



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

General Information	1
A Few Words from the Environmental Products Team	5
Corporate Overview	6
What Is an Isotope?	7
Isotopic Enrichment	7
Cambridge Isotope Laboratories, Inc. Facilities	8
Ordering Information	10
Pricing Information and Terms of Sale	10
Shipping Information	11
Product Information	11
Environmental Food, Water, and Exposure Products Information	12
Packaging Information	13
Quality Standards	13
Regulatory and Labeling Information	14
Dioxin and Furan Individual Standards	15
Introduction	16
¹³ C ₁₂ -Labeled Chlorodioxin Standards	17
¹³ C ₆ - and ³⁷ Cl ₄ -Labeled Chlorodioxin Standards	17
Unlabeled Chlorodioxin Standards	18
¹³ C ₁₂ -Labeled Chlorofuran Standards	20
Unlabeled Chlorofuran Standards	22
Unlabeled Chlorofuran Standards for Elution Profiling (Qualitative Solutions)	24
Unlabeled Chlorodioxin and Chlorofuran Standard Kits for Elution Profiling	25
¹³ C ₁₂ -Labeled Bromodioxin Standards	26
Unlabeled Bromodioxin Standards	26
¹³ C ₁₂ -Labeled Bromofuran Standards	27
Unlabeled Bromofuran Standards	27
Unlabeled Mixed Bromo/Chlorodioxin Standards	28
Dioxin and Furan Method Standards, Standard Mixtures, and Reference Materials	29
Introduction	30
US EPA Method 1613 Standard Mixtures	31
2,3,7,8-TetraCDD Only Standard Mixture	34
Performance Evaluation Reference Materials	35
Perfluorokerosene (PFK)	35
US EPA Method 23 Standard Mixtures	36
US EPA Method 8290 Standard Mixtures	38
European Air Method EN-1948 Standard Mixtures	40
JIS Methods K0311 and K0312 Dioxin/Furan Standard Mixtures	42
US EPA Method 8280 Standard Mixtures	47
Dioxin and Furan Plus PCB Standard Mixtures	50
Non-2,3,7,8-Containing Dioxin and Furan Standard Mixtures	59
Dioxin and Furan Food / Feed / QQQ Standard Mixtures	60
Two-Column Dioxin and Furan Standard Mixtures	62
Isotope-Labeled Dioxin and Furan Standard Mixtures	64
Unlabeled Dioxin and Furan Standard Mixtures	66
Window Defining Mixtures	68
Column Performance Mixtures	69
Instrument Performance Mixture	69
Bromodioxin/Furan Calibration Solutions	70
Bromodioxin/Furan Standard Mixtures	71

Table of Contents

PCB Standards and Standard Mixtures	75
Introduction	76
Isotope-Labeled Individual PCB Standards	77
Unlabeled Individual PCB “CS” Standards	80
Unlabeled PCB Standards	81
US EPA Method 1668A/B/C Standard Mixtures	82
CEN Method EN-1948-4 PCB Standard Mixtures	86
JIS PCB Methods Standard Mixtures	89
WHO “Dioxin-Like” PCB Mixtures	94
“Non-Dioxin-Like” (Marker/Indicator) PCB Mixtures	102
WHO “Dioxin-Like” and “Non-Dioxin-Like” (Marker/Indicator) PCB Mixtures	108
Isotope-Labeled PCB Standard Mixtures	117
Unlabeled PCB Standard Mixtures	118
PCB Window Defining Mixture	120
Isotope-Labeled Mixed Bromo/Chlorobiphenyl Standards	120
Unlabeled Mixed Bromo/Chlorobiphenyl Standards	120
Mixed Bromo/Chlorobiphenyl Standard Mixtures	121
PCB Metabolite Standards	122
Unlabeled Methyl Sulfone PCB Standards	122
Flame-Retardant Standards and Standard Mixtures	123
Introduction	124
Isotope-Labeled Individual Brominated Diphenyl Ether (BDE) Standards	125
Unlabeled Individual Brominated Diphenyl Ether (BDE) Standards	126
US EPA Method 1614 Standard Mixtures	130
RoHS Brominated Diphenyl Ether (BDE) Standard Mixtures	132
Brominated Diphenyl Ether (BDE) Standard Mixtures	136
Brominated Diphenyl Ether (BDE) Technical Mixtures	140
Brominated Diphenyl Ether (BDE) Metabolite Standards	140
Tetrabromobisphenol A (TBBPA) and Tetrachlorobisphenol A Standards	140
Hexabromocyclododecane (HBCD) Standards	140
Dechlorane Standards	141
Polybrominated Biphenyl (PBB) Standards	141
Other Flame-Retardant Standards	141
Brominated Flame-Retardant (BFR) Standard Mixtures	142
Phosphorus Flame-Retardant (PFR) Standards	144
Phosphorus Flame-Retardant (PFR) Standard Mixtures	144
Polycyclic Aromatic Compound (PAC) Standards and Standard Mixtures	145
Introduction	146
¹³ C-Labeled Polycyclic Aromatic Hydrocarbon (PAH) Standards	147
Deuterium-Labeled Polycyclic Aromatic Hydrocarbon (PAH) Standards	149
Unlabeled Polycyclic Aromatic Hydrocarbon (PAH) Standards	150
¹³ C-Labeled Polycyclic Aromatic Hydrocarbon (PAH) Standard Mixtures	151
Deuterium-Labeled Polycyclic Aromatic Hydrocarbon (PAH) Standard Mixtures	152
Unlabeled Polycyclic Aromatic Hydrocarbon (PAH) Standard Mixtures	154
Alkyl Polycyclic Aromatic Hydrocarbon (PAH) Standards	156
Halogenated Polycyclic Aromatic Hydrocarbon (PAH) Standards	156
Nitro Polycyclic Aromatic Hydrocarbon (PAH) Standards	156
Benzo[a]Pyrene Metabolites	156
Hydroxy Polycyclic Aromatic Hydrocarbon (PAH) Standards	157
Isotope-Labeled Polychlorinated Naphthalene (PCN) Standards	160
Unlabeled Polychlorinated Naphthalene (PCN) Standards	160
Polychlorinated Naphthalene (PCN) Standard Mixtures	161
Halowax Technical Mixtures	162

Table of Contents

Priority Pollutant, Endocrine Disruptor, and Chemical Contaminant Standards	163
Introduction	164
Personal Care Product Standards	165
Sex and Steroidal Hormone Standards	166
Prescription and Nonprescription Drug Standards	169
Veterinary and Human Antibiotic Standards	170
Tobacco-Specific Nitrosamines and Other Tobacco-Related Standards	170
Food and Drinking Water Impurity Standards	171
Phthalate and Phthalate Metabolite Standards	172
Bisphenol Standards	174
Perfluorinated Compound Standards	174
Nonylphenol, Nonylphenol Ethoxylate, and Nonylphenol Carboxylate Standards	175
Chlorinated Paraffin Standards	175
Nitrosamine Standards	176
Halogenated and Substituted Benzene, Phenol, and Anisole Standards	177
Endocrine-Disrupting Compounds and Xenoestrogen Standards	179
Industrial Chemical Standards	184
Explosives Standards	185
<i>n</i> -Alkane Standards	186
Priority Pollutant Standards	187
Priority Pollutant Standard Mixtures	193
Introduction	194
Chlorobenzene and Chlorophenol Standard Mixtures	195
US EPA Method 1653A Standard Mixtures	196
US EPA Method 1653 Standard Mixtures	197
US EPA CLP DMC Standard Mixtures	198
US EPA Methods 1624/1625 Standard Mixtures	200
Human Exposure Analysis Standard Mixtures	202
Pesticides and Chemical Weapon Standards	207
Introduction	208
Chlorinated Cyclodiene Pesticide Standards	209
Organochlorine (OC) Pesticide and Metabolite Standards	210
Organophosphate (OP) Pesticide and Metabolite Standards	212
Neonicotinoid Insecticide and Metabolite Standards	213
Carbamate Pesticide and Metabolite Standards	214
Triazine Herbicide and Metabolite Standards	214
Pyrethroid Pesticide and Metabolite Standards	215
Toxaphene Standards	215
Individual Pesticide and Pesticide Metabolite Standards	216
Stockholm Convention POPs Pesticide Standard Mixtures	222
Toxaphene Standard Mixtures	226
Multiple Class Pesticide Standard Mixtures	227
Pesticide Standard Mixtures	228
Chemical Weapon Metabolite Standards	238
Chemical Weapon Metabolite Standard Mixtures	239
Index	241

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 ¹³C-labeled PAHs, PAH metabolites, and PAH standard mixtures
- Expanded offering of ¹³C-labeled and unlabeled PCNs and PCN mixtures
- Many new ¹³C-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 ¹³C-labeled and unlabeled cyclic methyl siloxanes
- Bisphenol S and other bisphenol analogs
- Expanded phthalate monoester offerings
- New brominated, chlorinated, and phosphate flame retardants
- ¹³C-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.

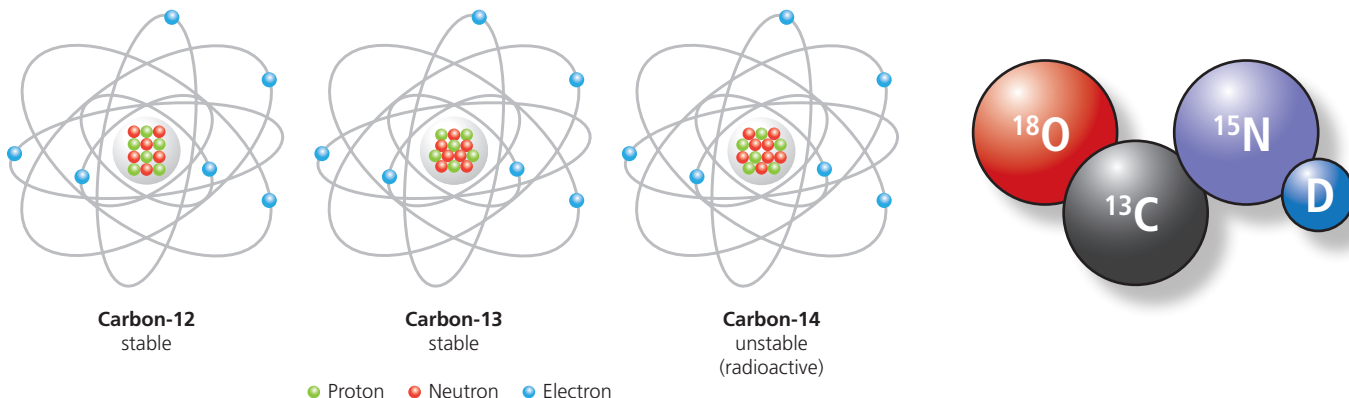
For more than 35 years, CIL has provided stable isotope-labeled standards for the analysis of organic contaminants using isotope dilution mass spectrometry (IDMS). The use of IDMS is widely accepted as an extremely accurate and robust analytical technique, yielding data of the highest quality. Through 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 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?

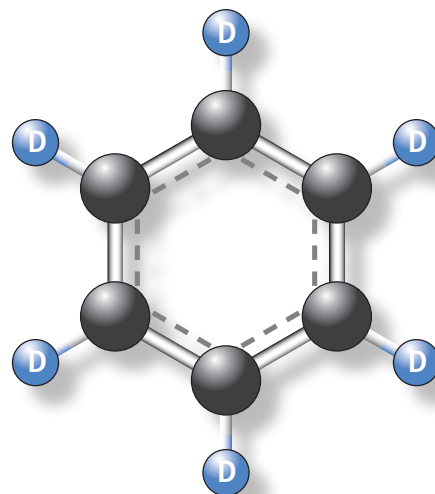
An isotope is any of two or more forms of a chemical element that has a different number of neutrons in the nucleus. There are 275 stable isotopes of the 81 nonradioactive elements, in

addition to over 800 radioactive isotopes. Every element has known isotopic forms. Isotopes of a single element possess almost identical chemical properties.



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.





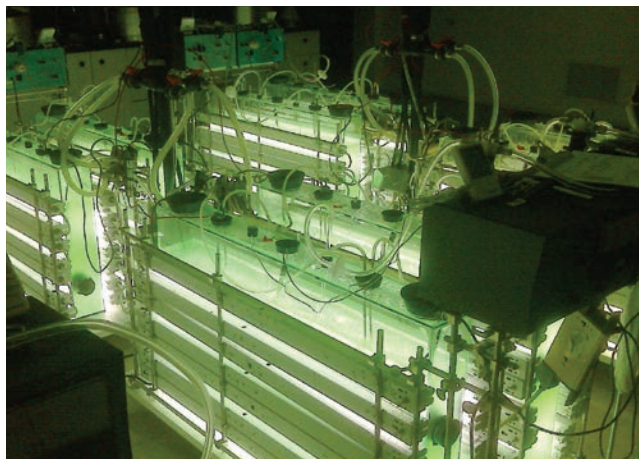
CIL Isotope Separations, LLC (CIS) Xenia, OH USA

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'Énergie 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 $\pm 2\%$ 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)

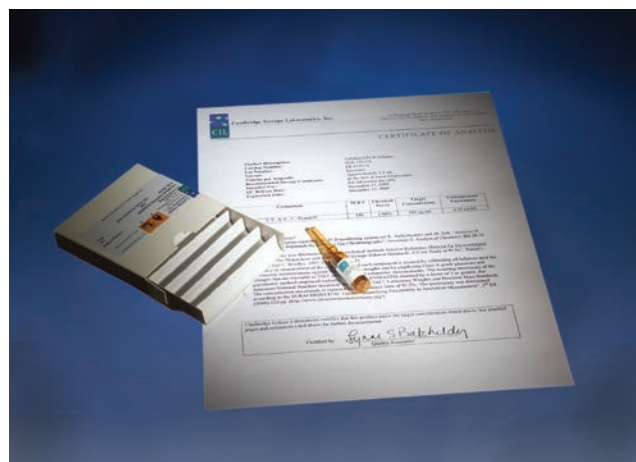
CHEMTREC is a registered trademark of American Chemistry Council, Inc.

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

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

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		
		
Explosing Bomb <ul style="list-style-type: none"> • Explosives • Self-reactives • Organic peroxides 	Corrosion <ul style="list-style-type: none"> • Skin corrosion/burns • Eye damage • Corrosive to metals 	Flame Over Circle <ul style="list-style-type: none"> • Oxidizing gases • Oxidizing liquids • Oxidizing solids
		
Gas Cylinder <ul style="list-style-type: none"> • Gases under pressure 	Environment <ul style="list-style-type: none"> • Aquatic toxicity 	Skull and Crossbones <ul style="list-style-type: none"> • Acute toxicity (fatal or toxic)
		
Exclamation Point <ul style="list-style-type: none"> • Irritant (eye and skin) • Skin sensitizer • Acute toxicity • Narcotic effects • Respiratory tract irritant • Hazardous to ozone layer (nonmandatory) 	Health Hazard <ul style="list-style-type: none"> • Carcinogen • Mutagenicity • Reproductive toxicity • Respiratory sensitizer • Target organ toxicity • Aspiration toxicity 	Flame <ul style="list-style-type: none"> • 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 ¹³C material.

Preparation of CIL/Cerilliant-certified solution standards is tightly controlled using a validated process to ensure accuracy and consistency. Our gravimetric approach (both analyte and solvent are added by weight) is performed using high precision 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 ¹³C 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%.

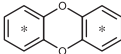
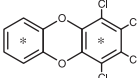
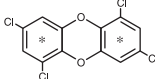
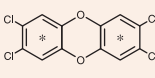
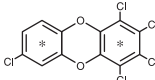
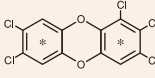
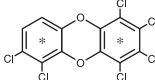
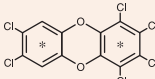
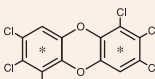
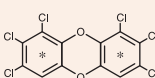
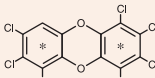
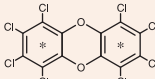
Unlabeled Chlorodioxin/Furan Standards for Elution Profiling

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 chromatograms 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.

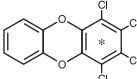
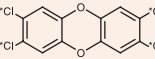
Brominated Dioxin and Furan Individual Standards

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.

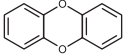
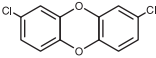
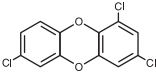
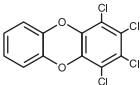
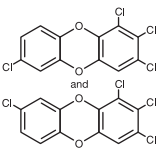
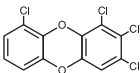
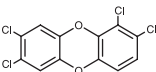
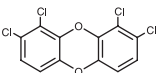
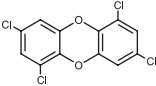
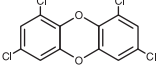
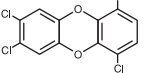
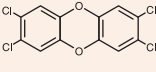
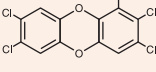
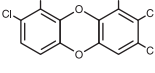
¹³C₁₂-Labeled Chlorodioxin Standards

Catalog No.	Compound	Structure	Concentration	Amount
CLM-1544-1.2	Dibenzo- <i>p</i> -dioxin (¹³ C ₁₂ , 99%)		50 ± 5 µg/mL in nonane	1.2 mL
ED-911 ED-911-1	1,2,3,4-Tetrachlorodibenzo- <i>p</i> -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- <i>p</i> -dioxin (¹³ C ₁₂ , 99%)		50 ± 5 µg/mL in nonane	1.2 mL
ED-900	2,3,7,8-Tetrachlorodibenzo- <i>p</i> -dioxin (¹³ C ₁₂ , 99%)		50 ± 2.5 µg/mL in nonane	1.2 mL
ED-4076	1,2,3,4,7-Pentachlorodibenzo- <i>p</i> -dioxin (¹³ C ₁₂ , 99%)		5 ± 0.5 µg/mL in nonane	1.2 mL
ED-955	1,2,3,7,8-Pentachlorodibenzo- <i>p</i> -dioxin (¹³ C ₁₂ , 99%)		50 ± 2.5 µg/mL in nonane	1.2 mL
ED-4077	1,2,3,4,6,7-Hexachlorodibenzo- <i>p</i> -dioxin (¹³ C ₁₂ , 99%)		5 ± 0.5 µg/mL in nonane	1.2 mL
ED-946	1,2,3,4,7,8-Hexachlorodibenzo- <i>p</i> -dioxin (¹³ C ₁₂ , 99%)		50 ± 2.5 µg/mL in nonane	1.2 mL
ED-966	1,2,3,6,7,8-Hexachlorodibenzo- <i>p</i> -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- <i>p</i> -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- <i>p</i> -dioxin (¹³ C ₁₂ , 99%)		50 ± 2.5 µg/mL in nonane	1.2 mL
ED-981	Octachlorodibenzo- <i>p</i> -dioxin (¹³ C ₁₂ , 99%)		10 ± 0.5 µg/mL in nonane	4 × 1.2 mL

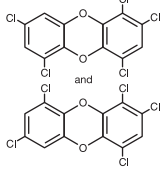
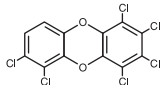
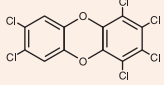
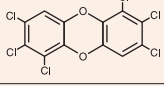
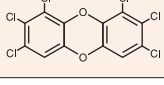
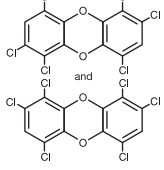
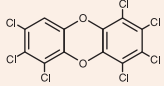
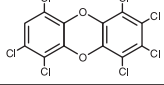
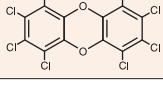
¹³C₆- and ³⁷Cl₄-Labeled Chlorodioxin Standards

Catalog No.	Compound	Structure	Concentration	Amount
ED-910	1,2,3,4-Tetrachlorodibenzo- <i>p</i> -dioxin (¹³ C ₆ , 99%)		50 ± 5 µg/mL in nonane	1.2 mL
ED-907	2,3,7,8-Tetrachlorodibenzo- <i>p</i> -dioxin (³⁷ Cl ₄ , 96%)		50 ± 5 µg/mL in nonane	1.2 mL

Unlabeled Chlorodioxin Standards

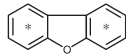
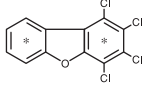
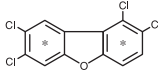
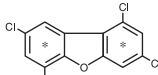
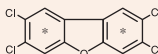
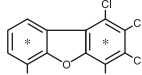
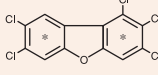
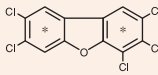
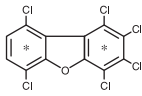
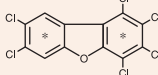
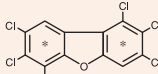
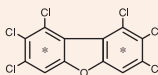
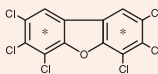
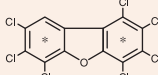
Catalog No.	Compound	Structure	Concentration	Amount
ULM-1711-1.2	Dibenzo- <i>p</i> -dioxin		50 ± 5 µg/mL in nonane	1.2 mL
ED-5568	2,8-Dichlorodibenzo- <i>p</i> -dioxin		50 ± 5 µg/mL in nonane	1.2 mL
ED-4090	1,3,7-Trichlorodibenzo- <i>p</i> -dioxin		50 ± 5 µg/mL in nonane	1.2 mL
ED-912	1,2,3,4-Tetrachlorodibenzo-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

Unlabeled Chlorodioxin Standards

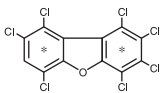
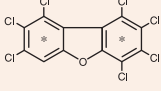
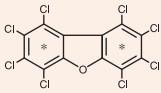
Catalog No.	Compound	Structure	Concentration	Amount
ED-927	1,2,4,6,8-Pentachlorodibenzo- <i>p</i> -dioxin/ 1,2,4,7,9-Pentachlorodibenzo- <i>p</i> -dioxin isomer pair		5 ± 0.5 µg/mL in nonane	1.2 mL
ED-932	1,2,3,4,6,7-Hexachlorodibenzo- <i>p</i> -dioxin		5 ± 0.5 µg/mL in nonane	1.2 mL
ED-961	1,2,3,4,7,8-Hexachlorodibenzo-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

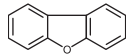
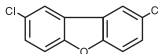
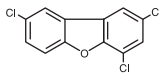
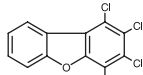
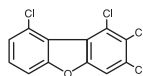
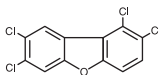
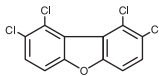
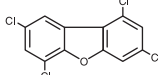
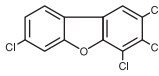
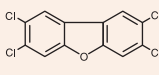
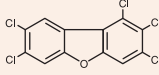
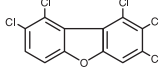
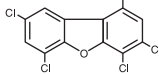
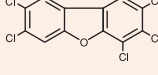
¹³C₁₂-Labeled Chlorofuran Standards

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

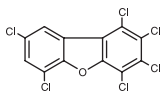
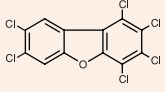
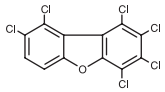
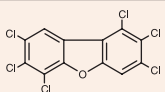
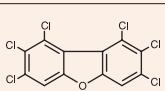
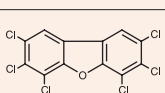
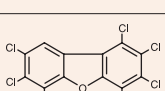
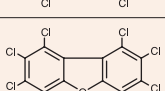
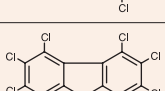
¹³C₁₂-Labeled Chlorofuran Standards

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

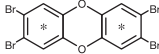
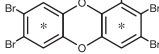
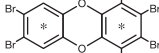
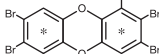
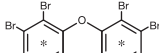
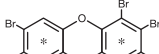
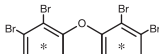
Catalog No.	Compound	Amount	Catalog No.	Compound	Amount
JR-D01-25	1,2,3,4-TetraCDD	0.2 mL	JR-D26-25	1,2,3,6,8-PentaCDD	0.2 mL
JR-D02-25	1,2,3,6-TetraCDD	0.2 mL	JR-D27-25	1,2,3,6,9-PentaCDD	0.2 mL
JR-D03-25	1,2,3,7-TetraCDD	0.2 mL	JR-D28-25	1,2,3,7,8-PentaCDD	0.2 mL
JR-D04-25	1,2,3,8-TetraCDD	0.2 mL	JR-D29-25	1,2,3,7,9-PentaCDD	0.2 mL
JR-D05-25	1,2,3,9-TetraCDD	0.2 mL	JR-D30-25	1,2,3,8,9-PentaCDD	0.2 mL
JR-D06-25	1,2,4,6-TetraCDD	0.2 mL	JR-D31-25	1,2,4,6,7-PentaCDD	0.2 mL
JR-D07-25	1,2,4,7-TetraCDD	0.2 mL	JR-D32-25	1,2,4,6,8-PentaCDD	0.2 mL
JR-D08-25	1,2,4,8-TetraCDD	0.2 mL	JR-D33-25	1,2,4,6,9-PentaCDD	0.2 mL
JR-D09-25	1,2,4,9-TetraCDD	0.2 mL	JR-D34-25	1,2,4,7,8-PentaCDD	0.2 mL
JR-D10-25	1,2,6,7-TetraCDD	0.2 mL	JR-D35-25	1,2,4,7,9-PentaCDD	0.2 mL
JR-D11-25	1,2,6,8-TetraCDD	0.2 mL	JR-D36-25	1,2,4,8,9-PentaCDD	0.2 mL
JR-D12-25	1,2,6,9-TetraCDD	0.2 mL	JR-D37-25	1,2,3,4,6,7-HexaCDD	0.2 mL
JR-D13-25	1,2,7,8-TetraCDD	0.2 mL	JR-D38-25	1,2,3,4,6,8-HexaCDD	0.2 mL
JR-D14-25	1,2,7,9-TetraCDD	0.2 mL	JR-D39-25	1,2,3,4,6,9-HexaCDD	0.2 mL
JR-D15-25	1,2,8,9-TetraCDD	0.2 mL	JR-D40-25	1,2,3,4,7,8-HexaCDD	0.2 mL
JR-D16-25	1,3,6,8-TetraCDD	0.2 mL	JR-D41-25	1,2,3,6,7,8-HexaCDD	0.2 mL
JR-D17-25	1,3,6,9-TetraCDD	0.2 mL	JR-D42-25	1,2,3,6,7,9-HexaCDD	0.2 mL
JR-D18-25	1,3,7,8-TetraCDD	0.2 mL	JR-D43-25	1,2,3,6,8,9-HexaCDD	0.2 mL
JR-D19-25	1,3,7,9-TetraCDD	0.2 mL	JR-D44-25	1,2,3,7,8,9-HexaCDD	0.2 mL
JR-D20-25	1,4,6,9-TetraCDD	0.2 mL	JR-D45-25	1,2,4,6,7,9-HexaCDD	0.2 mL
JR-D21-25	1,4,7,8-TetraCDD	0.2 mL	JR-D46-25	1,2,4,6,8,9-HexaCDD	0.2 mL
JR-D22-25	2,3,7,8-TetraCDD	0.2 mL	JR-D47-25	1,2,3,4,6,7,8-HeptaCDD	0.2 mL
JR-D23-25	1,2,3,4,6-PentaCDD	0.2 mL	JR-D48-25	1,2,3,4,6,7,9-HeptaCDD	0.2 mL
JR-D24-25	1,2,3,4,7-PentaCDD	0.2 mL	JR-D49-25	1,2,3,4,6,7,8,9-OctaCDD	0.2 mL
JR-D25-25	1,2,3,6,7-PentaCDD	0.2 mL			

Unlabeled Chlorodioxin and Chlorofuran Standard Kits for Elution Profiling

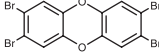
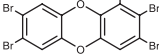
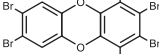
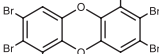
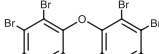
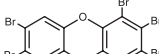
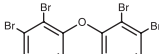
For convenience, CIL has bundled these standards by level of chlorination. Kits are available for tetra-through-hexa dioxins and tetra-through-hepta furans. A comprehensive kit containing all available standards is also available.

Catalog No.	Description	Contains	Amount
JR-TCDD-KIT	Comprehensive Tetrachlorodibenzo- <i>p</i> -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- <i>p</i> -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- <i>p</i> -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

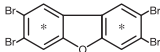
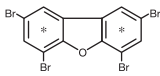
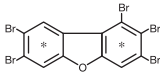
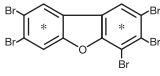
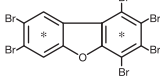
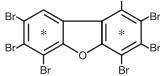
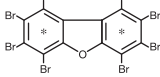
¹³C₁₂-Labeled Bromodioxin Standards

Catalog No.	Compound	Structure	Concentration	Amount
ED-1440-1.2	2,3,7,8-Tetrabromodibenzo- <i>p</i> -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- <i>p</i> -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- <i>p</i> -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- <i>p</i> -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- <i>p</i> -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- <i>p</i> -dioxin (¹³ C ₁₂ , 99%)		5 ± 0.5 µg/mL in 70% nonane/30% toluene	1.2 mL
ED-5089-1.2	Octabromodibenzo- <i>p</i> -dioxin (¹³ C ₁₂ , 99%)		5 ± 0.5 µg/mL in 70% nonane/30% toluene	1.2 mL

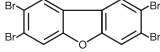
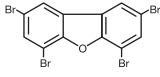
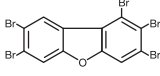
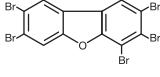
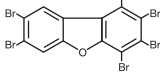
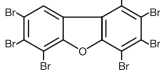
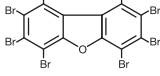
Unlabeled Bromodioxin Standards

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

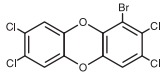
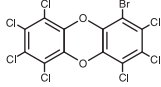
¹³C₁₂-Labeled Bromofuran Standards

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- <i>p</i> -dioxin		50 ± 0.5 µg/mL in <i>n</i> -nonane	1.2 mL
NEW EBC-2507-A-1.2	1-Bromo-2,3,4,6,7,8,9-heptachlorodibenzo- <i>p</i> -dioxin		5 ± 0.5 µg/mL in 70% nonane/30% toluene	1.2 mL



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 ¹³C-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 ¹³C-labeled “non-2,3,7,8-containing” congeners. These standard mixtures allow researchers to use all 17 ¹³C-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
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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

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

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

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/ μ L)
2,3,7,8-TetraCDD ($^{13}\text{C}_{12}$, 99%)	1000
1,2,3,7,8-PentaCDD ($^{13}\text{C}_{12}$, 99%)	1000
1,2,3,6,7,8-HexaCDD ($^{13}\text{C}_{12}$, 99%)	1000
1,2,3,4,6,7,8-HeptaCDD ($^{13}\text{C}_{12}$, 99%)	1000
OctaCDD ($^{13}\text{C}_{12}$, 99%)	2000
2,3,7,8-TetraCDF ($^{13}\text{C}_{12}$, 99%)	1000
1,2,3,7,8-PentaCDF ($^{13}\text{C}_{12}$, 99%)	1000
1,2,3,6,7,8-HexaCDF ($^{13}\text{C}_{12}$, 99%)	1000
1,2,3,4,6,7,8-HeptaCDF ($^{13}\text{C}_{12}$, 99%)	1000

EDF-4054	Method 23 Surrogate Standard Stock Solution	1.2 mL in nonane
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Labeled	(pg/ μ L)
2,3,7,8-TetraCDD ($^{37}\text{Cl}_4$, 96%)	1000
2,3,4,7,8-PentaCDF ($^{13}\text{C}_{12}$, 99%)	1000
1,2,3,4,7,8-HexaCDD ($^{13}\text{C}_{12}$, 99%)	1000
1,2,3,4,7,8-HexaCDF ($^{13}\text{C}_{12}$, 99%)	1000
1,2,3,4,7,8,9-HeptaCDF ($^{13}\text{C}_{12}$, 99%)	1000

EDF-4055	Method 23 Recovery Standard Stock Solution	1.2 mL in nonane
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Labeled	(pg/ μ L)
1,2,3,4-TetraCDD ($^{13}\text{C}_{12}$, 99%)	500
1,2,3,7,8,9-HexaCDD ($^{13}\text{C}_{12}$, 99%)	500

EDF-5189	Method 23 Alternate Recovery Standard Stock Solution	1.2 mL in nonane
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Labeled	(pg/ μ L)
1,2,3,7,8,9-HexaCDF ($^{13}\text{C}_{12}$, 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/ μ L)
2,3,7,8-TetraCDD ($^{13}\text{C}_{12}$, 99%)	100
2,3,7,8-TetraCDF ($^{13}\text{C}_{12}$, 99%)	100
1,2,3,7,8-PentaCDD ($^{13}\text{C}_{12}$, 99%)	100
1,2,3,7,8-PentaCDF ($^{13}\text{C}_{12}$, 99%)	100
1,2,3,6,7,8-HexaCDD ($^{13}\text{C}_{12}$, 99%)	250
1,2,3,4,7,8-HexaCDF ($^{13}\text{C}_{12}$, 99%)	250
1,2,3,4,6,7,8-HeptaCDD ($^{13}\text{C}_{12}$, 99%)	250
1,2,3,4,6,7,8-HeptaCDF ($^{13}\text{C}_{12}$, 99%)	250
OctaCDD ($^{13}\text{C}_{12}$, 99%)	500

ED-5004	Method 8290 Recovery Standard Solution	1.2 mL in nonane
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Labeled	(pg/ μ L)
1,2,3,4-TetraCDD ($^{13}\text{C}_{12}$, 99%)	100
1,2,3,7,8,9-HexaCDD ($^{13}\text{C}_{12}$, 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/ μ L)	EDF-5008-50 (pg/ μ L)
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
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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
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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
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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
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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
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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
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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
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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
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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
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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
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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 ($^{13}\text{C}_{12}$, 99%)	70	50	10	1000
2,3,3',5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	111	50	10	1000
2,2',3,4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	138	50	10	1000
2,2',3,3',5,5',6-HeptaCB ($^{13}\text{C}_{12}$, 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 ($^{13}\text{C}_{12}$, 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

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/ μ L)
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
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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
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NEW ES-5321-200X-1.2	Multi-Analyte Recovery Spiking Standard	1.2 mL in nonane
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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
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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

	EDF-5555 (pg/μL)	EDF-5555-10X (pg/μL)
Labeled		
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

	EDF-5556 (pg/μL)	EDF-5556-10X (pg/μL)
Labeled		
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

	EDF-5574 (pg/μL)	EDF-5574-10X (pg/μL)
Labeled		
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
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Unlabeled	(pg/μL)	Unlabeled	(pg/μL)
2,3,7,8-TetraCDD	500	1,2,3,4,6,7,8-HeptaCDD	1000
2,3,7,8-TetraCDF	500	1,2,3,4,6,7,8-HeptaCDF	1000
1,2,3,7,8-PentaCDD	500	1,2,3,4,7,8,9-HeptaCDF	1000
1,2,3,7,8-PentaCDF	500	OctaCDD	2500
2,3,4,7,8-PentaCDF	500	OctaCDF	2500
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		

*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 ($^{13}\text{C}_{12}$, 99%)	50
1,2,3,7,8-PentaCDF ($^{13}\text{C}_{12}$, 99%)	50
2,3,4,7,8-PentaCDF ($^{13}\text{C}_{12}$, 99%)	50
1,2,3,4,7,8-HexaCDF ($^{13}\text{C}_{12}$, 99%)	50
1,2,3,6,7,8-HexaCDF ($^{13}\text{C}_{12}$, 99%)	50
2,3,4,6,7,8-HexaCDF ($^{13}\text{C}_{12}$, 99%)	50
1,2,3,7,8,9-HexaCDF ($^{13}\text{C}_{12}$, 99%)	50
1,2,3,4,6,7,8-HeptaCDF ($^{13}\text{C}_{12}$, 99%)	50
1,2,3,4,7,8,9-HeptaCDF ($^{13}\text{C}_{12}$, 99%)	50
OctaCDF ($^{13}\text{C}_{12}$, 99%)	100
2,3,7,8-TetraCDD ($^{13}\text{C}_{12}$, 99%)	50
1,2,3,7,8-PentaCDD ($^{13}\text{C}_{12}$, 99%)	50
1,2,3,4,7,8-HexaCDD ($^{13}\text{C}_{12}$, 99%)	50
1,2,3,6,7,8-HexaCDD ($^{13}\text{C}_{12}$, 99%)	50
1,2,3,7,8,9-HexaCDD ($^{13}\text{C}_{12}$, 99%)	50
1,2,3,4,6,7,8-HeptaCDD ($^{13}\text{C}_{12}$, 99%)	50
OctaCDD ($^{13}\text{C}_{12}$, 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 ($^{13}\text{C}_{12}$, 99%)	50	1000
1,2,3,4,6-PentaCDF ($^{13}\text{C}_{12}$, 99%)	50	1000
1,2,3,4,6,7-HexaCDD ($^{13}\text{C}_{12}$, 99%)	50	1000
1,2,3,4,6,8,9-HeptaCDF ($^{13}\text{C}_{12}$, 99%)	50	1000

NEW ED-5432	Two-Column Dioxin and Furan Sampling Spike	1.2 mL in nonane
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Labeled	(ng/mL)
1,2,3,4-TetraCDD ($^{13}\text{C}_{12}$, 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 ($^{13}\text{C}_{12}$, 99%)	2000
2,3,7,8-TetraCDF ($^{13}\text{C}_{12}$, 99%)	2000
1,2,3,7,8-PentaCDD ($^{13}\text{C}_{12}$, 99%)	2000
2,3,4,7,8-PentaCDF ($^{13}\text{C}_{12}$, 99%)	2000
1,2,3,4,7,8-HexaCDD ($^{13}\text{C}_{12}$, 99%)	2000
1,2,3,4,7,8-HexaCDF ($^{13}\text{C}_{12}$, 99%)	2000
1,2,3,6,7,8-HexaCDD ($^{13}\text{C}_{12}$, 99%)	2000
1,2,3,6,7,8-HexaCDF ($^{13}\text{C}_{12}$, 99%)	2000
2,3,4,6,7,8-HexaCDF ($^{13}\text{C}_{12}$, 99%)	2000
1,2,3,4,6,7,8-HeptaCDD ($^{13}\text{C}_{12}$, 99%)	2000
1,2,3,4,6,7,8-HeptaCDF ($^{13}\text{C}_{12}$, 99%)	2000
OctaCDD ($^{13}\text{C}_{12}$, 99%)	4000
OctaCDF ($^{13}\text{C}_{12}$, 99%)	4000

EDF-957	Carbon-13 Quantifying Cocktail (2,3,7,8-PCDD/PCDF isomers)	Set of 3 × 0.4 mL in nonane
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Labeled	(ng/mL)
2,3,7,8-TetraCDD ($^{13}\text{C}_{12}$, 99%)	1000
2,3,7,8-TetraCDF ($^{13}\text{C}_{12}$, 99%)	1000
1,2,3,7,8-PentaCDD ($^{13}\text{C}_{12}$, 99%)	1000
1,2,3,7,8-PentaCDF ($^{13}\text{C}_{12}$, 99%)	1000
1,2,3,6,7,8-HexaCDD ($^{13}\text{C}_{12}$, 99%)	1000
1,2,3,4,7,8-HexaCDF ($^{13}\text{C}_{12}$, 99%)	1000
1,2,3,4,6,7,8-HeptaCDD ($^{13}\text{C}_{12}$, 99%)	1000
1,2,3,4,6,7,8-HeptaCDF ($^{13}\text{C}_{12}$, 99%)	1000
OctaCDD ($^{13}\text{C}_{12}$, 99%)	1000
OctaCDF ($^{13}\text{C}_{12}$, 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
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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
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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
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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
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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
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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
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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
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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 ($^{13}\text{C}_{12}$, 99%)	50
1,2,3,7,8-PentaBDD ($^{13}\text{C}_{12}$, 99%)	100
1,2,3,4,7,8-HexaBDD ($^{13}\text{C}_{12}$, 99%)	375
1,2,3,6,7,8-HexaBDD ($^{13}\text{C}_{12}$, 99%)	375
OctaBDD ($^{13}\text{C}_{12}$, 99%)	1125
2,3,7,8-TetraBDF ($^{13}\text{C}_{12}$, 99%)	200
2,3,4,7,8-PentaBDF ($^{13}\text{C}_{12}$, 99%)	200
1,2,3,4,7,8-HexaBDF ($^{13}\text{C}_{12}$, 99%)	375
1,2,3,4,6,7,8-HeptaBDF ($^{13}\text{C}_{12}$, 99%)	500
OctaBDF ($^{13}\text{C}_{12}$, 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 ($^{13}\text{C}_{12}$, 99%)	500	2000
1,2,3,7,8-PentaBDF ($^{13}\text{C}_{12}$, 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 ($^{13}\text{C}_{12}$, 99%)	200	800

Bromodioxin/Furan Standard Mixtures

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

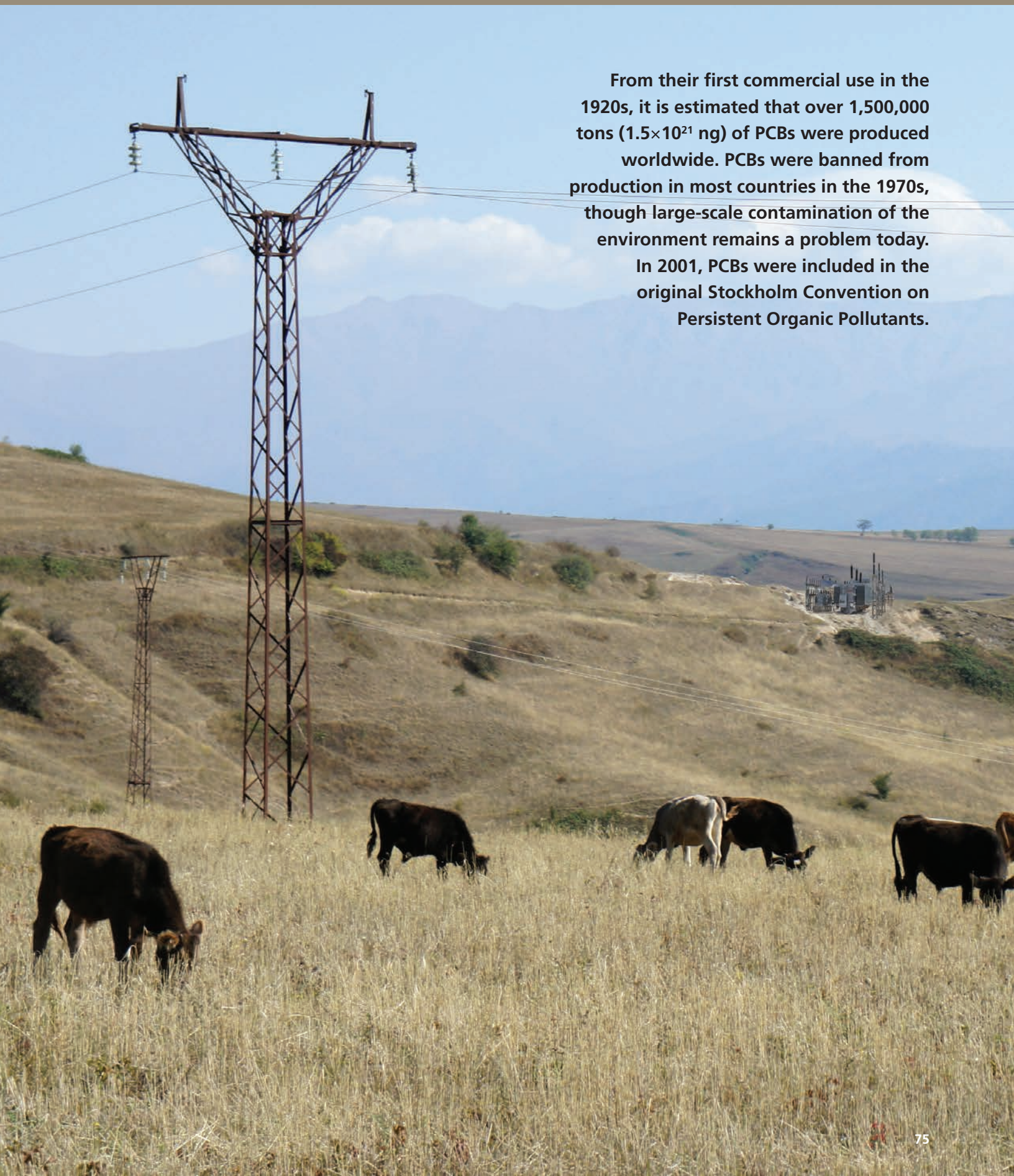
Labeled	(ng/mL)
2,3,7,8-TetraBDD (¹³ C ₁₂ , 99%)	200
1,2,3,6,7,8-HexaBDD (¹³ C ₁₂ , 99%)	50
1,2,3,7,8,9-HexaBDD (¹³ C ₁₂ , 99%)	150

EDF-5059	Polybrominated Dioxin and Furan Mixture	1.2 mL in nonane
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Unlabeled	(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

PCB Standards and Standard Mixtures

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 isoctane 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 ¹³C-labeled PCB standards to meet the growing needs of researchers utilizing isotope dilution mass spectrometry (IDMS). All ¹³C-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 ¹³C-non-ortho DL-PCBs, native content, other PCB congeners and PCDD/Fs.

High-Purity PCB Standards

Chemical Identity: Unambiguous identity by GC-MS, ¹H-NMR, ¹³C-NMR, and MP determination

Isotopic Enrichment: 99% by GC-MS

Chemical Purity: >98% by GC-MS, GC-ECD, and ¹H-NMR

- *Native Content: <0.1% by GC-MS SI*
- *¹³C-non-ortho DL-PCBs: <0.05% by GC-ECD vs. cal-curve, or HRGC-MS*
- *17 (2,3,7,8) containing PCDDIFs: <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"

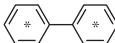
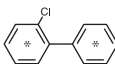
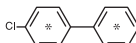
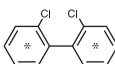
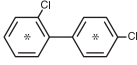
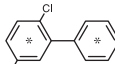
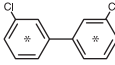
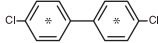
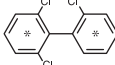
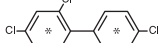
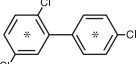
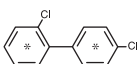
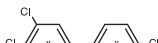
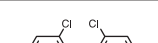
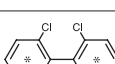
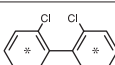
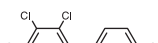
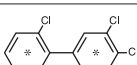
Comprehensive Native PCB Mixtures

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

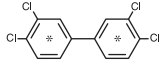
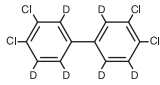
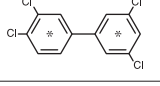
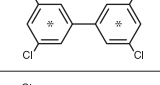
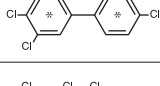
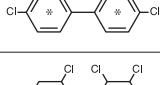
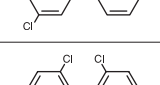
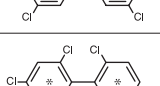
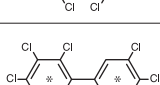
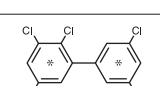
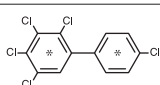
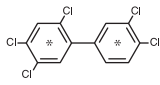
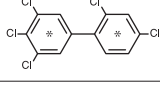
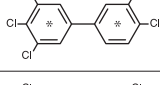
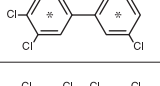
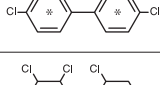

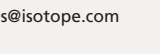
CIL offers a selection of labeled and unlabeled mixed halogenated biphenyl standards and standard mixtures. While very limited research on these compounds has been done to date, they have been identified in environmental matrices and warrant further investigation.

Isotope-Labeled Individual PCB Standards

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

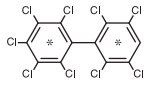
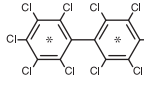
M = marker PCB DL = dioxin-like PCB

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 ($^{13}\text{C}_{12}$, 99%)	141		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
<i>M</i> EC-1406-3 EC-1406-1.2	2,2',4,4',5,5'-Hexachlorobiphenyl ($^{13}\text{C}_{12}$, 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 ($^{13}\text{C}_{12}$, 99%)	155		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
<i>DL</i> EC-1422-3 EC-1422-1.2	2,3,3',4,4',5-Hexachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	156		40 ± 2 µg/mL in nonane *high purity	3 mL 1.2 mL
<i>DL</i> EC-4051-3 EC-4051-1.2	2,3,3',4,4',5'-Hexachlorobiphenyl ($^{13}\text{C}_{12}$, 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 ($^{13}\text{C}_{12}$, 99%)	159		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
<i>DL</i> EC-4050-3 EC-4050-1.2	2,3',4,4',5,5'-Hexachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	167		40 ± 2 µg/mL in nonane *high purity	3 mL 1.2 mL
<i>DL</i> EC-1416-3 EC-1416-1.2	3,3',4,4',5,5'-Hexachlorobiphenyl ($^{13}\text{C}_{12}$, 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 ($^{13}\text{C}_{12}$, 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 ($^{13}\text{C}_{12}$, 99%)	178		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
<i>M</i> EC-1407-3 EC-1407-1.2	2,2',3,4,4',5,5'-Heptachlorobiphenyl ($^{13}\text{C}_{12}$, 99%)	180		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
<i>NEW</i> EC-5471-3 <i>NEW</i> EC-5471-1.2	2,2',3,4,4',5,6'-Heptachlorobiphenyl ($^{13}\text{C}_{12}$, 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 ($^{13}\text{C}_{12}$, 99%)	188		40 ± 2 µg/mL in nonane	3 mL 1.2 mL
<i>DL</i> EC-1409-3 EC-1409-1.2	2,3,3',4,4',5,5'-Heptachlorobiphenyl ($^{13}\text{C}_{12}$, 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 ($^{13}\text{C}_{12}$, 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 ($^{13}\text{C}_{12}$, 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 ($^{13}\text{C}_{12}$, 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 ($^{13}\text{C}_{12}$, 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',4,4',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
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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
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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',4,4',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
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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 ($^{13}\text{C}_{12}$, 99%)	60	100	10
3,3',4,5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	127	100	10
2,3,3',4,5,5'-HexaCB ($^{13}\text{C}_{12}$, 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 ($^{13}\text{C}_{12}$, 99%)	81	100	10
3,3',4,4'-TetraCB ($^{13}\text{C}_{12}$, 99%)	77	100	10
3,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	126	100	10
3,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	169	100	10
2,3,3',4,4'-PentaCB ($^{13}\text{C}_{12}$, 99%)	105	100	10
2,3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	114	100	10
2,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	118	100	10
2',3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	123	100	10
2,3,3',4,4',5-HexaCB ($^{13}\text{C}_{12}$, 99%)	156	100	10
2,3,3',4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	157	100	10
2,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	167	100	10
2,3,3',4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 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 ($^{13}\text{C}_{12}$, 99%)	28	1000	100
2,2',5,5'-TetraCB ($^{13}\text{C}_{12}$, 99%)	52	1000	100
2,2',4,5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	101	1000	100
2,2',3,4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	138	1000	100
2,2',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	153	1000	100
2,2',3,4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	180	1000	100

EC-5371	EN-1948-4 PCB Recovery Standard	1.2 mL in nonane
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Labeled	IUPAC	(ng/mL)
2,3',4',5-TetraCB ($^{13}\text{C}_{12}$, 99%)	70	100
2,3,3',5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	111	100
2,2',3,3',4,4',5-HeptaCB ($^{13}\text{C}_{12}$, 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 ($^{13}\text{C}_{12}$, 99%)	81	50
3,3',4,4'-TetraCB ($^{13}\text{C}_{12}$, 99%)	77	50
2',3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	123	50
2,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	118	100
2,3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	114	50
2,3,3',4,4'-PentaCB ($^{13}\text{C}_{12}$, 99%)	105	100
3,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	126	50
2,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	167	50
2,3,3',4,4',5-HexaCB ($^{13}\text{C}_{12}$, 99%)	156	100
2,3,3',4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	157	50
3,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	169	50
2,3,3',4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 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 ($^{13}\text{C}_{12}$, 99%)	70	50	1000
2,3,3',5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	111	50	1000
2,2',3,4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	138	50	1000
2,2',3,3',4,4',5-HeptaCB ($^{13}\text{C}_{12}$, 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 ($^{13}\text{C}_{12}$, 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'-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
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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 ($^{13}\text{C}_{12}$, 99%)	77	5000
3,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	126	5000
3,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	169	5000

EC-4187	Coplanar PCB Mixture	3 mL in nonane
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Labeled	IUPAC	(ng/mL)
3,3',4,4'-TetraCB ($^{13}\text{C}_{12}$, 99%)	77	1000
3,4,4',5-TetraCB ($^{13}\text{C}_{12}$, 99%)	81	1000
3,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	126	1000
3,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	169	1000

EC-4188	Mono-Ortho PCB Mixture – *High Purity	3 mL in nonane
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Labeled	IUPAC	(ng/mL)
2,3,3',4,4'-PentaCB ($^{13}\text{C}_{12}$, 99%)	105	1000
2,3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	114	1000
2,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	118	1000
2',3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	123	1000
2,3,3',4,4',5-HexaCB ($^{13}\text{C}_{12}$, 99%)	156	1000
2,3,3',4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	157	1000
2,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	167	1000
2,3,3',4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	189	1000

EC-4938	PCB Mixture-A	3 mL in nonane
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Labeled	IUPAC	(ng/mL)
3,3',4,4'-TetraCB ($^{13}\text{C}_{12}$, 99%)	77	1000
3,4,4',5-TetraCB ($^{13}\text{C}_{12}$, 99%)	81	1000
2',3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	123	1000
3,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	126	1000
3,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	169	1000
2,2',3,4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	180	1000

WHO "Dioxin-Like" PCB Mixtures

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

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 isoctane
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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 isoctane
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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 isoctane
EC-4987/100	Mono-Ortho Native PCB Solution	100 µL in isoctane

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/isoctane
EC-5414-CS1	Mono-Deca Plus Predominant PCB Calibration Solution [CS1]	0.2 mL in nonane/isoctane
EC-5414-CS2	Mono-Deca Plus Predominant PCB Calibration Solution [CS2]	0.2 mL in nonane/isoctane
EC-5414-CS3	Mono-Deca Plus Predominant PCB Calibration Solution [CS3]	0.2 mL in nonane/isoctane
EC-5414-CS4	Mono-Deca Plus Predominant PCB Calibration Solution [CS4]	0.2 mL in nonane/isoctane
EC-5414-CS5	Mono-Deca Plus Predominant PCB Calibration Solution [CS5]	0.2 mL in nonane/isoctane

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 ($^{13}\text{C}_{12}$, 99%)	3	2000	2000
2,4'-DiCB ($^{13}\text{C}_{12}$, 99%)	8	2000	2000
2,4,4'-TriCB ($^{13}\text{C}_{12}$, 99%)	28	2000	1000
2,2',5,5'-TetraCB ($^{13}\text{C}_{12}$, 99%)	52	2000	1000
2,2',4,5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	101	2000	1000
2,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	118	2000	1000
2,3,4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	114	2000	1000
2,2',3,4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	138	2000	1000
2,2',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	153	2000	1000
2,2',3,4,4',5,5'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	180	2000	1000
2,2',3,3',4,4',5,5'-OctaCB ($^{13}\text{C}_{12}$, 99%)	194	2000	2000
2,2',3,3',4,4',5,5',6-NonaCB ($^{13}\text{C}_{12}$, 99%)	206	2000	2000
DecaCB ($^{13}\text{C}_{12}$, 99%)	209	2000	2000

EC-5415	Mono-Deca Plus Predominant PCB Syringe Spike	1.2 mL in nonane
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Labeled	IUPAC	(ng/mL)
2,4',6-TriCB ($^{13}\text{C}_{12}$, 99%)	32	2000
2,3',4',5-TetraCB ($^{13}\text{C}_{12}$, 99%)	70	2000
3,3',4,5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	127	2000
2,2',3,3',4,4'-HexaCB ($^{13}\text{C}_{12}$, 99%)	128	2000
2,2',3,3',4,4',5-HeptaCB ($^{13}\text{C}_{12}$, 99%)	170	2000

EC-5412	Native Mono-Deca Plus Predominant Spike PCBs	1.2 mL in isooctane
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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/isoctane
NEW EC-5448-CS0.02	HRMS Rapid PCB Screening Calibration Solution [CS0.02]	0.2 mL in nonane/isoctane
NEW EC-5448-CS0.05	HRMS Rapid PCB Screening Calibration Solution [CS0.05]	0.2 mL in nonane/isoctane
NEW EC-5448-CS0.1	HRMS Rapid PCB Screening Calibration Solution [CS0.1]	0.2 mL in nonane/isoctane
NEW EC-5448-CS0.5	HRMS Rapid PCB Screening Calibration Solution [CS0.5]	0.2 mL in nonane/isoctane
EC-5448	Rapid PCB Screening Calibration Solutions [CS1-CS4]	Set of 4 × 0.2 mL in nonane/isoctane
EC-5448-CS1	Rapid PCB Screening Calibration Solution [CS1]	0.2 mL in nonane/isoctane
EC-5448-CS2	Rapid PCB Screening Calibration Solution [CS2]	0.2 mL in nonane/isoctane
EC-5448-CS3	Rapid PCB Screening Calibration Solution [CS3]	0.2 mL in nonane/isoctane
EC-5448-CS4	Rapid PCB Screening Calibration Solution [CS4]	0.2 mL in nonane/isoctane

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
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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
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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
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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
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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
<i>NEW</i> 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
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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

<i>NEW</i> EC-5502	UNEP PCB Working Solution 1	3 mL in isooctane
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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/isoctane
NEW EC-5518-CS1	Comprehensive PCB Calibration Solution [CS1]	0.2 mL in nonane/isoctane
NEW EC-5518-CS2	Comprehensive PCB Calibration Solution [CS2]	0.2 mL in nonane/isoctane
NEW EC-5518-CS3	Comprehensive PCB Calibration Solution [CS3]	0.2 mL in nonane/isoctane
NEW EC-5518-CS4	Comprehensive PCB Calibration Solution [CS4]	0.2 mL in nonane/isoctane
NEW EC-5518-CS5	Comprehensive PCB Calibration Solution [CS5]	0.2 mL in nonane/isoctane
NEW EC-5518-CS6	Comprehensive PCB Calibration Solution [CS6]	0.2 mL in nonane/isoctane

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',4,4',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
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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
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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 isoootane

Unlabeled	IUPAC	(ng/mL)	Unlabeled	IUPAC	(ng/mL)
2-MonoCB	1	2000	2,2',4,6,6'-PentaCB	104	1000
4-MonoCB	3	2000	2,3,3',4,4'-PentaCB	105	1000
2,2'-DiCB	4	2000	2,3,3',4',6-PentaCB	110	1000
2,4'-DiCB	8	2000	2,3,3',5,5'-PentaCB	111	1000
2,5-DiCB	9	2000	2,3,4,4',5-PentaCB	114	1000
2,6-DiCB	10	2000	2,3',4,4',5-PentaCB	118	1000
3,3'-DiCB	11	2000	2',3,4,4',5-PentaCB	123	1000
3,4-DiCB	12	2000	3,3',4,4',5-PentaCB	126	1000
4,4'-DiCB	15	2000	2,2',3,4,4',5'-HexaCB	138	1000
2,2',5-TriCB	18	1000	2,2',3,4',5',6-HexaCB	149	1000
2,2',6-TriCB	19	1000	2,2',4,4',5,5'-HexaCB	153	1000
2,4,4'-TriCB	28	1000	2,2',4,4',6,6'-HexaCB	155	1000
2,4',5-TriCB	31	1000	2,3,3',4,4',5-HexaCB	156	1000
2',3,4-TriCB	33	1000	2,3,3',4,4',5'-HexaCB	157	1000
3,3',4-TriCB	35	1000	2,3,3',4',5,5'-HexaCB	162	1000
3,4,4'-TriCB	37	1000	2,3',4,4',5,5'-HexaCB	167	1000
3,4,5-TriCB	38	1000	3,3',4,4',5,5'-HexaCB	169	1000
2,2',3,5'-TetraCB	44	1000	2,2',3,3',4,4',5-HeptaCB	170	1000
2,2',4,5'-TetraCB	49	1000	2,2',3,3',4,5,6'-HeptaCB	174	1000
2,2',5,5'-TetraCB	52	1000	2,2',3,3',5,5',6-HeptaCB	178	1000
2,2',6,6'-TetraCB	54	1000	2,2',3,4,4',5,5'-HeptaCB	180	1000
2,3,3',5-TetraCB	57	1000	2,2',3,4',5,5',6-HeptaCB	187	1000
2,3',4,4'-TetraCB	66	1000	2,2',3,4',5,6,6'-HeptaCB	188	1000
2,3',4',5-TetraCB	70	1000	2,3,3',4,4',5,5'-HeptaCB	189	1000
2,4,4',5-TetraCB	74	1000	2,2',3,3',4,4',5,5'-OctaCB	194	1000
3,3',4,4'-TetraCB	77	1000	2,2',3,3',4,4',5,6-OctaCB	195	1000
3,3',4,5-TetraCB	78	1000	2,2',3,3',4,5,6,6'-OctaCB	200	1000
3,3',4,5'-TetraCB	79	1000	2,2',3,3',5,5',6,6'-OctaCB	202	1000
3,4,4',5-TetraCB	81	1000	2,2',3,4,4',5,5',6-OctaCB	203	1000
2,2',3,4,5'-PentaCB	87	1000	2,3,3',4,4',5,5',6-OctaCB	205	1000
2,2',3,5',6-PentaCB	95	1000	2,2',3,3',4,4',5,5',6-NonaCB	206	1000
2,2',4,4',5-PentaCB	99	1000	2,2',3,3',4,5,5',6,6'-NonaCB	208	1000
2,2',4,5,5'-PentaCB	101	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						
<i>All concentrations are in ng/mL (ppb)</i>								
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
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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
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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 ($^{13}\text{C}_{12}$, 99%)	70	100	1000
2,3,3',5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	111	100	1000
2,2',3,4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	138	100	1000

EC-5163	PCB Mixture (PCB-70/111/138/1 70)	1.2 mL in nonane
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Labeled	IUPAC	(ng/mL)
2,3',4',5-TetraCB ($^{13}\text{C}_{12}$, 99%)	70	1000
2,3,3',5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	111	1000
2,2',3,4,4',5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	138	1000
2,2',3,3',4,4',5-HeptaCB ($^{13}\text{C}_{12}$, 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 ($^{13}\text{C}_{12}$, 99%)	15	100	1000
2,3',4',5-TetraCB ($^{13}\text{C}_{12}$, 99%)	70	100	1000

NEW EC-5523	PCB Recovery Standard (PCB-9, 118, 188)	1.2 mL in nonane
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Labeled	IUPAC	(ng/mL)
2,5-DiCB ($^{13}\text{C}_{12}$, 99%)	9	12,500
2,3',4,4',5-PentaCB ($^{13}\text{C}_{12}$, 99%)	118	12,500
2,2',3,4',5,6,6'-HeptaCB ($^{13}\text{C}_{12}$, 99%)	188	12,500

NEW ES-5474	CDC PCB Recovery Standard for OH-PAHs	1 mL in toluene
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Labeled	IUPAC	(ng/mL)
2,4,4'-TriCB ($^{13}\text{C}_{12}$, 99%)	28	200
2,3,3',4,4'-PentaCB ($^{13}\text{C}_{12}$, 99%)	105	200
2,2',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	153	200
2,3',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	167	200

EC-4060	PCB Mixture	1.2 mL in nonane
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Labeled	IUPAC	(ng/mL)
3,3',4,4'-TetraCB ($^{13}\text{C}_{12}$, 99%)	77	10,000
2,2',4,5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%)	101	10,000
2,2',3,4,5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%)	141	10,000
2,2',3,3',5,5',6-HeptaCB ($^{13}\text{C}_{12}$, 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)	Unlabeled	IUPAC	(ng/mL)
2-MonoCB	1	2000	2,2',4,4',5-PentaCB	99	1000
4-MonoCB	3	2000	2,2',4,6,6'-PentaCB	104	1000
2,4'-DiCB	8	2000	2,3,4,4',5-PentaCB	114	1000
2,5-DiCB	9	2000	2,3',4,4',5-PentaCB	118	1000
2,6-DiCB	10	2000	2',3,4,4',5-PentaCB	123	1000
3,4-DiCB	12	2000	3,3',4,4',5-PentaCB	126	1000
4,4'-DiCB	15	2000	2,2',4,4',5,5'-HexaCB	153	1000
2,2',5-TriCB	18	1000	2,2',4,4',6,6'-HexaCB	155	1000
2,2',6-TriCB	19	1000	2,3,3',4,4',5-HexaCB	156	1000
2',3,4-TriCB	33	1000	2,3,3',4,4',5'-HexaCB	157	1000
3,3',4-TriCB	35	1000	2,3,3',4',5,5'-HexaCB	162	1000
3,4,4'-TriCB	37	1000	2,3',4,4',5,5'-HexaCB	167	1000
3,4,5-TriCB	38	1000	3,3',4,4',5,5'-HexaCB	169	1000
2,2',3,5'-TetraCB	44	1000	2,2',3,4',5,6,6'-HeptaCB	188	1000
2,2',5,5'-TetraCB	52	1000	2,3,3',4,4',5,5'-HeptaCB	189	1000
2,2',6,6'-TetraCB	54	1000	2,2',3,3',4,4',5,5'-OctaCB	194	1000
2,3,3',5-TetraCB	57	1000	2,2',3,3',4,4',5,6-OctaCB	195	1000
2,4,4',5-TetraCB	74	1000	2,2',3,3',5,5',6,6'-OctaCB	202	1000
3,3',4,4'-TetraCB	77	1000	2,3,3',4,4',5,5',6-OctaCB	205	1000
3,3',4,5-TetraCB	78	1000	2,2',3,3',4,4',5,5',6-NonaCB	206	1000
3,3',4,5'-TetraCB	79	1000	2,2',3,3',4,5,5',6,6'-NonaCB	208	1000
3,4,4',5-TetraCB	81	1000	DecaCB	209	1000

EC-4133	DSJ PCB Mixture	1 mL in isooctane
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Unlabeled	IUPAC	(ng/mL)	Unlabeled	IUPAC	(ng/mL)
2,2',4-TriCB	17	500	2,2',3,4',5',6-HexaCB	149	2000
2,2',5-TriCB	18	2000	2,2',3,5,5',6-HexaCB	151	2000
2,4,4'-TriCB	28	2000	2,2',4,4',5,5'-HexaCB	153	2000
2,4',5-TriCB	31	1500	2,3,3',4,4',5-HexaCB	156	2000
2',3,4-TriCB	33	2000	2,3,3',4,4',6-HexaCB	158	500
2,2',3,5'-TetraCB	44	2000	3,3',4,4',5,5'-HexaCB	169	2000
2,2',4,5'-TetraCB	49	2000	2,2',3,3',4,4',5-HeptaCB	170	2000
2,2',5,5'-TetraCB	52	2000	2,2',3,3',4,4',6-HeptaCB	171	2000
2,3',4',5-TetraCB	70	2000	2,2',3,3',4',5,6-HeptaCB	177	2000
2,4,4',5-TetraCB	74	2000	2,2',3,4,4',5,5'-HeptaCB	180	2000
2,2',3,3',4-PentaCB	82	500	2,2',3,4,4',5',6-HeptaCB	183	2000
2,2',3,4,5'-PentaCB	87	2000	2,2',3,4',5,5',6-HeptaCB	187	2000
2,2',3,5',6-PentaCB	95	1000	2,3,3',4,4',5',6-HeptaCB	191	2000
2,2',4,4',5-PentaCB	99	2000	2,2',3,3',4,4',5,5'-OctaCB	194	2000
2,2',4,5,5'-PentaCB	101	2000	2,2',3,3',4,4',5,6-OctaCB	195	2000
2,3,3',4,4'-PentaCB	105	500	2,2',3,3',4,5,5',6'-OctaCB	201	1500
2,3,3',4',6-PentaCB	110	2000	2,3,3',4,4',5,5',6-OctaCB	205	2000
2,3',4,4',5-PentaCB	118	2000	2,2',3,3',4,4',5,5',6-NonaCB	206	2000
2,2',3,3',4,4'-HexaCB	128	2000	2,2',3,3',4,5,5',6,6'-NonaCB	208	2000
2,2',3,3',4,6'-HexaCB	132	1000	DecaCB	209	2000
2,2',3,4,4',5'-HexaCB	138	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 isoctane

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
<i>Note: #30 is second tri eluter</i>		
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
<i>Note: #194 is second-to-last octa eluter</i>		
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 isoctane	1.2 mL
PCBB-5273	3,4-Dibromo-3',4'-diCB	100 µg/mL in isoctane	1.2 mL
PCBB-5274	3,4-Dibromo-3',4',5'-triCB	100 µg/mL in isoctane	1.2 mL
PCBB-5295	4'-Bromo-3,3',4,5-tetraCB	100 µg/mL in isoctane	1.2 mL
PCBB-5296	4'-Bromo-2,3',4,5-tetraCB	100 µg/mL in isoctane	1.2 mL
PCBB-5297	4'-Bromo-2,3,3',4-tetraCB	100 µg/mL in isoctane	1.2 mL
PCBB-5298	4'-Bromo-2,3,3',4,5-pentaCB	100 µg/mL in isoctane	1.2 mL
PCBB-5340-CS	4'-Bromo-3,3',4,5,5'-pentaCB (Certified Standard)	100 µg/mL in isoctane	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
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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
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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
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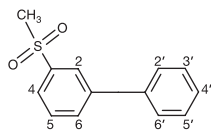
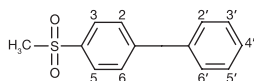
Unlabeled	(ng/mL)
4'-Bromo-3,3',4,5-tetraCB	1000
4'-Bromo-2,3',4,5-tetraCB	1000
4'-Bromo-2,3,3',4-tetraCB	1000
4'-Bromo-2,3,3',4,5-pentaCB	1000
4'-Bromo-3,3',4,5,5'-pentaCB	1000
3,4-Dichloro-3',4',5'-triBB	2000

PCB Metabolite Standards

Catalog No.	Compound	Concentration	Amount
OH-PCB			
OHCB-5114-1.2	4'-OH-3,3',4,5'-tetraCB ($^{13}\text{C}_{12}$, 99%)	50 µg/mL in nonane	1.2 mL
OHCB-5115-1.2	4-OH-2,3,3',4',5-pentaCB ($^{13}\text{C}_{12}$, 99%)	50 µg/mL in nonane	1.2 mL
OHCB-5117-1.2	4-OH-2,2',3,4',5,5'-hexaCB ($^{13}\text{C}_{12}$, 99%)	50 µg/mL in nonane	1.2 mL
OHCB-5118-1.2	3'-OH-2,2',3,4,4',5'-hexaCB ($^{13}\text{C}_{12}$, 99%)	50 µg/mL in nonane	1.2 mL
OHCB-5124-1.2	4'-OH-2,2',3,3',4,5,5'-heptaCB ($^{13}\text{C}_{12}$, 99%)	50 µg/mL in nonane	1.2 mL
MeO-PCB			
NEW MEOCB-5485-1.2	4-Methoxy-2,3,3',4',5-pentaCB ($^{13}\text{C}_{12}$, 99%)	50 µg/mL in nonane	1.2 mL
NEW MEOCB-5486-1.2	4-Methoxy-2,2',3,4',5,5'-hexaCB ($^{13}\text{C}_{12}$, 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

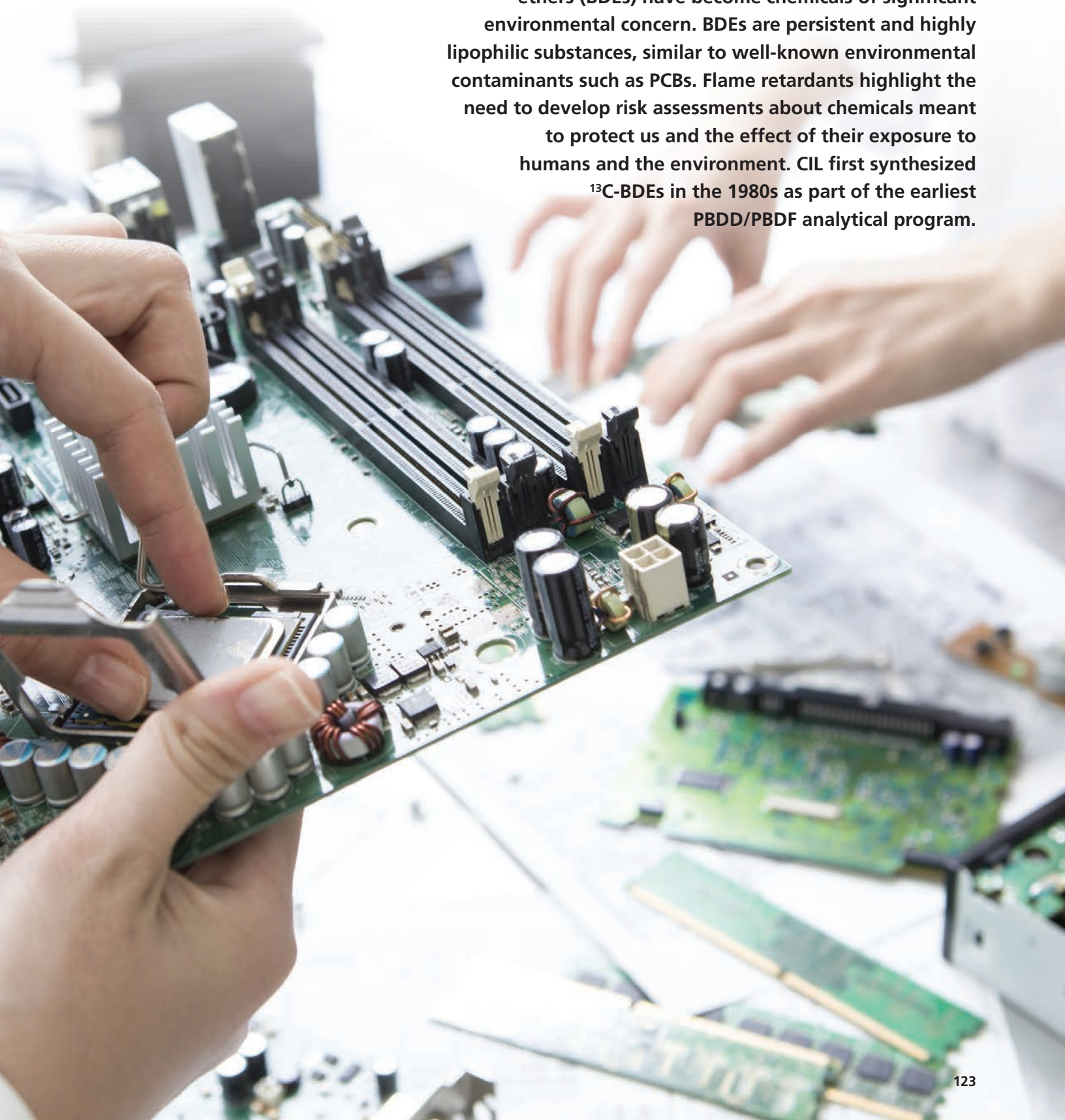
Unlabeled Methyl Sulfone PCB Standards

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-MeSO₂-PCB4-MeSO₂-PCB

Flame-Retardant Standards and Standard Mixtures

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 $^{13}\text{C}_{12}$ 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.

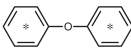
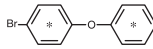
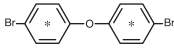
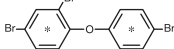
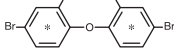
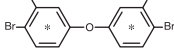
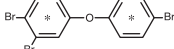
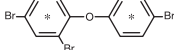
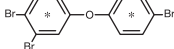
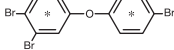
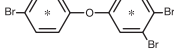
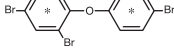
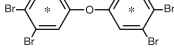
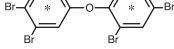
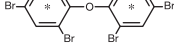
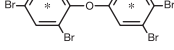
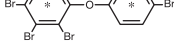
Dechloranes

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.

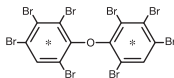
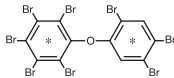
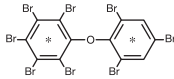
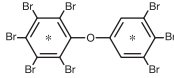
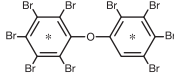
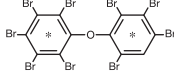
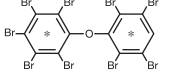
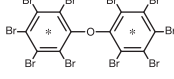
Isotope-Labeled Individual Brominated Diphenyl Ether (BDE) Standards

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

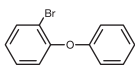
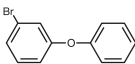
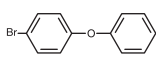
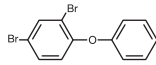
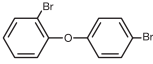
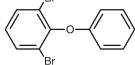
(continued)

Isotope-Labeled Individual Brominated Diphenyl Ether (BDE) Standards

Catalog No.	Compound	BDE	Structure	Concentration	Amount
EO-5337	2,2',3,3',4,4',5,5',6,6'-Octabromodiphenyl ether (¹³ C ₁₂ , 99%)	197		50 ± 5 µg/mL in nonane	1.2 mL
EO-5377	2,2',3,3',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',3,3',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

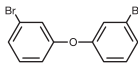
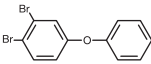
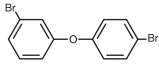
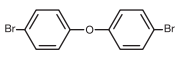
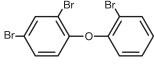
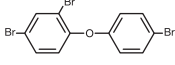
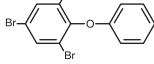
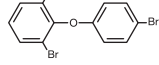
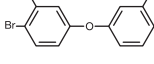
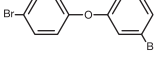
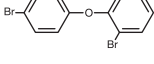
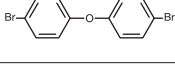
Multiple-unit pricing is available for individual ¹³C-BDE standards as follows: 2-3 units = 20% discount; 4 or more units = 33% discount

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

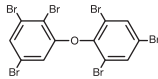
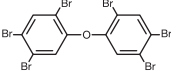
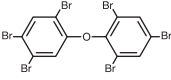
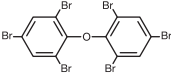
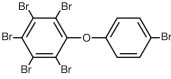
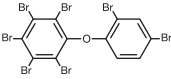
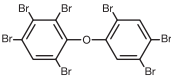
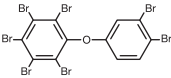
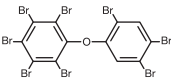
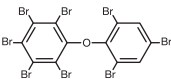
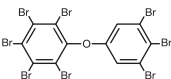
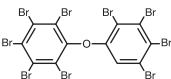
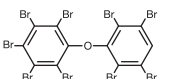
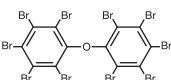
(continued)

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
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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
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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
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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
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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 ($^{13}\text{C}_{12}$, 99%)	1.2 mL in nonane

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

EO-5404	RoHS PBDE Syringe Spike	1.2 mL in nonane
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Labeled	BDE	(ng/mL)
2,2',3,4,4',5'-HexaBDE ($^{13}\text{C}_{12}$, 99%)	138	200

EO-5405	RoHS PBDE Native PAR Spike	1.2 mL in nonane
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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
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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
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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 ($^{13}\text{C}_{12}$, 99%)	3	100	1000
4,4'-DiBDE ($^{13}\text{C}_{12}$, 99%)	15	100	1000
2,4,4'-TriBDE ($^{13}\text{C}_{12}$, 99%)	28	100	1000
2,2',4,4'-TetraBDE ($^{13}\text{C}_{12}$, 99%)	47	100	1000
2,2',4,4',5-PentaBDE ($^{13}\text{C}_{12}$, 99%)	99	150	1500
2,2',4,4',6-PentaBDE ($^{13}\text{C}_{12}$, 99%)	100	150	1500
2,3',4,4',5-PentaBDE ($^{13}\text{C}_{12}$, 99%)	118	150	1500
2,2',4,4',5,5'-HexaBDE ($^{13}\text{C}_{12}$, 99%)	153	200	2000
2,2',3,4,4',5',6-HeptaBDE ($^{13}\text{C}_{12}$, 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 ($^{13}\text{C}_{12}$, 99%)	77	100	1000
3,3',4,4',5-PentaBDE ($^{13}\text{C}_{12}$, 99%)	126	150	1500

NEW EO-5507	Polybrominated Diphenyl Ether Injection Internal Standard	1.2 mL in nonane
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Labeled	BDE	(ng/mL)
2,2',4,4',5-PentaBDE ($^{13}\text{C}_{12}$, 99%)	99	200
2,2',4,4',5,6'-HexaBDE ($^{13}\text{C}_{12}$, 99%)	154	200

NEW EO-5509	Polybrominated Diphenyl Ether Native Injection Internal Standard	1.2 mL in nonane
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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
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Labeled	BDE	(ng/mL)
2,2',4,4',6-PentaBDE ($^{13}\text{C}_{12}$, 99%)	100	200
2,2',3,4,4',5',6-HeptaBDE ($^{13}\text{C}_{12}$, 99%)	183	200

NEW EO-5508	Polybrominated Diphenyl Ether Native Surrogate Standard	1.2 mL in nonane
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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)	Unlabeled	BDE	(ng/mL)
2,2',4-TriBDE	17	2500	2,2',4,4',6-PentaBDE	100	2500
2,4,4'-TriBDE	28	2500	2,2',3,4,4',5'-HexaBDE	138	3750
2,2',4,4'-TetraBDE	47	2500	2,2',4,4',5,5'-HexaBDE	153	2500
2,3',4,4'-TetraBDE	66	2500	2,2',4,4',5,6'-HexaBDE	154	2500
2,3',4',6-TetraBDE	71	2500	2,2',3,4,4',5',6-HeptaBDE	183	2500
2,2',3,4,4'-PentaBDE	85	2500	2,3,3',4,4',5,6-HeptaBDE	190	2500
2,2',4,4',5-PentaBDE	99	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
NEW CLM-8569-1.2	Dechlorane Plus <i>syn</i> (bis-cyclopentene- ¹³ C ₁₀ , 99%)	100 µg/mL in nonane	1.2 mL
CLM-8569-T-1.2		100 µg/mL in toluene	1.2 mL
NEW ULM-7886-1.2	Dechlorane Plus <i>syn</i> (unlabeled)	100 µg/mL in nonane	1.2 mL
ULM-7886-T-1.2		100 µg/mL in toluene	1.2 mL
NEW CLM-8588-1.2	Dechlorane Plus <i>anti</i> (bis-cyclopentene- ¹³ C ₁₀ , 99%)	100 µg/mL in nonane	1.2 mL
CLM-8588-T-1.2		100 µg/mL in toluene	1.2 mL
NEW ULM-7887-1.2	Dechlorane Plus <i>anti</i> (unlabeled)	100 µg/mL in nonane	1.2 mL
ULM-7887-T-1.2		100 µg/mL in toluene	1.2 mL
ULM-7777-1.2	Dechlorane Plus Technical Product (unlabeled) mix of <i>syn/anti</i> 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

EO-5169	BFR Recovery Spiking Solution	10 mL in 88% hexane/ 2% dodecane/10% nonane
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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 <i>bis</i> (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

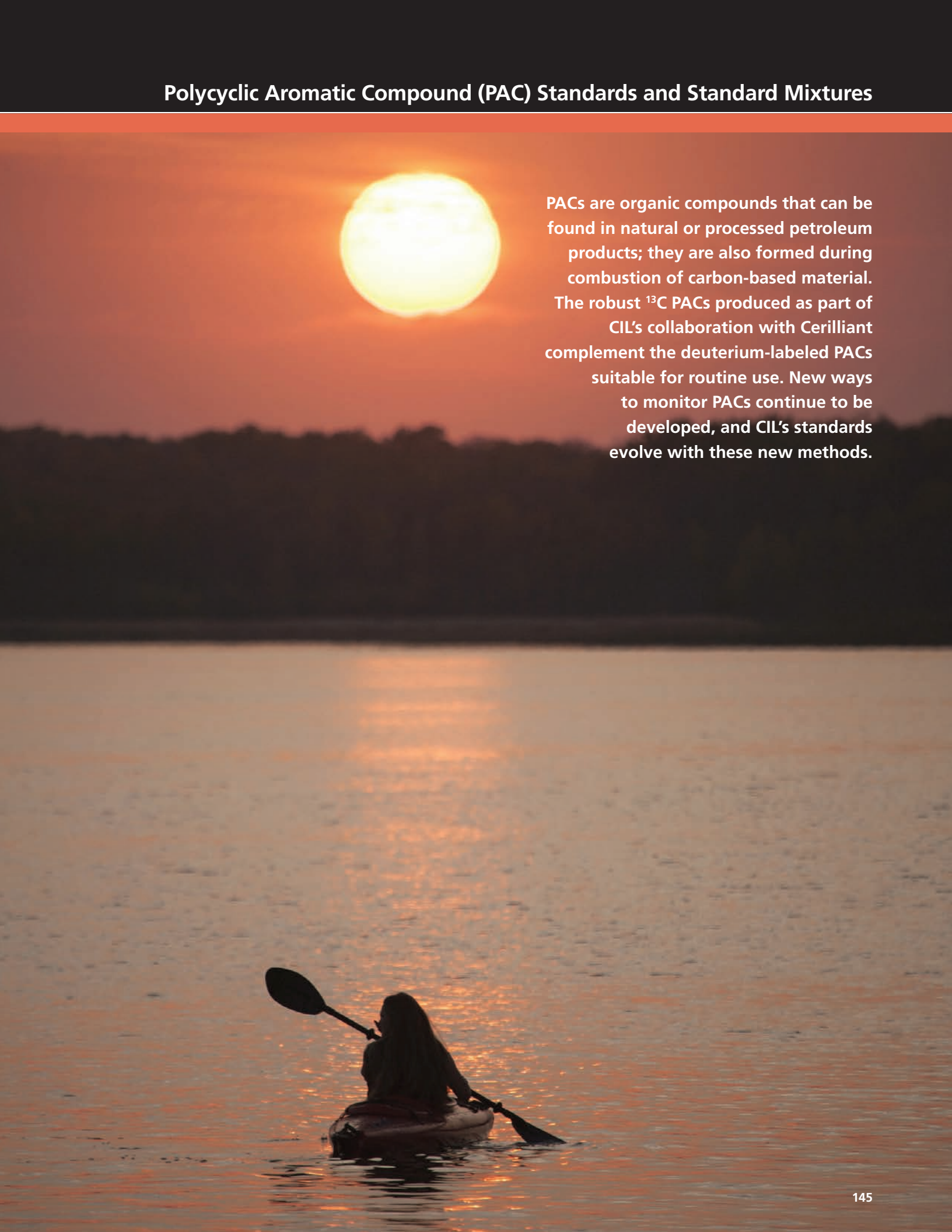
NEW	ES-5529	Phosphorus Flame-Retardant Standard Mixture (D, 98%)	1.2 mL in acetonitrile
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Labeled	(µg/mL)
Tris(2-chloroethyl) phosphate (D ₁₂ , 98%)	10
Tris(2-chloroisopropyl) phosphate (D ₁₈ , 98%)	10
Tris(1,3-dichloro-2-propyl) phosphate (D ₁₅ , 98%)	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
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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

A person is kayaking on a calm body of water during sunset. The sun is a large, bright yellow-orange orb in the sky, casting a shimmering reflection on the water's surface. The kayaker is in the lower foreground, silhouetted against the water. The background shows a dark, silhouetted shoreline under the twilight sky.

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.

¹³C-Labeled Polycyclic Aromatic Hydrocarbon (PAH) Standards

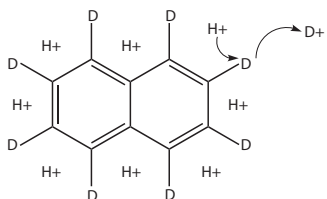
CIL, in cooperation with Cerilliant Corporation, is pleased to offer ¹³C-labeled polycyclic aromatic hydrocarbons (PAHs) as a superior alternative to deuterated standards. Although CIL has traditionally produced high-quality deuterated PAH analogs, some analysts have observed back-exchange of proton for deuterium under harsh extraction conditions and in certain matrices. If precise quantitation is required, or complete recovery information is needed, the non-exchangeable ¹³C isotope label is the right standard to use.

Deuterium Back-Exchange

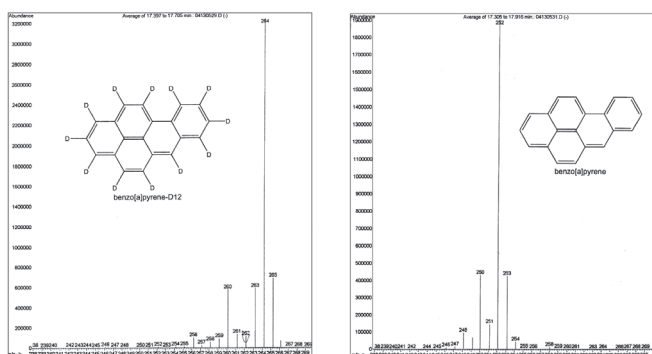
While analysts have been using deuterated PAH standards for years, labile deuterons are susceptible to back-exchange. The phenomenon is particularly likely to occur in acidic or catalytic matrices, when the importance of a reliable internal standard is greatest.

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

Naphthalene-D₈ deuterium-exchange



Deuterated PAH mass spectra differ from unlabeled mass spectra



Similar Mass Spectra

Even at lower voltages the parent ion loses a considerable number of protons or deuterons. Mass spectra of ¹³C 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 deuterium 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. ¹³C-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.

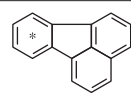
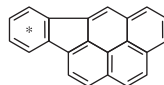

Benzo[a]Pyrene Tetrol Metabolites

Similarly to hydroxy PAHs, researchers have studied benzo[a]pyrene-7,8,9,10-tetrahydrodiol 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.

¹³C-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	Benzo[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

¹³C-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
CLM-3774-A NEW 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 ₉ N	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-Dibenzoc[<i>c,g</i>]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- <i>cd</i>]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
NEW DLM-450-1	<i>o</i> -Terphenyl (D ₁₄ , 98%)	C ₆ D ₄ (C ₆ D ₅) ₂	neat	1 g
DLM-450-5			neat	5 g
NEW DLM-382-1.2	<i>p</i> -Terphenyl (D ₁₄ , 98%)	C ₆ D ₄ (C ₆ D 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 ₈ H ₆ O	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	<i>p</i> -Terphenyl	C ₁₈ H ₁₄	200 µg/mL in isooctane	1.2 mL

¹³C-Labeled PAH Standard Mixtures

Catalog No.	Compound	Amount
ES-4087	EPA 16 PAH Cocktail	1.2 mL in nonane
	Labeled	($\mu\text{g/mL}$)
	Acenaphthene (¹³ C _{6r} , 99%)	5
	Acenaphthylene (¹³ C _{6r} , 99%)	5
	Anthracene (¹³ C _{6r} , 99%)	5
	Benz[a]anthracene (¹³ C _{6r} , 99%)	5
	Benzo[b]fluoranthene (¹³ C _{6r} , 99%)	5
	Benzo[k]fluoranthene (¹³ C _{6r} , 99%)	5
	Benzo[ghi]perylene (¹³ C _{12r} , 99%)	5
	Benzo[a]pyrene (¹³ C _{4r} , 99%)	5
	Chrysene (¹³ C _{6r} , 99%)	5
	Dibenz[a,h]anthracene (¹³ C _{6r} , 99%)	5
	Fluoranthene (¹³ C _{6r} , 99%)	5
	Fluorene (¹³ C _{6r} , 99%)	5
	Indeno[1,2,3-cd]pyrene (¹³ C _{6r} , 99%)	5
	Naphthalene (¹³ C _{6r} , 99%)	5
	Phenanthrene (¹³ C _{6r} , 99%)	5
	Pyrene (¹³ C _{3r} , 99%)	5
NEW ES-5546	Custom 16 PAH Solution	1.2 mL in nonane
	Labeled	($\mu\text{g/mL}$)
	Naphthalene (¹³ C _{10r} , 99%)	10
	Benzo[c]phenanthrene (¹³ C _{6r} , 99%)	1
	Cyclopenta[cd]pyrene (¹³ C _{6r} , 99%)	1
	Benz[a]anthracene (¹³ C _{6r} , 99%)	1
	Chrysene (¹³ C _{6r} , 99%)	1
	5-Methylchrysene (¹³ C _{6r} , 99%)	1
	Benzo[b]fluoranthene (¹³ C _{6r} , 99%)	1
	Benzo[k]fluoranthene (¹³ C _{6r} , 99%)	1
	Benz[e]aceanthrylene/Benz[j]aceanthrylene (¹³ C _{2r} , 94%; D _{2r} , 94%)	1
	Benzo[a]pyrene (¹³ C _{4r} , 99%)	1
	Indeno[1,2,3-cd]pyrene (¹³ C _{6r} , 99%)	1
	Dibenz[a,h]anthracene (¹³ C _{6r} , 99%)	1
	Dibenzo[a,l]pyrene (¹³ C _{6r} , 99%)	1
	Dibenzo[a,e]pyrene (¹³ C _{6r} , 99%)	1
	Dibenzo[a,i]pyrene (¹³ C _{12r} , 99%)	1
	Dibenzo[a,h]pyrene (¹³ C _{12r} , 99%)	1
NEW ES-5539	EFSA-8 ¹³ C PAH Standard Mixture	1.2 mL in nonane
	Labeled	($\mu\text{g/mL}$)
	Benz[a]anthracene (¹³ C _{6r} , 99%)	5
	Benzo[b]fluoranthene (¹³ C _{6r} , 99%)	5
	Benzo[k]fluoranthene (¹³ C _{6r} , 99%)	5
	Benzo[ghi]perylene (¹³ C _{12r} , 99%)	5
	Benzo[a]pyrene (¹³ C _{4r} , 99%)	5
	Chrysene (¹³ C _{6r} , 99%)	5
	Dibenz[a,h]anthracene (¹³ C _{6r} , 99%)	5
	Indeno[1,2,3-cd]pyrene (¹³ C _{6r} , 99%)	5
NEW ES-5540	EFSA-4 ¹³ C PAH Standard Mixture	1.2 mL in nonane
	Labeled	($\mu\text{g/mL}$)
	Benz[a]anthracene (¹³ C _{6r} , 99%)	5
	Benzo[b]fluoranthene (¹³ C _{6r} , 99%)	5
	Benzo[a]pyrene (¹³ C _{4r} , 99%)	5
	Chrysene (¹³ C _{6r} , 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
Benzo[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	PAH Surrogate Standard Mixture	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
Benzo[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

ES-2044	PAH Surrogate Cocktail	1 mL in 50% MeCl-D ₂ /50% methanol-OD
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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[<i>a,h</i>]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[<i>b</i>]fluoranthene (D ₁₂ , 98%)	1000
	Benzo[<i>k</i>]fluoranthene (D ₁₂ , 98%)	1000
	Benzo[<i>ghi</i>]perylene (D ₁₂ , 98%)	1000
	Benzo[<i>a</i>]pyrene (D ₁₂ , 98%)	1000
	Indeno[1,2,3- <i>cd</i>]pyrene (D ₁₂ , 98%)	1000
	Fluoranthene (D ₁₀ , 98%)	1000
ES-5386	PAH-SIM Recovery Standard Mixture	1.2 mL in MeCl ₂
	Labeled (µg/mL)	
	2-Methylnaphthalene (D ₁₀ , 98%)	1000
	Anthracene (D ₁₀ , 98%)	1000
	<i>p</i> -Terphenyl (D ₁₄ , 98%)	1000
	Benzo[<i>e</i>]pyrene (D ₁₂ , 98%)	1000
NEW ES-5498	PAH Two-Component Mixture	1.2 mL in 80% isooctane/ 20% toluene
	Labeled (µg/mL)	
	Benzo[<i>a</i>]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[<i>a</i>]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
	<i>p</i> -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
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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
Benzo[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
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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	EFS-A-4 Native PAH Standard Mixture	1.2 mL in isooctane

Unlabeled	($\mu\text{g/mL}$)
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
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Unlabeled	($\mu\text{g/mL}$)
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
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Unlabeled	($\mu\text{g/mL}$)
2-Methylnaphthalene	1000
Anthracene	1000
<i>p</i> -Terphenyl	1000
Benzo[e]pyrene	1000

Alkyl Polycyclic Aromatic Hydrocarbon (PAH) Standards

Catalog No.	Compound	Formula	Concentration	Amount
DLM-2845-1.2	9,10-Dimethylantracene (D ₁₄ , 98%)	C ₁₆ D ₁₄	50 µg/mL in toluene-D ₈	1.2 mL
NEW ULM-6234-1.2	9,10-Dimethylantracene (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 ₆ C ₁₃ H ₁₄	100 µg/mL in nonane	1.2 mL
DLM-3842-1.2	5-Methylchrysene (methyl-D ₃ , 98%)	C ₁₉ D ₃ H 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 ₆ C ₅ H 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 ₆ C ₅ H ₁₀ O	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 ₆ C 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 ₉ Cl	50 µg/mL in toluene	1.2 mL
NEW CLM-8989-1.2	7-Chlorobenz[a]anthracene (¹³ C ₆ , 99%)	*C ₆ C 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 ₉ Cl	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 ₆ H ₉ Cl	50 µg/mL in toluene	1.2 mL
ULM-8268-1.2	1-Chloropyrene (unlabeled)	C ₁₆ H ₉ Cl	50 µg/mL in toluene	1.2 mL
NEW CLM-9029-1.2	7,12-Dichlorobenz[a]anthracene (¹³ C ₆ , 99%)	C ₁₂ *C ₆ H ₁₀ Cl ₂	50 µg/mL in toluene	1.2 mL
NEW ULM-9024-1.2	7,12-Dichlorobenz[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 ₉ NO ₂	50 µg/mL in toluene-D ₈	1.2 mL
NEW ULM-8790-1.2	5-Nitroacenaphthene (unlabeled)	C ₁₂ H ₉ NO ₂	50 µg/mL in toluene	1.2 mL
DLM-4712-1.2	9-Nitroanthracene (D ₉ , 98%)	C ₁₄ D ₉ NO ₂	50 µg/mL in toluene-D ₈	1.2 mL
NEW ULM-8365-1.2	9-Nitroanthracene (unlabeled)	C ₁₄ H ₉ NO 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 ₉ NO ₂	50 µg/mL in toluene-D ₈	1.2 mL
NEW ULM-6600-1.2	3-Nitrofluoranthene (unlabeled) CP 87%	C ₁₆ H ₉ NO ₂	50 µg/mL in toluene	1.2 mL
DLM-3837-1.2	2-Nitrofluorene (D ₉ , 98%)	C ₁₃ D ₉ NO ₂	50 µg/mL in toluene-D ₈	1.2 mL
ULM-3883-1.2	2-Nitrofluorene (unlabeled)	C ₁₃ H ₉ NO ₂	50 µg/mL in toluene	1.2 mL
DLM-1528-1.2	1-Nitropyrene (D ₉ , 98%)	C ₁₈ D ₉ NO ₂	50 µg/mL in toluene-D ₈	1.2 mL
ULM-3978-1.2	1-Nitropyrene (unlabeled)	C ₁₈ H ₉ NO 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) ($^{13}\text{C}_6$, 99%)	50 $\mu\text{g}/\text{mL}$ in toluene	1.2 mL
NEW ULM-7552-1.2	6-Hydroxychrysene (unlabeled)	50 $\mu\text{g}/\text{mL}$ in isooctane	1.2 mL
NEW CLM-6087-1.2	2-Hydroxyfluorene (random- $^{13}\text{C}_6$, 99%)	50 $\mu\text{g}/\text{mL}$ in toluene	1.2 mL
NEW ULM-8973-1.2	2-Hydroxyfluorene (unlabeled)	50 $\mu\text{g}/\text{mL}$ in toluene	1.2 mL
NEW CLM-8977-1.2	3-Hydroxyfluorene ($^{13}\text{C}_6$, 99%)	50 $\mu\text{g}/\text{mL}$ in toluene	1.2 mL
NEW ULM-8974-1.2	3-Hydroxyfluorene (unlabeled)	50 $\mu\text{g}/\text{mL}$ in toluene	1.2 mL
NEW CLM-7700-1.2	9-Hydroxyfluorene ($^{13}\text{C}_6$, 99%)	50 $\mu\text{g}/\text{mL}$ in toluene	1.2 mL
NEW ULM-8975-1.2	9-Hydroxyfluorene (unlabeled)	50 $\mu\text{g}/\text{mL}$ in toluene	1.2 mL
NEW CLM-7701-1.2	1-Hydroxynaphthalene (1-naphthol) ($^{13}\text{C}_6$, 99%)	50 $\mu\text{g}/\text{mL}$ in toluene	1.2 mL
NEW ULM-8971-1.2	1-Hydroxynaphthalene (1-naphthol) (unlabeled)	50 $\mu\text{g}/\text{mL}$ in toluene	1.2 mL
NEW CLM-7713-1.2	2-Hydroxynaphthalene (2-naphthol) ($^{13}\text{C}_6$, 99%)	50 $\mu\text{g}/\text{mL}$ in toluene	1.2 mL
NEW ULM-8972-1.2	2-Hydroxynaphthalene (2-naphthol) (unlabeled)	50 $\mu\text{g}/\text{mL}$ in toluene	1.2 mL
NEW CLM-7669-1.2	1-Hydroxyphenanthrene ($^{13}\text{C}_4$, 99%)	50 $\mu\text{g}/\text{mL}$ in toluene	1.2 mL
NEW ULM-7929-1.2	1-Hydroxyphenanthrene (unlabeled)	50 $\mu\text{g}/\text{mL}$ in toluene	1.2 mL
NEW CLM-8463-T-1.2	2-Hydroxyphenanthrene ($^{13}\text{C}_6$, 99%)	50 $\mu\text{g}/\text{mL}$ in toluene	1.2 mL
NEW ULM-8464-T-1.2	2-Hydroxyphenanthrene (unlabeled)	50 $\mu\text{g}/\text{mL}$ in toluene	1.2 mL
CLM-4859-T-1.2	3-Hydroxyphenanthrene ($^{13}\text{C}_6$, 99%)	50 $\mu\text{g}/\text{mL}$ in toluene	1.2 mL
NEW ULM-7446-1.2	3-Hydroxyphenanthrene (unlabeled)	50 $\mu\text{g}/\text{mL}$ in toluene	1.2 mL
NEW CLM-7670-1.2	4-Hydroxyphenanthrene ($^{13}\text{C}_4$, 99%)	50 $\mu\text{g}/\text{mL}$ in toluene	1.2 mL
NEW ULM-7928-1.2	4-Hydroxyphenanthrene (unlabeled)	50 $\mu\text{g}/\text{mL}$ in toluene	1.2 mL
NEW CLM-9012-1.2	1-Hydroxypyrene ($^{13}\text{C}_6$, 99%)	50 $\mu\text{g}/\text{mL}$ in toluene	1.2 mL
NEW ULM-8976-1.2	1-Hydroxypyrene (unlabeled)	50 $\mu\text{g}/\text{mL}$ 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
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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
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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 ($^{13}\text{C}_{10}$, 99%)	2	10 $\mu\text{g}/\text{mL}$ in isooctane	1.2 mL
NEW	ECN-5520	1,5-Dichloronaphthalene ($^{13}\text{C}_{10}$, 99%)	6	10 $\mu\text{g}/\text{mL}$ in isooctane	1.2 mL
NEW	ECN-5575	1,2,3-Trichloronaphthalene ($^{13}\text{C}_{10}$, 99%)	13	10 $\mu\text{g}/\text{mL}$ in isooctane	Inquire
	ECN-5240	1,2,3,4-Tetrachloronaphthalene ($^{13}\text{C}_{10}$, 99%)	27	10 $\mu\text{g}/\text{mL}$ in isooctane	1.2 mL
	ECN-5241	1,3,5,7-Tetrachloronaphthalene ($^{13}\text{C}_{10}$, 99%)	42	10 $\mu\text{g}/\text{mL}$ in isooctane	1.2 mL
	ECN-5250	1,2,3,5,7-Pentachloronaphthalene ($^{13}\text{C}_{10}$, 99%)	52	10 $\mu\text{g}/\text{mL}$ in isooctane	1.2 mL
	ECN-5260	1,2,3,4,5,7-Hexachloronaphthalene ($^{13}\text{C}_{10}$, 99%)	64	10 $\mu\text{g}/\text{mL}$ in isooctane	1.2 mL
NEW	ECN-5267	1,2,3,4,5,8-Hexachloronaphthalene ($^{13}\text{C}_{10}$, 99%)	65	10 $\mu\text{g}/\text{mL}$ in isooctane	1.2 mL
	ECN-5261-A	1,2,3,5,6,7-Hexachloronaphthalene ($^{13}\text{C}_{10}$, 99%)	67	10 $\mu\text{g}/\text{mL}$ in isooctane	1.2 mL
	ECN-5270-A	1,2,3,4,5,6,7-Heptachloronaphthalene ($^{13}\text{C}_{10}$, 99%)	73	10 $\mu\text{g}/\text{mL}$ in isooctane	1.2 mL
	ECN-5280	Octachloronaphthalene ($^{13}\text{C}_{10}$, 99%)	75	10 $\mu\text{g}/\text{mL}$ in isooctane	1.2 mL
NEW	DLM-2005-1.2	2-Chloronaphthalene (D_7 , 98%)		100 $\mu\text{g}/\text{mL}$ 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 $\mu\text{g}/\text{mL}$ in nonane	1 mL
	ECN-2611	2-Monochloronaphthalene	2	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
	ECN-2620	1,2-Dichloronaphthalene	3	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
	ECN-2621	1,4-Dichloronaphthalene	5	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
	ECN-2622	1,5-Dichloronaphthalene	6	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
	ECN-2623	1,8-Dichloronaphthalene	9	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
	ECN-2624	2,3-Dichloronaphthalene	10	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
	ECN-2630	1,2,3-Trichloronaphthalene	13	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
NEW	ECN-2632	1,2,4-Trichloronaphthalene	14	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
NEW	ECN-2631	1,4,6-Trichloronaphthalene	24	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
	ECN-2640	1,2,3,4-Tetrachloronaphthalene	27	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
NEW	ECN-2645	1,2,3,5-Tetrachloronaphthalene	28	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
NEW	ECN-2646	1,2,3,8-Tetrachloronaphthalene	31	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
	ECN-2642	1,2,5,6-Tetrachloronaphthalene	36	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
	ECN-2641	1,3,5,7-Tetrachloronaphthalene	42	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
NEW	ECN-2644	1,4,5,8-Tetrachloronaphthalene	46	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
	ECN-2643	2,3,6,7-Tetrachloronaphthalene	48	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
NEW	ECN-2654	1,2,3,4,5-Pentachloronaphthalene	49	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
	ECN-2652	1,2,3,4,6-Pentachloronaphthalene	50	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
	ECN-2651	1,2,3,5,7-Pentachloronaphthalene	52	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
	ECN-2650	1,2,3,5,8-Pentachloronaphthalene	53	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
	ECN-2653	1,2,3,6,7-Pentachloronaphthalene	54	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
NEW	ECN-2656	1,2,4,5,8-Pentachloronaphthalene	59	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
NEW	ECN-2655	1,2,4,6,7-Pentachloronaphthalene	60	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
NEW	ECN-2668	1,2,3,4,5,6-Hexachloronaphthalene	63	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
NEW	ECN-2669	1,2,3,4,5,7-Hexachloronaphthalene	64	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
NEW	ECN-2667	1,2,3,4,5,8-Hexachloronaphthalene	65	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
	ECN-2660	1,2,3,4,6,7-Hexachloronaphthalene	66	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
	ECN-2663	1,2,3,5,6,7-Hexachloronaphthalene	67	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
	ECN-2664	1,2,3,5,6,8-Hexachloronaphthalene	68	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
	ECN-2662	1,2,3,5,7,8-Hexachloronaphthalene	69	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
	ECN-2665	1,2,3,6,7,8-Hexachloronaphthalene	70	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
	ECN-2666	1,2,4,5,6,8-Hexachloronaphthalene	71	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
	ECN-2661	1,2,4,5,7,8-Hexachloronaphthalene	72	100 $\mu\text{g}/\text{mL}$ in nonane	Inquire
	ECN-2670	1,2,3,4,5,6,7-Heptachloronaphthalene	73	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
	ECN-2671	1,2,3,4,5,6,8-Heptachloronaphthalene	74	100 $\mu\text{g}/\text{mL}$ in nonane	1 mL
	ECN-2680	Octachloronaphthalene	75	100 $\mu\text{g}/\text{mL}$ 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
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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
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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

Priority Pollutant, Endocrine Disruptor, and Chemical Contaminant Standards

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 ₆ D ₅ COC ₆ D ₅	100 µg/mL in nonane	1.2 mL
ULM-8303-1.2	Benzophenone (unlabeled)	C ₆ H ₅ COC ₆ H 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 ₅ Si ₅	100 µg/mL in methanol	1.2 mL
NEW ULM-9442-1.2	Decamethylcyclopentasiloxane "D5" (unlabeled)	C ₁₀ H ₃₀ O ₅ Si ₅	100 µg/mL in methanol	1.2 mL
DLM-4762-1.2	<i>N,N</i> -Diethyl- <i>m</i> -toluamide (DEET)	CH ₃ C ₆ H ₄ CON(CH ₂ CD ₃) ₂	100 µg/mL in MeCl	1.2 mL
DLM-4762-D-1.2	(dimethyl-D ₆ , 98%)		100 µg/mL in dioxane	1.2 mL
ULM-7975-1.2	<i>N,N</i> -Diethyl- <i>m</i> -toluamide (DEET) (unlabeled)	CH ₃ C ₆ H ₄ CON(CH ₂ CH 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 ₆ Si ₆	100 µg/mL in methanol	1.2 mL
NEW ULM-9443-1.2	Dodecamethylcyclohexasiloxane "D6" (unlabeled)	C ₁₂ H ₃₆ O ₆ Si 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 ₆ C ₁₂ H ₂₉ NaO ₃ S	10 µg/mL in methanol	1.2 mL
NEW ULM-9350-1.2	4-Dodecylbenzenesulfonate, sodium salt (unlabeled)	C ₁₈ H ₂₉ NaO ₃ S	10 µg/mL in methanol	1.2 mL
CLM-8008-1.2	Hexachlorophene (¹³ C ₁₃ , 99%)	*CH ₂ [*C ₆ H(Cl) ₃ OH] ₂	50 µg/mL in methanol	1.2 mL
ULM-8009-1.2	Hexachlorophene (unlabeled)	CH ₂ [C ₆ H(Cl) ₃ OH] ₂	50 µg/mL in methanol	1.2 mL
NEW CLM-9542-1.2	Hexamethylcyclotrisiloxane "D3" (hexamethyl- ¹³ C ₆ , 98%)	*C ₆ H ₁₈ O ₃ Si ₃	100 µg/mL in methanol	1.2 mL
NEW ULM-9687-1.2	Hexamethylcyclotrisiloxane "D3" (unlabeled)	C ₆ H ₁₈ O ₃ Si ₃	100 µg/mL in methanol	1.2 mL
CLM-4745-1.2	4-Hydroxybenzoic acid (ring- ¹³ C ₆ , 99%)	*C ₆ H ₆ O ₃	1 mg/mL in methanol	1.2 mL
ULM-8251-1.2	4-Hydroxybenzoic acid (unlabeled)	C ₇ H ₆ O 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 ₉ Cl ₃ O 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 ₉ Cl ₃ O ₂	100 µg/mL in nonane	1.2 mL
NEW CLM-9436-1.2	Octamethylcyclotetrasiloxane "D4" (octamethyl- ¹³ C ₈ , 98%)	*C ₈ H ₂₄ O ₄ Si ₄	100 µg/mL in methanol	1.2 mL
NEW ULM-9441-1.2	Octamethylcyclotetrasiloxane "D4" (unlabeled)	C ₈ H ₂₄ O ₄ Si 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 ₆ C ₈ H 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	<i>n</i> -Butyl paraben (ring- ¹³ C ₆ , 99%)	HO*C ₆ H ₄ CO ₂ (CH ₂) ₃ CH ₃	1 mg/mL in methanol	1.2 mL
ULM-8287-1.2	<i>n</i> -Butyl paraben (unlabeled)	HOC ₆ H ₄ CO ₂ (CH ₂) ₃ CH 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 ₆ C ₃ H ₁₀ O ₃	1 mg/mL in methanol	1.2 mL
NEW ULM-9760-1.2	Ethyl paraben (ethyl 4-hydroxybenzoate) (unlabeled)	C ₉ H 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 ₆ C ₅ H 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 ₆ C ₄ H 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 ₆ C ₂ H ₈ O ₃	1 mg/mL in methanol	1.2 mL
ULM-8250-1.2	Methyl paraben (methyl 4-hydroxybenzoate) (unlabeled)	C ₈ H ₈ O ₃	1 mg/mL in methanol	1.2 mL
NEW CLM-9763-1.2	<i>n</i> -Propyl paraben (<i>n</i> -propyl 4-hydroxybenzoate) (ring- ¹³ C ₆ , 99%)	*C ₆ C ₄ H ₁₂ O ₃	1 mg/mL in methanol	1.2 mL
NEW ULM-9762-1.2	<i>n</i> -Propyl paraben (<i>n</i> -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 ₆ H ₃ (OCH ₃)CO*C ₆ H ₅	100 µg/mL in acetonitrile	1.2 mL
ULM-8531-1.2	Oxybenzone (unlabeled)	HOC ₆ H ₃ (OCH ₃)COC ₆ H 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 ₆ C ₇ H ₉ Cl ₃ N ₂ O	100 µg/mL in acetonitrile	1.2 mL
ULM-7968-1.2	Triclocarban (3,4,4'-trichlorocarbanilide) (unlabeled)	C ₁₃ H ₉ Cl ₃ N ₂ O	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 ₇ Cl ₃ O ₂	100 µg/mL in nonane	1.2 mL
NEW CLM-6779-MT-1.2	Triclosan (2',4,4'-trichloro-2-hydroxydiphenyl ether) (unlabeled)	C ₁₂ H ₇ Cl ₃ O 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 ₇ Cl ₃ O ₂	100 µg/mL in nonane	1.2 mL
NEW ULM-6935-MT-1.2	Triclosan (2',4,4'-trichloro-2-hydroxydiphenyl ether) (unlabeled)	C ₁₂ H ₇ Cl ₃ O ₂	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 ₈ H 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 ₃ C ₁₆ H ₂₆ O ₂	100 µg/mL in methanol	1 mL
NEW CLM-9135-D	4-Androstene-3,17-dione (unlabeled)	C ₁₉ H ₂₆ O ₂	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 ₅ H 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	4-Androstene-3,17-dione (unlabeled)	C ₁₉ H ₂₆ O ₂	1000 µg/mL in methanol	1 mL
NEW DLM-9137-0.001	Androsterone glucuronide (2,2,4,4-D ₄ , 98%)	C ₂₅ D ₄ H 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 ₉ H 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 ₅ H ₃₉ O	neat	0.1 g
NEW CLM-9139-B	Cholesterol (2,3,4- ¹³ C ₃ , 98%)	*C ₃ C ₂₄ H ₄₆ O	50 µg/mL in chloroform	1 mL
NEW CLM-9139-C	Cholesterol (unlabeled)	C ₂₇ H ₄₆ O	100 µg/mL in chloroform	1 mL
NEW CLM-9587-1.2	Cholesterol (23,24,25,26,27- ¹³ C ₅ , 99%)	*C ₅ C ₂₂ H ₄₆ O	100 µg/mL in methanol	1.2 mL
CLM-804-0.1	Cholesterol (3,4- ¹³ C ₂ , 99%)	*C ₂ C 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 ₆ O	neat	0.1 g
DLM-3057-0.01	Cholesterol (25,26,26,27,27-D ₇ , 98%)	C ₂₇ H ₃₉ D ₇ O	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	Cholesterol (unlabeled)	C ₂₇ H ₄₆ O	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 ₄ O 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 ₈ H ₂₂ O ₄	neat	0.01 g
NEW DLM-2057-0.01	Cortisol (9,12,12-D ₃ , 98%)	C ₂₁ H ₂₇ D ₃ O ₅	neat	0.01 g
DLM-2218-0.1MG	Cortisol (9,11,12,12-D ₄ , 98%)	C ₂₁ D ₄ H 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	Cortisol (unlabeled)	C ₂₁ H ₃₀ O ₅	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 ₇ H 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 ₆ O 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	Dehydroepiandrosterone (DHEA) (unlabeled)	C ₁₉ H ₂₈ O ₂	1000 µg/mL in methanol	1 mL
NEW ULM-9144-C	Dehydroepiandrosterone sulfate, sodium salt (DHEAS) (unlabeled)	C ₁₉ H ₂₈ O ₅ S	100 µg/mL in methanol	1 mL
NEW ULM-9144-D	Dehydroepiandrosterone sulfate, sodium salt (DHEAS) (unlabeled)	C ₁₉ H ₂₈ O ₅ S	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 ₄ O 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 ₆ O 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 ₈ H 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	11-Deoxycortisol (unlabeled)	C ₂₁ H ₃₀ O ₄	1000 µg/mL in methanol	1 mL
DLM-170-D-1.2	Diethylstilbestrol (<i>cis/trans</i> mix) (ring-3,3',5,5'-diethyl-1,1',1'-D ₈ , 98%)	HOC ₆ D ₂ H ₂ (CH ₃ CD ₂) C=C(CD ₂ CH ₃)C ₆ H ₂ D ₂ OH	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 (<i>cis/trans</i> mix) (unlabeled)	HOC ₆ H ₄ (CH ₂ CH ₂) C=C(CH ₂ CH ₃)C ₆ H ₄ OH	100 µg/mL in dioxane	1.2 mL	
NEW NEW	CLM-9146-C CLM-9146-D	5-α-Dihydrotestosterone (2,3,4- ¹³ C ₃ , 99%)	*C ₃ C ₁₆ H ₂₈ O ₂	100 µg/mL in methanol 1000 µg/mL in methanol	1 mL 1 mL
	CLM-7936-0.1MG CLM-7936-1.2	DL-Estradiol (13,14,15,16,17,18- ¹³ C ₆ , 99%)	C ₁₂ *C ₆ H ₂₄ O ₂	neat 100 µg/mL in methanol	0.1 mg 1.2 mL
	CLM-803-1.2	Estradiol (3,4- ¹³ C ₂ , 99%)	*C ₂ C 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 ₄ O ₂	neat	5 mg
NEW	ULM-7449-0.1MG ULM-7449-1.2	Estradiol (unlabeled)	C ₁₈ H ₂₄ O ₂	neat 100 µg/mL in acetonitrile	0.1 mg 1.2 mL
NEW	CLM-9147-C	Estriol (16-α-hydroxyestradiol) (2,3,4- ¹³ C ₃ , 99%)	*C ₃ C 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 ₄ H 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 CLM-7935-1.2	DL-Estrone (13,14,15,16,17,18- ¹³ C ₆ , 99%)	C ₁₂ *C ₆ H ₂₂ O ₂	neat 100 µg/mL in methanol	0.1 mg 1.2 mL
NEW NEW	CLM-9148-B CLM-9148-C	Estrone (2,3,4- ¹³ C ₃ , 99%)	*C ₃ C ₁₅ H ₂₂ O ₂	50 µg/mL in methanol 100 µg/mL in methanol	1 mL 1 mL
	CLM-673-1.2	Estrone (3,4- ¹³ C ₂ , 90%)	*C ₂ C 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 ₄ O 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 ₆ C 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 ₆ C ₁₂ H ₂₁ O ₅ SNa	neat	0.1 mg
NEW	ULM-8132-0.1MG	Sodium estrone 3-sulfate (unlabeled)	C ₁₈ H ₂₁ O ₅ SNa	neat	0.1 mg
	CLM-3375-1.2	Ethynylestradiol (20,21- ¹³ C ₂ , 99%)	*C ₂ C 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 ₄ H 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 ₉ H 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 ₄ H 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 ₆ H ₃₇ NO ₅	neat	10 mg
NEW	DLM-9554-0.01	Glycodeoxycholic acid (2,2,4,4-D ₄ , 98%)	C ₂₆ D ₄ H 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 ₄ H 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 ₄ H 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 ₄ H 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 ₄ H ₂₆ O ₆	neat	1 mg
	CLM-8012-0.1MG	DL-2-Hydroxyestradiol (13,14,15,16,17,18- ¹³ C ₆ , 99%)	*C ₆ C 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 ₃ C 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 ₆ C 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 ₆ C 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 ₆ H 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 NEW	CDLM-9154-C CDLM-9154-D	17α-Hydroxypregnenolone (20,21- ¹³ C ₂ , 99%; 16,16-D ₂ , 99%)	*C ₂ C ₁₉ D ₂ H ₃₀ O ₃	100 µg/mL in methanol 1000 µg/mL in methanol	1 mL 1 mL
NEW NEW	ULM-9155-C ULM-9155-D	17α-Hydroxypregnenolone (unlabeled)	C ₂₁ H ₃₂ O ₃	100 µg/mL in methanol 1000 µg/mL in methanol	1 mL 1 mL
NEW NEW	CLM-9157-C CLM-9157-D	17α-Hydroxyprogesterone (2,3,4- ¹³ C ₃ , 98%)	*C ₃ C ₁₈ H ₃₀ O ₃	100 µg/mL in methanol 1000 µg/mL in methanol	1 mL 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 ₈ O 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 ₄ H 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 ₆ C 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 ₆ H 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 ₆ C 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 ₆ H 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 ₂ C 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 ₃ O 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 ₄ O 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 ₄ O 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 ₆ O 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 ₃ O ₃	neat	0.01 g
NEW	CDLM-9158-0.001	Pregnenolone (20,21- ¹³ C ₂ , 99%; 16,16-D ₂ , 98%)	*C ₂ C ₁₉ D ₂ H 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 ₂ C ₁₉ D ₂ H ₂₉ NaO ₅ S	neat	1 mg
NEW	ULM-9161-0.001	Pregnenolone sulfate, sodium salt (unlabeled)	C ₂₁ H ₃₁ NaO ₅ S	neat	1 mg
NEW	CLM-9162-B	Progesterone (2,3,4- ¹³ C ₃ , 99%)	*C ₃ C 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 ₂ C 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 ₉ H 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 ₄ H ₄₀ NNaO ₆ S	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 ₉ H ₃₅ NNaO ₆ S	neat	5 mg
NEW	ULM-9561-0.05	Taurochenodeoxycholic acid, sodium salt (unlabeled)	C ₂₆ H ₄₄ NNaO ₆ S	neat	50 mg
NEW	DLM-9568-0.01	Taurodeoxycholic acid, sodium salt (2,2,4,4-D ₄ , 98%)	C ₂₆ D ₄ H ₄₀ NNaO ₆ S	neat	10 mg
NEW	DLM-9567-0.005	Taurodeoxycholic acid, sodium salt (2,2,4,4,11,11-D ₆ , 98%)	C ₂₆ D ₆ H ₃₈ NNaO ₆ S	neat	5 mg
NEW	DLM-9570-0.01	Taurolithocholic acid, sodium salt (2,2,4,4-D ₄ , 98%)	C ₂₆ D ₄ H ₄₀ NO ₅ SNa	neat	10 mg
NEW	ULM-9569-0.05	Taurolithocholic acid, sodium salt (unlabeled)	C ₂₆ H ₄₄ NO ₅ SNa	neat	50 mg
NEW	CLM-159-0.01	Testosterone (3,4- ¹³ C ₂ , 99%)	*C ₂ C ₁₇ H ₂₈ O ₂	neat	0.01 g
NEW	CLM-9164-C	Testosterone (2,3,4- ¹³ C ₃ , 99%)	*C ₃ C 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 ₂ H 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 ₅ H 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 ₂ C 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 ₆ C ₉ H ₁₁ I ₄ NO ₄	neat	0.1 mg
NEW	CLM-8931-0.1MG	L-Thyroxine (ring- ¹³ C ₁₂ , 99%) CP 97%	HO*C ₆ H ₂ (I) ₂ O*C ₆ H ₂ (I) ₂ CH ₂ CH(NH ₂)CO ₂ H	neat	0.1 mg
NEW	ULM-8184-0.2MG	L-Thyroxine (unlabeled)	C ₁₅ H ₁₁ I ₄ NO ₄	neat	0.2 mg
NEW	DLM-9574-0.05	Ursodeoxycholic acid (2,2,4,4-D ₄ , 98%)	C ₂₄ D ₄ H 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 ₆ H ₄ OH	100 µg/mL in acetonitrile	1.2 mL
ULM-7629-1.2	Acetaminophen (unlabeled)	CH ₃ CONHC ₆ H ₄ OH	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 ₆ N·HCl	100 µg/mL in methanol	1.2 mL
ULM-8350-1.2	Amitriptyline-HCl (unlabeled)	C ₂₀ H ₂₃ N·HCl	100 µg/mL in methanol	1.2 mL
CLM-514-1.2	Caffeine (trimethyl- ¹³ C ₃ , 99%)	*C ₃ C ₅ H ₁₀ N ₄ O ₂	100 µg/mL in methanol	1.2 mL
ULM-7653-1.2	Caffeine (unlabeled)	C ₈ H ₁₀ N ₄ O ₂	100 µg/mL in methanol	1.2 mL
DLM-2806-1.2	Carbamazepine (D ₁₀ , 98%)	C ₁₅ D ₁₀ H ₂ N ₂ O	100 µg/mL in acetonitrile-D ₃	1.2 mL
ULM-6581-1.2	Carbamazepine (unlabeled) CP 97%	C ₁₅ H ₁₂ N ₂ O	100 µg/mL in acetonitrile	1.2 mL
DLM-1287-1.2	Clonidine (4,4,5,5-imidazoline-D ₄ , 98%)	C ₉ H ₅ D ₄ N ₃ Cl ₂	100 µg/mL in methanol	1.2 mL
ULM-8349-1.2	Clonidine (unlabeled)	C ₉ H ₉ N ₃ Cl ₂	100 µg/mL in methanol	1.2 mL
C-041	Codeine (D ₆ , 98%)	C ₁₈ H ₁₅ D ₆ NO 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 ₉ D ₃ N ₂ O	100 µg/mL in acetonitrile	1.2 mL
NEW ULM-9614-1.2	Cotinine (unlabeled)	C ₁₀ H ₁₂ N ₂ O	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 ₇ D ₅ N ₂ O·HCl	100 µg/mL in methanol	1 mL
D-907	Diazepam (unlabeled)	C ₁₆ H ₁₂ N ₂ O·HCl	1.0 mg/mL in methanol	1 mL
NEW DLM-9974-1.2	Diclofenac sodium (D ₄ , 98%)	C ₁₄ D ₄ H ₆ Cl ₂ NNaO ₂	100 µg/mL in methanol	1.2 mL
NEW ULM-9975-1.2	Diclofenac sodium (unlabeled)	C ₁₄ H ₁₀ Cl ₂ NNaO 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 ₁₅ H ₁₂ *N ₂ O ₂	100 µg/mL in methanol	1.2 mL
ULM-8533-1.2	5,5-Diphenylhydantoin (unlabeled)	C ₁₅ H ₁₂ N ₂ O ₂	100 µg/mL in methanol	1.2 mL
F-919	Fluoxetine oxalate (D ₆ , 98%)	C ₁₇ H ₁₂ D ₆ F ₃ NO·C ₂ H ₂ O ₄	100 µg/mL in methanol	1 mL
F-918	Fluoxetine-HCl (unlabeled)	C ₁₇ H ₁₈ F ₃ NO·HCl	1.0 mg/mL in methanol	1 mL
DLM-8221-1.2	Gemfibrozil (2,2-dimethyl-D ₆ , 98%)	C ₁₅ D ₆ H ₁₆ O ₃	100 µg/mL in <i>p</i> -dioxane	1.2 mL
ULM-8225-1.2	Gemfibrozil (unlabeled)	C ₁₅ H ₂₂ O ₃	100 µg/mL in <i>p</i> -dioxane	1.2 mL
CLM-6943-1.2	Ibuprofen (propionic- ¹³ C ₃ , 99%)	*C ₃ C 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 ₄ N ₂ ·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 ₆ D ₄ N ₂ O ₂ Cl ₂	100 µg/mL in acetonitrile	1 mL
L-901	Lorazepam (unlabeled)	C ₁₅ H ₁₀ N ₂ O ₂ Cl 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 ₃ H 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 ₅ H ₆ *N ₂ N ₂ O ₄		Inquire
NEW ULM-8234	Nitrofurazone (unlabeled)	C ₆ H ₆ N ₄ O ₄		Inquire
N-922	Norfluoxetine oxalate (D ₆ , 98%)	C ₁₆ H ₁₀ D ₆ F ₃ NO·C ₂ H ₂ O ₄	100 µg/mL in methanol	1 mL
N-923	Norfluoxetine oxalate (unlabeled)	C ₁₆ H ₁₆ F ₃ NO·C ₂ H ₂ O ₄	1.0 mg/mL in methanol	1 mL
DLM-3039-1MG	Phenylbutazone (diphenyl-D ₁₀ , 98%)	C ₁₉ D ₁₀ H ₁₀ N ₂ O 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 ₂ O ₂	neat	1 mg
CLM-7892	Resorcinol (¹³ C ₆ , 99%)	*C ₆ H ₆ O ₂		Inquire
CLM-8370-1.2	Thiabendazole (ring- ¹³ C ₆ , 99%)	C ₄ *C ₆ H ₇ N ₃ S	100 µg/mL in acetonitrile	1.2 mL
ULM-8371-1.2	Thiabendazole (unlabeled)	C ₁₀ H ₇ N ₃ S	100 µg/mL in acetonitrile	1.2 mL
NEW DLM-6861-MT-1.2	Warfarin (phenyl-D ₅ , 98%)	C ₁₉ H ₁₁ D ₅ O 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 ₂ O (phenyl- ¹³ C ₆ , 99%)	*C ₆ C ₁₀ H ₁₉ N ₃ O ₅ S·3H ₂ O	neat	1 mg
DLM-119-1.2	(+/-)-Chloramphenicol (ring-D ₄ , benzyl-D ₁ , 98%)	NO ₂ (C ₆ D ₄)CD(OH)CH(NHCOCHCl ₂)CH ₂ OH	100 µg/mL in acetonitrile	1.2 mL
ULM-6687-1.2	(+/-)-Chloramphenicol (unlabeled)	NO ₂ (C ₆ H ₄)CH(OH)CH(NHCOCHCl ₂)CH ₂ OH	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 ₃ C ₁₄ H ₁₈ F*NN ₂ O ₃ ·HCl	100 µg/mL in methanol	1.2 mL
ULM-7710-1.2	Ciprofloxacin·HCl (unlabeled)	C ₁₇ H ₁₈ FN ₃ O 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 ₂ C 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 ₂ N*C ₆ H ₄ SO ₂ NH(C ₆ N ₂ H ₇)	100 µg/mL in acetonitrile	1.2 mL
ULM-7220-1.2	Sulfamethazine (unlabeled)	H ₂ NC ₆ H ₄ SO ₂ NH(C ₆ N ₂ H ₇)	100 µg/mL in acetonitrile	1.2 mL
CLM-6944-1.2	Sulfamethoxazole (ring- ¹³ C ₆ , 99%)	C ₄ *C ₆ H ₁₁ N ₃ O ₃ S	100 µg/mL in acetonitrile	1.2 mL
ULM-7527-1.2	Sulfamethoxazole (unlabeled)	C ₁₀ H ₁₁ N ₃ O ₃ S	100 µg/mL in acetonitrile	1.2 mL
CLM-7988-A-1.2	Trimethoprim (¹³ C ₃ , 99%)	*C ₃ C ₁₁ H ₁₈ N ₄ O ₃	50 µg/mL in methanol	1.2 mL
ULM-7989-A-1.2	Trimethoprim (unlabeled)	C ₁₄ H ₁₈ N ₄ O 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 ₆ C ₄ H 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 ₆ C ₄ H 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 ₃ C ₇ H ₁₂ N ₂ O	100 µg/mL in water	1.2 mL
NEW DLM-1819-1.2	DL-Cotinine (methyl-D ₃ , 98%)	C ₁₀ D ₃ H ₉ N ₂ O	100 µg/mL in acetonitrile	1.2 mL
NEW ULM-9614-1.2	Cotinine (unlabeled)	C ₁₀ H ₁₂ N ₂ O	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 ₄ C ₆ H ₈ O ₃	100 µg/mL in acetonitrile	1.2 mL
ULM-7309-1.2	4-Methylumbelliferone (unlabeled)	C ₁₀ H ₈ O ₃	100 µg/mL in acetonitrile	1.2 mL
NEW CLM-6705-1.2	NAB (N'-Nitrosoanabasine) (¹³ C ₆ , 99%)	*C ₆ C ₄ H ₁₃ N ₃ O	100 µg/mL in acetonitrile	1.2 mL
NEW ULM-7168-1.2	NAB (N'-Nitrosoanabasine) (unlabeled)	C ₁₀ H ₁₃ N ₃ O	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 ₆ C ₄ H ₁₁ N ₃ O	100 µg/mL in acetonitrile	1.2 mL
ULM-7207-1.2	NAT (N'-Nitrosoanatabine) (unlabeled)	C ₁₀ H ₁₁ N ₃ O	2 mg/mL in acetonitrile	1.2 mL
NEW CLM-3914-1.2	DL-Nicotine (3',4',5'- ¹³ C ₃ , 99%)	*C ₃ C ₇ H 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 ₆ C ₄ H ₁₅ N ₃ O ₂	100 µg/mL in acetonitrile	1.2 mL
NEW ULM-9434-1.2	NNAL (4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol) (unlabeled)	C ₁₀ H ₁₅ N ₃ O ₂	100 µg/mL in acetonitrile	1.2 mL
NEW ULM-9434-20X-1.2			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 ₆ C ₄ H ₁₃ N ₃ O 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 ₃ O 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-Nitrosornicotine) (2,2',3,4,5,6- ¹³ C ₆ , 99%)	*C ₆ C ₃ H ₁₁ N ₃ O	100 µg/mL in nonane/ethanol (9:1)	1.2 mL
NEW DLM-7474-1.2	NNN (N-Nitrosornicotine) (2,4,5,6-D ₄ , 98%)	C ₉ D ₄ H ₇ N ₃ O	0.1 mg/mL in acetonitrile	1.2 mL
NEW ULM-9406-1.2	NNN (N-Nitrosornicotine) (unlabeled)	C ₉ H ₁₁ N ₃ O	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 ₃ C ₆ H ₁₀ N ₂ O	100 µg/mL in acetonitrile	1.2 mL
NEW ULM-9615-1.2	Norcotinine (unlabeled)	C ₉ H ₁₀ N ₂ O	100 µg/mL in acetonitrile	1.2 mL
NEW CLM-4892-1.2	DL-Nornicotine (3',4',5'- ¹³ C ₃ , 99%)	*C ₃ C ₆ H ₁₂ N ₂	100 µg/mL in acetonitrile	1.2 mL
NEW ULM-2154-1.2	Nornicotine (unlabeled)	C ₉ H 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 ₂ C=CHCONH ₂	1 mg/mL in methanol	1.2 mL
DLM-7170-1.2	1-Aminohydantoin hydrochloride (AHD) (5,5-D ₂ , 98%)	C ₃ H ₃ D ₂ N ₃ O ₂ Cl	100 µg/mL in acetonitrile-D ₃	1.2 mL
ULM-7188-1.2	1-Aminohydantoin hydrochloride (AHD) (unlabeled)	C ₃ H ₅ N ₃ O ₂ ·HCl	100 µg/mL in methanol	1.2 mL
DLM-7171-1.2	3-Amino-2-oxazolidone (AOZ) (ring-D ₄ , 98%)	C ₃ H ₂ D ₄ N ₂ O ₂	100 µg/mL in acetonitrile-D ₃	1.2 mL
ULM-7189-1.2	3-Amino-2-oxazolidone (AOZ) (unlabeled)	C ₃ H ₆ N ₂ O 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 ₈ H ₁₀ D ₅ N ₃ O 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 ₈ H ₁₅ N ₃ O ₃	100 µg/mL in methanol	1.2 mL
CLM-8589-1.2	Ammelide (ring- ¹³ C ₃ , 99%)	*C ₃ H ₄ N ₄ O ₂	100 µg/mL in water/ diethylamine (80/20 v/v)	1.2 mL
ULM-8590-1.2	Ammelide (unlabeled)	C ₃ H ₄ N ₄ O ₂	100 µg/mL in water/ diethylamine (80/20 v/v)	1.2 mL
CLM-8316-1.2	Ammeline (desethyldeisopropylhydroxyatrazine) (ring- ¹³ C ₃ , 99%)	*C ₃ H ₅ N ₅ O	100 µg/mL in water/ diethylamine (80/20 v/v)	1.2 mL
ULM-8323-1.2	Ammeline (desethyldeisopropylhydroxyatrazine) (unlabeled)	C ₃ H ₅ N ₅ O	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 ₆ H ₁₀ O ₅	100 µg/mL in DMSO	1.2 mL
ULM-8000-1.2	1,6-Anhydro-β-D-glucose (levoglucosan) (unlabeled)	C ₆ H ₁₀ O ₅	100 µg/mL in DMSO	1.2 mL
DLM-119-1.2	(+/-)-Chloramphenicol (ring-D ₄ , benzyl-D ₁ , 98%)	NO ₂ C ₆ D ₄ C ₅ DH ₅ O ₃ NCl ₂	100 µg/mL in acetonitrile	1.2 mL
ULM-6687-1.2	(+/-)-Chloramphenicol (unlabeled)	NO ₂ C ₆ H ₄ C ₅ H ₆ O ₃ NCl 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 ₂ CDOHCD ₂ OH	1 mg/mL in methanol	1.2 mL
ULM-7998-1.2	3-Chloro-1,2-propanediol (unlabeled)	ClCH ₂ CHOHCH ₂ OH	1 mg/mL in methanol	1.2 mL
CNLM-4661-1.2	Cyanuric acid (¹³ C ₃ , 99%; ¹⁵ N ₃ , 98%+) CP 90%+	*C ₃ H ₃ *N ₃ O ₃	100 µg/mL in water	1.2 mL
CNLM-4661-10X-1.2	Cyanuric acid (unlabeled)	C ₃ H ₃ N ₃ O ₃	1000 µg/mL in water	1.2 mL
ULM-8157-1.2	Cyanuric acid (unlabeled)	C ₃ H ₃ N ₃ O ₃	100 µg/mL in water	1.2 mL
NEW DLM-2943-1.2	2,6-Di(<i>tert</i> -butyl)-4-methyl phenol (BHT) (D ₂₁ , 98%)	C ₁₅ H ₃ D ₂₁ O	100 µg/mL in nonane	1.2 mL
NEW ULM-7494-1.2	2,6-Di(<i>tert</i> -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 ₄ D ₈ H ₂ O ₃	1 mg/mL in methanol	1.2 mL
ULM-8235-1.2	Diethylene glycol (unlabeled)	C ₄ H ₁₀ O ₃	1 mg/mL in methanol	1.2 mL
CNLM-8150-1.2	Melamine (¹³ C ₃ , 99%; amino- ¹⁵ N ₃ , 98%)	*C ₃ H ₆ *N ₃ N ₃	100 µg/mL in water	1.2 mL
CNLM-8150-10X-1.2	Melamine (unlabeled)	C ₃ H ₆ N ₃ N ₃	1000 µg/mL in water	1.2 mL
ULM-8156-1.2	Melamine (unlabeled)	C ₃ H ₆ N ₃ N 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 ₄ O	neat	25 mg
DLM-4766-1.2	2-Methylisoborneol (2-methyl-D ₃ , 98%)	C ₁₁ H ₁₇ D ₃ O	100 µg/mL in nonane	1.2 mL
CDLM-7279-S	<i>N</i> -Nitrosodimethylamine (¹³ C ₂ , 99%; D ₆ , 98%)	*C ₂ D ₆ N ₂ O	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	<i>o</i> -Phenylphenol (phenyl- ¹³ C ₆ , 99%)	*C ₆ H ₅ C ₆ H ₄ OH	100 µg/ml in nonane	1.2 mL
ULM-7396-1.2	<i>o</i> -Phenylphenol (unlabeled)	C ₆ H ₅ C ₆ H ₄ OH	100 µg/ml in nonane	1.2 mL
CLM-3748-1.2	<i>p</i> -Phenylphenol (phenyl- ¹³ C ₆ , 99%) CP 96%	*C ₆ H ₅ C ₆ H ₄ OH	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 ₂ NO·HCl	100 µg/mL in methanol	1.2 mL
ULM-7187-1.2	Semicarbazide hydrochloride (SEM) (unlabeled)	CH ₅ N ₃ O·HCl	100 µg/mL in methanol	1.2 mL
DLM-6083-1.2	2,4,6-Trichloroanisole (D ₅ , 98%)	C ₆ D ₂ Cl ₃ OC ₆ D ₃	1 mg/mL in methanol-D	1.2 mL
ULM-7999-1.2	2,4,6-Trichloroanisole (unlabeled)	C ₆ H ₂ Cl ₃ OCH ₃	1 mg/mL in methanol	1.2 mL
DLM-2080-1.2	1,2,3-Trichloropropane (D ₅ , 98%) CP 95%	CD ₂ ClC ₂ ClCD ₂ Cl	1 mg/mL in methanol	1.2 mL
ULM-6911-1.2	1,2,3-Trichloropropane (unlabeled)	CH ₂ ClCHClCH ₂ Cl	1 mg/mL in methanol	1.2 mL
NEW DLM-4444-0.1	Urethane (ethyl carbamate) (ethyl-D ₅ , 98%)	C ₃ H ₂ D ₅ NO 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
NEW	DLM-1369-1.2	Benzyl butyl phthalate (ring-D ₄ , 98%)	C ₆ D ₄ [CO ₂ (CH ₂) ₃ CH ₃][CH ₂ C ₆ H ₅]	100 µg/mL in nonane	1.2 mL
	DLM-1369-0.1			neat	0.1 g
	ULM-7551-1.2	Benzyl butyl phthalate (unlabeled)	C ₆ H ₄ [CO ₂ (CH ₂) ₃ CH ₃][CH ₂ C ₆ H 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 ₂ CH(C ₂ H ₅)C ₄ H 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 ₂ CH(C ₂ H ₅)C ₄ H 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 ₄ H ₃₈ O ₄		Inquire
NEW	DLM-1368-1.2	Bis(2-ethylhexyl) phthalate (ring-D ₄ , 98%)	C ₆ D ₄ [CO ₂ CH ₂ CH(C ₂ H ₅)C ₄ H ₉]] ₂	100 µg/mL in nonane	1.2 mL
	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 ₆ H ₄ [CO ₂ CH ₂ CH(C ₂ H ₅)C ₄ H ₉]] 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 ₂ C ₄ H ₄ (*CO ₂ C ₆ H ₁₁) ₂	100 µg/mL in nonane	1.2 mL
	ULM-8785-1.2	Dicyclohexyl phthalate (unlabeled)	C ₆ H ₄ (CO ₂ C ₆ H ₁₁) ₂	100 µg/mL in nonane	1.2 mL
	DLM-1629-1.2	Diethyl phthalate (ring-D ₄ , 98%)	C ₆ D ₄ (CO ₂ CH ₂ CH 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 ₆ H ₄ (CO ₂ CH ₂ CH 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 ₆ D ₄ (CO ₂ CH 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 ₆ H ₄ (CO ₂ CH ₃) ₂	100 µg/mL in nonane	1.2 mL
	DLM-1367-1.2	Di- <i>n</i> -butyl phthalate (ring-D ₄ , 98%)	C ₆ D ₄ [CO ₂ (CH ₂) ₃ CH 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- <i>n</i> -butyl phthalate (unlabeled)	C ₆ H ₄ [CO ₂ (CH ₂) ₃ CH ₃]] ₂	100 µg/mL in nonane	1.2 mL
	CLM-4669-1.2	Di- <i>n</i> -hexyl phthalate (ring-1,2- ¹³ C ₂ , dicarboxyl- ¹³ C ₂ , 99%)	*C ₂ C ₄ H ₄ *CO ₂ (CH ₂) ₅ CH ₃]] ₂	100 µg/mL in nonane	1.2 mL
	ULM-7434-1.2	Di- <i>n</i> -hexyl phthalate (unlabeled)	C ₆ H ₄ [CO ₂ (CH ₂) ₅ CH ₃]] ₂	100 µg/mL in nonane	1.2 mL
	DLM-1630-1.2	Di- <i>n</i> -octyl phthalate (ring-D ₄ , 98%)	C ₆ D ₄ [CO ₂ (CH ₂) ₇ CH ₃]] ₂	100 µg/mL in nonane	1.2 mL
NEW	DLM-1630-0.1			neat	0.1 g
	ULM-6129-1.2	Di- <i>n</i> -octyl phthalate (unlabeled)	C ₆ H ₄ [CO ₂ (CH ₂) ₇ CH ₃]] ₂	100 µg/mL in nonane	1.2 mL
	CLM-4668-1.2	Di- <i>n</i> -pentyl phthalate (ring-1,2- ¹³ C ₂ , dicarboxyl- ¹³ C ₂ , 99%)	*C ₂ C ₄ H ₄ *CO ₂ (CH ₂) ₄ CH ₃]] ₂	100 µg/mL in nonane	1.2 mL
	ULM-7433-1.2	Di- <i>n</i> -pentyl phthalate (unlabeled)	C ₆ H ₄ [CO ₂ (CH ₂) ₄ CH ₃]] ₂	100 µg/mL in nonane	1.2 mL
NEW	CLM-4671	Di- <i>n</i> -propyl phthalate (ring-1,2- ¹³ C ₂ , dicarboxyl- ¹³ C ₂ , 99%)	C ₂ C ₄ H ₄ -1,2-[*CO ₂ (CH ₂) ₂ CH ₃]] ₂		Inquire
	CLM-4591-MT-1.2	Monobenzyl phthalate (ring-1,2- ¹³ C ₂ , dicarboxyl- ¹³ C ₂ , 99%)	*C ₂ C ₄ H ₄ [*CO ₂ CH ₂ C ₆ H ₅][*CO ₂ H]	100 µg/mL in MTBE	1.2 mL
	ULM-6149-MT-1.2	Monobenzyl phthalate (unlabeled)	C ₆ H ₄ [CO ₂ CH ₂ C ₆ H ₅][CO ₂ H]	100 µg/mL in MTBE	1.2 mL
NEW	CLM-4590-MT-1.2	Mono- <i>n</i> -butyl phthalate (ring-1,2- ¹³ C ₂ , dicarboxyl- ¹³ C ₂ , 99%)	*C ₂ C ₄ H ₄ *CO ₂ (CH ₂) ₃ CH ₃][*CO ₂ H]	100 µg/mL in MTBE	1.2 mL
NEW	ULM-6148-MT-1.2	Mono- <i>n</i> -butyl phthalate (unlabeled)	C ₆ H ₄ [CO ₂ (CH ₂) ₃ CH ₃][CO ₂ H]	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 ₂ C ₄ H ₄ [*CO ₂ CH ₂ (CH ₂) ₅ CH ₃ CO ₂][*CO ₂ H]	100 µg/mL in MTBE	1.2 mL
NEW	ULM-8233-MT-1.2	Mono-[2-(carboxymethyl) hexyl] phthalate (DEHP Metabolite IV) (unlabeled)	C ₆ H ₄ [CO ₂ CH ₂ (CH ₂) ₅ CH ₃ CO ₂][CO ₂ H]	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 ₂ C ₄ H ₄ *CO ₂ (CH ₂) ₃ CO ₂ H][*CO ₂ H]	100 µg/mL in MTBE	1.2 mL
NEW	ULM-6848-MT-1.2	Mono-(3-carboxypropyl) phthalate (unlabeled)	C ₆ H ₄ [CO ₂ (CH ₂) ₃ CO ₂ H][CO ₂ H]	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 ₂ C ₄ H ₄ *CO ₂ C ₆ H ₁₁][*CO ₂ H]	100 µg/mL in MTBE	1.2 mL
NEW	ULM-7394-MT-1.2	Monocyclohexyl phthalate (unlabeled)	C ₆ H ₄ [CO ₂ C ₆ H ₁₁][CO ₂ H]	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 ₂ C ₄ H ₄ [*CO ₂ CH ₂ CH(CH ₂ CH ₃)(CH ₂) ₃ CH ₃][*CO ₂ H]	100 µg/mL in MTBE	1.2 mL
NEW	ULM-4583-MT-1.2	Mono-2-ethylhexyl phthalate (unlabeled)	C ₆ H ₄ [CO ₂ CH ₂ CH(CH ₂ CH ₃)(CH ₂) ₃ CH ₃][CO ₂ H]	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 ₂ C ₄ H ₄ [*CO ₂ CH ₂ (CH ₂ CH ₃)(CH ₂) ₃][*CO ₂ H]	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 ₆ H ₄ [CO ₂ CH ₂ (CH ₂ CH ₃)(CH ₂) ₃][CO ₂ H]	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 ₂ C ₄ H ₄ [*CO ₂ CH ₂ CH(CH ₂ CH ₃)CH ₂ CH ₂ CH(OH)CH ₃][*CO ₂ H]	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 ₆ H ₄ [CO ₂ CH ₂ CH(CH ₂ CH ₃)CH ₂ CH ₂ CH(OH)CH ₃][CO ₂ H]	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 ₂ C ₄ H ₄ [*CO ₂ CH ₂ CH(CH ₂ CH ₃)CH ₂ CH ₂ COCH ₃][*CO ₂ H]	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 ₆ H ₄ [CO ₂ CH ₂ CH(CH ₂ CH ₃)CH ₂ CH ₂ COCH ₃][CO ₂ H]	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 ₂ C ₄ H ₄ [*CO ₂ CH ₂ CH ₃][*CO ₂ H]	100 µg/mL in MTBE	1.2 mL
NEW	ULM-4585-MT-1.2	Monoethyl phthalate (unlabeled)	C ₆ H ₄ [CO ₂ CH ₂ CH ₃][CO ₂ H]	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 ₆ H ₄ [CO ₂ CH ₂ CH(CH ₃) ₂][CO ₂ H]	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 ₄ H ₂₆ O ₄		Inquire
NEW	ULM-4652-MT-1.2	Monoisodecyl phthalate (mono-3,7-dimethyloctyl phthalate) (unlabeled)	C ₆ H ₄ [CO ₂ (CH ₂) ₂ CH(CH ₃ (CH ₂) ₃ CH(CH ₃) ₂)]][CO ₂ H]	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 ₂ C ₄ H ₄ [*CO ₂ (CH ₂) ₆ CH(CH ₃) ₂][*CO ₂ H]	100 µg/mL in MTBE	1.2 mL
NEW	ULM-4651-MT-1.2	Monoisononyl phthalate (mono-3,5,5-trimethylhexyl phthalate) (unlabeled)	C ₆ H ₄ [CO ₂ (CH ₂) ₆ CH(CH ₃) ₂][CO ₂ H]	100 µg/mL in MTBE	1.2 mL
NEW	ULM-7395-MT-1.2	Monoisopropyl phthalate (unlabeled)	C ₆ H ₄ [CO ₂ CH(CH ₃) ₂][CO ₂ H]	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 ₂ C ₄ H ₄ [*CO ₂ CH ₃][*CO ₂ H]	100 µg/mL in MTBE	1.2 mL
NEW	ULM-6697-MT-1.2	Monomethyl phthalate (unlabeled)	C ₆ H ₄ [CO ₂ CH ₃][CO ₂ H]	100 µg/mL in MTBE	1.2 mL
NEW	CLM-6225	Monomethyl isophthalate (ring- ¹³ C ₆ , 99%)	*C ₆ C ₃ H ₈ O ₄		Inquire
NEW	ULM-6226	Monomethyl isophthalate (unlabeled)	C ₉ H ₈ O ₄		Inquire
NEW	CLM-4589-MT-1.2	Mono- <i>n</i> -octyl phthalate (ring-1,2- ¹³ C ₂ , dicarboxyl- ¹³ C ₂ , 99%)	*C ₂ C ₄ H ₄ [*CO ₂ (CH ₂) ₇ CH ₃][*CO ₂ H]	100 µg/mL in MTBE	1.2 mL
NEW	ULM-4593-MT-1.2	Mono- <i>n</i> -octyl phthalate (unlabeled)	C ₂ C ₄ H ₄ [CO ₂ (CH ₂) ₇ CH ₃][CO ₂ H]	100 µg/mL in MTBE	1.2 mL
NEW	ULM-7393-MT-1.2	Mono- <i>n</i> -pentyl phthalate (unlabeled)	C ₂ C ₄ H ₄ [CO ₂ (CH ₂) ₄ CH ₃][CO ₂ H]	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 ₂ C ₄ H ₄ *(COOH) ₂	100 µg/mL in MTBE	1.2 mL
NEW	ULM-8301-MT-1.2	Phthalic acid (unlabeled)	C ₆ H 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 ₆ H ₄ OH) ₂ C(CH ₃) ₂	100 µg/mL in acetonitrile	1.2 mL
ULM-7106-1.2	Bisphenol A (unlabeled)	(C ₆ H ₄ OH) ₂ C(CH ₃) ₂	100 µg/mL in acetonitrile	1.2 mL
ULM-8654-1.2	2,4'-Bisphenol A (unlabeled)	(C ₆ H ₄ OH) ₂ C(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-glucuronide) disodium salt (unlabeled) CP 90%	C ₂₇ H ₃₀ Na ₂ O ₁₄	100 µg/mL in methanol	1.2 mL
NEW ULM-9833-1.2	Bisphenol A bisulfate disodium salt (unlabeled) CP 90%	C ₁₅ H ₁₄ Na ₂ O ₈ S ₂	100 µg/mL in methanol	1.2 mL
NEW CLM-9776-1.2	Bisphenol AF (ring- ¹³ C ₁₂ , 99%)	(*C ₆ H ₄ OH) ₂ C(CF ₃) ₂	100 µg/mL in methanol	1.2 mL
NEW ULM-9779-1.2	Bisphenol AF (unlabeled)	(C ₆ H ₄ OH) ₂ C(CF ₃) ₂	100 µg/mL in methanol	1.2 mL
NEW ULM-9830-1.2	Bisphenol AP (unlabeled)	CH ₃ C(C ₆ H ₅)(C ₆ H ₄ OH) 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 ₃ CH(C ₆ H ₄ O) ₂	100 µg/mL in acetonitrile	1.2 mL
NEW CLM-9866-1.2	Bisphenol F (ring- ¹³ C ₁₂ , 99%)	CH ₂ (*C ₆ H ₄ OH) ₂	100 µg/mL in acetonitrile	1.2 mL
NEW ULM-9827-1.2	Bisphenol F (unlabeled)	(C ₆ H ₄ OH) ₂ CH 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 ₆ H ₄ [C(CH ₃) ₂ C ₆ H ₄ OH] 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 ₄ S	100 µg/mL in methanol	1.2 mL
NEW ULM-9320-1.2	Bisphenol S (unlabeled)	C ₁₂ H ₁₀ O ₄ S	100 µg/mL in methanol	1.2 mL
NEW ULM-9828-1.2	Bisphenol Z (unlabeled)	C ₆ H ₁₀ (C ₆ H ₄ OH) 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 ₈ F ₁₇ NaO ₃ S	50 µg/mL in methanol	1.2 mL
ULM-9001-1.2	Perfluorooctanesulfonate (PFOS), sodium salt (unlabeled)	C ₈ F ₁₇ NaO ₃ S	50 µg/mL in methanol	1.2 mL
NEW ULM-8097-1.2	Perfluorobutyric acid (PFBA) (unlabeled)	CF ₃ CF ₂ CF ₂ COOH	50 µg/mL in methanol	1.2 mL
NEW ULM-9515-1.2	Perfluoropentanoic acid (PFPA) (unlabeled)	CF ₃ (CF ₂) ₃ COOH	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 ₂ Na	50 µg/mL in methanol	1.2 mL
ULM-8342-1.2	Perfluorohexanoic acid (PFHxA), sodium salt (unlabeled)	CF ₃ (CF ₂) ₄ CO ₂ Na	50 µg/mL in methanol	1.2 mL
NEW ULM-9516-1.2	Perfluoroheptanoic acid (PFHpA) (unlabeled)	CF ₃ (CF ₂) ₅ CO ₂ H	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 ₂ H	50 µg/mL in methanol	1.2 mL
ULM-7451-1.2	Perfluorooctanoic acid (PFOA) (unlabeled)	CF ₃ (CF ₂) ₆ CO ₂ H	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 ₂ H	50 µg/mL in methanol	1.2 mL
ULM-8066-1.2	Perfluorononanoic acid (PFNA) (unlabeled)	CF ₃ (CF ₂) ₇ CO ₂ H	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 ₂ H	50 µg/mL in methanol	1.2 mL
ULM-8067-1.2	Perfluorodecanoic acid (PFDA) (unlabeled)	CF ₃ (CF ₂) ₈ CO ₂ H	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) ₉ CO ₂ Na	50 µg/mL in methanol	1.2 mL
ULM-8084-1.2	Perfluoroundecanoic acid (PFUA), sodium salt (unlabeled)	CF ₃ (CF ₂) ₉ CO ₂ Na	50 µg/mL in methanol	1.2 mL
NEW ULM-8068-1.2	Perfluorododecanoic acid (PFDoA) (unlabeled)	CF ₃ (CF ₂) ₁₀ CO ₂ H	50 µg/mL in methanol	1.2 mL
NEW ULM-9955-1.2	Perfluorotridecanoic acid (PFTeDA) (unlabeled)	CF ₃ (CF ₂) ₁₁ CO ₂ H		Inquire
NEW ULM-9956-1.2	Perfluorotetradecanoic acid (PFTeDA) (unlabeled)	CF ₃ (CF ₂) ₁₂ CO ₂ H		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 ₃ CH ₂ CH)(CH ₃)CH ₂ (CH ₃) (CH ₂ CH ₃)C *C ₆ H ₄ OH		Inquire
NEW ULM-8360-1.2	4-(1,3-Dimethyl-1-ethylpentyl) phenol (unlabeled)	(CH ₃ CH ₂ CH)(CH ₃)CH ₂ (CH ₃) (CH ₂ CH ₃)CC ₆ H ₄ OH	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) ₂ C(CH ₂) ₂ (CH ₃)(CH ₂ CH ₃) C *C ₆ H ₄ OH	100 µg/mL in methanol	1.2 mL
NEW ULM-8361-1.2	4-(1,4-Dimethyl-1-ethylpentyl) phenol (unlabeled)	(CH ₃) ₂ C(CH ₂) ₂ (CH ₃)(CH ₂ CH ₃) CC ₆ H ₄ OH	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 ₂ CH ₃) C *C ₆ H ₄ OH	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 ₂ CH ₃) CC ₆ H ₄ OH	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) ₂ C(CH ₂) ₃ (CH ₃) ₂ (CH ₂ CH ₃)C *C ₆ H ₄ OH		Inquire
NEW ULM-8362-1.2	4-(1,1,5-Trimethylhexyl) phenol (unlabeled)	(CH ₃) ₂ C(CH ₂) ₃ (CH ₃) ₂ (CH ₂ CH ₃)CC ₆ H ₄ OH	100 µg/mL in methanol	1.2 mL
NEW CLM-4306-1.2	<i>p-n</i> -Nonylphenol (ring- ¹³ C ₆ , 99%)	CH ₃ (CH ₂) ₈ *C ₆ H ₄ OH	100 µg/mL in nonane	1.2 mL
NEW CLM-4306-M-1.2			100 µg/mL in methanol	1.2 mL
NEW ULM-4559-1.2	<i>p-n</i> -Nonylphenol (unlabeled)	CH ₃ (CH ₂) ₈ C ₆ H ₄ OH	100 µg/mL in nonane	1.2 mL
NEW ULM-4559-M-1.2			100 µg/mL in methanol	1.2 mL
NEW CLM-4512-1.2	<i>p-n</i> -Nonylphenol monoethoxylate (ring- ¹³ C ₆ , 99%)	CH ₃ (CH ₂) ₈ *C ₆ H ₄ O(CH ₂) ₂ OH	100 µg/mL in nonane	1.2 mL
NEW CLM-4512-M-1.2			100 µg/mL in methanol	1.2 mL
NEW ULM-4520-1.2	<i>p-n</i> -Nonylphenol monoethoxylate (unlabeled)	CH ₃ (CH ₂) ₈ C ₆ H ₄ O(CH ₂) ₂ OH	100 µg/mL in nonane	1.2 mL
NEW ULM-4520-M-1.2			100 µg/mL in methanol	1.2 mL
NEW ULM-4520-SA-5X-1.2			500 µg/mL in acetonitrile	1.2 mL
NEW CLM-4307-1.2	<i>p-n</i> -Nonylphenol diethoxylate (ring- ¹³ C ₆ , 99%)	CH ₃ (CH ₂) ₈ *C ₆ H ₄ O(CH ₂) ₂ O (CH ₂) ₂ OH	100 µg/mL in nonane	1.2 mL
NEW CLM-4307-M-1.2			100 µg/mL in methanol	1.2 mL
NEW ULM-4521-1.2	<i>p-n</i> -Nonylphenol diethoxylate (unlabeled)	CH ₃ (CH ₂) ₈ C ₆ H ₄ O(CH ₂) ₂ O (CH ₂) ₂ OH	100 µg/mL in nonane	1.2 mL
NEW ULM-4521-M-1.2			100 µg/mL in methanol	1.2 mL
NEW ULM-4521-SA-5X-1.2			500 µg/mL in acetonitrile	1.2 mL
CLM-4516-1.2	<i>p-n</i> -Nonylphenol triethoxylate (ring- ¹³ C ₆ , 99%) CP 90%	CH ₃ (CH ₂) ₈ *C ₆ H ₄ O(CH ₂) ₂ O (CH ₂) ₂ O(CH ₂) ₂ OH	100 µg/mL in nonane	1.2 mL
ES-4157	<i>p-n</i> -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 x 1.2 mL
ULM-6560-1.2	<i>p</i> -Nonylphenol – technical grade (unlabeled)	C ₉ H ₁₉ C ₆ H ₄ OH	100 µg/mL in nonane	1.2 mL
ULM-7146-1.2	Nonylphenol monoethoxylate-branched isomers (unlabeled)	C ₉ H ₁₉ C ₆ H ₄ O(CH ₂) ₂ OH	100 µg/mL in nonane	1.2 mL
ULM-7147-1.2	Nonylphenol diethoxylate-branched isomers (unlabeled)	C ₉ H ₁₉ C ₆ H ₄ (OCH ₂ CH ₂) ₂ OH	100 µg/mL in nonane	1.2 mL
ULM-4688-1.2	Nonylphenoxyacetic acid – ring/chain isomers (unlabeled)	C ₉ H ₁₉ C ₆ H ₄ OCH ₂ CO ₂ H	100 µg/mL in nonane	1.2 mL
ULM-4690-1.2	<i>p-n</i> -Nonylphenoxyethoxyacetic acid (unlabeled)	CH ₃ (CH ₂) ₈ C ₆ H ₄ O(CH ₂) ₂ OCH ₂ CO ₂ H	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	<i>N</i> -Nitrodimethylamine (D ₆ , 98%)	C ₂ D ₆ N ₂ O ₂	1 mg/mL in MeCl-D ₂	1 mL
ULM-7780-S	<i>N</i> -Nitrodimethylamine (unlabeled)	C ₂ H ₆ N ₂ O ₂	1 mg/mL in MeCl	1 mL
DLM-7982-S	<i>N</i> -Nitrosodiethylamine (D ₁₀ , 98%)	(C ₂ D ₅) ₂ NNO	1 mg/mL in MeCl-D ₂	1 mL
ULM-7984-1.2	<i>N</i> -Nitrosodiethylamine (unlabeled)	(C ₂ H ₅) ₂ NNO	1 mg/mL in MeCl	1.2 mL
CDLM-7279-S	<i>N</i> -Nitrosodimethylamine (¹³ C ₂ , 99%; D ₆ , 98%)	*C ₂ D ₆ N ₂ O	1 mg/mL in MeCl-D ₂	1 mL
DLM-2130-S	<i>N</i> -Nitrosodimethylamine (D ₆ , 98%)	C ₂ D ₆ N ₂ O	1 mg/mL in MeCl-D ₂	1 mL
NLM-7647-S	<i>N</i> -Nitrosodimethylamine (¹⁵ N ₂ , 98%)	(C ₂ H ₅) ₂ *N*NO	1 mg/mL in MeCl	1 mL
NEW ULM-9042-S	<i>N</i> -Nitrosodimethylamine (unlabeled)	(C ₂ H ₅) ₂ NNO	1 mg/mL in MeCl	1 mL
DLM-3098-S	<i>N</i> -Nitrosodiphenylamine (2,2',4,4',6,6'-D ₆ , 98%)	(C ₆ D ₃ H ₂) ₂ NN=O	1 mg/mL in MeCl-D ₂	1 mL
ULM-7219-1.2	<i>N</i> -Nitrosodiphenylamine (unlabeled)	C ₁₂ H ₁₀ N ₂ O	1 mg/mL in MeCl	1.2 mL
DLM-2131-S	<i>N</i> -Nitrosodi- <i>n</i> -propylamine (D ₁₄ , 98%)	C ₆ D ₁₄ N ₂ O	1 mg/mL in MeCl-D ₂	1 mL
ULM-6637-S	<i>N</i> -Nitrosodi- <i>n</i> -propylamine (unlabeled)	C ₆ H ₁₄ N ₂ O	1 mg/mL in MeCl	1 mL
DLM-8254-1.2	<i>N</i> -Nitrosomorpholine (D ₈ , 98%)	CD ₈ N ₂ O ₂	1 mg/mL in MeCl-D ₂	1.2 mL
ULM-8255-1.2	<i>N</i> -Nitrosomorpholine (unlabeled) CP 96%	CH ₈ N ₂ O ₂	1 mg/mL in MeCl	1.2 mL
DLM-8252-1.2	<i>N</i> -Nitrosopyrrolidine (D ₈ , 98%)	C ₄ D ₈ N ₂ O	1 mg/mL in MeCl-D ₂	1.2 mL
ULM-8253-1.2	<i>N</i> -Nitrosopyrrolidine (unlabeled)	C ₄ H ₈ N ₂ O	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 ₆ H ₅ Br	neat	0.5 g
DLM-398-5	Bromobenzene (D ₅ , 99%)	C ₆ D ₅ Br	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 ₆ H ₄ BrOH	100 µg/mL in toluene	1.2 mL
ULM-6917-1.2	4-Bromophenol (unlabeled)	C ₆ H ₄ BrOH	100 µg/mL in toluene	1.2 mL
DLM-263-1	Chlorobenzene (D ₅ , 99%)	C ₆ D ₅ Cl	neat	1 g
DLM-263-5			neat	5 g
DLM-1638-0.1	2-Chlorophenol (ring-D ₄ , 99%)	C ₆ D ₄ ClOH	neat	0.1 g
DLM-1638-0.25			neat	0.25 g
CLM-1913-1.2	4-Chlorophenol (¹³ C ₆ , 99%)	*C ₆ H ₄ ClOH	100 µg/mL in toluene	1.2 mL
ULM-7420-1.2	4-Chlorophenol (unlabeled)	C ₆ H ₄ ClOH	100 µg/mL in nonane	1.2 mL
NEW CLM-9373-1.2	2,4-Dibromoanisole (ring- ¹³ C ₆ , 99%)	*C ₆ Br ₂ H ₃ OCH ₃	100 µg/mL in toluene	1.2 mL
NEW ULM-9369-1.2	2,4-Dibromoanisole (unlabeled)	C ₆ Br ₂ H ₃ OCH ₃	100 µg/mL in toluene	1.2 mL
CLM-1340-0.1	1,4-Dibromobenzene (¹³ C ₆ , 99%)	*C ₆ H ₄ Br ₂	neat	0.1 g
DLM-341-5	1,4-Dibromobenzene (D ₄ , 98%)	C ₆ D ₄ Br ₂	neat	5 g
CLM-6058-1.2	2,4-Dibromophenol (¹³ C ₆ , 99%)	*C ₆ H ₃ Br ₂ OH	100 µg/mL in toluene	1.2 mL
ULM-6918-1.2	2,4-Dibromophenol (unlabeled)	C ₆ H ₃ Br ₂ OH	100 µg/mL in toluene	1.2 mL
CLM-8007-1.2	2,6-Dibromophenol (¹³ C ₆ , 99%)	*C ₆ H ₃ Br ₂ OH	100 µg/mL in toluene	1.2 mL
ULM-7603-1.2	2,6-Dibromophenol (unlabeled)	C ₆ H ₃ Br ₂ OH	100 µg/mL in toluene	1.2 mL
CLM-126-1.2	1,2-Dichlorobenzene (¹³ C ₆ , 99%)	*C ₆ H ₄ Cl ₂	100 µg/mL in isooctane	1.2 mL
DLM-158-1	1,2-Dichlorobenzene (D ₄ , 99%)	C ₆ D ₄ Cl ₂	neat	1 g
DLM-158-5			neat	5 g
NEW ULM-7415-1.2	1,2-Dichlorobenzene (unlabeled)	C ₆ H ₄ Cl ₂	100 µg/mL in isooctane	1.2 mL
CLM-4484-1.2	1,3-Dichlorobenzene (¹³ C ₆ , 99%)	*C ₆ H ₄ Cl ₂	100 µg/mL in isooctane	1.2 mL
NEW DLM-2139-0.1	1,3-Dichlorobenzene (D ₄ , 98%)	C ₆ D ₄ Cl ₂	neat	0.1 g
NEW ULM-7431-1.2	1,3-Dichlorobenzene (unlabeled)	C ₆ H ₄ Cl ₂	100 µg/mL in isooctane	1.2 mL
CLM-1518-1	1,4-Dichlorobenzene (¹³ C ₆ , 99%)	*C ₆ H ₄ Cl ₂	neat	1 mg
DLM-268-5	1,4-Dichlorobenzene (D ₄ , 98%)	C ₆ D ₄ Cl ₂	neat	5 g
DLM-1359-0.1	2,4-Dichlorophenol (ring-D ₃ , 98%)	C ₆ D ₃ Cl ₂ OH	neat	0.1 g
DLM-1359-0.5			neat	0.5 g
DLM-1669-0.1	2,4-Dichlorophenol (D ₄ , 98%)	C ₆ D ₃ Cl ₂ OD	neat	0.1 g
ULM-6822-1.2	2,4-Dichlorophenol (unlabeled)	C ₆ H ₃ Cl ₂ OH	100 µg/mL in nonane	1.2 mL
NEW CLM-1365-1.2	2,5-Dichlorophenol (¹³ C ₆ , 99%)	*C ₆ H ₃ Cl ₂ OH	100 µg/mL in methanol	1.2 mL
NEW ULM-9066-1.2	2,5-Dichlorophenol (unlabeled)	C ₆ H ₃ Cl ₂ OH	100 µg/mL in methanol	1.2 mL
CLM-1921-1.2	Hexabromobenzene (¹³ C ₆ , 99%)	*C ₆ Br ₆	100 µg/mL in toluene	1.2 mL
ULM-7607-1.2	Hexabromobenzene (unlabeled)	C ₆ Br ₆	100 µg/mL in toluene	1.2 mL
CLM-351-1.2	Hexachlorobenzene (¹³ C ₆ , 99%)	*C ₆ Cl ₆	100 µg/mL in nonane	1.2 mL
CLM-351-0.1			neat	0.1 g
ULM-6130-1.2	Hexachlorobenzene (unlabeled)	C ₆ Cl ₆	100 µg/mL in nonane	1.2 mL
NEW CLM-8992-1.2	Pentabromoanisole (¹³ C ₆ , 99%)	*C ₆ CH ₃ Br ₅ O	100 µg/mL in toluene	1.2 mL
NEW ULM-8991-1.2	Pentabromoanisole (unlabeled)	C ₇ H ₃ Br ₅ O	100 µg/mL in toluene	1.2 mL
CLM-1959-1.2	Pentabromophenol (¹³ C ₆ , 99%)	*C ₆ Br ₅ OH	100 µg/mL in toluene	1.2 mL
ULM-6922-1.2	Pentabromophenol (unlabeled)	C ₆ Br ₅ OH	100 µg/mL in toluene	1.2 mL
CLM-8003-1.2	Pentachloroanisole (¹³ C ₆ , 99%)	*C ₆ CH ₃ Cl ₅ O	100 µg/mL in toluene	1.2 mL
ULM-7605-1.2	Pentachloroanisole (unlabeled)	C ₆ CH ₃ Cl ₅ O	100 µg/mL in toluene	1.2 mL
CLM-2050-1.2	Pentachlorobenzene (¹³ C ₆ , 99%)	*C ₆ HCl ₅	100 µg/mL in isooctane	1.2 mL
ULM-7234-1.2	Pentachlorobenzene (unlabeled)	C ₆ HCl ₅	100 µg/mL in isooctane	1.2 mL
CLM-1955-1.2	Pentachloronitrobenzene (¹³ C ₆ , 99%)	*C ₆ Cl ₅ NO ₂	100 µg/mL in nonane	1.2 mL
ULM-7597-1.2	Pentachloronitrobenzene (unlabeled)	C ₆ Cl ₅ NO ₂	100 µg/mL in nonane	1.2 mL
CLM-661-1.2	Pentachlorophenol (¹³ C ₆ , 99%)	*C ₆ Cl ₅ OH	100 µg/mL in nonane	1.2 mL
NEW CLM-661-0.01			neat	0.01 g
ULM-6894-1.2	Pentachlorophenol (unlabeled)	C ₆ Cl ₅ OH	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 ₆ HBr ₄ OH	100 µg/mL in toluene	1.2 mL
ULM-6778-1.2	2,3,4,5-Tetrabromophenol (unlabeled)	C ₆ HBr ₄ OH	100 µg/mL in toluene	1.2 mL
CLM-1982-1.2	1,2,3,4-Tetrachlorobenzene (¹³ C ₆ , 99%)	*C ₆ H ₂ Cl ₄	100 µg/mL in isooctane	1.2 mL
ULM-6195-1.2	1,2,3,4-Tetrachlorobenzene (unlabeled)	C ₆ H ₂ Cl ₄	100 µg/mL in isooctane	1.2 mL
ULM-7599-1.2	1,2,3,5-Tetrachlorobenzene (unlabeled)	C ₆ H ₂ Cl ₄	100 µg/mL in isooctane	1.2 mL
CLM-585-0.1	1,2,4,5-Tetrachlorobenzene (¹³ C ₆ , 99%)	*C ₆ H ₂ Cl ₄	neat	0.1 g
CLM-585-5			neat	5 mg
DLM-1177-1	1,2,4,5-Tetrachlorobenzene (D ₂ , 98%)	C ₆ D ₂ Cl ₄	neat	1 g
DLM-1177-5			neat	5 g
ULM-7598-1.2	1,2,4,5-Tetrachlorobenzene (unlabeled)	C ₆ H ₂ Cl ₄	100 µg/mL in isooctane	1.2 mL
ULM-2428-0.1	2,3,4,5-Tetrachlorophenol (unlabeled)	C ₆ H ₂ Cl ₄ O	neat	0.1 g
ULM-2429-0.1	2,3,4,6-Tetrachlorophenol (unlabeled)	C ₆ H ₂ Cl ₄ O	neat	0.1 g
ULM-2430-0.1	2,3,5,6-Tetrachlorophenol (unlabeled)	C ₆ H ₂ Cl ₄ O	neat	0.1 g
NEW CLM-9372-1.2	2,4,5-Tribromoanisole (ring- ¹³ C ₆ , 99%)	*C ₆ H ₃ Br ₃ O	100 µg/mL in toluene	1.2 mL
NEW ULM-9367-1.2	2,4,5-Tribromoanisole (unlabeled)	C ₇ H ₅ Br ₃ O	100 µg/mL in toluene	1.2 mL
NEW CLM-6744-1.2	2,4,6-Tribromoanisole (ring- ¹³ C ₆ , 99%)	*C ₆ H ₃ Br ₃ O	100 µg/mL in toluene	1.2 mL
NEW ULM-9370-1.2	2,4,6-Tribromoanisole (unlabeled)	C ₇ H ₅ Br ₃ O	100 µg/mL in toluene	1.2 mL
CLM-7488	2,3,4-Tribromophenol (¹³ C ₆ , 99%)	*C ₆ H ₂ Br ₃ OH		Inquire
NEW CLM-2235-1.2	2,3,5-Tribromophenol (¹³ C ₆ , 99%)	*C ₆ H ₂ Br ₃ OH	100 µg/mL in toluene	1.2 mL
NEW ULM-6919-1.2	2,3,5-Tribromophenol (unlabeled)	C ₆ H ₂ Br ₃ OH	100 µg/mL in toluene	1.2 mL
CLM-6151-1.2	2,4,5-Tribromophenol (¹³ C ₆ , 99%)	*C ₆ H ₂ Br ₃ OH	100 µg/mL in toluene	1.2 mL
ULM-6084-1.2	2,4,5-Tribromophenol (unlabeled)	C ₆ H ₂ Br ₃ OH	100 µg/mL in toluene	1.2 mL
CLM-6743-1.2	2,4,6-Tribromophenol (¹³ C ₆ , 99%)	*C ₆ H ₂ Br ₃ OH	100 µg/mL in toluene	1.2 mL
ULM-4210-1.2	2,4,6-Tribromophenol (unlabeled)	C ₆ H ₂ Br ₃ OH	100 µg/mL in toluene	1.2 mL
CLM-1836-1.2	3,4,5-Tribromophenol (¹³ C ₆ , 99%)	*C ₆ H ₂ Br ₃ OH	100 µg/mL in toluene	1.2 mL
NEW DLM-9198	2,4,6-Trichloroanisole (methyl-D ₃ , 99%)	C ₆ H ₂ Cl ₃ OCD ₃		Inquire
DLM-6083-1.2	2,4,6-Trichloroanisole (D ₅ , 98%)	C ₆ D ₂ Cl ₃ OCD 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 ₆ H ₂ Cl ₃ OCH ₃	1 mg/mL in methanol	1.2 mL
DLM-1972-0.1	1,2,3-Trichlorobenzene (D ₃ , 98%)	C ₆ D ₃ Cl ₃	neat	0.1 g
DLM-1178-0.1	1,2,4-Trichlorobenzene (D ₃ , 98%)	C ₆ D ₃ Cl 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 ₆ D ₃ Cl ₃	neat	1 g
CLM-513-1	2,4,5-Trichlorophenol (¹³ C ₆ , 99%)	*C ₆ H ₂ Cl ₃ OH	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 ₆ D ₂ Cl ₃ OH	neat	0.1 g
ULM-7525-1.2	2,4,5-Trichlorophenol (unlabeled)	C ₆ H ₂ Cl ₃ OH	100 µg/mL in methanol	1.2 mL
NEW CLM-1804-1.2	2,4,6-Trichlorophenol (¹³ C ₆ , 99%)	*C ₆ H ₂ Cl ₃ OH	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 ₆ D ₂ Cl ₃ OH	neat	0.01 g
DLM-3093-0.1			neat	0.1 g
ULM-7600-1.2	2,4,6-Trichlorophenol (unlabeled)	C ₆ H ₂ Cl ₃ OH	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 ₆ C ₆ H 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 ₆ C ₈ H ₂₀ ClNO ₂	100 µg/mL in nonane	1.2 mL
CLM-4725-1.2	Aldrin (¹³ C ₁₂ , 99%)	*C ₁₂ H ₈ Cl ₆	100 µg/mL in nonane	1.2 mL
CLM-1333-1.2	Anthracene (¹³ C ₆ , 99%)	*C ₆ C ₈ H 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 ₃ C ₅ H ₁₄ CIN ₅	100 µg/mL in nonane	1.2 mL
CLM-3602-1.2	Benz[a]anthracene (¹³ C ₆ , 99%)	*C ₆ C 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 ₄ C 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 ₄ C 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 ₆ C 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 ₈ H 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 ₆ C 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 ₆ C 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 ₆ D ₅ COC ₆ D ₅	100 µg/mL in nonane	1.2 mL
NEW ULM-8303-1.2	Benzophenone (unlabeled)	(C ₆ H ₅) ₂ CO	100 µg/mL in nonane	1.2 mL
DLM-1369-1.2	Benzyl butyl phthalate (ring-D ₄ , 98%)	C ₆ D ₄ [CO ₂ (CH ₂) ₃ CH ₃][(CH ₂ C ₆ H ₅)]	100 µg/mL in nonane	1.2 mL
CLM-2482-1.2	α-HCH (α-BHC) (¹³ C ₆ , 99%)	*C ₆ H ₆ Cl ₆	100 µg/mL in nonane	1.2 mL
CLM-3623-1.2	β-HCH (β-BHC) (¹³ C ₆ , 99%)	*C ₆ H ₆ Cl ₆	50 µg/mL in nonane	2 x 1.2 mL
CLM-1282-1.2	γ-HCH (γ-BHC) (lindane) (¹³ C ₆ , 99%)	*C ₆ H ₆ Cl ₆	100 µg/mL in nonane	1.2 mL
CLM-4675-1.2	Bis(2-ethylhexyl) adipate (adipate- ¹³ C ₆ , 99%)	(*C ₂ H ₄) ₂ [*CO ₂ [CH ₂ CH(C ₂ H ₅)C ₄ H ₉]] ₂	100 µg/mL in nonane	1.2 mL
DLM-1368-1.2	Bis(2-ethylhexyl) phthalate (ring-D ₄ , 98%)	C ₆ D ₄ 1,2-[-CO ₂ C ₈ H ₁₇] ₂	100 µg/mL in nonane	1.2 mL
ULM-6241-1.2	Bis(2-ethylhexyl) phthalate (unlabeled)	C ₆ H ₄ [CO ₂ CH ₂ CH(CH ₂ CH ₃)(CH ₂) ₃ CH ₃] ₂	100 µg/mL in nonane	1.2 mL
CLM-4325-1.2	Bisphenol A (ring- ¹³ C ₁₂ , 99%)	(*C ₆ H ₄ OH) ₂ C(CH ₃) ₂	100 µg/mL in acetonitrile	1.2 mL
ULM-7106-1.2	Bisphenol A (unlabeled)	(C ₆ H ₄ OH) ₂ C(CH ₃) ₂	100 µg/mL in acetonitrile	1.2 mL
ULM-8654-1.2	2,4'-Bisphenol A (unlabeled)	(C ₆ H ₄ OH) ₂ C(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 ₄ S	100 µg/mL in methanol	1.2 mL
NEW ULM-9320-1.2	Bisphenol S (unlabeled)	C ₁₂ H ₁₀ O ₄ S	100 µg/mL in methanol	1.2 mL
NEW CLM-9776-1.2	Bisphenol AF (ring- ¹³ C ₁₂ , 99%)	*C ₁₂ C ₃ H ₁₀ F ₆ O ₂	100 µg/mL in methanol	1.2 mL
NEW ULM-9779-1.2	Bisphenol AF (unlabeled)	C ₁₅ H ₁₀ F ₆ O ₂	100 µg/mL in methanol	1.2 mL
CLM-4674-1.2	n-Butylbenzene (ring- ¹³ C ₆ , 99%)	*C ₆ H ₅ C ₄ H ₉	100 µg/mL in nonane	1.2 mL
CLM-4682-1.2	Carbaryl (ring- ¹³ C ₆ , 99%)	*C ₆ C ₆ H ₁₁ NO ₂	100 µg/mL in nonane	1.2 mL
ULM-8096-1.2	Carbaryl (unlabeled)	C ₁₀ H ₇ CO ₂ NHCH ₃	100 µg/mL in nonane	1.2 mL
CLM-1911-1.2	Carbofuran (ring- ¹³ C ₆ , 99%)	*C ₆ C ₆ H 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 ₅ Cl 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 ₆ Cl ₆	100 µg/mL in nonane	1.2 mL
ULM-7443-1.2	Chlordene (unlabeled)	C ₁₀ H ₆ Cl ₆	100 µg/mL in nonane	1.2 mL
DLM-4360-1.2	Chlorpyrifos (diethyl-D ₁₀ , 99%)	C ₉ D ₁₀ H ₁ Cl ₃ NO ₃ PS	100 µg/mL in nonane	1.2 mL
CLM-3757-1.2	Chrysene (¹³ C ₆ , 99%)	*C ₆ C 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 ₆ C ₁₆ H ₁₈ Cl ₂ FNO 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)	$(ClC_6H_4)_2CHCCl_3$	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(<i>tert</i> -butyl)-4-methylphenol (BHT) (D ₂₁ , 98%)	$C_6D_2(C(CD_3)_2)_2CH_3OD$	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 (<i>O,O</i> -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- <i>n</i> -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- <i>n</i> -butyl phthalate (unlabeled)	$C_{16}H_{22}O_4$	100 µg/mL in nonane	1.2 mL
CLM-4669-1.2	Di- <i>n</i> -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- <i>n</i> -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- <i>n</i> -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- <i>n</i> -pentyl phthalate (unlabeled)	$C_6H_4[CO_2(CH_2)_4CH_3]_2$	100 µg/mL in nonane	1.2 mL
CLM-4671	Di- <i>n</i> -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

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NEW	ULM-8956-1.2	Endrin ketone (unlabeled)	C ₁₂ H ₈ Cl ₆ O	100 µg/mL in nonane	1.2 mL
	CLM-3374-1.2	Epichlorohydrin (¹³ C ₃ , 99%)	*C ₃ H ₅ OCl	100 µg/mL in acetonitrile	1.2 mL
	ULM-7403-1.2	Epichlorohydrin (unlabeled)	C ₃ H ₅ OCl	100 µg/mL in acetonitrile	1.2 mL
	DLM-4460-1.2	Genistein (3',5',6,8-D ₄ , 95%)	C ₁₅ D ₄ H ₅ O 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 ₂ PO(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 ₂ NHCH ₂ PO(OH) ₂	100 µg/mL in water	1.2 mL
	CLM-4759-1.2	Heptachlor (¹³ C ₁₀ , 99%)	*C ₁₀ H ₅ Cl ₇	100 µg/mL in nonane	1.2 mL
	ULM-2424-1.2	Heptachlor (unlabeled)	C ₁₀ H ₅ Cl ₇	100 µg/mL in nonane	1.2 mL
	CLM-4734-1.2	cis-Heptachlor epoxide (¹³ C ₁₀ , 99%)	*C ₁₀ H ₅ Cl ₇ O	100 µg/mL in nonane	1.2 mL
	ULM-2425-1.2	cis-Heptachlor epoxide (unlabeled)	C ₁₀ H ₅ Cl ₇ O	100 µg/mL in nonane	1.2 mL
	EB-5162	2,2',4,4',5,5'-HexaBB (¹³ C ₁₂ , 99%)	*C ₁₂ H ₄ Br 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 ₄ Br ₆	100 µg/mL in isooctane	1.2 mL
	CLM-351-1.2	Hexachlorobenzene (¹³ C ₆ , 99%)	*C ₆ Cl ₆	100 µg/mL in nonane	1.2 mL
	ULM-6130-1.2	Hexachlorobenzene (unlabeled)	C ₆ Cl 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 ₆ C 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 ₈ Cl ₆	100 µg/mL in nonane	1.2 mL
	ULM-7442-1.2	Isodrin (unlabeled)	C ₁₂ H ₈ Cl ₆	100 µg/mL in nonane	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 ₁₉ O ₆ PS ₂	100 µg/mL in nonane	1.2 mL
	CNLM-8150-1.2	Melamine (¹³ C ₃ , 99%; amino- ¹⁵ N ₃ , 98%)	*C ₃ H ₆ *N ₃ N 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 ₃ H ₆ N ₆	100 µg/mL in water	1.2 mL
	CNLM-7148-1.2	Methomyl (acetohydroxamate- ¹³ C ₂ , 99%; ¹⁵ N, 98%)	*C ₂ C ₃ H ₁₀ N*NO ₂ S	100 µg/mL in methanol	1.2 mL
NEW	ULM-8639-1.2	Methomyl (unlabeled)	C ₅ H ₁₀ N ₂ O ₂ S	100 µg/mL in methanol	1.2 mL
	CLM-4683-1.2	Methoxychlor (ring- ¹³ C ₁₂ , 99%)	(H ₃ C*C ₆ H ₄) ₂ CHCCl ₃	100 µg/mL in nonane	1.2 mL
	ULM-7440-1.2	Methoxychlor (unlabeled)	(H ₃ CC ₆ H ₄) ₂ CHCCl ₃	100 µg/mL in nonane	1.2 mL
	CLM-3712-1.2	Metolachlor (ring- ¹³ C ₆ , 99%)	*C ₆ C ₉ H 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 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) ₃ CC ₆ (NO ₂) ₂ (CH ₃) ₂ COCH ₃		Inquire
NEW	ULM-8290	Musk ketone (unlabeled)	(CH ₃) ₃ CC ₆ (NO ₂) ₂ (CH ₃) ₂ COCH ₃		Inquire
	CLM-1332-1.2	Naphthalene (¹³ C ₆ , 99%)	*C ₆ C ₄ H 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 ₃ CH ₇ NC ₅ H ₄ N	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 ₆ H ₄ CH ₃ NO ₂	1 mg/mL in acetonitrile	1 mL
	ULM-3891-1.2	4-Nitrotoluene (unlabeled)	C ₆ H ₄ CH ₃ NO ₂	1 mg/mL in acetonitrile	1.2 mL
	CLM-4811-1.2	cis-Nonachlor (¹³ C ₁₀ , 99%)	*C ₁₀ H ₅ Cl ₉	100 µg/mL in nonane	1.2 mL
	ULM-7445-1.2	cis-Nonachlor (unlabeled)	C ₁₀ H ₅ Cl ₉	100 µg/mL in nonane	1.2 mL
	CLM-4735-1.2	trans-Nonachlor (¹³ C ₁₀ , 99%)	*C ₁₀ H ₅ Cl ₉	100 µg/mL in nonane	1.2 mL
	ULM-7229-1.2	trans-Nonachlor (unlabeled)	C ₁₀ H ₅ Cl 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 ₆ H ₄ OH	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) ₈ C ₆ H ₄ OH	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 ₆ H ₄ O(C ₂ H ₄ O) ₂ H	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	<i>p</i> - <i>n</i> -Nonylphenol diethoxylate (unlabeled)	CH ₃ (CH ₂) ₈ C ₆ H ₄ O(C ₂ H ₄ O) ₂ H	100 µg/mL in nonane	1.2 mL
ULM-4521-M-1.2			100 µg/mL in methanol	1.2 mL
ULM-7147-1.2	Nonylphenol diethoxylate-branched isomers (unlabeled)	C ₉ H ₁₉ C ₆ H ₄ O(C ₂ H ₄ O) ₂ H	100 µg/mL in nonane	1.2 mL
CLM-4512-1.2	<i>p</i> - <i>n</i> -Nonylphenol monoethoxylate	CH ₃ (CH ₂) ₈ *C ₆ H ₄ O(CH ₂) ₂ OH	100 µg/mL in nonane	1.2 mL
CLM-4512-M-1.2	(ring- ¹³ C ₆ , 99%)		100 µg/mL in methanol	1.2 mL
ULM-4520-1.2	<i>p</i> - <i>n</i> -Nonylphenol monoethoxylate (unlabeled)	CH ₃ (CH ₂) ₈ C ₆ H ₄ O(CH ₂) ₂ OH	100 µg/mL in nonane	1.2 mL
ULM-4520-M-1.2			100 µg/mL in methanol	1.2 mL
NEW ULM-7146-1.2	Nonylphenol monoethoxylate-branched isomers (unlabeled)	C ₉ H ₁₉ C ₆ H ₄ O(CH ₂) ₂ OH	100 µg/mL in nonane	1.2 mL
CLM-4516-1.2	<i>p</i> - <i>n</i> -Nonylphenol triethoxylate	CH ₃ (CH ₂) ₈ *C ₆ H ₄ O(C ₂ H ₄ O) ₃ H	100 µg/mL in nonane	1.2 mL
	(ring- ¹³ C ₆ , 99%) CP 90%			
NEW CLM-9679-1.2	1,1,1,3,10,12,12,12-Octachlorododecane	*C ₁₂ H ₁₈ Cl ₈	100 µg/mL in nonane	1.2 mL
	(¹³ C ₁₂ , 99%)			
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	Oxychlorane (¹³ C ₁₀ , 99%)	*C ₁₀ H ₄ Cl ₈ O	100 µg/mL in nonane	1.2 mL
ULM-6139-1.2	Oxychlorane (unlabeled)	C ₁₀ H ₄ Cl ₈ O	100 µg/mL in nonane	1.2 mL
NEW CLM-9849-1.2	Benzyl paraben (benzyl 4-hydroxybenzoate)	*C ₆ C ₈ H ₁₂ O ₃	1 mg/mL in methanol	1.2 mL
	(ring- ¹³ C ₆ , 99%)			
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	<i>n</i> -Butyl paraben (ring- ¹³ C ₆ , 99%)	*C ₆ C ₅ H ₁₄ O ₃	1 mg/mL in methanol	1.2 mL
ULM-8287-1.2	<i>n</i> -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)	*C ₆ C ₃ H ₁₀ O ₃	1 mg/mL in methanol	1.2 mL
	(ring- ¹³ C ₆ , 99%)			
NEW ULM-9760-1.2	Ethyl paraben (ethyl 4-hydroxybenzoate) (unlabeled)	C ₉ H ₁₀ O ₃	1 mg/mL in methanol	1.2 mL
NEW CLM-9847-1.2	Isobutyl paraben (isobutyl 4-hydroxybenzoate)	*C ₆ C ₅ H ₁₄ O ₃	1 mg/mL in methanol	1.2 mL
	(ring- ¹³ C ₆ , 99%)			
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 ₆ C ₄ H 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)	*C ₆ C ₂ H ₈ O ₃	1 mg/mL in methanol	1.2 mL
	(ring- ¹³ C ₆ , 99%)			
ULM-8250-1.2	Methyl paraben (methyl 4-hydroxybenzoate) (unlabeled)	C ₈ H ₈ O ₃	1 mg/mL in methanol	1.2 mL
NEW CLM-9763-1.2	<i>n</i> -Propyl paraben (<i>n</i> -propyl 4-hydroxybenzoate)	*C ₆ C ₄ H ₁₂ O ₃	1 mg/mL in methanol	1.2 mL
	(ring- ¹³ C ₆ , 99%)			
NEW ULM-9762-1.2	<i>n</i> -Propyl paraben (<i>n</i> -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 ₄ NOPS	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 ₉ Cl ₉	10 µg/mL in nonane	1.2 mL
ULM-7829-1.2	Parlar 50 (unlabeled)	C ₁₀ H ₉ Cl ₉	10 µg/mL in nonane	1.2 mL
CLM-7932-1.2	Parlar 62 (¹³ C ₁₀ , 99%)	*C ₁₀ H ₉ Cl ₉	10 µg/mL in nonane	1.2 mL
ULM-7830-1.2	Parlar 62 (unlabeled)	C ₁₀ H ₉ Cl 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 ₉ Cl ₉	10 µg/mL in nonane	1.2 mL
ULM-8768-1.2	Parlar 69 (unlabeled)	C ₁₀ H ₉ Cl ₉	10 µg/mL in nonane	1.2 mL
CLM-8721-1.2	Parlar 70 (¹³ C ₁₀ , 99%)	*C ₁₀ H ₉ Cl ₉	10 µg/mL in nonane	1.2 mL
ULM-8769-1.2	Parlar 70 (unlabeled)	C ₁₀ H ₉ Cl ₉	10 µg/mL in nonane	1.2 mL
EC-1404-3	PCB-77 (3,3',4,4'-tetraCB) (¹³ C ₁₂ , 99%)	(*C ₆ Cl ₂ H 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 ₆ Cl ₃ H ₂ *C ₆ Cl ₂ H 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 ₆ Cl ₃ H ₂) ₂	40 µg/mL in nonane	3 mL
CLM-2050-1.2	Pentachlorobenzene (¹³ C ₆ , 99%)	*C ₆ HCl ₅	100 µg/mL in isooctane	1.2 mL
ULM-7234-1.2	Pentachlorobenzene (unlabeled)	C ₆ HCl ₅	100 µg/mL in isooctane	1.2 mL
CLM-1955-1.2	Pentachloronitrobenzene (¹³ C ₆ , 99%)	*C ₆ Cl ₅ NO ₂	100 µg/mL in nonane	1.2 mL
ULM-7597-1.2	Pentachloronitrobenzene (unlabeled)	C ₆ Cl ₅ NO ₂	100 µg/mL in nonane	1.2 mL
CLM-661-1.2	Pentachlorophenol (¹³ C ₆ , 99%)	*C ₆ Cl ₅ OH	100 µg/mL in nonane	1.2 mL
ULM-6894-1.2	Pentachlorophenol (unlabeled)	C ₆ Cl ₅ OH	100 µg/mL in nonane	1.2 mL
NEW CLM-8505-1.2	Perfluorooctanesulfonate (PFOS), sodium salt (¹³ C ₈ , 99%)	*C ₈ F ₁₇ NaO ₃ S	50 µg/mL in methanol	1.2 mL
NEW ULM-9001-1.2	Perfluorooctanesulfonate (PFOS), sodium salt (unlabeled)	C ₈ F ₁₇ NaO ₃ S	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) ₆ COOH	50 µg/mL in methanol	1.2 mL
CLM-7322-1.2	<i>cis</i> -Permethrin (phenoxy- ¹³ C ₆ , 99%)	*C ₆ C ₁₅ H ₂₀ Cl ₂ O ₃	50 µg/mL in nonane	1.2 mL
ULM-8526-1.2	<i>cis</i> -Permethrin (unlabeled)	C ₂₁ H ₂₀ Cl ₂ O ₃	50 µg/mL in nonane	1.2 mL
CLM-7323-1.2	<i>trans</i> -Permethrin (phenoxy- ¹³ C ₆ , 99%)	*C ₆ C ₁₅ H ₂₀ Cl ₂ O ₃	50 µg/mL in nonane	1.2 mL
ULM-8527-1.2	<i>trans</i> -Permethrin (unlabeled)	C ₂₁ H ₂₀ Cl ₂ O ₃	50 µg/mL in nonane	1.2 mL
CLM-2451-1.2	Phenanthrene (¹³ C ₆ , 99%)	*C ₆ C ₈ H 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 ₆ D ₅ OH	neat	1 g
NEW DLM-7141-1.2	Propoxur (isopropyl-D ₇ , 98%)	C ₁₁ D ₇ H ₈ NO 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 ₃ C ₄ H ₁₂ ClN ₅	100 µg/mL in methanol	1.2 mL
CLM-4694-1.2	Tetrabromobisphenol A (ring- ¹³ C ₁₂ , 99%)	(*C ₆ Br ₂ H ₂ OH) ₂ C(CH ₃) ₂	50 µg/mL in methanol	1.2 mL
ULM-8734-1.2	Tetrabromobisphenol A (unlabeled)	(C ₆ Br ₂ H ₂ OH) ₂ C(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- <i>p</i> -dioxin (¹³ C ₁₂ , 99%)	(*C ₆ H ₂ Cl ₂) ₂ O ₂	50 µg/mL in nonane	1.2 mL
ED-901	2,3,7,8-Tetrachlorodibenzo- <i>p</i> -dioxin (unlabeled)	(C ₆ H ₂ Cl ₂) ₂ O ₂	50 µg/mL in nonane	4 x 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 ₆ C ₂ H ₅ Cl ₃ O ₃	100 µg/mL in MeCl	1.2 mL
ULM-7213-1.2	2,4,5-Trichlorophenoxyacetic acid (unlabeled)	C ₈ H ₅ Cl ₃ O 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 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 ₆ H ₂ Cl ₃ NO	100 µg/mL in acetonitrile	1.2 mL
CLM-6779-1.2	Triclosan (2',4,4'-Trichloro-2-hydroxydiphenyl ether)	*C ₁₂ H ₇ Cl ₃ O ₂	100 µg/mL in nonane	1.2 mL
NEW CLM-6779-MT-1.2	Triclosan (¹³ C ₁₂ , 99%)	*C ₁₂ H ₇ Cl ₃ O 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 ₇ Cl ₃ O ₂	100 µg/mL in nonane	1.2 mL
NEW ULM-6935-MT-1.2	Triclosan (unlabeled)	C ₁₂ H ₇ Cl ₃ O ₂	100 µg/mL in MTBE	1.2 mL
DLM-4479-1.2	Trifluralin (di- <i>n</i> -propyl-D ₁₄ , 98%)	C ₁₃ D ₁₄ H ₂ F ₃ N ₃ O ₄	100 µg/mL in nonane	1.2 mL
NEW DLM-4444-0.1	Urethane (ethyl carbamate) (ethyl-D ₅ , 98%)	C ₃ D ₅ H ₂ NO ₂	neat	0.1 g
NEW DLM-167-C	Vinyl chloride (D ₃ , 98%)	C ₂ D ₃ Cl	100 µg/mL in methanol-OD	20 mL
NEW ULM-8224-1.2	Vinyl chloride (unlabeled)	C ₂ H ₃ Cl	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	<i>n</i> -Butylbenzene (ring- ¹³ C ₆ , 99%)	*C ₆ H ₅ (CH ₂) ₃ CH ₃	100 µg/mL in nonane	1.2 mL
CLM-4695-1.2	1,2-Dibromo-3-chloropropane (¹³ C ₃ , 99%)	*C ₃ H ₅ Br ₂ Cl	100 µg/mL in methanol	1.2 mL
CLM-6144-1.2	1,1-Dichloroethylene (random- ¹³ C, 99%) (stabilized with hydroquinone)	*CCH ₂ Cl ₂	100 µg/mL in methanol	1.2 mL
ULM-7214-1.2	1,1-Dichloroethylene (unlabeled) (stabilized with hydroquinone)	CCH ₂ Cl ₂	100 µg/mL in methanol	1.2 mL
CLM-6145-1.2	1,2-Dichloroethylene (¹³ C ₁ , 99%) (<i>cis/trans</i> mix) (stabilized with hydroquinone)	*CCH ₂ Cl ₂	100 µg/mL in methanol	1.2 mL
ULM-7215-1.2	1,2-Dichloroethylene (unlabeled) (<i>cis/trans</i> mix) (stabilized with hydroquinone)	CCH ₂ Cl ₂	100 µg/mL in methanol	1.2 mL
CLM-1305-1.2	2,4-Dichlorophenol (¹³ C ₆ , 99%)	*C ₆ H ₃ Cl ₂ OH	100 µg/mL in nonane	1.2 mL
CLM-3374-1.2	Epichlorohydrin (¹³ C ₃ , 99%)	*C ₃ H ₅ ClO	100 µg/mL in acetonitrile	1.2 mL
DLM-1008-1	Epichlorohydrin (D ₅ , 98%)	ClCD ₂ CDCD ₂ O	neat	1 g
ULM-7403-1.2	Epichlorohydrin (unlabeled)	ClCH ₂ CHCH ₂ O	100 µg/mL in acetonitrile	1.2 mL
CLM-8008-1.2	Hexachlorophene (¹³ C ₁₃ , 99%)	*CH ₂ [*C ₆ H(Cl) ₃ OH] ₂	50 µg/mL in methanol	1.2 mL
ULM-8009-1.2	Hexachlorophene (unlabeled)	CH ₂ [C ₆ H(Cl) ₃ OH] ₂	50 µg/mL in methanol	1.2 mL
CLM-4745-1.2	4-Hydroxybenzoic acid (ring- ¹³ C ₆ , 99%)	*C ₆ CH ₆ O ₃	1 mg/mL in methanol	1.2 mL
ULM-8251-1.2	4-Hydroxybenzoic acid (unlabeled)	C ₇ H ₆ O ₃	1 mg/mL in methanol	1.2 mL
NEW CLM-8792-1.2	Sodium <i>bis</i> (2-ethylhexyl) sulfosuccinate (DOSS) (fumaric acid- ¹³ C ₄ , 99%)	*C ₄ C ₁₆ H ₃₇ NaO ₇ S	100 µg/mL in acetonitrile	1.2 mL
NEW ULM-8807-1.2	Sodium <i>bis</i> (2-ethylhexyl) sulfosuccinate (DOSS) (unlabeled)	C ₂₀ H ₃₇ NaO ₇ S	100 µg/mL in acetonitrile	1.2 mL
CLM-8006-1.2	Tetrachlorobisphenol A (ring- ¹³ C ₁₂ , 99%)	*C ₁₂ C ₃ H ₁₂ Cl ₄ O ₂	50 µg/mL in methanol	1.2 mL
ULM-7606-1.2	Tetrachlorobisphenol A (unlabeled)	C ₁₂ C ₃ H ₁₂ Cl ₄ O ₂	50 µg/mL in methanol	1.2 mL
NEW DLM-9612-1.2	Tetradecyl (tri- <i>n</i> -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- <i>n</i> -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 ₄ D ₉) ₃ ClSn	100 µg/mL in MeCl-D ₂	1.2 mL
ULM-8061-1.2	Tributyltin chloride (unlabeled)	(C ₄ H ₉) ₃ ClSn	100 µg/mL in MeCl	1.2 mL
CLM-6185-1.2	1,1,1-Trichloroethane (2- ¹³ C, 99%)	*CCH ₃ Cl ₃	100 µg/mL in methanol	1.2 mL
DLM-2080-1.2	1,2,3-Trichloropropane (D ₅ , 98%) CP 95%	CD ₂ ClCDCICD ₂ Cl	100 µg/mL in methanol	1.2 mL
ULM-6911-1.2	1,2,3-Trichloropropane (unlabeled)	CH ₂ ClCHClCH ₂ Cl	1 mg/mL in methanol	1.2 mL
NEW CLM-9095	Trimethylolpropane phosphate (3,4,9,10- ¹³ C ₄ , 99%) CP 95%	*C ₄ C ₂ H ₁₁ O ₄ P		Inquire
NEW ULM-9096	Trimethylolpropane phosphate (unlabeled) CP 95%	C ₆ H ₁₁ O ₄ P		Inquire
NEW DLM-167-C	Vinyl chloride (D ₃ , 98%)	C ₂ D ₃ Cl	100 µg/mL in methanol-OD	20 mL
NEW ULM-8224-1.2	Vinyl chloride (unlabeled)	C ₂ H ₃ Cl	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 ($^{13}\text{C}_6$, 99%)	$^*\text{C}_6\text{H}_4(\text{NO}_2)_2$	1 mg/mL in acetonitrile neat	1 mL 0.1 g
ULM-3850-1.2	1,3-Dinitrobenzene (unlabeled)	$\text{C}_6\text{H}_4(\text{NO}_2)_2$	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)	$(\text{NO}_2)_2\text{C}_6\text{D}_3\text{OH}$	1 mg/mL in methanol-OD	10 mL
NEW ULM-8706-10	2,4-Dinitrophenol (unlabeled) (contains 0.35 mg/mL water)	$(\text{NO}_2)_2\text{C}_6\text{H}_3\text{OH}$	1 mg/mL in methanol	10 mL
DLM-2207-S	2,4-Dinitrotoluene (ring- D_3 , 98%)	$\text{C}_6\text{D}_3\text{CH}_3(\text{NO}_2)_2$	1 mg/mL in acetonitrile	1 mL
ULM-3888-S	2,4-Dinitrotoluene (unlabeled)	$\text{C}_6\text{H}_3\text{CH}_3(\text{NO}_2)_2$	1 mg/mL in acetonitrile	1 mL
DLM-1939-S	2,6-Dinitrotoluene (methyl- D_3 , 98%)	$\text{C}_6\text{H}_3\text{CD}_3(\text{NO}_2)_2$	1 mg/mL in acetonitrile	1 mL
ULM-3889-S	2,6-Dinitrotoluene (unlabeled)	$\text{C}_6\text{H}_3\text{CH}_3(\text{NO}_2)_2$	1 mg/mL in acetonitrile	1 mL
CNLM-7963-S	HMX ($^{13}\text{C}_4$, 99%; ring- $^{15}\text{N}_4$, 98%)	$^*\text{C}_4\text{H}_8\text{N}_4^*\text{N}_4\text{O}_8$	1 mg/mL in acetonitrile	1 mL
ULM-7969-1	HMX (unlabeled)	$\text{C}_4\text{H}_8\text{N}_4\text{N}_4\text{O}_8$	1 mg/mL in acetonitrile	1 mL
NEW CLM-675	Nitrobenzene ($^{13}\text{C}_6$, 99%)	$^*\text{C}_6\text{H}_5\text{NO}_2$		Inquire
NEW DLM-294-5	Nitrobenzene (D_5 , 99%)	$\text{C}_6\text{D}_5\text{NO}_2$	neat	5 g
NEW DLM-294-10	Nitrobenzene (unlabeled)	$\text{C}_6\text{H}_5\text{NO}_2$	neat	10 g
ULM-3892-1.2	Nitrobenzene (unlabeled)	$\text{C}_6\text{H}_5\text{NO}_2$	1 mg/mL in acetonitrile	1.2 mL
NEW NLM-814-1.2	Nitroglycerin (trinitroglycerol) ($^{15}\text{N}_3$, 98%)	$\text{C}_3\text{H}_3(^*\text{NO}_2)_3$	1 mg/mL in ethanol	1.2 mL
ULM-3893-S	Nitroglycerin (trinitroglycerol) (unlabeled)	$\text{C}_3\text{H}_5(\text{NO}_2)_3$	1 mg/mL in acetonitrile	1 mL
CLM-3912-S	2-Nitrotoluene (ring- $^{13}\text{C}_6$, 99%)	$^*\text{C}_6\text{H}_4\text{CH}_3\text{NO}_2$	1 mg/mL in acetonitrile	1 mL
ULM-3890-1.2	2-Nitrotoluene (unlabeled)	$\text{C}_6\text{H}_4\text{CH}_3\text{NO}_2$	1 mg/mL in acetonitrile	1.2 mL
CLM-3913-S	4-Nitrotoluene (ring- $^{13}\text{C}_6$, 99%)	$^*\text{C}_6\text{H}_4\text{CH}_3\text{NO}_2$	1 mg/mL in acetonitrile	1 mL
ULM-3891-1.2	4-Nitrotoluene (unlabeled)	$\text{C}_6\text{H}_4\text{CH}_3\text{NO}_2$	1 mg/mL in acetonitrile	1.2 mL
CNLM-7987-S	RDX ($^{13}\text{C}_3$, 99%; $^{15}\text{N}_3$, 98%)	$^*\text{C}_3\text{H}_6\text{N}_3(^*\text{NO}_2)_3$	1 mg/mL in acetonitrile	1 mL
CLM-3846-S	RDX ($^{13}\text{C}_3$, 99%)	$^*\text{C}_3\text{H}_6\text{N}_3(\text{NO}_2)_3$	1 mg/mL in acetonitrile	1 mL
ULM-3847-S	RDX (unlabeled)	$\text{C}_3\text{H}_6\text{N}_3(\text{NO}_2)_3$	1 mg/mL in acetonitrile	1.2 mL
CLM-3848-S	1,3,5-Trinitrobenzene ($^{13}\text{C}_6$, 99%)	$^*\text{C}_6\text{H}_3(\text{NO}_2)_3$	1 mg/mL in acetonitrile	1 mL
ULM-3849-1.2	1,3,5-Trinitrobenzene (unlabeled)	$\text{C}_6\text{H}_3(\text{NO}_2)_3$	1 mg/mL in acetonitrile	1.2 mL
CNLM-3643-S	2,4,6-Trinitrotoluene (TNT) ($^{13}\text{C}_7$, 99%; $^{15}\text{N}_3$, 98%)	$^*\text{C}_7\text{H}_5(^*\text{NO}_2)_3$	1 mg/mL in benzene (wetted with H_2O 33% by weight)	1 mL
ULM-3845-1.2	2,4,6-Trinitrotoluene (TNT) (unlabeled)	$\text{C}_7\text{H}_5(\text{NO}_2)_3$	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	<i>n</i> -Pentane (D ₁₂ , 98%)	CD ₃ (CD ₂) ₃ CD ₃	1 g
DLM-1213-5			5 g
DLM-139-1	<i>n</i> -Hexane (D ₁₄ , 98%)	CD ₃ (CD ₂) ₄ CD ₃	1 g
DLM-139-5			5 g
DLM-423-1	<i>n</i> -Heptane (D ₁₆ , 98%)	CD ₃ (CD ₂) ₅ CD ₃	1 g
DLM-423-5			5 g
DLM-50-1	<i>n</i> -Octane (D ₁₈ , 99%)	CD ₃ (CD ₂) ₆ CD ₃	1 g
DLM-50-5			5 g
DLM-2438-1	<i>n</i> -Nonane (D ₂₀ , 98%)	CD ₃ (CD ₂) ₇ CD ₃	1 g
DLM-2438-5			5 g
DLM-133-1	<i>n</i> -Decane (D ₂₂ , 99%)	CD ₃ (CD ₂) ₈ CD ₃	1 g
DLM-133-5			5 g
DLM-338-1	<i>n</i> -Dodecane (D ₂₆ , 98%)	CD ₃ (CD ₂) ₁₀ CD ₃	1 g
DLM-338-5			5 g
NEW DLM-1354-0.1	<i>n</i> -Tridecane (D ₂₈ , 98%)	CD ₃ (CD ₂) ₁₁ CD ₃	0.1 g
DLM-1354-0.5			0.5 g
DLM-670-1	<i>n</i> -Tetradecane (D ₃₀ , 98%)	CD ₃ (CD ₂) ₁₂ CD ₃	1 g
DLM-670-5			5 g
DLM-1283-1	<i>n</i> -Pentadecane (D ₃₂ , 98%)	CD ₃ (CD ₂) ₁₃ CD ₃	1 g
DLM-1283-5			5 g
DLM-203-0.1	<i>n</i> -Hexadecane (D ₃₄ , 98%)	CD ₃ (CD ₂) ₁₄ CD ₃	0.1 g
NEW DLM-203-1			1 g
DLM-203-5			5 g
NEW DLM-1342-1	<i>n</i> -Heptadecane (D ₃₆ , 98%) CP 95%	CD ₃ (CD ₂) ₁₅ CD ₃	1 g
DLM-1342-5			5 g
DLM-1346-0.1	<i>n</i> -Nonadecane (D ₄₀ , 98%)	CD ₃ (CD ₂) ₁₇ CD ₃	0.1 g
DLM-1346-1			1 g
DLM-2208-0.5	<i>n</i> -Eicosane (D ₄₂ , 98%)	CD ₃ (CD ₂) ₁₈ CD ₃	0.5 g
DLM-2208-1			1 g
DLM-3336-1	<i>n</i> -Tricosane (D ₄₈ , 98%)	CD ₃ (CD ₂) ₂₁ CD ₃	1 g
DLM-2209-0.5	<i>n</i> -Tetracosane (D ₅₀ , 98%)	CD ₃ (CD ₂) ₂₂ CD ₃	0.5 g
DLM-2210-0.5	<i>n</i> -Triacotane (D ₆₂ , 98%)	CD ₃ (CD ₂) ₂₈ CD ₃	0.5 g
DLM-2724-1	<i>n</i> -Dotriacontane (D ₆₆ , 98%)	CD ₃ (CD ₂) ₃₀ CD ₃	1 g
DLM-2634-1	<i>n</i> -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 ₃ COCD 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 ₂ C=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 ₇ NH ₂	1 mg/mL in benzene	1.2 mL
ULM-9376-1.2	2-Aminonaphthalene (unlabeled)	C ₁₀ H ₇ NH ₂	1 mg/mL in benzene	1.2 mL
DLM-7658	1-Amino-2-propanol (D ₉ , 98%)	C ₃ D ₉ NO		Inquire
CLM-714-0.1	Aniline (¹³ C ₆ , 99%)	*C ₆ H ₅ NH ₂	neat	0.1 g
CLM-714-0.25			neat	0.25 g
DLM-862-1	Aniline (ring-D ₅ , 98%)	C ₆ D ₅ NH ₂	neat	1 g
DLM-862-5			neat	5 g
DLM-106-5	Aniline (D ₇ , 98%)	C ₆ D ₅ ND ₂	neat	5 g
CLM-182-0.1	Benzene (¹³ C ₆ , 99%)	*C ₆ H ₆	neat	0.1 g
CLM-182-0.5			neat	0.5 g
DLM-1-5	Benzene (D ₆ , 99.5%)	C ₆ D ₆	neat	5 g
CDLM-629-0.1	Benzene (¹³ C ₆ , 99%; D ₆ , 98%)	*C ₆ D 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 ₈ D ₅ CO ₂ H	neat	1 g
DLM-122-5			neat	5 g
DLM-1663-1	1,4-Benzoquinone (D ₄ , 98%)	O(C ₆ D 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 ₂ CD ₂ Cl) ₂	neat	0.1 g
DLM-2004-0.05	Bis(2-chloroethyl) ether (D ₈ , 98%)	ClCD ₂ CD ₂ OCD ₂ CD ₂ Cl	neat	0.05 g
DLM-2004-0.1			neat	0.1 g
DLM-2138	Bis(2-chloroisopropyl) ether (D ₁₂ , 95%)	C ₆ D ₁₂ C ₁₂ O		Inquire
ULM-3693	Bis(2-chloroisopropyl) ether (unlabeled)	C ₆ H ₁₂ C ₁₂ O		Inquire
CLM-4325-1.2	Bisphenol A (ring- ¹³ C ₁₂ , 99%)	*(C ₆ H ₄ OH) ₂ C(CH ₃) ₂	100 µg/mL in acetonitrile	1.2 mL
ULM-7106-1.2	Bisphenol A (unlabeled)	(C ₆ H ₄ OH) ₂ C(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 ₆ H ₄ OH) ₂ C(CH ₃) ₂	100 µg/mL in acetonitrile	1.2 mL
DLM-872-0.1	Bromochloromethane (D ₂ , 98%)	CD ₂ ClBr	neat	0.1 g
CLM-2090-1	Bromodichloromethane (¹³ C, 99%) (stabilized with K ₂ CO ₃)	Br*CHCl ₂	neat	1 g
ULM-8480	Bromodichloromethane (unlabeled)	BrCHCl ₂		Inquire
DLM-874-10	Bromoethane (D ₅ , 98%)	CD ₃ CD ₂ Br	neat	10 g
DLM-103-1	2-Bromoethanol (1,1,2,2-D ₄ , 98%) CP 95%+	BrCD ₂ CD ₂ OH	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 ₃ Br	neat	1 L
DLM-401-5	Bromomethane (D ₃ , 99%) *	CD ₃ Br	neat	5 g
DLM-1910-0.1	2-Butanone (4,4,4-D ₃ , 98%)	CD ₃ CH ₂ COCH 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 ₃ CD ₂ COCD 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 ₃ CH ₂ CH ₂ CH ₂ OCD ₂ CD ₂ OH	1000 µg/mL in water	1.2 mL
NEW ULM-9046-1.2	2-Butoxyethanol (unlabeled)	C ₆ H ₁₄ O ₂	1000 µg/mL in water	1.2 mL
DLM-2134-0.1	Carbazole (ring-D ₈ , 98%)	C ₁₂ D ₈ NH	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 ₆ H ₄ (OH) ₂	neat	1 mg
DLM-1912-5	Catechol (D ₆ , 98%)	C ₆ D ₄ (OD) ₂	neat	5 g
CLM-2284-1	4-Chlorocatechol (¹³ C ₆ , 99%)	Cl*C ₆ H ₃ (OH) ₂	neat	1 mg
ULM-1701-0.1	4-Chlorocatechol (unlabeled) CP 90-95%	ClC ₆ H 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 ₃ CD ₂ Cl	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 ₂ CD ₂ OH	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 ₆ H ₃ (OH)(OCH ₃)	neat	0.1 g
DLM-2037-1	Chloriodomethane (D ₂ , 98%) (stabilized with copper wire)	ClCD ₂ I	neat	1 g
CLM-339-1	Chloromethane (¹³ C, 99%)	*CH ₃ Cl	neat	1 L
DLM-337-1-BS	Chloromethane (D ₃ , 99%)	CD ₃ Cl	neat	1 L
DLM-337-1-LB	Chloromethane (D ₃ , 99%)	CD ₃ Cl	neat	1 L
DLM-2205-0.01	4-Chloro-3-methylphenol (ring-2,6-D ₂ , 98%)	C ₇ D ₂ H ₄ ClO	neat	0.01 g
DLM-2205-0.1			neat	0.1 g
DLM-2005-1.2	2-Chloronaphthalene (D ₇ , 98%)	C ₁₀ D ₇ Cl	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 ₆ H ₄ NO ₂ Cl	neat	1 mg
DLM-1930-0.1	4-Chlorophenyl phenyl ether (phenyl-D ₅ , 98%)	ClC ₆ H ₄ OC ₆ D ₅	neat	0.1 g
ULM-2421-0.1	4-Chlorophenyl phenyl ether (unlabeled)	ClC ₆ H ₄ OC ₆ H ₅	neat	0.1 g
DLM-3014-1	2-Chloropropene (D ₅ , 98%)	D ₃ CClC=CD ₂	neat	1 g
DLM-3014-5			neat	5 g
NEW DLM-3016-1	<i>o</i> -Cresol (D ₈ , 98%)	D ₃ CC ₆ D ₄ OD	neat	1 g
DLM-3016-5			neat	5 g
CLM-7341	<i>p</i> -Cresol (ring- ¹³ C ₆ , 99%)	*C ₆ CH ₃ O		Inquire
NEW DLM-3017-1	<i>p</i> -Cresol (D ₈ , 98%)	D ₃ CC ₆ D ₄ OD	neat	1 g
DLM-3017-5			neat	5 g
DLM-1386-1	Decalin (D ₁₈ , 99%) (<i>cis/trans</i> mixture)	C ₁₀ D ₁₈	neat	1 g
DLM-1386-5			neat	5 g
DLM-1843-5	<i>trans</i> -Decalin (D ₁₈ , 98%)	C ₁₀ D ₁₈	neat	5 g
CLM-1544-1.2	Dibenzo- <i>p</i> -dioxin (¹³ C ₁₂ , 99%)	*C ₁₂ H ₈ O ₂	50 µg/mL in nonane	1.2 mL
ULM-1711-1.2	Dibenzo- <i>p</i> -dioxin (unlabeled)	C ₁₂ H ₈ O 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 ₈ O	50 µg/mL in nonane	1.2 mL
DLM-2276-0.05	Dibenzofuran (D ₈ , 98%)	C ₁₂ D ₈ O	neat	0.05 g
ULM-1712-1.2	Dibenzofuran (unlabeled)	C ₁₂ H ₈ O	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 ₈ S	neat	0.1 g
CLM-483-0.1	1,2-Dibromoethane (¹³ C ₂ , 99%)	Br*CH ₂ *CH ₂ Br	neat	0.1 g
CLM-483-1			neat	1 g
CLM-735-1	3,4-Dichloroaniline (¹³ C ₆ , 99%)	*C ₆ H ₃ Cl ₂ NH ₂	neat	1 mg
DLM-3022-1.2	3,3'-Dichlorobenzidine (ring-D ₆ , 98%)	C ₁₂ D ₆ H ₄ N ₂ Cl ₂	1 mg/mL in benzene	1.2 mL
ULM-1702-0.1	4,5-Dichlorocatechol (unlabeled) CP 95-99%	Cl ₂ C ₆ H ₂ (OH) ₂	neat	0.1 g
DLM-1934-0.1	1,1-Dichloroethane (2,2,2-D ₃ , 98%)	CD ₃ CHCl ₂	neat	0.1 g
DLM-1934-0.25			neat	0.25 g
DLM-18-1	1,2-Dichloroethane (D ₄ , 99%)	ClCD ₂ CD ₂ Cl	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 DLM-1936-1	1,2-Dichloroethylene (1,2-D ₂ , 98%) (<i>cis/trans</i> mixture)	CICD=CDCI	neat neat	0.1 g 1 g
DLM-1937-0.1 DLM-1937-0.25	1,2-Dichloropropane (D ₆ , 98%)	CICD ₂ CDCICD ₃	neat neat	0.1 g 0.25 g
DLM-2112-1.2	1,3-Dichloro-2-propanol (D ₅ , 98%)	CICD ₂ CD(OH)CD ₂ Cl	1 mg/mL in methanol	1.2 mL
ULM-8092-1.2	1,3-Dichloro-2-propanol (unlabeled)	CICH ₂ CH(OH)CH ₂ Cl	1 mg/mL in methanol	1.2 mL
DLM-1938-0.1	1,3-Dichloropropene (D ₄ , 98%) (<i>cis/trans</i> mixture)	CICD ₂ CD=CDCI	neat	0.1 g
ULM-1700-0.1	5,6-Dichlorovanillin (unlabeled)	Cl ₂ C ₆ H(CHO)(OH)(OCH ₃)	neat	0.1 g
DLM-1592-1 DLM-1592-5	Diethyl ether (D ₁₀ , 99%)	O(CD ₃ CD ₂) ₂	neat neat	1 g 5 g
ULM-8235-1.2	Diethylene glycol (unlabeled)	O(CH ₂ CH ₂ OH) ₂	1 mg/mL in methanol	1.2 mL
CLM-1006-0.5	Diiodomethane (¹³ C, 99%) (stabilized with copper wire)	*CH ₂ I ₂	neat	0.5 g
DLM-3190-1	<i>N,N</i> -Dimethylaniline (D ₁₁ , 98%)	C ₆ D ₃ N(CD ₃) ₂	neat	1 g
CLM-503-0.5 CLM-503-1	<i>N,N</i> -Dimethylformamide (carbonyl- ¹³ C, 99%)	H*CON(CH ₃) ₂	neat neat	0.5 g 1 g
DLM-1366-1.2 DLM-1366-0.1	Dimethyl phthalate (ring-D ₄ , 98%)	C ₆ D ₄ -1,2-(CO ₂ CH ₃) ₂	100 µg/mL in nonane neat	1.2 mL 0.1 g
DLM-3024-5	1,3-Dinitrobenzene (D ₄ , 98%)	C ₆ D ₄ N ₂ O ₄	neat	5 g
DLM-3173-0.1	4,6-Dinitro-2-methylphenol (ring-D ₂ , 98%)	CH ₃ C ₆ D ₂ (NO ₂) ₂ OH	neat	0.1 g
DLM-299-10	2,4-Dinitrophenol (ring-D ₃ , 98%)	C ₆ D ₃ (NO ₂) ₂ OH	1 mg/mL in methanol-OD	10 mL
NEW ULM-8706-10	2,4-Dinitrophenol (unlabeled) (contains 0.35 mg/mL water)	(NO ₂) ₂ C ₆ H ₃ OH	1 mg/mL in methanol	10 mL
DLM-2207-S	2,4-Dinitrotoluene (ring-D ₃ , 98%)	H ₃ CC ₆ D ₃ (NO ₂) ₂	1 mg/mL in acetonitrile	1 mL
DLM-1939-S	2,6-Dinitrotoluene (methyl-D ₃ , 98%)	D ₃ CC ₆ H ₅ (NO ₂) ₂	1 mg/mL in acetonitrile	1 mL
DLM-28-SM-1.2 DLM-28-5 DLM-28-10 DLM-28-25	1,4-Dioxane (<i>p</i> -dioxane) (D ₈ , 99%)	C ₄ D ₈ O ₂	1 mg/mL in methanol neat neat neat	1.2 mL 5 g 10 g 25 g
ULM-7840-1.2	1,4-Dioxane (<i>p</i> -dioxane) (unlabeled)	C ₄ H ₈ O ₂	1 mg/mL in methanol	1.2 mL
DLM-2133-0.1	Diphenylamine (diphenyl-D ₁₀ , 98%)	C ₆ D ₅ NHC ₆ D ₅	neat	0.1 g
CLM-1587-1.2	Diphenyl ether (¹³ C ₁₂ , 99%)	(*C ₆ H ₅) ₂ O	50 µg/mL in nonane	1.2 mL
DLM-2211-0.1	Diphenyl ether (D ₁₀ , 98%)	(C ₆ D ₅) ₂ O	neat	0.1 g
DLM-3026-0.05 DLM-3026-0.1	1,2-Diphenylhydrazine (diphenyl-D ₁₀ , 98%)	C ₁₂ D ₁₀ H ₅ N ₂	neat neat	0.05 g 0.1 g
NEW DLM-4880-1.2	<i>N,N'</i> -Diphenyl- <i>p</i> -phenylenediamine (D ₁₄ , 98%) CP 95%	C ₆ D ₅ NHC ₆ D ₄ NHC ₆ D ₅	100 µg/mL in nonane	1.2 mL
NEW ULM-9465-1.2	<i>N,N'</i> -Diphenyl- <i>p</i> -phenylenediamine (unlabeled)	C ₆ H ₅ NHC ₆ H ₄ NHC ₆ H ₅	100 µg/mL in nonane	1.2 mL
DLM-411-5	Durene (1,2,4,5-tetramethylbenzene) (D ₁₄ , 98%)	C ₆ D ₂ (CD ₃) ₄	neat	5 g
CLM-3374-1.2	Epichlorohydrin (¹³ C ₃ , 99%)	*C ₃ H ₅ ClO	100 µg/mL in acetonitrile	1.2 mL
DLM-1008-1	Epichlorohydrin (D ₅ , 98%)	CICD ₂ CDCD ₂ O	neat	1 g
ULM-7403-1.2	Epichlorohydrin (unlabeled)	CICH ₂ CHCH ₂ O	100 µg/mL in acetonitrile	1.2 mL
DLM-686-5	Ethylbenzene (ethyl-D ₅ , 98%)	C ₆ H ₅ CD ₂ CD ₃	neat	5 g
DLM-199-10	Ethylbenzene (D ₁₀ , 98%)	C ₆ D ₅ CD ₂ CD ₃	neat	10 g
DLM-4304-10	Ethylbenzene (D ₁₀ , 99%)	C ₆ D ₅ CD ₂ CD ₃	neat	10 g
CLM-473-0.1 CLM-473-0.5	Ethylene oxide (¹³ C ₂ , 99%) * (airfreight forbidden)	*CH ₂ *CH ₂ O	neat neat	0.1 g 0.5 g
DLM-271-5	Ethylene oxide (D ₄ , 99%) * (airfreight forbidden)	CD ₂ CD ₂ O	neat	5 g
CLM-810-1	Guaiacol (ring- ¹³ C ₆ , 99%)	CH ₃ O*C ₆ H ₄ OH	neat	1 mg
CLM-2145-1.2 CLM-2145-0.01	Hexachloro-1,3-butadiene (¹³ C ₄ , 99%)	*CCl ₂ =*CCl*CCl=*CCl ₂	100 µg/mL in isooctane neat	1.2 mL 0.01 g
NEW ULM-7526-1.2	Hexachloro-1,3-butadiene (unlabeled)	CCl ₂ =CCICCl=CCl ₂	100 µg/mL in isooctane	1.2 mL
CLM-2110-5 CLM-2110-10	Hexachlorocyclopentadiene (¹³ C ₄ , 99%)	*C ₄ CCl ₆	neat neat	5 mg 10 mg
CLM-2003-0.1 CLM-2003-0.5	Hexachloroethane (1- ¹³ C, 99%)	CCl ₃ *CCl ₃	neat neat	0.1 g 0.5 g
ULM-6074-60	1,2,4,5,7,8-Hexachloroxanthene (unlabeled)	C ₁₃ H ₄ Cl ₆ O	neat	60 µg
DLM-277-0.1 DLM-277-1	Hexanoic acid (D ₁₁ , 98%)	CD ₃ (CD ₂) ₄ CO ₂ H	neat neat	0.1 g 1 g

(continued on next page)

Priority Pollutant Standards


Catalog No.	Compound	Formula	Concentration	Amount
DLM-1522-1	Hydroquinone (ring-D ₄ , 98%)	HOC ₆ D ₄ OH	neat	1 g
NEW NLM-6715-1.2	8-Hydroxy-2'-deoxyguanosine (¹⁵ N ₅ , 98%) CP 95%	C ₁₀ H ₁₃ *N ₅ O ₅	25 µg/mL in water	1.2 mL
NEW ULM-9700-1.2	8-Hydroxy-2'-deoxyguanosine (unlabeled)	C ₁₀ H ₁₃ N ₅ O ₅	25 µg/mL in water	1.2 mL
NEW CLM-9593	3-Hydroxymethyltetrahydrofuran (¹³ C ₅ , 99%)	*C ₅ H ₁₀ O ₂		Inquire
ULM-2-4X25	Isooctane (unlabeled)	(CH ₃) ₃ CCH ₂ CH(CH ₃) ₂	neat	4 x 25 mL
DLM-1943-0.1	Isophorone (3-methyl-D ₃ ; 2,4,4,6,6-D ₅ , 98%)	CD ₂ C(CH ₃) ₂ CD ₂ C(CD ₃)=CDCO	neat	0.1 g
CLM-7864-1.2	Leucomalachite green (phenyl- ¹³ C ₆ , 99%)	*C ₆ H ₅ CH[C ₆ H ₄ N(CH ₃) ₂] ₂	100 µg/mL in acetonitrile	1.2 mL
ULM-7870-1.2	Leucomalachite green (unlabeled)	C ₆ H ₅ CH[C ₆ H ₄ N(CH ₃) ₂] ₂	100 µg/mL in acetonitrile	1.2 mL
DLM-24-5	Methanol (D ₄ , 99.8%)	CD ₃ OD	neat	5 g
DLM-24-10			neat	10 g
CLM-1593-0.25	Methylene chloride (¹³ C, 99%)	*CH ₂ Cl ₂	neat	0.25 g
CLM-1593-0.5			neat	0.5 g
DLM-23-5	Methylene chloride (D ₂ , 99.9%)	CD ₂ Cl ₂	neat	5 g
DLM-2277-1	2-(4-Methylphenyl) propane (D ₁₄ , 98%)	D ₃ CC ₆ D ₄ CD(CD ₃) ₂	neat	1 g
DLM-664-1	2-Nitroaniline (ring-D ₄ , 98%)	O ₂ NC ₆ D ₄ NH ₂	neat	1 g
NEW DLM-294-5	Nitrobenzene (D ₅ , 99%)	C ₆ D ₅ NO ₂	neat	5 g
NEW DLM-294-10			neat	10 g
ULM-3892-1.2	Nitrobenzene (unlabeled)	C ₆ H ₅ NO ₂	1 mg/mL in acetonitrile	1.2 mL
DLM-295-0.1	2-Nitrophenol (ring-D ₄ , 98%)	O ₂ NC ₆ D ₄ OH	neat	0.1 g
DLM-295-0.25			neat	0.25 g
DLM-296-0.1	4-Nitrophenol (ring-D ₄ , 98%)	O ₂ NC ₆ D ₄ OH	neat	0.1 g
DLM-296-0.25			neat	0.25 g
ULM-2323-4X25	<i>n</i> -Nonane (unlabeled)	CH ₃ (CH ₂) ₇ CH ₃	neat	4 x 25 mL
CLM-6680-1.2	Octachlorostyrene (¹³ C ₈ , 99%)	*C ₆ Cl ₅ *CCl=CCl ₂	100 µg/mL in isooctane	1.2 mL
ULM-1709-1.2	Octachlorostyrene (unlabeled)	C ₆ Cl ₅ CCl=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 *Na	100 µg/mL in water	1.2 mL
ULM-7312-1.2	Perchloric acid, sodium salt (unlabeled)	ClO ₄ *Na	100 µg/mL in water	1.2 mL
CLM-216-0.1	Phenol (¹³ C ₆ , 99%)	*C ₆ H ₅ OH	neat	0.1 g
DLM-695-1	Phenol (ring-D ₅ , 98%)	C ₆ D ₅ OH	neat	1 g
DLM-695-5			neat	5g
DLM-370-5	Phenol (D ₆ , 98%)	C ₆ D ₅ OD	neat	5 g
DLM-3039-1MG	Phenylbutazone (diphenyl-D ₁₀ , 98%)	C ₁₉ D ₁₀ H ₁₀ N ₂ O 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 ₂ O ₂	neat	1 mg
CLM-3733-1.2	<i>o</i> -Phenylphenol (ring- ¹³ C ₆ , 99%)	*C ₆ H ₅ C ₆ H ₄ OH	100 µg/mL in nonane	1.2 mL
ULM-7396-1.2	<i>o</i> -Phenylphenol (unlabeled)	C ₁₂ H ₉ OH	100 µg/mL in nonane	1.2 mL
CLM-3748-1.2	<i>p</i> -Phenylphenol (ring- ¹³ C ₆ , 99%) CP 96%	*C ₆ H ₅ C ₆ H ₄ OH	100 µg/mL in nonane	1.2 mL
CLM-3040-0.5	Phthalic acid (carboxyl- ¹³ C, 99%)	C ₆ H ₄ (*CO ₂ H)CO ₂ H	neat	0.5 g
DLM-787-5	Phthalic acid (ring-D ₄ , 98%)	C ₆ D ₄ (CO ₂ H) ₂	neat	5 g
DLM-1293-0.1	2-Picoline (2-methylpyridine) (D ₇ , 98%)	C ₅ D ₄ NCD ₃	neat	0.1 g
DLM-1293-1			neat	1 g
DLM-1541-1	3-Picoline (3-methylpyridine) (D ₇ , 98%)	C ₅ D ₄ NCD ₃	neat	1 g
DLM-1294-1	4-Picoline (4-methylpyridine) (D ₇ , 98%)	C ₅ D ₄ NCD ₃	neat	1 g
DLM-1067-5	1,2-Propylene oxide (D ₆ , 98%) *	CD ₃ CD ₂ O	neat	5 g
DLM-1158-0.1	Quinoline (D ₇ , 98%)	C ₉ D ₇ N	neat	0.1 g
DLM-1158-1			neat	1 g
DLM-3322-0.5	<i>trans</i> -Stilbene (D ₁₂ , 98%)	C ₆ D ₅ CD=CDC ₆ D ₅	neat	0.5 g
DLM-1083-5	Styrene (vinyl-D ₃ , 98%) (stabilized with BHT)	C ₆ H ₅ CD=CD ₂	neat	5 g
DLM-809-5	Styrene (ring-D ₅ , 98%) (stabilized with BHT)	C ₆ D ₅ CH=CH ₂	neat	5 g
DLM-380-1.2	Styrene (D ₈ , 98%) (stabilized with BHT)	C ₆ D ₅ CD=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 ₆ D ₄ (CO ₂ H) 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	<i>o</i> -Terphenyl (D ₁₄ , 98%)	C ₁₈ D ₁₄	neat	1 g
DLM-450-5			neat	5 g
DLM-382-1.2	<i>p</i> -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	<i>p</i> -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 ₃ C ₆ H ₇ C ₃ H ₇ OH	neat	0.1 g
DLM-2279-0.5			neat	0.5 g
ULM-1704-0.1	3,4,5,6-Tetrachlorocatechol (unlabeled)	Cl ₄ C ₆ (OH) ₂	neat	0.1 g
DLM-35-5	1,1,2,2-Tetrachloroethane (D ₂ , 99.6%)	Cl ₂ CDCDCI 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 ₄ C ₆ (OH)(OCH ₃)	neat	0.1 g
NEW ULM-8984-1.2	Tetrachloro- <i>m</i> -xylene (unlabeled)	C ₈ H ₆ Cl ₄	100 µg/mL in isooctane	1.2 mL
DLM-2053-0.1	<i>cis</i> -1,2,3,6-Tetrahydrophthalic anhydride (3,3,4,5,6,6-D ₆ , 98%)	C ₈ D ₆ H ₂ O ₃	neat	0.1 g
DLM-2054-0.1	<i>cis</i> -1,2,3,6-Tetrahydrophthalimide (3,3,4,5,6,6-D ₆ , 98%)	C ₈ D ₆ H ₃ NO ₂	neat	0.1 g
CLM-6069-0.1	Toluene (ring- ¹³ C ₆ , 99%)	*C ₆ H ₅ CH ₃	neat	0.1 g
CLM-309-0.5	Toluene (methyl- ¹³ C, 99%)	C ₆ H ₅ *CH ₃	neat	0.5 g
CLM-309-1			neat	1 g
DLM-1175-1	Toluene (methyl-D ₃ , 98%)	C ₆ H ₅ CD ₃	neat	1 g
DLM-1175-5			neat	5 g
DLM-1176-1	Toluene (ring-D ₅ , 98%)	C ₆ D ₅ CH ₃	neat	1 g
DLM-1176-5			neat	5 g
DLM-5-5	Toluene (D ₈ , 99.5%)	C ₆ D ₅ CD 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 ₃ C ₆ H(OH) ₂	neat	0.1 g
NEW ULM-9279	3,4,6-Trichlorocatechol (unlabeled)	C ₆ H ₃ Cl ₃ O ₂		Inquire
DLM-1974-0.1	1,1,1-Trichloroethane (D ₃ , 98%)	CD ₃ CCl 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 ₂ Cl	neat	0.1 g
DLM-1975-0.1	1,1,2-Trichloroethane (D ₃ , 98%)	Cl ₂ CDCDCI	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 ₂ C=CDCl	neat	1 g
DLM-2080-0.1	1,2,3-Trichloropropane (D ₅ , 98%) CP 95%	CD ₂ ClCDCICD ₂ Cl	neat	0.1 g
DLM-7663	Triethanolamine (D ₁₅ , 98%) (contains 2-amino-1-propanol) CP 97%	(DOCD ₂ CD ₂) ₃ N		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	<i>m</i> -Xylene (D ₁₀ , 98%)	C ₆ D ₄ (CD ₃) ₂	neat	5 g
DLM-808-5	<i>o</i> -Xylene (D ₁₀ , 98%)	C ₆ D ₄ (CD ₃) ₂	neat	5 g
DLM-313-5	<i>p</i> -Xylene (D ₁₀ , 98%)	C ₆ D ₄ (CD ₃) ₂	neat	5 g

Notes

A photograph showing two young boys standing in a shallow, polluted stream. The boy on the left is wearing a white t-shirt and white shorts, and the boy on the right is wearing a dark blue t-shirt and grey shorts. They are both looking towards the right side of the frame. The stream is filled with various pieces of trash, including plastic bottles, cardboard boxes, and other debris. In the background, there are some industrial buildings and trees. The overall scene depicts environmental contamination and its impact on children.

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
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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
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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
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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
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Unlabeled	(µg/mL)
Trichlorosyringol	500

EM-4183	Method 1653A Other Chlorophenolics Mixture-1	1 mL in methanol
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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-Chlorosyringaldehyde	500
	5-Chlorovanillin	500
	6-Chlorovanillin	500
	2,6-Dichlorosyringaldehyde	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 (<i>p</i> -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%) (<i>cis/trans</i> 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

	ES-5286 ($\mu\text{g/mL}$)	ES-5286-10X ($\mu\text{g/mL}$)
Labeled		
Vinyl chloride (D_3 , 98%)	100	1000
Chloroethane (D_5 , 98%)	100	1000
1,1-Dichloroethylene ($2,2\text{-D}_2$, 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%) (<i>cis/trans</i> mixture)	100	1000
1,1,1,2-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

	ES-5287 ($\mu\text{g/mL}$)	ES-5287-10X ($\mu\text{g/mL}$)
Labeled		
2-Butanone ($1,1,1,3,3\text{-D}_5$, 98%)	500	5000
2-Hexanone ($1,1,1,3,3\text{-D}_5$, 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

	ES-5288 ($\mu\text{g/mL}$)	ES-5288-10X ($\mu\text{g/mL}$)
Labeled		
1,4-Dioxane (<i>p</i> -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
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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- <i>n</i> -butyl phthalate (ring-D ₄ , 98%)	5000
(EPA 270B)	Diethyl phthalate (ring-D ₄ , 98%)	5000
(EPA 269B)	Di- <i>n</i> -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
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Labeled		(µg/mL)
(EPA 628B)	Carbazole (ring-D ₈ , 98%)	5000
(EPA 261B)	<i>N</i> -Nitrosodimethylamine (D ₆ , 98%)	5000
(EPA 263B)	<i>N</i> -Nitrosodi- <i>n</i> -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
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Labeled		(µg/mL)
(EPA 201B)	Acenaphthene (D ₁₀ , 99%)	2500
(EPA 278B)	Anthracene (D ₁₀ , 98%)	2500
(EPA 275B)	Benzo[<i>k</i>]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
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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
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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
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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%) (<i>cis/trans</i> 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 x 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- <i>p</i> -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- <i>p</i> -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- <i>p</i> -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
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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

Pesticides and Chemical Weapon Standards

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 tetrahydrofuranyl methyl substituents, as well as major metabolites of those compounds.

Toxaphene Standards

CIL has put considerable effort into developing the first set of ¹³C-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 ₈ Cl ₆	100 µg/mL in nonane	1.2 mL
ULM-7441-1.2	Aldrin (unlabeled)	C ₁₂ H ₈ Cl ₆	100 µg/mL in nonane	1.2 mL
CLM-8087-1.2	<i>cis</i> -Chlordane (α) (¹³ C ₁₀ , 99%)	*C ₁₀ H ₆ Cl ₈	100 µg/mL in nonane	1.2 mL
NEW ULM-2419-1.2	<i>cis</i> -Chlordane (α) (unlabeled)	C ₁₀ H ₆ Cl ₈	100 µg/mL in nonane	1.2 mL
ULM-2419-25			neat	25 mg
CLM-4792-1.2	<i>trans</i> -Chlordane (γ) (¹³ C ₁₀ , 99%)	*C ₁₀ H ₆ Cl ₈	100 µg/mL in nonane	1.2 mL
ULM-2420-1.2	<i>trans</i> -Chlordane (γ) (unlabeled)	C ₁₀ H ₆ Cl 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 ₆ Cl ₆	100 µg/mL in nonane	1.2 mL
ULM-7443-1.2	Chlordene (unlabeled)	C ₁₀ H ₆ Cl ₆	100 µg/mL in nonane	1.2 mL
CLM-4726-1.2	Dieldrin (¹³ C ₁₂ , 99%)	*C ₁₂ H ₈ Cl ₆ O	100 µg/mL in nonane	1.2 mL
ULM-7230-1.2	Dieldrin (unlabeled)	C ₁₂ H ₈ Cl ₆ O	100 µg/mL in nonane	1.2 mL
CLM-6025-1.2	Endosulfan I (¹³ C ₉ , 99%)	*C ₉ H ₆ Cl ₆ O ₃ S	100 µg/mL in nonane	1.2 mL
DLM-2862-1.2	Endosulfan I (D ₄ , 97%)	C ₉ D ₄ H ₂ Cl ₆ O ₃ S	100 µg/mL in nonane	1.2 mL
ULM-7447-1.2	Endosulfan I (unlabeled)	C ₉ H ₆ Cl ₆ O ₃ S	100 µg/mL in nonane	1.2 mL
CLM-6026-1.2	Endosulfan II (¹³ C ₉ , 99%)	*C ₉ H ₆ Cl ₆ O ₃ S	100 µg/mL in nonane	1.2 mL
ULM-7448-1.2	Endosulfan II (unlabeled)	C ₉ H ₆ Cl ₆ O ₃ S	100 µg/mL in nonane	1.2 mL
CLM-7531-1.2	Endosulfan sulfate (¹³ C ₉ , 99%)	*C ₉ H ₆ Cl ₆ O ₄ S	100 µg/mL in nonane	1.2 mL
ULM-7990-1.2	Endosulfan sulfate (unlabeled)	C ₉ H ₆ Cl ₆ O ₄ S	100 µg/mL in nonane	1.2 mL
CLM-4782-1.2	Endrin (¹³ C ₁₂ , 99%)	*C ₁₂ H ₈ Cl ₆ O	100 µg/mL in nonane	1.2 mL
ULM-7444-1.2	Endrin (unlabeled)	C ₁₂ H ₈ Cl ₆ O	100 µg/mL in nonane	1.2 mL
NEW CLM-4815-1.2	Endrin aldehyde (¹³ C ₁₂ , 99%)	*C ₁₂ H ₁₀ Cl ₆ O	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 ₆ O	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 ₈ Cl ₆ O	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 ₈ Cl ₆ O	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 ₅ Cl ₇	100 µg/mL in nonane	1.2 mL
ULM-2424-1.2	Heptachlor (unlabeled)	C ₁₀ H ₅ Cl ₇	100 µg/mL in nonane	1.2 mL
NEW ULM-2424-0.1			neat	0.1 g
CLM-4734-1.2	<i>cis</i> -Heptachlor epoxide (¹³ C ₁₀ , 99%)	*C ₁₀ H ₅ Cl ₇ O	100 µg/mL in nonane	1.2 mL
ULM-2425-1.2	<i>cis</i> -Heptachlor epoxide (unlabeled)	C ₁₀ H ₅ Cl ₇ O	100 µg/mL in nonane	1.2 mL
NEW ULM-2425-0.1			neat	0.1 g
ULM-7869-1.2	<i>trans</i> -Heptachlor epoxide (unlabeled)	C ₁₀ H ₅ Cl ₇ O	100 µg/mL in nonane	1.2 mL
CLM-4727-1.2	Isodrin (¹³ C ₁₂ , 99%)	*C ₁₂ H ₈ Cl ₆	100 µg/mL in nonane	1.2 mL
ULM-7442-1.2	Isodrin (unlabeled)	C ₁₂ H ₈ Cl 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 ₈ C ₂ Cl 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	<i>cis</i> -Nonachlor (¹³ C ₁₀ , 99%)	*C ₁₀ H ₅ Cl ₉	100 µg/mL in nonane	1.2 mL
ULM-7445-1.2	<i>cis</i> -Nonachlor (unlabeled)	C ₁₀ H ₅ Cl ₉	100 µg/mL in nonane	1.2 mL
CLM-4735-1.2	<i>trans</i> -Nonachlor (¹³ C ₁₀ , 99%)	*C ₁₀ H ₅ Cl ₉	100 µg/mL in nonane	1.2 mL
ULM-7229-1.2	<i>trans</i> -Nonachlor (unlabeled)	C ₁₀ H ₅ Cl ₉	100 µg/mL in nonane	1.2 mL
CLM-4729-1.2	Oxychlordane (¹³ C ₁₀ , 99%)	*C ₁₀ H ₄ Cl ₈ O	100 µg/mL in nonane	1.2 mL
ULM-6139-1.2	Oxychlordane (unlabeled)	C ₁₀ H ₄ Cl ₈ O	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 ₈ Cl ₆	100 µg/mL in nonane	1.2 mL
ULM-7441-1.2	Aldrin (unlabeled)	C ₁₂ H ₈ Cl ₆	100 µg/mL in nonane	1.2 mL
CLM-2482-1.2	α-HCH (α-BHC) (¹³ C ₆ , 99%)	*C ₆ H ₆ Cl ₆	100 µg/mL in nonane	1.2 mL
ULM-7232-1.2	α-HCH (α-BHC) (unlabeled)	C ₆ H ₆ Cl ₆	100 µg/mL in nonane	1.2 mL
CLM-3623-1.2	β-HCH (β-BHC) (¹³ C ₆ , 99%)	*C ₆ H ₆ Cl ₆	50 µg/mL in nonane	2 × 1.2 mL
ULM-6132-1.2	β-HCH (β-BHC) (unlabeled)	C ₆ H ₆ Cl 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 ₆ D ₆ Cl ₆	100 µg/mL in nonane	1.2 mL
CLM-1282-1.2	γ-HCH (γ-BHC) (lindane) (¹³ C ₆ , 99%)	*C ₆ H ₆ Cl ₆	100 µg/mL in nonane	1.2 mL
ULM-6133-1.2	γ-HCH (γ-BHC) (lindane) (unlabeled)	C ₆ H ₆ Cl ₆	100 µg/mL in nonane	1.2 mL
CLM-3648-1.2	δ-HCH (δ-BHC) (¹³ C ₆ , 99%)	*C ₆ H ₆ Cl ₆	100 µg/mL in nonane	1.2 mL
ULM-7233-1.2	δ-HCH (δ-BHC) (unlabeled)	C ₆ H ₆ Cl ₆	100 µg/mL in nonane	1.2 mL
CLM-8087-1.2	cis-Chlordane (α) (¹³ C ₁₀ , 99%)	*C ₁₀ H ₆ Cl ₈	100 µg/mL in nonane	1.2 mL
NEW ULM-2419-1.2	cis-Chlordane (α) (unlabeled)	C ₁₀ H ₆ Cl 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 ₆ Cl ₈	100 µg/mL in nonane	1.2 mL
ULM-2420-1.2	trans-Chlordane (γ) (unlabeled)	C ₁₀ H ₆ Cl 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
ULM-2301-0.1			neat	0.1 g
CLM-4758-1.2	Chlordene (¹³ C ₁₀ , 99%)	*C ₁₀ H ₆ Cl ₆	100 µg/mL in nonane	1.2 mL
ULM-7443-1.2	Chlordene (unlabeled)	C ₁₀ H ₆ Cl 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 ₂ H 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 ₂ H 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 ₈ H ₂ Cl 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 ₆ H ₄) ₂ C=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 ₈ Cl ₄	100 µg/mL in nonane	1.2 mL
CLM-1627-1.2	4,4'-DDE (ring- ¹³ C ₁₂ , 99%) [(p,p'-dichlorodiphenyl) dichloroethylene]	(Cl*C ₆ H ₄) ₂ C=CCl ₂	100 µg/mL in nonane	1.2 mL
CLM-1627-5			neat	5 mg
ULM-6137-1.2	4,4'-DDE (unlabeled) [(p,p'-dichlorodiphenyl) dichloroethylene]	(ClC ₆ H ₄) ₂ C=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 ₆ H ₄) ₂ CHCCl ₃	100 µg/mL in nonane	1.2 mL
ULM-6134-1.2	2,4'-DDT (unlabeled) [(o,p'-dichlorodiphenyl) trichloroethane]	ClC ₆ H ₄ CH(CCl ₃)C ₆ H ₄ Cl	100 µg/mL in nonane	1.2 mL
CLM-1281-1.2	4,4'-DDT (ring- ¹³ C ₁₂ , 99%) [(p,p'-dichlorodiphenyl) trichloroethane]	(Cl*C ₆ H ₄) ₂ CHCCl ₃	100 µg/mL in nonane	1.2 mL
CLM-1281-5			neat	5 mg
ULM-6135-1.2	4,4'-DDT (unlabeled) [(p,p'-dichlorodiphenyl) trichloroethane]	(ClC ₆ H ₄) ₂ CHCCl 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 ₆ H 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 ₈ Cl ₆ O	100 µg/mL in nonane	1.2 mL
ULM-7230-1.2	Dieldrin (unlabeled)	C ₁₂ H ₈ Cl ₆ O	100 µg/mL in nonane	1.2 mL
CLM-6025-1.2	Endosulfan I (¹³ C ₉ , 99%)	*C ₉ H ₆ Cl ₆ O ₃ S	100 µg/mL in nonane	1.2 mL
DLM-2862-1.2	Endosulfan I (D ₄ , 97%)	C ₉ D ₄ H ₂ Cl ₆ O ₃ S	100 µg/mL in nonane	1.2 mL
ULM-7447-1.2	Endosulfan I (unlabeled)	C ₉ H ₆ Cl ₆ O ₃ S	100 µg/mL in nonane	1.2 mL
CLM-6026-1.2	Endosulfan II (¹³ C ₉ , 99%)	*C ₉ H ₆ Cl ₆ O ₃ S	100 µg/mL in nonane	1.2 mL
ULM-7448-1.2	Endosulfan II (unlabeled)	C ₉ H ₆ Cl ₆ O ₃ S	100 µg/mL in nonane	1.2 mL
CLM-7531-1.2	Endosulfan sulfate (¹³ C ₉ , 99%)	*C ₉ H ₆ Cl ₆ O ₄ S	100 µg/mL in nonane	1.2 mL
ULM-7990-1.2	Endosulfan sulfate (unlabeled)	C ₉ H ₆ Cl ₆ O ₄ S	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 ₈ Cl ₆ O	100 µg/mL in nonane	1.2 mL
ULM-7444-1.2	Endrin (unlabeled)	C ₁₂ H ₈ Cl ₆ O	100 µg/mL in nonane	1.2 mL
NEW CLM-4815-1.2	Endrin aldehyde (¹³ C ₁₂ , 99%)	*C ₁₂ H ₁₀ Cl ₆ O	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 ₆ O	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 ₈ Cl ₆ O	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 ₈ Cl ₆ O	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 ₅ Cl ₇	100 µg/mL in nonane	1.2 mL
ULM-2424-1.2	Heptachlor (unlabeled)	C ₁₀ H ₅ Cl ₇	100 µg/mL in nonane	1.2 mL
ULM-2424-0.1			neat	0.1 g
CLM-4734-1.2	<i>cis</i> -Heptachlor epoxide (¹³ C ₁₀ , 99%)	*C ₁₀ H ₅ Cl ₇ O	100 µg/mL in nonane	1.2 mL
ULM-2425-1.2	<i>cis</i> -Heptachlor epoxide (unlabeled)	C ₁₀ H ₅ Cl ₇ O	100 µg/mL in nonane	1.2 mL
ULM-2425-0.1			neat	0.1 g
ULM-7869-1.2	<i>trans</i> -Heptachlor epoxide (unlabeled)	C ₁₀ H ₅ Cl ₇ O	100 µg/mL in nonane	1.2 mL
CLM-351-1.2	Hexachlorobenzene (¹³ C ₆ , 99%)	*C ₆ Cl ₆	100 µg/mL in nonane	1.2 mL
ULM-6130-1.2	Hexachlorobenzene (unlabeled)	C ₆ Cl ₆	100 µg/mL in nonane	1.2 mL
CLM-4727-1.2	Isodrin (¹³ C ₁₂ , 99%)	*C ₁₂ H ₈ Cl ₆	100 µg/mL in nonane	1.2 mL
ULM-7442-1.2	Isodrin (unlabeled)	C ₁₂ H ₈ Cl 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 ₃ O*C ₆ H ₄) ₂ CHCCl ₃	100 µg/mL in nonane	1.2 mL
ULM-7440-1.2	Methoxychlor (unlabeled)	(CH ₃ OC ₆ H ₄) ₂ CHCCl 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 ₈ C ₂ Cl 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	<i>cis</i> -Nonachlor (¹³ C ₁₀ , 99%)	*C ₁₀ H ₅ Cl ₉	100 µg/mL in nonane	1.2 mL
ULM-7445-1.2	<i>cis</i> -Nonachlor (unlabeled)	C ₁₀ H ₅ Cl ₉	100 µg/mL in nonane	1.2 mL
CLM-4735-1.2	<i>trans</i> -Nonachlor (¹³ C ₁₀ , 99%)	*C ₁₀ H ₅ Cl ₉	100 µg/mL in nonane	1.2 mL
ULM-7229-1.2	<i>trans</i> -Nonachlor (unlabeled)	C ₁₀ H ₅ Cl ₉	100 µg/mL in nonane	1.2 mL
CLM-4729-1.2	Oxychlorthane (¹³ C ₁₀ , 99%)	*C ₁₀ H ₄ Cl ₈ O	100 µg/mL in nonane	1.2 mL
ULM-6139-1.2	Oxychlorthane (unlabeled)	C ₁₀ H ₄ Cl ₈ O	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 ₄ D ₆ H ₄ NO ₃ PS	100 µg/mL in acetonitrile-D ₃	1.2 mL
ULM-7263-1.2	Acephate (unlabeled)	C ₄ H ₁₀ NO ₃ PS	100 µg/mL in acetonitrile	1.2 mL
NEW CDNLM-6786-1.2	Aminomethylphosphonic acid (AMPA)	*CH ₄ D ₂ *NO ₃ P	100 µg/mL in H ₂ O	1.2 mL
NEW CDNLM-6786-10	(¹³ C, 99%; ¹⁵ N, 98%, methylene-D ₂ , 98%)		100 µg/mL in H ₂ O	10 mL
NEW ULM-9399-1.2	Azinphos-methyl (unlabeled)	C ₁₀ PN ₃ H ₁₂ S ₂ O ₃	100 µg/mL in nonane	1.2 mL
DLM-7152	Bensulide (isopropoxy-D ₁₄ , 98%)	C ₁₄ D ₁₄ H ₁₀ NO ₄ PS ₃		Inquire
DLM-4360-1.2	Chlorpyrifos (diethyl-D ₁₀ , 99%)	C ₉ D ₁₀ HCl ₃ NO ₃ PS	100 µg/mL in nonane	1.2 mL
ULM-7489-1.2	Chlorpyrifos (unlabeled)	C ₉ H ₁₁ Cl ₃ NO ₃ PS	100 µg/mL in nonane	1.2 mL
NEW DLM-7153-1.2	Chlorpyrifos-methyl (dimethyl-D ₆ , 98%)	C ₇ HCl ₃ D ₆ NO ₃ PS	100 µg/mL in nonane	1.2 mL
NEW ULM-9538-1.2	Chlorpyrifos-methyl (unlabeled)	C ₇ H ₇ Cl ₃ NO ₃ PS	100 µg/mL in nonane	1.2 mL
DLM-1148-1.2	Diazinon (diethyl-D ₁₀ , 98%)	C ₁₂ H ₁₁ D ₁₀ N ₂ O ₃ PS	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 ₂ O ₃ PS	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 ₄ D ₆ HCl ₂ O ₄ P	neat	10 mg
ULM-7217-1.2	Dichlorvos (unlabeled)	(H ₃ CO) ₂ POOCH=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 ₄ D ₁₀ KO ₄ P	100 µg/mL in methanol	1.2 mL
NEW ULM-9287-M-1.2	O,O-Diethyl phosphate, potassium salt (DEP) (unlabeled)	C ₄ H ₁₀ KO ₄ P	100 µg/mL in methanol	1.2 mL
DLM-4852-1.2	O,O-Diethyl thiophosphate, potassium salt (DETP) (diethyl-D ₁₀ , 98%)	C ₄ D ₁₀ KO ₃ PS	100 µg/mL in methanol	1.2 mL
ERD-119	O,O-Diethyl thiophosphate, potassium salt (DETP) (unlabeled)	C ₄ H ₁₀ KO ₃ PS	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 ₄ D ₁₀ KO ₂ PS ₂	100 µg/mL in methanol	1.2 mL
NEW ULM-9002-1.2	O,O-Diethyl dithiophosphate, potassium salt (DEDTP) (unlabeled)	C ₄ H ₁₀ KO ₂ PS ₂	100 µg/mL in methanol	1.2 mL
ULM-9898-1.2	Diisopropyl methylphosphonate (unlabeled)	C ₇ H ₁₇ O ₃ P	1000 µg/mL in methanol	1.2 mL
DLM-7151-1.2	Dimethoate (O,O-dimethyl-D ₆ , 98%)	C ₅ D ₆ H ₆ NO ₃ PS ₂	100 µg/mL in acetonitrile	1.2 mL
ULM-7972-1.2	Dimethoate (unlabeled)	C ₅ H ₁₂ NO ₃ PS 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 ₂ D ₆ KO ₄ P	100 µg/mL in methanol	1.2 mL
NEW ULM-8867-1.2	O,O-Dimethyl phosphate, potassium salt (DMP) (unlabeled)	C ₂ H ₆ KO ₃ PS	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 ₂ D ₆ KO ₃ PS	100 µg/mL in methanol	1.2 mL
NEW ULM-8905-1.2	O,O-Dimethyl thiophosphate, potassium salt (DMTP) (unlabeled) CP 97%	C ₂ H ₆ KO ₃ PS	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 ₂ D ₆ KO ₂ PS ₂	100 µg/mL in methanol	1.2 mL
NEW ULM-9004-1.2	O,O-Dimethyl dithiophosphate, potassium salt (DMDTP) (unlabeled)	C ₂ H ₆ KO ₂ PS ₂	100 µg/mL in methanol	1.2 mL
ULM-9899-1.2	Dipinacolyl methylphosphonate (unlabeled)	C ₇ H ₁₇ O ₃ P	1000 µg/mL in methanol	1.2 mL
DLM-7183	Disulfoton (O,O-diethyl-D ₁₀ , 98%)	C ₈ D ₁₀ H ₉ O ₂ PS ₃		Inquire
ULM-6091-1.2	Ethyl dimethylamidophosphate, sodium salt (unlabeled)	C ₄ H ₁₁ NO ₃ PNa	1000 µg/mL in methanol	1.2 mL
DLM-6098-1.2	Ethyl hydrogen methylphosphonate (ethyl-D ₅ , 98%)	C ₃ H ₄ D ₅ O ₃ P	100 µg/mL in methanol	1.2 mL
ULM-6099-1.2	Ethyl methylphosphonic acid (unlabeled)	C ₃ H ₅ O ₃ P	1000 µg/mL in methanol	1.2 mL
DLM-2878-0.01	Fenitrothion (O,O-dimethyl-D ₆ , 98%)	C ₉ D ₆ H ₆ NO ₅ PS	neat	10 mg
CLM-4545-1.2	Fonofos (ring- ¹³ C ₆ , 99%)	*C ₆ C ₄ H ₁₅ OPS ₂	100 µg/mL in nonane	1.2 mL
ULM-6694-1.2	Fonofos (unlabeled)	CH ₂ CH ₃ P(S)(O)CH ₂ CH ₃ (SC ₆ H 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	Glyphosate (2- ¹³ C, 99%; ¹⁵ N, 98%+) CP 96%	HOO*CCH ₂ *NHCH ₂ PO(OH) ₂	100 µg/mL in water	1.2 mL
CNLM-4666-10			100 µg/mL in water	10 mL
CNLM-4666-10X-1.2			1000 µg/mL in water	1.2 mL
ULM-6876-1.2	Glyphosate (unlabeled)	HOOCH 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 ₆ 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 ₂ H ₁₁ D ₃ N ₂ O ₂ S	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-9823-1.2	Aldicarb (unlabeled)	C ₇ H ₁₄ N ₂ O ₂ S	100 µg/mL in acetonitrile	1.2 mL
	CLM-7140	Bendiocarb (¹³ C ₃ , 99%)	*C ₃ C ₈ H 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 ₆ C ₆ H ₁₁ NO ₂	100 µg/mL in nonane	1.2 mL
	ULM-8096-1.2	Carbaryl (unlabeled)	C ₁₀ H ₇ CO ₂ NHCH ₃	100 µg/mL in nonane	1.2 mL
	CLM-1911-1.2	Carbofuran (ring- ¹³ C ₆ , 99%)	*C ₆ C ₆ H ₁₅ NO ₃	100 µg/mL in <i>p</i> -dioxane	1.2 mL
	ULM-7419-1.2	Carbofuran (unlabeled)	C ₁₂ H ₁₅ NO ₃	100 µg/mL in <i>p</i> -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 ₂ C ₃ H ₁₀ N*NO ₂ S	100 µg/mL in methanol	1.2 mL
	ULM-8639-1.2	Methomyl (unlabeled)	C ₅ H ₁₀ NNO ₂ S	100 µg/mL in methanol	1.2 mL
	DLM-7141-1.2	Propoxur (isopropyl-D ₇ , 98%)	C ₁₁ D ₇ H ₈ NO 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 (desethyl-desisopropylhydroxyatrazine) (ring- ¹³ C ₃ , 99%)	NH ₂ (*C ₃ N ₃ OH)NH ₂	100 µg/mL in 80% water/ 20% diethylamine	1.2 mL
	ULM-8323-1.2	Ammeline (desethyl-desisopropylhydroxyatrazine) (unlabeled)	NH ₂ (C ₃ N ₃ OH)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) ₂ CHNH(*C ₃ N ₃ Cl)NHCH ₂ CH ₃	100 µg/mL in nonane	1.2 mL
	DLM-1149-1.2	Atrazine (ethylamine-D ₅ , 98%)	(CH ₃) ₂ CHNH(C ₃ N ₃ Cl)NHCD ₂ CD 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) ₂ CHNH(C ₃ N ₃ Cl)NHCH ₂ CH ₃	100 µg/mL in nonane	1.2 mL
	CLM-3894-1.2	Atrazine mercapturate (ring- ¹³ C ₃ , 99%)	*C ₃ C ₁₀ H ₂₂ N ₆ O ₃ S	100 µg/mL in acetonitrile	1.2 mL
	ULM-7346-1.2	Atrazine mercapturate (unlabeled)	C ₁₃ H ₂₂ N ₆ O ₃ S	100 µg/mL in acetonitrile	1.2 mL
	CLM-8311-1.2	Atrazinethiol (ring- ¹³ C ₃ , 99%)	(CH ₃ CH ₂ NH)*C ₃ N ₃ (SH)(NHCH(CH ₃) ₂)	100 µg/mL in acetonitrile	1.2 mL
	ULM-8318-1.2	Atrazinethiol (unlabeled)	(CH ₃ CH ₂ NH)C ₃ N 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) ₂ CHNH(*C ₃ N ₃ Cl)NH ₂	100 µg/mL in acetonitrile	1.2 mL
	ULM-8320-1.2	Desethylatrazine (unlabeled)	(CH ₃) ₂ CHNH(C ₃ N ₃ Cl)NH ₂	100 µg/mL in acetonitrile	1.2 mL
	CLM-7528-1.2	Desethyl desisopropyl atrazine (¹³ C ₃ , 99%) CP 95%	*C ₃ H ₄ ClN ₅	100 µg/mL in acetonitrile	1.2 mL
	ULM-8001-1.2	Desethyl desisopropyl atrazine (unlabeled)	C ₃ H ₄ ClN ₅	100 µg/mL in acetonitrile	1.2 mL
	CLM-8315-1.2	Desethylhydroxyatrazine (ring- ¹³ C ₃ , 99%)	(CH ₂ N)*C ₃ N ₃ (OH)(NHCH(CH ₃) ₂)	100 µg/mL in 80% water/ 20% diethylamine	1.2 mL
	ULM-8322-1.2	Desethylhydroxyatrazine (unlabeled)	(CH ₂ N)C ₃ N 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 ₃ CH ₂ NH(*C ₃ N ₃ Cl)NH ₂	100 µg/mL in acetonitrile	1.2 mL
	ULM-8319-1.2	Desisopropylatrazine (unlabeled)	CH ₃ CH ₂ NH(C ₃ N ₃ Cl)NH ₂	100 µg/mL in acetonitrile	1.2 mL
	CLM-8314-1.2	Desisopropylhydroxyatrazine (ring- ¹³ C ₃ , 99%)	(CH ₃ CH ₂ NH)*C ₃ N ₃ (OH)(NH ₂)	100 µg/mL in 80% water/ 20% diethylamine	1.2 mL
	ULM-8321-1.2	Desisopropylhydroxyatrazine (unlabeled)	(CH ₃ CH ₂ NH)C ₃ N 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 ₃ CH ₂ NH)*C ₃ N ₃ (OH)(NHCH(CH ₃) ₂)	100 µg/mL in 80% water/ 20% diethylamine	1.2 mL
	ULM-8317-1.2	Hydroxyatrazine (unlabeled)	(CH ₃ CH ₂ NH)C ₃ N 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 ₃ C ₆ H ₁₆ ClN ₅	100 µg/mL in methanol	1.2 mL
NEW	ULM-8304	Propazine (unlabeled)	C ₉ H ₁₆ ClN ₅		Inquire
	CLM-3739-1.2	Simazine (ring- ¹³ C ₃ , 99%)	*C ₃ C ₄ H 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 ₇ H 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 ₆ C ₁₆ H ₁₈ Cl ₂ FNO ₃	100 µg/mL in nonane	1.2 mL
ULM-7454-1.2	Cyfluthrin (mix of stereoisomers) (unlabeled)	C ₂₂ H ₁₈ Cl ₂ FNO ₃	100 µg/mL in nonane	1.2 mL
CLM-7292-1.2	Cypermethrin (mix of stereoisomers) (phenoxy- ¹³ C ₆ , 99%)	*C ₆ C ₁₆ H ₁₉ Cl ₂ NO ₃	100 µg/mL in nonane	1.2 mL
ULM-7453-1.2	Cypermethrin (mix of stereoisomers) (unlabeled)	C ₂₂ H ₁₉ Cl ₂ NO ₃	100 µg/mL in nonane	1.2 mL
NEW CDLM-9205-1.2	<i>cis</i> -DCCA (1,carboxyl- ¹³ C ₂ , 99%; 1-D, 97%)	C ₆ *C ₂ H ₆ DCl ₂ O ₂	100 µg/mL in acetonitrile-D ₃	1.2 mL
NEW ULM-9176-1.2	<i>cis</i> -DCCA (unlabeled)	C ₈ H ₁₀ Cl ₂ O ₂	100 µg/mL in acetonitrile	1.2 mL
NEW CDLM-9206-1.2	<i>trans</i> -DCCA (1,carboxyl- ¹³ C ₂ , 99%; 1-D, 97%) CP 97%	C ₆ *C ₂ H ₅ DCl ₂ O ₂	100 µg/mL in acetonitrile-D ₃	1.2 mL
NEW ULM-9175-1.2	<i>trans</i> -DCCA (unlabeled)	C ₈ H ₁₀ Cl ₂ O ₂	100 µg/mL in acetonitrile	1.2 mL
CLM-7389-1.2	4-Fluoro-3-phenoxybenzoic acid (¹³ C ₆ , 99%)	*C ₆ C ₇ H ₉ FO ₃	100 µg/mL in acetonitrile	1.2 mL
ULM-7391-1.2	4-Fluoro-3-phenoxybenzoic acid (unlabeled)	C ₁₃ H ₉ FO ₃	100 µg/mL in acetonitrile	1.2 mL
CLM-7322-1.2	<i>cis</i> -Permethrin (phenoxy- ¹³ C ₆ , 99%)	*C ₆ H ₅ OC ₆ H ₄ CH ₂ CO ₂ C ₇ H ₉ Cl ₂ O ₃	50 µg/mL in nonane	1.2 mL
ULM-8526-1.2	<i>cis</i> -Permethrin (unlabeled)	C ₆ H ₅ OC ₆ H ₄ CH ₂ CO ₂ C ₇ H ₉ Cl ₂ O ₃	50 µg/mL in nonane	1.2 mL
CLM-7323-1.2	<i>trans</i> -Permethrin (phenoxy- ¹³ C ₆ , 99%)	*C ₆ H ₅ OC ₆ H ₄ CH ₂ CO ₂ C ₇ H ₉ Cl ₂ O ₃	50 µg/mL in nonane	1.2 mL
ULM-8527-1.2	<i>trans</i> -Permethrin (unlabeled)	C ₆ H ₅ OC ₆ H ₄ CH ₂ CO ₂ C ₇ H ₉ Cl ₂ O ₃	50 µg/mL in nonane	1.2 mL
CLM-4542-1.2	3-Phenoxybenzoic acid (phenoxy- ¹³ C ₆ , 99%)	*C ₆ H ₅ OC ₆ H ₄ CO ₂ H	100 µg/mL in nonane	1.2 mL
CLM-4542-SA-1.2	3-Phenoxybenzoic acid (unlabeled)	C ₆ H ₅ OC ₆ H ₄ CO ₂ H	100 µg/mL in acetonitrile	1.2 mL
ULM-6781-1.2	3-Phenoxybenzoic acid (unlabeled)	C ₆ H ₅ OC ₆ H ₄ CO ₂ H	100 µg/mL in nonane	1.2 mL
ULM-6781-SA-1.2	3-Phenoxybenzoic acid (unlabeled)	C ₆ H ₅ OC ₆ H ₄ CO ₂ H	100 µg/mL in acetonitrile	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 ₉ Cl ₉	10 µg/mL in nonane	1.2 mL
ULM-7829-1.2	Parlar 50 (unlabeled)	C ₁₀ H ₉ Cl ₉	10 µg/mL in nonane	1.2 mL
CLM-7932-1.2	Parlar 62 (¹³ C ₁₀ , 99%)	*C ₁₀ H ₉ Cl ₉	10 µg/mL in nonane	1.2 mL
ULM-7830-1.2	Parlar 62 (unlabeled)	C ₁₀ H ₉ Cl ₉	10 µg/mL in nonane	1.2 mL
CLM-8720-1.2	Parlar 69 (¹³ C ₁₀ , 99%)	*C ₁₀ H ₉ Cl ₉	10 µg/mL in nonane	1.2 mL
ULM-8768-1.2	Parlar 69 (unlabeled)	C ₁₀ H ₉ Cl ₉	10 µg/mL in nonane	1.2 mL
CLM-8721-1.2	Parlar 70 (¹³ C ₁₀ , 99%)	*C ₁₀ H ₉ Cl ₉	10 µg/mL in nonane	1.2 mL
ULM-8769-1.2	Parlar 70 (unlabeled)	C ₁₀ H ₉ Cl 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 ₄ D ₆ H ₄ NO ₃ PS	100 µg/mL in acetonitrile-D ₃	1.2 mL
ULM-7263-1.2	Acephate (unlabeled)	C ₄ H ₁₀ NO ₃ PS	100 µg/mL in acetonitrile	1.2 mL
NEW CLM-9653-1.2	Acetamiprid (pyridylmethyl- ¹³ C ₆ , 99%)	*C ₆ C ₄ H 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 ₆ C ₈ H ₂₀ ClNO ₂	100 µg/mL in acetonitrile	1.2 mL
NEW ULM-9824-1.2	Acetochlor (unlabeled)	C ₆ C ₈ H ₂₀ ClNO ₂	100 µg/mL in acetonitrile	1.2 mL
CLM-3727-1.2	Alachlor (ring- ¹³ C ₆ , 99%) CP 96%	*C ₆ C ₈ H ₂₀ ClNO ₂	100 µg/mL in nonane	1.2 mL
CLM-3687-1.2	Alachlor acetylcysteine adduct (ring- ¹³ C ₆ , 99%)	*C ₆ C ₁₃ H ₂₈ N ₂ O ₅ S	100 µg/mL in acetonitrile	1.2 mL
NEW CDLM-9820-1.2	Aldicarb (¹³ C ₂ , 98%; D ₃ , 98%)	C ₅ *C ₂ H ₁₁ D ₃ N ₂ O ₂ S	100 µg/mL in acetonitrile	1.2 mL
NEW ULM-9823-1.2	Aldicarb (unlabeled)	C ₇ H ₁₄ N ₂ O ₂ S	100 µg/mL in acetonitrile	1.2 mL
CLM-4725-1.2	Aldrin (¹³ C ₁₂ , 99%)	*C ₁₂ H ₈ Cl ₆	100 µg/mL in nonane	1.2 mL
ULM-7441-1.2	Aldrin (unlabeled)	C ₁₂ H ₈ Cl ₆	100 µg/mL in nonane	1.2 mL
CDNLM-6786-1.2	Aminomethylphosphonic acid (AMPA)	*CH ₄ D ₂ *NO ₃ P	100 µg/mL in H ₂ O	1.2 mL
NEW CDNLM-6786-10	(¹³ C, 99%; ¹⁵ N, 98%, methylene-D ₂ , 98%)			10 mL
CLM-8316-1.2	Ammeline (desethyldeisopropylhydroxyatrazine) (ring- ¹³ C ₃ , 99%)	NH ₂ (*C ₃ N ₃ OH)NH ₂	100 µg/mL in 80% water/ 20% diethylamine	1.2 mL
ULM-8323-1.2	Ammeline (desethyldeisopropylhydroxyatrazine) (unlabeled)	NH ₂ (C ₃ N ₃ OH)NH ₂	100 µg/mL in 80% water/ 20% diethylamine	1.2 mL
CLM-3737-1.2	Atrazine (ring- ¹³ C ₃ , 99%)	*C ₃ C ₅ H ₁₄ ClN ₅	100 µg/mL in nonane	1.2 mL
DLM-1149-1.2	Atrazine (ethylamine-D ₅ , 98%)	C ₈ H ₉ D ₅ ClN ₅	100 µg/mL in nonane	1.2 mL
DLM-1149-5			neat	5 mg
ULM-7235-1.2	Atrazine (unlabeled)	C ₈ H ₁₄ ClN ₅	100 µg/mL in nonane	1.2 mL
CLM-3894-1.2	Atrazine mercapturate (ring- ¹³ C ₃ , 99%)	*C ₃ C ₁₀ H ₂₂ N ₆ O ₃ S	100 µg/mL in acetonitrile	1.2 mL
ULM-7346-1.2	Atrazine mercapturate (unlabeled)	C ₁₃ H ₂₂ N ₆ O ₃ S	100 µg/mL in acetonitrile	1.2 mL
CLM-8311-1.2	Atrazinethiol (ring- ¹³ C ₃ , 99%)	*C ₃ C ₅ H ₁₅ N ₅ S	100 µg/mL in acetonitrile	1.2 mL
ULM-8318-1.2	Atrazinethiol (unlabeled)	C ₈ H ₁₅ N ₅ S	100 µg/mL in acetonitrile	1.2 mL
NEW ULM-9399-1.2	Azinphos-methyl (unlabeled)	C ₁₀ P ₁ N ₃ H ₁₂ S ₂ O ₃	100 µg/mL in nonane	1.2 mL
CLM-7140	Bendiocarb (¹³ C ₃ , 99%)	*C ₃ C ₈ H 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 ₄ PS ₃		Inquire
CLM-2482-1.2	α-HCH (α-BHC) (¹³ C ₆ , 99%)	*C ₆ H ₆ Cl ₆	100 µg/mL in nonane	1.2 mL
ULM-7232-1.2	α-HCH (α-BHC) (unlabeled)	C ₆ H ₆ Cl ₆	100 µg/mL in nonane	1.2 mL
CLM-3623-1.2	β-HCH (β-BHC) (¹³ C ₆ , 99%)	*C ₆ H ₆ Cl ₆	50 µg/mL in nonane	2 × 1.2 mL
ULM-6132-1.2	β-HCH (β-BHC) (unlabeled)	C ₆ H ₆ Cl 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 ₆ D ₆ Cl ₆	100 µg/mL in nonane	1.2 mL
CLM-1282-1.2	γ-HCH (γ-BHC) (lindane) (¹³ C ₆ , 99%)	*C ₆ H ₆ Cl ₆	100 µg/mL in nonane	1.2 mL
ULM-6133-1.2	γ-HCH (γ-BHC) (lindane) (unlabeled)	C ₆ H ₆ Cl ₆	100 µg/mL in nonane	1.2 mL
CLM-3648-1.2	δ-HCH (δ-BHC) (¹³ C ₆ , 99%)	*C ₆ H ₆ Cl ₆	100 µg/mL in nonane	1.2 mL
ULM-7233-1.2	δ-HCH (δ-BHC) (unlabeled)	C ₆ H ₆ Cl ₆	100 µg/mL in nonane	1.2 mL
CLM-3741-1.2	Bromoxynil (ring- ¹³ C ₆ , 99%)	*C ₆ CH ₃ Br ₂ NO	50 µg/mL in nonane	2 × 1.2 mL
ULM-6205-1.2	Bromoxynil (unlabeled)	C ₇ H ₃ Br ₂ NO	50 µg/mL in nonane	1.2 mL
CLM-4682-1.2	Carbaryl (ring- ¹³ C ₆ , 99%)	*C ₆ C ₆ H ₁₁ NO ₂	100 µg/mL in nonane	1.2 mL
ULM-8096-1.2	Carbaryl (unlabeled)	C ₁₀ H ₇ CO ₂ NHCH ₃	100 µg/mL in nonane	1.2 mL
CLM-1911-1.2	Carbofuran (ring- ¹³ C ₆ , 99%)	*C ₆ C ₆ H 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 ₆ Cl ₈	100 µg/mL in nonane	1.2 mL
NEW ULM-2419-1.2	cis-Chlordane (α) (unlabeled)	C ₁₀ H ₆ Cl 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 ₆ Cl ₈	100 µg/mL in nonane	1.2 mL
NEW ULM-2420-1.2	trans-Chlordane (γ) (unlabeled)	C ₁₀ H ₆ Cl ₈	100 µg/mL in nonane	1.2 mL
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
ULM-2301-0.1			neat	0.1 g
CLM-4758-1.2	Chlordene (¹³ C ₁₀ , 99%)	*C ₁₀ H ₆ Cl ₆	100 µg/mL in nonane	1.2 mL
ULM-7443-1.2	Chlordene (unlabeled)	C ₁₀ H ₆ Cl 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 ₆ H ₃ OCH ₂ CO ₂ H		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 ₆ H ₃ OCH ₂ CO ₂ H		Inquire
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
CLM-1913-1.2	4-Chlorophenol (¹³ C ₆ , 99%)	*C ₆ H ₄ ClOH	100 µg/mL in nonane	1.2 mL
ULM-7420-1.2	4-Chlorophenol (unlabeled)	C ₆ H ₄ ClOH	100 µg/mL in nonane	1.2 mL
DLM-4360-1.2	Chlorpyrifos (diethyl-D ₁₀ , 99%)	C ₉ D ₁₀ HCl ₃ NO ₃ PS	100 µg/mL in nonane	1.2 mL
ULM-7489-1.2	Chlorpyrifos (unlabeled)	C ₉ H ₁₁ Cl ₃ NO ₃ PS	100 µg/mL in nonane	1.2 mL
NEW DLM-7153-1.2	Chlorpyrifos-methyl (dimethyl-D ₆ , 98%)	C ₇ HCl ₃ D ₆ NO ₃ PS	100 µg/mL in nonane	1.2 mL
NEW ULM-9538-1.2	Chlorpyrifos-methyl (unlabeled)	C ₇ H ₇ Cl ₃ NO ₃ PS	100 µg/mL in nonane	1.2 mL
NEW DLM-3760-1.2	Chlortoluron (<i>N,N</i> -dimethyl-D ₆ , 98%)	C ₁₀ H ₇ D ₆ ClN ₂ O	100 µg/mL in acetonitrile	1.2 mL
DLM-3760-0.01			neat	10 mg
NEW ULM-9825-1.2	Chlortoluron (unlabeled)	C ₁₀ H ₁₃ ClN ₂ O	100 µg/mL in acetonitrile	1.2 mL
NEW CNLM-9940-1.2	Clothianidin (thiazole- ¹³ C ₃ , 99%; ¹⁵ N, 98%)	*C ₃ C ₃ H ₆ Cl*NN ₂ O ₂ S		Inquire
NEW ULM-9941-1.2	Clothianidin (unlabeled)	C ₆ H ₈ ClN ₅ O ₂ S		Inquire
ERC-034	Cyclohexyl methylphosphonic acid (unlabeled)	CH ₃ PO ₃ HC ₆ H ₁₁	1000 µg/mL in methanol	1.2 mL
CLM-7293-1.2	Cyfluthrin (mix of stereoisomers) (phenoxy- ¹³ C ₆ , 99%)	*C ₆ C ₁₆ H ₁₈ Cl ₂ FNO ₃	100 µg/mL in nonane	1.2 mL
ULM-7454-1.2	Cyfluthrin (mix of stereoisomers) (unlabeled)	C ₂₂ H ₁₈ Cl ₂ FNO ₃	100 µg/mL in nonane	1.2 mL
CLM-7292-1.2	Cypermethrin (mix of stereoisomers) (phenoxy- ¹³ C ₆ , 99%)	*C ₆ C ₁₆ H ₁₉ Cl ₂ NO ₃	100 µg/mL in nonane	1.2 mL
ULM-7453-1.2	Cypermethrin (mix of stereoisomers) (unlabeled)	C ₂₂ H ₁₉ Cl ₂ NO ₃	100 µg/mL in nonane	1.2 mL
NEW CDLM-9205-1.2	<i>cis</i> -DCCA (1,carboxyl- ¹³ C ₂ , 99%; 1-D, 97%)	C ₆ *C ₂ H ₆ DCl ₂ O ₂	100 µg/mL in acetonitrile-D ₃	1.2 mL
NEW ULM-9176-1.2	<i>cis</i> -DCCA (unlabeled)	C ₈ H ₁₀ Cl ₂ O ₂	100 µg/mL in acetonitrile	1.2 mL
NEW CDLM-9206-1.2	<i>trans</i> -DCCA (1,carboxyl- ¹³ C ₂ , 99%; 1-D, 97%)	C ₆ *C ₂ H ₆ DCl ₂ O ₂	100 µg/mL in acetonitrile-D ₃	1.2 mL
NEW ULM-9175-1.2	<i>trans</i> -DCCA (unlabeled)	C ₈ H ₁₀ Cl ₂ O ₂	100 µg/mL in acetonitrile	1.2 mL
CLM-6999-1.2	2,4'-DDD (ring- ¹³ C ₁₂ , 99%) [(<i>o,p'</i> -Dichlorodiphenyl) dichloroethane]	*C ₁₂ C ₂ H ₁₀ Cl ₄	50 µg/mL in nonane	1.2 mL
ULM-7450-1.2	2,4'-DDD (unlabeled) [(<i>o,p'</i> -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%) [(<i>o,p'</i> -Dichlorodiphenyl) dichloroethane]	*C ₁₂ C ₂ H ₁₀ Cl ₄	100 µg/mL in nonane	1.2 mL
DLM-3533-1.2	4,4'-DDD (ring-D ₈ , 98%) [(<i>p,p'</i> -Dichlorodiphenyl) dichloroethane]	C ₁₄ D ₈ H ₂ Cl ₄	100 µg/mL in nonane	1.2 mL
ULM-7216-1.2	4,4'-DDD (unlabeled) [(<i>p,p'</i> -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%) [(<i>o,p'</i> -Dichlorodiphenyl) dichloroethylene]	(Cl*C ₆ H ₄) ₂ C=CCl ₂	100 µg/mL in nonane	1.2 mL
ULM-6251-1.2	2,4'-DDE (unlabeled) [(<i>o,p'</i> -Dichlorodiphenyl) dichloroethylene]	C ₁₄ H ₈ Cl ₄	100 µg/mL in nonane	1.2 mL
CLM-1627-1.2	4,4'-DDE (ring- ¹³ C ₁₂ , 99%)	(Cl*C ₆ H ₄) ₂ C=CCl ₂	100 µg/mL in nonane	1.2 mL
CLM-1627-5	[(<i>p,p'</i> -Dichlorodiphenyl) dichloroethylene]		neat	5 mg
ULM-6137-1.2	4,4'-DDE (unlabeled) [(<i>p,p'</i> -Dichlorodiphenyl) dichloroethylene]	(ClC ₆ H ₄) ₂ C=CCl ₂	100 µg/mL in nonane	1.2 mL
CLM-4692-1.2	2,4'-DDT (ring- ¹³ C ₁₂ , 99%) [(<i>o,p'</i> -Dichlorodiphenyl) trichloroethane]	(Cl*C ₆ H ₄) ₂ CHCCl ₃	100 µg/mL in nonane	1.2 mL
ULM-6134-1.2	2,4'-DDT (unlabeled) [(<i>o,p'</i> -Dichlorodiphenyl) trichloroethane]	ClC ₆ H ₄ CH(CCl ₃)C ₆ H ₄ Cl	100 µg/mL in nonane	1.2 mL
CLM-1281-1.2	4,4'-DDT (ring- ¹³ C ₁₂ , 99%)	(Cl*C ₆ H ₄) ₂ CHCCl ₃	100 µg/mL in nonane	1.2 mL
CLM-1281-5	[(<i>p,p'</i> -Dichlorodiphenyl) trichloroethane]		neat	5 mg
ULM-6135-1.2	4,4'-DDT (unlabeled) [(<i>p,p'</i> -Dichlorodiphenyl) trichloroethane]	(ClC ₆ H ₄) ₂ CHCCl ₃	100 µg/mL in nonane	1.2 mL
CLM-8313-1.2	Desethylatrazine (ring- ¹³ C ₃ , 99%) CP 97%	*C ₃ C ₃ H ₁₀ ClN ₅	100 µg/mL in acetonitrile	1.2 mL
ULM-8320-1.2	Desethylatrazine (unlabeled)	C ₆ H 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 ₃ H ₄ ClN ₅	100 µg/mL in acetonitrile	1.2 mL
ULM-8001-1.2	Desethyl desisopropyl atrazine (unlabeled)	C ₃ H ₄ ClN ₅	100 µg/mL in acetonitrile	1.2 mL
CLM-8315-1.2	Desethylhydroxyatrazine (ring- ¹³ C ₃ , 99%)	C ₃ *C ₃ H ₁₁ N ₅ O	100 µg/mL in 80% water/ 20% diethylamine	1.2 mL

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Individual Pesticide and Pesticide Metabolite Standards

Catalog No.	Compound	Formula	Concentration	Amount
ULM-8322-1.2	Desethylhydroxyatrazine (unlabeled)	C ₆ H ₁₁ N ₅ O	100 µg/mL in 80% water/ 20% diethylamine	1.2 mL
CLM-8312-1.2	Desisopropylatrazine (ring- ¹³ C ₃ , 99%)	*C ₃ C ₂ H ₈ ClN ₅	100 µg/mL in acetonitrile	1.2 mL
ULM-8319-1.2	Desisopropylatrazine (unlabeled)	C ₅ H ₈ ClN ₅	100 µg/mL in acetonitrile	1.2 mL
CLM-8314-1.2	Desisopropylhydroxyatrazine (ring- ¹³ C ₃ , 99%)	*C ₃ C ₂ H ₉ N ₅ O	100 µg/mL in acetonitrile	1.2 mL
ULM-8321-1.2	Desisopropylhydroxyatrazine (unlabeled)	C ₅ H ₉ N ₅ O	100 µg/mL in 80% water/ 20% diethylamine	1.2 mL
NEW DLM-1148-1.2	Diazinon (diethyl-D ₁₀ , 98%)	C ₁₂ H ₁₁ D ₁₀ N ₂ O ₃ PS	100 µg/mL in nonane	1.2 mL
NEW DLM-1148-A-1.2			100 µg/mL in acetonitrile	1.2 mL
NEW DLM-1148-5			neat	5 mg
NEW ULM-6575-S-10X-1.2	Diazinon (unlabeled)	C ₁₂ H ₂₁ N ₂ O ₃ PS	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 ₆ H 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 ₆ H ₃ OCH ₂ CO ₂ H	100 µg/mL in acetonitrile	1.2 mL
DLM-1146-5	2,4-Dichlorophenoxyacetic acid (2,4-D) (ring-D ₃ , 98%)	Cl ₂ C ₆ D ₃ OCH ₂ CO ₂ H	neat	5 mg
ULM-7418-1.2	2,4-Dichlorophenoxyacetic acid (2,4-D) (unlabeled)	Cl ₂ C ₆ H ₃ OCH ₂ CO ₂ H	100 µg/mL in acetonitrile	1.2 mL
CLM-3722-1.2	Dichlorprop (ring- ¹³ C ₆ , 99%)	*C ₆ C ₃ H ₈ Cl ₂ O ₃	100 µg/mL in nonane	1.2 mL
ULM-7313-1.2	Dichlorprop (unlabeled)	(Cl) ₂ C ₆ H ₃ OCH(CH ₃)CO ₂ H	100 µg/mL in nonane	1.2 mL
DLM-2829-0.01	Dichlorvos (dimethyl-D ₆ , 98%)	C ₄ D ₆ HCl ₂ O ₄ P	neat	10 mg
ULM-7217-1.2	Dichlorvos (unlabeled)	(H ₃ CO) ₂ POOCH=CCl ₂	100 µg/mL in nonane	1.2 mL
CLM-4726-1.2	Dieldrin (¹³ C ₁₂ , 99%)	*C ₁₂ H ₈ Cl ₆ O	100 µg/mL in nonane	1.2 mL
ULM-7230-1.2	Dieldrin (unlabeled)	C ₁₂ H ₈ Cl ₆ O	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 ₄ D ₁₀ KO ₄ P	100 µg/mL in methanol	1.2 mL
NEW ULM-9287-M-1.2	O,O-Diethyl phosphate, potassium salt (DEP) (unlabeled)	C ₄ H ₁₀ KO ₄ P	100 µg/mL in methanol	1.2 mL
DLM-4852-1.2	O,O-Diethyl thiophosphate, potassium salt (DETP) (diethyl-D ₁₀ , 98%)	C ₄ D ₁₀ KO ₃ PS	100 µg/mL in methanol	1.2 mL
ERD-119	O,O-Diethyl thiophosphate, potassium salt (DETP) (unlabeled)	C ₄ H ₁₀ KO ₃ PS	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 ₄ D ₁₀ KO ₂ PS ₂	100 µg/mL in methanol	1.2 mL
NEW ULM-9002-1.2	O,O-Diethyl dithiophosphate, potassium salt (DEDTP) (unlabeled)	C ₄ H ₁₀ KO ₂ PS ₂	100 µg/mL in methanol	1.2 mL
DLM-4762-1.2	N,N-Diethyl- <i>m</i> -toluamide (DEET) (dimethyl-D ₆ , 98%)	CH ₃ C ₆ H ₄ CON(CH ₂ CD 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- <i>m</i> -toluamide (DEET) (unlabeled)	CH ₃ C ₆ H ₄ CON(CH ₂ CH 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 ₇ H ₁₇ O ₃ P	1000 µg/mL in methanol	1.2 mL
DLM-7151-1.2	Dimethoate (O,O-dimethyl-D ₆ , 98%)	C ₅ D ₆ H ₆ NO ₃ PS ₂	100 µg/mL in acetonitrile	1.2 mL
ULM-7972-1.2	Dimethoate (unlabeled)	C ₅ H ₁₂ NO ₃ PS 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 ₂ D ₆ KO ₄ P	100 µg/mL in methanol	1.2 mL
NEW ULM-8867-1.2	O,O-Dimethyl phosphate, potassium salt (DMP) (unlabeled)	C ₂ H ₆ KO ₃ P 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 ₂ D ₆ KO ₃ PS	100 µg/mL in methanol	1.2 mL
NEW ULM-8905-1.2	O,O-Dimethyl thiophosphate, potassium salt (DMTP) (unlabeled) CP 97%	C ₂ H ₆ KO ₃ PS	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 ₂ D ₆ KO ₂ PS ₂	100 µg/mL in methanol	1.2 mL
NEW ULM-9004-1.2	O,O-Dimethyl dithiophosphate, potassium salt (DMDTP) (unlabeled)	C ₂ H ₆ KO ₂ PS ₂	100 µg/mL in methanol	1.2 mL
CLM-3373	Dinocap (ring- ¹³ C ₆ , 99%)	*C ₆ C ₁₂ H ₂₄ N ₂ O ₆		Inquire
NEW ULM-9171-1.2	Dinocap (unlabeled)	C ₁₈ H ₂₄ N ₂ O ₆		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

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 ₃ P	1000 µg/mL in methanol	1.2 mL
	DLM-7183	Disulfoton (<i>O,O</i> -diethyl-D ₁₀ , 98%)	C ₈ D ₁₀ H ₉ O ₂ PS ₃		Inquire
	CLM-6025-1.2	Endosulfan I (¹³ C ₉ , 99%)	*C ₉ H ₆ Cl ₆ O ₃ S	100 µg/mL in nonane	1.2 mL
	DLM-2862-1.2	Endosulfan I (D ₄ , 97%)	C ₉ D ₄ H ₂ Cl ₆ O ₃ S	100 µg/mL in nonane	1.2 mL
	ULM-7447-1.2	Endosulfan I (unlabeled)	C ₉ H ₆ Cl ₆ O ₃ S	100 µg/mL in nonane	1.2 mL
	CLM-6026-1.2	Endosulfan II (¹³ C ₉ , 99%)	*C ₉ H ₆ Cl ₆ O ₃ S	100 µg/mL in nonane	1.2 mL
	ULM-7448-1.2	Endosulfan II (unlabeled)	C ₉ H ₆ Cl ₆ O ₃ S	100 µg/mL in nonane	1.2 mL
	CLM-7531-1.2	Endosulfan sulfate (¹³ C ₉ , 99%)	*C ₉ H ₆ Cl ₆ O ₄ S	100 µg/mL in nonane	1.2 mL
	ULM-7990-1.2	Endosulfan sulfate (unlabeled)	C ₉ H ₆ Cl ₆ O ₄ S	100 µg/mL in nonane	1.2 mL
	CLM-4782-1.2	Endrin (¹³ C ₁₂ , 99%)	*C ₁₂ H ₈ Cl ₆ O	100 µg/mL in nonane	1.2 mL
	ULM-7444-1.2	Endrin (unlabeled)	C ₁₂ H ₈ Cl ₆ O	100 µg/mL in nonane	1.2 mL
NEW	CLM-4815-1.2	Endrin aldehyde (¹³ C ₁₂ , 99%)	*C ₁₂ H ₁₀ Cl ₆ O	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 ₆ O	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 ₈ Cl ₆ O	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 ₈ Cl ₆ O	100 µg/mL in nonane	1.2 mL
NEW	ULM-8956-50			neat	50 µg
NEW	ULM-6091-1.2	Ethyl dimethylamidophosphate, sodium salt (unlabeled)	C ₄ H ₁₁ NO ₃ PNa	1000 µg/mL in methanol	1.2 mL
NEW	DLM-6098-1.2	Ethyl methylphosphonate (ethyl-D ₅ , 98%)	C ₃ H ₄ D ₅ O ₃ P	100 µg/mL in methanol	1.2 mL
NEW	ULM-6099-1.2	Ethyl methylphosphonic acid (unlabeled)	C ₃ H ₉ O ₃ P	1000 µg/mL in methanol	1.2 mL
	DLM-2878-0.01	Fenitrothion (<i>O,O</i> -dimethyl-D ₆ , 98%)	C ₉ D ₆ H ₆ NO ₅ PS	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 ₄ C ₈ H ₄ Cl ₂ F ₆ N ₂ *N ₂ OS	100 µg/mL in methanol	1.2 mL
NEW	ULM-9635-1.2	Fipronil (unlabeled)	C ₁₂ H ₄ Cl ₂ F ₆ N ₄ OS	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 ₄ C ₈ H ₄ Cl ₂ F ₆ N ₂ *N ₂	100 µg/mL in methanol	1.2 mL
NEW	ULM-9646-1.2	Fipronil desulfinyl (unlabeled)	C ₁₂ H ₄ Cl ₂ F ₆ N 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 ₄ C ₇ H ₅ Cl ₂ F ₆ *N ₂ N ₂	100 µg/mL in methanol	1.2 mL
NEW	ULM-9649-1.2	Fipronil detrifluoromethyl sulfinyl (unlabeled)	C ₁₁ H ₅ Cl ₂ F ₆ N ₂ N 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 ₄ C ₈ H ₄ Cl ₂ F ₆ *N ₂ N ₂ S	100 µg/mL in methanol	1.2 mL
NEW	ULM-9644-1.2	Fipronil sulfide (unlabeled)	C ₁₂ H ₄ Cl ₂ F ₆ N ₄ S	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 ₄ C ₈ H ₄ Cl ₂ F ₆ *N ₂ N ₂ O ₂ S	100 µg/mL in methanol	1.2 mL
NEW	ULM-9642-1.2	Fipronil sulfone (unlabeled)	C ₁₂ H ₄ Cl ₂ F ₆ N ₄ O ₂ S	100 µg/mL in methanol	1.2 mL
	CLM-7389-1.2	4-Fluoro-3-phenoxybenzoic acid (¹³ C ₆ , 99%)	*C ₆ C ₇ H ₉ FO ₃	100 µg/mL in acetonitrile	1.2 mL
	ULM-7391-1.2	4-Fluoro-3-phenoxybenzoic acid (unlabeled)	C ₁₃ H ₉ FO ₃	100 µg/mL in acetonitrile	1.2 mL
	CLM-4545-1.2	Fonofos (ring- ¹³ C ₆ , 99%)	*C ₆ C ₄ H ₁₅ OPS ₂	100 µg/mL in nonane	1.2 mL
	ULM-6694-1.2	Fonofos (unlabeled)	CH ₂ CH ₃ P(S)(OCH ₂ CH ₃)(SC ₆ H ₅)	100 µg/mL in nonane	1.2 mL
NEW	DLM-9680	Forchlorfenuron (phenyl-D ₅ , 99%)	C ₁₂ D ₅ H ₅ ClN ₃ O		Inquire
	CNLM-4666-1.2	Glyphosate (2- ¹³ C, 99%; ¹⁵ N, 98%+)	HO ₂ *CCH ₂ *NHCH ₂ PO(OH) ₂	100 µg/mL in water	1.2 mL
NEW	CNLM-4666-10X-1.2			1000 µg/mL in water	1.2 mL
	CNLM-4666-10			100 µg/mL in water	10 mL
	ULM-6876-1.2	Glyphosate (unlabeled)	HO ₂ CCH ₂ NHCH ₂ PO(OH) ₂	100 µg/mL in water	1.2 mL
	CLM-4759-1.2	Heptachlor (¹³ C ₁₀ , 99%)	*C ₁₀ H ₅ Cl ₇	100 µg/mL in nonane	1.2 mL
	ULM-2424-1.2	Heptachlor (unlabeled)	C ₁₀ H ₅ Cl ₇	100 µg/mL in nonane	1.2 mL
	ULM-2424-0.1			neat	0.1 g
	CLM-4734-1.2	<i>cis</i> -Heptachlor epoxide (¹³ C ₁₀ , 99%)	*C ₁₀ H ₅ Cl ₇ O	100 µg/mL in nonane	1.2 mL
	ULM-2425-1.2	<i>cis</i> -Heptachlor epoxide (unlabeled)	C ₁₀ H ₅ Cl ₇ O	100 µg/mL in nonane	1.2 mL
	ULM-2425-0.1			neat	0.1 g
	ULM-7869-1.2	<i>trans</i> -Heptachlor epoxide (unlabeled)	C ₁₀ H ₅ Cl ₇ O	100 µg/mL in nonane	1.2 mL
	CLM-351-1.2	Hexachlorobenzene (¹³ C ₆ , 99%)	*C ₆ Cl ₆	100 µg/mL in nonane	1.2 mL
	ULM-6130-1.2	Hexachlorobenzene (unlabeled)	C ₆ Cl 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	Kepone (chlordecone) (unlabeled)	$C_{10}Cl_{10}O$	100 µg/mL in nonane	1.2 mL
	ULM-2301-0.1			neat	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	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	<i>cis</i> -Nonachlor ($^{13}C_{10}$, 99%)	$*C_{10}H_5Cl_9$	100 µg/mL in nonane	1.2 mL
	ULM-7445-1.2	<i>cis</i> -Nonachlor (unlabeled)	$C_{10}H_5Cl_9$	100 µg/mL in nonane	1.2 mL
	CLM-4735-1.2	<i>trans</i> -Nonachlor ($^{13}C_{10}$, 99%)	$*C_{10}H_5Cl_9$	100 µg/mL in nonane	1.2 mL
	ULM-7229-1.2	<i>trans</i> -Nonachlor (unlabeled)	$C_{10}H_5Cl_9$	100 µg/mL in nonane	1.2 mL
	CLM-4729-1.2	Oxychlorthane ($^{13}C_{10}$, 99%)	$*C_{10}H_4Cl_8O$	100 µg/mL in nonane	1.2 mL
	ULM-6139-1.2	Oxychlorthane (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
	DLM-7150-1.2	Oxydemeton methyl (<i>O,O</i> -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 ₉ Cl ₉	10 µg/mL in nonane	1.2 mL
ULM-7829-1.2	Parlar 50 (unlabeled)	C ₁₀ H ₉ Cl ₉	10 µg/mL in nonane	1.2 mL
CLM-7932-1.2	Parlar 62 (¹³ C ₁₀ , 99%)	*C ₁₀ H ₉ Cl ₉	10 µg/mL in nonane	1.2 mL
ULM-7830-1.2	Parlar 62 (unlabeled)	C ₁₀ H ₉ Cl ₉	10 µg/mL in nonane	1.2 mL
CLM-8720-1.2	Parlar 69 (¹³ C ₁₀ , 99%)	*C ₁₀ H ₉ Cl ₉	10 µg/mL in nonane	1.2 mL
ULM-8768-1.2	Parlar 69 (unlabeled)	C ₁₀ H ₉ Cl ₉	10 µg/mL in nonane	1.2 mL
CLM-8721-1.2	Parlar 70 (¹³ C ₁₀ , 99%)	*C ₁₀ H ₉ Cl ₉	10 µg/mL in nonane	1.2 mL
ULM-8769-1.2	Parlar 70 (unlabeled)	C ₁₀ H ₉ Cl ₉	10 µg/mL in nonane	1.2 mL
CLM-7322-1.2	<i>cis</i> -Permethrin (phenoxy- ¹³ C ₆ , 99%)	*C ₆ H ₅ OC ₆ H ₄ CH ₂ CO ₂ C ₇ H ₉ Cl ₂ O ₃	50 µg/mL in nonane	1.2 mL
ULM-8526-1.2	<i>cis</i> -Permethrin (unlabeled)	C ₆ H ₅ OC ₆ H ₄ CH ₂ CO ₂ C ₇ H ₉ Cl ₂ O ₃	50 µg/mL in nonane	1.2 mL
CLM-7323-1.2	<i>trans</i> -Permethrin (phenoxy- ¹³ C ₆ , 99%)	*C ₆ H ₅ OC ₆ H ₄ CH ₂ CO ₂ C ₇ H ₉ Cl ₂ O ₃	50 µg/mL in nonane	1.2 mL
ULM-8527-1.2	<i>trans</i> -Permethrin (unlabeled)	C ₆ H ₅ OC ₆ H ₄ CH ₂ CO ₂ C ₇ H ₉ Cl ₂ O ₃	50 µg/mL in nonane	1.2 mL
CLM-4542-1.2	3-Phenoxybenzoic acid (phenoxy- ¹³ C ₆ , 99%)	*C ₆ H ₅ OC ₆ H ₄ CO ₂ H	100 µg/mL in nonane	1.2 mL
CLM-4542-SA-1.2	3-Phenoxybenzoic acid (unlabeled)	C ₆ H ₅ OC ₆ H ₄ CO ₂ H	100 µg/mL in acetonitrile	1.2 mL
ULM-6781-1.2	3-Phenoxybenzoic acid (unlabeled)	C ₆ H ₅ OC ₆ H ₄ CO ₂ H	100 µg/mL in nonane	1.2 mL
ULM-6781-SA-1.2	3-Phenoxybenzoic acid (unlabeled)	C ₆ H ₅ OC ₆ H ₄ CO ₂ H	100 µg/mL in acetonitrile	1.2 mL
CLM-3733-1.2	<i>o</i> -Phenylphenol (phenyl- ¹³ C ₆ , 99%)	*C ₆ C ₆ H ₁₀ O	100 µg/mL in nonane	1.2 mL
ULM-7396-1.2	<i>o</i> -Phenylphenol (unlabeled)	C ₁₂ H ₉ OH	100 µg/mL in nonane	1.2 mL
CLM-3748-1.2	<i>p</i> -Phenylphenol (phenyl- ¹³ C ₆ , 99%)	*C ₆ C ₆ H ₁₀ O	100 µg/mL in acetonitrile	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 H ₆ D 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-3738-1.2	Propazine (ring- ¹³ C ₃ , 99%)	*C ₃ C ₆ H ₁₆ ClN ₅	100 µg/mL in methanol	1.2 mL
NEW ULM-8304	Propazine (unlabeled)	C ₉ H ₁₆ ClN ₅		Inquire
DLM-7141-1.2	Propoxur (isopropyl-D ₇ , 98%)	C ₁₁ D ₇ H ₈ NO 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 ₃ C ₄ H ₁₂ ClN ₅	100 µg/mL in methanol	1.2 mL
NEW CLM-3739-A-1.2	Simazine (unlabeled)	C ₇ H ₁₂ ClN ₅	100 µg/mL in acetonitrile	1.2 mL
ULM-7893-1.2	Simazine (unlabeled)	C ₇ H ₁₂ ClN ₅	100 µg/mL in methanol	1.2 mL
NEW ULM-7893-A-1.2	Simazine (unlabeled)	C ₇ H ₁₂ ClN ₅	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 ₂ Na	1 mg/mL in water	1.2 mL
NEW ULM-9674-1.2	Sodium monofluoroacetate (unlabeled)	FCH ₂ CO ₂ Na	1 mg/mL in water	1.2 mL
DLM-380-1.2	Styrene (D ₈ , 98%) + BHT	C ₆ D ₅ CD=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 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
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-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 ₆ 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
CLM-4551-1.2	2,4,5-Trichlorophenoxyacetic acid (2,4,5-T) (ring- ¹³ C ₆ , 99%)	*C ₆ C ₂ H ₅ Cl ₃ O ₃	100 µg/mL in MeCl	1.2 mL
ULM-7213-1.2	2,4,5-Trichlorophenoxyacetic acid (2,4,5-T) (unlabeled)	C ₆ H ₂ Cl ₃ OCH ₂ CO ₂ H	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 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
DLM-4479-1.2	Trifluralin (di- <i>n</i> -propyl-D ₁₄ , 98%)	C ₁₃ D ₁₄ H ₂ F ₃ N ₃ O ₄	100 µg/mL in nonane	1.2 mL
ULM-7236-1.2	Trifluralin (unlabeled)	C ₁₃ H ₁₄ H ₂ F ₃ N ₃ O 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.

Unlabeled	All concentrations are in ng/mL (ppb)					
	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
<i>trans</i> -Chlordane (γ)	0.4	2	10	40	200	800
<i>cis</i> -Chlordane (α)	0.4	2	10	40	200	800
<i>trans</i> -Nonachlor	0.4	2	10	40	200	800
<i>cis</i> -Nonachlor	0.4	2	10	40	200	800
Oxychlordane	0.4	2	10	40	200	800
Heptachlor	0.4	2	10	40	200	800
<i>trans</i> -Heptachlor epoxide	0.4	2	10	40	200	800
<i>cis</i> -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 ($^{13}\text{C}_6$, 99%)	20	20	20	20	20	20
Pentachlorobenzene ($^{13}\text{C}_6$, 99%)	20	20	20	20	20	20
Aldrin ($^{13}\text{C}_{12}$, 99%)	20	20	20	20	20	20
Endrin ($^{13}\text{C}_{12}$, 99%)	20	20	20	20	20	20
Dieldrin ($^{13}\text{C}_{12}$, 99%)	20	20	20	20	20	20
4,4'-DDT (ring- $^{13}\text{C}_{12}$, 99%)	20	20	20	20	20	20
4,4'-DDE (ring- $^{13}\text{C}_{12}$, 99%)	20	20	20	20	20	20
4,4'-DDD (ring- $^{13}\text{C}_{12}$, 99%)	20	20	20	20	20	20
2,4'-DDT (ring- $^{13}\text{C}_{12}$, 99%)	20	20	20	20	20	20
2,4'-DDE (ring- $^{13}\text{C}_{12}$, 99%)	20	20	20	20	20	20
2,4'-DDD (ring- $^{13}\text{C}_{12}$, 99%)	20	20	20	20	20	20
<i>trans</i> -Chlordane (γ) ($^{13}\text{C}_{10}$, 99%)	20	20	20	20	20	20
<i>trans</i> -Nonachlor ($^{13}\text{C}_{10}$, 99%)	20	20	20	20	20	20
<i>cis</i> -Nonachlor ($^{13}\text{C}_{10}$, 99%)	20	20	20	20	20	20
Oxychlordane ($^{13}\text{C}_{10}$, 99%)	20	20	20	20	20	20
Heptachlor ($^{13}\text{C}_{10}$, 99%)	20	20	20	20	20	20
<i>cis</i> -Heptachlor epoxide ($^{13}\text{C}_{10}$, 99%)	20	20	20	20	20	20
Mirex ($^{13}\text{C}_{10}$, 99%)	20	20	20	20	20	20
Kepone (chlordecone) ($^{13}\text{C}_{10}$, 99%)	20	20	20	20	20	20
α -HCH (α -BHC) ($^{13}\text{C}_6$, 99%)	20	20	20	20	20	20
β -HCH (β -BHC) ($^{13}\text{C}_6$, 99%)	20	20	20	20	20	20
γ -HCH (γ -BHC) (lindane) ($^{13}\text{C}_6$, 99%)	20	20	20	20	20	20
δ -HCH (δ -BHC) ($^{13}\text{C}_6$, 99%)	20	20	20	20	20	20
Endosulfan I ($^{13}\text{C}_9$, 99%)	20	20	20	20	20	20
Endosulfan II ($^{13}\text{C}_9$, 99%)	20	20	20	20	20	20
Endosulfan sulfate ($^{13}\text{C}_9$, 99%)	20	20	20	20	20	20
Syringe						
4,4'-DiCB ($^{13}\text{C}_{12}$, 99%) (PCB-15)	20	20	20	20	20	20
2,3',4',5-TetraCB ($^{13}\text{C}_{12}$, 99%) (PCB-70)	20	20	20	20	20	20
Sampling						
Isodrin ($^{13}\text{C}_{12}$, 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)

	CS1	CS2	CS3	CS4	CS5	CS6
Unlabeled						
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
<i>trans</i> -Chlordane (γ)	0.4	2	10	40	200	800
<i>cis</i> -Chlordane (α)	0.4	2	10	40	200	800
<i>trans</i> -Nonachlor	0.4	2	10	40	200	800
<i>cis</i> -Nonachlor	0.4	2	10	40	200	800
Oxychlordane	0.4	2	10	40	200	800
Heptachlor	0.4	2	10	40	200	800
<i>trans</i> -Heptachlor epoxide	0.4	2	10	40	200	800
<i>cis</i> -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 ($^{13}\text{C}_6$, 99%)	20	20	20	20	20	20
Pentachlorobenzene ($^{13}\text{C}_6$, 99%)	20	20	20	20	20	20
Aldrin ($^{13}\text{C}_{12}$, 99%)	20	20	20	20	20	20
Endrin ($^{13}\text{C}_{12}$, 99%)	20	20	20	20	20	20
Dieldrin ($^{13}\text{C}_{12}$, 99%)	20	20	20	20	20	20
4,4'-DDT (ring- $^{13}\text{C}_{12}$, 99%)	20	20	20	20	20	20
4,4'-DDE (ring- $^{13}\text{C}_{12}$, 99%)	20	20	20	20	20	20
4,4'-DDD (ring- $^{13}\text{C}_{12}$, 99%)	20	20	20	20	20	20
2,4'-DDT (ring- $^{13}\text{C}_{12}$, 99%)	20	20	20	20	20	20
2,4'-DDE (ring- $^{13}\text{C}_{12}$, 99%)	20	20	20	20	20	20
2,4'-DDD (ring- $^{13}\text{C}_{12}$, 99%)	20	20	20	20	20	20
<i>trans</i> -Chlordane (γ) ($^{13}\text{C}_{10}$, 99%)	20	20	20	20	20	20
<i>trans</i> -Nonachlor ($^{13}\text{C}_{10}$, 99%)	20	20	20	20	20	20
<i>cis</i> -Nonachlor ($^{13}\text{C}_{10}$, 99%)	20	20	20	20	20	20
Oxychlordane ($^{13}\text{C}_{10}$, 99%)	20	20	20	20	20	20
Heptachlor ($^{13}\text{C}_{10}$, 99%)	20	20	20	20	20	20
<i>cis</i> -Heptachlor epoxide ($^{13}\text{C}_{10}$, 99%)	20	20	20	20	20	20
Mirex ($^{13}\text{C}_{10}$, 99%)	20	20	20	20	20	20
Kepone (chlordecone) ($^{13}\text{C}_{10}$, 99%)	20	20	20	20	20	20
α -HCH (α -BHC) ($^{13}\text{C}_6$, 99%)	20	20	20	20	20	20
β -HCH (β -BHC) ($^{13}\text{C}_6$, 99%)	20	20	20	20	20	20
γ -HCH (γ -BHC) (lindane) ($^{13}\text{C}_6$, 99%)	20	20	20	20	20	20
δ -HCH (δ -BHC) ($^{13}\text{C}_6$, 99%)	20	20	20	20	20	20
Endosulfan I ($^{13}\text{C}_9$, 99%)	20	20	20	20	20	20
Endosulfan II ($^{13}\text{C}_9$, 99%)	20	20	20	20	20	20
Syringe						
4,4'-DiCB ($^{13}\text{C}_{12}$, 99%) (PCB-15)	20	20	20	20	20	20
2,3',4',5'-TetraCB ($^{13}\text{C}_{12}$, 99%) (PCB-70)	20	20	20	20	20	20
Sampling						
Isodrin ($^{13}\text{C}_{12}$, 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 _{6r} , 99%)	100	500	100	500
Pentachlorobenzene (¹³ C _{6r} , 99%)	100	500	100	500
Aldrin (¹³ C _{12r} , 99%)	100	500	100	500
Endrin (¹³ C _{12r} , 99%)	100	500	100	500
Dieldrin (¹³ C _{12r} , 99%)	100	500	100	500
4,4'-DDT (ring- ¹³ C _{12r} , 99%)	100	500	100	500
4,4'-DDE (ring- ¹³ C _{12r} , 99%)	100	500	100	500
4,4'-DDD (ring- ¹³ C _{12r} , 99%)	100	500	100	500
2,4'-DDT (ring- ¹³ C _{12r} , 99%)	100	500	100	500
2,4'-DDE (ring- ¹³ C _{12r} , 99%)	100	500	100	500
2,4'-DDD (ring- ¹³ C _{12r} , 99%)	100	500	100	500
<i>trans</i> -Chlordane (γ) (¹³ C _{10r} , 99%)	100	500	100	500
<i>trans</i> -Nonachlor (¹³ C _{10r} , 99%)	100	500	100	500
<i>cis</i> -Nonachlor (¹³ C _{10r} , 99%)	100	500	100	500
Oxychlordane (¹³ C _{10r} , 99%)	100	500	100	500
Heptachlor (¹³ C _{10r} , 99%)	100	500	100	500
<i>cis</i> -Heptachlor epoxide (¹³ C _{10r} , 99%)	100	500	100	500
Mirex (¹³ C _{10r} , 99%)	100	500	100	500
Kepone (chlordecone) (¹³ C _{10r} , 99%)	100	500	100	500
α-HCH (α-BHC) (¹³ C _{6r} , 99%)	100	500	100	500
β-HCH (β-BHC) (¹³ C _{6r} , 99%)	100	500	100	500
γ-HCH (γ-BHC) (lindane) (¹³ C _{6r} , 99%)	100	500	100	500
δ-HCH (δ-BHC) (¹³ C _{6r} , 99%)	100	500	100	500
Endosulfan I (¹³ C _{9r} , 99%)	100	500	100	500
Endosulfan II (¹³ C _{9r} , 99%)	100	500	100	500
Endosulfan sulfate (¹³ C _{9r} , 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 _{12r} , 99%) (PCB-15)	100	1000
2,3',4',5-TetraCB (¹³ C _{12r} , 99%) (PCB-70)	100	1000

ES-5466	Expanded POPs Pesticides Sampling Spike	1.2 mL in nonane
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Labeled	(ng/mL)
Isodrin (¹³ C _{12r} , 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
<i>trans</i> -Chlordane (γ)	1000	1000
<i>cis</i> -Chlordane (α)	1000	1000
<i>trans</i> -Nonachlor	1000	1000
<i>cis</i> -Nonachlor	1000	1000
Oxychlordane	1000	1000
Heptachlor	1000	1000
<i>trans</i> -Heptachlor epoxide	1000	1000
<i>cis</i> -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)	
	<i>trans</i> -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 ($^{13}\text{C}_6$, 99%)	1800
	γ -HCH (γ -BHC) (lindane) ($^{13}\text{C}_6$, 99%)	2600
	Heptachlor ($^{13}\text{C}_{10}$, 99%)	1400
	β -HCH (β -BHC) ($^{13}\text{C}_6$, 99%)	1600
	δ -HCH (δ -BHC) ($^{13}\text{C}_6$, 99%)	1600
	Aldrin ($^{13}\text{C}_{12}$, 99%)	1600
	Oxychlorane ($^{13}\text{C}_{10}$, 99%)	1600
	<i>cis</i> -Heptachlor epoxide ($^{13}\text{C}_{10}$, 99%)	1600
	Endosulfan I ($^{13}\text{C}_9$, 99%)	1600
	Dieldrin ($^{13}\text{C}_{12}$, 99%)	1600
	<i>trans</i> -Chlordane (γ) ($^{13}\text{C}_{10}$, 99%)	1600
	<i>trans</i> -Nonachlor ($^{13}\text{C}_{10}$, 98%)	1600
	4,4'-DDE (ring- $^{13}\text{C}_{12}$, 99%)	1600
	Endrin ($^{13}\text{C}_{12}$, 99%)	1600
	Endosulfan II ($^{13}\text{C}_9$, 99%)	1600
	<i>cis</i> -Nonachlor ($^{13}\text{C}_{10}$, 99%)	1600
	2,4'-DDT (ring- $^{13}\text{C}_{12}$, 99%)	1600
	4,4'-DDT (ring- $^{13}\text{C}_{12}$, 99%)	1600
	Mirex ($^{13}\text{C}_{10}$, 99%)	1600
	Methoxychlor (ring- $^{13}\text{C}_{12}$, 99%)	1600
	Azinphos-methyl (D_6 , 98%)	1600
	Diazinon (diethyl- D_{10} , 98%)	1600
	Fonofos (ring- $^{13}\text{C}_6$, 99%)	1600
	Atrazine (ring- $^{13}\text{C}_3$, 99%)	1600
	<i>cis</i> -Permethrin (phenoxy- $^{13}\text{C}_6$, 99%)	1600
	<i>trans</i> -Permethrin (phenoxy- $^{13}\text{C}_6$, 99%)	1600
NEW ES-5560	Multi-Class Pesticide Internal Standard	1.2 mL in acetonitrile
	Labeled (ng/mL)	
	Acetochlor (ring- $^{13}\text{C}_6$, 99%)	1000
	Aldicarb ($^{13}\text{C}_2$, 98%; D_3 , 98%)	1000
	Chlortoluron (<i>N,N</i> -dimethyl- D_6 , 98%)	1000
	Diazinon (diethyl- D_{10} , 98%)	1000
	2,4-Dichlorophenoxyacetic acid (ring- $^{13}\text{C}_6$, 99%)	1000
	Simazine (ring- $^{13}\text{C}_3$, 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
<i>trans</i> -Chlordane (γ)	0.4	2	10	40	200	800
<i>cis</i> -Chlordane (α)	0.4	2	10	40	200	800
<i>trans</i> -Nonachlor	0.4	2	10	40	200	800
<i>cis</i> -Nonachlor	0.4	2	10	40	200	800
Oxychlordane	0.4	2	10	40	200	800
Heptachlor	0.4	2	10	40	200	800
<i>trans</i> -Heptachlor epoxide	0.4	2	10	40	200	800
<i>cis</i> -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 ($^{13}\text{C}_{6r}$, 99%)	20	20	20	20	20	20
Aldrin ($^{13}\text{C}_{12r}$, 99%)	20	20	20	20	20	20
Dieldrin ($^{13}\text{C}_{12r}$, 99%)	20	20	20	20	20	20
Endrin ($^{13}\text{C}_{12r}$, 99%)	20	20	20	20	20	20
4,4'-DDT (ring- $^{13}\text{C}_{12r}$, 99%)	20	20	20	20	20	20
4,4'-DDE (ring- $^{13}\text{C}_{12r}$, 99%)	20	20	20	20	20	20
4,4'-DDD (ring- $^{13}\text{C}_{12r}$, 99%)	20	20	20	20	20	20
2,4'-DDT (ring- $^{13}\text{C}_{12r}$, 99%)	20	20	20	20	20	20
2,4'-DDE (ring- $^{13}\text{C}_{12r}$, 99%)	20	20	20	20	20	20
2,4'-DDD (ring- $^{13}\text{C}_{12r}$, 99%)	20	20	20	20	20	20
<i>trans</i> -Chlordane (γ) ($^{13}\text{C}_{10r}$, 99%)	20	20	20	20	20	20
<i>trans</i> -Nonachlor ($^{13}\text{C}_{10r}$, 99%)	20	20	20	20	20	20
<i>cis</i> -Nonachlor ($^{13}\text{C}_{10r}$, 99%)	20	20	20	20	20	20
Oxychlordane ($^{13}\text{C}_{10r}$, 99%)	20	20	20	20	20	20
Heptachlor ($^{13}\text{C}_{10r}$, 99%)	20	20	20	20	20	20
<i>cis</i> -Heptachlor epoxide ($^{13}\text{C}_{10r}$, 99%)	20	20	20	20	20	20
Mirex ($^{13}\text{C}_{10r}$, 99%)	20	20	20	20	20	20
α -HCH (α -BHC) ($^{13}\text{C}_{6r}$, 99%)	20	20	20	20	20	20
β -HCH (β -BHC) ($^{13}\text{C}_{6r}$, 99%)	20	20	20	20	20	20
γ -HCH (γ -BHC) (lindane) ($^{13}\text{C}_{6r}$, 99%)	20	20	20	20	20	20
δ -HCH (δ -BHC) ($^{13}\text{C}_{6r}$, 99%)	20	20	20	20	20	20
Syringe						
4,4'-DiCB ($^{13}\text{C}_{12r}$, 99%) (PCB-15)	20	20	20	20	20	20
2,3',4',5-TetraCB ($^{13}\text{C}_{12r}$, 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 ($^{13}\text{C}_6$, 99%)	100	200	1000
Aldrin ($^{13}\text{C}_{12}$, 99%)	100	200	1000
Dieldrin ($^{13}\text{C}_{12}$, 99%)	100	200	1000
Endrin ($^{13}\text{C}_{12}$, 99%)	100	200	1000
4,4'-DDT (ring- $^{13}\text{C}_{12}$, 99%)	100	200	1000
4,4'-DDE (ring- $^{13}\text{C}_{12}$, 99%)	100	200	1000
4,4'-DDD (ring- $^{13}\text{C}_{12}$, 99%)	100	200	1000
2,4'-DDT (ring- $^{13}\text{C}_{12}$, 99%)	100	200	1000
2,4'-DDE (ring- $^{13}\text{C}_{12}$, 99%)	100	200	1000
2,4'-DDD (ring- $^{13}\text{C}_{12}$, 99%)	100	200	1000
<i>trans</i> -Chlordane (γ) ($^{13}\text{C}_{10}$, 99%)	100	200	1000
<i>trans</i> -Nonachlor ($^{13}\text{C}_{10}$, 99%)	100	200	1000
<i>cis</i> -Nonachlor ($^{13}\text{C}_{10}$, 99%)	100	200	1000
Oxychlordane ($^{13}\text{C}_{10}$, 99%)	100	200	1000
Heptachlor ($^{13}\text{C}_{10}$, 99%)	100	200	1000
<i>cis</i> -Heptachlor epoxide ($^{13}\text{C}_{10}$, 99%)	100	200	1000
Mirex ($^{13}\text{C}_{10}$, 99%)	100	200	1000
α -HCH (α -BHC) ($^{13}\text{C}_6$, 99%)	100	200	1000
β -HCH (β -BHC) ($^{13}\text{C}_6$, 99%)	100	200	1000
γ -HCH (γ -BHC) (lindane) ($^{13}\text{C}_6$, 99%)	100	200	1000
δ -HCH (δ -BHC) ($^{13}\text{C}_6$, 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
<i>trans</i> -Chlordane (γ)	200	2000
<i>cis</i> -Chlordane (α)	200	2000
<i>trans</i> -Nonachlor	200	2000
<i>cis</i> -Nonachlor	200	2000
Oxychlordane	200	2000
Heptachlor	200	2000
<i>trans</i> -Heptachlor epoxide	200	2000
<i>cis</i> -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 ($^{13}\text{C}_{12}$, 99%) (PCB-15)	100	1000
2,3',4',5-TetraCB ($^{13}\text{C}_{12}$, 99%) (PCB-70)	100	1000

ES-5342	POPs Pesticides, non-Toxaphene, non-HCH HRMS Cleanup Spike	1.2 mL in nonane
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Labeled	(ng/mL)
Hexachlorobenzene ($^{13}\text{C}_6$, 99%)	10
Aldrin ($^{13}\text{C}_{12}$, 99%)	100
Dieldrin ($^{13}\text{C}_{12}$, 99%)	20
Endrin ($^{13}\text{C}_{12}$, 99%)	100
4,4'-DDT (ring- $^{13}\text{C}_{12}$, 99%)	100
4,4'-DDE (ring- $^{13}\text{C}_{12}$, 99%)	20
4,4'-DDD (ring- $^{13}\text{C}_{12}$, 99%)	100
2,4'-DDT (ring- $^{13}\text{C}_{12}$, 99%)	100
2,4'-DDE (ring- $^{13}\text{C}_{12}$, 99%)	20
2,4'-DDD (ring- $^{13}\text{C}_{12}$, 99%)	100
<i>trans</i> -Chlordane (γ) ($^{13}\text{C}_{10}$, 99%)	10
<i>trans</i> -Nonachlor ($^{13}\text{C}_{10}$, 99%)	10
<i>cis</i> -Nonachlor ($^{13}\text{C}_{10}$, 99%)	10
Oxychlordane ($^{13}\text{C}_{10}$, 99%)	100
Heptachlor ($^{13}\text{C}_{10}$, 99%)	20
<i>cis</i> -Heptachlor epoxide ($^{13}\text{C}_{10}$, 99%)	20
Mirex ($^{13}\text{C}_{10}$, 99%)	20

ES-5344-50X-0.5	POPs HRMS HCH Cleanup Spike	0.5 mL in nonane
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Labeled	(ng/mL)
α -HCH (α -BHC) ($^{13}\text{C}_6$, 99%)	1000
β -HCH (β -BHC) ($^{13}\text{C}_6$, 99%)	1000
γ -HCH (γ -BHC) (lindane) ($^{13}\text{C}_6$, 99%)	1000
δ -HCH (δ -BHC) ($^{13}\text{C}_6$, 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		
Oxychlorane	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 <i>syn</i>	1.0	2.5	10	35	100	300	500	1000		
Dechlorane Plus <i>anti</i>	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
Oxychlorane (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
Oxychlorane (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.

Unlabeled	All concentrations are in ng/mL (ppb)									
	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			
Oxychlorane	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	75
Parlar 50 (¹³ C ₁₀ , 99%)	75	75	75	75	75	75	75	75	75	75
Parlar 62 (¹³ C ₁₀ , 99%)	75	75	75	75	75	75	75	75	75	75
Hexachlorobenzene (¹³ C ₆ , 99%)	75	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	75
γ-HCH (γ-BHC) (lindane) (¹³ C ₆ , 99%)	75	75	75	75	75	75	75	75	75	75
Aldrin (¹³ C ₁₂ , 99%)	75	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	75
Oxychlorane (¹³ C ₁₀ , 99%)	75	75	75	75	75	75	75	75	75	75
trans-Nonachlor (¹³ C ₁₀ , 99%)	75	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	150
Dieldrin (¹³ C ₁₂ , 99%)	75	75	75	75	75	75	75	75	75	75
Endrin (¹³ C ₁₂ , 99%)	75	75	75	75	75	75	75	75	75	75
Isodrin (¹³ C ₁₂ , 99%)	75	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	75
4,4'-DDT (ring- ¹³ C ₁₂ , 99%)	75	75	75	75	75	75	75	75	75	75
Mirex (¹³ C ₁₀ , 99%)	75	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	75
cis-Chlordane (α) (¹³ C ₁₀ , 99%)	75	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	75
2,4'-DDE (ring- ¹³ C ₁₂ , 99%)	75	75	75	75	75	75	75	75	75	75
cis-Nonachlor (¹³ C ₁₀ , 99%)	75	75	75	75	75	75	75	75	75	75
Methoxychlor (ring- ¹³ C ₁₂ , 99%)	75	75	75	75	75	75	75	75	75	75
Pentachloroanisole (¹³ C ₆ , 99%)	75	75	75	75	75	75	75	75	75	75
Octachlorostyrene (¹³ C ₈ , 99%)	75	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	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

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
Oxychlorane (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 ($^{13}\text{C}_6$, 99%)	1000
α -HCH (α -BHC) ($^{13}\text{C}_6$, 99%)	1000
β -HCH (β -BHC) ($^{13}\text{C}_6$, 99%)	1000
γ -HCH (γ -BHC) (lindane) ($^{13}\text{C}_6$, 99%)	1000
Aldrin ($^{13}\text{C}_{12}$, 99%)	1000
Dieldrin ($^{13}\text{C}_{12}$, 99%)	1000
Endrin ($^{13}\text{C}_{12}$, 99%)	1000
<i>trans</i> -Chlordane (γ) ($^{13}\text{C}_{10}$, 99%)	1000
Oxychlordane ($^{13}\text{C}_{10}$, 99%)	1000
<i>trans</i> -Nonachlor ($^{13}\text{C}_{10}$, 99%)	1000
Heptachlor ($^{13}\text{C}_{10}$, 99%)	1000
<i>cis</i> -Heptachlor epoxide ($^{13}\text{C}_{10}$, 99%)	1000
4,4'-DDT (ring- $^{13}\text{C}_{12}$, 99%)	1000
4,4'-DDE (ring- $^{13}\text{C}_{12}$, 99%)	1000
4,4'-DDD (ring- $^{13}\text{C}_{12}$, 99%)	1000

NEW ES-5478	Pesticide Stock Solution 1	0.5 mL in nonane
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Labeled	(ng/mL)
α -HCH (α -BHC) ($^{13}\text{C}_6$, 99%)	5000
δ -HCH (δ -BHC) ($^{13}\text{C}_6$, 99%)	5000
Dieldrin ($^{13}\text{C}_{12}$, 99%)	5000
γ -HCH (γ -BHC) (lindane) ($^{13}\text{C}_6$, 99%)	5000
<i>cis</i> -Heptachlor epoxide ($^{13}\text{C}_{10}$, 99%)	5000
Heptachlor ($^{13}\text{C}_{10}$, 99%)	5000
Oxychlordane ($^{13}\text{C}_{10}$, 99%)	5000
2,4'-DDD (ring- $^{13}\text{C}_{12}$, 99%)	5000
2,4'-DDE (ring- $^{13}\text{C}_{12}$, 99%)	5000
2,4'-DDT (ring- $^{13}\text{C}_{12}$, 99%)	5000
4,4'-DDD (ring- $^{13}\text{C}_{12}$, 99%)	5000
4,4'-DDE (ring- $^{13}\text{C}_{12}$, 99%)	5000
4,4'-DDT (ring- $^{13}\text{C}_{12}$, 99%)	5000
<i>cis</i> -Nonachlor ($^{13}\text{C}_{10}$, 99%)	5000
<i>trans</i> -Nonachlor ($^{13}\text{C}_{10}$, 99%)	5000
<i>trans</i> -Chlordane (γ) ($^{13}\text{C}_{10}$, 99%)	5000
Mirex ($^{13}\text{C}_{10}$, 99%)	5000

NEW ES-5479	Pesticide Stock Solution 2	0.5 mL in nonane
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Labeled	(ng/mL)
Pentachlorobenzene ($^{13}\text{C}_5$, 99%)	5000
Hexachlorobenzene ($^{13}\text{C}_6$, 99%)	5000
β -HCH (β -BHC) ($^{13}\text{C}_6$, 99%)	5000
Aldrin ($^{13}\text{C}_{12}$, 99%)	5000
Endosulfan I ($^{13}\text{C}_9$, 99%)	5000
Endosulfan II ($^{13}\text{C}_9$, 99%)	5000
Endrin ($^{13}\text{C}_{12}$, 99%)	5000
<i>cis</i> -Chlordane (α) ($^{13}\text{C}_{10}$, 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
	<i>trans</i> -Heptachlor epoxide	5000
	<i>cis</i> -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
	<i>cis</i> -Nonachlor	5000
	<i>trans</i> -Nonachlor	5000
	<i>trans</i> -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
	<i>cis</i> -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 ($^{13}\text{C}_{12}$, 99%) (PCB-28)	10,000
	2,2',5,5'-TetraCB ($^{13}\text{C}_{12}$, 99%) (PCB-52)	10,000
	2,2',4,5,5'-PentaCB ($^{13}\text{C}_{12}$, 99%) (PCB-101)	10,000
	2,2',4,4',5,5'-HexaCB ($^{13}\text{C}_{12}$, 99%) (PCB-153)	10,000
	4,4'-DDT (ring- $^{13}\text{C}_{12}$, 99%)	10,000
	Hexachlorobenzene ($^{13}\text{C}_6$, 99%)	50,000
	1,2,4,5-Tetrachlorobenzene ($^{13}\text{C}_6$, 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
		Benzo[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 ₄ D ₂ *NO ₃ P	100 µg/mL in H ₂ O	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 ₃ P(O)(OC ₂ H ₅) ₂	1000 µg/mL in methanol	1.2 mL
NEW	ULM-9898-1.2	Diisopropyl methylphosphonate (unlabeled)	C ₇ H ₁₇ O ₃ P	1000 µg/mL in methanol	1.2 mL
NEW	ULM-9896-1.2	Dimethyl methylphosphonate (unlabeled)	C ₃ H ₉ O ₃ P	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 ₄ D ₁₀ KO ₄ P	100 µg/mL in methanol	1.2 mL
NEW	ULM-9287-M-1.2	O,O-Diethyl phosphate, potassium salt (DEP)	C ₄ H ₁₀ KO ₄ P	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 ₄ D ₁₀ KO ₃ PS	100 µg/mL in methanol	1.2 mL
	ERD-119	O,O-Diethyl thiophosphate, potassium salt (DETP) (unlabeled)	C ₄ H ₁₀ KO ₃ PS	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 ₄ D ₁₀ KO ₂ PS ₂	100 µg/mL in methanol	1.2 mL
NEW	ULM-9002-1.2	O,O-Diethyl dithiophosphate, potassium salt (DEDTP)	C ₄ H ₁₀ KO ₂ PS 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 ₂ D ₆ KO ₄ P	100 µg/mL in methanol	1.2 mL
NEW	ULM-8867-1.2	O,O-Dimethyl phosphoric acid, potassium salt (DMP)	C ₂ H ₆ KO ₄ P	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 ₂ D ₆ KO ₃ PS	100 µg/mL in methanol	1.2 mL
NEW	ULM-8905-1.2	O,O-Dimethyl thiophosphate, potassium salt (DMTP)	C ₂ H ₆ KO ₃ PS	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 ₂ D ₆ KO ₂ PS ₂	100 µg/mL in methanol	1.2 mL
NEW	ULM-9004-1.2	O,O-Dimethyl dithiophosphate, potassium salt (DMDTP)	C ₂ H ₆ KO ₂ PS 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 ₃ P	1000 µg/mL in methanol	1.2 mL
NEW	ULM-9887-1.2	1,4-Dithiane (unlabeled)	C ₄ H ₈ S ₂	1000 µg/mL in methanol	1.2 mL
	ULM-6091-1.2	Ethyl hydrogen dimethylamidophosphate, sodium salt (unlabeled) CP 90%	C ₄ H ₁₁ NPO ₃ Na	1000 µg/mL in methanol	1.2 mL
	DLM-6098-1.2	Ethyl hydrogen methylphosphonate (ethyl-D ₅ , 98%)	C ₃ H ₄ D ₅ O ₃ P	100 µg/mL in methanol	1.2 mL
NEW	ULM-9893-1.2	N-Ethyl-diethanolamine (unlabeled)	(HOCH ₂ CH ₂) ₂ NC ₂ H ₅	1000 µg/mL in methanol	1.2 mL
NEW	ULM-9948-1.2	Ethylphosphonic acid (unlabeled)	C ₂ H ₅ P(O)(OH) ₂	1000 µg/mL in methanol	1.2 mL
	ERI-017	Isopropyl methylphosphonic acid (D ₇ , 98%)	C ₄ H ₄ D ₇ O ₃ P	1000 µg/mL in methanol	1.2 mL
NEW	ULM-9892-1.2	N-Methyl-diethanolamine (unlabeled)	CH ₃ N(CH ₂ CH ₂ OH) ₂	1000 µg/mL in methanol	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
NEW	ERM-038	Methylphosphonic acid (unlabeled)	CH ₃ O ₃ P	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
NEW	ULM-6619-1.2	Methylphosphonic acid, mono-(1,2,2-trimethylpropyl) ester (unlabeled)	CH ₃ P(O)(OH)OCH ₂ (CH ₃) ₃ C(CH ₃) ₃	1000 µg/mL in methanol	1.2 mL
NEW	CLM-6096-1.2	Methylphosphonic acid, monocyclohexyl ester (cyclohexyl- ¹³ C ₆ , 99%)	C* ₆ H ₁₅ O ₃ P	100 µg/mL in methanol	1.2 mL
NEW	ULM-6097-1.2	Methylphosphonic acid, monocyclohexyl ester (unlabeled)	C ₇ H ₁₅ O ₃ P	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 ₃ P(O)(OH)OCH ₂ CH ₃	1000 µg/mL in methanol	1.2 mL
NEW	ULM-6093-1.2	Methylphosphonic acid, monoisopropyl ester (unlabeled)	C ₄ H ₁₁ O ₃ P	1000 µg/mL in methanol	1.2 mL
NEW	ULM-9894-1.2	Pinacolyl alcohol (unlabeled)	(CH ₃) ₃ CCH(OH)CH ₃	1000 µg/mL in methanol	1.2 mL
NEW	ULM-9895-1.2	1-Propylphosphonic acid (unlabeled)	C ₃ H ₉ O ₃ P	1000 µg/mL in methanol	1.2 mL
NEW	ULM-9886-1.2	2-Propylphosphonic acid (unlabeled)	C ₃ H ₉ O ₃ P	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 ₆ H ₈ N ₂ O ₂	100 µg/mL in acetonitrile	1.2 mL
NEW	ULM-9225-1.2	Ricinine (unlabeled)	C ₆ H ₈ N ₂ O ₂	100 µg/mL in acetonitrile	1.2 mL
	ERT-054	Thiodiglycol (D ₈ , 98%)	C ₄ H ₂ D ₈ O ₂ S	1000 µg/mL in methanol	1.2 mL

Chemical Weapon Metabolite Standards

Catalog No.	Compound	Formula	Concentration	Amount
ERT-053	Thiodiglycol (unlabeled)	C ₄ H ₁₀ O ₂ S	1000 µg/mL in methanol	1.2 mL
NEW ULM-9890-1.2	Thiodiglycol sulfone (unlabeled) ~70% WT in H ₂ O	O ₂ S(CH ₂ CH ₂ OH) ₂	1000 µg/mL in methanol	1.2 mL
ERT-054	Thiodiglycol (D ₈ , 98%)	C ₄ H ₂ D ₈ O ₂ S	1000 µg/mL in methanol	1.2 mL
ERT-053	Thiodiglycol (unlabeled)	C ₄ H ₁₀ O ₂ S	1000 µg/mL in methanol	1.2 mL
NEW ULM-9890-1.2	Thiodiglycol sulfone (unlabeled) ~70% WT in H ₂ O	O ₂ S(CH ₂ CH ₂ OH) ₂	1000 µg/mL in methanol	1.2 mL
NEW ULM-9889-1.2	Thiodiglycol sulfoxide (unlabeled)	C ₄ H ₁₀ O ₃ S	1000 µg/mL in methanol	1.2 mL
NEW ULM-9888-1.2	1,4-Thioxane (unlabeled)	C ₄ H ₈ OS	1000 µg/mL in methanol	1.2 mL
NEW ULM-9891-1.2	Triethanolamine (unlabeled)	(HOCH ₂ CH ₂) ₃ N	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)
	<i>O,O</i> -Dimethyl phosphate, potassium salt (dimethyl-D ₆ , 98%)	10,000
	<i>O,O</i> -Diethyl phosphate, potassium salt (diethyl-D ₁₀ , 98%)	10,000
	<i>O,O</i> -Dimethyl thiophosphate, potassium salt (dimethyl-D ₆ , 98%)	10,000
	<i>O,O</i> -Diethyl thiophosphate, potassium salt (diethyl-D ₁₀ , 98%)	10,000
	<i>O,O</i> -Dimethyl dithiophosphate, potassium salt (dimethyl-D ₆ , 98%)	10,000
	<i>O,O</i> -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)
	<i>O,O</i> -Dimethyl phosphate, potassium salt	10,000
	<i>O,O</i> -Diethyl phosphate, potassium salt	10,000
	<i>O,O</i> -Dimethyl thiophosphate, potassium salt	10,000
	<i>O,O</i> -Diethyl thiophosphate, potassium salt	10,000
	<i>O,O</i> -Dimethyl dithiophosphate, potassium salt	10,000
	<i>O,O</i> -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	($\mu\text{g/mL}$)
	Triethanolamine	100
	<i>N</i> -Methyldiethanolamine	100
	<i>N</i> -Ethyldiethanolamine	100
	Pinacolyl alcohol	100
NEW ES-5564	Phosphonic Acid Native Standards Mixture	1.2 mL in methanol
	Unlabeled	($\mu\text{g/mL}$)
	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	($\mu\text{g/mL}$)
	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	($\mu\text{g/mL}$)
	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

Product	Page	Product	Page
A			
Acenaphthene (¹³ C ₆ , 99%)	147, 151, 179	Benzo[<i>a</i>]anthracene (unlabeled)	150, 154, 155, 179, 237
Acenaphthene (D ₁₀ , 98%)	149, 152, 153, 179	Benzo[<i>e</i>]aceanthrylene/Benzo[<i>j</i>]aceanthrylene (¹³ C ₂ , 94%; D ₂ , 94%)	147, 151
Acenaphthene (D ₁₀ , 99%)	153, 200	Benzo[<i>e</i>]aceanthrylene/Benzo[<i>j</i>]aceanthrylene (unlabeled)	150, 154
Acenaphthene (unlabeled)	150, 154, 155, 179, 237	Benzene (¹³ C ₆ , 99%)	187
Acenaphthylene (¹³ C ₆ , 99%)	147, 151	Benzene (¹³ C ₆ , 99%; D ₆ , 98%)	187
Acenaphthylene (D ₈ , 98%)	149, 152, 198	Benzene (D ₆ , 99.5%)	187, 198, 199, 201
Acenaphthylene (unlabeled)	150, 154, 155, 237	Benzidine (ring-D ₈ , 98%)	187
Acephate (D ₆ , 98%)	212, 216	Benzo[<i>a</i>]pyrene (¹³ C ₄ , 99%)	147, 151, 179
Acephate (unlabeled)	212, 216	Benzo[<i>a</i>]pyrene (D ₁₂ , 98%)	149, 152, 153, 179, 198
Acetaminophen (acetyl- ¹³ C ₂ , 99%; ¹⁵ N, 98%)	169	Benzo[<i>a</i>]pyrene (unlabeled)	150, 154, 155, 179, 237
Acetaminophen (unlabeled)	169	(+/-)-Benzo[<i>a</i>]pyrene R-7,T-8,C-9,C-10-tetrahydrotetrol (ring- ¹³ C ₆ , 99%)	156
Acetamiprid (pyridylmethyl- ¹³ C ₆ , 99%)	213, 216	(+/-)-Benzo[<i>a</i>]pyrene R-7,T-8,C-9,T-10-tetrahydrotetrol (ring- ¹³ C ₆ , 99%)	156
Acetamiprid (unlabeled)	213, 216	(+/-)-Benzo[<i>a</i>]pyrene R-7,T-8,T-9,C-10-tetrahydrotetrol (ring- ¹³ C ₆ , 99%)	156
Acetochlor (ring- ¹³ C ₆ , 99%)	216, 227	(+/-)-Benzo[<i>a</i>]pyrene R-7,T-8,T-9,T-10-tetrahydrotetrol (ring- ¹³ C ₆ , 99%)	156
Acetochlor (unlabeled)	216, 227	Benzo[<i>b</i>]fluoranthene (¹³ C ₆ , 99%)	147, 151, 179
Acetone (D ₆ , 99.9%)	187	Benzo[<i>b</i>]fluoranthene (D ₁₂ , 98%)	149, 152, 153, 179
Acid Extractables Mixture-3	200	Benzo[<i>b</i>]fluoranthene (unlabeled)	150, 154, 155, 179, 237
Acridine (D ₉ , 98%)	149	Benzo[<i>b</i>]furan (¹³ C ₆ , 99%)	147
Acrylamide (+100 ppm hydroquinone) (1,2,3- ¹³ C ₃ , 99%)	171	Benzo[<i>b</i>]furan (unlabeled)	150
Acrylamide (+100 ppm hydroquinone) (unlabeled)	171	Benzo[<i>c</i>]fluorene (¹³ C ₆ , 99%)	147
Acrylonitrile (¹³ C ₃ , 99%)	187	Benzo[<i>c</i>]fluorene (unlabeled)	150
Acrylonitrile (D ₃ , 98%)	187	Benzo[<i>c</i>]phenanthrene (¹³ C ₆ , 99%)	147, 151, 179
Alachlor (ring- ¹³ C ₆ , 99%)	179, 216	Benzo[<i>c</i>]phenanthrene (unlabeled)	150, 154, 179
Aldicarb (¹³ C ₂ , 98%; D ₃ , 98%)	214, 216, 227	Benzo[<i>e</i>]pyrene (¹³ C ₄ , 99%)	147, 179
Aldicarb (unlabeled)	214, 216, 227	Benzo[<i>e</i>]pyrene (D ₁₂ , 98%)	149, 153, 179
Aldosterone (2,2,4,6,6,17,21,21-D ₆)	166	Benzo[<i>e</i>]pyrene (unlabeled)	150, 155, 179
Aldosterone (unlabeled)	166	Benzo[<i>ghi</i>]perylene (¹³ C ₁₂ , 99%)	147, 151
Aldrin (¹³ C ₁₂ , 99%)	179, 209, 210, 216, 222, 223, 224, 227, 228, 229, 230, 232, 233, 234	Benzo[<i>ghi</i>]perylene (D ₁₂ , 98%)	149, 152, 153
Aldrin (unlabeled)	209, 210, 216, 222, 223, 225, 228, 229, 232, 235, 236	Benzo[<i>ghi</i>]perylene (unlabeled)	150, 154, 155, 237
Amine and Alcohol Native Standards Mixture	240	Benzoic acid (ring-D ₆ , 98%)	187
3-Amino-2-oxazolidone (AOZ) (ring-D ₄ , 98%)	171	Benzo[<i>j</i>]fluoranthene (¹³ C ₁₂ , 99%)	147, 179
3-Amino-2-oxazolidone (AOZ) (unlabeled)	171	Benzo[<i>j</i>]fluoranthene (unlabeled)	150, 179
1-Amino-2-propanol (D ₉ , 98%)	187	Benzo[<i>k</i>]fluoranthene (¹³ C ₆ , 99%)	147, 151, 179
1-Aminohydantoin hydrochloride (AHD) (5,5-D ₂ , 98%)	171	Benzo[<i>k</i>]fluoranthene (D ₁₂ , 98%)	149, 152, 153, 179, 200
1-Aminohydantoin hydrochloride (AHD) (unlabeled)	171	Benzo[<i>k</i>]fluoranthene (unlabeled)	150, 154, 155, 237
Aminomethylphosphonic acid (AMPA) (¹³ C, 99%; ¹⁵ N, 98%, methylene-D ₂ , 98%)	212, 216, 238	Benzophenone (D ₁₀ , 98%)	165, 179
2-Aminonaphthalene (ring-D ₇ , 98%)	187	Benzophenone (unlabeled)	165, 179
2-Aminonaphthalene (unlabeled)	187	1,4-Benzoquinone (D ₄ , 98%)	187
Amitriptyline-HCl (<i>N,N</i> -dimethyl-D ₆ , 98%)	169	Benzyl butyl phthalate (ring-D ₄ , 98%)	172, 179
Amitriptyline-HCl (unlabeled)	169	Benzyl butyl phthalate (unlabeled)	172
Ammelide (ring- ¹³ C ₃ , 99%)	171	Benzyl paraben (benzyl 4-hydroxybenzoate) (ring- ¹³ C ₆ , 99%)	165, 182
Ammelide (unlabeled)	171	Benzyl paraben (benzyl 4-hydroxybenzoate) (unlabeled)	165, 182
Ammeline (desethyldeisopropylhydroxyatrazine) (ring- ¹³ C ₃ , 99%)	171, 214, 216	BFR Recovery Spiking Solution	143
Ammeline (desethyldeisopropylhydroxyatrazine) (unlabeled)	171	Biphenyl (¹³ C ₁₂ , 99%)	77, 187
Amoxicillin-3H ₂ O (phenyl- ¹³ C ₆ , 99%)	170	Biphenyl (D ₁₀ , 98%)	187
Anabasine (2,2',3,4,5,6- ¹³ C ₆ , 99%)	170	Biphenyl (unlabeled)	120, 187
Anabasine (unlabeled)	170	1,2-Bis(2,4,6-tribromophenoxy) ethane (¹³ C ₁₂ , 99%)	142, 143
Anatabine (2,2',3,4,5,6- ¹³ C ₆ , 99%)	170	1,2-Bis(2,4,6-tribromophenoxy) ethane (unlabeled)	141, 142
Anatabine (unlabeled)	170	Bis(2-chloroethoxy) methane (chloroethoxy-D ₈ , 98%)	187, 201
4-Androstene-3,17-dione (2,3,4- ¹³ C ₃ , 98%)	166	Bis(2-chloroethyl) ether (D ₈ , 98%)	187, 198, 200
4-Androstene-3,17-dione (2,2,4,6,6-D ₅ , 98%)	166	Bis(2-chloroisopropyl) ether (D ₁₂ , 95%)	187
4-Androstene-3,17-dione (unlabeled)	166	Bis(2-chloroisopropyl) ether (unlabeled)	187
Androsterone glucuronide (2,2,4,4-D ₆ , 98%)	166	Bis(2-ethylhexyl) adipate (adipate- ¹³ C ₆ , 99%)	172, 179
Androsterone glucuronide (unlabeled)	166	Bis(2-ethylhexyl) adipate (unlabeled)	172
1,6-Anhydro-β-D-glucose (levoglucosan) (¹³ C ₆ , 98%)	171	Bis(2-ethylhexyl) phthalate (ring-1,2- ¹³ C ₂ , dicarboxyl- ¹³ C ₂ , 99%)	172
Aniline (¹³ C ₆ , 99%)	187	Bis(2-ethylhexyl) phthalate (ring-D ₄ , 98%)	172, 179, 201
Aniline (D ₇ , 98%)	187	Bis(2-ethylhexyl) phthalate (unlabeled)	172, 179
Aniline (ring-D ₆ , 98%)	187	1,2-Bis(pentabromophenyl) ethane (¹³ C ₁₄ , 99%)	142, 143
Anthracene (¹³ C ₆ , 99%)	147, 151, 179	1,2-Bis(pentabromophenyl) ethane (unlabeled)	141, 142
Anthracene (D ₁₀ , 98%)	149, 152, 153, 179, 198, 200	2,4'-Bisphenol A (2-(2-hydroxyphenyl)-2-(4-hydroxyphenyl)propane) (unlabeled)	187
Anthracene (unlabeled)	150, 154, 155, 179, 237	Bisphenol A β-D-glucuronide (unlabeled)	174
Atrazine mercapturate (ring- ¹³ C ₃ , 99%)	214, 216	Bisphenol A bis-(β-D-glucuronide) disodium salt (unlabeled)	174
Atrazine mercapturate (unlabeled)	214, 216	Bisphenol A bisulfate disodium salt (unlabeled)	174
Atrazine (ethylamine-D ₂ , 98%)	214, 216	Bisphenol A diglycidyl ether (BADGE) (diglycidyl-D ₁₀ , 98%)	174
Atrazine (ring- ¹³ C ₃ , 99%)	179, 214, 216, 227	Bisphenol A diglycidyl ether (BADGE) (unlabeled)	174
Atrazine (unlabeled)	214, 216	Bisphenol AF (ring- ¹³ C ₁₂ , 99%)	174, 179
Atrazinethiol (ring- ¹³ C ₃ , 99%)	214, 216	Bisphenol AF (unlabeled)	174, 179
Atrazinethiol (unlabeled)	214, 216	Bisphenol AP (unlabeled)	174
Azinphos-methyl (D ₆ , 98%)	227	Bisphenol A (ring- ¹³ C ₁₂ , 99%)	174, 179, 187
Azinphos-methyl (unlabeled)	212, 216	Bisphenol A (unlabeled)	174, 179, 187
B			
Base Neutrals Dilution Mixture-5.2	200	2,4'-Bisphenol A (unlabeled)	174, 179
Base Neutrals Mixture-4.3	200	Bisphenol B (ring- ¹³ C ₁₂ , 99%)	174
Base Neutrals Mixture-6.2	200	Bisphenol B (unlabeled)	174
Base Neutrals Mixture-6.3	201	Bisphenol E (unlabeled)	174
Bendiocarb (¹³ C ₃ , 99%)	214, 216	Bisphenol F diglycidyl ether (BFDGE) (ring- ¹³ C ₁₂ , 99%)	174
Bendiocarb (unlabeled)	214, 216	Bisphenol F diglycidyl ether (BFDGE) (unlabeled)	174
Bensulide (isopropoxy-D ₁₄ , 98%)	212, 216	Bisphenol F (ring- ¹³ C ₁₂ , 99%)	174
Benzo[<i>a</i>]anthracene (¹³ C ₆ , 99%)	147, 151, 179	Bisphenol F (unlabeled)	174
Benzo[<i>a</i>]anthracene (D ₁₂ , 98%)	149, 152, 153, 179, 201	Bisphenol P (unlabeled)	174
		Bisphenol S (¹³ C ₁₂ , 98%)	174, 179
		Bisphenol S (unlabeled)	174, 179

Index

Product	Page	Product	Page
Bisphenol Z (unlabeled)	174	Chlordecone (kepone) ($^{13}\text{C}_{10}$, 99%)	179, 209, 210, 211, 216, 220, 222, 223, 224
Brominated Dioxin/Furan Internal Standard	74	Chlordecone (kepone) (unlabeled)	179, 209, 210, 211, 216, 220, 222, 223, 225, 236
Brominated Diphenyl Ether Calibration Solutions	136	Chlordene ($^{13}\text{C}_{10}$, 99%)	179, 209, 210, 216
Bromkal™ 70-5	140	Chlordene (unlabeled)	179, 209, 210, 216
4'-Bromo-2,3,3',4,5-pentaCB ($^{13}\text{C}_{12}$, 99%)	120, 121	3-Chloro-1,2-propanediol (~10% 2-chloro-1,3-propanediol) (propane- D_5 , 98%)	171
4'-Bromo-2,3,3',4,5-pentaCB (unlabeled)	120, 121	3-Chloro-1,2-propanediol (unlabeled)	171
4'-Bromo-2,3,3',4-tetraCB ($^{13}\text{C}_{12}$, 99%)	120, 121	5-Chloro-2-(2,4-dichlorophenoxy)-anisole (methyl triclosan) (ring- $^{13}\text{C}_{12}$, 99%)	202, 204
4'-Bromo-2,3,3',4-tetraCB (unlabeled)	120, 121	5-Chloro-2-(2,4-dichlorophenoxy)-anisole (methyl triclosan) (unlabeled)	202, 203, 204, 205
4'-Bromo-2,3',4,5-tetraCB ($^{13}\text{C}_{12}$, 99%)	120, 121	5-Chloro-2-(2,4-dichlorophenoxy)-phenol (triclosan) ($^{13}\text{C}_{12}$, 99%)	203, 205
4'-Bromo-2,3',4,5-tetraCB (unlabeled)	120, 121	4-Chloro-2-hydroxymethyl phenoxyacetic acid (HMCPA) (ring- $^{13}\text{C}_6$, 99%)	216
4'-Bromo-2,3',4,5-tetraCB (unlabeled)	120, 121	4-Chloro-3-methylphenol (MCPA) (ring- $^{13}\text{C}_6$, 99%)	188, 200
1-Bromo-2,3,4,6,7,8,9-heptachlorodibenzo-p-dioxin (unlabeled)	28	4-Chloroaniline (D_4 , 98%)	198
1-Bromo-2,3,7,8-tetrachlorodibenzo-p-dioxin (unlabeled)	28	9-Chloroanthracene (unlabeled)	156
4'-Bromo-3,3',4,5,5'-pentaCB ($^{13}\text{C}_{12}$, 99%)	120, 121	7-Chlorobenz[a]anthracene ($^{13}\text{C}_6$, 99%)	156
4'-Bromo-3,3',4,5,5'-pentaCB Certified Standard	120	7-Chlorobenz[a]anthracene (unlabeled)	156
4'-Bromo-3,3',4,5,5'-pentaCB (unlabeled)	121	Chlorobenzene ($^{13}\text{C}_6$, 99%)	195
4'-Bromo-3,3',4,5-tetraCB ($^{13}\text{C}_{12}$, 99%)	120, 121	Chlorobenzene (D_5 , 99%)	177, 201
4'-Bromo-3,3',4,5-tetraCB (unlabeled)	120, 121	Chlorobenzene (unlabeled)	195
7-Bromobenz[a]anthracene ($^{13}\text{C}_6$, 99%)	156	Chlorobenzene Cocktail Solution – Mono, Di, Tri Isomers	195
7-Bromobenz[a]anthracene (unlabeled)	156	Chlorobenzene Cocktail Solution – Tetra, Penta, Hexa Isomers	195
Bromobenzene ($^{13}\text{C}_6$, 99%)	177	4-Chlorocatechol ($^{13}\text{C}_6$, 99%)	188
Bromobenzene (D_5 , 99%)	177	4-Chlorocatechol (unlabeled)	188, 196
Bromochloromethane (D_2 , 98%)	187	Chlorodibenzofuran Mix – High	67
Bromodichloromethane (^{13}C , 99%)	187, 201	Chlorodibromomethane (^{13}C , 99%)	188, 201
Bromodichloromethane (unlabeled)	187	Chlorodioxin Mix – High	67
Bromodioxin/Furan Calibration Standard Solutions	70	Chloroethane (D_5 , 98%)	188, 198, 199
Bromodioxin/Furan Cleanup Spike	71	2-Chloroethanol (1,1,2,2- D_4 , 98%)	188
Bromodioxin/Furan Native PAR Solution	71	Chloroform (^{13}C , 99%)	188, 201
Bromodioxin/Furan Sampling Spike	71	Chloroform (D , 98%)	198
Bromodioxin/Furan Syringe Spike	71	Chloroform (D , 99.8%)	199
Bromoethane (D_5 , 98%)	187	4-Chloroguaiacol ($^{13}\text{C}_6$, 99%)	196
2-Bromoethanol (1,1,2,2- D_4 , 98%)	187	4-Chloroguaiacol (unlabeled)	188, 196, 197
Bromoform (^{13}C , 99%)	187, 201	Chloriodomethane (D_2 , 98%)	188
Bromoform (D , 99.5%)	187, 198	Chloriomethane (^{13}C , 99%)	188
Bromomethane (^{13}C , 99%)	187	Chloromethane (D_5 , 99%)	188
Bromomethane (D_5 , 99%)	187	2-Chloronaphthalene (D_2 , 98%)	160, 188, 200
4-Bromophenol ($^{13}\text{C}_6$, 99%)	177	6-Chloronicotinic acid ($^{13}\text{C}_6$, 99%)	213, 217
4-Bromophenol (unlabeled)	177	6-Chloronicotinic acid (unlabeled)	213, 217
4-Bromophenyl phenyl ether (phenyl- D_5 , 98%)	200	4-Chloronitrobenzene ($^{13}\text{C}_6$, 99%)	188
Bromoxynil (ring- $^{13}\text{C}_6$, 99%)	216	9-Chlorophenanthrene (unlabeled)	156
Bromoxynil (unlabeled)	216	2-Chlorophenol (ring- D_4 , 99%)	177, 198, 200
2-Butanone (1,1,1,3,3- D_5 , 98%)	187, 198, 199	4-Chlorophenol ($^{13}\text{C}_6$, 99%)	177, 195, 217
2-Butanone (4,4,4- D_3 , 98%)	187	4-Chlorophenol (unlabeled)	177, 196, 217
2-Butoxyethanol (1,1,2,2- D_4 , 99%)	187	Chlorophenol Cocktail Solution – Mono, Di, Tri Isomers	195
2-Butoxyethanol (unlabeled)	187	Chlorophenol Cocktail Solution – Tri, Tetra, Penta Isomers	195
<i>n</i> -Butylbenzene (ring- $^{13}\text{C}_6$, 99%)	179, 184	4-Chlorophenyl phenyl ether (phenyl- D_5 , 98%)	188, 200
Butyl benzyl phthalate (ring- D_5 , 99%)	201	4-Chlorophenyl phenyl ether (unlabeled)	188
<i>n</i> -Butyl paraben (ring- $^{13}\text{C}_6$, 99%)	165, 182	2-Chloropropene (D_3 , 98%)	188
<i>n</i> -Butyl paraben (unlabeled)	165, 182	1-Chloropyrene (mix of ring labeling) ($^{13}\text{C}_6$, 99%)	156
C		1-Chloropyrene (unlabeled)	156
Caffeine (trimethyl- $^{13}\text{C}_3$, 99%)	169	2-Chlorosyringaldehyde (unlabeled)	197
Caffeine (unlabeled)	169	5-Chlorovanillin (ring- $^{13}\text{C}_6$, 99%)	196
Carbamazepine (D_{10} , 98%)	169	5-Chlorovanillin (unlabeled)	197
Carbamazepine (unlabeled)	169	6-Chlorovanillin (unlabeled)	197
Carbaryl (ring- $^{13}\text{C}_6$, 99%)	179, 214, 216	Chlorpyrifos (diethyl- D_{10} , 99%)	179, 212, 217
Carbaryl (unlabeled)	179, 214, 216	Chlorpyrifos (unlabeled)	212, 217
Carbazole (ring- D_8 , 98%)	187, 200	Chlorpyrifos-methyl (dimethyl- D_6 , 98%)	212, 217
Carbofuran phenol (unlabeled)	214, 216	Chlorpyrifos-methyl (unlabeled)	212, 217
Carbofuran (ring- $^{13}\text{C}_6$, 99%)	179, 214, 216	Chlortoluron (<i>N,N</i> -dimethyl- D_6 , 98%)	227
Carbofuran (unlabeled)	179, 214, 216	Chlortoluron (unlabeled)	217, 227
Carbon-13 Quantifying Cocktail (2,3,7,8-PCDD/PCDF isomers)	65	Cholestenone (2,2,4,6,6- D_5 , 98%)	166
Carbon tetrachloride (^{13}C , 99%)	188, 201	Cholesterol (2,3,4- $^{13}\text{C}_3$, 98%)	166
Catechol ($^{13}\text{C}_6$, 99%)	188	Cholesterol (3,4- $^{13}\text{C}_2$, 99%)	166
Catechol (D_6 , 98%)	188	Cholesterol (23,24,25,26,27- $^{13}\text{C}_5$, 99%)	166
CDC BFR Calibration Standards	142	Cholesterol (2,2,3,4,4,6- D_6 , 97-98%)	166
CDC BFR Spiking Standard	143	Cholesterol (25,26,26,26,27,27- D_7 , 98%)	166
CDC OH-PAH Calibration Standards	158	Cholesterol (unlabeled)	166
CDC OH-PAH Native PAR Standard	159	Cholic acid (2,2,4,4- D_4 , 98%)	166
CDC OH-PAH Spiking Standard	159	Cholic acid (unlabeled)	166
CDC PCB Calibration Solutions	112	Chrysene ($^{13}\text{C}_6$, 99%)	148, 151, 179
CDC PCB Recovery Standard for OH-PAHs	117, 159	Chrysene (D_{12} , 98%)	149, 152, 153, 179, 200
CDC PCB Spiking Standard	113	Chrysene (unlabeled)	150, 154, 155, 179, 237
CDC POPs (with Parlars) Calibration Solutions	232	Ciprofloxacin-HCl (2,3-carboxyl- $^{13}\text{C}_3$, 99%; quinoline- ^{15}N , 98%)	170
CDC POPs (with Parlars) Spiking Standard	233	Ciprofloxacin-HCl (unlabeled)	170
Chenodeoxycholic acid (2,2,3,4,4,6,6,7,8- D_9 , 98%)	166	Clean Natural Matrix Reference Material (Fish)	35
Chenodeoxycholic acid (unlabeled)	166	Clonidine (4,4,5,5-imidazole- D_4 , 98%)	169
(+/-)-Chloramphenicol (ring- D_4 , benzyl- D_1 , 98%)	170, 171	Clonidine (unlabeled)	169
(+/-)-Chloramphenicol (unlabeled)	170, 171	Clothianidin (thiazole- $^{13}\text{C}_3$, 99%; ^{15}N , 98%)	213, 217
<i>cis</i> -Chlordane (ω) ($^{13}\text{C}_{10}$, 99%)	209, 210, 216, 232, 233, 234	Clothianidin (unlabeled)	213, 217
<i>cis</i> -Chlordane (ω) (unlabeled)	209, 210, 216, 222, 223, 225, 228, 229, 232, 235, 236	CLP OLC Volatiles DMC Stock Solutions	198
<i>trans</i> -Chlordane (γ) ($^{13}\text{C}_{10}$, 99%)	179, 209, 210, 216, 222, 223, 224, 226, 227, 228, 229, 230, 232, 233, 234	CLP OLC Volatiles Ketone DMC Stock Solution	198
<i>trans</i> -Chlordane (γ) (unlabeled)	209, 210, 216, 222, 223, 225, 228, 229, 232, 235, 236	CLP OLC Volatiles Non-Ketone DMC Stock Solution	198

Index

Product	Page	Product	Page
CLP Semi-Volatiles DMC Stock Solution	198	DecaBDE (unlabeled)	130, 131, 132, 133, 134, 135, 139, 140, 142, 143, 236
CLP SOM Volatiles 1,4-Dioxane DMC Stock Solution	199	Decabromobiphenyl (DecaBB) (¹³ C ₁₂ , 99%)	141
CLP SOM Volatiles Ketone DMC Stock Solution	199	Decabromobiphenyl (DecaBB) Certified Standard (unlabeled)	141
CLP SOM Volatiles Non-Ketone DMC Stock Solution	199	Decabromodiphenyl ether (DecaBDE) (¹³ C ₁₂ , 99%)	126
Codeine (D ₈ , 98%)	169	Decabromodiphenyl ether (DecaBDE) (unlabeled)	129
Codeine (unlabeled)	169	Decachlorobiphenyl (DecaCB) (¹³ C ₁₂ , 99%)	80, 83, 84, 102, 103, 106, 109, 110, 113, 116
Cod Liver Oil Reference Material	35	Decachlorobiphenyl (DecaCB) (unlabeled)	81, 82, 85, 102, 103, 107, 109, 111, 112, 114, 115, 116, 118, 120, 236
Comprehensive Heptachlorodibenzofuran Column Defining Kit	25	<i>trans</i> -Decalin (D ₁₈ , 98%)	188
Comprehensive Hexachlorodibenzofuran (HexaCDF) Column Defining Kit	25	Decalin (D ₁₈ , 99%) (<i>cis/trans</i> mixture)	188
Comprehensive Hexachlorodibenzo- <i>p</i> -dioxin (HexaCDD) Column Defining Kit	25	Decamethylcyclotrisiloxane "D ₃ " (decamethyl- ¹³ C ₁₀ , 98%)	165
Comprehensive Native PCB Mixture	111	Decamethylcyclotrisiloxane "D ₅ " (unlabeled)	165
Comprehensive PCB Calibration Solutions	108	<i>n</i> -Decane (D ₂₂ , 99%)	186
Comprehensive Pentachlorodibenzofuran Column Defining Kit	25	Dechlorane 602 (¹³ C ₁₀ , 99%)	141
Comprehensive Pentachlorodibenzo- <i>p</i> -dioxin Column Defining Kit	25	Dechlorane 602 (unlabeled)	141
Comprehensive Polychlorinated Dioxin and Furan Column Defining Kit	25	Dechlorane 603 (unlabeled)	141
Comprehensive Tetrachlorodibenzofuran (TetraCDF) Column Defining Kit	25	Dechlorane 604 (Component A) (unlabeled)	141
Comprehensive Tetrachlorodibenzo- <i>p</i> -dioxin Column Defining Kit	25	Dechlorane Plus anti (<i>bis</i> -cyclopentene- ¹³ C ₁₀ , 99%)	141
Contaminated Natural Matrix Reference Material (Fish)	35	Dechlorane Plus anti (unlabeled)	141, 231
Co-PCB Calibration Solutions	96	Dechlorane Plus syn (<i>bis</i> -cyclopentene- ¹³ C ₁₀ , 99%)	141
Co-PCB Syringe Spike	99	Dechlorane Plus syn (unlabeled)	141, 231
Coplanar PCB Mixture	100	Dechlorane Plus Technical Product (unlabeled)	141
Coronene (D ₁₂ , 97%)	149	Dehydroepiandrosterone (DHEA) (2,2,3,4,4,6- <i>D</i> ₆ , 99%)	166
Coronene (unlabeled)	150	Dehydroepiandrosterone (DHEA) (unlabeled)	166
Corticosterone (2,2,4,6,6,17 α ,21,21- <i>D</i> ₈ , 97-98%)	166	Dehydroepiandrosterone sulfate, sodium salt (DHEAS) (unlabeled)	166
Cortisol (9,11,12,12- <i>D</i> ₄ , 98%)	166	Deoxycholic acid (2,2,4,4,11,11- <i>D</i> ₆ , 98%)	166
Cortisol (9,12,12- <i>D</i> ₃ , 98%)	166	Deoxycholic acid (2,2,4,4- <i>D</i> ₄ , 98%)	166
Cortisol (unlabeled)	166	Deoxycholic acid (unlabeled)	166
Cortisone (2,2,4,6,6,12,12- <i>D</i> ₇ , 98%)	166	21-Deoxycortisol (2,2,4,6,6,21,21,21- <i>D</i> ₈ , 97%)	166
Cortisone (unlabeled)	166	11-Deoxycortisol (unlabeled)	166
DL-Cotinine (2',3',4'- ¹³ C ₃ , 99%)	170, 206	Desethylatrazine (ring- ¹³ C ₃ , 99%)	214, 217
DL-Cotinine (methyl- <i>D</i> ₃ , 98%)	169, 170	Desethylatrazine (unlabeled)	214, 217
Cotinine (unlabeled)	169, 170, 206	Desethyl desisopropyl atrazine (¹³ C ₃ , 99%)	214, 217
<i>o</i> -Cresol (D ₈ , 98%)	188	Desethyl desisopropyl atrazine (unlabeled)	214, 217
<i>p</i> -Cresol (D ₈ , 98%)	188	Desethylhydroxyatrazine (ring- ¹³ C ₃ , 99%)	214, 218
<i>p</i> -Cresol (ring- ¹³ C ₆ , 99%)	188	Desethylhydroxyatrazine (unlabeled)	214, 218
Custom 16 PAH Native Standard Mixture	154	Desisopropylatrazine (ring- ¹³ C ₃ , 99%)	214, 218
Custom 16 PAH Solution	151	Desisopropylatrazine (unlabeled)	214, 218
Cyanuric acid (¹³ C ₃ , 99%; ¹⁵ N ₃ , 98%+)	171	Desisopropylhydroxyatrazine (ring- ¹³ C ₃ , 99%)	218
Cyanuric acid (unlabeled)	171	Desisopropylhydroxyatrazine (unlabeled)	214, 218
Cyclohexyl methylphosphonic acid (unlabeled)	217	Dialkyl Phosphate and Phosphorothioate Cocktail (D, 98%)	239
Cyclopenta[<i>cd</i>]pyrene (¹³ C ₆ , 99%)	148, 151	Dialkyl Phosphate and Phosphorothioate Cocktail	239
Cyclopenta[<i>cd</i>]pyrene (unlabeled)	150, 154	Diazepam (D ₈ , 98%)	169
Cyfluthrin (mix of stereoisomers) (phenoxy- ¹³ C ₆ , 99%)	180, 215, 217	Diazepam (unlabeled)	169
Cyfluthrin (mix of stereoisomers) (unlabeled)	180, 215, 217	Diazinon (diethyl- <i>D</i> ₁₀ , 98%)	180, 212, 218, 227
Cypermethrin (mix of stereoisomers) (phenoxy- ¹³ C ₆ , 99%)	180, 215, 217	Diazinon (unlabeled)	212, 218, 227
Cypermethrin (mix of stereoisomers) (unlabeled)	180, 215, 217	Dibenzo[a,c]anthracene (D ₁₄ , 98%)	149
D		Dibenzo[a,c]anthracene (unlabeled)	150
Daidzein (3',5',8- <i>D</i> ₃ , 97%)	180	Dibenzo[a,h]anthracene (¹³ C ₆ , 99%)	148, 151
Daidzein (unlabeled)	180	Dibenzo[a,h]anthracene (D ₁₄ , 98%)	149, 152, 153, 201
<i>cis</i> -DCCA (1, <i>carboxyl</i> - ¹³ C ₂ , 99%; 1- <i>D</i> , 97%)	215, 217	Dibenzo[a,h]anthracene (unlabeled)	150, 154, 155, 237
<i>cis</i> -DCCA (unlabeled)	215, 217	Dibenzo[a,j]acridine (D ₁₃ , 98%)	149
<i>trans</i> -DCCA (1, <i>carboxyl</i> - ¹³ C ₂ , 99%; 1- <i>D</i> , 97%)	215, 217	Dibenzo[a,j]acridine (unlabeled)	150
<i>trans</i> -DCCA (unlabeled)	215, 217	Dibenzo[a,j]fluoranthene (unlabeled)	150
2,4'-DDD (ring- ¹³ C ₁₂ , 99%)	180, 210, 217, 222, 223, 224, 228, 229, 230, 234	Dibenzo[a,e]pyrene (¹³ C ₆ , 99%)	148, 151
2,4'-DDD (unlabeled)	210, 217, 222, 223, 225, 228, 229, 235, 236	Dibenzo[a,e]pyrene (unlabeled)	150, 154
4,4'-DDD (ring- ¹³ C ₁₂ , 99%)	210, 217, 222, 223, 224, 228, 229, 230, 234	Dibenzo[a,h]pyrene (¹³ C ₁₂ , 99%)	148, 151
4,4'-DDD (ring- <i>D</i> ₈ , 98%)	180, 210, 217	Dibenzo[a,h]pyrene (unlabeled)	150, 154
4,4'-DDD (unlabeled)	210, 217, 222, 223, 225, 228, 229, 235, 236	Dibenzo[a,j]pyrene (¹³ C ₁₂ , 99%)	148, 151
2,4'-DDE (ring- ¹³ C ₁₂ , 99%)	180, 210, 217, 222, 223, 224, 228, 229, 230, 232, 233, 234	Dibenzo[a,j]pyrene (D ₁₄ , 98%)	149
2,4'-DDE (unlabeled)	180, 210, 217, 222, 223, 225, 228, 229, 232, 235, 236	Dibenzo[a,j]pyrene (unlabeled)	150, 154
4,4'-DDE (ring- ¹³ C ₁₂ , 99%)	180, 210, 217, 227, 234, 222, 223, 224, 228, 229, 230, 231, 232, 233, 234	Dibenzo[a,l]pyrene (¹³ C ₆ , 99%)	148, 151
4,4'-DDE (unlabeled)	210, 217, 222, 223, 225, 228, 229, 231, 232, 235, 236	Dibenzo[a,l]pyrene (unlabeled)	150, 154
2,4'-DDT (ring- ¹³ C ₁₂ , 99%)	180, 210, 217, 222, 223, 224, 227, 228, 229, 230, 231, 232, 233, 234	Dibenzofuran (unlabeled)	22, 188
2,4'-DDT (unlabeled)	180, 210, 217, 222, 223, 225, 228, 229, 231, 232, 235, 236	Dibenzo- <i>p</i> -dioxin (¹³ C ₁₂ , 99%)	17, 188
4,4'-DDT (ring- ¹³ C ₁₂ , 99%)	180, 210, 217, 222, 223, 224, 227, 228, 229, 230, 231, 232, 233, 234, 235	Dibenzo- <i>p</i> -dioxin (unlabeled)	18, 188
4,4'-DDT (unlabeled)	180, 210, 217, 222, 223, 225, 228, 229, 231, 232, 235, 236	Dibenzothiophene (D ₈ , 98%)	188
DE-71™	140	3,4-Dibromo-3',4'-DiCB (¹³ C ₁₂ , 99%)	120
DE-79™	140	3,4-Dibromo-3',4'-DiCB (unlabeled)	120
DecaBDE (¹³ C ₁₂ , 99%)	130, 131, 132, 133, 134, 135, 142, 143	3,4-Dibromo-3',4',5'-TriCB (¹³ C ₁₂ , 99%)	120
		3,4-Dibromo-3',4',5'-TriCB (unlabeled)	120
		1,2-Dibromo-3-chloropropane (¹³ C ₃ , 99%)	184
		2,4-Dibromoanisole (ring- ¹³ C ₆ , 99%)	177, 202
		2,4-Dibromoanisole (unlabeled)	177, 202, 203
		1,4-Dibromobenzene (¹³ C ₆ , 99%)	177
		1,4-Dibromobenzene (D ₄ , 98%)	177
		2,4-Dibromodiphenyl ether (DiBDE) (unlabeled)	126, 132, 133, 136, 138, 139, 236
		2,4'-Dibromodiphenyl ether (DiBDE) (unlabeled)	126, 136, 138, 139
		2,6-Dibromodiphenyl ether (DiBDE) (unlabeled)	126, 136, 138, 139
		3,3'-Dibromodiphenyl ether (DiBDE) (unlabeled)	127, 136, 138, 139

Index

Product	Page	Product	Page
3,4-Dibromodiphenyl ether (DiBDE) (unlabeled)	127, 136, 138, 139	Diclofenac sodium (unlabeled)	169
3,4'-Dibromodiphenyl ether (DiBDE) (unlabeled)	127, 136, 138, 139	Dicyclohexyl phthalate (ring-1,2- ¹³ C ₂ , dicarboxyl- ¹³ C ₂ , 99%)	172
4,4'-Dibromodiphenyl ether (DiBDE) (¹³ C ₁₂ , 99%)	125, 132, 133, 134, 135, 136, 137, 138	Dicyclohexyl phthalate (unlabeled)	172
4,4'-Dibromodiphenyl ether (DiBDE) (unlabeled)	127, 132, 133, 134, 135, 136, 138, 139, 236	Dieldrin (¹³ C ₁₂ , 99%)	180, 209, 210, 218, 222, 223, 224, 227, 228, 229, 230, 231, 232, 233, 234
1,2-Dibromoethane (¹³ C ₂ , 99%)	188	Dieldrin (unlabeled)	180, 209, 210, 218, 222, 223, 225, 228, 229, 231, 232, 235, 236
2,4-Dibromophenol (¹³ C ₆ , 99%)	177, 203	Diethylene glycol (D ₆ , 98%)	171
2,4-Dibromophenol (unlabeled)	177	Diethylene glycol (unlabeled)	171, 189
2,6-Dibromophenol (¹³ C ₆ , 99%)	177	Diethyl ether (D ₁₀ , 99%)	189
2,6-Dibromophenol (unlabeled)	177	Diethyl methylphosphonate (unlabeled)	238, 240
1,3-Dichloro-2-propanol (D ₃ , 98%)	189	N,N-Diethyl- <i>m</i> -toluamide (DEET) (dimethyl-D ₆ , 98%)	165
1,3-Dichloro-2-propanol (unlabeled)	189	N,N-Diethyl- <i>m</i> -toluamide (DEET) (unlabeled)	165, 218
3,4-Dichloro-3',4',5',5'-TriBB (¹³ C ₁₂ , 99%)	120, 121	O,O-Diethyl phosphate, potassium salt (diethyl-D ₁₀ , 98%)	212, 218, 238, 239
3,4-Dichloro-3',4',5',5'-TriBB (unlabeled)	120, 121	O,O-Diethyl phosphate, potassium salt (unlabeled)	212, 218, 238, 239
2,6-Dichloro-4-nitroaniline (dicloran) (ring- ¹³ C ₆ , 99%)	210, 218	O,O-Diethyl thiophosphate, potassium salt (diethyl-D ₁₀ , 98%)	212, 218, 238, 239
3,4-Dichloroaniline (¹³ C ₆ , 99%)	188	O,O-Diethyl thiophosphate, potassium salt (unlabeled)	212, 218, 238, 239
1,2-Dichlorobenzene (¹³ C ₆ , 99%)	177, 180	O,O-Diethyl dithiophosphate, potassium salt (diethyl-D ₁₀ , 98%)	212, 218, 238, 239
1,2-Dichlorobenzene (D ₄ , 99%)	177, 198, 199, 201	O,O-Diethyl dithiophosphate, potassium salt (unlabeled)	212, 218, 238, 239
1,2-Dichlorobenzene (unlabeled)	177, 180	Diethyl phthalate (ring-D ₄ , 98%)	172, 180, 200
1,3-Dichlorobenzene (¹³ C ₆ , 99%)	177, 180	Diethyl phthalate (unlabeled)	172, 180
1,3-Dichlorobenzene (D ₄ , 98%)	177	Diethylstilbestrol (<i>cis/trans</i> mix)	
1,3-Dichlorobenzene (unlabeled)	177, 180	(ring-3,3',5,5'-diethyl-1,1,1',1'-D ₈ , 98%)	166
1,4-Dichlorobenzene (¹³ C ₆ , 99%)	177, 195	Diethylstilbestrol (<i>cis/trans</i> mix) (unlabeled)	167
1,4-Dichlorobenzene (D ₄ , 98%)	177, 201	2,2'-Difluorobiphenyl (unlabeled)	197
1,4-Dichlorobenzene (unlabeled)	195	5- α -Dihydrotestosterone (2,3,4- ¹³ C ₃ , 99%)	167
3,3'-Dichlorobenzidine (ring-D ₆ , 98%)	188	Diiodomethane (¹³ C, 99%)	189
2,2'-Dichlorobiphenyl (DiCB) (¹³ C ₁₂ , 99%)	77, 82, 84, 109, 110	Diisononyl phthalate (unlabeled)	172
2,2'-Dichlorobiphenyl (DiCB) (unlabeled)	80, 82, 85, 108, 111, 236	Diisopropyl methylphosphonate (unlabeled)	212, 218, 238, 240
2,4'-Dichlorobiphenyl (DiCB) (¹³ C ₁₂ , 99%)	77, 102, 103	Dimethoate (O,O-dimethyl-D ₆ , 98%)	180, 212, 218
2,4'-Dichlorobiphenyl (DiCB) (unlabeled)	80, 102, 103, 108, 111, 118	Dimethoate (unlabeled)	180, 212, 218
2,5-Dichlorobiphenyl (DiCB) (¹³ C ₁₂ , 99%)	77, 83, 84, 109, 110, 117	4-(1,3-Dimethyl-1-ethylpentyl) phenol (ring- ¹³ C ₆ , 99%)	175
2,5-Dichlorobiphenyl (DiCB) (unlabeled)	80, 108, 111, 118	4-(1,3-Dimethyl-1-ethylpentyl) phenol (unlabeled)	175
2,6-Dichlorobiphenyl (DiCB) (unlabeled)	80, 108, 111, 118, 120	4-(1,4-Dimethyl-1-ethylpentyl) phenol (ring- ¹³ C ₆ , 99%)	175
3,3'-Dichlorobiphenyl (DiCB) (¹³ C ₁₂ , 99%)	77	4-(1,4-Dimethyl-1-ethylpentyl) phenol (unlabeled)	175
3,3'-Dichlorobiphenyl (DiCB) (unlabeled)	80, 108, 111	N,N-Dimethylaniline (D ₁₁ , 98%)	189
3,4-Dichlorobiphenyl (DiCB) (unlabeled)	80, 108, 111, 118	9,10-Dimethylantracene (D ₁₄ , 98%)	156
4,4'-Dichlorobiphenyl (DiCB) (¹³ C ₁₂ , 99%)	77, 82, 84, 106, 109, 110, 117, 222, 223, 224, 228, 230	9,10-Dimethylantracene (unlabeled)	156
4,4'-Dichlorobiphenyl (DiCB) (unlabeled)	80, 82, 85, 108, 111, 118, 120, 236	N,N-Dimethylformamide (carbonyl- ¹³ C, 99%)	189
3,4-Dichlorocatechol (unlabeled)	196	Dimethyl methylphosphonate (unlabeled)	238, 240
3,6-Dichlorocatechol (unlabeled)	196	1,6-Dimethylnaphthalene (D ₁₂ , 98%)	156
4,5-Dichlorocatechol (ring- ¹³ C ₆ , 99%)	196	1,6-Dimethylnaphthalene (unlabeled)	156
4,5-Dichlorocatechol (unlabeled)	188, 196	1,8-Dimethylnaphthalene (D ₁₂ , 98%)	156
2,4-Dichlorodibenzofuran (DiCDF) (unlabeled)	67	1,8-Dimethylnaphthalene (unlabeled)	156
2,8-Dichlorodibenzofuran (DiCDF) (unlabeled)	22	2,6-Dimethylnaphthalene (D ₁₂ , 98%)	156
2,8-Dichlorodibenzo- <i>p</i> -dioxin (DiCDD) (unlabeled)	18, 67	2,6-Dimethylnaphthalene (unlabeled)	156
1,1-Dichloroethane (2,2,2-D ₃ , 98%)	188, 201	2,4-Dimethylphenol (ring-D ₃ , 98%)	200
1,2-Dichloroethane (D ₄ , 99%)	188, 198, 199, 201	O,O-Dimethyl phosphate, potassium salt (dimethyl-D ₆ , 98%)	212, 218, 238, 239
1,1-Dichloroethane (D ₂ , 98%)	198	O,O-Dimethyl phosphate, potassium salt (unlabeled)	212, 218, 238, 239
1,1-Dichloroethylene (random- ¹³ C, 99%)	184	O,O-Dimethyl thiophosphate, potassium salt (dimethyl-D ₆ , 98%)	212, 218, 238, 239
1,1-Dichloroethylene (2,2-D ₂ , 98%)	188, 199, 201	O,O-Dimethyl thiophosphate, potassium salt (unlabeled)	212, 218, 238, 239
1,1-Dichloroethylene (unlabeled)	184	O,O-Dimethyl dithiophosphate, potassium salt (dimethyl-D ₆ , 98%)	212, 218, 238, 239
1,2-Dichloroethylene (¹³ C ₁ , 99%) (<i>cis/trans</i> mix)	184	O,O-Dimethyl dithiophosphate, potassium salt (unlabeled)	212, 218, 238, 239
1,2-Dichloroethylene (1,2-D ₂ , 98%)	189, 201	Dimethyl phthalate (dimethyl-D ₆ , 98%)	198
1,2-Dichloroethylene (unlabeled) (<i>cis/trans</i> mix)	184	Dimethyl phthalate (ring-D ₄ , 98%)	172, 189, 201
3,4-Dichloroguaiacol (unlabeled)	196, 197	Dimethyl phthalate (unlabeled)	172
4,5-Dichloroguaiacol (unlabeled)	196, 197	Dimethyl tetrabromobisphenol A (ring- ¹³ C ₁₂ , 99%)	140, 202
4,6-Dichloroguaiacol (unlabeled)	196, 197	Dimethyl tetrabromobisphenol A (unlabeled)	140, 202, 203
1,2-Dichloronaphthalene (DiCN) (unlabeled)	160, 162	Di- <i>n</i> -butyl phthalate (ring-D ₄ , 98%)	172, 180, 200
1,4-Dichloronaphthalene (DiCN) (unlabeled)	160, 162	Di- <i>n</i> -butyl phthalate (unlabeled)	172, 180
1,5-Dichloronaphthalene (DiCN) (¹³ C ₁₀ , 99%)	160	Di- <i>n</i> -hexyl phthalate (ring-1,2- ¹³ C ₂ , dicarboxyl- ¹³ C ₂ , 99%)	172, 180
1,5-Dichloronaphthalene (DiCN) (unlabeled)	160	Di- <i>n</i> -hexyl phthalate (unlabeled)	172, 180
1,8-Dichloronaphthalene (DiCN) (unlabeled)	160	4,6-Dinitro-2-methylphenol (ring-D ₃ , 98%)	189, 198, 200
2,3-Dichloronaphthalene (DiCN) (unlabeled)	160	1,3-Dinitrobenzene (¹³ C ₆ , 99%)	185
2,4-Dichlorophenol (¹³ C ₆ , 99%)	184, 195, 196	1,3-Dinitrobenzene (D ₄ , 98%)	189
2,4-Dichlorophenol (D ₄ , 98%)	177	1,3-Dinitrobenzene (unlabeled)	185
2,4-Dichlorophenol (ring-D ₃ , 98%)	177, 198, 200	2,4-Dinitrophenol (ring-D ₃ , 98%)	185, 189, 200
2,4-Dichlorophenol (unlabeled)	177, 196	2,4-Dinitrophenol (unlabeled)	185, 189
2,5-Dichlorophenol (¹³ C ₆ , 99%)	177	2,4-Dinitrotoluene (ring-D ₃ , 98%)	185, 189
2,5-Dichlorophenol (unlabeled)	177	2,4-Dinitrotoluene (unlabeled)	185
2,6-Dichlorophenol (unlabeled)	196	2,6-Dinitrotoluene (methyl-D ₃ , 98%)	185, 189, 201
2,4-Dichlorophenoxyacetic acid (ring- ¹³ C ₆ , 99%)	180, 218, 227	2,6-Dinitrotoluene (unlabeled)	185
2,4-Dichlorophenoxyacetic acid (ring-D ₃ , 98%)	218	Dinocap (ring- ¹³ C ₆ , 99%)	218
2,4-Dichlorophenoxyacetic acid (unlabeled)	218, 227	Dinocap (unlabeled)	218
1,2-Dichloropropane (D ₆ , 98%)	189, 198, 199, 201	Di- <i>n</i> -octyl phthalate (ring-D ₄ , 98%)	172, 200
1,3-Dichloropropene (D ₆ , 98%)	189, 198, 199, 201	Di- <i>n</i> -octyl phthalate (unlabeled)	172
2,6-Dichlorosyringaldehyde (unlabeled)	197	Di-nofuran (furylmethyl- ¹³ C ₅ , 99%)	213, 219
5,6-Dichlorovanillin (unlabeled)	189, 197	Di-nofuran (unlabeled)	213, 219
Dichlorprop (ring- ¹³ C ₆ , 99%)	218	Di- <i>n</i> -pentyl phthalate (ring-1,2- ¹³ C ₂ , dicarboxyl- ¹³ C ₂ , 99%)	172, 180
Dichlorprop (unlabeled)	218	Di- <i>n</i> -pentyl phthalate (unlabeled)	172, 180
Dichlorvos (dimethyl-D ₆ , 98%)	212, 218	Di- <i>n</i> -propyl phthalate (ring-1,2- ¹³ C ₂ , dicarboxyl- ¹³ C ₂ , 99%)	172, 180
Dichlorvos (unlabeled)	212, 218	1,4-Dioxane (<i>p</i> -dioxane) (D ₈ , 99%)	189, 199, 201
7,12-Dichlorobenz[a]anthracene (¹³ C ₆ , 99%)	156	1,4-Dioxane (<i>p</i> -dioxane) (unlabeled)	189
7,12-Dichlorobenz[a]anthracene (unlabeled)	156	Dioxin and Furan Cleanup Spike	64
Diclofenac sodium (D ₄ , 98%)	169	Dioxin and Furan Food/Feed/QQQ Calibration Series	60
		Dioxin and Furan Food/Feed/QQQ Internal Standard Solution	61

Index

Product	Page	Product	Page
Dioxin and Furan Food/Feed/QQQ PAR Standard Solution	61	EPA Method 1614 Labeled Cleanup Stock Solution	131
Dioxin and Furan Food/Feed/QQQ Recovery Standard Solution	61	EPA Method 1614 Labeled Injection Internal Stock Solution	131
Dioxin Cleanup Spike	58	EPA Method 1614 Labeled Surrogate Stock Solution	131
Dioxin/Furan Calibration Solutions	59	EPA Method 1614 Native PAR Stock Solution	131
Dioxin/Furan/CP-PCB Calibration Series	54	EPA Method 1614 "Starter Kit"	130
Dioxin/Furan/CP-PCB Internal Standard	55	EPA Method 1699 Pesticide Stock Solution	227
Dioxin/Furan/CP-PCB Internal Standard 100X Stock	55	Epichlorohydrin ($^{13}\text{C}_3$, 99%)	181, 184, 189
Dioxin/Furan/CP-PCB PAR Standard	56	Epichlorohydrin (D_5 , 98%)	184, 189
Dioxin/Furan/CP-PCB Recovery Standard	55	Epichlorohydrin (unlabeled)	181, 184, 189
Dioxin/Furan/CP-PCB Recovery Standard 100X Stock	55	Erythromycin (90-95% Erythromycin A) (<i>N,N</i> -dimethyl- $^{13}\text{C}_2$, ~90%)	170
Dioxin/Furan Native Mix All 17 2,3,7,8 Isomers + 1,3,6,8-TetraCDD/F + 1,3,7,9-TetraCDD	66	Erythromycin (unlabeled)	170
Dioxin Sampling Spike	58	DL-Estradiol (13,14,15,16,17,18- $^{13}\text{C}_6$, 99%)	167
Dioxin Syringe Spike	58	Estradiol (3,4- $^{13}\text{C}_2$, 99%)	167
Diphenylamine (diphenyl- D_{10} , 98%)	189	Estradiol (2,4,16,16- D_4 , 95-97%)	167
Diphenyl ether ($^{13}\text{C}_{12}$, 99%)	125, 189	Estradiol (unlabeled)	167
Diphenyl ether (D_{10} , 98%)	189	Estrilol (16- α -hydroxyestradiol) (2,3,4- $^{13}\text{C}_3$, 99%)	167
5,5-Diphenylhydantoin (2- ^{13}C , 99%; 1,3- $^{15}\text{N}_2$, 98%)	169	Estrilol (2,4,16,17- D_4 , 98%)	167
5,5-Diphenylhydantoin (unlabeled)	169	Estrilol (unlabeled)	167
1,2-Diphenylhydrazine (diphenyl- D_{10} , 98%)	189	DL-Estrone (13,14,15,16,17,18- $^{13}\text{C}_6$, 99%)	167
<i>N,N'</i> -Diphenyl- <i>p</i> -phenylenediamine (D_{14} , 98%)	189	Estrone (2,3,4- $^{13}\text{C}_3$, 99%)	167
<i>N,N'</i> -Diphenyl- <i>p</i> -phenylenediamine (unlabeled)	189	Estrone (3,4- $^{13}\text{C}_2$, 90%)	167
Dipinacoyl methylphosphonate (unlabeled)	212, 219, 238, 240	Estrone (2,4,16,16- D_4 , 97%)	167
Disulfoton (<i>O,O</i> -diethyl- D_{10} , 98%)	212, 219	Estrone (unlabeled)	167
2,6-Di(<i>tert</i> -butyl)-4-methyl phenol (BHT) (D_{21} , 98%)	171, 180	4-(1-Ethyl-1-methylhexyl) phenol (ring- $^{13}\text{C}_6$, 99%)	175
2,6-Di(<i>tert</i> -butyl)-4-methyl phenol (BHT) (unlabeled)	171	4-(1-Ethyl-1-methylhexyl) phenol (unlabeled)	175
1,4-Dithiane (unlabeled)	238, 239	Ethylbenzene (D_{10} , 98%)	189, 201
DL-Estrone 3-methyl ether (13,14,15,16,17,18- $^{13}\text{C}_6$, 99%)	167	Ethylbenzene (D_{10} , 99%)	189
DL-PCB Native Plus Mixture	101	Ethylbenzene (ethyl- D_5 , 98%)	189
DL-PCB RH12 Calibration Solutions	94	<i>N</i> -Ethylthioethanolamine (unlabeled)	238, 240
DL-PCB RH12 Extended Calibration Solutions	94	Ethyl dimethylamidophosphate, sodium salt (unlabeled)	212
DL-PCB RH12 Extraction Spike	95	Ethylene oxide ($^{13}\text{C}_2$, 99%)	189
DL-PCB RH12 Native Spike (excluding PCB-170)	95	Ethylene oxide (D_4 , 99%)	189
DL-PCB RH12 Sampling Spike	95	Ethyl hydrogen dimethylamidophosphate, sodium salt (unlabeled)	238
DL-PCB RH12 Syringe Spike	95	Ethyl hydrogen methylphosphonate (ethyl- D_5 , 98%)	212, 238
Dodecamethylcyclohexasiloxane "D ₆ " (dodecamethyl- $^{13}\text{C}_{12}$, 98%)	165	Ethyl methylphosphonic acid (unlabeled)	212
Dodecamethylcyclohexasiloxane "D ₆ " (unlabeled)	165	Ethyl paraben (ethyl 4-hydroxybenzoate) (ring- $^{13}\text{C}_6$, 99%)	165, 182
<i>n</i> -Dodecane (D_{26} , 98%)	186	Ethyl paraben (ethyl 4-hydroxybenzoate) (unlabeled)	165, 182
4-Dodecylbenzenesulfonate, sodium salt (ring- $^{13}\text{C}_6$, 99%)	165	Ethylphosphonic acid (unlabeled)	238, 240
4-Dodecylbenzenesulfonate, sodium salt (unlabeled)	165	Ethynylestradiol (20,21- $^{13}\text{C}_2$, 99%)	167
<i>n</i> -Dotriacontane (D_{66} , 98%)	186	17- α -Ethynylestradiol (2,4,16,16- D_4 , 97-98%)	167
DSJ PCB Mixture	118	Ethynylestradiol (unlabeled)	167
Durene (1,2,4,5-tetramethylbenzene) (D_{14} , 98%)	189	Expanded POPs Pesticides Calibration Solutions	223
E			
"EEC Six" PAH Cocktail	153	Expanded POPs Pesticides Calibration Solution with Endosulfan Sulfate	222
EFSA-4 ^{13}C PAH Standard Mixture	151	Expanded POPs Pesticides Cleanup Spike	224
EFSA-4 Native PAH Standard Mixture	155	Expanded POPs Pesticides Cleanup Spike with Endosulfan Sulfate	224
EFSA-8 ^{13}C PAH Standard Mixture	151	Expanded POPs Pesticides PAR Solution	225
EFSA-8 Native PAH Standard Mixture	154	Expanded POPs Pesticides PAR Solution with Endosulfan Sulfate	225
<i>n</i> -Eicosane (D_{42} , 98%)	186	Expanded POPs Pesticides Sampling Spike	224
EN-1948-4 Marker PCB Calibration Series	87	Extended Phenolic Calibration Solutions	202
EN-1948-4 Marker PCB Extraction Standard	88, 105	Extended Phenolic Native PAR Standard	203
EN-1948-4 Marker PCB "Starter Kit"	87	Extended Phenolic Spiking Solution	203
EN-1948-4 PCB Recovery Standard	86, 88	F	
EN-1948-4 PCB Sampling Standard	86, 88, 119	Fenitrothion (<i>O,O</i> -dimethyl- D_6 , 98%)	212, 219
EN-1948-4 WHO PCB Calibration Series	86	Fipronil (3-cyano,pyrazole-3,4,5- $^{13}\text{C}_4$, 99%; 3-cyano, 5- $^{15}\text{N}_2$, 98%)	219
EN-1948-4 WHO PCB Extraction Standard	86, 88	Fipronil (unlabeled)	219
EN-1948-4 WHO PCB "Starter Kit"	86	Fipronil desulfinyl (3-cyano,pyrazole-3,4,5- $^{13}\text{C}_4$, 99%; 3-cyano, 5- $^{15}\text{N}_2$, 98%)	219
EN-1948 Calibration Solutions	40	Fipronil desulfinyl (unlabeled)	219
EN-1948 Dioxin/Furan "Starter Kit"	40	Fipronil detrifluoromethyl sulfinyl (3-cyano, pyrazole-3,4,5- $^{13}\text{C}_4$, 99%) 3-cyano- 5- $^{15}\text{N}_2$, 98%	219
EN-1948 Extraction Standard Solution	40, 41	Fipronil detrifluoromethyl sulfinyl (unlabeled)	219
EN-1948 Native Stock Response Factor Solution	40, 41	Fipronil sulfide (3-cyano, pyrazole-3,4,5- $^{13}\text{C}_4$, 99%; 3-cyano, 5- $^{15}\text{N}_2$, 98%)	219
EN-1948 Sampling Standard Solution	40, 41	Fipronil sulfide (unlabeled)	219
EN-1948 Syringe Standard Solution	40, 41	Fipronil sulfone (3-cyano,pyrazole-3,4,5- $^{13}\text{C}_4$, 99%; 3-cyano, 5- $^{15}\text{N}_2$, 98%)	219
Endosulfan I ($^{13}\text{C}_9$, 99%)	180, 209, 210, 219, 222, 223, 224, 227, 234	Fipronil sulfone (unlabeled)	219
Endosulfan I (D_4 , 97%)	180, 209, 210, 219	Fluoranthene ($^{13}\text{C}_6$, 99%)	148, 151
Endosulfan I (unlabeled)	180, 209, 210, 219, 222, 223, 225, 235, 236	Fluoranthene (D_{10} , 98%)	149, 152, 153
Endosulfan II ($^{13}\text{C}_9$, 99%)	180, 209, 210, 219, 222, 223, 224, 227, 234	Fluoranthene (unlabeled)	150, 154, 155, 237
Endosulfan II (unlabeled)	180, 209, 210, 219, 222, 223, 225, 235, 236	Fluorene ($^{13}\text{C}_6$, 99%)	148, 151
Endosulfan sulfate ($^{13}\text{C}_9$, 99%)	180, 209, 210, 219, 222, 224	Fluorene (D_{10} , 98%)	149, 152, 198, 200
Endosulfan sulfate (unlabeled)	180, 209, 210, 219, 222, 225	Fluorene (unlabeled)	150, 154, 155, 237
Endrin ($^{13}\text{C}_{12}$, 99%)	180, 209, 211, 219, 222, 223, 224, 227, 228, 229, 230, 232, 233, 234	4-Fluoro-3-phenoxybenzoic acid ($^{13}\text{C}_6$, 99%)	215, 219
Endrin (unlabeled)	180, 209, 211, 219, 222, 223, 225, 228, 229, 232, 235, 236	4-Fluoro-3-phenoxybenzoic acid (unlabeled)	215, 219
Endrin aldehyde ($^{13}\text{C}_{12}$, 99%)	180, 209, 211, 219	Floaxetone-HCl (unlabeled)	169
Endrin aldehyde (unlabeled)	180, 209, 211, 219, 235	Floaxetone oxalate (D_6 , 98%)	169
Endrin ketone ($^{13}\text{C}_{12}$, 99%)	181, 209, 211, 219	Fonofos (ring- $^{13}\text{C}_6$, 99%)	212, 219, 227
Endrin ketone (unlabeled)	181, 209, 211, 219	Fonofos (unlabeled)	212, 219
EPA 16 PAH Cocktail	151	Forchlorfenuron (phenyl- D_5 , 99%)	219
EPA Method 1614 Calibration Solutions	130	Fortified Cod Liver Oil Reference Material	35
		Fortified Natural Matrix Reference Material (Fish)	35
		Freeze-Dried Eggs Reference Material	35
		Fully Resolved Native Mono-Deca PCB Mixture	118

Index

Product	Page	Product	Page
G			
Gemfibrozil (2,2-dimethyl-D ₆ , 98%)	169	2,2',3,3',4,5,6'-Heptachlorobiphenyl (HeptaCB) (unlabeled)	81, 109, 111
Gemfibrozil (unlabeled)	169	2,2',3,3',4',5,6-Heptachlorobiphenyl (HeptaCB) (unlabeled)	112, 114, 118
Genistein (3',5',6,8-D ₄ , 95%)	181	2,2',3,3',5,5',6-Heptachlorobiphenyl (HeptaCB) (¹³ C ₁₂ , 99%)	79, 51, 53, 83, 84, 89, 90, 91, 96, 99, 109, 110, 113, 117
Glycochenodeoxycholic acid (2,2,3,4,4,6,6,7,8-D ₉ , 98%)	167	2,2',3,3',5,5',6-Heptachlorobiphenyl (HeptaCB) (unlabeled)	81, 109, 111, 112, 114, 119
Glycocholic acid (2,2,4,4-D ₄ , 98%)	167	2,2',3,4,4',5,5'-Heptachlorobiphenyl (HeptaCB) (¹³ C ₁₂ , 99%)	79, 51, 52, 58, 87, 88, 89, 90, 91, 94, 95, 96, 97, 98, 99,
Glycocholic acid (unlabeled)	167		100, 102, 103, 104, 105, 106, 113, 115, 116
Glycodeoxycholic acid (2,2,4,4,11,11-D ₆ , 98%)	167		
Glycodeoxycholic acid (2,2,4,4-D ₄ , 98%)	167		
Glycodeoxycholic acid, sodium salt (unlabeled)	167		
Glycolithocholic acid (2,2,4,4-D ₄ , 98%)	167		
Glycolithocholic acid, sodium salt (unlabeled)	167		
Glycoursodeoxycholic acid (2,2,4,4-D ₄ , 98%)	167		
Glycoursodeoxycholic acid (unlabeled)	167	2,2',3,4,4',5,5'-Heptachlorobiphenyl (HeptaCB) (unlabeled)	81, 50, 87, 89, 90, 94, 95, 96, 97, 98, 101, 102, 103, 104, 105, 107, 109, 111, 112, 114, 115, 116, 118
Glyphosate (2- ¹³ C, 99%; ¹⁵ N, 98%+)	181, 213, 219		
Glyphosate (unlabeled)	181, 213, 219		
Guaiaicol (ring- ¹³ C ₆ , 99%)	189		
H			
HALOWAX 1000	162	2,2',3,4,4',5,6'-Heptachlorobiphenyl (HeptaCB) (¹³ C ₁₂ , 99%)	79
HALOWAX 1013	162	2,2',3,4,4',5,6'-Heptachlorobiphenyl (HeptaCB) (unlabeled)	81
HALOWAX 1051	162	2,2',3,4,4',5',6-Heptachlorobiphenyl (HeptaCB) (unlabeled)	81, 112, 114, 118
α-HCH (α-BHC) (¹³ C ₆ , 99%)	179, 210, 216, 222, 223, 224, 228, 229, 230, 232, 233, 234	2,2',3,4,4',5',6-Heptachlorobiphenyl (HeptaCB) (unlabeled)	81, 104, 105, 109, 111, 112, 114, 115, 116, 118, 122
α-HCH (α-BHC) (unlabeled)	210, 216, 222, 223, 225, 228, 229, 232, 235, 236	2,2',3,4',5,5',6-Heptachlorobiphenyl (HeptaCB) (unlabeled)	79, 83, 84, 109, 110, 117
β-HCH (β-BHC) (¹³ C ₆ , 99%)	179, 210, 216, 222, 223, 224, 227, 228, 229, 230, 231, 232, 233, 234	2,2',3,4',5,6,6'-Heptachlorobiphenyl (HeptaCB) (¹³ C ₁₂ , 99%)	81, 82, 85, 109, 111, 118, 120, 236
β-HCH (β-BHC) (unlabeled)	210, 216, 222, 223, 225, 228, 229, 231, 232, 235, 236	(unlabeled)	79, 83, 84, 109, 110, 117
γ-HCH (γ-BHC) (lindane) (¹³ C ₆ , 99%; D ₆ , 99%)	210, 216	2,3,3',4,4',5,5'-Heptachlorobiphenyl (HeptaCB) (¹³ C ₁₂ , 99%)	51, 52, 58, 79, 83, 84, 86, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 109, 110, 113, 116
γ-HCH (γ-BHC) (lindane) (¹³ C ₆ , 99%)	179, 210, 216, 222, 223, 224, 227, 228, 229, 230, 231, 232, 233, 234		
γ-HCH (γ-BHC) (lindane) (unlabeled)	210, 216, 222, 223, 225, 228, 229, 231, 232, 235, 236	2,3,3',4,4',5,5'-Heptachlorobiphenyl (HeptaCB) (unlabeled)	50, 81, 82, 85, 86, 89, 90, 92, 94, 95, 96, 97, 98, 101, 109, 111, 112, 114, 115, 118, 120, 236
δ-HCH (δ-BHC) (¹³ C ₆ , 99%)	210, 216, 222, 223, 224, 227, 228, 229, 230, 234	2,3,3',4,4',5',6-Heptachlorobiphenyl (HeptaCB) (unlabeled)	81, 118
δ-HCH (δ-BHC) (unlabeled)	210, 216, 222, 223, 225, 228, 229, 235, 236	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HeptaCDF) (¹³ C ₁₂ , 99%)	20, 31, 32, 33, 34, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 51, 52, 54, 55, 57, 58, 59, 60, 61, 62, 63, 64, 65
HD Metabolite Native Standards Mixture	239		
Heavily Contaminated Sediment Reference Material	35	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HeptaCDF) (unlabeled)	23, 24, 31, 32, 33, 34, 36, 38, 39, 40, 41, 42, 44, 46, 47, 48, 49, 50, 54, 56, 59, 60, 61, 62, 66, 67, 68, 236
1,2,3,4,6,7,8-Heptabromodibenzofuran (HeptaBDF) (¹³ C ₁₂ , 99%)	27, 70, 71, 72, 73	1,2,3,4,6,7,9-Heptachlorodibenzofuran (HeptaCDF) (unlabeled)	24
1,2,3,4,6,7,8-Heptabromodibenzofuran (HeptaBDF) (unlabeled)	27, 70, 71, 72, 74	1,2,3,4,6,8,9-Heptachlorodibenzofuran (HeptaCDF) (¹³ C ₁₂ , 99%)	21, 42, 43, 44, 45, 51, 52, 54, 55, 58, 59, 60, 61, 62, 63
1,2,3,4,6,7,8-Heptabromodibenzo- <i>p</i> -dioxin (HeptaBDD) (¹³ C ₁₂ , 99%)	26, 70, 71	1,2,3,4,6,8,9-Heptachlorodibenzofuran (HeptaCDF) (unlabeled)	24
1,2,3,4,6,7,8-Heptabromodibenzo- <i>p</i> -dioxin (HeptaBDD) (unlabeled)	26, 70, 71	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HeptaCDF) (¹³ C ₁₂ , 99%)	21, 31, 32, 33, 34, 36, 37, 40, 41, 42, 43, 44, 45, 46, 51, 52, 54, 55, 57, 58, 59, 60, 61, 62, 63, 64
2,2',3,3',4,5',6-Heptabromodiphenyl ether (HeptaBDE) (unlabeled)	129	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HeptaCDF) (unlabeled)	23, 24, 31, 32, 33, 34, 36, 38, 39, 40, 41, 42, 44, 46, 47, 48, 49, 50, 54, 56, 59, 60, 61, 62, 66, 67, 68, 236
2,2',3,4,4',5,6-Heptabromodiphenyl ether (HeptaBDE) (unlabeled)	129, 132, 133, 136, 138, 139, 236		
2,2',3,4,4',5',6-Heptabromodiphenyl ether (HeptaBDE) (¹³ C ₁₂ , 99%)	125, 130, 131, 132, 133, 134, 135, 136, 137, 138, 142, 143	1,2,3,4,6,7,8-Heptachlorodibenzo- <i>p</i> -dioxin (HeptaCDD) (¹³ C ₁₂ , 99%)	17, 31, 32, 33, 34, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 48, 51, 52, 54, 55, 57, 58, 59, 60, 61, 62, 63, 64, 65
2,2',3,4,4',5',6-Heptabromodiphenyl ether (HeptaBDE) (unlabeled)	129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 142, 236		
2,3,3',4,4',5,6-Heptabromodiphenyl ether (HeptaBDE) (¹³ C ₁₂ , 99%)	125	1,2,3,4,6,7,8-Heptachlorodibenzo- <i>p</i> -dioxin (HeptaCDD) (unlabeled)	19, 25, 31, 32, 33, 34, 36, 38, 39, 40, 41, 42, 44, 46, 47, 48, 49, 50, 54, 56, 59, 60, 61, 62, 66, 67, 68, 236
2,3,3',4,4',5,6-Heptabromodiphenyl ether (HeptaBDE) (unlabeled)	129, 132, 133, 136, 138, 139, 236		
Heptachlor (¹³ C ₁₀ , 99%)	181, 209, 211, 219, 222, 223, 224, 227, 228, 229, 230, 234	1,2,3,4,6,7,9-Heptachlorodibenzo- <i>p</i> -dioxin (HeptaCDD) (unlabeled)	19, 25, 34, 68
Heptachlor (unlabeled)	181, 209, 211, 219, 222, 223, 225, 228, 229, 235, 236	1,2,3,4,5,6,7-Heptachloronaphthalene (HeptaCN) (¹³ C ₁₀ , 99%)	160, 161, 162
cis-Heptachlor epoxide (¹³ C ₁₀ , 99%)	181, 209, 211, 219, 222, 223, 224, 227, 228, 229, 230, 231, 232, 233, 234	1,2,3,4,5,6,7-Heptachloronaphthalene (HeptaCN) (unlabeled)	160, 161, 162
cis-Heptachlor epoxide (unlabeled)	181, 209, 211, 219, 222, 223, 225, 228, 229, 231, 232, 235, 236	1,2,3,4,5,6,8-Heptachloronaphthalene (HeptaCN) (unlabeled)	160
trans-Heptachlor epoxide (unlabeled)	209, 211, 219, 222, 223, 225, 228, 229, 235, 236	<i>n</i> -Heptadecane (D ₃₆ , 98%)	186
2,2',3,3',4,4',5-Heptachlorobiphenyl (HeptaCB) (¹³ C ₁₂ , 99%)	79, 51, 58, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 102, 103, 113, 115, 116, 117	<i>n</i> -Heptane (D ₁₆ , 98%)	186
2,2',3,3',4,4',5-Heptachlorobiphenyl (HeptaCB) (unlabeled)	81, 50, 89, 90, 94, 96, 97, 98, 101, 109, 111, 112, 114, 115, 116, 118, 119	Hexabromobenzene (¹³ C ₆ , 99%)	142, 143, 177
2,2',3,3',4,4',6-Heptachlorobiphenyl (HeptaCB) (unlabeled)	81, 118	Hexabromobenzene (unlabeled)	142, 177
2,2',3,3',4,5,5'-Heptachlorobiphenyl (HeptaCB) (unlabeled)	81, 112, 114	2,2',4,4',5,5'-Hexabromobiphenyl (HexaBB) (¹³ C ₁₂ , 99%)	141, 142, 143, 181
		2,2',4,4',5,5'-Hexabromobiphenyl (HexaBB) Certified Standard (unlabeled)	141, 142, 181
		2,3,3',4,4',5'-Hexabromobiphenyl (HexaBB) (¹³ C ₁₂ , 99%)	141
		2,3,3',4,4',5'-Hexabromobiphenyl (HexaBB) Certified Standard (unlabeled)	141
		Hexabromocyclododecane (¹³ C ₁₂ , 99%) (mix of isomers)	140
		α-Hexabromocyclododecane (¹³ C ₁₂ , 99%)	140
		α-Hexabromocyclododecane (unlabeled)	140
		β-Hexabromocyclododecane (¹³ C ₁₂ , 99%)	140

Index

Product	Page
β-Hexabromocyclododecane (unlabeled)	140
γ-Hexabromocyclododecane (13C12, 99%)	140, 142, 143
γ-Hexabromocyclododecane (unlabeled)	140, 142
1,2,3,4,7,8-Hexabromodibenzofuran (HexaBDF) (13C12, 99%)	27, 70, 71, 72, 73
1,2,3,4,7,8-Hexabromodibenzofuran (HexaBDF)(unlabeled)	27, 70, 71, 72, 74
1,2,3,4,7,8-Hexabromodibenzo-p-dioxin (HexaBDD) (13C12, 99%)	26, 70, 71, 72, 73
1,2,3,4,7,8-Hexabromodibenzo-p-dioxin (HexaBDD) (unlabeled)	26, 70, 71, 72, 74
1,2,3,6,7,8-Hexabromodibenzo-p-dioxin (HexaBDD) (13C12, 99%)	26, 70, 71, 72, 73, 74
1,2,3,6,7,8-Hexabromodibenzo-p-dioxin (HexaBDD) (unlabeled)	26, 70, 71, 72, 74
1,2,3,7,8,9-Hexabromodibenzo-p-dioxin (HexaBDD) (13C12, 99%)	26, 70, 71, 72, 73, 74
1,2,3,7,8,9-Hexabromodibenzo-p-dioxin (HexaBDD) (unlabeled)	26, 70, 71, 72, 74
2,2',3,3',4,4'-Hexabromodiphenyl ether (HexaBDE) (unlabeled)	128
2,2',3,4,4',5'-Hexabromodiphenyl ether (HexaBDE) (13C12, 99%)	125, 132, 133
2,2',3,4,4',5'-Hexabromodiphenyl ether (HexaBDE) (unlabeled)	128, 132, 133, 136, 138, 139, 236
2,2',3,4,4',6-Hexabromodiphenyl ether (HexaBDE) (13C12, 99%)	57, 113, 125, 130, 131, 142, 143, 202, 203, 204, 205, 231, 232, 233
2,2',3,4,4',6-Hexabromodiphenyl ether (HexaBDE) (unlabeled)	128
2,2',3,4,4',6'-Hexabromodiphenyl ether (HexaBDE) (unlabeled)	128
2,2',3,4',5,6'-Hexabromodiphenyl ether (HexaBDE) (unlabeled)	129
2,2',4,4',5,5'-Hexabromodiphenyl ether (HexaBDE) (13C12, 99%)	125, 130, 131, 132, 133, 134, 135, 136, 137, 138, 142, 143
2,2',4,4',5,5'-Hexabromodiphenyl ether (HexaBDE) (unlabeled)	129, 130, 131, 132, 133, 134, 135, 136, 138, 139, 142, 236
2,2',4,4',5,6'-Hexabromodiphenyl ether (HexaBDE) (13C12, 99%)	125, 130, 131, 132, 133, 134, 135, 137, 142, 143
2,2',4,4',5,6'-Hexabromodiphenyl ether (HexaBDE) (unlabeled)	129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 142, 236
2,2',4,4',6,6'-Hexabromodiphenyl ether (HexaBDE) (13C12, 99%)	125
2,2',4,4',6,6'-Hexabromodiphenyl ether (HexaBDE) (unlabeled)	129, 132, 133, 136, 138, 139, 236
2,3,4,4',5,6-Hexabromodiphenyl ether (HexaBDE) (unlabeled)	129, 132, 133, 136, 138, 139, 236
Hexachloro-1,3-butadiene (13C4, 99%)	189
Hexachloro-1,3-butadiene (unlabeled)	189
Hexachlorobenzene (13C6, 99%)	177, 181, 195, 200, 211, 220, 222, 223, 224, 227, 228, 229, 230, 231, 232, 233, 234, 235
Hexachlorobenzene (unlabeled)	177, 181, 195, 211, 220, 222, 223, 225, 228, 229, 231, 232, 235, 236
2,2',3,3',4,4'-Hexachlorobiphenyl (HexaCB) (13C12, 99%)	78, 94, 95, 102, 103, 112, 113, 116
2,2',3,3',4,4'-Hexachlorobiphenyl (HexaCB) (unlabeled)	81, 112, 114, 118
2,2',3,3',4,6'-Hexachlorobiphenyl (HexaCB) (unlabeled)	81, 118
2,2',3,4,4',5'-Hexachlorobiphenyl (HexaCB) (13C12, 99%)	78, 51, 53, 83, 84, 87, 88, 89, 90, 91, 92, 93, 96, 97, 98, 99, 102, 103, 104, 105, 106, 109, 110, 112, 113, 115, 116, 117, 130, 131
2,2',3,4,4',5'-Hexachlorobiphenyl (HexaCB) (unlabeled)	81, 87, 102, 103, 104, 105, 107, 108, 111, 112, 114, 115, 116, 118
2,2',3,4,5,5'-Hexachlorobiphenyl (HexaCB) (13C12, 99%)	79, 104, 105, 117
2,2',3,4,5,5'-Hexachlorobiphenyl (HexaCB) (unlabeled)	81, 119
2,2',3,4',5,5'-Hexachlorobiphenyl (HexaCB) (unlabeled)	81, 112, 114, 115, 116
2,2',3,4',5,6'-Hexachlorobiphenyl (HexaCB) (unlabeled)	81, 104, 105, 108, 111, 112, 114, 118
2,2',3,5,5,6'-Hexachlorobiphenyl (HexaCB) (unlabeled)	81, 112, 114, 118
2,2',4,4',5,5'-Hexachlorobiphenyl (HexaCB) (13C12, 99%)	79, 87, 88, 102, 103, 104, 105, 106, 112, 113, 115, 117, 158, 159, 235
2,2',4,4',5,5'-Hexachlorobiphenyl (HexaCB) (unlabeled)	81, 87, 102, 103, 104, 105, 107, 108, 111, 112, 114, 115, 116, 118, 235
2,2',4,4',6,6'-Hexachlorobiphenyl (HexaCB) (13C12, 99%)	79, 82, 84, 109, 110, 116
2,2',4,4',6,6'-Hexachlorobiphenyl (HexaCB) (unlabeled)	81, 82, 85, 108, 111, 115, 118, 119, 120, 236
2,3,3',4,4',5-Hexachlorobiphenyl (HexaCB) (13C12, 99%)	51, 52, 58, 79, 82, 84, 86, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 109, 110, 113, 115, 116
2,3,3',4,4',5-Hexachlorobiphenyl (HexaCB) (unlabeled)	50, 81, 82, 85, 86, 89, 90, 92, 94, 95, 96, 97, 98, 101, 108, 111, 112, 114, 115, 116, 118, 236
2,3,3',4,4',5'-Hexachlorobiphenyl (HexaCB) (13C12, 99%)	51, 52, 58, 79, 82, 84, 86, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 109, 110, 113, 116
2,3,3',4,4',5'-Hexachlorobiphenyl (HexaCB) (unlabeled)	50, 81, 82, 85, 86, 89, 90, 92, 94, 95, 96, 97, 98, 101, 108, 111, 112, 114, 118, 236

Product	Page
2,3,3',4,4',6-Hexachlorobiphenyl (HexaCB) (unlabeled)	81, 112, 114, 118
2,3,3',4,5,5'-Hexachlorobiphenyl (HexaCB) (13C12, 99%)	79, 86, 87, 88, 94, 95
2,3,3',4,5,5'-Hexachlorobiphenyl (HexaCB) (unlabeled)	81, 119
2,3,3',4',5,5'-Hexachlorobiphenyl (HexaCB) (unlabeled)	81, 109, 111, 118
2,3',4,4',5,5'-Hexachlorobiphenyl (HexaCB) (13C12, 99%)	51, 52, 58, 79, 82, 84, 86, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 109, 110, 113, 116, 117, 158, 159
2,3',4,4',5,5'-Hexachlorobiphenyl (HexaCB) (unlabeled)	50, 81, 82, 85, 86, 89, 90, 92, 94, 95, 96, 97, 98, 101, 109, 111, 112, 114, 115, 118, 119, 236
3,3',4,4',5,5'-Hexachlorobiphenyl (HexaCB) (13C12, 99%)	51, 52, 54, 55, 57, 58, 79, 82, 84, 86, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 109, 110, 183
3,3',4,4',5,5'-Hexachlorobiphenyl (HexaCB) (unlabeled)	50, 54, 56, 81, 82, 85, 86, 89, 90, 92, 94, 95, 96, 97, 98, 101, 109, 111, 118, 120, 236
Hexachlorocyclopentadiene (13C4, 99%)	189
1,5,5,6,6,10-Hexachlorodecane (13C10, 99%)	175, 181
1,5,5,6,6,10-Hexachlorodecane (unlabeled)	175, 181
1,2,3,4,6,7-Hexachlorodibenzofuran (HexaCDF) (unlabeled)	24
1,2,3,4,6,8-Hexachlorodibenzofuran (HexaCDF) (unlabeled)	23, 24, 34, 68
1,2,3,4,6,9-Hexachlorodibenzofuran (HexaCDF) (13C12, 99%)	20, 42, 43, 44, 45, 58, 59, 60, 61
1,2,3,4,6,9-Hexachlorodibenzofuran (HexaCDF) (unlabeled)	24
1,2,3,4,7,8-Hexachlorodibenzofuran (HexaCDF) (13C12, 99%)	20, 31, 32, 33, 34, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 48, 51, 52, 54, 55, 57, 58, 59, 60, 61, 62, 63, 64, 65
1,2,3,4,7,8-Hexachlorodibenzofuran (HexaCDF) (unlabeled)	23, 24, 31, 32, 33, 34, 36, 38, 39, 40, 41, 42, 44, 46, 47, 48, 49, 50, 54, 56, 59, 60, 61, 62, 66, 67, 236
1,2,3,4,7,9-Hexachlorodibenzofuran (HexaCDF) (unlabeled)	24
1,2,3,4,8,9-Hexachlorodibenzofuran (HexaCDF) (unlabeled)	23, 24, 34, 68
1,2,3,6,7,8-Hexachlorodibenzofuran (HexaCDF) (13C12, 99%)	20, 31, 32, 33, 34, 36, 37, 40, 41, 42, 43, 44, 45, 46, 51, 52, 54, 55, 57, 58, 59, 60, 61, 62, 63, 64, 65
1,2,3,6,7,8-Hexachlorodibenzofuran (HexaCDF) (unlabeled)	23, 24, 31, 32, 33, 34, 36, 38, 39, 40, 41, 42, 44, 46, 47, 48, 49, 50, 54, 56, 59, 60, 61, 62, 66, 67, 236
1,2,3,6,7,9-Hexachlorodibenzofuran (HexaCDF) (unlabeled)	24
1,2,3,6,8,9-Hexachlorodibenzofuran (HexaCDF) (unlabeled)	24
1,2,3,7,8,9-Hexachlorodibenzofuran (HexaCDF) (13C12, 99%)	20, 31, 32, 33, 34, 36, 37, 40, 41, 42, 43, 44, 45, 46, 51, 52, 54, 55, 57, 58, 59, 60, 61, 62, 63, 64
1,2,3,7,8,9-Hexachlorodibenzofuran (HexaCDF) (unlabeled)	23, 24, 31, 32, 33, 34, 36, 38, 39, 40, 41, 42, 44, 46, 47, 48, 49, 50, 54, 56, 59, 60, 61, 62, 66, 67, 236
1,2,4,6,7,8-Hexachlorodibenzofuran (HexaCDF) (unlabeled)	24
1,2,4,6,7,9-Hexachlorodibenzofuran (HexaCDF) (unlabeled)	24
1,2,4,6,8,9-Hexachlorodibenzofuran (HexaCDF) (unlabeled)	24
1,3,4,6,7,8-Hexachlorodibenzofuran (HexaCDF) (unlabeled)	24
1,3,4,6,7,9-Hexachlorodibenzofuran (HexaCDF) (unlabeled)	24
2,3,4,6,7,8-Hexachlorodibenzofuran (HexaCDF) (13C12, 99%)	20, 31, 32, 33, 34, 40, 41, 42, 43, 44, 45, 46, 51, 52, 54, 55, 57, 58, 59, 60, 61, 62, 63, 64, 65
2,3,4,6,7,8-Hexachlorodibenzofuran (HexaCDF) (unlabeled)	23, 24, 31, 32, 33, 34, 36, 38, 39, 40, 41, 42, 44, 46, 47, 48, 49, 50, 54, 56, 59, 60, 61, 62, 66, 67, 236
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin (HexaCDD) (13C12, 99%)	17, 51, 52, 62, 63
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin (HexaCDD) (unlabeled)	19, 25, 68
1,2,3,4,6,8-Hexachlorodibenzo-p-dioxin (HexaCDD) (unlabeled)	25
1,2,3,4,6,9-Hexachlorodibenzo-p-dioxin (HexaCDD) (unlabeled)	25
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HexaCDD) (13C12, 99%)	17, 31, 32, 33, 34, 36, 37, 40, 41, 42, 43, 44, 45, 46, 51, 52, 54, 55, 57, 58, 59, 60, 61, 62, 63, 64, 65
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HexaCDD) (unlabeled)	19, 25, 31, 32, 33, 34, 36, 38, 39, 40, 41, 42, 44, 46, 47, 48, 49, 50, 54, 56, 59, 60, 61, 62, 66, 67, 236

Index

Product	Page
4-MeSO ₂ -2,2',4',5,5'-pentachlorobiphenyl (unlabeled)	122
4-MeSO ₂ -2,3,3',4',6-pentachlorobiphenyl (unlabeled)	122
3-MeSO ₂ -2,2',4',5-tetrachlorobiphenyl (unlabeled)	122
4-MeSO ₂ -2,2',4',5-tetrachlorobiphenyl (unlabeled)	122
3-MeSO ₂ -4-Me-2',3',4',5,5'-pentachlorobiphenyl (unlabeled)	122
3-MeSO ₂ -DDE (unlabeled)	122
Methamidophos (dimethyl-D ₆ , 98%)	213, 220
Methamidophos (unlabeled)	213, 220
Methanol (D ₄ , 99.8%)	190
Method 23 Alternate Recovery Standard Stock Solution	36, 37
Method 23 Calibration Solutions	36
Method 23 Daily Calibration Check Standard	36
Method 23 Internal Standard Stock Solution	36, 37
Method 23 Recovery Standard Stock Solution	36, 37
Method 23 "Starter Kit"	36
Method 23 Surrogate Standard Stock Solution	36, 37
Method 1613 Calibration Solutions	31, 32
Method 1613 Cleanup Standard	32, 33
Method 1613 Daily Calibration Check Standard	31
Method 1613 Daily Calibration Plus Window Definer and Isomer Specificity Solution	34
Method 1613 Internal Standard Spiking Solution	32, 33
Method 1613 Labeled Compound Stock Solution	32, 33
Method 1613 Precision and Recovery Standard Solution	32, 33
Method 1613 "Starter Kit"	32
Method 1653A Labeled Chlorophenolic Derivatives Mixture	196
Method 1653A Other Chlorophenolics Mixture-1	196
Method 1653A Other Chlorophenolics Mixture-2	197
Method 1653A Regulated Chlorophenolics Mixture-1	196
Method 1653A Regulated Chlorophenolics Mixture-2	196
Method 1653 Unlabeled Chloroguaiacol Cocktail	197
Method 1668A/B/C Calibration Solutions	82, 83
Method 1668A/B/C Calibration Verification Solution	82
Method 1668A/B/C High Sensitivity Calibration Solution	82
Method 1668A/B/C Labeled Cleanup Standard Solution	83, 84, 110
Method 1668A/B/C Labeled Injection Internal Standard Solution	83, 84, 110
Method 1668A/B/C Labeled Toxics/LOC/Window Defining Solution	83, 84, 110
Method 1668A/B/C Native Toxics/LOC Solution	83, 85
Method 1668A/B/C "Starter Kit"	83
Method 8280 Calibration Solutions	47, 48
Method 8280 Cleanup Standard Solution	47, 49
Method 8280 Internal Standard Solution	47, 49
Method 8280 Matrix Spiking Solution	47, 49
Method 8280 Recovery Standard Solution	47, 49
Method 8280 "Starter Kit"	47
Method 8290 Calibration Solutions	38
Method 8290 Matrix Spiking Solution	38, 39
Method 8290 Matrix Spiking Solution (1:50 dilution)	39
Method 8290 Recovery Standard Solution	38, 39
Method 8290 Sample Fortification Solution	38, 39
Method 8290 "Starter Kit"	38
Methomyl (acetohydroxamate- ¹³ C ₂ , 99%; ¹⁵ N, 98%)	181, 214, 220
Methomyl (unlabeled)	181, 214, 220
4-Methoxy-2,2',3,4',5,5',6-heptachlorobiphenyl (¹³ C ₁₂ , 99%)	202, 204
4-Methoxy-2,2',3,4',5,5',6-heptachlorobiphenyl (unlabeled)	122, 202, 203, 204, 205
4-Methoxy-2,2',3,4',5,5',6-hexachlorobiphenyl (¹³ C ₁₂ , 99%)	122, 202, 204
4-Methoxy-2,2',3,4',5,5',6-hexachlorobiphenyl (unlabeled)	122, 202, 203, 204, 205
5'-Methoxy-2,2',4,4',5-pentabromodiphenyl ether (unlabeled)	202, 203
6-Methoxy-2,2',4,4',5-pentabromodiphenyl ether (unlabeled)	140, 202, 203
6'-Methoxy-2,2',4,4',6-pentabromodiphenyl ether (¹³ C ₁₂ , 99%)	202
2'-Methoxy-2,3',4,5'-tetrabromodiphenyl ether (unlabeled)	140
3-Methoxy-2,2',4,4'-tetrabromodiphenyl ether (unlabeled)	140, 202, 203
4-Methoxy-2,2',3,4'-tetrabromodiphenyl ether (unlabeled)	140, 202, 203
4'-Methoxy-2,2',4,5'-tetrabromodiphenyl ether (unlabeled)	140, 202, 203
5-Methoxy-2,2',4,4'-tetrabromodiphenyl ether (unlabeled)	140, 202, 203
6-Methoxy-2,2',4,4'-tetrabromodiphenyl ether (ring- ¹³ C ₁₂ , 99%)	140, 202
6-Methoxy-2,2',4,4'-tetrabromodiphenyl ether (unlabeled)	140, 202, 203
4-Methoxy-2,3,3',4',5-pentachlorobiphenyl (¹³ C ₁₂ , 99%)	122, 202, 204
4-Methoxy-2,3,3',4',5-pentachlorobiphenyl (unlabeled)	122, 202, 203, 204, 205
Methoxychlor (ring- ¹³ C ₂ , 99%)	181, 211, 220, 227, 232, 233
Methoxychlor (unlabeled)	181, 211, 220, 232
DL-2-Methoxyestradiol (13,14,15,16,17,18- ¹³ C ₆ , 99%)	168
2-Methoxyestradiol (unlabeled)	168
DL-4-Methoxyestradiol (13,14,15,16,17,18- ¹³ C ₆ , 99%)	168
4-Methoxyestradiol (unlabeled)	168
DL-2-Methoxyestrone (13,14,15,16,17,18- ¹³ C ₆ , 99%)	168
2-Methoxyestrone (unlabeled)	168
DL-4-Methoxyestrone (13,14,15,16,17,18- ¹³ C ₆ , 99%)	168
4-Methoxyestrone (unlabeled)	168
2-Methyl-1-naphthol (5,6,7,8,9,10- ¹³ C ₆ , 99%)	156
2-Methyl-1-naphthol (unlabeled)	156
5-Methylchrycene (¹³ C ₆ , 99%)	148, 151, 156
5-Methylchrycene (methyl-D ₃ , 98%)	156
5-Methylchrycene (unlabeled)	154, 156
N-Methyldiethanolamine (unlabeled)	238, 240
Methylene chloride (¹³ C, 99%)	190
Methylene chloride (D ₂ , 99.9%)	190, 201
2-Methylisoborneol (2-methyl-D ₃ , 98%)	171

Product	Page
1-Methylnaphthalene (D ₁₀ , 98%)	156
2-Methylnaphthalene (¹³ C ₆ , 99%)	156
2-Methylnaphthalene (D ₁₀ , 98%)	153, 156
2-Methylnaphthalene (unlabeled)	155, 156
Methyl paraben (methyl 4-hydroxybenzoate) (ring- ¹³ C ₆ , 99%)	165, 182
Methyl paraben (methyl 4-hydroxybenzoate) (unlabeled)	165, 182
4-Methylphenol (p-Cresol) (D ₈ , 98%)	198
2-(4-Methylphenyl) propane (D ₁₄ , 98%)	190
Methylphosphonic acid (¹³ C, 99%; methyl-D ₃ , 98%)	213, 220, 238
Methylphosphonic acid (methyl-D ₃ , 98%)	213, 220, 238
Methylphosphonic acid (unlabeled)	213, 220, 238, 240
Methylphosphonic acid, mono-(1,2,2-trimethylpropyl) ester (trimethylpropyl- ¹³ C ₆ , 99%)	213, 221, 239
Methylphosphonic acid, mono-(1,2,2-trimethylpropyl) ester (unlabeled)	238, 240
Methylphosphonic acid, monocyclohexyl ester (unlabeled)	240
Methylphosphonic acid, monoethyl ester (unlabeled)	238, 240
Methylphosphonic acid, monoisopropyl ester (unlabeled)	238, 240
Methyl triclosan (2,4,4-trichloro-2-methoxydiphenyl ether) (ring- ¹³ C ₁₂ , 99%)	165, 202, 204
Methyl triclosan (2,4,4-trichloro-2-methoxydiphenyl ether) (unlabeled)	165, 202, 203, 204, 205
4-Methylumbelliferone (2,3,4-methyl- ¹³ C ₄ , 99%)	170
4-Methylumbelliferone (unlabeled)	170
Methylphosphonic acid, monocyclohexyl ester (cyclohexyl- ¹³ C ₆ , 99%)	238
Methylphosphonic acid, monocyclohexyl ester (unlabeled)	238
Metolachlor (ring- ¹³ C ₆ , 99%)	181, 220
Metolachlor (unlabeled)	181, 220
Mirex (¹³ C ₁₀ , 99%)	181, 209, 211, 220, 222, 223, 224, 227, 228, 229, 230, 231, 232, 233, 234
Mirex (¹³ C ₈ , 99%)	209, 211, 220
Mirex (unlabeled)	181, 209, 211, 220, 222, 223, 225, 228, 229, 231, 232, 235, 236
Modified JIS Dioxin/Furan Calibration Solutions	42
Modified JIS Dioxin/Furan Cleanup Spike	43
Modified JIS Dioxin/Furan Syringe Spike	43
Modified JIS Low Concentration Cleanup Spike	45
Modified JIS Low Concentration Dioxin/Furan Calibration Solutions	44
Modified JIS Low Concentration Syringe Spike	45
Modified JIS PCB Alternate A Extended Calibration Solutions	90
Modified JIS PCB Alternate B Calibration Solutions	92
Modified JIS PCB Alternate B Cleanup Solution	93
Modified JIS PCB Alternate B Syringe Spike	93
Modified JIS PCB Calibration Solutions	89
Modified JIS PCB Cleanup Spike	91
Modified JIS PCB Extended Calibration Solutions	89
Modified JIS PCB Sampling Spike	53, 91, 93, 99
Modified JIS PCB Syringe Spike	53, 91
Mono-[2-(carboxymethyl) hexyl] phthalate (DEHP Metabolite IV) (¹³ C ₄ , 99%)	172
Mono-[2-(carboxymethyl) hexyl] phthalate (DEHP Metabolite IV) (unlabeled)	172
Mono-(2-ethyl-5-carboxypentyl) phthalate (DEHP Metabolite V) (¹³ C ₄ , 99%)	173
Mono-(2-ethyl-5-carboxypentyl) phthalate (DEHP Metabolite V) (unlabeled)	173
Mono-(2-ethyl-5-hydroxyhexyl)phthalate (DEHP Metabolite IX) (¹³ C ₄ , 99%)	173
Mono-(2-ethyl-5-hydroxyhexyl)phthalate (DEHP Metabolite IX) (unlabeled)	173
Mono-(2-ethyl-5-oxohexyl)phthalate (DEHP Metabolite VI) (¹³ C ₄ , 99%)	173
Mono-(2-ethyl-5-oxohexyl)phthalate (DEHP Metabolite VI) (unlabeled)	173
Mono-2-ethylhexyl phthalate (ring-1,2- ¹³ C ₂ , dicarboxyl- ¹³ C ₂ , 99%)	173
Mono-2-ethylhexyl phthalate (unlabeled)	173
Mono-2-methoxyethyl phthalate (unlabeled)	173
Mono-(3-carboxypropyl) phthalate (ring-1,2- ¹³ C ₂ , dicarboxyl- ¹³ C ₂ , 99%)	172
Mono-(3-carboxypropyl) phthalate (unlabeled)	172
Mono-3-hydroxybutyl phthalate (unlabeled)	173
Monobenzyl phthalate (ring-1,2- ¹³ C ₂ , dicarboxyl- ¹³ C ₂ , 99%)	172
Monobenzyl phthalate (unlabeled)	172
2-Monobromodiphenyl ether (MonoBDE) (unlabeled)	126, 136, 138, 139
3-Monobromodiphenyl ether (MonoBDE) (unlabeled)	126, 136, 138, 139
4-Monobromodiphenyl ether (MonoBDE) (¹³ C ₁₂ , 99%)	125, 132, 133, 136, 137, 138
4-Monobromodiphenyl ether (MonoBDE) (unlabeled)	126, 132, 133, 136, 138, 139, 236
2-Monochlorobiphenyl (MonoCB) (¹³ C ₁₂ , 99%)	77, 82, 84, 109, 110
2-Monochlorobiphenyl (MonoCB) (unlabeled)	80, 82, 85, 108, 111, 118, 120, 236
4-Monochlorobiphenyl (MonoCB) (¹³ C ₁₂ , 99%)	77, 82, 84, 102, 103, 106, 109, 110
4-Monochlorobiphenyl (MonoCB) (unlabeled)	80, 82, 85, 102, 103, 108, 111, 118, 120, 236
2-Monochlorodibenzofuran (MonoCDF) (unlabeled)	67
2-Monochlorodibenzo-p-dioxin (MonoCDD) (unlabeled)	67
1-Monochloronaphthalene (MonoCN) (unlabeled)	160
2-Monochloronaphthalene (MonoCN) (¹³ C ₁₀ , 99%)	160
2-Monochloronaphthalene (MonoCN) (unlabeled)	160, 162
Monocyclohexyl phthalate (ring-1,2- ¹³ C ₂ , dicarboxyl- ¹³ C ₂ , 99%)	172
Monocyclohexyl phthalate (unlabeled)	172
Mono-Deca PCB Mixture	106
Mono-Deca Plus Predominant PCB Calibration Solutions	102
Mono-Deca Plus Predominant PCB Syringe Spike	103
Mono-Deca Plus Predominant PCBs	103
Monoethyl phthalate (ring-1,2- ¹³ C ₂ , dicarboxyl- ¹³ C ₂ , 99%)	173
Monoethyl phthalate (unlabeled)	173
Mono-Hexa Chlorobenzene Solution	195
Monoisobutyl phthalate (unlabeled)	173

Index

Product	Page	Product	Page
Monoisodecyl phthalate (ring-1,2- ¹³ C ₂ , dicarboxyl- ¹³ C ₂ , 99%)	173	NNAL (4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol) (1,2',3',4',5',5',6'- ¹³ C ₆ , 99%)	170
Monoisodecyl phthalate (mono-3,7-dimethylhexyl phthalate) (unlabeled)	173	NNAL (4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol) (unlabeled)	170
Monoisooctyl phthalate (mono-3,5,5-trimethylhexyl phthalate) (ring-1,2- ¹³ C ₂ , dicarboxyl- ¹³ C ₂ , 99%)	173	NNK (Nicotine-derived nitrosamine ketone) (1,2',3',4',5',6'- ¹³ C ₆ , 99%)	170
Monoisooctyl phthalate (mono-3,5,5-trimethylhexyl phthalate) (unlabeled)	173	NNK (Nicotine-derived nitrosamine ketone) (unlabeled)	170
Monoisopropyl phthalate (unlabeled)	173	NNN (N-Nitrosornicotine) (2,2',3,4,5,6- ¹³ C ₆ , 99%)	170
Monomethyl isophthalate (ring- ¹³ C ₆ , 99%)	173	NNN (N-Nitrosornicotine) (2,4,5,6-D ₄ , 98%)	170
Monomethyl isophthalate (unlabeled)	173	NNN (N-Nitrosornicotine) (unlabeled)	170
Monomethyl phthalate (ring-1,2- ¹³ C ₂ , dicarboxyl- ¹³ C ₂ , 99%)	173	Non-2,3,7,8-Containing PCDF Cleanup Standard	64
Monomethyl phthalate (unlabeled)	173	2,2',3,3',4,4',5,5',6-Nonabromodiphenyl ether (NonaBDE) (¹³ C ₁₂ , 99%)	126, 134, 135, 142, 143
Mono- <i>n</i> -butyl phthalate (ring-1,2- ¹³ C ₂ , dicarboxyl- ¹³ C ₂ , 99%)	172	2,2',3,3',4,4',5,5',6-Nonabromodiphenyl ether (NonaBDE) (unlabeled)	129, 132, 133, 134, 135, 142, 236
Mono- <i>n</i> -butyl phthalate (unlabeled)	172	2,2',3,3',4,4',5,6,6'-Nonabromodiphenyl ether (NonaBDE) (¹³ C ₁₂ , 99%)	126, 132, 133, 134, 135, 142, 143
Mono- <i>n</i> -octyl phthalate (ring-1,2- ¹³ C ₂ , dicarboxyl- ¹³ C ₂ , 99%)	173	2,2',3,3',4,4',5,6,6'-Nonabromodiphenyl ether (NonaBDE) (unlabeled)	129, 132, 133, 134, 135, 142, 236
Mono- <i>n</i> -octyl phthalate (unlabeled)	173	2,2',3,3',4,5,5',6,6'-Nonabromodiphenyl ether (NonaBDE) (¹³ C ₁₂ , 99%)	126, 134, 135, 142, 143
Mono- <i>n</i> -pentyl phthalate (unlabeled)	173	2,2',3,3',4,5,5',6,6'-Nonabromodiphenyl ether (NonaBDE) (unlabeled)	129, 134, 135, 142
Mono-Octa PCN Native Mixture	162	<i>cis</i> -Nonachlor (¹³ C ₁₀ , 99%)	181, 209, 211, 220, 222, 223, 224, 227, 228, 229, 230, 232, 233, 234
Mono-Ortho Native PCB Solution	101	<i>cis</i> -Nonachlor (unlabeled)	181, 209, 211, 220, 222, 223, 225, 228, 229, 232, 235, 236
Mono-Ortho PCB Mixture – *High Purity	100	<i>trans</i> -Nonachlor (¹³ C ₁₀ , 99%)	181, 209, 211, 220, 222, 223, 224, 227, 228, 229, 230, 231, 232, 233, 234
5-(4-Morpholinylmethyl)-3-amino-2-oxazolidinone (AMOZ) (4,4,5,5',5'-D ₅ , 98%)	171	<i>trans</i> -Nonachlor (unlabeled)	181, 209, 211, 220, 222, 223, 225, 228, 229, 231, 232, 235, 236
5-(4-Morpholinylmethyl)-3-amino-2-oxazolidinone (AMOZ) (unlabeled)	171	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (NonaCB) (¹³ C ₁₂ , 99%)	79, 83, 84, 102, 103, 109, 110, 113
Multi-Analyte Recovery Spiking Standard	57, 113, 203, 205, 233	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (NonaCB) (unlabeled)	81, 82, 85, 102, 103, 109, 111, 112, 114, 118, 120, 236
Multi-Class Pesticide Internal Standard	227	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (NonaCB) (¹³ C ₁₂ , 99%)	57, 80, 83, 84, 106, 109, 110, 113, 142, 143, 202, 203, 204, 205, 231, 232, 233
Multi-Class Pesticide Native Standard	227	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (NonaCB) (unlabeled)	81, 82, 85, 109, 111, 118, 120, 236
Multi-Functional PAR Spike	236	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (NonaCB) (unlabeled)	81, 82, 85, 109, 111, 118, 120, 236
Musk ketone (<i>tert</i> -butyl-D ₉ , 98%)	181	<i>n</i> -Nonadecane (D ₂₀ , 98%)	186
Musk ketone (unlabeled)	181	<i>n</i> -Nonane (D ₁₀ , 98%)	186
		<i>n</i> -Nonane (unlabeled)	190
N		Non-Ortho Native PCB Solution	101
NAB (N'-Nitrosoanabasine) (¹³ C ₆ , 99%)	170	<i>p</i> - <i>n</i> -Nonylphenol (ring- ¹³ C ₆ , 99%)	175, 181
NAB (N'-Nitrosoanabasine) (unlabeled)	170	<i>p</i> - <i>n</i> -Nonylphenol (unlabeled)	175, 181
Naphthalene (¹³ C ₁₀ , 99%)	151	<i>p</i> -Nonylphenol – technical grade (unlabeled)	175
Naphthalene (¹³ C ₆ , 99%)	148, 151, 181	<i>p</i> - <i>n</i> -Nonylphenol diethoxylate (ring- ¹³ C ₆ , 99%)	175, 182
Naphthalene (D ₈ , 99%)	149, 152, 153, 200	<i>p</i> - <i>n</i> -Nonylphenol diethoxylate (unlabeled)	175, 182
Naphthalene (D ₈ , 99.5%)	149	Nonylphenol diethoxylate-branched isomers (unlabeled)	175, 182
Naphthalene (unlabeled)	150, 154, 155, 181, 237	<i>p</i> - <i>n</i> -Nonylphenol + mono-/di-/tri-ethoxylates (set of individual standards)	175
Naproxen (methyl- ¹³ C, 99% methyl-D ₃ , 98%)	169	<i>p</i> - <i>n</i> -Nonylphenol monoethoxylate (ring- ¹³ C ₆ , 99%)	175, 182
Naproxen (unlabeled)	169	<i>p</i> - <i>n</i> -Nonylphenol monoethoxylate (unlabeled)	175, 182
NAT (N'-Nitrosoanatasine) (¹³ C ₆ , 99%)	170	Nonylphenol monoethoxylate-branched isomers (unlabeled)	175, 182
NAT (N'-Nitrosoanatabine) (unlabeled)	170	<i>p</i> - <i>n</i> -Nonylphenol triethoxylate (ring- ¹³ C ₆ , 99%)	175, 182
Natural Matrix Reference Material (Soil)	35	Nonylphenoxyacetic acid – ring/chain isomers (unlabeled)	175
DL-Nicotine (3',4',5'- ¹³ C ₃ , 99%)	170, 181	<i>p</i> - <i>n</i> -Nonylphenoxyethoxyacetic acid (unlabeled)	175
Nicotine (unlabeled)	170, 181	DL-Norcotinine (3',4',5'- ¹³ C ₃ , 99%)	170
5-Nitroacenaphthene (D ₈ , 98%)	156	Norcotinine (unlabeled)	170
5-Nitroacenaphthene (unlabeled)	156	Norethindrone (ethynyl- ¹³ C ₂ , 99%)	168
2-Nitroaniline (ring-D ₆ , 98%)	190	Norfluoxetine oxalate (D ₈ , 98%)	169
9-Nitroanthracene (D ₈ , 98%)	156	Norfluoxetine oxalate (unlabeled)	169
9-Nitroanthracene (unlabeled)	156	DL-Nornicotine (3',4',5'- ¹³ C ₃ , 99%)	170
Nitrobenzene (¹³ C ₆ , 99%)	185	Nornicotine (unlabeled)	170
Nitrobenzene (D ₅ , 99%)	185, 190, 198, 201	19-Nortestosterone (16,16,17-D ₃ , 98%)	168
Nitrobenzene (unlabeled)	185, 190	19-Nortestosterone (unlabeled)	168
6-Nitrochrysene (D ₁₁ , 98%)	156		
6-Nitrochrysene (unlabeled)	156	O	
N-Nitrodimethylamine (dimethyl-D ₆ , 98%)	176	OctaBDE Technical Mix (DE-79™)	140
N-Nitrodimethylamine (unlabeled)	176	Octabromodibenzofuran (OctaBDF) (¹³ C ₁₂ , 99%)	27, 70, 71, 72, 73
3-Nitrofluoranthene (D ₈ , 98%) CP 87%	156	Octabromodibenzofuran (OctaBDF) (unlabeled)	27, 70, 71, 72
3-Nitrofluoranthene (unlabeled) CP 87%	156	Octabromodibenzo- <i>p</i> -dioxin (OctaBDD) (¹³ C ₁₂ , 99%)	26, 70, 71, 72, 73
2-Nitrofluorene (D ₈ , 98%)	156	Octabromodibenzo- <i>p</i> -dioxin (OctaBDD) (unlabeled)	26, 70, 71, 72, 74
2-Nitrofluorene (unlabeled)	156	2,2',3,3',4,4',6,6'-Octabromodiphenyl ether (OctaBDE) (¹³ C ₁₂ , 99%)	126, 134, 135, 142, 143
Nitrofurazone (carbonyl- ¹³ C, 99%; hydrazine- ¹⁵ N ₂ , 98%)	169	2,2',3,3',4,4',6,6'-Octabromodiphenyl ether (OctaBDE) (unlabeled)	129, 134, 135, 142
Nitrofurazone (unlabeled)	169	2,2',3,4,4',5,5',6-Octabromodiphenyl ether (OctaBDE) (¹³ C ₁₂ , 99%)	126, 142, 143
Nitroglycerin (¹⁵ N ₃ , 98%)	185	2,2',3,3',4,4',5,5',6-Octabromodiphenyl ether (OctaBDE) (unlabeled)	129, 132, 133, 142, 236
Nitroglycerin (unlabeled)	185	2,2',3,4,4',5,6,6'-Octabromodiphenyl ether (OctaBDE) (¹³ C ₁₂ , 99%)	126, 132, 133
2-Nitrophenol (ring-D ₄ , 98%)	190, 198, 200	2,2',3,4,4',5,6,6'-Octabromodiphenyl ether (OctaBDE) (unlabeled)	129, 132, 133, 236
4-Nitrophenol (ring-D ₄ , 98%)	190, 198, 200		
1-Nitropyrene (D ₉ , 98%)	156		
1-Nitropyrene (unlabeled)	156		
N-Nitrosodiethylamine (D ₁₀ , 98%)	176		
N-Nitrosodiethylamine (unlabeled)	176		
N-Nitrosodimethylamine (¹³ C ₂ , 99%; D ₆ , 98%)	171, 176		
N-Nitrosodimethylamine (D ₆ , 98%)	176, 200		
N-Nitrosodimethylamine (¹⁵ N ₂ , 98%)	176		
N-Nitrosodimethylamine (unlabeled)	176		
N-Nitrosodi- <i>n</i> -propylamine (D ₁₄ , 98%)	176, 200		
N-Nitrosodi- <i>n</i> -propylamine (unlabeled)	176		
N-Nitrosodiphenylamine (2,2',4,4',6,6'-D ₆ , 98%)	176		
N-Nitrosodiphenylamine (unlabeled)	176		
N-Nitrosomorpholine (D ₈ , 98%)	176		
N-Nitrosomorpholine (unlabeled)	176		
N-Nitrosopyrrolidine (D ₈ , 98%)	176		
N-Nitrosopyrrolidine (unlabeled)	176		
2-Nitrotoluene (ring- ¹³ C ₆ , 99%)	185		
2-Nitrotoluene (unlabeled)	185		
4-Nitrotoluene (ring- ¹³ C ₆ , 99%)	181, 185		
4-Nitrotoluene (unlabeled)	181, 185		

Index

Product	Page	Product	Page
2,3,3',4,4',5,5',6-Octabromodiphenyl ether (OctaBDE) (¹³ C ₁₂ , 99%)	126	Parlar 32 (¹³ C ₁₀ , 99%)	182, 215, 220
2,3,3',4,4',5,5',6-Octabromodiphenyl ether (OctaBDE) (unlabeled)	129	Parlar 32 (unlabeled)	182, 215, 220
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (OctaCB) (¹³ C ₁₂ , 99%)	79, 83, 84, 102, 103, 106, 109, 110, 113	Parlar 38 (unlabeled)	182, 215, 220
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (OctaCB) (unlabeled)	81, 102, 103, 109, 111, 112, 114, 118, 120	Parlar 39 (¹³ C ₁₀ , 99%)	182, 215, 220, 226
2,2',3,3',4,4',5,6-Octachlorobiphenyl (OctaCB) (unlabeled)	81, 109, 111, 112, 114, 118	Parlar 39 (unlabeled)	182, 215, 220
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (OctaCB) (unlabeled)	81, 112, 114	Parlar 40 (unlabeled)	215, 220, 226
2,2',3,3',4,5,5',6'-Octachlorobiphenyl (OctaCB) (unlabeled)	81, 119	Parlar 41 (unlabeled)	182, 215, 220, 226
2,2',3,3',4,5,5',6'-Octachlorobiphenyl (OctaCB) (unlabeled)	81, 109, 111	Parlar 44 (unlabeled)	182, 215, 220, 226
2,2',3,3',4,5,5',6'-Octachlorobiphenyl (OctaCB) (¹³ C ₁₂ , 99%)	79, 83, 84, 109, 110	Parlar 50 (¹³ C ₁₀ , 99%)	182, 215, 221, 226, 232, 233
2,2',3,3',4,5,5',6'-Octachlorobiphenyl (OctaCB) (unlabeled)	81, 112, 114, 118	Parlar 50 (unlabeled)	182, 215, 221, 226, 232
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (OctaCB) (unlabeled)	81, 109, 111	Parlar 62 (¹³ C ₁₀ , 99%)	183, 215, 221, 226, 232, 233
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (OctaCB) (¹³ C ₁₂ , 99%)	79, 83, 84, 109, 110	Parlar 62 (unlabeled)	183, 215, 221, 226, 232
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (OctaCB) (unlabeled)	81, 82, 85, 109, 111, 118, 120, 236	Parlar 69 (¹³ C ₁₀ , 99%)	183, 215, 221
2,2',3,3',4,4',5,5',6-Octachlorobiphenyl (OctaCB) (unlabeled)	81, 109, 111, 112, 114	Parlar 69 (unlabeled)	183, 215, 221
2,3,3',4,4',5,5',6-Octachlorobiphenyl (OctaCB) (¹³ C ₁₂ , 99%)	79, 83, 84, 109, 110	Parlar 70 (¹³ C ₁₀ , 99%)	183, 215, 221
2,3,3',4,4',5,5',6-Octachlorobiphenyl (OctaCB) (unlabeled)	81, 82, 85, 109, 111, 118, 236	Parlar 70 (unlabeled)	183, 215, 221
Octachlorodibenzofuran (OctaCDF) (¹³ C ₁₂ , 99%)	21, 40, 41, 42, 43, 44, 45, 46, 48, 51, 52, 54, 55, 57, 58, 59, 60, 61, 62, 63, 64, 65	PBDD/F Calibration Solutions	72
Octachlorodibenzofuran (OctaCDF) (unlabeled)	23, 24, 31, 32, 33, 34, 36, 38, 39, 40, 41, 42, 44, 46, 47, 48, 49, 50, 54, 56, 59, 60, 61, 62, 66, 67, 236	PBDD/F Cleanup Spike	73
Octachlorodibenzo- <i>p</i> -dioxin (OctaCDD) (¹³ C ₁₂ , 99%)	17, 31, 32, 33, 34, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 51, 52, 54, 55, 57, 58, 59, 60, 61, 62, 63, 64, 65	PBDD/F Sampling Stock	73
Octachlorodibenzo- <i>p</i> -dioxin (OctaCDD) (unlabeled)	19, 25, 31, 32, 33, 34, 36, 38, 39, 40, 41, 42, 44, 46, 47, 48, 49, 50, 54, 56, 59, 60, 61, 62, 67, 236	PBDD/F Syringe Spike Stock	73
1,1,1,3,10,12,12,12-Octachlorododecane (¹³ C ₁₂ , 99%)	175, 182	PCB Exhibit Calibration Solutions	115
1,1,1,3,10,12,12,12-Octachlorododecane (unlabeled)	175, 182	PCB Exhibit Internal Standard	116
Octachloronaphthalene (OctaCN) (¹³ C ₁₀ , 99%)	160, 161, 162	PCB Exhibit Native PAR Solution	116
Octachloronaphthalene (OctaCN) (unlabeled)	160, 161, 162	PCB Exhibit Recovery Solution	116
Octachlorostyrene (¹³ C ₈ , 99%)	190, 232, 233	PCB Mixture	106, 107, 119
Octachlorostyrene (unlabeled)	190, 232	PCB Mixture-A	100
Octamethylcyclotetrasiloxane "D ₄ " (octamethyl- ¹³ C ₈ , 98%)	165	PCB Mixture (PCB-70/111/138/170)	93, 117
Octamethylcyclotetrasiloxane "D ₄ " (unlabeled)	165	PCB/Pollutant Mixture	235
<i>n</i> -Octane (D ₈ , 99%)	186	PCB/Pollutant Native Mixture	235
4'-OH-2,2',3,3',4,5,5'-heptachlorobiphenyl (¹³ C ₁₂ , 99%)	122	PCB Recovery Standard	119
3'-OH-2,2',3,4,4',5'-hexachlorobiphenyl (¹³ C ₁₂ , 99%)	122	PCB Recovery Standard (PCB-9/118/188)	117
4-OH-2,2',3,4',5,5'-hexachlorobiphenyl (¹³ C ₁₂ , 99%)	122	PCB Syringe Spike	99, 117
4-OH-2,3,3',4',5-pentachlorobiphenyl (¹³ C ₁₂ , 99%)	122	PCB Window Defining Mixture	120
4'-OH-3,3',4,5-tetrachlorobiphenyl (¹³ C ₁₂ , 99%)	122	PCDD/PCDF Window Defining and Isomer Specificity Mix (DB-5 and DB-225 Columns)	68
Oxybenzone (phenyl- ¹³ C ₆ , 99%)	165	PCN Calibration Solutions	161
Oxybenzone (unlabeled)	165	PCN Cleanup Solution	161
Oxychlordane (¹³ C ₁₀ , 99%)	182, 209, 211, 220, 222, 223, 224, 227, 228, 229, 230, 231, 232, 233, 234	PCN Native PAR Solution	161
Oxychlordane (unlabeled)	182, 209, 211, 220, 222, 223, 225, 228, 229, 231, 232, 235, 236	PentaBDE Technical Mix (Bromkal™ 70-5)	140
Oxydemeton methyl (<i>O,O</i> -dimethyl-D ₆ , 98%)	213, 220	PentaBDE Technical Mix (DE-71™)	140
Oxydemeton methyl (unlabeled)	213, 220	Pentabromoanisole (¹³ C ₆ , 99%)	177, 202, 204
Oxypyrimidine (diazinon metabolite) (methyl-4,5,6- ¹³ C ₆ , 99%)	220	Pentabromoanisole (unlabeled)	177, 202, 203, 204, 205
Oxypyrimidine (unlabeled)	220	3,3',4,4',5-Pentabromobiphenyl (PentaBB) (¹³ C ₁₂ , 99%)	141
P		3,3',4,4',5-Pentabromobiphenyl (PentaBB) (unlabeled)	141
PAH Cocktail for CARB Method 429	152, 154	1,2,3,7,8-Pentabromodibenzofuran (PentaBDF) (¹³ C ₁₂ , 99%)	27, 70, 71, 72, 73
PAH Injection Standard	153	1,2,3,7,8-Pentabromodibenzofuran (PentaBDF) (unlabeled)	27, 70, 71, 72, 74
PAH Mixture	153	2,3,4,7,8-Pentabromodibenzofuran (PentaBDF) (¹³ C ₁₂ , 99%)	27, 70, 71, 72, 73
PAH Native Standard Mixture	155	2,3,4,7,8-Pentabromodibenzofuran (PentaBDF) (unlabeled)	27, 70, 71, 72, 74
PAH Recovery Standard	153	1,2,3,7,8-Pentabromodibenzo- <i>p</i> -dioxin (PentaBDD) (¹³ C ₁₂ , 99%)	26, 70, 71, 72, 73
PAH-SIM Recovery Standard Mixture	153, 155	1,2,3,7,8-Pentabromodibenzo- <i>p</i> -dioxin (PentaBDD) (unlabeled)	26, 70, 71, 72, 74
PAH Surrogate Cocktail	152	2,2',3,4,4'-Pentabromodiphenyl ether (PentaBDE) (unlabeled)	128, 132, 133, 136, 138, 139, 142, 236
PAH Surrogate Standard Mixture	152	2,2',4,4',5-Pentabromodiphenyl ether (PentaBDE) (¹³ C ₁₂ , 99%)	125, 130, 131, 132, 133, 134, 135, 136, 137, 138, 142, 143
PAH Two-Component Mixture	153	2,2',4,4',5-Pentabromodiphenyl ether (PentaBDE) (unlabeled)	128, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 142, 236
Parathion (diethyl-D ₁₀ , 98%)	182, 213, 220	2,2',4,4',6-Pentabromodiphenyl ether (PentaBDE) (¹³ C ₁₂ , 99%)	125, 130, 131, 136, 137, 138, 142, 143
Parathion (unlabeled)	182, 213, 220	2,2',4,4',6-Pentabromodiphenyl ether (PentaBDE) (unlabeled)	128, 130, 131, 132, 133, 136, 137, 138, 139, 142, 236
Parlar 26 (¹³ C ₁₀ , 99%)	182, 215, 220, 226, 232, 233	2,3,3',4,4'-Pentabromodiphenyl ether (PentaBDE) (unlabeled)	128
Parlar 26 (unlabeled)	182, 215, 220, 226, 232	2,3',4,4',5-Pentabromodiphenyl ether (PentaBDE) (¹³ C ₁₂ , 99%)	125, 136, 137, 138
		2,3',4,4',5-Pentabromodiphenyl ether (PentaBDE) (unlabeled)	128, 136, 138, 139
		2,3',4,4',5-Pentabromodiphenyl ether (PentaBDE) (unlabeled)	128, 132, 133, 136, 138, 139, 236
		2,3',4,4',5-Pentabromodiphenyl ether (PentaBDE) (¹³ C ₁₂ , 99%)	125, 136, 137, 138
		2,3',4,4',5-Pentabromodiphenyl ether (PentaBDE) (unlabeled)	128, 132, 133, 136, 138, 139, 236
		Pentabromophenol (¹³ C ₆ , 99%)	177, 203, 205
		Pentabromophenol (unlabeled)	177
		Pentachloroanisole (¹³ C ₆ , 99%)	177, 202, 204, 232, 233
		Pentachloroanisole (unlabeled)	177, 202, 203, 204, 205, 232
		Pentachlorobenzene (¹³ C ₆ , 99%)	177, 183, 195, 222, 223, 224, 234
		Pentachlorobenzene (unlabeled)	177, 183, 195, 222, 223, 225, 235, 236
		2,2',3,3',4-Pentachlorobiphenyl (PentaCB) (unlabeled)	80, 118
		2,2',3,4,4'-Pentachlorobiphenyl (PentaCB) (¹³ C ₁₂ , 99%)	78

Index

Product	Page	Product	Page
2,2',3,4,4'-Pentachlorobiphenyl (PentaCB) (unlabeled)	80	1,2,6,7,8-Pentachlorodibenzofuran (PentaCDF) (unlabeled)	24
2,2',3,4,5'-Pentachlorobiphenyl (PentaCB) (unlabeled)	80, 108, 111, 112, 114, 115, 116, 118	1,2,6,7,9-Pentachlorodibenzofuran (PentaCDF) (unlabeled)	24
2,2',3',4,5-Pentachlorobiphenyl (PentaCB) (¹³ C ₁₂ , 99%)	78	1,3,4,6,7-Pentachlorodibenzofuran (PentaCDF) (unlabeled)	24
2,2',3',4,5-Pentachlorobiphenyl (PentaCB) (unlabeled)	80	1,3,4,6,8-Pentachlorodibenzofuran (PentaCDF) (unlabeled)	22, 24, 34, 68
2,2',3,5',6-Pentachlorobiphenyl (PentaCB) (unlabeled)	80, 108, 111, 118	1,3,4,6,9-Pentachlorodibenzofuran (PentaCDF) (unlabeled)	24
2,2',4,4',5-Pentachlorobiphenyl (PentaCB) (unlabeled)	80, 108, 111, 112, 114, 115, 116, 118	1,3,4,7,8-Pentachlorodibenzofuran (PentaCDF) (unlabeled)	24
2,2',4,5,5'-Pentachlorobiphenyl (PentaCB) (¹³ C ₁₂ , 99%)	78, 83, 84, 87, 88, 102, 103, 104, 105, 106, 109, 110, 112, 113, 115, 116, 117, 235	1,3,4,7,9-Pentachlorodibenzofuran (PentaCDF) (unlabeled)	24
2,2',4,5,5'-Pentachlorobiphenyl (PentaCB) (unlabeled)	80, 87, 102, 103, 104, 105, 107, 108, 111, 112, 114, 115, 116, 118, 119, 235	1,3,6,7,8-Pentachlorodibenzofuran (PentaCDF) (unlabeled)	24
2,2',4,6,6'-Pentachlorobiphenyl (PentaCB) (¹³ C ₁₂ , 99%)	78, 82, 84, 109, 110	1,4,6,7,8-Pentachlorodibenzofuran (PentaCDF) (unlabeled)	24
2,2',4,6,6'-Pentachlorobiphenyl (PentaCB) (unlabeled)	80, 82, 85, 108, 111, 118, 120, 236	2,3,4,6,7-Pentachlorodibenzofuran (PentaCDF) (unlabeled)	24
2,3,3',4,4'-Pentachlorobiphenyl (PentaCB) (¹³ C ₁₂ , 99%)	51, 52, 58, 78, 82, 84, 86, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 109, 110, 112, 113, 115, 116, 117, 158, 159	2,3,4,6,8-Pentachlorodibenzofuran (PentaCDF) (unlabeled)	24
2,3,3',4,4'-Pentachlorobiphenyl (PentaCB) (unlabeled)	50, 80, 82, 85, 86, 89, 90, 92, 94, 95, 96, 97, 98, 101, 108, 111, 112, 114, 115, 116, 118, 119, 236	2,3,4,7,8-Pentachlorodibenzofuran (PentaCDF) (¹³ C ₁₂ , 99%)	20, 31, 32, 33, 34, 36, 37, 40, 41, 42, 43, 44, 45, 46, 51, 52, 54, 55, 57, 58, 59, 60, 61, 62, 63, 64, 65
2,3,3',4',6-Pentachlorobiphenyl (PentaCB) (unlabeled)	80, 104, 105, 108, 111, 112, 114, 115, 116, 118	2,3,4,7,8-Pentachlorodibenzofuran (PentaCDF) (unlabeled)	22, 24, 31, 32, 33, 34, 36, 38, 39, 40, 41, 42, 44, 46, 47, 48, 49, 50, 54, 56, 59, 60, 61, 62, 66, 67, 236
2,3,3',5,5'-Pentachlorobiphenyl (PentaCB) (¹³ C ₁₂ , 99%)	51, 53, 78, 83, 84, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 109, 110, 116, 117	1,2,3,4,6-Pentachlorodibenzo- <i>p</i> -dioxin (PentaCDD) (unlabeled)	25
2,3,3',5,5'-Pentachlorobiphenyl (PentaCB) (unlabeled)	81, 108, 111, 115, 119	1,2,3,4,7-Pentachlorodibenzo- <i>p</i> -dioxin (PentaCDD) (¹³ C ₁₂ , 99%)	17, 42, 43, 44, 45
2,3,3',5,6-Pentachlorobiphenyl (PentaCB) (unlabeled)	81, 119	1,2,3,4,7-Pentachlorodibenzo- <i>p</i> -dioxin (PentaCDD) (unlabeled)	25
2,3,4,4',5-Pentachlorobiphenyl (PentaCB) (¹³ C ₁₂ , 99%)	51, 52, 58, 78, 82, 84, 86, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 102, 103, 109, 110, 112, 113, 117	1,2,3,6,7-Pentachlorodibenzo- <i>p</i> -dioxin (PentaCDD) (unlabeled)	25
2,3,4,4',5-Pentachlorobiphenyl (PentaCB) (unlabeled)	50, 81, 82, 85, 86, 89, 90, 92, 94, 95, 96, 97, 98, 101, 102, 103, 103, 108, 111, 112, 118, 236	1,2,3,6,7-Pentachlorodibenzo- <i>p</i> -dioxin (PentaCDD) (unlabeled)	25
2,3',4,4',5-Pentachlorobiphenyl (PentaCB) (¹³ C ₁₂ , 99%)	51, 52, 58, 78, 82, 84, 86, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 102, 103, 104, 105, 106, 109, 110, 112, 113, 115, 116	1,2,3,6,8-Pentachlorodibenzo- <i>p</i> -dioxin (PentaCDD) (unlabeled)	25
2,3',4,4',5-Pentachlorobiphenyl (PentaCB) (unlabeled)	50, 81, 82, 85, 86, 89, 90, 92, 94, 95, 96, 97, 98, 101, 102, 103, 104, 105, 107, 108, 111, 112, 114, 115, 116, 118, 236	1,2,3,7,8-Pentachlorodibenzo- <i>p</i> -dioxin (PentaCDD) (¹³ C ₁₂ , 99%)	17, 31, 32, 33, 34, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 48, 51, 52, 54, 55, 57, 58, 59, 60, 61, 62, 63, 64, 65
2,3',4,4',5'-Pentachlorobiphenyl (PentaCB) (¹³ C ₁₂ , 99%)	109	1,2,3,7,8-Pentachlorodibenzo- <i>p</i> -dioxin (PentaCDD) (unlabeled)	18, 25, 31, 32, 33, 34, 36, 38, 39, 40, 41, 42, 44, 46, 47, 48, 49, 50, 54, 56, 59, 62, 66, 67, 236
2,3',4,4',5'-Pentachlorobiphenyl (PentaCB) (unlabeled)	108	1,2,3,7,9-Pentachlorodibenzo- <i>p</i> -dioxin (PentaCDD) (unlabeled)	18, 25, 34, 68
2',3,4,4',5-Pentachlorobiphenyl (PentaCB) (¹³ C ₁₂ , 99%)	51, 52, 58, 78, 82, 84, 86, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 110, 112, 113	1,2,3,8,9-Pentachlorodibenzo- <i>p</i> -dioxin (PentaCDD) (unlabeled)	25
2',3,4,4',5-Pentachlorobiphenyl (PentaCB) (unlabeled)	50, 81, 82, 85, 86, 89, 90, 92, 94, 95, 96, 97, 98, 101, 111, 112, 118, 236	1,2,4,6,7-Pentachlorodibenzo- <i>p</i> -dioxin (PentaCDD) (unlabeled)	25
3,3',4,4',5-Pentachlorobiphenyl (PentaCB) (¹³ C ₁₂ , 99%)	51, 52, 54, 55, 57, 58, 78, 82, 84, 86, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 109, 110, 183	1,2,4,6,8-Pentachlorodibenzo- <i>p</i> -dioxin (PentaCDD) (unlabeled)	25
3,3',4,4',5-Pentachlorobiphenyl (PentaCB) (unlabeled)	50, 54, 56, 81, 82, 85, 86, 89, 90, 92, 94, 95, 96, 97, 98, 101, 108, 111, 118, 120, 236	1,2,4,6,8-Pentachlorodibenzo- <i>p</i> -dioxin/ 1,2,4,7,9-Pentachlorodibenzo- <i>p</i> -dioxin (PentaCDD) isomer pair (unlabeled)	19, 34, 68
3,3',4,5,5'-Pentachlorobiphenyl (PentaCB) (¹³ C ₁₂ , 99%)	78, 86, 87, 88, 94, 95, 102, 103	1,2,4,6,9-Pentachlorodibenzo- <i>p</i> -dioxin (PentaCDD) (unlabeled)	25
3,3',4,5,5'-Pentachlorobiphenyl (PentaCB) (unlabeled)	81, 119	1,2,4,7,8-Pentachlorodibenzo- <i>p</i> -dioxin (PentaCDD) (unlabeled)	25
1,2,3,4,6-Pentachlorodibenzofuran (PentaCDF) (¹³ C ₁₂ , 99%)	20, 51, 52, 59, 62, 63	1,2,4,7,9-Pentachlorodibenzo- <i>p</i> -dioxin (PentaCDD) (unlabeled)	25
1,2,3,4,6-Pentachlorodibenzofuran (PentaCDF) (unlabeled)	24	1,2,4,8,9-Pentachlorodibenzo- <i>p</i> -dioxin (PentaCDD) (unlabeled)	25
1,2,3,4,7-Pentachlorodibenzofuran (PentaCDF) (unlabeled)	24	1,2,3,4,5-Pentachloronaphthalene (PentaCN) (unlabeled)	160
1,2,3,4,8-Pentachlorodibenzofuran (PentaCDF) (unlabeled)	24	1,2,3,4,6-Pentachloronaphthalene (PentaCN) (unlabeled)	160
1,2,3,4,9-Pentachlorodibenzofuran (PentaCDF) (unlabeled)	24	1,2,3,5,7-Pentachloronaphthalene (PentaCN) (¹³ C ₁₀ , 99%)	160, 161, 162
1,2,3,6,7-Pentachlorodibenzofuran (PentaCDF) (unlabeled)	24	1,2,3,5,7-Pentachloronaphthalene (PentaCN) (unlabeled)	160, 161, 162
1,2,3,6,8-Pentachlorodibenzofuran (PentaCDF) (unlabeled)	24	1,2,3,5,8-Pentachloronaphthalene (PentaCN) (unlabeled)	160, 162
1,2,3,6,9-Pentachlorodibenzofuran (PentaCDF) (unlabeled)	24	1,2,3,6,7-Pentachloronaphthalene (PentaCN) (unlabeled)	160
1,2,3,7,8-Pentachlorodibenzofuran (PentaCDF) (¹³ C ₁₂ , 99%)	20, 31, 32, 33, 34, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 48, 51, 52, 54, 55, 57, 58, 59, 60, 61, 62, 63, 64, 65	1,2,4,5,8-Pentachloronaphthalene (PentaCN) (unlabeled)	160
1,2,3,7,8-Pentachlorodibenzofuran (PentaCDF) (unlabeled)	22, 24, 31, 32, 33, 34, 36, 38, 39, 40, 41, 42, 44, 46, 47, 48, 49, 50, 54, 56, 59, 60, 61, 62, 66, 67, 236	1,2,4,6,7-Pentachloronaphthalene (PentaCN) (unlabeled)	160
1,2,3,7,9-Pentachlorodibenzofuran (PentaCDF) (unlabeled)	24	Pentachloronitrobenzene (¹³ C ₆ , 99%)	177, 183
1,2,3,8,9-Pentachlorodibenzofuran (PentaCDF) (unlabeled)	22, 24, 34, 68	Pentachloronitrobenzene (unlabeled)	177, 183
1,2,4,6,7-Pentachlorodibenzofuran (PentaCDF) (unlabeled)	24	Pentachlorophenol (¹³ C ₆ , 99%)	177, 183, 195, 196, 200, 203, 205
1,2,4,6,8-Pentachlorodibenzofuran (PentaCDF) (unlabeled)	24	Pentachlorophenol (unlabeled)	177, 183, 196
1,2,4,6,9-Pentachlorodibenzofuran (PentaCDF) (unlabeled)	24	<i>n</i> -Pentadecane (D ₃₂ , 98%)	186
1,2,4,7,8-Pentachlorodibenzofuran (PentaCDF) (unlabeled)	24	<i>n</i> -Pentane (D ₁₂ , 98%)	186
1,2,4,7,9-Pentachlorodibenzofuran (PentaCDF) (unlabeled)	24	Perchloric acid, sodium salt (¹⁸ O ₄ , 90%+)	171, 190
1,2,4,8,9-Pentachlorodibenzofuran (PentaCDF) (unlabeled)	24	Perchloric acid, sodium salt (unlabeled)	171, 190
Persistent Organic Pollutants Cleanup Spike	234	Perfluorobutyric acid (PFBA) (unlabeled)	174
Persistent Pesticide Calibration Solutions	231	Perfluorodecanoic acid (PFDA) (¹³ C ₉ , 99%)	174
Persistent Pesticide Spiking Solution	231	Perfluorododecanoic acid (PFDA) (unlabeled)	174
		Perfluorododecanoic acid (PFDoA) (unlabeled)	174
		Perfluoroheptanoic acid (PFHpA) (unlabeled)	174
		Perfluorohexanoic acid (PFHxA), sodium salt (¹³ C ₆ , 99%)	174
		Perfluorohexanoic acid (PFHxA), sodium salt (unlabeled)	174
		Perfluorokerosene, High-Boiling Range (unlabeled)	35
		Perfluorokerosene, Low-Boiling Range (unlabeled)	35
		Perfluorononanoic acid (PFNA) (¹³ C ₉ , 99%)	174
		Perfluorononanoic acid (PFNA) (unlabeled)	174
		Perfluorooctanesulfonate (PFOS), sodium salt (¹³ C ₈ , 99%)	174, 183
		Perfluorooctanesulfonate (PFOS), sodium salt (unlabeled)	174, 183
		Perfluorooctanoic acid (PFOA) (¹³ C ₈ , 99%)	174, 183
		Perfluorooctanoic acid (PFOA) (unlabeled)	174, 183
		Perfluoropentanoic acid (PFPA) (unlabeled)	174
		Perfluorotetradecanoic acid (PFTeDA) (unlabeled)	174
		Perfluorotridecanoic acid (PFTriDA) (unlabeled)	174
		Perfluoroundecanoic acid (PFUA), sodium salt (¹³ C ₉ , 99%)	174
		Perfluoroundecanoic acid (PFUA), sodium salt (unlabeled)	174
		<i>cis</i> -Permethrin (phenoxy- ¹³ C ₆ , 99%)	183, 215, 221, 227
		<i>cis</i> -Permethrin (unlabeled)	183, 215, 221
		<i>trans</i> -Permethrin (phenoxy- ¹³ C ₆ , 99%)	183, 215, 221, 227
		<i>trans</i> -Permethrin (unlabeled)	183, 215, 221

Index

Product	Page	Product	Page
Perylene (D ₁₂ , 98%)	149, 152, 153	Q	
Perylene (unlabeled)	150, 155	Quinoline (D ₇ , 98%)	190
Pesticide Stock Solution 1	234, 235	R	
Pesticide Stock Solution 2	234, 235	Rapid PCB Screening Calibration Solutions	104
Phenanthrene (¹³ C ₆ , 99%)	148, 151, 183	Rapid PCB Screening Native PAR Solution	105
Phenanthrene (D ₁₀ , 98%)	149, 152, 153, 183	Rapid PCB Screening Syringe Spike	105
Phenanthrene (unlabeled)	150, 154, 155, 183, 237	RDX (¹³ C ₃ , 99%)	185
Phenol (D ₆ , 98%)	190	RDX (¹³ C ₃ , 99%; ¹⁵ N ₃ , 98%)	185
Phenol (ring-D ₅ , 98%)	183, 190, 198, 200	RDX (unlabeled)	185
Phenolic Calibration Standards	204	Recovery Standard for Dioxin, Furan and PCB in Tissue	57
Phenolic Native PAR Standard	205	Resorcinol (¹³ C ₆ , 99%)	169
Phenolic Spiking Standard	205	Resorcinol bis(diphenyl phosphate) (unlabeled)	144
3-Phenoxybenzoic acid (phenoxy- ¹³ C ₆ , 99%)	215, 221	Ricinine (ring- ¹³ C ₅ , 99%; cyano- ¹³ C, 99%)	238
3-Phenoxybenzoic acid (unlabeled)	215, 221	Ricinine (unlabeled)	238
Phenylbutazone (diphenyl-D ₁₀ , 98%)	169, 190	RoHS PBDE Calibration Solutions	132
Phenylbutazone (unlabeled)	169, 190	RoHS PBDE Cleanup Spike	133
o-Phenylphenol (phenyl- ¹³ C ₆ , 99%)	171, 190, 221	RoHS PBDE Native PAR Spike	133
o-Phenylphenol (unlabeled)	171, 190, 221	RoHS PBDE Syringe Spike	133
p-Phenylphenol (phenyl- ¹³ C ₆ , 99%)	171, 190, 221	RoHS Screening PBDE Calibration Solutions	134
Phorate (diethoxy- ¹³ C ₄ , 99%)	213, 221	RoHS Screening PBDE Cleanup Spike	135
Phorate (unlabeled)	213, 221	RoHS Screening PBDE Native PAR Spike	135
Phosmet (dimethyl-D ₆ , 98%)	213, 221	RoHS Screening PBDE Syringe Spike	135
Phosmet (unlabeled)	213, 221	S	
Phosphonic Acid Esters Native Standards Mixture	240	Saytex® 102E	140
Phosphonic Acid Half-Esters Native Standards Mixture	240	Semicarbazide hydrochloride (SEM) (¹³ C, 99%; ¹⁵ N ₂ , 98%)	171
Phosphonic Acid Native Standards Mixture	240	Semicarbazide hydrochloride (SEM) (unlabeled)	171
Phosphorus Flame-Retardant Standard Mixture	144	Set of Chlorophenolics Mixtures	197
Phthalic acid (ring-1,2- ¹³ C ₂ , dicarboxyl- ¹³ C ₂ , 99%)	173	Set of Other Chlorophenolics Mixtures	197
Phthalic acid (carboxyl- ¹³ C, 99%)	190	Set of Regulated Chlorophenolics Mixtures	197
Phthalic acid (ring-D ₄ , 98%)	190	Simazine (ring- ¹³ C ₃ , 99%)	183, 214, 221, 227
Phthalic acid (unlabeled)	173	Simazine (unlabeled)	214, 221, 227
2-Picoline (2-methylpyridine) (D ₇ , 98%)	190	Sodium bis(2-ethylhexyl) sulfosuccinate (DOSS) (fumaric acid- ¹³ C ₄ , 99%)	184
3-Picoline (3-methylpyridine) (D ₇ , 98%)	190	Sodium bis(2-ethylhexyl) sulfosuccinate (DOSS) (unlabeled)	184
4-Picoline (4-methylpyridine) (D ₇ , 98%)	190	DL-Sodium estrone 3-sulfate (13,14,15,16,17,18- ¹³ C ₆ , 99%)	
Pinacolyl alcohol (unlabeled)	238, 240	(12-13- ¹³ C-sodium acetate)	167
Polybrominated Dioxin and Furan Mixture	74	Sodium estrone 3-sulfate (unlabeled)	167
Polybrominated Diphenyl Ether Analytical Standard Solution	138	Sodium monofluoroacetate (¹³ C ₃ , 99%; 2,2-D ₂ , 98%)	221
Polybrominated Diphenyl Ether Injection Internal Standard	137	Sodium monofluoroacetate (unlabeled)	221
Polybrominated Diphenyl Ether Native Surrogate Standard	137	trans-Stilbene (D ₁₂ , 98%)	190
Polybrominated Diphenyl Ether PAR Solution	139	Styrene (D ₈ , 98%)	190, 221
Polybrominated Diphenyl Ether Performance Standard Solution	137	Styrene (ring-D ₈ , 98%)	190
Polybrominated Diphenyl Ether Predominant Congener Mixture	139	Styrene (vinyl-D ₃ , 98%)	190
Polybrominated Diphenyl Ether Surrogate Spiking Solution	137	Sulfamethazine (phenyl- ¹³ C ₆ , 90%)	170
Polybrominated Diphenyl Ether Surrogate Standard	137	Sulfamethazine (unlabeled)	170
POPs Cleanup Spike	229	Sulfamethoxazole (ring- ¹³ C ₆ , 99%)	170
POPs HRMS HCH Cleanup Spike	230	Sulfamethoxazole (unlabeled)	170
POPs PAR Solution	229	Sulfoxaflor (cyano- ¹³ C, 99%; cyano- ¹⁵ N, imine- ¹⁵ N, 98%)	213, 221
POPs Pesticides Calibration Solutions	228	Sulfoxaflor (unlabeled)	213, 221
POPs Pesticides HRMS Cleanup Spike	229	Supplemental Internal Standard Solution	48
POPs Pesticides HRMS (PCB) Syringe Spike	117, 224, 230	T	
POPs Pesticides LRMS Cleanup Spike	229	Taurochenodeoxycholic acid, sodium salt (2,2,3,4,4,6,6,7,8-D ₈ , 98%)	168
POPs Pesticides, non-Toxaphene, non-HCH HRMS Cleanup Spike	230	Taurochenodeoxycholic acid, sodium salt (2,2,4,4-D ₄ , 98%)	168
POPs Toxaphene Surrogate Solution with PCB Syringe	226	Taurochenodeoxycholic acid, sodium salt (unlabeled)	168
Potassium bromate (¹⁸ O ₃ , 98%)	171	Taurodeoxycholic acid, sodium salt (2,2,4,4,11,11-D ₆ , 98%)	168
Potassium bromate (unlabeled)	171	Taurodeoxycholic acid, sodium salt (2,2,4,4-D ₄ , 98%)	168
Predominant Bioaccumulative Toxaphene Congeners	226	Taurolithocholic acid, sodium salt (2,2,4,4-D ₄ , 98%)	168
Predominant Mono-Deca PCB Spike	103	Taurolithocholic acid, sodium salt (unlabeled)	168
5-α-Pregnan-3-α-ol-20-one (17,21,21,21-D ₄ , 96-98%)	168	TBB (2-ethylhexyl-2,3,4,5-tetrabromobenzoate) (D ₁₇ , 98%)	141
5-β-Pregnan-3-α-ol-20-one (17,21,21,21-D ₄ , 96-98%)	168	TBB (2-ethylhexyl-2,3,4,5-tetrabromobenzoate) (unlabeled)	141
5-α-Pregnane-3,20-dione (1,2,4,5,6,7-D ₆ , 95%)	168	TBPH (bis(2-ethylhexyl)tetrabromophthalate) (D ₃₄ , 98%)	141
5-α-Pregnane-3-α,21-diol-20-one (17,21,21-D ₃ , 95%)	168	TBPH (bis(2-ethylhexyl)tetrabromophthalate) (unlabeled)	141
Pregnenolone (20,21- ¹³ C ₂ , 99%; 16,16-D ₂ , 98%)	168	Terbufos (diethoxy- ¹³ C ₄ , 99%)	213, 221
Pregnenolone (unlabeled)	168	Terephthalic acid (ring-D ₄ , 98%)	190
Pregnenolone sulfate, sodium salt (20,21- ¹³ C ₂ , 99%; 16,16-D ₂ , 98%)	168	o-Terphenyl (D ₁₄ , 98%)	150, 191
Pregnenolone sulfate, sodium salt (unlabeled)	168	p-Terphenyl (D ₁₄ , 98%)	150, 153, 191
Progesterone (2,3,4- ¹³ C ₃ , 99%)	168	p-Terphenyl (unlabeled)	150, 155, 191
Progesterone (3,4- ¹³ C ₂ , 90%)	168	α-Terpineol (propyl methyl-D ₃ , 98%)	191
Progesterone (2,2,4,6,6,17α,21,21-D ₈ , 98%)	168	Testosterone (2,3,4- ¹³ C ₃ , 99%)	168
Progesterone (unlabeled)	168	Testosterone (3,4- ¹³ C ₂ , 99%)	168
Propazine (ring- ¹³ C ₃ , 99%)	214, 221	Testosterone (3,4- ¹³ C ₂ , 99%; ¹⁷ - ¹⁸ O, 98%)	168
Propazine (unlabeled)	214, 221	Testosterone (2,2,4,6,6-D ₅ , 98%)	168
Propoxur (isopropyl-D ₇ , 98%)	183, 214, 221	Testosterone (unlabeled)	168
Propoxur (unlabeled)	183, 214, 221	3,3',4,4'-Tetrabromobiphenyl (TetraBB) (¹³ C ₁₂ , 99%)	141
1,2-Propylene oxide (D ₆ , 98%)	190	3,3',4,4'-Tetrabromobiphenyl (TetraBB) Certified Standard (unlabeled)	141
n-Propyl paraben (n-propyl 4-hydroxybenzoate) (ring- ¹³ C ₆ , 99%)	165, 182	Tetrabromobisphenol A (ring- ¹³ C ₁₂ , 99%)	140, 183, 203
n-Propyl paraben (n-propyl 4-hydroxybenzoate) (unlabeled)	165, 182	Tetrabromobisphenol A (unlabeled)	140, 183
1-Propylphosphonic acid (unlabeled)	238, 240	2,3,7,8-Tetrabromodibenzofuran (TetraBDF) (¹³ C ₁₂ , 99%)	27, 70, 71, 72, 73
2-Propylphosphonic acid (unlabeled)	238, 240	2,3,7,8-Tetrabromodibenzofuran (TetraBDF) (unlabeled)	27, 70, 71, 72, 74
Purgeables/Volatiles Mixture-E.1	201	2,4,6,8-Tetrabromodibenzofuran (TetraBDF) (¹³ C ₁₂ , 99%)	27, 55, 57, 70, 71, 72, 73
Purgeables/Volatiles Mixture-F	201	2,4,6,8-Tetrabromodibenzofuran (TetraBDF) (unlabeled)	27, 70, 71, 72
Purgeables/Volatiles Mixture-H	201	2,3,7,8-Tetrabromodibenzo-p-dioxin (TetraBDD) (¹³ C ₁₂ , 99%)	26, 70, 71, 72, 73, 74
PXB Calibration Solutions	121		
PXB Cleanup Spike	121		
PXB Native PAR Solution	121		
PXB Syringe Standard	121		
Pyrene (¹³ C ₃ , 99%)	148, 151		
Pyrene (D ₁₀ , 98%)	149, 152, 198, 200		
Pyrene (unlabeled)	150, 154, 155, 237		

Index

Product	Page	Product	Page
2,3,7,8-Tetrabromodibenzo- <i>p</i> -dioxin (TetraBDD) (unlabeled)	26, 70, 71, 72, 74	1,2,3,4-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	22, 24, 44, 58, 59
2,2',4,4'-Tetrabromodiphenyl ether (TetraBDE) (¹³ C ₁₂ , 99%)	125, 130, 131, 132, 133, 134, 135, 136, 137, 138, 142, 143	1,2,3,6-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
2,2',4,4'-Tetrabromodiphenyl ether (TetraBDE) (unlabeled)	127, 130, 131, 132, 133, 134, 135, 136, 138, 139, 142, 236	1,2,3,7-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
2,2',4,5'-Tetrabromodiphenyl ether (TetraBDE) (unlabeled)	127, 132, 133, 136, 138, 139, 236	1,2,3,8-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
2,2',4,6'-Tetrabromodiphenyl ether (TetraBDE) (unlabeled)	127	1,2,3,9-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	22, 24, 68
2,3',4,4'-Tetrabromodiphenyl ether (TetraBDE) (unlabeled)	127, 132, 133, 136, 138, 139, 142, 236	1,2,4,6-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
2,3',4',6-Tetrabromodiphenyl ether (TetraBDE) (unlabeled)	128, 132, 133, 136, 138, 139, 236	1,2,4,7-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
2,4,4',6-Tetrabromodiphenyl ether (TetraBDE) (unlabeled)	128, 136, 138, 139	1,2,4,8-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
3,3',4,4'-Tetrabromodiphenyl ether (TetraBDE) (¹³ C ₁₂ , 99%)	57, 113, 125, 136, 137, 138, 142, 143, 202, 203, 204, 205, 231, 232, 233	1,2,4,9-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
3,3',4,4'-Tetrabromodiphenyl ether (TetraBDE) (unlabeled)	128, 132, 133, 136, 138, 139, 236	1,2,6,7-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
3,3',4,5'-Tetrabromodiphenyl ether (TetraBDE) (unlabeled)	128	1,2,6,8-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
2,3,4,5-Tetrabromophenol (¹³ C ₆ , 99%)	178	1,2,6,9-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
2,3,4,5-Tetrabromophenol (unlabeled)	178	1,2,7,8-Tetrachlorodibenzofuran (TetraCDF) (¹³ C ₁₂ , 99%)	20, 43, 44, 45, 51, 52, 58, 59, 62, 63
TetraCDD Column Performance Solution Mixture	69	1,2,7,9-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	22, 24, 42, 44, 50, 59, 62
TetraCDD-HeptaCDD Standard Solution (B) (2,3,7,8 isomers)	66	1,2,7,9-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
TetraCDD-HeptaCDD Window Defining Mixture (DB-5)	68	1,2,8,9-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	22, 24, 34, 42, 44, 50, 59, 62, 68
1,2,3,4-TetraCDD Instrument Performance Check	69	1,3,4,6-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
1,3,6,8-TetraCDD/F Containing Cleanup Spike	64	1,3,4,7-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
TetraCDF-HeptaCDF Standard Solution (B) (2,3,7,8 isomers)	66	1,3,4,8-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
TetraCDF-HeptaCDF Window Defining Mixture (DB-5)	68	1,3,4,9-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
1,2,3,4-Tetrachlorobenzene (¹³ C ₆ , 99%)	178, 195	1,3,6,7-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
1,2,3,4-Tetrachlorobenzene (unlabeled)	178, 195	1,3,6,8-Tetrachlorodibenzofuran (TetraCDF) (¹³ C ₁₂ , 99%)	20, 42, 43, 44, 45, 58, 59, 62, 64
1,2,3,5-Tetrachlorobenzene (unlabeled)	178	1,3,6,8-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	22, 24, 34, 42, 44, 50, 59, 62, 66, 68
1,2,4,5-Tetrachlorobenzene (¹³ C ₆ , 99%)	178, 195, 235	1,3,6,9-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
1,2,4,5-Tetrachlorobenzene (D ₂ , 98%)	178	1,3,7,8-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
1,2,4,5-Tetrachlorobenzene (unlabeled)	178, 235	1,3,7,9-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
2,2',3,5'-Tetrachlorobiphenyl (TetraCB) (unlabeled)	80, 104, 105, 108, 111, 112, 114, 118	1,4,6,7-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
2,2',4,4'-Tetrachlorobiphenyl (TetraCB) (¹³ C ₁₂ , 99%)	77	1,4,6,8-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
2,2',4,4'-Tetrachlorobiphenyl (TetraCB) (unlabeled)	80	1,4,6,9-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
2,2',4,5'-Tetrachlorobiphenyl (TetraCB) (unlabeled)	80, 108, 111, 112, 114, 118	1,4,7,8-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
2,2',5,5'-Tetrachlorobiphenyl (TetraCB) (¹³ C ₁₂ , 99%)	77, 83, 84, 87, 88, 102, 103, 104, 105, 106, 109, 110, 112, 113, 115, 116, 130, 131, 235	1,6,7,8-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
2,2',5,5'-Tetrachlorobiphenyl (TetraCB) (unlabeled)	80, 87, 102, 103, 104, 105, 107, 108, 111, 112, 114, 115, 116, 118, 235	2,3,4,6-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
2,2',6,6'-Tetrachlorobiphenyl (TetraCB) (¹³ C ₁₂ , 99%)	77, 82, 84, 109, 110	2,3,4,7-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	22, 24, 68
2,2',6,6'-Tetrachlorobiphenyl (TetraCB) (unlabeled)	80, 82, 85, 108, 111, 118, 120, 236	2,3,4,8-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
2,3,3',5'-Tetrachlorobiphenyl (TetraCB) (unlabeled)	80, 108, 111, 118	2,3,6,7-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
2,3,4,4'-Tetrachlorobiphenyl (TetraCB) (¹³ C ₁₂ , 99%)	77, 86, 87, 88, 94, 95	2,3,6,8-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
2,3,4,4'-Tetrachlorobiphenyl (TetraCB) (unlabeled)	80, 119	2,3,7,8-Tetrachlorodibenzofuran (TetraCDF) (¹³ C ₁₂ , 99%)	20, 31, 32, 33, 34, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 51, 52, 54, 55, 57, 58, 59, 60, 61, 62, 63, 64, 65, 68
2,3',4,4'-Tetrachlorobiphenyl (TetraCB) (unlabeled)	80, 108, 111, 112, 114, 115, 116	2,3,7,8-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	22, 24, 31, 32, 33, 34, 36, 38, 39, 40, 41, 42, 44, 46, 47, 48, 49, 50, 54, 56, 59, 60, 61, 62, 66, 67, 68, 236
2,3',4,5'-Tetrachlorobiphenyl (TetraCB) (unlabeled)	80, 108, 111, 112, 114, 115, 116, 118, 119	2,4,6,7-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
2,4,4',5'-Tetrachlorobiphenyl (TetraCB) (unlabeled)	80, 108, 111, 112, 114, 115, 116, 118	2,4,6,8-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
3,3',4,4'-Tetrachlorobiphenyl (TetraCB) (¹³ C ₁₂ , 99%)	51, 52, 54, 55, 57, 58, 78, 82, 84, 86, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 102, 103, 104, 105, 116, 117, 222, 223, 224, 228, 230	3,4,6,7-Tetrachlorodibenzofuran (TetraCDF) (unlabeled)	24
3,3',4,4'-Tetrachlorobiphenyl (TetraCB) (unlabeled)	80, 104, 105, 108, 111, 115, 118, 119	1,2,3,4-Tetrachlorodibenzo- <i>p</i> -dioxin (TetraCDD) (¹³ C ₁₂ , 99%)	17, 31, 32, 33, 34, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 51, 58, 59, 60, 61, 62, 63, 69
3,3',4,4'-Tetrachlorobiphenyl (TetraCB) (D ₂ , 98%)	78	1,2,3,4-Tetrachlorodibenzo- <i>p</i> -dioxin (TetraCDD) (¹³ C ₆ , 99%)	17, 34, 54, 55, 57, 60, 113, 142, 143, 161, 202, 203, 204, 205, 231, 232, 233
3,3',4,4'-Tetrachlorobiphenyl (TetraCB) (unlabeled)	50, 54, 56, 80, 82, 85, 86, 89, 90, 92, 94, 95, 96, 97, 98, 101, 108, 111, 118, 119, 120, 23	1,2,3,4-Tetrachlorodibenzo- <i>p</i> -dioxin (TetraCDD) (unlabeled)	18, 25, 34, 69
3,3',4,5'-Tetrachlorobiphenyl (TetraCB) (unlabeled)	80, 108, 111, 118	1,2,3,6-Tetrachlorodibenzo- <i>p</i> -dioxin (TetraCDD) (unlabeled)	25
3,3',4,5'-Tetrachlorobiphenyl (TetraCB) (¹³ C ₁₂ , 99%)	51, 53, 58, 78, 89, 90, 91, 92, 93, 96, 97, 98, 99	1,2,3,7-Tetrachlorodibenzo- <i>p</i> -dioxin (TetraCDD) (unlabeled)	25
3,3',4,5'-Tetrachlorobiphenyl (TetraCB) (unlabeled)	80, 108, 111, 118	1,2,3,7-Tetrachlorodibenzo- <i>p</i> -dioxin/1,2,3,8-Tetrachlorodibenzo- <i>p</i> -dioxin isomer pair (TetraCDD) (unlabeled)	18, 34, 68, 69
3,3',5,5'-Tetrachlorobiphenyl (TetraCB) (¹³ C ₁₂ , 99%)	51, 52, 54, 55, 57, 58, 78, 82, 84, 86, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 109, 110	1,2,3,8-Tetrachlorodibenzo- <i>p</i> -dioxin (TetraCDD) (unlabeled)	25
3,4,4',5'-Tetrachlorobiphenyl (TetraCB) (unlabeled)	50, 54, 56, 80, 82, 85, 86, 89, 90, 92, 94, 95, 96, 97, 98, 101, 108, 111, 118, 236	1,2,3,9-Tetrachlorodibenzo- <i>p</i> -dioxin (TetraCDD) (unlabeled)	18, 25, 34, 68
Tetrachlorobisphenol A (ring- ¹³ C ₁₂ , 99%)	140, 184	1,2,4,6-Tetrachlorodibenzo- <i>p</i> -dioxin (TetraCDD) (unlabeled)	25
Tetrachlorobisphenol A (unlabeled)	140, 184	1,2,4,7-Tetrachlorodibenzo- <i>p</i> -dioxin (TetraCDD) (unlabeled)	25
3,4,5,6-Tetrachlorocatechol (ring- ¹³ C ₆ , 99%)	196	1,2,4,8-Tetrachlorodibenzo- <i>p</i> -dioxin (TetraCDD) (unlabeled)	25
3,4,5,6-Tetrachlorocatechol (unlabeled)	191, 196	1,2,4,9-Tetrachlorodibenzo- <i>p</i> -dioxin (TetraCDD) (unlabeled)	25
1,2,3,4-Tetrachlorodibenzofuran (TetraCDF) (¹³ C ₁₂ , 99%)	20, 42	1,2,6,7-Tetrachlorodibenzo- <i>p</i> -dioxin (TetraCDD) (unlabeled)	25
		1,2,6,8-Tetrachlorodibenzo- <i>p</i> -dioxin (TetraCDD) (unlabeled)	25
		1,2,6,9-Tetrachlorodibenzo- <i>p</i> -dioxin (TetraCDD) (unlabeled)	25
		1,2,7,8-Tetrachlorodibenzo- <i>p</i> -dioxin (TetraCDD) (¹³ C ₁₂ , 99%)	42
		1,2,7,8-Tetrachlorodibenzo- <i>p</i> -dioxin (TetraCDD) (unlabeled)	18, 25, 69
		1,2,7,9-Tetrachlorodibenzo- <i>p</i> -dioxin (TetraCDD) (unlabeled)	25
		1,2,8,9-Tetrachlorodibenzo- <i>p</i> -dioxin (TetraCDD) (unlabeled)	18, 25, 34, 42, 44, 50, 59, 62, 68
		1,3,6,8-Tetrachlorodibenzo- <i>p</i> -dioxin (TetraCDD) (¹³ C ₁₂ , 99%)	17, 42, 43, 44, 45, 51, 52, 58, 59, 64
		1,3,6,8-Tetrachlorodibenzo- <i>p</i> -dioxin (TetraCDD) (unlabeled)	18, 25, 34, 42, 44, 50, 59, 62, 68
		1,3,6,9-Tetrachlorodibenzo- <i>p</i> -dioxin (TetraCDD) (unlabeled)	25
		1,3,7,8-Tetrachlorodibenzo- <i>p</i> -dioxin (TetraCDD) (unlabeled)	25
		1,3,7,9-Tetrachlorodibenzo- <i>p</i> -dioxin (TetraCDD) (unlabeled)	18, 25, 42, 44, 50, 59, 62
		1,4,6,9-Tetrachlorodibenzo- <i>p</i> -dioxin (TetraCDD) (unlabeled)	25
		1,4,7,8-Tetrachlorodibenzo- <i>p</i> -dioxin (TetraCDD) (unlabeled)	18, 25, 69

Index

Product	Page	Product	Page
2,3,7,8-Tetrachlorodibenzo- <i>p</i> -dioxin (TetraCDD) (¹³ C ₁₂ , 99%)	17, 31, 32, 33, 34, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 51, 52, 54, 55, 57, 58, 59, 60, 61, 62, 63, 64, 65, 68, 69, 183	Tributyl phosphate (unlabeled)	144
2,3,7,8-Tetrachlorodibenzo- <i>p</i> -dioxin (TetraCDD) (³⁷ Cl ₄ , 96%)	17, 31, 32, 33, 34, 36, 37, 47, 48, 49, 69	Tributyltin chloride (D ₂₇ , 98%)	183, 184, 191
2,3,7,8-Tetrachlorodibenzo- <i>p</i> -dioxin (TetraCDD) (unlabeled)	18, 25, 31, 32, 33, 34, 36, 38, 39, 40, 41, 42, 44, 46, 47, 48, 49, 50, 54, 56, 59, 60, 61, 62, 66, 67, 68, 69, 183, 236	Tributyltin chloride (unlabeled)	183, 184, 191
1,1,2,2-Tetrachloroethane (D ₂ , 99.6%)	191, 198, 199, 201	3,5,6-Trichloro-2-pyridinol (TCPY) (4,5,6- ¹³ C ₃ , 99%)	183, 213, 221
Tetrachloroethylene (¹³ C ₂ , 99%)	191, 201	3,5,6-Trichloro-2-pyridinol (TCPY) (unlabeled)	183, 213, 221
3,4,5,6-Tetrachloroguaiacol (¹³ C ₆ , 99%)	196	2,4,6-Trichloroanisole (D ₃ , 98%)	171, 178
3,4,5,6-Tetrachloroguaiacol (unlabeled)	191, 196, 197	2,4,6-Trichloroanisole (methyl-D ₃ , 99%)	178
Tetrachloro- <i>m</i> -xylene (unlabeled)	191	2,4,6-Trichloroanisole (unlabeled)	171, 178
1,2,3,4-Tetrachloronaphthalene (TetraCN) (¹³ C ₁₀ , 99%)	160, 161, 162	1,2,3-Trichlorobenzene (¹³ C ₆ , 99%)	195
1,2,3,4-Tetrachloronaphthalene (TetraCN) (unlabeled)	160, 161	1,2,3-Trichlorobenzene (D ₃ , 98%)	178, 201
1,2,3,5-Tetrachloronaphthalene (TetraCN) (unlabeled)	160	1,2,3-Trichlorobenzene (unlabeled)	195
1,2,3,8-Tetrachloronaphthalene (TetraCN) (unlabeled)	160	1,2,4-Trichlorobenzene (¹³ C ₆ , 99%)	195
1,2,5,6-Tetrachloronaphthalene (TetraCN) (unlabeled)	160	1,2,4-Trichlorobenzene (D ₃ , 98%)	178, 200
1,3,5,7-Tetrachloronaphthalene (TetraCN) (¹³ C ₁₀ , 99%)	160, 162	1,3,5-Trichlorobenzene (D ₃ , 98%)	178
1,3,5,7-Tetrachloronaphthalene (TetraCN) (unlabeled)	160, 162	2,2',4'-Trichlorobiphenyl (TriCB) (unlabeled)	80, 118
1,4,5,8-Tetrachloronaphthalene (TetraCN) (unlabeled)	160, 162	2,2',5'-Trichlorobiphenyl (TriCB) (unlabeled)	80, 104, 105, 108, 111, 112, 114, 118
2,3,6,7-Tetrachloronaphthalene (TetraCN) (unlabeled)	160	2,2',6'-Trichlorobiphenyl (TriCB) (¹³ C ₁₂ , 99%)	77, 82, 84, 109, 110
2,3,4,5-Tetrachlorophenol (¹³ C ₆ , 99%)	195	2,2',6'-Trichlorobiphenyl (TriCB) (unlabeled)	80, 82, 85, 108, 111, 118, 236
2,3,4,5-Tetrachlorophenol (unlabeled)	178	2',3,4'-Trichlorobiphenyl (TriCB) (unlabeled)	80, 108, 111, 118
2,3,4,6-Tetrachlorophenol (unlabeled)	178, 196	2,4,4'-Trichlorobiphenyl (TriCB) (¹³ C ₁₂ , 99%)	77, 83, 84, 87, 88, 102, 103, 104, 105, 106, 109, 110, 112, 113, 117, 158, 159, 235
2,3,5,6-Tetrachlorophenol (unlabeled)	178	2,4,4'-Trichlorobiphenyl (TriCB) (unlabeled)	80, 87, 102, 103, 104, 105, 107, 108, 111, 112, 114, 118, 119, 235
<i>n</i> -Tetracosane (D ₂₀ , 98%)	186	2,4',5'-Trichlorobiphenyl (TriCB) (¹³ C ₁₂ , 99%)	77
<i>n</i> -Tetradecane (D ₃₀ , 98%)	186	2,4',5'-Trichlorobiphenyl (TriCB) (unlabeled)	80, 108, 111, 118
Tetradecyl (tri- <i>n</i> -butyl) phosphonium bromide (D ₂₉ , 98%)	184	2,4,6-Trichlorobiphenyl (TriCB) (unlabeled)	80, 120
Tetradecyl (tri- <i>n</i> -butyl) phosphonium chloride (unlabeled)	184	2,4',6'-Trichlorobiphenyl (TriCB) (¹³ C ₁₂ , 99%)	77, 102, 103
3- α ,5- β -Tetrahydroaldosterone (unlabeled)	166	2,4',6'-Trichlorobiphenyl (TriCB) (unlabeled)	80
3-Tetrahydrofuroic acid (¹³ C ₅ , 99%)	213, 221	3,3',4'-Trichlorobiphenyl (TriCB) (unlabeled)	80, 108, 111, 118
3-Tetrahydrofuroic acid (unlabeled)	213, 221	3,4,4'-Trichlorobiphenyl (TriCB) (¹³ C ₁₂ , 99%)	77, 82, 84, 109, 110
<i>cis</i> -1,2,3,6-Tetrahydrophthalic anhydride (3,3,4,5,6,6-D ₆ , 98%)	191	3,4,4'-Trichlorobiphenyl (TriCB) (unlabeled)	80, 82, 85, 108, 111, 118, 120, 236
<i>cis</i> -1,2,3,6-Tetrahydrophthalimide (3,3,4,5,6,6-D ₆ , 98%)	191	3,4,5-Trichlorobiphenyl (TriCB) (unlabeled)	80, 108, 111, 118
Tetra-OctaCDD and CDF Standard Solution	64	3,4',5'-Trichlorobiphenyl (TriCB) (unlabeled)	80
Tetra-Octa PCN Mixture	162	3,4,5-Trichlorocatechol (unlabeled)	191, 196
Thiabendazole (ring- ¹³ C ₆ , 99%)	169	3,4,6-Trichlorocatechol (unlabeled)	191, 196
Thiabendazole (unlabeled)	169	2,4,6-Trichlorodibenzofuran (TriCDF) (unlabeled)	67
Thiacloprid (pyridylmethyl- ¹³ C ₆ , 99%)	213, 221	2,4,8-Trichlorodibenzofuran (TriCDF) (unlabeled)	22
Thiacloprid (unlabeled)	213, 221	2,3,7-Trichlorodibenzo- <i>p</i> -dioxin (TriCDD) (unlabeled)	67
Thiamethoxam (thiazole- ¹³ C ₃ , 99%; ¹⁵ N, 98%)	213, 221	1,1,1-Trichloroethane (2- ¹³ C, 99%)	184
Thiamethoxam (unlabeled)	213, 221	1,1,1-Trichloroethane (D ₃ , 98%)	191, 201
Thiodiglycol (D ₈ , 98%)	238, 239	1,1,2-Trichloroethane (¹³ C ₂ , 99%)	191, 201
Thiodiglycol (unlabeled)	238, 239	1,1,2-Trichloroethane (D ₃ , 98%)	191
Thiodiglycol sulfone (unlabeled)	238, 239	Trichloroethylene (¹³ C ₂ , 99%)	191, 201
Thiodiglycol sulfoxide (unlabeled)	239	Trichloroethylene (D, 98%)	191
1,4-Thioxane (unlabeled)	239	3,4,5-Trichloroguaiacol (unlabeled)	196, 197
L-Thyroxine (ring- ¹³ C ₁₂ , 99%)	168	3,4,6-Trichloroguaiacol (unlabeled)	196, 197
L-Thyroxine (tyrosine-ring- ¹³ C ₆ , 99%)	168	4,5,6-Trichloroguaiacol (¹³ C ₆ , 99%)	196
L-Thyroxine (unlabeled)	168	4,5,6-Trichloroguaiacol (unlabeled)	196, 197
Toluene (ring- ¹³ C ₆ , 99%)	191	1,2,3-Trichloronaphthalene (TriCN) (¹³ C ₁₀ , 99%)	160
Toluene (methyl- ¹³ C, 99%)	191	1,2,3-Trichloronaphthalene (TriCN) (unlabeled)	160, 162
Toluene (D ₈ , 99.5%)	191, 198, 199, 201	1,2,4-Trichloronaphthalene (TriCN) (unlabeled)	160
Toluene (ring-D ₅ , 98%)	191	1,4,6-Trichloronaphthalene (TriCN) (unlabeled)	160, 162
Toluene (methyl-D ₃ , 98%)	191	2,4,5-Trichlorophenol (¹³ C ₆ , 99%)	178, 195
Toxic and Predominant PCB PAR Solution	114	2,4,5-Trichlorophenol (ring-D ₃ , 98%)	178, 200
<i>n</i> -Triacontane (D ₆₂ , 98%)	186	2,4,5-Trichlorophenol (unlabeled)	178, 196
2,4,5-Tribromoanisole (ring- ¹³ C ₆ , 99%)	178, 202	2,4,6-Trichlorophenol (¹³ C ₆ , 99%)	178, 195
2,4,5-Tribromoanisole (unlabeled)	178, 202, 203	2,4,6-Trichlorophenol (ring-D ₃ , 98%)	178, 200
2,4,6-Tribromoanisole (ring- ¹³ C ₆ , 99%)	178, 202	2,4,6-Trichlorophenol (unlabeled)	178, 196
2,4,6-Tribromoanisole (unlabeled)	178, 202, 203	3,4,5-Trichlorophenol (unlabeled)	196
2,2',4-Tribromodiphenyl ether (TriBDE) (unlabeled)	127, 132, 133, 136, 138, 139, 142, 236	2,4,5-Trichlorophenoxyacetic acid (ring- ¹³ C ₆ , 99%)	183, 221
2,3',4-Tribromodiphenyl ether (TriBDE) (unlabeled)	127, 136, 138, 139	2,4,5-Trichlorophenoxyacetic acid (unlabeled)	183, 221
2',3,4-Tribromodiphenyl ether (TriBDE) (unlabeled)	127, 136, 138, 139	1,2,3-Trichloropropane (D ₃ , 98%)	171, 184, 191
2,4,4'-Tribromodiphenyl ether (TriBDE) (¹³ C ₁₂ , 99%)	125, 130, 131, 132, 133, 134, 135, 136, 137, 138, 142, 143	1,2,3-Trichloropropane (unlabeled)	171, 184
2,4,4'-Tribromodiphenyl ether (TriBDE) (unlabeled)	127, 130, 131, 132, 133, 134, 135, 136, 138, 139, 142, 236	Trichlorosyringol (unlabeled)	196
2,4,6-Tribromodiphenyl ether (TriBDE) (unlabeled)	127, 136, 138, 139	Triclocarban (3,4,4'-trichlorocarbanilide) (4'-chlorophenyl- ¹³ C ₆ , 99%)	166
2,4',6-Tribromodiphenyl ether (TriBDE) (unlabeled)	127, 136, 138, 139	Triclocarban (3,4,4'-trichlorocarbanilide) (unlabeled)	166
3,3',4-Tribromodiphenyl ether (TriBDE) (unlabeled)	127, 136, 138, 139	Triclosan (2',4,4'-Trichloro-2-hydroxydiphenyl ether) (¹³ C ₁₂ , 99%)	166, 183
3,4,4'-Tribromodiphenyl ether (TriBDE) (unlabeled)	127, 136, 138, 139	Triclosan (2',4,4'-Trichloro-2-hydroxydiphenyl ether) (unlabeled)	166, 183
2,3,4-Tribromophenol (¹³ C ₆ , 99%)	178	<i>n</i> -Tricosane (D ₄₈ , 98%)	186
2,3,5-Tribromophenol (¹³ C ₆ , 99%)	178	<i>n</i> -Tridecane (D ₂₈ , 98%)	186
2,3,5-Tribromophenol (unlabeled)	178	Triethanolamine (D ₁₅ , 98%)	191
2,4,5-Tribromophenol (¹³ C ₆ , 99%)	178, 203	Triethanolamine (unlabeled)	239, 240
2,4,5-Tribromophenol (unlabeled)	178	Triethyl phosphate (D ₁₅ , 98%)	144
2,4,6-Tribromophenol (¹³ C ₆ , 99%)	178, 203	Triethyl phosphate (unlabeled)	144
2,4,6-Tribromophenol (unlabeled)	178	Trifluralin (di- <i>n</i> -propyl-D ₁₄ , 98%)	183, 221
3,4,5-Tribromophenol (¹³ C ₆ , 99%)	178	Trifluralin (unlabeled)	221, 235
3,4,5-Tribromophenol (unlabeled)	178	Trimethoprim (¹³ C ₆ , 99%)	170
Tributyl phosphate (D ₂₇ , 98%)	144	Trimethoprim (unlabeled)	170
		4-(1,1,5-Trimethylhexyl) phenol (ring- ¹³ C ₆ , 99%)	175
		4-(1,1,5-Trimethylhexyl) phenol (unlabeled)	175
		Trimethylolpropane phosphate (3,4,9,10- ¹³ C ₄ , 99%)	184
		Trimethylolpropane phosphate (unlabeled)	184
		1,3,5-Trinitrobenzene (¹³ C ₆ , 99%)	185
		1,3,5-Trinitrobenzene (unlabeled)	185
		Trinitroglycerol	185
		2,4,6-Trinitrotoluene (TNT) (¹³ C ₇ , 99%; ¹⁵ N ₃ , 98%)	185

Index

Product	Page
2,4,6-Trinitrotoluene (TNT) (unlabeled)	185
Triphenylene (D ₁₂ , 98%)	150
Triphenyl phosphate (D ₁₅ , 98%)	144
Triphenyl phosphate (unlabeled)	144
Tripropyl phosphate (D ₂₁ , 98%)	144
Tripropyl phosphate (unlabeled)	144
Tris(1,3-dichloro-2-propyl) phosphate (D ₁₅ , 98%)	144
Tris(1,3-dichloro-2-propyl) phosphate (unlabeled)	144
Tris(2,4,6-tribromophenoxy)-1,3,5-triazine (TTBP-TAZ) (¹³ C ₁₈ , 99%)	141
Tris(2,4,6-tribromophenoxy)-1,3,5-triazine (TTBP-TAZ) (unlabeled)	141
Tris(2-chloroethyl) phosphate (D ₁₂ , 98%)	144
Tris(2-chloroethyl) phosphate (unlabeled)	144
Tris(2-chloroisopropyl) phosphate (D ₁₈ , 98%)	144
Tris(2-chloroisopropyl) phosphate (unlabeled)	144
Two-Column Dioxin and Furan and PCB Calibration Solutions	50
Two-Column Dioxin and Furan and PCB Cleanup Spike	52
Two-Column Dioxin and Furan Calibration Solutions	62
Two-Column Dioxin and Furan Cleanup Spike	63
Two-Column Dioxin and Furan Sampling Spike	63
Two-Column Dioxin and Furan Syringe Spike	52, 63
U	
UNEP OC Pesticide ECD Internal Standard Mixture	119
UNEP PCB Working Solution 1	107
Urethane (ethyl carbamate) (ethyl-D ₅ , 98%)	171, 183
Ursodeoxycholic acid (2,2,4,4-D ₄ , 98%)	168
Ursodeoxycholic acid (unlabeled)	168
US EPA Method 8276 Toxaphene Composite Stock Standard	226
US EPA Method 8276 Toxaphene Injection Internal Standard	226
US EPA Method 8276 Toxaphene Surrogate Standard	226

Product	Page
V	
Vinyl bromide (D ₃ , 98%)	191
Vinyl chloride (D ₃ , 98%)	183, 184, 191, 198, 199
Vinyl chloride (unlabeled)	183, 184
W	
Warfarin (phenyl-D ₅ , 98%)	169
Warfarin (unlabeled)	169
WHO Coplanar and Mono-Ortho PCBs	99, 101
WHO Coplanar and Mono-Ortho PCBs and 170/180	101
WHO Coplanar and Mono-Ortho PCBs with PCB 170/180	99
WHO PCB and PCB-170 + 180 + Syringe PCB Calibration Solutions	97
WHO PCB + PCB-170 + PCB-180 Cleanup Standard	99
WHO PCB + PCB-170 + PCB-180 + Syringe PCB Calibration Solutions	98
X	
<i>m</i> -Xylene (D ₁₀ , 98%)	191
<i>o</i> -Xylene (D ₁₀ , 98%)	191
<i>p</i> -Xylene (D ₁₀ , 98%)	191

Index

Catalog No.	Page	Catalog No.	Page	Catalog No.	Page	Catalog No.	Page
BDE-1-CS	126	CLM-351-1.2	177, 181, 211, 220	CLM-3040-0.5	190	CLM-4745-1.2	165, 184
BDE-2-CS	126	CLM-457-0.01	168	CLM-3045-1.2	170	CLM-4748-1.2	171
BDE-3-CS	126	CLM-473-0.1	189	CLM-3235-1.2	77, 187	CLM-4758-1.2	179, 209, 210, 216
BDE-7-CS	126	CLM-473-0.5	189	CLM-3373	218	CLM-4759-1.2	181, 209, 211, 219
BDE-8-CS	126	CLM-483-0.1	188	CLM-3374-1.2	181, 184, 189	CLM-4782-1.2	180, 209, 211, 219
BDE-10-CS	126	CLM-483-1	188	CLM-3375-1.2	167	CLM-4792-1.2	179, 209, 210, 216
BDE-11-CS	127	CLM-503-0.5	189	CLM-3596-1.2	148	CLM-4811-1.2	181, 209, 211, 220
BDE-12-CS	127	CLM-503-1	189	CLM-3597-1.2	148	CLM-4813-1.2	181, 209, 211, 220
BDE-13-CS	127	CLM-513-1	178	CLM-3598-1.2	148	CLM-4814-1.2	179, 209, 210,
BDE-15-CS	127	CLM-513-SI-1.2	178	CLM-3599-1.2	147, 179		211, 216, 220
BDE-17-CS	127	CLM-514-1.2	169	CLM-3600-1.2	148, 181	CLM-4815-1.2	180, 209, 211, 219
BDE-25-CS	127	CLM-585-0.1	178	CLM-3601-1.2	148	CLM-4815-50	180, 209, 211, 219
BDE-28-CS	127	CLM-585-5	178	CLM-3602-1.2	147, 179	CLM-4816-1.2	181, 209, 211, 219
BDE-30-CS	127	CLM-661-0.01	177	CLM-3621-1.2	156	CLM-4816-50	181, 209, 211, 219
BDE-32-CS	127	CLM-661-1.2	177, 183	CLM-3623-1.2	179, 210, 216	CLM-4859-T-1.2	157
BDE-33-CS	127	CLM-673-1.2	167	CLM-3648-1.2	210, 216	CLM-4860-T-1.2	157
BDE-35-CS	127	CLM-675	185	CLM-3672-MT-1.2	170	CLM-4892-1.2	170
BDE-37-CS	127	CLM-714-0.1	187	CLM-3687-1.2	216	CLM-4896-1.2	170
BDE-47-CS	127	CLM-714-0.25	187	CLM-3712-1.2	181, 220	CLM-6023-1.2	170
BDE-49-CS	127	CLM-726-0.1	187	CLM-3722-1.2	218	CLM-6025-1.2	180, 209, 210, 219
BDE-51-CS	127	CLM-726-0.5	187	CLM-3727-1.2	179, 216	CLM-6026-1.2	180, 209, 210, 219
BDE-66-CS	127	CLM-731-0.1	188	CLM-3733-1.2	171, 190, 221	CLM-6058-1.2	177
BDE-71-CS	128	CLM-731-0.5	188	CLM-3737-1.2	179, 214, 216	CLM-6069-0.1	191
BDE-75-CS	128	CLM-731-1	188	CLM-3738-1.2	214, 221	CLM-6071-MT-1.2	173
BDE-77-CS	128	CLM-735-1	188	CLM-3739-1.2	183, 214, 221	CLM-6087-1.2	157
BDE-79-CS	128	CLM-803-1.2	167	CLM-3739-A-1.2	214, 221	CLM-6096-1.2	238
BDE-85-CS	128	CLM-804-0.1	166	CLM-3741-1.2	216	CLM-6106-1.2	238
BDE-99-CS	128	CLM-810-1	189	CLM-3748-1.2	171, 190, 221	CLM-6144-1.2	184
BDE-100-CS	128	CLM-813-1.2	171	CLM-3756-1.2	147, 179	CLM-6145-1.2	184
BDE-105-CS	128	CLM-816-1.2	210, 218	CLM-3757-1.2	148, 179	CLM-6151-1.2	178
BDE-116-CS	128	CLM-856-0.1	187	CLM-3774-A	148	CLM-6170-1.2	147, 179
BDE-118-CS	128	CLM-871-0.5	177	CLM-3774-A-T-1.2	148	CLM-6185-1.2	184
BDE-119-CS	128	CLM-1006-0.5	189	CLM-3835-1.2	148	CLM-6225	173
BDE-120-CS	128	CLM-1217-1	187	CLM-3846-S	185	CLM-6238	172
BDE-126-CS	128	CLM-1281-1.2	180, 210, 217	CLM-3848-S	185	CLM-6620-1.2	213, 221, 239
BDE-128-CS	128	CLM-1281-5	210, 217	CLM-3894-1.2	214, 216	CLM-6640-MT-1.2	173
BDE-138-CS	128	CLM-1282-1.2	179, 210, 216	CLM-3912-S	185	CLM-6641-MT-1.2	173
BDE-139-CS	128	CLM-1305-1.2	184	CLM-3913-S	181, 185	CLM-6651-1.2	170
BDE-140-CS	128	CLM-1332-1.2	148, 181	CLM-3914-1.2	170, 181	CLM-6652-1.2	170
BDE-148-CS	129	CLM-1333-1.2	147, 179	CLM-4306-1.2	175, 181	CLM-6680-1.2	190
BDE-153-CS	129	CLM-1340-0.1	177	CLM-4306-M-1.2	175, 181	CLM-6704-1.2	170
BDE-154-CS	129	CLM-1364-1.2	147	CLM-4307-1.2	175, 182	CLM-6705-1.2	170
BDE-155-CS	129	CLM-1365-1.2	177	CLM-4307-M-1.2	175, 182	CLM-6725-0.1MG	168
BDE-166-CS	129	CLM-1518-1	177	CLM-4323-MT-1.2	173	CLM-6743-1.2	178
BDE-175-CS	129	CLM-1519-0.1	185	CLM-4325-1.2	174, 179, 187	CLM-6744-1.2	178
BDE-181-CS	129	CLM-1519-S	185	CLM-4484-1.2	177, 180	CLM-6758	216
BDE-183-CS	129	CLM-1520-1	188	CLM-4512-1.2	175, 182	CLM-6759	216
BDE-190-CS	129	CLM-1544-1.2	17, 188	CLM-4512-M-1.2	175, 182	CLM-6779-1.2	166, 183
BDE-197-CS	129	CLM-1559-1	188	CLM-4516-1.2	175, 182	CLM-6779-MT-1.2	166, 183
BDE-203-CS	129	CLM-1561-1.2	20, 188	CLM-4538-1.2	220	CLM-6847-MT-1.2	172
BDE-204-CS	129	CLM-1587-1.2	125, 189	CLM-4542-1.2	215, 221	CLM-6943-1.2	169
BDE-205-CS	129	CLM-1593-0.5	190	CLM-4542-SA-1.2	215, 221	CLM-6944-1.2	170
BDE-206-CS	129	CLM-1593-0.25	190	CLM-4543	213, 221	CLM-6999-1.2	180, 210, 217
BDE-207-CS	129	CLM-1627-1.2	180, 210, 217	CLM-4544-1.2	213, 221	CLM-7100-1.2	210, 217
BDE-208-CS	129	CLM-1627-5	210, 217	CLM-4545-1.2	212, 219	CLM-7102-1.2	140
BDE-209-CS	129	CLM-1643-1.2	147, 179	CLM-4546-1.2	216	CLM-7140	214, 216
C-006	169	CLM-1804-1.2	178	CLM-4551-1.2	183, 221	CLM-7245-1.2	156
C-041	169	CLM-1804-SI-1.2	178	CLM-4555-1.2	170	CLM-7246-1.2	156
CDLM-624-1.2	210, 216	CLM-1836-1.2	178	CLM-4556-1.2	170	CLM-7286-1.2	166
CDLM-629-0.1	187	CLM-1858-1.2	180, 218	CLM-4557-1.2	170	CLM-7292-1.2	180, 215, 217
CDLM-6100-1.2	213, 220, 238	CLM-1911-1.2	179, 214, 216	CLM-4584-MT-1.2	173	CLM-7293-1.2	180, 215, 217
CDLM-7279-S	171, 176	CLM-1913-1.2	177, 217	CLM-4586-MT-1.2	173	CLM-7308-1.2	156
CDLM-7665-1.2	169	CLM-1921-1.2	141, 177	CLM-4587-MT-1.2	173	CLM-7322-1.2	183, 215, 221
CDLM-7943-1.2	221	CLM-1955-1.2	177, 183	CLM-4588	173	CLM-7323-1.2	183, 215, 221
CDLM-9154-C	167	CLM-1959-1.2	177	CLM-4589-MT-1.2	173	CLM-7341	188
CDLM-9154-D	167	CLM-1965-0.1	191	CLM-4590-MT-1.2	172	CLM-7389-1.2	215, 219
CDLM-9158-0.001	168	CLM-1982-1.2	178	CLM-4591-MT-1.2	172	CLM-7407-1MG	170
CDLM-9160-0.001	168	CLM-1996-1.2	178	CLM-4592-MT-1.2	172	CLM-7488	178
CDLM-9205-1.2	215, 217	CLM-2003-0.1	189	CLM-4668-1.2	172, 180	CLM-7528-1.2	214, 217
CDLM-9206-1.2	215, 217	CLM-2003-0.5	189	CLM-4669-1.2	172, 180	CLM-7531-1.2	180, 209, 210, 219
CDLM-9731-1.2	147	CLM-2050-1.2	177, 183	CLM-4670-1.2	172	CLM-7627-1.2	156
CDLM-9820-1.2	214, 216	CLM-2075-0.1	191	CLM-4671	172, 180	CLM-7669-1.2	157
CDNLM-6786-1.2	212, 216, 238	CLM-2078-1	209, 211, 220	CLM-4674-1.2	179, 184	CLM-7670-1.2	157
CDNLM-6786-10	212, 216, 238	CLM-2090-1	187	CLM-4675-1.2	172, 179	CLM-7700-1.2	157
CLM-126-1.2	177, 180	CLM-2091	188	CLM-4682-1.2	179, 214, 216	CLM-7701-1.2	157
CLM-129-0.1	191	CLM-2110-5	189	CLM-4683-1.2	181, 211, 220	CLM-7713-1.2	157
CLM-159-0.01	168	CLM-2110-10	189	CLM-4692-1.2	180, 210, 217	CLM-7864-1.2	190
CLM-182-0.1	187	CLM-2145-0.01	189	CLM-4693-1.2	180, 210, 217	CLM-7885-1.2	165
CLM-182-0.5	187	CLM-2145-1.2	189	CLM-4694-1.2	140, 183	CLM-7892	169
CLM-216-0.1	190	CLM-2235-1.2	178	CLM-4694-T-1.2	140	CLM-7922-0.5	140
CLM-262-0.1	188	CLM-2268-1.2	177	CLM-4695-1.2	184	CLM-7923-1.2	140
CLM-262-0.5	188	CLM-2284-1	188	CLM-4725-1.2	179, 209, 210, 216	CLM-7924-1.2	140
CLM-262-1	188	CLM-2451-1.2	148, 183	CLM-4726-1.2	180, 209, 210, 218	CLM-7930-1.2	182, 215, 220
CLM-309-0.5	191	CLM-2468-0.01	168	CLM-4727-1.2	181, 209, 211, 220	CLM-7931-1.2	182, 215, 221
CLM-309-1	191	CLM-2477-1.2	147	CLM-4729-1.2	182, 209, 211, 220	CLM-7932-1.2	183, 215, 221
CLM-339-1	188	CLM-2482-1.2	179, 210, 216	CLM-4734-1.2	181, 209, 211, 219	CLM-7935-0.1MG	167
CLM-351-0.1	177	CLM-2722-1.2	147, 179	CLM-4735-1.2	181, 209, 211, 220	CLM-7935-1.2	167

Index

Catalog No.	Page	Catalog No.	Page	Catalog No.	Page	Catalog No.	Page
CLM-7936-0.1MG	167	CLM-9373-1.2	177	DLM-139-1	186	DLM-683-1.2	168
CLM-7936-1.2	167	CLM-9374-1.2	140	DLM-139-5	186	DLM-686-5	189
CLM-7988-A-1.2	170	CLM-9436-1.2	165	DLM-155-0.1	149	DLM-695-1	183, 190
CLM-8003-1.2	177	CLM-9437-1.2	165	DLM-155-0.5	149	DLM-695-5	190
CLM-8005-1.2	174, 183	CLM-9438-1.2	165	DLM-155-1.2	149	DLM-787-5	190
CLM-8006-1.2	140, 184	CLM-9499-1.2	148	DLM-158-1	177	DLM-799-1	178
CLM-8007-1.2	177	CLM-9535-1.2	141	DLM-158-5	177	DLM-808-5	191
CLM-8008-1.2	165, 184	CLM-9542-1.2	165	DLM-167-1.2	191	DLM-809-5	190
CLM-8011-0.1MG	167	CLM-9587-1.2	166	DLM-167-5	191	DLM-820-1	187
CLM-8012-0.1MG	167	CLM-9590-1.2	147, 179	DLM-167-C	183, 184	DLM-820-5	187
CLM-8013-0.1MG	167	CLM-9593	190	DLM-170-D-1.2	166	DLM-849-0.1	149
CLM-8014-0.1MG	168	CLM-9594-1.2	213, 219	DLM-183-1.2	165, 179	DLM-849-0.5	149
CLM-8015-0.1MG	168	CLM-9598-1.2	213, 217	DLM-199-10	189	DLM-862-1	187
CLM-8016-0.1MG	167	CLM-9610-1.2	147	DLM-203-0.1	186	DLM-862-5	187
CLM-8017-0.1MG	168	CLM-9652-1.2	213, 221	DLM-203-1	186	DLM-872-0.1	187
CLM-8018-0.1MG	167	CLM-9653-1.2	213, 216	DLM-203-5	186	DLM-874-10	187
CLM-8019-0.1MG	168	CLM-9679-1.2	175, 182	DLM-257-0.01	149	DLM-1008-1	184, 189
CLM-8033-0.1MG	167	CLM-9690-1.2	213, 221	DLM-257-1.2	149, 179	DLM-1067-5	190
CLM-8060-1.2	174	CLM-9692-1.2	170	DLM-258-0.01	149	DLM-1083-5	190
CLM-8087-1.2	209, 210, 216	CLM-9729-1.2	148, 156	DLM-258-0.05	149	DLM-1088-1	190
CLM-8148-MT-1.2	173	CLM-9730-1.2	147, 179	DLM-258-0.1	149	DLM-1088-5	190
CLM-8172-1.2	174	CLM-9761-1.2	165, 182	DLM-258-1.2	149, 179	DLM-1123-0.1	149
CLM-8174-1.2	156	CLM-9763-1.2	165, 182	DLM-261-0.1	149	DLM-1123-1	149
CLM-8232-MT-1.2	172	CLM-9776-1.2	174, 179	DLM-261-1	149	DLM-1123-1.2	149
CLM-8249-1.2	165, 182	CLM-9845-1.2	165, 182	DLM-261-1.2	149, 179	DLM-1146-5	218
CLM-8267-1.2	156	CLM-9847-1.2	165, 182	DLM-263-1	177	DLM-1148-1.2	180, 212, 218
CLM-8285-1.2	165, 182	CLM-9849-1.2	165, 182	DLM-263-5	177	DLM-1148-5	212, 218
CLM-8310-1.2	214, 220	CLM-9851-1.2	174	DLM-268-5	177	DLM-1148-A-1.2	212, 218
CLM-8311-1.2	214, 216	CLM-9866-1.2	174	DLM-271-5	189	DLM-1149-1.2	214, 216
CLM-8312-1.2	214, 218	CLM-9867-1.2	174	DLM-277-0.1	189	DLM-1149-5	214, 216
CLM-8313-1.2	214, 217	CNLM-411-1.2	169	DLM-277-1	189	DLM-1158-0.1	190
CLM-8314-1.2	214, 218	CNLM-3643-5	185	DLM-294-5	185, 190	DLM-1158-1	190
CLM-8315-1.2	214, 218	CNLM-3726-1.2	169	DLM-294-10	185, 190	DLM-1171-5	188
CLM-8316-1.2	171, 214, 217	CNLM-4661-1.2	171	DLM-295-0.1	190	DLM-1171-A-1.2	188
CLM-8340-1.2	174	CNLM-4661-10X-1.2	171	DLM-295-0.25	190	DLM-1175-1	191
CLM-8356-1.2	175	CNLM-4666-1.2	181, 213, 219	DLM-296-0.1	190	DLM-1175-5	191
CLM-8357-1.2	175	CNLM-4666-10	213, 219	DLM-296-0.25	190	DLM-1176-1	191
CLM-8358-1.2	175	CNLM-4666-10X-1.2	181, 213, 219	DLM-299-10	185, 189	DLM-1176-5	191
CLM-8359-1.2	175	CNLM-7148-1.2	181, 214, 220	DLM-313-5	191	DLM-1177-1	178
CLM-8370-1.2	169	CNLM-7221-1.2	171	DLM-337-1-B5	188	DLM-1177-5	178
CLM-8463-T-1.2	157	CNLM-7539-1.2	170	DLM-337-1-LB	188	DLM-1178-0.1	178
CLM-8505-1.2	174, 183	CNLM-7963-5	185	DLM-338-1	186	DLM-1178-1	178
CLM-8525-1.2	165	CNLM-7987-5	185	DLM-338-5	186	DLM-1178-5	178
CLM-8569-1.2	141	CNLM-8150-1.2	171, 181	DLM-341-5	177	DLM-1213-1	186
CLM-8569-T-1.2	141	CNLM-8150-10X-1.2	171, 181	DLM-365-1	149	DLM-1213-5	186
CLM-8588-1.2	141	CNLM-8223-1.2	169	DLM-365-1.2	149	DLM-1283-1	186
CLM-8588-T-1.2	141	CNLM-9636-1.2	219	DLM-365-5	149	DLM-1283-5	186
CLM-8589-1.2	171	CNLM-9643-1.2	219	DLM-365-10	149	DLM-1287-1.2	169
CLM-8705-1.2	182, 215, 220	CNLM-9645-1.2	219	DLM-366-0.1	149	DLM-1293-0.1	190
CLM-8719-1.2	182, 215, 220	CNLM-9647-1.2	219	DLM-366-1	149	DLM-1293-1	190
CLM-8720-1.2	183, 215, 221	CNLM-9650-1.2	219	DLM-366-1.2	149	DLM-1294-1	190
CLM-8721-1.2	183, 215, 221	CNLM-9860-1.2	213, 221	DLM-370-5	190	DLM-1322-1.2	156
CLM-8789-1.2	174	CNLM-9869-1.2	213, 221	DLM-371-0.1	149	DLM-1338-1.2	187
CLM-8792-1.2	184	CNLM-9940-1.2	213, 217	DLM-371-1	149	DLM-1342-1	186
CLM-8931-0.1MG	168	COLM-9061-1.2	168	DLM-371-1.2	149, 183	DLM-1342-5	186
CLM-8977-1.2	157	D-902	169	DLM-371-5	149	DLM-1346-0.1	186
CLM-8989-1.2	156	D-907	169	DLM-380-1	190	DLM-1346-1	186
CLM-8992-1.2	177	DLM-1-5	187	DLM-380-1.2	190, 221	DLM-1354-0.1	186
CLM-9000-1.2	175, 181	DLM-5-5	191	DLM-380-5	190	DLM-1354-0.5	186
CLM-9012-1.2	157	DLM-9-10	187	DLM-382-1	150, 191	DLM-1359-0.1	177
CLM-9028-1.2	156	DLM-18-1	188	DLM-382-1.2	150, 191	DLM-1359-0.5	177
CLM-9029-1.2	156	DLM-18-5	188	DLM-382-5	150, 191	DLM-1366-0.1	172, 189
CLM-9049-1.2	183, 213, 221	DLM-23-5	190	DLM-398-5	177	DLM-1366-1.2	172, 189
CLM-9050-1.2	213, 220	DLM-24-5	190	DLM-398-10	177	DLM-1367-0.1	172
CLM-9095	184	DLM-24-10	190	DLM-398-25	177	DLM-1367-0.25	172
CLM-9135-C	166	DLM-28-5	189	DLM-400-10	187	DLM-1367-1.2	172, 180
CLM-9135-D	166	DLM-28-10	189	DLM-400-25	187	DLM-1368-0.1	172
CLM-9139-B	166	DLM-28-25	189	DLM-401-5	187	DLM-1368-0.25	172
CLM-9139-C	166	DLM-28-5M-1.2	189	DLM-411-5	189	DLM-1368-1.2	172, 179
CLM-9146-C	167	DLM-35-5	191	DLM-423-1	186	DLM-1369-0.1	172
CLM-9146-D	167	DLM-50-1	186	DLM-423-5	186	DLM-1369-1.2	172, 179
CLM-9147-C	167	DLM-50-5	186	DLM-450-1	150, 191	DLM-1386-1	188
CLM-9148-B	167	DLM-102-1	149	DLM-450-5	150, 191	DLM-1386-5	188
CLM-9148-C	167	DLM-102-1.2	149, 179	DLM-494-1	187	DLM-1522-1	190
CLM-9153-0.1MG	167	DLM-102-5	149	DLM-494-5	187	DLM-1528-1.2	156
CLM-9157-C	167	DLM-103-1	187	DLM-601-0.1	150	DLM-1541-1	190
CLM-9157-D	167	DLM-103-5	187	DLM-601-1	150	DLM-1592-1	189
CLM-9162-B	168	DLM-106-5	187	DLM-610-0.1	149	DLM-1592-5	189
CLM-9162-C	168	DLM-108-0.1	149	DLM-610-1.2	149, 179	DLM-1607-1	156
CLM-9164-C	168	DLM-108-1	149	DLM-663-0.1	187	DLM-1629-0.1	172
CLM-9165-T-1.2	148	DLM-108-1.2	149, 179	DLM-663-1	187	DLM-1629-0.25	172
CLM-9167-1.2	148	DLM-108-5	149	DLM-663-5	187	DLM-1629-1.2	172, 180
CLM-9282-1.2	141	DLM-119-1.2	170, 171	DLM-664-1	190	DLM-1630-0.1	172
CLM-9319-1.2	174, 179	DLM-122-1	187	DLM-670-1	186	DLM-1630-1.2	172
CLM-9349-1.2	165	DLM-122-5	187	DLM-670-5	186	DLM-1632-1.2	171
CLM-9363-1.2	147	DLM-133-1	186	DLM-677-0.1	149	DLM-1638-0.1	177
CLM-9372-1.2	178	DLM-133-5	186	DLM-677-1.2	149	DLM-1638-0.25	177

Index

Catalog No.	Page	Catalog No.	Page	Catalog No.	Page	Catalog No.	Page
DLM-1663-1	187	DLM-2829-0.01	212, 218	DLM-7153-1.2	212, 217	EC-1412-1.2	78
DLM-1669-0.1	177, 180	DLM-2845-1.2	156	DLM-7170-1.2	171	EC-1412-3	78
DLM-1819-1.2	169, 170	DLM-2852-1.2	156	DLM-7171-1.2	171	EC-1413-1.2	77
DLM-1843-5	188	DLM-2853-1.2	156	DLM-7172-1.2	171	EC-1413-3	77
DLM-1910-0.1	187	DLM-2854-1.2	156	DLM-7183	212, 219	EC-1414-1.2	78
DLM-1910-1	187	DLM-2862-1.2	180, 209, 210, 219	DLM-7347-0.01	166	EC-1414-3	78
DLM-1912-5	188	DLM-2878-0.01	212, 219	DLM-7474-1.2	170	EC-1415-1.2	78
DLM-1923-0.01	149	DLM-2943-1.2	171, 180	DLM-7658	187	EC-1415-3	78
DLM-1923-1.2	149, 179	DLM-2970-1.2	182, 213, 220	DLM-7663	191	EC-1416-1.2	79
DLM-1928-0.5	188	DLM-3008-1.2	169	DLM-7779-5	176	EC-1416-3	79, 183
DLM-1930-0.1	188	DLM-3014-1	188	DLM-7953-1.2	168	EC-1417-1.2	79
DLM-1934-0.1	188	DLM-3014-5	188	DLM-7982-5	176	EC-1417-3	79
DLM-1934-0.25	188	DLM-3016-1	188	DLM-8020-1.2	149	EC-1418-1.2	79
DLM-1935-0.1	188	DLM-3016-5	188	DLM-8049-0.005	166	EC-1418-3	79
DLM-1935-1	188	DLM-3017-1	188	DLM-8074-1.2	144	EC-1419-1.2	80
DLM-1936-0.1	189	DLM-3017-5	188	DLM-8085-1.2	168	EC-1419-3	80
DLM-1936-1	189	DLM-3022-1.2	188	DLM-8085-D-1.2	168	EC-1420-1.2	78
DLM-1937-0.1	189	DLM-3024-5	189	DLM-8221-1.2	169	EC-1420-3	78
DLM-1937-0.25	189	DLM-3026-0.1	189	DLM-8246	181	EC-1421-1.2	78
DLM-1938-0.1	189	DLM-3026-0.05	189	DLM-8252-1.2	176	EC-1421-3	78
DLM-1939-5	185, 189	DLM-3035-1.2	169	DLM-8254-1.2	176	EC-1422-1.2	79
DLM-1943-0.1	190	DLM-3039-0.1	169, 190	DLM-8276-0.1	166	EC-1422-3	79
DLM-1945-0.1	187	DLM-3039-0.05	169, 190	DLM-8305-0.01	166	EC-1424-1.2	77
DLM-1972-0.1	178	DLM-3039-1MG	169, 190	DLM-8330-0.05	166	EC-1424-3	77
DLM-1974-0.1	191	DLM-3049-1	191	DLM-8438-0.001	166	EC-1425-1.2	78
DLM-1974-1	191	DLM-3057-0.01	166	DLM-8512-1.2	213, 220	EC-1425-3	78, 183
DLM-1975-0.1	191	DLM-3063-1.2	78	DLM-8583-0.1MG	167	EC-1426-1.2	79
DLM-1975-0.5	191	DLM-3063-3	78	DLM-8811-1.2	187	EC-1426-3	79
DLM-2004-0.1	187	DLM-3093-0.01	178	DLM-8868-1.2	212, 218, 238	EC-1428-1.2	78
DLM-2004-0.05	187	DLM-3093-0.1	178	DLM-8901-1.2	144	EC-1428-3	78
DLM-2005-0.01	160, 188	DLM-3098-5	176	DLM-8904-1.2	212, 218, 238	EC-1430	120
DLM-2005-0.1	160, 188	DLM-3173-0.1	189	DLM-9003-1.2	212, 218, 238	EC-1434-1.2	77
DLM-2005-1.2	160, 188	DLM-3190-1	189	DLM-9070-1.2	144	EC-1434-3	77
DLM-2030-1.2	187	DLM-3322-0.5	190	DLM-9137-0.001	166	EC-1435-1.2	78
DLM-2037-1	188	DLM-3336-1	186	DLM-9142-0.001	166	EC-1435-3	78
DLM-2053-0.1	191	DLM-3344-5	191	DLM-9149-0.001	167	EC-1436-1.2	78
DLM-2054-0.1	191	DLM-3533-1.2	180, 210, 217	DLM-9150-0.001	167	EC-1436-3	78
DLM-2057-0.01	166	DLM-3740-1.2	149	DLM-9193-1.2	174	EC-1668A/B-KIT	83
DLM-2080-0.1	191	DLM-3754-0.01	168	DLM-9198	178	EC-1948-4M-KIT	87
DLM-2080-1.2	171, 184	DLM-3760-0.01	217	DLM-9313-1.2	144	EC-1948-4W-KIT	86
DLM-2112-1.2	189	DLM-3760-1.2	217	DLM-9315-1.2	144	EC-4050-1.2	79
DLM-2130-5	176	DLM-3816-0.01	168	DLM-9317-1.2	144	EC-4050-3	79
DLM-2131-5	176	DLM-3836-1.2	156	DLM-9541-0.01	166	EC-4051-1.2	79
DLM-2133-0.1	189	DLM-3837-1.2	156	DLM-9546-0.01	166	EC-4051-3	79
DLM-2134-0.1	187	DLM-3839-1.2	156	DLM-9550-0.01	167	EC-4058	106
DLM-2135-0.01	149	DLM-3841-1.2	149	DLM-9553-0.01	167	EC-4060	117
DLM-2135-1.2	149	DLM-3842-1.2	156	DLM-9554-0.01	167	EC-4070	100
DLM-2136-0.01	149	DLM-3843-1.2	149	DLM-9556-0.01	167	EC-4078-1.2	77
DLM-2136-1.2	149, 179	DLM-3875-10	149	DLM-9558-0.01	167	EC-4078-3	77
DLM-2138	187	DLM-3910-0.01	168	DLM-9560-0.05	168	EC-4133	118
DLM-2139-0.1	177	DLM-3940-1.2	144	DLM-9562-0.01	168	EC-4163-1.2	77
DLM-2140-0.1	149	DLM-3976-5	167	DLM-9563-0.005	168	EC-4163-3	77
DLM-2140-1.2	149	DLM-3979-1.2	168	DLM-9567-0.005	168	EC-4165-1.2	77
DLM-2143-0.1	178	DLM-3979-5	168	DLM-9568-0.01	168	EC-4165-3	77
DLM-2148-0.01	149	DLM-4304-10	189	DLM-9570-0.01	168	EC-4167-1.2	79
DLM-2148-1.2	149, 181	DLM-4360-1.2	179, 212, 217	DLM-9574-0.05	168	EC-4167-3	79
DLM-2204-0.1	149	DLM-4412-25	171	DLM-9612-1.2	184	EC-4187	100
DLM-2204-1.2	149	DLM-4444-0.1	171, 183	DLM-9680	219	EC-4188	100
DLM-2205-0.01	188	DLM-4460-1.2	181	DLM-9945-1.2	141	EC-4189-A	106
DLM-2205-0.1	188	DLM-4461-1.2	180	DLM-9947-1.2	141	EC-4199-1.2	79
DLM-2206-0.1	188	DLM-4476-1.2	181, 213, 220	DLM-9974-1.2	169	EC-4199-3	79
DLM-2207-5	185, 189	DLM-4479-1.2	183, 221	EB-5055	141	EC-4900-1.2	79
DLM-2208-0.5	186	DLM-4541-M-1.2	212, 218, 238	EB-5056	141	EC-4900-3	79
DLM-2208-1	186	DLM-4633-1.2	171	EB-5106	141	EC-4901-1.2	77
DLM-2209-0.5	186	DLM-4667-1.2	213, 221	EB-5162	141, 181	EC-4901-3	77
DLM-2210-0.5	186	DLM-4691-0.01	167	EB-5439	141	EC-4902-1.2	78
DLM-2211-0.1	189	DLM-4711-1.2	156	EBC-2501	28	EC-4902-3	78
DLM-2218-0.1MG	166	DLM-4712-1.2	156	EBC-2507-A-1.2	28	EC-4904-1.2	78
DLM-2276-0.05	188	DLM-4762-1.2	165, 218	EC-1402-1.2	77	EC-4904-3	78
DLM-2277-1	190	DLM-4762-D-1.2	165, 218	EC-1402-3	77	EC-4905-1.2	79
DLM-2279-0.1	191	DLM-4766-1.2	171	EC-1404-1.2	78	EC-4905-3	79
DLM-2279-0.5	191	DLM-4851-M-1.2	212, 218, 238	EC-1404-3	78, 183	EC-4908-1.2	77
DLM-2294-0.01	168	DLM-4852-1.2	212, 218, 238	EC-1405-1.2	78	EC-4908-3	77
DLM-2398-5	191	DLM-4880-1.2	189	EC-1405-3	78	EC-4909-1.2	77
DLM-2438-1	186	DLM-6000-1.2	212, 216	EC-1406-1.2	79	EC-4909-3	77
DLM-2438-5	186	DLM-6083-0.1	178	EC-1406-3	79	EC-4910-1.2	78
DLM-2487-5	167	DLM-6083-1.2	171, 178	EC-1407-1.2	79	EC-4910-3	78
DLM-2607-0.1	166	DLM-6098-1.2	212, 219, 238	EC-1407-3	79	EC-4911-1.2	77
DLM-2611-0.05	166	DLM-6196-1.2	213, 220, 238	EC-1408-1.2	79	EC-4911-3	77
DLM-2634-1	186	DLM-6598-0.01	168	EC-1408-3	79	EC-4912-3	77
DLM-2715-0.01	149	DLM-6861-MT-1.2	169	EC-1409-1.2	79	EC-4912-1.2	77
DLM-2715-0.1	149	DLM-7136-1.2	183, 184, 191	EC-1409-3	79	EC-4913-3	79
DLM-2715-1.2	149	DLM-7141-1.2	183, 214, 221	EC-1410-1.2	80	EC-4914-1.2	77
DLM-2724-1	186	DLM-7149-1.2	213, 220	EC-1410-3	80	EC-4914-3	77
DLM-2742-0.01	167	DLM-7150-1.2	213, 220	EC-1410-10	80	EC-4929-1.2	78
DLM-2806-1.2	169	DLM-7151-1.2	180, 212, 218	EC-1411-1.2	78	EC-4929-3	78
DLM-2824-0.01	166	DLM-7152	212, 216	EC-1411-3	78	EC-4935	101

Index

Catalog No.	Page	Catalog No.	Page	Catalog No.	Page	Catalog No.	Page
EC-4935-A	101	EC-5380-CS1	86	EC-5518-CS5	108	ECN-5558	162
EC-4935-B	101	EC-5380-CS2	86	EC-5518-CS6	108	ECN-5575	160
EC-4937	99	EC-5380-CS3	86	EC-5523	117	ED-900	17, 183
EC-4938	100	EC-5380-CS4	86	EC-5531	115	ED-901	18, 183
EC-4976	82, 83	EC-5380-CS5	86	EC-5532	116	ED-901-A	18
EC-4976-0.2	82	EC-5380-CS6	86	EC-5533	116	ED-901-B	18
EC-4976-1	82	EC-5385	87	EC-5534	116	ED-901-C	18
EC-4976-2	82	EC-5385-CS1	87	EC-5559	101	ED-901-D	18
EC-4976-3	82	EC-5385-CS2	87	EC-7438	119	ED-905	18
EC-4976-3-4	82	EC-5385-CS3	87	ECB-5269	120	ED-906B-5	66
EC-4976-4	82	EC-5385-CS4	87	ECB-5270	120	ED-906B-25	66
EC-4976-5	82	EC-5385-CS5	87	ECB-5271	120	ED-907	17
EC-4977	83, 84, 110	EC-5385-CS6	87	ECB-5291	120	ED-908	69
EC-4977-S	84, 110	EC-5396	96	ECB-5292	120	ED-910	17
EC-4978	83, 84, 110	EC-5396-CS1	96	ECB-5293	120	ED-911	17
EC-4979	83, 84, 100	EC-5396-CS2	96	ECB-5294	120	ED-911-1	17
EC-4986	101	EC-5396-CS3	96	ECB-5339	120	ED-912	18
EC-4987	101	EC-5396-CS4	96	ECB-5387	121	ED-915	18
EC-4989	83, 85	EC-5396-CS5	96	ECB-5389	121	ED-916	18
EC-4987/100	101	EC-5396-CS6	96	ECB-5390	121	ED-922	18
EC-4990-1.2	77	EC-5397	99	ECB-5390-CS1	121	ED-924	18
EC-4990-3	77	EC-5411	103	ECB-5390-CS2	121	ED-927	19
EC-4995	99	EC-5411-A	103	ECB-5390-CS3	121	ED-929	19
EC-5000	101	EC-5412	103	ECB-5390-CS4	121	ED-932	19
EC-5045	99	EC-5414	102	ECB-5390-CS5	121	ED-935-A	69
EC-5048-1.2	78	EC-5414-CS1	102	ECN-1000	162	ED-946	17
EC-5048-3	78	EC-5414-CS2	102	ECN-1013	162	ED-948	18
EC-5085	114	EC-5414-CS3	102	ECN-1051	162	ED-950	18
EC-5095-1.2	77	EC-5414-CS4	102	ECN-2610	160	ED-950-C	18
EC-5095-3	77	EC-5414-CS5	102	ECN-2611	160	ED-955	17
EC-5163	93, 117	EC-5415	103	ECN-2620	160	ED-960	19
EC-5179	107	EC-5418	92	ECN-2621	160	ED-960-C	19
EC-5181	99, 117	EC-5418-CS0.4H	92	ECN-2622	160	ED-961	19
EC-5181-10X-1.2	99, 117	EC-5418-CS1H	92	ECN-2623	160	ED-966	17
EC-5186	98	EC-5418-CS2H	92	ECN-2624	160	ED-969	19
EC-5186-CS1	98	EC-5418-CS3H	92	ECN-2630	160	ED-969-C	19
EC-5186-CS2	98	EC-5418-CS4H	92	ECN-2631	160	ED-971	19
EC-5186-CS3	98	EC-5418-CS5H	92	ECN-2632	160	ED-972	17
EC-5186-CS4	98	EC-5418-CS6H	92	ECN-2640	160	ED-976	19
EC-5186-CS5	98	EC-5419	93	ECN-2641	160	ED-980	19
EC-5315	97	EC-5420	93	ECN-2642	160	ED-980-C	19
EC-5315-1	97	EC-5421-CS0.4H	94	ECN-2643	160	ED-981	17
EC-5315-2	97	EC-5421-CS1H	94	ECN-2644	160	ED-996	17
EC-5315-3	97	EC-5421-CS2H	94	ECN-2645	160	ED-1440-1.2	26
EC-5315-4	97	EC-5421-CS3H	94	ECN-2646	160	ED-1441-1.2	26
EC-5315-5	97	EC-5421-CS4H	94	ECN-2650	160	ED-1450-1.2	26
EC-5323-CS0.4H	89	EC-5421-CS5H	94	ECN-2651	160	ED-1451-1.2	26
EC-5323-CS1H	89	EC-5421-CS6H	94	ECN-2652	160	ED-1462-A-1.2	26
EC-5323-CS2H	89	EC-5421-H	94	ECN-2653	160	ED-1465-1.2	26
EC-5323-CS3H	89	EC-5421-H-E	94	ECN-2654	160	ED-1466-A-1.2	26
EC-5323-CS4H	89	EC-5422	95	ECN-2655	160	ED-1481-1.2	26
EC-5323-CS5H	89	EC-5422-10X	95	ECN-2656	160	ED-1732-S	68
EC-5323-CS6H	89	EC-5423	95	ECN-2660	160	ED-2518	18
EC-5323-H	89	EC-5423-10X	95	ECN-2661	160	ED-2521	47, 49
EC-5323-H-E	89	EC-5424	95	ECN-2662	160	ED-2522	47, 49
EC-5324	91	EC-5424-10X	95	ECN-2663	160	ED-2534-A-1.2	26
EC-5325	53, 91	EC-5433	111	ECN-2664	160	ED-4061	18
EC-5325-0.2X	53, 91	EC-5434	118	ECN-2665	160	ED-4076	17
EC-5325-20X	53, 91	EC-5448	104	ECN-2666	160	ED-4077	17
EC-5326	53, 91, 93, 99	EC-5448-CS0.1	104	ECN-2667	160	ED-4090	18
EC-5326-20X	53, 91, 93, 99	EC-5448-CS0.02	104	ECN-2668	160	ED-4135	67
EC-5336-1.2	79	EC-5448-CS0.05	104	ECN-2669	160	ED-4140	40, 41
EC-5336-3	79	EC-5448-CS0.5	104	ECN-2670	160	ED-4159-CS1	34
EC-5350	117, 224, 230	EC-5448-CS1	104	ECN-2671	160	ED-4198	17
EC-5350-L	117, 224, 230	EC-5448-CS2	104	ECN-2680	160	ED-5004	38, 39
EC-5360	90	EC-5448-CS3	104	ECN-5102	162	ED-5073	74
EC-5360-CS0.4H	90	EC-5448-CS4	104	ECN-5217	160	ED-5089-1.2	26
EC-5360-CS1H	90	EC-5448-HR	104	ECN-5240	160	ED-5237-A-1.2	26
EC-5360-CS2H	90	EC-5450	105	ECN-5241	160	ED-5238-A-1.2	26
EC-5360-CS3H	90	EC-5453	105	ECN-5250	160	ED-5356-1.2	26
EC-5360-CS4H	90	EC-5460	119	ECN-5260	160	ED-5357-1.2	26
EC-5360-CS5H	90	EC-5471-1.2	79	ECN-5261-A	160	ED-5432	63
EC-5360-CS6H	90	EC-5471-3	79	ECN-5267	160	ED-5461	69
EC-5366	112	EC-5492	119	ECN-5270-A	160	ED-5568	18
EC-5367	113	EC-5494-1.2	77	ECN-5280	160	EDF-23-KIT	36
EC-5367-5X10	113	EC-5494-3	77	ECN-5489	161	EDF-957	65
EC-5370	86, 87, 88	EC-5495	107	ECN-5489-CS1	161	EDF-1613-KIT	32
EC-5370-1/10X-10	88	EC-5502	107	ECN-5489-CS2	161	EDF-1948-KIT	40
EC-5371	86, 87, 88	EC-5504	119	ECN-5489-CS3	161	EDF-2519-1	47
EC-5372	86, 88	EC-5505-10X	95	ECN-5489-CS4	161	EDF-2519-2	47
EC-5372-1/10X-10	88	EC-5512-1.2	77	ECN-5489-CS5	161	EDF-2519-3	47
EC-5375	106	EC-5512-3	77	ECN-5489-CS6	161	EDF-2519-4	47
EC-5375-1/10X-10	106	EC-5518	108	ECN-5489-CS7	161	EDF-2519-5	47
EC-5379	87, 88, 105	EC-5518-CS1	108	ECN-5490	161	EDF-2519-A	47
EC-5379-1/10X-10	88, 105	EC-5518-CS2	108	ECN-5490-200X-1.2	161	EDF-2520	47, 49
EC-5379-5X1.2	88, 105	EC-5518-CS3	108	ECN-5497	161	EDF-2523	47, 49
EC-5380	86	EC-5518-CS4	108	ECN-5520	160	EDF-2524	35

Index

Catalog No.	Page	Catalog No.	Page	Catalog No.	Page	Catalog No.	Page
EDF-2525	35	EDF-5381-CS7	72	EDF-9999-0.1	31	EM-4018	197
EDF-2526	35	EDF-5382	73	EDF-9999-0.2	31	EM-4028	197
EDF-2681	48	EDF-5383	73	EDF-9999-0.5	31	EM-4173	196
EDF-4023	35	EDF-5383-4X	73	EDF-9999-1	31	EM-4173-1	196
EDF-4052	36	EDF-5392	59	EDF-9999-2	31	EM-4173-2	196
EDF-4052-1	36	EDF-5392-1	59	EDF-9999-3	31	EM-4180	197
EDF-4052-2	36	EDF-5392-2	59	EDF-9999-3-4	31	EM-4181	196
EDF-4052-3	36	EDF-5392-3	59	EDF-9999-4	31	EM-4182	196
EDF-4052-4	36	EDF-5392-4	59	EDF-9999-5	31	EM-4183	196
EDF-4052-5	36	EDF-5392-5	59	EDF-9999-A	32	EM-4184	197
EDF-4053	36, 37	EDF-5392-6	59	EDF-9999-A-3	32	EM-4185	197
EDF-4054	36, 37	EDF-5393	58	EF-903	22	EM-4186	197
EDF-4055	36, 37	EDF-5395	58	EF-903-C	22	EM-1614-KIT	130
EDF-4067	64	EDF-5407	70	EF-904	20	EO-1439	125
EDF-4067-A	64	EDF-5407-1	70	EF-909B-5	66	EO-4930	125
EDF-4095	48	EDF-5407-2	70	EF-909B-25	66	EO-4958-1.2	140
EDF-4095-1	48	EDF-5407-3	70	EF-918	22	EO-4982	125
EDF-4095-2	48	EDF-5407-4	70	EF-920	20	EO-4983	125
EDF-4095-3	48	EDF-5407-5	70	EF-921	22	EO-4984	125
EDF-4095-4	48	EDF-5408	71	EF-939	22	EO-4985	125
EDF-4095-5	48	EDF-5409-A	71	EF-942-50	22	EO-4993	125
EDF-4096	49	EDF-5429-6H	62	EF-943-50	23	EO-4999	125
EDF-4139	40, 41	EDF-5429-7H	62	EF-944	22	EO-5001	125
EDF-4139-10	41	EDF-5429-CS1H	62	EF-952	20	EO-5002	125
EDF-4141	34	EDF-5429-CS2H	62	EF-953	22	EO-5003	126
EDF-4144	57	EDF-5429-CS3H	62	EF-953-C	22	EO-5030	140
EDF-4145	57	EDF-5429-CS4H	62	EF-954	22	EO-5031	140
EDF-4147	68	EDF-5429-CS5H	62	EF-956	22	EO-5034	125
EDF-4175	40, 41	EDF-5429-CS6H	62	EF-956-C	22	EO-5035	125
EDF-4947	40	EDF-5429-CS7H	62	EF-958	20	EO-5060	140
EDF-4947-CS1	40	EDF-5429-CS8H	62	EF-962	23	EO-5099	138
EDF-4947-CS2	40	EDF-5430	63	EF-963	20	EO-5100	137
EDF-4947-CS3	40	EDF-5431	52, 63	EF-964	23	EO-5100-10X-0.5	137
EDF-4947-CS4	40	EDF-5431-20X	52, 63	EF-964-C	23	EO-5101	137
EDF-4947-CS5	40	EDF-5443	50	EF-965	23	EO-5101-10X-1.2	137
EDF-4964-A	65	EDF-5443-CS1H	50	EF-967	23	EO-5103	139
EDF-5005	38, 39	EDF-5443-CS2H	50	EF-968	23	EO-5104	136
EDF-5006	38	EDF-5443-CS3H	50	EF-973	23	EO-5104-CS1	136
EDF-5006-1	38	EDF-5443-CS4H	50	EF-974	20	EO-5104-CS2	136
EDF-5006-2	38	EDF-5443-CS5H	50	EF-975	23	EO-5104-CS3	136
EDF-5006-3	38	EDF-5443-CS6H	50	EF-982	23	EO-5104-CS4	136
EDF-5006-4	38	EDF-5444	52	EF-982-C	23	EO-5104-CS5	136
EDF-5006-5	38	EDF-5444-C	52	EF-983	21	EO-5104-CS6	136
EDF-5008	38, 39	EDF-5462	35	EF-985	20	EO-5113	139
EDF-5008-50	39	EDF-5463	35	EF-986	20	EO-5113-7.5X-0.5	139
EDF-5041	64	EDF-5491	35	EF-987	20	EO-5161	125
EDF-5041-20	64	EDF-5493	66	EF-988	21	EO-5165	125
EDF-5059	74	EDF-5517	71	EF-1438	20	EO-5169	143
EDF-5174-40X	64	EDF-5524	54	EF-1442-1.2	27	EO-5240	126
EDF-5183	35	EDF-5524-0.1	54	EF-1443-1.2	27	EO-5241	126
EDF-5184	35	EDF-5524-0.3	54	EF-1452-1.2	27	EO-5242	126
EDF-5187	46	EDF-5524-1	54	EF-1453-1.2	27	EO-5275	130, 131
EDF-5187-ST1	46	EDF-5524-2	54	EF-1454-1.2	27	EO-5276	130, 131
EDF-5187-ST2	46	EDF-5524-3	54	EF-1455-1.2	27	EO-5277	130, 131
EDF-5187-ST3	46	EDF-5524-4	54	EF-1463-1.2	27	EO-5278	130, 131
EDF-5187-ST4	46	EDF-5524-5	54	EF-1464-1.2	27	EO-5279	130
EDF-5187-ST5	46	EDF-5524-6	54	EF-1486-1.2	27	EO-5279-CS1	130
EDF-5189	36, 37	EDF-5524-7	54	EF-1731-S	68	EO-5279-CS2	130
EDF-5304	64	EDF-5525	55	EF-1789	22	EO-5279-CS3	130
EDF-5327-CS0.2H	42	EDF-5525-100X-1.2	55	EF-1793	22	EO-5279-CS4	130
EDF-5327-CS1H	42	EDF-5526	55	EF-4030	22	EO-5279-CS5	130
EDF-5327-CS2H	42	EDF-5526-100X-1.2	55	EF-4031	22	EO-5319-A	142
EDF-5327-CS3H	42	EDF-5538	56	EF-4134	67	EO-5319-A-CS1	142
EDF-5327-CS4H	42	EDF-5554	60	EF-4138	40, 41	EO-5319-A-CS2	142
EDF-5327-CS5H	42	EDF-5554-CS0.2	60	EF-4138-10	40, 41	EO-5319-A-CS3	142
EDF-5327-CS6H	42	EDF-5554-CS0.4	60	EF-5009	20	EO-5319-A-CS4	142
EDF-5327-CS7H	42	EDF-5554-H	60	EF-5050	20	EO-5319-A-CS5	142
EDF-5327-H	42	EDF-5554-L	60	EF-5052	20	EO-5319-A-CS6	142
EDF-5327-H-E	42	EDF-5555	61	EF-5054	21	EO-5319-A-CS7	142
EDF-5328	43	EDF-5555-10X	61	EF-5081-1.2	27	EO-5319-A-CS8	142
EDF-5329	43	EDF-5556	61	EF-5082-1.2	27	EO-5319-A-CS9	142
EDF-5331-CS0.2L	44	EDF-5556-10X	61	EF-5259-1.2	27	EO-5319-A-CS10	142
EDF-5331-CS1L	44	EDF-5557	61	EF-5263-1.2	27	EO-5320-A	143
EDF-5331-CS2L	44	EDF-5574	61	EF-5266-1.2	27	EO-5320-200X-1.2	143
EDF-5331-CS3L	44	EDF-5574-10X	61	EF-5384	73	EO-5337	126
EDF-5331-CS4L	44	EDF-5999	32, 33	EF-5384-4X	73	EO-5355	126
EDF-5331-CS5L	44	EDF-5999-2.5ML	33	EF-5394	58	EO-5362	126
EDF-5331-L-E	44	EDF-6999	32, 33	EF-5394-0.5X	58	EO-5376	125
EDF-5332	45	EDF-6999-10X	33	EF-5410	71	EO-5377	126
EDF-5333	45	EDF-7999	32, 33	EM-1724-A	195	EO-5388	121
EDF-5381	72	EDF-7999-10X	33	EM-1724-B	195	EO-5402	132
EDF-5381-CS1	72	EDF-8280-KIT	47	EM-1725-A	195	EO-5402-CS1	132
EDF-5381-CS2	72	EDF-8290-KIT	38	EM-1725-B	195	EO-5402-CS2	132
EDF-5381-CS3	72	EDF-8999	32, 33	EM-1726-A	195	EO-5402-CS3	132
EDF-5381-CS4	72	EDF-8999-4	33	EM-1726-B	195	EO-5402-CS4	132
EDF-5381-CS5	72	EDF-8999-5ML	33	EM-1727-A	195	EO-5402-CS5	132
EDF-5381-CS6	72	EDF-9999	31, 32	EM-1727-B	195	EO-5403	133

Index

Catalog No.	Page	Catalog No.	Page	Catalog No.	Page	Catalog No.	Page
EO-5403-10X-1.2	133	ES-5472	158	JR-D18-25	25	JR-F56-25	24
EO-5404	133	ES-5472-CS1	158	JR-D19-25	25	JR-F57-25	24
EO-5405	133	ES-5472-CS2	158	JR-D20-25	25	JR-F58-25	24
EO-5413	125	ES-5472-CS3	158	JR-D21-25	25	JR-F59-25	24
EO-5425	134	ES-5472-CS4	158	JR-D22-25	25	JR-F60-25	24
EO-5425-CS1	134	ES-5472-CS5	158	JR-D23-25	25	JR-F61-25	24
EO-5425-CS2	134	ES-5472-CS6	158	JR-D24-25	25	JR-F62-25	24
EO-5425-CS3	134	ES-5472-CS7	158	JR-D25-25	25	JR-F63-25	24
EO-5426	135	ES-5472-CS8	158	JR-D26-25	25	JR-F64-25	24
EO-5427	135	ES-5472-CS9	158	JR-D27-25	25	JR-F65-25	24
EO-5428	135	ES-5472-CS10	158	JR-D28-25	25	JR-F66-25	24, 25
EO-5506	137	ES-5473-T	159	JR-D29-25	25	JR-F67-25	24, 25
EO-5507	137	ES-5474	117, 159	JR-D30-25	25	JR-F68-25	24
EO-5508	137	ES-5475	235	JR-D31-25	25	JR-F69-25	24
EO-5509	137	ES-5476	235	JR-D32-25	25	JR-F70-25	24
ERC-034	217	ES-5478	234	JR-D33-25	25	JR-F71-25	24
ERD-119	212, 218, 238	ES-5479	234	JR-D34-25	25	JR-F72-25	24
ERI-015	220	ES-5481	153	JR-D35-25	25	JR-F73-25	24
ERI-017	238	ES-5482	204	JR-D36-25	25	JR-F74-25	24
ERI-026	220	ES-5482-CS1	204	JR-D37-25	25	JR-F75-25	24
ERM-038	213, 220, 238	ES-5482-CS2	204	JR-D38-25	25	JR-F76-25	24
ERT-053	238, 239	ES-5482-CS3	204	JR-D39-25	25	JR-F77-25	24
ERT-054	238, 239	ES-5482-CS4	204	JR-D40-25	25	JR-F78-25	24
ES-2002	200	ES-5482-CS5	204	JR-D41-25	25	JR-F79-25	24
ES-2003	200	ES-5482-CS6	204	JR-D42-25	25	JR-F80-25	24
ES-2004	201	ES-5483	205	JR-D43-25	25	JR-F81-25	24
ES-2006	201	ES-5484	159	JR-D44-25	25	JR-F82-25	24, 25
ES-2008	201	ES-5496	205	JR-D45-25	25	JR-F83-25	24, 25
ES-2026	200	ES-5498	153	JR-D46-25	25	JR-F84-25	24
ES-2032	201	ES-5499-2.2	235	JR-D47-25	25	JR-F85-25	24
ES-2036	200	ES-5501	235	JR-D48-25	25	JR-F86-25	24, 25
ES-2043	153	ES-5503	155	JR-D49-25	25	JR-F87-25	24
ES-2044	152	ES-5510	202	JR-F01-25	24, 25	JR-HPCDF-KIT	25
ES-2528	152	ES-5510-CS1	202	JR-F02-25	24	JR-HXCDD-KIT	25
ES-4087	151	ES-5510-CS2	202	JR-F03-25	24	JR-HXCDF-KIT	25
ES-4157	175	ES-5510-CS3	202	JR-F04-25	24	JR-PCDD/F-KIT	25
ES-5019-A	231	ES-5510-CS4	202	JR-F05-25	24	JR-PECDD-KIT	25
ES-5019-A-CS1-8	231	ES-5510-CS5	202	JR-F06-25	24	JR-PECDF-KIT	25
ES-5019-A-CS9-10	231	ES-5510-CS6	202	JR-F07-25	24	JR-TCDD-KIT	25
ES-5021	231	ES-5511	203	JR-F08-25	24	JR-TCDF-KIT	25
ES-5037	198	ES-5516	227	JR-F09-25	24	L-901	169
ES-5038	198	ES-5521	236, 237	JR-F10-25	24	L-902	169
ES-5038-1	198	ES-5529	144	JR-F11-25	24	MEOCB-5109-1.2	122
ES-5038-2	198	ES-5530	144	JR-F12-25	24	MEOCB-5111-1.2	122
ES-5164	152	ES-5535	206	JR-F13-25	24	MEOCB-5135-1.2	122
ES-5164-1.2	152	ES-5536	206	JR-F14-25	24	MEOCB-5485-1.2	122
ES-5177-5X10	231	ES-5539	151	JR-F15-25	24	MEOCB-5486-1.2	122
ES-5177-500X-N-0.5	231	ES-5540	151	JR-F16-25	24	MEOBDE-5153-1.2	140
ES-5261-1.2	234	ES-5541	154	JR-F17-25	24	MEOBDE-5203-1.2	140
ES-5286	199	ES-5542	155	JR-F18-25	24	MEOBDE-5205-1.2	140
ES-5286-10X	199	ES-5543	226	JR-F19-25	24	MEOBDE-5207-1.2	140
ES-5287	199	ES-5544	226	JR-F20-25	24	MEOBDE-5209-1.2	140
ES-5287-10X	199	ES-5545	226	JR-F21-25	24	MEOBDE-5211-1.2	140
ES-5288	199	ES-5546	151	JR-F22-25	24	MEOBDE-5227-1.2	140
ES-5288-10X	199	ES-5547	239	JR-F23-25	24	MEOBDE-5260-1.2	140
ES-5321	57, 113, 203, 205, 233	ES-5548	239	JR-F24-25	24	MSCB-4007	122
ES-5321-200X-1.2	57, 113, 203, 205, 233	ES-5549	154	JR-F25-25	24	MSCB-4008	122
ES-5321-5X10	233	ES-5560	227	JR-F26-25	24	MSCB-4009	122
ES-5342	230	ES-5561	227	JR-F27-25	24	MSCB-4010	122
ES-5344-50X-0.5	230	ES-5562	239	JR-F28-25	24	MSCB-4012	122
ES-5348	228	ES-5563	240	JR-F29-25	24	MSCB-4013	122
ES-5349	229	ES-5564	240	JR-F30-25	24	MSCB-4015	122
ES-5349-L	229	ES-5565	240	JR-F31-25	24	MSCB-4027	122
ES-5352-L	226	ES-5566	240	JR-F32-25	24	N-922	169
ES-5353	226	ES-9444	203	JR-F33-25	24	N-923	169
ES-5386	153	ES-9463	153	JR-F34-25	24	NLM-814-1.2	185
ES-5399	229	ES-9464	153	JR-F35-25	24	NLM-6715-1.2	190
ES-5399-10X-0.5	229	F-918	169	JR-F36-25	24	NLM-7647-S	176
ES-5400	229	F-919	169	JR-F37-25	24	OHCB-5114-1.2	122
ES-5401	195	I-902	169	JR-F38-25	24, 25	OHCB-5115-1.2	122
ES-5406	195	JR-D01-25	25	JR-F39-25	24, 25	OHCB-5117-1.2	122
ES-5437	154	JR-D02-25	25	JR-F40-25	24	OHCB-5118-1.2	122
ES-5438	155	JR-D03-25	25	JR-F41-25	24	OHCB-5124-1.2	122
ES-5442	232	JR-D04-25	25	JR-F42-25	24	OHBDE-5190-1.2	140
ES-5449-10	233	JR-D05-25	25	JR-F43-25	24	OHBDE-5191-1.2	140
ES-5449-100X-1.2	233	JR-D06-25	25	JR-F44-25	24	OHBDE-5206-1.2	140
ES-5464	223	JR-D07-25	25	JR-F45-25	24	OHBDE-5212-1.2	140
ES-5464-A	222	JR-D08-25	25	JR-F46-25	24	OHBDE-5228-1.2	140
ES-5465	224	JR-D09-25	25	JR-F47-25	24	OLM-7310-1.2	171, 190
ES-5465-5X	224	JR-D10-25	25	JR-F48-25	24	OLM-8283-180-1.2	171
ES-5465-A	224	JR-D11-25	25	JR-F49-25	24	PBB-77-CS	141
ES-5465-A-5X	224	JR-D12-25	25	JR-F50-25	24	PBB-126	141
ES-5466	224	JR-D13-25	25	JR-F51-25	24	PBB-153-CS	141, 181
ES-5467	225	JR-D14-25	25	JR-F52-25	24	PBB-157-CS	141
ES-5467-A	225	JR-D15-25	25	JR-F53-25	24	PBB-209-CS	141
		JR-D16-25	25	JR-F54-25	24	PCB-1-CS	80
		JR-D17-25	25	JR-F55-25	24	PCB-3-CS	80

Index

Catalog No.	Page	Catalog No.	Page	Catalog No.	Page	Catalog No.	Page
PCB-4-CS	80	PCB-203-CS	81	ULM-3888-S	185	ULM-6891-1.2	150
PCB-8-CS	80	PCB-205-CS	81	ULM-3889-S	185	ULM-6894-1.2	177, 183
PCB-9-CS	80	PCB-206-CS	81	ULM-3890-1.2	185	ULM-6911-1.2	171, 184
PCB-10-CS	80	PCB-208-CS	81	ULM-3891-1.2	181, 185	ULM-6917-1.2	177
PCB-11-CS	80	PCB-209-CS	81	ULM-3892-1.2	185, 190	ULM-6918-1.2	177
PCB-12-CS	80	PCBB-5272-CS	120	ULM-3893-S	185	ULM-6919-1.2	178
PCB-15-CS	80	PCBB-5273	120	ULM-3978-1.2	156	ULM-6922-1.2	177
PCB-17-CS	80	PCBB-5274	120	ULM-4210-1.2	178	ULM-6935-1.2	166, 183
PCB-18-CS	80	PCBB-5295	120	ULM-4322-MT-1.2	170	ULM-6935-MT-1.2	166, 183
PCB-19-CS	80	PCBB-5296	120	ULM-4459-1.2	180	ULM-7106-1.2	174, 179, 187
PCB-28-CS	80	PCBB-5297	120	ULM-4520-1.2	175, 182	ULM-7146-1.2	175, 182
PCB-30-CS	80	PCBB-5298	120	ULM-4520-M-1.2	175, 182	ULM-7147-1.2	175, 182
PCB-31-CS	80	PCBB-5340-CS	120	ULM-4520-SA-5X-1.2	175	ULM-7168-1.2	170
PCB-32-CS	80	PFK-HIGH-0.1	35	ULM-4521-1.2	175, 182	ULM-7168-4X-1.2	170
PCB-33-CS	80	PFK-HIGH-0.5	35	ULM-4521-M-1.2	175, 182	ULM-7187-1.2	171
PCB-35-CS	80	PFK-HIGH-1	35	ULM-4521-SA-5X-1.2	175	ULM-7188-1.2	171
PCB-37-CS	80	PFK-LOW-0.25	35	ULM-4559-1.2	175, 181	ULM-7189-1.2	171
PCB-38-CS	80	PFK-LOW-1	35	ULM-4559-M-1.2	175, 181	ULM-7190-1.2	171
PCB-39-CS	80	ULM-2-4X25	190	ULM-4583-MT-1.2	173	ULM-7207-1.2	170
PCB-44-CS	80	ULM-1226-0.01	150	ULM-4585-MT-1.2	173	ULM-7211-1.2	167
PCB-47-CS	80	ULM-1226-1.2	150	ULM-4593-MT-1.2	173	ULM-7212-1.2	167
PCB-49-CS	80	ULM-1227-0.01	150	ULM-4594	173	ULM-7213-1.2	183, 221
PCB-52-CS	80	ULM-1227-T-1.2	150	ULM-4651-MT-1.2	173	ULM-7214-1.2	184
PCB-54-CS	80	ULM-1253-1.2	150	ULM-4652-MT-1.2	173	ULM-7215-1.2	184
PCB-57-CS	80	ULM-1253-25	150	ULM-4662-MT-1.2	173	ULM-7216-1.2	210, 217
PCB-60-CS	80	ULM-1700-0.1	189	ULM-4663-MT-1.2	173	ULM-7217-1.2	212, 218
PCB-66-CS	80	ULM-1701-0.1	188	ULM-4688-1.2	175	ULM-7219-1.2	176
PCB-70-CS	80	ULM-1702-0.1	188	ULM-4690-1.2	175	ULM-7220-1.2	170
PCB-74-CS	80	ULM-1703-0.1	191	ULM-4820	173	ULM-7229-1.2	181, 209, 211, 220
PCB-77-CS	80	ULM-1704-0.1	191	ULM-4834-1.2	140	ULM-7230-1.2	180, 209, 210, 218
PCB-78-CS	80	ULM-1705-0.1	188	ULM-4835-1.2	140	ULM-7232-1.2	210, 216
PCB-79-CS	80	ULM-1708-0.1	191	ULM-4836-1.2	140	ULM-7233-1.2	210, 216
PCB-80-CS	80	ULM-1709-1.2	190	ULM-4841-1.2	168	ULM-7234-1.2	177, 183
PCB-81-CS	80	ULM-1710-0.5	187	ULM-5370	119	ULM-7235-1.2	214, 216
PCB-82-CS	80	ULM-1710-1.2	187	ULM-6074-60	189	ULM-7236-1.2	221
PCB-85-CS	80	ULM-1711-0.01	188	ULM-6084-1.2	178	ULM-7242-MT-1.2	169
PCB-87-CS	80	ULM-1711-1.2	18, 188	ULM-6091-1.2	212, 219, 238	ULM-7263-1.2	212, 216
PCB-95-CS	80	ULM-1712-0.05	188	ULM-6093-1.2	213, 238	ULM-7271-1.2	156
PCB-97-CS	80	ULM-1712-1.2	22, 188	ULM-6097-1.2	238	ULM-7275-1.2	169
PCB-99-CS	80	ULM-2154-1.2	170	ULM-6097-10X-1.2	238	ULM-7281-1.2	170
PCB-101-CS	80	ULM-2301-0.1	209, 210, 211,	ULM-6099-1.2	212, 219, 238	ULM-7282-1.2	170
PCB-104-CS	80		216, 220	ULM-6129-1.2	172	ULM-7309-1.2	170
PCB-105-CS	80	ULM-2301-1.2	179, 209, 210,	ULM-6130-1.2	177, 181, 211, 220	ULM-7312-1.2	171, 190
PCB-110-CS	80		211, 216, 220	ULM-6132-1.2	210, 216	ULM-7313-1.2	218
PCB-111-CS	81	ULM-2323-4X25	190	ULM-6132-SM-1.2	216	ULM-7314-1.2	181, 220
PCB-112-CS	81	ULM-2411-1.2	150, 179	ULM-6133-1.2	210, 216	ULM-7346-1.2	214, 216
PCB-114-CS	81	ULM-2411-25	150	ULM-6133-SM-1.2	216	ULM-7375-2X1.2	141
PCB-118-CS	81	ULM-2412-0.1	150	ULM-6134-1.2	180, 210, 217	ULM-7378-1MG	169, 190
PCB-123-CS	81	ULM-2412-1-1.2	150, 179	ULM-6135-1.2	180, 210, 217	ULM-7391-1.2	215, 219
PCB-126-CS	81	ULM-2415-0.1	150	ULM-6137-1.2	210, 217	ULM-7393-MT-1.2	173
PCB-127-CS	81	ULM-2415-1-1.2	150, 179	ULM-6139-1.2	182, 209, 211, 220	ULM-7394-MT-1.2	172
PCB-128-CS	81	ULM-2416-0.1	150	ULM-6139-SM-1.2	209, 211, 220	ULM-7395-MT-1.2	173
PCB-132-CS	81	ULM-2416-1-1.2	150, 179	ULM-6148-MT-1.2	172	ULM-7396-1.2	171, 190, 221
PCB-138-CS	81	ULM-2417-0.1	150	ULM-6149-MT-1.2	172	ULM-7403-1.2	181, 184, 189
PCB-141-CS	81	ULM-2417-1-1.2	150	ULM-6174-1.2	172, 180	ULM-7412-1.2	150, 179
PCB-146-CS	81	ULM-2418-0.1	150	ULM-6181-1.2	156	ULM-7413-1.2	150, 179
PCB-149-CS	81	ULM-2418-1.2	150	ULM-6182-1.2	156	ULM-7414-1.2	150
PCB-151-CS	81	ULM-2419-1.2	209, 210, 216	ULM-6195-1.2	178	ULM-7415-1.2	177, 180
PCB-153-CS	81	ULM-2419-25	209, 210, 216	ULM-6205-1.2	216	ULM-7416-1.2	156
PCB-155-CS	81	ULM-2420-1.2	209, 210, 216	ULM-6226	173	ULM-7417-1.2	150
PCB-156-CS	81	ULM-2420-25	209, 210, 216	ULM-6234-1.2	156	ULM-7418-1.2	218
PCB-157-CS	81	ULM-2421-0.1	188	ULM-6235-1.2	156	ULM-7419-1.2	179, 214, 216
PCB-158-CS	81	ULM-2422-0.1	150	ULM-6236-1.2	140	ULM-7420-1.2	177, 217
PCB-159-CS	81	ULM-2422-T-1.2	150	ULM-6241-1.2	172, 179	ULM-7421-1.2	150
PCB-162-CS	81	ULM-2423-1.2	150	ULM-6251-1.2	180, 210, 217	ULM-7422-1.2	150
PCB-167-CS	81	ULM-2423-A-1.2	150	ULM-6560-1.2	175	ULM-7423-1.2	150, 179
PCB-169-CS	81	ULM-2424-0.1	209, 211, 219	ULM-6566-1.2	172	ULM-7424-1.2	150, 179
PCB-170-CS	81	ULM-2424-1.2	181, 209, 211, 219	ULM-6575-A-1.2	212, 218	ULM-7425-1.2	150, 181
PCB-171-CS	81	ULM-2425-0.1	209, 211, 219	ULM-6575-S-10X-1.2	212, 218	ULM-7426-1.2	150
PCB-172-CS	81	ULM-2425-1.2	181, 209, 211, 219	ULM-6576-1.2	150	ULM-7427-1.2	150, 183
PCB-174-CS	81	ULM-2426-25	150	ULM-6581-1.2	169	ULM-7428-1.2	150, 191
PCB-177-CS	81	ULM-2426-1-1.2	150	ULM-6600-1.2	156	ULM-7431-1.2	177, 180
PCB-178-CS	81	ULM-2427-0.1	211, 220	ULM-6619-1.2	238	ULM-7432-1.2	220
PCB-180-CS	81	ULM-2427-1.2	181, 209, 211, 220	ULM-6637-S	176	ULM-7433-1.2	172, 180
PCB-182-CS	81	ULM-2428-0.1	178	ULM-6671-1.2	150	ULM-7434-1.2	172, 180
PCB-183-CS	81	ULM-2429-0.1	178	ULM-6687-1.2	170, 171	ULM-7440-1.2	181, 211, 220
PCB-187-CS	81	ULM-2430-0.1	178	ULM-6694-1.2	212, 219	ULM-7441-1.2	209, 210, 216
PCB-188-CS	81	ULM-3693	187	ULM-6697-MT-1.2	173	ULM-7442-1.2	181, 209, 211, 220
PCB-189-CS	81	ULM-3845-1.2	185	ULM-6721-1.2	171	ULM-7443-1.2	179, 209, 210, 216
PCB-191-CS	81	ULM-3847-S	185	ULM-6778-1.2	178	ULM-7444-1.2	180, 209, 211, 219
PCB-194-CS	81	ULM-3849-1.2	185	ULM-6781-1.2	215, 221	ULM-7445-1.2	181, 209, 211, 220
PCB-195-CS	81	ULM-3850-1.2	185	ULM-6781-SA-1.2	215, 221	ULM-7446-1.2	157
PCB-196-CS	81	ULM-3881-1.2	156	ULM-6783-1.2	172	ULM-7447-1.2	180, 209, 210, 219
PCB-198-CS	81	ULM-3883-1.2	156	ULM-6822-1.2	177	ULM-7448-1.2	180, 209, 210, 219
PCB-199-CS	81	ULM-3884-1.2	150	ULM-6848-MT-1.2	172	ULM-7449-0.1MG	167
PCB-201-CS	81	ULM-3884-25	150	ULM-6875-1.2	214, 216	ULM-7449-1.2	167
PCB-202-CS	81	ULM-3885-1.2	150	ULM-6876-1.2	181, 213, 219	ULM-7450-1.2	210, 217

Index

Catalog No.	Page	Catalog No.	Page	Catalog No.	Page	Catalog No.	Page
ULM-7451-1.2	174, 183	ULM-8233-MT-1.2	172	ULM-9011-1.2	156	ULM-9615-1.2	170
ULM-7453-1.2	180, 215, 217	ULM-8234	169	ULM-9024-1.2	156	ULM-9618-1.2	150
ULM-7454-1.2	180, 215, 217	ULM-8235-1.2	171, 189	ULM-9025-1.2	156	ULM-9621-1.2	141
ULM-7466-1.2	172, 180	ULM-8239-1.2	156	ULM-9032-1.2	144	ULM-9622-1.2	141
ULM-7489-1.2	212, 217	ULM-8250-1.2	165, 182	ULM-9033-1.2	144	ULM-9635-1.2	219
ULM-7494-1.2	171	ULM-8251-1.2	165, 184	ULM-9042-S	176	ULM-9642-1.2	219
ULM-7525-1.2	178	ULM-8253-1.2	176	ULM-9046-1.2	187	ULM-9644-1.2	219
ULM-7526-1.2	189	ULM-8255-1.2	176	ULM-9066-1.2	177	ULM-9646-1.2	219
ULM-7527-1.2	170	ULM-8261-0.1MG	167	ULM-9073-1.2	213, 220	ULM-9649-1.2	219
ULM-7551-1.2	172	ULM-8262-0.1MG	168	ULM-9090-1.2	144	ULM-9674-1.2	221
ULM-7552-1.2	157	ULM-8263-0.1MG	168	ULM-9091-1.2	144	ULM-9687-1.2	165
ULM-7567-1.2	213, 221	ULM-8268-1.2	156	ULM-9096	184	ULM-9691-1.2	213, 221
ULM-7595-1.2	141	ULM-8269-1.2	156	ULM-9134-0.001	166	ULM-9693-1.2	144
ULM-7597-1.2	177, 183	ULM-8270-1.2	156	ULM-9138-0.005	166	ULM-9700-1.2	190
ULM-7598-1.2	178	ULM-8287-1.2	165, 182	ULM-9140-C	166	ULM-9732-1.2	213, 219
ULM-7599-1.2	178	ULM-8290	181	ULM-9140-D	166	ULM-9733-1.2	213, 221
ULM-7600-1.2	178	ULM-8301-MT-1.2	173	ULM-9141-C	166	ULM-9734-1.2	213, 216
ULM-7600-SI-1.2	178	ULM-8303-1.2	165, 179	ULM-9141-D	166	ULM-9758-1.2	150
ULM-7603-1.2	177	ULM-8304	214, 221	ULM-9143-C	166	ULM-9759-1.2	150
ULM-7605-1.2	177	ULM-8317-1.2	214, 220	ULM-9143-D	166	ULM-9760-1.2	165, 182
ULM-7606-1.2	140, 184	ULM-8318-1.2	214, 216	ULM-9144-C	166	ULM-9762-1.2	165, 182
ULM-7607-1.2	141, 177	ULM-8319-1.2	214, 218	ULM-9144-D	166	ULM-9765-1.2	183, 214, 221
ULM-7629-1.2	169	ULM-8320-1.2	214, 217	ULM-9145-C	166	ULM-9767-0	172
ULM-7653-1.2	169	ULM-8321-1.2	214, 218	ULM-9145-D	166	ULM-9779-1.2	174, 179
ULM-7709-1.2	169	ULM-8322-1.2	214, 218	ULM-9151-0.001	167	ULM-9823-1.2	214, 216
ULM-7710-1.2	170	ULM-8323-1.2	171, 214, 217	ULM-9155-C	167	ULM-9824-1.2	216
ULM-7777-1.2	141	ULM-8342-1.2	174	ULM-9155-D	167	ULM-9825-1.2	217
ULM-7780-S	176	ULM-8349-1.2	169	ULM-9156-C	168	ULM-9826-1.2	174
ULM-7823-0.1MG	166	ULM-8350-1.2	169	ULM-9156-D	168	ULM-9827-1.2	174
ULM-7828-1.2	182, 215, 220	ULM-8360-1.2	175	ULM-9159-0.001	168	ULM-9828-1.2	174
ULM-7829-1.2	182, 215, 221	ULM-8361-1.2	175	ULM-9161.001	168	ULM-9829-1.2	174
ULM-7830-1.2	183, 215, 221	ULM-8362-1.2	175	ULM-9163-0.001	166	ULM-9830-1.2	174
ULM-7840-1.2	189	ULM-8363-1.2	175	ULM-9171-1.2	218	ULM-9831-1.2	174
ULM-7869-1.2	209, 211, 219	ULM-8365-1.2	156	ULM-9175-1.2	215, 217	ULM-9832-1.2	174
ULM-7870-1.2	190	ULM-8371-1.2	169	ULM-9176-1.2	215, 217	ULM-9833-1.2	174
ULM-7884-1.2	165	ULM-8451-1.2	171	ULM-9202-0.001	166	ULM-9846-1.2	165, 182
ULM-7886-1.2	141	ULM-8454-1.2	213, 221	ULM-9204-1.2	183, 213, 221	ULM-9848-1.2	165, 182
ULM-7886-T-1.2	141	ULM-8464-T-1.2	157	ULM-9225-1.2	238	ULM-9850-1.2	165, 182
ULM-7887-1.2	141	ULM-8472-C	166	ULM-9279	191	ULM-9852-1.2	174
ULM-7887-T-1.2	141	ULM-8472-D	166	ULM-9283-1.2	141	ULM-9857-1.2	174
ULM-7893-1.2	214, 221	ULM-8480	187	ULM-9287-M-1.2	212, 218, 238	ULM-9868-1.2	174
ULM-7893-A-1.2	214, 221	ULM-8513-1.2	213, 220	ULM-9287-M-20X-1.2	238	ULM-9870-1.2	213, 221
ULM-7919-MT-1.2	173	ULM-8526-1.2	183, 215, 221	ULM-9314-1.2	144	ULM-9886-1.2	238
ULM-7921-D-1.2	167	ULM-8527-1.2	183, 215, 221	ULM-9316-1.2	144	ULM-9887-1.2	238
ULM-7928-1.2	157	ULM-8531-1.2	165	ULM-9318-1.2	144	ULM-9888-1.2	239
ULM-7929-1.2	157	ULM-8533-1.2	169	ULM-9320-1.2	174, 179	ULM-9889-1.2	239
ULM-7968-1.2	166	ULM-8579-1.2	213, 220	ULM-9350-1.2	165	ULM-9890-1.2	238, 239
ULM-7969-1	185	ULM-8590-1.2	171	ULM-9357-1.2	150	ULM-9891-1.2	239
ULM-7972-1.2	180, 212, 218	ULM-8638	214, 216	ULM-9367-1.2	178	ULM-9892-1.2	238
ULM-7975-1.2	165, 218	ULM-8639-1.2	181, 214, 220	ULM-9369-1.2	177	ULM-9893-1.2	238
ULM-7975-D-1.2	165, 218	ULM-8654-1.2	174, 179, 187	ULM-9370-1.2	178	ULM-9894-1.2	238
ULM-7984-1.2	176	ULM-8665-1.2	182, 215, 220	ULM-9376-1.2	187	ULM-9895-1.2	238
ULM-7989-A-1.2	170	ULM-8706-10	185, 189	ULM-9399-1.2	212, 216	ULM-9896-1.2	238
ULM-7990-1.2	180, 209, 210, 219	ULM-8734-1.2	140, 183	ULM-9406-1.2	170	ULM-9897-1.2	238
ULM-7998-1.2	171	ULM-8734-T-1.2	140, 183	ULM-9406-20X-1.2	170	ULM-9898-1.2	212, 218, 238
ULM-7999-1.2	171, 178	ULM-8767-1.2	182, 215, 220	ULM-9428-1.2	181, 215, 220	ULM-9899-1.2	212, 219, 238
ULM-8000-1.2	171	ULM-8768-1.2	183, 215, 221	ULM-9429-1.2	181, 215, 220	ULM-9939-1.2	213, 221
ULM-8001-1.2	214, 217	ULM-8769-1.2	183, 215, 221	ULM-9430-1.2	215, 220	ULM-9941-1.2	213, 217
ULM-8009-1.2	165, 184	ULM-8785-1.2	172	ULM-9431-1.2	182, 215, 220	ULM-9946-1.2	141
ULM-8061-1.2	183, 184, 191	ULM-8790-1.2	156	ULM-9432-1.2	182, 215, 220	ULM-9948-1.2	238
ULM-8066-1.2	174	ULM-8807-1.2	184	ULM-9434-1.2	170	ULM-9955-1.2	174
ULM-8067-1.2	174	ULM-8867-1.2	212, 218, 238	ULM-9434-20X-1.2	170	ULM-9956-1.2	174
ULM-8068-1.2	174	ULM-8867-20X-1.2	238	ULM-9441-1.2	165	ULM-9975-1.2	169
ULM-8081-1.2	168	ULM-8872-1.2	213, 220	ULM-9442-1.2	165		
ULM-8081-D-1.2	168	ULM-8905-1.2	212, 218, 238	ULM-9443-1.2	165		
ULM-8084-1.2	174	ULM-8905-2X-1.2	238	ULM-9465-1.2	189		
ULM-8092-1.2	189	ULM-8917-1.2	175, 181	ULM-9485-1.2	175, 182		
ULM-8096-1.2	179, 214, 216	ULM-8956-1.2	181, 209, 211, 219	ULM-9506-1.2	141		
ULM-8097-1.2	174	ULM-8956-50	209, 211, 219	ULM-9515-1.2	174		
ULM-8122-1.2	181, 213, 220	ULM-8958-1.2	180, 209, 211, 219	ULM-9516-1.2	174		
ULM-8132-0.1MG	167	ULM-8958-50	209, 211, 219	ULM-9538-1.2	212, 217		
ULM-8133-0.1MG	167	ULM-8971-1.2	157	ULM-9540-0.05	166		
ULM-8134-0.1MG	167	ULM-8972-1.2	157	ULM-9543-0.05	166		
ULM-8135-0.1MG	167	ULM-8973-1.2	157	ULM-9545-0.05	166		
ULM-8136-0.1MG	168	ULM-8974-1.2	157	ULM-9547-1.2	170, 181		
ULM-8137-0.1MG	168	ULM-8975-1.2	157	ULM-9551-0.05	167		
ULM-8144-1.2	182, 213, 220	ULM-8976-1.2	157	ULM-9552-0.05	167		
ULM-8149-MT-1.2	173	ULM-8984-1.2	191	ULM-9555-0.05	167		
ULM-8155-1.2	150, 179	ULM-8987-1.2	170	ULM-9557-0.05	167		
ULM-8155-25	150	ULM-8987-20X-1.2	170	ULM-9559-0.05	168		
ULM-8156-1.2	171, 181	ULM-8991-1.2	177	ULM-9561-0.05	168		
ULM-8157-1.2	171	ULM-9001-1.2	174, 183	ULM-9569-0.05	168		
ULM-8184-0.2MG	168	ULM-9002-1.2	212, 218, 238	ULM-9573-0.05	168		
ULM-8218-0.1MG	167	ULM-9002-20X-1.2	238	ULM-9604-1.2	213, 217		
ULM-8219-1.2	168	ULM-9004-1.2	212, 218, 238	ULM-9609-1.2	184		
ULM-8224-1.2	183, 184	ULM-9004-20X-1.2	238	ULM-9614-1.2	169, 170		
ULM-8225-1.2	169	ULM-9005-1.2	182, 215, 220	ULM-9614-W-1.2	169, 170		