mL in nonane
EDF-5381-CS6	PBDD/F Calibration Solution [CS6]	0.2 mL in nonane
EDF-5381-CS7	PBDD/F Calibration Solution [CS7]	0.2 mL in nonane

All concentrations are in ng/mL (ppb)

Unlabeled	CS1	CS2	CS3	CS4	CS5	CS6	CS7
2,3,7,8-TetraBDD	0.1	0.4	2	10	20	40	—
1,2,3,7,8-PentaBDD	0.2	0.8	4	20	40	80	—
1,2,3,4,7,8-HexaBDD	0.75	3	15	75	150	300	—
1,2,3,6,7,8-HexaBDD	0.75	3	15	75	150	300	—
1,2,3,7,8,9-HexaBDD	0.75	3	15	75	150	300	—
OctaBDD	1	4	20	100	200	400	800
2,3,7,8-TetraBDF	0.5	2	10	50	100	200	—
2,4,6,8-TetraBDF	0.5	2	10	50	100	200	—
1,2,3,7,8-PentaBDF	0.5	2	10	50	100	200	—
2,3,4,7,8-PentaBDF	0.5	2	10	50	100	200	—
1,2,3,4,7,8-HexaBDF	0.75	3	15	75	150	300	—
1,2,3,4,6,7,8-HeptaBDF	0.75	3	15	75	150	300	600
OctaBDF	1	4	20	100	200	400	800
Labeled							
2,3,7,8-TetraBDD ($^{13}C_{12}$, 99%)	10	10	10	10	10	10	—
1,2,3,7,8-PentaBDD ($^{13}C_{12}$, 99%)	20	20	20	20	20	20	—
1,2,3,4,7,8-HexaBDD ($^{13}C_{12}$, 99%)	75	75	75	75	75	75	—
1,2,3,6,7,8-HexaBDD ($^{13}C_{12}$, 99%)	75	75	75	75	75	75	
1,2,3,7,8,9-HexaBDD ($^{13}C_{12}$, 99%)	100	100	100	100	100	100	—
OctaBDD ($^{13}C_{12}$, 99%)	225	225	225	225	225	225	225
2,3,7,8-TetraBDF ($^{13}C_{12}$, 99%)	40	40	40	40	40	40	—
2,4,6,8-TetraBDF ($^{13}C_{12}$, 99%)	40	40	40	40	40	40	—
1,2,3,7,8-PentaBDF ($^{13}C_{12}$, 99%)	40	40	40	40	40	40	—
2,3,4,7,8-PentaBDF ($^{13}C_{12}$, 99%)	40	40	40	40	40	40	—
1,2,3,4,7,8-HexaBDF ($^{13}C_{12}$, 99%)	40	40	40	40	40	40	—
1,2,3,4,6,7,8-HeptaBDF ($^{13}C_{12}$, 99%)	100	100	100	100	100	100	—
OctaBDF ($^{13}C_{12}$, 99%)	225	225	225	225	225	225	225

Bromodioxin/Furan Standard Mixtures

Catalog No.	Compound	Amount
EDF-5382	PBDD/F Cleanup Spike	0.5 mL in nonane

Labeled	(ng/mL)
2,3,7,8-TetraBDD ($^{13}C_{12}$, 99%)	50
1,2,3,7,8-PentaBDD ($^{13}C_{12}$, 99%)	100
1,2,3,4,7,8-HexaBDD ($^{13}C_{12}$, 99%)	375
1,2,3,6,7,8-HexaBDD ($^{13}C_{12}$, 99%)	375
OctaBDD ($^{13}C_{12}$, 99%)	1125
2,3,7,8-TetraBDF ($^{13}C_{12}$, 99%)	200
2,3,4,7,8-PentaBDF ($^{13}C_{12}$, 99%)	200
1,2,3,4,7,8-HexaBDF ($^{13}C_{12}$, 99%)	375
1,2,3,4,6,7,8-HeptaBDF ($^{13}C_{12}$, 99%)	500
OctaBDF ($^{13}C_{12}$, 99%)	1125

EDF-5383	PBDD/F Syringe Spike Stock	1.2 mL in nonane
EDF-5383-4X	PBDD/F Syringe Spike Stock	1.2 mL in nonane

Labeled	EDF-5383 (ng/mL)	EDF-5383-4X (ng/mL)
1,2,3,7,8,9-HexaBDD ($^{13}C_{12}$, 99%)	500	2000
1,2,3,7,8-PentaBDF ($^{13}C_{12}$, 99%)	200	800

EF-5384	PBDD/F Sampling Stock	1.2 mL in nonane
EF-5384-4X	PBDD/F Sampling Stock	1.2 mL in nonane

Labeled	EF-5384 (ng/mL)	EF-5384-4X (ng/mL)
2,4,6,8-TetraBDF ($^{13}C_{12}$, 99%)	200	800

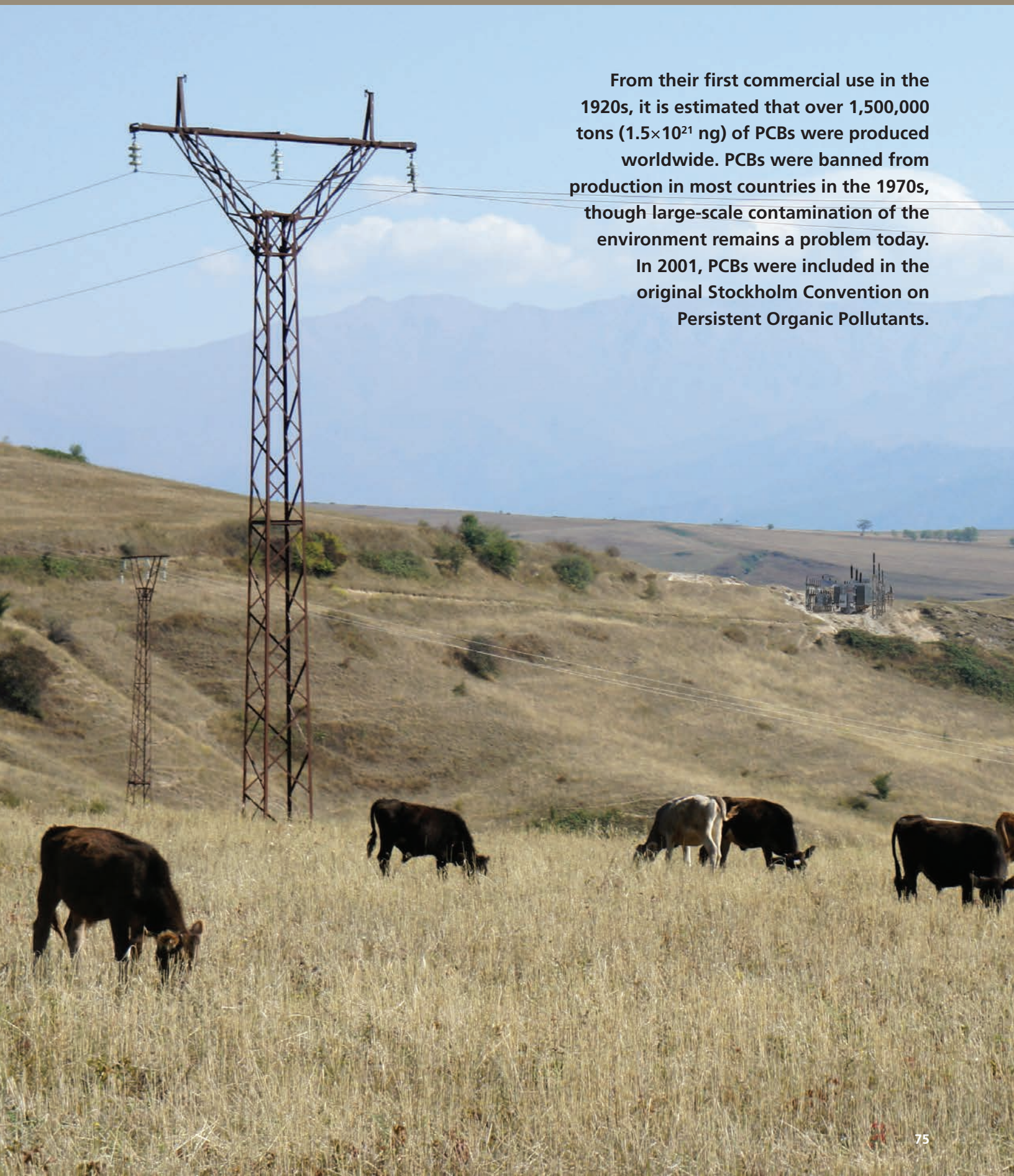
Bromodioxin/Furan Standard Mixtures

Catalog No.	Compound	Amount
ED-5073	Brominated Dioxin/Furan Internal Standard	1.2 mL in nonane

Labeled	(ng/mL)
2,3,7,8-TetraBDD ($^{13}C_{12}$, 99%)	200
1,2,3,6,7,8-HexaBDD ($^{13}C_{12}$, 99%)	50
1,2,3,7,8,9-HexaBDD ($^{13}C_{12}$, 99%)	150

Catalog No.	Compound	Amount
EDF-5059	Polybrominated Dioxin and Furan Mixture	1.2 mL in nonane

Unabeled	(ng/mL)
2,3,7,8-TetraBDD	1000
1,2,3,7,8-PentaBDD	1000
1,2,3,4,7,8-HexaBDD	1000
1,2,3,6,7,8-HexaBDD	1000
1,2,3,7,8,9-HexaBDD	1000
OctaBDD	1000
2,3,7,8-TetraBDF	1000
1,2,3,7,8-PentaBDF	1000
2,3,4,7,8-PentaBDF	1000
1,2,3,4,7,8-HexaBDF	1000
1,2,3,4,6,7,8-HeptaBDF	1000



From their first commercial use in the 1920s, it is estimated that over 1,500,000 tons (1.5×10^{21} ng) of PCBs were produced worldwide. PCBs were banned from production in most countries in the 1970s, though large-scale contamination of the environment remains a problem today. In 2001, PCBs were included in the original Stockholm Convention on Persistent Organic Pollutants.

PCB Nomenclature

In recent years, interest in PCB testing has centered around two different but related groups of congeners, one group based on congeners most commonly found in technical PCB products and thus in the environment, and another based on toxicity. To help researchers more easily find the products they need, PCB standards and standard mixtures have been categorized by these two groups: "WHO Dioxin-Like PCBs" – compounds that demonstrate dioxin-like activity and have been given toxic equivalence factors (TEFs) by the World Health Organization (WHO); and "WHO Non-Dioxin-Like (Marker/Indicator) PCBs" – compounds that are found in the highest concentrations in technical products and the environment, but have not been given TEFs by the WHO. Please note that CIL also offers a set of standard mixtures developed for the combined analysis of both groups. Look to CIL for even more developments in this area as we continue to work toward meeting the complete needs of researchers in environmental, food, water, and exposure analysis.

Unlabeled "CS" PCB Standards

CIL's primary business is isotopically labeled standards, but it is important to remember that the accuracy and precision of a quantitative analysis is dependent upon the accuracy and precision of the unlabeled (native) standards. In the past, CIL utilized commercially available native standards from multiple vendors for the confirmation of its isotopically labeled standards. It was discovered, however, that there can be substantial variability among the commercial native standards. Thus, CIL initiated the "CS" (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-labeled standards from CIL.

Isotope-Labeled PCB Standards

CIL offers more than 50 individual ^{13}C-labeled PCB standards to meet the growing needs of researchers utilizing isotope dilution mass spectrometry (IDMS). All ^{13}C-labeled PCB standards are quantified against CIL-certified unlabeled PCB standards for utmost precision and accuracy.

High-Purity PCB Standards

CIL responds 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 labeled standards of other PCB congeners or polychlorinated dibenzo-*p*-dioxins and dibenzofurans (PCDD/Fs) becomes a hindrance to a laboratory's 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.

High-Purity PCB Standards

Chemical Identity: Unambiguous identity by GC-MS, ^{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"

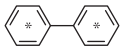
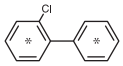
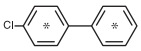
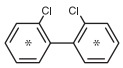
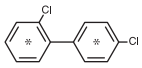
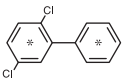
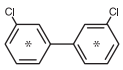
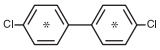
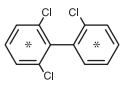
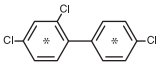
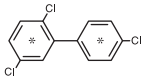
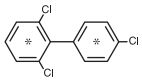
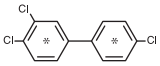
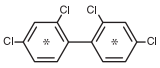
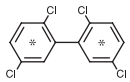
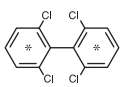
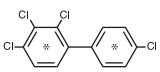
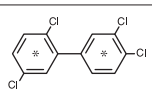
Comprehensive Native PCB Mixtures

CIL has produced a new calibration series and spiking solutions to go along with its two large mixes of unlabeled PCBs formulated entirely from its PCB certified standards individual stock solutions. The Comprehensive PCB Mixtures include 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.

Mixed Bromo/Chlorobiphenyl Standards

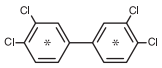
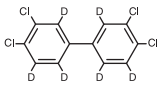
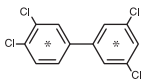
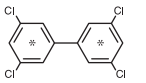
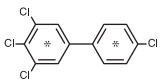
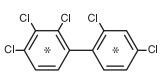
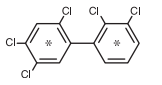
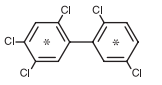
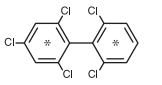
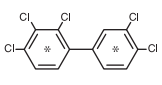
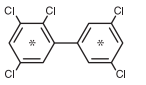
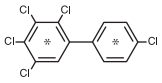
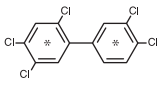
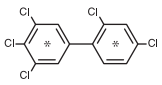
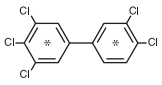
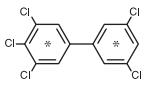
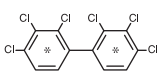
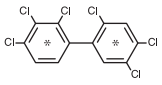
CIL offers a selection of labeled and unlabeled mixed halogenated biphenyl standards and standard mixtures. While very limited research on these compounds has been done to date, they have been identified in environmental matrices and warrant further investigation.

Isotope-Labeled Individual PCB Standards

	Catalog No.	Compound	IUPAC	Structure	Concentration	Amount
	CLM-3235-1.2	Biphenyl ($^{13}C_{12}$, 99%)	0		100 µg/mL in nonane	1.2 mL
	EC-4908-3 EC-4908-1.2	2-Monochlorobiphenyl ($^{13}C_{12}$, 99%)	1		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-4990-3 EC-4990-1.2	4-Monochlorobiphenyl ($^{13}C_{12}$, 99%)	3		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-4911-3 EC-4911-1.2	2,2′-Dichlorobiphenyl ($^{13}C_{12}$, 99%)	4		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-5095-3 EC-5095-1.2	2,4′-Dichlorobiphenyl ($^{13}C_{12}$, 99%)	8		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-4165-3 EC-4165-1.2	2,5-Dichlorobiphenyl ($^{13}C_{12}$, 99%)	9		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
NEW *NEW*	EC-5494-3 EC-5494-1.2	3,3′-Dichlorobiphenyl ($^{13}C_{12}$, 99%)	11		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-1402-3 EC-1402-1.2	4,4′-Dichlorobiphenyl ($^{13}C_{12}$, 99%)	15		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-4909-3 EC-4909-1.2	2,2′,6-Trichlorobiphenyl ($^{13}C_{12}$, 99%)	19		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
M	EC-1413-3 EC-1413-1.2	2,4,4′-Trichlorobiphenyl ($^{13}C_{12}$, 99%)	28		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
NEW *NEW*	EC-5512-3 EC-5512-1.2	2,4′,5-Trichlorobiphenyl ($^{13}C_{12}$, 99%)	31		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-4163-3 EC-4163-1.2	2,4′,6-Trichlorobiphenyl ($^{13}C_{12}$, 99%)	32		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-4901-3 EC-4901-1.2	3,4,4′-Trichlorobiphenyl ($^{13}C_{12}$, 99%)	37		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-1434-3 EC-1434-1.2	2,2′,4,4′-Tetrachlorobiphenyl ($^{13}C_{12}$, 99%)	47		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
M	EC-1424-3 EC-1424-1.2	2,2′,5,5′-Tetrachlorobiphenyl ($^{13}C_{12}$, 99%)	52		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-4912-3 EC-4912-1.2	2,2′,6,6′-Tetrachlorobiphenyl ($^{13}C_{12}$, 99%)	54		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-4078-3 EC-4078-1.2	2,3,4,4′-Tetrachlorobiphenyl ($^{13}C_{12}$, 99%)	60		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-4914-3 EC-4914-1.2	2,3′,4′,5-Tetrachlorobiphenyl ($^{13}C_{12}$, 99%)	70		40 ± 2 µg/mL in nonane	3 mL 1.2 mL

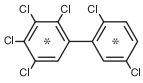
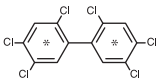
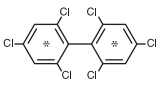
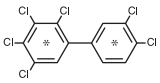
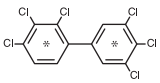
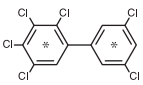
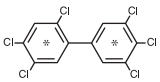
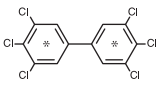
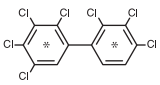
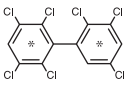
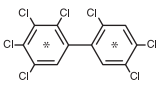
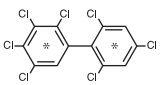
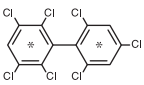
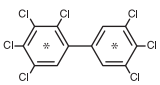
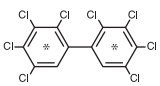
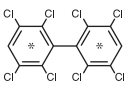
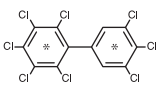
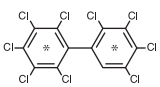
M = marker PCB *DL = dioxin-like PCB*

Isotope-Labeled Individual PCB Standards

	Catalog No.	Compound	IUPAC	Structure	Concentration	Amount
DL	EC-1404-3 EC-1404-1.2	3,3′,4,4′-Tetrachlorobiphenyl ($^{13}C_{12}$, 99%)	77		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
DL	DLM-3063-3 DLM-3063-1.2	3,3′,4,4′-Tetrachlorobiphenyl (D_6, 98%)	77		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-5048-3 EC-5048-1.2	3,3′,4,5′-Tetrachlorobiphenyl ($^{13}C_{12}$, 99%)	79		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-1414-3 EC-1414-1.2	3,3′,5,5′-Tetrachlorobiphenyl ($^{13}C_{12}$, 99%)	80		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
DL	EC-1412-3 EC-1412-1.2	3,4,4′,5-Tetrachlorobiphenyl ($^{13}C_{12}$, 99%)	81		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-4929-3 EC-4929-1.2	2,2′,3,4,4′-Pentachlorobiphenyl ($^{13}C_{12}$, 99%)	85		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-1428-3 EC-1428-1.2	2,2′,3′,4,5-Pentachlorobiphenyl ($^{13}C_{12}$, 99%)	97		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
M	EC-1405-3 EC-1405-1.2	2,2′,4,5,5′-Pentachlorobiphenyl ($^{13}C_{12}$, 99%)	101		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-4910-3 EC-4910-1.2	2,2′,4,6,6′-Pentachlorobiphenyl ($^{13}C_{12}$, 99%)	104		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
DL	EC-1420-3 EC-1420-1.2	2,3,3′,4,4′-Pentachlorobiphenyl ($^{13}C_{12}$, 99%)	105		40 ± 2 µg/mL in nonane *high purity	3 mL 1.2 mL
	EC-1415-3 EC-1415-1.2	2,3,3′,5,5′-Pentachlorobiphenyl ($^{13}C_{12}$, 99%)	111		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
DL	EC-4902-3 EC-4902-1.2	2,3,4,4′,5-Pentachlorobiphenyl ($^{13}C_{12}$, 99%)	114		40 ± 2 µg/mL in nonane *high purity	3 mL 1.2 mL
M/DL	EC-1435-3 EC-1435-1.2	2,3′,4,4′,5-Pentachlorobiphenyl ($^{13}C_{12}$, 99%)	118		40 ± 2 µg/mL in nonane *high purity	3 mL 1.2 mL
DL	EC-4904-3 EC-4904-1.2	2′,3,4,4′,5-Pentachlorobiphenyl ($^{13}C_{12}$, 99%)	123		40 ± 2 µg/mL in nonane *high purity	3 mL 1.2 mL
DL	EC-1425-3 EC-1425-1.2	3,3′,4,4′,5-Pentachlorobiphenyl ($^{13}C_{12}$, 99%)	126		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-1421-3 EC-1421-1.2	3,3′,4,5,5′-Pentachlorobiphenyl ($^{13}C_{12}$, 99%)	127		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-1411-3 EC-1411-1.2	2,2′,3,3′,4,4′-Hexachlorobiphenyl ($^{13}C_{12}$, 99%)	128		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
M	EC-1436-3 EC-1436-1.2	2,2′,3,4,4′,5′-Hexachlorobiphenyl ($^{13}C_{12}$, 99%)	138		40 ± 2 µg/mL in nonane	3 mL 1.2 mL

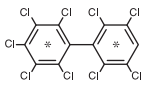
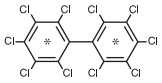
M = marker PCB *DL = dioxin-like PCB*

Isotope-Labeled Individual PCB Standards

	Catalog No.	Compound	IUPAC	Structure	Concentration	Amount
	EC-1426-3 EC-1426-1.2	2,2′,3,4,5,5′-Hexachlorobiphenyl ($^{13}C_{12}$, 99%)	141		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
M	EC-1406-3 EC-1406-1.2	2,2′,4,4′,5,5′-Hexachlorobiphenyl ($^{13}C_{12}$, 99%)	153		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-4167-3 EC-4167-1.2	2,2′,4,4′,6,6′-Hexachlorobiphenyl ($^{13}C_{12}$, 99%)	155		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
DL	EC-1422-3 EC-1422-1.2	2,3,3′,4,4′,5-Hexachlorobiphenyl ($^{13}C_{12}$, 99%)	156		40 ± 2 µg/mL in nonane *high purity	3 mL 1.2 mL
DL	EC-4051-3 EC-4051-1.2	2,3,3′,4,4′,5′-Hexachlorobiphenyl ($^{13}C_{12}$, 99%)	157		40 ± 2 µg/mL in nonane *high purity	3 mL 1.2 mL
	EC-5336-3 EC-5336-1.2	2,3,3′,4,5,5′-Hexachlorobiphenyl ($^{13}C_{12}$, 99%)	159		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
DL	EC-4050-3 EC-4050-1.2	2,3′,4,4′,5,5′-Hexachlorobiphenyl ($^{13}C_{12}$, 99%)	167		40 ± 2 µg/mL in nonane *high purity	3 mL 1.2 mL
DL	EC-1416-3 EC-1416-1.2	3,3′,4,4′,5,5′-Hexachlorobiphenyl ($^{13}C_{12}$, 99%)	169		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-4905-3 EC-4905-1.2	2,2′,3,3′,4,4′,5-Heptachlorobiphenyl ($^{13}C_{12}$, 99%)	170		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-1417-3 EC-1417-1.2	2,2′,3,3′,5,5′,6-Heptachlorobiphenyl ($^{13}C_{12}$, 99%)	178		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
M	EC-1407-3 EC-1407-1.2	2,2′,3,4,4′,5,5′-Heptachlorobiphenyl ($^{13}C_{12}$, 99%)	180		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
NEW *NEW*	EC-5471-3 EC-5471-1.2	2,2′,3,4,4′,5,6′-Heptachlorobiphenyl ($^{13}C_{12}$, 99%)	182		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-4913-3 EC-4913-1.2	2,2′,3,4′,5,6,6′-Heptachlorobiphenyl ($^{13}C_{12}$, 99%)	188		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
DL	EC-1409-3 EC-1409-1.2	2,3,3′,4,4′,5,5′-Heptachlorobiphenyl ($^{13}C_{12}$, 99%)	189		40 ± 2 µg/mL in nonane *high purity	3 mL 1.2 mL
	EC-1418-3 EC-1418-1.2	2,2′,3,3′,4,4′,5,5′-Octachlorobiphenyl ($^{13}C_{12}$, 99%)	194		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-1408-3 EC-1408-1.2	2,2′,3,3′,5,5′,6,6′-Octachlorobiphenyl ($^{13}C_{12}$, 99%)	202		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-4199-3 EC-4199-1.2	2,3,3′,4,4′,5,5′,6-Octachlorobiphenyl ($^{13}C_{12}$, 99%)	205		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
	EC-4900-3 EC-4900-1.2	2,2′,3,3′,4,4′,5,5′,6-Nonachlorobiphenyl ($^{13}C_{12}$, 99%)	206		40 ± 2 µg/mL in nonane	3 mL 1.2 mL

M = marker PCB *DL = dioxin-like PCB*

Isotope-Labeled Individual PCB Standards

Catalog No.	Compound	IUPAC	Structure	Concentration	Amount
EC-1419-3 EC-1419-1.2	2,2′,3,3′,4,5,5′,6,6′-Nonachlorobiphenyl ($^{13}C_{12}$, 99%)	208		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
EC-1410-3 EC-1410-1.2 EC-1410-10	Decachlorobiphenyl ($^{13}C_{12}$, 99%)	209		40 ± 2 µg/mL in nonane	3 mL 1.2 mL 10 mL

Unlabeled Individual PCB "CS" Standards

	Catalog No.	Compound	Concentration	Amount
	PCB-1-CS	2-Monochlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-3-CS	4-Monochlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-4-CS	2,2′-Dichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-8-CS	2,4′-Dichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-9-CS	2,5-Dichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-10-CS	2,6-Dichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-11-CS	3,3′-Dichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-12-CS	3,4-Dichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-15-CS	4,4′-Dichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
NEW	PCB-17-CS	2,2′,4-Trichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-18-CS	2,2′,5-Trichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-19-CS	2,2′,6-Trichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-28-CS	2,4,4′-Trichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-30-CS	2,4,6-Trichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-31-CS	2,4′,5-Trichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-32-CS	2,4′,6-Trichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-33-CS	2′,3,4-Trichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-35-CS	3,3′,4-Trichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-37-CS	3,4,4′-Trichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-38-CS	3,4,5-Trichlorobiphenyl	100 ± 5 µg/mL in isooctane	1 2 mL
	PCB-39-CS	3,4′,5-Trichlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-44-CS	2,2′,3,5′-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-47-CS	2,2′,4,4′-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-49-CS	2,2′,4,5′-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-52-CS	2,2′,5,5′-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-54-CS	2,2′,6,6′-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-57-CS	2,3,3′,5-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-60-CS	2,3,4,4′-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-66-CS	2,3′,4,4′-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-70-CS	2,3′,4′,5-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-74-CS	2,4,4′,5-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-77-CS	3,3′,4,4′-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-78-CS	3,3′,4,5-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-79-CS	3,3′,4,5′-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-80-CS	3,3′,5,5′-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-81-CS	3,4,4′,5-Tetrachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
NEW	PCB-82-CS	2,2′,3,3′,4-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-85-CS	2,2′,3,4,4′-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-87-CS	2,2′,3,4,5′-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-95-CS	2,2′,3,5′,6-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-97-CS	2,2′,3′,4,5-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-99-CS	2,2′,4,4′,5-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-101-CS	2,2′,4,5,5′-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-104-CS	2,2′,4,6,6′-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-105-CS	2,3,3′,4,4′-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-110-CS	2,3,3′,4′,6-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL

Unlabeled Individual PCB "CS" Standards

	Catalog No.	Compound	Concentration	Amount
	PCB-111-CS	2,3,3′,5,5′-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-112-CS	2,3,3′,5,6-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-114-CS	2,3,4,4′,5-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-118-CS	2,3′,4,4′,5-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-123-CS	2′,3,4,4′,5-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-126-CS	3,3′,4,4′,5-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-127-CS	3,3′,4,5,5′-Pentachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-128-CS	2,2′,3,3′,4,4′-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
NEW	PCB-132-CS	2,2′,3,3′,4,6′-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-138-CS	2,2′,3,4,4′,5′-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-141-CS	2,2′,3,4,5,5′-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-146-CS	2,2′,3,4′,5,5′-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-149-CS	2,2′,3,4′,5′,6-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-151-CS	2,2′,3,5,5′,6-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-153-CS	2,2′,4,4′,5,5′-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-155-CS	2,2′,4,4′,6,6′-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-156-CS	2,3,3′,4,4′,5-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-157-CS	2,3,3′,4,4′,5′-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-158-CS	2,3,3′,4,4′,6-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-159-CS	2,3,3′,4,5,5′-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-162-CS	2,3,3′,4′,5,5′-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-167-CS	2,3′,4,4′,5,5′-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-169-CS	3,3′,4,4′,5,5′-Hexachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-170-CS	2,2′,3,3′,4,4′,5-Heptachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
NEW	PCB-171-CS	2,2′,3,3′,4,4′,6-Heptachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-172-CS	2,2′,3,3′,4,5,5′-Heptachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-174-CS	2,2′,3,3′,4,5,6′-Heptachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-177-CS	2,2′,3,3′,4′,5,6-Heptachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-178-CS	2,2′,3,3′,5,5′,6-Heptachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-180-CS	2,2′,3,4,4′,5,5′-Heptachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
NEW	PCB-182-CS	2,2′,3,4,4′,5,6′-Heptachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
NEW	PCB-183-CS	2,2′,3,4,4′,5′,6-Heptachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-187-CS	2,2′,3,4′,5,5′,6-Heptachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-188-CS	2,2′,3,4′,5,6,6′-Heptachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-189-CS	2,3,3′,4,4′,5,5′-Heptachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
NEW	PCB-191-CS	2,3,3′,4,4′,5′,6-Heptachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-194-CS	2,2′,3,3′,4,4′,5,5′-Octachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-195-CS	2,2′,3,3′,4,4′,5,6-Octachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-196-CS	2,2′,3,3′,4,4′,5′,6-Octachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-198-CS	2,2′,3,3′,4,5,5′,6-Octachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-199-CS	2,2′,3,3′,4,5,6,6′-Octachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-201-CS	2,2′,3,3′,4,5,5′,6′-Octachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-202-CS	2,2′,3,3′,5,5′,6,6′-Octachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-203-CS	2,2′,3,4,4′,5,5′,6-Octachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-205-CS	2,3,3′,4,4′,5,5′,6-Octachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-206-CS	2,2′,3,3′,4,4′,5,5′,6-Nonachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-208-CS	2,2′,3,3′,4,5,5′,6,6′-Nonachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL
	PCB-209-CS	Decachlorobiphenyl	100 ± 5 µg/mL in isooctane	1.2 mL

Unlabeled PCB Standards

CIL also offers:

- All 209 PCBs in single weighed solutions at approximately 35 µg/mL in isooctane, with chemical purity >95%.
- All 209 PCBs in neat form; typically at nominal weights of 1 or 5 mg.

For details, please consult the CIL website at shop.isotope.com.

US EPA Method 1668A/B/C Standard Mixtures

Catalog No.	Compound	Amount
EC-4976	Method 1668A/B/C Calibration Solutions [CS1-CS5]	Set of 5 × 0.2 mL in nonane
EC-4976-0.2	Method 1668A/B/C High Sensitivity Calibration Solution [CS0.2] (not included in EC-4976)	0.2 mL in nonane
EC-4976-1	Method 1668A/B/C Calibration Solution [CS1]	0.2 mL in nonane
EC-4976-2	Method 1668A/B/C Calibration Solution [CS2]	0.2 mL in nonane
EC-4976-3	Method 1668A/B/C Calibration Verification Solution [CS3]	0.2 mL in nonane
EC-4976-3-4	Method 1668A/B/C Calibration Verification Solution [CS3]	Set of 4 × 0.2 mL in nonane
EC-4976-4	Method 1668A/B/C Calibration Solution [CS4]	0.2 mL in nonane
EC-4976-5	Method 1668A/B/C Calibration Solution [CS5]	0.2 mL in nonane

All concentrations are in ng/mL (ppb)

Native Toxics/LOC	IUPAC	CS0.2	CS1	CS2	CS3	CS4	CS5
2-MonoCB	1	0.2	1.0	5.0	50	400	2000
4-MonoCB	3	0.2	1.0	5.0	50	400	2000
2,2′-DiCB	4	0.2	1.0	5.0	50	400	2000
4,4′-DiCB	15	0.2	1.0	5.0	50	400	2000
2,2′,6-TriCB	19	0.2	1.0	5.0	50	400	2000
3,4,4′-TriCB	37	0.2	1.0	5.0	50	400	2000
2,2′,6,6′-TetraCB	54	0.2	1.0	5.0	50	400	2000
3,3′,4,4′-TetraCB	77	0.2	1.0	5.0	50	400	2000
3,4,4′,5-TetraCB	81	0.2	1.0	5.0	50	400	2000
2,2′,4,6,6′-PentaCB	104	0.2	1.0	5.0	50	400	2000
2,3,3,′4,4′-PentaCB	105	0.2	1.0	5.0	50	400	2000
2,3,4,4′,5-PentaCB	114	0.2	1.0	5.0	50	400	2000
2,3′,4,4′,5-PentaCB	118	0.2	1.0	5.0	50	400	2000
2′,3,4,4′,5-PentaCB	123	0.2	1.0	5.0	50	400	2000
3,3′,4,4′,5-PentaCB	126	0.2	1.0	5.0	50	400	2000
2,2′,4,4′,6,6′-HexaCB	155	0.2	1.0	5.0	50	400	2000
2,3,3′,4,4′,5-HexaCB	156	0.2	1.0	5.0	50	400	2000
2,3,3′,4,4′,5′-HexaCB	157	0.2	1.0	5.0	50	400	2000
2,3′,4,4′,5,5′-HexaCB	167	0.2	1.0	5.0	50	400	2000
3,3′,4,4′,5,5′-HexaCB	169	0.2	1.0	5.0	50	400	2000
2,2′,3,4′,5,6,6′-HeptaCB	188	0.2	1.0	5.0	50	400	2000
2,3,3′,4,4′,5,5′-HeptaCB	189	0.2	1.0	5.0	50	400	2000
2,2′,3,3′,5,5′,6,6′-OctaCB	202	0.2	1.0	5.0	50	400	2000
2,3,3′,4,4′,5,5′,6-OctaCB	205	0.2	1.0	5.0	50	400	2000
2,2′,3,3′,4,4′,5,5′,6-NonaCB	206	0.2	1.0	5.0	50	400	2000
2,2′,3,3′,4,5,5′,6,6′-NonaCB	208	0.2	1.0	5.0	50	400	2000
DecaCB	209	0.2	1.0	5.0	50	400	2000
Labeled Toxics/LOC/Window Defining							
2-MonoCB ($^{13}C_{12}$, 99%)	1	100	100	100	100	100	100
4-MonoCB ($^{13}C_{12}$, 99%)	3	100	100	100	100	100	100
2,2′-DiCB ($^{13}C_{12}$, 99%)	4	100	100	100	100	100	100
4,4′-DiCB ($^{13}C_{12}$, 99%)	15	100	100	100	100	100	100
2,2′,6-TriCB ($^{13}C_{12}$, 99%)	19	100	100	100	100	100	100
3,4,4′-TriCB ($^{13}C_{12}$, 99%)	37	100	100	100	100	100	100
2,2′,6,6′-TetraCB ($^{13}C_{12}$, 99%)	54	100	100	100	100	100	100
3,3′,4,4′-TetraCB ($^{13}C_{12}$, 99%)	77	100	100	100	100	100	100
3,4,4′,5-TetraCB ($^{13}C_{12}$, 99%)	81	100	100	100	100	100	100
2,2′,4,6,6′-PentaCB ($^{13}C_{12}$, 99%)	104	100	100	100	100	100	100
2,3,3′,4,4′-PentaCB ($^{13}C_{12}$, 99%)	105	100	100	100	100	100	100
2,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	114	100	100	100	100	100	100
2,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	118	100	100	100	100	100	100
2′,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	123	100	100	100	100	100	100
3,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	126	100	100	100	100	100	100
2,2′,4,4′,6,6′-HexaCB ($^{13}C_{12}$, 99%)	155	100	100	100	100	100	100
2,3,3′,4,4′,5-HexaCB ($^{13}C_{12}$, 99%)	156	100	100	100	100	100	100
2,3,3′,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	157	100	100	100	100	100	100
2,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	167	100	100	100	100	100	100
3,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	169	100	100	100	100	100	100

(continued on next page)

US EPA Method 1668A/B/C Standard Mixtures

(continued from previous page)

All concentrations are in ng/mL (ppb)

Labeled Toxics/LOC/Window Defining	IUPAC	CS0.2	CS1	CS2	CS3	CS4	CS5
2,2′,3,4′,5,6,6′-HeptaCB ($^{13}C_{12}$, 99%)	188	100	100	100	100	100	100
2,3,3′,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	189	100	100	100	100	100	100
2,2′,3,3′,5,5′,6,6′-OctaCB ($^{13}C_{12}$, 99%)	202	100	100	100	100	100	100
2,3,3′,4,4′,5,5′,6-OctaCB ($^{13}C_{12}$, 99%)	205	100	100	100	100	100	100
2,2′,3,3′,4,4′,5,5′,6-NonaCB ($^{13}C_{12}$, 99%)	206	100	100	100	100	100	100
2,2′,3,3′,4,5,5′,6,6′-NonaCB ($^{13}C_{12}$, 99%)	208	100	100	100	100	100	100
DecaCB ($^{13}C_{12}$, 99%)	209	100	100	100	100	100	100
Labeled Cleanup							
2,4,4′-TriCB ($^{13}C_{12}$, 99%)	28	100	100	100	100	100	100
2,3,3′,5,5′-PentaCB ($^{13}C_{12}$, 99%)	111	100	100	100	100	100	100
2,2′,3,3′,5,5′,6-HeptaCB ($^{13}C_{12}$, 99%)	178	100	100	100	100	100	100
Labeled Injection Internal							
2,5-DiCB ($^{13}C_{12}$, 99%)	9	100	100	100	100	100	100
2,2′,5,5′-TetraCB ($^{13}C_{12}$, 99%)	52	100	100	100	100	100	100
2,2′,4,5,5′-PentaCB ($^{13}C_{12}$, 99%)	101	100	100	100	100	100	100
2,2′,3,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	138	100	100	100	100	100	100
2,2′,3,3′,4,4′,5,5′-OctaCB ($^{13}C_{12}$, 99%)	194	100	100	100	100	100	100

NEW	EC-1668A/B-KIT	Method 1668A/B/C "Starter Kit"	1 Kit

Contains one each of the following items:

EC-4976	Method 1668A/B/C Calibration Solutions [CS1-CS5]
EC-4977	Method 1668A/B/C Labeled Toxics/LOC/Window Defining Solution
EC-4978	Method 1668A/B/C Labeled Cleanup Standard Solution
EC-4979	Method 1668A/B/C Labeled Injection Internal Standard Solution
EC-4989	Method 1668A/B/C Native Toxics/LOC Solution

US EPA Method 1668A/B/C Standard Mixtures

Catalog No.	Compound	Amount
EC-4977	Method 1668A/B/C Labeled Toxics/LOC/Window Defining Solution	1.2 mL in nonane
EC-4977-5	Method 1668A/B/C Labeled Toxics/LOC/Window Defining Solution	5 mL in nonane

Labeled	IUPAC	(ng/mL)
2-MonoCB ($^{13}C_{12}$, 99%)	1	1000
4-MonoCB ($^{13}C_{12}$, 99%)	3	1000
2,2′-DiCB ($^{13}C_{12}$, 99%)	4	1000
4,4′-DiCB ($^{13}C_{12}$, 99%)	15	1000
2,2′,6-TriCB ($^{13}C_{12}$, 99%)	19	1000
3,4,4′-TriCB ($^{13}C_{12}$, 99%)	37	1000
2,2′,6,6′-TetraCB ($^{13}C_{12}$, 99%)	54	1000
3,3′,4,4′-TetraCB ($^{13}C_{12}$, 99%)	77	1000
3,4,4′,5-TetraCB ($^{13}C_{12}$, 99%)	81	1000
2,2′,4,6,6′-PentaCB ($^{13}C_{12}$, 99%)	104	1000
2,3,3′,4,4′-PentaCB ($^{13}C_{12}$, 99%)	105	1000
2,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	114	1000
2,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	118	1000
2′,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	123	1000
3,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	126	1000
2,3,3′,4,4′,5-HexaCB ($^{13}C_{12}$, 99%)	155	1000
2,2′,4,4′,6,6′-HexaCB ($^{13}C_{12}$, 99%)	156	1000
2,3,3′,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	157	1000
2,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	167	1000
3,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	169	1000
2,2′,3,4′,5,6,6′-HeptaCB ($^{13}C_{12}$, 99%)	188	1000
2,3,3′,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	189	1000
2,2′,3,3′,5,5′,6,6′-OctaCB ($^{13}C_{12}$, 99%)	202	1000
2,3,3′,4,4′,5,5′,6-OctaCB ($^{13}C_{12}$, 99%)	205	1000
2,2′,3,3′,4,4′,5,5′,6-NonaCB ($^{13}C_{12}$, 99%)	206	1000
2,2′,3,3′,4,5,5′,6,6′-NonaCB ($^{13}C_{12}$, 99%)	208	1000
DecaCB ($^{13}C_{12}$, 99%)	209	1000

EC-4978	Method 1668A/B/C Labeled Cleanup Standard Solution	1.2 mL in nonane

Labeled	IUPAC	(ng/mL)
2,4,4′-TriCB ($^{13}C_{12}$, 99%)	28	1000
2,3,3′,5,5′-PentaCB ($^{13}C_{12}$, 99%)	111	1000
2,2′,3,3′,5,5′,6-HeptaCB ($^{13}C_{12}$, 99%)	178	1000

EC-4979	Method 1668A/B/C Labeled Injection Internal Standard Solution	1.2 mL in nonane

Labeled	IUPAC	(ng/mL)
2,5-DiCB ($^{13}C_{12}$, 99%)	9	5000
2,2′,5,5′-TetraCB ($^{13}C_{12}$, 99%)	52	5000
2,2′,4,5,5′-PentaCB ($^{13}C_{12}$, 99%)	101	5000
2,2′,3,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	138	5000
2,2′,3,3′,4,4′,5,5′-OctaCB ($^{13}C_{12}$, 99%)	194	5000

US EPA Method 1668A/B/C Standard Mixtures

Catalog No.	Compound	Amount
EC-4989	Method 1668A/B/C Native Toxics/LOC Solution	1.2 mL in nonane

Unlabeled	IUPAC	(ng/mL)
2-MonoCB	1	2000
4-MonoCB	3	2000
2,2′-DiCB	4	2000
4,4′-DiCB	15	2000
2,2′,6-TriCB	19	2000
3,4,4′-TriCB	37	2000
2,2′,6,6′-TetraCB	54	2000
3,3′,4,4′-TetraCB	77	2000
3,4,4′,5-TetraCB	81	2000
2,2′,4,6,6′-PentaCB	104	2000
2,3,3′,4,4′-PentaCB	105	2000
2,3,4,4′,5-PentaCB	114	2000
2,3′,4,4′,5-PentaCB	118	2000
2′,3,4,4′,5-PentaCB	123	2000
3,3′,4,4′,5-PentaCB	126	2000
2,2′,4,4′,6,6′-HexaCB	155	2000
2,3,3′,4,4′,5-HexaCB	156	2000
2,3,3′,4,4′,5′-HexaCB	157	2000
2,3′,4,4′,5,5′-HexaCB	167	2000
3,3′,4,4′,5,5′-HexaCB	169	2000
2,2′,3,4′,5,6,6′-HeptaCB	188	2000
2,3,3′,4,4′,5,5′-HeptaCB	189	2000
2,2′,3,3′,5,5′,6,6′-OctaCB	202	2000
2,3,3′,4,4′,5,5′,6-OctaCB	205	2000
2,2′,3,3′,4,4′,5,5′,6-NonaCB	206	2000
2,2′,3,3′,4,5,5′,6,6′-NonaCB	208	2000
DecaCB	209	2000

CEN Method EN-1948-4 PCB Standard Mixtures

Catalog No.	Compound	Amount
EC-5380	EN-1948-4 WHO PCB Calibration Series [CS1-CS6]	Set of 6 × 0.2 mL in nonane/isooctane
EC-5380-CS1	EN-1948-4 WHO PCB Calibration Series [CS1]	0.2 mL in nonane/isooctane
EC-5380-CS2	EN-1948-4 WHO PCB Calibration Series [CS2]	0.2 mL in nonane/isooctane
EC-5380-CS3	EN-1948-4 WHO PCB Calibration Series [CS3]	0.2 mL in nonane/isooctane
EC-5380-CS4	EN-1948-4 WHO PCB Calibration Series [CS4]	0.2 mL in nonane/isooctane
EC-5380-CS5	EN-1948-4 WHO PCB Calibration Series [CS5]	0.2 mL in nonane/isooctane
EC-5380-CS6	EN-1948-4 WHO PCB Calibration Series [CS6]	0.2 mL in nonane/isooctane

All concentrations are in ng/mL (ppb)

Unlabeled	IUPAC	CS1	CS2	CS3	CS4	CS5	CS6
3,4,4′,5-TetraCB	81	0.1	1	10	50	200	800
3,3′,4,4′-TetraCB	77	0.1	1	10	50	200	800
3,3′,4,4′,5-PentaCB	126	0.1	1	10	50	200	800
3,3′,4,4′,5,5′-HexaCB	169	0.1	1	10	50	200	800
2,3,3′,4,4′-PentaCB	105	0.1	1	10	50	200	800
2,3,4,4′,5-PentaCB	114	0.1	1	10	50	200	800
2,3′,4,4′,5-PentaCB	118	0.6	6	60	300	1200	4800
2′,3,4,4′,5-PentaCB	123	0.1	1	10	50	200	800
2,3,3′,4,4′,5-HexaCB	156	0.1	1	10	50	200	800
2,3,3′,4,4′,5′-HexaCB	157	0.1	1	10	50	200	800
2,3′,4,4′,5,5′-HexaCB	167	0.1	1	10	50	200	800
2,3,3′,4,4′,5,5′-HeptaCB	189	0.1	1	10	50	200	800
Sampling							
2,3,4,4′-TetraCB ($^{13}C_{12}$, 99%)	60	10	10	10	10	10	10
3,3′,4,5,5′-PentaCB ($^{13}C_{12}$, 99%)	127	10	10	10	10	10	10
2,3,3′,4,5,5′-HexaCB ($^{13}C_{12}$, 99%)	159	10	10	10	10	10	10
Extraction							
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
2,3,3′,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-PentaCB ($^{13}C_{12}$, 99%)	118	10	10	10	10	10	10
2′,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	123	10	10	10	10	10	10
2,3,3′,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′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	167	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
Recovery							
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′,3,3′,4,4′,5-HeptaCB ($^{13}C_{12}$, 99%)	170	10	10	10	10	10	10

NEW	EC-1948-4W-KIT	EN-1948-4 WHO PCB "Starter Kit"	1 Kit

Contains one each of the following items:

EC-5380	EN-1948-4 WHO PCB Calibration Series [CS1-CS6]
EC-5370	EN-1948-4 PCB Sampling Standard
EC-5372	EN-1948-4 WHO PCB Extraction Standard
EC-5371	EN-1948-4 PCB Recovery Standard

CEN Method EN-1948-4 PCB Standard Mixtures

Catalog No.	Compound	Amount
EC-5385	EN-1948-4 Marker PCB Calibration Series [CS1-CS6]	Set of 6 × 0.2 mL in nonane/isooctane
EC-5385-CS1	EN-1948-4 Marker PCB Calibration Series [CS1]	0.2 mL in nonane/isooctane
EC-5385-CS2	EN-1948-4 Marker PCB Calibration Series [CS2]	0.2 mL in nonane/isooctane
EC-5385-CS3	EN-1948-4 Marker PCB Calibration Series [CS3]	0.2 mL in nonane/isooctane
EC-5385-CS4	EN-1948-4 Marker PCB Calibration Series [CS4]	0.2 mL in nonane/isooctane
EC-5385-CS5	EN-1948-4 Marker PCB Calibration Series [CS5]	0.2 mL in nonane/isooctane
EC-5385-CS6	EN-1948-4 Marker PCB Calibration Series [CS6]	0.2 mL in nonane/isooctane

All concentrations are in ng/mL (ppb)

Unlabeled	IUPAC	CS1	CS2	CS3	CS4	CS5	CS6
2,4,4′-TriCB	28	0.1	1	10	100	500	5000
2,2′,5,5′-TetraCB	52	0.1	1	10	100	500	5000
2,2′,4,5,5′-PentaCB	101	0.1	1	10	100	500	5000
2,2′,3,4,4′,5′-HexaCB	138	0.1	1	10	100	500	5000
2,2′,4,4′,5,5′-HexaCB	153	0.1	1	10	100	500	5000
2,2′,3,4,4′,5,5′-HeptaCB	180	0.1	1	10	100	500	5000
Sampling							
2,3,4,4′-TetraCB ($^{13}C_{12}$, 99%)	60	10	10	10	10	10	10
3,3′,4,5,5′-PentaCB ($^{13}C_{12}$, 99%)	127	10	10	10	10	10	10
2,3,3′,4,5,5′-HexaCB ($^{13}C_{12}$, 99%)	159	10	10	10	10	10	10
Extraction							
2,4,4′-TriCB ($^{13}C_{12}$, 99%)	28	100	100	100	100	100	100
2,2′,5,5′-TetraCB ($^{13}C_{12}$, 99%)	52	100	100	100	100	100	100
2,2′,4,5,5′-PentaCB ($^{13}C_{12}$, 99%)	101	100	100	100	100	100	100
2,2′,3,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	138	100	100	100	100	100	100
2,2′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	153	100	100	100	100	100	100
2,2′,3,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	180	100	100	100	100	100	100
Recovery							
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′,3,3′,4,4′,5-HeptaCB ($^{13}C_{12}$, 99%)	170	10	10	10	10	10	10

NEW	EC-1948-4M-KIT	EN-1948-4 Marker PCB “Starter Kit”	1 Kit

Contains one each of the following items:

EC-5385	EN-1948-4 Marker PCB Calibration Series [CS1-CS6]
EC-5370	EN-1948-4 PCB Sampling Standard
EC-5379	EN-1948-4 Marker PCB Extraction Standard
EC-5371	EN-1948-4 PCB Recovery Standard

CEN Method EN-1948-4 PCB Standard Mixtures

Catalog No.	Compound	Amount
EC-5370	EN-1948-4 PCB Sampling Standard	1.2 mL in nonane
EC-5370-1/10X-10	EN-1948-4 PCB Sampling Standard (1/10 concentration)	10 mL in nonane

Labeled	IUPAC	EC-5370 (ng/mL)	EC-5370-1/10X-10 (ng/mL)
2,3,4,4′-TetraCB ($^{13}C_{12}$, 99%)	60	100	10
3,3′,4,5,5′-PentaCB ($^{13}C_{12}$, 99%)	127	100	10
2,3,3′,4,5,5′-HexaCB ($^{13}C_{12}$, 99%)	159	100	10

EC-5372	EN-1948-4 WHO PCB Extraction Standard	1.2 mL in nonane
EC-5372-1/10X-10	EN-1948-4 WHO PCB Extraction Standard (1/10 concentration)	10 mL in nonane

Labeled	IUPAC	EC-5372 (ng/mL)	EC-5372-1/10X-10 (ng/mL)
3,4,4′,5-TetraCB ($^{13}C_{12}$, 99%)	81	100	10
3,3′,4,4′-TetraCB ($^{13}C_{12}$, 99%)	77	100	10
3,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	126	100	10
3,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	169	100	10
2,3,3′,4,4′-PentaCB ($^{13}C_{12}$, 99%)	105	100	10
2,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	114	100	10
2,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	118	100	10
2′,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	123	100	10
2,3,3′,4,4′,5-HexaCB ($^{13}C_{12}$, 99%)	156	100	10
2,3,3′,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	157	100	10
2,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	167	100	10
2,3,3′,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	189	100	10

EC-5379	EN-1948-4 Marker PCB Extraction Standard	1.2 mL in nonane
EC-5379-5X1.2	EN-1948-4 Marker PCB Extraction Standard	5 × 1.2 mL in nonane
EC-5379-1/10X-10	EN-1948-4 Marker PCB Extraction Standard (1/10 concentration)	10 mL in nonane

Labeled	IUPAC	EC-5379 (ng/mL)	EC-5379-1/10X-10 (ng/mL)
2,4,4′-TriCB ($^{13}C_{12}$, 99%)	28	1000	100
2,2′,5,5′-TetraCB ($^{13}C_{12}$, 99%)	52	1000	100
2,2′,4,5,5′-PentaCB ($^{13}C_{12}$, 99%)	101	1000	100
2,2′,3,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	138	1000	100
2,2′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	153	1000	100
2,2′,3,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	180	1000	100

EC-5371	EN-1948-4 PCB Recovery Standard	1.2 mL in nonane

Labeled	IUPAC	(ng/mL)
2,3′,4′,5-TetraCB ($^{13}C_{12}$, 99%)	70	100
2,3,3′,5,5′-PentaCB ($^{13}C_{12}$, 99%)	111	100
2,2′,3,3′,4,4′,5-HeptaCB ($^{13}C_{12}$, 99%)	170	100

JIS PCB Methods Standard Mixtures

Catalog No.	Compound	Amount
EC-5323-H	Modified JIS PCB Calibration Solutions [CS1H-CS5H]	Set of 5 × 0.2 mL in nonane/isooctane
EC-5323-H-E	Modified JIS PCB Extended Calibration Solutions [CS0.4H-CS6H]	Set of 7 × 0.2 mL in nonane/isooctane
EC-5323-CS0.4H	Modified JIS PCB Extended Calibration Solution [CS0.4H]	0.2 mL in nonane/isooctane
EC-5323-CS1H	Modified JIS PCB Extended Calibration Solution [CS1H]	0.2 mL in nonane/isooctane
EC-5323-CS2H	Modified JIS PCB Extended Calibration Solution [CS2H]	0.2 mL in nonane/isooctane
EC-5323-CS3H	Modified JIS PCB Extended Calibration Solution [CS3H]	0.2 mL in nonane/isooctane
EC-5323-CS4H	Modified JIS PCB Extended Calibration Solution [CS4H]	0.2 mL in nonane/isooctane
EC-5323-CS5H	Modified JIS PCB Extended Calibration Solution [CS5H]	0.2 mL in nonane/isooctane
EC-5323-CS6H	Modified JIS PCB Extended Calibration Solution [CS6H]	0.2 mL in nonane/isooctane

All concentrations are in ng/mL (ppb)

Unlabeled	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
Cleanup								
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
Syringe								
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
Sampling								
3,3′,4,5′-TetraCB ($^{13}C_{12}$, 99%)	79	10	10	10	10	10	10	10

JIS PCB Methods Standard Mixtures

Catalog No.	Compound	Amount
EC-5360	Modified JIS PCB Alternate A Extended Calibration Solutions [CS0.4H-CS6H]	Set of 7 × 0.2 mL in nonane/isooctane
EC-5360-CS0.4H	Modified JIS PCB Alternate A Extended Calibration Solution [CS0.4H]	0.2 mL in nonane/isooctane
EC-5360-CS1H	Modified JIS PCB Alternate A Extended Calibration Solution [CS1H]	0.2 mL in nonane/isooctane
EC-5360-CS2H	Modified JIS PCB Alternate A Extended Calibration Solution [CS2H]	0.2 mL in nonane/isooctane
EC-5360-CS3H	Modified JIS PCB Alternate A Extended Calibration Solution [CS3H]	0.2 mL in nonane/isooctane
EC-5360-CS4H	Modified JIS PCB Alternate A Extended Calibration Solution [CS4H]	0.2 mL in nonane/isooctane
EC-5360-CS5H	Modified JIS PCB Alternate A Extended Calibration Solution [CS5H]	0.2 mL in nonane/isooctane
EC-5360-CS6H	Modified JIS PCB Alternate A Extended Calibration Solution [CS6H]	0.2 mL in nonane/isooctane

All concentrations are in ng/mL (ppb)

Unlabeled	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
Cleanup								
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
Syringe								
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
Sampling								
3,3′,4,5′-TetraCB ($^{13}C_{12}$, 99%)	79	10	10	10	10	10	10	10

JIS PCB Methods Standard Mixtures

Catalog No.	Compound	Amount
EC-5324	Modified JIS PCB Cleanup Spike	1.2 mL in nonane

Labeled	IUPAC	(ng/mL)
3,4,4′,5-TetraCB ($^{13}C_{12}$, 99%)	81	50
3,3′,4,4′-TetraCB ($^{13}C_{12}$, 99%)	77	50
3,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	126	50
3,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	169	50
2′,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	123	50
2,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	118	100
2,3,3′,4,4′-PentaCB ($^{13}C_{12}$, 99%)	105	100
2,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	114	50
2,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	167	50
2,3,3′,4,4′,5-HexaCB ($^{13}C_{12}$, 99%)	156	100
2,3,3′,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	157	50
2,3,3′,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	189	50
2,2′,3,3′,4,4′,5-HeptaCB ($^{13}C_{12}$, 99%)	170	50
2,2′,3,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	180	50

EC-5325	Modified JIS PCB Syringe Spike	1.2 mL in nonane
EC-5325-0.2X	Modified JIS PCB Syringe Spike	10 mL in nonane
EC-5325-20X	Modified JIS PCB Syringe Spike	1.2 mL in nonane

Labeled	IUPAC	EC-5325 (ng/mL)	EC-5325-0.2X (ng/mL)	EC-5325-20X (ng/mL)
2,3′,4′,5-TetraCB ($^{13}C_{12}$, 99%)	70	50	10	1000
2,3,3′,5,5′-PentaCB ($^{13}C_{12}$, 99%)	111	50	10	1000
2,2′,3,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	138	50	10	1000
2,2′,3,3′,5,5′,6-HeptaCB ($^{13}C_{12}$, 99%)	178	50	10	1000

EC-5326	Modified JIS PCB Sampling Spike	1.2 mL in nonane
NEW EC-5326-20X	Modified JIS PCB Sampling Spike	1.2 mL in nonane

Labeled	IUPAC	EC-5326 (ng/mL)	EC-5326-20X (ng/mL)
3,3′,4,5′-TetraCB ($^{13}C_{12}$, 99%)	79	50	1000

JIS PCB Methods Standard Mixtures

Catalog No.	Compound	Amount
EC-5418	Modified JIS PCB Alternate B Calibration Solutions [CS1H-CS5H]	Set of 5 × 0.2 mL in nonane/isooctane
EC-5418-CS0.4H	Modified JIS PCB Alternate B Calibration Solution [CS0.4H] (not included with EC-5418)	0.2 mL in nonane/isooctane
EC-5418-CS6H	Modified JIS PCB Alternate B Calibration Solution [CS6H] (not included with EC-5418)	0.2 mL in nonane/isooctane
EC-5418-CS1H	Modified JIS PCB Alternate B Calibration Solution [CS1H]	0.2 mL in nonane/isooctane
EC-5418-CS2H	Modified JIS PCB Alternate B Calibration Solution [CS2H]	0.2 mL in nonane/isooctane
EC-5418-CS3H	Modified JIS PCB Alternate B Calibration Solution [CS3H]	0.2 mL in nonane/isooctane
EC-5418-CS4H	Modified JIS PCB Alternate B Calibration Solution [CS4H]	0.2 mL in nonane/isooctane
EC-5418-CS5H	Modified JIS PCB Alternate B Calibration Solution [CS5H]	0.2 mL in nonane/isooctane

All concentrations are in ng/mL (ppb)

Unlabeled	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
Cleanup								
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
Syringe								
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
2,2′,3,3′,4,4′,5-HeptaCB ($^{13}C_{12}$, 99%)	170	4	10	10	10	10	10	10
Sampling								
3,3′,4,5′-TetraCB ($^{13}C_{12}$, 99%)	79	4	10	10	10	10	10	10

JIS PCB Methods Standard Mixtures

Catalog No.	Compound	Amount
EC-5419	Modified JIS PCB Alternate B Cleanup Solution	1.2 mL in nonane

Labeled	IUPAC	(ng/mL)
3,4,4′,5-TetraCB ($^{13}C_{12}$, 99%)	81	50
3,3′,4,4′-TetraCB ($^{13}C_{12}$, 99%)	77	50
2′,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	123	50
2,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	118	100
2,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	114	50
2,3,3′,4,4′-PentaCB ($^{13}C_{12}$, 99%)	105	100
3,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	126	50
2,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	167	50
2,3,3′,4,4′,5-HexaCB ($^{13}C_{12}$, 99%)	156	100
2,3,3′,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	157	50
3,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	169	50
2,3,3′,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	189	50

EC-5420	Modified JIS PCB Alternate B Syringe Spike	1.2 mL in nonane
EC-5163	PCB Mixture (PCB-70/111/138/170)	1.2 mL in nonane

Labeled	IUPAC	EC-5420 (ng/mL)	EC-5163 (ng/mL)
2,3′,4′,5-TetraCB ($^{13}C_{12}$, 99%)	70	50	1000
2,3,3′,5,5′-PentaCB ($^{13}C_{12}$, 99%)	111	50	1000
2,2′,3,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	138	50	1000
2,2′,3,3′,4,4′,5-HeptaCB ($^{13}C_{12}$, 99%)	170	50	1000

EC-5326	Modified JIS PCB Sampling Spike	1.2 mL in nonane
NEW EC-5326-20X	Modified JIS PCB Sampling Spike	1.2 mL in nonane

Labeled	IUPAC	EC-5326 (ng/mL)	EC-5326-20X (ng/mL)
3,3′,4,5′-TetraCB ($^{13}C_{12}$, 99%)	79	50	1000

WHO "Dioxin-Like" PCB Mixtures

Catalog No.	Compound	Amount
EC-5421-H-E	DL-PCB RH12 Extended Calibration Solutions [CS0.4H-CS6H]	Set of 7 × 0.2 mL in nonane
EC-5421-H	DL-PCB RH12 Calibration Solutions [CS1H-CS5H]	Set of 5 × 0.2 mL in nonane
EC-5421-CS0.4H	DL-PCB RH12 Extended Calibration Solution [CS0.4H]	0.2 mL in nonane
EC-5421-CS1H	DL-PCB RH12 Calibration Solution [CS1H]	0.2 mL in nonane
EC-5421-CS2H	DL-PCB RH12 Calibration Solution [CS2H]	0.2 mL in nonane
EC-5421-CS3H	DL-PCB RH12 Calibration Solution [CS3H]	0.2 mL in nonane
EC-5421-CS4H	DL-PCB RH12 Calibration Solution [CS4H]	0.2 mL in nonane
EC-5421-CS5H	DL-PCB RH12 Calibration Solution [CS5H]	0.2 mL in nonane
EC-5421-CS6H	DL-PCB RH12 Extended Calibration Solution [CS6H]	0.2 mL in nonane

All concentrations are in ng/mL (ppb)

Unlabeled	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
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
Extraction								
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
2,2′,3,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	180	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
Syringe								
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
Sampling								
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

WHO "Dioxin-Like" PCB Mixtures

	Catalog No.	Compound	Amount
	EC-5422	DL-PCB RH12 Extraction Spike	1.2 mL in nonane
NEW	EC-5422-10X	DL-PCB RH12 Extraction Spike	1.2 mL in nonane

Labeled	IUPAC	EC-5422 (ng/mL)	EC-5422-10X (ng/mL)
3,4,4′,5-TetraCB ($^{13}C_{12}$, 99%)	81	100	1000
3,3′,4,4′-TetraCB ($^{13}C_{12}$, 99%)	77	100	1000
2′,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	123	100	1000
2,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	118	200	2000
2,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	114	100	1000
2,3,3′,4,4′-PentaCB ($^{13}C_{12}$, 99%)	105	200	2000
3,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	126	100	1000
2,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	167	100	1000
2,3,3′,4,4′,5-HexaCB ($^{13}C_{12}$, 99%)	156	200	2000
2,3,3′,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	157	100	1000
2,2′,3,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	180	100	1000
3,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	169	100	1000
2,3,3′,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	189	100	1000

	EC-5423	DL-PCB RH12 Syringe Spike	1.2 mL in nonane
	EC-5423-10X	DL-PCB RH12 Syringe Spike	1.2 mL in nonane

Labeled	IUPAC	EC-5423 (ng/mL)	EC-5423-10X (ng/mL)
2,3′,4′,5-TetraCB ($^{13}C_{12}$, 99%)	70	100	1000
3,3′,4,5,5′-PentaCB ($^{13}C_{12}$, 99%)	127	100	1000
2,2′,3,3′,4,4′-HexaCB ($^{13}C_{12}$, 99%)	128	100	1000
2,2′,3,3′,4,4′,5-HeptaCB ($^{13}C_{12}$, 99%)	170	100	1000

	EC-5424	DL-PCB RH12 Sampling Spike	1.2 mL in nonane
NEW	EC-5424-10X	DL-PCB RH12 Sampling Spike	1.2 mL in nonane

Labeled	IUPAC	EC-5424 (ng/mL)	EC-5424-10X (ng/mL)
2,3,4,4′-TetraCB ($^{13}C_{12}$, 99%)	60	100	1000
2,3,3′,5,5′-PentaCB ($^{13}C_{12}$, 99%)	111	100	1000
2,3,3′,4,5,5′-HexaCB ($^{13}C_{12}$, 99%)	159	100	1000

NEW	EC-5505-10X	DL-PCB RH12 Native Spike (excluding PCB-170)	1.2 mL in nonane

Labeled	IUPAC	(ng/mL)
3,4,4′,5-TetraCB	81	1000
3,3′,4,4′-TetraCB	77	1000
2′,3,4,4′,5-PentaCB	123	1000
2,3′,4,4′,5-PentaCB	118	2000
2,3,4,4′,5-PentaCB	114	1000
2,3,3′,4,4′-PentaCB	105	2000
3,3′,4,4′,5-PentaCB	126	1000
2,3′,4,4′,5,5′-HexaCB	167	1000
2,3,3′,4,4′,5-HexaCB	156	2000
2,3,3′,4,4′,5′-HexaCB	157	1000
3,3′,4,4′,5,5′-HexaCB	169	1000
2,2′,3,4,4′,5,5′-HeptaCB	180	1000
2,3,3′,4,4′,5,5′-HeptaCB	189	1000

WHO "Dioxin-Like" PCB Mixtures

Catalog No.	Compound	Amount
EC-5396	Co-PCB Calibration Solutions [CS1-CS6]	Set of 6 × 0.2 mL in nonane
EC-5396-CS1	Co-PCB Calibration Solution [CS1]	0.2 mL in nonane
EC-5396-CS2	Co-PCB Calibration Solution [CS2]	0.2 mL in nonane
EC-5396-CS3	Co-PCB Calibration Solution [CS3]	0.2 mL in nonane
EC-5396-CS4	Co-PCB Calibration Solution [CS4]	0.2 mL in nonane
EC-5396-CS5	Co-PCB Calibration Solution [CS5]	0.2 mL in nonane
EC-5396-CS6	Co-PCB Calibration Solution [CS6]	0.2 mL in nonane

All concentrations are in ng/mL (ppb)

Unlabeled	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
Labeled							
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
Syringe							
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
Sampling							
3,3′,4,5′-TetraCB ($^{13}C_{12}$, 99%)	79	10	10	10	10	10	10

WHO "Dioxin-Like" PCB Mixtures

Catalog No.	Compound	Amount
EC-5315	WHO PCB and PCB-170 + 180 + Syringe PCB Calibration Solutions (low) [CS1-CS5]	Set of 5 × 0.2 mL in nonane
EC-5315-1	WHO PCB and PCB-170 + 180 + Syringe PCB Calibration Solution [CS1]	0.2 mL in nonane
EC-5315-2	WHO PCB and PCB-170 + 180 + Syringe PCB Calibration Solution [CS2]	0.2 mL in nonane
EC-5315-3	WHO PCB and PCB-170 + 180 + Syringe PCB Calibration Solution [CS3]	0.2 mL in nonane
EC-5315-4	WHO PCB and PCB-170 + 180 + Syringe PCB Calibration Solution [CS4]	0.2 mL in nonane
EC-5315-5	WHO PCB and PCB-170 + 180 + Syringe PCB Calibration Solution [CS5]	0.2 mL in nonane

All concentrations are in ng/mL (ppb)

Unlabeled	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
2,2′,3,3′,4,4′,5-HeptaCB	170	0.2	1	5	20	100
2,2′,3,4,4′,5,5′-HeptaCB	180	0.2	1	5	20	100
2,3,3′,4,4′,5,5′-HeptaCB	189	0.2	1	5	20	100
Labeled						
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
2,2′,3,3′,4,4′,5-HeptaCB ($^{13}C_{12}$, 99%)	170	10	10	10	10	10
2,2′,3,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	180	10	10	10	10	10
2,3,3′,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	189	10	10	10	10	10
Syringe						
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
Sampling						
3,3′,4,5′-TetraCB ($^{13}C_{12}$, 99%)	79	10	10	10	10	10

WHO "Dioxin-Like" PCB Mixtures

Catalog No.	Compound	Amount
EC-5186	WHO PCB + PCB-170 + PCB-180 + Syringe PCB Calibration Solutions [CS1-CS5]	Set of 5 × 0.2 mL in nonane/isooctane
EC-5186-CS1	WHO PCB + PCB-170 + PCB-180 + Syringe PCB Solution [CS1]	0.2 mL in nonane/isooctane
EC-5186-CS2	WHO PCB + PCB-170 + PCB-180 + Syringe PCB Solution [CS2]	0.2 mL in nonane/isooctane
EC-5186-CS3	WHO PCB + PCB-170 + PCB-180 + Syringe PCB Solution [CS3]	0.2 mL in nonane/isooctane
EC-5186-CS4	WHO PCB + PCB-170 + PCB-180 + Syringe PCB Solution [CS4]	0.2 mL in nonane/isooctane
EC-5186-CS5	WHO PCB + PCB-170 + PCB-180 + Syringe PCB Solution [CS5]	0.2 mL in nonane/isooctane

All concentrations are in ng/mL (ppb)

Unlabeled	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
Labeled						
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
Syringe						
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
Sampling						
3,3′,4,5′-TetraCB ($^{13}C_{12}$, 99%)	79	10	10	10	10	10

WHO "Dioxin-Like" PCB Mixtures

Catalog No.	Compound	Amount
EC-4937	WHO Coplanar and Mono-Ortho PCBs	3 mL in nonane

Labeled	IUPAC	(ng/mL)
3,3′,4,4′-TetraCB ($^{13}C_{12}$, 99%)	77	1000
3,4,4′,5-TetraCB ($^{13}C_{12}$, 99%)	81	1000
2,3,3′,4,4′-PentaCB ($^{13}C_{12}$, 99%)	105	1000
2,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	114	1000
2,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	118	1000
2′,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	123	1000
3,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	126	1000
2,3,3′,4,4′,5-HexaCB ($^{13}C_{12}$, 99%)	156	1000
2,3,3′,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	157	1000
2,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	167	1000
3,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	169	1000
2,3,3′,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	189	1000

EC-4995	WHO Coplanar and Mono-Ortho PCBs with PCB 170/180	1.2 mL in nonane
EC-5045	WHO PCB + PCB-170 + PCB-180 Cleanup Standard	1.2 mL in nonane

Labeled	IUPAC	EC-4995 (ng/mL)	EC-5045 (ng/mL)
3,3′,4,4′-TetraCB ($^{13}C_{12}$, 99%)	77	1000	2000
3,4,4′,5-TetraCB ($^{13}C_{12}$, 99%)	81	1000	2000
2,3,3′,4,4′-PentaCB ($^{13}C_{12}$, 99%)	105	1000	2000
2,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	114	1000	2000
2,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	118	1000	2000
2′,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	123	1000	2000
3,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	126	1000	2000
2,3,3′,4,4′,5-HexaCB ($^{13}C_{12}$, 99%)	156	1000	2000
2,3,3′,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	157	1000	2000
2,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	167	1000	2000
3,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	169	1000	2000
2,2′,3,3′,4,4′,5-HeptaCB ($^{13}C_{12}$, 99%)	170	1000	2000
2,2′,3,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	180	1000	2000
2,3,3′,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	189	1000	2000

EC-5397	Co-PCB Syringe Spike	1.2 mL in nonane
EC-5181	PCB Syringe Spike	1.2 mL in nonane
EC-5181-10X-1.2	PCB Syringe Spike (10X stock)	1.2 mL in nonane

Labeled	IUPAC	EC-5397 (ng/mL)	EC-5181 (ng/mL)	EC-5181-10X-1.2 (ng/mL)
2,3′,4′,5-TetraCB ($^{13}C_{12}$, 99%)	70	20	100	1000
2,3,3′,5,5′-PentaCB ($^{13}C_{12}$, 99%)	111	20	100	1000
2,2′,3,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	138	20	100	1000
2,2′,3,3′,5,5′,6-HeptaCB ($^{13}C_{12}$, 99%)	178	20	–	–

	EC-5326	Modified JIS PCB Sampling Spike	1.2 mL in nonane
NEW	EC-5326-20X	Modified JIS PCB Sampling Spike	1.2 mL in nonane

Labeled	IUPAC	EC-5326 (ng/mL)	EC-5326-20X (ng/mL)
3,3′,4,5′-TetraCB ($^{13}C_{12}$, 99%)	79	50	1000

WHO "Dioxin-Like" PCB Mixtures

Catalog No.	Compound	Amount
EC-4070	Coplanar PCB Mixture	3 mL in nonane

Labeled	IUPAC	(ng/mL)
3,3′,4,4′-TetraCB ($^{13}C_{12}$, 99%)	77	5000
3,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	126	5000
3,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	169	5000

EC-4187	Coplanar PCB Mixture	3 mL in nonane

Labeled	IUPAC	(ng/mL)
3,3′,4,4′-TetraCB ($^{13}C_{12}$, 99%)	77	1000
3,4,4′,5-TetraCB ($^{13}C_{12}$, 99%)	81	1000
3,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	126	1000
3,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	169	1000

EC-4188	Mono-Ortho PCB Mixture – *High Purity	3 mL in nonane

Labeled	IUPAC	(ng/mL)
2,3,3′,4,4′-PentaCB ($^{13}C_{12}$, 99%)	105	1000
2,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	114	1000
2,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	118	1000
2′,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	123	1000
2,3,3′,4,4′,5-HexaCB ($^{13}C_{12}$, 99%)	156	1000
2,3,3′,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	157	1000
2,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	167	1000
2,3,3′,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	189	1000

EC-4938	PCB Mixture-A	3 mL in nonane

Labeled	IUPAC	(ng/mL)
3,3′,4,4′-TetraCB ($^{13}C_{12}$, 99%)	77	1000
3,4,4′,5-TetraCB ($^{13}C_{12}$, 99%)	81	1000
2′,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	123	1000
3,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	126	1000
3,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	169	1000
2,2′,3,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	180	1000

WHO "Dioxin-Like" PCB Mixtures

Catalog No.	Compound	Amount
EC-4935	WHO Coplanar and Mono-Ortho PCBs	1.2 mL in isooctane
EC-4935-A	WHO Coplanar and Mono-Ortho PCBs	3 mL in isooctane
EC-4935-B	WHO Coplanar and Mono-Ortho PCBs	1.2 mL in isooctane
NEW EC-5559	DL-PCB Native Plus Mixture	1.2 mL in isooctane

Unlabeled	IUPAC	EC-4935 (ng/mL)	EC-4935-A (ng/mL)	EC-4935-B (ng/mL)	EC-5559 (ng/mL)
3,3′,4,4′-TetraCB	77	2000	1000	5000	2000
3,4,4′,5-TetraCB	81	2000	1000	5000	1000
2,3,3′,4,4′-PentaCB	105	2000	1000	5000	2000
2,3,4,4′,5-PentaCB	114	2000	1000	5000	1000
2,3′,4,4′,5-PentaCB	118	2000	1000	5000	5000
2′,3,4,4′,5-PentaCB	123	2000	1000	5000	1000
3,3′,4,4′,5-PentaCB	126	2000	1000	5000	1000
2,3,3′,4,4′,5-HexaCB	156	2000	1000	5000	2000
2,3,3′,4,4′,5′-HexaCB	157	2000	1000	5000	1000
2,3′,4,4′,5,5′-HexaCB	167	2000	1000	5000	1000
3,3′,4,4′,5,5′-HexaCB	169	2000	1000	5000	1000
2,3,3′,4,4′,5,5′-HeptaCB	189	2000	1000	5000	1000

EC-5000	WHO Coplanar and Mono-Ortho PCBs and 170/180	1.2 mL in isooctane

Unlabeled	IUPAC	(ng/mL)
3,3′,4,4′-TetraCB	77	2000
3,4,4′,5-TetraCB	81	2000
2,3,3′,4,4′-PentaCB	105	2000
2,3,4,4′,5-PentaCB	114	2000
2,3′,4,4′,5-PentaCB	118	2000
2′,3,4,4′,5-PentaCB	123	2000
3,3′,4,4′,5-PentaCB	126	2000
2,3,3′,4,4′,5-HexaCB	156	2000
2,3,3′,4,4′,5′-HexaCB	157	2000
2,3′,4,4′,5,5′-HexaCB	167	2000
3,3′,4,4′,5,5′-HexaCB	169	2000
2,2′,3,3′,4,4′,5-HeptaCB	170	2000
2,2′,3,4,4′,5,5′-HeptaCB	180	2000
2,3,3′,4,4′,5,5′-HeptaCB	189	2000

EC-4986	Non-Ortho Native PCB Solution	1.2 mL in isooctane

Unlabeled	IUPAC	(ng/mL)
3,3′,4,4′-TetraCB	77	10,000
3,4,4′,5-TetraCB	81	10,000
3,3′,4,4′,5-PentaCB	126	10,000
3,3′,4,4′,5,5′-HexaCB	169	10,000

EC-4987	Mono-Ortho Native PCB Solution	1.2 mL in isooctane
EC-4987/100	Mono-Ortho Native PCB Solution	100 µL in isooctane

Unlabeled	IUPAC	EC-4987 (ng/mL)	EC-4987/100 (ng/mL)
2,3,3′,4,4′-PentaCB	105	10,000	100
2,3,4,4′,5-PentaCB	114	10,000	100
2,3′,4,4′,5-PentaCB	118	10,000	100
2′,3,4,4′,5-PentaCB	123	10,000	100
2,3,3′,4,4′,5-HexaCB	156	10,000	100
2,3,3′,4,4′,5′-HexaCB	157	10,000	100
2,3′,4,4′,5,5′-HexaCB	167	10,000	100
2,3,3′,4,4′,5,5′-HeptaCB	189	10,000	100

"Non-Dioxin-Like" (Marker/Indicator) PCB Mixtures

Catalog No.	Compound	Amount
EC-5414	Mono-Deca Plus Predominant PCB Calibration Solutions [CS1-CS5]	Set of 5 × 0.2 mL in nonane/isooctane
EC-5414-CS1	Mono-Deca Plus Predominant PCB Calibration Solution [CS1]	0.2 mL in nonane/isooctane
EC-5414-CS2	Mono-Deca Plus Predominant PCB Calibration Solution [CS2]	0.2 mL in nonane/isooctane
EC-5414-CS3	Mono-Deca Plus Predominant PCB Calibration Solution [CS3]	0.2 mL in nonane/isooctane
EC-5414-CS4	Mono-Deca Plus Predominant PCB Calibration Solution [CS4]	0.2 mL in nonane/isooctane
EC-5414-CS5	Mono-Deca Plus Predominant PCB Calibration Solution [CS5]	0.2 mL in nonane/isooctane

All concentrations are in ng/mL (ppb)

Unlabeled	IUPAC	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′,3,4,4′,5′-HexaCB	138	2	10	50	250	1000
2,2′,4,4′,5,5′-HexaCB	153	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
DecaCB	209	4	20	100	500	2000
Labeled						
4-MonoCB ($^{13}C_{12}$, 99%)	3	100	100	100	100	100
2,4′-DiCB ($^{13}C_{12}$, 99%)	8	100	100	100	100	100
2,4,4′-TriCB ($^{13}C_{12}$, 99%)	28	100	100	100	100	100
2,2′,5,5′-TetraCB ($^{13}C_{12}$, 99%)	52	100	100	100	100	100
2,2′,4,5,5′-PentaCB ($^{13}C_{12}$, 99%)	101	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%)	114	100	100	100	100	100
2,2′,3,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	138	100	100	100	100	100
2,2′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	153	100	100	100	100	100
2,2′,3,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	180	100	100	100	100	100
2,2′,3,3′,4,4′,5,5′-OctaCB ($^{13}C_{12}$, 99%)	194	100	100	100	100	100
2,2′,3,3′,4,4′,5,5′,6-NonaCB ($^{13}C_{12}$, 99%)	206	100	100	100	100	100
DecaCB ($^{13}C_{12}$, 99%)	209	100	100	100	100	100
Syringe						
2,4′,6-TriCB ($^{13}C_{12}$, 99%)	32	100	100	100	100	100
2,3′,4′,5-TetraCB ($^{13}C_{12}$, 99%)	70	100	100	100	100	100
3,3′,4,5,5′-PentaCB ($^{13}C_{12}$, 99%)	127	100	100	100	100	100
2,2′,3,3′,4,4′-HexaCB ($^{13}C_{12}$, 99%)	128	100	100	100	100	100
2,2′,3,3′,4,4′,5-HeptaCB ($^{13}C_{12}$, 99%)	170	100	100	100	100	100

"Non-Dioxin-Like" (Marker/Indicator) PCB Mixtures

Catalog No.	Compound	Amount
EC-5411	Predominant Mono-Deca PCB Spike	1.2 mL in nonane
NEW EC-5411-A	Modified Predominant Mono-Deca PCB Spike	1.2 mL in nonane

Labeled	IUPAC	EC-5411 (ng/mL)	EC-5411-A (ng/mL)
4-MonoCB ($^{13}C_{12}$, 99%)	3	2000	2000
2,4′-DiCB ($^{13}C_{12}$, 99%)	8	2000	2000
2,4,4′-TriCB ($^{13}C_{12}$, 99%)	28	2000	1000
2,2′,5,5′-TetraCB ($^{13}C_{12}$, 99%)	52	2000	1000
2,2′,4,5,5′-PentaCB ($^{13}C_{12}$, 99%)	101	2000	1000
2,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	118	2000	1000
2,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	114	2000	1000
2,2′,3,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	138	2000	1000
2,2′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	153	2000	1000
2,2′,3,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	180	2000	1000
2,2′,3,3′,4,4′,5,5′-OctaCB ($^{13}C_{12}$, 99%)	194	2000	2000
2,2′,3,3′,4,4′,5,5′,6-NonaCB ($^{13}C_{12}$, 99%)	206	2000	2000
DecaCB ($^{13}C_{12}$, 99%)	209	2000	2000

EC-5415	Mono-Deca Plus Predominant PCB Syringe Spike	1.2 mL in nonane

Labeled	IUPAC	(ng/mL)
2,4′,6-TriCB ($^{13}C_{12}$, 99%)	32	2000
2,3′,4′,5-TetraCB ($^{13}C_{12}$, 99%)	70	2000
3,3′,4,5,5′-PentaCB ($^{13}C_{12}$, 99%)	127	2000
2,2′,3,3′,4,4′-HexaCB ($^{13}C_{12}$, 99%)	128	2000
2,2′,3,3′,4,4′,5-HeptaCB ($^{13}C_{12}$, 99%)	170	2000

EC-5412	Native Mono-Deca Plus Predominant Spike PCBs	1.2 mL in isooctane

Unlabeled	IUPAC	(ng/mL)
4-MonoCB	3	2000
2,4′-DiCB	8	2000
2,4,4′-TriCB	28	2000
2,2′,5,5′-TetraCB	52	2000
2,2′,4,5,5′-PentaCB	101	2000
2,3′,4,4′,5-PentaCB	118	2000
2,3,4,4′,5-PentaCB	114	2000
2,2′,3,4,4′,5′-HexaCB	138	2000
2,2′,4,4′,5,5′-HexaCB	153	2000
2,2′,3,4,4′,5,5′-HeptaCB	180	2000
2,2′,3,3′,4,4′,5,5′-OctaCB	194	2000
2,2′,3,3′,4,4′,5,5′,6-NonaCB	206	2000
DecaCB	209	2000

"Non-Dioxin-Like" (Marker/Indicator) PCB Mixtures

	Catalog No.	Compound	Amount
NEW	EC-5448-HR	Rapid PCB Screening Calibration Solutions [CS0.02, 0.05, 0.1, 0.5]	Set of 4 × 0.2 mL in nonane/isooctane
NEW	EC-5448-CS0.02	HRMS Rapid PCB Screening Calibration Solution [CS0.02]	0.2 mL in nonane/isooctane
NEW	EC-5448-CS0.05	HRMS Rapid PCB Screening Calibration Solution [CS0.05]	0.2 mL in nonane/isooctane
NEW	EC-5448-CS0.1	HRMS Rapid PCB Screening Calibration Solution [CS0.1]	0.2 mL in nonane/isooctane
NEW	EC-5448-CS0.5	HRMS Rapid PCB Screening Calibration Solution [CS0.5]	0.2 mL in nonane/isooctane
	EC-5448	Rapid PCB Screening Calibration Solutions [CS1-CS4]	Set of 4 × 0.2 mL in nonane/isooctane
	EC-5448-CS1	Rapid PCB Screening Calibration Solution [CS1]	0.2 mL in nonane/isooctane
	EC-5448-CS2	Rapid PCB Screening Calibration Solution [CS2]	0.2 mL in nonane/isooctane
	EC-5448-CS3	Rapid PCB Screening Calibration Solution [CS3]	0.2 mL in nonane/isooctane
	EC-5448-CS4	Rapid PCB Screening Calibration Solution [CS4]	0.2 mL in nonane/isooctane

All concentrations are in ng/mL (ppb)

Unlabeled	IUPAC	CS0.02	CS0.05	CS0.1	CS0.5	CS1	CS2	CS3	CS4
2,4,4′-TriCB	28	0.02	0.05	0.1	0.5	1	5	10	50
2,2′,5-TriCB	18	0.02	0.05	0.1	0.5	1	5	10	50
2,2′,3,5′-TetraCB	44	0.02	0.05	0.1	0.5	1	5	10	50
2,3′,4′,5-TetraCB	70	0.02	0.05	0.1	0.5	1	5	10	50
2,2′,5,5′-TetraCB	52	0.02	0.05	0.1	0.5	1	5	10	50
2,2′,4,5,5′-PentaCB	101	0.02	0.05	0.1	0.5	1	5	10	50
2,3,3′,4′,6-PentaCB	110	0.02	0.05	0.1	0.5	1	5	10	50
2,3′,4,4′,5-PentaCB	118	0.02	0.05	0.1	0.5	1	5	10	50
2,2′,3,4′,5′,6-HexaCB	149	0.02	0.05	0.1	0.5	1	5	10	50
2,2′,3,4,4′,5′-HexaCB	138	0.02	0.05	0.1	0.5	1	5	10	50
2,2′,4,4′,5,5′-HexaCB	153	0.02	0.05	0.1	0.5	1	5	10	50
2,2′,3,4,4′,5,5′-HeptaCB	180	0.02	0.05	0.1	0.5	1	5	10	50
2,2′,3,4′,5,5′,6-HeptaCB	187	0.02	0.05	0.1	0.5	1	5	10	50
Extraction									
2,4,4′-TriCB ($^{13}C_{12}$, 99%)	28	10	10	10	10	10	10	10	10
2,2′,5,5′-TetraCB ($^{13}C_{12}$, 99%)	52	10	10	10	10	10	10	10	10
2,2′,4,5,5′-PentaCB ($^{13}C_{12}$, 99%)	101	10	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	10
2,2′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	153	10	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	10
Syringe									
2,3′,4′,5-TetraCB ($^{13}C_{12}$, 99%)	70	10	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	10
2,2′,3,4,5,5′-HexaCB ($^{13}C_{12}$, 99%)	141	10	10	10	10	10	10	10	10

"Non-Dioxin-Like" (Marker/Indicator) PCB Mixtures

Catalog No.	Compound	Amount
EC-5379	EN-1948-4 Marker PCB Extraction Standard	1.2 mL in nonane
EC-5379-5X1.2	EN-1948-4 Marker PCB Extraction Standard	5 × 1.2 mL in nonane
EC-5379-1/10X-10	EN-1948-4 Marker PCB Extraction Standard (1/10 concentration)	10 mL in nonane

Labeled	IUPAC	EC-5379 (ng/mL)	EC-5379-1/10X-10 (ng/mL)
2,4,4′-TriCB ($^{13}C_{12}$, 99%)	28	1000	100
2,2′,5,5′-TetraCB ($^{13}C_{12}$, 99%)	52	1000	100
2,2′,4,5,5′-PentaCB ($^{13}C_{12}$, 99%)	101	1000	100
2,2′,3,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	138	1000	100
2,2′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	153	1000	100
2,2′,3,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	180	1000	100

EC-5450	Rapid PCB Screening Syringe Spike	1.2 mL in nonane

Labeled	IUPAC	(ng/mL)
2,3′,4′,5-TetraCB ($^{13}C_{12}$, 99%)	70	2000
2,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	118	2000
2,2′,3,4,5,5′-HexaCB ($^{13}C_{12}$, 99%)	141	2000

EC-5453	Rapid PCB Screening Native PAR Solution	0.5 mL in isooctane

Unlabeled	IUPAC	(ng/mL)
2,4,4′-TriCB	28	1000
2,2′,5-TriCB	18	1000
2,2′,3,5′-TetraCB	44	1000
2,3′,4′,5-TetraCB	70	1000
2,2′,5,5′-TetraCB	52	1000
2,2′,4,5,5′-PentaCB	101	1000
2,3,3′,4′,6-PentaCB	110	1000
2,3′,4,4′,5-PentaCB	118	1000
2,2′,3,4′,5′,6-HexaCB	149	1000
2,2′,3,4,4′,5′-HexaCB	138	1000
2,2′,4,4′,5,5′-HexaCB	153	1000
2,2′,3,4,4′,5,5′-HeptaCB	180	1000
2,2′,3,4′,5,5′,6-HeptaCB	187	1000

"Non-Dioxin-Like" (Marker/Indicator) PCB Mixtures

	Catalog No.	Compound	Amount
NEW	EC-5375	Marker-7 PCB Mixture (with PCB-118)	1.2 mL in nonane
NEW	EC-5375-1/10X-10	Marker-7 PCB Mixture (with PCB-118)	10 mL in nonane

Labeled	IUPAC	EC-5375 (ng/mL)	EC-5375-1/10X-10 (ng/mL)
2,4,4′-TriCB ($^{13}C_{12}$, 99%)	28	1000	100
2,2′,5,5′-TetraCB ($^{13}C_{12}$, 99%)	52	1000	100
2,2′,4,5,5′-PentaCB ($^{13}C_{12}$, 99%)	101	1000	100
2,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	118	1000	100
2,2′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	153	1000	100
2,2′,3,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	138	1000	100
2,2′,3,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	180	1000	100

EC-4058	PCB Mixture	3 mL in nonane

Labeled	IUPAC	(ng/mL)
2,4,4′-TriCB ($^{13}C_{12}$, 99%)	28	5000
2,2′,5,5′-TetraCB ($^{13}C_{12}$, 99%)	52	5000
2,2′,4,5,5′-PentaCB ($^{13}C_{12}$, 99%)	101	5000
2,2′,3,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	138	5000
2,2′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	153	5000
2,2′,3,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	180	5000
DecaCB ($^{13}C_{12}$, 99%)	209	5000

EC-4189-A	Mono-Deca PCB Mixture	3 mL in nonane

Labeled	IUPAC	(ng/mL)
4-MonoCB ($^{13}C_{12}$, 99%)	3	1000
4,4′-DiCB ($^{13}C_{12}$, 99%)	15	1000
2,4,4′-TriCB ($^{13}C_{12}$, 99%)	28	1000
2,2′,5,5′-TetraCB ($^{13}C_{12}$, 99%)	52	1000
2,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	118	1000
2,2′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	153	1000
2,2′,3,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	180	1000
2,2′,3,3′,4,4′,5,5′-OctaCB ($^{13}C_{12}$, 99%)	194	1000
2,2′,3,3′,4,5,5′,6,6′-NonaCB ($^{13}C_{12}$, 99%)	208	1000
DecaCB ($^{13}C_{12}$, 99%)	209	1000

"Non-Dioxin-Like" (Marker/Indicator) PCB Mixtures

	Catalog No.	Compound	Amount
NEW	EC-5495	Marker-7 PCB Mixture (with PCB-118)	1.2 mL in isooctane

Unlabeled	IUPAC	(ng/mL)
2,4,4′-TriCB	28	1000
2,2′,5,5′-TetraCB	52	1000
2,2′,4,5,5′-PentaCB	101	1000
2,3′,4,4′,5-PentaCB	118	1000
2,2′,4,4′,5,5′-HexaCB	153	1000
2,2′,3,4,4′,5′-HexaCB	138	1000
2,2′,3,4,4′,5,5′-HeptaCB	180	1000

EC-5179	PCB Mixture	3 mL in isooctane

Unlabeled	IUPAC	(ng/mL)
2,4,4′-TriCB	28	5000
2,2′,5,5′-TetraCB	52	5000
2,2′,4,5,5′-PentaCB	101	5000
2,2′,3,4,4′,5′-HexaCB	138	5000
2,2′,4,4′,5,5′-HexaCB	153	5000
2,2′,3,4,4′,5,5′-HeptaCB	180	5000
DecaCB	209	5000

NEW	EC-5502	UNEP PCB Working Solution 1	3 mL in isooctane

Unlabeled	IUPAC	(ng/mL)
2,4,4′-TriCB	28	2.0
2,2′,5,5′-TetraCB	52	2.5
2,2′,4,5,5′-PentaCB	101	4.0
2,2′,3,4,4′,5′-HexaCB	138	4.0
2,2′,4,4′,5,5′-HexaCB	153	5.0
2,2′,3,4,4′,5,5′-HeptaCB	180	6.0

See also **EN-1948-4 PCB Standard Mixtures**, pp. 86-88.

WHO "Dioxin-Like" and "Non-Dioxin-Like" (Marker/Indicator) PCB Mixtures

	Catalog No.	Compound	Amount
NEW	EC-5518	Comprehensive PCB Calibration Solutions [CS1-CS5]	5 × 0.2 mL in nonane/isooctane
NEW	EC-5518-CS1	Comprehensive PCB Calibration Solution [CS1]	0.2 mL in nonane/isooctane
NEW	EC-5518-CS2	Comprehensive PCB Calibration Solution [CS2]	0.2 mL in nonane/isooctane
NEW	EC-5518-CS3	Comprehensive PCB Calibration Solution [CS3]	0.2 mL in nonane/isooctane
NEW	EC-5518-CS4	Comprehensive PCB Calibration Solution [CS4]	0.2 mL in nonane/isooctane
NEW	EC-5518-CS5	Comprehensive PCB Calibration Solution [CS5]	0.2 mL in nonane/isooctane
NEW	EC-5518-CS6	Comprehensive PCB Calibration Solution [CS6]	0.2 mL in nonane/isooctane

All concentrations are in ng/mL (ppb)

Unlabeled	IUPAC	CS1	CS2	CS3	CS4	CS5	CS6
2-MonoCB	1	0.2	1	4	20	100	500
4-MonoCB	3	0.2	1	4	20	100	500
2,2′-DiCB	4	0.2	1	4	20	100	500
2,4′-DiCB	8	0.2	1	4	20	100	500
2,5-DiCB	9	0.2	1	4	20	100	500
2,6-DiCB	10	0.2	1	4	20	100	500
3,3′-DiCB	11	0.2	1	4	20	100	500
3,4-DiCB	12	0.2	1	4	20	100	500
4,4′-DiCB	15	0.2	1	4	20	100	500
2,2′,5-TriCB	18	0.1	0.5	2	10	50	250
2,2′,6-TriCB	19	0.1	0.5	2	10	50	250
2,4,4′-TriCB	28	0.1	0.5	2	10	50	250
2,4′,5-TriCB	31	0.1	0.5	2	10	50	250
2′,3,4-TriCB	33	0.1	0.5	2	10	50	250
3,3′,4-TriCB	35	0.1	0.5	2	10	50	250
3,4,4′-TriCB	37	0.1	0.5	2	10	50	250
3,4,5-TriCB	38	0.1	0.5	2	10	50	250
2,2′,3,5′-TetraCB	44	0.1	0.5	2	10	50	250
2,2′,4,5′-TetraCB	49	0.1	0.5	2	10	50	250
2,2′,5,5′-TetraCB	52	0.1	0.5	2	10	50	250
2,2′,6,6′-TetraCB	54	0.1	0.5	2	10	50	250
2,3,3′,5-TetraCB	57	0.1	0.5	2	10	50	250
2,3′,4,4′-TetraCB	66	0.1	0.5	2	10	50	250
2,3′,4′,5-TetraCB	70	0.1	0.5	2	10	50	250
2,4,4′,5-TetraCB	74	0.1	0.5	2	10	50	250
3,3′,4,4′-TetraCB	77	0.1	0.5	2	10	50	250
3,3′,4,5-TetraCB	78	0.1	0.5	2	10	50	250
3,3′,4,5′-TetraCB	79	0.1	0.5	2	10	50	250
3,4,4′,5-TetraCB	81	0.1	0.5	2	10	50	250
2,2′,3,4,5′-PentaCB	87	0.1	0.5	2	10	50	250
2,2′,3,5′,6-PentaCB	95	0.1	0.5	2	10	50	250
2,2′,4,4′,5-PentaCB	99	0.1	0.5	2	10	50	250
2,2′,4,5,5′-PentaCB	101	0.1	0.5	2	10	50	250
2,2′,4,6,6′-PentaCB	104	0.1	0.5	2	10	50	250
2,3,3′,4,4′-PentaCB	105	0.1	0.5	2	10	50	250
2,3,3′,4′,6-PentaCB	110	0.1	0.5	2	10	50	250
2,3,3′,5,5′-PentaCB	111	0.1	0.5	2	10	50	250
2,3,4,4′,5-PentaCB	114	0.1	0.5	2	10	50	250
2,3′,4,4′,5-PentaCB	118	0.1	0.5	2	10	50	250
2,3′,4,4′,5′-PentaCB	123	0.1	0.5	2	10	50	250
3,3′,4,4′,5-PentaCB	126	0.1	0.5	2	10	50	250
2,2′,3,4,4′,5′-HexaCB	138	0.1	0.5	2	10	50	250
2,2′,3,4′,5′,6-HexaCB	149	0.1	0.5	2	10	50	250
2,2′,4,4′,5,5′-HexaCB	153	0.1	0.5	2	10	50	250
2,2′,4,4′,6,6′-HexaCB	155	0.1	0.5	2	10	50	250
2,3,3′,4,4′,5-HexaCB	156	0.1	0.5	2	10	50	250
2,3,3′,4,4′,5′-HexaCB	157	0.1	0.5	2	10	50	250

(continued on next page)

WHO "Dioxin-Like" and "Non-Dioxin-Like" (Marker/Indicator) PCB Mixtures

(continued from previous page)

Unlabeled	IUPAC	CS1	CS2	CS3	CS4	CS5	CS6
2,3,3′,4′,5,5′-HexaCB	162	0.1	0.5	2	10	50	250
2,3′,4,4′,5,5′-HexaCB	167	0.1	0.5	2	10	50	250
3,3′,4,4′,5,5′-HexaCB	169	0.1	0.5	2	10	50	250
2,2′,3,3′,4,4′,5-HeptaCB	170	0.1	0.5	2	10	50	250
2,2′,3,3′,4,5,6′-HeptaCB	174	0.1	0.5	2	10	50	250
2,2′,3,3′,5,5′,6-HeptaCB	178	0.1	0.5	2	10	50	250
2,2′,3,4,4′,5,5′-HeptaCB	180	0.1	0.5	2	10	50	250
2,2′,3,4′,5,5′,6-HeptaCB	187	0.1	0.5	2	10	50	250
2,2′,3,4′,5,6,6′-HeptaCB	188	0.1	0.5	2	10	50	250
2,3,3′,4,4′,5,5′-HeptaCB	189	0.1	0.5	2	10	50	250
2,2′,3,3′,4,4′,5,5′-OctaCB	194	0.1	0.5	2	10	50	250
2,2′,3,3′,4,4′,5,6-OctaCB	195	0.1	0.5	2	10	50	250
2,2′,3,3′,4,5,6,6′-OctaCB	200	0.1	0.5	2	10	50	250
2,2′,3,3′,5,5′,6,6′-OctaCB	202	0.1	0.5	2	10	50	250
2,2′,3,4,4′,5,5′,6-OctaCB	203	0.1	0.5	2	10	50	250
2,3,3′,4,4′,5,5′,6-OctaCB	205	0.1	0.5	2	10	50	250
2,2′,3,3′,4,4′,5,5′,6-NonaCB	206	0.1	0.5	2	10	50	250
2,2′,3,3′,4,5,5′,6,6′-NonaCB	208	0.1	0.5	2	10	50	250
DecaCB	209	0.1	0.5	2	10	50	250
Toxics/LOC/Window Defining							
2-MonoCB ($^{13}C_{12}$, 99%)	1	10	10	10	10	10	10
4-MonoCB ($^{13}C_{12}$, 99%)	3	10	10	10	10	10	10
2,2′-DiCB ($^{13}C_{12}$, 99%)	4	10	10	10	10	10	10
4,4′-DiCB ($^{13}C_{12}$, 99%)	15	10	10	10	10	10	10
2,2′,6-TriCB ($^{13}C_{12}$, 99%)	19	10	10	10	10	10	10
3,4,4′-TriCB ($^{13}C_{12}$, 99%)	37	10	10	10	10	10	10
2,2′,6,6′-TetraCB ($^{13}C_{12}$, 99%)	54	10	10	10	10	10	10
3,3′,4,4′-TetraCB ($^{13}C_{12}$, 99%)	77	10	10	10	10	10	10
3,4,4′,5-TetraCB ($^{13}C_{12}$, 99%)	81	10	10	10	10	10	10
2,2′,4,6,6′-PentaCB ($^{13}C_{12}$, 99%)	104	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-PentaCB ($^{13}C_{12}$, 99%)	118	10	10	10	10	10	10
2,3′,4,4′,5′-PentaCB ($^{13}C_{12}$, 99%)	123	10	10	10	10	10	10
3,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	126	10	10	10	10	10	10
2,2′,4,4′,6,6′-HexaCB ($^{13}C_{12}$, 99%)	155	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′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	167	10	10	10	10	10	10
3,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	169	10	10	10	10	10	10
2,2′,3,4′,5,6,6′-HeptaCB ($^{13}C_{12}$, 99%)	188	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′,5,5′,6,6′-OctaCB ($^{13}C_{12}$, 99%)	202	10	10	10	10	10	10
2,3,3′,4,4′,5,5′,6-OctaCB ($^{13}C_{12}$, 99%)	205	10	10	10	10	10	10
2,2′,3,3′,4,4′,5,5′,6-NonaCB ($^{13}C_{12}$, 99%)	206	10	10	10	10	10	10
2,2′,3,3′,4,5,5′,6,6′-NonaCB ($^{13}C_{12}$, 99%)	208	10	10	10	10	10	10
DecaCB ($^{13}C_{12}$, 99%)	209	10	10	10	10	10	10
Cleanup							
2,4,4′-TriCB ($^{13}C_{12}$, 99%)	28	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′,3,3′,5,5′,6-HeptaCB ($^{13}C_{12}$, 99%)	178	10	10	10	10	10	10
Injection Internal							
2,5-DiCB ($^{13}C_{12}$, 99%)	9	10	10	10	10	10	10
2,2′,5,5′-TetraCB ($^{13}C_{12}$, 99%)	52	10	10	10	10	10	10
2,2′,4,5,5′-PentaCB ($^{13}C_{12}$, 99%)	101	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′,4,4′,5,5′-OctaCB ($^{13}C_{12}$, 99%)	194	10	10	10	10	10	10

WHO "Dioxin-Like" and "Non-Dioxin-Like" (Marker/Indicator) PCB Mixtures

Catalog No.	Compound	Amount
EC-4977	Method 1668A/B/C Labeled Toxics/LOC/Window Defining Solution	1.2 mL in nonane
EC-4977-5	Method 1668A/B/C Labeled Toxics/LOC/Window Defining Solution	5 mL in nonane

Labeled	IUPAC	(ng/mL)
2-MonoCB ($^{13}C_{12}$, 99%)	1	1000
4-MonoCB ($^{13}C_{12}$, 99%)	3	1000
2,2′-DiCB ($^{13}C_{12}$, 99%)	4	1000
4,4′-DiCB ($^{13}C_{12}$, 99%)	15	1000
2,2′,6-TriCB ($^{13}C_{12}$, 99%)	19	1000
3,4,4′-TriCB ($^{13}C_{12}$, 99%)	37	1000
2,2′,6,6′-TetraCB ($^{13}C_{12}$, 99%)	54	1000
3,3′,4,4′-TetraCB ($^{13}C_{12}$, 99%)	77	1000
3,4,4′,5-TetraCB ($^{13}C_{12}$, 99%)	81	1000
2,2′,4,6,6′-PentaCB ($^{13}C_{12}$, 99%)	104	1000
2,3,3′,4,4′-PentaCB ($^{13}C_{12}$, 99%)	105	1000
2,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	114	1000
2,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	118	1000
2′,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	123	1000
3,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	126	1000
2,3,3′,4,4′,5-HexaCB ($^{13}C_{12}$, 99%)	155	1000
2,2′,4,4′,6,6′-HexaCB ($^{13}C_{12}$, 99%)	156	1000
2,3,3′,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	157	1000
2,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	167	1000
3,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	169	1000
2,2′,3,4′,5,6,6′-HeptaCB ($^{13}C_{12}$, 99%)	188	1000
2,3,3′,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	189	1000
2,2′,3,3′,5,5′,6,6′-OctaCB ($^{13}C_{12}$, 99%)	202	1000
2,3,3′,4,4′,5,5′,6-OctaCB ($^{13}C_{12}$, 99%)	205	1000
2,2′,3,3′,4,4′,5,5′,6-NonaCB ($^{13}C_{12}$, 99%)	206	1000
2,2′,3,3′,4,5,5′,6,6′-NonaCB ($^{13}C_{12}$, 99%)	208	1000
DecaCB ($^{13}C_{12}$, 99%)	209	1000

EC-4978	Method 1668A/B/C Labeled Cleanup Standard Solution	1.2 mL in nonane

Labeled	IUPAC	(ng/mL)
2,4,4′-TriCB ($^{13}C_{12}$, 99%)	28	1000
2,3,3′,5,5′-PentaCB ($^{13}C_{12}$, 99%)	111	1000
2,2′,3,3′,5,5′,6-HeptaCB ($^{13}C_{12}$, 99%)	178	1000

EC-4979	Method 1668A/B/C Labeled Injection Internal Standard Solution	1.2 mL in nonane

Labeled	IUPAC	(ng/mL)
2,5-DiCB ($^{13}C_{12}$, 99%)	9	5000
2,2′,5,5′-TetraCB ($^{13}C_{12}$, 99%)	52	5000
2,2′,4,5,5′-PentaCB ($^{13}C_{12}$, 99%)	101	5000
2,2′,3,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	138	5000
2,2′,3,3′,4,4′,5,5′-OctaCB ($^{13}C_{12}$, 99%)	194	5000

WHO "Dioxin-Like" and "Non-Dioxin-Like" (Marker/Indicator) PCB Mixtures

Catalog No.	Compound	Amount
EC-5433	Comprehensive Native PCB Mixture	1.2 mL in isooctane

Unlabeled	IUPAC	(ng/mL)
2-MonoCB	1	2000
4-MonoCB	3	2000
2,2′-DiCB	4	2000
2,4′-DiCB	8	2000
2,5-DiCB	9	2000
2,6-DiCB	10	2000
3,3′-DiCB	11	2000
3,4-DiCB	12	2000
4,4′-DiCB	15	2000
2,2′,5-TriCB	18	1000
2,2′,6-TriCB	19	1000
2,4,4′-TriCB	28	1000
2,4′,5-TriCB	31	1000
2′,3,4-TriCB	33	1000
3,3′,4-TriCB	35	1000
3,4,4′-TriCB	37	1000
3,4,5-TriCB	38	1000
2,2′,3,5′-TetraCB	44	1000
2,2′,4,5′-TetraCB	49	1000
2,2′,5,5′-TetraCB	52	1000
2,2′,6,6′-TetraCB	54	1000
2,3,3′,5-TetraCB	57	1000
2,3′,4,4′-TetraCB	66	1000
2,3′,4′,5-TetraCB	70	1000
2,4,4′,5-TetraCB	74	1000
3,3′,4,4′-TetraCB	77	1000
3,3′,4,5-TetraCB	78	1000
3,3′,4,5′-TetraCB	79	1000
3,4,4′,5-TetraCB	81	1000
2,2′,3,4,5′-PentaCB	87	1000
2,2′,3,5′,6-PentaCB	95	1000
2,2′,4,4′,5-PentaCB	99	1000
2,2′,4,5,5′-PentaCB	101	1000

Unlabeled	IUPAC	(ng/mL)
2,2′,4,6,6′-PentaCB	104	1000
2,3,3′,4,4′-PentaCB	105	1000
2,3,3′,4′,6-PentaCB	110	1000
2,3,3′,5,5′-PentaCB	111	1000
2,3,4,4′,5-PentaCB	114	1000
2,3′,4,4′,5-PentaCB	118	1000
2′,3,4,4′,5-PentaCB	123	1000
3,3′,4,4′,5-PentaCB	126	1000
2,2′,3,4,4′,5′-HexaCB	138	1000
2,2′,3,4′,5′,6-HexaCB	149	1000
2,2′,4,4′,5,5′-HexaCB	153	1000
2,2′,4,4′,6,6′-HexaCB	155	1000
2,3,3′,4,4′,5-HexaCB	156	1000
2,3,3′,4,4′,5′-HexaCB	157	1000
2,3,3′,4′,5,5′-HexaCB	162	1000
2,3′,4,4′,5,5′-HexaCB	167	1000
3,3′,4,4′,5,5′-HexaCB	169	1000
2,2′,3,3′,4,4′,5-HeptaCB	170	1000
2,2′,3,3′,4,5,6′-HeptaCB	174	1000
2,2′,3,3′,5,5′,6-HeptaCB	178	1000
2,2′,3,4,4′,5,5′-HeptaCB	180	1000
2,2′,3,4′,5,5′,6-HeptaCB	187	1000
2,2′,3,4′,5,6,6′-HeptaCB	188	1000
2,3,3′,4,4′,5,5′-HeptaCB	189	1000
2,2′,3,3′,4,4′,5,5′-OctaCB	194	1000
2,2′,3,3′,4,4′,5,6-OctaCB	195	1000
2,2′,3,3′,4,5,6,6′-OctaCB	200	1000
2,2′,3,3′,5,5′,6,6′-OctaCB	202	1000
2,2′,3,4,4′,5,5′,6-OctaCB	203	1000
2,3,3′,4,4′,5,5′,6-OctaCB	205	1000
2,2′,3,3′,4,4′,5,5′,6-NonaCB	206	1000
2,2′,3,3′,4,5,5′,6,6′-NonaCB	208	1000
DecaCB	209	1000

WHO "Dioxin-Like" and "Non-Dioxin-Like" (Marker/Indicator) PCB Mixtures

Catalog No.	Compound	Amount
EC-5366	CDC PCB Calibration Solutions [CS1-CS10] (NOTE: Individual calibration standards are available upon request)	Set of 10 × 0.5 mL in nonane

All concentrations are in ng/mL (ppb)

Unlabeled	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		
Labeled											
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

(continued on next page)

WHO "Dioxin-Like" and "Non-Dioxin-Like" (Marker/Indicator) PCB Mixtures

(continued from previous page)

All concentrations are in ng/mL (ppb)

Labeled	IUPAC	CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8	CS9	CS10
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
Recovery											
1,2,3,4-TCDD ($^{13}C_{6}$, 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′-TetraBDE ($^{13}C_{12}$, 99%)	77	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

	EC-5367	CDC PCB Spiking Standard	10 mL in methanol
NEW	EC-5367-5X10	CDC PCB Spiking Standard	5 × 10 mL in methanol

Labeled	IUPAC	(ng/mL)
2,4,4′-TriCB ($^{13}C_{12}$, 99%)	28	7.5
2,2′,5,5′-TetraCB ($^{13}C_{12}$, 99%)	52	7.5
2,2′,4,5,5′-PentaCB ($^{13}C_{12}$, 99%)	101	7.5
2′,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	123	7.5
2,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	118	7.5
2,3,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	114	7.5
2,2′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	153	7.5
2,3,3′,4,4′-PentaCB ($^{13}C_{12}$, 99%)	105	7.5
2,2′,3,3′,5,5′,6-HeptaCB ($^{13}C_{12}$, 99%)	178	7.5
2,2′,3,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	138	7.5
2,2′,3,3′,4,4′-HexaCB ($^{13}C_{12}$, 99%)	128	7.5
2,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	167	7.5
2,3,3′,4,4′,5-HexaCB ($^{13}C_{12}$, 99%)	156	7.5
2,3,3′,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	157	7.5
2,2′,3,3′,4,4′,5-HeptaCB ($^{13}C_{12}$, 99%)	170	7.5
2,2′,3,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	180	7.5
2,3,3′,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	189	7.5
2,2′,3,3′,4,4′,5,5′-OctaCB ($^{13}C_{12}$, 99%)	194	7.5
2,2′,3,3′,4,4′,5,5′,6-NonaCB ($^{13}C_{12}$, 99%)	206	7.5
DecaCB ($^{13}C_{12}$, 99%)	209	7.5

	ES-5321	Multi-Analyte Recovery Spiking Standard	10 mL in 88% hexane/ 2% dodecane/10% nonane
NEW	ES-5321-200X-1.2	Multi-Analyte Recovery Spiking Standard	1.2 mL in nonane

Labeled	IUPAC	ES-5321 (ng/mL)	ES-5321-200X-1.2 (ng/mL)
1,2,3,4-TetraCDD ($^{13}C_{6}$, 99%)		2.5	500
2,2′,3,3′,4,5,5′,6,6′-NonaCB ($^{13}C_{12}$, 99%)	208	10.0	2000
3,3′,4,4′-TetraBDE ($^{13}C_{12}$, 99%)	77	7.5	1500
2,2′,3,4,4′,6-HexaBDE ($^{13}C_{12}$, 99%)	139	7.5	1500

WHO "Dioxin-Like" and "Non-Dioxin-Like" (Marker/Indicator) PCB Mixtures

Catalog No.	Compound	Amount
EC-5085	Toxic and Predominant PCB PAR Solution (does not include PCB-114 or PCB-123)	1.2 mL in nonane

Unlabeled	IUPAC	(ng/mL)
2,2′,5-TriCB	18	250
2,4,4′-TriCB	28	250
2,2′,3,5′-TetraCB	44	250
2,2′,4,5′-TetraCB	49	250
2,2′,5,5′-TetraCB	52	250
2,3′,4,4′-TetraCB	66	250
2,4,4′,5-TetraCB	74	250
2,2′,3,4,5′-PentaCB	87	250
2,2′,4,4′,5-PentaCB	99	250
2,2′,4,5,5′-PentaCB	101	250
2,3,3′,4,4′-PentaCB	105	250
2,3,3′,4′,6-PentaCB	110	250
2,3′,4,4′,5-PentaCB	118	250
2,2′,3,3′,4,4′-HexaCB	128	250
2,2′,3,4,4′,5′-HexaCB	138	250
2,2′,3,4′,5,5′-HexaCB	146	250
2,2′,3,4′,5′,6-HexaCB	149	250
2,2′,3,5,5′,6-HexaCB	151	250
2,2′,4,4′,5,5′-HexaCB	153	250
2,3,3′,4,4′,5-HexaCB	156	250
2,3,3′,4,4′,5′-HexaCB	157	250
2,3,3′,4,4′,6-HexaCB	158	250
2,3′,4,4′,5,5′-HexaCB	167	250
2,2′,3,3′,4,4′,5-HeptaCB	170	250
2,2′,3,3′,4,5,5′-HeptaCB	172	250
2,2′,3,3′,4′,5,6-HeptaCB	177	250
2,2′,3,3′,5,5′,6-HeptaCB	178	250
2,2′,3,4,4′,5,5′-HeptaCB	180	250
2,2′,3,4,4′,5′,6-HeptaCB	183	250
2,2′,3,4′,5,5′,6-HeptaCB	187	250
2,3,3′,4,4′,5,5′-HeptaCB	189	250
2,2′,3,3′,4,4′,5,5′-OctaCB	194	250
2,2′,3,3′,4,4′,5,6-OctaCB	195	250
2,2′,3,3′,4,4′,5′,6-OctaCB	196	250
2,2′,3,3′,4,5,5′,6′-OctaCB	201	250
2,2′,3,4,4′,5,5′,6-OctaCB	203	250
2,2′,3,3′,4,4′,5,5′,6-NonaCB	206	250
DecaCB	209	250

WHO "Dioxin-Like" and "Non-Dioxin-Like" (Marker/Indicator) PCB Mixtures

	Catalog No.	Compound	Amount
NEW	EC-5531	PCB Exhibit Calibration Solutions [CS0.2-CS5]	6 × 0.2 mL in nonane/isooctane

All concentrations are in ng/mL (ppb)

Unlabeled	IUPAC	CS0.2	CS1	CS2	CS3	CS4	CS5
2,2′,5,5′-TetraCB	52	0.2	1	5	50	400	2000
2,3′,4,4′-TetraCB	66	0.2	1	5	50	400	2000
2,4,4′,5-TetraCB	74	0.2	1	5	50	400	2000
2,2′,3,4,5′-PentaCB	87	0.2	1	5	50	400	2000
2,2′,4,4′,5-PentaCB	99	0.2	1	5	50	400	2000
2,2′,4,5,5′-PentaCB	101	0.2	1	5	50	400	2000
2,3,3′,4,4′-PentaCB	105	0.2	1	5	50	400	2000
2,3,3′,4′,6-PentaCB	110	0.2	1	5	50	400	2000
2,3′,4,4′,5-PentaCB	118	0.2	1	5	50	400	2000
2,2′,3,4,4′,5′-HexaCB	138	0.2	1	5	50	400	2000
2,2′,3,4′,5,5′-HexaCB	146	0.2	1	5	50	400	2000
2,2′,4,4′,5,5′-HexaCB	153	0.2	1	5	50	400	2000
2,3,3′,4,4′,5-HexaCB	156	0.2	1	5	50	400	2000
2,2′,3,3′,4,4′,5-HeptaCB	170	0.2	1	5	50	400	2000
2,2′,3,4,4′,5,5′-HeptaCB	180	0.2	1	5	50	400	2000
2,2′,3,4′,5,5′,6-HeptaCB	187	0.2	1	5	50	400	2000
DecaCB	209	0.2	1	5	50	400	2000
Internal							
2,2′,5,5′-TetraCB ($^{13}C_{12}$, 99%)	52	25	25	25	25	25	25
2,2′,4,5,5′-PentaCB ($^{13}C_{12}$, 99%)	101	25	25	25	25	25	25
2,3,3′,4,4′-PentaCB ($^{13}C_{12}$, 99%)	105	25	25	25	25	25	25
2,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	118	25	25	25	25	25	25
2,2′,3,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	138	25	25	25	25	25	25
2,2′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	153	25	25	25	25	25	25
2,3,3′,4,4′,5-HexaCB ($^{13}C_{12}$, 99%)	156	25	25	25	25	25	25
2,2′,3,3′,4,4′,5-HeptaCB ($^{13}C_{12}$, 99%)	170	25	25	25	25	25	25
2,2′,3,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	180	25	25	25	25	25	25
Recovery							
2,3′,4′,5-TetraCB	70	25	25	25	25	25	25
2,3,3′,5,5′-PentaCB	111	25	25	25	25	25	25
2,2′,4,4′,6,6′-HexaCB	155	25	25	25	25	25	25
2,3′,4,4′,5,5′-HexaCB	167	25	25	25	25	25	25
2,3,3′,4,4′,5,5′-HeptaCB	189	25	25	25	25	25	25

WHO "Dioxin-Like" and "Non-Dioxin-Like" (Marker/Indicator) PCB Mixtures

	Catalog No.	Compound	Amount
NEW	EC-5532	PCB Exhibit Internal Standard	1.2 mL in nonane

Labeled	IUPAC	(ng/mL)
2,2′,5,5′-TetraCB ($^{13}C_{12}$, 99%)	52	100
2,2′,4,5,5′-PentaCB ($^{13}C_{12}$, 99%)	101	100
2,3,3′,4,4′-PentaCB ($^{13}C_{12}$, 99%)	105	100
2,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	118	100
2,2′,3,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	138	100
2,2′,3,3′,4,4′-HexaCB ($^{13}C_{12}$, 99%)	153	100
2,3,3′,4,4′,5-HexaCB ($^{13}C_{12}$, 99%)	156	100
2,3,3′,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	157	100
2,2′,3,3′,4,4′,5-HeptaCB ($^{13}C_{12}$, 99%)	170	100
2,2′,3,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	180	100
DecaCB ($^{13}C_{12}$, 99%)	209	100

NEW	EC-5533	PCB Exhibit Recovery Solution	1.2 mL in nonane

Labeled	IUPAC	(ng/mL)
2,3′,4′,5-TetraCB ($^{13}C_{12}$, 99%)	70	5000
2,3,3′,5,5′-PentaCB ($^{13}C_{12}$, 99%)	111	5000
2,2′,4,4′,6,6′-HexaCB ($^{13}C_{12}$, 99%)	155	5000
2,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	167	5000
2,3,3′,4,4′,5,5′-HeptaCB ($^{13}C_{12}$, 99%)	189	5000

NEW	EC-5534	PCB Exhibit Native PAR Solution	1.2 mL in isooctane

Unlabeled	IUPAC	(ng/mL)
2,2′,5,5′-TetraCB	52	200
2,3′,4,4′-TetraCB	66	200
2,4,4′,5-TetraCB	74	200
2,2′,3,4,5′-PentaCB	87	200
2,2′,4,4′,5-PentaCB	99	200
2,2′,4,5,5′-PentaCB	101	200
2,3,3′,4,4′-PentaCB	105	200
2,3,3′,4′,6-PentaCB	110	200
2,3′,4,4′,5-PentaCB	118	200
2,2′,3,4,4′,5′-HexaCB	138	200
2,2′,3,4′,5,5′-HexaCB	146	200
2,2′,4,4′,5,5′-HexaCB	153	200
2,3,3′,4,4′,5-HexaCB	156	200
2,2′,3,3′,4,4′,5-HeptaCB	170	200
2,2′,3,4,4′,5,5′-HeptaCB	180	200
2,2′,3,4′,5,5′,6-HeptaCB	187	200
DecaCB	209	200

Isotope-Labeled PCB Standard Mixtures

Catalog No.	Compound	Amount
EC-5181	PCB Syringe Spike	1.2 mL in nonane
EC-5181-10X-1.2	PCB Syringe Spike	1.2 mL in nonane

Labeled	IUPAC	EC-5181 (ng/mL)	EC-5181-10X-1.2 (ng/mL)
2,3′,4′,5-TetraCB ($^{13}C_{12}$, 99%)	70	100	1000
2,3,3′,5,5′-PentaCB ($^{13}C_{12}$, 99%)	111	100	1000
2,2′,3,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	138	100	1000

EC-5163	PCB Mixture (PCB-70/111/138/1 70)	1.2 mL in nonane

Labeled	IUPAC	(ng/mL)
2,3′,4′,5-TetraCB ($^{13}C_{12}$, 99%)	70	1000
2,3,3′,5,5′-PentaCB ($^{13}C_{12}$, 99%)	111	1000
2,2′,3,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	138	1000
2,2′,3,3′,4,4′,5-HeptaCB ($^{13}C_{12}$, 99%)	170	1000

EC-5350	POPs Pesticides HRMS (PCB) Syringe Spike	1.2 mL in nonane
EC-5350-L	POPs Pesticides HRMS (PCB) Syringe Spike	1.2 mL in nonane

Labeled	IUPAC	EC-5350 (ng/mL)	EC-5350-L (ng/mL)
4,4′-DiCB ($^{13}C_{12}$, 99%)	15	100	1000
2,3′,4′,5-TetraCB ($^{13}C_{12}$, 99%)	70	100	1000

NEW EC-5523	PCB Recovery Standard (PCB-9, 118, 188)	1.2 mL in nonane

Labeled	IUPAC	(ng/mL)
2,5-DiCB ($^{13}C_{12}$, 99%)	9	12,500
2,3′,4,4′,5-PentaCB ($^{13}C_{12}$, 99%)	118	12,500
2,2′,3,4′,5,6,6′-HeptaCB ($^{13}C_{12}$, 99%)	188	12,500

NEW ES-5474	CDC PCB Recovery Standard for OH-PAHs	1 mL in toluene

Labeled	IUPAC	(ng/mL)
2,4,4′-TriCB ($^{13}C_{12}$, 99%)	28	200
2,3,3′,4,4′-PentaCB ($^{13}C_{12}$, 99%)	105	200
2,2′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	153	200
2,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	167	200

EC-4060	PCB Mixture	1.2 mL in nonane

Labeled	IUPAC	(ng/mL)
3,3′,4,4′-TetraCB ($^{13}C_{12}$, 99%)	77	10,000
2,2′,4,5,5′-PentaCB ($^{13}C_{12}$, 99%)	101	10,000
2,2′,3,4,5,5′-HexaCB ($^{13}C_{12}$, 99%)	141	10,000
2,2′,3,3′,5,5′,6-HeptaCB ($^{13}C_{12}$, 99%)	178	10,000

Unlabeled PCB Standard Mixtures

Catalog No.	Compound	Amount
EC-5434	Fully Resolved Native Mono-Deca PCB Mixture	1.2 mL in isooctane

Unlabeled	IUPAC	(ng/mL)
2-MonoCB	1	2000
4-MonoCB	3	2000
2,4′-DiCB	8	2000
2,5-DiCB	9	2000
2,6-DiCB	10	2000
3,4-DiCB	12	2000
4,4′-DiCB	15	2000
2,2′,5-TriCB	18	1000
2,2′,6-TriCB	19	1000
2′,3,4-TriCB	33	1000
3,3′,4-TriCB	35	1000
3,4,4′-TriCB	37	1000
3,4,5-TriCB	38	1000
2,2′,3,5′-TetraCB	44	1000
2,2′,5,5′-TetraCB	52	1000
2,2′,6,6′-TetraCB	54	1000
2,3,3′,5-TetraCB	57	1000
2,4,4′,5-TetraCB	74	1000
3,3′,4,4′-TetraCB	77	1000
3,3′,4,5-TetraCB	78	1000
3,3′,4,5′-TetraCB	79	1000
3,4,4′,5-TetraCB	81	1000

Unlabeled	IUPAC	(ng/mL)
2,2′,4,4′,5-PentaCB	99	1000
2,2′,4,6,6′-PentaCB	104	1000
2,3,4,4′,5-PentaCB	114	1000
2,3′,4,4′,5-PentaCB	118	1000
2′,3,4,4′,5-PentaCB	123	1000
3,3′,4,4′,5-PentaCB	126	1000
2,2′,4,4′,5,5′-HexaCB	153	1000
2,2′,4,4′,6,6′-HexaCB	155	1000
2,3,3′,4,4′,5-HexaCB	156	1000
2,3,3′,4,4′,5′-HexaCB	157	1000
2,3,3′,4′,5,5′-HexaCB	162	1000
2,3′,4,4′,5,5′-HexaCB	167	1000
3,3′,4,4′,5,5′-HexaCB	169	1000
2,2′,3,4′,5,6,6′-HeptaCB	188	1000
2,3,3′,4,4′,5,5′-HeptaCB	189	1000
2,2′,3,3′,4,4′,5,5′-OctaCB	194	1000
2,2′,3,3′,4,4′,5,6-OctaCB	195	1000
2,2′,3,3′,5,5′,6,6′-OctaCB	202	1000
2,3,3′,4,4′,5,5′,6-OctaCB	205	1000
2,2′,3,3′,4,4′,5,5′,6-NonaCB	206	1000
2,2′,3,3′,4,5,5′,6,6′-NonaCB	208	1000
DecaCB	209	1000

Catalog No.	Compound	Amount
EC-4133	DSJ PCB Mixture	1 mL in isooctane

Unlabeled	IUPAC	(ng/mL)
2,2′,4-TriCB	17	500
2,2′,5-TriCB	18	2000
2,4,4′-TriCB	28	2000
2,4′,5-TriCB	31	1500
2′,3,4-TriCB	33	2000
2,2′,3,5′-TetraCB	44	2000
2,2′,4,5′-TetraCB	49	2000
2,2′,5,5′-TetraCB	52	2000
2,3′,4′,5-TetraCB	70	2000
2,4,4′,5-TetraCB	74	2000
2,2′,3,3′,4-PentaCB	82	500
2,2′,3,4,5′-PentaCB	87	2000
2,2′,3,5′,6-PentaCB	95	1000
2,2′,4,4′,5-PentaCB	99	2000
2,2′,4,5,5′-PentaCB	101	2000
2,3,3′,4,4′-PentaCB	105	500
2,3,3′,4′,6-PentaCB	110	2000
2,3′,4,4′,5-PentaCB	118	2000
2,2′,3,3′,4,4′-HexaCB	128	2000
2,2′,3,3′,4,6′-HexaCB	132	1000
2,2′,3,4,4′,5′-HexaCB	138	2000

Unlabeled	IUPAC	(ng/mL)
2,2′,3,4′,5′,6-HexaCB	149	2000
2,2′,3,5,5′,6-HexaCB	151	2000
2,2′,4,4′,5,5′-HexaCB	153	2000
2,3,3′,4,4′,5-HexaCB	156	2000
2,3,3′,4,4′,6-HexaCB	158	500
3,3′,4,4′,5,5′-HexaCB	169	2000
2,2′,3,3′,4,4′,5-HeptaCB	170	2000
2,2′,3,3′,4,4′,6-HeptaCB	171	2000
2,2′,3,3′,4′,5,6-HeptaCB	177	2000
2,2′,3,4,4′,5,5′-HeptaCB	180	2000
2,2′,3,4,4′,5′,6-HeptaCB	183	2000
2,2′,3,4′,5,5′,6-HeptaCB	187	2000
2,3,3′,4,4′,5′,6-HeptaCB	191	2000
2,2′,3,3′,4,4′,5,5′-OctaCB	194	2000
2,2′,3,3′,4,4′,5,6-OctaCB	195	2000
2,2′,3,3′,4,5,5′,6′-OctaCB	201	1500
2,3,3′,4,4′,5,5′,6-OctaCB	205	2000
2,2′,3,3′,4,4′,5,5′,6-NonaCB	206	2000
2,2′,3,3′,4,5,5′,6,6′-NonaCB	208	2000
DecaCB	209	2000

Unlabeled PCB Standard Mixtures

Catalog No.	Compound	Amount
EC-5492	PCB Recovery Standard	1 mL in toluene

Unlabeled	IUPAC	(ng/mL)
2,4,4′-TriCB	28	200
2,3,3′,4,4′-PentaCB	105	200
2,2′,4,4′,5,5′-HexaCB	153	200
2,3′,4,4′,5,5′-HexaCB	167	200

NEW	EC-5504	PCB Recovery Standard	1.2 mL in isooctane

Unlabeled	IUPAC	(ng/mL)
2,3′,4′,5-TetraCB	70	100
2,3,3′,5,5′-PentaCB	111	100
2,2′,3,3′,4,4′,5-HeptaCB	170	100

EC-7438	PCB Mixture	1.2 mL in isooctane

Unlabeled	IUPAC	(ng/mL)
3,3′,4,4′-TetraCB	77	10,000
2,2′,4,5,5′-PentaCB	101	10,000
2,2′,3,4,5,5′-HexaCB	141	10,000
2,2′,3,3′,5,5′,6-HeptaCB	178	10,000

NEW	ULM-5370	EN-1948-4 PCB Sampling Standard	Inquire

Unlabeled	IUPAC	(ng/mL)
2,3,4,4′-TetraCB	60	100
3,3′,4,5,5′-PentaCB	127	100
2,3,3′,4,5,5′-HexaCB	159	100

NEW	EC-5460	UNEP OC Pesticide ECD Internal Standard Mixture	1.2 mL in isooctane

Unlabeled	IUPAC	(ng/mL)
2,3,3′,5,6-PentaCB	112	5000
2,2′,4,4′,6,6′-HexaCB	155	5000
2,2′,3,3′,4,5,5′,6-OctaCB	198	5000

PCB Window Defining Mixture

Catalog No.	Compound	Amount
EC-1430	PCB Window Defining Mixture (for use with DB-5 type GC-MS columns)	5 mL in isooctane

Unlabeled	IUPAC	(ng/mL)
Biphenyl	0	2500
2-MonoCB	1	2500
4-MonoCB	3	2500
2,6-DiCB	10	2500
4,4′-DiCB	15	2500
Note: #30 is second tri eluter		
2,4,6-TriCB	30	2500
3,4,4′-TriCB	37	2500
2,2′,6,6′-TetraCB	54	2500
3,3′,4,4′-TetraCB	77	2500
2,2′,4,6,6′-PentaCB	104	2500
3,3′,4,4′,5-PentaCB	126	2500
2,2′,4,4′,6,6′-HexaCB	155	2500
3,3′,4,4′,5,5′-HexaCB	169	2500
2,2′,3,4′,5,6,6′-HeptaCB	188	2500
2,3,3′,4,4′,5,5′-HeptaCB	189	2500
2,2′,3,3′,5,5′,6,6′-OctaCB	202	2500
Note: #194 is second-to-last octa eluter		
2,2′,3,3′,4,4′,5,5′-OctaCB	194	2500
2,2′,3,3′,4,4′,5,5′,6-NonaCB	206	2500
2,2′,3,3′,4,5,5′,6,6′-NonaCB	208	2500
DecaCB	209	2500

Isotope-Labeled Mixed Bromo/Chlorobiphenyl Standards

Catalog No.	Compound	Concentration	Amount
ECB-5269	3,4-Dichloro-3′,4′,5′-triBB ($^{13}C_{12}$, 99%)	40 µg/mL in nonane	3 mL
ECB-5270	3,4-Dibromo-3′,4′-diCB ($^{13}C_{12}$, 99%)	40 µg/mL in nonane	3 mL
ECB-5271	3,4-Dibromo-3′,4′,5′-triCB ($^{13}C_{12}$, 99%)	40 µg/mL in nonane	3 mL
ECB-5291	4′-Bromo-3,3′,4,5-tetraCB ($^{13}C_{12}$, 99%)	40 µg/mL in nonane	3 mL
ECB-5292	4′-Bromo-2,3′,4,5-tetraCB ($^{13}C_{12}$, 99%)	40 µg/mL in nonane	3 mL
ECB-5293	4′-Bromo-2,3,3′,4-tetraCB ($^{13}C_{12}$, 99%)	40 µg/mL in nonane	3 mL
ECB-5294	4′-Bromo-2,3,3′,4,5-pentaCB ($^{13}C_{12}$, 99%)	40 µg/mL in nonane	3 mL
ECB-5339	4′-Bromo-3,3′,4,5,5′-pentaCB ($^{13}C_{12}$, 99%)	40 µg/mL in nonane	3 mL

Unlabeled Mixed Bromo/Chlorobiphenyl Standards

Catalog No.	Compound	Concentration	Amount
PCBB-5272-CS	3,4-Dichloro-3′,4′,5′-triBB (Certified Standard)	100 µg/mL in isooctane	1.2 mL
PCBB-5273	3,4-Dibromo-3′,4′-diCB	100 µg/mL in isooctane	1.2 mL
PCBB-5274	3,4-Dibromo-3′,4′,5′-triCB	100 µg/mL in isooctane	1.2 mL
PCBB-5295	4′-Bromo-3,3′,4,5-tetraCB	100 µg/mL in isooctane	1.2 mL
PCBB-5296	4′-Bromo-2,3′,4,5-tetraCB	100 µg/mL in isooctane	1.2 mL
PCBB-5297	4′-Bromo-2,3,3′,4-tetraCB	100 µg/mL in isooctane	1.2 mL
PCBB-5298	4′-Bromo-2,3,3′,4,5-pentaCB	100 µg/mL in isooctane	1.2 mL
PCBB-5340-CS	4′-Bromo-3,3′,4,5,5′-pentaCB (Certified Standard)	100 µg/mL in isooctane	1.2 mL

Mixed Bromo/Chlorobiphenyl Standard Mixtures

Catalog No.	Compound	Amount
ECB-5390	PXB Calibration Solutions [CS1-CS5]	Set of 5 × 0.2 mL in nonane
ECB-5390-CS1	PXB Calibration Solution [CS1]	0.2 mL in nonane
ECB-5390-CS2	PXB Calibration Solution [CS2]	0.2 mL in nonane
ECB-5390-CS3	PXB Calibration Solution [CS3]	0.2 mL in nonane
ECB-5390-CS4	PXB Calibration Solution [CS4]	0.2 mL in nonane
ECB-5390-CS5	PXB Calibration Solution [CS5]	0.2 mL in nonane

All concentrations are in ng/mL (ppb)

Unlabeled	CS1	CS2	CS3	CS4	CS5
4′-Bromo-3,3′,4,5-tetraCB	2	10	50	200	200
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
Labeled					
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%)	200	200	200	200	200
2,2′,3,4,5,5′-HexaCDE ($^{13}C_{12}$, 99%)	100	100	100	100	100

ECB-5389	PXB Cleanup Spike	1.2 mL in nonane

Labeled	(ng/mL)
4′-Bromo-3,3′,4,5-tetraCB ($^{13}C_{12}$, 99%)	1000
4′-Bromo-2,3′,4,5-tetraCB ($^{13}C_{12}$, 99%)	1000
4′-Bromo-2,3,3′,4-tetraCB ($^{13}C_{12}$, 99%)	1000
4′-Bromo-2,3,3′,4,5-pentaCB ($^{13}C_{12}$, 99%)	1000
4′-Bromo-3,3′,4,5,5′-pentaCB ($^{13}C_{12}$, 99%)	1000
3,4-Dichloro-3′,4′,5′-triBB ($^{13}C_{12}$, 99%)	2000

EO-5388	PXB Syringe Standard	1.2 mL in nonane

Labeled	(ng/mL)
2,2′,3,4,5,5′-HexaCDE ($^{13}C_{12}$, 99%)	1000

ECB-5387	PXB Native PAR Solution	0.5 mL in nonane

Unlabeled	(ng/mL)
4′-Bromo-3,3′,4,5-tetraCB	1000
4′-Bromo-2,3′,4,5-tetraCB	1000
4′-Bromo-2,3,3′,4-tetraCB	1000
4′-Bromo-2,3,3′,4,5-pentaCB	1000
4′-Bromo-3,3′,4,5,5′-pentaCB	1000
3,4-Dichloro-3′,4′,5′-triBB	2000

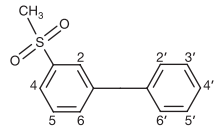
PCB Metabolite Standards

Catalog No.	Compound	Concentration	Amount
	OH-PCB		
OHCB-5114-1.2	4′-OH-3,3′,4,5′-tetraCB ($^{13}C_{12}$, 99%)	50 µg/mL in nonane	1.2 mL
OHCB-5115-1.2	4-OH-2,3,3′,4′,5-pentaCB ($^{13}C_{12}$, 99%)	50 µg/mL in nonane	1.2 mL
OHCB-5117-1.2	4-OH-2,2′,3,4′,5,5′-hexaCB ($^{13}C_{12}$, 99%)	50 µg/mL in nonane	1.2 mL
OHCB-5118-1.2	3′-OH-2,2′,3,4,4′,5′-hexaCB ($^{13}C_{12}$, 99%)	50 µg/mL in nonane	1.2 mL
OHCB-5124-1.2	4′-OH-2,2′,3,3′,4,5,5′-heptaCB ($^{13}C_{12}$, 99%)	50 µg/mL in nonane	1.2 mL
	MeO-PCB		
NEW MEOCB-5485-1.2	4-Methoxy-2,3,3′,4′,5-pentaCB ($^{13}C_{12}$, 99%)	50 µg/mL in nonane	1.2 mL
NEW MEOCB-5486-1.2	4-Methoxy-2,2′,3,4′,5,5′-hexaCB ($^{13}C_{12}$, 99%)	50 µg/mL in nonane	1.2 mL
MEOCB-5109-1.2	4-Methoxy-2,3,3′,4′,5-pentaCB (unlabeled)	50 µg/mL in nonane	1.2 mL
MEOCB-5111-1.2	4-Methoxy-2,2′,3,4′,5,5′-hexaCB (unlabeled)	50 µg/mL in nonane	1.2 mL
MEOCB-5135-1.2	4-Methoxy-2,2′,3,4′,5,5′,6-heptaCB (unlabeled)	50 µg/mL in nonane	1.2 mL

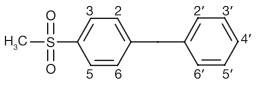
Unlabeled Methyl Sulfone PCB Standards

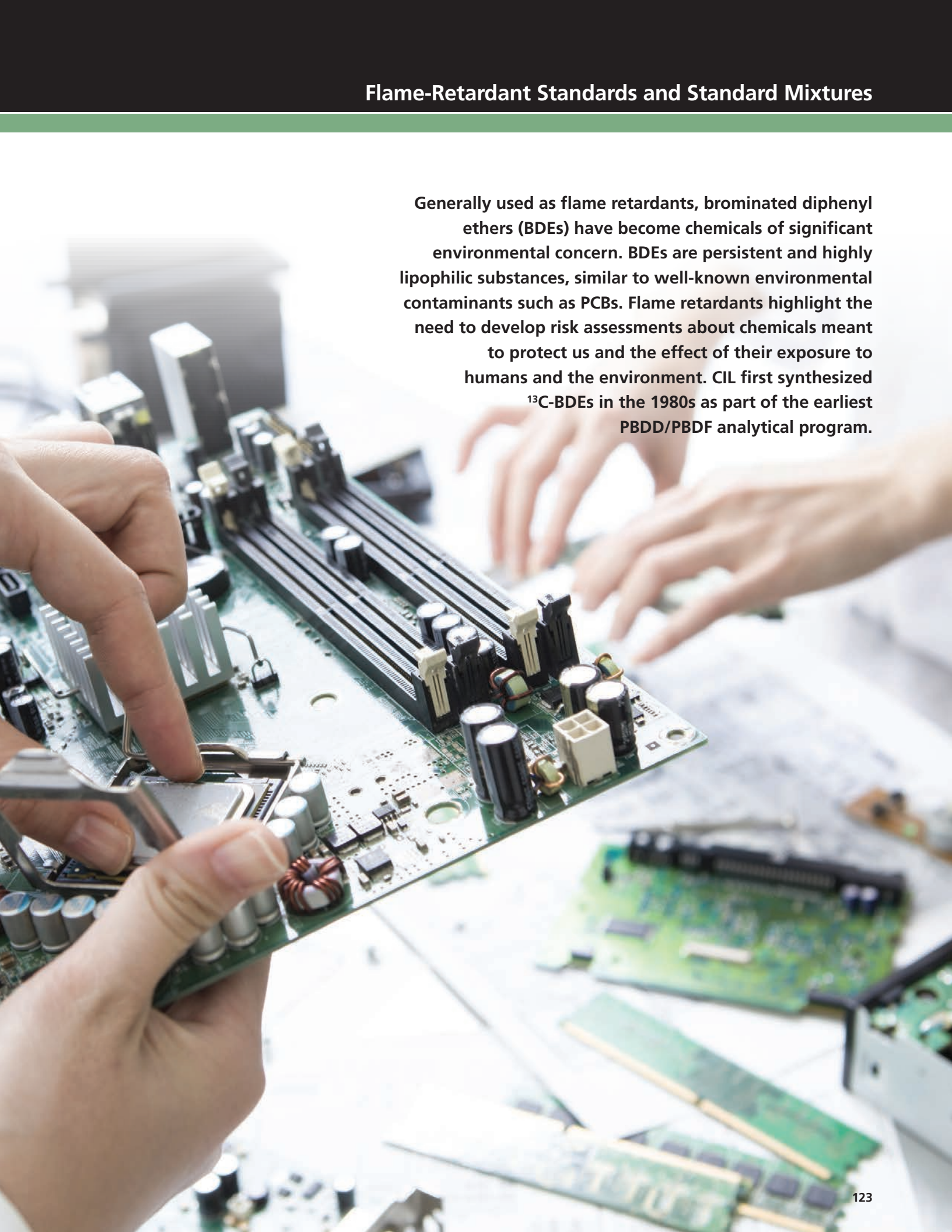
Catalog No.	Compound	Concentration	Amount
MSCB-4027	3-$MeSO_2$-4-Me-2′,3′,4′,5,5′-pentaCB (Internal Standard)	40 ± 4 µg/mL in nonane	1.2 mL
MSCB-4007	3-$MeSO_2$-2,2′,4′,5-tetraCB	40 ± 4 µg/mL in nonane	1.2 mL
MSCB-4008	4-$MeSO_2$-2,2′,4′,5-tetraCB	40 ± 4 µg/mL in nonane	1.2 mL
MSCB-4009	3-$MeSO_2$-2,2′,4′,5,5′-pentaCB	40 ± 4 µg/mL in nonane	1.2 mL
MSCB-4010	4-$MeSO_2$-2,2′,4′,5,5′-pentaCB	40 ± 4 µg/mL in nonane	1.2 mL
MSCB-4012	4-$MeSO_2$-2,3,3′,4′,6-pentaCB	40 ± 4 µg/mL in nonane	1.2 mL
MSCB-4013	3-$MeSO_2$-2,2′,4′,5,5′,6-hexaCB	40 ± 4 µg/mL in nonane	1.2 mL
MSCB-4015	3-$MeSO_2$-DDE	40 ± 4 µg/mL in nonane	1.2 mL

3-$MeSO_2$-PCB



4-$MeSO_2$-PCB





Generally used as flame retardants, brominated diphenyl ethers (BDEs) have become chemicals of significant environmental concern. BDEs are persistent and highly lipophilic substances, similar to well-known environmental contaminants such as PCBs. Flame retardants highlight the need to develop risk assessments about chemicals meant to protect us and the effect of their exposure to humans and the environment. CIL first synthesized ^{13}C-BDEs in the 1980s as part of the earliest PBDD/PBDF analytical program.

Isotope-Labeled and Unlabeled 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, 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.

US EPA Method 1614 Standard Mixtures

The US EPA has developed a standardized test method for analysis of BDEs 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.

Isotope-Labeled and Unlabeled 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 unlabeled and $^{13}C_{12}$ methoxy- and hydroxy-BDEs. These items represent some of the BDE metabolites available from CIL; please contact CIL or your CIL representative for more information on these compounds.

Brominated Flame-Retardant Standards and Standard Mixtures

Following regulatory restrictions and voluntary removal of 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 labeled and unlabeled 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.

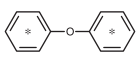
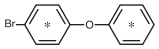
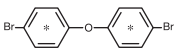
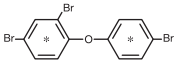
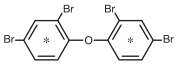
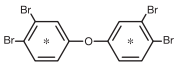
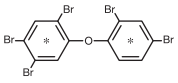
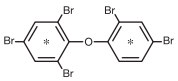
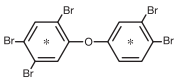
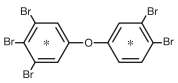
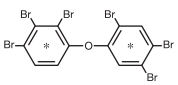
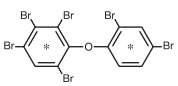
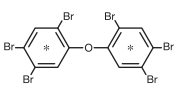
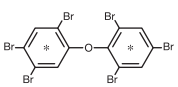
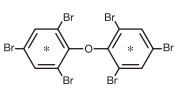
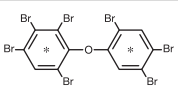
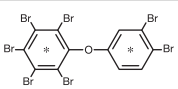
Dechloranes

Dechloranes are highly chlorinated norbornene compounds, synthesized by the Diels-Alder reaction of hexachloro-cyclopenta-diene with various substrates. Dechloranes first found commercial application as flame-retardant compounds in the 1960s. While Dechlorane Plus has been the subject of significant environmental research in recent years, related compounds – Dechlorane 602 (Dec 602), Dec 603 and Dec 604 – have been identified in air, fish and sediment samples. Although the research thus far is limited, indications suggest that Dec 602 may be found in fish and sediment samples at levels similar to or even higher than Dechlorane Plus.

Phosphorus Flame Retardants

Since the 1940s, trialkyl, triaryl and halogenated trialkyl/triaryl phosphate ester compounds have been used as commercial additives in flame retardants, plasticizers, hydraulic fluids, solvents, extraction agents, antifoam agents, adhesives and coatings for electronic devices. In recent years, the demand for phosphate ester compounds for flame-retardant applications has increased as many brominated flame retardants have been removed from the market. New research initiatives continue to broaden the understanding of the effects of these compounds in the environment, though analytical challenges remain. The use of isotopically labeled internal standards has been shown to help compensate for matrix effects, and to generally strengthen data by use of isotope dilution mass spectrometry.

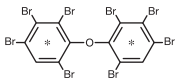
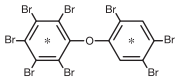
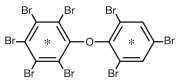
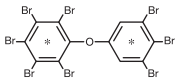
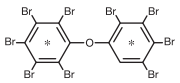
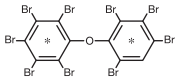
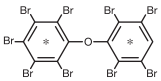
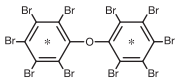
Isotope-Labeled Individual Brominated Diphenyl Ether (BDE) Standards

Catalog No.	Compound	BDE	Structure	Concentration	Amount
CLM-1587-1.2	Diphenyl ether ($^{13}C_{12}$, 99%)	0		50 ± 5 µg/mL in nonane	1.2 mL
EO-4999	4-Monobromodiphenyl ether ($^{13}C_{12}$, 99%)	3		50 ± 5 µg/mL in nonane	1.2 mL
EO-5001	4,4′-Dibromodiphenyl ether ($^{13}C_{12}$, 99%)	15		50 ± 5 µg/mL in nonane	1.2 mL
EO-5002	2,4,4′-Tribromodiphenyl ether ($^{13}C_{12}$, 99%)	28		50 ± 5 µg/mL in nonane	1.2 mL
EO-4982	2,2′,4,4′-Tetrabromodiphenyl ether ($^{13}C_{12}$, 99%)	47		50 ± 5 µg/mL in nonane	1.2 mL
EO-1439	3,3′,4,4′-Tetrabromodiphenyl ether ($^{13}C_{12}$, 99%)	77		50 ± 5 µg/mL in nonane	1.2 mL
EO-4983	2,2′,4,4′,5-Pentabromodiphenyl ether ($^{13}C_{12}$, 99%)	99		50 ± 5 µg/mL in nonane	1.2 mL
EO-4993	2,2′,4,4′,6-Pentabromodiphenyl ether ($^{13}C_{12}$, 99%)	100		50 ± 5 µg/mL in nonane	1.2 mL
EO-5034	2,3′,4,4′,5-Pentabromodiphenyl ether ($^{13}C_{12}$, 99%)	118		50 ± 5 µg/mL in nonane	1.2 mL
EO-4930	3,3′,4,4′,5-Pentabromodiphenyl ether ($^{13}C_{12}$, 99%)	126		50 ± 5 µg/mL in nonane	1.2 mL
EO-5035	2,2′,3,4,4′,5′-Hexabromodiphenyl ether ($^{13}C_{12}$, 99%)	138		50 ± 5 µg/mL in nonane	1.2 mL
EO-5165	2,2′,3,4,4′,6-Hexabromodiphenyl ether ($^{13}C_{12}$, 99%)	139		50 ± 5 µg/mL in nonane	1.2 mL
EO-4984	2,2′,4,4′,5,5′-Hexabromodiphenyl ether ($^{13}C_{12}$, 99%)	153		50 ± 5 µg/mL in nonane	1.2 mL
EO-5161	2,2′,4,4′,5,6′-Hexabromodiphenyl ether ($^{13}C_{12}$, 99%)	154		50 ± 5 µg/mL in nonane	1.2 mL
EO-5413	2,2′,4,4′,6,6′-Hexabromodiphenyl ether ($^{13}C_{12}$, 99%)	155		50 ± 5 µg/mL in nonane	1.2 mL
EO-4985	2,2′,3,4,4′,5′,6-Heptabromodiphenyl ether ($^{13}C_{12}$, 99%)	183		50 ± 5 µg/mL in nonane	1.2 mL
EO-5376	2,3,3′,4,4′,5,6-Heptabromodiphenyl ether ($^{13}C_{12}$, 99%)	190		50 ± 5 µg/mL in nonane	1.2 mL

Multiple-unit pricing is available for individual ^{13}C-BDE standards as follows: 2-3 units = 20% discount; 4 or more units = 33% discount

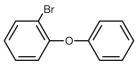
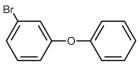
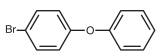
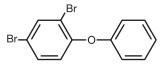
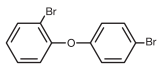
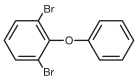
(continued)

Isotope-Labeled Individual Brominated Diphenyl Ether (BDE) Standards

Catalog No.	Compound	BDE	Structure	Concentration	Amount
EO-5337	2,2′,3,3′,4,4′,6,6′-Octabromodiphenyl ether ($^{13}C_{12}$, 99%)	197		50 ± 5 µg/mL in nonane	1.2 mL
EO-5377	2,2′,3,4,4′,5,5′,6-Octabromodiphenyl ether ($^{13}C_{12}$, 99%)	203		50 ± 5 µg/mL in nonane	1.2 mL
EO-5355	2,2′,3,4,4′,5,6,6′-Octabromodiphenyl ether ($^{13}C_{12}$, 99%)	204		50 ± 5 µg/mL in nonane	1.2 mL
EO-5362	2,3,3′,4,4′,5,5′,6-Octabromodiphenyl ether ($^{13}C_{12}$, 99%)	205		50 ± 5 µg/mL in nonane	1.2 mL
EO-5240	2,2′,3,3′,4,4′,5,5′,6-Nonabromodiphenyl ether ($^{13}C_{12}$, 99%)	206		50 ± 5 µg/mL in nonane	1.2 mL
EO-5241	2,2′,3,3′,4,4′,5,6,6′-Nonabromodiphenyl ether ($^{13}C_{12}$, 99%)	207		50 ± 5 µg/mL in nonane	1.2 mL
EO-5242	2,2′,3,3′,4,5,5′,6,6′-Nonabromodiphenyl ether ($^{13}C_{12}$, 99%)	208		50 ± 5 µg/mL in nonane	1.2 mL
EO-5003	Decabromodiphenyl ether ($^{13}C_{12}$, 99%)	209		50 ± 5 µg/mL in nonane	1.2 mL

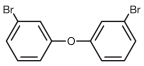
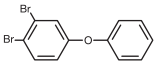
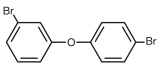
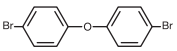
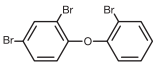
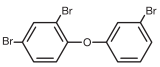
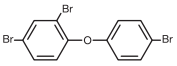
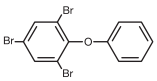
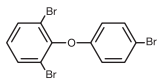
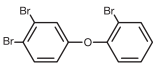
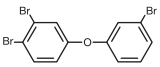
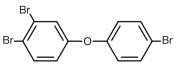
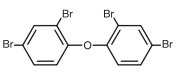
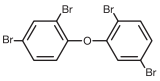
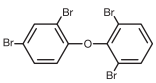
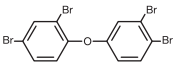
Multiple-unit pricing is available for individual ^{13}C-BDE standards as follows: 2-3 units = 20% discount; 4 or more units = 33% discount

Unlabeled Individual Brominated Diphenyl Ether (BDE) Standards

Catalog No.	Compound	BDE	Structure	Concentration	Amount
BDE-1-CS	2-Monobromodiphenyl ether	1		50 ± 5 µg/mL in nonane	1.2 mL
BDE-2-CS	3-Monobromodiphenyl ether	2		50 ± 5 µg/mL in nonane	1.2 mL
BDE-3-CS	4-Monobromodiphenyl ether	3		50 ± 5 µg/mL in nonane	1.2 mL
BDE-7-CS	2,4-Dibromodiphenyl ether	7		50 ± 5 µg/mL in nonane	1.2 mL
BDE-8-CS	2,4′-Dibromodiphenyl ether	8		50 ± 5 µg/mL in nonane	1.2 mL
BDE-10-CS	2,6-Dibromodiphenyl ether	10		50 ± 5 µg/mL in nonane	1.2 mL

Multiple-unit pricing is available for individual unlabeled BDE standards as follows: 5-7 units = 20% discount; 8-11 units = 33% discount; 12 or more units = 50% discount

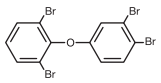
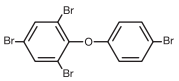
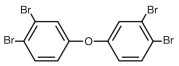
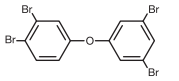
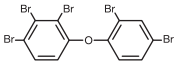
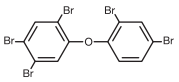
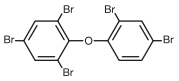
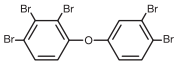
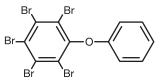
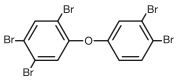
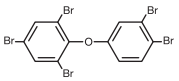
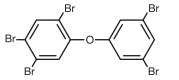
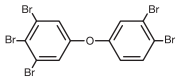
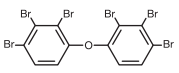
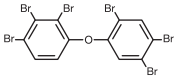
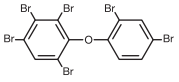
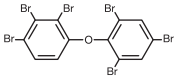
Unlabeled Individual Brominated Diphenyl Ether (BDE) Standards

Catalog No.	Compound	BDE	Structure	Concentration	Amount
BDE-11-CS	3,3′-Dibromodiphenyl ether	11		50 ± 5 µg/mL in nonane	1.2 mL
BDE-12-CS	3,4-Dibromodiphenyl ether	12		50 ± 5 µg/mL in nonane	1.2 mL
BDE-13-CS	3,4′-Dibromodiphenyl ether	13		50 ± 5 µg/mL in nonane	1.2 mL
BDE-15-CS	4,4′-Dibromodiphenyl ether	15		50 ± 5 µg/mL in nonane	1.2 mL
BDE-17-CS	2,2′,4-Tribromodiphenyl ether	17		50 ± 5 µg/mL in nonane	1.2 mL
BDE-25-CS	2,3′,4-Tribromodiphenyl ether	25		50 ± 5 µg/mL in nonane	1.2 mL
BDE-28-CS	2,4,4′-Tribromodiphenyl ether	28		50 ± 5 µg/mL in nonane	1.2 mL
BDE-30-CS	2,4,6-Tribromodiphenyl ether	30		50 ± 5 µg/mL in nonane	1.2 mL
BDE-32-CS	2,4′,6-Tribromodiphenyl ether	32		50 ± 5 µg/mL in nonane	1.2 mL
BDE-33-CS	2′,3,4-Tribromodiphenyl ether	33		50 ± 5 µg/mL in nonane	1.2 mL
BDE-35-CS	3,3′,4-Tribromodiphenyl ether	35		50 ± 5 µg/mL in nonane	1.2 mL
BDE-37-CS	3,4,4′-Tribromodiphenyl ether	37		50 ± 5 µg/mL in nonane	1.2 mL
BDE-47-CS	2,2′,4,4′-Tetrabromodiphenyl ether	47		50 ± 5 µg/mL in nonane	1.2 mL
BDE-49-CS	2,2′,4,5′-Tetrabromodiphenyl ether	49		50 ± 5 µg/mL in nonane	1.2 mL
BDE-51-CS	2,2′,4,6′-Tetrabromodiphenyl ether	51		50 ± 5 µg/mL in nonane	1.2 mL
BDE-66-CS	2,3′,4,4′-Tetrabromodiphenyl ether	66		50 ± 5 µg/mL in nonane	1.2 mL

Multiple-unit pricing is available for individual unlabeled BDE standards as follows: 5-7 units = 20% discount; 8-11 units = 33% discount; 12 or more units = 50% discount

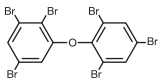
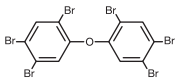
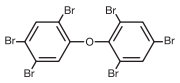
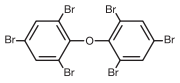
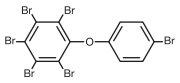
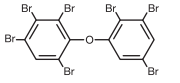
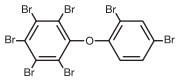
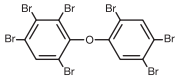
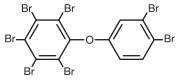
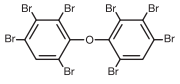
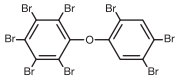
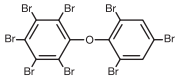
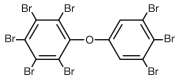
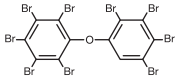
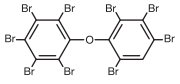
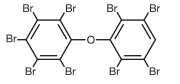
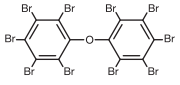
(continued)

Unlabeled Individual Brominated Diphenyl Ether (BDE) Standards

Catalog No.	Compound	BDE	Structure	Concentration	Amount
BDE-71-CS	2,3′,4′,6-Tetrabromodiphenyl ether	71		50 ± 5 µg/mL in nonane	1.2 mL
BDE-75-CS	2,4,4′,6-Tetrabromodiphenyl ether	75		50 ± 5 µg/mL in nonane	1.2 mL
BDE-77-CS	3,3′,4,4′-Tetrabromodiphenyl ether	77		50 ± 5 µg/mL in nonane	1.2 mL
BDE-79-CS	3,3′,4,5′-Tetrabromodiphenyl ether	79		50 ± 5 µg/mL in nonane	1.2 mL
BDE-85-CS	2,2′,3,4,4′-Pentabromodiphenyl ether	85		50 ± 5 µg/mL in nonane	1.2 mL
BDE-99-CS	2,2′,4,4′,5-Pentabromodiphenyl ether	99		50 ± 5 µg/mL in nonane	1.2 mL
BDE-100-CS	2,2′,4,4′,6-Pentabromodiphenyl ether	100		50 ± 5 µg/mL in nonane	1.2 mL
BDE-105-CS	2,3,3′,4,4′-Pentabromodiphenyl ether	105		50 ± 5 µg/mL in nonane	1.2 mL
BDE-116-CS	2,3,4,5,6-Pentabromodiphenyl ether	116		50 ± 5 µg/mL in nonane	1.2 mL
BDE-118-CS	2,3′,4,4′,5-Pentabromodiphenyl ether	118		50 ± 5 µg/mL in nonane	1.2 mL
BDE-119-CS	2,3′,4,4′,6-Pentabromodiphenyl ether	119		50 ± 5 µg/mL in nonane	1.2 mL
BDE-120-CS	2,3′,4,5,5′-Pentabromodiphenyl ether	120		50 ± 5 µg/mL in nonane	1.2 mL
BDE-126-CS	3,3′,4,4′,5-Pentabromodiphenyl ether	126		50 ± 5 µg/mL in nonane	1.2 mL
BDE-128-CS	2,2′,3,3′,4,4′-Hexabromodiphenyl ether	128		50 ± 5 µg/mL in nonane	1.2 mL
BDE-138-CS	2,2′,3,4,4′,5′-Hexabromodiphenyl ether	138		50 ± 5 µg/mL in nonane	1.2 mL
BDE-139-CS	2,2′,3,4,4′,6-Hexabromodiphenyl ether	139		50 ± 5 µg/mL in nonane	1.2 mL
BDE-140-CS	2,2′,3,4,4′,6′-Hexabromodiphenyl ether	140		50 ± 5 µg/mL in nonane	1.2 mL

Multiple-unit pricing is available for individual unlabeled BDE standards as follows: 5-7 units = 20% discount; 8-11 units = 33% discount; 12 or more units = 50% discount

Unlabeled Individual Brominated Diphenyl Ether (BDE) Standards

Catalog No.	Compound	BDE	Structure	Concentration	Amount
BDE-148-CS	2,2′,3,4′,5,6′-Hexabromodiphenyl ether	148		50 ± 5 µg/mL in nonane	1.2 mL
BDE-153-CS	2,2′,4,4′,5,5′-Hexabromodiphenyl ether	153		50 ± 5 µg/mL in nonane	1.2 mL
BDE-154-CS	2,2′,4,4′,5,6′-Hexabromodiphenyl ether	154		50 ± 5 µg/mL in nonane	1.2 mL
BDE-155-CS	2,2′,4,4′,6,6′-Hexabromodiphenyl ether	155		50 ± 5 µg/mL in nonane	1.2 mL
BDE-166-CS	2,3,4,4′,5,6-Hexabromodiphenyl ether	166		50 ± 5 µg/mL in nonane	1.2 mL
BDE-175-CS	2,2′,3,3′,4,5′,6-Heptabromodiphenyl ether	175		50 ± 5 µg/mL in nonane	1.2 mL
BDE-181-CS	2,2′,3,4,4′,5,6-Heptabromodiphenyl ether	181		50 ± 5 µg/mL in nonane	1.2 mL
BDE-183-CS	2,2′,3,4,4′,5′,6-Heptabromodiphenyl ether	183		50 ± 5 µg/mL in nonane	1.2 mL
BDE-190-CS	2,3,3′,4,4′,5,6-Heptabromodiphenyl ether	190		50 ± 5 µg/mL in nonane	1.2 mL
BDE-197-CS	2,2′,3,3′,4,4′,6,6′-Octabromodiphenyl ether	197		50 ± 5 µg/mL in nonane	1.2 mL
BDE-203-CS	2,2′,3,4,4′,5,5′,6-Octabromodiphenyl ether	203		50 ± 5 µg/mL in nonane	1.2 mL
BDE-204-CS	2,2′,3,4,4′,5,6,6′-Octabromodiphenyl ether	204		50 ± 5 µg/mL in nonane	1.2 mL
BDE-205-CS	2,3,3′,4,4′,5,5′,6-Octabromodiphenyl ether	205		50 ± 5 µg/mL in nonane	1.2 mL
BDE-206-CS	2,2′,3,3′,4,4′,5,5′,6-Nonabromodiphenyl ether	206		50 ± 5 µg/mL in nonane	1.2 mL
BDE-207-CS	2,2′,3,3′,4,4′,5,6,6′-Nonabromodiphenyl ether	207		50 ± 5 µg/mL in nonane	1.2 mL
BDE-208-CS	2,2′,3,3′,4,5,5′,6,6′-Nonabromodiphenyl ether	208		50 ± 5 µg/mL in nonane	1.2 mL
BDE-209-CS	Decabromodiphenyl ether	209		50 ± 5 µg/mL in nonane	1.2 mL

Multiple-unit pricing is available for individual unlabeled BDE standards as follows: 5-7 units = 20% discount; 8-11 units = 33% discount; 12 or more units = 50% discount

US EPA Method 1614 Standard Mixtures

Catalog No.	Compound	Amount
EO-5279	EPA Method 1614 Calibration Solutions [CS1-CS5]	Set of 5 × 0.2 mL in nonane
EO-5279-CS1	EPA Method 1614 Calibration Solution [CS1]	0.2 mL in nonane
EO-5279-CS2	EPA Method 1614 Calibration Solution [CS2]	0.2 mL in nonane
EO-5279-CS3	EPA Method 1614 Calibration Solution [CS3]	0.2 mL in nonane
EO-5279-CS4	EPA Method 1614 Calibration Solution [CS4]	0.2 mL in nonane
EO-5279-CS5	EPA Method 1614 Calibration Solution [CS5]	0.2 mL in nonane

All concentrations are in ng/mL (ppb)

Unlabeled	Congener	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	25,000
Surrogate						
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′,4,4′,6-PentaBDE ($^{13}C_{12}$, 99%)	100	100	100	100	100	100
2,2′,4,4′,5,5′-HexaBDE ($^{13}C_{12}$, 99%)	153	100	100	100	100	100
2,2′,4,4′,5,6′-HexaBDE ($^{13}C_{12}$, 99%)	154	100	100	100	100	100
2,2′,3,4,4′,5′,6-HeptaBDE ($^{13}C_{12}$, 99%)	183	100	100	100	100	100
DecaBDE ($^{13}C_{12}$, 99%)	209	1000	1000	1000	1000	1000
Cleanup						
2,2′,3,4,4′,6-HexaBDE ($^{13}C_{12}$, 99%)	139	100	100	100	100	100
Injection Internal						
2,2′,5,5′-TetraCB ($^{13}C_{12}$, 99%)	PCB-52	100	100	100	100	100
2,2′,3,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	PCB-138	100	100	100	100	100

NEW	EO-1614-KIT	EPA Method 1614 "Starter Kit"	1 Kit

Contains one each of the following items:

EO-5279	Method 1614 Calibration Solutions CS1-CS5
EO-5277	Method 1614 Labeled Surrogate Stock Solution
EO-5276	Method 1614 Labeled Cleanup Stock Solution
EO-5275	Method 1614 Labeled Injection Internal Stock Solution
EO-5278	Method 1614 Native PAR Stock Solution

US EPA Method 1614 Standard Mixtures

Catalog No.	Compound	Amount
EO-5277	EPA Method 1614 Labeled Surrogate Stock Solution	1.2 mL in nonane

Labeled	Congener	(ng/mL)
2,4,4′-TriBDE ($^{13}C_{12}$, 99%)	28	1000
2,2′,4,4′-TetraBDE ($^{13}C_{12}$, 99%)	47	1000
2,2′,4,4′,5-PentaBDE ($^{13}C_{12}$, 99%)	99	1000
2,2′,4,4′,6-PentaBDE ($^{13}C_{12}$, 99%)	100	1000
2,2′,4,4′,5,5′-HexaBDE ($^{13}C_{12}$, 99%)	153	1000
2,2′,4,4′,5,6′-HexaBDE ($^{13}C_{12}$, 99%)	154	1000
2,2′,3,4,4′,5′,6-HeptaBDE ($^{13}C_{12}$, 99%)	183	1000
DecaBDE ($^{13}C_{12}$, 99%)	209	10,000

EO-5276	EPA Method 1614 Labeled Cleanup Stock Solution	1.2 mL in nonane

Labeled	Congener	(ng/mL)
2,2′,3,4,4′,6-HexaBDE ($^{13}C_{12}$, 99%)	139	1000

EO-5275	EPA Method 1614 Labeled Injection Internal Stock Solution	1.2 mL in nonane

Labeled	Congener	(ng/mL)
2,2′,5,5′-TetraCB ($^{13}C_{12}$, 99%)	PCB-52	5000
2,2′,3,4,4′,5′-HexaCB ($^{13}C_{12}$, 99%)	PCB-138	5000

EO-5278	EPA Method 1614 Native PAR Stock Solution	1.2 mL in nonane

Unlabeled	Congener	(ng/mL)
2,4,4′-TriBDE	28	1000
2,2′,4,4′-TetraBDE	47	1000
2,2′,4,4′,5-PentaBDE	99	1000
2,2′,4,4′,6-PentaBDE	100	1000
2,2′,4,4′,5,5′-HexaBDE	153	1000
2,2′,4,4′,5,6′-HexaBDE	154	1000
2,2′,3,4,4′,5′,6-HeptaBDE	183	1000
DecaBDE	209	10,000

RoHS Brominated Diphenyl Ether (BDE) Standard Mixtures

Catalog No.	Compound	Amount
EO-5402	RoHS PBDE Calibration Solutions [CS1-CS5]	Set of 5 × 0.2 mL in nonane
EO-5402-CS1	RoHS PBDE Calibration Solution [CS1]	0.2 mL in nonane
EO-5402-CS2	RoHS PBDE Calibration Solution [CS2]	0.2 mL in nonane
EO-5402-CS3	RoHS PBDE Calibration Solution [CS3]	0.2 mL in nonane
EO-5402-CS4	RoHS PBDE Calibration Solution [CS4]	0.2 mL in nonane
EO-5402-CS5	RoHS PBDE Calibration Solution [CS5]	0.2 mL in nonane

All concentrations are in ng/mL (ppb)

Unlabeled	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
Cleanup						
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′,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
Syringe						
2,2′,3,4,4′,5′-HexaBDE ($^{13}C_{12}$, 99%)	138	200	200	200	200	200

RoHS Brominated Diphenyl Ether (BDE) Standard Mixtures

Catalog No.	Compound	Amount
EO-5403	RoHS PBDE Cleanup Spike	1.2 mL in nonane
NEW EO-5403-10X-1.2	RoHS PBDE Cleanup 10X Spike ($^{13}C_{12}$, 99%)	1.2 mL in nonane

Labeled	BDE	EO-5403 (ng/mL)	EO-5403-10X-1.2 (ng/mL)
4-MonoBDE ($^{13}C_{12}$, 99%)	3	100	1000
4,4′-DiBDE ($^{13}C_{12}$, 99%)	15	100	1000
2,4,4′-TriBDE ($^{13}C_{12}$, 99%)	28	100	1000
2,2′,4,4′-TetraBDE ($^{13}C_{12}$, 99%)	47	100	1000
2,2′,4,4′,5-PentaBDE ($^{13}C_{12}$, 99%)	99	100	1000
2,2′,4,4′,5,5′-HexaBDE ($^{13}C_{12}$, 99%)	153	200	2000
2,2′,4,4′,5,6′-HexaBDE ($^{13}C_{12}$, 99%)	154	200	2000
2,2′,3,4,4′,5′,6-HeptaBDE ($^{13}C_{12}$, 99%)	183	200	2000
2,2′,3,4,4′,5,6,6′-OctaBDE ($^{13}C_{12}$, 99%)	204	200	2000
2,2′,3,3′,4,4′,5,6,6′-NonaBDE ($^{13}C_{12}$, 99%)	207	500	5000
DecaBDE ($^{13}C_{12}$, 99%)	209	500	5000

EO-5404	RoHS PBDE Syringe Spike	1.2 mL in nonane

Labeled	BDE	(ng/mL)
2,2′,3,4,4′,5′-HexaBDE ($^{13}C_{12}$, 99%)	138	200

EO-5405	RoHS PBDE Native PAR Spike	1.2 mL in nonane

Unlabeled	BDE	(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

RoHS Brominated Diphenyl Ether (BDE) Standard Mixtures

Catalog No.	Compound	Amount
EO-5425	RoHS Screening PBDE Calibration Solutions [CS1-CS3]	Set of 3 × 0.2 mL in nonane
EO-5425-CS1	RoHS Screening PBDE Calibration Solution [CS1]	0.2 mL in nonane
EO-5425-CS2	RoHS Screening PBDE Calibration Solution [CS2]	0.2 mL in nonane
EO-5425-CS3	RoHS Screening PBDE Calibration Solution [CS3]	0.2 mL in nonane

All concentrations are in ng/mL (ppb)

Unlabeled	BDE	CS1	CS2	CS3
4,4′-DiBDE	15	20	100	1000
2,4,4′-TriBDE	28	20	100	1000
2,2′,4,4′-TetraBDE	47	20	100	1000
2,2′,4,4′,5-PentaBDE	99	20	100	1000
2,2′,4,4′,5,5′-HexaBDE	153	20	100	1000
2,2′,4,4′,5,6′-HexaBDE	154	20	100	1000
2,2′,3,4,4′,5′,6-HeptaBDE	183	20	100	1000
2,2′,3,3′,4,4′,6,6′-OctaBDE	197	50	250	2500
2,2′,3,3′,4,4′,5,5′,6-NonaBDE	206	100	500	5000
2,2′,3,3′,4,4′,5,6,6′-NonaBDE	207	50	250	2500
2,2′,3,3′,4,5,5′,6,6′-NonaBDE	208	50	250	2500
DecaBDE	209	500	2500	25,000
Cleanup				
4,4′-DiBDE ($^{13}C_{12}$, 99%)	15	100	100	100
2,4,4′-TriBDE ($^{13}C_{12}$, 99%)	28	100	100	100
2,2′,4,4′-TetraBDE ($^{13}C_{12}$, 99%)	47	100	100	100
2,2′,4,4′,5-PentaBDE ($^{13}C_{12}$, 99%)	99	100	100	100
2,2′,4,4′,5,5′-HexaBDE ($^{13}C_{12}$, 99%)	153	100	100	100
2,2′,4,4′,5,6′-HexaBDE ($^{13}C_{12}$, 99%)	154	100	100	100
2,2′,3,4,4′,5′,6-HeptaBDE ($^{13}C_{12}$, 99%)	183	100	100	100
2,2′,3,3′,4,4′,6,6′-OctaBDE ($^{13}C_{12}$, 99%)	197	250	250	250
2,2′,3,3′,4,4′,5,5′,6-NonaBDE ($^{13}C_{12}$, 99%)	206	500	500	500
2,2′,3,3′,4,5,5′,6,6′-NonaBDE ($^{13}C_{12}$, 99%)	208	250	250	250
DecaBDE ($^{13}C_{12}$, 99%)	209	2500	2500	2500
Syringe				
2,2′,3,3′,4,4′,5,6,6′-NonaBDE ($^{13}C_{12}$, 99%)	207	250	250	250

RoHS Brominated Diphenyl Ether (BDE) Standard Mixtures

Catalog No.	Compound	Amount
EO-5426	RoHS Screening PBDE Cleanup Spike	1.2 mL in nonane

Labeled	BDE	(ng/mL)
4,4′-DiBDE ($^{13}C_{12}$, 99%)	15	1000
2,4,4′-TriBDE ($^{13}C_{12}$, 99%)	28	1000
2,2′,4,4′-TetraBDE ($^{13}C_{12}$, 99%)	47	1000
2,2′,4,4′,5-PentaBDE ($^{13}C_{12}$, 99%)	99	1000
2,2′,4,4′,5,5′-HexaBDE ($^{13}C_{12}$, 99%)	153	1000
2,2′,4,4′,5,6′-HexaBDE ($^{13}C_{12}$, 99%)	154	1000
2,2′,3,4,4′,5′,6-HeptaBDE ($^{13}C_{12}$, 99%)	183	1000
2,2′,3,3′,4,4′,6,6′-OctaBDE ($^{13}C_{12}$, 99%)	197	2500
2,2′,3,3′,4,4′,5,5′,6-NonaBDE ($^{13}C_{12}$, 99%)	206	5000
2,2′,3,3′,4,5,5′,6,6′-NonaBDE ($^{13}C_{12}$, 99%)	208	2500
DecaBDE ($^{13}C_{12}$, 99%)	209	25,000

EO-5427	RoHS Screening PBDE Syringe Spike	1.2 mL in nonane

Labeled	BDE	(ng/mL)
2,2′,3,3′,4,4′,5,6,6′-NonaBDE ($^{13}C_{12}$, 99%)	207	2500

EO-5428	RoHS Screening PBDE Native PAR Spike	1.2 mL in nonane

Unlabeled	BDE	(ng/mL)
4,4′-DiBDE	15	1000
2,4,4′-TriBDE	28	1000
2,2′,4,4′-TetraBDE	47	1000
2,2′,4,4′,5-PentaBDE	99	1000
2,2′,4,4′,5,5′-HexaBDE	153	1000
2,2′,4,4′,5,6′-HexaBDE	154	1000
2,2′,3,4,4′,5′,6-HeptaBDE	183	1000
2,2′,3,3′,4,4′,6,6′-OctaBDE	197	2500
2,2′,3,3′,4,4′,5,5′,6-NonaBDE	206	5000
2,2′,3,3′,4,4′,5,6,6′-NonaBDE	207	2500
2,2′,3,3′,4,5,5′,6,6′-NonaBDE	208	2500
DecaBDE	209	25,000

Brominated Diphenyl Ether (BDE) Standard Mixtures

Catalog No.	Compound	Amount
EO-5104	Brominated Diphenyl Ether Calibration Solutions [CS1-CS6]	Set of 6 × 0.2 mL in nonane
EO-5104-CS1	Brominated Diphenyl Ether Calibration Solution [CS1]	0.2 mL in nonane
EO-5104-CS2	Brominated Diphenyl Ether Calibration Solution [CS2]	0.2 mL in nonane
EO-5104-CS3	Brominated Diphenyl Ether Calibration Solution [CS3]	0.2 mL in nonane
EO-5104-CS4	Brominated Diphenyl Ether Calibration Solution [CS4]	0.2 mL in nonane
EO-5104-CS5	Brominated Diphenyl Ether Calibration Solution [CS5]	0.2 mL in nonane
EO-5104-CS6	Brominated Diphenyl Ether Calibration Solution [CS6]	0.2 mL in nonane

All concentrations are in ng/mL (ppb)

Unlabeled	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
Surrogate							
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
2,2′,4,4′,5-PentaBDE ($^{13}C_{12}$, 99%)	99	100	100	100	100	100	100
2,2′,4,4′,6-PentaBDE ($^{13}C_{12}$, 99%)	100	100	100	100	100	100	100
2,3′,4,4′,5-PentaBDE ($^{13}C_{12}$, 99%)	118	100	100	100	100	100	100
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
Performance							
3,3′,4,4′-TetraBDE ($^{13}C_{12}$, 99%)	77	100	100	100	100	100	100
3,3′,4,4′,5-PentaBDE ($^{13}C_{12}$, 99%)	126	150	150	150	150	150	150

Brominated Diphenyl Ether (BDE) Standard Mixtures

Catalog No.	Compound	Amount
EO-5100	Polybrominated Diphenyl Ether Surrogate Spiking Solution	1.2 mL in nonane
EO-5100-10X-0.5	Polybrominated Diphenyl Ether Surrogate Spiking Solution (10X stock)	0.5 mL in nonane

Labeled	BDE	EO-5100 (ng/mL)	EO-5100-10X-0.5 (ng/mL)
4-MonoBDE ($^{13}C_{12}$, 99%)	3	100	1000
4,4′-DiBDE ($^{13}C_{12}$, 99%)	15	100	1000
2,4,4′-TriBDE ($^{13}C_{12}$, 99%)	28	100	1000
2,2′,4,4′-TetraBDE ($^{13}C_{12}$, 99%)	47	100	1000
2,2′,4,4′,5-PentaBDE ($^{13}C_{12}$, 99%)	99	150	1500
2,2′,4,4′,6-PentaBDE ($^{13}C_{12}$, 99%)	100	150	1500
2,3′,4,4′,5-PentaBDE ($^{13}C_{12}$, 99%)	118	150	1500
2,2′,4,4′,5,5′-HexaBDE ($^{13}C_{12}$, 99%)	153	200	2000
2,2′,3,4,4′,5′,6-HeptaBDE ($^{13}C_{12}$, 99%)	183	250	2500

EO-5101	Polybrominated Diphenyl Ether Performance Standard Solution	1.2 mL in nonane
EO-5101-10X-1.2	Polybrominated Diphenyl Ether Performance Standard Solution (10X stock)	1.2 mL in nonane

Labeled	BDE	EO-5101 (ng/mL)	EO-5101-10X-1.2 (ng/mL)
3,3′,4,4′-TetraBDE ($^{13}C_{12}$, 99%)	77	100	1000
3,3′,4,4′,5-PentaBDE ($^{13}C_{12}$, 99%)	126	150	1500

NEW EO-5507 Polybrominated Diphenyl Ether Injection Internal Standard 1.2 mL in nonane

Labeled	BDE	(ng/mL)
2,2′,4,4′,5-PentaBDE ($^{13}C_{12}$, 99%)	99	200
2,2′,4,4′,5,6′-HexaBDE ($^{13}C_{12}$, 99%)	154	200

NEW EO-5509 Polybrominated Diphenyl Ether Native Injection Internal Standard 1.2 mL in nonane

Unlabeled	BDE	(ng/mL)
2,2′,4,4′,5-PentaBDE	99	200
2,2′,4,4′,5,6′-HexaBDE	154	200

NEW EO-5506 Polybrominated Diphenyl Ether Surrogate Standard 1.2 mL in nonane

Labeled	BDE	(ng/mL)
2,2′,4,4′,6-PentaBDE ($^{13}C_{12}$, 99%)	100	200
2,2′,3,4,4′,5′,6-HeptaBDE ($^{13}C_{12}$, 99%)	183	200

NEW EO-5508 Polybrominated Diphenyl Ether Native Surrogate Standard 1.2 mL in nonane

Unlabeled	BDE	(ng/mL)
2,2′,4,4′,6-PentaBDE	100	200
2,2′,3,4,4′,5′,6-HeptaBDE	183	200

Brominated Diphenyl Ether (BDE) Standard Mixtures

Catalog No.	Compound	Amount
EO-5099	Polybrominated Diphenyl Ether Analytical Standard Solution	1.2 mL in nonane

Unlabeled	BDE	(ng/mL)
2-MonoBDE	1	100
3-MonoBDE	2	100
4-MonoBDE	3	100
2,4-DiBDE	7	100
2,4′-DiBDE	8	100
2,6-DiBDE	10	100
3,3′-DiBDE	11	100
3,4-DiBDE	12	100
3,4′-DiBDE	13	100
4,4′-DiBDE	15	100
2,2′,4-TriBDE	17	100
2,3′,4-TriBDE	25	100
2,4,4′-TriBDE	28	100
2,4,6-TriBDE	30	100
2,4′,6-TriBDE	32	100
2′,3,4-TriBDE	33	100
3,3′,4-TriBDE	35	100
3,4,4′-TriBDE	37	100
2,2′,4,4′-TetraBDE	47	100
2,2′,4,5′-TetraBDE	49	100
2,3′,4,4′-TetraBDE	66	100
2,3′,4′,6-TetraBDE	71	100
2,4,4′,6-TetraBDE	75	100
3,3′,4,4′-TetraBDE	77	100
2,2′,3,4,4′-PentaBDE	85	150
2,2′,4,4′,5-PentaBDE	99	150
2,2′,4,4′,6-PentaBDE	100	150
2,3,4,5,6-PentaBDE	116	150
2,3′,4,4′,5-PentaBDE	118	150
2,3′,4,4′,6-PentaBDE	119	150
3,3′,4,4′,5-PentaBDE	126	150
2,2′,3,4,4′,5′-HexaBDE	138	300
2,2′,4,4′,5,5′-HexaBDE	153	200
2,2′,4,4′,5,6′-HexaBDE	154	200
2,2′,4,4′,6,6′-HexaBDE	155	200
2,3,4,4′,5,6-HexaBDE	166	200
2,2′,3,4,4′,5,6-HeptaBDE	181	250
2,2′,3,4,4′,5′,6-HeptaBDE	183	250
2,3,3′,4,4′,5,6-HeptaBDE	190	250
Labeled		
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
3,3′,4,4′-TetraBDE ($^{13}C_{12}$, 99%)	77	100
2,2′,4,4′,5-PentaBDE ($^{13}C_{12}$, 99%)	99	150
2,2′,4,4′,6-PentaBDE ($^{13}C_{12}$, 99%)	100	150
2,3′,4,4′,5-PentaBDE ($^{13}C_{12}$, 99%)	118	150
3,3′,4,4′,5-PentaBDE ($^{13}C_{12}$, 99%)	126	150
2,2′,4,4′,5,5′-HexaBDE ($^{13}C_{12}$, 99%)	153	200
2,2′,3,4,4′,5′,6-HeptaBDE ($^{13}C_{12}$, 99%)	183	250

Brominated Diphenyl Ether (BDE) Standard Mixtures

Catalog No.	Compound	Amount
EO-5103	Polybrominated Diphenyl Ether Predominant Congener Mixture	1.2 mL in nonane

Unlabeled	BDE	(ng/mL)
2,2′,4-TriBDE	17	2500
2,4,4′-TriBDE	28	2500
2,2′,4,4′-TetraBDE	47	2500
2,3′,4,4′-TetraBDE	66	2500
2,3′,4′,6-TetraBDE	71	2500
2,2′,3,4,4′-PentaBDE	85	2500
2,2′,4,4′,5-PentaBDE	99	2500

Unlabeled	BDE	(ng/mL)
2,2′,4,4′,6-PentaBDE	100	2500
2,2′,3,4,4′,5′-HexaBDE	138	3750
2,2′,4,4′,5,5′-HexaBDE	153	2500
2,2′,4,4′,5,6′-HexaBDE	154	2500
2,2′,3,4,4′,5′,6-HeptaBDE	183	2500
2,3,3′,4,4′,5,6-HeptaBDE	190	2500
DecaBDE	209	10,000

EO-5113	Polybrominated Diphenyl Ether PAR Solution	0.5 mL in nonane
EO-5113-7.5X-0.5	Polybrominated Diphenyl Ether PAR Solution (7.5X stock)	0.5 mL in nonane

Unlabeled	BDE	EO-5113 (ng/mL)	EO-5113-7.5X-0.5 (ng/mL)
2-MonoBDE	1	100	750
3-MonoBDE	2	100	750
4-MonoBDE	3	100	750
2,4-DiBDE	7	100	750
2,4′-DiBDE	8	100	750
2,6-DiBDE	10	100	750
3,3′-DiBDE	11	100	750
3,4-DiBDE	12	100	750
3,4′-DiBDE	13	100	750
4,4′-DiBDE	15	100	750
2,2′,4-TriBDE	17	100	750
2,3′,4-TriBDE	25	100	750
2,4,4′-TriBDE	28	100	750
2,4,6-TriBDE	30	100	750
2,4′,6-TriBDE	32	100	750
2′,3,4-TriBDE	33	100	750
3,3′,4-TriBDE	35	100	750
3,4,4′-TriBDE	37	100	750
2,2′,4,4′-TetraBDE	47	100	750
2,2′,4,5′-TetraBDE	49	100	750
2,3′,4,4′-TetraBDE	66	100	750
2,3′,4′,6-TetraBDE	71	100	750
2,4,4′,6-TetraBDE	75	100	750
3,3′,4,4′-TetraBDE	77	100	750
2,2′,3,4,4′-PentaBDE	85	150	1125
2,2′,4,4′,5-PentaBDE	99	150	1125
2,2′,4,4′,6-PentaBDE	100	150	1125
2,3,4,5,6-PentaBDE	116	150	1125
2,3′,4,4′,5-PentaBDE	118	150	1125
2,3′,4,4′,6-PentaBDE	119	150	1125
3,3′,4,4′,5-PentaBDE	126	150	1125
2,2′,3,4,4′,5′-HexaBDE	138	300	2250
2,2′,4,4′,5,5′-HexaBDE	153	200	1500
2,2′,4,4′,5,6′-HexaBDE	154	200	1500
2,2′,4,4′,6,6′-HexaBDE	155	200	1500
2,3,4,4′,5,6-HexaBDE	166	200	1500
2,2′,3,4,4′,5,6-HeptaBDE	181	250	1875
2,2′,3,4,4′,5′,6-HeptaBDE	183	250	1875
2,3,3′,4,4′,5,6-HeptaBDE	190	250	1875

Brominated Diphenyl Ether (BDE) Technical Mixtures

Catalog No.	Compound	Concentration	Amount
EO-4958-1.2	Pentabromodiphenyl Ether Technical Mix (Bromkal™ 70-5)	50 µg/mL in methanol	1.2 mL
EO-5031	Pentabromodiphenyl Ether Technical Mix (DE-71™)	50 µg/mL in methanol	1.2 mL
EO-5030	Octabromodiphenyl Ether Technical Mix (DE-79™)	50 µg/mL in methanol	1.2 mL
EO-5060	Decabromodiphenyl Ether Technical Mix (Saytex® 102E)	10 µg/mL in methanol	10 mL

Bromkal is a trademark of Chemische Fabrik Kalk GmbH. DE-71 is a trademark of Chemtura (Great Lakes Chemical Company). DE-79 is a trademark of Chemtura (Great Lakes Chemical Company). Saytex is a registered trademark of Albemarle Corporation.

Brominated Diphenyl Ether (BDE) Metabolite Standards

	Catalog No.	Compound	Concentration	Amount
	OH-BDE			
	OHBDE-5190-1.2	6-Hydroxy-2,2′,4,4′-tetrabromodiphenyl ether (ring-$^{13}C_{12}$, 99%) CP 92%	50 µg/mL in toluene	1.2 mL
	OHBDE-5206-1.2	6-Hydroxy-2,2′,4,4′-tetrabromodiphenyl ether (unlabeled)	50 µg/mL in nonane	1.2 mL
	OHBDE-5191-1.2	2-Hydroxy-2′,4,4′,5′,6-pentabromodiphenyl ether (ring-$^{13}C_{12}$, 99%) CP 94%	50 µg/mL in toluene	1.2 mL
	OHBDE-5212-1.2	4′-Hydroxy-2,2′,4,5′-tetrabromodiphenyl ether (unlabeled)	50 µg/mL in nonane	1.2 mL
	OHBDE-5228-1.2	6-Hydroxy-2,2′,4,4′,5-pentabromodiphenyl ether (unlabeled)	50 µg/mL in nonane	1.2 mL
	MeO-BDE			
	MEOBDE-5153-1.2	2′-Methoxy-2,3′,4,5′-tetrabromodiphenyl ether (unlabeled)	50 µg/mL in nonane	1.2 mL
NEW	MEOBDE-5207-1.2	3-Methoxy-2,2′,4,4′-tetrabromodiphenyl ether (unlabeled)	50 µg/mL in nonane	1.2 mL
NEW	MEOBDE-5203-1.2	4-Methoxy-2,2′,3,4′-tetrabromodiphenyl ether (unlabeled)	50 µg/mL in nonane	1.2 mL
NEW	MEOBDE-5211-1.2	4′-Methoxy-2,2′,4,5′-tetrabromodiphenyl ether (unlabeled)	50 µg/mL in nonane	1.2 mL
NEW	MEOBDE-5209-1.2	5-Methoxy-2,2′,4,4′-tetrabromodiphenyl ether (unlabeled)	50 µg/mL in nonane	1.2 mL
NEW	MEOBDE-5260-1.2	6-Methoxy-2,2′,4,4′-tetrabromodiphenyl ether (ring-$^{13}C_{12}$, 99%)	50 µg/mL in nonane	1.2 mL
	MEOBDE-5205-1.2	6-Methoxy-2,2′,4,4′-tetrabromodiphenyl ether (unlabeled)	50 µg/mL in nonane	1.2 mL
NEW	MEOBDE-5227-1.2	6-Methoxy-2,2′,4,4′,5-pentabromodiphenyl ether (unlabeled)	50 µg/mL in nonane	1.2 mL

Tetrabromobisphenol A (TBBPA) and Tetrachlorobisphenol A Standards

	Catalog No.	Compound	Concentration	Amount
NEW	CLM-9374-1.2	Dimethyl tetrabromobisphenol A (ring-$^{13}C_{12}$, 99%)	100 µg/mL in toluene	1.2 mL
	ULM-6236-1.2	Dimethyl tetrabromobisphenol A (unlabeled)	50 µg/mL in nonane	1.2 mL
	CLM-4694-1.2	Tetrabromobisphenol A (TBBPA) (ring-$^{13}C_{12}$, 99%)	50 µg/mL in methanol	1.2 mL
NEW	CLM-4694-T-1.2	Tetrabromobisphenol A (TBBPA) (ring-$^{13}C_{12}$, 99%)	50 µg/mL in toluene	1.2 mL
	ULM-8734-1.2	Tetrabromobisphenol A (TBBPA) (unlabeled)	50 µg/mL in methanol	1.2 mL
NEW	ULM-8734-T-1.2	Tetrabromobisphenol A (TBBPA) (unlabeled)	50 µg/mL in toluene	1.2 mL
	CLM-8006-1.2	Tetrachlorobisphenol A (ring-$^{13}C_{12}$, 99%)	50 µg/mL in methanol	1.2 mL
	ULM-7606-1.2	Tetrachlorobisphenol A (unlabeled)	50 µg/mL in methanol	1.2 mL

Hexabromocyclododecane (HBCD) Standards

Catalog No.	Compound	Concentration	Amount
CLM-7922-0.5	α-Hexabromocyclododecane (HBCD) ($^{13}C_{12}$, 99%)	50 µg/mL in toluene	0.5 mL
ULM-4834-1.2	α-Hexabromocyclododecane (HBCD) (unlabeled)	50 µg/mL in toluene	1.2 mL
CLM-7923-1.2	β-Hexabromocyclododecane (HBCD) ($^{13}C_{12}$, 99%)	50 µg/mL in toluene	1.2 mL
ULM-4835-1.2	β-Hexabromocyclododecane (HBCD) (unlabeled)	50 µg/mL in toluene	1.2 mL
CLM-7924-1.2	γ-Hexabromocyclododecane (HBCD) ($^{13}C_{12}$, 99%)	50 µg/mL in toluene	1.2 mL
ULM-4836-1.2	γ-Hexabromocyclododecane (HBCD) (unlabeled)	50 µg/mL in toluene	1.2 mL
CLM-7102-1.2	Hexabromocyclododecane (HBCD) ($^{13}C_{12}$, 99%) unequal mixture of α, β, and γ isomers	50 µg/mL in toluene	1.2 mL

Dechlorane Standards

	Catalog No.	Compound	Concentration	Amount
	CLM-8569-1.2	Dechlorane Plus *syn* (bis-cyclopentene-$^{13}C_{10}$, 99%)	100 µg/mL in nonane	1.2 mL
NEW	CLM-8569-T-1.2		100 µg/mL in toluene	1.2 mL
	ULM-7886-1.2	Dechlorane Plus *syn* (unlabeled)	100 µg/mL in nonane	1.2 mL
NEW	ULM-7886-T-1.2		100 µg/mL in toluene	1.2 mL
	CLM-8588-1.2	Dechlorane Plus *anti* (bis-cyclopentene-$^{13}C_{10}$, 99%)	100 µg/mL in nonane	1.2 mL
NEW	CLM-8588-T-1.2		100 µg/mL in toluene	1.2 mL
	ULM-7887-1.2	Dechlorane Plus *anti* (unlabeled)	100 µg/mL in nonane	1.2 mL
NEW	ULM-7887-T-1.2		100 µg/mL in toluene	1.2 mL
	ULM-7777-1.2	Dechlorane Plus Technical Product (unlabeled) mix of *syn/anti* isomers	100 µg/mL in nonane	1.2 mL
NEW	CLM-9282-1.2	Dechlorane 602 ($^{13}C_{10}$, 99%)	100 µg/mL in nonane	1.2 mL
NEW	ULM-9283-1.2	Dechlorane 602 (unlabeled)	100 µg/mL in nonane	1.2 mL
NEW	ULM-9621-1.2	Dechlorane 603 (unlabeled)	100 µg/mL in nonane	1.2 mL
NEW	ULM-9622-1.2	Dechlorane 604 (Component A) (unlabeled) CP >95%	100 µg/mL in nonane	1.2 mL

Polybrominated Biphenyl (PBB) Standards

Catalog No.	Compound	PBB	Concentration	Amount
EB-5055	3,3′,4,4′-Tetrabromobiphenyl ($^{13}C_{12}$, 99%)	77	40 µg/mL in nonane	3 mL
PBB-77-CS	3,3′,4,4′-Tetrabromobiphenyl Certified Standard (unlabeled)	77	100 µg/mL in isooctane	1.2 mL
EB-5056	3,3′,4,4′,5-Pentabromobiphenyl ($^{13}C_{12}$, 99%)	126	40 µg/mL in nonane	3 mL
PBB-126	3,3′,4,4′,5-Pentabromobiphenyl (unlabeled)	126	100 µg/mL in isooctane	1.2 mL
EB-5162	2,2′,4,4′,5,5′-Hexabromobiphenyl ($^{13}C_{12}$, 99%)	153	40 µg/mL in nonane	3 mL
PBB-153-CS	2,2′,4,4′,5,5′-Hexabromobiphenyl Certified Standard (unlabeled)	153	100 µg/mL in isooctane	1.2 mL
EB-5106	2,3,3′,4,4′,5′-Hexabromobiphenyl ($^{13}C_{12}$, 99%)	157	40 µg/mL in nonane	3 mL
PBB-157-CS	2,3,3′,4,4′,5′-Hexabromobiphenyl Certified Standard (unlabeled)	157	100 µg/mL in isooctane	1.2 mL
EB-5439	Decabromobiphenyl ($^{13}C_{12}$, 99%)	209	40 µg/mL in nonane	3 mL
PBB-209-CS	Decabromobiphenyl Certified Standard (unlabeled)	209	100 µg/mL in isooctane	1.2 mL

Other Flame-Retardant Standards

	Catalog No.	Compound	Concentration	Amount
	ULM-7375-2X1.2	1,2-Bis(pentabromophenyl) ethane (DBDPE) (unlabeled) CP 96%	25 µg/mL in toluene	2 × 1.2 mL
	ULM-7595-1.2	1,2-Bis(2,4,6-tribromophenoxy) ethane (BTBPE) (unlabeled)	50 µg/mL in nonane	1.2 mL
NEW	CLM-1921-1.2	Hexabromobenzene ($^{13}C_6$, 99%)	100 µg/mL in toluene	1.2 mL
NEW	ULM-7607-1.2	Hexabromobenzene (unlabeled)	100 µg/mL in toluene	1.2 mL
NEW	CLM-9535-1.2	Tris(2,4,6-tribromophenoxy)-1,3,5-triazine (TTBP-TAZ) ($^{13}C_{18}$, 99%)	50 µg/mL in dioxane	1.2 mL
NEW	ULM-9506-1.2	Tris(2,4,6-tribromophenoxy)-1,3,5-triazine (TTBP-TAZ) (unlabeled)	50 µg/mL in dioxane	1.2 mL
NEW	DLM-9945-1.2	TBB (2-ethylhexyl-2,3,4,5-tetrabromobenzoate) (D_{17}, 98%)	50 µg/mL in toluene	Inquire
NEW	ULM-9944-1.2	TBB (2-ethylhexyl-2,3,4,5-tetrabromobenzoate) (unlabeled)	50 µg/mL in toluene	Inquire
NEW	DLM-9947-1.2	TBPH (bis(2-ethylhexyl)tetrabromophthalate) (D_{34}, 98%)	50 µg/mL in toluene	Inquire
NEW	ULM-9946-1.2	TBPH (bis(2-ethylhexyl)tetrabromophthalate) (unlabeled)	50 µg/mL in toluene	Inquire

Brominated Flame-Retardant (BFR) Standard Mixtures

Catalog No.	Compound	Amount
EO-5319-A	CDC BFR Calibration Standards [CS1-CS10]	Set of 10 × 0.5 mL in nonane
EO-5319-A-CS1	CDC BFR Calibration Standard [CS1]	0.5 mL in nonane
EO-5319-A-CS2	CDC BFR Calibration Standard [CS2]	0.5 mL in nonane
EO-5319-A-CS3	CDC BFR Calibration Standard [CS3]	0.5 mL in nonane
EO-5319-A-CS4	CDC BFR Calibration Standard [CS4]	0.5 mL in nonane
EO-5319-A-CS5	CDC BFR Calibration Standard [CS5]	0.5 mL in nonane
EO-5319-A-CS6	CDC BFR Calibration Standard [CS6]	0.5 mL in nonane
EO-5319-A-CS7	CDC BFR Calibration Standard [CS7]	0.5 mL in nonane
EO-5319-A-CS8	CDC BFR Calibration Standard [CS8]	0.5 mL in nonane
EO-5319-A-CS9	CDC BFR Calibration Standard [CS9]	0.5 mL in nonane
EO-5319-A-CS10	CDC BFR Calibration Standard [CS10]	0.5 mL in nonane

All concentrations are in ng/mL (ppb)

Unlabeled	Congener	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′-HexaBB	PBB-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-Bis(pentabromophenyl) 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
γ-Hexabromobenzene		0.2	0.5	1	5	10	50	100	500	1000	2000
Labeled											
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
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′-HexaBB ($^{13}C_{12}$, 99%)	PBB-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-Bis(pentabromophenyl) 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
γ-Hexabromocyclododecane ($^{13}C_{12}$, 99%)		75	75	75	75	75	75	75	75	75	75

Brominated Flame-Retardant (BFR) Standard Mixtures

Catalog No.	Compound	Amount
EO-5320-A	CDC BFR Spiking Standard	10 mL in methanol
EO-5320-200X-1.2	CDC BFR Spiking Standard	1.2 mL in nonane/toluene

Labeled	Congener	EC-5320-A (ng/mL)	EO-5320-200X-1.2 (ng/mL)
2,4,4′-TriBDE ($^{13}C_{12}$, 99%)	28	7.5	1500
2,2′,4,4′-TetraBDE ($^{13}C_{12}$, 99%)	47	7.5	1500
2,2′,4,4′,6-PentaBDE ($^{13}C_{12}$, 99%)	100	7.5	1500
2,2′,4,4′,5-PentaBDE ($^{13}C_{12}$, 99%)	99	7.5	1500
2,2′,4,4′,5,6′-HexaBDE ($^{13}C_{12}$, 99%)	154	7.5	1500
2,2′,4,4′,5,5′-HexaBDE ($^{13}C_{12}$, 99%)	153	7.5	1500
2,2′,3,4,4′,5′,6-HeptaBDE ($^{13}C_{12}$, 99%)	183	7.5	1500
2,2′,3,3′,4,4′,6,6′-OctaBDE ($^{13}C_{12}$, 99%)	197	7.5	1500
2,2′,3,4,4′,5,5′,6-OctaBDE ($^{13}C_{12}$, 99%)	203	7.5	1500
2,2′,3,3′,4,4′,5,5′,6-NonaBDE ($^{13}C_{12}$, 99%)	206	7.5	1500
2,2′,3,3′,4,4′,5,6,6′-NonaBDE ($^{13}C_{12}$, 99%)	207	7.5	1500
2,2′,3,3′,4,5,5′,6,6′-NonaBDE ($^{13}C_{12}$, 99%)	208	7.5	1500
DecaBDE ($^{13}C_{12}$, 99%)	209	50	10,000
2,2′,4,4′,5,5′-HexaBB ($^{13}C_{12}$, 99%)	PBB-153	7.5	1500
Hexabromobenzene ($^{13}C_{6}$, 99%)		7.5	1500
1,2-Bis(pentabromophenyl) ethane ($^{13}C_{14}$, 99%)		7.5	1500
1,2-Bis(2,4,6-tribromophenoxy) ethane ($^{13}C_{12}$, 99%)		7.5	1500
γ-Hexabromocyclododecane ($^{13}C_{12}$, 99%)		7.5	1500

Catalog No.	Compound	Amount
EO-5169	BFR Recovery Spiking Solution	10 mL in 88% hexane/ 2% dodecane/10% nonane

Labeled	Congener	(ng/mL)
1,2,3,4-TetraCDD ($^{13}C_{6}$, 99%)		2.5
3,3′,4,4′-TetraBDE ($^{13}C_{12}$, 99%)	77	7.5
2,2′,3,4,4′,6-HexaBDE ($^{13}C_{12}$, 99%)	139	7.5
2,2′,3,3′,4,5,5′,6,6′-NonaCB ($^{13}C_{12}$, 99%)	208	10

Phosphorus Flame-Retardant (PFR) Standards

	Catalog No.	Compound	Concentration	Amount
NEW	ULM-9693-1.2	Resorcinol *bis*(diphenyl phosphate) (unlabeled)	100 µg/mL in toluene	1.2 mL
NEW	DLM-8074-1.2	Triethyl phosphate (D_{15}, 98%)	1 mg/mL in acetonitrile	1.2 mL
NEW	ULM-9032-1.2	Triethyl phosphate (unlabeled)	1 mg/mL in acetonitrile	1.2 mL
NEW	DLM-8901-1.2	Tripropyl phosphate (D_{21}, 98%)	1 mg/mL in acetonitrile	1.2 mL
NEW	ULM-9090-1.2	Tripropyl phosphate (unlabeled)	1 mg/mL in acetonitrile	1.2 mL
NEW	DLM-3940-1.2	Tributyl phosphate (D_{27}, 98%)	1 mg/mL in acetonitrile	1.2 mL
NEW	ULM-9033-1.2	Tributyl phosphate (unlabeled)	1 mg/mL in acetonitrile	1.2 mL
NEW	DLM-9070-1.2	Triphenyl phosphate (D_{15}, 98%)	1 mg/mL in acetonitrile	1.2 mL
NEW	ULM-9091-1.2	Triphenyl phosphate (unlabeled)	1 mg/mL in acetonitrile	1.2 mL
NEW	DLM-9313-1.2	Tris(2-chloroethyl) phosphate (D_{12}, 98%)	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-9314-1.2	Tris(2-chloroethyl) phosphate (unlabeled)	100 µg/mL in acetonitrile	1.2 mL
NEW	DLM-9317-1.2	Tris(2-chloroisopropyl) phosphate (D_{18}, 98%)	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-9318-1.2	Tris(2-chloroisopropyl) phosphate (unlabeled)	100 µg/mL in acetonitrile	1.2 mL
NEW	DLM-9315-1.2	Tris(1,3-dichloro-2-propyl) phosphate (D_{15}, 98%)	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-9316-1.2	Tris(1,3-dichloro-2-propyl) phosphate (unlabeled)	100 µg/mL in acetonitrile	1.2 mL

Phosphorus Flame-Retardant PFR Standard Mixtures

NEW	ES-5529	Phosphorus Flame-Retardant Standard Mixture (D, 98%)	1.2 mL in acetonitrile

Labeled	(µg/mL)
Tris(2-chloroethyl) phosphate (D_{12}, 98%)	10
Tris(2-chloroisopropyl) phosphate (D_{18}, 98%)	10
Tris(1,3-dichloro-2-propyl) phosphate (D_{15}, 98%)	10
Triethyl phosphate (D_{15}, 98%)	10
Tripropyl phosphate (D_{21}, 98%)	10
Tributyl phosphate (D_{27}, 98%)	10
Triphenyl phosphate (D_{15}, 98%)	10

NEW	ES-5530	Phosphorus Flame-Retardant Standard Mixture	1.2 mL in acetonitrile

Unlabeled	(µg/mL)
Tris(2-chloroethyl) phosphate	10
Tris(2-chloroisopropyl) phosphate	10
Tris(1,3-dichloro-2-propyl) phosphate	10
Triethyl phosphate	10
Tripropyl phosphate	10
Tributyl phosphate	10
Triphenyl phosphate	10

Polycyclic Aromatic Compound (PAC) Standards and Standard Mixtures

PACs are organic compounds that can be found in natural or processed petroleum products; they are also formed during combustion of carbon-based material. The robust ^{13}C PACs produced as part of CIL's collaboration with Cerilliant complement the deuterium-labeled PACs suitable for routine use. New ways to monitor PACs continue to be developed, and CIL's standards evolve with these new methods.

^{13}C-Labeled Polycyclic Aromatic Hydrocarbon (PAH) Standards

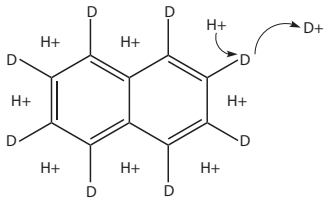
CIL, in cooperation with Cerilliant Corporation, is pleased to offer ^{13}C-labeled polycyclic aromatic hydrocarbons (PAHs) as a superior alternative to deuterated standards. Although CIL has traditionally produced high-quality deuterated PAH analogs, some analysts have observed back-exchange of proton 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

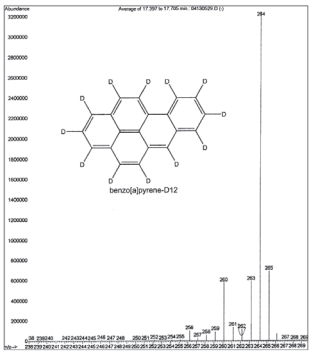
While analysts have been using deuterated PAH standards for years, labile deuterons are susceptible to back-exchange. The phenomenon is particularly likely to occur in acidic or catalytic matrices, when the importance of a reliable internal standard is greatest.

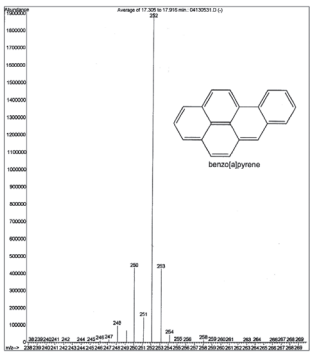
Deuterium-labeled PAH metabolites are even more susceptible to the phenomena of back-exchange and loss of protons/deuterons in the mass spectrometer.

Naphthalene-D_8 deuterium-exchange



Deuterated PAH mass spectra differ from unlabeled mass spectra





Similiar Mass Spectra

Even at lower voltages the parent ion loses a considerable number of protons or deuterons. Mass spectra of ^{13}C PAHs will show a succession of proton losses (M-1, M-2, M-3, M-4 etc., similar to native PAHs), while mass spectra of deuterated PAHs will show a succession of deuteron losses (M-2, M-4, M-6, M-8, etc.).

In the chromatogram for the deuterated benzo[*a*]pyrene, the proton losses at M-2, M-4, etc. are supplemented with proton losses of M-1, M-3, etc. This represents a loss of deuterons from incompletely deuterated species. As a result, the profile of the deuterated material does not correspond exactly to that of the unlabeled material. ^{13}C-labeled benzo[*a*]pyrene, however, will match the unlabeled material with the 4 AMU shift being the only difference between the two profiles.

Hydroxy PAHs

PAH exposure occurs through ingestion, inhalation, and dermal contact. In the body, these compounds are predominantly metabolized as epoxides, which are converted to phenol (hydroxy) and dihydrodiol derivatives. The hydroxylated metabolites of the PAHs are excreted in human urine both as free hydroxylated metabolites and as hydroxylated metabolites conjugated to glucuronic acid or sulfate. During 1999-2002, the Centers for Disease Control and Prevention (CDC) began to measure 22 hydroxylated PAH urinary metabolites as part of the Third National Report on Human Exposure to Environmental Chemicals in the National Health and Nutrition Examination Survey (NHANES). Since then, CDC and others have focused human exposure studies on 10 target hydroxylated PAH urinary metabolites. CIL has produced isotopically labeled and unlabeled standard solutions and standard mixtures for each of these target metabolites.

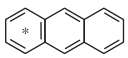
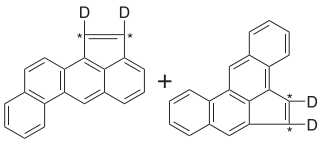
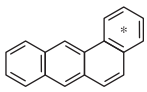
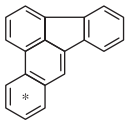
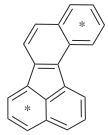
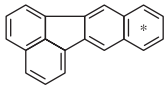
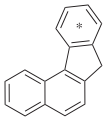
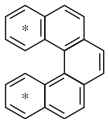
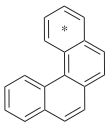
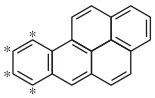
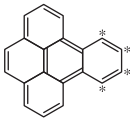
Substituted PAHs

For many years, researchers have studied the effects of diesel combustion engines, and one of the major issues related to this is the production of nitrated PAHs. Nitrated PAHS with >3 rings have been linked to the mutagenic properties associated with diesel-exhaust particulate matter. Alkyl PAHs are found in petroleum products and are typically studied in environmental forensics and fingerprinting. Alkyl PAHs may be found in high levels compared to parent PAHs and are often more persistent and bioaccumulative. Halogenated PAHs are likely the least studied but hold similar interest to parent PAHs and other substituted PAHs. Halogenated PAHs are often associated with incomplete incineration of municipal, industrial, and electronic wastes.

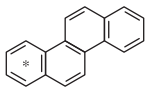
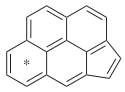
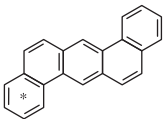
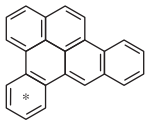
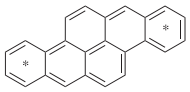
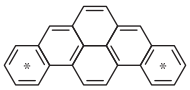
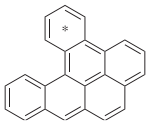
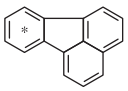
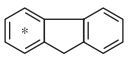
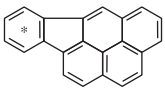
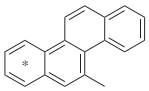
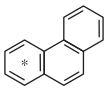
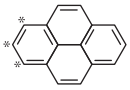
Benzo[*a*]Pyrene Tetrol Metabolites

Similarly to hydroxy PAHs, researchers have studied benzo[*a*]pyrene-7,8,9,10-tetrahydrotetrols levels in blood samples as markers for human exposure to PAHs, in particular, exposure to cigarette smoke or occupational exposure to benzo[*a*]pyrene, one of the most commonly studied PAHs.

^{13}C-Labeled Polycyclic Aromatic Hydrocarbon (PAH) Standards

	Catalog No.	Compound	Structure	Concentration	Amount
	CLM-1643-1.2	Acenaphthene ($^{13}C_6$, 99%)		100 ± 10 µg/mL in nonane	1.2 mL
	CLM-2477-1.2	Acenaphthylene ($^{13}C_6$, 99%)		100 ± 10 µg/mL in nonane	1.2 mL
	CLM-1333-1.2	Anthracene ($^{13}C_6$, 99%)		100 ± 10 µg/mL in nonane	1.2 mL
NEW	CDLM-9731-1.2	Benz[*e*]aceanthrylene/Benz[*j*]aceanthrylene ($^{13}C_2$, 94%; D_2, 94%)		100 ± 10 µg/mL in nonane	1.2 mL
	CLM-3602-1.2	Benz[*a*]anthracene ($^{13}C_6$, 99%)		100 ± 10 µg/mL in nonane	1.2 mL
	CLM-3599-1.2	Benzo[*b*]fluoranthene ($^{13}C_6$, 99%)		100 ± 10 µg/mL in nonane	1.2 mL
NEW	CLM-9590-1.2	Benzo[*j*]fluoranthene ($^{13}C_{12}$, 99%)		100 ± 10 µg/mL in nonane	1.2 mL
	CLM-3756-1.2	Benzo[*k*]fluoranthene ($^{13}C_6$, 99%)		100 ± 10 µg/mL in nonane	1.2 mL
NEW	CLM-9363-1.2	Benzo[*c*]fluorene ($^{13}C_6$, 99%)		100 ± 10 µg/mL in nonane	1.2 mL
NEW	CLM-9610-1.2	Benzo[*b*]furan ($^{13}C_6$, 99%)		100 ± 10 µg/mL in nonane	1.2 mL
	CLM-1364-1.2	Benzo[*ghi*]perylene ($^{13}C_{12}$, 99%)		100 ± 10 µg/mL in nonane	1.2 mL
NEW	CLM-9730-1.2	Benzo[*c*]phenanthrene ($^{13}C_6$, 99%)		100 ± 10 µg/mL in nonane	1.2 mL
	CLM-2722-1.2	Benzo[*a*]pyrene ($^{13}C_4$, 99%)		100 ± 10 µg/mL in nonane	1.2 mL
	CLM-6170-1.2	Benzo[*e*]pyrene ($^{13}C_4$, 99%)		100 ± 10 µg/mL in nonane	1.2 mL

^{13}C-Labeled Polycyclic Aromatic Hydrocarbon (PAH) Standards

	Catalog No.	Compound	Structure	Concentration	Amount
	CLM-3757-1.2	Chrysene ($^{13}C_6$, 99%)		100 ± 10 µg/mL in nonane	1.2 mL
NEW	CLM-9167-1.2	Cyclopenta[*cd*]pyrene ($^{13}C_6$, 99%)		100 ± 10 µg/mL in nonane	1.2 mL
	CLM-3598-1.2	Dibenz[*a,h*]anthracene ($^{13}C_6$, 99%)		100 ± 10 µg/mL in nonane	1.2 mL
	CLM-3835-1.2	Dibenzo[*a,e*]pyrene ($^{13}C_6$, 99%)		100 ± 10 µg/mL in nonane	1.2 mL
NEW	CLM-9165-T-1.2	Dibenzo[*a,h*]pyrene ($^{13}C_{12}$, 99%)		100 ± 10 µg/mL in toluene	1.2 mL
NEW	CLM-3774-A CLM-3774-A-T-1.2	Dibenzo[*a,i*]pyrene ($^{13}C_{12}$, 99%)		50 ± 5 µg/mL in nonane 100 ± 10 µg/mL in toluene	1.2 mL
NEW	CLM-9499-1.2	Dibenzo[*a,l*]pyrene ($^{13}C_6$, 99%)		100 ± 10 µg/mL in nonane	1.2 mL
	CLM-3597-1.2	Fluoranthene ($^{13}C_6$, 99%)		100 ± 10 µg/mL in nonane	1.2 mL
	CLM-3596-1.2	Fluorene ($^{13}C_6$, 99%)		100 ± 10 µg/mL in nonane	1.2 mL
	CLM-3600-1.2	Indeno[1,2,3-*cd*]pyrene ($^{13}C_6$, 99%)		100 ± 10 µg/mL in nonane	1.2 mL
NEW	CLM-9729-1.2	5-Methylchrysene ($^{13}C_6$, 99%)		100 ± 10 µg/mL in nonane	1.2 mL
	CLM-1332-1.2	Naphthalene ($^{13}C_6$, 99%)		100 ± 10 µg/mL in nonane	1.2 mL
	CLM-2451-1.2	Phenanthrene ($^{13}C_6$, 99%)		100 ± 10 µg/mL in nonane	1.2 mL
	CLM-3601-1.2	Pyrene ($^{13}C_3$, 99%)		100 ± 10 µg/mL in nonane	1.2 mL

Deuterium-Labeled Polycyclic Aromatic Hydrocarbon (PAH) Standards

Catalog No.	Compound	Formula	Concentration	Amount
DLM-108-1.2	Acenaphthene (D_{10}, 98%)	$C_{12}D_{10}$	200 µg/mL in isooctane	1.2 mL
DLM-108-0.1			neat	0.1 g
DLM-108-1			neat	1 g
DLM-108-5			neat	5 g
DLM-2204-1.2	Acenaphthylene (D_8, 98%)	$C_{12}D_8$	200 µg/mL in isooctane	1.2 mL
DLM-2204-0.1			neat	0.1 g
DLM-849-0.1	Acridine (D_9, 98%)	$C_{13}D_9N$	neat	0.1 g
DLM-849-0.5			neat	0.5 g
DLM-102-1.2	Anthracene (D_{10}, 98%)	$C_{14}D_{10}$	200 µg/mL in isooctane	1.2 mL
DLM-102-1			neat	1 g
DLM-102-5			neat	5 g
DLM-610-1.2	Benz[*a*]anthracene (D_{12}, 98%)	$C_{18}D_{12}$	200 µg/mL in isooctane	1.2 mL
DLM-610-0.1			neat	0.1 g
DLM-2136-1.2	Benzo[*b*]fluoranthene (D_{12}, 98%)	$C_{20}D_{12}$	200 µg/mL in isooctane	1.2 mL
DLM-2136-0.01			neat	0.01 g
DLM-1923-1.2	Benzo[*k*]fluoranthene (D_{12}, 98%)	$C_{20}D_{12}$	200 µg/mL in isooctane	1.2 mL
DLM-1923-0.01			neat	0.01 g
DLM-2135-1.2	Benzo[*ghi*]perylene (D_{12}, 98%)	$C_{22}D_{12}$	200 µg/mL in toluene-D_8	1.2 mL
DLM-2135-0.01			neat	0.01 g
DLM-258-1.2	Benzo[*a*]pyrene (D_{12}, 98%)	$C_{20}D_{12}$	200 µg/mL in isooctane	1.2 mL
DLM-258-0.01			neat	0.01 g
DLM-258-0.05			neat	0.05 g
DLM-258-0.1			neat	0.1 g
DLM-257-1.2	Benzo[*e*]pyrene (D_{12}, 98%)	$C_{20}D_{12}$	200 µg/mL in isooctane	1.2 mL
DLM-257-0.01			neat	0.01 g
DLM-261-1.2	Chrysene (D_{12}, 98%)	$C_{18}D_{12}$	200 µg/mL in toluene-D_8	1.2 mL
DLM-261-0.1			neat	0.1 g
DLM-261-1			neat	1 g
DLM-2715-1.2	Coronene (D_{12}, 97%)	$C_{24}D_{12}$	200 µg/mL in benzene	1.2 mL
DLM-2715-0.01			neat	0.01 g
DLM-2715-0.1			neat	0.1 g
DLM-3843-1.2	Dibenz[*a,j*]acridine (D_{13}, 98%)	$C_{21}D_{13}N$	50 µg/mL in toluene-D_8	1.2 mL
NEW DLM-8020-1.2	Dibenz[*a,c*]anthracene (D_{14}, 98%)	$C_{22}D_{14}$	200 µg/mL in toluene-D_8	1.2 mL
DLM-677-1.2	Dibenz[*a,h*]anthracene (D_{14}, 98%)	$C_{22}D_{14}$	200 µg/mL in toluene-D_8	1.2 mL
DLM-677-0.1			neat	0.1 g
DLM-3740-1.2	Dibenzo[*a,i*]pyrene (D_{14}, 98%)	$C_{24}D_{14}$	200 µg/mL in toluene-D_8	1.2 mL
DLM-3841-1.2	7H-Dibenzo[*c,g*]carbazole (D_{12}, 98%)	$C_{20}D_{12}HN$	50 µg/mL in toluene-D_8	1.2 mL
DLM-2140-1.2	Fluoranthene (D_{10}, 98%)	$C_{16}D_{10}$	200 µg/mL in isooctane	1.2 mL
DLM-2140-0.1			neat	0.1 g
DLM-1123-1.2	Fluorene (D_{10}, 98%)	$C_{13}D_{10}$	200 µg/mL in isooctane	1.2 mL
DLM-1123-0.1			neat	0.1 g
DLM-1123-1			neat	1 g
DLM-2148-1.2	Indeno[1,2,3-*cd*]pyrene (D_{12}, 98%)	$C_{22}D_{12}$	200 µg/mL in isooctane	1.2 mL
DLM-2148-0.01			neat	0.01 g
DLM-365-1.2	Naphthalene (D_8, 99%)	$C_{10}D_8$	200 µg/mL in isooctane	1.2 mL
DLM-365-1			neat	1 g
DLM-365-5			neat	5 g
DLM-365-10			neat	10 g
DLM-3875-10	Naphthalene (D_8, 99.5%)	$C_{10}D_8$	neat	10 g
DLM-366-1.2	Perylene (D_{12}, 98%)	$C_{20}D_{12}$	200 µg/mL in toluene-D_8	1.2 mL
DLM-366-0.1			neat	0.1 g
DLM-366-1			neat	1 g
DLM-371-1.2	Phenanthrene (D_{10}, 98%)	$C_{14}D_{10}$	200 µg/mL in isooctane	1.2 mL
DLM-371-0.1			neat	0.1 g
DLM-371-1			neat	1 g
DLM-371-5			neat	5 g
DLM-155-1.2	Pyrene (D_{10}, 98%)	$C_{16}D_{10}$	200 µg/mL in isooctane	1.2 mL
DLM-155-0.1			neat	0.1 g
DLM-155-0.5			neat	0.5 g

Deuterium-Labeled PAH Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	DLM-450-1	*o*-Terphenyl (D_{14}, 98%)	$C_6D_4(C_6D_5)_2$	neat	1 g
NEW	DLM-450-5			neat	5 g
	DLM-382-1.2	*p*-Terphenyl (D_{14}, 98%)	$C_6D_4(C_6D_5)_2$	200 µg/mL in isooctane	1.2 mL
	DLM-382-1			neat	1 g
NEW	DLM-382-5			neat	5 g
	DLM-601-0.1	Triphenylene (D_{12}, 98%)	$C_{18}D_{12}$	neat	0.1 g
	DLM-601-1			neat	1 g

Unlabeled PAH Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	ULM-7413-1.2	Acenaphthene	$C_{12}H_{10}$	200 µg/mL in isooctane	1.2 mL
	ULM-7422-1.2	Acenaphthylene	$C_{12}H_8$	200 µg/mL in isooctane	1.2 mL
	ULM-7412-1.2	Anthracene	$C_{14}H_{10}$	200 µg/mL in isooctane	1.2 mL
NEW	ULM-9758-1.2	Benz[*e*]aceanthrylene/Benz[*j*]aceanthrylene	$C_{20}H_{12}$	200 µg/mL in nonane	1.2 mL
	ULM-2415-I-1.2	Benz[*a*]anthracene	$C_{18}H_{12}$	200 µg/mL in isooctane	1.2 mL
	ULM-2415-0.1			neat	0.1 g
	ULM-2416-I-1.2	Benzo[*b*]fluoranthene	$C_{20}H_{12}$	200 µg/mL in isooctane	1.2 mL
	ULM-2416-0.1			neat	0.1 g
NEW	ULM-2411-1.2	Benzo[*j*]fluoranthene	$C_{20}H_{12}$	100 µg/mL in nonane	1.2 mL
	ULM-2411-25			neat	25 mg
NEW	ULM-2417-I-1.2	Benzo[*k*]fluoranthene	$C_{20}H_{12}$	200 µg/mL in isooctane	1.2 mL
	ULM-2417-0.1			neat	0.1 g
NEW	ULM-9357-1.2	Benzo[*c*]fluorene	$C_{17}H_{12}$	100 µg/mL in nonane	1.2 mL
NEW	ULM-9618-1.2	Benzo[*b*]furan	C_8H_6O	100 µg/mL in nonane	1.2 mL
	ULM-2418-1.2	Benzo[*ghi*]perylene	$C_{22}H_{12}$	200 µg/mL in toluene	1.2 mL
	ULM-2418-0.1			neat	0.1 g
NEW	ULM-8155-1.2	Benzo[*c*]phenanthrene	$C_{18}H_{12}$	100 µg/mL in nonane	1.2 mL
	ULM-8155-25			neat	25 mg
	ULM-2412-I-1.2	Benzo[*a*]pyrene	$C_{20}H_{12}$	200 µg/mL in isooctane	1.2 mL
	ULM-2412-0.1			neat	0.1 g
	ULM-7423-1.2	Benzo[*e*]pyrene	$C_{20}H_{12}$	200 µg/mL in isooctane	1.2 mL
	ULM-7424-1.2	Chrysene	$C_{18}H_{12}$	200 µg/mL in toluene	1.2 mL
	ULM-6576-1.2	Coronene	$C_{24}H_{12}$	200 µg/mL in benzene	1.2 mL
NEW	ULM-6891-1.2	Cyclopenta[*cd*]pyrene	$C_{18}H_{10}$	100 µg/mL in nonane	1.2 mL
	ULM-3884-1.2	Dibenz[*a,j*]acridine	$C_{21}H_{13}N$	50 µg/mL in toluene	1.2 mL
	ULM-3884-25			neat	25 mg
NEW	ULM-9759-1.2	Dibenz[*a,c*]anthracene	$C_{22}H_{14}$	200 µg/mL in toluene	1.2 mL
	ULM-2422-T-1.2	Dibenz[*a,h*]anthracene	$C_{22}H_{14}$	200 µg/mL in toluene	1.2 mL
	ULM-2422-0.1			neat	0.1 g
	ULM-3885-1.2	7H-Dibenzo[*c,g*]carbazole	$C_{20}H_{13}N$	50 µg/mL in toluene	1.2 mL
	ULM-6671-1.2	Dibenzo[*a,e*]fluoranthene	$C_{24}H_{14}$	200 µg/mL in toluene	1.2 mL
NEW	ULM-1226-1.2	Dibenzo[*a,e*]pyrene	$C_{24}H_{14}$	100 µg/mL in nonane	1.2 mL
	ULM-1226-0.01			neat	0.01 g
	ULM-1227-T-1.2	Dibenzo[*a,h*]pyrene	$C_{24}H_{14}$	100 µg/mL in toluene	1.2 mL
NEW	ULM-1227-0.01			neat	0.01 g
	ULM-2423-1.2	Dibenzo[*a,i*]pyrene	$C_{24}H_{14}$	200 µg/mL in toluene	1.2 mL
NEW	ULM-2423-A-1.2			50 µg/mL in nonane	1.2 mL
	ULM-1253-1.2	Dibenzo[*a,l*]pyrene	$C_{24}H_{14}$	200 µg/mL in toluene	1.2 mL
	ULM-1253-25			neat	25 mg
	ULM-7421-1.2	Fluoranthene	$C_{16}H_{10}$	200 µg/mL in isooctane	1.2 mL
	ULM-7414-1.2	Fluorene	$C_{13}H_{10}$	200 µg/mL in isooctane	1.2 mL
	ULM-2426-I-1.2	Indeno[1,2,3-*cd*]pyrene	$C_{22}H_{12}$	200 µg/mL in isooctane	1.2 mL
	ULM-2426-25			neat	25 mg
	ULM-7425-1.2	Naphthalene	$C_{10}H_{10}$	200 µg/mL in isooctane	1.2 mL
	ULM-7426-1.2	Perylene	$C_{20}H_{12}$	200 µg/mL in isooctane	1.2 mL
	ULM-7427-1.2	Phenanthrene	$C_{14}H_{10}$	200 µg/mL in isooctane	1.2 mL
	ULM-7417-1.2	Pyrene	$C_{16}H_{10}$	200 µg/mL in toluene	1.2 mL
	ULM-7428-1.2	*p*-Terphenyl	$C_{18}H_{14}$	200 µg/mL in isooctane	1.2 mL

^{13}C-Labeled PAH Standard Mixtures

Catalog No.	Compound	Amount
ES-4087	EPA 16 PAH Cocktail	1.2 mL in nonane

Labeled	(µg/mL)
Acenaphthene ($^{13}C_6$, 99%)	5
Acenaphthylene ($^{13}C_6$, 99%)	5
Anthracene ($^{13}C_6$, 99%)	5
Benz[*a*]anthracene ($^{13}C_6$, 99%)	5
Benzo[*b*]fluoranthene ($^{13}C_6$, 99%)	5
Benzo[*k*]fluoranthene ($^{13}C_6$, 99%)	5
Benzo[*ghi*]perylene ($^{13}C_{12}$, 99%)	5
Benzo[*a*]pyrene ($^{13}C_4$, 99%)	5
Chrysene ($^{13}C_6$, 99%)	5
Dibenz[*a,h*]anthracene ($^{13}C_6$, 99%)	5
Fluoranthene ($^{13}C_6$, 99%)	5
Fluorene ($^{13}C_6$, 99%)	5
Indeno[1,2,3-*cd*]pyrene ($^{13}C_6$, 99%)	5
Naphthalene ($^{13}C_6$, 99%)	5
Phenanthrene ($^{13}C_6$, 99%)	5
Pyrene ($^{13}C_3$, 99%)	5

NEW	ES-5546	Custom 16 PAH Solution	1.2 mL in nonane

Labeled	(µg/mL)
Naphthalene ($^{13}C_{10}$, 99%)	10
Benzo[*c*]phenanthrene ($^{13}C_6$, 99%)	1
Cyclopenta[*cd*]pyrene ($^{13}C_6$, 99%)	1
Benz[*a*]anthracene ($^{13}C_6$, 99%)	1
Chrysene ($^{13}C_6$, 99%)	1
5-Methylchrysene ($^{13}C_6$, 99%)	1
Benzo[*b*]fluoranthene ($^{13}C_6$, 99%)	1
Benzo[*k*]fluoranthene ($^{13}C_6$, 99%)	1
Benz[*e*]aceanthrylene/Benz[*j*]aceanthrylene ($^{13}C_2$, 94%; D_2, 94%)	1
Benzo[*a*]pyrene ($^{13}C_4$, 99%)	1
Indeno[1,2,3-*cd*]pyrene ($^{13}C_6$, 99%)	1
Dibenz[*a,h*]anthracene ($^{13}C_6$, 99%)	1
Dibenzo[*a,l*]pyrene ($^{13}C_6$, 99%)	1
Dibenzo[*a,e*]pyrene ($^{13}C_6$, 99%)	1
Dibenzo[*a,i*]pyrene ($^{13}C_{12}$, 99%)	1
Dibenzo[*a,h*]pyrene ($^{13}C_{12}$, 99%)	1

NEW	ES-5539	EFSA-8 ^{13}C PAH Standard Mixture	1.2 mL in nonane

Labeled	(µg/mL)
Benz[*a*]anthracene ($^{13}C_6$, 99%)	5
Benzo[*b*]fluoranthene ($^{13}C_6$, 99%)	5
Benzo[*k*]fluoranthene ($^{13}C_6$, 99%)	5
Benzo[*ghi*]perylene ($^{13}C_{12}$, 99%)	5
Benzo[*a*]pyrene ($^{13}C_4$, 99%)	5
Chrysene ($^{13}C_6$, 99%)	5
Dibenz[*a,h*]anthracene ($^{13}C_6$, 99%)	5
Indeno[1,2,3-*cd*]pyrene ($^{13}C_6$, 99%)	5

NEW	ES-5540	EFSA-4 ^{13}C PAH Standard Mixture	1.2 mL in nonane

Labeled	(µg/mL)
Benz[*a*]anthracene ($^{13}C_6$, 99%)	5
Benzo[*b*]fluoranthene ($^{13}C_6$, 99%)	5
Benzo[*a*]pyrene ($^{13}C_4$, 99%)	5
Chrysene ($^{13}C_6$, 99%)	5

Deuterium-Labeled Polycyclic Aromatic Hydrocarbon (PAH) Standard Mixtures

Catalog No.	Compound	Amount
ES-2528	PAH Cocktail for CARB Method 429	1 mL in benzene-D_6

Labeled	(µg/mL)
Acenaphthene (D_{10}, 98%)	100
Acenaphthylene (D_8, 98%)	100
Anthracene (D_{10}, 98%)	100
Benz[*a*]anthracene (D_{12}, 98%)	100
Benzo[*b*]fluoranthene (D_{12}, 98%)	100
Benzo[*k*]fluoranthene (D_{12}, 98%)	100
Benzo[*ghi*]perylene (D_{12}, 98%)	100
Benzo[*a*]pyrene (D_{12}, 98%)	100
Chrysene (D_{12}, 98%)	100
Dibenz[*a,h*]anthracene (D_{14}, 98%)	100
Fluoranthene (D_{10}, 98%)	100
Fluorene (D_{10}, 98%)	100
Indeno[1,2,3-*cd*]pyrene (D_{12}, 98%)	100
Naphthalene (D_8, 99%)	100
Phenanthrene (D_{10}, 98%)	100
Pyrene (D_{10}, 98%)	100

	ES-5164	10 mL in 90% toluene/10% isooctane
NEW	ES-5164-1.2	1.2 mL in 90% toluene/10% isooctane

Labeled	(µg/mL)
Naphthalene (D_8, 99%)	200
Benz[*a*]anthracene (D_{12}, 98%)	200
Phenanthrene (D_{10}, 98%)	200
Fluoranthene (D_{10}, 98%)	200
Benzo[*b*]fluoranthene (D_{12}, 98%)	200
Benzo[*a*]pyrene (D_{12}, 98%)	200
Benzo[*ghi*]perylene (D_{12}, 98%)	200
Indeno[1,2,3-*cd*]pyrene (D_{12}, 98%)	200
Dibenz[*a,h*]anthracene (D_{14}, 98%)	200
Acenaphthylene (D_8, 98%)	200
Acenaphthene (D_{10}, 98%)	200
Fluorene (D_{10}, 98%)	200
Pyrene (D_{10}, 98%)	200
Benzo[*k*]fluoranthene (D_{12}, 98%)	200
Perylene (D_{12}, 98%)	200
Chrysene (D_{12}, 98%)	200

Catalog No.	Compound	Amount
ES-2044	PAH Surrogate Cocktail	1 mL in 50% MeCl-D_2/50% methanol-OD

Labeled	(µg/mL)
Acenaphthylene (D_8, 98%)	200
Benzo[*a*]pyrene (D_{12}, 98%)	200
Benzo[*ghi*]perylene (D_{12}, 98%)	200
Fluoranthene (D_{10}, 98%)	200
Naphthalene (D_8, 99%)	200
Phenanthrene (D_{10}, 98%)	200
Pyrene (D_{10}, 98%)	200

Deuterium-Labeled Polycyclic Aromatic Hydrocarbon (PAH) Standard Mixtures

	Catalog No.	Compound	Amount
NEW	ES-5481	PAH Mixture	5 mL in toluene

Labeled	(µg/mL)
Chrysene (D_{12}, 98%)	2500
Dibenz[*a,h*]anthracene (D_{14}, 98%)	2500
Naphthalene (D_8, 99%)	2500
Perylene (D_{12}, 98%)	2500
Phenanthrene (D_{10}, 98%)	2500
Acenaphthene (D_{10}, 98%)	2500

ES-2043	"EEC Six" PAH Cocktail	1.2 mL in benzene-D_6

Labeled	(µg/mL)
Benzo[*b*]fluoranthene (D_{12}, 98%)	1000
Benzo[*k*]fluoranthene (D_{12}, 98%)	1000
Benzo[*ghi*]perylene (D_{12}, 98%)	1000
Benzo[*a*]pyrene (D_{12}, 98%)	1000
Indeno[1,2,3-*cd*]pyrene (D_{12}, 98%)	1000
Fluoranthene (D_{10}, 98%)	1000

ES-5386	PAH-SIM Recovery Standard Mixture	1.2 mL in MeCl-D_2

Labeled	(µg/mL)
2-Methylnaphthalene (D_{10}, 98%)	1000
Anthracene (D_{10}, 98%)	1000
p-Terphenyl (D_{14}, 98%)	1000
Benzo[e]pyrene (D_{12}, 98%)	1000

NEW	ES-5498	PAH Two-Component Mixture	1.2 mL in 80% isooctane/ 20% toluene

Labeled	(µg/mL)
Benzo[*a*]pyrene (D_{12}, 98%)	2000
Fluoranthene (D_{10}, 98%)	2000

NEW	ES-9463	PAH Injection Standard	10 mL in isooctane

Labeled	(ng/mL)
Anthracene (D_{10}, 98%)	10
Fluoranthene (D_{10}, 98%)	10
Benz[*a*]anthracene (D_{12}, 98%)	10

NEW	ES-9464	PAH Recovery Standard	10 mL in isooctane/toluene-D_8

Labeled	(ng/mL)
Acenaphthene (D_{10}, 98%)	10
p-Terphenyl (D_{14}, 98%)	10
Perylene (D_{12}, 98%)	10

Unlabeled Polycyclic Aromatic Hydrocarbon (PAH) Standard Mixtures

	Catalog No.	Compound	Amount
NEW	ES-5437	PAH Cocktail for CARB Method 429	1.2 mL in benzene

Unlabeled	(µg/mL)
Acenaphthene	100
Acenaphthylene	100
Anthracene	100
Benz[*a*]anthracene	100
Benzo[*b*]fluoranthene	100
Benzo[*k*]fluoranthene	100
Benzo[*ghi*]perylene	100
Benzo[*a*]pyrene	100
Chrysene	100
Dibenz[*a,h*]anthracene	100
Fluoranthene	100
Fluorene	100
Indeno[1,2,3-*cd*]pyrene	100
Naphthalene	100
Phenanthrene	100
Pyrene	100

NEW	ES-5549	Custom 16 PAH Native Standard Mixture	1.2 mL in nonane

Unlabeled	(µg/mL)
Naphthalene	10
Benzo[*c*]phenanthrene	1
Cyclopenta[*cd*]pyrene	1
Benz[*a*]anthracene	1
Chrysene	1
5-Methylchrysene	1
Benzo[*b*]fluoranthene	1
Benzo[*k*]fluoranthene	1
Benz[e]aceanthrylene/Benz[*j*]aceanthrylene	1
Benzo[*a*]pyrene	1
Indeno[1,2,3-*cd*]pyrene	1
Dibenz[*a,h*]anthracene	1
Dibenzo[*a,l*]pyrene	1
Dibenzo[*a,e*]pyrene	1
Dibenzo[*a,i*]pyrene	1
Dibenzo[*a,h*]pyrene	1

NEW	ES-5541	EFSA-8 Native PAH Standard Mixture	1.2 mL in isooctane

Unlabeled	(µg/mL)
Benz[*a*]anthracene	5
Benzo[*b*]fluoranthene	5
Benzo[*k*]fluoranthene	5
Benzo[*ghi*]perylene	5
Benzo[*a*]pyrene	5
Chrysene	5
Dibenz[*a,h*]anthracene	5
Indeno[1,2,3-*cd*]pyrene	5

Unlabeled Polycyclic Aromatic Hydrocarbon (PAH) Standard Mixtures

	Catalog No.	Compound	Amount
NEW	ES-5542	EFSA-4 Native PAH Standard Mixture	1.2 mL in isooctane

Unlabeled	(µg/mL)
Benz[*a*]anthracene	5
Benzo[*b*]fluoranthene	5
Benzo[*a*]pyrene	5
Chrysene	5

	ES-5438	PAH Native Standard Mixture	1.2 mL in 90% toluene/10% isooctane

Unlabeled	(µg/mL)
Naphthalene	200
Benz[*a*]anthracene	200
Phenanthrene	200
Fluoranthene	200
Benzo[*b*]fluoranthene	200
Benzo[*a*]pyrene	200
Benzo[*ghi*]perylene	200
Indeno[1,2,3-*cd*]pyrene	200
Dibenz[*a,h*]anthracene	200
Acenaphthylene	200
Acenaphthene	200
Fluorene	200
Pyrene	200
Benzo[*k*]fluoranthene	200
Perylene	200
Chrysene	200

NEW	ES-5503	PAH-SIM Recovery Standard Mixture	1.2 mL in MeCl

Unlabeled	(µg/mL)
2-Methylnaphthalene	1000
Anthracene	1000
p-Terphenyl	1000
Benzo[e]pyrene	1000

Alkyl Polycyclic Aromatic Hydrocarbon (PAH) Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	DLM-2845-1.2	9,10-Dimethylanthracene (D_{14}, 98%)	$C_{16}D_{14}$	50 µg/mL in toluene-D_8	1.2 mL
NEW	ULM-6234-1.2	9,10-Dimethylanthracene (unlabeled)	$C_{16}H_{14}$	50 µg/mL in toluene	1.2 mL
	DLM-2852-1.2	1,6-Dimethylnaphthalene (D_{12}, 98%)	$C_{12}D_{12}$	50 µg/mL in toluene-D_8	1.2 mL
NEW	ULM-6182-1.2	1,6-Dimethylnaphthalene (unlabeled)	$C_{12}H_{12}$	50 µg/mL in toluene	1.2 mL
	DLM-2854-1.2	1,8-Dimethylnaphthalene (D_{12}, 98%)	$C_{12}D_{12}$	50 µg/mL in toluene-D_8	1.2 mL
	ULM-6181-1.2	1,8-Dimethylnaphthalene (unlabeled)	$C_{12}H_{12}$	50 µg/mL in toluene	1.2 mL
	DLM-2853-1.2	2,6-Dimethylnaphthalene (D_{12}, 98%)	$C_{12}D_{12}$	50 µg/mL in toluene-D_8	1.2 mL
	ULM-7271-1.2	2,6-Dimethylnaphthalene (unlabeled)	$C_{12}H_{12}$	50 µg/mL in toluene	1.2 mL
NEW	CLM-9729-1.2	5-Methylchrysene ($^{13}C_6$, 99%)	$*C_6C_{13}H_{14}$	100 µg/mL in nonane	1.2 mL
	DLM-3842-1.2	5-Methylchrysene (methyl-D_3, 98%)	$C_{19}D_3H_{11}$	50 µg/mL in toluene-D_8	1.2 mL
	ULM-6235-1.2	5-Methylchrysene (unlabeled)	$C_{19}H_{14}$	50 µg/mL in toluene	1.2 mL
	DLM-1607-1	1-Methylnaphthalene (D_{10}, 98%)	$C_{11}D_{10}$	neat	1 g
	CLM-3621-1.2	2-Methylnaphthalene ($^{13}C_6$, 99%)	$*C_6C_5H_{10}$	100 µg/mL in nonane	1.2 mL
	DLM-1322-1.2	2-Methylnaphthalene (D_{10}, 98%)	$C_{11}D_{10}$	200 µg/mL in isooctane	1.2 mL
	ULM-7416-1.2	2-Methylnaphthalene (unlabeled)	$C_{11}H_{10}$	200 µg/mL in isooctane	1.2 mL
NEW	CLM-8174-1.2	2-Methyl-1-naphthol (5,6,7,8,9,10-$^{13}C_6$, 99%)	$*C_6C_5H_{10}$	50 µg/mL in toluene	1.2 mL
NEW	ULM-8239-1.2	2-Methyl-1-naphthol (unlabeled)	$C_{11}H_{10}O$	50 µg/mL in toluene	1.2 mL

Halogenated Polycyclic Aromatic Hydrocarbon (PAH) Standards

	Catalog No.	Compound	Formula	Concentration	Amount
NEW	CLM-9028-1.2	7-Bromobenz[*a*]anthracene ($^{13}C_6$, 99%)	$*C_6C_{12}H_{11}Br$	50 µg/mL in toluene	1.2 mL
NEW	ULM-9025-1.2	7-Bromobenz[*a*]anthracene (unlabeled)	$C_{18}H_{11}Br$	50 µg/mL in toluene	1.2 mL
	ULM-8269-1.2	9-Chloroanthracene (unlabeled)	$C_{14}H_9Cl$	50 µg/mL in toluene	1.2 mL
NEW	CLM-8989-1.2	7-Chlorobenz[*a*]anthracene ($^{13}C_6$, 99%)	$*C_6C_{12}H_{11}Cl$	50 µg/mL in toluene	1.2 mL
NEW	ULM-9011-1.2	7-Chlorobenz[*a*]anthracene (unlabeled)	$C_{18}H_{11}Cl$	50 µg/mL in toluene	1.2 mL
	ULM-8270-1.2	9-Chlorophenanthrene (unlabeled)	$C_{14}H_9Cl$	50 µg/mL in toluene	1.2 mL
	CLM-8267-1.2	1-Chloropyrene (mix of ring labeling) ($^{13}C_6$, 99%)	$C_{10}*C_6H_9Cl$	50 µg/mL in toluene	1.2 mL
	ULM-8268-1.2	1-Chloropyrene (unlabeled)	$C_{16}H_9Cl$	50 µg/mL in toluene	1.2 mL
NEW	CLM-9029-1.2	7,12-Dicholorobenz[*a*]anthracene ($^{13}C_6$, 99%)	$C_{12}*C_6H_{10}Cl_2$	50 µg/mL in toluene	1.2 mL
NEW	ULM-9024-1.2	7,12-Dicholorobenz[*a*]anthracene (unlabeled)	$C_{18}H_{10}Cl_2$	50 µg/mL in toluene	1.2 mL

Nitro Polycyclic Aromatic Hydrocarbon (PAH) Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	DLM-3836-1.2	5-Nitroacenaphthene (D_9, 98%)	$C_{12}D_9NO_2$	50 µg/mL in toluene-D_8	1.2 mL
NEW	ULM-8790-1.2	5-Nitroacenaphthene (unlabeled)	$C_{12}H_9NO_2$	50 µg/mL in toluene	1.2 mL
	DLM-4712-1.2	9-Nitroanthracene (D_9, 98%)	$C_{14}D_9NO_2$	50 µg/mL in toluene-D_8	1.2 mL
NEW	ULM-8365-1.2	9-Nitroanthracene (unlabeled)	$C_{14}H_9NO_2$	50 µg/mL in toluene	1.2 mL
	DLM-3839-1.2	6-Nitrochrysene (D_{11}, 98%)	$C_{18}D_{11}NO_2$	50 µg/mL in toluene-D_8	1.2 mL
NEW	ULM-3881-1.2	6-Nitrochrysene (unlabeled)	$C_{18}H_{11}NO_2$	50 µg/mL in toluene	1.2 mL
	DLM-4711-1.2	3-Nitrofluoranthene (D_9, 98%) CP 87%	$C_{16}D_9NO_2$	50 µg/mL in toluene-D_8	1.2 mL
NEW	ULM-6600-1.2	3-Nitrofluoranthene (unlabeled) CP 87%	$C_{16}H_9NO_2$	50 µg/mL in toluene	1.2 mL
	DLM-3837-1.2	2-Nitrofluorene (D_9, 98%)	$C_{13}D_9NO_2$	50 µg/mL in toluene-D_8	1.2 mL
	ULM-3883-1.2	2-Nitrofluorene (unlabeled)	$C_{13}H_9NO_2$	50 µg/mL in toluene	1.2 mL
	DLM-1528-1.2	1-Nitropyrene (D_9, 98%)	$C_{18}D_9NO_2$	50 µg/mL in toluene-D_8	1.2 mL
	ULM-3978-1.2	1-Nitropyrene (unlabeled)	$C_{18}H_9NO_2$	50 µg/mL in toluene	1.2 mL

Benzo[*a*]pyrene Metabolites

	Catalog No.	Compound	Concentration	Amount
NEW	CLM-7245-1.2	(+/-)-Benzo[*a*]pyrene R-7,T-8,C-9,C-10-tetrahydrotetrol (ring-$^{13}C_6$, 99%)	100 µg/mL in methanol	Inquire
NEW	CLM-7246-1.2	(+/-)-Benzo[*a*]pyrene R-7,T-8,T-9,C-10-tetrahydrotetrol (ring-$^{13}C_6$, 99%)	100 µg/mL in methanol	Inquire
NEW	CLM-7308-1.2	(+/-)-Benzo[*a*]pyrene R-7,T-8,C-9,T-10-tetrahydrotetrol (ring-$^{13}C_6$, 99%)	100 µg/mL in methanol	Inquire
NEW	CLM-7627-1.2	(+/-)-Benzo[*a*]pyrene R-7,T-8,T-9,T-10-tetrahydrotetrol (ring-$^{13}C_6$, 99%)	100 µg/mL in methanol	Inquire

Hydroxy Polycyclic Aromatic Hydrocarbon (PAH) Standards

	Catalog No.	Compound	Concentration	Amount
	CLM-4860-T-1.2	6-Hydroxychrysene (mix of ring labeling) ($^{13}C_6$, 99%)	50 µg/mL in toluene	1.2 mL
NEW	ULM-7552-1.2	6-Hydroxychrysene (unlabeled)	50 µg/mL in isooctane	1.2 mL
NEW	CLM-6087-1.2	2-Hydroxyfluorene (random-$^{13}C_6$, 99%)	50 µg/mL in toluene	1.2 mL
NEW	ULM-8973-1.2	2-Hydroxyfluorene (unlabeled)	50 µg/mL in toluene	1.2 mL
NEW	CLM-8977-1.2	3-Hydroxyfluorene ($^{13}C_6$, 99%)	50 µg/mL in toluene	1.2 mL
NEW	ULM-8974-1.2	3-Hydroxyfluorene (unlabeled)	50 µg/mL in toluene	1.2 mL
NEW	CLM-7700-1.2	9-Hydroxyfluorene ($^{13}C_6$, 99%)	50 µg/mL in toluene	1.2 mL
NEW	ULM-8975-1.2	9-Hydroxyfluorene (unlabeled)	50 µg/mL in toluene	1.2 mL
NEW	CLM-7701-1.2	1-Hydroxynaphthalene (1-naphthol) ($^{13}C_6$, 99%)	50 µg/mL in toluene	1.2 mL
NEW	ULM-8971-1.2	1-Hydroxynaphthalene (1-naphthol) (unlabeled)	50 µg/mL in toluene	1.2 mL
NEW	CLM-7713-1.2	2-Hydroxynaphthalene (2-naphthol) ($^{13}C_6$, 99%)	50 µg/mL in toluene	1.2 mL
NEW	ULM-8972-1.2	2-Hydroxynaphthalene (2-naphthol) (unlabeled)	50 µg/mL in toluene	1.2 mL
NEW	CLM-7669-1.2	1-Hydroxyphenanthrene ($^{13}C_4$, 99%)	50 µg/mL in toluene	1.2 mL
NEW	ULM-7929-1.2	1-Hydroxyphenanthrene (unlabeled)	50 µg/mL in toluene	1.2 mL
NEW	CLM-8463-T-1.2	2-Hydroxyphenanthrene ($^{13}C_6$, 99%)	50 µg/mL in toluene	1.2 mL
NEW	ULM-8464-T-1.2	2-Hydroxyphenanthrene (unlabeled)	50 µg/mL in toluene	1.2 mL
	CLM-4859-T-1.2	3-Hydroxyphenanthrene ($^{13}C_6$, 99%)	50 µg/mL in toluene	1.2 mL
NEW	ULM-7446-1.2	3-Hydroxyphenanthrene (unlabeled)	50 µg/mL in toluene	1.2 mL
NEW	CLM-7670-1.2	4-Hydroxyphenanthrene ($^{13}C_4$, 99%)	50 µg/mL in toluene	1.2 mL
NEW	ULM-7928-1.2	4-Hydroxyphenanthrene (unlabeled)	50 µg/mL in toluene	1.2 mL
NEW	CLM-9012-1.2	1-Hydroxypyrene ($^{13}C_6$, 99%)	50 µg/mL in toluene	1.2 mL
NEW	ULM-8976-1.2	1-Hydroxypyrene (unlabeled)	50 µg/mL in toluene	1.2 mL

Hydroxy Polycyclic Aromatic Hydrocarbon (PAH) Standard Mixtures

	Catalog No.	Compound	Amount
NEW	ES-5472	CDC OH-PAH Calibration Standards [CS1-CS10]	10 × 0.5 mL in toluene
NEW	ES-5472-CS1	CDC OH-PAH Calibration Standard [CS1]	0.5 mL in toluene
NEW	ES-5472-CS2	CDC OH-PAH Calibration Standard [CS2]	0.5 mL in toluene
NEW	ES-5472-CS3	CDC OH-PAH Calibration Standard [CS3]	0.5 mL in toluene
NEW	ES-5472-CS4	CDC OH-PAH Calibration Standard [CS4]	0.5 mL in toluene
NEW	ES-5472-CS5	CDC OH-PAH Calibration Standard [CS5]	0.5 mL in toluene
NEW	ES-5472-CS6	CDC OH-PAH Calibration Standard [CS6]	0.5 mL in toluene
NEW	ES-5472-CS7	CDC OH-PAH Calibration Standard [CS7]	0.5 mL in toluene
NEW	ES-5472-CS8	CDC OH-PAH Calibration Standard [CS8]	0.5 mL in toluene
NEW	ES-5472-CS9	CDC OH-PAH Calibration Standard [CS9]	0.5 mL in toluene
NEW	ES-5472-CS10	CDC OH-PAH Calibration Standard [CS10]	0.5 mL in toluene

All concentrations are in ng/mL

Unlabeled	IUPAC	CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8	CS9	CS10
1-Hydroxynaphthalene		4	8	20	40	200	400	2000	4000	8000	16,000
2-Hydroxynaphthalene		4	8	20	40	200	400	2000	4000	8000	16,000
2-Hydroxyfluorene		1	2	5	10	50	100	500	1000	–	–
3-Hydroxyfluorene		1	2	5	10	50	100	500	1000	–	–
9-Hydroxyfluorene		1	2	5	10	50	100	500	1000	–	–
1-Hydroxyphenanthrene		1	2	5	10	50	100	500	1000	–	–
2-Hydroxyphenanthrene		1	2	5	10	50	100	500	1000	–	–
3-Hydroxyphenanthrene		1	2	5	10	50	100	500	1000	–	–
4-Hydroxyphenanthrene		1	2	5	10	50	100	500	1000	–	–
1-Hydroxypyrene		1	2	5	10	50	100	500	1000	–	–
Labeled											
1-Hydroxynaphthalene ($^{13}C_6$, 99%)		400	400	400	400	400	400	400	400	400	400
2-Hydroxynaphthalene ($^{13}C_6$, 99%)		400	400	400	400	400	400	400	400	400	400
2-Hydroxyfluorene (random-$^{13}C_6$, 99%)		100	100	100	100	100	100	100	100	100	100
3-Hydroxyfluorene ($^{13}C_6$, 98%)		100	100	100	100	100	100	100	100	100	100
9-Hydroxyfluorene ($^{13}C_6$, 99%)		100	100	100	100	100	100	100	100	100	100
1-Hydroxyphenanthrene ($^{13}C_4$, 99%)		100	100	100	100	100	100	100	100	100	100
2-Hydroxyphenanthrene ($^{13}C_6$, 99%)		100	100	100	100	100	100	100	100	100	100
3-Hydroxyphenanthrene ($^{13}C_6$, 99%)		100	100	100	100	100	100	100	100	100	100
4-Hydroxyphenanthrene ($^{13}C_4$, 99%)		100	100	100	100	100	100	100	100	100	100
1-Hydroxypyrene ($^{13}C_6$, 99%)		100	100	100	100	100	100	100	100	100	100
2,4,4′-TriCB ($^{13}C_{12}$, 99%)	28	100	100	100	100	100	100	100	100	100	100
2,3,3′,4,4′-PentaCB ($^{13}C_{12}$, 99%)	105	100	100	100	100	100	100	100	100	100	100
2,2′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	153	100	100	100	100	100	100	100	100	100	100
2,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	167	100	100	100	100	100	100	100	100	100	100

Hydroxy Polycyclic Aromatic Hydrocarbon (PAH) Standard Mixtures

	Catalog No.	Compound	Amount
NEW	ES-5473-T	CDC OH-PAH Spiking Standard	0.5 mL in toluene

Labeled	(ng/mL)
1-Hydroxynaphthalene ($^{13}C_6$, 99%)	10,000
2-Hydroxynaphthalene ($^{13}C_6$, 99%)	10,000
2-Hydroxyfluorene (random-$^{13}C_6$, 99%)	2500
3-Hydroxyfluorene ($^{13}C_6$, 98%)	2500
9-Hydroxyfluorene ($^{13}C_6$, 99%)	2500
1-Hydroxyphenanthrene ($^{13}C_4$, 99%)	2500
2-Hydroxyphenanthrene ($^{13}C_6$, 99%)	2500
3-Hydroxyphenanthrene ($^{13}C_6$, 99%)	2500
4-Hydroxyphenanthrene ($^{13}C_4$, 99%)	2500
1-Hydroxypyrene ($^{13}C_6$, 99%)	2500

NEW	ES-5474	CDC PCB Recovery Standard for OH-PAHs	1.0 mL in toluene

Labeled	IUPAC	(ng/mL)
2,4,4′-TriCB ($^{13}C_{12}$, 99%)	28	200
2,3,3′,4,4′-PentaCB ($^{13}C_{12}$, 99%)	105	200
2,2′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	153	200
2,3′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%)	167	200

NEW	ES-5484	CDC OH-PAH Native PAR Standard	1.2 mL in toluene

Unlabeled	(ng/mL)
1-Hydroxynaphthalene	4000
2-Hydroxynaphthalene	4000
2-Hydroxyfluorene	1000
3-Hydroxyfluorene	1000
9-Hydroxyfluorene	1000
1-Hydroxyphenanthrene	1000
2-Hydroxyphenanthrene	1000
3-Hydroxyphenanthrene	1000
4-Hydroxyphenanthrene	1000
1-Hydroxypyrene	1000

Isotope-Labeled Polychlorinated Naphthalene (PCN) Standards

	Catalog No.	Compound	PCN	Concentration	Amount
NEW	ECN-5217	2-Monochloronaphthalene ($^{13}C_{10}$, 99%)	2	10 µg/mL in isooctane	1.2 mL
NEW	ECN-5520	1,5-Dichloronaphthalene ($^{13}C_{10}$, 99%)	6	10 µg/mL in isooctane	1.2 mL
NEW	ECN-5575	1,2,3-Trichloronaphthalene ($^{13}C_{10}$, 99%)	13	10 µg/mL in isooctane	Inquire
	ECN-5240	1,2,3,4-Tetrachloronaphthalene ($^{13}C_{10}$, 99%)	27	10 µg/mL in isooctane	1.2 mL
	ECN-5241	1,3,5,7-Tetrachloronaphthalene ($^{13}C_{10}$, 99%)	42	10 µg/mL in isooctane	1.2 mL
	ECN-5250	1,2,3,5,7-Pentachloronaphthalene ($^{13}C_{10}$, 99%)	52	10 µg/mL in isooctane	1.2 mL
	ECN-5260	1,2,3,4,5,7-Hexachloronaphthalene ($^{13}C_{10}$, 99%)	64	10 µg/mL in isooctane	1.2 mL
NEW	ECN-5267	1,2,3,4,5,8-Hexachloronaphthalene ($^{13}C_{10}$, 99%)	65	10 µg/mL in isooctane	1.2 mL
	ECN-5261-A	1,2,3,5,6,7-Hexachloronaphthalene ($^{13}C_{10}$, 99%)	67	10 µg/mL in isooctane	1.2 mL
	ECN-5270-A	1,2,3,4,5,6,7-Heptachloronaphthalene ($^{13}C_{10}$, 99%)	73	10 µg/mL in isooctane	1.2 mL
	ECN-5280	Octachloronaphthalene ($^{13}C_{10}$, 99%)	75	10 µg/mL in isooctane	1.2 mL
NEW	DLM-2005-1.2	2-Chloronaphthalene (D_7, 98%)		100 µg/mL in nonane	1.2 mL
NEW	DLM-2005-0.01			neat	0.01 g
NEW	DLM-2005-0.1			neat	0.1 g

Unlabeled Polychlorinated Naphthalene (PCN) Standards

	Catalog No.	Compound	PCN	Concentration	Amount
	ECN-2610	1-Monochloronaphthalene	1	100 µg/mL in nonane	1 mL
	ECN-2611	2-Monochloronaphthalene	2	100 µg/mL in nonane	1 mL
	ECN-2620	1,2-Dichloronaphthalene	3	100 µg/mL in nonane	1 mL
	ECN-2621	1,4-Dichloronaphthalene	5	100 µg/mL in nonane	1 mL
	ECN-2622	1,5-Dichloronaphthalene	6	100 µg/mL in nonane	1 mL
	ECN-2623	1,8-Dichloronaphthalene	9	100 µg/mL in nonane	1 mL
	ECN-2624	2,3-Dichloronaphthalene	10	100 µg/mL in nonane	1 mL
	ECN-2630	1,2,3-Trichloronaphthalene	13	100 µg/mL in nonane	1 mL
NEW	ECN-2632	1,2,4-Trichloronaphthalene	14	100 µg/mL in nonane	1 mL
NEW	ECN-2631	1,4,6-Trichloronaphthalene	24	100 µg/mL in nonane	1 mL
	ECN-2640	1,2,3,4-Tetrachloronaphthalene	27	100 µg/mL in nonane	1 mL
NEW	ECN-2645	1,2,3,5-Tetrachloronaphthalene	28	100 µg/mL in nonane	1 mL
NEW	ECN-2646	1,2,3,8-Tetrachloronaphthalene	31	100 µg/mL in nonane	1 mL
	ECN-2642	1,2,5,6-Tetrachloronaphthalene	36	100 µg/mL in nonane	1 mL
	ECN-2641	1,3,5,7-Tetrachloronaphthalene	42	100 µg/mL in nonane	1 mL
NEW	ECN-2644	1,4,5,8-Tetrachloronaphthalene	46	100 µg/mL in nonane	1 mL
	ECN-2643	2,3,6,7-Tetrachloronaphthalene	48	100 µg/mL in nonane	1 mL
NEW	ECN-2654	1,2,3,4,5-Pentachloronaphthalene	49	100 µg/mL in nonane	1 mL
	ECN-2652	1,2,3,4,6-Pentachloronaphthalene	50	100 µg/mL in nonane	1 mL
	ECN-2651	1,2,3,5,7-Pentachloronaphthalene	52	100 µg/mL in nonane	1 mL
	ECN-2650	1,2,3,5,8-Pentachloronaphthalene	53	100 µg/mL in nonane	1 mL
	ECN-2653	1,2,3,6,7-Pentachloronaphthalene	54	100 µg/mL in nonane	1 mL
NEW	ECN-2656	1,2,4,5,8-Pentachloronaphthalene	59	100 µg/mL in nonane	1 mL
NEW	ECN-2655	1,2,4,6,7-Pentachloronaphthalene	60	100 µg/mL in nonane	1 mL
NEW	ECN-2668	1,2,3,4,5,6-Hexachloronaphthalene	63	100 µg/mL in nonane	1 mL
NEW	ECN-2669	1,2,3,4,5,7-Hexachloronaphthalene	64	100 µg/mL in nonane	1 mL
NEW	ECN-2667	1,2,3,4,5,8-Hexachloronaphthalene	65	100 µg/mL in nonane	1 mL
	ECN-2660	1,2,3,4,6,7-Hexachloronaphthalene	66	100 µg/mL in nonane	1 mL
	ECN-2663	1,2,3,5,6,7-Hexachloronaphthalene	67	100 µg/mL in nonane	1 mL
	ECN-2664	1,2,3,5,6,8-Hexachloronaphthalene	68	100 µg/mL in nonane	1 mL
	ECN-2662	1,2,3,5,7,8-Hexachloronaphthalene	69	100 µg/mL in nonane	1 mL
	ECN-2665	1,2,3,6,7,8-Hexachloronaphthalene	70	100 µg/mL in nonane	1 mL
	ECN-2666	1,2,4,5,6,8-Hexachloronaphthalene	71	100 µg/mL in nonane	1 mL
	ECN-2661	1,2,4,5,7,8-Hexachloronaphthalene	72	100 µg/mL in nonane	Inquire
	ECN-2670	1,2,3,4,5,6,7-Heptachloronaphthalene	73	100 µg/mL in nonane	1 mL
	ECN-2671	1,2,3,4,5,6,8-Heptachloronaphthalene	74	100 µg/mL in nonane	1 mL
	ECN-2680	Octachloronaphthalene	75	100 µg/mL in nonane	1 mL

Polychlorinated Naphthalene (PCN) Standard Mixtures

	Catalog No.	Compound	Amount
NEW	ECN-5489	PCN Calibration Solutions [CS1-CS7]	7 × 0.5 mL in nonane
NEW	ECN-5489-CS1	PCN Calibration Solution [CS1]	0.5 mL in nonane
NEW	ECN-5489-CS2	PCN Calibration Solution [CS2]	0.5 mL in nonane
NEW	ECN-5489-CS3	PCN Calibration Solution [CS3]	0.5 mL in nonane
NEW	ECN-5489-CS4	PCN Calibration Solution [CS4]	0.5 mL in nonane
NEW	ECN-5489-CS5	PCN Calibration Solution [CS5]	0.5 mL in nonane
NEW	ECN-5489-CS6	PCN Calibration Solution [CS6]	0.5 mL in nonane
NEW	ECN-5489-CS7	PCN Calibration Solution [CS7]	0.5 mL in nonane

All concentrations are in ng/mL

Unlabeled	PCN	CS1	CS2	CS3	CS4	CS5	CS6	CS7
1,2,3,4-TetraCN	27	0.1	0.2	1	2	10	20	100
1,2,3,5,7-PentaCN	52	0.1	0.2	1	2	10	20	100
1,2,3,4,6,7-HexaCN	66	0.1	0.2	1	2	10	20	100
1,2,3,5,6,7-HexaCN	67	0.1	0.2	1	2	10	20	100
1,2,3,5,6,8-HexaCN	68	0.1	0.2	1	2	10	20	100
1,2,3,4,5,6,7-HeptaCN	73	0.1	0.2	1	2	10	20	100
OctaCN	75	0.1	0.2	1	2	10	20	100
Labeled								
1,2,3,4-TetraCN ($^{13}C_{10}$, 99%)	27	10	10	10	10	10	10	10
1,2,3,5,7-PentaCN ($^{13}C_{10}$, 99%)	52	10	10	10	10	10	10	10
1,2,3,4,5,7-HexaCN ($^{13}C_{10}$, 99%)	64	10	10	10	10	10	10	10
1,2,3,5,6,7-HexaCN ($^{13}C_{10}$, 99%)	67	10	10	10	10	10	10	10
1,2,3,4,5,6,7-HeptaCN ($^{13}C_{10}$, 99%)	73	10	10	10	10	10	10	10
OctaCN ($^{13}C_{10}$, 99%)	75	10	10	10	10	10	10	10
1,2,3,4-TetraCDD ($^{13}C_{6}$, 99%)		25	25	25	25	25	25	25

NEW	ECN-5490	PCN Cleanup Solution	5 mL in methanol/isooctane
NEW	ECN-5490-200X-1.2	PCN Cleanup Solution (200X stock)	Inquire

Labeled	PCN	ECN-5490 (ng/mL)	ECN-5490-200X-1.2 (ng/mL)
1,2,3,4-TetraCN ($^{13}C_{10}$, 99%)	27	0.5	100
1,2,3,5,7-PentaCN ($^{13}C_{10}$, 99%)	52	0.5	100
1,2,3,4,5,7-HexaCN ($^{13}C_{10}$, 99%)	64	0.5	100
1,2,3,5,6,7-HexaCN ($^{13}C_{10}$, 99%)	67	0.5	100
1,2,3,4,5,6,7-HeptaCN ($^{13}C_{10}$, 99%)	73	0.5	100
OctaCN ($^{13}C_{10}$, 99%)	75	0.5	100

NEW	ECN-5497	PCN Native PAR Solution	1.2 mL in nonane

Unlabeled	PCN	(ng/mL)
1,2,3,4-TetraCN	27	1000
1,2,3,5,7-PentaCN	52	1000
1,2,3,4,6,7-HexaCN	66	1000
1,2,3,5,6,7-HexaCN	67	1000
1,2,3,5,6,8-HexaCN	68	1000
1,2,3,4,5,6,7-HeptaCN	73	1000
OctaCN	75	1000

Polychlorinated Naphthalene (PCN) Standard Mixtures

Catalog No.	Compound	Amount
ECN-5102	Tetra-Octa PCN Mixture	1.2 mL in isooctane

Labeled	PCN	(ng/mL)
1,2,3,4-TetraCN ($^{13}C_{10}$, 99%)	27	1000
1,3,5,7-TetraCN ($^{13}C_{10}$, 99%)	42	1000
1,2,3,5,7-PentaCN ($^{13}C_{10}$, 99%)	52	1000
1,2,3,5,6,7-HexaCN ($^{13}C_{10}$, 99%)	67	1000
1,2,3,4,5,6,7-HeptaCN ($^{13}C_{10}$, 99%)	73	1000
OctaCN ($^{13}C_{10}$, 99%)	75	1000

NEW	ECN-5558	Mono-Octa PCN Native Mixture	1.2 mL in nonane

Unlabeled	PCN	(ng/mL)
2-MonoCN	2	1000
1,2-DiCN	3	1000
1,4-DiCN	5	1000
1,2,3-TriCN	13	1000
1,4,6-TriCN	24	1000
1,4,5,8-TetraCN	46	1000
1,3,5,7-TetraCN	42	1000
1,2,3,5,7-PentaCN	52	1000
1,2,3,5,8-PentaCN	53	1000
1,2,3,4,6,7-HexaCN	66	1000
1,2,3,5,6,8-HexaCN	68	1000
1,2,3,4,5,6,7-HeptaCN	73	1000
OctaCN	75	1000

Halowax Technical Mixtures

Catalog No.	Compound	Concentration	Amount
ECN-1000	HALOWAX 1000	100 µg/mL in hexane	2 mL
ECN-1013	HALOWAX 1013	100 µg/mL in hexane	2 mL
ECN-1051	HALOWAX 1051	100 µg/mL in hexane	2 mL

Major improvements in air and water quality resulted from focus on the prevention and remediation of priority pollutants. Cleaning up the environment and the products that impact dietary intake will ultimately lead to a cleaner, healthier life for all of us, and future generations. Emerging contaminants, particularly those analyzed by LC-MS, are among the most active areas of CIL's new-product development efforts.

Pharmaceutical and Personal Care Product 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 labeled 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, works 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 IDMS. 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 Standards

From stain-resistant textiles to nonstick surface coatings and much more, poly- and perfluorinated compounds (PFCs) are nearly ubiquitous chemicals in the environment. CIL offers several new labeled and unlabeled 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 its offerings of labeled and unlabeled nitrosamine standards.

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.

Bisphenol Standards

Bisphenol A (BPA) is a synthetic compound that has long been used in the production of polycarbonate plastics and epoxy resins. With recent bans on the use of BPA in certain food and water containers, replacement materials, many of which are alternative bisphenol compounds, are finding larger use. As the list of replacements grows, so too does the list of analytical standards being produced by CIL.

Perfluorokerosene Standards

Mass spectrometers require a reference compound to accurately assign masses and to verify tuning and operating conditions of the instrument. In the late 1960s, Columbia Organic Chemical Company successfully synthesized perfluorokerosene (PFK), and in a short time PFK became the most widely used reference compound in the mass spec community. Because PFK is difficult to synthesize and purify, the last producer halted production of it in 2011. CIL recognized the need for continued production of PFK and has partnered with a new producer, offering low- and high-boiling PFK standards.

Chlorinated Paraffin Standards

Chlorinated paraffins, or chloroalkanes, are industrial chemicals that have been used for many years as coolants, lubricants, plasticizers, and flame retardants. Short chain (C_{10}-C_{13}) chlorinated paraffins (SCCP) have come under increased scrutiny in recent years because of concerns about long-range transport, persistence in the environment, bioaccumulation, and potentially toxic endpoints. In 2006, the European Commission submitted a formal application to include SCCP in the Stockholm Convention. CIL has worked diligently to synthesize single-isomer SCCP standards to assist researchers in what is an extremely difficult analytical process.

Personal Care Product Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	DLM-183-1.2	Benzophenone (D_{10}, 98%)	$C_6D_5COC_6D_5$	100 µg/mL in nonane	1.2 mL
	ULM-8303-1.2	Benzophenone (unlabeled)	$C_6H_5COC_6H_5$	100 µg/mL in nonane	1.2 mL
NEW	CLM-9437-1.2	Decamethylcyclopentasiloxane "D5" (decamethyl-$^{13}C_{10}$, 98%)	$*C_{10}H_{30}O_5Si_5$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9442-1.2	Decamethylcyclopentasiloxane "D5" (unlabeled)	$C_{10}H_{30}O_5Si_5$	100 µg/mL in methanol	1.2 mL
	DLM-4762-1.2	*N,N*-Diethyl-*m*-toluamide (DEET) (dimethyl-D_6, 98%)	$CH_3C_6H_4CON(CH_2CD_3)_2$	100 µg/mL in MeCl	1.2 mL
	DLM-4762-D-1.2			100 µg/mL in dioxane	1.2 mL
	ULM-7975-1.2	*N,N*-Diethyl-*m*-toluamide (DEET) (unlabeled)	$CH_3C_6H_4CON(CH_2CH_3)_2$	100 µg/mL in MeCl	1.2 mL
	ULM-7975-D-1.2			100 µg/mL in dioxane	1.2 mL
NEW	CLM-9438-1.2	Dodecamethylcyclohexasiloxane "D6" (dodecamethyl-$^{13}C_{12}$, 98%) CP 92%	$*C_{12}H_{36}O_6Si_6$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9443-1.2	Dodecamethylcyclohexasiloxane "D6" (unlabeled)	$C_{12}H_{36}O_6Si_6$	100 µg/mL in methanol	1.2 mL
NEW	CLM-9349-1.2	4-Dodecylbenzenesulfonate, sodium salt (ring-$^{13}C_6$, 99%) CP 94%	$*C_6C_{12}H_{29}NaO_3S$	10 µg/mL in methanol	1.2 mL
NEW	ULM-9350-1.2	4-Dodecylbenzenesulfonate, sodium salt (unlabeled)	$C_{18}H_{29}NaO_3S$	10 µg/mL in methanol	1.2 mL
	CLM-8008-1.2	Hexachlorophene ($^{13}C_{13}$, 99%)	$*CH_2[*C_6H(Cl)_3OH]_2$	50 µg/mL in methanol	1.2 mL
	ULM-8009-1.2	Hexachlorophene (unlabeled)	$CH_2[C_6H(Cl)_3OH]_2$	50 µg/mL in methanol	1.2 mL
NEW	CLM-9542-1.2	Hexamethylcyclotrisiloxane "D3" (hexamethyl-$^{13}C_6$, 98%)	$*C_6H_{18}O_3Si_3$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9687-1.2	Hexamethylcyclotrisiloxane "D3" (unlabeled)	$C_6H_{18}O_3Si_3$	100 µg/mL in methanol	1.2 mL
	CLM-4745-1.2	4-Hydroxybenzoic acid (ring-$^{13}C_6$, 99%)	$*C_6CH_6O_3$	1 mg/mL in methanol	1.2 mL
	ULM-8251-1.2	4-Hydroxybenzoic acid (unlabeled)	$C_7H_6O_3$	1 mg/mL in methanol	1.2 mL
	CLM-7885-1.2	Methyl triclosan (2,4,4-trichloro-2-methoxydiphenyl ether) (ring-$^{13}C_{12}$, 99%)	$*C_{12}CH_9Cl_3O_2$	100 µg/mL in nonane	1.2 mL
	ULM-7884-1.2	Methyl triclosan (2,4,4-trichloro-2-methoxydiphenyl ether) (unlabeled)	$C_{12}CH_9Cl_3O_2$	100 µg/mL in nonane	1.2 mL
NEW	CLM-9436-1.2	Octamethylcyclotetrasiloxane "D4" (octamethyl-$^{13}C_8$, 98%)	$*C_8H_{24}O_4Si_4$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9441-1.2	Octamethylcyclotetrasiloxane "D4" (unlabeled)	$C_8H_{24}O_4Si_4$	100 µg/mL in methanol	1.2 mL
NEW	CLM-9849-1.2	Benzyl paraben (benzyl 4-hydroxybenzoate) (ring-$^{13}C_6$, 99%)	$*C_6C_8H_{12}O_3$	1 mg/mL in methanol	1.2 mL
NEW	ULM-9850-1.2	Benzyl paraben (benzyl 4-hydroxybenzoate) (unlabeled)	$C_{14}H_{12}O_3$	1 mg/mL in methanol	1.2 mL
	CLM-8285-1.2	*n*-Butyl paraben (ring-$^{13}C_6$, 99%)	$HO*C_6H_4CO_2(CH_2)_3CH_3$	1 mg/mL in methanol	1.2 mL
	ULM-8287-1.2	*n*-Butyl paraben (unlabeled)	$HOC_6H_4CO_2(CH_2)_3CH_3$	1 mg/mL in methanol	1.2 mL
NEW	CLM-9761-1.2	Ethyl paraben (ethyl 4-hydroxybenzoate) (ring-$^{13}C_6$, 99%)	$*C_6C_3H_{10}O_3$	1 mg/mL in methanol	1.2 mL
NEW	ULM-9760-1.2	Ethyl paraben (ethyl 4-hydroxybenzoate) (unlabeled)	$C_9H_{10}O_3$	1 mg/mL in methanol	1.2 mL
NEW	CLM-9847-1.2	Isobutyl paraben (isobutyl 4-hydroxybenzoate) (ring-$^{13}C_6$, 99%)	$*C_6C_5H_{14}O_3$	1 mg/mL in methanol	1.2 mL
NEW	ULM-9848-1.2	Isobutyl paraben (isobutyl 4-hydroxybenzoate) (unlabeled)	$C_{11}H_{14}O_3$	1 mg/mL in methanol	1.2 mL
NEW	CLM-9845-1.2	Isopropyl paraben (isopropyl 4-hydroxybenzoate) (ring-$^{13}C_6$, 99%)	$*C_6C_4H_{12}O_3$	1 mg/mL in methanol	1.2 mL
NEW	ULM-9846-1.2	Isopropyl paraben (isopropyl 4-hydroxybenzoate) (unlabeled)	$C_{10}H_{12}O_3$	1 mg/mL in methanol	1.2 mL
	CLM-8249-1.2	Methyl paraben (methyl 4-hydroxybenzoate) (ring-$^{13}C_6$, 99%)	$*C_6C_2H_8O_3$	1 mg/mL in methanol	1.2 mL
	ULM-8250-1.2	Methyl paraben (methyl 4-hydroxybenzoate) (unlabeled)	$C_8H_8O_3$	1 mg/mL in methanol	1.2 mL
NEW	CLM-9763-1.2	*n*-Propyl paraben (*n*-propyl 4-hydroxybenzoate) (ring-$^{13}C_6$, 99%)	$*C_6C_4H_{12}O_3$	1 mg/mL in methanol	1.2 mL
NEW	ULM-9762-1.2	*n*-Propyl paraben (*n*-propyl 4-hydroxybenzoate) (unlabeled)	$C_{10}H_{12}O_3$	1 mg/mL in methanol	1.2 mL
	CLM-8525-1.2	Oxybenzone (phenyl-$^{13}C_6$, 99%)	$HOC_6H_3(OCH_3)CO*C_6H_5$	100 µg/mL in acetonitrile	1.2 mL
	ULM-8531-1.2	Oxybenzone (unlabeled)	$HOC_6H_3(OCH_3)COC_6H_5$	100 µg/mL in acetonitrile	1.2 mL

(continued on next page)

Personal Care Product Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	CLM-7286-1.2	Triclocarban (3,4,4′-trichlorocarbanilide) (4′-chlorophenyl-$^{13}C_6$, 99%)	*$C_6C_7H_9Cl_3N_2O$	100 µg/mL in acetonitrile	1.2 mL
	ULM-7968-1.2	Triclocarban (3,4,4′-trichlorocarbanilide) (unlabeled)	$C_{13}H_9Cl_3N_2O$	100 µg/mL in acetonitrile	1.2 mL
	CLM-6779-1.2	Triclosan (2′,4,4′-trichloro-2-hydroxydiphenyl ether)	*$C_{12}H_7Cl_3O_2$	100 µg/mL in nonane	1.2 mL
NEW	CLM-6779-MT-1.2	($^{13}C_{12}$, 99%)		100 µg/mL in MTBE	1.2 mL
	ULM-6935-1.2	Triclosan (2′,4,4′-trichloro-2-hydroxydiphenyl ether)	$C_{12}H_7Cl_3O_2$	100 µg/mL in nonane	1.2 mL
NEW	ULM-6935-MT-1.2	(unlabeled)		100 µg/mL in MTBE	1.2 mL

Sex and Steroidal Hormone Standards

	Catalog No.	Compound	Formula	Concentration	Amount
NEW	DLM-8438-0.001	Aldosterone (2,2,4,6,6,17,21,21-D_8)	$C_{21}D_8H_{20}O_5$	neat	1 mg
NEW	ULM-9134-0.001	Aldosterone (unlabeled) CP 95%	$C_{21}H_{28}O_5$	neat	1 mg
NEW	ULM-9163-0.001	3-α,5-β-Tetrahydroaldosterone (unlabeled)	$C_{21}H_{32}O_5$	neat	1 mg
NEW	CLM-9135-C	4-Androstene-3,17-dione (2,3,4-$^{13}C_3$, 98%)	*$C_3C_{16}H_{26}O_2$	100 µg/mL in methanol	1 mL
NEW	CLM-9135-D			1000 µg/mL in methanol	1 mL
NEW	DLM-8330-0.05	4-Androstene-3,17-dione (2,2,4,6,6-D_5, 98%)	$C_{19}D_5H_{21}O_2$	neat	0.05 g
NEW	ULM-8472-C	4-Androstene-3,17-dione (unlabeled)	$C_{19}H_{26}O_2$	100 µg/mL in methanol	1 mL
NEW	ULM-8472-D			1000 µg/mL in methanol	1 mL
NEW	DLM-9137-0.001	Androsterone glucuronide (2,2,4,4-D_4, 98%)	$C_{25}D_4H_{34}O_8$	neat	1 mg
NEW	ULM-9138-0.005	Androsterone glucuronide (unlabeled)	$C_{25}H_{38}O_8$	neat	5 mg
NEW	DLM-9541-0.01	Chenodeoxycholic acid (2,2,3,4,4,6,6,7,8-D_9, 98%)	$C_{24}D_9H_{31}O_4$	neat	10 mg
NEW	ULM-9540-0.05	Chenodeoxycholic acid (unlabeled)	$C_{24}H_{40}O_4$	neat	50 mg
NEW	DLM-8276-0.1	Cholestenone (2,2,4,6,6-D_5, 98%)	$C_{27}D_5H_{39}O$	neat	0.1 g
NEW	CLM-9139-B	Cholesterol (2,3,4-$^{13}C_3$, 98%)	*$C_3C_{24}H_{46}O$	50 µg/mL in chloroform	1 mL
NEW	CLM-9139-C			100 µg/mL in chloroform	1 mL
NEW	CLM-9587-1.2	Cholesterol (23,24,25,26,27-$^{13}C_5$, 99%)	*$C_5C_{22}H_{46}O$	100 µg/mL in methanol	1.2 mL
	CLM-804-0.1	Cholesterol (3,4-$^{13}C_2$, 99%)	*$C_2C_{25}H_{46}O$	neat	0.1 g
	DLM-2607-0.1	Cholesterol (2,2,3,4,4,6-D_6, 97-98%)	$C_{27}H_{40}D_6O$	neat	0.1 g
	DLM-3057-0.01	Cholesterol (25,26,26,26,27,27,27-D_7, 98%)	$C_{27}H_{39}D_7O$	neat	0.01 g
NEW	ULM-9140-C	Cholesterol (unlabeled)	$C_{27}H_{46}O$	100 µg/mL in chloroform	1 mL
NEW	ULM-9140-D			1000 µg/mL in chloroform	1 mL
NEW	DLM-2611-0.05	Cholic acid (2,2,4,4-D_4, 98%)	$C_{24}H_{36}D_4O_5$	neat	50 mg
NEW	ULM-9543-0.05	Cholic acid (unlabeled)	$C_{24}H_{40}O_5$	neat	50 mg
NEW	DLM-7347-0.01	Corticosterone (2,2,4,6,6,17α,21,21-D_8, 97-98%)	$C_{21}D_8H_{22}O_4$	neat	0.01 g
NEW	DLM-2057-0.01	Cortisol (9,12,12-D_3, 98%)	$C_{21}H_{27}D_3O_5$	neat	0.01 g
	DLM-2218-0.1MG	Cortisol (9,11,12,12-D_4, 98%)	$C_{21}D_4H_{26}O_5$	neat	0.1 mg
NEW	ULM-7823-0.1MG	Cortisol (unlabeled)	$C_{21}H_{30}O_5$	neat	0.1 mg
NEW	ULM-9141-C	Cortisol (unlabeled)	$C_{21}H_{30}O_5$	100 µg/mL in methanol	1 mL
NEW	ULM-9141-D			1000 µg/mL in methanol	1 mL
NEW	DLM-9142-0.001	Cortisone (2,2,4,6,6,12,12-D_7, 98%)	$C_{21}D_7H_{21}O_5$	neat	1 mg
NEW	ULM-9202-0.001	Cortisone (unlabeled)	$C_{21}H_{28}O_5$	neat	1 mg
	DLM-8049-0.005	Dehydroepiandrosterone (DHEA) (2,2,3,4,4,6-D_6, 99%) CP 97%	$C_{19}H_{22}D_6O_2$	neat	5 mg
NEW	ULM-9143-C	Dehydroepiandrosterone (DHEA) (unlabeled)	$C_{19}H_{28}O_2$	100 µg/mL in methanol	1 mL
NEW	ULM-9143-D			1000 µg/mL in methanol	1 mL
NEW	ULM-9144-C	Dehydroepiandrosterone sulfate, sodium salt (DHEAS)	$C_{19}H_{28}O_5S$	100 µg/mL in methanol	1 mL
NEW	ULM-9144-D	(unlabeled)		1000 µg/mL in methanol	1 mL
NEW	DLM-2824-0.01	Deoxycholic acid (2,2,4,4-D_4, 98%)	$C_{24}H_{36}D_4O_4$	neat	10 mg
NEW	DLM-9546-0.01	Deoxycholic acid (2,2,4,4,11,11-D_6, 98%)	$C_{24}H_{34}D_6O_4$	neat	10 mg
NEW	ULM-9545-0.05	Deoxycholic acid (unlabeled)	$C_{24}H_{40}O_4$	neat	50 mg
NEW	DLM-8305-0.01	21-Deoxycortisol (2,2,4,6,6,21,21,21-D_8, 97%)	$C_{21}D_8H_{22}O_4$	neat	0.01 g
NEW	ULM-9145-C	11-Deoxycortisol (unlabeled)	$C_{21}H_{30}O_4$	100 µg/mL in methanol	1 mL
NEW	ULM-9145-D			1000 µg/mL in methanol	1 mL
	DLM-170-D-1.2	Diethylstilbestrol (*cis/trans* mix) (ring-3,3',5,5'-diethyl-1,1,1',1'-D_8, 98%)	$HOC_6D_2H_2(CH_3CD_2)$ $C=C(CD_2CH_3)C_6H_2D_2OH$	100 µg/mL in dioxane	1.2 mL

Sex and Steroidal Hormone Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	ULM-7921-D-1.2	Diethylstilbestrol (*cis/trans* mix) (unlabeled)	$HOC_6H_4(CH_3CH_2)$ $C=C(CH_2CH_3)C_6H_4OH$	100 µg/mL in dioxane	1.2 mL
NEW	CLM-9146-C	5-α-Dihydrotestosterone (2,3,4-$^{13}C_3$, 99%)	$*C_3C_{16}H_{28}O_2$	100 µg/mL in methanol	1 mL
NEW	CLM-9146-D			1000 µg/mL in methanol	1 mL
	CLM-7936-0.1MG	DL-Estradiol (13,14,15,16,17,18-$^{13}C_6$, 99%)	$C_{12}*C_6H_{24}O_2$	neat	0.1 mg
	CLM-7936-1.2			100 µg/mL in methanol	1.2 mL
	CLM-803-1.2	Estradiol (3,4-$^{13}C_2$, 99%)	$*C_2C_{16}H_{24}O_2$	100 µg/mL in acetonitrile	1.2 mL
NEW	DLM-2487-5	Estradiol (2,4,16,16-D_4, 95-97%)	$C_{18}H_{20}D_4O_2$	neat	5 mg
NEW	ULM-7449-0.1MG	Estradiol (unlabeled)	$C_{18}H_{24}O_2$	neat	0.1 mg
	ULM-7449-1.2			100 µg/mL in acetonitrile	1.2 mL
NEW	CLM-9147-C	Estriol (16-α-hydroxyestradiol) (2,3,4-$^{13}C_3$, 99%)	$*C_3C_{15}H_{24}O_3$	100 µg/mL in methanol	1 mL
	DLM-8583-0.1MG	Estriol (2,4,16,17-D_4, 98%) CP 95%	$C_{18}D_4H_{20}O_3$	neat	0.1 mg
	ULM-8218-0.1MG	Estriol (unlabeled)	$C_{18}H_{24}O_3$	neat	0.1 mg
	CLM-7935-0.1MG	DL-Estrone (13,14,15,16,17,18-$^{13}C_6$, 99%)	$C_{12}*C_6H_{22}O_2$	neat	0.1 mg
	CLM-7935-1.2			100 µg/mL in methanol	1.2 mL
NEW	CLM-9148-B	Estrone (2,3,4-$^{13}C_3$, 99%)	$*C_3C_{15}H_{22}O_2$	50 µg/mL in methanol	1 mL
NEW	CLM-9148-C			100 µg/mL in methanol	1 mL
	CLM-673-1.2	Estrone (3,4-$^{13}C_2$, 90%)	$*C_2C_{16}H_{22}O_2$	100 µg/mL in acetonitrile	1.2 mL
NEW	DLM-3976-5	Estrone (2,4,16,16-D_4, 97%)	$C_{18}H_{18}D_4O_2$	neat	5 mg
	ULM-7212-1.2	Estrone (unlabeled)	$C_{18}H_{22}O_2$	100 µg/mL in acetonitrile	1.2 mL
NEW	CLM-8033-0.1MG	DL-Estrone 3-methyl ether (13,14,15,16,17,18-$^{13}C_6$, 99%)	$*C_6C_{13}H_{24}O_2$	neat	0.1 mg
NEW	CLM-8018-0.1MG	DL-Sodium estrone 3-sulfate (13,14,15,16,17,18-$^{13}C_6$, 99%) (12-13%-sodium acetate)	$*C_6C_{12}H_{21}O_5SNa$	neat	0.1 mg
NEW	ULM-8132-0.1MG	Sodium estrone 3-sulfate (unlabeled)	$C_{18}H_{21}O_5SNa$	neat	0.1 mg
	CLM-3375-1.2	Ethynylestradiol (20,21-$^{13}C_2$, 99%)	$*C_2C_{18}H_{24}O_2$	100 µg/mL in acetonitrile	1.2 mL
NEW	DLM-4691-0.01	17-α-Ethynylestradiol (2,4,16,16-D_4, 97-98%)	$C_{20}D_4H_{20}O_2$	neat	0.01 g
	ULM-7211-1.2	Ethynylestradiol (unlabeled)	$C_{20}H_{24}O_2$	100 µg/mL in acetonitrile	1.2 mL
NEW	DLM-9550-0.01	Glycochenodeoxycholic acid (2,2,3,4,4,6,6,7,8-D_9, 98%) CP 97%	$C_{26}D_9H_{34}NO_5$	neat	10 mg
NEW	DLM-2742-0.01	Glycocholic acid (2,2,4,4-D_4, 98%) (contains ~4% water)	$C_{26}D_4H_{39}NO_6$	neat	10 mg
NEW	ULM-9551-0.05	Glycocholic acid (unlabeled)	$C_{26}H_{43}NO_6$	neat	50 mg
NEW	DLM-9553-0.01	Glycodeoxycholic acid (2,2,4,4,11,11-D_6, 98%)	$C_{26}D_6H_{37}NO_5$	neat	10 mg
NEW	DLM-9554-0.01	Glycodeoxycholic acid (2,2,4,4-D_4, 98%)	$C_{26}D_4H_{39}NO_5$	neat	10 mg
NEW	ULM-9552-0.05	Glycodeoxycholic acid, sodium salt (unlabeled)	$C_{26}H_{42}NNaO_5$	neat	50 mg
NEW	DLM-9556-0.01	Glycolithocholic acid (2,2,4,4-D_4, 98%)	$C_{26}D_4H_{39}NO_4$	neat	10 mg
NEW	ULM-9555-0.05	Glycolithocholic acid, sodium salt (unlabeled)	$C_{26}H_{42}NNaO_4$	neat	50 mg
NEW	DLM-9558-0.01	Glycoursodeoxycholic acid (2,2,4,4-D_4, 98%) CP 97%	$C_{26}D_4H_{39}NO_5$	neat	10 mg
NEW	ULM-9557-0.05	Glycoursodeoxycholic acid (unlabeled)	$C_{26}H_{43}NO_5$	neat	50 mg
NEW	DLM-9150-0.001	18-Hydroxycorticosterone (9,11,12,12-D_4, 98%) CP 95%	$C_{21}D_4H_{26}O_5$	neat	1 mg
NEW	ULM-9151-0.001	18-Hydroxycorticosterone (unlabeled) CP 95%	$C_{21}H_{30}O_5$	neat	1 mg
NEW	DLM-9149-0.001	6-β-Hydroxycortisol (9,11,12,12-D_4, 98%) CP 97%	$C_{21}D_4H_{26}O_6$	neat	1 mg
	CLM-8012-0.1MG	DL-2-Hydroxyestradiol (13,14,15,16,17,18-$^{13}C_6$, 99%)	$*C_6C_{12}H_{24}O_3$	neat	0.1 mg
	ULM-8135-0.1MG	2-Hydroxyestradiol (unlabeled)	$C_{18}H_{24}O_3$	neat	0.1 mg
NEW	CLM-9153-0.1MG	16-α-Hydroxyestrone (2,3,4-$^{13}C_3$, 99%)	$*C_3C_{15}H_{22}O_3$	neat	0.1 mg
	CLM-8011-0.1MG	DL-2-Hydroxyestrone (13,14,15,16,17,18-$^{13}C_6$, 99%)	$*C_6C_{12}H_{22}O_3$	neat	0.1 mg
	ULM-8134-0.1MG	2-Hydroxyestrone (unlabeled)	$C_{18}H_{22}O_3$	neat	0.1 mg
	CLM-8013-0.1MG	DL-4-Hydroxyestrone (13,14,15,16,17,18-$^{13}C_6$, 99%)	$*C_6C_{12}H_{22}O_3$	neat	0.1 mg
	ULM-8261-0.1MG	4-Hydroxyestrone (unlabeled) CP 96%	$C_{18}H_{22}O_3$	neat	0.1 mg
	CLM-8016-0.1MG	DL-2-Hydroxyestrone-3-methyl ether (13,14,15,16,17,18-$^{13}C_6$, 99%)	$C_{13}*C_6H_{24}O_3$	neat	0.1 mg
	ULM-8133-0.1MG	2-Hydroxyestrone-3-methyl ether (unlabeled)	$C_{19}H_{24}O_3$	neat	0.1 mg
NEW	CDLM-9154-C	17α-Hydroxypregnenolone	$*C_2C_{19}D_2H_{30}O_3$	100 µg/mL in methanol	1 mL
NEW	CDLM-9154-D	(20,21-$^{13}C_2$, 99%; 16,16-D_2, 99%)		1000 µg/mL in methanol	1 mL
NEW	ULM-9155-C	17α-Hydroxypregnenolone (unlabeled)	$C_{21}H_{32}O_3$	100 µg/mL in methanol	1 mL
NEW	ULM-9155-D			1000 µg/mL in methanol	1 mL
NEW	CLM-9157-C	17α-Hydroxyprogesterone (2,3,4-$^{13}C_3$, 98%)	$*C_3C_{18}H_{30}O_3$	100 µg/mL in methanol	1 mL
NEW	CLM-9157-D			1000 µg/mL in methanol	1 mL

(continued on next page)

Sex and Steroidal Hormone Standards

	Catalog No.	Compound	Formula	Concentration	Amount
NEW	DLM-6598-0.01	17-Hydroxyprogesterone (2,2,4,6,6,21,21,21-D_8, 98%)	$C_{21}H_{22}D_8O_3$	neat	0.01 g
NEW	ULM-9156-C	17α-Hydroxyprogesterone (unlabeled) CP 95%	$C_{21}H_{30}O_3$	100 µg/mL in methanol	1 mL
NEW	ULM-9156-D			1000 µg/mL in methanol	1 mL
NEW	DLM-9560-0.05	Lithocholic acid (2,2,4,4-D_4, 98%)	$C_{24}D_4H_{36}O_3$	neat	50 mg
NEW	ULM-9559-0.05	Lithocholic acid (unlabeled)	$C_{24}H_{40}O_3$	neat	50 mg
	CLM-8015-0.1MG	DL-2-Methoxyestradiol (13,14,15,16,17,18-$^{13}C_6$, 99%)	$*C_6C_{13}H_{26}O_3$	neat	0.1 mg
	ULM-8137-0.1MG	2-Methoxyestradiol (unlabeled)	$C_{19}H_{26}O_3$	neat	0.1 mg
NEW	CLM-8019-0.1MG	DL-4-Methoxyestradiol (13,14,15,16,17,18-$^{13}C_6$, 99%)	$C_{13}*C_6H_{26}O_3$	neat	0.1 mg
NEW	ULM-8136-0.1MG	4-Methoxyestradiol (unlabeled)	$C_{19}H_{26}O_3$	neat	0.1 mg
	CLM-8014-0.1MG	DL-2-Methoxyestrone (13,14,15,16,17,18-$^{13}C_6$, 99%)	$*C_6C_{13}H_{24}O_3$	neat	0.1 mg
	ULM-8263-0.1MG	2-Methoxyestrone (unlabeled)	$C_{19}H_{24}O_3$	neat	0.1 mg
	CLM-8017-0.1MG	DL-4-Methoxyestrone (13,14,15,16,17,18-$^{13}C_6$, 99%)	$C_{13}*C_6H_{24}O_3$	neat	0.1 mg
	ULM-8262-0.1MG	4-Methoxyestrone (unlabeled)	$C_{19}H_{24}O_3$	neat	0.1 mg
NEW	CLM-2468-0.01	Norethindrone (ethynyl-$^{13}C_2$, 99%)	$*C_2C_{18}H_{26}O_2$	neat	0.01 g
NEW	DLM-3979-1.2	19-Nortestosterone (16,16,17-D_3, 98%)	$C_{18}H_{23}D_3O_2$	100 µg/mL in methanol	1.2 mL
	DLM-3979-5			neat	5 mg
NEW	ULM-4841-1.2	19-Nortestosterone (unlabeled)	$C_{18}H_{26}O_2$	100 µg/mL in methanol	1.2 mL
NEW	DLM-3754-0.01	5-α-Pregnan-3-α-ol-20-one (17,21,21,21-D_4, 96-98%) CP 95%+	$C_{21}H_{30}D_4O_2$	neat	0.01 g
NEW	DLM-2294-0.01	5-β-Pregnan-3-α-ol-20-one (17,21,21,21-D_4, 96-98%)	$C_{21}H_{30}D_4O_2$	neat	0.01 g
NEW	DLM-3816-0.01	5-α-Pregnane-3,20-dione (1,2,4,5,6,7-D_6, 95%)	$C_{21}H_{26}D_6O_2$	neat	0.01 g
NEW	DLM-3910-0.01	5-α-Pregnane-3-α,21-diol-20-one (17,21,21-D_3, 95%)	$C_{21}H_{31}D_3O_3$	neat	0.01 g
NEW	CDLM-9158-0.001	Pregnenolone (20,21-$^{13}C_2$, 99%; 16,16-D_2, 98%)	$*C_2C_{19}D_2H_{30}O_2$	neat	1 mg
NEW	ULM-9159-0.001	Pregnenolone (unlabeled)	$C_{21}H_{32}O_2$	neat	1 mg
NEW	CDLM-9160-0.001	Pregnenolone sulfate, sodium salt (20,21-$^{13}C_2$, 99%; 16,16-D_2, 98%)	$*C_2C_{19}D_2H_{29}NaO_5S$	neat	1 mg
NEW	ULM-9161-0.001	Pregnenolone sulfate, sodium salt (unlabeled)	$C_{21}H_{31}NaO_5S$	neat	1 mg
NEW	CLM-9162-B	Progesterone (2,3,4-$^{13}C_3$, 99%)	$*C_3C_{18}H_{30}O_2$	50 µg/mL in acetonitrile	1 mL
NEW	CLM-9162-C			100 µg/mL in acetonitrile	1 mL
NEW	CLM-457-0.01	Progesterone (3,4-$^{13}C_2$, 90%)	$*C_2C_{19}H_{30}O_2$	neat	0.01 g
NEW	DLM-7953-1.2	Progesterone (2,2,4,6,6,17α,21,21,21-D_9, 98%)	$C_{21}D_9H_{21}O_2$	100 µg/mL in dioxane	1.2 mL
	ULM-8219-1.2	Progesterone (unlabeled)	$C_{21}H_{30}O_2$	100 µg/mL in dioxane	1.2 mL
NEW	DLM-9562-0.01	Taurochenodeoxycholic acid, sodium salt (2,2,4,4-D_4, 98%) CP 97%	$C_{26}D_4H_{40}NNaO_6S$	neat	10 mg
NEW	DLM-9563-0.005	Taurochenodeoxycholic acid, sodium salt (2,2,3,4,4,6,6,7,8-D_9, 98%)	$C_{26}D_9H_{35}NNaO_6S$	neat	5 mg
NEW	ULM-9561-0.05	Taurochenodeoxycholic acid, sodium salt (unlabeled)	$C_{26}H_{44}NNaO_6S$	neat	50 mg
NEW	DLM-9568-0.01	Taurodeoxycholic acid, sodium salt (2,2,4,4-D_4, 98%)	$C_{26}D_4H_{40}NNaO_6S$	neat	10 mg
NEW	DLM-9567-0.005	Taurodeoxycholic acid, sodium salt (2,2,4,4,11,11-D_6, 98%)	$C_{26}D_6H_{38}NNaO_6S$	neat	5 mg
NEW	DLM-9570-0.01	Taurolithocholic acid, sodium salt (2,2,4,4-D_4, 98%)	$C_{26}D_4H_{40}NO_5SNa$	neat	10 mg
NEW	ULM-9569-0.05	Taurolithocholic acid, sodium salt (unlabeled)	$C_{26}H_{44}NO_5SNa$	neat	50 mg
NEW	CLM-159-0.01	Testosterone (3,4-$^{13}C_2$, 99%)	$*C_2C_{17}H_{28}O_2$	neat	0.01 g
NEW	CLM-9164-C	Testosterone (2,3,4-$^{13}C_3$, 99%)	$*C_3C_{16}H_{28}O_2$	100 µg/mL in methanol	1 mL
	DLM-683-1.2	Testosterone (1,2-D_2, 98%)	$C_{19}D_2H_{26}O_2$	100 µg/mL in MeCl	1.2 mL
	DLM-8085-1.2	Testosterone (2,2,4,6,6-D_5, 98%)	$C_{19}D_5H_{23}O_2$	100 µg/mL in MeCl	1.2 mL
	DLM-8085-D-1.2			100 µg/mL in dioxane	1.2 mL
NEW	COLM-9061-1.2	Testosterone (3,4-$^{13}C_2$, 99%; 17-^{18}O, 98%)	$*C_2C_{17}H_{28}*OO$	100 µg/mL in MeCl	1.2 mL
	ULM-8081-1.2	Testosterone (unlabeled)	$C_{19}H_{28}O_2$	100 µg/mL in MeCl	1.2 mL
	ULM-8081-D-1.2			100 µg/mL in dioxane	1.2 mL
	CLM-6725-0.1MG	L-Thyroxine (tyrosine-ring-$^{13}C_6$, 99%) CP 90%	$*C_6C_9H_{11}I_4NO_4$	neat	0.1 mg
NEW	CLM-8931-0.1MG	L-Thyroxine (ring-$^{13}C_{12}$, 99%) CP 97%	$HO*C_6H_2(I)_2O*C_6H_2(I)_2$ $CH_2CH(NH_2)CO_2H$	neat	0.1 mg
NEW	ULM-8184-0.2MG	L-Thyroxine (unlabeled)	$C_{15}H_{11}I_4NO_4$	neat	0.2 mg
NEW	DLM-9574-0.05	Ursodeoxycholic acid (2,2,4,4-D_4, 98%)	$C_{24}D_4H_{36}O_4$	neat	50 mg
NEW	ULM-9573-0.05	Ursodeoxycholic acid (unlabeled)	$C_{24}H_{40}O_4$	neat	50 mg

Prescription and Nonprescription Drug Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	CNLM-3726-1.2	Acetaminophen (acetyl-$^{13}C_2$, 99%; ^{15}N, 98%)	$*CH_3*CO*NHC_6H_4OH$	100 µg/mL in acetonitrile	1.2 mL
	ULM-7629-1.2	Acetaminophen (unlabeled)	$CH_3CONHC_6H_4OH$	100 µg/mL in acetonitrile	1.2 mL
	DLM-3008-1.2	Amitriptyline·HCl (*N,N*-dimethyl-D_6, 98%)	$C_{20}H_{17}D_6N{\cdot}HCl$	100 µg/mL in methanol	1.2 mL
	ULM-8350-1.2	Amitriptyline·HCl (unlabeled)	$C_{20}H_{23}N{\cdot}HCl$	100 µg/mL in methanol	1.2 mL
	CLM-514-1.2	Caffeine (trimethyl-$^{13}C_3$, 99%)	$*C_3C_5H_{10}N_4O_2$	100 µg/mL in methanol	1.2 mL
	ULM-7653-1.2	Caffeine (unlabeled)	$C_8H_{10}N_4O_2$	100 µg/mL in methanol	1.2 mL
	DLM-2806-1.2	Carbamazepine (D_{10}, 98%)	$C_{15}D_{10}H_2N_2O$	100 µg/mL in acetonitrile-D_3	1.2 mL
	ULM-6581-1.2	Carbamazepine (unlabeled) CP 97%	$C_{15}H_{12}N_2O$	100 µg/mL in acetonitrile	1.2 mL
	DLM-1287-1.2	Clonidine (4,4,5,5-imidazoline-D_4, 98%)	$C_9H_5D_4N_3Cl_2$	100 µg/mL in methanol	1.2 mL
	ULM-8349-1.2	Clonidine (unlabeled)	$C_9H_9N_3Cl_2$	100 µg/mL in methanol	1.2 mL
	C-041	Codeine (D_6, 98%)	$C_{18}H_{15}D_6NO_3$	1.0 mg/mL in methanol	1 mL
	C-006	Codeine (unlabeled)	$C_{18}H_{21}NO_3$	1.0 mg/mL in methanol	1 mL
NEW	DLM-1819-1.2	DL-Cotinine (methyl-D_3, 98%)	$C_{10}H_9D_3N_2O$	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-9614-1.2	Cotinine (unlabeled)	$C_{10}H_{12}N_2O$	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-9614-W-1.2			100 µg/mL in water	1.2 mL
	D-902	Diazepam (D_5, 98%)	$C_{16}H_7D_5N_2O{\cdot}HCl$	100 µg/mL in methanol	1 mL
	D-907	Diazepam (unlabeled)	$C_{16}H_{12}N_2O{\cdot}HCl$	1.0 mg/mL in methanol	1 mL
NEW	DLM-9974-1.2	Diclofenac sodium (D_4, 98%)	$C_{14}D_4H_6Cl_2NNaO_2$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9975-1.2	Diclofenac sodium (unlabeled)	$C_{14}H_{10}Cl_2NNaO_2$	100 µg/mL in methanol	1.2 mL
	CNLM-411-1.2	5,5-Diphenylhydantoin (2-^{13}C, 99%; 1,3-$^{15}N_2$, 98%)	$*CC_{14}H_{12}*N_2O_2$	100 µg/mL in methanol	1.2 mL
	ULM-8533-1.2	5,5-Diphenylhydantoin (unlabeled)	$C_{15}H_{12}N_2O_2$	100 µg/mL in methanol	1.2 mL
	F-919	Fluoxetine oxalate (D_6, 98%)	$C_{17}H_{12}D_6F_3NO{\cdot}C_2H_2O_4$	100 µg/mL in methanol	1 mL
	F-918	Fluoxetine·HCl (unlabeled)	$C_{17}H_{18}F_3NO{\cdot}HCl$	1.0 mg/mL in methanol	1 mL
	DLM-8221-1.2	Gemfibrozil (2,2-dimethyl-D_6, 98%)	$C_{15}D_6H_{16}O_3$	100 µg/mL in *p*-dioxane	1.2 mL
	ULM-8225-1.2	Gemfibrozil (unlabeled)	$C_{15}H_{22}O_3$	100 µg/mL in *p*-dioxane	1.2 mL
	CLM-6943-1.2	Ibuprofen (propionic-$^{13}C_3$, 99%)	$*C_3C_{10}H_{18}O_2$	100 µg/mL in acetonitrile	1.2 mL
	ULM-7275-1.2	Ibuprofen (unlabeled)	$C_{13}H_{18}O_2$	100 µg/mL in acetonitrile	1.2 mL
	DLM-3035-1.2	Imipramine·HCl (2,4,6,8-D_4, 98%)	$C_{19}H_{20}D_4N_2{\cdot}HCl$	100 µg/mL in methanol	1.2 mL
	I-902	Imipramine (unlabeled)	$C_{19}H_{24}N_2$	1.0 mg/mL in methanol	1 mL
	L-902	Lorazepam (D_4, 98%)	$C_{15}H_6D_4N_2O_2Cl_2$	100 µg/mL in acetonitrile	1 mL
	L-901	Lorazepam (unlabeled)	$C_{15}H_{10}N_2O_2Cl_2$	1.0 mg/mL in acetonitrile	1 mL
	CDLM-7665-1.2	Naproxen (methyl-^{13}C, 99% methyl-D_3, 98%)	$*CC_{13}D_3H_{11}O_3$	100 µg/mL in acetonitrile	1.2 mL
	ULM-7709-1.2	Naproxen (unlabeled)	$C_{14}H_{14}O_3$	100 µg/mL in acetonitrile	1.2 mL
NEW	CNLM-8223-1.2	Nitrofurazone (carbonyl-^{13}C, 99%; hydrazine-$^{15}N_2$, 98%) CP 97%+	$*CC_5H_6*N_2N_2O_4$		Inquire
NEW	ULM-8234	Nitrofurazone (unlabeled)	$C_6H_6N_4O_4$		Inquire
	N-922	Norfluoxetine oxalate (D_6, 98%)	$C_{16}H_{10}D_6F_3NO{\cdot}C_2H_2O_4$	100 µg/mL in methanol	1 mL
	N-923	Norfluoxetine oxalate (unlabeled)	$C_{16}H_{16}F_3NO{\cdot}C_2H_2O_4$	1.0 mg/mL in methanol	1 mL
	DLM-3039-1MG	Phenylbutazone (diphenyl-D_{10}, 98%)	$C_{19}D_{10}H_{10}N_2O_2$	neat	1 mg
NEW	DLM-3039-0.05			neat	0.05 g
NEW	DLM-3039-0.1			neat	0.1 g
	ULM-7378-1MG	Phenylbutazone (unlabeled)	$C_{19}H_{20}N_2O_2$	neat	1 mg
	CLM-7892	Resorcinol ($^{13}C_6$, 99%)	$*C_6H_6O_2$		Inquire
	CLM-8370-1.2	Thiabendazole (ring-$^{13}C_6$, 99%)	$C_4*C_6H_7N_3S$	100 µg/mL in acetonitrile	1.2 mL
	ULM-8371-1.2	Thiabendazole (unlabeled)	$C_{10}H_7N_3S$	100 µg/mL in acetonitrile	1.2 mL
NEW	DLM-6861-MT-1.2	Warfarin (phenyl-D_5, 98%)	$C_{19}H_{11}D_5O_4$	100 µg/mL in MTBE	1.2 mL
NEW	ULM-7242-MT-1.2	Warfarin (unlabeled)	$C_{19}H_{16}O_4$	100 µg/mL in MTBE	1.2 mL

Veterinary and Human Antibiotic Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	CLM-7407-1MG	Amoxicillin·3H_2O (phenyl-$^{13}C_6$, 99%)	*$C_6C_{10}H_{19}N_3O_5S·3H_2O$	neat	1 mg
	DLM-119-1.2	(+/-)-Chloramphenicol (ring-D_4, benzyl-D_1, 98%)	$NO_2(C_6D_4)CD(OH)CH(NHCOCHCl_2)CH_2OH$	100 µg/mL in acetonitrile	1.2 mL
	ULM-6687-1.2	(+/-)-Chloramphenicol (unlabeled)	$NO_2(C_6H_4)CH(OH)CH(NHCOCHCl_2)CH_2OH$	100 µg/mL in acetonitrile	1.2 mL
	CNLM-7539-1.2	Ciprofloxacin·HCl (2,3,carboxyl-$^{13}C_3$, 99%; quinoline-^{15}N, 98%)	*$C_3C_{14}H_{18}F*NN_2O_3·HCl$	100 µg/mL in methanol	1.2 mL
	ULM-7710-1.2	Ciprofloxacin·HCl (unlabeled)	$C_{17}H_{18}FN_3O_3·HCl$	100 µg/mL in methanol	1.2 mL
NEW	CLM-3672-MT-1.2	Erythromycin (90-95% Erythromycin A) (*N,N*-dimethyl-$^{13}C_2$, ~90%)	*$C_2C_{35}H_{67}NO_{13}$	100 µg/mL in MTBE	1.2 mL
NEW	ULM-4322-MT-1.2	Erythromycin (unlabeled)	$C_{37}H_{67}NO_{13}$	100 µg/mL in MTBE	1.2 mL
	CLM-3045-1.2	Sulfamethazine (phenyl-$^{13}C_6$, 90%)	$H_2N*C_6H_4SO_2NH(C_6N_2H_7)$	100 µg/mL in acetonitrile	1.2 mL
	ULM-7220-1.2	Sulfamethazine (unlabeled)	$H_2NC_6H_4SO_2NH(C_6N_2H_7)$	100 µg/mL in acetonitrile	1.2 mL
	CLM-6944-1.2	Sulfamethoxazole (ring-$^{13}C_6$, 99%)	$C_4*C_6H_{11}N_3O_3S$	100 µg/mL in acetonitrile	1.2 mL
	ULM-7527-1.2	Sulfamethoxazole (unlabeled)	$C_{10}H_{11}N_3O_3S$	100 µg/mL in acetonitrile	1.2 mL
	CLM-7988-A-1.2	Trimethoprim ($^{13}C_3$, 99%)	*$C_3C_{11}H_{18}N_4O_3$	50 µg/mL in methanol	1.2 mL
	ULM-7989-A-1.2	Trimethoprim (unlabeled)	$C_{14}H_{18}N_4O_3$	50 µg/mL in methanol	1.2 mL

Tobacco-Specific Nitrosamines and Other Tobacco-Related Standards

	Catalog No.	Compound	Formula	Concentration	Amount
NEW	CLM-6651-1.2	Anabasine (2,2′3,4,5,6-$^{13}C_6$, 99%)	*$C_6C_4H_{14}N_2$	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-7281-1.2	Anabasine (unlabeled)	$C_{10}H_{14}N_2$	0.1 µg/mL in acetonitrile	1.2 mL
NEW	CLM-6652-1.2	Anatabine (2,2′,3,4,5,6-$^{13}C_6$, 99%)	*$C_6C_4H_{12}N_2$	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-7282-1.2	Anatabine (unlabeled)	$C_{10}H_{12}N_2$	0.1 µg/mL in acetonitrile	1.2 mL
NEW	CLM-9692-1.2	DL-Cotinine (2′,3′,4′-$^{13}C_3$, 99%) CP 97%	*$C_3C_7H_{12}N_2O$	100 µg/mL in water	1.2 mL
NEW	DLM-1819-1.2	DL-Cotinine (methyl-D_3, 98%)	$C_{10}D_3H_9N_2O$	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-9614-1.2	Cotinine (unlabeled)	$C_{10}H_{12}N_2O$	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-9614-W-1.2			100 µg/mL in water	1.2 mL
	CLM-6023-1.2	4-Methylumbelliferone (2,3,4,methyl-$^{13}C_4$, 99%)	*$C_4C_6H_8O_3$	100 µg/mL in acetonitrile	1.2 mL
	ULM-7309-1.2	4-Methylumbelliferone (unlabeled)	$C_{10}H_8O_3$	100 µg/mL in acetonitrile	1.2 mL
NEW	CLM-6705-1.2	NAB (*N*′-Nitrosoanabasine) ($^{13}C_6$, 99%)	*$C_6C_4H_{13}N_3O$	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-7168-1.2	NAB (*N*′-Nitrosoanabasine) (unlabeled)	$C_{10}H_{13}N_3O$	0.5 mg/mL in acetonitrile	1.2 mL
	ULM-7168-4X-1.2			2 mg/mL in acetonitrile	1.2 mL
NEW	CLM-6704-1.2	NAT (*N*′-Nitrosoanatabine) ($^{13}C_6$, 99%) CP 95%	*$C_6C_4H_{11}N_3O$	100 µg/mL in acetonitrile	1.2 mL
	ULM-7207-1.2	NAT (*N*′-Nitrosoanatabine) (unlabeled)	$C_{10}H_{11}N_3O$	2 mg/mL in acetonitrile	1.2 mL
NEW	CLM-3914-1.2	DL-Nicotine (3′,4′,5′-$^{13}C_3$, 99%)	*$C_3C_7H_{14}N_2$	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-9547-1.2	Nicotine (unlabeled)	$C_{10}H_{14}N_2$	100 µg/mL in acetonitrile	1.2 mL
NEW	CLM-4556-1.2	NNAL (4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol) (1,2′,3′,4′,5′,6′-$^{13}C_6$, 99%)	*$C_6C_4H_{15}N_3O_2$	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-9434-1.2	NNAL (4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol)	$C_{10}H_{15}N_3O_2$	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-9434-20X-1.2	(unlabeled)		2 mg/mL in acetonitrile	1.2 mL
	CLM-4555-1.2	NNK (Nicotine-derived nitrosamine ketone) (1,2′,3′,4′,5′,6′-$^{13}C_6$, 99%)	*$C_6C_4H_{13}N_3O_2$	100 µg/mL in nonane/ethanol (9:1)	1.2 mL
NEW	ULM-8987-1.2	NNK (Nicotine-derived nitrosamine ketone) (unlabeled)	$C_{10}H_{13}N_3O_2$	100 µg/mL in nonane/ethanol (9:1)	1.2 mL
NEW	ULM-8987-20X-1.2			2 mg/mL in acetonitrile	1.2 mL
	CLM-4557-1.2	NNN (*N*-Nitrosonornicotine) (2,2′,3,4,5,6-$^{13}C_6$, 99%)	*$C_6C_3H_{11}N_3O$	100 µg/mL in nonane/ethanol (9:1)	1.2 mL
NEW	DLM-7474-1.2	NNN (*N*-Nitrosonornicotine) (2,4,5,6-D_4, 98%)	$C_9D_4H_7N_3O$	0.1 mg/mL in acetonitrile	1.2 mL
NEW	ULM-9406-1.2	NNN (*N*-Nitrosonornicotine) (unlabeled)	$C_9H_{11}N_3O$	0.1 mg/mL in acetonitrile	1.2 mL
NEW	ULM-9406-20X-1.2			2 mg/mL in acetonitrile	1.2 mL
NEW	CLM-4896-1.2	DL-Norcotinine (3′,4′,5′-$^{13}C_3$, 99%)	*$C_3C_6H_{10}N_2O$	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-9615-1.2	Norcotinine (unlabeled)	$C_9H_{10}N_2O$	100 µg/mL in acetonitrile	1.2 mL
NEW	CLM-4892-1.2	DL-Nornicotine (3′,4′,5′-$^{13}C_3$, 99%)	*$C_3C_6H_{12}N_2$	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-2154-1.2	Nornicotine (unlabeled)	$C_9H_{12}N_2$	100 µg/mL in acetonitrile	1.2 mL

Food and Drinking Water Impurity Standards

Catalog No.	Compound	Formula	Concentration	Amount
CLM-813-1.2	Acrylamide (+100 ppm hydroquinone) (1,2,3-$^{13}C_3$, 99%)	H_2*C=*CH*$CONH_2$	1 mg/mL in methanol	1.2 mL
ULM-6721-1.2	Acrylamide (+100 ppm hydroquinone) (unlabeled)	H_2C=$CHCONH_2$	1 mg/mL in methanol	1.2 mL
DLM-7170-1.2	1-Aminohydantoin hydrochloride (AHD) (5,5-D_2, 98%)	$C_3H_3D_2N_3O_2Cl$	100 µg/mL in acetonitrile-D_3	1.2 mL
ULM-7188-1.2	1-Aminohydantoin hydrochloride (AHD) (unlabeled)	$C_3H_5N_3O_2$·HCl	100 µg/mL in methanol	1.2 mL
DLM-7171-1.2	3-Amino-2-oxazolidone (AOZ) (ring-D_4, 98%)	$C_3H_2D_4N_2O_2$	100 µg/mL in acetonitrile-D_3	1.2 mL
ULM-7189-1.2	3-Amino-2-oxazolidone (AOZ) (unlabeled)	$C_3H_6N_2O_2$·HCl	100 µg/mL in methanol	1.2 mL
DLM-7172-1.2	5-(4-Morpholinylmethyl)-3-amino-2-oxazolidinone (AMOZ) (4,4,5,5′,5′-D_5, 98%)	$C_8H_{10}D_5N_3O_3$	100 µg/mL in acetonitrile-D_3	1.2 mL
ULM-7190-1.2	5-(4-Morpholinylmethyl)-3-amino-2-oxazolidinone (AMOZ) (unlabeled)	$C_8H_{15}N_3O_3$	100 µg/mL in methanol	1.2 mL
CLM-8589-1.2	Ammelide (ring-$^{13}C_3$, 99%)	*$C_3H_4N_4O_2$	100 µg/mL in water/ diethylamine (80/20 v/v)	1.2 mL
ULM-8590-1.2	Ammelide (unlabeled)	$C_3H_4N_4O_2$	100 µg/mL in water/ diethylamine (80/20 v/v)	1.2 mL
CLM-8316-1.2	Ammeline (desethyldesisopropylhydroxyatrazine) (ring-$^{13}C_3$, 99%)	*$C_3H_5N_5O$	100 µg/mL in water/ diethylamine (80/20 v/v)	1.2 mL
ULM-8323-1.2	Ammeline (desethyldesisopropylhydroxyatrazine) (unlabeled)	$C_3H_5N_5O$	100 µg/mL in water/ diethylamine (80/20 v/v)	1.2 mL
CLM-4748-1.2	1,6-Anhydro-β-D-glucose (levoglucosan) ($^{13}C_6$, 98%)	*$C_6H_{10}O_5$	100 µg/mL in DMSO	1.2 mL
ULM-8000-1.2	1,6-Anhydro-β-D-glucose (levoglucosan) (unlabeled)	$C_6H_{10}O_5$	100 µg/mL in DMSO	1.2 mL
DLM-119-1.2	(+/-)-Chloramphenicol (ring-D_4, benzyl-D_1, 98%)	$NO_2C_6D_4C_5DH_5O_3NCl_2$	100 µg/mL in acetonitrile	1.2 mL
ULM-6687-1.2	(+/-)-Chloramphenicol (unlabeled)	$NO_2C_6H_4C_5H_6O_3NCl_2$	100 µg/mL in acetonitrile	1.2 mL
DLM-4633-1.2	3-Chloro-1,2-propanediol (~10% 2-chloro-1,3-propanediol)(propane-D_5, 98%)	$ClCD_2CDOHCD_2OH$	1 mg/mL in methanol	1.2 mL
ULM-7998-1.2	3-Chloro-1,2-propanediol (unlabeled)	$ClCH_2CHOHCH_2OH$	1 mg/mL in methanol	1.2 mL
CNLM-4661-1.2 CNLM-4661-10X-1.2	Cyanuric acid ($^{13}C_3$, 99%; $^{15}N_3$, 98%+) CP 90%+	*C_3H_3*N_3O_3	100 µg/mL in water 1000 µg/mL in water	1.2 mL 1.2 mL
ULM-8157-1.2	Cyanuric acid (unlabeled)	$C_3H_3N_3O_3$	100 µg/mL in water	1.2 mL
NEW DLM-2943-1.2	2,6-Di(*tert*-butyl)-4-methyl phenol (BHT) (D_{21}, 98%)	$C_{15}H_3D_{21}O$	100 µg/mL in nonane	1.2 mL
NEW ULM-7494-1.2	2,6-Di(*tert*-butyl)-4-methyl phenol (BHT) (unlabeled)	$C_{15}H_{24}O$	100 µg/mL in nonane	1.2 mL
DLM-1632-1.2	Diethylene glycol (D_8, 98%)	$C_4D_8H_2O_3$	1 mg/mL in methanol	1.2 mL
ULM-8235-1.2	Diethylene glycol (unlabeled)	$C_4H_{10}O_3$	1 mg/mL in methanol	1.2 mL
CNLM-8150-1.2 CNLM-8150-10X-1.2	Melamine ($^{13}C_3$, 99%; amino-$^{15}N_3$, 98%)	*C_3H_6*N_3N_3	100 µg/mL in water 1000 µg/mL in water	1.2 mL 1.2 mL
ULM-8156-1.2	Melamine (unlabeled)	$C_3H_6N_3N_3$	100 µg/mL in water	1.2 mL
DLM-4412-25	(-)-Menthol (1,2,6,6-D_4, 98%)	$C_{10}H_{16}D_4O$	neat	25 mg
DLM-4766-1.2	2-Methylisoborneol (2-methyl-D_3, 98%)	$C_{11}H_{17}D_3O$	100 µg/mL in nonane	1.2 mL
CDLM-7279-S	*N*-Nitrosodimethylamine ($^{13}C_2$, 99%; D_6, 98%)	*$C_2D_6N_2O$	1 mg/mL in MeCl-D_2	1 mL
OLM-7310-1.2	Perchloric acid, sodium salt ($^{18}O_4$, 90%+)	NaCl*O_4	100 µg/mL in water	1.2 mL
ULM-7312-1.2	Perchloric acid, sodium salt (unlabeled)	$NaClO_4$	100 µg/ml in water	1.2 mL
CLM-3733-1.2	*o*-Phenylphenol (phenyl-$^{13}C_6$, 99%)	*$C_6H_5C_6H_4OH$	100 µg/ml in nonane	1.2 mL
ULM-7396-1.2	*o*-Phenylphenol (unlabeled)	$C_6H_5C_6H_4OH$	100 µg/ml in nonane	1.2 mL
CLM-3748-1.2	*p*-Phenylphenol (phenyl-$^{13}C_6$, 99%) CP 96%	*$C_6H_5C_6H_4OH$	100 µg/mL in nonane	1.2 mL
NEW OLM-8283-18O-1.2	Potassium bromate ($^{18}O_3$, 98%) CP 90-95%	KBr*O_3	100 µg/mL in ^{18}O water	1.2 mL
ULM-8451-1.2	Potassium bromate (unlabeled)	$KBrO_3$	100 µg/mL in water	1.2 mL
CNLM-7221-1.2	Semicarbazide hydrochloride (SEM) (^{13}C, 99%; $^{15}N_2$, 98%)	*CH_5*N_2NO·HCl	100 µg/mL in methanol	1.2 mL
ULM-7187-1.2	Semicarbazide hydrochloride (SEM) (unlabeled)	CH_5N_3O· HCl	100 µg/mL in methanol	1.2 mL
DLM-6083-1.2	2,4,6-Trichloroanisole (D_5, 98%)	$C_6D_2Cl_3OCD_3$	1 mg/mL in methanol-D	1.2 mL
ULM-7999-1.2	2,4,6-Trichloroanisole (unlabeled)	$C_6H_2Cl_3OCH_3$	1 mg/mL in methanol	1.2 mL
DLM-2080-1.2	1,2,3-Trichloropropane (D_5, 98%) CP 95%	$CD_2ClCDClCD_2Cl$	1 mg/mL in methanol	1.2 mL
ULM-6911-1.2	1,2,3-Trichloropropane (unlabeled)	$CH_2ClCHClCH_2Cl$	1 mg/mL in methanol	1.2 mL
NEW DLM-4444-0.1	Urethane (ethyl carbamate) (ethyl-D_5, 98%)	$C_3H_2D_5NO_2$	neat	0.1 g

Please also see the sections on PCBs, pesticides, PAHs and priority pollutants for other products that can be used in food and water analysis.

Phthalate and Phthalate Metabolite Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	DLM-1369-1.2	Benzyl butyl phthalate (ring-D_4, 98%)	$C_6D_4[CO_2(CH_2)_3CH_3][CH_2C_6H_5]$	100 µg/mL in nonane	1.2 mL
NEW	DLM-1369-0.1			neat	0.1 g
	ULM-7551-1.2	Benzyl butyl phthalate (unlabeled)	$C_6H_4[CO_2(CH_2)_3CH_3][CH_2C_6H_5]$	100 µg/mL in nonane	1.2 mL
	CLM-4675-1.2	Bis(2-ethylhexyl) adipate (adipate-$^{13}C_6$, 99%)	$(*CH_2)_4[*CO_2[CH_2CH(C_2H_5)C_4H_9]]_2$	100 µg/mL in nonane	1.2 mL
	ULM-6566-1.2	Bis(2-ethylhexyl) adipate (unlabeled)	$(CH_2)_4[CO_2[CH_2CH(C_2H_5)C_4H_9]]_2$	100 µg/mL in nonane	1.2 mL
NEW	CLM-6238	Bis(2-ethylhexyl) phthalate (ring-1,2-$^{13}C_2$, dicarboxyl-$^{13}C_2$, 99%)	$C_{20}*C_4H_{38}O_4$		Inquire
	DLM-1368-1.2	Bis(2-ethylhexyl) phthalate (ring-D_4, 98%)	$C_6D_4[CO_2CH_2CH(C_2H_5)C_4H_9]_2$	100 µg/mL in nonane	1.2 mL
NEW	DLM-1368-0.1			neat	0.1 g
NEW	DLM-1368-0.25			neat	0.25 g
	ULM-6241-1.2	Bis(2-ethylhexyl) phthalate (unlabeled)	$C_6H_4[CO_2CH_2CH(CH_2CH_3(CH_2)_3CH_3]_2$	1000 µg/mL in nonane	1.2 mL
	CLM-4670-1.2	Dicyclohexyl phthalate (ring-1,2-$^{13}C_2$, dicarboxyl-$^{13}C_2$, 99%)	$*C_2C_4H_4(*CO_2C_6H_{11})_2$	100 µg/mL in nonane	1.2 mL
	ULM-8785-1.2	Dicyclohexyl phthalate (unlabeled)	$C_6H_4(CO_2C_6H_{11})_2$	100 µg/mL in nonane	1.2 mL
	DLM-1629-1.2	Diethyl phthalate (ring-D_4, 98%)	$C_6D_4(CO_2CH_2CH_3)_2$	100 µg/mL in nonane	1.2 mL
NEW	DLM-1629-0.1			neat	0.1 g
NEW	DLM-1629-0.25			neat	0.25 g
	ULM-6174-1.2	Diethyl phthalate (unlabeled)	$C_6H_4(CO_2CH_2CH_3)_2$	100 µg/mL in nonane	1.2 mL
NEW	ULM-9767	Diisononyl phthalate (unlabeled)	$C_{26}H_{42}O_4$		Inquire
	DLM-1366-1.2	Dimethyl phthalate (ring-D_4, 98%)	$C_6D_4(CO_2CH_3)_2$	100 µg/mL in nonane	1.2 mL
NEW	DLM-1366-0.1			neat	0.1 g
NEW	ULM-6783-1.2	Dimethyl phthalate (unlabeled)	$C_6H_4(CO_2CH_3)_2$	100 µg/mL in nonane	1.2 mL
	DLM-1367-1.2	Di-*n*-butyl phthalate (ring-D_4, 98%)	$C_6D_4[CO_2(CH_2)_3CH_3]_2$	100 µg/mL in nonane	1.2 mL
NEW	DLM-1367-0.1			neat	0.1 g
NEW	DLM-1367-0.25			neat	0.25 g
NEW	ULM-7466-1.2	Di-*n*-butyl phthalate (unlabeled)	$C_6H_4[CO_2(CH_2)_3CH_3]_2$	100 µg/mL in nonane	1.2 mL
	CLM-4669-1.2	Di-*n*-hexyl phthalate (ring-1,2-$^{13}C_2$, dicarboxyl-$^{13}C_2$, 99%)	$*C_2C_4H_4[*CO_2(CH_2)_5CH_3]_2$	100 µg/mL in nonane	1.2 mL
	ULM-7434-1.2	Di-*n*-hexyl phthalate (unlabeled)	$C_6H_4[CO_2(CH_2)_5CH_3]_2$	100 µg/mL in nonane	1.2 mL
	DLM-1630-1.2	Di-*n*-octyl phthalate (ring-D_4, 98%)	$C_6D_4[CO_2(CH_2)_7CH_3]_2$	100 µg/mL in nonane	1.2 mL
NEW	DLM-1630-0.1			neat	0.1 g
	ULM-6129-1.2	Di-*n*-octyl phthalate (unlabeled)	$C_6H_4[CO_2(CH_2)_7CH_3]_2$	100 µg/mL in nonane	1.2 mL
	CLM-4668-1.2	Di-*n*-pentyl phthalate (ring-1,2-$^{13}C_2$, dicarboxyl-$^{13}C_2$, 99%)	$*C_2C_4H_4[*CO_2(CH_2)_4CH_3]_2$	100 µg/mL in nonane	1.2 mL
	ULM-7433-1.2	Di-*n*-pentyl phthalate (unlabeled)	$C_6H_4[CO_2(CH_2)_4CH_3]_2$	100 µg/mL in nonane	1.2 mL
NEW	CLM-4671	Di-*n*-propyl phthalate (ring-1,2-$^{13}C_2$, dicarboxyl-$^{13}C_2$, 99%)	$C_2C_4H_4$-1,2-$[*CO_2(CH_2)_2CH_3]_2$		Inquire
	CLM-4591-MT-1.2	Monobenzyl phthalate (ring-1,2-$^{13}C_2$, dicarboxyl-$^{13}C_2$, 99%)	$*C_2C_4H_4[*CO_2CH_2C_6H_5][*CO_2H]$	100 µg/mL in MTBE	1.2 mL
	ULM-6149-MT-1.2	Monobenzyl phthalate (unlabeled)	$C_6H_4[CO_2CH_2C_6H_5][CO_2H]$	100 µg/mL in MTBE	1.2 mL
NEW	CLM-4590-MT-1.2	Mono-*n*-butyl phthalate (ring-1,2-$^{13}C_2$, dicarboxyl-$^{13}C_2$, 99%)	$*C_2C_4H_4[*CO_2(CH_2)_3CH_3][*CO_2H]$	100 µg/mL in MTBE	1.2 mL
NEW	ULM-6148-MT-1.2	Mono-*n*-butyl phthalate (unlabeled)	$C_6H_4[CO_2(CH_2)_3CH_3][CO_2H]$	100 µg/mL in MTBE	1.2 mL
NEW	CLM-8232-MT-1.2	Mono-[2-(carboxymethyl) hexyl] phthalate (DEHP Metabolite IV) ($^{13}C_4$, 99%)	$*C_2C_4H_4[*CO_2CH_2(CH2)_5CH_3CO_2[*CO_2H]$	100 µg/mL in MTBE	1.2 mL
NEW	ULM-8233-MT-1.2	Mono-[2-(carboxymethyl) hexyl] phthalate (DEHP Metabolite IV) (unlabeled)	$C_6H_4[CO_2CH_2(CH2)_5CH_3CO_2][CO_2H]$	100 µg/mL in MTBE	1.2 mL
NEW	CLM-6847-MT-1.2	Mono-(3-carboxypropyl) phthalate (ring-1,2-$^{13}C_2$, dicarboxyl-$^{13}C_2$, 99%)	$*C_2C_4H_4[*CO_2(CH_2)_3CO_2H][*CO_2H]$	100 µg/mL in MTBE	1.2 mL
NEW	ULM-6848-MT-1.2	Mono-(3-carboxypropyl) phthalate (unlabeled)	$C_6H_4[CO_2(CH_2)_3CO_2H][CO_2H]$	100 µg/mL in MTBE	1.2 mL
NEW	CLM-4592-MT-1.2	Monocyclohexyl phthalate (ring-1,2-$^{13}C_2$, dicarboxyl-$^{13}C_2$, 99%)	$*C_2C_4H_4[*CO_2C_6H_{11}][*CO_2H]$	100 µg/mL in MTBE	1.2 mL
NEW	ULM-7394-MT-1.2	Monocyclohexyl phthalate (unlabeled)	$C_6H_4[CO_2C_6H_{11}][CO_2H]$	100 µg/mL in MTBE	1.2 mL

Phthalate and Phthalate Metabolite Standards

	Catalog No.	Compound	Formula	Concentration	Amount
NEW	CLM-4584-MT-1.2	Mono-2-ethylhexyl phthalate (ring-1,2-$^{13}C_2$, dicarboxyl-$^{13}C_2$, 99%)	$*C_2C_4H_4[*CO_2CH_2CH(CH_2CH_3)(CH_2)_3CH_3][*CO_2H]$	100 µg/mL in MTBE	1.2 mL
NEW	ULM-4583-MT-1.2	Mono-2-ethylhexyl phthalate (unlabeled)	$C_6H_4[CO_2CH_2CH(CH_2CH_3)(CH_2)_3CH_3][CO_2H]$	100 µg/mL in MTBE	1.2 mL
NEW	CLM-8148-MT-1.2	Mono-(2-ethyl-5-carboxypentyl) phthalate (DEHP Metabolite V) ($^{13}C_4$, 99%)	$*C_2C_4H_4[*CO_2CH_2(CH_2CH_3)(CH_2)_3[*CO_2H]$	100 µg/mL in MTBE	1.2 mL
NEW	ULM-8149-MT-1.2	Mono-(2-ethyl-5-carboxypentyl) phthalate (DEHP Metabolite V) (unlabeled)	$C_6H_4[CO_2CH_2(CH_2CH_3)(CH_2)_3][CO_2H]$	100 µg/mL in MTBE	1.2 mL
NEW	CLM-6641-MT-1.2	Mono-(2-ethyl-5-hydroxyhexyl)phthalate (DEHP Metabolite IX) ($^{13}C_4$, 99%)	$*C_2C_4H_4[*CO_2CH_2CH(CH_2CH_3)CH_2CH_2CH(OH)CH_3][*CO_2H]$	100 µg/mL in MTBE	1.2 mL
NEW	ULM-4662-MT-1.2	Mono-(2-ethyl-5-hydroxyhexyl)phthalate (DEHP Metabolite IX) (unlabeled)	$C_6H_4[CO_2CH_2CH(CH_2CH_3)CH_2CH_2CH(OH)CH_3][CO_2H]$	100 µg/mL in MTBE	1.2 mL
NEW	CLM-6640-MT-1.2	Mono-(2-ethyl-5-oxohexyl)phthalate (DEHP Metabolite VI) ($^{13}C_4$, 99%)	$*C_2C_4H_4[*CO_2CH_2CH(CH_2CH_3)CH_2CH_2COCH_3][*CO_2H]$	100 µg/mL in MTBE	1.2 mL
NEW	ULM-4663-MT-1.2	Mono-(2-ethyl-5-oxohexyl)phthalate (DEHP Metabolite VI) (unlabeled)	$C_6H_4[CO_2CH_2CH(CH_2CH_3)CH_2CH_2COCH_3][CO_2H]$	100 µg/mL in MTBE	1.2 mL
NEW	CLM-4586-MT-1.2	Monoethyl phthalate (ring-1,2-$^{13}C_2$, dicarboxyl-$^{13}C_2$, 99%)	$*C_2C_4H_4[*CO_2CH_2CH_3][*CO_2H]$	100 µg/mL in MTBE	1.2 mL
NEW	ULM-4585-MT-1.2	Monoethyl phthalate (unlabeled)	$C_6H_4[CO_2CH_2CH_3][CO_2H]$	100 µg/mL in MTBE	1.2 mL
NEW	ULM-4820	Mono-3-hydroxybutyl phthalate (unlabeled)	$C_{12}H_{14}O_5$		Inquire
NEW	ULM-7919-MT-1.2	Monoisobutyl phthalate (unlabeled)	$C_6H_4[CO_2CH_2CH(CH_3)_2][CO_2H]$	100 µg/mL in MTBE	1.2 mL
NEW	CLM-4588	Monoisodecyl phthalate (ring-1,2-$^{13}C_2$, dicarboxyl-$^{13}C_2$, 99%)	$C_{14}*C_4H_{26}O_4$		Inquire
NEW	ULM-4652-MT-1.2	Monoisodecyl phthalate (mono-3,7-dimethyloctyl phthalate) (unlabeled)	$C_6H_4[CO_2(CH_2)_2CH(CH_3(CH_2)_3CH(CH_3)_2][CO_2H]$	100 µg/mL in MTBE	1.2 mL
NEW	CLM-4587-MT-1.2	Monoisononyl phthalate (mono-3,5,5-trimethylhexyl phthalate) (ring-1,2-$^{13}C_2$, dicarboxyl-$^{13}C_2$, 99%)	$*C_2C_4H_4[*CO_2(CH_2)_6CH(CH_3)_2][*CO_2H]$	100 µg/mL in MTBE	1.2 mL
NEW	ULM-4651-MT-1.2	Monoisononyl phthalate (mono-3,5,5-trimethylhexyl phthalate) (unlabeled)	$C_6H_4[CO_2(CH_2)_6CH(CH_3)_2][CO_2H]$	100 µg/mL in MTBE	1.2 mL
NEW	ULM-7395-MT-1.2	Monoisopropyl phthalate (unlabeled)	$C_6H_4[CO_2CH(CH_3)_2][CO_2H]$	100 µg/mL in MTBE	1.2 mL
NEW	ULM-4594	Mono-2-methoxyethyl phthalate (unlabeled)	$C_{11}H_{12}O_5$		Inquire
NEW	CLM-6071-MT-1.2	Monomethyl phthalate (ring-1,2-$^{13}C_2$, dicarboxyl-$^{13}C_2$, 99%)	$*C_2C_4H_4[*CO_2CH_3][*CO_2H]$	100 µg/mL in MTBE	1.2 mL
NEW	ULM-6697-MT-1.2	Monomethyl phthalate (unlabeled)	$C_6H_4[CO_2CH_3][CO_2H]$	100 µg/mL in MTBE	1.2 mL
NEW	CLM-6225	Monomethyl isophthalate (ring-$^{13}C_6$, 99%)	$*C_6C_3H_8O_4$		Inquire
NEW	ULM-6226	Monomethyl isophthalate (unlabeled)	$C_9H_8O_4$		Inquire
NEW	CLM-4589-MT-1.2	Mono-*n*-octyl phthalate (ring-1,2-$^{13}C_2$, dicarboxyl-$^{13}C_2$, 99%)	$*C_2C_4H_4[*CO_2(CH_2)_7CH_3][*CO_2H]$	100 µg/mL in MTBE	1.2 mL
NEW	ULM-4593-MT-1.2	Mono-*n*-octyl phthalate (unlabeled)	$C_2C_4H_4[CO_2(CH_2)_7CH_3][CO_2H]$	100 µg/mL in MTBE	1.2 mL
NEW	ULM-7393-MT-1.2	Mono-*n*-pentyl phthalate (unlabeled)	$C_2C_4H_4[CO_2(CH_2)_4CH_3][CO_2H]$	100 µg/mL in MTBE	1.2 mL
NEW	CLM-4323-MT-1.2	Phthalic acid (ring-1,2-$^{13}C_2$, dicarboxyl-$^{13}C_2$, 99%)	$*C_2C_4H_4*(COOH)_2$	100 µg/mL in MTBE	1.2 mL
NEW	ULM-8301-MT-1.2	Phthalic acid (unlabeled)	$C_6H_4(COOH)_2$	100 µg/mL in MTBE	1.2 mL

Bisphenol Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	CLM-4325-1.2	Bisphenol A (ring-$^{13}C_{12}$, 99%)	$(*C_6H_4OH)_2C(CH_3)_2$	100 µg/mL in acetonitrile	1.2 mL
	ULM-7106-1.2	Bisphenol A (unlabeled)	$(C_6H_4OH)_2C(CH_3)_2$	100 µg/mL in acetonitrile	1.2 mL
	ULM-8654-1.2	2,4′-Bisphenol A (unlabeled)	$(C_6H_4OH)_2C(CH_3)_2$	100 µg/mL in acetonitrile	1.2 mL
NEW	DLM-9193-1.2	Bisphenol A diglycidyl ether (BADGE) (diglycidyl-D_{10}, 98%)	$C_{21}H_{14}D_{10}O_4$	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-9857-1.2	Bisphenol A diglycidyl ether (BADGE) (unlabeled)	$C_{21}H_{14}H_{10}O_4$	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-9831-1.2	Bisphenol A β-D-glucuronide (unlabeled) CP 90%	$C_{21}H_{24}O_8$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9832-1.2	Bisphenol A bis-(β-D-glucoronide) disodium salt (unlabeled) CP 90%	$C_{27}H_{30}Na_2O_{14}$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9833-1.2	Bisphenol A bissulfate disodium salt (unlabeled) CP 90%	$C_{15}H_{14}Na_2O_8S_2$	100 µg/mL in methanol	1.2 mL
NEW	CLM-9776-1.2	Bisphenol AF (ring-$^{13}C_{12}$, 99%)	$(*C_6H_4OH)_2C(CF_3)_2$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9779-1.2	Bisphenol AF (unlabeled)	$(C_6H_4OH)_2C(CF_3)_2$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9830-1.2	Bisphenol AP (unlabeled)	$CH_3C(C_6H_5)(C_6H_4OH)_2$	100 µg/mL in methanol	1.2 mL
NEW	CLM-9851-1.2	Bisphenol B (ring-$^{13}C_{12}$, 99%)	$C_4*C_{12}H_{18}O_2$	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-9852-1.2	Bisphenol B (unlabeled)	$C_{16}H_{18}O_2$	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-9826-1.2	Bisphenol E (unlabeled)	$CH_3CH(C_6H_4O_4)_2$	100 µg/mL in acetonitrile	1.2 mL
NEW	CLM-9866-1.2	Bisphenol F (ring-$^{13}C_{12}$, 99%)	$CH_2(*C_6H_4OH)_2$	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-9827-1.2	Bisphenol F (unlabeled)	$(C_6H_4OH)_2CH_2$	100 µg/mL in acetonitrile	1.2 mL
NEW	CLM-9867-1.2	Bisphenol F diglycidyl ether (BFDGE) (ring-$^{13}C_{12}$, 99%)	$C_7*C_{12}H_{20}O_4$		Inquire
NEW	ULM-9868-1.2	Bisphenol F diglycidyl ether (BFDGE) (unlabeled)	$C_{19}H_{20}O_4$		Inquire
NEW	ULM-9829-1.2	Bisphenol P (unlabeled)	$C_6H_4[C(CH_3)_2C_6H_4OH]_2$	100 µg/mL in methanol	1.2 mL
NEW	CLM-9319-1.2	Bisphenol S ($^{13}C_{12}$, 98%)	$*C_{12}H_{10}O_4S$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9320-1.2	Bisphenol S (unlabeled)	$C_{12}H_{10}O_4S$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9828-1.2	Bisphenol Z (unlabeled)	$C_6H_{10}(C_6H_4OH)_2$	100 µg/mL in methanol	1.2 mL

Perfluorinated Compound Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	CLM-8505-1.2	Perfluorooctanesulfonate (PFOS), sodium salt ($^{13}C_8$, 99%)	$*C_8F_{17}NaO_3S$	50 µg/mL in methanol	1.2 mL
	ULM-9001-1.2	Perfluorooctanesulfonate (PFOS), sodium salt (unlabeled)	$C_8F_{17}NaO_3S$	50 µg/mL in methanol	1.2 mL
NEW	ULM-8097-1.2	Perfluorobutyric acid (PFBA) (unlabeled)	$CF_3CF_2CF_2COOH$	50 µg/mL in methanol	1.2 mL
NEW	ULM-9515-1.2	Perfluoropentanoic acid (PFPA) (unlabeled)	$CF_3(CF_2)_3COOH$	50 µg/mL in methanol	1.2 mL
	CLM-8340-1.2	Perfluorohexanoic acid (PFHxA), sodium salt ($^{13}C_6$, 99%)	$*CF_3(*CF_2)_4*CO_2Na$	50 µg/mL in methanol	1.2 mL
	ULM-8342-1.2	Perfluorohexanoic acid (PFHxA), sodium salt (unlabeled)	$CF_3(CF_2)_4CO_2Na$	50 µg/mL in methanol	1.2 mL
NEW	ULM-9516-1.2	Perfluoroheptanoic acid (PFHpA) (unlabeled)	$CF_3(CF_2)_5CO_2H$	50 µg/mL in methanol	1.2 mL
	CLM-8005-1.2	Perfluorooctanoic acid (PFOA) ($^{13}C_8$, 99%)	$*CF_3(*CF_2)_6*CO_2H$	50 µg/mL in methanol	1.2 mL
	ULM-7451-1.2	Perfluorooctanoic acid (PFOA) (unlabeled)	$CF_3(CF_2)_6CO_2H$	50 µg/mL in methanol	1.2 mL
	CLM-8060-1.2	Perfluorononanoic acid (PFNA) ($^{13}C_9$, 99%)	$*CF_3(*CF_2)_7*CO_2H$	50 µg/mL in methanol	1.2 mL
	ULM-8066-1.2	Perfluorononanoic acid (PFNA) (unlabeled)	$CF_3(CF_2)_7CO_2H$	50 µg/mL in methanol	1.2 mL
	CLM-8172-1.2	Perfluorodecanoic acid (PFDA) ($^{13}C_9$, 99%)	$CF_3(*CF_2)_8*CO_2H$	50 µg/mL in methanol	1.2 mL
	ULM-8067-1.2	Perfluorodecanoic acid (PFDA) (unlabeled)	$CF_3(CF_2)_8CO_2H$	50 µg/mL in methanol	1.2 mL
NEW	CLM-8789-1.2	Perfluoroundecanoic acid (PFUA), sodium salt ($^{13}C_9$, 99%)	$CF_3(*CF_2)_9CO_2Na$	50 µg/mL in methanol	1.2 mL
	ULM-8084-1.2	Perfluoroundecanoic acid (PFUA), sodium salt (unlabeled)	$CF_3(CF_2)_9CO_2Na$	50 µg/mL in methanol	1.2 mL
NEW	ULM-8068-1.2	Perfluorododecanoic acid (PFDoA) (unlabeled)	$CF_3(CF_2)_{10}CO_2H$	50 µg/mL in methanol	1.2 mL
NEW	ULM-9955-1.2	Perfluorotridecanoic acid (PFTrDA) (unlabeled)	$CF_3(CF_2)_{11}CO_2H$		Inquire
NEW	ULM-9956-1.2	Perfluorotetradecanoic acid (PFTeDA) (unlabeled)	$CF_3(CF_2)_{12}CO_2H$		Inquire

Nonylphenol, Nonylphenol Ethoxylate, and Nonylphenol Carboxylate Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	CLM-8356-1.2	4-(1,3-Dimethyl-1-ethylpentyl) phenol (ring-$^{13}C_6$, 99%)	$(CH_3CH_2CH)(CH_3)CH_2(CH_3)(CH_2CH_3)C^*C_6H_4OH$		Inquire
NEW	ULM-8360-1.2	4-(1,3-Dimethyl-1-ethylpentyl) phenol (unlabeled)	$(CH_3CH_2CH)(CH_3)CH_2(CH_3)(CH_2CH_3)CC_6H_4OH$	100 µg/mL in methanol	1.2 mL
NEW	CLM-8357-1.2	4-(1,4-Dimethyl-1-ethylpentyl) phenol (ring-$^{13}C_6$, 99%)	$(CH_3)_2C(CH_2)_2(CH_3)(CH_2CH_3)C^*C_6H_4OH$	100 µg/mL in methanol	1.2 mL
NEW	ULM-8361-1.2	4-(1,4-Dimethyl-1-ethylpentyl) phenol (unlabeled)	$(CH_3)_2C(CH_2)_2(CH_3)(CH_2CH_3)CC_6H_4OH$	100 µg/mL in methanol	1.2 mL
NEW	CLM-8359-1.2	4-(1-Ethyl-1-methylhexyl) phenol (ring-$^{13}C_6$, 99%)	$[(CH_3)(CH_2)_4](CH_3)(CH_2CH_3)C^*C_6H_4OH$	100 µg/mL in methanol	1.2 mL
NEW	ULM-8363-1.2	4-(1-Ethyl-1-methylhexyl) phenol (unlabeled)	$[(CH_3)(CH_2)_4](CH_3)(CH_2CH_3)CC_6H_4OH$	100 µg/mL in methanol	1.2 mL
	CLM-8358-1.2	4-(1,1,5-Trimethylhexyl) phenol (ring-$^{13}C_6$, 99%)	$(CH_3)_2C(CH_2)_3(CH_3)_2(CH_2CH_3)C^*C_6H_4OH$		Inquire
NEW	ULM-8362-1.2	4-(1,1,5-Trimethylhexyl) phenol (unlabeled)	$(CH_3)_2C(CH_2)_3(CH_3)_2(CH_2CH_3)CC_6H_4OH$	100 µg/mL in methanol	1.2 mL
	CLM-4306-1.2	*p-n*-Nonylphenol (ring-$^{13}C_6$, 99%)	$CH_3(CH_2)_8{}^*C_6H_4OH$	100 µg/mL in nonane	1.2 mL
NEW	CLM-4306-M-1.2			100 µg/mL in methanol	1.2 mL
	ULM-4559-1.2	*p-n*-Nonylphenol (unlabeled)	$CH_3(CH_2)_8C_6H_4OH$	100 µg/mL in nonane	1.2 mL
NEW	ULM-4559-M-1.2			100 µg/mL in methanol	1.2 mL
	CLM-4512-1.2	*p-n*-Nonylphenol monoethoxylate (ring-$^{13}C_6$, 99%)	$CH_3(CH_2)_8{}^*C_6H_4O(CH_2)_2OH$	100 µg/mL in nonane	1.2 mL
NEW	CLM-4512-M-1.2			100 µg/mL in methanol	1.2 mL
	ULM-4520-1.2	*p-n*-Nonylphenol monoethoxylate (unlabeled)	$CH_3(CH_2)_8C_6H_4O(CH_2)_2OH$	100 µg/mL in nonane	1.2 mL
NEW	ULM-4520-M-1.2			100 µg/mL in methanol	1.2 mL
	ULM-4520-SA-5X-1.2			500 µg/mL in acetonitrile	1.2 mL
	CLM-4307-1.2	*p-n*-Nonylphenol diethoxylate (ring-$^{13}C_6$, 99%)	$CH_3(CH_2)_8{}^*C_6H_4O(CH_2)_2O(CH_2)_2OH$	100 µg/mL in nonane	1.2 mL
NEW	CLM-4307-M-1.2			100 µg/mL in methanol	1.2 mL
	ULM-4521-1.2	*p-n*-Nonylphenol diethoxylate (unlabeled)	$CH_3(CH_2)_8C_6H_4O(CH_2)_2O(CH_2)_2OH$	100 µg/mL in nonane	1.2 mL
NEW	ULM-4521-M-1.2			100 µg/mL in methanol	1.2 mL
	ULM-4521-SA-5X-1.2			500 µg/mL in acetonitrile	1.2 mL
	CLM-4516-1.2	*p-n*-Nonylphenol triethoxylate (ring-$^{13}C_6$, 99%) CP 90%	$CH_3(CH_2)_8{}^*C_6H_4O(CH_2)_2O(CH_2)_2O(CH_2)_2OH$	100 µg/mL in nonane	1.2 mL
	ES-4157	*p-n*-Nonylphenol + mono-/di-/tri-ethoxylates (set of individual standards) 1 ampoule each of CLM-4306-1.2, CLM-4512-1.2, CLM-4307-1.2 and CLM-4516-1.2			Set of 4 × 1.2 mL
	ULM-6560-1.2	*p*-Nonylphenol – technical grade (unlabeled)	$C_9H_{19}C_6H_4OH$	100 µg/mL in nonane	1.2 mL
	ULM-7146-1.2	Nonylphenol monoethoxylate-branched isomers (unlabeled)	$C_9H_{19}C_6H_4O(CH_2)_2OH$	100 µg/mL in nonane	1.2 mL
	ULM-7147-1.2	Nonylphenol diethoxylate-branched isomers (unlabeled)	$C_9H_{19}C_6H_4(OCH_2CH_2)_2OH$	100 µg/mL in nonane	1.2 mL
	ULM-4688-1.2	Nonylphenoxyacetic acid – ring/chain isomers (unlabeled)	$C_9H_{19}C_6H_4OCH_2CO_2H$	100 µg/mL in nonane	1.2 mL
	ULM-4690-1.2	*p-n*-Nonylphenoxyethoxyacetic acid (unlabeled)	$CH_3(CH_2)_8C_6H_4O(CH_2)_2OCH_2CO_2H$	100 µg/mL in nonane	1.2 mL

Chlorinated Paraffin Standards

	Catalog No.	Compound	Formula	Concentration	Amount
NEW	CLM-9000-1.2	1,5,5,6,6,10-Hexachlorodecane ($^{13}C_{10}$, 99%)	$^*C_{10}H_{16}Cl_6$	100 µg/mL in nonane	1.2 mL
NEW	ULM-8917-1.2	1,5,5,6,6,10-Hexachlorodecane (unlabeled)	$C_{10}H_{16}Cl_6$	100 µg/mL in nonane	1.2 mL
NEW	CLM-9679-1.2	1,1,1,3,10,12,12,12-Octachlorododecane ($^{13}C_{12}$, 99%)	$^*C_{12}H_{18}Cl_8$	100 µg/mL in nonane	1.2 mL
NEW	ULM-9485-1.2	1,1,1,3,10,12,12,12-Octachlorododecane (unlabeled)	$C_{12}H_{18}Cl_8$	100 µg/mL in nonane	1.2 mL

Nitrosamine Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	DLM-7779-S	*N*-Nitrodimethylamine (D_6, 98%)	$C_2D_6N_2O_2$	1 mg/mL in MeCl-D_2	1 mL
	ULM-7780-S	*N*-Nitrodimethylamine (unlabeled)	$C_2H_6N_2O_2$	1 mg/mL in MeCl	1 mL
	DLM-7982-S	*N*-Nitrosodiethylamine (D_{10}, 98%)	$(C_2D_5)_2NNO$	1 mg/mL in MeCl-D_2	1 mL
	ULM-7984-1.2	*N*-Nitrosodiethylamine (unlabeled)	$(C_2H_5)_2NNO$	1 mg/mL in MeCl	1.2 mL
	CDLM-7279-S	*N*-Nitrosodimethylamine ($^{13}C_2$, 99%; D_6, 98%)	$*C_2D_6N_2O$	1 mg/mL in MeCl-D_2	1 mL
	DLM-2130-S	*N*-Nitrosodimethylamine (D_6, 98%)	$C_2D_6N_2O$	1 mg/mL in MeCl-D_2	1 mL
	NLM-7647-S	*N*-Nitrosodimethylamine ($^{15}N_2$, 98%)	$(C_2H_5)_2*N*NO$	1 mg/mL in MeCl	1 mL
NEW	ULM-9042-S	*N*-Nitrosodimethylamine (unlabeled)	$(C_2H_5)_2NNO$	1 mg/mL in MeCl	1 mL
	DLM-3098-S	*N*-Nitrosodiphenylamine (2,2′,4,4′,6,6′-D_6, 98%)	$(C_6D_3H_2)_2NN{=}O$	1 mg/mL in MeCl-D_2	1 mL
	ULM-7219-1.2	*N*-Nitrosodiphenylamine (unlabeled)	$C_{12}H_{10}N_2O$	1 mg/mL in MeCl	1.2 mL
	DLM-2131-S	*N*-Nitrosodi-*n*-propylamine (D_{14}, 98%)	$C_6D_{14}N_2O$	1 mg/mL in MeCl-D_2	1 mL
	ULM-6637-S	*N*-Nitrosodi-*n*-propylamine (unlabeled)	$C_6H_{14}N_2O$	1 mg/mL in MeCl	1 mL
	DLM-8254-1.2	*N*-Nitrosomorpholine (D_8, 98%)	$CD_8N_2O_2$	1 mg/mL in MeCl-D_2	1.2 mL
	ULM-8255-1.2	*N*-Nitrosomorpholine (unlabeled) CP 96%	$CH_8N_2O_2$	1 mg/mL in MeCl	1.2 mL
	DLM-8252-1.2	*N*-Nitrosopyrrolidine (D_8, 98%)	$C_4D_8N_2O$	1 mg/mL in MeCl-D_2	1.2 mL
	ULM-8253-1.2	*N*-Nitrosopyrrolidine (unlabeled)	$C_4H_8N_2O$	1 mg/mL in MeCl	1.2 mL

Halogenated and Substituted Benzene, Phenol, and Anisole Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	CLM-871-0.5	Bromobenzene ($^{13}C_6$, 99%)	*C_6H_5Br	neat	0.5 g
	DLM-398-5	Bromobenzene (D_5, 99%)	C_6D_5Br	neat	5 g
	DLM-398-10			neat	10 g
	DLM-398-25			neat	25 g
	CLM-2268-1.2	4-Bromophenol ($^{13}C_6$, 99%)	*C_6H_4BrOH	100 µg/mL in toluene	1.2 mL
	ULM-6917-1.2	4-Bromophenol (unlabeled)	C_6H_4BrOH	100 µg/mL in toluene	1.2 mL
	DLM-263-1	Chlorobenzene (D_5, 99%)	C_6D_5Cl	neat	1 g
	DLM-263-5			neat	5 g
	DLM-1638-0.1	2-Chlorophenol (ring-D_4, 99%)	C_6D_4ClOH	neat	0.1 g
	DLM-1638-0.25			neat	0.25 g
	CLM-1913-1.2	4-Chlorophenol ($^{13}C_6$, 99%)	*C_6H_4ClOH	100 µg/mL in toluene	1.2 mL
	ULM-7420-1.2	4-Chlorophenol (unlabeled)	C_6H_4ClOH	100 µg/mL in nonane	1.2 mL
NEW	CLM-9373-1.2	2,4-Dibromoanisole (ring-$^{13}C_6$, 99%)	*$C_6Br_2H_3OCH_3$	100 µg/mL in toluene	1.2 mL
NEW	ULM-9369-1.2	2,4-Dibromoanisole (unlabeled)	$C_6Br_2H_3OCH_3$	100 µg/mL in toluene	1.2 mL
	CLM-1340-0.1	1,4-Dibromobenzene ($^{13}C_6$, 99%)	*$C_6H_4Br_2$	neat	0.1 g
	DLM-341-5	1,4-Dibromobenzene (D_4, 98%)	$C_6D_4Br_2$	neat	5 g
	CLM-6058-1.2	2,4-Dibromophenol ($^{13}C_6$, 99%)	*$C_6H_3Br_2OH$	100 µg/mL in toluene	1.2 mL
	ULM-6918-1.2	2,4-Dibromophenol (unlabeled)	$C_6H_3Br_2OH$	100 µg/mL in toluene	1.2 mL
	CLM-8007-1.2	2,6-Dibromophenol ($^{13}C_6$, 99%)	*$C_6H_3Br_2OH$	100 µg/mL in toluene	1.2 mL
	ULM-7603-1.2	2,6-Dibromophenol (unlabeled)	$C_6H_3Br_2OH$	100 µg/mL in toluene	1.2 mL
	CLM-126-1.2	1,2-Dichlorobenzene ($^{13}C_6$, 99%)	*$C_6H_4Cl_2$	100 µg/mL in isooctane	1.2 mL
	DLM-158-1	1,2-Dichlorobenzene (D_4, 99%)	$C_6D_4Cl_2$	neat	1 g
	DLM-158-5			neat	5 g
NEW	ULM-7415-1.2	1,2-Dichlorobenzene (unlabeled)	$C_6H_4Cl_2$	100 µg/mL in isooctane	1.2 mL
	CLM-4484-1.2	1,3-Dichlorobenzene ($^{13}C_6$, 99%)	*$C_6H_4Cl_2$	100 µg/mL in isooctane	1.2 mL
NEW	DLM-2139-0.1	1,3-Dichlorobenzene (D_4, 98%)	$C_6D_4Cl_2$	neat	0.1 g
NEW	ULM-7431-1.2	1,3-Dichlorobenzene (unlabeled)	$C_6H_4Cl_2$	100 µg/mL in isooctane	1.2 mL
	CLM-1518-1	1,4-Dichlorobenzene ($^{13}C_6$, 99%)	*$C_6H_4Cl_2$	neat	1 mg
	DLM-268-5	1,4-Dichlorobenzene (D_4, 98%)	$C_6D_4Cl_2$	neat	5 g
	DLM-1359-0.1	2,4-Dichlorophenol (ring-D_3, 98%)	$C_6D_3Cl_2OH$	neat	0.1 g
	DLM-1359-0.5			neat	0.5 g
	DLM-1669-0.1	2,4-Dichlorophenol (D_4, 98%)	$C_6D_3Cl_2OD$	neat	0.1 g
	ULM-6822-1.2	2,4-Dichlorophenol (unlabeled)	$C_6H_3Cl_2OH$	100 µg/mL in nonane	1.2 mL
NEW	CLM-1365-1.2	2,5-Dichlorophenol ($^{13}C_6$, 99%)	*$C_6H_3Cl_2OH$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9066-1.2	2,5-Dichlorophenol (unlabeled)	$C_6H_3Cl_2OH$	100 µg/mL in methanol	1.2 mL
	CLM-1921-1.2	Hexabromobenzene ($^{13}C_6$, 99%)	*C_6Br_6	100 µg/mL in toluene	1.2 mL
	ULM-7607-1.2	Hexabromobenzene (unlabeled)	C_6Br_6	100 µg/mL in toluene	1.2 mL
	CLM-351-1.2	Hexachlorobenzene ($^{13}C_6$, 99%)	*C_6Cl_6	100 µg/mL in nonane	1.2 mL
	CLM-351-0.1			neat	0.1 g
	ULM-6130-1.2	Hexachlorobenzene (unlabeled)	C_6Cl_6	100 µg/mL in nonane	1.2 mL
NEW	CLM-8992-1.2	Pentabromoanisole ($^{13}C_6$, 99%)	*$C_6CH_3Br_5O$	100 µg/mL in toluene	1.2 mL
NEW	ULM-8991-1.2	Pentabromoanisole (unlabeled)	$C_7H_3Br_5O$	100 µg/mL in toluene	1.2 mL
	CLM-1959-1.2	Pentabromophenol ($^{13}C_6$, 99%)	*C_6Br_5OH	100 µg/mL in toluene	1.2 mL
	ULM-6922-1.2	Pentabromophenol (unlabeled)	C_6Br_5OH	100 µg/mL in toluene	1.2 mL
	CLM-8003-1.2	Pentachloroanisole ($^{13}C_6$, 99%)	*$C_6CH_3Cl_5O$	100 µg/mL in toluene	1.2 mL
	ULM-7605-1.2	Pentachloroanisole (unlabeled)	$C_6CH_3Cl_5O$	100 µg/mL in toluene	1.2 mL
	CLM-2050-1.2	Pentachlorobenzene ($^{13}C_6$, 99%)	*C_6HCl_5	100 µg/mL in isooctane	1.2 mL
	ULM-7234-1.2	Pentachlorobenzene (unlabeled)	C_6HCl_5	100 µg/mL in isooctane	1.2 mL
	CLM-1955-1.2	Pentachloronitrobenzene ($^{13}C_6$, 99%)	*$C_6Cl_5NO_2$	100 µg/mL in nonane	1.2 mL
	ULM-7597-1.2	Pentachloronitrobenzene (unlabeled)	$C_6Cl_5NO_2$	100 µg/mL in nonane	1.2 mL
	CLM-661-1.2	Pentachlorophenol ($^{13}C_6$, 99%)	*C_6Cl_5OH	100 µg/mL in nonane	1.2 mL
NEW	CLM-661-0.01			neat	0.01 g
	ULM-6894-1.2	Pentachlorophenol (unlabeled)	C_6Cl_5OH	100 µg/mL in nonane	1.2 mL

(continued on next page)

Halogenated and Substituted Benzene, Phenol, and Anisole Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	CLM-1996-1.2	2,3,4,5-Tetrabromophenol ($^{13}C_6$, 99%)	*C_6HBr_4OH	100 µg/mL in toluene	1.2 mL
	ULM-6778-1.2	2,3,4,5-Tetrabromophenol (unlabeled)	C_6HBr_4OH	100 µg/mL in toluene	1.2 mL
	CLM-1982-1.2	1,2,3,4-Tetrachlorobenzene ($^{13}C_6$, 99%)	*$C_6H_2Cl_4$	100 µg/mL in isooctane	1.2 mL
	ULM-6195-1.2	1,2,3,4-Tetrachlorobenzene (unlabeled)	$C_6H_2Cl_4$	100 µg/mL in isooctane	1.2 mL
	ULM-7599-1.2	1,2,3,5-Tetrachlorobenzene (unlabeled)	$C_6H_2Cl_4$	100 µg/mL in isooctane	1.2 mL
	CLM-585-0.1	1,2,4,5-Tetrachlorobenzene ($^{13}C_6$, 99%)	*$C_6H_2Cl_4$	neat	0.1 g
	CLM-585-5			neat	5 mg
	DLM-1177-1	1,2,4,5-Tetrachlorobenzene (D_2, 98%)	$C_6D_2Cl_4$	neat	1 g
	DLM-1177-5			neat	5 g
	ULM-7598-1.2	1,2,4,5-Tetrachlorobenzene (unlabeled)	$C_6H_2Cl_4$	100 µg/mL in isooctane	1.2 mL
	ULM-2428-0.1	2,3,4,5-Tetrachlorophenol (unlabeled)	$C_6H_2Cl_4O$	neat	0.1 g
	ULM-2429-0.1	2,3,4,6-Tetrachlorophenol (unlabeled)	$C_6H_2Cl_4O$	neat	0.1 g
	ULM-2430-0.1	2,3,5,6-Tetrachlorophenol (unlabeled)	$C_6H_2Cl_4O$	neat	0.1 g
NEW	CLM-9372-1.2	2,4,5-Tribromoanisole (ring-$^{13}C_6$, 99%)	*$C_6CH_5Br_3O$	100 µg/mL in toluene	1.2 mL
NEW	ULM-9367-1.2	2,4,5-Tribromoanisole (unlabeled)	$C_7H_5Br_3O$	100 µg/mL in toluene	1.2 mL
NEW	CLM-6744-1.2	2,4,6-Tribromoanisole (ring-$^{13}C_6$, 99%)	*$C_6CH_5Br_3O$	100 µg/mL in toluene	1.2 mL
NEW	ULM-9370-1.2	2,4,6-Tribromoanisole (unlabeled)	$C_7H_5Br_3O$	100 µg/mL in toluene	1.2 mL
	CLM-7488	2,3,4-Tribromophenol ($^{13}C_6$, 99%)	*$C_6H_2Br_3OH$		Inquire
NEW	CLM-2235-1.2	2,3,5-Tribromophenol ($^{13}C_6$, 99%)	*$C_6H_2Br_3OH$	100 µg/mL in toluene	1.2 mL
NEW	ULM-6919-1.2	2,3,5-Tribromophenol (unlabeled)	$C_6H_2Br_3OH$	100 µg/mL in toluene	1.2 mL
	CLM-6151-1.2	2,4,5-Tribromophenol ($^{13}C_6$, 99%)	*$C_6H_2Br_3OH$	100 µg/mL in toluene	1.2 mL
	ULM-6084-1.2	2,4,5-Tribromophenol (unlabeled)	$C_6H_2Br_3OH$	100 µg/mL in toluene	1.2 mL
	CLM-6743-1.2	2,4,6-Tribromophenol ($^{13}C_6$, 99%)	*$C_6H_2Br_3OH$	100 µg/mL in toluene	1.2 mL
	ULM-4210-1.2	2,4,6-Tribromophenol (unlabeled)	$C_6H_2Br_3OH$	100 µg/mL in toluene	1.2 mL
	CLM-1836-1.2	3,4,5-Tribromophenol ($^{13}C_6$, 99%)	*$C_6H_2Br_3OH$	100 µg/mL in toluene	1.2 mL
NEW	DLM-9198	2,4,6-Trichloroanisole (methyl-D_3, 99%)	$C_6H_2Cl_3OCD_3$		Inquire
	DLM-6083-1.2	2,4,6-Trichloroanisole (D_5, 98%)	$C_6D_2Cl_3OCD_3$	1 mg/mL in methanol-D	1.2 mL
	DLM-6083-0.1			neat	0.1 g
	ULM-7999-1.2	2,4,6-Trichloroanisole (unlabeled)	$C_6H_2Cl_3OCH_3$	1 mg/mL in methanol	1.2 mL
	DLM-1972-0.1	1,2,3-Trichlorobenzene (D_3, 98%)	$C_6D_3Cl_3$	neat	0.1 g
	DLM-1178-0.1	1,2,4-Trichlorobenzene (D_3, 98%)	$C_6D_3Cl_3$	neat	0.1 g
	DLM-1178-1			neat	1 g
	DLM-1178-5			neat	5 g
	DLM-799-1	1,3,5-Trichlorobenzene (D_3, 98%)	$C_6D_3Cl_3$	neat	1 g
	CLM-513-1	2,4,5-Trichlorophenol ($^{13}C_6$, 99%)	*$C_6H_2Cl_3OH$	100 µg/mL in methanol	1 mL
	CLM-513-SI-1.2			100 µg/mL in isooctane	1.2 mL
	DLM-2143-0.1	2,4,5-Trichlorophenol (ring-D_2, 98%)	$C_6D_2Cl_3OH$	neat	0.1 g
	ULM-7525-1.2	2,4,5-Trichlorophenol (unlabeled)	$C_6H_2Cl_3OH$	100 µg/mL in methanol	1.2 mL
NEW	CLM-1804-1.2	2,4,6-Trichlorophenol ($^{13}C_6$, 99%)	*$C_6H_2Cl_3OH$	100 µg/mL in methanol	1.2 mL
	CLM-1804-SI-1.2			100 µg/mL in isooctane	1.2 mL
	DLM-3093-0.01	2,4,6-Trichlorophenol (ring-D_2, 98%)	$C_6D_2Cl_3OH$	neat	0.01 g
	DLM-3093-0.1			neat	0.1 g
	ULM-7600-1.2	2,4,6-Trichlorophenol (unlabeled)	$C_6H_2Cl_3OH$	100 µg/mL in methanol	1.2 mL
NEW	ULM-7600-SI-1.2			100 µg/mL in isooctane	1.2 mL

Please also see the priority pollutant mixtures section for halogenated benzene and phenol cocktails.

Endocrine-Disrupting Compounds and Xenoestrogen Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	CLM-1643-1.2	Acenaphthene ($^{13}C_6$, 99%)	$*C_6C_6H_{10}$	100 µg/mL in nonane	1.2 mL
	DLM-108-1.2	Acenaphthene (D_{10}, 98%)	$C_{12}D_{10}$	200 µg/mL in isooctane	1.2 mL
	ULM-7413-1.2	Acenaphthene (unlabeled)	$C_{12}H_{10}$	200 µg/mL in isooctane	1.2 mL
	CLM-3727-1.2	Alachlor (ring-$^{13}C_6$, 99%) CP 96%+	$*C_6C_8H_{20}ClNO_2$	100 µg/mL in nonane	1.2 mL
	CLM-4725-1.2	Aldrin ($^{13}C_{12}$, 99%)	$*C_{12}H_8Cl_6$	100 µg/mL in nonane	1.2 mL
	CLM-1333-1.2	Anthracene ($^{13}C_6$, 99%)	$*C_6C_8H_{10}$	100 µg/mL in nonane	1.2 mL
	DLM-102-1.2	Anthracene (D_{10}, 98%)	$C_{14}D_{10}$	200 µg/mL in isooctane	1.2 mL
	ULM-7412-1.2	Anthracene (unlabeled)	$C_{14}H_{10}$	200 µg/mL in isooctane	1.2 mL
	CLM-3737-1.2	Atrazine (ring-$^{13}C_3$, 99%)	$*C_3C_5H_{14}ClN_5$	100 µg/mL in nonane	1.2 mL
	CLM-3602-1.2	Benz[*a*]anthracene ($^{13}C_6$, 99%)	$*C_6C_{12}H_{12}$	100 µg/mL in nonane	1.2 mL
	DLM-610-1.2	Benz[*a*]anthracene (D_{12}, 98%)	$C_{18}D_{12}$	200 µg/mL in isooctane	1.2 mL
	ULM-2415-I-1.2	Benz[*a*]anthracene (unlabeled)	$C_{18}H_{12}$	200 µg/mL in isooctane	1.2 mL
	CLM-2722-1.2	Benzo[*a*]pyrene ($^{13}C_4$, 99%)	$*C_4C_{16}H_{12}$	100 µg/mL in nonane	1.2 mL
	DLM-258-1.2	Benzo[*a*]pyrene (D_{12}, 98%)	$C_{20}D_{12}$	200 µg/mL in isooctane	1.2 mL
NEW	ULM-2412-I-1.2	Benzo[*a*]pyrene (unlabeled)	$C_{20}H_{12}$	200 µg/mL in isooctane	1.2 mL
	CLM-6170-1.2	Benzo[*e*]pyrene ($^{13}C_4$, 99%)	$*C_4C_{16}H_{12}$	100 µg/mL in nonane	1.2 mL
	DLM-257-1.2	Benzo[*e*]pyrene (D_{12}, 98%)	$C_{20}D_{12}$	200 µg/mL in isooctane	1.2 mL
	ULM-7423-1.2	Benzo[*e*]pyrene (unlabeled)	$C_{20}H_{12}$	200 µg/mL in isooctane	1.2 mL
	CLM-3599-1.2	Benzo[*b*]fluoranthene ($^{13}C_6$, 99%)	$*C_6C_{14}H_1$	100 µg/mL in nonane	1.2 mL
	DLM-2136-1.2	Benzo[*b*]fluoranthene (D_{12}, 98%)	$C_{20}D_{12}$	200 µg/mL in isooctane	1.2 mL
NEW	ULM-2416-I-1.2	Benzo[*b*]fluoranthene (unlabeled)	$C_{20}H_{12}$	200 µg/mL in isooctane	1.2 mL
NEW	CLM-9590-1.2	Benzo[*j*]fluoranthene ($^{13}C_{12}$, 99%)	$*C_{12}C_8H_{12}$	100 µg/mL in nonane	1.2 mL
NEW	ULM-2411-1.2	Benzo[*j*]fluoranthene (unlabeled)	$C_{20}H_{12}$	100 µg/mL in nonane	1.2 mL
	CLM-3756-1.2	Benzo[*k*]fluoranthene ($^{13}C_6$, 99%)	$*C_6C_{14}H_1$	100 µg/mL in nonane	1.2 mL
	DLM-1923-1.2	Benzo[*k*]fluoranthene (D_{12}, 98%)	$C_{20}D_{12}$	200 µg/mL in isooctane	1.2 mL
NEW	CLM-9730-1.2	Benzo[*c*]phenanthrene ($^{13}C_6$, 99%)	$*C_6C_{12}H_{12}$	100 µg/mL in nonane	1.2 mL
NEW	ULM-8155-1.2	Benzo[*c*]phenanthrene (unlabeled)	$C_{18}H_{12}$	100 µg/mL in nonane	1.2 mL
NEW	DLM-183-1.2	Benzophenone (D_{10}, 98%)	$C_6D_5COC_6D_5$	100 µg/mL in nonane	1.2 mL
NEW	ULM-8303-1.2	Benzophenone (unlabeled)	$(C_6H_5)_2CO$	100 µg/mL in nonane	1.2 mL
	DLM-1369-1.2	Benzyl butyl phthalate (ring-D_4, 98%)	$C_6D_4[CO_2(CH_2)_3CH_3][CH_2C_6H_5]$	100 µg/mL in nonane	1.2 mL
	CLM-2482-1.2	α-HCH (α-BHC) ($^{13}C_6$, 99%)	$*C_6H_6Cl_6$	100 µg/mL in nonane	1.2 mL
	CLM-3623-1.2	β-HCH (β-BHC) ($^{13}C_6$, 99%)	$*C_6H_6Cl_6$	50 µg/mL in nonane	2 × 1.2 mL
	CLM-1282-1.2	γ-HCH (γ-BHC) (lindane) ($^{13}C_6$, 99%)	$*C_6H_6Cl_6$	100 µg/mL in nonane	1.2 mL
	CLM-4675-1.2	Bis(2-ethylhexyl) adipate (adipate-$^{13}C_6$, 99%)	$(*CH_2)_4[*CO_2[CH_2CH(C_2H_5)C_4H_9]]_2$	100 µg/mL in nonane	1.2 mL
	DLM-1368-1.2	Bis(2-ethylhexyl) phthalate (ring-D_4, 98%)	C_6D_4-1,2-$[CO_2C_8H_{17}]_2$	100 µg/mL in nonane	1.2 mL
	ULM-6241-1.2	Bis(2-ethylhexyl) phthalate (unlabeled)	$C_6H_4[CO_2CH_2CH(CH_2CH_3)(CH_2)_3CH_3]_2$	1000 µg/mL in nonane	1.2 mL
	CLM-4325-1.2	Bisphenol A (ring-$^{13}C_{12}$, 99%)	$(*C_6H_4OH)_2C(CH_3)_2$	100 µg/mL in acetonitrile	1.2 mL
	ULM-7106-1.2	Bisphenol A (unlabeled)	$(C_6H_4OH)_2C(CH_3)_2$	100 µg/mL in acetonitrile	1.2 mL
	ULM-8654-1.2	2,4′-Bisphenol A (unlabeled)	$(C_6H_4OH)_2C(CH_3)_2$	100 µg/mL in acetonitrile	1.2 mL
NEW	CLM-9319-1.2	Bisphenol S ($^{13}C_{12}$, 98%)	$*C_{12}H_{10}O_4S$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9320-1.2	Bisphenol S (unlabeled)	$C_{12}H_{10}O_4S$	100 µg/mL in methanol	1.2 mL
NEW	CLM-9776-1.2	Bisphenol AF (ring-$^{13}C_{12}$, 99%)	$*C_{12}C_3H_{10}F_6O_2$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9779-1.2	Bisphenol AF (unlabeled)	$C_{15}H_{10}F_6O_2$	100 µg/mL in methanol	1.2 mL
	CLM-4674-1.2	*n*-Butylbenzene (ring-$^{13}C_6$, 99%)	$*C_6H_5C_4H_9$	100 µg/mL in nonane	1.2 mL
	CLM-4682-1.2	Carbaryl (ring-$^{13}C_6$, 99%)	$*C_6C_6H_{11}NO_2$	100 µg/mL in nonane	1.2 mL
	ULM-8096-1.2	Carbaryl (unlabeled)	$C_{10}H_7CO_2NHCH_3$	100 µg/mL in nonane	1.2 mL
	CLM-1911-1.2	Carbofuran (ring-$^{13}C_6$, 99%)	$*C_6C_6H_{15}NO_3$	100 µg/mL in 1,4-dioxane	1.2 mL
	ULM-7419-1.2	Carbofuran (unlabeled)	$C_{12}H_{15}NO_3$	100 µg/mL in 1,4-dioxane	1.2 mL
	CLM-4792-1.2	*trans*-Chlordane (γ) ($^{13}C_{10}$, 99%)	$*C_{10}H_5Cl_8$	100 µg/mL in nonane	1.2 mL
	CLM-4814-1.2	Chlordecone (kepone) ($^{13}C_{10}$, 99%)	$*C_{10}Cl_{10}O$	100 µg/mL in nonane	1.2 mL
	ULM-2301-1.2	Chlordecone (kepone) (unlabeled)	$C_{10}Cl_{10}O$	100 µg/mL in nonane	1.2 mL
	CLM-4758-1.2	Chlordene ($^{13}C_{10}$, 99%)	$*C_{10}H_6Cl_6$	100 µg/mL in nonane	1.2 mL
	ULM-7443-1.2	Chlordene (unlabeled)	$C_{10}H_6Cl_6$	100 µg/mL in nonane	1.2 mL
	DLM-4360-1.2	Chlorpyrifos (diethyl-D_{10}, 99%)	$C_9D_{10}H_1Cl_3NO_3PS$	100 µg/mL in nonane	1.2 mL
	CLM-3757-1.2	Chrysene ($^{13}C_6$, 99%)	$*C_6C_{12}H_{12}$	100 µg/mL in nonane	1.2 mL
	DLM-261-1.2	Chrysene (D_{12}, 98%)	$C_{18}D_{12}$	200 µg/mL in toluene-D_8	1.2 mL
	ULM-7424-1.2	Chrysene (unlabeled)	$C_{18}H_{12}$	200 µg/mL in toluene	1.2 mL
	CLM-7293-1.2	Cyfluthrin (mix of stereoisomers) (phenoxy-$^{13}C_6$, 99%)	$*C_6C_{16}H_{18}Cl_2FNO_3$	100 µg/mL in nonane	1.2 mL

(continued on next page)

Endocrine-Disrupting Compounds and Xenoestrogen Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	ULM-7454-1.2	Cyfluthrin (mix of stereoisomers) (unlabeled)	$C_{22}H_{18}Cl_2FNO_3$	100 µg/mL in nonane	1.2 mL
	CLM-7292-1.2	Cypermethrin (mix of stereoisomers) (phenoxy-$^{13}C_6$, 99%)	$*C_6C_{16}H_{19}Cl_2NO_3$	100 µg/mL in nonane	1.2 mL
	ULM-7453-1.2	Cypermethrin (mix of stereoisomers) (unlabeled)	$C_{22}H_{19}Cl_2NO_3$	100 µg/mL in nonane	1.2 mL
	DLM-4461-1.2	Daidzein (3′,5′,8-D_3, 97%)	$C_{15}D_3H_7O_4$	60 µg/mL in acetonitrile-D_3	2 × 1.2 mL
	ULM-4459-1.2	Daidzein (unlabeled)	$C_{15}H_{10}O_4$	60 µg/mL in acetonitrile	1.2 mL
	CLM-6999-1.2	2,4′-DDD (ring-$^{13}C_{12}$, 99%)	$*C_{12}C_2H_{10}Cl_4$	100 µg/mL in nonane	1.2 mL
	DLM-3533-1.2	4,4′-DDD (ring-D_8, 98%)	$C_{14}D_8H_4Cl_4$	100 µg/mL in nonane	1.2 mL
	CLM-4693-1.2	2,4′-DDE (ring-$^{13}C_{12}$, 99%)	$(Cl*C_6H_4)_2C{=}CCl_2$	100 µg/mL in nonane	1.2 mL
	ULM-6251-1.2	2,4′-DDE (unlabeled)	$(ClC_6H_4)_2C{=}CCl_2$	100 µg/mL in nonane	1.2 mL
	CLM-1627-1.2	4,4′-DDE (ring-$^{13}C_{12}$, 99%)	$(Cl*C_6H_4)_2C{=}CCl_2$	100 µg/mL in nonane	1.2 mL
	CLM-4692-1.2	2,4′-DDT (ring-$^{13}C_{12}$, 99%)	$(Cl*C_6H_4)_2CHCCl_3$	100 µg/mL in nonane	1.2 mL
	ULM-6134-1.2	2,4′-DDT (unlabeled)	$(ClC_6H_4)CHCCl_3$	100 µg/mL in nonane	1.2 mL
	CLM-1281-1.2	4,4′-DDT (ring-$^{13}C_{12}$, 99%)	$(Cl*C_6H_4)_2CHCCl_3$	100 µg/mL in nonane	1.2 mL
	ULM-6135-1.2	4,4′-DDT (unlabeled)	$(ClC_6H_4)_2CHCCl_3$	100 µg/mL in nonane	1.2 mL
	DLM-1148-1.2	Diazinon (diethyl-D_{10}, 98%)	$C_{12}D_{10}H_{11}N_2O_3PS$	100 µg/mL in nonane	1.2 mL
	DLM-2943-1.2	2,6-Di(*tert*-butyl)-4-methylphenol (BHT) (D_{21}, 98%)	$C_6D_2(C(CD_3)_3)_2CH_3OD$	100 µg/mL in nonane	1.2 mL
	CLM-126-1.2	1,2-Dichlorobenzene ($^{13}C_6$, 99%)	$*C_6H_4Cl_2$	100 µg/mL in isooctane	1.2 mL
NEW	ULM-7415-1.2	1,2-Dichlorobenzene (unlabeled)	$C_6H_4Cl_2$	100 µg/mL in isooctane	1.2 mL
	CLM-4484-1.2	1,3-Dichlorobenzene ($^{13}C_6$, 99%)	$*C_6H_4Cl_2$	100 µg/mL in isooctane	1.2 mL
NEW	ULM-7431-1.2	1,3-Dichlorobenzene (unlabeled)	$C_6H_4Cl_2$	100 µg/mL in isooctane	1.2 mL
	DLM-1669-0.1	2,4-Dichlorophenol (ring-D_3, OD, 98%)	$C_6D_3Cl_2OD$	neat	0.1 g
	CLM-1858-1.2	2,4-Dichlorophenoxyacetic acid (ring-$^{13}C_6$, 99%)	$Cl_2*C_6H_3OCH_2CO_2H$	100 µg/mL in acetonitrile	1.2 mL
	CLM-4726-1.2	Dieldrin ($^{13}C_{12}$, 99%)	$*C_{12}H_8Cl_6O$	100 µg/mL in nonane	1.2 mL
	ULM-7230-1.2	Dieldrin (unlabeled)	$C_{12}H_8Cl_6O$	100 µg/mL in nonane	1.2 mL
	DLM-1629-1.2	Diethyl phthalate (ring-D_4, 98%)	$C_6D_4(CO_2CH_2CH_3)_2$	100 µg/mL in nonane	1.2 mL
	ULM-6174-1.2	Diethyl phthalate (unlabeled)	$C_6H_4(CO_2CH_2CH_3)_2$	100 µg/mL in nonane	1.2 mL
NEW	DLM-7151-1.2	Dimethoate (*O,O*-dimethyl-D_6, 98%)	$C_5D_6H_6NO_3PS_2$	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-7972-1.2	Dimethoate (unlabeled)	$C_5H_{12}NO_3PS_2$	100 µg/mL in acetonitrile	1.2 mL
	DLM-1367-1.2	Di-*n*-butyl phthalate (ring-D_4, 98%)	$C_6D_4(COO(CH_2)_3CH_3)_2$	100 µg/mL in nonane	1.2 mL
NEW	ULM-7466-1.2	Di-*n*-butyl phthalate (unlabeled)	$C_{16}H_{22}O_4$	100 µg/mL in nonane	1.2 mL
	CLM-4669-1.2	Di-*n*-hexyl phthalate (ring-1,2-$^{13}C_2$, dicarboxyl-$^{13}C_2$, 99%)	$*C_2C_4H_4(*CO_2(CH_2)_5CH_3)_2$	100 µg/mL in nonane	1.2 mL
	ULM-7434-1.2	Di-*n*-hexyl phthalate (unlabeled)	$C_6H_4(CO_2(CH_2)_5CH_3)_2$	100 µg/mL in nonane	1.2 mL
	CLM-4668-1.2	Di-*n*-pentyl phthalate (ring-1,2-$^{13}C_2$, dicarboxyl-$^{13}C_2$, 99%)	$*C_2C_4H_4[*CO_2(CH_2)_4CH_3]_2$	100 µg/mL in nonane	1.2 mL
	ULM-7433-1.2	Di-*n*-pentyl phthalate (unlabeled)	$C_6H_4[CO_2(CH_2)_4CH_3]_2$	100 µg/mL in nonane	1.2 mL
	CLM-4671	Di-*n*-propyl phthalate (ring-1,2-$^{13}C_2$, dicarboxyl-$^{13}C_2$, 99%)	$*C_2C_4H_4[*CO_2(CH_2)_2CH_3]_2$		Inquire
	CLM-6025-1.2	Endosulfan I ($^{13}C_9$, 99%)	$*C_9H_6Cl_6O_3S$	100 µg/mL in nonane	1.2 mL
	DLM-2862-1.2	Endosulfan I (D_4, 97%)	$C_9D_4H_2Cl_6O_3S$	100 µg/mL in nonane	1.2 mL
	ULM-7447-1.2	Endosulfan I (unlabeled)	$C_9H_6Cl_6O_3S$	100 µg/mL in nonane	1.2 mL
	CLM-6026-1.2	Endosulfan II ($^{13}C_9$, 99%)	$*C_9H_6Cl_6O_3S$	100 µg/mL in nonane	1.2 mL
	ULM-7448-1.2	Endosulfan II (unlabeled)	$C_9H_6Cl_6O_3S$	100 µg/mL in nonane	1.2 mL
	CLM-7531-1.2	Endosulfan sulfate ($^{13}C_9$, 99%)	$*C_9H_6Cl_6O_4S$	100 µg/mL in nonane	1.2 mL
	ULM-7990-1.2	Endosulfan sulfate (unlabeled)	$C_9H_6Cl_6O_4S$	100 µg/mL in nonane	1.2 mL
	CLM-4782-1.2	Endrin ($^{13}C_{12}$, 99%)	$*C_{12}H_8Cl_6O$	100 µg/mL in nonane	1.2 mL
	ULM-7444-1.2	Endrin (unlabeled)	$C_{12}H_8Cl_6O$	100 µg/mL in nonane	1.2 mL
	CLM-4815-1.2	Endrin aldehyde ($^{13}C_{12}$, 99%)	$*C_{12}H_8Cl_6O$	100 µg/mL in nonane	1.2 mL
NEW	CLM-4815-50			neat	50 µg
NEW	ULM-8958-1.2	Endrin aldehyde (unlabeled)	$C_{12}H_8Cl_6O$	100 µg/mL in nonane	1.2 mL
NEW	CLM-4816-1.2	Endrin ketone ($^{13}C_{12}$, 99%)	$*C_{12}H_8Cl_6O$	100 µg/mL in nonane	1.2 mL
	CLM-4816-50			neat	50 µg

Endocrine-Disrupting Compounds and Xenoestrogen Standards

	Catalog No.	Compound	Formula	Concentration	Amount
NEW	ULM-8956-1.2	Endrin ketone (unlabeled)	$C_{12}H_8Cl_6O$	100 µg/mL in nonane	1.2 mL
	CLM-3374-1.2	Epichlorohydrin ($^{13}C_3$, 99%)	$*C_3H_5OCl$	100 µg/mL in acetonitrile	1.2 mL
	ULM-7403-1.2	Epichlorohydrin (unlabeled)	C_3H_5OCl	100 µg/mL in acetonitrile	1.2 mL
	DLM-4460-1.2	Genistein (3',5',6,8-D_4, 95%)	$C_{15}D_4H_5O_5$	100 µg/mL in acetonitrile	1.2 mL
	CNLM-4666-1.2	Glyphosate (2-^{13}C, 99%; ^{15}N, 98%+) CP 96%	$HOOC*CH_2*NHCH_2PO(OH)_2$	100 µg/mL in water	1.2 mL
NEW	CNLM-4666-10X-1.2			1000 µg/mL in water	1.2 mL
	ULM-6876-1.2	Glyphosate (unlabeled)	$HOOCCH_2NHCH_2PO(OH)_2$	100 µg/mL in water	1.2 mL
	CLM-4759-1.2	Heptachlor ($^{13}C_{10}$, 99%)	$*C_{10}H_5Cl_7$	100 µg/mL in nonane	1.2 mL
	ULM-2424-1.2	Heptachlor (unlabeled)	$C_{10}H_5Cl_7$	100 µg/mL in nonane	1.2 mL
	CLM-4734-1.2	*cis*-Heptachlor epoxide ($^{13}C_{10}$, 99%)	$*C_{10}H_5Cl_7O$	100 µg/mL in nonane	1.2 mL
	ULM-2425-1.2	*cis*-Heptachlor epoxide (unlabeled)	$C_{10}H_5Cl_7O$	100 µg/mL in nonane	1.2 mL
	EB-5162	2,2',4,4',5,5'-HexaBB ($^{13}C_{12}$, 99%)	$*C_{12}H_4Br_6$	40 +/-4 µg/mL in nonane	1.2 mL
	PBB-153-CS	2,2',4,4',5,5'-HexaBB (Certified Standard) (unlabeled)	$C_{12}H_4Br_6$	100 µg/mL in isooctane	1.2 mL
	CLM-351-1.2	Hexachlorobenzene ($^{13}C_6$, 99%)	$*C_6Cl_6$	100 µg/mL in nonane	1.2 mL
	ULM-6130-1.2	Hexachlorobenzene (unlabeled)	C_6Cl_6	100 µg/mL in nonane	1.2 mL
NEW	CLM-9000-1.2	1,5,5,6,6,10-Hexachlorodecane ($^{13}C_{10}$, 99%)	$*C_{10}H_{16}Cl_6$	100 µg/mL in nonane	1.2 mL
NEW	ULM-8917-1.2	1,5,5,6,6,10-Hexachlorodecane (unlabeled)	$C_{10}H_{16}Cl_6$	100 µg/mL in nonane	1.2 mL
NEW	ULM-9429-1.2	Hp-Sed (unlabeled)	$C_{10}H_{11}Cl_7$	10 µg/mL in nonane	1.2 mL
NEW	ULM-9428-1.2	Hx-Sed (unlabeled)	$C_{10}H_{12}Cl_6$	10 µg/mL in nonane	1.2 mL
	CLM-3600-1.2	Indeno[1,2,3-*cd*]pyrene ($^{13}C_6$, 99%)	$*C_6C_{14}H_{12}$	100 µg/mL in nonane	1.2 mL
	DLM-2148-1.2	Indeno[1,2,3-*cd*]pyrene (D_{12}, 98%)	$C_{22}D_{12}$	200 µg/mL in isooctane	1.2 mL
	CLM-4727-1.2	Isodrin ($^{13}C_{12}$, 99%)	$*C_{12}H_8Cl_6$	100 µg/mL in nonane	1.2 mL
	ULM-7442-1.2	Isodrin (unlabeled)	$C_{12}H_8Cl_6$	100 µg/mL in nonane	1.2 mL
	DLM-4476-1.2	Malathion (D_{10}, 99%)	$C_{10}D_{10}H_9O_6PS_2$	100 µg/mL in nonane	1.2 mL
	ULM-8122-1.2	Malathion (unlabeled)	$C_{10}H_{19}O_6PS_2$	100 µg/mL in nonane	1.2 mL
	CNLM-8150-1.2	Melamine ($^{13}C_3$, 99%; amino-$^{15}N_3$, 98%)	$*C_3H_6*N_3N_3$	100 µg/mL in water	1.2 mL
	CNLM-8150-10X-1.2			1000 µg/mL in water	1.2 mL
	ULM-8156-1.2	Melamine (unlabeled)	$C_3H_6N_6$	100 µg/mL in water	1.2 mL
	CNLM-7148-1.2	Methomyl (acetohydroxamate-$^{13}C_2$, 99%; ^{15}N, 98%)	$*C_2C_3H_{10}N*NO_2S$	100 µg/mL in methanol	1.2 mL
NEW	ULM-8639-1.2	Methomyl (unlabeled)	$C_5H_{10}N_2O_2S$	100 µg/mL in methanol	1.2 mL
	CLM-4683-1.2	Methoxychlor (ring-$^{13}C_{12}$, 99%)	$(H_3C*C_6H_4)_2CHCCl_3$	100 µg/mL in nonane	1.2 mL
	ULM-7440-1.2	Methoxychlor (unlabeled)	$(H_3CC_6H_4)_2CHCCl_3$	100 µg/mL in nonane	1.2 mL
	CLM-3712-1.2	Metolachlor (ring-$^{13}C_6$, 99%)	$*C_6C_9H_{22}ClNO_2$	100 µg/mL in nonane	1.2 mL
	ULM-7314-1.2	Metolachor (unlabeled)	$C_{15}H_{22}ClNO_2$	100 µg/mL in nonane	1.2 mL
	CLM-4813-1.2	Mirex ($^{13}C_{10}$, 99%)	$*C_{10}Cl_{12}$	100 µg/mL in nonane	1.2 mL
	ULM-2427-1.2	Mirex (unlabeled)	$C_{10}Cl_{12}$	100 µg/mL in nonane	1.2 mL
NEW	DLM-8246	Musk ketone (*tert*-butyl-D_9, 98%)	$(CD_3)_3CC_6(NO_2)_2(CH_3)_2COCH_3$		Inquire
NEW	ULM-8290	Musk ketone (unlabeled)	$(CH_3)_3CC_6(NO_2)_2(CH_3)_2COCH_3$		Inquire
	CLM-1332-1.2	Naphthalene ($^{13}C_6$, 99%)	$*C_6C_4H_8$	100 µg/mL in nonane	1.2 mL
	ULM-7425-1.2	Naphthalene (unlabeled)	$C_{10}H_8$	100 µg/mL in nonane	1.2 mL
NEW	CLM-3914-1.2	DL-Nicotine (3',4',5'-$^{13}C_3$, 99%)	$CH_3*C_3CH_7NC_5H_4N$	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-9547-1.2	Nicotine (unlabeled)	$C_{10}H_{14}N_2$	100 µg/mL in acetonitrile	1.2 mL
	CLM-3913-S	4-Nitrotoluene (ring-$^{13}C_6$, 99%)	$*C_6H_4CH_3NO_2$	1 mg/mL in acetonitrile	1 mL
	ULM-3891-1.2	4-Nitrotoluene (unlabeled)	$C_6H_4CH_3NO_2$	1 mg/mL in acetonitrile	1.2 mL
	CLM-4811-1.2	*cis*-Nonachlor ($^{13}C_{10}$, 99%)	$*C_{10}H_5Cl_9$	100 µg/mL in nonane	1.2 mL
	ULM-7445-1.2	*cis*-Nonachlor (unlabeled)	$C_{10}H_5Cl_9$	100 µg/mL in nonane	1.2 mL
	CLM-4735-1.2	*trans*-Nonachlor ($^{13}C_{10}$, 99%)	$*C_{10}H_5Cl_9$	100 µg/mL in nonane	1.2 mL
	ULM-7229-1.2	*trans*-Nonachlor (unlabeled)	$C_{10}H_5Cl_9$	100 µg/mL in nonane	1.2 mL
	CLM-4306-1.2	*p-n*-Nonylphenol (ring-$^{13}C_6$, 99%)	$CH_3(CH_2)_8*C_6H_4OH$	100 µg/mL in nonane	1.2 mL
	CLM-4306-M-1.2			100 µg/mL in methanol	1.2 mL
	ULM-4559-1.2	*p-n*-Nonylphenol (unlabeled)	$CH_3(CH_2)_8C_6H_4OH$	100 µg/mL in nonane	1.2 mL
	ULM-4559-M-1.2			100 µg/mL in methanol	1.2 mL
	CLM-4307-1.2	*p-n*-Nonylphenol diethoxylate (ring-$^{13}C_6$, 99%)	$CH_3(CH_2)_8*C_6H_4O(C_2H_4O)_2H$	100 µg/mL in nonane	1.2 mL
	CLM-4307-M-1.2			100 µg/mL in methanol	1.2 mL

(continued on next page)

Endocrine-Disrupting Compounds and Xenoestrogen Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	ULM-4521-1.2 ULM-4521-M-1.2	*p-n*-Nonylphenol diethoxylate (unlabeled)	$CH_3(CH_2)_8C_6H_4O(C_2H_4O)_2H$	100 µg/mL in nonane 100 µg/mL in methanol	1.2 mL 1.2 mL
	ULM-7147-1.2	Nonylphenol diethoxylate-branched isomers (unlabeled)	$C_9H_{19}C_6H_4O(C_2H_4O)_2H$	100 µg/mL in nonane	1.2 mL
	CLM-4512-1.2 CLM-4512-M-1.2	*p-n*-Nonylphenol monoethoxylate (ring-$^{13}C_6$, 99%)	$CH_3(CH_2)_8{}^*C_6H_4O(CH_2)_2OH$	100 µg/mL in nonane 100 µg/mL in methanol	1.2 mL 1.2 mL
	ULM-4520-1.2 ULM-4520-M-1.2	*p-n*-Nonylphenol monoethoxylate (unlabeled)	$CH_3(CH_2)_8C_6H_4O(CH_2)_2OH$	100 µg/mL in nonane 100 µg/mL in methanol	1.2 mL 1.2 mL
NEW	ULM-7146-1.2	Nonylphenol monoethoxylate-branched isomers (unlabeled)	$C_9H_{19}C_6H_4O(CH_2)_2OH$	100 µg/mL in nonane	1.2 mL
	CLM-4516-1.2	*p-n*-Nonylphenol triethoxylate (ring-$^{13}C_6$, 99%) CP 90%	$CH_3(CH_2)_8{}^*C_6H_4O(C_2H_4O)_3H$	100 µg/mL in nonane	1.2 mL
NEW	CLM-9679-1.2	1,1,1,3,10,12,12,12-Octachlorododecane ($^{13}C_{12}$, 99%)	$^*C_{12}H_{18}Cl_8$	100 µg/mL in nonane	1.2 mL
NEW	ULM-9485-1.2	1,1,1,3,10,12,12,12-Octachlorododecane (unlabeled)	$C_{12}H_{18}Cl_8$	100 µg/mL in nonane	1.2 mL
	CLM-4729-1.2	Oxychlordane ($^{13}C_{10}$, 99%)	$^*C_{10}H_4Cl_8O$	100 µg/mL in nonane	1.2 mL
	ULM-6139-1.2	Oxychlordane (unlabeled)	$C_{10}H_4Cl_8O$	100 µg/mL in nonane	1.2 mL
NEW	CLM-9849-1.2	Benzyl paraben (benzyl 4-hydroxybenzoate) (ring-$^{13}C_6$, 99%)	$^*C_6C_8H_{12}O_3$	1 mg/mL in methanol	1.2 mL
NEW	ULM-9850-1.2	Benzyl paraben (benzyl 4-hydroxybenzoate) (unlabeled)	$C_{14}H_{12}O_3$	1 mg/mL in methanol	1.2 mL
	CLM-8285-1.2	*n*-Butyl paraben (ring-$^{13}C_6$, 99%)	$^*C_6C_5H_{14}O_3$	1 mg/mL in methanol	1.2 mL
	ULM-8287-1.2	*n*-Butyl paraben (unlabeled)	$C_{11}H_{14}O_3$	1 mg/mL in methanol	1.2 mL
NEW	CLM-9761-1.2	Ethyl paraben (ethyl 4-hydroxybenzoate) (ring-$^{13}C_6$, 99%)	$^*C_6C_3H_{10}O_3$	1 mg/mL in methanol	1.2 mL
NEW	ULM-9760-1.2	Ethyl paraben (ethyl 4-hydroxybenzoate) (unlabeled)	$C_9H_{10}O_3$	1 mg/mL in methanol	1.2 mL
NEW	CLM-9847-1.2	Isobutyl paraben (isobutyl 4-hydroxybenzoate) (ring-$^{13}C_6$, 99%)	$^*C_6C_5H_{14}O_3$	1 mg/mL in methanol	1.2 mL
NEW	ULM-9848-1.2	Isobutyl paraben (isobutyl 4-hydroxybenzoate) (unlabeled)	$C_{11}H_{14}O_3$	1 mg/mL in methanol	1.2 mL
NEW	CLM-9845-1.2	Isopropyl paraben (isopropyl 4-hydroxybenzoate) (ring-$^{13}C_6$, 99%)	$^*C_6C_4H_{12}O_3$	1 mg/mL in methanol	1.2 mL
NEW	ULM-9846-1.2	Isopropyl paraben (isopropyl 4-hydroxybenzoate) (unlabeled)	$C_{10}H_{12}O_3$	1 mg/mL in methanol	1.2 mL
	CLM-8249-1.2	Methyl paraben (methyl 4-hydroxybenzoate) (ring-$^{13}C_6$, 99%)	$^*C_6C_2H_8O_3$	1 mg/mL in methanol	1.2 mL
	ULM-8250-1.2	Methyl paraben (methyl 4-hydroxybenzoate) (unlabeled)	$C_8H_8O_3$	1 mg/mL in methanol	1.2 mL
NEW	CLM-9763-1.2	*n*-Propyl paraben (*n*-propyl 4-hydroxybenzoate) (ring-$^{13}C_6$, 99%)	$^*C_6C_4H_{12}O_3$	1 mg/mL in methanol	1.2 mL
NEW	ULM-9762-1.2	*n*-Propyl paraben (*n*-propyl 4-hydroxybenzoate) (unlabeled)	$C_{10}H_{12}O_3$	1 mg/mL in methanol	1.2 mL
	DLM-2970-1.2	Parathion (diethyl-D_{10}, 98%)	$C_{10}D_{10}H_4NOPS$	100 µg/mL in nonane	1.2 mL
	ULM-8144-1.2	Parathion (unlabeled)	$C_{10}H_{14}NOPS$	100 µg/mL in nonane	1.2 mL
	CLM-7930-1.2	Parlar 26 ($^{13}C_{10}$, 99%)	$^*C_{10}H_{10}Cl_8$	10 µg/mL in nonane	1.2 mL
	ULM-7828-1.2	Parlar 26 (unlabeled)	$C_{10}H_{10}Cl_8$	10 µg/mL in nonane	1.2 mL
	CLM-8705-1.2	Parlar 32 ($^{13}C_{10}$, 99%)	$^*C_{10}H_{11}Cl_7$	10 µg/mL in nonane	1.2 mL
	ULM-8665-1.2	Parlar 32 (unlabeled)	$C_{10}H_{11}Cl_7$	10 µg/mL in nonane	1.2 mL
NEW	ULM-9005-1.2	Parlar 38 (unlabeled)	$C_{10}H_{10}Cl_8$	10 µg/mL in nonane	1.2 mL
	CLM-8719-1.2	Parlar 39 ($^{13}C_{10}$, 99%)	$^*C_{10}H_{11}Cl_7$	10 µg/mL in nonane	1.2 mL
	ULM-8767-1.2	Parlar 39 (unlabeled)	$C_{10}H_{11}Cl_7$	10 µg/mL in nonane	1.2 mL
NEW	ULM-9431-1.2	Parlar 41 (unlabeled)	$C_{10}H_{10}Cl_8$	10 µg/mL in nonane	1.2 mL
NEW	ULM-9432-1.2	Parlar 44 (unlabeled)	$C_{10}H_{10}Cl_8$	10 µg/mL in nonane	1.2 mL
	CLM-7931-1.2	Parlar 50 ($^{13}C_{10}$, 99%)	$^*C_{10}H_9Cl_9$	10 µg/mL in nonane	1.2 mL
	ULM-7829-1.2	Parlar 50 (unlabeled)	$C_{10}H_9Cl_9$	10 µg/mL in nonane	1.2 mL
	CLM-7932-1.2	Parlar 62 ($^{13}C_{10}$, 99%)	$^*C_{10}H_9Cl_9$	10 µg/mL in nonane	1.2 mL
	ULM-7830-1.2	Parlar 62 (unlabeled)	$C_{10}H_9Cl_9$	10 µg/mL in nonane	1.2 mL

Endocrine-Disrupting Compounds and Xenoestrogen Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	CLM-8720-1.2	Parlar 69 ($^{13}C_{10}$, 99%)	$*C_{10}H_9Cl_9$	10 µg/mL in nonane	1.2 mL
	ULM-8768-1.2	Parlar 69 (unlabeled)	$C_{10}H_9Cl_9$	10 µg/mL in nonane	1.2 mL
	CLM-8721-1.2	Parlar 70 ($^{13}C_{10}$, 99%)	$*C_{10}H_9Cl_9$	10 µg/mL in nonane	1.2 mL
	ULM-8769-1.2	Parlar 70 (unlabeled)	$C_{10}H_9Cl_9$	10 µg/mL in nonane	1.2 mL
	EC-1404-3	PCB-77 (3,3′,4,4′-tetraCB) ($^{13}C_{12}$, 99%)	$(*C_6Cl_2H_3)_2$	40 µg/mL in nonane	3 mL
	EC-1425-3	PCB-126 (3,3′,4,4′,5-pentaCB) ($^{13}C_{12}$, 99%)	$*C_6Cl_3H_2*C_6Cl_2H_3$	40 µg/mL in nonane	3 mL
	EC-1416-3	PCB-169 (3,3′,4,4′,5,5′-hexaCB) ($^{13}C_{12}$, 99%)	$(*C_6Cl_3H_2)_2$	40 µg/mL in nonane	3 mL
	CLM-2050-1.2	Pentachlorobenzene ($^{13}C_6$, 99%)	$*C_6HCl_5$	100 µg/mL in isooctane	1.2 mL
	ULM-7234-1.2	Pentachlorobenzene (unlabeled)	C_6HCl_5	100 µg/mL in isooctane	1.2 mL
	CLM-1955-1.2	Pentachloronitrobenzene ($^{13}C_6$, 99%)	$*C_6Cl_5NO_2$	100 µg/mL in nonane	1.2 mL
	ULM-7597-1.2	Pentachloronitrobenzene (unlabeled)	$C_6Cl_5NO_2$	100 µg/mL in nonane	1.2 mL
	CLM-661-1.2	Pentachlorophenol ($^{13}C_6$, 99%)	$*C_6Cl_5OH$	100 µg/mL in nonane	1.2 mL
	ULM-6894-1.2	Pentachlorophenol (unlabeled)	C_6Cl_5OH	100 µg/mL in nonane	1.2 mL
NEW	CLM-8505-1.2	Perfluorooctanesulfonate (PFOS), sodium salt ($^{13}C_8$, 99%)	$*C_8F_{17}NaO_3S$	50 µg/mL in methanol	1.2 mL
NEW	ULM-9001-1.2	Perfluorooctanesulfonate (PFOS), sodium salt (unlabeled)	$C_8F_{17}NaO_3S$	50 µg/mL in methanol	1.2 mL
	CLM-8005-1.2	Perfluorooctanoic acid (PFOA) ($^{13}C_8$, 99%)	$*CF_3(*CF_2)_6*COOH$	50 µg/mL in methanol	1.2 mL
	ULM-7451-1.2	Perfluorooctanoic acid (PFOA) (unlabeled) (90:10 straight:branched isomers) CP 96%	$CF_3(CF_2)_6COOH$	50 µg/mL in methanol	1.2 mL
	CLM-7322-1.2	*cis*-Permethrin (phenoxy-$^{13}C_6$, 99%)	$*C_6C_{15}H_{20}Cl_2O_3$	50 µg/mL in nonane	1.2 mL
	ULM-8526-1.2	*cis*-Permethrin (unlabeled)	$C_{21}H_{20}Cl_2O_3$	50 µg/mL in nonane	1.2 mL
	CLM-7323-1.2	*trans*-Permethrin (phenoxy-$^{13}C_6$, 99%)	$*C_6C_{15}H_{20}Cl_2O_3$	50 µg/mL in nonane	1.2 mL
	ULM-8527-1.2	*trans*-Permethrin (unlabeled)	$C_{21}H_{20}Cl_2O_3$	50 µg/mL in nonane	1.2 mL
	CLM-2451-1.2	Phenanthrene ($^{13}C_6$, 99%)	$*C_6C_8H_{10}$	100 µg/mL in nonane	1.2 mL
	DLM-371-1.2	Phenanthrene (D_{10}, 98%)	$C_{14}D_{10}$	200 µg/mL in isooctane	1.2 mL
	ULM-7427-1.2	Phenanthrene (unlabeled)	$C_{14}H_{10}$	200 µg/mL in isooctane	1.2 mL
NEW	DLM-695-1	Phenol (ring-D_5, 98%)	C_6D_5OH	neat	1 g
NEW	DLM-7141-1.2	Propoxur (isopropyl-D_7, 98%)	$C_{11}D_7H_8NO_3$	100 µg/mL in nonane	1.2 mL
NEW	ULM-9765-1.2	Propoxur (unlabeled)	$C_{11}H_{15}NO_3$	100 µg/mL in nonane	1.2 mL
	CLM-3739-1.2	Simazine (ring-$^{13}C_3$, 99%)	$*C_3C_4H_{12}ClN_5$	100 µg/mL in methanol	1.2 mL
	CLM-4694-1.2	Tetrabromobisphenol A (ring-$^{13}C_{12}$, 99%)	$(*C_6Br_2H_2OH)_2C(CH_3)_2$	50 µg/mL in methanol	1.2 mL
	ULM-8734-1.2	Tetrabromobisphenol A (unlabeled)	$(C_6Br_2H_2OH)_2C(CH_3)_2$	50 µg/mL in methanol	1.2 mL
NEW	ULM-8734-T-1.2			50 µg/mL in toluene	1.2 mL
	ED-900	2,3,7,8-Tetrachlorodibenzo-*p*-dioxin ($^{13}C_{12}$, 99%)	$(*C_6H_2Cl_2)_2O_2$	50 µg/mL in nonane	1.2 mL
	ED-901	2,3,7,8-Tetrachlorodibenzo-*p*-dioxin (unlabeled)	$(C_6H_2Cl_2)_2O_2$	50 µg/mL in nonane	4 × 1.2 mL
	DLM-7136-1.2	Tributyltin chloride (D_{27}, 98%)	$C_{12}D_{27}ClSn$	100 µg/mL in MeCl	1.2 mL
	ULM-8061-1.2	Tributyltin chloride (unlabeled)	$C_{12}H_{27}ClSn$	100 µg/mL in MeCl	1.2 mL
	CLM-4551-1.2	2,4,5-Trichlorophenoxyacetic acid (ring-$^{13}C_6$, 99%)	$*C_6C_2H_5Cl_3O_3$	100 µg/mL in MeCl	1.2 mL
	ULM-7213-1.2	2,4,5-Trichlorophenoxyacetic acid (unlabeled)	$C_8H_5Cl_3O_3$	100 µg/mL in MeCl	1.2 mL
NEW	CLM-9049-1.2	3,5,6-Trichloro-2-pyridinol (TCPY) (4,5,6-$^{13}C_3$, 99%) CP 97%	$*C_3C_2H_2Cl_3NO$	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-9204-1.2	3,5,6-Trichloro-2-pyridinol (TCPY) (unlabeled)	$C_5H_2Cl_3NO$	100 µg/mL in acetonitrile	1.2 mL
	CLM-6779-1.2	Triclosan (2',4,4'-Trichloro-2-hydroxydiphenyl ether) ($^{13}C_{12}$, 99%)	$*C_{12}H_7Cl_3O_2$	100 µg/mL in nonane	1.2 mL
NEW	CLM-6779-MT-1.2			100 µg/mL in MTBE	1.2 mL
	ULM-6935-1.2	Triclosan (2',4,4'-Trichloro-2-hydroxydiphenyl ether) (unlabeled)	$C_{12}H_7Cl_3O_2$	100 µg/mL in nonane	1.2 mL
NEW	ULM-6935-MT-1.2			100 µg/mL in MTBE	1.2 mL
	DLM-4479-1.2	Trifluralin (di-*n*-propyl-D_{14}, 98%)	$C_{13}D_{14}H_2F_3N_3O_4$	100 µg/mL in nonane	1.2 mL
NEW	DLM-4444-0.1	Urethane (ethyl carbamate) (ethyl-D_5, 98%)	$C_3D_5H_2NO_2$	neat	0.1 g
NEW	DLM-167-C	Vinyl chloride (D_3, 98%)	C_2D_3Cl	100 µg/mL in methanol-OD	20 mL
NEW	ULM-8224-1.2	Vinyl chloride (unlabeled)	C_2H_3Cl	50 µg/mL in methanol	1.2 mL

This section represents only a partial listing of known and suspected endocrine-disrupting chemicals. If you do not see a standard listed here for a compound you are interested in, please contact CIL to discuss how we can help you with your research needs.

Industrial Chemical Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	CLM-4674-1.2	*n*-Butylbenzene (ring-$^{13}C_6$, 99%)	$*C_6H_5(CH_2)_3CH_3$	100 µg/mL in nonane	1.2 mL
	CLM-4695-1.2	1,2-Dibromo-3-chloropropane ($^{13}C_3$, 99%)	$*C_3H_5Br_2Cl$	100 µg/mL in methanol	1.2 mL
	CLM-6144-1.2	1,1-Dichloroethylene (random-^{13}C, 99%) (stabilized with hydroquinone)	$*CCH_2Cl_2$	100 µg/mL in methanol	1.2 mL
	ULM-7214-1.2	1,1-Dichloroethylene (unlabeled) (stabilized with hydroquinone)	CCH_2Cl_2	100 µg/mL in methanol	1.2 mL
	CLM-6145-1.2	1,2-Dichloroethylene ($^{13}C_1$, 99%) (*cis*/*trans* mix) (stabilized with hydroquinone)	$*CCH_2Cl_2$	100 µg/mL in methanol	1.2 mL
	ULM-7215-1.2	1,2-Dichloroethylene (unlabeled) (*cis*/*trans* mix) (stabilized with hydroquinone)	CCH_2Cl_2	100 µg/mL in methanol	1.2 mL
	CLM-1305-1.2	2,4-Dichlorophenol ($^{13}C_6$, 99%)	$*C_6H_3Cl_2OH$	100 µg/mL in nonane	1.2 mL
	CLM-3374-1.2	Epichlorohydrin ($^{13}C_3$, 99%)	$*C_3H_5ClO$	100 µg/mL in acetonitrile	1.2 mL
	DLM-1008-1	Epichlorohydrin (D_5, 98%)	$ClCD_2CDCD_2O$	neat	1 g
	ULM-7403-1.2	Epichlorohydrin (unlabeled)	$ClCH_2CHCH_2O$	100 µg/mL in acetonitrile	1.2 mL
	CLM-8008-1.2	Hexachlorophene ($^{13}C_{13}$, 99%)	$*CH_2[*C_6H(Cl)_3OH]_2$	50 µg/mL in methanol	1.2 mL
	ULM-8009-1.2	Hexachlorophene (unlabeled)	$CH_2[C_6H(Cl)_3OH]_2$	50 µg/mL in methanol	1.2 mL
	CLM-4745-1.2	4-Hydroxybenzoic acid (ring-$^{13}C_6$, 99%)	$*C_6CH_6O_3$	1 mg/mL in methanol	1.2 mL
	ULM-8251-1.2	4-Hydroxybenzoic acid (unlabeled)	$C_7H_6O_3$	1 mg/mL in methanol	1.2 mL
NEW	CLM-8792-1.2	Sodium *bis*(2-ethylhexyl) sulfosuccinate (DOSS) (fumaric acid-$^{13}C_4$, 99%)	$*C_4C_{16}H_{37}NaO_7S$	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-8807-1.2	Sodium *bis*(2-ethylhexyl) sulfosuccinate (DOSS) (unlabeled)	$C_{20}H_{37}NaO_7S$	100 µg/mL in acetonitrile	1.2 mL
	CLM-8006-1.2	Tetrachlorobisphenol A (ring-$^{13}C_{12}$, 99%)	$*C_{12}C_3H_{12}Cl_4O_2$	50 µg/mL in methanol	1.2 mL
	ULM-7606-1.2	Tetrachlorobisphenol A (unlabeled)	$C_{12}C_3H_{12}Cl_4O_2$	50 µg/mL in methanol	1.2 mL
NEW	DLM-9612-1.2	Tetradecyl (tri-*n*-butyl) phosphonium bromide (D_{29}, 98%)	$C_{26}H_{27}D_{29}PBr$	100 µg/mL in acetone:water (75:25)	1.2 mL
NEW	ULM-9609-1.2	Tetradecyl (tri-*n*-butyl) phosphonium chloride (unlabeled)	$C_{26}H_{56}ClP$	100 µg/mL in acetone:water (75:25)	1.2 mL
	DLM-7136-1.2	Tributyltin chloride (D_{27}, 98%)	$(C_4D_9)_3ClSn$	100 µg/mL in MeCl-D_2	1.2 mL
	ULM-8061-1.2	Tributyltin chloride (unlabeled)	$(C_4H_9)_3ClSn$	100 µg/mL in MeCl	1.2 mL
	CLM-6185-1.2	1,1,1-Trichloroethane (2-^{13}C, 99%)	$*CCH_3Cl_3$	100 µg/mL in methanol	1.2 mL
	DLM-2080-1.2	1,2,3-Trichloropropane (D_5, 98%) CP 95%	$CD_2ClCDClCD_2Cl$	100 µg/mL in methanol	1.2 mL
	ULM-6911-1.2	1,2,3-Trichloropropane (unlabeled)	$CH_2ClCHClCH_2Cl$	1 mg/mL in methanol	1.2 mL
NEW	CLM-9095	Trimethylolpropane phosphate (3,4,9,10-$^{13}C_4$, 99%) CP 95%	$*C_4C_2H_{11}O_4P$		Inquire
NEW	ULM-9096	Trimethylolpropane phosphate (unlabeled) CP 95%	$C_6H_{11}O_4P$		Inquire
NEW	DLM-167-C	Vinyl chloride (D_3, 98%)	C_2D_3Cl	100 µg/mL in methanol-OD	20 mL
NEW	ULM-8224-1.2	Vinyl chloride (unlabeled)	C_2H_3Cl	50 µg/mL in methanol	1.2 mL

Explosives Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	CLM-1519-S CLM-1519-0.1	1,3-Dinitrobenzene ($^{13}C_6$, 99%)	$*C_6H_4(NO_2)_2$	1 mg/mL in acetonitrile neat	1 mL 0.1 g
	ULM-3850-1.2	1,3-Dinitrobenzene (unlabeled)	$C_6H_4(NO_2)_2$	1 mg/mL in acetonitrile	1.2 mL
	DLM-299-10	2,4-Dinitrophenol (ring-D_3, 98%) (contains 0.35 mg/mL deuterium oxide)	$(NO_2)_2C_6D_3OH$	1 mg/mL in methanol-OD	10 mL
NEW	ULM-8706-10	2,4-Dinitrophenol (unlabeled) (contains 0.35 mg/mL water)	$(NO_2)_2C_6H_3OH$	1 mg/mL in methanol	10 mL
	DLM-2207-S	2,4-Dinitrotoluene (ring-D_3, 98%)	$C_6D_3CH_3(NO_2)_2$	1 mg/mL in acetonitrile	1 mL
	ULM-3888-S	2,4-Dinitrotoluene (unlabeled)	$C_6H_3CH_3(NO_2)_2$	1 mg/mL in acetonitrile	1 mL
	DLM-1939-S	2,6-Dinitrotoluene (methyl-D_3, 98%)	$C_6H_3CD_3(NO_2)_2$	1 mg/mL in acetonitrile	1 mL
	ULM-3889-S	2,6-Dinitrotoluene (unlabeled)	$C_6H_3CH_3(NO_2)_2$	1 mg/mL in acetonitrile	1 mL
	CNLM-7963-S	HMX ($^{13}C_4$, 99%; ring-$^{15}N_4$, 98%)	$*C_4H_8N_4*N_4O_8$	1 mg/mL in acetonitrile	1 mL
	ULM-7969-1	HMX (unlabeled)	$C_4H_8N_4N_4O_8$	1 mg/mL in acetonitrile	1 mL
NEW	CLM-675	Nitrobenzene ($^{13}C_6$, 99%)	$*C_6H_5NO_2$		Inquire
NEW	DLM-294-5	Nitrobenzene (D_5, 99%)	$C_6D_5NO_2$	neat	5 g
NEW	DLM-294-10			neat	10 g
	ULM-3892-1.2	Nitrobenzene (unlabeled)	$C_6H_5NO_2$	1 mg/mL in acetonitrile	1.2 mL
NEW	NLM-814-1.2	Nitroglycerin (trinitroglycerol) ($^{15}N_3$, 98%)	$C_3H_3(*NO_3)_3$	1 mg/mL in ethanol	1.2 mL
	ULM-3893-S	Nitroglycerin (trinitroglycerol) (unlabeled)	$C_3H_5(NO_3)_3$	1 mg/mL in acetonitrile	1 mL
	CLM-3912-S	2-Nitrotoluene (ring-$^{13}C_6$, 99%)	$*C_6H_4CH_3NO_2$	1 mg/mL in acetonitrile	1 mL
	ULM-3890-1.2	2-Nitrotoluene (unlabeled)	$C_6H_4CH_3NO_2$	1 mg/mL in acetonitrile	1.2 mL
	CLM-3913-S	4-Nitrotoluene (ring-$^{13}C_6$, 99%)	$*C_6H_4CH_3NO_2$	1 mg/mL in acetonitrile	1 mL
	ULM-3891-1.2	4-Nitrotoluene (unlabeled)	$C_6H_4CH_3NO_2$	1 mg/mL in acetonitrile	1.2 mL
	CNLM-7987-S	RDX ($^{13}C_3$, 99%; $^{15}N_3$, 98%)	$*C_3H_6N_3(*NO_2)_3$	1 mg/mL in acetonitrile	1 mL
	CLM-3846-S	RDX ($^{13}C_3$, 99%)	$*C_3H_6N_3(NO_2)_3$	1 mg/mL in acetonitrile	1 mL
	ULM-3847-S	RDX (unlabeled)	$C_3H_6N_3(NO_2)_3$	1 mg/mL in acetonitrile	1.2 mL
	CLM-3848-S	1,3,5-Trinitrobenzene ($^{13}C_6$, 99%)	$*C_6H_3(NO_2)_3$	1 mg/mL in acetonitrile	1 mL
	ULM-3849-1.2	1,3,5-Trinitrobenzene (unlabeled)	$C_6H_3(NO_2)_3$	1 mg/mL in acetonitrile	1.2 mL
	CNLM-3643-S	2,4,6-Trinitrotoluene (TNT) ($^{13}C_7$, 99%; $^{15}N_3$, 98%)	$*C_7H_5(*NO_2)_3$	1 mg/mL in benzene (wetted with H_2O 33% by weight)	1 mL
	ULM-3845-1.2	2,4,6-Trinitrotoluene (TNT) (unlabeled)	$C_7H_5(NO_2)_3$	1 mg/mL in acetonitrile	1.2 mL

Note: Shipping restrictions on explosive compounds may prevent CIL from shipping certain standards, especially outside of the US. Please contact CIL to confirm availability of these explosive standards.

n-Alkane Standards

	Catalog No.	Compound	Formula	Amount
	DLM-1213-1 DLM-1213-5	*n*-Pentane (D_{12}, 98%)	$CD_3(CD_2)_3CD_3$	1 g 5 g
	DLM-139-1 DLM-139-5	*n*-Hexane (D_{14}, 98%)	$CD_3(CD_2)_4CD_3$	1 g 5 g
	DLM-423-1 DLM-423-5	*n*-Heptane (D_{16}, 98%)	$CD_3(CD_2)_5CD_3$	1 g 5 g
	DLM-50-1 DLM-50-5	*n*-Octane (D_{18}, 99%)	$CD_3(CD_2)_6CD_3$	1 g 5 g
	DLM-2438-1 DLM-2438-5	*n*-Nonane (D_{20}, 98%)	$CD_3(CD_2)_7CD_3$	1 g 5 g
	DLM-133-1 DLM-133-5	*n*-Decane (D_{22}, 99%)	$CD_3(CD_2)_8CD_3$	1 g 5 g
	DLM-338-1 DLM-338-5	*n*-Dodecane (D_{26}, 98%)	$CD_3(CD_2)_{10}CD_3$	1 g 5 g
NEW	DLM-1354-0.1 DLM-1354-0.5	*n*-Tridecane (D_{28}, 98%)	$CD_3(CD_2)_{11}CD_3$	0.1 g 0.5 g
	DLM-670-1 DLM-670-5	*n*-Tetradecane (D_{30}, 98%)	$CD_3(CD_2)_{12}CD_3$	1 g 5 g
	DLM-1283-1 DLM-1283-5	*n*-Pentadecane (D_{32}, 98%)	$CD_3(CD_2)_{13}CD_3$	1 g 5 g
NEW	DLM-203-0.1 DLM-203-1 DLM-203-5	*n*-Hexadecane (D_{34}, 98%)	$CD_3(CD_2)_{14}CD_3$	0.1 g 1 g 5 g
NEW	DLM-1342-1 DLM-1342-5	*n*-Heptadecane (D_{36}, 98%) CP 95%	$CD_3(CD_2)_{15}CD_3$	1 g 5 g
	DLM-1346-0.1 DLM-1346-1	*n*-Nonadecane (D_{40}, 98%)	$CD_3(CD_2)_{17}CD_3$	0.1 g 1 g
	DLM-2208-0.5 DLM-2208-1	*n*-Eicosane (D_{42}, 98%)	$CD_3(CD_2)_{18}CD_3$	0.5 g 1 g
	DLM-3336-1	*n*-Tricosane (D_{48}, 98%)	$CD_3(CD_2)_{21}CD_3$	1 g
	DLM-2209-0.5	*n*-Tetracosane (D_{50}, 98%)	$CD_3(CD_2)_{22}CD_3$	0.5 g
	DLM-2210-0.5	*n*-Triacontane (D_{62}, 98%)	$CD_3(CD_2)_{28}CD_3$	0.5 g
	DLM-2724-1	*n*-Dotriacontane (D_{66}, 98%)	$CD_3(CD_2)_{30}CD_3$	1 g
	DLM-2634-1	*n*-Hexatriacontane (D_{74}, 98%)	$CD_3(CD_2)_{34}CD_3$	1 g

Priority Pollutant Standards

Catalog No.	Compound	Formula	Concentration	Amount
DLM-9-10	Acetone (D_6, 99.9%)	CD_3COCD_3	neat	10 g
CLM-856-0.1	Acrylonitrile ($^{13}C_3$, 99%) (inhibited with 0.1% 4-methoxy phenol)	H_2*C=*CH*CN	neat	0.1 g
DLM-820-1	Acrylonitrile (D_3, 98%)	D_2C=CDCN	neat	1 g
DLM-820-5	(inhibited with 0.1% 4-methoxy phenol)		neat	5 g
DLM-2030-1.2	2-Aminonaphthalene (ring-D_7, 98%)	$C_{10}D_7NH_2$	1 mg/mL in benzene	1.2 mL
ULM-9376-1.2	2-Aminonaphthalene (unlabeled)	$C_{10}H_7NH_2$	1 mg/mL in benzene	1.2 mL
DLM-7658	1-Amino-2-propanol (D_9, 98%)	C_3D_9NO		Inquire
CLM-714-0.1	Aniline ($^{13}C_6$, 99%)	*$C_6H_5NH_2$	neat	0.1 g
CLM-714-0.25			neat	0.25 g
DLM-862-1	Aniline (ring-D_5, 98%)	$C_6D_5NH_2$	neat	1 g
DLM-862-5			neat	5 g
DLM-106-5	Aniline (D_7, 98%)	$C_6D_5ND_2$	neat	5 g
CLM-182-0.1	Benzene ($^{13}C_6$, 99%)	*C_6H_6	neat	0.1 g
CLM-182-0.5			neat	0.5 g
DLM-1-5	Benzene (D_6, 99.5%)	C_6D_6	neat	5 g
CDLM-629-0.1	Benzene ($^{13}C_6$, 99%; D_6, 98%)	*C_6D_6	neat	0.1 g
DLM-1338-1.2	Benzidine (ring-D_8, 98%)	$C_{12}D_8(NH_2)_2$	100 µg/mL in toluene	1.2 mL
DLM-122-1	Benzoic acid (ring-D_5, 98%)	$C_8D_5CO_2H$	neat	1 g
DLM-122-5			neat	5 g
DLM-1663-1	1,4-Benzoquinone (D_4, 98%)	$O(C_6D_4)O$	neat	1 g
CLM-3235-1.2	Biphenyl ($^{13}C_{12}$, 99%)	*$C_{12}H_{10}$	100 µg/mL in nonane	1.2 mL
DLM-494-1	Biphenyl (D_{10}, 98%)	$C_{12}D_{10}$	neat	1 g
DLM-494-5			neat	5 g
ULM-1710-1.2	Biphenyl (unlabeled)	$C_{12}H_{10}$	50 µg/mL in nonane	1.2 mL
ULM-1710-0.5			neat	0.5 g
DLM-1945-0.1	Bis(2-chloroethoxy) methane (chloroethoxy-D_8, 98%)	$CH_2(OCD_2CD_2Cl)_2$	neat	0.1 g
DLM-2004-0.05	Bis(2-chloroethyl) ether (D_8, 98%)	$ClCD_2CD_2OCD_2CD_2Cl$	neat	0.05 g
DLM-2004-0.1			neat	0.1 g
DLM-2138	Bis(2-chloroisopropyl) ether (D_{12}, 95%)	$C_6D_{12}C_{12}O$		Inquire
ULM-3693	Bis(2-chloroisopropyl) ether (unlabeled)	$C_6H_{12}C_{12}O$		Inquire
CLM-4325-1.2	Bisphenol A (ring-$^{13}C_{12}$, 99%)	*$(C_6H_4OH)_2C(CH_3)_2$	100 µg/mL in acetonitrile	1.2 mL
ULM-7106-1.2	Bisphenol A (unlabeled)	$(C_6H_4OH)_2C(CH_3)_2$	100 µg/mL in acetonitrile	1.2 mL
ULM-8654-1.2	2,4'-Bisphenol A (2-(2-hydroxyphenyl)-2-(4-hydroxyphenyl)propane) (unlabeled)	$(C_6H_4OH)_2C(CH_3)_2$	100 µg/mL in acetonitrile	1.2 mL
DLM-872-0.1	Bromochloromethane (D_2, 98%)	CD_2ClBr	neat	0.1 g
CLM-2090-1	Bromodichloromethane (^{13}C, 99%) (stabilized with K_2CO_3)	Br*$CHCl_2$	neat	1 g
ULM-8480	Bromodichloromethane (unlabeled)	$BrCHCl_2$		Inquire
DLM-874-10	Bromoethane (D_5, 98%)	CD_3CD_2Br	neat	10 g
DLM-103-1	2-Bromoethanol (1,1,2,2-D_4, 98%) CP 95%+	$BrCD_2CD_2OH$	neat	1 g
DLM-103-5			neat	5 g
CLM-726-0.1	Bromoform (^{13}C, 99%) (stabilized with copper wire)	*$CHBr_3$	neat	0.1 g
CLM-726-0.5			neat	0.5 g
DLM-400-10	Bromoform (D, 99.5%) (stabilized with copper wire)	$CDBr_3$	neat	10 g
DLM-400-25			neat	25 g
CLM-1217-1	Bromomethane (^{13}C, 99%) *	*CH_3Br	neat	1 L
DLM-401-5	Bromomethane (D_3, 99%) *	CD_3Br	neat	5 g
DLM-1910-0.1	2-Butanone (4,4,4-D_3, 98%)	$CD_3CH_2COCH_3$	neat	0.1 g
DLM-1910-1			neat	1 g
DLM-663-0.1	2-Butanone (1,1,1,3,3-D_5, 98%)	$CH_3CD_2COCD_3$	neat	0.1 g
DLM-663-1			neat	1 g
DLM-663-5			neat	5 g
NEW DLM-8811-1.2	2-Butoxyethanol (1,1,2,2,-D_4, 99%)	$CH_3CH_2CH_2CH_2OCD_2CD_2OH$	1000 µg/mL in water	1.2 mL
NEW ULM-9046-1.2	2-Butoxyethanol (unlabeled)	$C_6H_{14}O_2$	1000 µg/mL in water	1.2 mL
DLM-2134-0.1	Carbazole (ring-D_8, 98%)	$C_{12}D_8NH$	neat	0.1 g

*Gases require a breakseal flask or cylinder and valve at an additional charge. Breakseal flasks are only available for certain gases at atmospheric pressure.

(continued on next page)

Priority Pollutant Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	CLM-731-0.1	Carbon tetrachloride (^{13}C, 99%)	$*CCl_4$	neat	0.1 g
	CLM-731-0.5			neat	0.5 g
	CLM-731-1			neat	1 g
	CLM-1520-1	Catechol ($^{13}C_6$, 99%)	$*C_6H_4(OH)_2$	neat	1 mg
	DLM-1912-5	Catechol (D_6, 98%)	$C_6D_4(OD)_2$	neat	5 g
	CLM-2284-1	4-Chlorocatechol ($^{13}C_6$, 99%)	$Cl*C_6H_3(OH)_2$	neat	1 mg
	ULM-1701-0.1	4-Chlorocatechol (unlabeled) CP 90-95%	$ClC_6H_3(OH)_2$	neat	0.1 g
	CLM-2091	Chlorodibromomethane (^{13}C, 99%)	Br_2*CHCl		Inquire
NEW	DLM-1171-A-1.2	Chloroethane (D_5, 98%)	CD_3CD_2Cl	1000 µg/mL in nonane	1.2 mL
	DLM-1171-5			neat	5 g
	DLM-1928-0.5	2-Chloroethanol (1,1,2,2-D_4, 98%)	$ClCD_2CD_2OH$	neat	0.5 g
	CLM-262-0.1	Chloroform (^{13}C, 99%)	$*CHCl_3$	neat	0.1 g
	CLM-262-0.5			neat	0.05 g
	CLM-262-1			neat	1 g
	ULM-1705-0.1	4-Chloroguaiacol (unlabeled) CP 85-90%	$ClC_6H_3(OH)(OCH_3)$	neat	0.1 g
	DLM-2037-1	Chloroiodomethane (D_2, 98%) (stabilized with copper wire)	$ClCD_2I$	neat	1 g
	CLM-339-1	Chloromethane (^{13}C, 99%)	$*CH_3Cl$	neat	1 L
	DLM-337-1-BS	Chloromethane (D_3, 99%)	CD_3Cl	neat	1 L
	DLM-337-1-LB	Chloromethane (D_3, 99%)	CD_3Cl	neat	1 L
	DLM-2205-0.01	4-Chloro-3-methylphenol (ring-2,6-D_2, 98%)	$C_7D_2H_4ClO$	neat	0.01 g
	DLM-2205-0.1			neat	0.1 g
	DLM-2005-1.2	2-Chloronaphthalene (D_7, 98%)	$C_{10}D_7Cl$	100 µg/mL in nonane	1.2 mL
	DLM-2005-0.01			neat	0.01 g
	DLM-2005-0.1			neat	0.1 g
	CLM-1559-1	4-Chloronitrobenzene ($^{13}C_6$, 99%)	$*C_6H_4NO_2Cl$	neat	1 mg
	DLM-1930-0.1	4-Chlorophenyl phenyl ether (phenyl-D_5, 98%)	$ClC_6H_4OC_6D_5$	neat	0.1 g
	ULM-2421-0.1	4-Chlorophenyl phenyl ether (unlabeled)	$ClC_6H_4OC_6H_5$	neat	0.1 g
	DLM-3014-1	2-Chloropropene (D_5, 98%)	$D_3CClC=CD_2$	neat	1 g
	DLM-3014-5			neat	5 g
NEW	DLM-3016-1	*o*-Cresol (D_8, 98%)	$D_3CC_6D_4OD$	neat	1 g
	DLM-3016-5			neat	5 g
	CLM-7341	*p*-Cresol (ring-$^{13}C_6$, 99%)	$*C_6CH_8O$		Inquire
NEW	DLM-3017-1	*p*-Cresol (D_8, 98%)	$D_3CC_6D_4OD$	neat	1 g
	DLM-3017-5			neat	5 g
	DLM-1386-1	Decalin (D_{18}, 99%) (*cis*/*trans* mixture)	$C_{10}D_{18}$	neat	1 g
	DLM-1386-5			neat	5 g
	DLM-1843-5	*trans*-Decalin (D_{18}, 98%)	$C_{10}D_{18}$	neat	5 g
	CLM-1544-1.2	Dibenzo-*p*-dioxin ($^{13}C_{12}$, 99%)	$*C_{12}H_8O_2$	50 µg/mL in nonane	1.2 mL
	ULM-1711-1.2	Dibenzo-*p*-dioxin (unlabeled)	$C_{12}H_8O_2$	50 µg/mL in nonane	1.2 mL
	ULM-1711-0.01			neat	0.01 g
	CLM-1561-1.2	Dibenzofuran ($^{13}C_{12}$, 99%)	$*C_{12}H_8O$	50 µg/mL in nonane	1.2 mL
	DLM-2276-0.05	Dibenzofuran (D_8, 98%)	$C_{12}D_8O$	neat	0.05 g
	ULM-1712-1.2	Dibenzofuran (unlabeled)	$C_{12}H_8O$	50 µg/mL in nonane	1.2 mL
	ULM-1712-0.05			neat	0.05 g
	DLM-2206-0.1	Dibenzothiophene (D_8, 98%)	$C_{12}D_8S$	neat	0.1 g
	CLM-483-0.1	1,2-Dibromoethane ($^{13}C_2$, 99%)	$Br*CH_2*CH_2Br$	neat	0.1 g
	CLM-483-1			neat	1 g
	CLM-735-1	3,4-Dichloroaniline ($^{13}C_6$, 99%)	$*C_6H_3Cl_3NH_2$	neat	1 mg
	DLM-3022-1.2	3,3′-Dichlorobenzidine (ring-D_6, 98%)	$C_{12}D_6H_4N_2Cl_2$	1 mg/mL in benzene	1.2 mL
	ULM-1702-0.1	4,5-Dichlorocatechol (unlabeled) CP 95-99%	$Cl_2C_6H_2(OH)_2$	neat	0.1 g
	DLM-1934-0.1	1,1-Dichloroethane (2,2,2-D_3, 98%)	CD_3CHCl_2	neat	0.1 g
	DLM-1934-0.25			neat	0.25 g
	DLM-18-1	1,2-Dichloroethane (D_4, 99%)	$ClCD_2CD_2Cl$	neat	1 g
	DLM-18-5			neat	5 g
	DLM-1935-0.1	1,1-Dichloroethylene (2,2-D_2, 98%)	$CD_2=CCl_2$	neat	0.1 g
	DLM-1935-1	(inhibited with hydroquinone)		neat	1 g

*Gases require a breakseal flask or cylinder and valve at an additional charge. Breakseal flasks are only available for certain gases at atmospheric pressure.

Priority Pollutant Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	DLM-1936-0.1	1,2-Dichloroethylene (1,2-D_2, 98%) (*cis*/*trans* mixture)	ClCD=CDCl	neat	0.1 g
	DLM-1936-1			neat	1 g
	DLM-1937-0.1	1,2-Dichloropropane (D_6, 98%)	$ClCD_2CDClCD_3$	neat	0.1 g
	DLM-1937-0.25			neat	0.25 g
	DLM-2112-1.2	1,3-Dichloro-2-propanol (D_5, 98%)	$ClCD_2CD(OH)CD_2Cl$	1 mg/mL in methanol	1.2 mL
	ULM-8092-1.2	1,3-Dichloro-2-propanol (unlabeled)	$ClCH_2CH(OH)CH_2Cl$	1 mg/mL in methanol	1.2 mL
	DLM-1938-0.1	1,3-Dichloropropene (D_4, 98%) (*cis*/*trans* mixture)	$ClCD_2CD=CDCl$	neat	0.1 g
	ULM-1700-0.1	5,6-Dichlorovanillin (unlabeled)	$Cl_2C_6H(CHO)(OH)(OCH_3)$	neat	0.1 g
	DLM-1592-1	Diethyl ether (D_{10}, 99%)	$O(CD_3CD_2)_2$	neat	1 g
	DLM-1592-5			neat	5 g
	ULM-8235-1.2	Diethylene glycol (unlabeled)	$O(CH_2CH_2OH)_2$	1 mg/mL in methanol	1.2 mL
	CLM-1006-0.5	Diiodomethane (^{13}C, 99%) (stabilized with copper wire)	$*CH_2I_2$	neat	0.5 g
	DLM-3190-1	*N,N*-Dimethylaniline (D_{11}, 98%)	$C_6D_5N(CD_3)_2$	neat	1 g
	CLM-503-0.5	*N,N*-Dimethylformamide (carbonyl-^{13}C, 99%)	$H*CON(CH_3)_2$	neat	0.5 g
	CLM-503-1			neat	1 g
	DLM-1366-1.2	Dimethyl phthalate (ring-D_4, 98%)	C_6D_4-1,2-$(CO_2CH_3)_2$	100 µg/mL in nonane	1.2 mL
	DLM-1366-0.1			neat	0.1 g
	DLM-3024-5	1,3-Dinitrobenzene (D_4, 98%)	$C_6D_4N_2O_4$	neat	5 g
	DLM-3173-0.1	4,6-Dinitro-2-methylphenol (ring-D_2, 98%)	$CH_3C_6D_2(NO_2)_2OH$	neat	0.1 g
	DLM-299-10	2,4-Dinitrophenol (ring-D_3, 98%)	$C_6D_3(NO_2)_2OH$	1 mg/mL in methanol-OD	10 mL
NEW	ULM-8706-10	2,4-Dinitrophenol (unlabeled) (contains 0.35 mg/mL water)	$(NO_2)_2C_6H_3OH$	1 mg/mL in methanol	10 mL
	DLM-2207-S	2,4-Dinitrotoluene (ring-D_3, 98%)	$H_3CC_6D_3(NO_2)_2$	1 mg/mL in acetonitrile	1 mL
	DLM-1939-S	2,6-Dinitrotoluene (methyl-D_3, 98%)	$D_3CC_6H_5(NO_2)_2$	1 mg/mL in acetonitrile	1 mL
	DLM-28-SM-1.2	1,4-Dioxane (*p*-dioxane) (D_8, 99%)	$C_4D_8O_2$	1 mg/mL in methanol	1.2 mL
	DLM-28-5			neat	5 g
	DLM-28-10			neat	10 g
	DLM-28-25			neat	25 g
	ULM-7840-1.2	1,4-Dioxane (*p*-dioxane) (unlabeled)	$C_4H_8O_2$	1 mg/mL in methanol	1.2 mL
	DLM-2133-0.1	Diphenylamine (diphenyl-D_{10}, 98%)	$C_6D_5NHC_6D_5$	neat	0.1 g
	CLM-1587-1.2	Diphenyl ether ($^{13}C_{12}$, 99%)	$(*C_6H_5)_2O$	50 µg/mL in nonane	1.2 mL
	DLM-2211-0.1	Diphenyl ether (D_{10}, 98%)	$(C_6D_5)_2O$	neat	0.1 g
	DLM-3026-0.05	1,2-Diphenylhydrazine (diphenyl-D_{10}, 98%)	$C_{12}D_{10}H_5N_2$	neat	0.05 g
	DLM-3026-0.1			neat	0.1 g
NEW	DLM-4880-1.2	*N,N'*-Diphenyl-*p*-phenylenediamine (D_{14}, 98%) CP 95%	$C_6D_5NHC_6D_4NHC_6D_5$	100 µg/mL in nonane	1.2 mL
NEW	ULM-9465-1.2	*N,N'*-Diphenyl-*p*-phenylenediamine (unlabeled)	$C_6H_5NHC_6H_4NHC_6H_5$	100 µg/mL in nonane	1.2 mL
	DLM-411-5	Durene (1,2,4,5-tetramethylbenzene) (D_{14}, 98%)	$C_6D_2(CD_3)_4$	neat	5 g
	CLM-3374-1.2	Epichlorohydrin ($^{13}C_3$, 99%)	$*C_3H_5ClO$	100 µg/mL in acetonitrile	1.2 mL
	DLM-1008-1	Epichlorohydrin (D_5, 98%)	$ClCD_2CDCD_2O$	neat	1 g
	ULM-7403-1.2	Epichlorohydrin (unlabeled)	$ClCH_2CHCH_2O$	100 µg/mL in acetonitrile	1.2 mL
	DLM-686-5	Ethylbenzene (ethyl-D_5, 98%)	$C_6H_5CD_2CD_3$	neat	5 g
	DLM-199-10	Ethylbenzene (D_{10}, 98%)	$C_6D_5CD_2CD_3$	neat	10 g
	DLM-4304-10	Ethylbenzene (D_{10}, 99%)	$C_6D_5CD_2CD_3$	neat	10 g
	CLM-473-0.1	Ethylene oxide ($^{13}C_2$, 99%) * (airfreight forbidden)	$*CH_2*CH_2O$	neat	0.1 g
	CLM-473-0.5			neat	0.5 g
	DLM-271-5	Ethylene oxide (D_4, 99%) * (airfreight forbidden)	CD_2CD_2O	neat	5 g
	CLM-810-1	Guaiacol (ring-$^{13}C_6$, 99%)	$CH_3O*C_6H_4OH$	neat	1 mg
	CLM-2145-1.2	Hexachloro-1,3-butadiene ($^{13}C_4$, 99%)	$*CCl_2=*CCl*CCl=*CCl_2$	100 µg/mL in isooctane	1.2 mL
	CLM-2145-0.01			neat	0.01 g
NEW	ULM-7526-1.2	Hexachloro-1,3-butadiene (unlabeled)	$CCl_2=CClCCl=CCl_2$	100 µg/mL in isooctane	1.2 mL
	CLM-2110-5	Hexachlorocyclopentadiene ($^{13}C_4$, 99%)	$*C_4CCl_6$	neat	5 mg
	CLM-2110-10			neat	10 mg
	CLM-2003-0.1	Hexachloroethane (1-^{13}C, 99%)	CCl_3*CCl_3	neat	0.1 g
	CLM-2003-0.5			neat	0.5 g
	ULM-6074-60	1,2,4,5,7,8-Hexachloroxanthene (unlabeled)	$C_{13}H_4Cl_6O$	neat	60 µg
	DLM-277-0.1	Hexanoic acid (D_{11}, 98%)	$CD_3(CD_2)_4CO_2H$	neat	0.1 g
	DLM-277-1			neat	1 g

(continued on next page)

Priority Pollutant Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	DLM-1522-1	Hydroquinone (ring-D_4, 98%)	HOC_6D_4OH	neat	1 g
NEW	NLM-6715-1.2	8-Hydroxy-2′-deoxyguanosine ($^{15}N_5$, 98%) CP 95%	$C_{10}H_{13}{}^*N_5O_5$	25 µg/mL in water	1.2 mL
NEW	ULM-9700-1.2	8-Hydroxy-2′-deoxyguanosine (unlabeled)	$C_{10}H_{13}N_5O_5$	25 µg/mL in water	1.2 mL
NEW	CLM-9593	3-Hydroxymethyltetrahydrofuran ($^{13}C_5$, 99%)	$^*C_5H_{10}O_2$		Inquire
	ULM-2-4X25	Isooctane (unlabeled)	$(CH_3)_3CCH_2CH(CH_3)_2$	neat	4 × 25 mL
	DLM-1943-0.1	Isophorone (3-methyl-D_3; 2,4,4,6,6-D_5, 98%)	$CD_2C(CH_3)_2CD_2C(CD_3)$= CDCO	neat	0.1 g
	CLM-7864-1.2	Leucomalachite green (phenyl-$^{13}C_6$, 99%)	$^*C_6H_5CH[C_6H_4N(CH_3)_2]_2$	100 µg/mL in acetonitrile	1.2 mL
	ULM-7870-1.2	Leucomalachite green (unlabeled)	$C_6H_5CH[C_6H_4N(CH_3)_2]_2$	100 µg/mL in acetonitrile	1.2 mL
	DLM-24-5	Methanol (D_4, 99.8%)	CD_3OD	neat	5 g
	DLM-24-10			neat	10 g
	CLM-1593-0.25	Methylene chloride (^{13}C, 99%)	$^*CH_2Cl_2$	neat	0.25 g
	CLM-1593-0.5			neat	0.5 g
	DLM-23-5	Methylene chloride (D_2, 99.9%)	CD_2Cl_2	neat	5 g
	DLM-2277-1	2-(4-Methylphenyl) propane (D_{14}, 98%)	$D_3CC_6D_4CD(CD_3)_2$	neat	1 g
	DLM-664-1	2-Nitroaniline (ring-D_4, 98%)	$O_2NC_6D_4NH_2$	neat	1 g
NEW	DLM-294-5	Nitrobenzene (D_5, 99%)	$C_6D_5NO_2$	neat	5 g
NEW	DLM-294-10			neat	10 g
	ULM-3892-1.2	Nitrobenzene (unlabeled)	$C_6H_5NO_2$	1 mg/mL in acetonitrile	1.2 mL
	DLM-295-0.1	2-Nitrophenol (ring-D_4, 98%)	$O_2NC_6D_4OH$	neat	0.1 g
	DLM-295-0.25			neat	0.25 g
	DLM-296-0.1	4-Nitrophenol (ring-D_4, 98%)	$O_2NC_6D_4OH$	neat	0.1 g
	DLM-296-0.25			neat	0.25 g
	ULM-2323-4X25	*n*-Nonane (unlabeled)	$CH_3(CH_2)_7CH_3$	neat	4 × 25 mL
	CLM-6680-1.2	Octachlorostyrene ($^{13}C_8$, 99%)	$^*C_6Cl_5{}^*CCl=^*CCl_2$	100 µg/mL in isooctane	1.2 mL
	ULM-1709-1.2	Octachlorostyrene (unlabeled)	$C_6Cl_5CCl=CCl_2$	100 µg/mL in isooctane	1.2 mL
	OLM-7310-1.2	Perchloric acid, sodium salt ($^{18}O_4$, 90%+)	$Cl^*{}^{18}O_4{\cdot}Na$	100 µg/mL in water	1.2 mL
	ULM-7312-1.2	Perchloric acid, sodium salt (unlabeled)	$ClO_4{\cdot}Na$	100 µg/mL in water	1.2 mL
	CLM-216-0.1	Phenol ($^{13}C_6$, 99%)	$^*C_6H_5OH$	neat	0.1 g
	DLM-695-1	Phenol (ring-D_5, 98%)	C_6D_5OH	neat	1 g
	DLM-695-5			neat	5g
	DLM-370-5	Phenol (D_6, 98%)	C_6D_5OD	neat	5 g
	DLM-3039-1MG	Phenylbutazone (diphenyl-D_{10}, 98%)	$C_{19}D_{10}H_{10}N_2O_2$	neat	1 mg
	DLM-3039-0.05				0.05 g
	DLM-3039-0.1				0.1 g
NEW	ULM-7378-1MG	Phenylbutazone (unlabeled)	$C_{19}H_{20}N_2O_2$	neat	1 mg
	CLM-3733-1.2	*o*-Phenylphenol (ring-$^{13}C_6$, 99%)	$^*C_6H_5C_6H_4OH$	100 µg/mL in nonane	1.2 mL
	ULM-7396-1.2	*o*-Phenylphenol (unlabeled)	$C_{12}H_9OH$	100 µg/mL in nonane	1.2 mL
	CLM-3748-1.2	*p*-Phenylphenol (ring-$^{13}C_6$, 99%) CP 96%	$^*C_6H_5C_6H_4OH$	100 µg/mL in nonane	1.2 mL
	CLM-3040-0.5	Phthalic acid (carboxyl-^{13}C, 99%)	$C_6H_4(^*CO_2H)CO_2H$	neat	0.5 g
	DLM-787-5	Phthalic acid (ring-D_4, 98%)	$C_6D_4(CO_2H)_2$	neat	5 g
	DLM-1293-0.1	2-Picoline (2-methylpyridine) (D_7, 98%)	$C_5D_4NCD_3$	neat	0.1 g
	DLM-1293-1			neat	1 g
	DLM-1541-1	3-Picoline (3-methylpyridine) (D_7, 98%)	$C_5D_4NCD_3$	neat	1 g
	DLM-1294-1	4-Picoline (4-methylpyridine) (D_7, 98%)	$C_5D_4NCD_3$	neat	1 g
	DLM-1067-5	1,2-Propylene oxide (D_6, 98%) *	CD_3CDCD_2O	neat	5 g
	DLM-1158-0.1	Quinoline (D_7, 98%)	C_9D_7N	neat	0.1 g
	DLM-1158-1			neat	1 g
	DLM-3322-0.5	*trans*-Stilbene (D_{12}, 98%)	$C_6D_5CD=CDC_6D_5$	neat	0.5 g
	DLM-1083-5	Styrene (vinyl-D_3, 98%) (stabilized with BHT)	$C_6H_5CD=CD_2$	neat	5 g
	DLM-809-5	Styrene (ring-D_5, 98%) (stabilized with BHT)	$C_6D_5CH=CH_2$	neat	5 g
	DLM-380-1.2	Styrene (D_8, 98%) (stabilized with BHT)	$C_6D_5CD=CD_2$	100 µg/mL in nonane	1.2 mL
	DLM-380-1			neat	1 g
	DLM-380-5			neat	5 g
	DLM-1088-1	Terephthalic acid (ring-D_4, 98%)	$C_6D_4(CO_2H)_2$	neat	1 g
	DLM-1088-5			neat	5 g

*Gases require a breakseal flask or cylinder and valve at an additional charge. Breakseal flasks are only available for certain gases at atmospheric pressure.

Priority Pollutant Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	DLM-450-1	*o*-Terphenyl (D_{14}, 98%)	$C_{18}D_{14}$	neat	1 g
	DLM-450-5			neat	5 g
	DLM-382-1.2	*p*-Terphenyl (D_{14}, 98%)	$C_{18}D_{14}$	200 µg/mL in isooctane	1.2 mL
	DLM-382-1			neat	1 g
	DLM-382-5			neat	5 g
	ULM-7428-1.2	*p*-Terphenyl (unlabeled)	$C_{18}H_{14}$	200 µg/mL in isooctane	1.2 mL
	DLM-2279-0.1	α-Terpineol (propyl methyl-D_3, 98%)	$CD_3C_6H_7C_3H_7OH$	neat	0.1 g
	DLM-2279-0.5			neat	0.5 g
	ULM-1704-0.1	3,4,5,6-Tetrachlorocatechol (unlabeled)	$Cl_4C_6(OH)_2$	neat	0.1 g
	DLM-35-5	1,1,2,2-Tetrachloroethane (D_2, 99.6%)	$Cl_2CDCDCl_2$	neat	5 g
	CLM-1965-0.1	Tetrachloroethylene ($^{13}C_2$, 99%)	$Cl_2{}^*C={}^*CCl_2$	neat	0.1 g
	ULM-1708-0.1	3,4,5,6-Tetrachloroguaiacol (unlabeled)	$Cl_4C_6(OH)(OCH_3)$	neat	0.1 g
NEW	ULM-8984-1.2	Tetrachloro-*m*-xylene (unlabeled)	$C_8H_6Cl_4$	100 µg/mL in isooctane	1.2 mL
	DLM-2053-0.1	*cis*-1,2,3,6-Tetrahydrophthalic anhydride (3,3,4,5,6,6-D_6, 98%)	$C_8D_6H_2O_3$	neat	0.1 g
	DLM-2054-0.1	*cis*-1,2,3,6-Tetrahydrophthalimide (3,3,4,5,6,6-D_6, 98%)	$C_8D_6H_3NO_2$	neat	0.1 g
	CLM-6069-0.1	Toluene (ring-$^{13}C_6$, 99%)	$^*C_6H_5CH_3$	neat	0.1 g
	CLM-309-0.5	Toluene (methyl-^{13}C, 99%)	$C_6H_5{}^*CH_3$	neat	0.5 g
	CLM-309-1			neat	1 g
	DLM-1175-1	Toluene (methyl-D_3, 98%)	$C_6H_5CD_3$	neat	1 g
	DLM-1175-5			neat	5 g
	DLM-1176-1	Toluene (ring-D_5, 98%)	$C_6D_5CH_3$	neat	1 g
	DLM-1176-5			neat	5 g
	DLM-5-5	Toluene (D_8, 99.5%)	$C_6D_5CD_3$	neat	5 g
	DLM-7136-1.2	Tributyltin chloride (D_{27}, 98%)	$C_{12}D_{27}ClSn$	100 µg/mL in MeCl-D_2	1.2 mL
	ULM-8061-1.2	Tributyltin chloride (unlabeled)	$C_{12}H_{27}ClSn$	100 µg/mL in MeCl	1.2 mL
	ULM-1703-0.1	3,4,5-Trichlorocatechol (unlabeled)	$Cl_3C_6H(OH)_2$	neat	0.1 g
NEW	ULM-9279	3,4,6-Trichlorocatechol (unlabeled)	$C_6H_3Cl_3O_2$		Inquire
	DLM-1974-0.1	1,1,1-Trichloroethane (D_3, 98%)	CD_3CCl_3	neat	0.1 g
	DLM-1974-1			neat	1 g
	CLM-2075-0.1	1,1,2-Trichloroethane ($^{13}C_2$, 99%)	$Cl_2{}^*CH{}^*CH_2Cl$	neat	0.1 g
	DLM-1975-0.1	1,1,2-Trichloroethane (D_3, 98%)	Cl_2CDCD_2Cl	neat	0.1 g
	DLM-1975-0.5			neat	0.5 g
	CLM-129-0.1	Trichloroethylene ($^{13}C_2$, 99%) (stabilized with diisopropylamine)	$Cl_2{}^*C={}^*CHCl$	neat	0.1 g
	DLM-3049-1	Trichloroethylene (D, 98%)	$Cl_2C=CDCl$	neat	1 g
	DLM-2080-0.1	1,2,3-Trichloropropane (D_5, 98%) CP 95%	$CD_2ClCDClCD_2Cl$	neat	0.1 g
	DLM-7663	Triethanolamine (D_{15}, 98%) (contains 2-amino-1-propanol) CP 97%	$(DOCD_2CD_2)_3N$		Inquire
	DLM-3344-5	Vinyl bromide (D_3, 98%) * (inhibited with hydroquinone)	$CD_2=CDBr$	neat	5 g
	DLM-167-1.2	Vinyl chloride (D_3, 98%)	$CD_2=CDCl$	50 µg/mL in methanol-OD	1.2 mL
	DLM-167-5	Vinyl chloride (D_3, 98%) * (inhibited with hydroquinone)		neat	5 g
	DLM-2398-5	*m*-Xylene (D_{10}, 98%)	$C_6D_4(CD_3)_2$	neat	5 g
	DLM-808-5	*o*-Xylene (D_{10}, 98%)	$C_6D_4(CD_3)_2$	neat	5 g
	DLM-313-5	*p*-Xylene (D_{10}, 98%)	$C_6D_4(CD_3)_2$	neat	5 g

Notes

Chlorinated benzenes and phenols are common chemical contaminants produced in vast quantities and used in many industrial processes, bringing them in contact with the environment in a variety of locations. Owing to the sheer volume of use in commercial products, halogenated benzenes and phenols remain among the largest contributors to environmental contamination.

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.

US EPA Method 1653A

US 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.

US EPA CLP DMC Standard Mixtures

EPA's Contract Laboratory Program (CLP) has developed methods for the analysis of volatile and semi-volatile compounds which utilize isotopically labeled 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.

US 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.

Human Exposure Analysis

Exposure analysis studies the ultimate effects environmental or food pollutants have on a biological system. Increasingly, public health studies are looking at the relationship between adverse health issues and exposure to environmental and food pollutants, as well as consumption pollutants such as tobacco compounds, bisphenols, etc. CIL has worked for years to develop analytical standards to assist exposure research and now offers some targeted mixtures as well. Our "phenolics" mixes include several ubiquitous exposure biomarkers, including PCB metabolites, BDE metabolites, tetrabromobisphenol A, triclosan, chlorophenols, and bromophenols. The analytes in the calibration solutions are the derivatized analogues of the target compounds, and the unusual concentrations are a result of corrections for molecular weights of the derivatized products. The spiking solution contains underivatized compounds to allow for derivatization during the isotope dilution method.

Chlorobenzene and Chlorophenol Standard Mixtures

Catalog No.	Compound	Amount
EM-1724-A	^{13}C-Labeled Chlorobenzene Cocktail Solution – Mono, Di, Tri Isomers	1.2 mL in isooctane
EM-1724-B	^{13}C-Labeled Chlorobenzene Cocktail Solution – Mono, Di, Tri Isomers	1.2 mL in methanol

Labeled	(µg/mL)
Chlorobenzene ($^{13}C_6$, 99%)	100
1,4-Dichlorobenzene ($^{13}C_6$, 99%)	100
1,2,4-Trichlorobenzene ($^{13}C_6$, 99%)	100

EM-1725-A	^{13}C-Labeled Chlorobenzene Cocktail Solution – Tetra, Penta, Hexa Isomers	1.2 mL in isooctane
EM-1725-B	^{13}C-Labeled Chlorobenzene Cocktail Solution – Tetra, Penta, Hexa Isomers	1.2 mL in methanol

Labeled	(µg/mL)
1,2,4,5-Tetrachlorobenzene ($^{13}C_6$, 99%)	100
Pentachlorobenzene ($^{13}C_6$, 99%)	100
Hexachlorobenzene ($^{13}C_6$, 99%)	100

EM-1726-A	^{13}C-Labeled Chlorophenol Cocktail Solution – Mono, Di, Tri Isomers	1.2 mL in isooctane
EM-1726-B	^{13}C-Labeled Chlorophenol Cocktail Solution – Mono, Di, Tri Isomers	1.2 mL in methanol

Labeled	(µg/mL)
4-Chlorophenol ($^{13}C_6$, 99%)	100
2,4-Dichlorophenol ($^{13}C_6$, 99%)	100
2,4,6-Trichlorophenol ($^{13}C_6$, 99%)	100

EM-1727-A	^{13}C-Labeled Chlorophenol Cocktail Solution – Tri, Tetra, Penta Isomers	1.2 mL in isooctane
EM-1727-B	^{13}C-Labeled Chlorophenol Cocktail Solution – Tri, Tetra, Penta Isomers	1.2 mL in methanol

Labeled	(µg/mL)
2,4,5-Trichlorophenol ($^{13}C_6$, 99%)	100
2,3,4,5-Tetrachlorophenol ($^{13}C_6$, 99%)	100
Pentachlorophenol ($^{13}C_6$, 99%)	100

ES-5401	^{13}C-Labeled Mono-Hexa Chlorobenzene Solution	1.2 mL in toluene

Labeled	(µg/mL)
Chlorobenzene ($^{13}C_6$, 99%)	500
1,4-Dichlorobenzene ($^{13}C_6$, 99%)	500
1,2,3-Trichlorobenzene ($^{13}C_6$, 99%)	500
1,2,3,4-Tetrachlorobenzene ($^{13}C_6$, 99%)	500
Pentachlorobenzene ($^{13}C_6$, 99%)	500
Hexachlorobenzene ($^{13}C_6$, 99%)	500

ES-5406	Native Mono-Hexa Chlorobenzene Solution	1.2 mL in toluene

Unlabeled	(µg/mL)
Chlorobenzene	500
1,4-Dichlorobenzene	500
1,2,3-Trichlorobenzene	500
1,2,3,4-Tetrachlorobenzene	500
Pentachlorobenzene	500
Hexachlorobenzene	500

US EPA Method 1653A Standard Mixtures

Catalog No.	Compound	Amount
EM-4173	Method 1653A Labeled Chlorophenolic Derivatives Mixture – 1 Each: EM-4173-1 and EM-4173-2 (Note: unlabeled internal standard, 3,4,5-trichlorophenol already formulated into the standard)	2 × 1 mL
EM-4173-1	Method 1653A Labeled Chlorophenolic Derivatives Mixture	1 mL in methanol
EM-4173-2	Method 1653A Labeled Chlorophenolic Derivatives Mixture	1 mL in acetone

Labeled	EM-4173-1 (µg/mL)	EM-4173-2 (µg/mL)
2,4-Dichlorophenol ($^{13}C_6$, 99%)	250	–
4-Chloroguaiacol ($^{13}C_6$, 99%)	250	–
4,5-Dichlorocatechol (ring-$^{13}C_6$, 99%)	250	–
4,5,6-Trichloroguaiacol ($^{13}C_6$, 99%)	250	–
Pentachlorophenol ($^{13}C_6$, 99%)	250	–
3,4,5,6-Tetrachloroguaiacol ($^{13}C_6$, 99%)	250	–
3,4,5,6-Tetrachlorocatechol (ring-$^{13}C_6$, 99%)	250	–
3,4,5-Trichlorophenol (unlabeled) (IS)	250	–
5-Chlorovanillin (ring-$^{13}C_6$, 99%)	–	250

EM-4181	Method 1653A Regulated Chlorophenolics Mixture-1	1 mL in methanol

Unlabeled	(µg/mL)
Pentachlorophenol	1000
3,4,5,6-Tetrachloroguaiacol	1000
3,4,5-Trichlorocatechol	1000
3,4,5-Trichloroguaiacol	500
4,5,6-Trichloroguaiacol	500
2,4,6-Trichlorophenol	500
3,4,5,6-Tetrachlorocatechol	1000
2,3,4,6-Tetrachlorophenol	500
3,4,6-Trichlorocatechol	1000
3,4,6-Trichloroguaiacol	500
2,4,5-Trichlorophenol	500

EM-4182	Method 1653A Regulated Chlorophenolics Mixture-2	1 mL in acetone

Unlabeled	(µg/mL)
Trichlorosyringol	500

EM-4183	Method 1653A Other Chlorophenolics Mixture-1	1 mL in methanol

Unlabeled	(µg/mL)
4-Chlorocatechol	250
4-Chlorophenol	250
3,6-Dichlorocatechol	500
3,4-Dichloroguaiacol	500
4,6-Dichloroguaiacol	500
2,6-Dichlorophenol	500
4-Chloroguaiacol	250
3,4-Dichlorocatechol	500
4,5-Dichlorocatechol	500
4,5-Dichloroguaiacol	500
2,4-Dichlorophenol	500

US EPA Method 1653A Standard Mixtures

Catalog No.	Compound	Amount
EM-4184	Method 1653A Other Chlorophenolics Mixture-2	1 mL in acetone

Unlabeled	(µg/mL)
2-Chlorosyringealdehyde	500
5-Chlorovanillin	500
6-Chlorovanillin	500
2,6-Dichlorosyringealdehyde	1000
5,6-Dichlorovanillin	1000

EM-4185	Set of Regulated Chlorophenolics Mixtures 1 Each: EM-4181 and EM-4182	2 × 1 mL
EM-4186	Set of Other Chlorophenolics Mixtures 1 Each: EM-4183 and EM-4184	2 × 1 mL
EM-4180	Set of Chlorophenolics Mixtures 1 Each: EM-4181, EM-4182, EM-4183 and EM-4184	4 × 1 mL

US EPA Method 1653 Standard Mixtures

EM-4018	Method 1653 Unlabeled Chloroguaiacol Cocktail	1 mL in acetone

Unlabeled	(µg/mL)
4-Chloroguaiacol	250
3,4-Dichloroguaiacol	500
4,5-Dichloroguaiacol	500
4,6-Dichloroguaiacol	500
3,4,5-Trichloroguaiacol	500
3,4,6-Trichloroguaiacol	500
4,5,6-Trichloroguaiacol	500
3,4,5,6-Tetrachloroguaiacol	1000

EM-4028	Instrument Performance Standard	1 mL in acetone

Unlabeled	(µg/mL)
2,2′-Difluorobiphenyl	5000

US EPA CLP DMC Standard Mixtures

Catalog No.	Compound	Amount
ES-5037	CLP Semi-Volatiles DMC Stock Solution	1.2 mL in MeCl-D_2

Labeled	(µg/mL)
Phenol (ring-D_5, 98%)	2000
Bis(2-chloroethyl) ether (D_8, 98%)	2000
2-Chlorophenol (ring-D_4, 98%)	2000
4-Methylphenol (*p*-Cresol) (D_8, 98%)	2000
Nitrobenzene (D_5, 99%)	2000
2-Nitrophenol (ring-D_4, 98%)	2000
2,4-Dichlorophenol (ring-D_3, 98%)	2000
4-Chloroaniline (D_4, 98%)	2000
Dimethyl phthalate (dimethyl-D_6, 98%)	2000
Acenaphthylene (D_8, 98%)	2000
4-Nitrophenol (ring-D_4, 98%)	2000
Fluorene (D_{10}, 98%)	2000
4,6-Dinitro-2-methylphenol (ring-D_2, 98%)	2000
Anthracene (D_{10}, 98%)	2000
Pyrene (D_{10}, 98%)	2000
Benzo[*a*]pyrene (D_{12}, 98%)	2000

ES-5038	CLP OLC Volatiles DMC Stock Solutions 1 Each: ES-5038-1 and ES-5038-2	1 set
ES-5038-1	CLP OLC Volatiles Non-Ketone DMC Stock Solution	1 mL in methanol-OD
ES-5038-2	CLP OLC Volatiles Ketone DMC Stock Solution	0.5 mL in methanol-OD

Labeled	ES-5038-1 (µg/mL)	ES-5038-2 (µg/mL)
Vinyl chloride (D_3, 98%)	100	–
Chloroethane (D_5, 98%)	100	–
1,1-Dichloroethene (D_2, 98%)	100	–
2-Butanone (1,1,1,3,3-D_5, 98%)	–	200
Chloroform (D, 98%)	100	–
1,2-Dichloroethane (D_4, 99%)	100	–
Benzene (D_6, 99.5%)	100	–
1,2-Dichloropropane (D_6, 98%)	100	–
Toluene (D_8, 99.5%)	100	–
1,3-Dichloropropene (D_4, 98%) (*cis/trans* mixture)	100	–
2-Hexanone (1,1,1,3,3-D_5, 98%)	–	200
Bromoform (D, 99.5%)	100	–
1,1,2,2-Tetrachloroethane (D_2, 99.6%)	100	–
1,2-Dichlorobenzene (D_4, 99%)	100	–

US EPA CLP DMC Standard Mixtures

Catalog No.	Compound	Amount
ES-5286	CLP SOM Volatiles Non-Ketone DMC Stock Solution	1 mL in methanol-OD
ES-5286-10X	CLP SOM Volatiles Non-Ketone DMC 10X Stock Solution	1 mL in methanol-OD

Labeled	ES-5286 (µg/mL)	ES-5286-10X (µg/mL)
Vinyl chloride (D_3, 98%)	100	1000
Chloroethane (D_5, 98%)	100	1000
1,1-Dichloroethylene (2,2-D_2, 98%)	100	1000
Chloroform (D, 99.8%)	100	1000
1,2-Dichloroethane (D_4, 99%)	100	1000
Benzene (D_6, 99.5%)	100	1000
1,2-Dichloropropane (D_6, 98%)	100	1000
Toluene (D_8, 99.5%)	100	1000
1,3-Dichloropropene (D_4, 98%) (*cis/trans* mixture)	100	1000
1,1,2,2-Tetrachloroethane (D_2, 99.6%)	100	1000
1,2-Dichlorobenzene (D_4, 99%)	100	1000

ES-5287	CLP SOM Volatiles Ketone DMC Stock Solution	0.5 mL in methanol-OD
ES-5287-10X	CLP SOM Volatiles Ketone DMC 10X Stock Solution	0.5 mL in methanol-OD

Labeled	ES-5287 (µg/mL)	ES-5287-10X (µg/mL)
2-Butanone (1,1,1,3,3-D_5, 98%)	500	5000
2-Hexanone (1,1,1,3,3-D_5, 98%)	500	5000

ES-5288	CLP SOM Volatiles 1,4-Dioxane DMC Stock Solution	1 mL in methanol-OD
ES-5288-10X	CLP SOM Volatiles 1,4-Dioxane 10X DMC Stock Solution	1 mL in methanol-OD

Labeled	ES-5288 (µg/mL)	ES-5288-10X (µg/mL)
1,4-Dioxane (*p*-dioxane) (D_8, 99%)	1250	12,500

US EPA Methods 1624/1625 Standard Mixtures

Catalog No.	Compound		Amount
ES-2036	Acid Extractables Mixture-3		1 mL in benzene-D_6
	Labeled	(µg/mL)	
(EPA 222A)	4-Chloro-3-methylphenol (ring-2,6-D_2, 98%)	5000	
(EPA 224A)	2-Chlorophenol (ring-D_4, 98%)	5000	
(EPA 231A)	2,4-Dichlorophenol (ring-D_3, 98%)	5000	
(EPA 234A)	2,4-Dimethylphenol (ring-D_3, 98%)	5000	
(EPA 260A)	4,6-Dinitro-2-methylphenol (ring-D_2, 98%)	5000	
(EPA 259A)	2,4-Dinitrophenol (ring-D_3, 98%)	5000	
(EPA 257A)	2-Nitrophenol (ring-D_4, 98%)	5000	
(EPA 258A)	4-Nitrophenol (ring-D_4, 98%)	5000	
(EPA 264A)	Pentachlorophenol ($^{13}C_6$, 99%)	5000	
(EPA 265A)	Phenol (ring-D_5, 98%)	5000	
(EPA 631A)	2,4,5-Trichlorophenol (ring-D_2, 98%)	5000	
(EPA 221A)	2,4,6-Trichlorophenol (ring-D_2, 98%)	5000	
ES-2002	Base Neutrals Mixture-4.3		1 mL in benzene-D_6
	Labeled	(µg/mL)	
(EPA 241B)	4-Bromophenyl phenyl ether (phenyl-D_5, 98%)	5000	
(EPA 220B)	2-Chloronaphthalene (D_7, 98%)	5000	
(EPA 240B)	4-Chlorophenyl phenyl ether (phenyl-D_5, 98%)	5000	
(EPA 268B)	Di-*n*-butyl phthalate (ring-D_4, 98%)	5000	
(EPA 270B)	Diethyl phthalate (ring-D_4, 98%)	5000	
(EPA 269B)	Di-*n*-octyl phthalate (ring-D_4, 98%)	5000	
(EPA 209B)	Hexachlorobenzene ($^{13}C_6$, 99%)	5000	
(EPA 212B)	Hexachloroethane (1-^{13}C, 99%)	5000	
(EPA 254B)	Isophorone (3-methyl-D_3; 2,4,4,6,6-D_5, 98%)	5000	
(EPA 208B)	1,2,4-Trichlorobenzene (D_3, 98%)	5000	
ES-2026	Base Neutrals Dilution Mixture-5.2		1 mL in benzene-D_6
	Labeled	(µg/mL)	
(EPA 628B)	Carbazole (ring-D_8, 98%)	5000	
(EPA 261B)	*N*-Nitrosodimethylamine (D_6, 98%)	5000	
(EPA 263B)	*N*-Nitrosodi-*n*-propylamine (D_{14}, 98%)	5000	
ES-2003	Base Neutrals Mixture-6.2		2 × 1 mL in 50% benzene-D_6 and 50% MeCl-D_2
	Labeled	(µg/mL)	
(EPA 201B)	Acenaphthene (D_{10}, 99%)	2500	
(EPA 278B)	Anthracene (D_{10}, 98%)	2500	
(EPA 275B)	Benzo[*k*]fluoranthene (D_{12}, 98%)	2500	
(EPA 218B)	Bis(2-chloroethyl) ether (D_8, 98%)	2500	
(EPA 276B)	Chrysene (D_{12}, 98%)	2500	
(EPA 280B)	Fluorene (D_{10}, 98%)	2500	
(EPA 255B)	Naphthalene (D_8, 99%)	2500	
(EPA 284B)	Pyrene (D_{10}, 98%)	2500	

US EPA Methods 1624/1625 Standard Mixtures

Catalog No.	Compound	Amount
ES-2004	Base Neutrals Mixture-6.3	1 mL in benzene-D_6

Labeled		(µg/mL)
(EPA 272B)	Benz[*a*]anthracene (D_{12}, 98%)	5000
(EPA 267B)	Butyl benzyl phthalate (ring-D_4, 99%)	5000
(EPA 243B)	Bis(2-chloroethoxy) methane (chloroethoxy-D_8, 98%)	5000
(EPA 266B)	Bis(2-ethylhexyl) phthalate (ring-D_4, 99%)	5000
(EPA 282B)	Dibenz[*a,h*]anthracene (D_{14}, 98%)	5000
(EPA 225B)	1,2-Dichlorobenzene (D_4, 99%)	5000
(EPA 227B)	1,4-Dichlorobenzene (D_4, 98%)	5000
(EPA 271B)	Dimethyl phthalate (ring-D_4, 99%)	5000
(EPA 236B)	2,6-Dinitrotoluene (methyl-D_3, 98%)	5000
(EPA 256B)	Nitrobenzene (D_5, 99%)	5000
(EPA 629B)	1,2,3-Trichlorobenzene (D_3, 98%)	5000

ES-2032	Purgeables/Volatiles Mixture-E.1	1 mL in methanol-D_4

Labeled		(µg/mL)
(EPA 206V)	Carbon tetrachloride (^{13}C, 99%)	50
(EPA 207V)	Chlorobenzene (D_5, 99%)	50
(EPA 223V)	Chloroform (^{13}C, 99%)	50
(EPA 213V)	1,1-Dichloroethane (2,2,2-D_3, 98%)	50
(EPA 229V)	1,1-Dichloroethylene (2,2-D_2, 98%)	50
(EPA 244V)	Methylene chloride (D_2, 99.9%)	50
(EPA 232V)	1,2-Dichloropropane (D_6, 98%)	50
(EPA 214V)	1,1,2-Trichloroethane ($^{13}C_2$, 99%)	50

ES-2006	Purgeables/Volatiles Mixture-F	1 mL in methanol-D_4

Labeled		(µg/mL)
(EPA 204V)	Benzene (D_6, 99.5%)	50
(EPA 247V)	Bromoform (^{13}C, 99%)	50
(EPA 210V)	1,2-Dichloroethane (D_4, 99%)	50
(EPA 238V)	Ethylbenzene (D_{10}, 98%)	50
(EPA 215V)	1,1,2,2-Tetrachloroethane (D_2, 99.6%)	50
(EPA 286V)	Toluene (D_8, 99.5%)	50
(EPA 211V)	1,1,1-Trichloroethane (D_3, 98%)	50

ES-2008	Purgeables/Volatiles Mixture-H	1 mL in methanol-D_4

Labeled		(µg/mL)
(EPA 248V)	Bromodichloromethane (^{13}C, 99%)	50
(EPA 251V)	Chlorodibromomethane (^{13}C, 99%)	50
(EPA 30V)	1,2-Dichloroethylene (1,2-D_2, 98%)	50
(EPA 33V)	1,3-Dichloropropene (D_4, 98%) (*cis/trans* mixture)	50
(EPA 627V)	1,4-Dioxane (D_8, 99%)	50
(EPA 285V)	Tetrachloroethylene ($^{13}C_2$, 99%)	50
(EPA 287V)	Trichloroethylene ($^{13}C_2$, 99%)	50

Human Exposure Analysis Standard Mixtures

	Catalog No.	Compound	Amount
NEW	ES-5510	Extended Phenolic Calibration Solutions [CS1-CS6]	6 × 0.5 mL in 80% nonane/20% dodecane, hexane and toluene
NEW	ES-5510-CS1	Extended Phenolic Calibration Solution [CS1]	0.5 mL in 80% nonane/20% dodecane, hexane and toluene
NEW	ES-5510-CS2	Extended Phenolic Calibration Solution [CS2]	0.5 mL in 80% nonane/20% dodecane, hexane and toluene
NEW	ES-5510-CS3	Extended Phenolic Calibration Solution [CS3]	0.5 mL in 80% nonane/20% dodecane, hexane and toluene
NEW	ES-5510-CS4	Extended Phenolic Calibration Solution [CS4]	0.5 mL in 80% nonane/20% dodecane, hexane and toluene
NEW	ES-5510-CS5	Extended Phenolic Calibration Solution [CS5]	0.5 mL in 80% nonane/20% dodecane, hexane and toluene
NEW	ES-5510-CS6	Extended Phenolic Calibration Solution [CS6]	0.5 mL in 80% nonane/20% dodecane, hexane and toluene

*All concentrations are in ng/mL (ppb)**

Unlabeled	IUPAC	CS1	CS2	CS3	CS4	CS5	CS6
4-Methoxy-2,3,3′,4′,5-pentachlorobiphenyl		0.21	0.52	2.60	21	104	520
4-Methoxy-2,2′,3,4′,5,5′-hexachlorobiphenyl		0.21	0.52	2.59	21	104	519
4-Methoxy-2,2′,3,4′,5,5′,6-heptachlorobiphenyl		0.21	0.52	2.59	26.2	103	517
5-Chloro-2-(2,4-dichlorophenoxy)-anisole (methyl triclosan)		2.10	5.24	26.2	210	1048	5242
4-Methoxy-2,2′,3,4′-tetrabromodiphenyl ether		0.21	0.51	2.57	21	103	514
3-Methoxy-2,2′,4,4′-tetrabromodiphenyl ether		0.21	0.51	2.57	21	103	514
5-Methoxy-2,2′,4,4′-tetrabromodiphenyl ether		0.21	0.51	2.57	21	103	514
6-Methoxy-2,2′,4,4′-tetrabromodiphenyl ether		0.21	0.51	2.57	21	103	514
4′-Methoxy-2,2′,4,5′-tetrabromodiphenyl ether		0.21	0.51	2.57	21	102	514
5′-Methoxy-2,2′,4,4′,5-pentabromodiphenyl ether		0.20	0.51	2.56	21	102	512
6-Methoxy-2,2′,4,4′,5-pentabromodiphenyl ether		0.20	0.51	2.56	21	102	512
2,4-Dibromoanisole		0.21	0.53	2.64	21	106	528
2,4,5-Tribromoanisole		0.21	0.52	2.61	21	104	521
2,4,6-Tribromoanisole		0.21	0.52	2.61	21	104	521
Pentabromoanisole		0.21	0.51	2.57	21	103	514
Pentachloroanisole		2.11	5.26	26.3	210	1053	5263
Dimethyl tetrabromobisphenol A		0.11	0.26	1.31	11	53	263
Labeled							
4-Methoxy-2,3,3′,4′,5-pentachlorobiphenyl ($^{13}C_{12}$, 99%)		104	104	104	104	104	104
4-Methoxy-2,2′,3,4′,5,5′-hexachlorobiphenyl ($^{13}C_{12}$, 99%)		104	104	104	104	104	104
4-Methoxy-2,2′,3,4′,5,5′,6-heptachlorobiphenyl ($^{13}C_{12}$, 99%)		103	103	103	103	103	103
6-Methoxy-2,2′,4,4′-tetrabromodiphenyl ether (ring-$^{13}C_{12}$, 99%)		103	103	103	103	103	103
6′-Methoxy-2,2′,4,4′,6-pentabromodiphenyl ether ($^{13}C_{12}$, 99%)		102	102	102	102	102	102
2,4-Dibromoanisole (ring-$^{13}C_6$, 99%)		105	105	105	105	105	105
2,4,5-Tribromoanisole (ring-$^{13}C_6$, 99%)		104	104	104	104	104	104
2,4,6-Tribromoanisole (ring-$^{13}C_6$, 99%)		104	104	104	104	104	104
Pentabromoanisole ($^{13}C_6$, 99%)		103	103	103	103	103	103
Pentachloroanisole ($^{13}C_6$, 99%)		1052	1052	1052	1052	1052	1052
Dimethyl tetrabromobisphenol A (ring-$^{13}C_{12}$, 99%)		53	53	53	53	53	53
5-Chloro-2-(2,4-dichlorophenoxy)-anisole (methyl triclosan) (ring-$^{13}C_{12}$, 99%)		1047	1047	1047	1047	1047	1047
1,2,3,4-Tetrachlorodibenzo-*p*-dioxin ($^{13}C_6$, 99%)		25	25	25	25	25	25
2,2′,3,3′,4,5,5′,6,6′-Nonachlorobiphenyl ($^{13}C_{12}$, 99%)	208	100	100	100	100	100	100
3,3′,4,4′-Tetrabromodiphenyl ether ($^{13}C_{12}$, 99%)	77	75	75	75	75	75	75
2,2′,3,4,4′,6-Hexabromodiphenyl ether ($^{13}C_{12}$, 99%)	139	75	75	75	75	75	75

**Concentrations are determined for listed derivatized compounds.*

Human Exposure Analysis Standard Mixtures

	Catalog No.	Compound	Amount
NEW	ES-5511	Extended Phenolic Spiking Solution	10 mL in methanol

Labeled	(ng/mL)
4-Hydroxy-2,3,3′,4′,5-pentachlorobiphenyl ($^{13}C_{12}$, 99%)	10
4-Hydroxy-2,2′,3,4′,5,5′-hexachlorobiphenyl ($^{13}C_{12}$, 99%)	10
4-Hydroxy-2,2′,3,4′,5,5′,6-heptachlorobiphenyl ($^{13}C_{12}$, 99%)	10
6-Hydroxy-2,2′,4,4′-tetrabromodiphenyl ether ($^{13}C_{12}$, 99%)	10
6′-Hydroxy-2,2′,4,4′,6-pentabromodiphenyl ether ($^{13}C_{12}$, 99%)	10
2,4-Dibromophenol ($^{13}C_6$, 99%)	10
2,4,5-Tribromophenol ($^{13}C_6$, 99%)	10
2,4,6-Tribromophenol ($^{13}C_6$, 99%)	10
Pentabromophenol ($^{13}C_6$, 99%)	10
Pentachlorophenol ($^{13}C_6$, 99%)	100
Tetrabromobisphenol A (ring-$^{13}C_{12}$, 99%)	5
5-Chloro-2-(2,4-dichlorophenoxy)-phenol (triclosan) ($^{13}C_{12}$, 99%)	100

	ES-5321	Multi-Analyte Recovery Spiking Standard	10 mL in 88% hexane/ 2% dodecane/10% nonane
NEW	ES-5321-200X-1.2	Multi-Analyte Recovery Spiking Standard	1.2 mL in nonane

Labeled	IUPAC	ES-5321 (ng/mL)	ES-5321-200X-1.2 (ng/mL)
1,2,3,4-TetraCDD ($^{13}C_6$, 99%)		2.5	500
2,2′,3,3′,4,5,5′,6,6′-NonaCB ($^{13}C_{12}$, 99%)	208	10.0	2000
3,3′,4,4′-TetraBDE ($^{13}C_{12}$, 99%)	77	7.5	1500
2,2′,3,4,4′,6-HexaBDE ($^{13}C_{12}$, 99%)	139	7.5	1500

NEW	ES-9444	Extended Phenolic Native PAR Standard	1.2 mL in 91% nonane/ 9% toluene

Unlabeled	(ng/mL)*
4-Methoxy-2,3,3′,4′,5-pentachlorobiphenyl	520
4-Methoxy-2,2′,3,4′,5,5′-hexachlorobiphenyl	519
4-Methoxy-2,2′,3,4′,5,5′,6-heptachlorobiphenyl	517
4-Methoxy-2,2′,3,4′-tetrabromodiphenyl ether	514
3-Methoxy-2,2′,4,4′-tetrabromodiphenyl ether	514
5-Methoxy-2,2′,4,4′-tetrabromodiphenyl ether	514
6-Methoxy-2,2′,4,4′-tetrabromodiphenyl ether	514
4′-Methoxy-2,2′,4,5′-tetrabromodiphenyl ether	514
5′-Methoxy-2,2′,4,4′,5-pentabromodiphenyl ether	512
6-Methoxy-2,2′,4,4′,5-pentabromodiphenyl ether	512
2,4-Dibromoanisole	528
2,4,5-Tribromoanisole	521
2,4,6-Tribromoanisole	521
Dimethyl tetrabromobisphenol A	263
Pentabromoanisole	514
5-Chloro-2-(2,4-dichlorophenoxy)-anisole (methyl triclosan)	5240
Pentachloroanisole	5263

**Concentrations are determined for listed derivatized compounds.*

Human Exposure Analysis Standard Mixtures

	Catalog No.	Compound	Amount
NEW	ES-5482	Phenolic Calibration Standards [CS1-CS6]	6 × 0.5 mL in nonane
NEW	ES-5482-CS1	Phenolic Calibration Standard [CS1]	0.5 mL in nonane
NEW	ES-5482-CS2	Phenolic Calibration Standard [CS2]	0.5 mL in nonane
NEW	ES-5482-CS3	Phenolic Calibration Standard [CS3]	0.5 mL in nonane
NEW	ES-5482-CS4	Phenolic Calibration Standard [CS4]	0.5 mL in nonane
NEW	ES-5482-CS5	Phenolic Calibration Standard [CS5]	0.5 mL in nonane
NEW	ES-5482-CS6	Phenolic Calibration Standard [CS6]	0.5 mL in nonane

*All concentrations are in ng/mL (ppb)**

Unlabeled	IUPAC	CS1	CS2	CS3	CS4	CS5	CS6
4-Methoxy-2,3,3′,4′,5-pentachlorobiphenyl		0.52	1.04	10.4	104	520	5200
4-Methoxy-2,2′,3,4′,5,5′-hexachlorobiphenyl		0.52	1.04	10.4	104	519	5190
4-Methoxy-2,2′,3,4′,5,5′,6-heptachlorobiphenyl		0.52	1.03	10.3	103	517	5170
Pentachloroanisole		0.53	1.05	10.5	105	526	5260
5-Chloro-2-(2,4-dichlorophenoxy)-anisole (methyl triclosan)		0.52	1.05	10.5	105	524	5240
Pentabromoanisole		0.51	1.03	10.3	103	514	5140
Labeled							
4-Methoxy-2,3,3′,4′,5-pentachlorobiphenyl ($^{13}C_{12}$, 99%)		104	104	104	104	104	104
4-Methoxy-2,2′,3,4′,5,5′-hexachlorobiphenyl ($^{13}C_{12}$, 99%)		104	104	104	104	104	104
4-Methoxy-2,2′,3,4′,5,5′,6-heptachlorobiphenyl ($^{13}C_{12}$, 99%)		103	103	103	103	103	103
Pentachloroanisole ($^{13}C_6$, 99%)		263	263	263	263	263	263
5-Chloro-2-(2,4-dichlorophenoxy)-anisole (methyl triclosan) (ring-$^{13}C_{12}$, 99%)		262	262	262	262	262	262
Pentabromoanisole ($^{13}C_6$, 99%)		103	103	103	103	103	103
1,2,3,4-Tetrachlorodibenzo-*p*-dioxin ($^{13}C_6$, 99%)		25	25	25	25	25	25
2,2′,3,3′,4,5,5′,6,6′-Nonachlorobiphenyl ($^{13}C_{12}$, 99%)	208	100	100	100	100	100	100
3,3′,4,4′-Tetrabromodiphenyl ether ($^{13}C_{12}$, 99%)	77	75	75	75	75	75	75
2,2′,3,4,4′,6-Hexabromodiphenyl ether ($^{13}C_{12}$, 99%)	139	75	75	75	75	75	75

**Concentrations are determined for listed derivatized compounds.*

Human Exposure Analysis Standard Mixtures

	Catalog No.	Compound	Amount
NEW	ES-5483	Phenolic Spiking Standard	10 mL in acetonitrile

Labeled	(ng/mL)
4-Hydroxy-2,3,3′,4′,5-pentachlorobiphenyl ($^{13}C_{12}$, 99%)	10
4-Hydroxy-2,2′,3,4′,5,5′-hexachlorobiphenyl ($^{13}C_{12}$, 99%)	10
4-Hydroxy-2,2′,3,4′,5,5′,6-heptachlorobiphenyl ($^{13}C_{12}$, 99%)	10
Pentachlorophenol ($^{13}C_6$, 99%)	25
5-Chloro-2-(2,4-dichlorophenoxy)-phenol (triclosan) ($^{13}C_{12}$, 99%)	25
Pentabromophenol ($^{13}C_6$, 99%)	10

	ES-5321	Multi-Analyte Recovery Spiking Standard	10 mL in 88% hexane/2% dodecane/10% nonane
NEW	ES-5321-200X-1.2	Multi-Analyte Recovery Spiking Standard	1.2 mL in nonane

Labeled	IUPAC	ES-5321 (ng/mL)	ES-5321-200X-1.2 (ng/mL)
1,2,3,4-Tetrachlorodibenzo-*p*-dioxin ($^{13}C_6$, 99%)		2.5	500
2,2′,3,3′,4,5,5′,6,6′-Nonachlorobiphenyl ($^{13}C_{12}$, 99%)	208	10	2000
3,3′,4,4′-Tetrabromodiphenyl ether ($^{13}C_{12}$, 99%)	77	7.5	1500
2,2′,3,4,4′,6-Hexabromodiphenyl ether ($^{13}C_{12}$, 99%)	139	7.5	1500

NEW	ES-5496	Phenolic Native PAR Standard	1.2 mL in nonane

Unlabeled	(ng/mL)
4-Methoxy-2,3,3′,4′,5-pentachlorobiphenyl	1
4-Methoxy-2,2′,3,4′,5,5′-hexachlorobiphenyl	1
4-Methoxy-2,2′,3,4′,5,5′,6-heptachlorobiphenyl	1
Pentachloroanisole	1
5-Chloro-2-(2,4-dichlorophenoxy)-anisole (methyl triclosan)	1
Pentabromoanisole	1

Human Exposure Analysis Standard Mixtures

	Catalog No.	Compound	Amount
NEW	ES-5535	JECS Labeled Mixture Solution	1.2 mL in water

Labeled	(ng/mL)
8-Hydroxy-2′-deoxyguanosine ($^{15}N_5$, 98%)	7500
DL-Cotinine (2′,3′,4′-$^{13}C_3$, 99%)	150

NEW	ES-5536	JECS Native Mixture Solution	1.2 mL in water

Unlabeled	(ng/mL)
8-Hydroxy-2′-deoxyguanosine	500
Cotinine	500

Essential to agricultural productivity and general pest control, many pesticides have been found to be toxic to humans and animals, and as such have been banned from use in numerous countries. The Stockholm Convention has focused worldwide attention on analysis of the most toxic pesticides. CIL promotes the development of new isotope-labeled legacy and "new use" pesticides to support laboratories using IDMS for the most accurate analytical results.

Pesticide Standards

CIL continues to add to its already extensive inventory of isotopically labeled standards for pesticide and pesticide metabolite analysis. As a result of this development over the past few years, CIL can now present its standards by category, including organochlorine, organophosphorous, carbamate, triazine, or pyrethroid pesticide standards. You can still find the complete listing 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) and Carbamate Insecticides

Organophosphates are a large class of contact insecticides that target the insect's nervous system by interfering with the enzyme acetylcholinesterase, disrupting nerve impulses and killing or disabling the insect. Organophosphate insecticides and chemical warfare nerve agents (such as sarin, tabun, soman, and VX) work in the same way, and metabolites of both groups are quite similar. Organophosphates have a cumulative toxic effect to wildlife, so multiple exposures to the chemicals amplifies the toxicity. Carbamates feature the carbamate ester functional group and kill insects by *reversibly* inactivating the enzyme acetylcholinesterase, similarly to organophosphate pesticides. They are, however, much less stable in the environment and break down rapidly.

Pyrethroid Insecticides

Pyrethroids are synthetic pesticides developed to mimic the effect of naturally occurring pyrethrins. In general, pyrethroids are low in toxicity to mammals and birds, however, they are potentially highly toxic to fish, have high arthropod toxicity, are fast acting, dissolve poorly in water, and break down quickly, especially in direct sunlight. Pyrethroids became popular as consumer insecticides in the 1990s as replacements for older pesticides, like diazinon and Dursban®, which were phased out for environmental and human-health reasons.

Neonicotinoid Pesticides

Neonicotinoids have received a lot of attention in the mainstream press as a possible cause of colony collapse disorder (CCD) in honeybees, which are critical pollinators in many agricultural environments where their viability enables billions of dollars of commerce each year. While CCD may also have other causes, analytical chemists have focused on neonicotinoid pesticides as a potential contributing factor. CIL has produced several neonicotinoid standards, including labeled standards with chloropyridylmethyl, chlorothiazolylmethyl, and tetrahydrofuranylmethyl substituents, as well as major metabolites of those compounds.

Toxaphene Standards

CIL has put considerable effort into developing the first set of ^{13}C-labeled toxaphene standards. The list of labeled and unlabeled standards (with Parlar congener #) continues to grow, so visit CIL's website and watch for future product announcements for more details. The new POPs toxaphene mixtures are ideal for researchers interested in primary investigations of the most prevalent congeners.

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 has 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.

Pesticide Standard Mixtures

New applications and increased testing by IDMS have led to the development of several pesticides mixtures being offered for the first time in this catalog. Our expanded POPs pesticide calibration series and related spiking mixtures contain all pesticides listed as Stockholm Convention POPs, including kepone (aka chlordecone), HCHs (including lindane), pentachlorobenzene, and endosulfan I and II. These solutions allow analysts to use preformulated mixtures for detection and quantification of the complete series of these important POPs.

Chemical Weapon Metabolite Standards

Often quite similar to metabolites of common pesticides, chemical weapons metabolite standards help researchers determine potential contamination from dangerous compounds, such as nerve agents and other toxic chemicals. Several metabolites, degradation byproducts, and others are represented in this section.

Chlorinated Cyclodiene Pesticide Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	CLM-4725-1.2	Aldrin ($^{13}C_{12}$, 99%)	*$C_{12}H_8Cl_6$	100 µg/mL in nonane	1.2 mL
	ULM-7441-1.2	Aldrin (unlabeled)	$C_{12}H_8Cl_6$	100 µg/mL in nonane	1.2 mL
	CLM-8087-1.2	*cis*-Chlordane (α) ($^{13}C_{10}$, 99%)	*$C_{10}H_6Cl_8$	100 µg/mL in nonane	1.2 mL
NEW	ULM-2419-1.2	*cis*-Chlordane (α) (unlabeled)	$C_{10}H_6Cl_8$	100 µg/mL in nonane	1.2 mL
	ULM-2419-25			neat	25 mg
	CLM-4792-1.2	*trans*-Chlordane (γ) ($^{13}C_{10}$, 99%)	*$C_{10}H_6Cl_8$	100 µg/mL in nonane	1.2 mL
	ULM-2420-1.2	*trans*-Chlordane (γ) (unlabeled)	$C_{10}H_6Cl_8$	100 µg/mL in nonane	1.2 mL
NEW	ULM-2420-25			neat	25 mg
	CLM-4814-1.2	Chlordecone (kepone) ($^{13}C_{10}$, 99%)	*$C_{10}Cl_{10}O$	100 µg/mL in nonane	1.2 mL
	ULM-2301-1.2	Chlordecone (kepone) (unlabeled)	$C_{10}Cl_{10}O$	100 µg/mL in nonane	1.2 mL
NEW	ULM-2301-0.1			neat	0.1 g
	CLM-4758-1.2	Chlordene ($^{13}C_{10}$, 99%)	*$C_{10}H_6Cl_6$	100 µg/mL in nonane	1.2 mL
	ULM-7443-1.2	Chlordene (unlabeled)	$C_{10}H_6Cl_6$	100 µg/mL in nonane	1.2 mL
	CLM-4726-1.2	Dieldrin ($^{13}C_{12}$, 99%)	*$C_{12}H_8Cl_6O$	100 µg/mL in nonane	1.2 mL
	ULM-7230-1.2	Dieldrin (unlabeled)	$C_{12}H_8Cl_6O$	100 µg/mL in nonane	1.2 mL
	CLM-6025-1.2	Endosulfan I ($^{13}C_9$, 99%)	*$C_9H_6Cl_6O_3S$	100 µg/mL in nonane	1.2 mL
	DLM-2862-1.2	Endosulfan I (D_4, 97%)	$C_9D_4H_2Cl_6O_3S$	100 µg/mL in nonane	1.2 mL
	ULM-7447-1.2	Endosulfan I (unlabeled)	$C_9H_6Cl_6O_3S$	100 µg/mL in nonane	1.2 mL
	CLM-6026-1.2	Endosulfan II ($^{13}C_9$, 99%)	*$C_9H_6Cl_6O_3S$	100 µg/mL in nonane	1.2 mL
	ULM-7448-1.2	Endosulfan II (unlabeled)	$C_9H_6Cl_6O_3S$	100 µg/mL in nonane	1.2 mL
	CLM-7531-1.2	Endosulfan sulfate ($^{13}C_9$, 99%)	*$C_9H_6Cl_6O_4S$	100 µg/mL in nonane	1.2 mL
	ULM-7990-1.2	Endosulfan sulfate (unlabeled)	$C_9H_6Cl_6O_4S$	100 µg/mL in nonane	1.2 mL
	CLM-4782-1.2	Endrin ($^{13}C_{12}$, 99%)	*$C_{12}H_8Cl_6O$	100 µg/mL in nonane	1.2 mL
	ULM-7444-1.2	Endrin (unlabeled)	$C_{12}H_8Cl_6O$	100 µg/mL in nonane	1.2 mL
NEW	CLM-4815-1.2	Endrin aldehyde ($^{13}C_{12}$, 99%)	*$C_{12}H_{10}Cl_6O$	100 µg/mL in nonane	1.2 mL
	CLM-4815-50			neat	50 µg
NEW	ULM-8958-1.2	Endrin aldehyde (unlabeled)	$C_{12}H_{10}Cl_6O$	100 µg/mL in nonane	1.2 mL
NEW	ULM-8958-50			neat	50 µg
NEW	CLM-4816-1.2	Endrin ketone ($^{13}C_{12}$, 99%)	*$C_{12}H_8Cl_6O$	100 µg/mL in nonane	1.2 mL
	CLM-4816-50			neat	50 µg
NEW	ULM-8956-1.2	Endrin ketone (unlabeled)	$C_{12}H_8Cl_6O$	100 µg/mL in nonane	1.2 mL
NEW	ULM-8956-50			neat	50 µg
	CLM-4759-1.2	Heptachlor ($^{13}C_{10}$, 99%)	*$C_{10}H_5Cl_7$	100 µg/mL in nonane	1.2 mL
	ULM-2424-1.2	Heptachlor (unlabeled)	$C_{10}H_5Cl_7$	100 µg/mL in nonane	1.2 mL
NEW	ULM-2424-0.1			neat	0.1 g
	CLM-4734-1.2	*cis*-Heptachlor epoxide ($^{13}C_{10}$, 99%)	*$C_{10}H_5Cl_7O$	100 µg/mL in nonane	1.2 mL
	ULM-2425-1.2	*cis*-Heptachlor epoxide (unlabeled)	$C_{10}H_5Cl_7O$	100 µg/mL in nonane	1.2 mL
NEW	ULM-2425-0.1			neat	0.1 g
	ULM-7869-1.2	*trans*-Heptachlor epoxide (unlabeled)	$C_{10}H_5Cl_7O$	100 µg/mL in nonane	1.2 mL
	CLM-4727-1.2	Isodrin ($^{13}C_{12}$, 99%)	*$C_{12}H_8Cl_6$	100 µg/mL in nonane	1.2 mL
	ULM-7442-1.2	Isodrin (unlabeled)	$C_{12}H_8Cl_6$	100 µg/mL in nonane	1.2 mL
	CLM-4814-1.2	Kepone (chlordecone) ($^{13}C_{10}$, 99%)	*$C_{10}Cl_{10}O$	100 µg/mL in nonane	1.2 mL
	ULM-2301-1.2	Kepone (chlordecone) (unlabeled)	$C_{10}Cl_{10}O$	100 µg/mL in nonane	1.2 mL
NEW	ULM-2301-0.1			neat	0.1 g
	CLM-4813-1.2	Mirex ($^{13}C_{10}$, 99%)	*$C_{10}Cl_{12}$	100 µg/mL in nonane	1.2 mL
NEW	CLM-2078-1	Mirex ($^{13}C_8$, 99%)	*$C_8C_2Cl_{12}$	200 µg/mL in toluene	1 mL
	ULM-2427-1.2	Mirex (unlabeled)	$C_{10}Cl_{12}$	100 µg/mL in nonane	1.2 mL
	CLM-4811-1.2	*cis*-Nonachlor ($^{13}C_{10}$, 99%)	*$C_{10}H_5Cl_9$	100 µg/mL in nonane	1.2 mL
	ULM-7445-1.2	*cis*-Nonachlor (unlabeled)	$C_{10}H_5Cl_9$	100 µg/mL in nonane	1.2 mL
	CLM-4735-1.2	*trans*-Nonachlor ($^{13}C_{10}$, 99%)	*$C_{10}H_5Cl_9$	100 µg/mL in nonane	1.2 mL
	ULM-7229-1.2	*trans*-Nonachlor (unlabeled)	$C_{10}H_5Cl_9$	100 µg/mL in nonane	1.2 mL
	CLM-4729-1.2	Oxychlordane ($^{13}C_{10}$, 99%)	*$C_{10}H_4Cl_8O$	100 µg/mL in nonane	1.2 mL
	ULM-6139-1.2	Oxychlordane (unlabeled)	$C_{10}H_4Cl_8O$	100 µg/mL in nonane	1.2 mL
	ULM-6139-SM-1.2			100 µg/mL in methanol	1.2 mL

NOTE: Some standards also available in less than uniformly labeled forms. Please inquire if interested.

Organochlorine (OC) Pesticide and Metabolite Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	CLM-4725-1.2	Aldrin ($^{13}C_{12}$, 99%)	$*C_{12}H_8Cl_6$	100 µg/mL in nonane	1.2 mL
	ULM-7441-1.2	Aldrin (unlabeled)	$C_{12}H_8Cl_6$	100 µg/mL in nonane	1.2 mL
	CLM-2482-1.2	α-HCH (α-BHC) ($^{13}C_6$, 99%)	$*C_6H_6Cl_6$	100 µg/mL in nonane	1.2 mL
	ULM-7232-1.2	α-HCH (α-BHC) (unlabeled)	$C_6H_6Cl_6$	100 µg/mL in nonane	1.2 mL
	CLM-3623-1.2	β-HCH (β-BHC) ($^{13}C_6$, 99%)	$*C_6H_6Cl_6$	50 µg/mL in nonane	2 × 1.2 mL
	ULM-6132-1.2	β-HCH (β-BHC) (unlabeled)	$C_6H_6Cl_6$	50 µg/mL in nonane	2 × 1.2 mL
	CDLM-624-1.2	γ-HCH (γ-BHC) (lindane) ($^{13}C_6$, 99%; D_6, 99%)	$*C_6D_6Cl_6$	100 µg/mL in nonane	1.2 mL
	CLM-1282-1.2	γ-HCH (γ-BHC) (lindane) ($^{13}C_6$, 99%)	$*C_6H_6Cl_6$	100 µg/mL in nonane	1.2 mL
	ULM-6133-1.2	γ-HCH (γ-BHC) (lindane) (unlabeled)	$C_6H_6Cl_6$	100 µg/mL in nonane	1.2 mL
	CLM-3648-1.2	δ-HCH (δ-BHC) ($^{13}C_6$, 99%)	$*C_6H_6Cl_6$	100 µg/mL in nonane	1.2 mL
	ULM-7233-1.2	δ-HCH (δ-BHC) (unlabeled)	$C_6H_6Cl_6$	100 µg/mL in nonane	1.2 mL
	CLM-8087-1.2	*cis*-Chlordane (α) ($^{13}C_{10}$, 99%)	$*C_{10}H_6Cl_8$	100 µg/mL in nonane	1.2 mL
NEW	ULM-2419-1.2 ULM-2419-25	*cis*-Chlordane (α) (unlabeled)	$C_{10}H_6Cl_8$	100 µg/mL in nonane neat	1.2 mL 25 mg
	CLM-4792-1.2	*trans*-Chlordane (γ) ($^{13}C_{10}$, 99%)	$*C_{10}H_6Cl_8$	100 µg/mL in nonane	1.2 mL
NEW	ULM-2420-1.2 ULM-2420-25	*trans*-Chlordane (γ) (unlabeled)	$C_{10}H_6Cl_8$	100 µg/mL in nonane neat	1.2 mL 25 mg
	CLM-4814-1.2	Chlordecone (kepone) ($^{13}C_{10}$, 99%)	$*C_{10}Cl_{10}O$	100 µg/mL in nonane	1.2 mL
	ULM-2301-1.2 ULM-2301-0.1	Chlordecone (kepone) (unlabeled)	$C_{10}Cl_{10}O$	100 µg/mL in nonane neat	1.2 mL 0.1 g
	CLM-4758-1.2	Chlordene ($^{13}C_{10}$, 99%)	$*C_{10}H_6Cl_6$	100 µg/mL in nonane	1.2 mL
	ULM-7443-1.2	Chlordene (unlabeled)	$C_{10}H_6Cl_6$	100 µg/mL in nonane	1.2 mL
	CLM-6999-1.2	2,4′-DDD (ring-$^{13}C_{12}$, 99%) [(*o,p*′-Dichlorodiphenyl) dichloroethane]	$*C_{12}C_2H_{10}Cl_4$	50 µg/mL in nonane	1.2 mL
	ULM-7450-1.2	2,4′-DDD (unlabeled) [(*o,p*′-dichlorodiphenyl) dichloroethane]	$C_{14}H_{10}Cl_4$	50 µg/mL in nonane	1.2 mL
	CLM-7100-1.2	4,4′-DDD (ring-$^{13}C_{12}$, 99%) [(*p,p*′-dichlorodiphenyl) dichloroethane]	$*C_{12}C_2H_{10}Cl_4$	100 µg/mL in nonane	1.2 mL
	DLM-3533-1.2	4,4′-DDD (ring-D_8, 98%) [(*p,p*′-dichlorodiphenyl) dichloroethane]	$C_{14}D_8H_2Cl_4$	100 µg/mL in nonane	1.2 mL
	ULM-7216-1.2	4,4′-DDD (unlabeled) [(*p,p*′-dichlorodiphenyl) dichloroethane]	$C_{14}H_{10}Cl_4$	100 µg/mL in nonane	1.2 mL
	CLM-4693-1.2	2,4′-DDE (ring-$^{13}C_{12}$, 99%) [(*o,p*′-dichlorodiphenyl) dichloroethylene]	$(Cl*C_6H_4)_2C{=}CCl_2$	100 µg/mL in nonane	1.2 mL
	ULM-6251-1.2	2,4′-DDE (unlabeled) [(*o,p*′-dichlorodiphenyl) dichloroethylene]	$C_{14}H_8Cl_4$	100 µg/mL in nonane	1.2 mL
	CLM-1627-1.2 CLM-1627-5	4,4′-DDE (ring-$^{13}C_{12}$, 99%) [(*p,p*′-dichlorodiphenyl) dichloroethylene]	$(Cl*C_6H_4)_2C{=}CCl_2$	100 µg/mL in nonane neat	1.2 mL 5 mg
	ULM-6137-1.2	4,4′-DDE (unlabeled) [(*p,p*′-dichlorodiphenyl) dichloroethylene]	$(ClC_6H_4)_2C{=}CCl_2$	100 µg/mL in nonane	1.2 mL
	CLM-4692-1.2	2,4′-DDT (ring-$^{13}C_{12}$, 99%) [(*o,p*′-dichlorodiphenyl) trichloroethane]	$(Cl*C_6H_4)_2CHCCl_3$	100 µg/mL in nonane	1.2 mL
	ULM-6134-1.2	2,4′-DDT (unlabeled) [(*o,p*′-dichlorodiphenyl) trichloroethane]	$ClC_6H_4CH(CCl_3)C_6H_4Cl$	100 µg/mL in nonane	1.2 mL
	CLM-1281-1.2 CLM-1281-5	4,4′-DDT (ring-$^{13}C_{12}$, 99%) [(*p,p*′-dichlorodiphenyl) trichloroethane]	$(Cl*C_6H_4)_2CHCCl_3$	100 µg/mL in nonane neat	1.2 mL 5 mg
	ULM-6135-1.2	4,4′-DDT (unlabeled) [(*p,p*′-dichlorodiphenyl) trichloroethane]	$(ClC_6H_4)_2CHCCl_3$	100 µg/mL in nonane	1.2 mL
	CLM-816-1.2	2,6-Dichloro-4-nitroaniline (ring-$^{13}C_6$, 99%)	$Cl_2*C_6H_2(NO_2)NH_2$	100 µg/mL in nonane	1.2 mL
	CLM-4726-1.2	Dieldrin ($^{13}C_{12}$, 99%)	$*C_{12}H_8Cl_6O$	100 µg/mL in nonane	1.2 mL
	ULM-7230-1.2	Dieldrin (unlabeled)	$C_{12}H_8Cl_6O$	100 µg/mL in nonane	1.2 mL
	CLM-6025-1.2	Endosulfan I ($^{13}C_9$, 99%)	$*C_9H_6Cl_6O_3S$	100 µg/mL in nonane	1.2 mL
	DLM-2862-1.2	Endosulfan I (D_4, 97%)	$C_9D_4H_2Cl_6O_3S$	100 µg/mL in nonane	1.2 mL
	ULM-7447-1.2	Endosulfan I (unlabeled)	$C_9H_6Cl_6O_3S$	100 µg/mL in nonane	1.2 mL
	CLM-6026-1.2	Endosulfan II ($^{13}C_9$, 99%)	$*C_9H_6Cl_6O_3S$	100 µg/mL in nonane	1.2 mL
	ULM-7448-1.2	Endosulfan II (unlabeled)	$C_9H_6Cl_6O_3S$	100 µg/mL in nonane	1.2 mL
	CLM-7531-1.2	Endosulfan sulfate ($^{13}C_9$, 99%)	$*C_9H_6Cl_6O_4S$	100 µg/mL in nonane	1.2 mL
	ULM-7990-1.2	Endosulfan sulfate (unlabeled)	$C_9H_6Cl_6O_4S$	100 µg/mL in nonane	1.2 mL

Organochlorine (OC) Pesticide and Metabolite Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	CLM-4782-1.2	Endrin ($^{13}C_{12}$, 99%)	$*C_{12}H_8Cl_6O$	100 µg/mL in nonane	1.2 mL
	ULM-7444-1.2	Endrin (unlabeled)	$C_{12}H_8Cl_6O$	100 µg/mL in nonane	1.2 mL
NEW	CLM-4815-1.2	Endrin aldehyde ($^{13}C_{12}$, 99%)	$*C_{12}H_{10}Cl_6O$	100 µg/mL in nonane	1.2 mL
	CLM-4815-50			neat	50 µg
NEW	ULM-8958-1.2	Endrin aldehyde (unlabeled)	$C_{12}H_{10}Cl_6O$	100 µg/mL in nonane	1.2 mL
NEW	ULM-8958-50			neat	50 µg
NEW	CLM-4816-1.2	Endrin ketone ($^{13}C_{12}$, 99%)	$*C_{12}H_8Cl_6O$	100 µg/mL in nonane	1.2 mL
	CLM-4816-50			neat	50 µg
NEW	ULM-8956-1.2	Endrin ketone (unlabeled)	$C_{12}H_8Cl_6O$	100 µg/mL in nonane	1.2 mL
NEW	ULM-8956-50			neat	50 µg
	CLM-4759-1.2	Heptachlor ($^{13}C_{10}$, 99%)	$*C_{10}H_5Cl_7$	100 µg/mL in nonane	1.2 mL
	ULM-2424-1.2	Heptachlor (unlabeled)	$C_{10}H_5Cl_7$	100 µg/mL in nonane	1.2 mL
	ULM-2424-0.1			neat	0.1 g
	CLM-4734-1.2	*cis*-Heptachlor epoxide ($^{13}C_{10}$, 99%)	$*C_{10}H_5Cl_7O$	100 µg/mL in nonane	1.2 mL
	ULM-2425-1.2	*cis*-Heptachlor epoxide (unlabeled)	$C_{10}H_5Cl_7O$	100 µg/mL in nonane	1.2 mL
	ULM-2425-0.1			neat	0.1 g
	ULM-7869-1.2	*trans*-Heptachlor epoxide (unlabeled)	$C_{10}H_5Cl_7O$	100 µg/mL in nonane	1.2 mL
	CLM-351-1.2	Hexachlorobenzene ($^{13}C_6$, 99%)	$*C_6Cl_6$	100 µg/mL in nonane	1.2 mL
	ULM-6130-1.2	Hexachlorobenzene (unlabeled)	C_6Cl_6	100 µg/mL in nonane	1.2 mL
	CLM-4727-1.2	Isodrin ($^{13}C_{12}$, 99%)	$*C_{12}H_8Cl_6$	100 µg/mL in nonane	1.2 mL
	ULM-7442-1.2	Isodrin (unlabeled)	$C_{12}H_8Cl_6$	100 µg/mL in nonane	1.2 mL
	CLM-4814-1.2	Kepone (chlordecone) ($^{13}C_{10}$, 99%)	$*C_{10}Cl_{10}O$	100 µg/mL in nonane	1.2 mL
	ULM-2301-1.2	Kepone (chlordecone) (unlabeled)	$C_{10}Cl_{10}O$	100 µg/mL in nonane	1.2 mL
	ULM-2301-0.1			neat	0.1 g
	CLM-4683-1.2	Methoxychlor (ring-$^{13}C_{12}$, 99%)	$(CH_3O*C_6H_4)_2CHCCl_3$	100 µg/mL in nonane	1.2 mL
	ULM-7440-1.2	Methoxychlor (unlabeled)	$(CH_3OC_6H_4)_2CHCCl_3$	100 µg/mL in nonane	1.2 mL
	CLM-4813-1.2	Mirex ($^{13}C_{10}$, 99%)	$*C_{10}Cl_{12}$	100 µg/mL in nonane	1.2 mL
	CLM-2078-1	Mirex ($^{13}C_8$, 99%)	$*C_8C_2Cl_{12}$	100 µg/mL in toluene	1 mL
	ULM-2427-1.2	Mirex (unlabeled)	$C_{10}Cl_{12}$	100 µg/mL in nonane	1.2 mL
	ULM-2427-0.1			neat	0.1 g
	CLM-4811-1.2	*cis*-Nonachlor ($^{13}C_{10}$, 99%)	$*C_{10}H_5Cl_9$	100 µg/mL in nonane	1.2 mL
	ULM-7445-1.2	*cis*-Nonachlor (unlabeled)	$C_{10}H_5Cl_9$	100 µg/mL in nonane	1.2 mL
	CLM-4735-1.2	*trans*-Nonachlor ($^{13}C_{10}$, 99%)	$*C_{10}H_5Cl_9$	100 µg/mL in nonane	1.2 mL
	ULM-7229-1.2	*trans*-Nonachlor (unlabeled)	$C_{10}H_5Cl_9$	100 µg/mL in nonane	1.2 mL
	CLM-4729-1.2	Oxychlordane ($^{13}C_{10}$, 99%)	$*C_{10}H_4Cl_8O$	100 µg/mL in nonane	1.2 mL
	ULM-6139-1.2	Oxychlordane (unlabeled)	$C_{10}H_4Cl_8O$	100 µg/mL in nonane	1.2 mL
	ULM-6139-SM-1.2			100 µg/mL in methanol	1.2 mL

Organophosphate (OP) Pesticide and Metabolite Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	DLM-6000-1.2	Acephate (D_6, 98%)	$C_4D_6H_4NO_3PS$	100 µg/mL in acetonitrile-D_3	1.2 mL
	ULM-7263-1.2	Acephate (unlabeled)	$C_4H_{10}NO_3PS$	100 µg/mL in acetonitrile	1.2 mL
	CDNLM-6786-1.2	Aminomethylphosphonic acid (AMPA)	$*CH_4D_2*NO_3P$	100 µg/mL in H_2O	1.2 mL
NEW	CDNLM-6786-10	(^{13}C, 99%; ^{15}N, 98%, methylene-D_2, 98%)		100 µg/mL in H_2O	10 mL
NEW	ULM-9399-1.2	Azinphos-methyl (unlabeled)	$C_{10}PN_3H_{12}S_2O_3$	100 µg/mL in nonane	1.2 mL
	DLM-7152	Bensulide (isopropoxy-D_{14}, 98%)	$C_{14}D_{14}H_{10}NO_4PS_3$		Inquire
	DLM-4360-1.2	Chlorpyrifos (diethyl-D_{10}, 99%)	$C_9D_{10}HCl_3NO_3PS$	100 µg/mL in nonane	1.2 mL
	ULM-7489-1.2	Chlorpyrifos (unlabeled)	$C_9H_{11}Cl_3NO_3PS$	100 µg/mL in nonane	1.2 mL
NEW	DLM-7153-1.2	Chlorpyrifos-methyl (dimethyl-D_6, 98%)	$C_7HCl_3D_6NO_3PS$	100 µg/mL in nonane	1.2 mL
NEW	ULM-9538-1.2	Chlorpyrifos-methyl (unlabeled)	$C_7H_7Cl_3NO_3PS$	100 µg/mL in nonane	1.2 mL
	DLM-1148-1.2	Diazinon (diethyl-D_{10}, 98%)	$C_{12}H_{11}D_{10}N_2O_3PS$	100 µg/mL in nonane	1.2 mL
NEW	DLM-1148-5			neat	5 mg
NEW	DLM-1148-A-1.2			100 µg/mL in acetonitrile	1.2 mL
	ULM-6575-A-1.2	Diazinon (unlabeled)	$C_{12}H_{21}N_2O_3PS$	100 µg/mL in acetonitrile	1.2 mL
	ULM-6575-S-10X-1.2			1000 µg/mL in nonane	1.2 mL
	DLM-2829-0.01	Dichlorvos (dimethyl-D_6, 98%)	$C_4D_6HCl_2O_4P$	neat	10 mg
	ULM-7217-1.2	Dichlorvos (unlabeled)	$(H_3CO)_2POOCH{=}CCl_2$	100 µg/mL in nonane	1.2 mL
NEW	DLM-4851-M-1.2	*O,O*-Diethyl phosphate, potassium salt (DEP) (diethyl-D_{10}, 98%)	$C_4D_{10}KO_4P$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9287-M-1.2	*O,O*-Diethyl phosphate, potassium salt (DEP) (unlabeled)	$C_4H_{10}KO_4P$	100 µg/mL in methanol	1.2 mL
	DLM-4852-1.2	*O,O*-Diethyl thiophosphate, potassium salt (DETP) (diethyl-D_{10}, 98%)	$C_4D_{10}KO_3PS$	100 µg/mL in methanol	1.2 mL
	ERD-119	*O,O*-Diethyl thiophosphate, potassium salt (DETP) (unlabeled)	$C_4H_{10}KO_3PS$	1000 µg/mL in methanol	1.2 mL
NEW	DLM-9003-1.2	*O,O*-Diethyl dithiophosphate, potassium salt (DEDTP) (diethyl-D_{10}, 98%)	$C_4D_{10}KO_2PS_2$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9002-1.2	*O,O*-Diethyl dithiophosphate, potassium salt (DEDTP) (unlabeled)	$C_4H_{10}KO_2PS_2$	100 µg/mL in methanol	1.2 mL
	ULM-9898-1.2	Diisopropyl methylphosphonate (unlabeled)	$C_7H_{17}O_3P$	1000 µg/mL in methanol	1.2 mL
	DLM-7151-1.2	Dimethoate (*O,O*-dimethyl-D_6, 98%)	$C_5D_6H_6NO_3PS_2$	100 µg/mL in acetonitrile	1.2 mL
	ULM-7972-1.2	Dimethoate (unlabeled)	$C_5H_{12}NO_3PS_2$	100 µg/mL in acetonitrile	1.2 mL
NEW	DLM-8868-1.2	*O,O*-Dimethyl phosphate, potassium salt (DMP) (dimethyl-D_6, 98%)	$C_2D_6KO_4P$	100 µg/mL in methanol	1.2 mL
NEW	ULM-8867-1.2	*O,O*-Dimethyl phosphate, potassium salt (DMP) (unlabeled)	$C_2H_6KO_3PS$	100 µg/mL in methanol	1.2 mL
NEW	DLM-8904-1.2	*O,O*-Dimethyl thiophosphate, potassium salt (DMTP) (dimethyl-D_6, 98%) CP 97%	$C_2D_6KO_3PS$	100 µg/mL in methanol	1.2 mL
NEW	ULM-8905-1.2	*O,O*-Dimethyl thiophosphate, potassium salt (DMTP) (unlabeled) CP 97%	$C_2H_6KO_3PS$	1000 µg/mL in methanol	1.2 mL
NEW	DLM-4541-M-1.2	*O,O*-Dimethyl dithiophosphate, potassium salt (DMDTP) (dimethyl-D_6, 98%)	$C_2D_6KO_2PS_2$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9004-1.2	*O,O*-Dimethyl dithiophosphate, potassium salt (DMDTP) (unlabeled)	$C_2H_6KO_2PS_2$	100 µg/mL in methanol	1.2 mL
	ULM-9899-1.2	Dipinacolyl methylphosphonate (unlabeled)	$C_7H_{17}O_3P$	1000 µg/mL in methanol	1.2 mL
	DLM-7183	Disulfoton (*O,O*-diethyl-D_{10}, 98%)	$C_8D_{10}H_9O_2PS_3$		Inquire
	ULM-6091-1.2	Ethyl dimethylamidophosphate, sodium salt (unlabeled)	$C_4H_{11}NO_3PNa$	1000 µg/mL in methanol	1.2 mL
	DLM-6098-1.2	Ethyl hydrogen methylphosphonate (ethyl-D_5, 98%)	$C_3H_4D_5O_3P$	100 µg/mL in methanol	1.2 mL
	ULM-6099-1.2	Ethyl methylphosphonic acid (unlabeled)	$C_3H_9O_3P$	1000 µg/mL in methanol	1.2 mL
	DLM-2878-0.01	Fenitrothion (*O,O*-dimethyl-D_6, 98%)	$C_9D_6H_6NO_5PS$	neat	10 mg
	CLM-4545-1.2	Fonofos (ring-$^{13}C_6$, 99%)	$*C_6C_4H_{15}OPS_2$	100 µg/mL in nonane	1.2 mL
	ULM-6694-1.2	Fonofos (unlabeled)	$CH_2CH_3P(S)(OCH_2CH_3)(SC_6H_5)$	100 µg/mL in nonane	1.2 mL

Organophosphate (OP) Pesticide and Metabolite Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	CNLM-4666-1.2 CNLM-4666-10 CNLM-4666-10X-1.2	Glyphosate (2-^{13}C, 99%; ^{15}N, 98%+) CP 96%	HOO*CCH$_2$*NHCH$_2$PO(OH)$_2$	100 µg/mL in water 100 µg/mL in water 1000 µg/mL in water	1.2 mL 10 mL 1.2 mL
	ULM-6876-1.2	Glyphosate (unlabeled)	HOOCCH$_2$NHCH$_2$PO(OH)$_2$	100 µg/mL in water	1.2 mL
	ULM-6093-1.2	Isopropyl methylphosphonic acid (unlabeled)	C$_4$H$_{11}$O$_3$P	1000 µg/mL in methanol	1.2 mL
	DLM-4476-1.2	Malathion (D$_{10}$, 99%)	C$_{10}$D$_{10}$H$_9$O$_6$PS$_2$	100 µg/mL in nonane	1.2 mL
	ULM-8122-1.2	Malathion (unlabeled)	C$_{10}$H$_{15}$O$_6$PS$_2$	100 µg/mL in nonane	1.2 mL
NEW	CLM-9050-1.2	Malathion diacid (^{13}C$_4$, 99%) CP 97%	*C$_6$H$_{11}$O$_6$PS$_2$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9073-1.2	Malathion diacid (unlabeled)	C$_4$C$_2$H$_{11}$O$_6$PS$_2$	100 µg/mL in methanol	1.2 mL
NEW	DLM-7149-1.2	Methamidophos (dimethyl-D$_6$, 98%)	C$_2$D$_6$H$_2$NO$_2$PS	100 µg/mL in dioxane	1.2 mL
NEW	ULM-8872-1.2	Methamidophos (unlabeled)	C$_2$H$_8$NO$_2$PS	100 µg/mL in dioxane	1.2 mL
	CDLM-6100-1.2	Methylphosphonic acid (^{13}C, 99%; methyl-D$_3$, 98%)	*CD$_3$H$_2$O$_3$P	100 µg/mL in methanol	1.2 mL
	DLM-6196-1.2	Methylphosphonic acid (methyl-D$_3$, 98%)	CD$_3$H$_2$O$_3$P	100 µg/mL in methanol	1.2 mL
	ERM-038	Methylphosphonic acid (unlabeled)	CH$_3$P(O)(OH)$_2$	1000 µg/mL in methanol	1.2 mL
	CLM-6620-1.2	Methylphosphonic acid, mono-(1,2,2-trimethylpropyl) ester (trimethylpropyl-^{13}C$_6$, 99%)	*C$_6$CH$_{17}$O$_3$P	100 µg/mL in methanol	1.2 mL
	DLM-7150-1.2	Oxydemeton methyl (*O,O*-dimethyl-D$_6$, 98%)	C$_6$D$_6$H$_9$O$_4$PS$_2$	100 µg/mL in acetonitrile	1.2 mL
	ULM-8579-1.2	Oxydemeton methyl (unlabeled)	C$_6$H$_{15}$O$_4$PS$_2$	100 µg/mL in acetonitrile	1.2 mL
	DLM-2970-1.2	Parathion (diethyl-D$_{10}$, 98%)	NO$_2$(C$_6$H$_4$)OP(=S)(OC$_2$D$_5$)$_2$	100 µg/mL in nonane	1.2 mL
	ULM-8144-1.2	Parathion (unlabeled)	NO$_2$(C$_6$H$_4$)OP(=S)(OC$_2$H$_5$)$_2$	100 µg/mL in nonane	1.2 mL
	CLM-4544-1.2	Phorate (diethoxy-^{13}C$_4$, 99%)	(*C$_2$H$_5$O)$_2$P(S)SCH$_2$SC$_2$H$_5$	100 µg/mL in acetonitrile	1.2 mL
	ULM-7567-1.2	Phorate (unlabeled)	(C$_2$H$_5$O)$_2$P(S)SCH$_2$SC$_2$H$_5$	100 µg/mL in acetonitrile	1.2 mL
	DLM-4667-1.2	Phosmet (dimethyl-D$_6$, 98%)	C$_{11}$D$_6$H$_6$NO$_4$PS$_2$	100 µg/mL in acetonitrile	1.2 mL
	ULM-8454-1.2	Phosmet (unlabeled)	C$_{11}$H$_{12}$NO$_4$PS$_2$	100 µg/mL in acetonitrile	1.2 mL
	CLM-4543	Terbufos (diethoxy-^{13}C$_4$, 99%)	C(CH$_3$)$_3$SCH$_2$SP(S)(O*CH$_2$*CH$_3$)$_2$		Inquire
NEW	CLM-9049-1.2	3,5,6-Trichloro-2-pyridinol (TCPY) (4,5,6-^{13}C$_3$, 99%) CP 97%	*C$_3$C$_2$H$_2$Cl$_3$NO	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-9204-1.2	3,5,6-Trichloro-2-pyridinol (TCPY) (unlabeled)	C$_5$H$_2$Cl$_3$NO	100 µg/mL in acetonitrile	1.2 mL

Neonicotinoid Insecticide and Metabolite Standards

	Catalog No.	Compound	Formula	Concentration	Amount
NEW	CLM-9653-1.2	Acetamiprid (pyridylmethyl-^{13}C$_6$, 99%)	*C$_6$C$_4$H$_{11}$ClN$_4$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9734-1.2	Acetamiprid (unlabeled)	C$_{10}$H$_{11}$ClN$_4$	100 µg/mL in methanol	1.2 mL
NEW	CLM-9598-1.2	6-Chloronicotinic acid (^{13}C$_6$, 99%)	*C$_6$H$_4$ClNO$_2$	100 µg/mL in MTBE	1.2 mL
NEW	ULM-9604-1.2	6-Chloronicotinic acid (unlabeled)	C$_6$H$_4$ClNO$_2$	100 µg/mL in MTBE	1.2 mL
NEW	CNLM-9940-1.2	Clothianidin (thiazole-^{13}C$_3$, 99%; ^{15}N, 98%)	*C$_3$C$_3$H$_8$Cl*NN$_4$O$_2$S		Inquire
NEW	ULM-9941-1.2	Clothianidin (unlabeled)	C$_6$H$_8$ClN$_5$O$_2$S		Inquire
NEW	CLM-9594-1.2	Dinotefuran (furylmethyl-^{13}C$_5$, 99%)	*C$_5$C$_2$H$_{14}$N$_4$O$_3$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9732-1.2	Dinotefuran (unlabeled)	C$_7$H$_{14}$N$_4$O$_3$	100 µg/mL in methanol	1.2 mL
NEW	DLM-8512-1.2	Imidacloprid (4,4,5,5-D$_4$, 98%)	C$_9$H$_6$D$_4$ClN$_5$O$_2$	100 µg/mL in methanol	1.2 mL
NEW	ULM-8513-1.2	Imidacloprid (unlabeled)	C$_9$H$_{10}$ClN$_5$O$_2$	100 µg/mL in methanol	1.2 mL
NEW	CNLM-9869-1.2	Sulfoxaflor (cyano-^{13}C, 99%; cyano-^{15}N, imine-^{15}N, 98%)	*CC$_9$H$_{10}$F$_3$*N$_2$NOS	100 µg/mL in methanol	1.2 mL
NEW	ULM-9870-1.2	Sulfoxaflor (unlabeled)	C$_{10}$H$_{10}$F$_3$N$_2$NOS	100 µg/mL in methanol	1.2 mL
NEW	CLM-9690-1.2	3-Tetrahydrofuroic acid (^{13}C$_5$, 99%)	*C$_5$H$_8$O$_3$	100 µg/mL in MTBE	1.2 mL
NEW	ULM-9691-1.2	3-Tetrahydrofuroic acid (unlabeled)	C$_5$H$_8$O$_3$	100 µg/mL in MTBE	1.2 mL
NEW	CLM-9652-1.2	Thiacloprid (pyridylmethyl-^{13}C$_6$, 99%)	*C$_6$C$_4$H$_9$ClN$_4$S	100 µg/mL in methanol	1.2 mL
NEW	ULM-9733-1.2	Thiacloprid (unlabeled)	C$_{10}$H$_9$ClN$_4$S	100 µg/mL in methanol	1.2 mL
NEW	CNLM-9860-1.2	Thiamethoxam (thiazole-^{13}C$_3$, 99%; ^{15}N, 98%)	*C$_3$C$_5$H$_{10}$Cl*NN$_4$O$_3$S		Inquire
NEW	ULM-9939-1.2	Thiamethoxam (unlabeled)	C$_8$H$_{10}$ClN$_5$O$_3$S		Inquire

Carbamate Pesticide and Metabolite Standards

	Catalog No.	Compound	Formula	Concentration	Amount
NEW	CDLM-9820-1.2	Aldicarb ($^{13}C_2$, 98%; D_3, 98%)	$C_5*C_2H_{11}D_3N_2O_2S$	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-9823-1.2	Aldicarb (unlabeled)	$C_7H_{14}N_2O_2S$	100 µg/mL in acetonitrile	1.2 mL
	CLM-7140	Bendiocarb ($^{13}C_3$, 99%)	$*C_3C_8H_{13}NO_4$		Inquire
	ULM-8638	Bendiocarb (unlabeled)	$C_{11}H_{13}NO_4$		Inquire
	CLM-4682-1.2	Carbaryl (ring-$^{13}C_6$, 99%)	$*C_6C_6H_{11}NO_2$	100 µg/mL in nonane	1.2 mL
	ULM-8096-1.2	Carbaryl (unlabeled)	$C_{10}H_7CO_2NHCH_3$	100 µg/mL in nonane	1.2 mL
	CLM-1911-1.2	Carbofuran (ring-$^{13}C_6$, 99%)	$*C_6C_6H_{15}NO_3$	100 µg/mL in *p*-dioxane	1.2 mL
	ULM-7419-1.2	Carbofuran (unlabeled)	$C_{12}H_{15}NO_3$	100 µg/mL in *p*-dioxane	1.2 mL
	ULM-6875-1.2	Carbofuran phenol (unlabeled)	$C_{10}H_{12}O_2$	200 µg/mL in nonane	1.2 mL
	CNLM-7148-1.2	Methomyl (acetohydroxamate-$^{13}C_2$, 99%; ^{15}N, 98%)	$*C_2C_3H_{10}N*NO_2S$	100 µg/mL in methanol	1.2 mL
	ULM-8639-1.2	Methomyl (unlabeled)	$C_5H_{10}NNO_2S$	100 µg/mL in methanol	1.2 mL
	DLM-7141-1.2	Propoxur (isopropyl-D_7, 98%)	$C_{11}D_7H_8NO_3$	100 µg/mL in nonane	1.2 mL
NEW	ULM-9765-1.2	Propoxur (unlabeled)	$C_{11}H_{15}NO_3$	100 µg/mL in nonane	1.2 mL

Triazine Herbicide and Metabolite Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	CLM-8316-1.2	Ammeline (desethyldesisopropylhydroxyatrazine) (ring-$^{13}C_3$, 99%)	$NH_2(*C_3N_3OH)NH_2$	100 µg/mL in 80% water/ 20% diethylamine	1.2 mL
	ULM-8323-1.2	Ammeline (desethyldesisopropylhydroxyatrazine) (unlabeled)	$NH_2(C_3N_3OH)NH_2$	100 µg/mL in 80% water/ 20% diethylamine	1.2 mL
	CLM-3737-1.2	Atrazine (ring-$^{13}C_3$, 99%)	$(CH_3)_2CHNH(*C_3N_3Cl)NHCH_2CH_3$	100 µg/mL in nonane	1.2 mL
	DLM-1149-1.2	Atrazine (ethylamine-D_5, 98%)	$(CH_3)_2CHNH(C_3N_3Cl)NHCD_2CD_3$	100 µg/mL in nonane	1.2 mL
NEW	DLM-1149-5			100 µg/mL in nonane	5 mg
	ULM-7235-1.2	Atrazine (unlabeled)	$(CH_3)_2CHNH(C_3N_3Cl)NHCH_2CH_3$	100 µg/mL in nonane	1.2 mL
	CLM-3894-1.2	Atrazine mercapturate (ring-$^{13}C_3$, 99%)	$*C_3C_{10}H_{22}N_6O_3S$	100 µg/mL in acetonitrile	1.2 mL
	ULM-7346-1.2	Atrazine mercapturate (unlabeled)	$C_{13}H_{22}N_6O_3S$	100 µg/mL in acetonitrile	1.2 mL
	CLM-8311-1.2	Atrazinethiol (ring-$^{13}C_3$, 99%)	$(CH_3CH_2NH)*C_3N_3(SH)(NHCH(CH_3)_2)$	100 µg/mL in acetonitrile	1.2 mL
	ULM-8318-1.2	Atrazinethiol (unlabeled)	$(CH_3CH_2NH)C_3N_3(SH)(NHCH(CH_3)_2)$	100 µg/mL in acetonitrile	1.2 mL
	CLM-8313-1.2	Desethylatrazine (ring-$^{13}C_3$, 99%) CP 97%	$(CH_3)_2CHNH(*C_3N_3Cl)NH_2$	100 µg/mL in acetonitrile	1.2 mL
	ULM-8320-1.2	Desethylatrazine (unlabeled)	$(CH_3)_2CHNH(C_3N_3Cl)NH_2$	100 µg/mL in acetonitrile	1.2 mL
	CLM-7528-1.2	Desethyl desisopropyl atrazine ($^{13}C_3$, 99%) CP 95%	$*C_3H_4ClN_5$	100 µg/mL in acetonitrile	1.2 mL
	ULM-8001-1.2	Desethyl desisopropyl atrazine (unlabeled)	$C_3H_4ClN_5$	100 µg/mL in acetonitrile	1.2 mL
	CLM-8315-1.2	Desethylhydroxyatrazine (ring-$^{13}C_3$, 99%)	$(CH_2N)*C_3N_3(OH)(NHCH(CH_3)_2)$	100 µg/mL in 80% water/ 20% diethylamine	1.2 mL
	ULM-8322-1.2	Desethylhydroxyatrazine (unlabeled)	$(CH_2N)C_3N_3(OH)(NHCH(CH_3)_2)$	100 µg/mL in 80% water/ 20% diethylamine	1.2 mL
	CLM-8312-1.2	Desisopropylatrazine (ring-$^{13}C_3$, 99%)	$CH_3CH_2NH(*C_3N_3Cl)NH_2$	100 µg/mL in acetonitrile	1.2 mL
	ULM-8319-1.2	Desisopropylatrazine (unlabeled)	$CH_3CH_2NH(C_3N_3Cl)NH_2$	100 µg/mL in acetonitrile	1.2 mL
	CLM-8314-1.2	Desisopropylhydroxyatrazine (ring-$^{13}C_3$, 99%)	$(CH_3CH_2NH)*C_3N_3(OH)(NH_2)$	100 µg/mL in 80% water/ 20% diethylamine	1.2 mL
	ULM-8321-1.2	Desisopropylhydroxyatrazine (unlabeled)	$(CH_3CH_2NH)C_3N_3(OH)(NH_2)$	100 µg/mL in 80% water/ 20% diethylamine	1.2 mL
	CLM-8310-1.2	Hydroxyatrazine (ring-$^{13}C_3$, 99%)	$(CH_3CH_2NH)*C_3N_3(OH)(NHCH(CH_3)_2)$	100 µg/mL in 80% water/ 20% diethylamine	1.2 mL
	ULM-8317-1.2	Hydroxyatrazine (unlabeled)	$(CH_3CH_2NH)C_3N_3(OH)(NHCH(CH_3)_2)$	100 µg/mL in 80% water/ 20% diethylamine	1.2 mL
	CLM-3738-1.2	Propazine (ring-$^{13}C_3$, 99%)	$*C_3C_6H_{16}ClN_5$	100 µg/mL in methanol	1.2 mL
NEW	ULM-8304	Propazine (unlabeled)	$C_9H_{16}ClN_5$		Inquire
	CLM-3739-1.2	Simazine (ring-$^{13}C_3$, 99%)	$*C_3C_4H_{12}ClN_5$	100 µg/mL in methanol	1.2 mL
NEW	CLM-3739-A-1.2			100 µg/mL in acetonitrile	1.2 mL
	ULM-7893-1.2	Simazine (unlabeled)	$C_7H_{12}ClN_5$	100 µg/mL in methanol	1.2 mL
NEW	ULM-7893-A-1.2			100 µg/mL in acetonitrile	1.2 mL

Pyrethroid Pesticide and Metabolite Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	CLM-7293-1.2	Cyfluthrin (mix of stereoisomers) (phenoxy-$^{13}C_6$, 99%)	$*C_6C_{16}H_{18}Cl_2FNO_3$	100 µg/mL in nonane	1.2 mL
	ULM-7454-1.2	Cyfluthrin (mix of stereoisomers) (unlabeled)	$C_{22}H_{18}Cl_2FNO_3$	100 µg/mL in nonane	1.2 mL
	CLM-7292-1.2	Cypermethrin (mix of stereoisomers) (phenoxy-$^{13}C_6$, 99%)	$*C_6C_{16}H_{19}Cl_2NO_3$	100 µg/mL in nonane	1.2 mL
	ULM-7453-1.2	Cypermethrin (mix of stereoisomers) (unlabeled)	$C_{22}H_{19}Cl_2NO_3$	100 µg/mL in nonane	1.2 mL
NEW	CDLM-9205-1.2	*cis*-DCCA (1,carboxyl-$^{13}C_2$, 99%; 1-D, 97%)	$C_6*C_2H_9DCl_2O_2$	100 µg/mL in acetonitrile-D_3	1.2 mL
NEW	ULM-9176-1.2	*cis*-DCCA (unlabeled)	$C_8H_{10}Cl_2O_2$	100 µg/mL in acetonitrile	1.2 mL
NEW	CDLM-9206-1.2	*trans*-DCCA (1,carboxyl-$^{13}C_2$, 99%; 1-D, 97%) CP 97%	$C_6*C_2H_9DCl_2O_2$	100 µg/mL in acetonitrile-D_3	1.2 mL
NEW	ULM-9175-1.2	*trans*-DCCA (unlabeled)	$C_8H_{10}Cl_2O_2$	100 µg/mL in acetonitrile	1.2 mL
	CLM-7389-1.2	4-Fluoro-3-phenoxybenzoic acid ($^{13}C_6$, 99%)	$*C_6C_7H_9FO_3$	100 µg/mL in acetonitrile	1.2 mL
	ULM-7391-1.2	4-Fluoro-3-phenoxybenzoic acid (unlabeled)	$C_{13}H_9FO_3$	100 µg/mL in acetonitrile	1.2 mL
	CLM-7322-1.2	*cis*-Permethrin (phenoxy-$^{13}C_6$, 99%)	$*C_6H_5OC_6H_4CH_2CO_2C_7H_9Cl_2O_3$	50 µg/mL in nonane	1.2 mL
	ULM-8526-1.2	*cis*-Permethrin (unlabeled)	$C_6H_5OC_6H_4CH_2CO_2C_7H_9Cl_2O_3$	50 µg/mL in nonane	1.2 mL
	CLM-7323-1.2	*trans*-Permethrin (phenoxy-$^{13}C_6$, 99%)	$*C_6H_5OC_6H_4CH_2CO_2C_7H_9Cl_2O_3$	50 µg/mL in nonane	1.2 mL
	ULM-8527-1.2	*trans*-Permethrin (unlabeled)	$C_6H_5OC_6H_4CH_2CO_2C_7H_9Cl_2O_3$	50 µg/mL in nonane	1.2 mL
	CLM-4542-1.2 CLM-4542-SA-1.2	3-Phenoxybenzoic acid (phenoxy-$^{13}C_6$, 99%)	$*C_6H_5OC_6H_4CO_2H$	100 µg/mL in nonane 100 µg/mL in acetonitrile	1.2 mL 1.2 mL
	ULM-6781-1.2 ULM-6781-SA-1.2	3-Phenoxybenzoic acid (unlabeled)	$C_6H_5OC_6H_4CO_2H$	100 µg/mL in nonane 100 µg/mL in acetonitrile	1.2 mL 1.2 mL

Toxaphene Standards

	Catalog No.	Compound	Formula	Concentration	Amount
NEW	ULM-9429-1.2	Hp-Sed (unlabeled)	$C_{10}H_{11}Cl_7$	10 µg/mL in nonane	1.2 mL
NEW	ULM-9428-1.2	Hx-Sed (unlabeled)	$C_{10}H_{12}Cl_6$	10 µg/mL in nonane	1.2 mL
	CLM-7930-1.2	Parlar 26 ($^{13}C_{10}$, 99%)	$*C_{10}H_{10}Cl_8$	10 µg/mL in nonane	1.2 mL
	ULM-7828-1.2	Parlar 26 (unlabeled)	$C_{10}H_{10}Cl_8$	10 µg/mL in nonane	1.2 mL
	CLM-8705-1.2	Parlar 32 ($^{13}C_{10}$, 99%)	$*C_{10}H_{11}Cl_7$	10 µg/mL in nonane	1.2 mL
	ULM-8665-1.2	Parlar 32 (unlabeled)	$C_{10}H_{11}Cl_7$	10 µg/mL in nonane	1.2 mL
NEW	ULM-9005-1.2	Parlar 38 (unlabeled)	$C_{10}H_{10}Cl_8$	10 µg/mL in nonane	1.2 mL
	CLM-8719-1.2	Parlar 39 ($^{13}C_{10}$, 99%)	$*C_{10}H_{10}Cl_8$	10 µg/mL in nonane	1.2 mL
	ULM-8767-1.2	Parlar 39 (unlabeled)	$C_{10}H_{10}Cl_8$	10 µg/mL in nonane	1.2 mL
NEW	ULM-9430-1.2	Parlar 40 (unlabeled)	$C_{10}H_{10}Cl_8$	10 µg/mL in nonane	1.2 mL
NEW	ULM-9431-1.2	Parlar 41 (unlabeled)	$C_{10}H_{10}Cl_8$	10 µg/mL in nonane	1.2 mL
NEW	ULM-9432-1.2	Parlar 44 (unlabeled)	$C_{10}H_{10}Cl_8$	10 µg/mL in nonane	1.2 mL
	CLM-7931-1.2	Parlar 50 ($^{13}C_{10}$, 99%)	$*C_{10}H_9Cl_9$	10 µg/mL in nonane	1.2 mL
	ULM-7829-1.2	Parlar 50 (unlabeled)	$C_{10}H_9Cl_9$	10 µg/mL in nonane	1.2 mL
	CLM-7932-1.2	Parlar 62 ($^{13}C_{10}$, 99%)	$*C_{10}H_9Cl_9$	10 µg/mL in nonane	1.2 mL
	ULM-7830-1.2	Parlar 62 (unlabeled)	$C_{10}H_9Cl_9$	10 µg/mL in nonane	1.2 mL
	CLM-8720-1.2	Parlar 69 ($^{13}C_{10}$, 99%)	$*C_{10}H_9Cl_9$	10 µg/mL in nonane	1.2 mL
	ULM-8768-1.2	Parlar 69 (unlabeled)	$C_{10}H_9Cl_9$	10 µg/mL in nonane	1.2 mL
	CLM-8721-1.2	Parlar 70 ($^{13}C_{10}$, 99%)	$*C_{10}H_9Cl_9$	10 µg/mL in nonane	1.2 mL
	ULM-8769-1.2	Parlar 70 (unlabeled)	$C_{10}H_9Cl_9$	10 µg/mL in nonane	1.2 mL

See page 226 for mixtures containing toxaphene congeners.

Individual Pesticide and Pesticide Metabolite Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	DLM-6000-1.2	Acephate (D_6, 98%)	$C_4D_6H_4NO_3PS$	100 µg/mL in acetonitrile-D_3	1.2 mL
	ULM-7263-1.2	Acephate (unlabeled)	$C_4H_{10}NO_3PS$	100 µg/mL in acetonitrile	1.2 mL
NEW	CLM-9653-1.2	Acetamiprid (pyridylmethyl-$^{13}C_6$, 99%)	$*C_6C_4H_{11}ClN_4$	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-9734-1.2	Acetamiprid (unlabeled)	$C_{10}H_{11}ClN_4$	100 µg/mL in methanol	1.2 mL
NEW	CLM-4546-1.2	Acetochlor (ring-$^{13}C_6$, 99%)	$*C_6C_8H_{20}ClNO_2$	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-9824-1.2	Acetochlor (unlabeled)	$C_6C_8H_{20}ClNO_2$	100 µg/mL in acetonitrile	1.2 mL
	CLM-3727-1.2	Alachlor (ring-$^{13}C_6$, 99%) CP 96%	$*C_6C_8H_{20}ClNO_2$	100 µg/mL in nonane	1.2 mL
	CLM-3687-1.2	Alachlor acetylcysteine adduct (ring-$^{13}C_6$, 99%)	$*C_6C_{13}H_{28}N_2O_5S$	100 µg/mL in acetonitrile	1.2 mL
NEW	CDLM-9820-1.2	Aldicarb ($^{13}C_2$, 98%; D_3, 98%)	$C_5*C_2H_{11}D_3N_2O_2S$	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-9823-1.2	Aldicarb (unlabeled)	$C_7H_{14}N_2O_2S$	100 µg/mL in acetonitrile	1.2 mL
	CLM-4725-1.2	Aldrin ($^{13}C_{12}$, 99%)	$*C_{12}H_8Cl_6$	100 µg/mL in nonane	1.2 mL
	ULM-7441-1.2	Aldrin (unlabeled)	$C_{12}H_8Cl_6$	100 µg/mL in nonane	1.2 mL
NEW	CDNLM-6786-1.2 CDNLM-6786-10	Aminomethylphosphonic acid (AMPA) (^{13}C, 99%; ^{15}N, 98%, methylene-D_2, 98%)	$*CH_4D_2*NO_3P$	100 µg/mL in H_2O	1.2 mL 10 mL
	CLM-8316-1.2	Ammeline (desethyldesisopropylhydroxyatrazine) (ring-$^{13}C_3$, 99%)	$NH_2(*C_3N_3OH)NH_2$	100 µg/mL in 80% water/ 20% diethylamine	1.2 mL
	ULM-8323-1.2	Ammeline (desethyldesisopropylhydroxyatrazine) (unlabeled)	$NH_2(C_3N_3OH)NH_2$	100 µg/mL in 80% water/ 20% diethylamine	1.2 mL
	CLM-3737-1.2	Atrazine (ring-$^{13}C_3$, 99%)	$*C_3C_5H_{14}ClN_5$	100 µg/mL in nonane	1.2 mL
	DLM-1149-1.2 DLM-1149-5	Atrazine (ethylamine-D_5, 98%)	$C_8H_9D_5ClN_5$	100 µg/mL in nonane neat	1.2 mL 5 mg
	ULM-7235-1.2	Atrazine (unlabeled)	$C_8H_{14}ClN_5$	100 µg/mL in nonane	1.2 mL
	CLM-3894-1.2	Atrazine mercapturate (ring-$^{13}C_3$, 99%)	$*C_3C_{10}H_{22}N_6O_3S$	100 µg/mL in acetonitrile	1.2 mL
	ULM-7346-1.2	Atrazine mercapturate (unlabeled)	$C_{13}H_{22}N_6O_3S$	100 µg/mL in acetonitrile	1.2 mL
	CLM-8311-1.2	Atrazinethiol (ring-$^{13}C_3$, 99%)	$*C_3C_5H_{15}N_5S$	100 µg/mL in acetonitrile	1.2 mL
	ULM-8318-1.2	Atrazinethiol (unlabeled)	$C_8H_{15}N_5S$	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-9399-1.2	Azinphos-methyl (unlabeled)	$C_{10}PN_3H_{12}S_2O_3$	100 µg/mL in nonane	1.2 mL
	CLM-7140	Bendiocarb ($^{13}C_3$, 99%)	$*C_3C_8H_{13}NO_4$		Inquire
	ULM-8638	Bendiocarb (unlabeled)	$C_{11}H_{13}NO_4$		Inquire
	DLM-7152	Bensulide (isopropoxy-D_{14}, 98%)	$C_{14}D_{14}H_{10}NO_4PS_3$		Inquire
	CLM-2482-1.2	α-HCH (α-BHC) ($^{13}C_6$, 99%)	$*C_6H_6Cl_6$	100 µg/mL in nonane	1.2 mL
	ULM-7232-1.2	α-HCH (α-BHC) (unlabeled)	$C_6H_6Cl_6$	100 µg/mL in nonane	1.2 mL
	CLM-3623-1.2	β-HCH (β-BHC) ($^{13}C_6$, 99%)	$*C_6H_6Cl_6$	50 µg/mL in nonane	2 × 1.2 mL
	ULM-6132-1.2	β-HCH (β-BHC) (unlabeled)	$C_6H_6Cl_6$	100 µg/mL in nonane	2 × 1.2 mL
	CDLM-624-1.2	γ-HCH (γ-BHC) (lindane) ($^{13}C_6$, 99%; D_6, 99%)	$*C_6D_6Cl_6$	100 µg/mL in nonane	1.2 mL
	CLM-1282-1.2	γ-HCH (γ-BHC) (lindane) ($^{13}C_6$, 99%)	$*C_6H_6Cl_6$	100 µg/mL in nonane	1.2 mL
	ULM-6133-1.2	γ-HCH (γ-BHC) (lindane) (unlabeled)	$C_6H_6Cl_6$	100 µg/mL in nonane	1.2 mL
	CLM-3648-1.2	δ-HCH (δ-BHC) ($^{13}C_6$, 99%)	$*C_6H_6Cl_6$	100 µg/mL in nonane	1.2 mL
	ULM-7233-1.2	δ-HCH (δ-BHC) (unlabeled)	$C_6H_6Cl_6$	100 µg/mL in nonane	1.2 mL
	CLM-3741-1.2	Bromoxynil (ring-$^{13}C_6$, 99%)	$*C_6CH_3Br_2NO$	50 µg/mL in nonane	2 × 1.2 mL
	ULM-6205-1.2	Bromoxynil (unlabeled)	$C_7H_3Br_2NO$	50 µg/mL in nonane	1.2 mL
	CLM-4682-1.2	Carbaryl (ring-$^{13}C_6$, 99%)	$*C_6C_6H_{11}NO_2$	100 µg/mL in nonane	1.2 mL
	ULM-8096-1.2	Carbaryl (unlabeled)	$C_{10}H_7CO_2NHCH_3$	100 µg/mL in nonane	1.2 mL
	CLM-1911-1.2	Carbofuran (ring-$^{13}C_6$, 99%)	$*C_6C_6H_{15}NO_3$	100 µg/mL in 1,4-dioxane	1.2 mL
	ULM-7419-1.2	Carbofuran (unlabeled)	$C_{12}H_{15}NO_3$	100 µg/mL in 1,4-dioxane	1.2 mL
	ULM-6875-1.2	Carbofuran phenol (unlabeled)	$C_{10}H_{12}O_2$	200 µg/mL in nonane	1.2 mL
	CLM-8087-1.2	*cis*-Chlordane (α) ($^{13}C_{10}$, 99%)	$*C_{10}H_6Cl_8$	100 µg/mL in nonane	1.2 mL
NEW	ULM-2419-1.2 ULM-2419-25	*cis*-Chlordane (α) (unlabeled)	$C_{10}H_6Cl_8$	100 µg/mL in nonane neat	1.2 mL 25 mg
	CLM-4792-1.2	*trans*-Chlordane (γ) ($^{13}C_{10}$, 99%)	$*C_{10}H_6Cl_8$	100 µg/mL in nonane	1.2 mL
NEW	ULM-2420-1.2 ULM-2420-25	*trans*-Chlordane (γ) (unlabeled)	$C_{10}H_6Cl_8$	100 µg/mL in nonane neat	1.2 mL 25 mg
	CLM-4814-1.2	Chlordecone (kepone) ($^{13}C_{10}$, 99%)	$*C_{10}Cl_{10}O$	100 µg/mL in nonane	1.2 mL
	ULM-2301-1.2 ULM-2301-0.1	Chlordecone (kepone) (unlabeled)	$C_{10}Cl_{10}O$	100 µg/mL in nonane neat	1.2 mL 0.1 g
	CLM-4758-1.2	Chlordene ($^{13}C_{10}$, 99%)	$*C_{10}H_6Cl_6$	100 µg/mL in nonane	1.2 mL
	ULM-7443-1.2	Chlordene (unlabeled)	$C_{10}H_6Cl_6$	100 µg/mL in nonane	1.2 mL
	CLM-6759	4-Chloro-2-hydroxymethyl phenoxyacetic acid (HMCPA) (ring-$^{13}C_6$, 99%)	$ClOH*C_6H_3OCH_2CO_2H$		Inquire

Individual Pesticide and Pesticide Metabolite Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	CLM-6758	4-Chloro-2-methylphenoxyacetic acid (MCPA) (ring-$^{13}C_6$, 99%)	$ClCH_3$*$C_6H_3OCH_2CO_2H$		Inquire
NEW	CLM-9598-1.2	6-Chloronicotinic acid ($^{13}C_6$, 99%)	*$C_6H_4ClNO_2$	100 µg/mL in MTBE	1.2 mL
NEW	ULM-9604-1.2	6-Chloronicotinic acid (unlabeled)	$C_6H_4ClNO_2$	100 µg/mL in MTBE	1.2 mL
	CLM-1913-1.2	4-Chlorophenol ($^{13}C_6$, 99%)	*C_6H_4ClOH	100 µg/mL in nonane	1.2 mL
	ULM-7420-1.2	4-Chlorophenol (unlabeled)	C_6H_4ClOH	100 µg/mL in nonane	1.2 mL
	DLM-4360-1.2	Chlorpyrifos (diethyl-D_{10}, 99%)	$C_9D_{10}HCl_3NO_3PS$	100 µg/mL in nonane	1.2 mL
	ULM-7489-1.2	Chlorpyrifos (unlabeled)	$C_9H_{11}Cl_3NO_3PS$	100 µg/mL in nonane	1.2 mL
NEW	DLM-7153-1.2	Chlorpyrifos-methyl (dimethyl-D_6, 98%)	$C_7HCl_3D_6NO_3PS$	100 µg/mL in nonane	1.2 mL
NEW	ULM-9538-1.2	Chlorpyrifos-methyl (unlabeled)	$C_7H_7Cl_3NO_3PS$	100 µg/mL in nonane	1.2 mL
NEW	DLM-3760-1.2 DLM-3760-0.01	Chlortoluron (*N,N*-dimethyl-D_6, 98%)	$C_{10}H_7D_6ClN_2O$	100 µg/mL in acetonitrile neat	1.2 mL 10 mg
NEW	ULM-9825-1.2	Chlortoluron (unlabeled)	$C_{10}H_{13}ClN_2O$	100 µg/mL in acetonitrile	1.2 mL
NEW	CNLM-9940-1.2	Clothianidin (thiazole-$^{13}C_3$, 99%; ^{15}N, 98%)	*$C_3C_3H_8Cl$*NN_4O_2S		Inquire
NEW	ULM-9941-1.2	Clothianidin (unlabeled)	$C_6H_8ClN_5O_2S$		Inquire
	ERC-034	Cyclohexyl methylphosphonic acid (unlabeled)	$CH_3PO_3HC_6H_{11}$	1000 µg/mL in methanol	1.2 mL
	CLM-7293-1.2	Cyfluthrin (mix of stereoisomers) (phenoxy-$^{13}C_6$, 99%)	*$C_6C_{16}H_{18}Cl_2FNO_3$	100 µg/mL in nonane	1.2 mL
	ULM-7454-1.2	Cyfluthrin (mix of stereoisomers) (unlabeled)	$C_{22}H_{18}Cl_2FNO_3$	100 µg/mL in nonane	1.2 mL
	CLM-7292-1.2	Cypermethrin (mix of stereoisomers) (phenoxy-$^{13}C_6$, 99%)	*$C_6C_{16}H_{19}Cl_2NO_3$	100 µg/mL in nonane	1.2 mL
	ULM-7453-1.2	Cypermethrin (mix of stereoisomers) (unlabeled)	$C_{22}H_{19}Cl_2NO_3$	100 µg/mL in nonane	1.2 mL
NEW	CDLM-9205-1.2	*cis*-DCCA (1,carboxyl-$^{13}C_2$, 99%; 1-D, 97%)	C_6*$C_2H_9DCl_2O_2$	100 µg/mL in acetonitrile-D_3	1.2 mL
NEW	ULM-9176-1.2	*cis*-DCCA (unlabeled)	$C_8H_{10}Cl_2O_2$	100 µg/mL in acetonitrile	1.2 mL
NEW	CDLM-9206-1.2	*trans*-DCCA (1,carboxyl-$^{13}C_2$, 99%; 1-D, 97%)	C_6*$C_2H_9DCl_2O_2$	100 µg/mL in acetonitrile-D_3	1.2 mL
NEW	ULM-9175-1.2	*trans*-DCCA (unlabeled)	$C_8H_{10}Cl_2O_2$	100 µg/mL in acetonitrile	1.2 mL
	CLM-6999-1.2	2,4′-DDD (ring-$^{13}C_{12}$, 99%) [(*o,p′*-Dichlorodiphenyl) dichloroethane]	*$C_{12}C_2H_{10}Cl_4$	50 µg/mL in nonane	1.2 mL
	ULM-7450-1.2	2,4′-DDD (unlabeled) [(*o,p′*-Dichlorodiphenyl) dichloroethane]	$C_{14}H_{10}Cl_4$	50 µg/mL in nonane	1.2 mL
	CLM-7100-1.2	4,4′-DDD (ring-$^{13}C_{12}$, 99%) [(*o,p′*-Dichlorodiphenyl) dichloroethane]	*$C_{12}C_2H_{10}Cl_4$	100 µg/mL in nonane	1.2 mL
	DLM-3533-1.2	4,4′-DDD (ring-D_8, 98%) [(*p,p′*-Dichlorodiphenyl) dichloroethane]	$C_{14}D_8H_2Cl_4$	100 µg/mL in nonane	1.2 mL
	ULM-7216-1.2	4,4′-DDD (unlabeled) [(*p,p′*-Dichlorodiphenyl) dichloroethane]	$C_{14}H_{10}Cl_4$	100 µg/mL in nonane	1.2 mL
	CLM-4693-1.2	2,4′-DDE (ring-$^{13}C_{12}$, 99%) [(*o,p′*-Dichlorodiphenyl) dichloroethylene]	$(Cl*C_6H_4)_2C=CCl_2$	100 µg/mL in nonane	1.2 mL
	ULM-6251-1.2	2,4′-DDE (unlabeled) [(*o,p′*-Dichlorodiphenyl) dichloroethylene]	$C_{14}H_8Cl_4$	100 µg/mL in nonane	1.2 mL
	CLM-1627-1.2 CLM-1627-5	4,4′-DDE (ring-$^{13}C_{12}$, 99%) [(*p,p′*-Dichlorodiphenyl) dichloroethylene]	$(Cl*C_6H_4)_2C=CCl_2$	100 µg/mL in nonane neat	1.2 mL 5 mg
	ULM-6137-1.2	4,4′-DDE (unlabeled) [(*p,p′*-Dichlorodiphenyl) dichloroethylene]	$(ClC_6H_4)_2C=CCl_2$	100 µg/mL in nonane	1.2 mL
	CLM-4692-1.2	2,4′-DDT (ring-$^{13}C_{12}$, 99%) [(*o,p′*-Dichlorodiphenyl) trichloroethane]	$(Cl*C_6H_4)_2CHCCl_3$	100 µg/mL in nonane	1.2 mL
	ULM-6134-1.2	2,4′-DDT (unlabeled) [(*o,p′*-Dichlorodiphenyl) trichloroethane]	$ClC_6H_4CH(CCl_3)C_6H_4Cl$	100 µg/mL in nonane	1.2 mL
	CLM-1281-1.2 CLM-1281-5	4,4′-DDT (ring-$^{13}C_{12}$, 99%) [(*p,p′*-Dichlorodiphenyl) trichloroethane]	$(Cl*C_6H_4)_2CHCCl_3$	100 µg/mL in nonane neat	1.2 mL 5 mg
	ULM-6135-1.2	4,4′-DDT (unlabeled) [(*p,p′*-Dichlorodiphenyl) trichloroethane]	$(ClC_6H_4)_2CHCCl_3$	100 µg/mL in nonane	1.2 mL
	CLM-8313-1.2	Desethylatrazine (ring-$^{13}C_3$, 99%) CP 97%	*$C_3C_3H_{10}ClN_5$	100 µg/mL in acetonitrile	1.2 mL
	ULM-8320-1.2	Desethylatrazine (unlabeled)	$C_6H_{10}ClN_5$	100 µg/mL in acetonitrile	1.2 mL
	CLM-7528-1.2	Desethyl desisopropyl atrazine ($^{13}C_3$, 99%) CP 95%	*$C_3H_4ClN_5$	100 µg/mL in acetonitrile	1.2 mL
	ULM-8001-1.2	Desethyl desisopropyl atrazine (unlabeled)	$C_3H_4ClN_5$	100 µg/mL in acetonitrile	1.2 mL
	CLM-8315-1.2	Desethylhydroxyatrazine (ring-$^{13}C_3$, 99%)	C_3*$C_3H_{11}N_5O$	100 µg/mL in 80% water/ 20% diethylamine	1.2 mL

(continued on next page)

Individual Pesticide and Pesticide Metabolite Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	ULM-8322-1.2	Desethylhydroxyatrazine (unlabeled)	$C_6H_{11}N_5O$	100 µg/mL in 80% water/ 20% diethylamine	1.2 mL
	CLM-8312-1.2	Desisopropylatrazine (ring-$^{13}C_3$, 99%)	$*C_3C_2H_8ClN_5$	100 µg/mL in acetonitrile	1.2 mL
	ULM-8319-1.2	Desisopropylatrazine (unlabeled)	$C_5H_8ClN_5$	100 µg/mL in acetonitrile	1.2 mL
	CLM-8314-1.2	Desisopropylhydroxyatrazine (ring-$^{13}C_3$, 99%)	$*C_3C_2H_9N_5O$	100 µg/mL in acetonitrile	1.2 mL
	ULM-8321-1.2	Desisopropylhydroxyatrazine (unlabeled)	$C_5H_9N_5O$	100 µg/mL in 80% water/ 20% diethylamine	1.2 mL
	DLM-1148-1.2	Diazinon (diethyl-D_{10}, 98%)	$C_{12}H_{11}D_{10}N_2O_3PS$	100 µg/mL in nonane	1.2 mL
NEW	DLM-1148-A-1.2			100 µg/mL in acetonitrile	1.2 mL
	DLM-1148-5			neat	5 mg
	ULM-6575-S-10X-1.2	Diazinon (unlabeled)	$C_{12}H_{21}N_2O_3PS$	1000 µg/mL in nonane	1.2 mL
NEW	ULM-6575-A-1.2			100 µg/mL in acetonitrile	1.2 mL
	CLM-816-1.2	2,6-Dichloro-4-nitroaniline (ring-$^{13}C_6$, 99%)	$Cl_2*C_6H_2(NO_2)NH_2$	100 µg/mL in nonane	1.2 mL
	CLM-1858-1.2	2,4-Dichlorophenoxyacetic acid (2,4-D) (ring-$^{13}C_6$, 99%)	$Cl_2*C_6H_3OCH_2CO_2H$	100 µg/mL in acetonitrile	1.2 mL
	DLM-1146-5	2,4-Dichlorophenoxyacetic acid (2,4-D) (ring-D_3, 98%)	$Cl_2C_6D_3OCH_2CO_2H$	neat	5 mg
	ULM-7418-1.2	2,4-Dichlorophenoxyacetic acid (2,4-D) (unlabeled)	$Cl_2C_6H_3OCH_2CO_2H$	100 µg/mL in acetonitrile	1.2 mL
	CLM-3722-1.2	Dichlorprop (ring-$^{13}C_6$, 99%)	$*C_6C_3H_8Cl_2O_3$	100 µg/mL in nonane	1.2 mL
	ULM-7313-1.2	Dichlorprop (unlabeled)	$(Cl)_2C_6H_3OCH(CH_3)CO_2H$	100 µg/mL in nonane	1.2 mL
	DLM-2829-0.01	Dichlorvos (dimethyl-D_6, 98%)	$C_4D_6HCl_2O_4P$	neat	10 mg
	ULM-7217-1.2	Dichlorvos (unlabeled)	$(H_3CO)_2POOCH{=}CCl_2$	100 µg/mL in nonane	1.2 mL
	CLM-4726-1.2	Dieldrin ($^{13}C_{12}$, 99%)	$*C_{12}H_8Cl_6O$	100 µg/mL in nonane	1.2 mL
	ULM-7230-1.2	Dieldrin (unlabeled)	$C_{12}H_8Cl_6O$	100 µg/mL in nonane	1.2 mL
NEW	DLM-4851-M-1.2	*O,O*-Diethyl phosphate, potassium salt (DEP) (diethyl-D_{10}, 98%)	$C_4D_{10}KO_4P$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9287-M-1.2	*O,O*-Diethyl phosphate, potassium salt (DEP) (unlabeled)	$C_4H_{10}KO_4P$	100 µg/mL in methanol	1.2 mL
	DLM-4852-1.2	*O,O*-Diethyl thiophosphate, potassium salt (DETP) (diethyl-D_{10}, 98%)	$C_4D_{10}KO_3PS$	100 µg/mL in methanol	1.2 mL
	ERD-119	*O,O*-Diethyl thiophosphate, potassium salt (DETP) (unlabeled)	$C_4H_{10}KO_3PS$	1000 µg/mL in methanol	1.2 mL
NEW	DLM-9003-1.2	*O,O*-Diethyl dithiophosphate, potassium salt (DEDTP) (diethyl-D_{10}, 98%)	$C_4D_{10}KO_2PS_2$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9002-1.2	*O,O*-Diethyl dithiophosphate, potassium salt (DEDTP) (unlabeled)	$C_4H_{10}KO_2PS_2$	100 µg/mL in methanol	1.2 mL
	DLM-4762-1.2	*N,N*-Diethyl-*m*-toluamide (DEET) (dimethyl-D_6, 98%)	$CH_3C_6H_4CON(CH_2CD_3)_2$	100 µg/mL in MeCl-D_2	1.2 mL
	DLM-4762-D-1.2			100 µg/mL in dioxane	1.2 mL
	ULM-7975-1.2	*N,N*-Diethyl-*m*-toluamide (DEET) (unlabeled)	$CH_3C_6H_4CON(CH_2CH_3)_2$	100 µg/mL in MeCl	1.2 mL
	ULM-7975-D-1.2			100 µg/mL in dioxane	1.2 mL
NEW	ULM-9898-1.2	Diisopropyl methylphosphonate (unlabeled)	$C_7H_{17}O_3P$	1000 µg/mL in methanol	1.2 mL
	DLM-7151-1.2	Dimethoate (*O,O*-dimethyl-D_6, 98%)	$C_5D_6H_6NO_3PS_2$	100 µg/mL in acetonitrile	1.2 mL
	ULM-7972-1.2	Dimethoate (unlabeled)	$C_5H_{12}NO_3PS_2$	100 µg/mL in acetonitrile	1.2 mL
NEW	DLM-8868-1.2	*O,O*-Dimethyl phosphate, potassium salt (DMP) (dimethyl-D_6, 98%)	$C_2D_6KO_4P$	100 µg/mL in methanol	1.2 mL
NEW	ULM-8867-1.2	*O,O*-Dimethyl phosphate, potassium salt (DMP) (unlabeled)	$C_2H_6KO_3P_4$	100 µg/mL in methanol	1.2 mL
NEW	DLM-8904-1.2	*O,O*-Dimethyl thiophosphate, potassium salt (DMTP) (dimethyl-D_6, 98%) CP 97%	$C_2D_6KO_3PS$	100 µg/mL in methanol	1.2 mL
NEW	ULM-8905-1.2	*O,O*-Dimethyl thiophosphate, potassium salt (DMTP) (unlabeled) CP 97%	$C_2H_6KO_3PS$	1000 µg/mL in methanol	1.2 mL
NEW	DLM-4541-M-1.2	*O,O*-Dimethyl dithiophosphate, potassium salt (DMDTP) (dimethyl-D_6, 98%)	$C_2D_6KO_2PS_2$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9004-1.2	*O,O*-Dimethyl dithiophosphate, potassium salt (DMDTP) (unlabeled)	$C_2H_6KO_2PS_2$	100 µg/mL in methanol	1.2 mL
	CLM-3373	Dinocap (ring-$^{13}C_6$, 99%)	$*C_6C_{12}H_{24}N_2O_6$		Inquire
NEW	ULM-9171-1.2	Dinocap (unlabeled)	$C_{18}H_{24}N_2O_6$		Inquire
NEW	CLM-9594-1.2	Dinotefuran (furylmethyl-$^{13}C_5$, 99%)	$*C_5C_2H_{14}N_4O_3$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9732-1.2	Dinotefuran (unlabeled)	$C_7H_{14}N_4O_3$	100 µg/mL in methanol	1.2 mL

Individual Pesticide and Pesticide Metabolite Standards

	Catalog No.	Compound	Formula	Concentration	Amount
NEW	ULM-9899-1.2	Dipinacolyl methylphosphonate (unlabeled)	$C_{13}H_{29}O_3P$	1000 µg/mL in methanol	1.2 mL
	DLM-7183	Disulfoton (*O,O*-diethyl-D_{10}, 98%)	$C_8D_{10}H_9O_2PS_3$		Inquire
	CLM-6025-1.2	Endosulfan I ($^{13}C_9$, 99%)	$*C_9H_6Cl_6O_3S$	100 µg/mL in nonane	1.2 mL
	DLM-2862-1.2	Endosulfan I (D_4, 97%)	$C_9D_4H_2Cl_6O_3S$	100 µg/mL in nonane	1.2 mL
	ULM-7447-1.2	Endosulfan I (unlabeled)	$C_9H_6Cl_6O_3S$	100 µg/mL in nonane	1.2 mL
	CLM-6026-1.2	Endosulfan II ($^{13}C_9$, 99%)	$*C_9H_6Cl_6O_3S$	100 µg/mL in nonane	1.2 mL
	ULM-7448-1.2	Endosulfan II (unlabeled)	$C_9H_6Cl_6O_3S$	100 µg/mL in nonane	1.2 mL
	CLM-7531-1.2	Endosulfan sulfate ($^{13}C_9$, 99%)	$*C_9H_6Cl_6O_4S$	100 µg/mL in nonane	1.2 mL
	ULM-7990-1.2	Endosulfan sulfate (unlabeled)	$C_9H_6Cl_6O_4S$	100 µg/mL in nonane	1.2 mL
	CLM-4782-1.2	Endrin ($^{13}C_{12}$, 99%)	$*C_{12}H_8Cl_6O$	100 µg/mL in nonane	1.2 mL
	ULM-7444-1.2	Endrin (unlabeled)	$C_{12}H_8Cl_6O$	100 µg/mL in nonane	1.2 mL
NEW	CLM-4815-1.2 CLM-4815-50	Endrin aldehyde ($^{13}C_{12}$, 99%)	$*C_{12}H_{10}Cl_6O$	100 µg/mL in nonane neat	1.2 mL 50 µg
NEW NEW	ULM-8958-1.2 ULM-8958-50	Endrin aldehyde (unlabeled)	$C_{12}H_{10}Cl_6O$	100 µg/mL in nonane neat	1.2 mL 50 µg
NEW	CLM-4816-1.2 CLM-4816-50	Endrin ketone ($^{13}C_{12}$, 99%)	$*C_{12}H_8Cl_6O$	100 µg/mL in nonane neat	1.2 mL 50 µg
NEW NEW	ULM-8956-1.2 ULM-8956-50	Endrin ketone (unlabeled)	$C_{12}H_8Cl_6O$	100 µg/mL in nonane neat	1.2 mL 50 µg
NEW	ULM-6091-1.2	Ethyl dimethylamidophosphate, sodium salt (unlabeled)	$C_4H_{11}NO_3PNa$	1000 µg/mL in methanol	1.2 mL
NEW	DLM-6098-1.2	Ethyl methylphosphonate (ethyl-D_5, 98%)	$C_3H_4D_5O_3P$	100 µg/mL in methanol	1.2 mL
NEW	ULM-6099-1.2	Ethyl methylphosphonic acid (unlabeled)	$C_3H_9O_3P$	1000 µg/mL in methanol	1.2 mL
	DLM-2878-0.01	Fenitrothion (*O,O*-dimethyl-D_6, 98%)	$C_9D_6H_6NO_5PS$	neat	10 mg
NEW	CNLM-9636-1.2	Fipronil (3-cyano, pyrazole-3,4,5-$^{13}C_4$, 99%; 3-cyano, 5-$^{15}N_2$, 98%)	$*C_4C_8H_4Cl_2F_6N_2*N_2OS$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9635-1.2	Fipronil (unlabeled)	$C_{12}H_4Cl_2F_6N_4OS$	100 µg/mL in methanol	1.2 mL
NEW	CNLM-9647-1.2	Fipronil desulfinyl (3-cyano, pyrazole-3,4,5-$^{13}C_4$, 99%; 3-cyano, 5-$^{15}N_2$, 98%)	$*C_4C_8H_4Cl_2F_6N_2*N_2$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9646-1.2	Fipronil desulfinyl (unlabeled)	$C_{12}H_4Cl_2F_6N_4$	100 µg/mL in methanol	1.2 mL
NEW	CNLM-9650-1.2	Fipronil detrifluoromethyl sulfinyl (3-cyano, pyrazole-3,4,5-$^{13}C_4$, 99%) 3-cyano- 5-$^{15}N_2$, 98%)	$*C_4C_7H_5Cl_2F_3*N_2N_2$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9649-1.2	Fipronil detrifluoromethyl sulfinyl (unlabeled)	$C_{11}H_5Cl_2F_3N_2N_2$	100 µg/mL in methanol	1.2 mL
NEW	CNLM-9645-1.2	Fipronil sulfide (3-cyano, pyrazole-3,4,5-$^{13}C_4$, 99%; 3-cyano, 5-$^{15}N_2$, 98%)	$*C_4C_8H_4Cl_2F_6*N_2N_2S$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9644-1.2	Fipronil sulfide (unlabeled)	$C_{12}H_4Cl_2F_6N_4S$	100 µg/mL in methanol	1.2 mL
NEW	CNLM-9643-1.2	Fipronil sulfone (3-cyano, pyrazole-3,4,5-$^{13}C_4$, 99%; 3-cyano, 5-$^{15}N_2$, 98%)	$*C_4C_8H_4Cl_2F_6*N_2N_2O_2S$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9642-1.2	Fipronil sulfone (unlabeled)	$C_{12}H_4Cl_2F_6N_4O_2S$	100 µg/mL in methanol	1.2 mL
	CLM-7389-1.2	4-Fluoro-3-phenoxybenzoic acid ($^{13}C_6$, 99%)	$*C_6C_7H_9FO_3$	100 µg/mL in acetonitrile	1.2 mL
	ULM-7391-1.2	4-Fluoro-3-phenoxybenzoic acid (unlabeled)	$C_{13}H_9FO_3$	100 µg/mL in acetonitrile	1.2 mL
	CLM-4545-1.2	Fonofos (ring-$^{13}C_6$, 99%)	$*C_6C_4H_{15}OPS_2$	100 µg/mL in nonane	1.2 mL
	ULM-6694-1.2	Fonofos (unlabeled)	$CH_2CH_3P(S)(OCH_2CH_3)(SC_6H_5)$	100 µg/mL in nonane	1.2 mL
NEW	DLM-9680	Forchlorfenuron (phenyl-D_5, 99%)	$C_{12}D_5H_5ClN_3O$		Inquire
NEW	CNLM-4666-1.2 CNLM-4666-10X-1.2 CNLM-4666-10	Glyphosate (2-^{13}C, 99%; ^{15}N, 98%+)	$HO_2*CCH_2*NHCH_2PO(OH)_2$	100 µg/mL in water 1000 µg/mL in water 100 µg/mL in water	1.2 mL 1.2 mL 10 mL
	ULM-6876-1.2	Glyphosate (unlabeled)	$HO_2CCH_2NHCH_2PO(OH)_2$	100 µg/mL in water	1.2 mL
	CLM-4759-1.2	Heptachlor ($^{13}C_{10}$, 99%)	$*C_{10}H_5Cl_7$	100 µg/mL in nonane	1.2 mL
	ULM-2424-1.2 ULM-2424-0.1	Heptachlor (unlabeled)	$C_{10}H_5Cl_7$	100 µg/mL in nonane neat	1.2 mL 0.1 g
	CLM-4734-1.2	*cis*-Heptachlor epoxide ($^{13}C_{10}$, 99%)	$*C_{10}H_5Cl_7O$	100 µg/mL in nonane	1.2 mL
	ULM-2425-1.2 ULM-2425-0.1	*cis*-Heptachlor epoxide (unlabeled)	$C_{10}H_5Cl_7O$	100 µg/mL in nonane neat	1.2 mL 0.1 g
	ULM-7869-1.2	*trans*-Heptachlor epoxide (unlabeled)	$C_{10}H_5Cl_7O$	100 µg/mL in nonane	1.2 mL
	CLM-351-1.2	Hexachlorobenzene ($^{13}C_6$, 99%)	$*C_6Cl_6$	100 µg/mL in nonane	1.2 mL
	ULM-6130-1.2	Hexachlorobenzene (unlabeled)	C_6Cl_6	100 µg/mL in nonane	1.2 mL

(continued on next page)

Individual Pesticide and Pesticide Metabolite Standards

	Catalog No.	Compound	Formula	Concentration	Amount
NEW	ULM-9429-1.2	Hp-Sed (unlabeled)	$C_{10}H_{11}Cl_7$	10 µg/mL in nonane	1.2 mL
NEW	ULM-9428-1.2	Hx-Sed (unlabeled)	$C_{10}H_{12}Cl_6$	10 µg/mL in nonane	1.2 mL
	CLM-8310-1.2	Hydroxyatrazine (ring-$^{13}C_3$, 99%)	$(CH_3CH_2NH)^*C_3N_3(OH)(NHCH(CH_3)_2)$	100 µg/mL in 80% water/ 20% diethylamine	1.2 mL
	ULM-8317-1.2	Hydroxyatrazine (unlabeled)	$(CH_3CH_2NH)C_3N_3(OH)(NHCH(CH_3)_2)$	100 µg/mL in 80% water/ 20% diethylamine	1.2 mL
	DLM-8512-1.2	Imidacloprid (4,4,5,5-D_4, 98%)	$C_9H_6D_4ClN_5O_2$	100 µg/mL in methanol	1.2 mL
	ULM-8513-1.2	Imidacloprid (unlabeled)	$C_9H_{10}ClN_5O_2$	100 µg/mL in methanol	1.2 mL
	CLM-4727-1.2	Isodrin ($^{13}C_{12}$, 99%)	$^*C_{12}H_8Cl_6$	100 µg/mL in nonane	1.2 mL
	ULM-7442-1.2	Isodrin (unlabeled)	$C_{12}H_8Cl_6$	100 µg/mL in nonane	1.2 mL
	ERI-026	Isobutyl hydrogen methylphosphonate (unlabeled)	$C_5H_{13}O_3P$	1000 µg/mL in methanol	1.2 mL
	ERI-015	Isopropyl methylphosphonic acid (unlabeled)	$C_4H_{11}O_3P$	100 µg/mL in methanol	1.2 mL
	CLM-4814-1.2	Kepone (chlordecone) ($^{13}C_{10}$, 99%)	$^*C_{10}Cl_{10}O$	100 µg/mL in nonane	1.2 mL
	ULM-2301-1.2 ULM-2301-0.1	Kepone (chlordecone) (unlabeled)	$C_{10}Cl_{10}O$	100 µg/mL in nonane neat	1.2 mL 0.1 g
	DLM-4476-1.2	Malathion (D_{10}, 99%)	$C_{10}D_{10}H_9O_6PS_2$	100 µg/mL in nonane	1.2 mL
	ULM-8122-1.2	Malathion (unlabeled)	$C_{10}H_{19}O_6PS_2$	100 µg/mL in nonane	1.2 mL
NEW	CLM-9050-1.2	Malathion diacid ($^{13}C_4$, 99%) CP 97%	$^*C_4C_2H_{11}O_6PS_2$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9073-1.2	Malathion diacid (unlabeled)	$C_6H_{11}O_6PS_2$	100 µg/mL in methanol	1.2 mL
NEW	DLM-7149-1.2	Methamidophos (dimethyl-D_6, 98%)	$C_2D_6H_2NO_2PS$	100 µg/mL in dioxane	1.2 mL
NEW	ULM-8872-1.2	Methamidophos (unlabeled)	$C_2H_8NO_2PS$	100 µg/mL in dioxane	1.2 mL
	CNLM-7148-1.2	Methomyl (acetohydroxamate-$^{13}C_2$, 99%; ^{15}N, 98%)	$^*C_2C_3H_{10}N^*NO_2S$	100 µg/mL in methanol	1.2 mL
	ULM-8639-1.2	Methomyl (unlabeled)	$C_5H_{10}NNO_2S$	100 µg/mL in methanol	1.2 mL
	CLM-4683-1.2	Methoxychlor (ring-$^{13}C_{12}$, 99%)	$(CH_3O^*C_6H_4)_2CHCCl_3$	100 µg/mL in nonane	1.2 mL
	ULM-7440-1.2	Methoxychlor (unlabeled)	$(CH_3OC_6H_4)_2CHCCl_3$	100 µg/mL in nonane	1.2 mL
	CDLM-6100-1.2	Methylphosphonic acid (^{13}C, 99%; methyl-D_3, 98%)	$^*CD_3H_2O_3P$	100 µg/mL in methanol	1.2 mL
	DLM-6196-1.2	Methylphosphonic acid (methyl-D_3, 98%)	$CD_3P(O)(OH)_2$	100 µg/mL in methanol	1.2 mL
	ERM-038	Methylphosphonic acid (unlabeled)	$CH_3P(O)(OH)_2$	100 µg/mL in methanol	1.2 mL
	CLM-6620-1.2	Methylphosphonic acid, mono-(1,2,2-trimethylpropyl) ester (trimethylpropyl-$^{13}C_6$, 99%)	$^*C_6CH_{17}O_3P$	100 µg/mL in methanol	1.2 mL
	CLM-3712-1.2	Metolachlor (ring-$^{13}C_6$, 99%)	$^*C_6C_9H_{22}ClNO_2$	100 µg/mL in nonane	1.2 mL
	ULM-7314-1.2	Metolachlor (unlabeled)	$C_{15}H_{22}ClNO_2$	100 µg/mL in nonane	1.2 mL
	CLM-4813-1.2	Mirex ($^{13}C_{10}$, 99%)	$^*C_{10}Cl_1$	100 µg/mL in nonane	1.2 mL
	CLM-2078-1	Mirex ($^{13}C_8$, 99%)	$^*C_8C_2Cl_{12}$	200 µg/mL in toluene	1 mL
	ULM-2427-1.2 ULM-2427-0.1	Mirex (unlabeled)	$C_{10}Cl_{12}$	100 µg/mL in nonane neat	1.2 mL 0.1 g
	CLM-4811-1.2	*cis*-Nonachlor ($^{13}C_{10}$, 99%)	$^*C_{10}H_5Cl_9$	100 µg/mL in nonane	1.2 mL
	ULM-7445-1.2	*cis*-Nonachlor (unlabeled)	$C_{10}H_5Cl_9$	100 µg/mL in nonane	1.2 mL
	CLM-4735-1.2	*trans*-Nonachlor ($^{13}C_{10}$, 99%)	$^*C_{10}H_5Cl_9$	100 µg/mL in nonane	1.2 mL
	ULM-7229-1.2	*trans*-Nonachlor (unlabeled)	$C_{10}H_5Cl_9$	100 µg/mL in nonane	1.2 mL
	CLM-4729-1.2	Oxychlordane ($^{13}C_{10}$, 99%)	$^*C_{10}H_4Cl_8O$	100 µg/mL in nonane	1.2 mL
	ULM-6139-1.2 ULM-6139-SM-1.2	Oxychlordane (unlabeled)	$C_{10}H_4Cl_8O$	100 µg/mL in nonane 100 µg/mL in methanol	1.2 mL 1.2 mL
	DLM-7150-1.2	Oxydemeton methyl (*O,O*-dimethyl-D_6, 98%)	$C_6D_6H_9O_4PS_2$	100 µg/mL in acetonitrile	1.2 mL
	ULM-8579-1.2	Oxydemeton methyl (unlabeled)	$C_6H_{15}O_4PS_2$	100 µg/mL in acetonitrile	1.2 mL
	CLM-4538-1.2	Oxypyrimidine (diazinon metabolite) (methyl-4,5,6-$^{13}C_4$, 99%)	$^*C_4C_4H_{12}N_2O$	100 µg/mL in acetonitrile	1.2 mL
	ULM-7432-1.2	Oxypyrimidine (unlabeled)	$C_8H_{12}N_2O$	100 µg/mL in acetonitrile	1.2 mL
	DLM-2970-1.2	Parathion (diethyl-D_{10}, 98%)	$C_{10}D_{10}H_4NO_5PS$	100 µg/mL in nonane	1.2 mL
	ULM-8144-1.2	Parathion (unlabeled)	$NO_2(C_6H_4)OP(=S)(OC_2H_5)_2$	100 µg/mL in nonane	1.2 mL
	CLM-7930-1.2	Parlar 26 ($^{13}C_{10}$, 99%)	$^*C_{10}H_{10}Cl_8$	10 µg/mL in nonane	1.2 mL
	ULM-7828-1.2	Parlar 26 (unlabeled)	$C_{10}H_{10}Cl_8$	10 µg/mL in nonane	1.2 mL
	CLM-8705-1.2	Parlar 32 ($^{13}C_{10}$, 99%)	$^*C_{10}H_{11}Cl_7$	10 µg/mL in nonane	1.2 mL
	ULM-8665-1.2	Parlar 32 (unlabeled)	$C_{10}H_{11}Cl_7$	10 µg/mL in nonane	1.2 mL
NEW	ULM-9005-1.2	Parlar 38 (unlabeled)	$C_{10}H_{10}Cl_8$	10 µg/mL in nonane	1.2 mL
	CLM-8719-1.2	Parlar 39 ($^{13}C_{10}$, 99%)	$^*C_{10}H_{10}Cl_8$	10 µg/mL in nonane	1.2 mL
	ULM-8767-1.2	Parlar 39 (unlabeled)	$C_{10}H_{10}Cl_8$	10 µg/mL in nonane	1.2 mL
NEW	ULM-9430-1.2	Parlar 40 (unlabeled)	$C_{10}H_{10}Cl_8$	10 µg/mL in nonane	1.2 mL
NEW	ULM-9431-1.2	Parlar 41 (unlabeled)	$C_{10}H_{10}Cl_8$	10 µg/mL in nonane	1.2 mL
NEW	ULM-9432-1.2	Parlar 44 (unlabeled)	$C_{10}H_{10}Cl_8$	10 µg/mL in nonane	1.2 mL

Individual Pesticide and Pesticide Metabolite Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	CLM-7931-1.2	Parlar 50 ($^{13}C_{10}$, 99%)	$*C_{10}H_9Cl_9$	10 µg/mL in nonane	1.2 mL
	ULM-7829-1.2	Parlar 50 (unlabeled)	$C_{10}H_9Cl_9$	10 µg/mL in nonane	1.2 mL
	CLM-7932-1.2	Parlar 62 ($^{13}C_{10}$, 99%)	$*C_{10}H_9Cl_9$	10 µg/mL in nonane	1.2 mL
	ULM-7830-1.2	Parlar 62 (unlabeled)	$C_{10}H_9Cl_9$	10 µg/mL in nonane	1.2 mL
	CLM-8720-1.2	Parlar 69 ($^{13}C_{10}$, 99%)	$*C_{10}H_9Cl_9$	10 µg/mL in nonane	1.2 mL
	ULM-8768-1.2	Parlar 69 (unlabeled)	$C_{10}H_9Cl_9$	10 µg/mL in nonane	1.2 mL
	CLM-8721-1.2	Parlar 70 ($^{13}C_{10}$, 99%)	$*C_{10}H_9Cl_9$	10 µg/mL in nonane	1.2 mL
	ULM-8769-1.2	Parlar 70 (unlabeled)	$C_{10}H_9Cl_9$	10 µg/mL in nonane	1.2 mL
	CLM-7322-1.2	*cis*-Permethrin (phenoxy-$^{13}C_6$, 99%)	$*C_6H_5OC_6H_4CH_2CO_2C_7H_9Cl_2O_3$	50 µg/mL in nonane	1.2 mL
	ULM-8526-1.2	*cis*-Permethrin (unlabeled)	$C_6H_5OC_6H_4CH_2CO_2C_7H_9Cl_2O_3$	50 µg/mL in nonane	1.2 mL
	CLM-7323-1.2	*trans*-Permethrin (phenoxy-$^{13}C_6$, 99%)	$*C_6H_5OC_6H_4CH_2CO_2C_7H_9Cl_2O_3$	50 µg/mL in nonane	1.2 mL
	ULM-8527-1.2	*trans*-Permethrin (unlabeled)	$C_6H_5OC_6H_4CH_2CO_2C_7H_9Cl_2O_3$	50 µg/mL in nonane	1.2 mL
	CLM-4542-1.2	3-Phenoxybenzoic acid (phenoxy-$^{13}C_6$, 99%)	$*C_6H_5OC_6H_4CO_2H$	100 µg/mL in nonane	1.2 mL
	CLM-4542-SA-1.2			100 µg/mL in acetonitrile	1.2 mL
	ULM-6781-1.2	3-Phenoxybenzoic acid (unlabeled)	$C_6H_5OC_6H_4CO_2H$	100 µg/mL in nonane	1.2 mL
	ULM-6781-SA-1.2			100 µg/mL in acetonitrile	1.2 mL
	CLM-3733-1.2	*o*-Phenylphenol (phenyl-$^{13}C_6$, 99%)	$*C_6C_6H_{10}O$	100 µg/mL in nonane	1.2 mL
	ULM-7396-1.2	*o*-Phenylphenol (unlabeled)	$C_{12}H_9OH$	100 µg/mL in nonane	1.2 mL
	CLM-3748-1.2	*p*-Phenylphenol (phenyl-$^{13}C_6$, 99%)	$*C_6C_6H_{10}O$	100 µg/mL in acetonitrile	1.2 mL
	CLM-4544-1.2	Phorate (diethoxy-$^{13}C_4$, 99%)	$(*C_2H_5O)_2P(S)SCH_2SC_2H_5$	100 µg/mL in acetonitrile	1.2 mL
	ULM-7567-1.2	Phorate (unlabeled)	$(C_2H_5O)_2P(S)SCH_2SC_2H_5$	100 µg/mL in acetonitrile	1.2 mL
	DLM-4667-1.2	Phosmet (dimethyl-D_6, 98%)	$C_{11}H_6D_6NO_4PS_2$	100 µg/mL in acetonitrile	1.2 mL
	ULM-8454-1.2	Phosmet (unlabeled)	$C_{11}H_{12}NO_4PS_2$	100 µg/mL in acetonitrile	1.2 mL
	CLM-3738-1.2	Propazine (ring-$^{13}C_3$, 99%)	$*C_3C_6H_{16}ClN_5$	100 µg/mL in methanol	1.2 mL
NEW	ULM-8304	Propazine (unlabeled)	$C_9H_{16}ClN_5$		Inquire
	DLM-7141-1.2	Propoxur (isopropyl-D_7, 98%)	$C_{11}D_7H_8NO_3$	100 µg/mL in nonane	1.2 mL
NEW	ULM-9765-1.2	Propoxur (unlabeled)	$C_{11}H_{15}NO_3$	100 µg/mL in nonane	1.2 mL
	CLM-3739-1.2	Simazine (ring-$^{13}C_3$, 99%)	$*C_3C_4H_{12}ClN_5$	100 µg/mL in methanol	1.2 mL
NEW	CLM-3739-A-1.2			100 µg/mL in acetonitrile	1.2 mL
	ULM-7893-1.2	Simazine (unlabeled)	$C_7H_{12}ClN_5$	100 µg/mL in methanol	1.2 mL
NEW	ULM-7893-A-1.2			100 µg/mL in acetonitrile	1.2 mL
NEW	CDLM-7943-1.2	Sodium monofluoroacetate ($^{13}C_2$, 99%; 2,2-D_2, 98%)	$F*CD_2*CO_2Na$	1 mg/mL in water	1.2 mL
NEW	ULM-9674-1.2	Sodium monofluoroacetate (unlabeled)	FCH_2CO_2Na	1 mg/mL in water	1.2 mL
	DLM-380-1.2	Styrene (D_8, 98%) + BHT	$C_6D_5CD=CD_2$	100 µg/mL in nonane	1.2 mL
NEW	CNLM-9869-1.2	Sulfoxaflor (cyano-^{13}C, 99%; cyano-^{15}N, imine-^{15}N, 98%)	$*CC_9H_{10}F_3*N_2NOS$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9870-1.2	Sulfoxaflor (unlabeled)	$C_{10}H_{10}F_3N_2NOS$	100 µg/mL in methanol	1.2 mL
	CLM-4543	Terbufos (diethoxy-$^{13}C_4$, 99%)	$C(CH_3)_3SCH_2SP(S)(O*CH_2*CH_3)_2$		Inquire
NEW	CLM-9690-1.2	3-Tetrahydrofuroic acid ($^{13}C_5$, 99%)	$*C_5H_8O_3$	100 µg/mL in MTBE	1.2 mL
NEW	ULM-9691-1.2	3-Tetrahydrofuroic acid (unlabeled)	$C_5H_8O_3$	100 µg/mL in MTBE	1.2 mL
NEW	CLM-9652-1.2	Thiacloprid (pyridylmethyl-$^{13}C_6$, 99%)	$*C_6C_4H_9ClN_4S$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9733-1.2	Thiacloprid (unlabeled)	$C_{10}H_9ClN_4S$	100 µg/mL in methanol	1.2 mL
NEW	CNLM-9860-1.2	Thiamethoxam (thiazole-$^{13}C_3$, 99%; ^{15}N, 98%)	$*C_3C_5H_{10}Cl*NN_4O_3S$		Inquire
NEW	ULM-9939-1.2	Thiamethoxam (unlabeled)	$C_8H_{10}ClN_5O_3S$		Inquire
	CLM-4551-1.2	2,4,5-Trichlorophenoxyacetic acid (2,4,5-T) (ring-$^{13}C_6$, 99%)	$*C_6C_2H_5Cl_3O_3$	100 µg/mL in MeCl	1.2 mL
	ULM-7213-1.2	2,4,5-Trichlorophenoxyacetic acid (2,4,5-T) (unlabeled)	$C_6H_2Cl_3OCH_2CO_2H$	100 µg/mL in MeCl	1.2 mL
NEW	CLM-9049-1.2	3,5,6-Trichloro-2-pyridinol (TCPY) (4,5,6-$^{13}C_3$, 99%) CP 97%	$*C_3C_2H_2Cl_3NO$	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-9204-1.2	3,5,6-Trichloro-2-pyridinol (TCPY) (unlabeled)	$C_5H_2Cl_3NO$	100 µg/mL in acetonitrile	1.2 mL
	DLM-4479-1.2	Trifluralin (di-*n*-propyl-D_{14}, 98%)	$C_{13}D_{14}H_2F_3N_3O_4$	100 µg/mL in nonane	1.2 mL
	ULM-7236-1.2	Trifluralin (unlabeled)	$C_{13}H_{14}H_2F_3N_3O_4$	100 µg/mL in nonane	1.2 mL

Stockholm Convention POPs Pesticide Standard Mixtures

Catalog No.	Compound	Amount
NEW ES-5464-A	Expanded POPs Pesticides Calibration Solutions with Endosulfan Sulfate [CS1-CS6]	Set of 6 × 0.2 mL in nonane

Individual calibration solutions are available. Please inquire.

All concentrations are in ng/mL (ppb)

Unlabeled	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 (γ)	0.4	2	10	40	200	800
cis-Chlordane (α)	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
Kepone (chlordecone)	0.4	2	10	40	200	800
α-HCH (α-BHC)	0.4	2	10	40	200	800
β-HCH (β-BHC)	0.4	2	10	40	200	800
γ-HCH (γ-BHC) (lindane)	0.4	2	10	40	200	800
δ-HCH (δ-BHC)	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
Endosulfan sulfate	0.4	2	10	40	200	800
Labeled						
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 (ring-$^{13}C_{12}$, 99%)	20	20	20	20	20	20
4,4′-DDE (ring-$^{13}C_{12}$, 99%)	20	20	20	20	20	20
4,4′-DDD (ring-$^{13}C_{12}$, 99%)	20	20	20	20	20	20
2,4′-DDT (ring-$^{13}C_{12}$, 99%)	20	20	20	20	20	20
2,4′-DDE (ring-$^{13}C_{12}$, 99%)	20	20	20	20	20	20
2,4′-DDD (ring-$^{13}C_{12}$, 99%)	20	20	20	20	20	20
trans-Chlordane (γ) ($^{13}C_{10}$, 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
α-HCH (α-BHC) ($^{13}C_6$, 99%)	20	20	20	20	20	20
β-HCH (β-BHC) ($^{13}C_6$, 99%)	20	20	20	20	20	20
γ-HCH (γ-BHC) (lindane) ($^{13}C_6$, 99%)	20	20	20	20	20	20
δ-HCH (δ-BHC) ($^{13}C_6$, 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
Endosulfan sulfate ($^{13}C_9$, 99%)	20	20	20	20	20	20
Syringe						
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
Sampling						
Isodrin ($^{13}C_{12}$, 99%)	20	20	20	20	20	20

Stockholm Convention POPs Pesticide Standard Mixtures

Catalog No.	Compound	Amount
ES-5464	Expanded POPs Pesticides Calibration Solutions [CS1-CS6]	Set of 6 × 0.2 mL in nonane

Individual calibration solutions are available. Please inquire.

All concentrations are in ng/mL (ppb)

Unlabeled	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 (γ)	0.4	2	10	40	200	800
cis-Chlordane (α)	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
Kepone (chlordecone)	0.4	2	10	40	200	800
α-HCH (α-BHC)	0.4	2	10	40	200	800
β-HCH (β-BHC)	0.4	2	10	40	200	800
γ-HCH (γ-BHC) (lindane)	0.4	2	10	40	200	800
δ-HCH (δ-BHC)	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
Labeled						
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 (ring-$^{13}C_{12}$, 99%)	20	20	20	20	20	20
4,4′-DDE (ring-$^{13}C_{12}$, 99%)	20	20	20	20	20	20
4,4′-DDD (ring-$^{13}C_{12}$, 99%)	20	20	20	20	20	20
2,4′-DDT (ring-$^{13}C_{12}$, 99%)	20	20	20	20	20	20
2,4′-DDE (ring-$^{13}C_{12}$, 99%)	20	20	20	20	20	20
2,4′-DDD (ring-$^{13}C_{12}$, 99%)	20	20	20	20	20	20
trans-Chlordane (γ) ($^{13}C_{10}$, 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
α-HCH (α-BHC) ($^{13}C_6$, 99%)	20	20	20	20	20	20
β-HCH (β-BHC) ($^{13}C_6$, 99%)	20	20	20	20	20	20
γ-HCH (γ-BHC) (lindane) ($^{13}C_6$, 99%)	20	20	20	20	20	20
δ-HCH (δ-BHC) ($^{13}C_6$, 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						
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
Sampling						
Isodrin ($^{13}C_{12}$, 99%)	20	20	20	20	20	20

Stockholm Convention POPs Pesticide Standard Mixtures

	Catalog No.	Compound	Amount
NEW	ES-5465-A	Expanded POPs Pesticides Cleanup Spike with Endosulfan Sulfate	1.2 mL in nonane
NEW	ES-5465-A-5X	Expanded POPs Pesticides Cleanup Spike with Endosulfan Sulfate (5X stock)	1.2 mL in nonane
	ES-5465	Expanded POPs Pesticides Cleanup Spike	1.2 mL in nonane
	ES-5465-5X	Expanded POPs Pesticides Cleanup Spike (5X stock)	1.2 mL in nonane

Labeled	ES-5465-A (ng/mL)	ES-5465-A-5X (ng/mL)	ES-5465 (ng/mL)	ES-5465-5X (ng/mL)
Hexachlorobenzene ($^{13}C_6$, 99%)	100	500	100	500
Pentachlorobenzene ($^{13}C_6$, 99%)	100	500	100	500
Aldrin ($^{13}C_{12}$, 99%)	100	500	100	500
Endrin ($^{13}C_{12}$, 99%)	100	500	100	500
Dieldrin ($^{13}C_{12}$, 99%)	100	500	100	500
4,4′-DDT (ring-$^{13}C_{12}$, 99%)	100	500	100	500
4,4′-DDE (ring-$^{13}C_{12}$, 99%)	100	500	100	500
4,4′-DDD (ring-$^{13}C_{12}$, 99%)	100	500	100	500
2,4′-DDT (ring-$^{13}C_{12}$, 99%)	100	500	100	500
2,4′-DDE (ring-$^{13}C_{12}$, 99%)	100	500	100	500
2,4′-DDD (ring-$^{13}C_{12}$, 99%)	100	500	100	500
trans-Chlordane (γ) ($^{13}C_{10}$, 99%)	100	500	100	500
trans-Nonachlor ($^{13}C_{10}$, 99%)	100	500	100	500
cis-Nonachlor ($^{13}C_{10}$, 99%)	100	500	100	500
Oxychlordane ($^{13}C_{10}$, 99%)	100	500	100	500
Heptachlor ($^{13}C_{10}$, 99%)	100	500	100	500
cis-Heptachlor epoxide ($^{13}C_{10}$, 99%)	100	500	100	500
Mirex ($^{13}C_{10}$, 99%)	100	500	100	500
Kepone (chlordecone) ($^{13}C_{10}$, 99%)	100	500	100	500
α-HCH (α-BHC) ($^{13}C_6$, 99%)	100	500	100	500
β-HCH (β-BHC) ($^{13}C_6$, 99%)	100	500	100	500
γ-HCH (γ-BHC) (lindane) ($^{13}C_6$, 99%)	100	500	100	500
δ-HCH (δ-BHC) ($^{13}C_6$, 99%)	100	500	100	500
Endosulfan I ($^{13}C_9$, 99%)	100	500	100	500
Endosulfan II ($^{13}C_9$, 99%)	100	500	100	500
Endosulfan sulfate ($^{13}C_9$, 99%)	100	500	–	–

EC-5350	POPs Pesticides HRMS (PCB) Syringe Spike	1.2 mL in nonane
EC-5350-L	POPs Pesticides LRMS (PCB) Syringe Spike	0.5 mL in nonane

Labeled	ES-5350 (ng/mL)	ES-5350-L (ng/mL)
4,4′-DiCB ($^{13}C_{12}$, 99%) (PCB-15)	100	1000
2,3′,4′,5-TetraCB ($^{13}C_{12}$, 99%) (PCB-70)	100	1000

ES-5466	Expanded POPs Pesticides Sampling Spike	1.2 mL in nonane

Labeled	(ng/mL)
Isodrin ($^{13}C_{12}$, 99%)	1000

Stockholm Convention POPs Pesticide Standard Mixtures

	Catalog No.	Compound	Amount
NEW	ES-5467-A	Expanded POPs Pesticides PAR Solution with Endosulfan Sulfate	1.2 mL in nonane
	ES-5467	Expanded POPs Pesticides PAR Solution	1.2 mL in nonane

Unlabeled	ES-5467-A (ng/mL)	ES-5467 (ng/mL)
Hexachlorobenzene	1000	1000
Pentachlorobenzene	1000	1000
Aldrin	1000	1000
Dieldrin	1000	1000
Endrin	1000	1000
4,4′-DDT	1000	1000
4,4′-DDE	1000	1000
4,4′-DDD	1000	1000
2,4′-DDT	1000	1000
2,4′-DDE	1000	1000
2,4′-DDD	1000	1000
trans-Chlordane (γ)	1000	1000
cis-Chlordane (α)	1000	1000
trans-Nonachlor	1000	1000
cis-Nonachlor	1000	1000
Oxychlordane	1000	1000
Heptachlor	1000	1000
trans-Heptachlor epoxide	1000	1000
cis-Heptachlor epoxide	1000	1000
Mirex	1000	1000
Kepone (chlordecone)	1000	1000
α-HCH (α-BHC)	1000	1000
β-HCH (β-BHC)	1000	1000
γ-HCH (γ-BHC) (lindane)	1000	1000
δ-HCH (δ-BHC)	1000	1000
Endosulfan I	1000	1000
Endosulfan II	1000	1000
Endosulfan sulfate	1000	–

Toxaphene Standard Mixtures

	Catalog No.	Compound	Amount
NEW	ES-5543	US EPA Method 8276 Toxaphene Composite Stock Standard	1.2 mL in nonane

Unlabeled	(ng/mL)
Hx-Sed	1000
Hp-Sed	1000
Parlar 26	1000
Parlar 40	1000
Parlar 41	1000
Parlar 44	1000
Parlar 50	1000
Parlar 62	1000

NEW	ES-5544	US EPA Method 8276 Toxaphene Surrogate Standard	1.2 mL in nonane

Labeled	(ng/mL)
Parlar 26 ($^{13}C_{10}$, 99%)	100
Parlar 50 ($^{13}C_{10}$, 99%)	100
Parlar 62 ($^{13}C_{10}$, 99%)	100

NEW	ES-5545	US EPA Method 8276 Toxaphene Injection Internal Standard	1.2 mL in nonane

Labeled	(ng/mL)
Parlar 39 ($^{13}C_{10}$, 99%)	100

ES-5352-L	POPs Toxaphene Surrogate Solution with PCB Syringe	1.2 mL in nonane

Labeled	(ng/mL)
trans-Chlordane (γ) ($^{13}C_{10}$, 99%)	1000

ES-5353	Predominant Bioaccumulative Toxaphene Congeners (Parlar 26, 50 and 62)	1.2 mL in nonane

Unlabeled	(ng/mL)
Parlar 26	2000
Parlar 50	2000
Parlar 62	2000

Multiple Class Pesticide Standard Mixtures

	Catalog No.	Compound	Amount
NEW	ES-5516	EPA Method 1699 Pesticide Stock Solution	0.5 mL in nonane

Labeled	(ng/mL)
Hexachlorobenzene ($^{13}C_6$, 99%)	1800
γ-HCH (γ-BHC) (lindane) ($^{13}C_6$, 99%)	2600
Heptachlor ($^{13}C_{10}$, 99%)	1400
β-HCH (β-BHC) ($^{13}C_6$, 99%)	1600
δ-HCH (δ-BHC) ($^{13}C_6$, 99%)	1600
Aldrin ($^{13}C_{12}$, 99%)	1600
Oxychlordane ($^{13}C_{10}$, 99%)	1600
cis-Heptachlor epoxide ($^{13}C_{10}$, 99%)	1600
Endosulfan I ($^{13}C_9$, 99%)	1600
Dieldrin ($^{13}C_{12}$, 99%)	1600
trans-Chlordane (γ) ($^{13}C_{10}$, 99%)	1600
trans-Nonachlor ($^{13}C_{10}$, 98%)	1600
4,4′-DDE (ring-$^{13}C_{12}$, 99%)	1600
Endrin ($^{13}C_{12}$, 99%)	1600
Endosulfan II ($^{13}C_9$, 99%)	1600
cis-Nonachlor ($^{13}C_{10}$, 99%)	1600
2,4′-DDT (ring-$^{13}C_{12}$, 99%)	1600
4,4′-DDT (ring-$^{13}C_{12}$, 99%)	1600
Mirex ($^{13}C_{10}$, 99%)	1600
Methoxychlor (ring-$^{13}C_{12}$, 99%)	1600
Azinphos-methyl (D_6, 98%)	1600
Diazinon (diethyl-D_{10}, 98%)	1600
Fonofos (ring-$^{13}C_6$, 99%)	1600
Atrazine (ring-$^{13}C_3$, 99%)	1600
cis-Permethrin (phenoxy-$^{13}C_6$, 99%)	1600
trans-Permethrin (phenoxy-$^{13}C_6$, 99%)	1600

NEW	ES-5560	Multi-Class Pesticide Internal Standard	1.2 mL in acetonitrile

Labeled	(ng/mL)
Acetochlor (ring-$^{13}C_6$, 99%)	1000
Aldicarb ($^{13}C_2$, 98%; D_3, 98%)	1000
Chlortoluron (*N,N*-dimethyl-D_6, 98%)	1000
Diazinon (diethyl-D_{10}, 98%)	1000
2,4-Dichlorophenoxyacetic acid (ring-$^{13}C_6$, 99%)	1000
Simazine (ring-$^{13}C_3$, 99%)	1000

NEW	ES-5561	Multi-Class Pesticide Native Standard	1.2 mL in acetonitrile

Unlabeled	(ng/mL)
Acetochlor	1000
Aldicarb	1000
Chlortoluron	1000
Diazinon	1000
2,4-Dichlorophenoxyacetic acid	1000
Simazine	1000

Pesticide Standard Mixtures

Catalog No.	Compound	Amount
ES-5348	POPs Pesticides Calibration Solutions [CS1-CS6]	Set of 6 × 0.2 mL in nonane

Individual calibration solutions are available. Please inquire.

All concentrations are in ng/mL (ppb)

Unlabeled	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 (γ)	0.4	2	10	40	200	800
cis-Chlordane (α)	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
α-HCH (α-BHC)	0.4	2	10	40	200	800
β-HCH (β-BHC)	0.4	2	10	40	200	800
γ-HCH (γ-BHC) (lindane)	0.4	2	10	40	200	800
δ-HCH (δ-BHC)	0.4	2	10	40	200	800
Cleanup						
Hexachlorobenzene ($^{13}C_6$, 99%)	20	20	20	20	20	20
Aldrin ($^{13}C_{12}$, 99%)	20	20	20	20	20	20
Dieldrin ($^{13}C_{12}$, 99%)	20	20	20	20	20	20
Endrin ($^{13}C_{12}$, 99%)	20	20	20	20	20	20
4,4′-DDT (ring-$^{13}C_{12}$, 99%)	20	20	20	20	20	20
4,4′-DDE (ring-$^{13}C_{12}$, 99%)	20	20	20	20	20	20
4,4′-DDD (ring-$^{13}C_{12}$, 99%)	20	20	20	20	20	20
2,4′-DDT (ring-$^{13}C_{12}$, 99%)	20	20	20	20	20	20
2,4′-DDE (ring-$^{13}C_{12}$, 99%)	20	20	20	20	20	20
2,4′-DDD (ring-$^{13}C_{12}$, 99%)	20	20	20	20	20	20
trans-Chlordane (γ) ($^{13}C_{10}$, 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
α-HCH (α-BHC) ($^{13}C_6$, 99%)	20	20	20	20	20	20
β-HCH (β-BHC) ($^{13}C_6$, 99%)	20	20	20	20	20	20
γ-HCH (γ-BHC) (lindane) ($^{13}C_6$, 99%)	20	20	20	20	20	20
δ-HCH (δ-BHC) ($^{13}C_6$, 99%)	20	20	20	20	20	20
Syringe						
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

Pesticide Standard Mixtures

Catalog No.	Compound	Amount
ES-5349	POPs Pesticides HRMS Cleanup Spike	1.2 mL in nonane
ES-5400	POPs Cleanup Spike	1.2 mL in nonane
ES-5349-L	POPs Pesticides LRMS Cleanup Spike	0.5 mL in nonane

Labeled	ES-5349 (ng/mL)	ES-5400 (ng/mL)	ES-5349-L (ng/mL)
Hexachlorobenzene ($^{13}C_6$, 99%)	100	200	1000
Aldrin ($^{13}C_{12}$, 99%)	100	200	1000
Dieldrin ($^{13}C_{12}$, 99%)	100	200	1000
Endrin ($^{13}C_{12}$, 99%)	100	200	1000
4,4′-DDT (ring-$^{13}C_{12}$, 99%)	100	200	1000
4,4′-DDE (ring-$^{13}C_{12}$, 99%)	100	200	1000
4,4′-DDD (ring-$^{13}C_{12}$, 99%)	100	200	1000
2,4′-DDT (ring-$^{13}C_{12}$, 99%)	100	200	1000
2,4′-DDE (ring-$^{13}C_{12}$, 99%)	100	200	1000
2,4′-DDD (ring-$^{13}C_{12}$, 99%)	100	200	1000
trans-Chlordane (γ) ($^{13}C_{10}$, 99%)	100	200	1000
trans-Nonachlor ($^{13}C_{10}$, 99%)	100	200	1000
cis-Nonachlor ($^{13}C_{10}$, 99%)	100	200	1000
Oxychlordane ($^{13}C_{10}$, 99%)	100	200	1000
Heptachlor ($^{13}C_{10}$, 99%)	100	200	1000
cis-Heptachlor epoxide ($^{13}C_{10}$, 99%)	100	200	1000
Mirex ($^{13}C_{10}$, 99%)	100	200	1000
α-HCH (α-BHC) ($^{13}C_6$, 99%)	100	200	1000
β-HCH (β-BHC) ($^{13}C_6$, 99%)	100	200	1000
γ-HCH (γ-BHC) (lindane) ($^{13}C_6$, 99%)	100	200	1000
δ-HCH (δ-BHC) ($^{13}C_6$, 99%)	100	200	1000

ES-5399	POPs PAR Solution	1.2 mL in nonane
ES-5399-10X-0.5	POPs PAR Solution (10X concentration)	0.5 mL in nonane

Unlabeled	ES-5399 (ng/mL)	ES-5399-10X-0.5 (ng/mL)
Hexachlorobenzene	200	2000
Aldrin	200	2000
Dieldrin	200	2000
Endrin	200	2000
4,4′-DDT	200	2000
4,4′-DDE	200	2000
4,4′-DDD	200	2000
2,4′-DDT	200	2000
2,4′-DDE	200	2000
2,4′-DDD	200	2000
trans-Chlordane (γ)	200	2000
cis-Chlordane (α)	200	2000
trans-Nonachlor	200	2000
cis-Nonachlor	200	2000
Oxychlordane	200	2000
Heptachlor	200	2000
trans-Heptachlor epoxide	200	2000
cis-Heptachlor epoxide	200	2000
Mirex	200	2000
α-HCH (α-BHC)	200	2000
β-HCH (β-BHC)	200	2000
γ-HCH (γ-BHC) (lindane)	200	2000
δ-HCH (δ-BHC)	200	2000

Pesticide Standard Mixtures

Catalog No.	Compound	Amount
EC-5350	POPs Pesticides HRMS (PCB) Syringe Spike	1.2 mL in nonane
NEW EC-5350-L	POPs Pesticides HRMS (PCB) Syringe Spike	1.2 mL in nonane

Labeled	EC-5350 (ng/mL)	EC-5350-L (ng/mL)
4,4′-DiCB ($^{13}C_{12}$, 99%) (PCB-15)	100	1000
2,3′,4′,5-TetraCB ($^{13}C_{12}$, 99%) (PCB-70)	100	1000

ES-5342	POPs Pesticides, non-Toxaphene, non-HCH HRMS Cleanup Spike	1.2 mL in nonane

Labeled	(ng/mL)
Hexachlorobenzene ($^{13}C_6$, 99%)	10
Aldrin ($^{13}C_{12}$, 99%)	100
Dieldrin ($^{13}C_{12}$, 99%)	20
Endrin ($^{13}C_{12}$, 99%)	100
4,4′-DDT (ring-$^{13}C_{12}$, 99%)	100
4,4′-DDE (ring-$^{13}C_{12}$, 99%)	20
4,4′-DDD (ring-$^{13}C_{12}$, 99%)	100
2,4′-DDT (ring-$^{13}C_{12}$, 99%)	100
2,4′-DDE (ring-$^{13}C_{12}$, 99%)	20
2,4′-DDD (ring-$^{13}C_{12}$, 99%)	100
trans-Chlordane (γ) ($^{13}C_{10}$, 99%)	10
trans-Nonachlor ($^{13}C_{10}$, 99%)	10
cis-Nonachlor ($^{13}C_{10}$, 99%)	10
Oxychlordane ($^{13}C_{10}$, 99%)	100
Heptachlor ($^{13}C_{10}$, 99%)	20
cis-Heptachlor epoxide ($^{13}C_{10}$, 99%)	20
Mirex ($^{13}C_{10}$, 99%)	20

ES-5344-50X-0.5	POPs HRMS HCH Cleanup Spike	0.5 mL in nonane

Labeled	(ng/mL)
α-HCH (α-BHC) ($^{13}C_6$, 99%)	1000
β-HCH (β-BHC) ($^{13}C_6$, 99%)	1000
γ-HCH (γ-BHC) (lindane) ($^{13}C_6$, 99%)	1000
δ-HCH (δ-BHC) ($^{13}C_6$, 99%)	1000

Pesticide Standard Mixtures

Catalog No.	Compound	Amount
ES-5019-A	Persistent Pesticide Calibration Solutions [CS1-CS10]	Set of 10 × 0.25 mL in nonane
ES-5019-A-CS1-8	Persistent Pesticide Calibration Solutions [CS1-CS8]	Set of 8 × 0.25 mL in nonane
ES-5019-A-CS9-10	Persistent Pesticide Calibration Solutions [CS9-CS10]	Set of 2 × 0.25 mL in nonane

All concentrations are in ng/mL (ppb)

Unlabeled	CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8	CS9	CS10
Hexachlorobenzene	1.0	2.5	10	35	100	300	500	1000		
β-HCH (β-BHC)	1.0	2.5	10	35	100	300	500	1000		
γ-HCH (γ-BHC) (lindane)	1.0	2.5	10	35	100	300	500	1000		
cis-Heptachlor epoxide (B isomer)	1.0	2.5	10	35	100	300	500	1000		
Oxychlordane	1.0	2.5	10	35	100	300	500	1000		
trans-Nonachlor	1.0	2.5	10	35	100	300	500	1000		
4,4′-DDE	1.0	2.5	10	35	100	300	500	1000	3000	6000
Dieldrin	1.0	2.5	10	35	100	300	500	1000		
2,4′-DDT	1.0	2.5	10	35	100	300	500	1000	3000	6000
4,4′-DDT	1.0	2.5	10	35	100	300	500	1000		
Mirex	1.0	2.5	10	35	100	300	500	1000		
Dechlorane Plus *syn*	1.0	2.5	10	35	100	300	500	1000		
Dechlorane Plus *anti*	1.0	2.5	10	35	100	300	500	1000		
Labeled										
Hexachlorobenzene ($^{13}C_6$, 99%)	100	100	100	100	100	100	100	100	100	100
Dieldrin ($^{13}C_{12}$, 99%)	100	100	100	100	100	100	100	100	100	100
β-HCH (β-BHC) ($^{13}C_6$, 99%)	100	100	100	100	100	100	100	100	100	100
γ-HCH (γ-BHC) (lindane) ($^{13}C_6$, 99%)	100	100	100	100	100	100	100	100	100	100
cis-Heptachlor epoxide ($^{13}C_{10}$, 99%)	100	100	100	100	100	100	100	100	100	100
Oxychlordane ($^{13}C_{10}$, 99%)	100	100	100	100	100	100	100	100	100	100
trans-Nonachlor ($^{13}C_{10}$, 99%)	100	100	100	100	100	100	100	100	100	100
Mirex ($^{13}C_{10}$, 99%)	100	100	100	100	100	100	100	100	100	100
2,4′-DDT (ring-$^{13}C_{12}$, 99%)	100	100	100	100	100	100	100	100	100	100
4,4′-DDT (ring-$^{13}C_{12}$, 99%)	100	100	100	100	100	100	100	100	100	100
4,4′-DDE (ring-$^{13}C_{12}$, 99%)	250	250	250	250	250	250	250	250	250	250
Recovery										
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%) (PCB-208)	100	100	100	100	100	100	100	100	100	100
3,3′,4,4′-TetraBDE ($^{13}C_{12}$, 99%) (BDE-77)	75	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	75

ES-5177-5X10	Persistent Pesticide Spiking Solution	5 × 10 mL in methanol
ES-5021	Persistent Pesticide Spiking Solution	2.5 mL in nonane
ES-5177-500X-N-0.5	Persistent Pesticide Spiking Solution	0.5 mL in nonane

Labeled	ES-5177-5X10 (ng/mL)	ES-5021 (ng/mL)	ES-5177-500X-N-0.5 (ng/mL)
Hexachlorobenzene ($^{13}C_6$, 99%)	10	100	5000
Dieldrin ($^{13}C_{12}$, 99%)	10	100	5000
β-HCH (β-BHC) ($^{13}C_6$, 99%)	10	100	5000
γ-HCH (γ-BHC) (lindane) ($^{13}C_6$, 99%)	10	100	5000
cis-Heptachlor epoxide ($^{13}C_{10}$, 99%)	10	100	5000
Oxychlordane ($^{13}C_{10}$, 99%)	10	100	5000
trans-Nonachlor ($^{13}C_{10}$, 99%)	10	100	5000
Mirex ($^{13}C_{10}$, 99%)	10	100	5000
2,4′-DDT (ring-$^{13}C_{12}$, 99%)	10	100	5000
4,4′-DDT (ring-$^{13}C_{12}$, 99%)	10	100	5000
4,4′-DDE (ring$^{13}C_{12}$, 99%)	25	250	12,500

Pesticide Standard Mixtures

Catalog No.	Compound	Amount
ES-5442	CDC POPs (with Parlars) Calibration Solutions [CS1-CS9]	Set of 9 × 0.5 mL in nonane

Individual calibration solutions are available. Please inquire.

All concentrations are in ng/mL (ppb)

Unlabeled	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		
β-HCH (β-BHC)	2.5	5	10	30	100	300	1000		
γ-HCH (γ-BHC) (lindane)	2.5	5	10	30	100	300	1000		
Aldrin	2.5	5	10	30	100	300	1000		
cis-Heptachlor epoxide	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	2.5	5	10	30	100	300	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		
α-HCH (α-BHC)	2.5	5	10	30	100	300	1000		
cis-Chlordane (α)	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		
Labeled									
Parlar 26 ($^{13}C_{10}$, 99%)	75	75	75	75	75	75	75	75	75
Parlar 50 ($^{13}C_{10}$, 99%)	75	75	75	75	75	75	75	75	75
Parlar 62 ($^{13}C_{10}$, 99%)	75	75	75	75	75	75	75	75	75
Hexachlorobenzene ($^{13}C_{6}$, 99%)	75	75	75	75	75	75	75	75	75
β-HCH (β-BHC) ($^{13}C_{6}$, 99%)	75	75	75	75	75	75	75	75	75
γ-HCH (γ-BHC) (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 ($^{13}C_{10}$, 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 (ring-$^{13}C_{12}$, 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 (ring-$^{13}C_{12}$, 99%)	75	75	75	75	75	75	75	75	75
4,4′-DDT (ring-$^{13}C_{12}$, 99%)	75	75	75	75	75	75	75	75	75
Mirex ($^{13}C_{10}$, 99%)	75	75	75	75	75	75	75	75	75
α-HCH (α-BHC) ($^{13}C_{6}$, 99%)	75	75	75	75	75	75	75	75	75
cis-Chlordane (α) ($^{13}C_{10}$, 99%)	75	75	75	75	75	75	75	75	75
trans-Chlordane (γ) ($^{13}C_{10}$, 99%)	75	75	75	75	75	75	75	75	75
2,4′-DDE (ring-$^{13}C_{12}$, 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 (ring-$^{13}C_{12}$, 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
Recovery									
1,2,3,4-TetraCDD ($^{13}C_{6}$, 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%) (BDE-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

Pesticide Standard Mixtures

	Catalog No.	Compound	Amount
NEW	ES-5449-10	CDC POPs (with Parlars) Spiking Standard	10 mL in nonane
NEW	ES-5449-100X-1.2	CDC POPs (with Parlars) Spiking Standard (100X stock)	1.2 mL in nonane

Labeled	ES-5449-10 (ng/mL)	ES-5449-100X-1.2 (ng/mL)
Parlar 26 ($^{13}C_{10}$, 99%)	7.5	750
Parlar 50 ($^{13}C_{10}$, 99%)	7.5	750
Parlar 62 ($^{13}C_{10}$, 99%)	7.5	750
Hexachlorobenzene ($^{13}C_{6}$, 99%)	7.5	750
β-HCH (β-BHC) ($^{13}C_{6}$, 99%)	7.5	750
γ-HCH (γ-BHC) (lindane) ($^{13}C_{6}$, 99%)	7.5	750
Aldrin ($^{13}C_{12}$, 99%)	7.5	750
cis-Heptachlor epoxide ($^{13}C_{10}$, 99%)	7.5	750
Oxychlordane ($^{13}C_{10}$, 99%)	7.5	750
trans-Nonachlor ($^{13}C_{10}$, 99%)	7.5	750
4,4′-DDE (ring-$^{13}C_{12}$, 99%)	15.0	1500
Dieldrin ($^{13}C_{12}$, 99%)	7.5	750
Endrin ($^{13}C_{12}$, 99%)	7.5	750
Isodrin ($^{13}C_{12}$, 99%)	7.5	750
2,4′-DDT (ring-$^{13}C_{12}$, 99%)	7.5	750
4,4′-DDT (ring-$^{13}C_{12}$, 99%)	7.5	750
Mirex ($^{13}C_{10}$, 99%)	7.5	750
α-HCH (α-BHC) ($^{13}C_{6}$, 99%)	7.5	750
cis-Chlordane (α) ($^{13}C_{10}$, 99%)	7.5	750
trans-Chlordane (γ) ($^{13}C_{10}$, 99%)	7.5	750
2,4′-DDE (ring-$^{13}C_{12}$, 99%)	7.5	750
cis-Nonachlor ($^{13}C_{10}$, 99%)	7.5	750
Methoxychlor (ring-$^{13}C_{12}$, 99%)	7.5	750
Pentachloroanisole ($^{13}C_{6}$, 99%)	7.5	750
Octachlorostyrene ($^{13}C_{8}$, 99%)	7.5	750

	ES-5321	Multi-Analyte Recovery Spiking Standard	10 mL in 88% hexane/2% dodecane/10% nonane
NEW	ES-5321-5X10	Multi-Analyte Recovery Spiking Standard	5 × 10 mL in 88% hexane/2% dodecane/10% nonane
NEW	ES-5321-200X-1.2	Multi-Analyte Recovery Spiking Standard	1.2 mL in nonane

Labeled	ES-5321 (ng/mL)	ES-5321-200X-1.2 (ng/mL)
1,2,3,4-TetraCDD ($^{13}C_{6}$, 99%)	2.5	500
2,2′,3,3′,4,5,5′,6,6′-NonaCB ($^{13}C_{12}$, 99%) (PCB-208)	10	2000
3,3′,4,4′-TetraBDE ($^{13}C_{12}$, 99%) (BDE-77)	7.5	1500
2,2′,3,4,4′,6-HexaBDE ($^{13}C_{12}$, 99%) (BDE-139)	7.5	1500

Pesticide Standard Mixtures

Catalog No.	Compound	Amount
ES-5261-1.2	Persistent Organic Pollutants Cleanup Spike	1.2 mL in nonane

Labeled	(ng/mL)
Hexachlorobenzene ($^{13}C_6$, 99%)	1000
α-HCH (α-BHC) ($^{13}C_6$, 99%)	1000
β-HCH (β-BHC) ($^{13}C_6$, 99%)	1000
γ-HCH (γ-BHC) (lindane) ($^{13}C_6$, 99%)	1000
Aldrin ($^{13}C_{12}$, 99%)	1000
Dieldrin ($^{13}C_{12}$, 99%)	1000
Endrin ($^{13}C_{12}$, 99%)	1000
trans-Chlordane (γ) ($^{13}C_{10}$, 99%)	1000
Oxychlordane ($^{13}C_{10}$, 99%)	1000
trans-Nonachlor ($^{13}C_{10}$, 99%)	1000
Heptachlor ($^{13}C_{10}$, 99%)	1000
cis-Heptachlor epoxide ($^{13}C_{10}$, 99%)	1000
4,4′-DDT (ring-$^{13}C_{12}$, 99%)	1000
4,4′-DDE (ring-$^{13}C_{12}$, 99%)	1000
4,4′-DDD (ring-$^{13}C_{12}$, 99%)	1000

NEW	ES-5478	Pesticide Stock Solution 1	0.5 mL in nonane

Labeled	(ng/mL)
α-HCH (α-BHC) ($^{13}C_6$, 99%)	5000
δ-HCH (δ-BHC) ($^{13}C_6$, 99%)	5000
Dieldrin ($^{13}C_{12}$, 99%)	5000
γ-HCH (γ-BHC) (lindane) ($^{13}C_6$, 99%)	5000
cis-Heptachlor epoxide ($^{13}C_{10}$, 99%)	5000
Heptachlor ($^{13}C_{10}$, 99%)	5000
Oxychlordane ($^{13}C_{10}$, 99%)	5000
2,4′-DDD (ring-$^{13}C_{12}$, 99%)	5000
2,4′-DDE (ring-$^{13}C_{12}$, 99%)	5000
2,4′-DDT (ring-$^{13}C_{12}$, 99%)	5000
4,4′-DDD (ring-$^{13}C_{12}$, 99%)	5000
4,4′-DDE (ring-$^{13}C_{12}$, 99%)	5000
4,4′-DDT (ring-$^{13}C_{12}$, 99%)	5000
cis-Nonachlor ($^{13}C_{10}$, 99%)	5000
trans-Nonachlor ($^{13}C_{10}$, 99%)	5000
trans-Chlordane (γ) ($^{13}C_{10}$, 99%)	5000
Mirex ($^{13}C_{10}$, 99%)	5000

NEW	ES-5479	Pesticide Stock Solution 2	0.5 mL in nonane

Labeled	(ng/mL)
Pentachlorobenzene ($^{13}C_6$, 99%)	5000
Hexachlorobenzene ($^{13}C_6$, 99%)	5000
β-HCH (β-BHC) ($^{13}C_6$, 99%)	5000
Aldrin ($^{13}C_{12}$, 99%)	5000
Endosulfan I ($^{13}C_9$, 99%)	5000
Endosulfan II ($^{13}C_9$, 99%)	5000
Endrin ($^{13}C_{12}$, 99%)	5000
cis-Chlordane (α) ($^{13}C_{10}$, 99%)	5000

Pesticide Standard Mixtures

	Catalog No.	Compound	Amount
NEW	ES-5475	Pesticide Stock Solution 1	1.2 mL in nonane

Unlabeled	(ng/mL)
α-HCH (α-BHC)	5000
δ-HCH (δ-BHC)	5000
Dieldrin	5000
γ-HCH (γ-BHC) (lindane)	5000
trans-Heptachlor epoxide	5000
cis-Heptachlor epoxide	5000
Heptachlor	5000
Oxychlordane	5000
2,4′-DDD	5000
2,4′-DDE	5000
2,4′-DDT	5000
4,4′-DDD	5000
4,4′-DDE	5000
4,4′-DDT	5000
cis-Nonachlor	5000
trans-Nonachlor	5000
trans-Chlordane (γ)	5000
Mirex	5000

NEW	ES-5476	Pesticide Stock Solution 2	1.2 mL in nonane

Unlabeled	(ng/mL)
Pentachlorobenzene	5000
Trifluralin	5000
Hexachlorobenzene	5000
β-HCH (β-BHC)	5000
Aldrin	5000
Endosulfan I	5000
Endosulfan II	5000
Endrin	5000
cis-Chlordane (α)	5000
Endrin aldehyde	5000

NEW	ES-5499-2.2	PCB/Pollutant Mixture	2.2 mL in hexane

Labeled	(ng/mL)
2,4,4′-TriCB ($^{13}C_{12}$, 99%) (PCB-28)	10,000
2,2′,5,5′-TetraCB ($^{13}C_{12}$, 99%) (PCB-52)	10,000
2,2′,4,5,5′-PentaCB ($^{13}C_{12}$, 99%) (PCB-101)	10,000
2,2′,4,4′,5,5′-HexaCB ($^{13}C_{12}$, 99%) (PCB-153)	10,000
4,4′-DDT (ring-$^{13}C_{12}$, 99%)	10,000
Hexachlorobenzene ($^{13}C_{6}$, 99%)	50,000
1,2,4,5-Tetrachlorobenzene ($^{13}C_{6}$, 99%)	50,000

NEW	ES-5501	PCB/Pollutant Native Mixture	1.2 mL in hexane

Unlabeled	(ng/mL)
2,4,4′-TriCB (PCB-28)	10,000
2,2′,5,5′-TetraCB (PCB-52)	10,000
2,2′,4,5,5′-PentaCB (PCB-101)	10,000
2,2′,4,4′,5,5′-HexaCB (PCB-153)	10,000
4,4′-DDT	10,000
Hexachlorobenzene	50,000
1,2,4,5-Tetrachlorobenzene	50,000

Pesticide Standard Mixtures

	Catalog No.	Compound	Amount
NEW	ES-5521	Multi-Functional PAR Spike	1.2 mL in nonane

Unlabeled Dioxins	IUPAC	(ng/mL)
2,3,7,8-TetraCDD		200
1,2,3,7,8-PentaCDD		200
1,2,3,4,7,8-HexaCDD		200
1,2,3,6,7,8-HexaCDD		200
1,2,3,7,8,9-HexaCDD		200
1,2,3,4,6,7,8-HeptaCDD		200
OctaCDD		200
2,3,7,8-TetraCDF		200
1,2,3,7,8-PentaCDF		200
2,3,4,7,8-PentaCDF		200
1,2,3,4,7,8-HexaCDF		200
1,2,3,6,7,8-HexaCDF		200
1,2,3,7,8,9-HexaCDF		200
2,3,4,6,7,8-HexaCDF		200
1,2,3,4,6,7,8-HeptaCDF		200
1,2,3,4,7,8,9-HeptaCDF		200
OctaCDF		200
Unlabeled PCBs		
2-MonoCB	1	200
4-MonoCB	3	200
2,2′-DiCB	4	200
4,4′-DiCB	15	200
2,2′,6-TriCB	19	200
3,4,4′-TriCB	37	200
2,2′,6,6′-TetraCB	54	200
3,3′,4,4′-TetraCB	77	200
3,4,4′,5-TetraCB	81	200
2,2′,4,6,6′-PentaCB	104	200
2,3,3′,4,4′-PentaCB	105	200
2,3,4,4′,5-PentaCB	114	200
2,3′,4,4′,5-PentaCB	118	200
2′,3,4,4′,5-PentaCB	123	200
3,3′,4,4′,5-PentaCB	126	200
2,2′,4,4′,6,6′-HexaCB	155	200
2,3,3′,4,4′,5-HexaCB	156	200
2,3,3′,4,4′,5′-HexaCB	157	200
2,3′,4,4′,5,5′-HexaCB	167	200
3,3′,4,4′,5,5′-HexaCB	169	200
2,2′,3,4′,5,6,6′-HeptaCB	188	200
2,3,3′,4,4′,5,5′-HeptaCB	189	200
2,2′,3,3′,5,5′,6,6′-OctaCB	202	200
2,3,3′,4,4′,5,5′,6-OctaCB	205	200
2,2′,3,3′,4,4′,5,5′,6-NonaCB	206	200
2,2′,3,3′,4,5,5′,6,6′-NonaCB	208	200
DecaCB	209	200

Unlabeled PBDEs	IUPAC	(ng/mL)
4-MonoBDE	3	200
2,4-DiBDE	4	200
4,4′-DiBDE	15	200
2,2′,4-TriBDE	17	200
2,4,4′-TriBDE	28	200
2,2′,4,4′-TetraBDE	47	200
2,2′,4,5′-TetraBDE	49	200
2,3′,4,4′-TetraBDE	66	200
2,3′,4′,6-TetraBDE	71	200
3,3′,4,4′-TetraBDE	77	200
2,2′,3,4,4′-PentaBDE	85	200
2,2′,4,4′,5-PentaBDE	99	200
2,2′,4,4′,6-PentaBDE	100	200
2,3′,4,4′,6-PentaBDE	119	200
3,3′,4,4′,5-PentaBDE	126	200
2,2′,3,4,4′,5′-HexaBDE	138	400
2,2′,4,4′,5,5′-HexaBDE	153	400
2,2′,4,4′,5,6′-HexaBDE	154	400
2,2′,4,4′,6,6′-HexaBDE	155	400
2,3,4,4′,5,6-HexaBDE	166	400
2,2′,3,4,4′,5,6-HeptaBDE	181	400
2,2′,3,4,4′,5′,6-HeptaBDE	183	400
2,3,3′,4,4′,5,6-HeptaBDE	190	400
2,2′,3,4,4′,5,5′,6-OctaBDE	203	400
2,3,3′,4,4′,5,5′,6-OctaBDE	205	400
2,2′,3,3′,4,4′,5,5′,6-NonaBDE	206	1000
2,2′,3,3′,4,4′,5,6,6′-NonaBDE	207	1000
DecaBDE	209	1000
Unlabeled Pesticides		
Pentachlorobenzene		200
Hexachlorobenzene		200
α-HCH (α-BHC)		200
β-HCH (β-BHC)		200
γ-HCH (γ-BHC) (lindane)		200
δ-HCH (δ-BHC)		200
Heptachlor		200
cis-Heptachlor epoxide		200
trans-Heptachlor epoxide		200
cis-Nonachlor		200
trans-Nonachlor		200
cis-Chlordane (α)		200
trans-Chlordane (β)		200
Oxychlordane		200
2,4′-DDD		200
4,4′-DDD		200
2,4′-DDE		200
4,4′-DDE		200
2,4′-DDT		200
4,4′-DDT		200
Aldrin		200
Dieldrin		200
Endrin		200
Mirex		200
Chlordecone (kepone)		200
Endosulfan I		200
Endosulfan II		200

(continued on next page)

Pesticide Standard Mixtures

(continued from previous page)

NEW	ES-5521	Multi-Functional PAR Spike (continued)	1.2 mL in nonane

Unlabeled PAHs	(ng/mL)
Acenaphthene	200
Acenaphthylene	200
Anthracene	200
Benz[*a*]anthracene	200
Benzo[*b*]fluoranthene	200
Benzo[*k*]fluoranthene	200
Benzo[*ghi*]perylene	200
Benzo[*a*]pyrene	200
Chrysene	200
Dibenz[*a,h*]anthracene	200
Fluoranthene	200
Fluorene	200
Indeno[1,2,3-*cd*]pyrene	200
Naphthalene	200
Phenanthrene	200
Pyrene	200

Chemical Weapon Metabolite Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	CDNLM-6786-1.2	Aminomethylphosphonic acid (AMPA)	*CH_4D_2*NO_3P	100 µg/mL in H_2O	1.2 mL
NEW	CDNLM-6786-10	(^{13}C, 99%; ^{15}N, 98%, methylene-D_2, 98%)			10 mL
NEW	ULM-9897-1.2	Diethyl methylphosphonate (unlabeled)	$CH_3P(O)(OC_2H_5)_2$	1000 µg/mL in methanol	1.2 mL
NEW	ULM-9898-1.2	Diisopropyl methylphosphonate (unlabeled)	$C_7H_{17}O_3P$	1000 µg/mL in methanol	1.2 mL
NEW	ULM-9896-1.2	Dimethyl methylphosphonate (unlabeled)	$C_3H_9O_3P$	1000 µg/mL in methanol	1.2 mL
NEW	DLM-4851-M-1.2	*O,O*-Diethyl phosphate, potassium salt (DEP) (diethyl-D_{10}, 98%)	$C_4D_{10}KO_4P$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9287-M-1.2	*O,O*-Diethyl phosphate, potassium salt (DEP)	$C_4H_{10}KO_4P$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9287-M-20X-1.2	(unlabeled)		2 mg/mL in methanol	1.2 mL
	DLM-4852-1.2	*O,O*-Diethyl thiophosphate, potassium salt (DETP) (diethyl-D_{10}, 98%)	$C_4D_{10}KO_3PS$	100 µg/mL in methanol	1.2 mL
	ERD-119	*O,O*-Diethyl thiophosphate, potassium salt (DETP) (unlabeled)	$C_4H_{10}KO_3PS$	1000 µg/mL in methanol	1.2 mL
NEW	DLM-9003-1.2	*O,O*-Diethyl dithiophosphate, potassium salt (DEDTP) (diethyl-D_{10}, 98%)	$C_4D_{10}KO_2PS_2$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9002-1.2	*O,O*-Diethyl dithiophosphate, potassium salt (DEDTP)	$C_4H_{10}KO_2PS_2$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9002-20X-1.2	(unlabeled)		2 mg/mL in methanol	1.2 mL
NEW	DLM-8868-1.2	*O,O*-Dimethyl phosphoric acid, potassium salt (DMP) (dimethyl-D_6, 98%)	$C_2D_6KO_4P$	100 µg/mL in methanol	1.2 mL
NEW	ULM-8867-1.2	*O,O*-Dimethyl phosphoric acid, potassium salt (DMP)	$C_2H_6KO_4P$	100 µg/mL in methanol	1.2 mL
NEW	ULM-8867-20X-1.2	(unlabeled)		2 mg/mL in methanol	1.2 mL
NEW	DLM-8904-1.2	*O,O*-Dimethyl thiophosphate, potassium salt (DMTP) (dimethyl-D_6, 98%) CP 97%	$C_2D_6KO_3PS$	100 µg/mL in methanol	1.2 mL
NEW	ULM-8905-1.2	*O,O*-Dimethyl thiophosphate, potassium salt (DMTP)	$C_2H_6KO_3PS$	1000 µg/mL in methanol	1.2 mL
NEW	ULM-8905-2X-1.2	(unlabeled) CP 97%		2 mg/mL in methanol	1.2 mL
NEW	DLM-4541-M-1.2	*O,O*-Dimethyl dithiophosphate, potassium salt (DMDTP) (dimethyl-D_6, 98%)	$C_2D_6KO_2PS_2$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9004-1.2	*O,O*-Dimethyl dithiophosphate, potassium salt (DMDTP)	$C_2H_6KO_2PS_2$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9004-20X-1.2	(unlabeled)		2 mg/mL in methanol	1.2 mL
NEW	ULM-9899-1.2	Dipinacolyl methylphosphonate (unlabeled)	$C_{13}H_{29}O_3P$	1000 µg/mL in methanol	1.2 mL
NEW	ULM-9887-1.2	1,4-Dithiane (unlabeled)	$C_4H_8S_2$	1000 µg/mL in methanol	1.2 mL
	ULM-6091-1.2	Ethyl hydrogen dimethylamidophosphate, sodium salt (unlabeled) CP 90%	$C_4H_{11}NPO_3Na$	1000 µg/mL in methanol	1.2 mL
	DLM-6098-1.2	Ethyl hydrogen methylphosphonate (ethyl-D_5, 98%)	$C_3H_4D_5O_3P$	100 µg/mL in methanol	1.2 mL
NEW	ULM-9893-1.2	*N*-Ethyldiethanolamine (unlabeled)	$(HOCH_2CH_2)NC_2H_5$	1000 µg/mL in methanol	1.2 mL
NEW	ULM-9948-1.2	Ethylphosphonic acid (unlabeled)	$C_2H_5P(O)(OH)_2$	1000 µg/mL in methanol	1.2 mL
	ERI-017	Isopropyl methylphosphonic acid (D_7, 98%)	$C_4H_4D_7O_3P$	1000 µg/mL in methanol	1.2 mL
NEW	ULM-9892-1.2	*N*-Methyldiethanolamine (unlabeled)	$CH_3N(CH_2CH_2OH)_2$	1000 µg/mL in methanol	1.2 mL
	CDLM-6100-1.2	Methylphosphonic acid (^{13}C, 99%; methyl-D_3, 98%)	*$CD_3H_2O_3P$	100 µg/mL in methanol	1.2 mL
	DLM-6196-1.2	Methylphosphonic acid (methyl-D_3, 98%)	$CD_3H_2O_3P$	100 µg/mL in methanol	1.2 mL
NEW	ERM-038	Methylphosphonic acid (unlabeled)	CH_5O_3P	1000 µg/mL in methanol	1.2 mL
	CLM-6620-1.2	Methylphosphonic acid, mono-(1,2,2-trimethylpropyl) ester (trimethylpropyl-$^{13}C_6$, 99%)	*$C_6CH_{17}O_3P$	100 µg/mL in methanol	1.2 mL
NEW	ULM-6619-1.2	Methylphosphonic acid, mono-(1,2,2-trimethylpropyl) ester (unlabeled)	$CH_3P(O)(OH)OCH_2(CH_3)C(CH_3)_3$	1000 µg/mL in methanol	1.2 mL
NEW	CLM-6096-1.2	Methyphosphonic acid, monocyclohexyl ester (cyclohexyl-$^{13}C_6$, 99%)	C*$C_6H_{15}O_3P$	100 µg/mL in methanol	1.2 mL
NEW	ULM-6097-1.2	Methyphosphonic acid, monocyclohexyl ester (unlabeled)	$C_7H_{15}O_3P$	100 µg/mL in methanol	1.2 mL
NEW	ULM-6097-10X-1.2	CP 90%		1000 µg/mL in methanol	1.2 mL
NEW	ULM-6099-1.2	Methylphosphonic acid, monoethyl ester (unlabeled)	$CH_3P(O)(OH)OCH_2CH_3$	1000 µg/mL in methanol	1.2 mL
NEW	ULM-6093-1.2	Methylphosphonic acid, monoisopropyl ester (unlabeled)	$C_4H_{11}O_3P$	1000 µg/mL in methanol	1.2 mL
NEW	ULM-9894-1.2	Pinacolyl alcohol (unlabeled)	$(CH_3)_3CCH(OH)CH_3$	1000 µg/mL in methanol	1.2 mL
NEW	ULM-9895-1.2	1-Propylphosphonic acid (unlabeled)	$C_3H_9O_3P$	1000 µg/mL in methanol	1.2 mL
NEW	ULM-9886-1.2	2-Propylphosphonic acid (unlabeled)	$C_3H_9O_3P$	1000 µg/mL in methanol	1.2 mL
	CLM-6106-1.2	Ricinine (ring-$^{13}C_5$, 99%; cyano-^{13}C, 99%)	C_2*$C_6H_8N_2O_2$	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-9225-1.2	Ricinine (unlabeled)	$C_8H_8N_2O_2$	100 µg/mL in acetonitrile	1.2 mL
	ERT-054	Thiodiglycol (D_8, 98%)	$C_4H_2D_8O_2S$	1000 µg/mL in methanol	1.2 mL

Chemical Weapon Metabolite Standards

	Catalog No.	Compound	Formula	Concentration	Amount
	ERT-053	Thiodiglycol (unlabeled)	$C_4H_{10}O_2S$	1000 µg/mL in methanol	1.2 mL
NEW	ULM-9890-1.2	Thiodiglycol sulfone (unlabeled) ~70% WT in H_2O	$O_2S(CH_2CH_2OH)_2$	1000 µg/mL in methanol	1.2 mL
	ERT-054	Thiodiglycol (D_8, 98%)	$C_4H_2D_8O_2S$	1000 µg/mL in methanol	1.2 mL
	ERT-053	Thiodiglycol (unlabeled)	$C_4H_{10}O_2S$	1000 µg/mL in methanol	1.2 mL
NEW	ULM-9890-1.2	Thiodiglycol sulfone (unlabeled) ~70% WT in H_2O	$O_2S(CH_2CH_2OH)_2$	1000 µg/mL in methanol	1.2 mL
NEW	ULM-9889-1.2	Thiodiglycol sulfoxide (unlabeled)	$C_4H_{10}O_3S$	1000 µg/mL in methanol	1.2 mL
NEW	ULM-9888-1.2	1,4-Thioxane (unlabeled)	C_4H_8OS	1000 µg/mL in methanol	1.2 mL
NEW	ULM-9891-1.2	Triethanolamine (unlabeled)	$(HOCH_2CH_2)_3N$	1000 µg/mL in methanol	1.2 mL

Chemical Weapon Metabolite Standard Mixtures

	Catalog No.	Compound	Amount
NEW	ES-5547	Dialkyl Phosphate and Phosphorothioate Cocktail (D, 98%)	1.2 mL in methanol

Labeled	(ng/mL)
O,O-Dimethyl phosphate, potassium salt (dimethyl-D_6, 98%)	10,000
O,O-Diethyl phosphate, potassium salt (diethyl-D_{10}, 98%)	10,000
O,O-Dimethyl thiophosphate, potassium salt (dimethyl-D_6, 98%)	10,000
O,O-Diethyl thiophosphate, potassium salt (diethyl-D_{10}, 98%)	10,000
O,O-Dimethyl dithiophosphate, potassium salt (dimethyl-D_6, 98%)	10,000
O,O-Diethyl dithiophosphate, potassium salt (diethyl-D_{10}, 98%)	10,000

NEW	ES-5548	Dialkyl Phosphate and Phosphorothioate Cocktail	1.2 mL in methanol

Unlabeled	(ng/mL)
O,O-Dimethyl phosphate, potassium salt	10,000
O,O-Diethyl phosphate, potassium salt	10,000
O,O-Dimethyl thiophosphate, potassium salt	10,000
O,O-Diethyl thiophosphate, potassium salt	10,000
O,O-Dimethyl dithiophosphate, potassium salt	10,000
O,O-Diethyl dithiophosphate, potassium salt	10,000

NEW	ES-5562	HD Metabolites Native Standards Mixture	1.2 mL in methanol

Unlabeled	(µg/mL)
1,4-Dithiane	100
Thiodiglycol	100
1,4-Thioxane	100
Thiodiglycol sulfoxide	100
Thiodiglycol sulfone	100

Chemical Weapon Metabolite Standard Mixtures

	Catalog No.	Compound	Amount
NEW	ES-5563	Amines and Alcohol Native Standards Mixture	1.2 mL in methanol

Unlabeled	(µg/mL)
Triethanolamine	100
N-Methyldiethanolamine	100
N-Ethyldiethanolamine	100
Pinacolyl alcohol	100

NEW	ES-5564	Phosphonic Acid Native Standards Mixture	1.2 mL in methanol

Unlabeled	(µg/mL)
Methylphosphonic acid	100
Ethylphosphonic acid	100
1-Propylphosphonic acid	100
2-Propylphosphonic acid	100

NEW	ES-5565	Phosphonic Acid Esters Native Standards Mixture	1.2 mL in methanol

Unlabeled	(µg/mL)
Dimethyl methylphosphonate	100
Diethyl methylphosphonate	100
Diisopropyl methylphosphonate	100
Dipinacolyl methylphosphonate	100

NEW	ES-5566	Phosphonic Acid Half-Esters Native Standards Mixture	1.2 mL in methanol

Unlabeled	(µg/mL)
Methylphosphonic acid, monoethyl ester	100
Methylphosphonic acid, monoisopropyl ester	100
Methylphosphonic acid, mono-(1,2,2-trimethylpropyl) ester	100
Methylphosphonic acid, monocyclohexyl ester	100

Index

Index

Index

Index

Index

Index

Index

Index

Index

Index

Index

Index

Index

Index

Index

Index

Index

Index

Index

Index

Index

Index

Index

Index

ENV_CATALOG_2017 (1-11-17)