



AccuStandard®

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Singles:

- Singles are listed by POP group, Functional group and Applications group and are shown in the Organic Single Analytes section.
- All analytes used in EPA Methods are listed at the beginning of the EPA Methods section.
- An index of CAS numbers and Organic Analytes are in the back of the catalog.

Mixtures:

- Selected mixtures are listed in the Single Organic section by chemical group.
- Listing for each EPA, DIN and other methods are by method numbers in the Organic Method section starting on page 127.

What we've changed in this catalog

Every product of ours is contained in this one master catalog.

New Products in this Catalog

- Plastic Additives
- BioFuels
- More Dyes
- Methoxy and Hydroxy PCBs
- More PBDEs
- Fluoro PBDEs
- Brominated Dibenzo-p-Dioxins
- UOP Standards
- ICP Instrument Specific Standards
- ASTM 7065 Phenols
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- Melamine Analytical Set

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About the Cover

Our Chemist/Collector was fortunate to acquire one of the prime works of one of the most famous painters of the genre. Thomas Wyck's (1616-1677) *The Alchemist in His Studio*, working among his books and papers. The painting is quite dark, but rich. For the cover we lightened it up a bit benefiting from hidden features not visible in the original before cleaning. Notice Wyck's upside down signature in the lower left near the globe. The painting is an excellent addition to our growing collection. See back page for reprints of paintings featured on all previous covers.

PRINTED ON
RECYCLED PAPER



Officers



Mike Bolgar
CEO



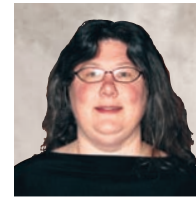
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Manager, New Business Development



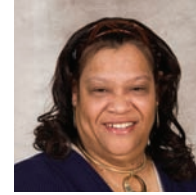
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Customer Service Rep.



Viola P.
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Inorganic Technical Support and Quotes



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Customer Service Rep.



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Customer Service Rep.



About Us

Founded in 1986, AccuStandard has grown from one employee (Alice Bolgar, the CEO's wife), to the current team of 65 people. The company started in a small business incubator co-sponsored by Yale University, The City of New Haven and the State of Connecticut at the former site of Olin Chemical Company in New Haven, Connecticut, USA. Outgrowing that facility, AccuStandard moved across town in 1998 into a fully modernized facility of 37,000 square feet of laboratories, office and storage space. AccuStandard is now one of the leading companies in the field of Chemical Reference Standards.

AccuStandard ships products to over 108 countries and maintains a distributor network in 65 of those countries. Since its beginning, the product line has grown to include over 11,000 Reference Standard products and twice that number of special formulations which have been developed for specific customer needs.

The company is renowned for its recognition and speedy introduction of Standards to the market place. Featured in its history of firsts are all of the 209 congeners of polychlorinated biphenyls (PCBs), over 180 out of the 209 congeners of Polybrominated diphenyl ethers (the flame retardants, PBDEs) as well as halogenated dioxins and dibenzofurans, which all point to our particular strength: organic synthesis.

Among the more recent introductions are the hydroxy and methoxy PBDE congeners, fluorinated PBDE congeners (used as internal standards), Biofuels, Plastic Additives (AccuStandard authored a CRC Press Handbook), EPA Method 535 pesticide derivatives and previously unavailable explosives.

AccuStandard's quality system is audited to ISO 9001 and ISO/IEC 17025 and complies with governmental regulations for the preparation, handling and storage of hazardous substances such as Explosives and Drugs.

AccuStandard owes its success in large part to the excellence, loyalty and dedication of its staff, and we look forward to serving our customers for many years to come.

AccuStandard, At Your Service



Synthesis



Organic and Inorganic Production



Assembly / Shipping



Organic and Inorganic Quality Control

AccuStandard's Quality Resources

- On-Going Stability Program for understanding of chemical interactions
- Complete range of instrumentation: GC/MS, GC/ECD, GC/FID, GC/NPD, LC/MS/MS, HPLC, XOS Sulfur analyzer, Antek 9000 sulfur analyzer, Physical Standards instruments for Flash Point, Distillation, Cloud Point, Freeze Point, Aniline Point, Pour Point, Vapor Pressure. Plus ICP, ICP/MS, Karl Fischer, IC with ion suppression conductivity detector, ion selective electrodes, auto polarimeter and others.
- Monthly internal meetings for formal failure analysis of any non-conformances.
- ISO 9001:2000 and ISO 17025:2005



Agilent 1100/120 Series LC/MS/MS System



Custom Services

Custom Synthesis

The AccuStandard Synthesis Department employs PhD Organic Chemists with many years of academic and industrial experience. This experienced team has developed hundreds of pure chemical compounds for companies and governmental agencies around the world. AccuStandard specializes in synthesizing chemicals of high purity to be used as reference standards, for milligram to kilogram batches. AccuStandard is the only company to synthesize all 209 individual PCB congeners as well as over 180 individual PBDE congeners.



Synthesis Experience

- PCBs (all 209 congeners), PBBs, PCB Metabolites
- Explosives - TNT, RDX, HMX, TATP, HND, HMTD
- PBDEs (over 180 congeners)
- PBDE Metabolites
- FBDEs
- Halo-Dibenzodioxins
- Halo-Dibenzofurans
- PAHs, Nitro-PAHs
- Substituted Diphenylethers
- Pesticides and Metabolites
- Forensics
- Wear Metals
- Pharmaceuticals
and
Other Rare Chemicals

Lab Resources

- Milligram to Kilogram Scale Glassware
- Equipment to work under N₂/Ar
- Liquid Solid Phase Chrom. (mg to 2 kg)
- Flash Chrom. (mg to 2 kg) including Horizon High Performance Flash Chrom. System
- Microwave Synthesis System
- Preparative TLC
- Buchi Rotary Evaporators
- Vacuum Drying Oven
- Parr Pressure Reactor (high pressure reaction, hydrogenation)
- Distillation Equipment - High Vacuum Distillation, Molecular Distillation (Kugelrohr), and Spinning Band Columns

Analytical Resources

- ¹H-NMR spectrometer - 400 MHZ
- GC/MS, GC/FID, GC/ECD, GC/NPD
- HPLC
- ICP
- ICP/MS
- Low Sulfur Analyzers (Antek, X-Ray Optical)
- LC/MS/MS
- Hg Analyzer

Custom Formulations

With over 40,000 custom and catalog standards, there is a good chance that AccuStandard will have a catalog item to meet your needs. However, if your laboratory requires something specific, our Chemists will manufacture a Custom Standard to meet your unique requirements. Custom Standards are an economical and time saving way to have a Standard prepared for your individual needs.

Custom QC options

1. Gravimetric/Volumetric Certification: Each purity is measured gravimetrically and QC verified instrumentally (where available). Every component in the Standard is guaranteed to be within +/-0.5% of the requested value unless otherwise stated on the Certificate of Analysis. The solutions are diluted to volume using Class A glassware. A Certificate of Analysis accompanies each Standard and documents the gravimetric values used.
2. Full Quantitative Certification: This QA/QC method includes extended GC analysis using both internal calibration standards plus statistical analysis. A data package containing analytical and gravimetric data can be provided if requested during the quotation phase (Organic Customs only).



Custom Packaging & Bulk Quantity Requirements

AccuStandard has the resources and equipment to meet your custom packaging requirements.

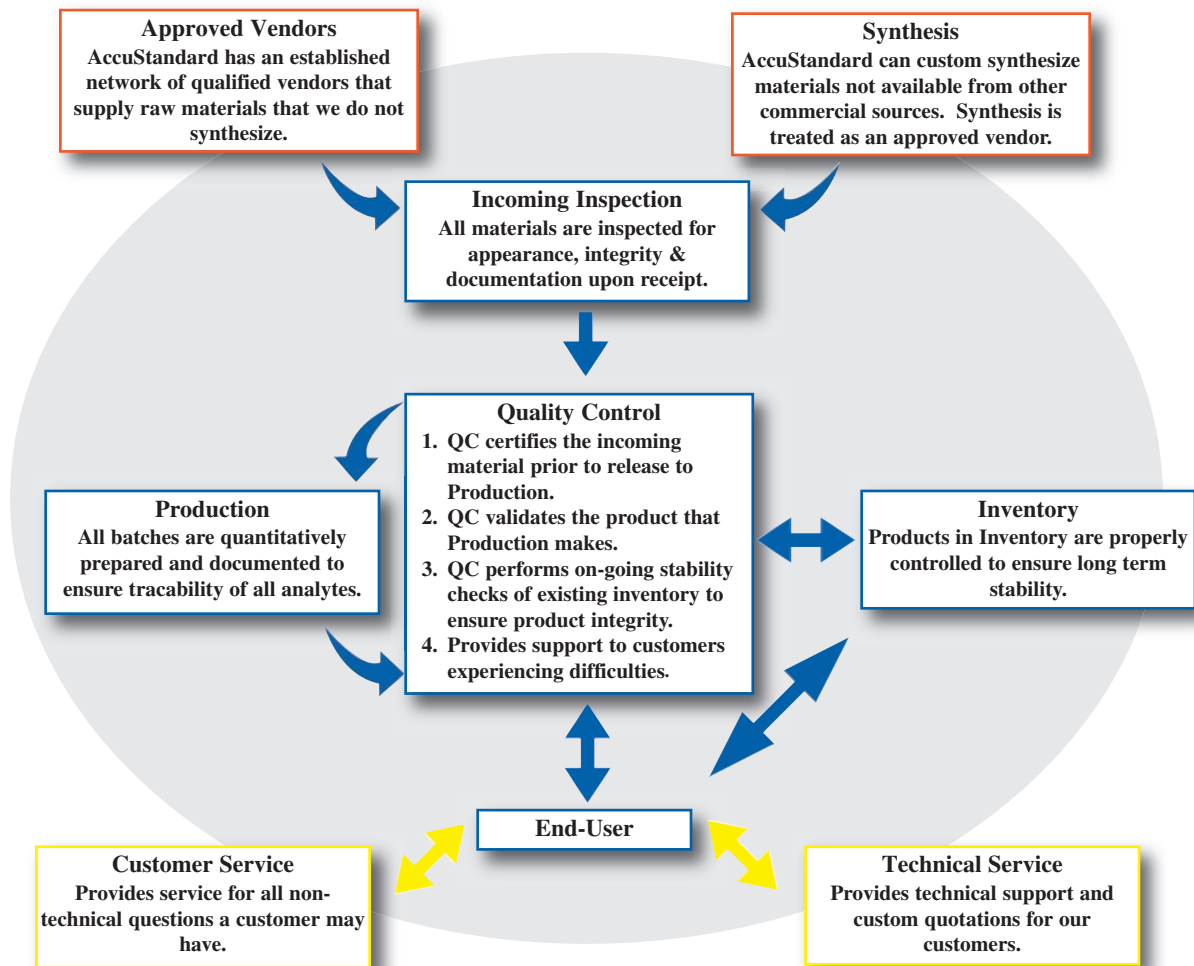
- Automated ampule filling & sealing 0.2 mL up to 20 mL and ampule sizes from 1 mL to 20 mL
- Quantities from 500 to over 500,000 ampules
- Homogeneity testing
- Amber ampules for added product stability
- Private labeling and packaging (OEM)

We can reduce your costs using the Cozzoli Auto Filling/Sealing Machine to package just the right size product for your application. OEM Standards - Privately labeled standards manufactured and tested to your specifications. Cold and under-Nitrogen sealing available.



ISO 9001 & 17025 Quality System

How AccuStandard Ensures the Best Quality in the Industry




Visit our website at AccuStandard.com and click "About Us" for a copy of the latest Certificates.



Documentation and Certification

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CERTIFICATE OF ANALYSIS

CATALOG NO: DRH-007S

DESCRIPTION: Proposed DEP(MA) - Aliphatic Hydrocarbons

LOT: B8100022

SOLVENT: CH₂Cl₂:Hexane (1:1)

EXPIRATION: Nov 4, 2018

This product is guaranteed accurate to ± 0.5% of the Certified Analyte concentration through the Expiration Date on the Label.

Component	CAS #	Purity %	Prepared Concentration ¹	Certified Analyte Concentration ²
	(GC/MS)		(µg/mL)	(µg/mL)
n-Nonane	111-84-2	100	1004	1004
n-Decane	124-18-5	99.7	1006	1003
n-Dodecane	112-40-3	99.2	1002	994
n-Tetradecane	629-59-4	98.5	1002	987
n-Hexadecane	544-76-3	99.4	1003	997
n-Octadecane	593-45-3	100	1008	1008
n-Nonadecane	629-92-5	96.8	1037*	1004
n-Eicosane	112-95-8	99.8	1003	1001
n-Docosane	629-97-0	99.1	1007	998
n-Tetracosane	646-31-1	100	1001	1001
n-Hexacosane	630-01-3	98	1008	988
n-Octacosane	630-02-4	100	1005	1005
n-Triacontane	638-68-6	97.5	1026*	1000
n-Hexatriacontane	630-06-8	98.8	1002	990

14 Components

* Weight compensated to 100% purity

NIST Tracability

1. All weights are traceable through NIST, Test No. 822/272103-05.
 2. Certified Analyte Concentration = Purity x Prepared Concentration. The Uncertainty calculated for this product is ±4% which is the Combined Uncertainty (ucy). It represents an estimated standard deviation equal to the positive square root of the total variance of the uncertainty of components. The Expanded Uncertainty is U which is Uc(y) * K where K is the coverage factor at the 95% confidence level (K=2).
 3. A product with a suffix (-1A, -2B, etc.) on its lot# has had its expiration date extended and is identical to the same lot# without the suffix.

Certified by: R. Cooper

AccuStandard is accredited to ISO/IEC 17025:2005

QR-ORGINO-001
Rev. 07/07

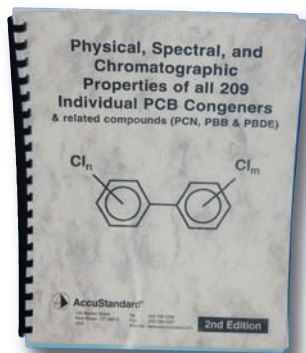
Uncertainty Values

The uncertainty values as stated on our Certificate of Analysis have been determined using the EURACHEM/CITAC Guide (Quantifying Uncertainty in Analytical Measurement). We have evaluated both Type A (based on a series of observations) and Type B (manufacturers specifications and calibration data) factors and report a combined expanded uncertainty.

Although uncertainty relates to the general concept of doubt, uncertainty of measurement does not imply doubt about the validity of a measurement, but rather increased confidence in the validity of a measurement result. Uncertainty takes the form of a range and cannot be used to correct a measurement result. The uncertainty of the result should never be interpreted as representing the error itself, or the error remaining after correction.

QC management approval

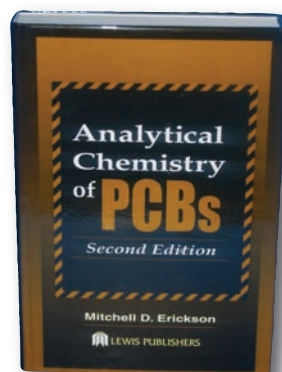
Technical Reference Books



Physical, Spectra, and Chromatographic Properties of all 209 Individual PCB Congeners
AccuStandard's FT/IR, Mass Spectral data, melting point and chromatographic information along with chromatographic data from George Frame's study is available in this book.

Our own PCB Book

Contains the Physical, Spectral and Chromatographic Properties of all 209 Congeners. Also included is an article by George Frame
BOOK-PCB-002

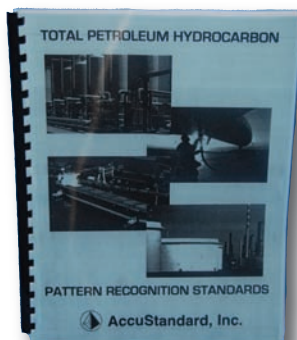


Analytical Chemistry of PCBs

This updated and expanded Second Edition of Dr. Erickson's Analytical Chemistry of PCBs appears a decade after the first and is completely revised and updated. The changes from the First Edition reflect the significant growth in the area and a growing appreciation of the importance of PCB analysis to our culture. This book is a comprehensive review of the analytical chemistry of PCBs. It is part history, part annotated bibliography, part comparison, and part guidance. Featuring a new chapter on analyst/customer interactions and several new appendices, the Second Edition is an invaluable resource for both chemists with no experience in PCB analysis and seasoned PCB researchers.

PCB Book

Analytical Chemistry of PCBs
BOOK-PCB-001



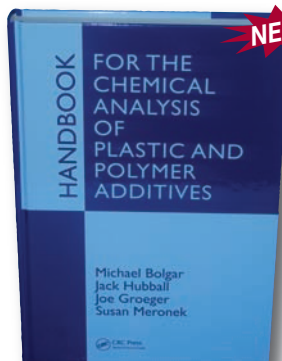
Total Petroleum Hydrocarbon Pattern Recognition Standards

This book contains chromatography for the various petroleum products typically found during LUFT/LUST site investigations. The chromatography shows each fuel pattern in a 25 minute analytical run for early eluting petroleum products like gasoline to late eluting products like motor oil. In addition, an *n*-alkane standard analyzed under identical conditions has been overlaid on each petroleum product chromatogram. Use of the book will assist the chemist's identification of the fuel for pattern recognition.

TPH Book

Total Petroleum Hydrocarbon Pattern Recognition Standards
BOOK-TPH-001

and ending *n*-alkane reference points can be used to establish gross hydrocarbon concentrations. By comparing the specific *n*-alkane range of the closest identified petroleum standard to that of the unknown sample a reproducible gross hydrocarbon number can be achieved.



Handbook for the Chemical Analysis of Plastic and Polymer Additives

This book, recently published by CRC Press, contains a host of analytical reference data for each of the many common plastics and polymer additives. Each of the compounds is also offered by AccuStandard as a certified reference standard, most in both neat and solution form, making comparison of the analytical results easier.

Plastics Book

For the Chemical Analysis of Plastic and Polymer Additives
BOOK-PLAS-001

Each compound has:(where applicable)

- Chemical Information
- Structure
- CAS Number
- RTECS Number
- Formula
- Molecular Weight
- IUPAC Name, other common names and some popular brand names
- Physical Properties
- Appearance
- Melting and Boiling Points
- Stability
- Solubilities in several common solvents
- Application
- Regulatory
- Environmental Impact
- Point of Release
- Toxicological Data
- Analytical Data
- Mass Spectrum with key ions tabulated
- Chromatogram with conditions
- Other Important Information

Additional reference information, such as the full text of select EPA Methods and EU Directives, can be found on our Website.

QC Standards



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AccuStandard has developed the NotLot Program for customers to meet regulatory, auditor and laboratory requirements for the use of independent lots without having to place two different orders with two different companies. NotLots are the simplest way to verify the accuracy of your analysis without the added paperwork required when using lots from two different manufacturers.

NotLots contain the same formulation of materials as the first lot, and are made independently.

This program is available on selected catalog items. Ask your Customer Service Representative for the catalog number and a NotLot.

NotLots will be provided at the regular list price for the more common products, and for the same price but with a minimum quantity of 5 for the less common and Custom (S-) products. NotLots may not be available for resale items, kits, Paks, or Inorganic Standards.

Not Lot



Independent Lots

Alternate Source Line

Cross Reference

ASL

Improves Analytical Results, while Saving Time and Money

AccuStandard enhances your laboratory's analytical results while streamlining your purchasing efforts through the Alternate Source Line (ASL) of Analytical Standards. Use ASL's for Independent lots to other Standard suppliers' formulations.

- Truly independent lots
- Identical Formulations to allow easy analysis without modifying analytical programs
- Economical packaging versus custom products

For additional
Cross Referencing,
visit our Website

Request a competitor's formulation and chemists will manufacture a high quality ASL at a competitive cost. All ASL formulations were originally designed to meet an individual lab's need, but once incorporated into the ASL line, benefit the global analytical community.

AccuStandard has compiled the following cross-reference table for the most requested CLP, and EPA 500, 600, 8000 series analytical Standard formulations currently offered in the marketplace.

SUPELCO	ACCUSTANDARD	SUPELCO	ACCUSTANDARD	SUPELCO	ACCUSTANDARD	SUPELCO	ACCUSTANDARD
36588	P-085S-A-10X	48142	TCLP-A-0.5X	48834	M-625-BN-4	47358-U	M-524-FS
36656	M-8150S-A-10	48143	TCLP-VOC	48835	CLP-PI	47426-U	M-8081-SC
40003	M-8031	48166	DRH-001S-10X	48853	M-001C	47507-U	M-601/602
40156	M-508-IS	48238	M-8040B-R	48859	M-001P	47568-U	CLP-LC-IS-100X
40179	CLP-FC	48242	M-525.2-IS	48859	M-604	47578-U	GRH-003S
43286	M-8015A-10X	48243	M-525-5	48859	M-625A	47616-U	P-093S-H-10X
45843	M-8150S-A-06	48243	M-CL-2	48861	M-001K	47644-U	M-8151-IS
45873	M-8150S-A-09	48246	M-525-2-5X	48862	M-001L	47668-U	M-552.1-SS-ME
46965	M-601C-10X	48249	M-525-1	48863	M-001N	47669-U	M-552.1-IS
47077	CLP-004	48249	M-525-1-5X	48863	M-625-02	47915-U	M-608-ASL
47283	M-8330A-R	48282	M-1618D	48864	M-001 R-0.1X	47930-U	Z-014G
47284	M-8330B-R2	48355	APP-9-208-10X	48864	M-001R	47960-U	M-8270-SS
47399	M-502C-10	48378	M-8150S-A-08	48866	M-625-BN-1	47970-U	M-001B
47645	M-552.1-SS	48389	M-602-SS	48866	Z-014H	47980-U	M-8150-05
47896	M-8150S-A-01	48389	M-602-SS-10X	48875	CLP-AS	47985-U	M-8150-09
47897	M-8150S-A-04	48399	CLP-003-R	48876	CLP-PS-10X	47987-U	M-8150-04
47904	M-501-0.5X-5ML	48449	CLP-026-R2-10X	48878	CLP-007B	48057-U	CLP-022G
47905	GAD-001	48464	CLP-011A	48902	Z-014J	48057-U	CLP-022G-10X
47913	M-8080-QC-R	48466	M-524-SS	48902	Z-014J-0.5X	48100-U	CLP-007A
47914	Z-014C	48483	M-8020-QC	48906	M-605	48120-U	Z-014B
47933	M-502A-R	48599	D-404S	48906	Z-014F	48140-U	M-501-10X
47937	M-551.1-IS-10X	48599	M-613	48907	Z-014D	48225-U	M-504-10X
47951	M-8040-SS	48672	M-601C	48908	Z-014E	48226-U	M-8020-10X
47969	M-001A	48704	C-260S-M-28.5X	48913	M-8080	48228-U	M-611-10X
47973	M-525-4-5X	48718	M-625-17	48913	Z-014C-R2	48235-U	M-8040A-R
47975	CLP-025-10X	48740	M-602	48925	CLP-BNS	48240-U	M-607
47976	CLP-028-10X	48741	M-606	48935	CLP-030	48240-U	M-8070
47979	M-8150-01	48743	M-610	48939	CLP-029	48710-U	M-625-14
47981	M-8150-02	48743	M-610A	48943	M-624-SS-09	48714-U	M-625-15
47982	M-8150-06	48743	M-610-QC-10X	48945	M-624-SS-10	48715-U	M-625-12
47984	M-8150-08	48746	M-501	48949	CLP-022K-10X	48716-U	M-625-18
47986	M-8150-10	48775	M-502C-06	48958	M-8260-IS	48717-U	M-625-13
47988	M-8150-03	48777	M-502C-05	48958	M-8260-IS-10X	48719-U	M-625-16
47993	CLP-BTEX-10X	48779	M-502C-04	48959	M-8260-SS	48720-U	M-625-10
48026	CLP-BTEX	48786	M-502C-03	48959	M-8260-SS-10X	48721-U	M-625-11
48045	M-551A	48788	M-625-01	49156	M-550-QC	48722-U	M-625-09
48063	M-507-SS	48789	M-625-03	502049	M-625-BN	48790-U	M-508-SS
48064	M-507-IS	48791	M-625-06	502111	M-502A-R-10X	48790-U	M-625-05
48081	M-525-SS	48792	M-551.1-SS-100X	502316	P-242S-10X	48799-U	M-502B-10X
48082	CLP-033	48792	M-625-04	507989	M-508-QC	48858-U	M-608-QC
48082	M-525-TS	48792	M-8310-SS-10X	861271	M-8150B-SS	48900-U	Z-014A
48083	M-624-SS-03	48797	M-502C-02	861271	P-244S	48905-U	Z-014G-R
48099	M-525-FS-1	48801	M-625-19	44690-U	M-547-10X	48940-U	M-624-SS-01
48101	CLP-PS-4X	48802	M-502C-07	46856-U	M-531M	48950-U	M-502-IS
48129	CLP-PES-A-10X	48803	M-502C-08	46862-U	CLP-023R-160X	48952-U	M-524-SS-2-10X
48139	TCLP-PES-1	48832	M-625-BN-2	46863-U	CLP-024R-160X		
48141	TCLP-HERB-ME	48833	M-625-BN-3	46960-U	M-508P-A		

Alternate Source Line

Cross Reference

ULTRA	ACCUSTANDARD	ULTRA	ACCUSTANDARD	ULTRA	ACCUSTANDARD	ULTRA	ACCUSTANDARD	ULTRA	ACCUSTANDARD
ALD-100-1	M-8315	EPA-2045N-1	M-VOC-2	NPM-107A-1	P-085S-A-10X	PPS-190-1	M-547	STM-270N-1	CLP-PI
ALD-554-1	M-554	FLM-001-1	FL-0102	NPM-108	M-507H-PAK	PPS-200-1	M-548A	STM-272-1	CLP-PI-2.5X
ALD-554D-1	M-554-DNPH	FLM-002-1	FL-OADD	NPM-108-1	M-507H	PPS-210-1	M-548B	STM-290N-1	M-001 R-0.1X
AMM-602N-1	M-602	FLM-003-1	FL-0003	NPM-109	M-507F-R2-PAK	PPS-220-1	M-548-IS	STM-291-1	M-001R
AMM-622-1	M-602-GAS	FLM-004-1	FL-0004-CR	NPM-109-1	M-507F-R2	PPS-230-1	M-548-CAL	STM-320N-1	M-524-FS
AMM-812-1	M-8020-10X	FLM-005-1	FL-0005-NB	NPM-507	M-507-QC-PAK	PPS-240-1	M-525-5	STM-330N-1	M-8260-SS
AMN-613-1	M-603	GCM-150-1	M-625-TS-20X	NPM-619-1	M-619M	PPS-250-1	APP-9-208-10X	STM-341N-1	M-8260-IS
AMN-803-1	M-603-10X	HBM-5152A-1	M-515.2A-1-PAK	NPM-634-1	M-634	PPS-251-1	M-552.1-IS	STM-390-1	M-624-SS-M
AMN-813-1	M-8031	HBM-5152A-1	M-515.2A-1	NSM-617-1	M-607	PPS-261-1	P-242S-10X	STM-401-1	M-8010-IS/SS
AMN-823-1	M-8032	HBM-5152M-1	M-515.2-1-PAK	NSM-807-1	M-8070	PPS-262-1	P-247S-10X	STM-410-1	M-8020-IS-10X
AMN-823A-1	M-8032B	HBM-5152M-1	M-515.2-1	NVM-511-1	M-8015A	PPS-270-1	M-550-IS	STM-420-1	M-8020-SS
ASTM-100-1	ASTM-D3710	HBM-5153A-1	M-515.2A-2-PAK	PBM-515M-1	M-515-R	PPS-280-1	M-548.1-ME	STM-460-1	M-502-IS-ASL
ASTM-110-1	DRH-002S	HBM-5153A-1	M-515.2A-2	PHM-5522A-1	M-552.2A	PPS-300-1	M-552.1-SS	STS-110N-1	CLP-004-80X
ASTM-130-1	ASTM-E1387	HBM-5153M-1	M-515.2-2-PAK	PHM-5522M-1	M-552.2	PPS-301-1	M-552.1-SS-ME	STS-111-1	CLP-004
ATS-111-1	M-548.1-IS	HBM-5153M-1	M-515.2-2	PHM-552A	M-552A-R	PPS-350-1	M-8141A-IS	STS-112-1	CLP-004-100X
ATS-161-1	M-525-FS-2	HBM-5155A-1	M-515A-R2-PAK	PHM-552M	M-552A	PPS-360-1	M-8141A-SS-X	STS-190-1	M-624-SS-04
BECM-621-1	M-611	HBM-5155A-1	M-515A-R2	PHM-604-1	M-625A	PSM-506	M-506-PAK	STS-200-1	M-624-SS-05
BECM-811-1	M-611-10X	HBM-515M	M-515-R-PAK	PHM-624-1	M-604	PSM-506-1	M-506	STS-220N-1	M-602-SS
BKM-605-1	M-605	HBM-555A-1	M-555A	PHM-814-1	M-8040A-R	PSM-516	M-506-QC-PAK	STS-220N-1	M-602-SS-10X
BTX-110-1	CLP-BTEX	HBM-555B-1	M-555B	PHM-824-1	M-8040B-R	PSM-516-1	M-506-QC	STS-280N-1	CLP-PES-A-10X
BTX-2000N	CLP-BTEX-10X	HBM-8151A-1	M-8151A	PM-006-1	AE-00031	PSM-525-1	M-525-4	STS-440-1	M-8020-SS
CHM-622-1	M-612	HBM-8151M-1	M-8151	PM-007-1	AE-00032	PSM-525A-1	M-525-4-5X	SVM-100A-1	M-625-BN
CHM-842-1	M-8121	HBM-8152M-1	M-8150M	PM-525A-1	M-525-1	PSM-616-1	M-606	SVM-101A-1	M-625-BN-5X
CHM-852-1	M-8120-QC	HC-070	M-601C	PM-525B-1	M-525-1-5X	PSM-806-1	M-8060	SVM-102-1	CLP-HC-BN
CLP-110-1	CLP-020-10X	HCM-551A-1	M-551A	PM-611-1	M-610	PSM-816-1	M-8060-QC	SVM-110-1	M-625-BN-1
CLP-120-1	CLP-021	HCM-551B-1	M-551B	PM-613A-1	M-8100-QC	RGO-100-1	M-418-CON	SVM-111-1	M-625-BN-2
CLP-120-1	CLP-021-10X	HCM-601-1	M-601-ASL	PM-613A-1	M-610-QC	RGO-101X	M-1664-20ML-PAK	SVM-112-1	M-625-BN-3
CLP-153	CLP-022G	HCM-601G-1	M-001C	PM-811-1	M-81-00-R	RPCM-525-1	M-525-2	SVM-113-1	M-625-BN-4
CLP-206-1	CLP-026-R2-10X	HCM-620-1	GAD-001	PPM-505D-1	M-505-ASL	RPCM-525-A-1	M-525-2-5X	SVM-120A-1	M-8270-01
CLP-231-1	CLP-017	HCM-621-1	M-601/602	PPM-505E	M-505R-2-PAK	RPE-015	D-101N	SVM-121-1	M-8270-05
CLP-245-1	CLP-FC	HCM-812-1	M-504-10X	PPM-505E-1	M-505R-2	RPE-015S	D-101S	SVM-122-1	M-8270-02
CLP-310-1	CLP-011A	ISM-280N-1	CLP-BNS	PPM-508	M-508-QC-PAK	RPE-016	D-102N	SVM-123-1	M-8270-06
CLP-320-1	CLP-010	ISM-285-1	CLP-030	PPM-508-1	M-508-QC	RPE-016S	D-102S	SVM-124-1	M-8270-03
CLP-330-1	CLP-009-10X	ISM-290N-1	CLP-AS	PPM-508B	M-508P-A-PAK	RPE-017A	D-801N	SVM-125-1	M-8270-04A
CLP-340-1	CLP-027	ISM-295-1	CLP-029	PPM-508B-1	M-508P-A	RPE-017S	D-801S	SVM-126-1	M-8270-07
CLP-341-1	M-1618-GP	ISM-301-1	CLP-034	PPM-508D-1	M-508P-B-R	RPE-023	D-100N	SVM-127-1	M-8270-08
CLP-342-1	CLP-027-R2	ISM-310-1	M-525-FS-1	PPM-508E-1	M-508.1-ASL	RPE-023S	D-100S	SVM-128-1	M-8270-04B
CLP-40N-1	CLP-007B	ISM-331-1	M-8270-SS	PPM-515M	M-515-QC-PAK	RPE-025	D-203N	SVM-129-1	M-8270-09
CLP-411-1	CLP-011B	ISM-335-1	CLP-031-R	PPM-515M	M-515-QC-R-PAK	RPE-025S	D-203S	SVM-500-1	M-525-REG-ASL
DWM-5031-1	M-503	ISM-380-1	M-8040-SS	PPM-515M-1	M-515-QC-R	RPE-026	D-302N	SVM-642-1	M-642
DWM-504N	M-504-PAK	ISM-390-1	M-8061-SS-10X	PPM-525C-1	M-525-3	RPE-026S	D-302S	TCLP-500-1	TCLP-VOC
DWM-504N-1	M-504	ISM-411-1	M-8121-SS	PPM-525D-1	M-525-3-5X	RPE-027	D-401N	TCLP-512-1	TCLP-BNA
DWM-514	M-504.1-CSS-PAK	ISM-430-1	M-8410-IS	PPM-525E-1	M-525-2-CP-ASL	RPE-027S	D-401S	TCLP-520N-1	TCLP-A-0.5X
DWM-514-1	M-504.1-CSS	ISM-450-1	M-1618D	PPM-530-1	M-531M	RPE-029S	D-404S	TCLP-531-1	TCLP-PES
DWM-544	M-502B-10X-PAK	ISM-510-1	M-525.2-IS/SS	PPM-530B-1	M-531-REG-ASL	RPE-029S	M-613	TCLP-533-1	TCLP-PES-2
DWM-544	M-502C-01-PAK	ISM-520-1	M-525.2-IS	PPM-549-1	M-549.1	RPE-051	D-202N	TCLP-540-1	TCLP-HERB
DWM-544-1	M-502B-10X	ISM-560-1	Z-014J	PPM-608B-1	M-608-ASL	RPE-051S	D-202S	TCLP-540M-1	TCLP-HERB-ME
DWM-544-1	M-502C-01	ISM-560-1	Z-014J-0.5X	PPM-608C-1	M-608-QC	RPE-053A	D-304N	THK-501	M-501-SET
DWM-544-1	M-601B-10X	ISM-580-1	DRH-MA-SS-100X	PPM-608C-1	M-8080-QC-R	RPE-053S	D-304S	THK-501-1	M-501V
DWM-580-1	M-502	IST-151-1	M-8310-SS-10X	PPM-608D-1	M-001H	RPE-054A	D-405N	THM-511	M-501-PAK
DWM-583	M-503-PAK	IST-340-1	CLP-033	PPM-625B-1	M-625P	RPE-054S	D-405S	THM-511-1	M-501
DWM-583-1	M-502A-R	IST-341-1	M-525-TS	PPM-808B-1	Z-014C-R2	RPE-055A	D-503N	THM-521-1	M-501-25X
DWM-583-1	M-502-REG	IST-370-1	M-525-SS	PPM-808C-1	M-8081-SC	RPE-055S	D-503S	US-100N	Z-014A
DWM-584	M-502B-PAK	IST-400-1	M-8061-IS	PPM-808D-1	M-8081-DC	RPE-056A	D-501N	US-101N	Z-014B
DWM-584-1	M-502B	IST-420-1	M-8121-IS	PPM-831-1	M-8318M	RPE-056S	D-501S	US-102BN	Z-014C
DWM-584-1	M-601B	MISA-180-1	MISA-VWS	PPS-100-1	M-507-SS	RPE-057A	D-502N	US-103N	Z-014D
DWM-588-1	M-502-10X	MISA-201-1	MISA-A	PPS-110	M-507-IS-PAK	RPE-057S	D-502S	US-104N	Z-014E
DWM-589N-1	M-502A-R-10X	MISA-220-1	MISA-PEST	PPS-110-1	M-507-IS	RPE-057S	D-601S	US-105N	Z-014F
DWM-590-1	M-502C-07	MISA-231-1	MISA-NC	PPS-120	M-508-SS-PAK	RPE-058A	D-601N	US-106N	Z-014G
DWM-591-1	M-502C-08	NAIM-609-1	M-609-R	PPS-120-1	M-508-SS	RPE-059	D-301N	US-107N	Z-014H
DWM-592-1	M-524R-B	NAIM-833E-1	M-8330-R	PPS-130	M-508-IS-PAK	RPE-059S	D-301S	US-112B	M-8080
DWM-593A	M-502C-10	NPM-101	M-507A-PAK	PPS-130-1	M-508-IS	RPE-060A	D-403N	US-126	Z-014G-R
EPA-100-1	S-532	NPM-101-1	M-507A	PPS-140	M-508A-1-PAK	RPE-060S	D-403S	US-130	Z-014A-LC
EPA-2004N-1	M-CL-2	NPM-102	M-507B-PAK	PPS-140-1	M-508A-1	RPE-063A	D-701N	UST-200-1	DRH-001S-10X
EPA-2010N-1	M-GBN-1	NPM-102-1	M-507B	PPS-141-1	C-260S-M-28.5X	RPE-063S	D-701S	UST-310-1	DRH-005S-10X
EPA-2011N-1	M-GBN-2	NPM-103	M-507C-PAK	PPS-150	M-508A-2-PAK	SMA-100-1	GRH-004S/SS	XY-0115-1	M-001A
EPA-2012N	M-GPE-1	NPM-103-1	M-507C	PPS-160-1	P-244S	SMA-300-1	DRH-006S	XY-0116-1	M-001B
EPA-2013N-1	M-GPE-2	NPM-104A	M-507D-PAK	PPS-161	M-515-SS-PAK	SMA-310-1	DRH-007S	XY-0120-1	M-001D
EPA-2015N-1	M-HER	NPM-104A-1	M-507D	PPS-161	M-515-SS-PAK	SMN-101-1	M-465B-10X	XY-0121-1	M-001E
EPA-2038N-1	M-PNA-1	NPM-105	M-507E-PAK	PPS-161-1	M-515-SS	SMN-102-1	M-465D-ADD-R	XY-0122-1	M-001F
EPA-2039N-1	M-PNA-2	NPM-105-1	M-507E	PPS-163-1	M-515-SS-50X	SPM-824-1	M-8140M-5X	XY-0123-1	M-001G-D
EPA-2041N-1	M-VOA-1	NPM-106	M-507G-PAK	PPS-165-1	M-8150B-SS	SPM-834-1	M-8141M	XY-0126-1	M-001P
EPA-2042N-1	M-VOA-2	NPM-106-1	M-507G	PPS-170-1	M-515-IS	SPM-854-1	M-8141A-2M	XY-0127-1	M-001K
EPA-2043N-1	M-VOB	NPM-107-1	M-507-QC	PPS-171-1	M-8151-IS	STM-260N-1	CLP-PS-4X	XY-0128-1	M-001L
EPA-2044N-1	M-VOC-1	NPM-107A-1	M-507F	PPS-172-1	M-515-IS-M-5X	STM-262-1	CLP-PS-10X	XY-0129-1	M-001J

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ASL 500 Method Series

ISTD/SS for 500 Series Volatile Methods

M-502-IS-ASL		1 x 1 mL
M-502-IS-ASL-PAK	SAVE	5 x 1 mL
2.0 mg/mL each in MeOH		
2-Bromo-1-chloropropane		1-Chloro-2-fluorobenzene

Method 505 Organohalide Pesticides

M-505-ASL		1 x 1 mL
M-505-ASL-PAK	SAVE	5 x 1 mL
At stated conc. in Acetone		
		12 comps.
Alachlor (50 µg/mL)	Heptachlor (20 µg/mL)	
Aldrin (20 µg/mL)	Heptachlor epoxide (Isomer B) (20 µg/mL)	
Atrazine (500 µg/mL)	Hexachlorobenzene (10 µg/mL)	
γ-BHC (20 µg/mL)	Hexachlorocyclopentadiene (20 µg/mL)	
Dieldrin (20 µg/mL)	Methoxychlor (200 µg/mL)	
Endrin (20 µg/mL)	Simazine (100 µg/mL)	

Method 508.1 (SDWA) Regulated Pesticide Mix

M-508.1-ASL		1 x 1 mL
M-508.1-ASL-PAK	SAVE	5 x 1 mL
100 µg/mL each in MtBE		
		17 comps.
Alachlor	Dieldrin	Methoxychlor
Aldrin	Endrin	Metolachlor
Atrazine	Heptachlor	Metribuzin
γ-BHC	Heptachlor epoxide (Isomer B)	Propachlor
α-Chlordane	Hexachlorobenzene	Simazine
γ-Chlordane	Hexachlorocyclopentadiene	

Method 525.2 Nitrogen / Phosphorous Pesticide Mix

M-525.2-NP1-ASL		1 x 1 mL
100 µg/mL each in Acetone		
		41 comps.
Alachlor	Ethoprop	Prometryne
Ametryn	Fenarimol	Pronamide
Atraton	Fluridone	Propachlor
Atrazine	Hexazinone	Propazine
Bromacil	Methyl paraoxon	Simetryn
Butachlor	Metolachlor	Tetrachlorvinphos
Butylate	Metribuzin	Tebuthiuron
Chlorpropham	Mevinphos	Terbacil
Dursban	MGK-264	Prebane
Cycloate	Molinate	Triadimefon
Cyanazine	Napropamide	Tricyclazole
Dichlorvos	Norflurazon	Trifluralin
Diphenamid	Pebulate	Vernolate
EPTC	Prometon	

Method 525.2 Nitrogen/Phosphorous Pesticide Mix

M-525.2-NP2-ASL		1 x 1 mL
M-525.2-NP2-ASL-PAK	SAVE	5 x 1 mL
100 µg/mL each in Acetone		
		6 comps.
Carboxin	Fenamiphos	
Diazinon	Merphos	
Disulfoton	Terbufos	

Method 525.2 Organochlorine Pesticides

M-525.2-CP-ASL		1 x 1 mL
M-525.2-CP-ASL-PAK	SAVE	5 x 1 mL
100 µg/mL each in Acetone		
		30 comps.
Alachlor	Dacthal	Etridiazole
Aldrin	p,p'-DDD	α-Chlordane
Atrazine	p,p'-DDE	γ-Chlordane
α-BHC	p,p'-DDT	Heptachlor
β-BHC		Dieldrin
δ-BHC	Endosulfan I	Heptachlor epoxide (Isomer B)
γ-BHC	Endosulfan II	Methoxychlor
Chlorobenzilate	Endosulfan sulfate	cis-Permethrin
Chlorothalonil	Endrin	trans-Permethrin
Chloroneb	Endrin aldehyde	Simazine
		trans-Nonachlor

Method 525.2 Semi-Volatile Mix

M-525.2-SV-ASL		1 x 1 mL
M-525.2-SV-ASL-PAK	SAVE	5 x 1 mL
100 µg/mL each in Acetone		
		33 comps.
Acenaphthylene	2,4-Dinitrotoluene	
Anthracene	2,6-Dinitrotoluene	
Benz[a]anthracene	Fluorene	
Benzo[b]fluoranthene	Hexachlorobenzene	
Benzo[k]fluoranthene	2,2',4,4',5,6'-Hexachlorobiphenyl	
Benzo[g,h,i]perylene	2,2',3,3',4,4',6-Heptachlorobiphenyl	
Benzo[a]pyrene	Hexachlorocyclopentadiene	
Benzyl butyl phthalate	Indeno[1,2,3-cd]pyrene	
2-Chlorobiphenyl	Isophorone	
Chrysene	2,2',3,3',4,5',6,6'-Octachlorobiphenyl	
Dibenz[a,h]anthracene	2,2',3',4,6-Pentachlorobiphenyl	
2,3-Dichlorobiphenyl	Pentachlorophenol (400 µg/mL)	
bis(2-Ethylhexyl)adipate	Phenanthrene	
bis(2-Ethylhexyl)phthalate	Pyrene	
Diethyl phthalate	2,2',4,4'-Tetrachlorobiphenyl	
Dimethyl phthalate	2,4,5-Trichlorobiphenyl	
Dibutyl phthalate		

Method 525.2 Regulated Semi-Volatiles Mix

M-525-REG-ASL		1 x 1 mL
M-525-REG-ASL-PAK	SAVE	5 x 1 mL
0.5 mg/mL each in Acetone		
		6 comps.
Benzo[a]pyrene	Hexachlorobenzene	
bis(2-Ethylhexyl)adipate	Hexachlorocyclopentadiene	
bis(2-Ethylhexyl)phthalate	Pentachlorophenol (2.0 mg/mL)	

Method 525.2 Surrogate Standard

M-525.2-SS2-ASL		1 x 1 mL
M-525.2-SS2-ASL-PAK	SAVE	5 x 1 mL
500 µg/mL each in Acetone		
		4 comps.
1,3-Dimethyl-2-nitrobenzene	Pyrene-d ₁₀	
Perylene-d ₁₂	Triphenylphosphate	

Method 525.2 ISTD/SS Fortification Solution

M-525.2-FS-ASL		1 x 1 mL
M-525.2-FS-ASL-PAK	SAVE	5 x 1 mL
500 µg/mL each in Acetone		
		7 comps.
Acenaphthene-d ₁₀	Phenanthrene-d ₁₀	
Chrysene-d ₁₂	Pyrene-d ₁₀	
1,3-Dimethyl-2-nitrobenzene	Triphenylphosphate	
Perylene-d ₁₂		

ASL 600 Method Series

Method 601 Purgeable Halocarbon Mixture

M-601-ASL 1 x 1 mL
 M-601-ASL-PAK 5 x 1 mL
 100 µg/mL each in MeOH 28 comps. **SAVE**

Bromodichloromethane	1,2-Dichloroethane
Bromoform	1,1-Dichloroethene
Bromomethane	trans-1,2-Dichloroethene
Carbon tetrachloride	1,2-Dichloropropane
Chlorobenzene	1,3-Dichloropropene
Chloroethane	1,3-Dichloropropene
Chloroform	Dichloromethane
Chloromethane	1,1,2,2-Tetrachloroethane
Dibromochloromethane	Tetrachloroethene
1,2-Dichlorobenzene	1,1,1-Trichloroethane
1,3-Dichlorobenzene	1,1,2-Trichloroethane
1,4-Dichlorobenzene	Trichloroethene
Dichlorodifluoromethane	Trichlorofluoromethane
1,1-Dichloroethane	Vinyl chloride

Method 601 Performance Check Solution

S-532-ASL 1 x 1 mL
 S-532-ASL-PAK 5 x 1 mL
 0.2 mg/mL each in MeOH 8 comps. **SAVE**

Benzene	1,1-Dichloroethene
Carbon tetrachloride	1,1,1-Trichloroethane
1,4-Dichlorobenzene	Trichloroethene
1,2-Dichloroethane	Vinyl chloride

Method 608 Pesticides

M-608-ASL 1 x 1 mL
 M-608-ASL-PAK 5 x 1 mL
 20 µg/mL each in MeOH 16 comps. **SAVE**

Aldrin	p,p'-DDE	Endosulfan sulfate
α-BHC	p,p'-DDT	Endrin
β-BHC	Dieldrin	Endrin aldehyde
δ-BHC	Endosulfan I	Heptachlor
γ-BHC	Endosulfan II	Heptachlor epoxide (Isomer B)
p,p'-DDD		

Method 615 Underivatized Chlorinated Herbicides

M-615A-ASL 1 x 1 mL
 M-615A-ASL-PAK 5 x 1 mL
 At stated conc. in MeOH 10 comps. **SAVE**

Method 615 Methyl Derivatives of Chlorinated Herbicides

M-615-ASL 1 x 1 mL
 M-615-ASL-PAK 5 x 1 mL
 At stated conc. in MeOH 10 comps. **SAVE**

2,4-D	(100 µg/mL)	Dicamba	(10 µg/mL)
2,4-DB	(100 µg/mL)	Dichlorprop	(100 µg/mL)
2,4,5-T	(10 µg/mL)	Dinoseb	(50 µg/mL)
2,4,5-TP	(10 µg/mL)	MCPA	(10,000 µg/mL)
Dalapon	(250 µg/mL)	MCPP	(10,000 µg/mL)

ASL 8000 Method Series

Method 8015 Non-Halogenated Volatiles Mix

M-8015-ASL 1 x 1 mL
 100 µg/mL each in MeOH 12 comps.

Acetonitrile	Ethyl methacrylate
Acrylamide	Isobutyl alcohol
2-Butanone	Methacrylonitrile
Diethyl ether	Methyl methacrylate
1,4-Dioxane	4-Methyl-2-pentanone
Ethanol	Propionitrile

Method 8020A ISTD/SS Solution

M-8020-IS/SS-ASL 1 x 1 mL
 M-8020-IS/SS-ASL-PAK 5 x 1 mL
 1.5 mg/mL each in MeOH 5 comps. **SAVE**

4-Bromochlorobenzene	Fluorobenzene
p-Bromofluorobenzene	α,α,α-Trifluorotoluene
1,4-Difluorobenzene	

Method 8040A Phenols QC Check Standard

M-8040A-ASL 1 x 1 mL
 M-8040A-ASL-PAK 5 x 1 mL
 100 µg/mL each in Isopropanol **SAVE**
 M-8040A-ASL-20X 1 x 1 mL
 2000 µg/mL each in Isopropanol 19 comps.

Dinoseb	4,6-Dinitro-o-cresol
4-Chloro-3-methylphenol	2,4-Dinitrophenol
2-Chlorophenol	2-Nitrophenol
o-Cresol	4-Nitrophenol
m-Cresol	Pentachlorophenol
p-Cresol	Phenol
2-Cyclohexyl-4,6-dinitrophenol	2,3,4,6-Tetrachlorophenol
2,4-Dichlorophenol	2,4,5-Trichlorophenol
2,6-Dichlorophenol	2,4,6-Trichlorophenol
2,4-Dimethylphenol	

Method 8080A Organochlorine Pesticides Mix

M-8080A-ASL 1 x 1 mL
 M-8080A-ASL-PAK 5 x 1 mL
 250 µg/mL each in Hexane:Toluene (1:1) 17 comps. **SAVE**

Aldrin	p,p'-DDE	Endrin
α-BHC	p,p'-DDT	Endrin aldehyde
β-BHC	Dieldrin	Heptachlor
δ-BHC	Endosulfan I	Heptachlor epoxide (Isomer B)
γ-BHC	Endosulfan II	Methoxychlor (1000 µg/mL)
p,p'-DDD	Endosulfan sulfate	

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AccuStandard formulated the **M-8270-ASL-SET** with convenient mixtures based on similar analytical or functional group characteristics. Should your semi-volatile calibration table have additional required analytes, we can easily manufacture specific formulations.

Alternate Source Method 8270C/D Set

M-8270-ASL-SET

17 x 1 mL

The set includes the following 17 products

M-8270-01-ASL Ethers & Phthalates Mix	M-8270-08-ASL Phenols Mix	Z-014J Internal Standards Mix
M-8270-02-ASL Chlorinated Hydrocarbons Mix	M-8270-09-ASL Organochlorine Pesticide Mix	CLP-BNS Base/Neutrals Surrogate Standard
M-8270-03-ASL Nitrosamines Mix	M-8270-10-ASL Pesticide Mix	CLP-AS Acid Surrogate Standard
M-8270-04-ASL Base/Neutrals Mix	M-8270-11-ASL Toxic Substances Mix	
M-8270-05-ASL Base/Neutrals Mix	M-8270-12-ASL Phenols Mix	
M-8270-06-ASL PAH Mix	M-8270-13-ASL Polynuclear Aromatic Hydrocarbon Mix	
M-8270-07-ASL Pyridines Mix	M-8270-14-ASL Organochlorine Pesticide Mix	

ASL Method 8270C/D Alternate Method 8270 Formulations

Ethers & Phthalates Mix

M-8270-01-ASL

1 x 1 mL
11 comps.

2.0 mg/mL each in CH₂Cl₂

bis(2-Chloroethoxy)methane	4-Chlorophenyl phenyl ether
bis(2-Chloroethyl)ether	Diethyl phthalate
bis(2-Ethylhexyl)phthalate	Dimethyl phthalate
bis(2-Chloro-1-methylethyl)ether	Dibutyl phthalate
4-Bromophenyl phenyl ether	Di- <i>n</i> -octyl phthalate
Benzyl butyl phthalate	

Base/Neutrals Mix

M-8270-04-ASL

1 x 1 mL
13 comps.

2.0 mg/mL each in CH₂Cl₂

2-Acetylaminofluorene	1-Naphthylamine
4-Aminobiphenyl	2-Naphthylamine
3,3'-Dichlorobenzidine	5-Nitro- <i>o</i> -toluidine
4-Dimethylaminoazobenzene	Phenacetin
3,3'-Dimethylbenzidine	<i>p</i> -Phenylenediamine
α,α -Dimethylphenethylamine	<i>o</i> -Toluidine
Diphenylamine	

Chlorinated Hydrocarbons Mix

M-8270-02-ASL

1 x 1 mL
13 comps.

2.0 mg/mL each in CH₂Cl₂

2-Chloronaphthalene	Hexachloroethane
1,2-Dichlorobenzene	Hexachloropropene
1,3-Dichlorobenzene	Pentachlorobenzene
1,4-Dichlorobenzene	Pentachloroethane
Hexachlorobenzene	1,2,4,5-Tetrachlorobenzene
Hexachlorobutadiene	1,2,4-Trichlorobenzene
Hexachlorocyclopentadiene	

Base/Neutrals Mix

M-8270-05-ASL

1 x 1 mL
13 comps.

2.0 mg/mL each in CH₂Cl₂

Acetophenone	Methyl methanesulfonate
1,3-Dinitrobenzene	1,4-Naphthoquinone
2,4-Dinitrotoluene	Nitrobenzene
2,6-Dinitrotoluene	Pentachloronitrobenzene
Ethyl methanesulfonate	Safrole
Isophorone	1,3,5-Trinitrobenzene
Isosafrole	

Nitrosamines Mix

M-8270-03-ASL

1 x 1 mL
9 comps.

2.0 mg/mL each in CH₂Cl₂

N-Nitrosodi- <i>n</i> -butylamine	N-Nitrosomethylethylamine
N-Nitrosodiethylamine	N-Nitrosomorpholine
N-Nitrosodimethylamine	N-Nitrosopiperidine
N-Nitrosodiphenylamine	N-Nitrosopyrrolidine
N-Nitrosodi- <i>n</i> -propylamine	

PAH Mix

M-8270-06-ASL

1 x 1 mL
2 comps.

2.0 mg/mL each CH₂Cl₂:Benzene (1:1)

7,12-Dimethylbenz[a]anthracene
3-Methylcholanthrene

Alternate Method 8270C/D Formulations Continued on the Next Page

Use our Custom Quotation form
(at the back of catalog) to request
additional analytes.

ASL Method 8270C/D Semi-Volatiles by GC/MS Alternate Method 8270 Formulations

Pyridine Mix

M-8270-07-ASL 1 x 1 mL
2.0 mg/mL each in Acetone 4 comps.

Methapyrilene 2-Picoline
4-Nitroquinoline-1-oxide Pyridine

Phenol Mix

M-8270-08-ASL 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 8 comps.

o-Cresol Dinoseb
m-Cresol Hexachlorophene
p-Cresol 2,3,4,6-Tetrachlorophenol
2,6-Dichlorophenol 2,4,5-Trichlorophenol

Organophosphorous Pesticide Mix

M-8270-09-ASL 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 9 comps.

Dimethoate *o,o,o*-Triethylphosphorothioate
Disulfoton Methyl parathion
Famphur Parathion
Thionazin Phorate
Sulfotep

Pesticide Mix

M-8270-10-ASL 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 6 comps.

Aramite Isodrin
Chlorobenzilate Kepone
Diallate Pronamide

Toxic Substance Mix

M-8270-11-ASL 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 8 comps.

Aniline 2-Methylnaphthalene
Benzyl alcohol 2-Nitroaniline
4-Chloroaniline 3-Nitroaniline
Dibenzofuran 4-Nitroaniline

Internal Standards Mixture

Z-014J 1 x 1 mL
Z-014J-PAK **SAVE** 5 x 1 mL
4.0 mg/mL each in CH₂Cl₂ 6 comps.

Acenaphthene-d₁₀ Naphthalene-d₈
Chrysene-d₁₂ Perylene-d₁₂
1,4-Dichlorobenzene-d₄ Phenanthrene-d₁₀

Acid Surrogate Standard

CLP-AS 1 x 1 mL
CLP-AS-PAK **SAVE** 5 x 1 mL
2.0 mg/mL each in MeOH 3 comps.

2-Fluorophenol 2,4,6-Tribromophenol
Phenol-d₅

Base/Neutrals Surrogate Standard

CLP-BNS 1 x 1 mL
CLP-BNS-PAK **SAVE** 5 x 1 mL
1.0 mg/mL each in CH₂Cl₂ 3 comps.

2-Fluorobiphenyl *p*-Terphenyl-d₁₄
Nitrobenzene-d₅

Phenol Mixture

M-8270-12-ASL 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 11 comps.

4-Chloro-3-methylphenol 2-Nitrophenol
2-Chlorophenol 4-Nitrophenol
2,4-Dichlorophenol Pentachlorophenol
2,4-Dimethylphenol Phenol
2,4-Dinitrophenol 2,4,6-Trichlorophenol
2-Methyl-4,6-dinitrophenol

Polynuclear Aromatic Hydrocarbon Mixture

M-8270-13-ASL 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂:Benzene (1:1) 16 comps.

Acenaphthene Chrysene
Acenaphthylene Dibenz[a,h]anthracene
Anthracene Fluoranthene
Benz[a]anthracene Fluorene
Benzo[a]pyrene Indeno[1,2,3-cd]pyrene
Benzo[b]fluoranthene Naphthalene
Benzo[g,h,i]perylene Phenanthrene
Benzo[k]fluoranthene Pyrene

Organochlorine Pesticide Mix

M-8270-14-ASL 1 x 1 mL
2.0 mg/mL each in Acetone 17 comps.

Aldrin Endosulfan I
 α -BHC Endosulfan II
 β -BHC Endosulfan sulfate
 δ -BHC Endrin
 γ -BHC Endrin aldehyde
4,4'-DDD Heptachlor
4,4'-DDE Heptachlor epoxide
4,4'-DDT Methoxychlor
Dieldrin

ASL Method 8270C/D Appendix IX Semi-Volatiles by GC/MS

These additional formulations, used in conjunction with the ASL 8270C/D formulations and designed on a functional group basis, will allow the chemist to analyze a complete method 8270C/D analyte list.

Additions to Method 8270

M-8270-13A-R2 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 10 comps.

4-aminoazobenzene	2,4-Diaminotoluene
3-Amino-9-ethylcarbazole	4,4'-Methylenebis(N,N-dimethylaniline)
o-Anisidine	4,4'-Methylenebis(2-chloroaniline)
5-Chloro-2-methylaniline	4,4'-oxydianiline
p-Cresidine	2,4,5-Trimethylaniline

M-8270-13B-R 1 x 1 mL
2.0 mg/mL each in THF 3 comps

2-Aminoanthraquinone	4-Chloro-1,3-phenylenediamine
4-Chloro-1,2-phenylenediamine	

M-8270-14A-R1 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 7 comps.

Benzoic acid	Thiophenol
1-Chloronaphthalene	tris-(2,3-Dibromopropyl)phosphate
Dibenz[a,j]acridine	Tri-p-tolyl phosphate
Resorcinol	

M-8270-14B 1 x 1 mL
2.0 mg/mL each in THF 5 comps.

p-Benzoquinone	Phthalic anhydride
Hydroquinone	Trimethyl phosphate
Maleic anhydride	

M-8270-14C 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂:MeOH (3:1) 5 comps.

1-Acetyl-2-thiourea	3-Picolyl chloride HCL
Diethyl sulfate	Toluene diisocyanate
Hexamethylphosphoramide	

M-8270-15 1 x 1 mL
1.0 mg/mL each in CH₂Cl₂:MeOH (19:1) 13 comps.

Dibenzo[a,e]pyrene	Nicotine
1,2-Dibromo-3-chloropropane	5-Nitroacenaphthene
Diethyl stilbestrol	5-Nitro-o-anisidine
1,2-Dinitrobenzene	4-Nitrobiphenyl
1,4-Dinitrobenzene	Propylthiouracil
5,5-Diphenylhydantoin	Strychnine
Mestranol	

Pesticides

M-8270-16 1 x 1 mL
1000 µg/mL each in CH₂Cl₂ 10 comps.

Anilazine	Dioxathion
Azinphos methyl	Mirex
Barbamate	Sulfoxide
Demeton (mixed isomers)	Sulfallate
Dichlone	Trifluralin

M-8270-17 1 x 1 mL
1000 µg/mL each in CH₂Cl₂ 7 comps.

Brominal	Dinocap
Captafol	Fluchloralin
Captan	Nitrofen
Dinex	

Carbamates/Pesticides

M-8270-18 1 x 1 mL
1000 µg/mL each in CH₂Cl₂ 6 comps.

Carbaryl	Mexacarbate
Carbofuran	Schradan (Octamethylpyrophosphoramidate)
Ethyl carbamate	Phenobarbital

Pesticides

M-8270-19 1 x 1 mL
1000 µg/mL each in CH₂Cl₂ 12 comps.

Carbophenothion	Fensulfothion	Phosalone
Coumaphos	Fenthion	Imidan (Phosmet)
EPN	Leptophos	Terbufos
ETHION	Malathion	Tetrachlorvinphos

M-8270-20 1 x 1 mL
1000 µg/mL each in CH₂Cl₂ 9 comps.

Chlorfenvinphos	Dicrotophos	Naled
Ciodrin (Crotoxyphos)	Mevinphos	Phosphamidon
Dichlorvos	Monocrotophos	TEPP (Tetraethyl pyrophosphate)

M-8270-21 1 x 1 mL
2.0 mg/mL each in Acetone 3 comps.

α-Chlordane	Endrin ketone
γ-Chlordane	

Semi-Volatile additions

M-8270-22 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 2 comps.

Benzidine	3,3'-Dimethoxybenzidine
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APP-9-126-10X 1 x 1 mL
1.0 mg/mL in CH₂Cl₂

Methapyrilene

P-427S-10X 1 x 1 mL
1.0 mg/mL in MeOH

Dinex

ASL Method 8270C/D Appendix IX Semi-Volatiles by Method 8270

The following formulations allow the analytical chemist to combine more analytes at one time in the development of a Method 8270C/D calibration curve. Use of these Alternate Source standards allow you to check product comparability from an independent source. AccuStandard has formulated the necessary additional standards required to have the most complete 8270C/D analyte list in the industry.

8270 Semi-Volatile Standards

M-8270-AG01-ASL

1000 µg/mL each in CH₂Cl₂:Benzene (3:1)1 x 1 mL
64 comps.

Acenaphthene	2,4-Dinitrophenol
Acenaphthylene	Dimethyl phthalate
Anthracene	2,4-Dinitrotoluene
Azobenzene	2,6-Dinitrotoluene
Benz[a]anthracene	Di- <i>n</i> -octyl phthalate
Benzo[a]pyrene	Fluoranthene
Benzo[b]fluoranthene	Fluorene
Benzo[g,h,i]perylene	Hexachlorobenzene
Benzo[k]fluoranthene	Hexachlorobutadiene
Benzyl butyl phthalate	Hexachlorocyclopentadiene
bis(2-Chloroethoxy)methane	Hexachloroethane
bis(2-Chloroethyl)ether	Indeno[1,2,3-cd]pyrene
bis(2-Chloro-1-methylethyl)ether	Isophorone
bis(2-Ethylhexyl)phthalate	2-Methylnaphthalene
4-Bromophenyl phenyl ether	2-Methylphenol
Carbazole	4-Methylphenol
4-Chloroaniline	Naphthalene
2-Chloronaphthalene	2-Nitroaniline
4-Chloro-3-methylphenol	3-Nitroaniline
2-Chlorophenol	4-Nitroaniline
4-Chlorophenyl phenyl ether	Nitrobenzene
Chrysene	2-Nitrophenol
Dibenz[a,h]anthracene	4-Nitrophenol
Dibenzofuran	<i>n</i> -Nitrosodimethylamine
Dibutyl phthalate	<i>N</i> -Nitrosodi- <i>n</i> -propylamine
1,2-Dichlorobenzene	Pentachlorophenol
1,3-Dichlorobenzene	Phenanthrene
1,4-Dichlorobenzene	Phenol
2,4-Dichlorophenol	Pyrene
Diethyl phthalate	1,2,4-Trichlorobenzene
2,4-Dimethylphenol	2,4,5-Trichlorophenol
4,6-Dinitro-2-methylphenol	2,4,6-Trichlorophenol

M-8270-AG02-ASL

1000 µg/mL each in CH₂Cl₂1 x 1 mL
39 comps.

Aniline	4-Nitroquinoline-N-oxide
Acetophenone	<i>N</i> -Nitrosodi- <i>n</i> -butylamine
2-Acetamidofluorene	<i>N</i> -Nitrosodiethylamine
4-Aminobiphenyl	<i>N</i> -Nitrosomethylethylamine
Benzyl alcohol	<i>N</i> -Nitrosomorpholine
2,6-Dichlorophenol	<i>N</i> -Nitrosopiperidine
4-Dimethylaminoazobenzene	<i>N</i> -Nitrosopyrrolidine
7,12-Dimethylbenz[a]anthracene	5-Nitro- <i>o</i> -toluidine
1,3-Dinitrobenzene	Pentachlorobenzene
Dinoseb	Pentachloronitrobenzene
Diphenylamine	Pentachloroethane
Ethyl methanesulfonate	Phenacetin
Hexachloropropene	2-Picoline
Isosafrole	Pyridine
Methapyrilene	Safrole
3-Methylcholanthrene	1,2,4,5-Tetrachlorobenzene
Methyl methanesulfonate	2,3,4,6-Tetrachlorophenol
3-Methylphenol	1,3,5-Trinitrobenzene
1-Naphthylamine	<i>o</i> -Toluidine
2-Naphthylamine	

M-8270-07

2.0 mg/mL each in CH₂Cl₂1 x 1 mL
15 comps.

Aramite	Dinoseb	Parathion
Chlorobenzilate	Disulfoton	Phorate
Diallate	Famphur	Silvex (2,4,5-TP)
2,4-D	Kepone	Sulfotep
Dimethoate	Methyl parathion	Thionazin

Additions to Method 8270

M-8270-13A-R

2.0 mg/mL each in CH₂Cl₂1 x 1 mL
12 comps.

4-Aminoazobenzene	4,4'-Methylenebis(<i>N,N</i> -dimethylaniline)
3-Amino-9-ethylcarbazole	4,4'-Methylene bis(2-chloroaniline)
<i>o</i> -Anisidine	4,4'-Oxydianiline
5-Chloro-2-methylaniline	2-Picoline
<i>p</i> -Cresidine	Pyridine
2,4-Diaminotoluene	2,4,5-Trimethylaniline

M-8270-13B-R

2.0 mg/mL each in THF

1 x 1 mL
3 comps.

2-Aminoanthraquinone	4-Chloro-1,3-phenylenediamine
4-Chloro-1,2-phenylenediamine	

M-8270-14A-R1

2.0 mg/mL each in CH₂Cl₂1 x 1 mL
7 comps.

Benzoic acid	Thiophenol
1-Chloronaphthalene	tris-(2,3-Dibromopropyl)phosphate
Dibenz[a,j]acridine	Tri- <i>p</i> -tolyl phosphate
Resorcinol	

M-8270-14B

2.0 mg/mL each in THF

1 x 1 mL
5 comps.

<i>p</i> -Benzoquinone	Phthalic anhydride
Hydroquinone	Trimethyl phosphate
Maleic anhydride	

M-8270-14C

2.0 mg/mL each in CH₂Cl₂:MeOH (3:1)1 x 1 mL
5 comps.

1-Acetyl-2-thiourea	3-Picolyl chloride HCL
Diethyl sulfate	Toluene diisocyanate
Hexamethylphosphoramide	

M-8270-15

1.0 mg/mL each in CH₂Cl₂:MeOH (19:1)1 x 1 mL
13 comps.

Dibenzo[a,e]pyrene	5,5-Diphenylhydantoin	5-Nitro- <i>o</i> -anisidine
1,2-Dibromo-3-chloropropane	Mestranol	4-Nitrobiphenyl
Diethyl stilbestrol	Nicotine	Propylthiouracil
1,2-Dinitrobenzene	5-Nitroacenaphthene	Strychnine
1,4-Dinitrobenzene		

ASL Method 8270C/D Appendix IX Semi-Volatiles by Method 8270 (Continued)

Pesticides

M-8270-16 1 x 1 mL
1000 µg/mL each in CH₂Cl₂ 10 comps.

Anilazine	Dichlone	Sulfoxide
Azinphos methyl	Dioxathion	Sulfallate
Barbamate	Mirex	Trifluralin
Demeton (mixed isomers)		

M-8270-17 1 x 1 mL
1000 µg/mL each in CH₂Cl₂ 7 comps.

Brominal	Dinex	Fluchloralin
Captafol	Dinocap	Nitrofen
Captan		

Carbamates/Pesticides

M-8270-18 1 x 1 mL
1000 µg/mL each in CH₂Cl₂ 6 comps.

Carbaryl	Mexacarbate
Carbofuran	Schradan (Octamethylpyrophosphoramidate)
Ethyl carbamate	Phenobarbital

Pesticides

M-8270-19 1 x 1 mL
1000 µg/mL each in CH₂Cl₂ 12 comps.

Carbophenothion	Fensulfothion	Phosalone
Coumaphos	Fenthion	Imidan (Phosmet)
EPN	Leptophos	Terbufos
Ethion	Malathion	Tetrachlorvinphos

M-8270-20 1 x 1 mL
1000 µg/mL each in CH₂Cl₂ 9 comps.

Chlorfenvinphos	Dicrotophos	Naled
Ciodrin (Crotoxyphos)	Mevinphos	Phosphamidon
Dichlorvos	Monocrotophos	TEPP (Tetraethyl pyrophosphate)

Semi-Volatile additions

M-8270-22 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 2 comps.

Benzidine	3,3'-Dimethoxybenzidine
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Pesticides - Mix #2

Z-014C-R 1 x 1 mL
Z-014C-R-PAK 5 x 1 mL
2.0 mg/mL each in Toluene:Hexane (1:1) 20 comps. **SAVE**

Aldrin	4,4'-DDD	Endrin
α-BHC	4,4'-DDE	Endrin aldehyde
β-BHC	4,4'-DDT	Endrin ketone
γ-BHC	Dieldrin	Heptachlor
δ-BHC	Endosulfan I	Heptachlor epoxide
α-Chlordane	Endosulfan II	Methoxychlor
γ-Chlordane	Endosulfan sulfate	

Semi-Volatile additions

M-8270-23-R1 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 4 comps.

3,3'-Dichlorobenzidine	a,a-Dimethylphenethylamine
3,3'-Dimethylbenzidine	p-Phenylenediamine

M-8270-24 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 4 comps.

Hexachlorophene	Pronamide
Isodrin	o,o,o-Triethylphosphorothioate

AS-E0060 1 x 1 mL
5.0 mg/mL in MeOH

N-Nitrosodiphenylamine

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Column Testing Solutions

AccuStandard has assembled the following test mixtures based on suggestions by Grob^{1,2} for evaluating capillary column performance. The alkanes in these mixtures can be used for evaluating instrumental effects and determining separation number and efficiency (PS-CP-02-1ML, PS-CP-03-1ML, PS-CP-04-1ML, PS-CP-05A-1ML, PS-CP-06A-1ML). Grob 2 has suggested a more complete mixture, the Non-Polar Columns Test Mix PS-CP-01-1ML provides a more complete capillary column test because a wider variety of organic compounds is included.

References

1. K. Grob and G. Grob, *Chromatographia*, 4, 422 (1971)
2. K. Grob, Jr., G. Grob, and K. Grob, *J. Chromatogr.*, 156, 1 (1978)

Capillary Column Probe Solutions (also Grob Mixes)

Alkane C₈-C₁₂ Mixture

PS-CP-02-1ML 1 mL
0.5 mg/mL each in *n*-Hexane
5 comps.

Octane	Undecane
Nonane	Dodecane
Decane	

Alkane C₁₃-C₂₀ Mixture

PS-CP-03-1ML 1 mL
0.5 mg/mL each in *n*-Hexane
8 comps.

Tridecane	Heptadecane
Tetradecane	Octadecane
Pentadecane	Nonadecane
Hexadecane	Eicosane

Alkane C₈-C₄₀ Mixture

PS-CP-06A-1ML 1 mL
0.5 mg/mL each in *n*-Hexane
23 comps.

Octane	Eicosane
Nonane	Docosane
Decane	Tetracosane
Undecane	Hexacosane
Dodecane	Octacosane
Tridecane	Triacontane
Tetradecane	Dotriacontane
Pentadecane	Tetratriacontane
Hexadecane	Hexatriacontane
Heptadecane	Octatriacontane
Octadecane	Tetracontane
Nonadecane	

Alkane C₂₂-C₃₂ Even Number Mixture

PS-CP-04-1ML 1 mL
0.5 mg/mL each in *n*-Hexane
6 comps.

Docosane	Octacosane
Tetracosane	Triacontane
Hexacosane	Dotriacontane

Alkane C₃₄-C₄₄ Even Number Mixture

PS-CP-05A-1ML 1 mL
0.5 mg/mL each in *n*-Hexane
4 comps.

Tetratriacontane	Octatriacontane
Hexatriacontane	Tetracontane

Non-Polar Columns Test Mix

PS-CP-01-1ML 1 mL
At the stated conc. in CH₂Cl₂
12 comps.

Methyl decanoate	0.42 mg/mL
Methyl undecanoate	0.42 mg/mL
Methyl dodecanoate	0.41 mg/mL
2,3-Butanediol	0.53 mg/mL
Dicyclohexylamine	0.31 mg/mL
2,6-Dimethylaniline	0.32 mg/mL
2,6-Dimethylphenol	0.32 mg/mL
2-Ethylhexanoic acid	0.38 mg/mL
Nonanal	0.40 mg/mL
Octanol	0.36 mg/mL
Undecane	0.29 mg/mL
Decane	0.28 mg/mL

Contains interactive and labile components. Refrigerate when not in use.

Proficiency Testing - Self Test

AccuTest & AccuValue

PT
Self-Test

AccuStandard Self Test Advantages

- **Extra material:** AccuStandard includes sufficient material to allow for two tests
- Perfect for routine Quality Assurance activities
- Run at your convenience

Proficiency Tests for Every Application

- **Internal Control:**
Use the Self Tests periodically to verify lab QA/QC performance and management control
- **Study Pre-Test:**
Assure that your lab is ready for your Proficiency Test by taking the Self-Test first. Results are sent to you and/or your designee
- **Recertification:**
Use the AccuTest format in your State or with other regulatory bodies to rapidly demonstrate acceptable performance (check with regulatory body for acceptance prior to analysis).

AccuTest and AccuValue Products

AccuTest - Suffix "-AT"

- Mimics a Study
- You report to AccuStandard, and we grade it
- Results typically sent back to lab within 48 hours

AccuValue - Suffix "-AV"

- Immediate Feedback
- Results sent in a sealed envelope with the product
- Self-graded



Water Supply (WS)	
Organic	
USEPA Analytes	21-22
NELAC/CA Additions	22-23
Inorganic	
USEPA Analytes	23
NELAC/CA Additions	23
Water Pollution (WP)	
Organic	
USEPA Analytes	24
NELAC/CA Additions	25
Inorganic	
USEPA Analytes	25
NELAC/CA Additions	26
Petrochemical QC Samples	
Petroleum PT	275-276

PT Water Supply Organic

Water Supply (WS) Volatile Organic Parameters

WS-PT Regulated VOCs

OPE-RVOC-001-AT	2 mL
OPE-RVOC-001-AV	2 mL

Sample conc. after prep 1-60 µg/L

Contains 21 analytes listed below

Benzene	Ethylbenzene
Carbon tetrachloride	Styrene
Chlorobenzene	Tetrachloroethene
1,2-Dichlorobenzene	Toluene
1,4-Dichlorobenzene	1,1,1-Trichloroethane
1,2-Dichloroethane	1,1,2-Trichloroethane
1,1-Dichloroethene	Trichloroethene
cis-1,2-Dichloroethene	1,2,4-Trichlorobenzene
trans-1,2-Dichloroethene	Vinyl chloride
Dichloromethane	Total Xylenes (o,m,p)
1,2-Dichloropropane	

WS-PT Trihalomethanes VOCs

OPE-THMV-001-AT	2 mL
OPE-THMV-001-AV	2 mL

Sample conc. after prep 1-200 µg/L

Contains 4 analytes listed below, plus grading for Total THMs

Bromodichloromethane	Chloroform
Bromoform	Total THMs
Chlorodibromomethane	

WS-PT Unregulated VOCs

OPE-URV-001-AT *	2 mL
OPE-URV-001-AV *	2 mL

Sample conc. after prep 1-60 µg/L

Contains 5 highlighted compounds plus 10-20 selected analytes from the following list:

Bromobenzene	1,1-Dichloropropene
Bromochloromethane	cis-1,3-Dichloropropene
Bromomethane	trans-1,3-Dichloropropene
n-Butylbenzene	Fluorotrichloromethane
sec-Butylbenzene	Hexachlorobutadiene
tert-Butylbenzene	Isopropylbenzene
Chloroethane	p-Isopropyltoluene
Chloromethane	n-Propylbenzene
2-Chlorotoluene	1,1,1,2-Tetrachloroethane
4-Chlorotoluene	1,1,2,2-Tetrachloroethane
Dibromomethane	1,2,3-Trichlorobenzene
1,3-Dichlorobenzene	Trichlorotrifluoroethane
Dichlorodifluoromethane	1,2,4-Trimethylbenzene
1,1-Dichloroethane	1,2,3-Trichloropropane
1,3-Dichloropropane	1,3,5-Trimethylbenzene
2,2-Dichloropropane	

* Designed for NELAC/CA

WS-PT EDB/DBCP

OPE-EDB-001-AT	2 mL
OPE-EDB-001-AV	2 mL

Sample conc. after prep 0.05-20 µg/L

Contains 2 analytes listed below

1,2-Dibromo-3-chloropropane
Ethylene dibromide

WS-PT Organic Disinfection By-Products 1

OPE-ODBP-001-AT	2 mL
OPE-ODBP-001-AV	2 mL

Sample conc. after prep 0.1-100 µg/L

Contains 6 analytes listed below

Bromochloroacetic acid	Monobromoacetic acid
Dibromoacetic acid	Monochloroacetic acid
Dichloroacetic acid	Trichloroacetic acid

WS-PT Organic Disinfection By-Products 2

OPE-ODBP-002-AT	2 mL
OPE-ODBP-002-AV	2 mL

Sample conc. after prep 0.1-100 µg/L

Contains analyte listed below

Chloral hydrate

Water Supply (WS) Pesticides & Semi-Volatile Organic Parameters

WS-PT SOCs #1

OPE-SOC-001-AT 2 mL
OPE-SOC-001-AV 2 mL

Sample conc. after prep 0.1-200 µg/L
Contains 3 analytes listed below

bis(2-Ethylhexyl)adipate Benzo[a]pyrene
bis(2-Ethylhexyl)phthalate

WS-PT SOCs #2

OPE-SOC-002-AT 2 mL
OPE-SOC-002-AV 2 mL

Sample conc. after prep 0.1-900 µg/L
Contains 3 analytes listed below

Diquat Glyphosate
Endothall

WS-PT Pesticides

OPE-PEST-001-AT 2 mL
OPE-PEST-001-AV 2 mL

Sample conc. after prep 0.1-100 µg/L
Contains 11 analytes listed below

Aldrin Hexachlorocyclopentadiene
Dieldrin Lindane
Endrin Methoxychlor
Heptachlor Propachlor
Heptachlor epoxide Trifluralin
Hexachlorobenzene

WS-PT Toxaphene

OPE-PEST-002-AT 2 mL
OPE-PEST-002-AV 2 mL

Sample conc. after prep 0.10-25 µg/L
Contains analyte listed below

Toxaphene

WS-PT Chlordane

OPE-PEST-003-AT 2 mL
OPE-PEST-003-AV 2 mL

Sample conc. after prep 0.10-25 µg/L
Contains analyte listed below

Chlordane

WS-PT Pesticides Mix #4

OPE-PEST-004-AT 2 mL
OPE-PEST-004-AV 2 mL

Sample conc. after prep 0.10-50 µg/L
Contains 3 analytes listed below

Alachlor Simazine
Atrazine

WS-PT Pesticides Mix #5

OPE-PEST-005-AT * 2 mL
OPE-PEST-005-AV * 2 mL

Sample conc. after prep 1-50 µg/L
Contains 3-5 randomly selected analytes listed below

Butachlor Prometon
Metolachlor Bromacil
Metribuzin * Designed for NELAC/CA

WS-PT Dioxin

OPE-DIOX-001-AT 2 mL
OPE-DIOX-001-AV 2 mL

Sample conc. after prep 10-100 pg/L
Contains analyte listed below

2,3,7,8-Tetrachloro-p-dibenzodioxin

WS-PT PCBs as Decachlorobiphenyl

OPE-PCB-001-AT 2 mL
OPE-PCB-001-AV 2 mL

Sample conc. after prep 0.10-10 µg/L
Contains one of the Aroclors listed below

Aroclor 1242 Aroclor 1260
Aroclor 1254

WS-PT Herbicides

OPE-HERB-001-AT 2 mL
OPE-HERB-001-AV 2 mL

Sample conc. after prep 1.0-175 µg/L
Contains 8 analytes listed below

Acifluorfen Dinoseb
2,4-D Pentachlorophenol
Dalapon Picloram
Dicamba 2,4,5-TP (Silvex)

NELAC/CA Organic PT Samples

WS-PT EDB/DBCP/TCP

OPE-EDB-002-AT 2 mL
OPE-EDB-002-AV 2 mL

Sample conc. after prep 0.05-20 µg/L
Contains 3 analytes listed below

1,2-Dibromo-3-chloropropane
Ethylene dibromide
1,2,3-Trichloropropane

WS-PT Phthalates

OPE-SOC-006-AT 2 mL
OPE-SOC-006-AV 2 mL

Sample conc. after prep 1-100 µg/L
Contains 7 analytes listed below

Benzyl butyl phthalate Di-n-octyl phthalate
Dibutyl phthalate bis(2-Ethylhexyl)adipate
Diethyl phthalate bis(2-Ethylhexyl)phthalate
Dimethyl phthalate

WS-PT PCBs

OPE-PCB-004-AT 2 mL
OPE-PCB-004-AV 2 mL

Sample conc. after prep 0.2-5 µg/L
Contains 1 of Aroclors listed below

Aroclor 1016/1242 Aroclor 1254
Aroclor 1232 Aroclor 1260
Aroclor 1248

WS-PT Oxygenates

OPE-OXY-001-AT 2 mL
OPE-OXY-001-AV 2 mL

Sample conc. after prep 5.0-50 µg/L
Contains 4 analytes listed below

ETBE MTBE
Diisopropylether TAME

WS-PT Herbicide

OPE-HERB-002-AT 2 mL
OPE-HERB-002-AV 2 mL

Sample conc. after prep 1.0-50 µg/L
Contains analyte listed below

Bentazon

SUFFIX KEY
"AT" = Pre-Test
"AV" = Values Included

Water Supply (WS) Inorganic

for AccuTest & AccuValue

PT
Self-Test

Water Supply (WS) Inorganic Parameters

WS-PT Trace Metals #1

IPE-MET-001-AT 2 x 20 mL
IPE-MET-001-AV 2 x 20 mL

Sample conc. after prep

Contains 18 analytes listed below

Analyte List	Sample range
Aluminum	20-4500 µg/L
Antimony	2-1000 µg/L
Arsenic	2-200 µg/L
Barium	20-3500 µg/L
Beryllium	0.5-200 µg/L
Cadmium	1-200 µg/L
Calcium	3500-110000 µg/L
Chromium	5-500 µg/L
Copper	20-2250 µg/L
Iron	20-4500 µg/L
Lead	2-200 µg/L
Manganese	10-1200 µg/L
Mercury	0.5-20 µg/L
Nickel	5-600 µg/L
Selenium	2-125 µg/L
Silver	2-750 µg/L
Thallium	1-100 µg/L
Zinc	50-3500 µg/L

WS-PT Trace Metals #2

IPE-MET-002-AT 20 mL
IPE-MET-002-AV 20 mL

Sample conc. after prep

Contains 2 analytes listed below

Analyte List	Sample range
Boron	20-2250 µg/L
Molybdenum	3-500 µg/L

WS-PT Inorganic Disinfection By-Products

IPE-DBP-001-AT 20 mL
IPE-DBP-001-AV 20 mL

Sample conc. after prep

Contains 4 analytes listed below

Analyte List	Sample range
Chlorate	20-200 µg/L
Chlorite	5-1000 µg/L
Bromate	2-60 µg/L
Bromide	10- 600 µg/L

WS-PT Inorganic Minerals

IPE-MIN-001-AT * 3 x 20 mL
IPE-MIN-001-AV * 3 x 20 mL

Sample conc. after prep

Contains 13 analytes listed below

Analyte List	Sample range
Alkalinity as CaCO ₃	10-300 mg/L
Chloride	10-500 mg/L
Conductivity	25- 2500 µmhos
Dissolved Solids	50-5000 mg/L
Fluoride	1-10 mg/L
Total Hardness as CaCO ₃	15- 600 mg/L
Ca Hardness as CaCO ₃	40- 500 mg/L
Langliers Index	5-125 mg/L
Nitrate as N	0.5-20 mg/L
pH	5-10 units
Potassium	2-250 mg/L
Sodium	5 -500 mg/L
Sulfate	2-600 mg/L

* Designed for NELAC/CA

WS-PT Sulfate/TOC

IPE-MIN-002-AT 20 mL
IPE-MIN-002-AV 20 mL

Sample conc. after prep

Contains 2 analytes listed below

Analyte List	Sample range
Sulfate	5-600 mg/L
TOC	0.8-6 mg/L

WS-PT Residual Free Chlorine

IPE-TRC-001-AT 20 mL
IPE-TRC-001-AV 20 mL

Sample conc. after prep

Contains analyte listed below

Analyte List	Sample range
Residual Free Chlorine	0.2-6.0 mg/L

WS-PT Inorganic Solids

IPE-SOL-001-AT 4 mL
IPE-SOL-001-AV 4 mL

Sample conc. after prep

Contains 3 analytes listed below

Analyte List	Sample range
Suspended Solids	5-200 mg/L
Dissolved Solids	50-5000 mg/L
Total solids	50-5200 mg/L

WS-PT Cyanide

IPE-CN-001-AT 20 mL
IPE-CN-001-AV 20 mL

Sample conc. after prep

Contains analyte listed below

Analyte List	Sample range
Total Cyanide	0.1-0.5 mg/L

WS-PT Inorganic Hardness

IPE-HARD-001-AT 20 mL
IPE-HARD-001-AV 20 mL

Sample conc. after prep

Contains 4 analytes listed below

Analyte List	Sample range
Calcium	3.5-110 mg/L
Magnesium	0.5-23 mg/L
Total Hardness as CaCO ₃	15-600 mg/L
Ca Hardness as CaCO ₃	40- 500 mg/L

WS-PT Nitrate/Nitrite/ OrthoPhosphate/Fluoride

IPE-MIN-003-AT 20 mL
IPE-MIN-003-AV 20 mL

Sample conc. after prep

Contains 4 analytes listed below

Analyte List	Sample range
Nitrate-N	0.5-20 mg/L
Nitrite-N	0.1-10 mg/L
OrthoPhosphate- P	0.3-1.7 mg/L
Fluoride	0.9-10 mg/L

WS-PT Nitrite

IPE-MIN-004-AT 20 mL
IPE-MIN-004-AV 20 mL

Sample conc. after prep

Contains analyte listed below

Analyte List	Sample range
Nitrite-N	0.1-10 mg/L

NELAC/CA Inorganic PT Samples

WS-PT MBAS

IPE-MBAS-001-AT 20 mL
IPE-MBAS-001-AV 20 mL

Sample conc. after prep 0.05-2.0 mg/L

Contains analyte listed below

MBAS

WS-PT Silica

IPE-SILICA-001-AT 20 mL
IPE-SILICA-001-AV 20 mL

Sample conc. after prep 50-250 mg/L

Contains analyte listed below

Silica

WS-PT Inorganic Minerals

IPE-MIN-001-AT 2 x 20 mL
IPE-MIN-001-AV 2 x 20 mL

Sample conc. after prep

Contains 13 analytes listed below

Analyte List	Sample range
Alkalinity as CaCO ₃	10-300 mg/L
Chloride	10-500 mg/L
Conductivity	25- 2500 µmhos
Dissolved Solids	50-5000 mg/L
Fluoride	1-10 mg/L
Total Hardness as CaCO ₃	15- 600 mg/L
Ca Hardness as CaCO ₃	40- 500 mg/L
Langliers Index	5-125 mg/L
Nitrate as N	0.5-20 mg/L
pH	5-10 units
Potassium	2-250 mg/L
Sodium	5 -500 mg/L
Sulfate	2-600 mg/L

WS-PT Perchlorate

IPE-PER-001-AT 20 mL
IPE-PER-001-AV 20 mL

Sample conc. after prep 10-50 µg/L

Contains analyte listed below

Perchlorate

WS-PT UV-254 Absorbance & TOC

IPE-UV/TOC-001-AT 20 mL
IPE-UV/TOC-001-AV 20 mL

Contains 2 analytes listed below

Analyte List	Sample range
UV-254 Absorbance	0.015 cm ⁻¹ -0.15 cm ⁻¹
TOC	0.9 mg/L - 5 mg/L

PT Water Supply Organic

Water Pollution (WP) Organic Parameters

WP-PT VOCs

OPE-VOC-002-AT 2 mL
OPE-VOC-002-AV 2 mL

Sample conc. after prep 2-250 µg/L

Product contains 15-22 randomly selected analytes listed below

Benzene	1,1-Dichloroethene
Bromodichloromethane	Dichloromethane
Bromoform	<i>trans</i> -1,2-Dichloroethene
Bromomethane	1,2-Dichloropropane
Carbon tetrachloride	<i>cis</i> -1,3-Dichloropropene
Chlorobenzene	<i>trans</i> -1,3-Dichloropropene
Chloroethane	Ethylbenzene
Chloroform	4-Methyl-2-pentanone (MIBK)
Chloromethane	1,1,2,2-Tetrachloroethane
Dibromochloromethane	Tetrachloroethene
1,2-Dichlorobenzene	Toluene
1,3-Dichlorobenzene	1,1,1-Trichloroethane
1,4-Dichlorobenzene	1,1,2-Trichloroethane
Dichlorodifluoromethane	Trichloroethene
1,1-Dichloroethane	Trichlorofluoromethane
1,2-Dichloroethane	Vinyl Chloride

WP-PT Aromatic VOCs

OPE-AVOC-001C-AT 2 mL
OPE-AVOC-001C-AV 2 mL

Sample conc. after prep 5-100 µg/L

Contains 6 analytes listed below

Benzene	1,2-Dichlorobenzene
Ethylbenzene	1,3-Dichlorobenzene
Toluene	1,4-Dichlorobenzene

WP-PT Halocarbon VOCs

OPE-HVOC-001C-AT 2 mL
OPE-HVOC-001C-AV 2 mL

Sample conc. after prep 5-200 µg/L

Contains 12 analytes listed below

Bromodichloromethane	Dibromochloromethane
Bromoform	1,2-Dichloroethane
Carbon tetrachloride	Dichloromethane
Chlorobenzene	Tetrachloroethene
Chloroform	Trichloroethene
1,1-Dichloroethene	1,1,1-Trichloroethane

SUFFIX KEY
"AT" = Pre-Test
"AV" = Values Included

WP-PT Pesticides

OPE-PEST-006-AT 2 mL
OPE-PEST-006-AV 2 mL

Sample conc. after prep 0.1-10 µg/L

Contains 7 analytes listed below

Aldrin	4,4'-DDT
Dieldrin	Heptachlor
4,4'-DDD	Heptachlor epoxide
4,4'-DDE	

WP-PT Chlordane

OPE-PEST-007C-AT 2 mL
OPE-PEST-007C-AV 2 mL

Sample conc. after prep 0.10-20 µg/L

Contains analyte listed below

Chlordane

WP-PT Pesticides

OPE-PEST-008-AT 2 mL
OPE-PEST-008-AV 2 mL

Sample conc. after prep 0.1-75 µg/L

Contains 7-17 randomly selected analytes from listed below

Aldrin	Endosulfan I
α-BHC	Endosulfan II
β-BHC	Endosulfan sulfate
δ-BHC	Endrin
γ-BHC	Endrin aldehyde
p,p'-DDD	Heptachlor
p,p'-DDE	Heptachlor epoxide
p,p'-DDT	Methoxychlor
Dieldrin	

WP-PT PCBs

OPE-PCB-002-SET-AT 2 x 2 mL
OPE-PCB-002-SET-AV 2 x 2 mL

Set contains one 2 mL ampule of OPE-PCB-002A (low conc.) & one 2 mL ampule of OPE-PCB-002B (high conc.)

Sample conc. after prep 0.10-15 µg/L

Each ampule in the set contains 1 of the Aroclors listed below

Aroclor 1232	Aroclor 1254
Aroclor 1016/1242	Aroclor 1260
Aroclor 1248	

WP-PT PCBs in Transformer Oil

OPE-PCB-003-SET-AT 2 x 5 mL
OPE-PCB-003-SET-AV 2 x 5 mL

Set contains one 5 mL ampule of

OPE-PCB-003A (low conc.) & one 5 mL ampule of OPE-PCB-003B (high conc.)

Sample conc. after prep 10-60 mg/kg

Each ampule in the set contains 1 of the Aroclors listed below

Aroclor 1016/1242	Aroclor 1254
Aroclor 1248	Aroclor 1260

WP-PT SOCs

OPE-SOC-004-AT 2 mL
OPE-SOC-004-AV 2 mL

Sample conc. after prep 10-200 µg/L

Contains 6-15 randomly selected analytes listed below

Acenaphthene	Indeno[1,2,3-cd]pyrene
Acenaphthylene	Phenanthrene
Anthracene	Pyrene
Benzo[a]anthracene	Fluoranthene
Benzo[a]pyrene	Naphthalene
Benzo[b]fluoranthene	bis(2-Ethylhexyl)adipate
Benzo[k]fluoranthene	Butylbenzylphthalate
Benzo[g,h,i]perylene	bis(2-Ethylhexyl)phthalate
Chrysene	di-n-Butylphthalate
Dibenz[a,h]anthracene	Diethylphthalate
Fluorene	Dimethylphthalate

WP-PT SOC Acids

OPE-SOC-005-AT * 2 mL
OPE-SOC-005-AV * 2 mL

Sample conc. after prep 10-200 µg/L

Product contains 5-8 randomly selected analytes listed below

4-Chloro-3-methylphenol	2-Nitrophenol
2-Chlorophenol	4-Nitrophenol
o-Cresol	Pentachlorophenol
2,4-Dichlorophenol	Phenol
2,4-Dimethylphenol	2,4,6-Trichlorophenol
2,4-Dinitrophenol	
2-Methyl-4,6-dinitrophenol	

* Designed for NELAC/CA

Water Pollution (WP) Inorganic & Petroleum

for AccuTest & AccuValue

PT
Self-Test

Water Pollution (WP) / DMR-QA Inorganic Parameters

WP-PT Cyanide

IPE-CN-002-AT	20 mL
IPE-CN-002-AV	20 mL

Sample conc. after prep

Contains analyte listed below

Analyte List	Sample range
Total Cyanide	0.02-1.2 mg/L

WP-PT Inorganic Hardness

IPE-HARD-002-AT	20 mL
IPE-HARD-002-AV	20 mL

Sample conc. after prep

Contains 4 analytes listed below

Analyte List	Sample range
Calcium	3.5-150 mg/L
Magnesium	0.5-50 mg/L
Total Hardness as CaCO ₃	15-600 mg/L
Ca Hardness as CaCO ₃	15- 575 mg/L

WP-PT Trace Metals

IPE-MET-003-AT	2 x 20 mL
IPE-MET-003-AV	2 x 20 mL

Sample conc. after prep

Contains 23 analytes listed below

Analyte List	Sample range
Aluminum	50-4500 µg/L
Antimony	10-1000 µg/L
Arsenic	10-1000 µg/L
Barium	50-3500 µg/L
Beryllium	5-1000 µg/L
Boron	50-2500 µg/L
Cadmium	5-1000 µg/L
Chromium	15-1500 µg/L
Cobalt	10-1500 µg/L
Copper	10-1000 µg/L
Iron	25-4500 µg/L
Lead	30-4000 µg/L
Manganese	50-4500 µg/L
Mercury	0.5-40 µg/L
Molybdenum	20-700 µg/L
Nickel	50-3500 µg/L
Selenium	20-2500 µg/L
Silver	10-750 µg/L
Strontium	2-1000 µg/L
Thallium	10-1000 µg/L
Titanium	25-500 µg/L
Vanadium	50-11500 µg/L
Zinc	25-2500 µg/L

WP-PT Inorganic Minerals

IPE-MIN-005-AT	2 x 20 mL
IPE-MIN-005-AV	2 x 20 mL

Sample conc. after prep

Contains 12 analytes listed below

Analyte List	Sample range
Alkalinity as CaCO ₃	5-150 mg/L
Calcium	2-150 mg/L
Chloride	10-500 mg/L
Conductivity	25- 2500 µmhos
Total Dissolved Solids	25-2400 mg/L
Fluoride	0.2-10 mg/L
Total Hardness as CaCO ₃	15- 600 mg/L
Ca Hardness as CaCO ₃	15- 575 mg/L
Magnesium	0.5-50 mg/L
Potassium	2-250 mg/L
Sodium	5 -500 mg/L
Sulfate	2-600 mg/L

WP-PT Demand

IPE-MIN-006-AT	20 mL
IPE-MIN-006-AV	20 mL

Sample conc. after prep

Contains 4 analytes listed below

Analyte List	Sample range
COD	10-500 mg/L
BOD	10-275 mg/L
cBOD	10-275 mg/L
TOC	5-125 mg/L

WP-PT Nutrients #1

IPE-MIN-007-AT	20 mL
IPE-MIN-007-AV	20 mL

Sample conc. after prep

Contains 3 analytes listed below

Analyte List	Sample range
Nitrate-N	0.2-50 mg/L
Ammonia-N	0.1-20 mg/L
OrthoPhosphate- P	0.01-6 mg/L

WP-PT Nutrients #2

IPE-MIN-008-AT	20 mL
IPE-MIN-008-AV	20 mL

Sample conc. after prep

Contains both analytes listed below

Analyte List	Sample range
Total Phosphorous	0.10-15 mg/L
Total Kjeldahl nitrogen as N	0.3-40 mg/L

WP-PT Oil & Grease & Total Petroleum Hydrocarbon (TPH)

IPE-OILG-001-AT *	5 mL
IPE-OILG-001-AV *	5 mL

Sample conc. after prep

Contains 2 analytes listed below * Designed for NELAC/CA

Analyte List	Sample range
Total Oil & Grease	5-100 mg/L
TPH	5-100 mg/L

Technical Note

To be used by gravimetric oil and grease methods. In addition, this PT sample can now be used for TPH analysis by gravimetric methods including the EPA method 1664. The sample contains analytes typically present in the environment.

WP-PT pH

IPE-PH-001-AT	20 mL
IPE-PH-001-AV	20 mL

Sample conc. after prep

Contains analyte listed below

Analyte List	Sample range
pH	2-12 units

WP-PT Total Phenolics

IPE-PHEN-001-AT	20 mL
IPE-PHEN-001-AV	20 mL

Sample conc. after prep

Contains analyte listed below

Analyte List	Sample range
Total Phenolics	0.03-6 mg/L

WP-PT Inorganic Solids

IPE-SOL-002-AT	4 mL
IPE-SOL-002-AV	4 mL

Sample conc. after prep

Contains 3 analytes listed below

Analyte List	Sample range
Suspended Solids	5-200 mg/L
Dissolved Solids	25-2400 mg/L
Total Solids	30-3000 mg/L

WP-PT Total Residual Chlorine

IPE-TRC-002-AT	20 mL
IPE-TRC-002-AV	20 mL

Sample conc. after prep

Contains analyte listed below

Analyte List	Sample range
Total Residual Chlorine	0.10-6.0 mg/L

PT Water Pollution Inorganic

Water Pollution (WP)

for AccuTest & AccuValue

NELAC/CA Organic PT Samples

WP-PT CARB

OPE-CARB-003-AT 2 mL
OPE-CARB-003-AV 2 mL

Sample conc. after prep 5-50 µg/L
Contains 5 analytes listed below

Carbofuran Oxamyl
Karmex (Diuron) Propham
Methomyl

WP-PT SOCs

OPE-SOC-009-AT 2 mL
OPE-SOC-009-AV 2 mL

Sample conc. after prep 10-200 µg/L
Contains 7 analytes listed below

Benzyl butyl phthalate Di-*n*-octyl phthalate
Dibutyl phthalate bis(2-ethylhexyl)adipate
Diethyl phthalate bis(2-ethylhexyl)phthalate
Dimethyl phthalate

NELAC/CA Inorganic PT Samples

WP-PT Hexavalent Chromium

IPE-HEX-001-AT 20 mL
IPE-HEX-001-AV 20 mL

Sample conc. after prep 50-100 µg/L
Contains analyte listed below

Hexavalent Chromium (Cr⁶⁺)

WP-PT Bromide

IPE-MIN-009-AT 20 mL
IPE-MIN-009-AV 20 mL

Sample conc. after prep 50-500 µg/L
Contains analyte listed below

Bromide

WP-PT Settleable Solids

IPE-SSOL-001-AT neat
IPE-SSOL-001-AV neat

Sample conc. after prep 2 mL/L to 20 mL/L
Contains analyte listed below

Settleable solid

WP-PT Metals

IPE-MET-004-AT 20 mL
IPE-MET-004-AV 20 mL

Sample conc. after prep 10-400 µg/L
Contains 7 analytes listed below

Gold Rhodium
Iridium Ruthenium
Palladium Tin
Platinum

WP-PT Nitrite

IPE-MIN-010-AT 20 mL
IPE-MIN-010-AV 20 mL

Sample conc. after prep 0.1-10 mg/L
Contains analyte listed below

Nitrite

WP-PT Oil & Grease & Total Petroleum Hydrocarbon (TPH)

IPE-OILG-001-AT * 5 mL
IPE-OILG-001-AV * 5 mL

Sample conc. after prep
Contains 2 analytes listed below

Analyte List	Sample range
Total Oil & Grease	5-100 mg/L
TPH	5-100 mg/L

WP-PT Boron (non-colorimetric method)

IPE-MET-005-AT 20 mL
IPE-MET-005-AV 20 mL

Sample conc. after prep 20-1500 µg/L
Contains analyte listed below

Boron

WP-PT TOX

IPE-TOX-001-AT 20 mL
IPE-TOX-001-AV 20 mL

Sample conc. after prep 5-500 µg/L
Contains analyte listed below

TOX

WP-PT Silica

IPE-SILICA-002-AT 20 mL
IPE-SILICA-002-AV 20 mL

Sample conc. after prep 50-300 mg/L
Contains analyte listed below

Silica

WP-PT MBAS

IPE-MBAS-002-AT 20 mL
IPE-MBAS-002-AV 20 mL

Sample conc. after prep 500-1000 µg/L
Contains analyte listed below

MBAS

Technical Note

Product is to be used by gravimetric oil and grease methods. In addition, this PT sample can now be used for TPH analysis by gravimetric methods including the EPA Method 1664. The sample contains real world material typically present in the environment.

SUFFIX KEY

"AT" = Pre-Test
"AV" = Values Included

Organic Single Analytes and Select Mixtures

Singles are listed:

- By each chemical and functional group in the Organic Single section.
- All analytes used in EPA methods are listed at the beginning of the EPA Methods section.
- An index of CAS numbers is in the back of the Catalog.

Persistent Organic Pollutants (POPs) are persistent (resistant to environmental degradation), they bioaccumulate in animal tissue, and they are toxic to humans. A specific list was defined in 1995 by the United Nations, and this list was the center of the Stockholm Convention in 2001. The list originally included “the dirty dozen” and was expanded to include other pesticides, PBDEs, and some chemicals used in industrial processes.



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For an index of
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Numbers, see back of catalog



AccuStandard in the World of PCBs...

History

Polychlorinated biphenyls (PCBs) have been the subject of numerous studies and investigations over the last several decades because of their environmental persistency and bioaccumulation.

Their abundance as a pollutant stems from their worldwide manufacture as heavily-used industrial chemicals (in the USA, as Aroclors by Monsanto), with the main application as a di-electric fluid for capacitors and transformers. As late as 1984, about 758 million pounds were still in use in the United States alone.

Toxicity & BioAccumulation

The chemical formulation of PCBs, its physiological properties (lipophilicity causing bioaccumulation in body lipids and liver organs) and overall toxicity are quite similar to that of the banned pesticide, DDT.

One of the first signals of the effect of PCBs on the environment in the United States, was noted in 1970 on Great Gull Island at the entrance to Long Island Sound. Scientists observed a sharp increase in the number of abnormalities found in young sea gulls, such as feather loss, crossed beaks, and four legs. In addition, the egg shells were extremely thin.

In 1968, Japan documented the first of over 1200 human patients, many of them children, who developed acne-form skin eruptions (chloracne) and other clinical symptoms. These symptoms were eventually traced to the ingestion of the industrial PCB, Kannechlor 400, (trademark of the Kanegafuchi Chemical Industry Company) which had been blended with Rice Oil (Yusho) used in cooking oil.

The effect was thus termed Yusho Disease. The average amount of actual PCBs consumed by the victims was estimated at 2 grams. By 1973, 22 of the 1200 victims had died, 41% from malignant tumors, suggesting a possible excess mortality from that cause.

Since then, additional studies have been performed discovering many more occurrences and correlations.

Regulatory Actions

The overwhelming problem with PCBs is their continuing environmental impact. Their stability, and widespread prior use, has caused global contamination of soils, rivers and other waterways that could affect our food and water supplies for years to come.

This problem has become of paramount concern to the US EPA, which prohibited, under Section 6(e) of the Toxic Substances Control Act, the use of PCBs, except in totally enclosed systems, after July 1, 1978; the manufacture of PCBs, after January 1, 1979 and the processing and distribution in commerce of PCBs after July 1, 1979. PCBs used as industrial chemicals were totally prohibited after July 1, 1984.

In order to facilitate environmental monitoring, toxicity studies, and possible destruction of PCBs present in the environment, the EPA permits the synthesis and distribution of small quantities for research purposes (see box below).

In the course of the investigations, it was determined that some of the 209 congeners that constitute the industrial PCB product behave differently than others and it is very helpful, even essential, to the scientific and regulatory communities, that individual congeners be available. For this reason, the EPA granted manufacturing and export exemptions to a few, select standards manufacturers.

The Founder of AccuStandard, Inc. was the first to obtain this exemption. AccuStandard is the leader in synthesizing PCBs and indeed, is the first, and so far only, manufacturer to have synthesized all 209 congeners. Our expertise can assist you in your PCB investigations.

AccuStandard meets or exceeds the specifications of those chemical compounds that are listed in the "Specifications for Standard Grade Reference Material" section of [Reagent Chemicals](#),

Tenth Edition by the American Chemical Society (ACS).





PCB Groupings and Formulations

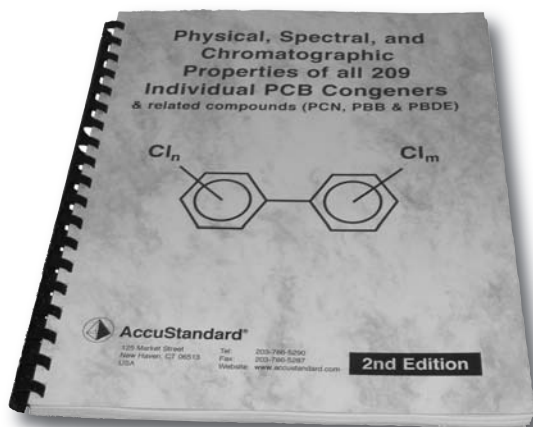
Toxicity and Abundance

PCB Congeners can be grouped according to their presence in the technical mixtures (i.e. Aroclors) and according to their toxicity, generally falling into the following pattern:

Congeners that contain fewer chlorine substitutions in the ortho positions are more toxic than those having more chlorines in those positions. The most toxic are the tetra, penta and hexachlorobiphenyl congeners that are unsubstituted in the ortho position (Dioxin-like).

Analytical Convenience

To obtain meaningful analytical data, the congeners need to be formulated into groupings of solutions that are all resolved on a gas chromatographic column. The "holy grail" of columns, the single column by which all 209 congeners are separated has, to this date, eluded all GC column manufacturers.



Physical, Spectral, and Chromatographic Properties of all 209 Individual PCB Congeners

AccuStandard's FT/IR, Mass Spectral data, melting point and chromatographic information along with chromatographic data from George Frame's study is available in the book.

PCB-BOOK-002

There are 2 columns that are closest to achieving the "holy grail" status of separating all the PCB congeners. They are Agilent DB-XLB & SGE's HT 8 which resolve all but 4 pairs of significant congeners and 5 pairs of minor congeners.

George Frame and his co-workers at General Electric Company have coordinated a seminal study of specially formulated PCB groups - five of which are composed of the congeners contained in Aroclors, the remaining four mixtures contain those congeners generally absent in Aroclors. AccuStandard prepared and supplied the nine mixtures used in Dr. Frame's study from its inventory of the 209 pure congeners.

The above nine mixtures were then tested on 17 different columns by independent laboratories and column manufacturers. The resulting chromatographic retention time and response data was compiled and published. This information has proven invaluable for identification and quantification of the different Aroclors as well as for congener specific analysis.

Physical, Spectral, and Chromatographic Properties of All 209 Individual PCB Congeners

Capillary GC Systems Characteristics, Researchers, and Aroclor PCB Solutions and System Resolving Power

Syst#	Column	Silicone Substitution*	Len. (ft)	I. D. (mm)	Film (µm)	Analyt	Company	Det.	No. of Congen.	No. of "TZ" (n)	209S (n)		
1	DB1	100% A	30	.25	.25	G. Frame	GE	ECD	86	35	30	273	40
2	DB1	100% A	30	.25	.25	G. Frame	GE	ECD	86	35	30	273	40
3	HTX-1	100% A	80	.25	.25	G. Frame	GE	ECD	86	35	30	273	40
4	SFB-Duyl	100% E	30	.25	.25	J. Coakley	HWK	MS	95	38	17	416	87
5	SFB-Duyl	100% E	30	.25	.25	G. Frame	GE	ECD	47	38	24	322	45
6	SFB-Duyl	100% E	30	.25	.25	G. Frame	GE	ECD	47	38	24	322	45
7	SFB-Duyl	100% E	30	.25	.25	J. Coakley	HWK	ECD	41	17	24	322	45
8	SFB-Duyl	100% E	30	.25	.25	J. Coakley	HWK	ECD	38	28	24	322	45
9	CP-MS-C18	100% D	100	.25	.10	R. Swain	Supelco	MS	81	25	11	330	104
10	CP-MS-C18	100% D	100	.25	.10	L. deWitte	Chrompack	ECD	80	29	11	330	104
11	DBS-MS	8% K	100	.25	.10	D. Laiter	NIST	ECD	80	29	11	330	104
12	RTX-S	8% B	30	.25	.50	M. Hastings	GE	ECD	35	18	17	382	148
13	CP-MS-13	14% B	80	.25	.25	C. Loupe	Restek	MS	82	38	17	386	158
14	SFB-30	30% B	80	.25	.25	G. deWitte	Chrompack	MS	80	30	25	387	108
15	HP-35	35% B	30	.25	.25	M. Ervine	Supelco	MS	88	41	22	348	94
16	HTX-35	35% B	30	.25	.25	L. Chang	HPL	MS	88	30	25	304	87
17	DB-17	50% B	30	.25	.25	C. Loupe	Restek	MS	88	41	22	348	94
18	HP-1301	6% G	30	.25	.25	M. Hastings	J&W	MS	82	33	19	388	89
19	AT-1101	14% B	30	.25	.25	L. Chang	HPL	MS	84	47	17	388	119
20	007-COP	80% D/15% E	30	.25	.25	S. Miller	Altex	MS	95	28	30	346	91
21	DBS-MS	"Phg."	30	.25	.25	M. Hastings	J&W	MS	68	42	28	248	43
22	DBS-MS	"Phg."	30	.25	.25	M. Hastings	J&W	MS	68	42	28	248	43
23	DBS-MS	"Phg."	30	.25	.25	M. Hastings	J&W	MS	68	42	28	248	43
24	DBS-MS	"Phg."	30	.25	.25	M. Hastings	J&W	MS	68	42	28	248	43
25	DBS-MS	"Phg."	30	.25	.25	M. Hastings	J&W	MS	68	42	28	248	43
26	DBS-MS	"Phg."	30	.25	.25	M. Hastings	J&W	MS	68	42	28	248	43
27	DBS-MS	"Phg."	30	.25	.25	M. Hastings	J&W	MS	68	42	28	248	43

Key to Poly(methylsiloxane)-based Stationary Phase Structures

- A Me-Si-Me
- B P-Si-P
- C P-Si-Me
- D C18-Si-Me
- E C8-Si-Me
- F Phenylsilyl
- G CyP-Si-P
- H CyP-Si-CyP
- I CyBA-Si-Me
- J O-Si-P-Si-O
- K O-Si-C-Si-O
- L O-Si-C-Si-O



Chlorobiphenyl Congeners (PCBs)

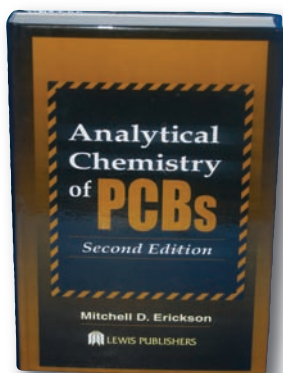
- All 209 possible congeners are available in Neat and Solution form
- All congeners are 99+% pure by GC/FID & GC/MS

209 Solutions in a Set *Exclusive*

C-35-SET	35 µg/mL in Isooctane	set of 209 x 1 mL
C-100-SET	100 µg/mL in Isooctane	set of 209 x 1 mL

PCBS

Chlorobiphenyl Congeners (PCBs)			99+% Pure		Solutions in Isooctane			
No.	Compound	CAS No.	Neat Cat. No.	Unit	35 µg/mL Cat. No.	1 mL	100 µg/mL Cat. No.	1 mL
1	2-Chlorobiphenyl	2051-60-7	C-001N	50 mg	C-001S		C-001S-TP	
2	3-Chlorobiphenyl	2051-61-8	C-002N	50 mg	C-002S		C-002S-TP	
3	4-Chlorobiphenyl	2051-62-9	C-003N	50 mg	C-003S		C-003S-TP	
4	2,2'-Dichlorobiphenyl	13029-08-8	C-004N	25 mg	C-004S		C-004S-TP	
5	2,3-Dichlorobiphenyl	16605-91-7	C-005N	50 mg	C-005S		C-005S-TP	
6	2,3'-Dichlorobiphenyl	25569-80-6	C-006N	5 mg	C-006S		C-006S-TP	
7	2,4-Dichlorobiphenyl	33284-50-3	C-007N	25 mg	C-007S		C-007S-TP	
8	2,4'-Dichlorobiphenyl	34883-43-7	C-008N	25 mg	C-008S		C-008S-TP	
9	2,5-Dichlorobiphenyl	34883-39-1	C-009N	50 mg	C-009S		C-009S-TP	
10	2,6-Dichlorobiphenyl	33146-45-1	C-010N	25 mg	C-010S		C-010S-TP	
11	3,3'-Dichlorobiphenyl	2050-67-1	C-011N	50 mg	C-011S		C-011S-TP	
12	3,4-Dichlorobiphenyl	2974-92-7	C-012N	50 mg	C-012S		C-012S-TP	
13	3,4'-Dichlorobiphenyl	2974-90-5	C-013N	5 mg	C-013S		C-013S-TP	
14	3,5-Dichlorobiphenyl	34883-41-5	C-014N	50 mg	C-014S		C-014S-TP	
15	4,4'-Dichlorobiphenyl	2050-68-2	C-015N	10 mg	C-015S		C-015S-TP	
16	2,2',3-Trichlorobiphenyl	38444-78-9	C-016N	5 mg	C-016S		C-016S-TP	
17	2,2',4-Trichlorobiphenyl	37680-66-3	C-017N	5 mg	C-017S		C-017S-TP	
18	2,2',5-Trichlorobiphenyl	37680-65-2	C-018N	25 mg	C-018S		C-018S-TP	
19	2,2',6-Trichlorobiphenyl	38444-73-4	C-019N	5 mg	C-019S		C-019S-TP	
20	2,3,3'-Trichlorobiphenyl	38444-84-7	C-020N	5 mg	C-020S		C-020S-TP	
21	2,3,4-Trichlorobiphenyl	55702-46-0	C-021N	25 mg	C-021S		C-021S-TP	
22	2,3,4'-Trichlorobiphenyl	38444-85-8	C-022N	5 mg	C-022S		C-022S-TP	
23	2,3,5-Trichlorobiphenyl	55720-44-0	C-023N	5 mg	C-023S		C-023S-TP	
24	2,3,6-Trichlorobiphenyl	55702-45-9	C-024N	10 mg	C-024S		C-024S-TP	
25	2,3',4-Trichlorobiphenyl	55712-37-3	C-025N	5 mg	C-025S		C-025S-TP	
26	2,3',5-Trichlorobiphenyl	38444-81-4	C-026N	25 mg	C-026S		C-026S-TP	
27	2,3',6-Trichlorobiphenyl	38444-76-7	C-027N	5 mg	C-027S		C-027S-TP	
28	2,4,4'-Trichlorobiphenyl	7012-37-5	C-028N	10 mg	C-028S		C-028S-TP	
29	2,4,5-Trichlorobiphenyl	15862-07-4	C-029N	50 mg	C-029S		C-029S-TP	
30	2,4,6-Trichlorobiphenyl	35693-92-6	C-030N	50 mg	C-030S		C-030S-TP	
31	2,4',5-Trichlorobiphenyl	16606-02-3	C-031N	25 mg	C-031S		C-031S-TP	
32	2,4',6-Trichlorobiphenyl	38444-77-8	C-032N	5 mg	C-032S		C-032S-TP	
33	2',3,4-Trichlorobiphenyl	38444-86-9	C-033N	10 mg	C-033S		C-033S-TP	
34	2',3,5-Trichlorobiphenyl	37680-68-5	C-034N	5 mg	C-034S		C-034S-TP	
35	3,3',4-Trichlorobiphenyl	37680-69-6	C-035N	5 mg	C-035S		C-035S-TP	
36	3,3',5-Trichlorobiphenyl	38444-87-0	C-036N	5 mg	C-036S		C-036S-TP	
37	3,4,4'-Trichlorobiphenyl	38444-90-5	C-037N	5 mg	C-037S		C-037S-TP	
38	3,4,5-Trichlorobiphenyl	53555-66-1	C-038N	5 mg	C-038S		C-038S-TP	
39	3,4',5-Trichlorobiphenyl	38444-88-1	C-039N	5 mg	C-039S		C-039S-TP	



PCB Book

Analytical Chemistry of PCBs
BOOK-PCB-001

Analytical Chemistry of PCBs

This updated and expanded Second Edition of Dr. Erickson's Analytical Chemistry of PCBs appears a decade after the first and is completely revised and updated. The changes from the First Edition reflect the significant growth in the area and a growing appreciation of the importance of PCB analysis to our culture. This book is a comprehensive review of the analytical chemistry of PCBs. It is part history, part annotated bibliography, part comparison, and part guidance. Featuring a new chapter on analyst/customer interactions and several new appendices, the Second Edition is an invaluable resource for both chemists with no experience in PCB analysis and seasoned PCB researchers.



Chlorobiphenyl Congeners (PCBs)



*In 1993 AccuStandard
completed the synthesis of all 209 congeners as
individuals (each in a pure form).*

PCBs

Chlorobiphenyl Congeners (PCBs)			99+ % Pure		Solutions in Isooctane			
No.	Compound	CAS No.	Neat Cat. No.	Unit	35 µg/mL Cat. No.	1 mL	100 µg/mL Cat. No.	1 mL
40	2,2',3,3'-Tetrachlorobiphenyl	38444-93-8	C-040N	50 mg	C-040S		C-040S-TP	
41	2,2',3,4-Tetrachlorobiphenyl	52663-59-9	C-041N	5 mg	C-041S		C-041S-TP	
42	2,2',3,4'-Tetrachlorobiphenyl	36559-22-5	C-042N	5 mg	C-042S		C-042S-TP	
43	2,2',3,5-Tetrachlorobiphenyl	70362-46-8	C-043N	5 mg	C-043S		C-043S-TP	
44	2,2',3,5'-Tetrachlorobiphenyl	41464-39-5	C-044N	25 mg	C-044S		C-044S-TP	
45	2,2',3,6-Tetrachlorobiphenyl	70362-45-7	C-045N	5 mg	C-045S		C-045S-TP	
46	2,2',3,6'-Tetrachlorobiphenyl	41464-47-5	C-046N	5 mg	C-046S		C-046S-TP	
47	2,2',4,4'-Tetrachlorobiphenyl	2437-79-8	C-047N	50 mg	C-047S		C-047S-TP	
48	2,2',4,5-Tetrachlorobiphenyl	70362-47-9	C-048N	5 mg	C-048S		C-048S-TP	
49	2,2',4,5'-Tetrachlorobiphenyl	41464-40-8	C-049N	20 mg	C-049S		C-049S-TP	
50	2,2',4,6-Tetrachlorobiphenyl	62796-65-0	C-050N	5 mg	C-050S		C-050S-TP	
51	2,2',4,6'-Tetrachlorobiphenyl	68194-04-7	C-051N	5 mg	C-051S		C-051S-TP	
52	2,2',5,5'-Tetrachlorobiphenyl	35693-99-3	C-052N	10 mg	C-052S		C-052S-TP	
53	2,2',5,6'-Tetrachlorobiphenyl	41464-41-9	C-053N	25 mg	C-053S		C-053S-TP	
54	2,2',6,6'-Tetrachlorobiphenyl	15968-05-5	C-054N	50 mg	C-054S		C-054S-TP	
55	2,3,3',4-Tetrachlorobiphenyl	74338-24-2	C-055N	5 mg	C-055S		C-055S-TP	
56	2,3,3',4'-Tetrachlorobiphenyl	41464-43-1	C-056N	5 mg	C-056S		C-056S-TP	
57	2,3,3',5-Tetrachlorobiphenyl	70424-67-8	C-057N	5 mg	C-057S		C-057S-TP	
58	2,3,3',5'-Tetrachlorobiphenyl	41464-49-7	C-058N	5 mg	C-058S		C-058S-TP	
59	2,3,3',6-Tetrachlorobiphenyl	74472-33-6	C-059N	5 mg	C-059S		C-059S-TP	
60	2,3,4,4'-Tetrachlorobiphenyl	33025-41-1	C-060N	5 mg	C-060S		C-060S-TP	
61	2,3,4,5-Tetrachlorobiphenyl	33284-53-6	C-061N	50 mg	C-061S		C-061S-TP	
62	2,3,4,6-Tetrachlorobiphenyl	54230-22-7	C-062N	5 mg	C-062S		C-062S-TP	
63	2,3,4',5-Tetrachlorobiphenyl	74472-34-7	C-063N	5 mg	C-063S		C-063S-TP	
64	2,3,4',6-Tetrachlorobiphenyl	52663-58-8	C-064N	5 mg	C-064S		C-064S-TP	
65	2,3,5,6-Tetrachlorobiphenyl	33284-54-7	C-065N	25 mg	C-065S		C-065S-TP	
66	2,3',4,4'-Tetrachlorobiphenyl	32598-10-0	C-066N	20 mg	C-066S		C-066S-TP	
67	2,3',4,5-Tetrachlorobiphenyl	73557-53-8	C-067N	5 mg	C-067S		C-067S-TP	
68	2,3',4,5'-Tetrachlorobiphenyl	73575-52-7	C-068N	5 mg	C-068S		C-068S-TP	
69	2,3',4,6-Tetrachlorobiphenyl	60233-24-1	C-069N	5 mg	C-069S		C-069S-TP	
70	2,3',4',5-Tetrachlorobiphenyl	32598-11-1	C-070N	10 mg	C-070S		C-070S-TP	
71	2,3',4',6-Tetrachlorobiphenyl	41464-46-4	C-071N	5 mg	C-071S		C-071S-TP	
72	2,3',5,5'-Tetrachlorobiphenyl	41464-42-0	C-072N	25 mg	C-072S		C-072S-TP	
73	2,3',5,6-Tetrachlorobiphenyl	74338-23-1	C-073N	5 mg	C-073S		C-073S-TP	
74	2,4,4',5-Tetrachlorobiphenyl	32690-93-0	C-074N	5 mg	C-074S		C-074S-TP	
75	2,4,4',6-Tetrachlorobiphenyl	32598-12-2	C-075N	5 mg	C-075S		C-075S-TP	
76	2',3,4,5-Tetrachlorobiphenyl	70362-48-0	C-076N	5 mg	C-076S		C-076S-TP	
77	3,3',4,4'-Tetrachlorobiphenyl	32598-13-3	C-077N	25 mg	C-077S		C-077S-TP	
78	3,3',4,5-Tetrachlorobiphenyl	70362-49-1	C-078N	5 mg	C-078S		C-078S-TP	
79	3,3',4,5'-Tetrachlorobiphenyl	41464-48-6	C-079N	5 mg	C-079S		C-079S-TP	
80	3,3',5,5'-Tetrachlorobiphenyl	33284-52-5	C-080N	5 mg	C-080S		C-080S-TP	
81	3,4,4',5-Tetrachlorobiphenyl	70362-50-4	C-081N	5 mg	C-081S		C-081S-TP	
82	2,2',3,3',4-Pentachlorobiphenyl	52663-62-4	C-082N	5 mg	C-082S		C-082S-TP	
83	2,2',3,3',5-Pentachlorobiphenyl	60145-20-2	C-083N	5 mg	C-083S		C-083S-TP	
84	2,2',3,3',6-Pentachlorobiphenyl	52663-60-2	C-084N	5 mg	C-084S		C-084S-TP	
85	2,2',3,4,4'-Pentachlorobiphenyl	65510-45-4	C-085N	5 mg	C-085S		C-085S-TP	
86	2,2',3,4,5-Pentachlorobiphenyl	55312-69-1	C-086N	5 mg	C-086S		C-086S-TP	
87	2,2',3,4,5'-Pentachlorobiphenyl	38380-02-8	C-087N	10 mg	C-087S		C-087S-TP	
88	2,2',3,4,6-Pentachlorobiphenyl	55215-17-3	C-088N	5 mg	C-088S		C-088S-TP	
89	2,2',3,4,6'-Pentachlorobiphenyl	73575-57-2	C-089N	5 mg	C-089S		C-089S-TP	
90	2,2',3,4',5-Pentachlorobiphenyl	68194-07-0	C-090N	5 mg	C-090S		C-090S-TP	
91	2,2',3,4',6-Pentachlorobiphenyl	68194-05-8	C-091N	5 mg	C-091S		C-091S-TP	
92	2,2',3,5,5'-Pentachlorobiphenyl	52663-61-3	C-092N	5 mg	C-092S		C-092S-TP	
93	2,2',3,5,6-Pentachlorobiphenyl	73575-56-1	C-093N	5 mg	C-093S		C-093S-TP	
94	2,2',3,5,6'-Pentachlorobiphenyl	73575-55-0	C-094N	5 mg	C-094S		C-094S-TP	
95	2,2',3,5',6-Pentachlorobiphenyl	38379-99-6	C-095N	5 mg	C-095S		C-095S-TP	
96	2,2',3,6,6'-Pentachlorobiphenyl	73575-54-9	C-096N	5 mg	C-096S		C-096S-TP	
97	2,2',3',4,5-Pentachlorobiphenyl	41464-51-1	C-097N	10 mg	C-097S		C-097S-TP	
98	2,2',3',4,6-Pentachlorobiphenyl	60233-25-2	C-098N	5 mg	C-098S		C-098S-TP	
99	2,2',4,4',5-Pentachlorobiphenyl	38380-01-7	C-099N	5 mg	C-099S		C-099S-TP	
100	2,2',4,4',6-Pentachlorobiphenyl	39485-83-1	C-100N	5 mg	C-100S		C-100S-TP	
101	2,2',4,5,5'-Pentachlorobiphenyl	37680-73-2	C-101N	10 mg	C-101S		C-101S-TP	
102	2,2',4,5,6'-Pentachlorobiphenyl	68194-06-9	C-102N	5 mg	C-102S		C-102S-TP	
103	2,2',4,5',6-Pentachlorobiphenyl	60145-21-3	C-103N	10 mg	C-103S		C-103S-TP	
104	2,2',4,6,6'-Pentachlorobiphenyl	56558-16-8	C-104N	5 mg	C-104S		C-104S-TP	
105	2,3,3',4,4'-Pentachlorobiphenyl	32598-14-4	C-105N	5 mg	C-105S		C-105S-TP	
106	2,3,3',4,5-Pentachlorobiphenyl	70424-69-0	C-106N	5 mg	C-106S		C-106S-TP	

Chlorobiphenyl Congeners (PCBs) continued on Next Page



Chlorobiphenyl Congeners (PCBs)

PCBS

Chlorobiphenyl Congeners (PCBs)

99+% Pure

Solutions in Isooctane

No.	Compound	CAS No.	Neat Cat. No.	Unit	Solutions in Isooctane	
					35 µg/mL Cat. No.	100 µg/mL Cat. No.
107	2,3,3',4',5-Pentachlorobiphenyl	70424-68-9	C-107N	5 mg	C-107S	C-107S-TP
108	2,3,3',4,5'-Pentachlorobiphenyl	70362-41-3	C-108N	5 mg	C-108S	C-108S-TP
109	2,3,3',4,6-Pentachlorobiphenyl	74472-35-8	C-109N	5 mg	C-109S	C-109S-TP
110	2,3,3',4',6-Pentachlorobiphenyl	38380-03-9	C-110N	5 mg	C-110S	C-110S-TP
111	2,3,3',5,5'-Pentachlorobiphenyl	39635-32-0	C-111N	5 mg	C-111S	C-111S-TP
112	2,3,3',5,6-Pentachlorobiphenyl	74472-36-9	C-112N	5 mg	C-112S	C-112S-TP
113	2,3,3',5,6'-Pentachlorobiphenyl	68194-10-5	C-113N	5 mg	C-113S	C-113S-TP
114	2,3,4,4',5-Pentachlorobiphenyl	74472-37-0	C-114N	5 mg	C-114S	C-114S-TP
115	2,3,4,4',6-Pentachlorobiphenyl	74472-38-1	C-115N	5 mg	C-115S	C-115S-TP
116	2,3,4,5,6-Pentachlorobiphenyl	18259-05-7	C-116N	10 mg	C-116S	C-116S-TP
117	2,3,4',5,6-Pentachlorobiphenyl	68194-11-6	C-117N	5 mg	C-117S	C-117S-TP
118	2,3',4,4',5-Pentachlorobiphenyl	31508-00-6	C-118N	5 mg	C-118S	C-118S-TP
119	2,3',4,4',6-Pentachlorobiphenyl	56558-17-9	C-119N	5 mg	C-119S	C-119S-TP
120	2,3',4,5,5'-Pentachlorobiphenyl	68194-12-7	C-120N	5 mg	C-120S	C-120S-TP
121	2,3',4,5',6-Pentachlorobiphenyl	56558-18-0	C-121N	5 mg	C-121S	C-121S-TP
122	2',3,3',4,5-Pentachlorobiphenyl	76842-07-4	C-122N	5 mg	C-122S	C-122S-TP
123	2',3,4,4',5-Pentachlorobiphenyl	65510-44-3	C-123N	5 mg	C-123S	C-123S-TP
124	2',3,4,5,5'-Pentachlorobiphenyl	70424-70-3	C-124N	5 mg	C-124S	C-124S-TP
125	2',3,4,5,6'-Pentachlorobiphenyl	74472-39-2	C-125N	5 mg	C-125S	C-125S-TP
126	3,3',4,4',5-Pentachlorobiphenyl	57465-28-8	C-126N	5 mg	C-126S	C-126S-TP
127	3,3',4,5,5'-Pentachlorobiphenyl	39635-33-1	C-127N	5 mg	C-127S	C-127S-TP
128	2,2',3,3',4,4'-Hexachlorobiphenyl	38380-07-3	C-128N	20 mg	C-128S	C-128S-TP
129	2,2',3,3',4,5-Hexachlorobiphenyl	55215-18-4	C-129N	5 mg	C-129S	C-129S-TP
130	2,2',3,3',4,5'-Hexachlorobiphenyl	52663-66-8	C-130N	5 mg	C-130S	C-130S-TP
131	2,2',3,3',4,6-Hexachlorobiphenyl	61798-70-7	C-131N	5 mg	C-131S	C-131S-TP
132	2,2',3,3',4,6'-Hexachlorobiphenyl	38380-05-1	C-132N	5 mg	C-132S	C-132S-TP
133	2,2',3,3',5,5'-Hexachlorobiphenyl	35694-04-3	C-133N	5 mg	C-133S	C-133S-TP
134	2,2',3,3',5,6-Hexachlorobiphenyl	52704-70-8	C-134N	5 mg	C-134S	C-134S-TP
135	2,2',3,3',5,6'-Hexachlorobiphenyl	52744-13-5	C-135N	5 mg	C-135S	C-135S-TP
136	2,2',3,3',6,6'-Hexachlorobiphenyl	38411-22-2	C-136N	20 mg	C-136S	C-136S-TP
137	2,2',3,4,4',5-Hexachlorobiphenyl	35694-06-5	C-137N	5 mg	C-137S	C-137S-TP
138	2,2',3,4,4',5'-Hexachlorobiphenyl	35065-28-2	C-138N	5 mg	C-138S	C-138S-TP
139	2,2',3,4,4',6-Hexachlorobiphenyl	56030-56-9	C-139N	5 mg	C-139S	C-139S-TP
140	2,2',3,4,4',6'-Hexachlorobiphenyl	59291-64-4	C-140N	5 mg	C-140S	C-140S-TP
141	2,2',3,4,5,5'-Hexachlorobiphenyl	52712-04-6	C-141N	5 mg	C-141S	C-141S-TP
142	2,2',3,4,5,6-Hexachlorobiphenyl	41411-61-4	C-142N	5 mg	C-142S	C-142S-TP
143	2,2',3,4,5,6'-Hexachlorobiphenyl	68194-15-0	C-143N	5 mg	C-143S	C-143S-TP
144	2,2',3,4,5',6-Hexachlorobiphenyl	68194-14-9	C-144N	5 mg	C-144S	C-144S-TP
145	2,2',3,4,6,6'-Hexachlorobiphenyl	74472-40-5	C-145N	5 mg	C-145S	C-145S-TP
146	2,2',3,4',5,5'-Hexachlorobiphenyl	51908-16-8	C-146N	5 mg	C-146S	C-146S-TP
147	2,2',3,4',5,6-Hexachlorobiphenyl	68194-13-8	C-147N	5 mg	C-147S	C-147S-TP
148	2,2',3,4',5,6'-Hexachlorobiphenyl	74472-41-6	C-148N	5 mg	C-148S	C-148S-TP
149	2,2',3,4',5',6-Hexachlorobiphenyl	38380-04-0	C-149N	5 mg	C-149S	C-149S-TP
150	2,2',3,4',6,6'-Hexachlorobiphenyl	68194-08-1	C-150N	5 mg	C-150S	C-150S-TP
151	2,2',3,5,5',6-Hexachlorobiphenyl	52663-63-5	C-151N	5 mg	C-151S	C-151S-TP
152	2,2',3,5,6,6'-Hexachlorobiphenyl	68194-09-2	C-152N	5 mg	C-152S	C-152S-TP
153	2,2',4,4',5,5'-Hexachlorobiphenyl	35065-27-1	C-153N	10 mg	C-153S	C-153S-TP
154	2,2',4,4',5,6'-Hexachlorobiphenyl	60145-22-4	C-154N	5 mg	C-154S	C-154S-TP
155	2,2',4,4',6,6'-Hexachlorobiphenyl	33979-03-2	C-155N	50 mg	C-155S	C-155S-TP
156	2,3,3',4,4',5-Hexachlorobiphenyl	38380-08-4	C-156N	5 mg	C-156S	C-156S-TP
157	2,3,3',4,4',5'-Hexachlorobiphenyl	69782-90-7	C-157N	5 mg	C-157S	C-157S-TP
158	2,3,3',4,4',6-Hexachlorobiphenyl	74472-42-7	C-158N	5 mg	C-158S	C-158S-TP
159	2,3,3',4,5,5'-Hexachlorobiphenyl	39635-35-3	C-159N	5 mg	C-159S	C-159S-TP
160	2,3,3',4,5,6-Hexachlorobiphenyl	41411-62-5	C-160N	5 mg	C-160S	C-160S-TP
161	2,3,3',4,5',6-Hexachlorobiphenyl	74474-43-8	C-161N	5 mg	C-161S	C-161S-TP
162	2,3,3',4',5,5'-Hexachlorobiphenyl	39635-34-2	C-162N	5 mg	C-162S	C-162S-TP
163	2,3,3',4',5,6-Hexachlorobiphenyl	74472-44-9	C-163N	5 mg	C-163S	C-163S-TP
164	2,3,3',4',5',6-Hexachlorobiphenyl	74472-45-0	C-164N	5 mg	C-164S	C-164S-TP
165	2,3,3',5,5',6-Hexachlorobiphenyl	74472-46-1	C-165N	5 mg	C-165S	C-165S-TP
166	2,3,4,4',5,6-Hexachlorobiphenyl	41411-63-6	C-166N	5 mg	C-166S	C-166S-TP
167	2,3',4,4',5,5'-Hexachlorobiphenyl	52663-72-6	C-167N	5 mg	C-167S	C-167S-TP
168	2,3',4,4',5',6-Hexachlorobiphenyl	59291-65-5	C-168N	5 mg	C-168S	C-168S-TP
169	3,3',4,4',5,5'-Hexachlorobiphenyl	32774-16-6	C-169N	5 mg	C-169S	C-169S-TP

Other solvents, concentrations and quantities are available upon request.

Chlorobiphenyl Congeners (PCBs)



PCBS

Chlorobiphenyl Congeners (PCBs)		99+% Pure			Solutions in Isooctane			
No.	Compound	CAS No.	Neat Cat. No.	Unit	35 µg/mL Cat. No.	1 mL	100 µg/mL Cat. No.	1 mL
170	2,2',3,3',4,4',5-Heptachlorobiphenyl	35065-30-6	C-170N	5 mg	C-170S		C-170S-TP	
171	2,2',3,3',4,4',6-Heptachlorobiphenyl	52663-71-5	C-171N	5 mg	C-171S		C-171S-TP	
172	2,2',3,3',4,5,5'-Heptachlorobiphenyl	52663-74-8	C-172N	5 mg	C-172S		C-172S-TP	
173	2,2',3,3',4,5,6-Heptachlorobiphenyl	68194-16-1	C-173N	5 mg	C-173S		C-173S-TP	
174	2,2',3,3',4,5,6'-Heptachlorobiphenyl	38411-25-5	C-174N	5 mg	C-174S		C-174S-TP	
175	2,2',3,3',4,5',6-Heptachlorobiphenyl	40186-70-7	C-175N	5 mg	C-175S		C-175S-TP	
176	2,2',3,3',4,6,6'-Heptachlorobiphenyl	52663-65-7	C-176N	5 mg	C-176S		C-176S-TP	
177	2,2',3,3',4',5,6-Heptachlorobiphenyl	52663-70-4	C-177N	5 mg	C-177S		C-177S-TP	
178	2,2',3,3',5,5',6-Heptachlorobiphenyl	52663-67-9	C-178N	5 mg	C-178S		C-178S-TP	
179	2,2',3,3',5,6,6'-Heptachlorobiphenyl	52663-64-6	C-179N	5 mg	C-179S		C-179S-TP	
180	2,2',3,4,4',5,5'-Heptachlorobiphenyl	35065-29-3	C-180N	5 mg	C-180S		C-180S-TP	
181	2,2',3,4,4',5,6-Heptachlorobiphenyl	74472-47-2	C-181N	5 mg	C-181S		C-181S-TP	
182	2,2',3,4,4',5,6'-Heptachlorobiphenyl	60145-23-5	C-182N	5 mg	C-182S		C-182S-TP	
183	2,2',3,4,4',5',6-Heptachlorobiphenyl	52663-69-1	C-183N	5 mg	C-183S		C-183S-TP	
184	2,2',3,4,4',6,6'-Heptachlorobiphenyl	74472-48-3	C-184N	5 mg	C-184S		C-184S-TP	
185	2,2',3,4,5,5',6-Heptachlorobiphenyl	52712-05-7	C-185N	5 mg	C-185S		C-185S-TP	
186	2,2',3,4,5,6,6'-Heptachlorobiphenyl	74472-49-4	C-186N	5 mg	C-186S		C-186S-TP	
187	2,2',3,4',5,5',6-Heptachlorobiphenyl	52663-68-0	C-187N	5 mg	C-187S		C-187S-TP	
188	2,2',3,4',5,6,6'-Heptachlorobiphenyl	74487-85-7	C-188N	5 mg	C-188S		C-188S-TP	
189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	39635-31-9	C-189N	5 mg	C-189S		C-189S-TP	
190	2,3,3',4,4',5,6-Heptachlorobiphenyl	41411-64-7	C-190N	5 mg	C-190S		C-190S-TP	
191	2,3,3',4,4',5',6-Heptachlorobiphenyl	74472-50-7	C-191N	5 mg	C-191S		C-191S-TP	
192	2,3,3',4,5,5',6-Heptachlorobiphenyl	74472-51-8	C-192N	5 mg	C-192S		C-192S-TP	
193	2,3,3',4',5,5',6-Heptachlorobiphenyl	69782-91-8	C-193N	5 mg	C-193S		C-193S-TP	
194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl	35694-08-7	C-194N	5 mg	C-194S		C-194S-TP	
195	2,2',3,3',4,4',5,6-Octachlorobiphenyl	52663-78-2	C-195N	5 mg	C-195S		C-195S-TP	
196	2,2',3,3',4,4',5,6'-Octachlorobiphenyl	42740-50-1	C-196N	5 mg	C-196S		C-196S-TP	
197	2,2',3,3',4,4',6,6'-Octachlorobiphenyl	33091-17-7	C-197N	5 mg	C-197S		C-197S-TP	
198	2,2',3,3',4,5,5',6-Octachlorobiphenyl	68194-17-2	C-198N	5 mg	C-198S		C-198S-TP	
199	2,2',3,3',4,5,5',6'-Octachlorobiphenyl	52663-75-9	C-199N-R1	5 mg	C-199S-R1		C-199S-TP-R1	
200	2,2',3,3',4,5,6,6'-Octachlorobiphenyl	52663-73-7	C-200N-R1	5 mg	C-200S-R1		C-200S-TP-R1	
201	2,2',3,3',4,5',6,6'-Octachlorobiphenyl	40186-71-8	C-201N-R1	5 mg	C-201S-R1		C-201S-TP-R1	
202	2,2',3,3',5,5',6,6'-Octachlorobiphenyl	2136-99-4	C-202N	5 mg	C-202S		C-202S-TP	
203	2,2',3,4,4',5,5',6-Octachlorobiphenyl	52663-76-0	C-203N	5 mg	C-203S		C-203S-TP	
204	2,2',3,4,4',5,6,6'-Octachlorobiphenyl	74472-52-9	C-204N	5 mg	C-204S		C-204S-TP	
205	2,3,3',4,4',5,5',6-Octachlorobiphenyl	74472-53-0	C-205N	5 mg	C-205S		C-205S-TP	
206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	40186-72-9	C-206N	5 mg	C-206S		C-206S-TP	
207	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	52663-79-3	C-207N	5 mg	C-207S		C-207S-TP	
208	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	52663-77-1	C-208N	5 mg	C-208S		C-208S-TP	
209	2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl	2051-24-3	C-209N	10 mg	C-209S		C-209S-TP	

Technical Note

The congener numbering system is now being used. The only changes from the BZ numbering system affect congeners #199 (formerly BZ#201), #200 (formerly BZ#199) and #201 (formerly BZ#200).

Have PCB Questions?

AccuStandard chemists have been involved in the synthesis of PCBs and related compounds for over 35 years. Our experience and expertise in this area can help you solve related analytical problems.

We are the only company to synthesize all 209 congeners.

Mixtures for Congener Specific PCB Analysis



Method 1668 (continued) Set of 209 Congeners by HRGC/HRMS

PCB Congener Mix #4

M-1668A-4-0.01X
At stated conc. in Isooctane

2,3',4'-Trichlorobiphenyl	(2.5 µg/mL)
2,3,4'-Trichlorobiphenyl	(2.5 µg/mL)
2,3',4,6'-Tetrachlorobiphenyl	(5.0 µg/mL)
2,2',4,4'-Tetrachlorobiphenyl	(5.0 µg/mL)
2,2',3,4'-Tetrachlorobiphenyl	(5.0 µg/mL)
2,3,4',6'-Tetrachlorobiphenyl	(5.0 µg/mL)
2,3',4',5'-Tetrachlorobiphenyl	(5.0 µg/mL)
2,2',4,5,6'-Pentachlorobiphenyl	(5.0 µg/mL)
2,2',3',4,5'-Pentachlorobiphenyl	(5.0 µg/mL)
2,2',3,4,4',6'-Pentachlorobiphenyl	(5.0 µg/mL)
2',3,4,4',5'-Pentachlorobiphenyl	(5.0 µg/mL)
2,2',3,3',5,6'-Hexachlorobiphenyl	(5.0 µg/mL)
2,2',3,3',4,6'-Hexachlorobiphenyl	(5.0 µg/mL)
2,3,3',4',5,6'-Hexachlorobiphenyl	(5.0 µg/mL)
2,2',3,4,4',5,5'-Heptachlorobiphenyl	(5.0 µg/mL)

PCB Congener Mix #5

M-1668A-5-0.01X
At stated conc. in Isooctane

2-Chlorobiphenyl	(2.5 µg/mL)	2,2',3',4,6'-Pentachlorobiphenyl	(5.0 µg/mL)
4-Chlorobiphenyl	(2.5 µg/mL)	2',3,4,5,6'-Pentachlorobiphenyl	(5.0 µg/mL)
2,2'-Dichlorobiphenyl	(2.5 µg/mL)	2,3,3',4',6'-Pentachlorobiphenyl	(5.0 µg/mL)
4,4'-Dichlorobiphenyl	(2.5 µg/mL)	3,3',4,4',5'-Pentachlorobiphenyl	(5.0 µg/mL)
2,2',6'-Trichlorobiphenyl	(2.5 µg/mL)	2,2',4,4',6,6'-Hexachlorobiphenyl	(5.0 µg/mL)
2,2',3'-Trichlorobiphenyl	(2.5 µg/mL)	2,2',3,4,4',5'-Hexachlorobiphenyl	(5.0 µg/mL)
3,4,4'-Trichlorobiphenyl	(2.5 µg/mL)	3,3',4,4',5,5'-Hexachlorobiphenyl	(5.0 µg/mL)
2,2',6,6'-Tetrachlorobiphenyl	(5.0 µg/mL)	2,2',3,4',5,6,6'-Heptachlorobiphenyl	(5.0 µg/mL)
2,2',3,5'-Tetrachlorobiphenyl	(5.0 µg/mL)	2,3,3',4,4',5,5'-Heptachlorobiphenyl	(5.0 µg/mL)
2,2',3,5'-Tetrachlorobiphenyl	(5.0 µg/mL)	2,2',3,3',5,5',6,6'-Octachlorobiphenyl	(7.5 µg/mL)
2,4,4',5'-Tetrachlorobiphenyl	(5.0 µg/mL)	2,3,3',4,4',5,5',6'-Octachlorobiphenyl	(7.5 µg/mL)
2,3,3',4'-Tetrachlorobiphenyl	(5.0 µg/mL)	2,2',3,3',4,4',5,5',6,6'-Nonachlorobiphenyl	(7.5 µg/mL)
3,3',4,4'-Tetrachlorobiphenyl	(5.0 µg/mL)	2,2',3,3',4,4',5,5',6'-Nonachlorobiphenyl	(7.5 µg/mL)
2,2',4,6,6'-Pentachlorobiphenyl	(5.0 µg/mL)	Decachlorobiphenyl	(7.5 µg/mL)

PCBS

Method 1668A/1668 Combined Congener Standards

M-1668A-C-NT-LOC-WD
M-1668A-C-NT-LOC-WD-PAK
20 µg/mL each in Isooctane

SAVE
1 x 1 mL
5 x 1 mL
33 comps.

2-Chlorobiphenyl	2,2',4,4',6,6'-Hexachlorobiphenyl
4-Chlorobiphenyl	2,3,3',4,4',5'-Hexachlorobiphenyl
2,2'-Dichlorobiphenyl	2,3,3',4,4',5'-Hexachlorobiphenyl
4,4'-Dichlorobiphenyl	2,3',4,4',5,5'-Hexachlorobiphenyl
2,2',6'-Trichlorobiphenyl	3,3',4,4',5,5'-Hexachlorobiphenyl
2,3,5'-Trichlorobiphenyl	2,2',3,3',4,4',5'-Heptachlorobiphenyl
2',3,5'-Trichlorobiphenyl	2,2',3,4,4',5,5'-Heptachlorobiphenyl
3,4,4'-Trichlorobiphenyl	2,2',3,4,4',5,6'-Heptachlorobiphenyl
2,2',6,6'-Tetrachlorobiphenyl	2,2',3,4',5,5',6'-Heptachlorobiphenyl
3,3',4,4'-Tetrachlorobiphenyl	2,2',3,4',5,6,6'-Heptachlorobiphenyl
3,4,4',5'-Tetrachlorobiphenyl	2,3,3',4,4',5,5'-Heptachlorobiphenyl
2,2',4,6,6'-Pentachlorobiphenyl	2,2',3,3',5,5',6,6'-Octachlorobiphenyl
2,3,3',4,4'-Pentachlorobiphenyl	2,3,3',4,4',5,5',6'-Octachlorobiphenyl
2,3,4,4',5'-Pentachlorobiphenyl	2,2',3,3',4,4',5,5',6'-Nonachlorobiphenyl
2,3',4,4',5'-Pentachlorobiphenyl	2,2',3,3',4,4',5,5',6,6'-Nonachlorobiphenyl
2',3,4,4',5'-Pentachlorobiphenyl	2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl
3,3',4,4',5'-Pentachlorobiphenyl	

GPC Calibration Solution

CLP-027-R2-WL-10ML
At stated conc. in CH₂Cl₂

Corn Oil	(25 mg/mL)
bis(2-Ethylhexyl)phthalate	(0.5 mg/mL)
Methoxychlor	(0.1 mg/mL)
Perylene	(0.02 mg/mL)
Sulfur	(0.08 mg/mL)

Level of Chlorination Calibration/Spike Set

Determination of Chlorobiphenyl content at each level of chlorination

Calibration/Spike Set

M-1668A-LOC-SET

2 x 1 mL (M-1668A-NAT, M-1668A-PAR)

Native PCB Calibration Mix

M-1668A-NAT
At stated conc. in Isooctane

4-Chlorobiphenyl	(5 µg/mL)
4,4'-Dichlorobiphenyl	(5 µg/mL)
2,4,4'-Trichlorobiphenyl	(5 µg/mL)
3,3',4,4'-Tetrachlorobiphenyl	(1 µg/mL)
2,3,3',4,4'-Pentachlorobiphenyl	(5 µg/mL)
2,3,4,4',5'-Pentachlorobiphenyl	(5 µg/mL)
2,3',4,4',5'-Pentachlorobiphenyl	(5 µg/mL)
2',3,4,4',5'-Pentachlorobiphenyl	(5 µg/mL)
3,3',4,4',5'-Pentachlorobiphenyl	(5 µg/mL)
2,3,3',4,4',5'-Hexachlorobiphenyl	(10 µg/mL)
2,3,3',4,4',5'-Hexachlorobiphenyl	(10 µg/mL)
2,3',4,4',5,5'-Hexachlorobiphenyl	(10 µg/mL)
3,3',4,4',5,5'-Hexachlorobiphenyl	(10 µg/mL)
2,2',3,3',4,4',5'-Heptachlorobiphenyl	(10 µg/mL)
2,2',3,4,4',5,5'-Heptachlorobiphenyl	(10 µg/mL)
2,3,3',4,4',5,5'-Heptachlorobiphenyl	(10 µg/mL)
2,2',3,3',4,4',5,5'-Octachlorobiphenyl	(10 µg/mL)
2,2',3,3',4,4',5,5',6'-Nonachlorobiphenyl	(10 µg/mL)
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl	(20 µg/mL)

PAR PCB Spike Mix

M-1668A-PAR
At stated conc. in Isooctane

4-Chlorobiphenyl	(10 µg/mL)
4,4'-Dichlorobiphenyl	(10 µg/mL)
2,4,4'-Trichlorobiphenyl	(10 µg/mL)
3,3',4,4'-Tetrachlorobiphenyl	(0.2 µg/mL)
2,3,3',4,4'-Pentachlorobiphenyl	(10 µg/mL)
2,3,4,4',5'-Pentachlorobiphenyl	(10 µg/mL)
2,3',4,4',5'-Pentachlorobiphenyl	(10 µg/mL)
2',3,4,4',5'-Pentachlorobiphenyl	(10 µg/mL)
3,3',4,4',5'-Pentachlorobiphenyl	(1 µg/mL)
2,3,3',4,4',5'-Hexachlorobiphenyl	(10 µg/mL)
2,3,3',4,4',5'-Hexachlorobiphenyl	(10 µg/mL)
2,3',4,4',5,5'-Hexachlorobiphenyl	(10 µg/mL)
3,3',4,4',5,5'-Hexachlorobiphenyl	(2 µg/mL)
2,2',3,3',4,4',5'-Heptachlorobiphenyl	(2 µg/mL)
2,2',3,4,4',5,5'-Heptachlorobiphenyl	(10 µg/mL)
2,3,3',4,4',5,5'-Heptachlorobiphenyl	(2 µg/mL)
2,2',3,3',4,4',5,5'-Octachlorobiphenyl	(10 µg/mL)
2,2',3,3',4,4',5,5',6'-Nonachlorobiphenyl	(10 µg/mL)
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl	(20 µg/mL)



Congener Specific PCB Analysis

Canadian Methods

A second set of four formulations has been selected by the Institute for Biological Sciences of Canada and can be purchased individually or as a complete set (C-CAN-SET). The concentration levels for these formulations are selected so that 1 mL of standard diluted into 100 mL will show equal response by ECD.

PCB Congener (Canadian RM) Set

C-CAN-SET

4 x 1 mL (set includes C-CAN-01, C-CAN-02, C-CAN-03, C-CAN-04)

PCB Congeners Mix #1

C-CAN-01	1 x 1 mL
At stated conc. in Isooctane	
No.	14 comps.
18	2,2',5-Trichlorobiphenyl (11.8 µg/mL)
31	2,4',5-Trichlorobiphenyl (6.6 µg/mL)
40	2,2',3,3'-Tetrachlorobiphenyl (4.9 µg/mL)
44	2,2',3,5'-Tetrachlorobiphenyl (5.9 µg/mL)
49	2,2',4,5'-Tetrachlorobiphenyl (7.6 µg/mL)
54	2,2',6,6'-Tetrachlorobiphenyl (16.6 µg/mL)
77	3,3',4,4'-Tetrachlorobiphenyl (5.5 µg/mL)
86	2,2',3,4,5-Pentachlorobiphenyl (2.9 µg/mL)
87	2,2',3,4,5'-Pentachlorobiphenyl (3.8 µg/mL)
121	2,3',4,5',6-Pentachlorobiphenyl (3.1 µg/mL)
153	2,2',4,4',5,5'-Hexachlorobiphenyl (2.1 µg/mL)
156	2,3,3',4,4',5-Hexachlorobiphenyl (1.5 µg/mL)
159	2,3,3',4,5,5'-Hexachlorobiphenyl (1.2 µg/mL)
209	2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (1.7 µg/mL)

PCB Congeners Mix #2

C-CAN-02	1 x 1 mL
At stated conc. in Isooctane	
No.	15 comps.
15	4,4'-Dichlorobiphenyl (91.9 µg/mL)
52	2,2',5,5'-Tetrachlorobiphenyl (15.2 µg/mL)
60	2,3,4,4'-Tetrachlorobiphenyl (3.9 µg/mL)
103	2,2',4,5',6-Pentachlorobiphenyl (10.8 µg/mL)
105	2,3,3',4,4'-Pentachlorobiphenyl (4 µg/mL)
128	2,2',3,3',4,4'-Hexachlorobiphenyl (4.9 µg/mL)
143	2,2',3,4,5,6'-Hexachlorobiphenyl (5.7 µg/mL)
154	2,2',4,4',5,6'-Hexachlorobiphenyl (6.2 µg/mL)
173	2,2',3,3',4,5,6-Heptachlorobiphenyl (2.3 µg/mL)
182	2,2',3,4,4',5,6'-Heptachlorobiphenyl (3.8 µg/mL)
202	2,2',3,3',5,5',6,6'-Octachlorobiphenyl (3.6 µg/mL)
205	2,3,3',4,4',5,5',6-Octachlorobiphenyl (3.2 µg/mL)
207	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (3.8 µg/mL)
208	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (2.4 µg/mL)
209	2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (2.8 µg/mL)

PCB Congeners Mix #3

C-CAN-03	1 x 1 mL
At stated conc. in Isooctane	
No.	15 comps.
15	4,4'-Dichlorobiphenyl (138.1 µg/mL)
114	2,3,4,4',5-Pentachlorobiphenyl (6.3 µg/mL)
129	2,2',3,3',4,5-Hexachlorobiphenyl (8.3 µg/mL)
137	2,2',3,4,4',5-Hexachlorobiphenyl (7.4 µg/mL)
153	2,2',4,4',5,5'-Hexachlorobiphenyl (7.3 µg/mL)
171	2,2',3,3',4,4',6-Heptachlorobiphenyl (5.2 µg/mL)
183	2,2',3,4,4',5',6-Heptachlorobiphenyl (6.6 µg/mL)
185	2,2',3,4,5,5',6-Heptachlorobiphenyl (3.5 µg/mL)
189	2,3,3',4,4',5,5'-Heptachlorobiphenyl (4.7 µg/mL)
191	2,3,3',4,4',5',6-Heptachlorobiphenyl (5 µg/mL)
201	2,2',3,3',4,5',6,6'-Octachlorobiphenyl (7 µg/mL)
199	2,2',3,3',4,5,5',6'-Octachlorobiphenyl (4.8 µg/mL)
203	2,2',3,4,4',5,5',6-Octachlorobiphenyl (5.1 µg/mL)
206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (6.7 µg/mL)
209	Decachlorobiphenyl (5.1 µg/mL)

PCB Congeners Mix #4

C-CAN-04	1 x 1 mL
At stated conc. in Isooctane	
No.	15 comps.
14	4,4'-Dichlorobiphenyl (76.7 µg/mL)
101	2,2',4,5,5'-Pentachlorobiphenyl (8.9 µg/mL)
118	2,3',4,4',5-Pentachlorobiphenyl (3.9 µg/mL)
138	2,2',3,4,4',5'-Hexachlorobiphenyl (4.2 µg/mL)
141	2,2',3,4,5,5'-Hexachlorobiphenyl (2.8 µg/mL)
151	2,2',3,5,5',6-Hexachlorobiphenyl (5 µg/mL)
153	2,2',4,4',5,5'-Hexachlorobiphenyl (3.3 µg/mL)
170	2,2',3,3',4,4',5-Heptachlorobiphenyl (3 µg/mL)
180	2,2',3,4,4',5,5'-Heptachlorobiphenyl (2.8 µg/mL)
187	2,2',3,4',5,5',6-Heptachlorobiphenyl (3.2 µg/mL)
194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl (2.4 µg/mL)
195	2,2',3,3',4,4',5,6-Octachlorobiphenyl (2.6 µg/mL)
196	2,2',3,3',4,4',5,6'-Octachlorobiphenyl (3.3 µg/mL)
199	2,2',3,3',4,5,5',6'-Octachlorobiphenyl (3.6 µg/mL)
209	Decachlorobiphenyl (2.7 µg/mL)

Quebec Ministry of Environment Congener Mix

C-QME-01

At stated conc. in Isooctane

1 x 1 mL

41 comps.

No.		No.	
17	2,2',4-Trichlorobiphenyl (500 ng/mL)	149	2,2',3,4',5',6-Hexachlorobiphenyl (2000 ng/mL)
18	2,2',5-Trichlorobiphenyl (2000 ng/mL)	151	2,2',3,5,5',6-Hexachlorobiphenyl (2000 ng/mL)
28	2,4,4'-Trichlorobiphenyl (2000 ng/mL)	153	2,2',4,4',5,5'-Hexachlorobiphenyl (2000 ng/mL)
31	2,4',5-Trichlorobiphenyl (1500 ng/mL)	156	2,3,3',4,4',5-Hexachlorobiphenyl (2000 ng/mL)
33	2',3,4-Trichlorobiphenyl (2000 ng/mL)	158	2,3,3',4,4',6-Hexachlorobiphenyl (500 ng/mL)
44	2,2',3,5'-Tetrachlorobiphenyl (2000 ng/mL)	169	3,3',4,4',5,5'-Hexachlorobiphenyl (2000 ng/mL)
49	2,2',4,5'-Tetrachlorobiphenyl (2000 ng/mL)	170	2,2',3,3',4,4',5-Heptachlorobiphenyl (2000 ng/mL)
52	2,2',5,5'-Tetrachlorobiphenyl (2000 ng/mL)	171	2,2',3,3',4,4',6-Heptachlorobiphenyl (2000 ng/mL)
70	2,3',4',5-Tetrachlorobiphenyl (2000 ng/mL)	177	2,2',3,3',4',5,6-Heptachlorobiphenyl (2000 ng/mL)
74	2,4,4',5-Tetrachlorobiphenyl (2000 ng/mL)	180	2,2',3,4,4',5,5'-Heptachlorobiphenyl (2000 ng/mL)
82	2,2',3,3',4-Pentachlorobiphenyl (500 ng/mL)	183	2,2',3,4,4',5',6-Heptachlorobiphenyl (2000 ng/mL)
87	2,2',3,4,5'-Pentachlorobiphenyl (2000 ng/mL)	187	2,2',3,4',5,5',6-Heptachlorobiphenyl (2000 ng/mL)
95	2,2',3,5',6-Pentachlorobiphenyl (1000 ng/mL)	191	2,3,3',4,4',5',6-Heptachlorobiphenyl (2000 ng/mL)
99	2,2',4,4',5-Pentachlorobiphenyl (2000 ng/mL)	194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl (2000 ng/mL)
101	2,2',4,5,5'-Pentachlorobiphenyl (2000 ng/mL)	195	2,2',3,3',4,4',5,6-Octachlorobiphenyl (2000 ng/mL)
105	2,3,3',4,4'-Pentachlorobiphenyl (500 ng/mL)	199	2,2',3,3',4,5,5',6'-Octachlorobiphenyl (1500 ng/mL)
110	2,3,3',4',6-Pentachlorobiphenyl (2000 ng/mL)	205	2,3,3',4,4',5,5',6-Octachlorobiphenyl (2000 ng/mL)
118	2,3',4,4',5-Pentachlorobiphenyl (2000 ng/mL)	206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (2000 ng/mL)
128	2,2',3,3',4,4'-Hexachlorobiphenyl (2000 ng/mL)	208	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (2000 ng/mL)
132	2,2',3,3',4,6'-Hexachlorobiphenyl (1000 ng/mL)	209	Decachlorobiphenyl (2000 ng/mL)
138	2,2',3,4,4',5'-Hexachlorobiphenyl (2000 ng/mL)		

Congener Specific PCB Analysis



PCBS

Integrated Atmospheric Deposition Network (IADN)

The Integrated Atmospheric Deposition Network is composed of five agencies: the US EPA, Environment Canada's (EC) Metrological Service of Canada, EC's National Water Research Institute (NWRI), EC's Ecosystem Health Division of Ontario Region (EHD), and the Ontario Ministry of Environment (OME) whose goal it is to cooperatively implement the Great Lakes Water Quality Agreement.

This agreement requires certain chemicals to be monitored. The tier 1 group specifically called for the measurement of PCB congeners. AccuStandard was requested to develop a set of IADN PCB congener standards to meet this specific chemical list.

IADN Congener Set

C-IADN-SET

3 x 1 mL (C-IADN-01, C-IADN-02, C-IADN-03)

IADN Congener Standard #1

C-IADN-01

1 x 1 mL

30 µg/mL each in Isooctane

28 comps.

2,2'-Dichlorobiphenyl
2,4'-Dichlorobiphenyl
2,6'-Dichlorobiphenyl
4,4'-Dichlorobiphenyl
2,2',5-Trichlorobiphenyl
2,4,4'-Trichlorobiphenyl
2,4',6-Trichlorobiphenyl
2,2',3,4-Tetrachlorobiphenyl
2,2',3,6-Tetrachlorobiphenyl
2,2',5,5'-Tetrachlorobiphenyl
2,3,3',4'-Tetrachlorobiphenyl
2,3',4,4'-Tetrachlorobiphenyl
2,4,4',5-Tetrachlorobiphenyl
3,4,4',5-Tetrachlorobiphenyl
2,2',3,4,4'-Pentachlorobiphenyl
2,2',3,4',6-Pentachlorobiphenyl
2,2',3',4,5-Pentachlorobiphenyl
2,2',4,4,5'-Pentachlorobiphenyl
2,3,4,4',5-Pentachlorobiphenyl
2',3,4,4',5-Pentachlorobiphenyl
2,2',3,3',4,6-Hexachlorobiphenyl
2,2',3,4,4',5'-Hexachlorobiphenyl
2,2',4,4',5,5'-Hexachlorobiphenyl
2,3',4,4',5,5'-Hexachlorobiphenyl
2,2',3,3',4,4',6-Heptachlorobiphenyl
2,2',3,4,4',5,5'-Heptachlorobiphenyl
2,2',3,3',4,5,6'-Octachlorobiphenyl
2,3,3',4,4',5,5',6-Octachlorobiphenyl

IADN Congener Standard #2

C-IADN-02

1 x 1 mL

30 µg/mL each in Isooctane

28 comps.

2,3-Dichlorobiphenyl
2,4'-Dichlorobiphenyl
3,4-Dichlorobiphenyl
2,2',3-Trichlorobiphenyl
2,2',6-Trichlorobiphenyl
2,3',5-Trichlorobiphenyl
2',3,4-Trichlorobiphenyl
2,2',3,4'-Tetrachlorobiphenyl
2,2',4,4'-Tetrachlorobiphenyl
2,2',4,5'-Tetrachlorobiphenyl
2,3,4,4'-Tetrachlorobiphenyl
2,3',4',5-Tetrachlorobiphenyl
2',3,4,5-Tetrachlorobiphenyl
2,2',3,3',5-Pentachlorobiphenyl
2,2',3,4,5'-Pentachlorobiphenyl
2,2',3,5,5'-Pentachlorobiphenyl
2,2',4,4',5-Pentachlorobiphenyl
2,3,3',4,4'-Pentachlorobiphenyl
2,3',4,4',5-Pentachlorobiphenyl
3,3',4,4',5-Pentachlorobiphenyl
2,2',3,3',4,6'-Hexachlorobiphenyl
2,2',3,4,5',6-Hexachlorobiphenyl
2,3,3',4,4',5-Hexachlorobiphenyl
3,3',4,4',5,5'-Hexachlorobiphenyl
2,2',3,3',4,4',5,5'-Heptachlorobiphenyl
2,3,3',4,4',5,6'-Heptachlorobiphenyl
2,2',3,3',4,5,5',6'-Octachlorobiphenyl
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl

IADN Congener Standard #3

C-IADN-03

1 x 1 mL

30 µg/mL each in Isooctane

28 comps.

2,3'-Dichlorobiphenyl
2,5-Dichlorobiphenyl
3,4'-Dichlorobiphenyl
2,2',4-Trichlorobiphenyl
2,3,4'-Trichlorobiphenyl
2,4',5-Trichlorobiphenyl
3,4,4'-Trichlorobiphenyl
2,2',3,5'-Tetrachlorobiphenyl
2,2',4,5-Tetrachlorobiphenyl
2,2',5,6'-Tetrachlorobiphenyl
2,3,4',6-Tetrachlorobiphenyl
2,3',4',6-Tetrachlorobiphenyl
3,3',4,4'-Tetrachlorobiphenyl
2,2',3,3',6-Pentachlorobiphenyl
2,2',3,4,6'-Pentachlorobiphenyl
2,2',3,5',6-Pentachlorobiphenyl
2,2',4,4',6-Pentachlorobiphenyl
2,3,3',4',6-Pentachlorobiphenyl
2,3',4,4',6-Pentachlorobiphenyl
2,2',3,3',4,4'-Hexachlorobiphenyl
2,2',3,3',5,6'-Hexachlorobiphenyl
2,2',3,4',5,6'-Hexachlorobiphenyl
2,3,3',4',5,6'-Hexachlorobiphenyl
2,2',3,3',4,4',5-Heptachlorobiphenyl
2,2',3,3',4,5,6'-Heptachlorobiphenyl
2,2',3,3',4,4',5,5'-Octachlorobiphenyl
2,2',3,3',5,5',6'-Octachlorobiphenyl
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl

PCB Congener Content Evaluation

These Congener Calibration mixes have been formulated to meet the proposed International standard titled "Insulating Liquids - Contamination by PCBs - Method of Determination by Capillary Column Gas Chromatography".

Mix #1

AE-00059

1 x 1 mL

AE-00059-10ML

1 x 10 mL

10 µg/mL each in Isooctane

6 comps.

No.
28 2,4,4'-Trichlorobiphenyl
52 2,2',5,5'-Tetrachlorobiphenyl
101 2,2',4,5,5'-Pentachlorobiphenyl
138 2,2',3,4,4',5'-Hexachlorobiphenyl
153 2,2',4,4',5,5'-Hexachlorobiphenyl
180 2,2',3,4,4',5,5'-Heptachlorobiphenyl

Mix #2

AE-00060

1 x 1 mL

AE-00060-10ML

1 x 10 mL

10 µg/mL each in Isooctane

3 comps.

No.
77 3,3',4,4'-Tetrachlorobiphenyl
126 3,3',4,4',5-Pentachlorobiphenyl
169 3,3',4,4',5,5'-Hexachlorobiphenyl

Congener Calibration Mix

AE-00061

1 x 1 mL

AE-00061-10ML

1 x 10 mL

10 µg/mL each in Isooctane

14 comps.

No.
18 2,2',5-Trichlorobiphenyl
28 2,4,4'-Trichlorobiphenyl
31 2,4',5-Trichlorobiphenyl
44 2,2',3,5'-Tetrachlorobiphenyl
52 2,2',5,5'-Tetrachlorobiphenyl
101 2,2',4,5,5'-Pentachlorobiphenyl
118 2,3',4,4',5-Pentachlorobiphenyl
138 2,2',3,4,4',5'-Hexachlorobiphenyl
149 2,2',3,4',5,6'-Hexachlorobiphenyl
153 2,2',4,4',5,5'-Hexachlorobiphenyl
170 2,2',3,3',4,4',5-Heptachlorobiphenyl
180 2,2',3,4,4',5,5'-Heptachlorobiphenyl
194 2,2',3,3',4,4',5,5'-Octachlorobiphenyl
209 Decachlorobiphenyl

Internal Standards

Each at 100 µg/mL in Isooctane

C-030S-TP

1 x 1 mL

2,4,6-Trichlorobiphenyl

C-209S-TP

1 x 1 mL

2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl

Technical Note

These Congener Content Evaluation Mixes have proven useful for European Laboratories estimating the PCB content of a sample when following EU guideline 96/59/EU for cleanup of PCBs.



Congener Specific PCB Analysis

PCBS

Toxicity and Abundance Based PCB Congener Formulations

A study was conducted in 1989 by McFarland and J. Clarke ¹, (Environmental Occurrence, Abundance, and Potential Toxicity of Polychlorinated Biphenyl Congeners: Consideration for a Congener - Specific Analysis) The data that formed the basis for conclusions in the study have been referenced by the National Oceanic & Atmospheric Administration (NOAA) which came out with a method in the same year.

Abundance Analysis

Five of the solutions AccuStandard offers are formulated to assist the investigator or analytical Chemist in their own studies and can be purchased individually or as a complete set (C-SCA-SET). According to the study the 36 congeners contained in these five groups are considered environmentally threatening due to their frequency of occurrence in environmental samples, abundance in the Aroclors and potential toxicity.

Group 1a: comprises the three congeners present to a small extent in the Aroclors that are the most toxic and have been characterized as pure 3-Methyl cholanthrene - type (3-MC) inducers.

Group 1b: congeners are mixed-type inducers but are of somewhat lesser toxicity and are very abundant in the Aroclors as well as in the environment. It includes Congener # 105 which, while not as prevalent, is potentially almost as toxic as the Group 1a congeners.

Group 2: includes the congeners which are Phenobarbital - type (PB) inducers for Mixed-Function Oxidase enzymes. These are less toxic but more abundant in the environment. They represent 25-41% of total PCB content found in animal tissue.

Group 3: congeners are weak- or non-inducers representing about 10% of the PCB content of tissues.

Group 4: congeners have some potential for toxicity but have very low presence in tissue.

Toxicity Analysis

A sixth solution is prepared for the analyst who is investigating the presence of PCB congeners in food and human tissues. Specific congeners are selected by K.C. Jones ² as outlined in his article referenced below which is titled, "Determination of polychlorinated biphenyls in human food stuffs and tissues: Suggestions for a selective congener analytical approach".

Literature Reference

1. V.A. McFarland and J.U. Clarke, Environmental Health Perspectives, vol. 81, pp 225-239 (1989). 2. K.C. Jones, Sci. Total Environment, vol. 68, pp 141-159 (1988).

Formulations for Toxicity & Abundance Studies

C-SCA-SET

Complete Set of PCB Congeners

5 x 1 mL (includes C-SCA-01, C-SCA-02, C-SCA-03, C-SCA-04, C-SCA-05)

Mix #1 Group 1a (3 MC Type Inducers)

C-SCA-01

10 µg/mL each in Isooctane

1 x 1 mL
3 comps.

3,3',4,4'-Tetrachlorobiphenyl (77) 3,3',4,4',5,5'-Hexachlorobiphenyl (169)
3,3',4,4',5-Pentachlorobiphenyl (126)

Mix #2 Group 1b (Mixed Type Inducers)

C-SCA-02

10 µg/mL each in Isooctane

1 x 1 mL
6 comps.

2,2',3,3',4,4'-Pentachlorobiphenyl (105) 2,2',3,4,4',5'-Hexachlorobiphenyl (138)
2,2',3,4,4',5-Pentachlorobiphenyl (118) 2,2',3,4,4',5,6-Heptachlorobiphenyl (156)
2,2',3,3',4,4'-Hexachlorobiphenyl (128) 2,2',3,3',4,4',5-Heptachlorobiphenyl (170)

Mix #3 Group 2 (PB Type Inducers)

C-SCA-03

10 µg/mL each in Isooctane

1 x 1 mL
7 comps.

2,2',3,4,5'-Pentachlorobiphenyl (87) 2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)
2,2',4,4',5-Pentachlorobiphenyl (99) 2,2',3,4,4',5,6-Heptachlorobiphenyl (183)
2,2',4,5,5'-Pentachlorobiphenyl (101) 2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)
2,2',4,4',5,5'-Hexachlorobiphenyl (153)

Mix #4 Group 3 (Non-Inducer Type)

C-SCA-04

10 µg/mL each in Isooctane

1 x 1 mL
10 comps.

2,2',5-Trichlorobiphenyl (18) 2,4,4',5-Tetrachlorobiphenyl (74)
2,2',3,5'-Tetrachlorobiphenyl (44) 2,2',3,5,5',6-Hexachlorobiphenyl (151)
2,2',4,5'-Tetrachlorobiphenyl (49) 2,2',3,3',4',5,6-Heptachlorobiphenyl (177)
2,2',5,5'-Tetrachlorobiphenyl (52) 2,2',3,4',5,5',6-Heptachlorobiphenyl (187)
2,3',4',5-Tetrachlorobiphenyl (70) 2,2',3,3',4,5,5',6'-Octachlorobiphenyl (199)

Mix #5 Group 4 (Mixed Type Inducers present at very low levels)

C-SCA-05

10 µg/mL each in Isooctane

1 x 1 mL
10 comps.

3,4,4'-Trichlorobiphenyl (37) 2,3,3',4,4',5'-Hexachlorobiphenyl (157)
3,4,4',5-Tetrachlorobiphenyl (81) 2,3,3',4,4',6-Hexachlorobiphenyl (157)
2,3,4,4',5-Pentachlorobiphenyl (114) 2,3',4,4',5,5'-Hexachlorobiphenyl (167)
2,3',4,4',6-Pentachlorobiphenyl (119) 2,3',4,4',5',6-Hexachlorobiphenyl (168)
2',3,4,4',5-Pentachlorobiphenyl (123) 2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)

Mix #6 (Food & Human Tissue analysis)

C-SCA-06

10 µg/mL each in Isooctane

1 x 1 mL
32 comps.

2,4'-Dichlorobiphenyl (8) 2,3,4,4',5-Pentachlorobiphenyl (114)
2,4,4'-Trichlorobiphenyl (28) 2,3',4,4',5-Pentachlorobiphenyl (118)
3,4,4'-Trichlorobiphenyl (37) 3,3',4,4',5-Pentachlorobiphenyl (126)
2,2',3,5'-Tetrachlorobiphenyl (44) 2,2',3,3',4,4'-Hexachlorobiphenyl (128)
2,2',4,5'-Tetrachlorobiphenyl (49) 2,2',3,4,4',5'-Hexachlorobiphenyl (138)
2,2',5,5'-Tetrachlorobiphenyl (52) 2,2',4,4',5,5'-Hexachlorobiphenyl (153)
2,3,4,4'-Tetrachlorobiphenyl (60) 2,3,3',4,4',5-Hexachlorobiphenyl (156)
2,3',4,4'-Tetrachlorobiphenyl (66) 2,3,3',4,4',6-Hexachlorobiphenyl (158)
2,3',4',5-Tetrachlorobiphenyl (70) 2,3,4,4',5,6-Hexachlorobiphenyl (166)
2,4,4',5-Tetrachlorobiphenyl (74) 3,3',4,4',5,5'-Hexachlorobiphenyl (169)
3,3',4,4'-Tetrachlorobiphenyl (77) 2,2',3,3',4,4',5-Heptachlorobiphenyl (170)
2,2',3,3',4-Pentachlorobiphenyl (82) 2,2',3,3',5,6,6'-Heptachlorobiphenyl (179)
2,2',3,4,5'-Pentachlorobiphenyl (87) 2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)
2,2',4,4',5-Pentachlorobiphenyl (99) 2,2',3,4,4',5',6-Heptachlorobiphenyl (183)
2,2',4,5,5'-Pentachlorobiphenyl (101) 2,2',3,4',5,5',6-Heptachlorobiphenyl (187)
2,3,3',4,4'-Pentachlorobiphenyl (105) 2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)

Non-Ortho Substituted PCBs

C-SCA-DIOXLIK

10 µg/mL each in Isooctane

1 x 1 mL
4 comps.

3,3',4,4'-Tetrachlorobiphenyl (77)
3,3',4,4',5-Pentachlorobiphenyl (126)
3,3',4,4',5,5'-Hexachlorobiphenyl (169)
3,4,4',5-Tetrachlorobiphenyl (81)

Internal Standard

C-EU-IS-10ML

At stated conc. in Isooctane

1 x 10 mL
2 comps.

2,4,6-Trichlorobiphenyl
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl

Dutch Seven PCBs Standard

PCB-DUTCH7-SET

100 µg/mL each in Isooctane

7 x 1 mL

PCB-DUTCH7

10 µg/mL each in Isooctane

1 x 1 mL
7 comps.

2,4,4'-Trichlorobiphenyl
2,2',5,5'-Tetrachlorobiphenyl
2,2',4,5,5'-Pentachlorobiphenyl
2,3',4,4',5-Pentachlorobiphenyl
2,2',3,4,4',5'-Hexachlorobiphenyl
2,2',4,4',5,5'-Hexachlorobiphenyl
2,2',3,4,4',5,5'-Heptachlorobiphenyl



Congener Specific PCB Analysis



PCBS

PCB Congener Mix for West Coast Fish Studies

C-WCFS	1 x 1 mL
25 µg/mL each in Isooctane	24 comps.
2,4',5'-Trichlorobiphenyl	2,2',3,4,5,5'-Hexachlorobiphenyl
2',3,4'-Trichlorobiphenyl	2,2',3,4',5',6'-Hexachlorobiphenyl
2,2',4,5'-Tetrachlorobiphenyl	2,2',3,5,5',6'-Hexachlorobiphenyl
2,3,3',4'-Tetrachlorobiphenyl	2,3,3',4,4',5'-Hexachlorobiphenyl
2,3,4,4'-Tetrachlorobiphenyl	2,3,3',4,4',6'-Hexachlorobiphenyl
2,3',4',5'-Tetrachlorobiphenyl	2,2',3,3',4,5,6'-Heptachlorobiphenyl
2,2',3,4,5'-Pentachlorobiphenyl	2,2',3,3',4',5,6'-Heptachlorobiphenyl
2,2',3,5',6'-Pentachlorobiphenyl	2,2',3,3',4,4',5,5'-Octachlorobiphenyl
2,2',3',4,5'-Pentachlorobiphenyl	2,2',3,3',4,5,5',6'-Octachlorobiphenyl
2,2',4,4',5'-Pentachlorobiphenyl	2,2',3,4,4',5,5',6'-Octachlorobiphenyl
2,3,3',4',6'-Pentachlorobiphenyl	2,2',3,4,4',5',6'-Heptachlorobiphenyl
2,2',3,3',4,6'-Hexachlorobiphenyl	2,4,4',5'-Tetrachlorobiphenyl

WHO/NIST/NOAA Congener List

C-WNN	1 x 1 mL
C-WNN-PAK	5 x 1 mL
10 µg/mL each in Isooctane	28 comps.
2,4'-Dichlorobiphenyl	2,2',3,3',4,4'-Hexachlorobiphenyl
2,2',5'-Trichlorobiphenyl	2,2',3,4,4',5'-Hexachlorobiphenyl
2,4,4'-Trichlorobiphenyl	2,2',4,4',5,5'-Hexachlorobiphenyl
2,2',3,5'-Tetrachlorobiphenyl	2,3,3',4,4',5'-Hexachlorobiphenyl
2,2',5,5'-Tetrachlorobiphenyl	2,3,3',4,4',5'-Hexachlorobiphenyl
2,3',4,4'-Tetrachlorobiphenyl	2,3',4,4',5,5'-Hexachlorobiphenyl
3,3',4,4'-Tetrachlorobiphenyl	3,3',4,4',5,5'-Hexachlorobiphenyl
3,4,4',5'-Tetrachlorobiphenyl	2,2',3,3',4,4',5-Heptachlorobiphenyl
2,2',4,5,5'-Pentachlorobiphenyl	2,2',3,4,4',5,5'-Heptachlorobiphenyl
2,3,3',4,4'-Pentachlorobiphenyl	2,2',3,4',5,5',6-Heptachlorobiphenyl
2,3,4,4',5'-Pentachlorobiphenyl	2,3,3',4,4',5,5'-Heptachlorobiphenyl
2,3',4,4',5'-Pentachlorobiphenyl	2,2',3,3',4,4',5,6-Octachlorobiphenyl
2',3,4,4',5'-Pentachlorobiphenyl	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl
3,3',4,4',5'-Pentachlorobiphenyl	Decachlorobiphenyl

World Health Organization Congener Mix

C-WHO-01	1 x 1 mL
2.0 µg/mL each in Isooctane	12 comps.
3,3',4,4'-Tetrachlorobiphenyl	2,3',4,4',5'-Pentachlorobiphenyl
3,4,4',5'-Tetrachlorobiphenyl	2',3,4,4',5'-Pentachlorobiphenyl
2,3,3',4,4'-Pentachlorobiphenyl	3,3',4,4',5'-Pentachlorobiphenyl
2,3,4,4',5'-Pentachlorobiphenyl	2,3,3',4,4',5'-Hexachlorobiphenyl
	2,3,3',4,4',5'-Hexachlorobiphenyl
	2,3,3',4,4',5'-Hexachlorobiphenyl
	2,3,3',4,4',5'-Hexachlorobiphenyl
	2,3,3',4,4',5'-Hexachlorobiphenyl
	2,3,3',4,4',5'-Hexachlorobiphenyl
	2,3,3',4,4',5'-Hexachlorobiphenyl

DCMA-PCB Isomer Mixture

M-002	1 x 1 mL
M-002-PAK	5 x 1 mL
At stated conc. in Hexane	10 comps.
2-Chlorobiphenyl (100 µg/mL)	2,2',3,3',6,6'-Hexachlorobiphenyl (10 µg/mL)
3,3'-Dichlorobiphenyl (100 µg/mL)	2,2',3,4,5,5',6-Heptachlorobiphenyl (5 µg/mL)
2,4,5-Trichlorobiphenyl (10 µg/mL)	2,2',3,3',4,4',5,5'-Octachlorobiphenyl (5 µg/mL)
2,2',4,4'-Tetrachlorobiphenyl (10 µg/mL)	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (5 µg/mL)
2,3',4,5',6-Pentachlorobiphenyl (10 µg/mL)	2,2',3,3',4,4',5,5',6'-Decachlorobiphenyl (5 µg/mL)

Technical Note

The Dry Color Manufacturer's Association (DCMA) recommends that its members use this type of mixture to monitor their process streams for PCBs. The DCMA-PCB congener method is made from pure PCB congeners in Hexane.

CEN's Workgroup #22 for PCBs in Waste Oil

PCB-W22	1 x 1 mL
10 µg/mL each in Isooctane	15 comps.
PCB-W22-PAK	5 x 1 mL
PCB-W22-SET	15 x 1 mL
100 µg/mL in Isooctane	(Set of Individual Solutions)

Technical Note

The Commitee' Europeen de Normalisation (CEN) has assigned Workgroup Number 22 in Hamburg, Germany to develop a method for "PCBs" in waste oil.

No.	No.	No.
(18) 2,2',5-Trichlorobiphenyl (01)	(52) 2,2',5,5'-Tetrachlorobiphenyl (06)	(149) 2,2',3,4',5',6-Hexachlorobiphenyl (11)
(20) 2,3,3'-Trichlorobiphenyl (02)	(101) 2,2',4,5,5'-Pentachlorobiphenyl (07)	(153) 2,2',4,4',5,5'-Hexachlorobiphenyl (12)
(28) 2,4,4'-Trichlorobiphenyl (03)	(105) 2,3,3',4,4'-Pentachlorobiphenyl (08)	(170) 2,2',3,3',4,4',5-Heptachlorobiphenyl (13)
(31) 2,4',5-Trichlorobiphenyl (04)	(118) 2,3',4,4',5-Pentachlorobiphenyl (09)	(180) 2,2',3,4,4',5,5'-Heptachlorobiphenyl (14)
(44) 2,2',3,5'-Tetrachlorobiphenyl (05)	(138) 2,2',3,4,4',5'-Hexachlorobiphenyl (10)	(194) 2,2',3,3',4,4',5,5'-Octachlorobiphenyl (15)

Dioxin-Like Congeners



C-DIOXLIK	Level 1 -01	Level 2 -02	Level 3 -03	Level 4 -04	Level 5 -05	Level 6 -06	Level 7 -07	Level 8 -08	Level 9 -09	Level 10 -10	Level 11 -11	Level 12 -12
	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL
3,3',4,4'-Tetrachlorobiphenyl (77)	0.05	0.1	0.2	0.5	1	2	5	10	20	50	100	250
3,4,4',5'-Tetrachlorobiphenyl (81)	0.05	0.1	0.2	0.5	1	2	5	10	20	50	100	250
2,3,3',4,4'-Pentachlorobiphenyl (105)	0.05	0.1	0.2	0.5	1	2	5	10	20	50	100	250
2,3,4,4',5'-Pentachlorobiphenyl (114)	0.05	0.1	0.2	0.5	1	2	5	10	20	50	100	250
2,3',4,4',5'-Pentachlorobiphenyl (118)	0.05	0.1	0.2	0.5	1	2	5	10	20	50	100	250
2',3,4,4',5'-Pentachlorobiphenyl (123)	0.05	0.1	0.2	0.5	1	2	5	10	20	50	100	250
3,3',4,4',5'-Pentachlorobiphenyl (126)	0.05	0.1	0.2	0.5	1	2	5	10	20	50	100	250
2,3,3',4,4',5'-Hexachlorobiphenyl (156)	0.05	0.1	0.2	0.5	1	2	5	10	20	50	100	250
2,3,3',4,4',5'-Hexachlorobiphenyl (157)	0.05	0.1	0.2	0.5	1	2	5	10	20	50	100	250
2,3',4,4',5,5'-Hexachlorobiphenyl (167)	0.05	0.1	0.2	0.5	1	2	5	10	20	50	100	250
3,3',4,4',5,5'-Hexachlorobiphenyl (169)	0.05	0.1	0.2	0.5	1	2	5	10	20	50	100	250
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)	0.05	0.1	0.2	0.5	1	2	5	10	20	50	100	250
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)	0.05	0.1	0.2	0.5	1	2	5	10	20	50	100	250
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)	0.05	0.1	0.2	0.5	1	2	5	10	20	50	100	250

C-DIOXLIK1-SET	5 x 1 mL	C-DIOXLIK2-SET	5 x 1 mL	C-DIOXLIK3-SET	5 x 1 mL	Individual Levels 4, 6, 8, 10 12
Set includes		Set includes		Set includes		C-DIOXLIK3-04
C-DIOXLIK-02	C-DIOXLIK-08	C-DIOXLIK-03	C-DIOXLIK-09	C-DIOXLIK-04	C-DIOXLIK-10	1 mL
C-DIOXLIK-04	C-DIOXLIK-10	C-DIOXLIK-05	C-DIOXLIK-11	C-DIOXLIK-06	C-DIOXLIK-12	1 mL
C-DIOXLIK-06		C-DIOXLIK-07		C-DIOXLIK-08		1 mL
						C-DIOXLIK3-08
						1 mL
						C-DIOXLIK3-10
						1 mL
						C-DIOXLIK3-12
						1 mL



PCB Congener Calibration Mixtures

9 Mixtures Contain All 209 Congeners
Present in Aroclors

PCB Congener Mix #1

C-CS-01	1 x 1 mL
10 µg/mL each in Isooctane	39 comps.
No.	
1	2-Chlorobiphenyl
2	3-Chlorobiphenyl †
3	4-Chlorobiphenyl
4	2,2'-Dichlorobiphenyl
6	2,3'-Dichlorobiphenyl
8	2,4'-Dichlorobiphenyl
9	2,5-Dichlorobiphenyl
16	2,2',3-Trichlorobiphenyl
18	2,2',5-Trichlorobiphenyl
19	2,2',6-Trichlorobiphenyl
22	2,3,4'-Trichlorobiphenyl
25	2,3',4-Trichlorobiphenyl
28	2,4,4'-Trichlorobiphenyl
44	2,2',3,5'-Tetrachlorobiphenyl
52	2,2',5,5'-Tetrachlorobiphenyl
56	2,3,3',4'-Tetrachlorobiphenyl
66	2,3',4,4'-Tetrachlorobiphenyl
67	2,3',4,5-Tetrachlorobiphenyl
71	2,3',4',6-Tetrachlorobiphenyl
74	2,4,4',5-Tetrachlorobiphenyl
82	2,2',3,3',4-Pentachlorobiphenyl
87	2,2',3,4,5'-Pentachlorobiphenyl
99	2,2',4,4',5-Pentachlorobiphenyl
110	2,3,3',4',6-Pentachlorobiphenyl
138	2,2',3,4,4',5'-Hexachlorobiphenyl
146	2,2',3,4',5,5'-Hexachlorobiphenyl
147	2,2',3,4',5,6-Hexachlorobiphenyl †
153	2,2',4,4',5,5'-Hexachlorobiphenyl
173	2,2',3,3',4,5,6-Heptachlorobiphenyl
174	2,2',3,3',4,5,6'-Heptachlorobiphenyl
177	2,2',3,3',4',5,6-Heptachlorobiphenyl
179	2,2',3,3',5,6,6'-Heptachlorobiphenyl
180	2,2',3,4,4',5,5'-Heptachlorobiphenyl
187	2,2',3,4',5,5',6-Heptachlorobiphenyl
194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl
195	2,2',3,3',4,4',5,6-Octachlorobiphenyl
199	2,2',3,3',4,5,5',6'-Octachlorobiphenyl
203	2,2',3,4,4',5,5',6-Octachlorobiphenyl
206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl

PCB Congener Mix #4

C-CS-04	1 x 1 mL
10 µg/mL each in Isooctane	22 comps.
No.	
13	3,4'-Dichlorobiphenyl
14	3,5-Dichlorobiphenyl †
35	3,3',4-Trichlorobiphenyl
51	2,2',4,6'-Tetrachlorobiphenyl
53	2,2',5,6'-Tetrachlorobiphenyl
54	2,2',6,6'-Tetrachlorobiphenyl †
73	2,3',5',6-Tetrachlorobiphenyl †
75	2,4,4',6-Tetrachlorobiphenyl
81	3,4,4',5-Tetrachlorobiphenyl †
90	2,2',3,4',5-Pentachlorobiphenyl †
100	2,2',4,4',6-Pentachlorobiphenyl †
117	2,3,4',5,6-Pentachlorobiphenyl
122	2',3,3',4,5-Pentachlorobiphenyl
124	2',3,4,5,5'-Pentachlorobiphenyl
130	2,2',3,3',4,5'-Hexachlorobiphenyl
154	2,2',4,4',5,6'-Hexachlorobiphenyl †
163	2,3,3',4',5,6-Hexachlorobiphenyl
165	2,3,3',5,5',6-Hexachlorobiphenyl †
175	2,2',3,3',4,5',6-Heptachlorobiphenyl
200	2,2',3,3',4,5,6,6'-Octachlorobiphenyl
201	2,2',3,3',4,5',6,6'-Octachlorobiphenyl
202	2,2',3,3',5,5',6,6'-Octachlorobiphenyl

PCB Congener Mix #2

C-CS-02	1 x 1 mL
10 µg/mL each in Isooctane	36 comps.
No.	
5	2,3-Dichlorobiphenyl
7	2,4-Dichlorobiphenyl
10	2,6-Dichlorobiphenyl
17	2,2',4-Trichlorobiphenyl
24	2,3,6-Trichlorobiphenyl
26	2,3',5-Trichlorobiphenyl
31	2,4',5-Trichlorobiphenyl
32	2,4',6-Trichlorobiphenyl
37	3,4,4'-Trichlorobiphenyl
41	2,2',3,4-Tetrachlorobiphenyl
45	2,2',3,6-Tetrachlorobiphenyl
46	2,2',3,6'-Tetrachlorobiphenyl
48	2,2',4,5-Tetrachlorobiphenyl
60	2,3,4,4'-Tetrachlorobiphenyl
70	2,3',4',5-Tetrachlorobiphenyl
83	2,2',3,3',5-Pentachlorobiphenyl
84	2,2',3,3',6-Pentachlorobiphenyl
95	2,2',3,5',6-Pentachlorobiphenyl
103	2,2',4,5',6-Pentachlorobiphenyl †
107	2,2',3,3',4',5-Pentachlorobiphenyl
115	2,3,4,4',6-Pentachlorobiphenyl
131	2,2',3,3',4,6-Hexachlorobiphenyl
132	2,2',3,3',4,6-Hexachlorobiphenyl
135	2,2',3,3',5,6'-Hexachlorobiphenyl
141	2,2',3,4,5,5'-Hexachlorobiphenyl
149	2,2',3,4',5',6-Hexachlorobiphenyl
164	2,2',3,3',4',5',6-Hexachlorobiphenyl
170	2,2',3,3',4,4',5-Heptachlorobiphenyl
171	2,2',3,3',4,4',6-Heptachlorobiphenyl
172	2,2',3,3',4,5,5'-Heptachlorobiphenyl
178	2,2',3,3',5,5',6-Heptachlorobiphenyl
183	2,2',3,4,4',5',6-Heptachlorobiphenyl
193	2,3,3',4',5,5',6-Heptachlorobiphenyl
196	2,2',3,3',4,4',5',6-Octachlorobiphenyl
197	2,2',3,3',4,4',6,6'-Octachlorobiphenyl
205	2,3,3',4,4',5,5',6-Octachlorobiphenyl

PCB Congener Mix #5

C-CS-05	1 x 1 mL
10 µg/mL each in Isooctane	20 comps.
No.	
12	3,4-Dichlorobiphenyl
33	2',3,4-Trichlorobiphenyl
49	2,2',4,5'-Tetrachlorobiphenyl
59	2,3,3',6-Tetrachlorobiphenyl
63	2,3,4',5-Tetrachlorobiphenyl
64	2,3,4',6-Tetrachlorobiphenyl
77	3,3',4,4'-Tetrachlorobiphenyl
85	2,2',3,4,4'-Pentachlorobiphenyl
91	2,2',3,4',6-Pentachlorobiphenyl
97	2,2',3',4,5-Pentachlorobiphenyl
104	2,2',4,6,6'-Pentachlorobiphenyl †
114	2,3,4,4',5-Pentachlorobiphenyl
123	2',3,4,4',5-Pentachlorobiphenyl
129	2,2',3,3',4,5-Hexachlorobiphenyl
137	2,2',3,4,4',5-Hexachlorobiphenyl
156	2,3,3',4,4',5-Hexachlorobiphenyl
167	2,3',4,4',5,5'-Hexachlorobiphenyl
176	2,2',3,3',4,6,6'-Heptachlorobiphenyl
185	2,2',3,4,5,5',6-Heptachlorobiphenyl
189	2,3,3',4,4',5,5'-Heptachlorobiphenyl

PCB Congener Mix #3

C-CS-03	1 x 1 mL
10 µg/mL each in Isooctane	27 comps.
No.	
15	4,4'-Dichlorobiphenyl
20	2,3,3'-Trichlorobiphenyl
27	2,3',6-Trichlorobiphenyl
29	2,4,5-Trichlorobiphenyl
34	2',3,5-Trichlorobiphenyl
40	2,2',3,3'-Tetrachlorobiphenyl
42	2,2',3,4'-Tetrachlorobiphenyl
47	2,2',4,4'-Tetrachlorobiphenyl
69	2,3',4,6-Tetrachlorobiphenyl †
92	2,2',3,5,5'-Pentachlorobiphenyl
93	2,2',3,5,6-Pentachlorobiphenyl †
101	2,2',4,5,5'-Pentachlorobiphenyl
105	2,3,3',4,4'-Pentachlorobiphenyl
118	2,3',4,4',5-Pentachlorobiphenyl
119	2,3',4,4',6-Pentachlorobiphenyl
128	2,2',3,3',4,4'-Hexachlorobiphenyl
134	2,2',3,3',5,6-Hexachlorobiphenyl
136	2,2',3,3',6,6'-Hexachlorobiphenyl
144	2,2',3,4,5',6-Hexachlorobiphenyl
151	2,2',3,5,5',6-Hexachlorobiphenyl
157	2,3,3',4,4',5'-Hexachlorobiphenyl
158	2,3,3',4,4',6-Hexachlorobiphenyl
190	2,3,3',4,4',5,6-Heptachlorobiphenyl
191	2,3,3',4,4',5',6-Heptachlorobiphenyl
207	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl †
208	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl
209	2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl †

Reference Key

non-Bold = Congener in any of Aroclors 1242, 1254 or 1260 @ < 1.0 Wt. %

Bold = Congener in any of Aroclors 1242, 1254 or 1260 @ > 1.0 Wt. %

† = Congener not in any of the 3 Aroclors @ > 0.05 Wt. %

Bold congeners related to mixes #6, 7 & 8 marginally above 0.05 Wt. %, except #43 @ 0.24 Wt. % in Aroclor 1242.

Some "non-Aroclor" congeners assigned to Mixes 1-5 to reduce coelutions and number of mixes needed.

PCB Congener Calibration Mixtures



9 Mixtures Contain All 209 Congeners Not Present in Aroclors

PCB Congener Mix #6

C-CS-06 1 x 1 mL
10 µg/mL each in Isooctane 18 comps.

No.	
11	3,3'-Dichlorobiphenyl †
21	2,3,4-Trichlorobiphenyl †
38	3,4,5-Trichlorobiphenyl †
50	2,2',4,6-Tetrachlorobiphenyl †
57	2,3,3',5-Tetrachlorobiphenyl †
61	2,3,4,5-Tetrachlorobiphenyl †
65	2,3,5,6-Tetrachlorobiphenyl †
86	2,2',3,4,5-Pentachlorobiphenyl †
102	2,2',4,5,6'-Pentachlorobiphenyl †
113	2,3,3',5',6-Pentachlorobiphenyl †
126	3,3',4,4',5-Pentachlorobiphenyl †
127	3,3',4,5,5'-Pentachlorobiphenyl †
133	2,2',3,3',5,5'-Hexachlorobiphenyl †
139	2,2',3,4,4',6-Hexachlorobiphenyl †
145	2,2',3,4,6,6'-Hexachlorobiphenyl †
161	2,3,3',4,5',6-Hexachlorobiphenyl †
169	3,3',4,4',5,5'-Hexachlorobiphenyl †
181	2,2',3,4,4',5,6-Heptachlorobiphenyl

PCB Congener Mix #8

C-CS-08 1 x 1 mL
10 µg/mL each in Isooctane 12 comps.

No.	
30	2,4,6-Trichlorobiphenyl †
43	2,2',3,5-Tetrachlorobiphenyl †
55	2,3,3',4-Tetrachlorobiphenyl †
58	2,3,3',5'-Tetrachlorobiphenyl †
76	2',3,4,5-Tetrachlorobiphenyl †
109	2,3,3',4,6-Pentachlorobiphenyl †
112	2,3,3',5,6-Pentachlorobiphenyl †
120	2,3',4,5,5'-Pentachlorobiphenyl †
159	2,3,3',4,5,5'-Hexachlorobiphenyl †
186	2,2',3,4,5,6,6'-Heptachlorobiphenyl †
192	2,3,3',4,5,5',6-Heptachlorobiphenyl †
198	2,2',3,3',4,5,5',6-Octachlorobiphenyl †

PCB Congener Mix #9

C-CS-09 1 x 1 mL
10 µg/mL each in Isooctane 21 comps.

No.	
23	2,3,5-Trichlorobiphenyl †
39	3,4',5-Trichlorobiphenyl †
62	2,3,4,6-Tetrachlorobiphenyl †
68	2,3',4,5'-Tetrachlorobiphenyl †
80	3,3',5,5'-Tetrachlorobiphenyl †
88	2,2',3,4,6-Pentachlorobiphenyl †
94	2,2',3,5,6'-Pentachlorobiphenyl †
111	2,3,3',5,5'-Pentachlorobiphenyl †
116	2,3,4,5,6-Pentachlorobiphenyl †
121	2,3',4,5',6-Pentachlorobiphenyl †
125	2',3,4,5,6'-Pentachlorobiphenyl †
140	2,2',3,4,4',6'-Hexachlorobiphenyl †
142	2,2',3,4,5,6-Hexachlorobiphenyl †
143	2,2',3,4,5,6'-Hexachlorobiphenyl †
148	2,2',3,4',5,6'-Hexachlorobiphenyl †
150	2,2',3,4',6,6'-Hexachlorobiphenyl †
155	2,2',4,4',6,6'-Hexachlorobiphenyl †
160	2,3,3',4,5,6-Hexachlorobiphenyl †
162	2,3,3',4',5,5'-Hexachlorobiphenyl †
168	2,3',4,4',5',6-Hexachlorobiphenyl †
188	2,2',3,4',5,6,6'-Heptachlorobiphenyl †

PCB Congener Mix #7

C-CS-07 1 x 1 mL
10 µg/mL each in Isooctane 14 comps.

No.	
36	3,3',5-Trichlorobiphenyl †
72	2,3',5,5'-Tetrachlorobiphenyl †
78	3,3',4,5-Tetrachlorobiphenyl †
79	3,3',4,5'-Tetrachlorobiphenyl †
89	2,2',3,4,6'-Pentachlorobiphenyl †
96	2,2',3,6,6'-Pentachlorobiphenyl †
98	2,2',3',4,6-Pentachlorobiphenyl †
106	2,3,3',4,5-Pentachlorobiphenyl †
108	2,3,3',4,5'-Pentachlorobiphenyl †
152	2,2',3,5,6,6'-Hexachlorobiphenyl †
166	2,3,4,4',5,6-Hexachlorobiphenyl †
182	2,2',3,4,4',5,6'-Heptachlorobiphenyl †
184	2,2',3,4,4',6,6'-Heptachlorobiphenyl †
204	2,2',3,4,4',5,6,6'-Octachlorobiphenyl †

Congener Calibration Solution Sets

Mixes containing all 209 PCB congeners.

C-CSQ-SET 9 x 1 mL		
1 mL each of:		
C-CS-01	C-CS-04	C-CS-07
C-CS-02	C-CS-05	C-CS-08
C-CS-03	C-CS-06	C-CS-09

Mixes for congeners found in Aroclor® 1242, 1254 and 1260

C-CSA-SET 5 x 1 mL	
1 mL each of:	
C-CS-01	C-CS-04
C-CS-02	C-CS-05
C-CS-03	

Mixes for non-Aroclor congeners

C-CSN-SET 4 x 1 mL	
1 mL each of:	
C-CS-06	C-CS-08
C-CS-07	C-CS-09

PCBS



PCB Congener Calibration Mixtures

Method 680 PCB Analytes

Internal Standards

M-680-IS	1 x 1 mL
M-680-IS-PAK SAVE	5 x 1 mL
75 µg/mL each in Hexane	
M-680-IS-10X	1 x 1 mL
M-680-IS-10X-PAK SAVE	5 x 1 mL
750 µg/mL each in Hexane	
Chrysene-d ₁₂	
Phenanthrene-d ₁₀	

PCB Locator Mixture

M-PCBL	1 x 1 mL
M-PCBL-PAK SAVE	5 x 1 mL
At stated conc. in Isooctane	
Aroclor 1242	(0.5 µg/mL)
Aroclor 1260	(0.5 µg/mL)
2-Chlorobiphenyl	(0.1 µg/mL)
3-Chlorobiphenyl	(0.1 µg/mL)
Decachlorobiphenyl	(0.1 µg/mL)

Retention Time Calibration Standard

M-680-RT	1 x 1 mL
M-680-RT-PAK SAVE	5 x 1 mL
100 µg/mL each in Hexane	
3,3',4,4'-Tetrachlorobiphenyl	
2,2',4,6,6'-Pentachlorobiphenyl	
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	

See EPA section Method 680 for complete analyte list.

PCB Isomer Calibration Mix

M-680A	1 x 1 mL
At stated conc. in Hexane	
No.	
1	2-Chlorobiphenyl (50 µg/mL)
5	2,3-Dichlorobiphenyl (50 µg/mL)
29	2,4,5-Trichlorobiphenyl (50 µg/mL)
50	2,2',4,6-Tetrachlorobiphenyl (100 µg/mL)
87	2,2',3,4,5'-Pentachlorobiphenyl (100 µg/mL)
154	2,2',4,4',5,6'-Hexachlorobiphenyl (100 µg/mL)
188	2,2',3,4',5,6,6'-Heptachlorobiphenyl (150 µg/mL)
201	2,2',3,3',4,5',6,6'-Octachlorobiphenyl (150 µg/mL)
209	2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (250 µg/mL)

Internal Standard

M-680B	1 x 1 mL
250 µg/mL in Toluene	
Chrysene-d ₁₂	

Tuning Standard

M-680-TS	1 x 1 mL
M-680-TS-PAK SAVE	5 x 1 mL
10 µg/mL in CH ₂ Cl ₂	
Decafluorotriphenylphosphine (DFTPP)	

PCB Isomer Calibration Set

M-680-SET	2 x 1 mL
Includes: M-680A (Mix) M-680B (Internal Standard)	

Level of Chlorination	Isomer Selected	Congener Number	RF Value vs. Chrysene-d ₁₂	Mean RF Value vs. Chrysene-d ₁₂
1	2-mono	1	0.899	0.925
2	2,3-di	5	0.651	0.642
3	2,4,5-tri	29	0.411	0.411
4	2,2',4,6-tetra	50	0.305	0.431
5	2,2',3,4,5'-penta	87	0.299	0.287
6	2,2',4,4',5,6'-hexa	154	0.254	0.254
7	2,2',3,4',5,6,6'-hepta	188	0.164	0.160
8	2,2',3,3',4,5',6,6'-octa	201	0.207	0.191
9,10	2,2',3,3',4,4',5,5',6,6'-deca	209	0.144	0.150



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Technical Note

The EPA has designated the following isomers for use in quantifying PCB's by GC/MS. The PCBs are identified and measured as isomer groups (i.e., by level of chlorination). A concentration is measured for each PCB isomer group; total PCB concentration in each sample extract is obtained by summing isomer group concentrations.



Instrument Test Solutions

PCB Window Defining Mixture

C-WDM 1 x 1 mL
 C-WDM-PAK **SAVE** 5 x 1 mL
 2.5 µg/mL each in Isooctane 20 comps.

No.	
0	Biphenyl
1	2-Chlorobiphenyl
3	4-Chlorobiphenyl
10	2,6-Dichlorobiphenyl
15	4,4'-Dichlorobiphenyl
19	2,2',6-Trichlorobiphenyl
37	3,4,4'-Trichlorobiphenyl
54	2,2',6,6'-Tetrachlorobiphenyl
77	3,3',4,4'-Tetrachlorobiphenyl
104	2,2',4,6,6'-Pentachlorobiphenyl
126	3,3',4,4',5-Pentachlorobiphenyl
155	2,2',4,4',6,6'-Hexachlorobiphenyl
169	3,3',4,4',5,5'-Hexachlorobiphenyl
188	2,2',3,4',5,6,6'-Heptachlorobiphenyl
189	2,3,3',4,4',5,5'-Heptachlorobiphenyl
202	2,2',3,3',5,5',6,6'-Octachlorobiphenyl
205	2,3,3',4,4',5,5',6-Octachlorobiphenyl
208	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl
206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl
209	2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl

PCB Calibration Check Solution

C-CCSEC 1 x 1 mL
 C-CCSEC-PAK **SAVE** 5 x 1 mL
 100 µg/mL each in Acetone 20 comps.

C-CCSEC-R 1 x 1 mL
 C-CCSEC-R-PAK **SAVE** 5 x 1 mL
 C-CCSEC plus 2,2',3,3',4,5',6,6'-Octachlorobiphenyl 21 comps.

Special Blend

No.	
8	2,4'-Dichlorobiphenyl
18	2,2',5-Trichlorobiphenyl
28	2,4,4'-Trichlorobiphenyl
44	2,2',3,5'-Tetrachlorobiphenyl
52	2,2',5,5'-Tetrachlorobiphenyl
66	2,3',4,4'-Tetrachlorobiphenyl
77	3,3',4,4'-Tetrachlorobiphenyl
101	2,2',4,5,5'-Pentachlorobiphenyl
105	2,3,3',4,4'-Pentachlorobiphenyl
118	2,3',4,4',5-Pentachlorobiphenyl
126	3,3',4,4',5-Pentachlorobiphenyl
128	2,2',3,3',4,4'-Hexachlorobiphenyl
138	2,2',3,4,4',5'-Hexachlorobiphenyl
153	2,2',4,4',5,5'-Hexachlorobiphenyl
170	2,2',3,3',4,4',5-Heptachlorobiphenyl
180	2,2',3,4,4',5,5'-Heptachlorobiphenyl
187	2,2',3,4',5,5',6-Heptachlorobiphenyl
195	2,2',3,3',4,4',5,6-Octachlorobiphenyl
206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl
209	2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl

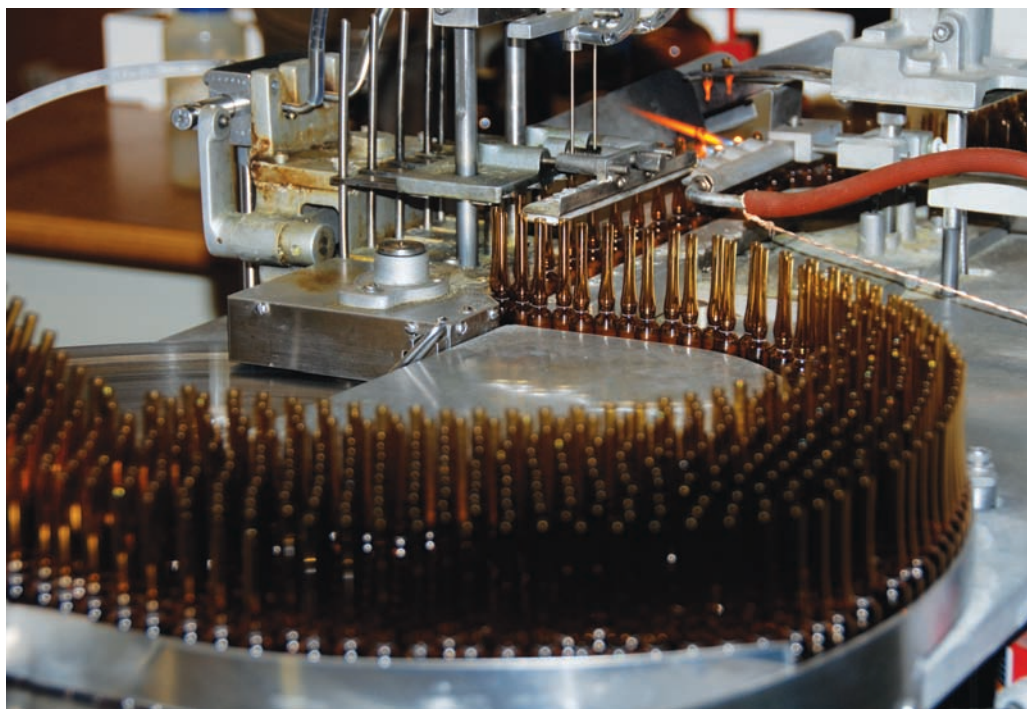
PCB/Selective Ion Monitoring Solution

PCB-SIM 1 x 1 mL
 PCB-SIM-PAK **SAVE** 5 x 1 mL
 At stated conc. in Hexane 12 comps.

No.		
1	2-Chlorobiphenyl	(10 µg/mL)
5	2,3-Dichlorobiphenyl	(10 µg/mL)
29	2,4,5-Trichlorobiphenyl	(10 µg/mL)
104	2,2',4,6,6'-Pentachlorobiphenyl	(20 µg/mL)
87	2,2',3,4,5'-Pentachlorobiphenyl	(20 µg/mL)
208	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	(40 µg/mL)
50	2,2',4,6-Tetrachlorobiphenyl	(20 µg/mL)
209	2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl	(50 µg/mL)
77	3,3',4,4'-Tetrachlorobiphenyl	(20 µg/mL)
200	2,2',3,3',4,5',6,6'-Octachlorobiphenyl	(30 µg/mL)
186	2,2',3,4',5,6,6'-Heptachlorobiphenyl	(30 µg/mL)
154	2,2',4,4',5,6'-Hexachlorobiphenyl	(20 µg/mL)

Technical Note

For use with Phenyl methyl silicone type columns.





Aroclors

(Industrial PCBs)

Aroclors

Aroclor Solutions in Isooctane and Methanol, 2 Concentrations (Individuals and Sets)

Aroclor #	35 µg/mL in Isooctane		100 µg/mL in Isooctane	35 µg/mL in Methanol		100 µg/mL in Methanol
	1 mL	PAK 5 x 1 mL		1 mL	PAK 5 x 1 mL	
Aroclor 1016	C-216S	C-216S-PAK	C-216S-TP	C-216S-M	C-216S-M-PAK	C-216S-M-2.85X
Aroclor 1221	C-221S	C-221S-PAK	C-221S-TP	C-221S-M	C-221S-M-PAK	C-221S-M-2.85X
Aroclor 1232	C-232S	C-232S-PAK	C-232S-TP	C-232S-M	C-232S-M-PAK	C-232S-M-2.85X
Aroclor 1242	C-242S	C-242S-PAK	C-242S-TP	C-242S-M	C-242S-M-PAK	C-242S-M-2.85X
Aroclor 1248	C-248S	C-248S-PAK	C-248S-TP	C-248S-M	C-248S-M-PAK	C-248S-M-2.85X
Aroclor 1254	C-254S	C-254S-PAK	C-254S-TP	C-254S-M	C-254S-M-PAK	C-254S-M-2.85X
Aroclor 1260	C-260S	C-260S-PAK	C-260S-TP	C-260S-M	C-260S-M-PAK	C-260S-M-2.85X
Aroclor 1262	C-262S	C-262S-PAK	C-262S-TP	C-262S-M	C-262S-M-PAK	C-262S-M-2.85X
Aroclor 1268	C-268S	C-268S-PAK	C-268S-TP	C-268S-M	C-268S-M-PAK	C-268S-M-2.85X
Set of 9 above	Z-008S-SET			Z-008S-M-SET		

Aroclor Solutions in Hexane, 2 Conc. (Individuals, Sets, PAKs)

Aroclor #	Hexane		Hexane	
	1000 µg/mL	1 mL	PAK SAVE 20%	5 x 1 mL
Aroclor 1016	C-216S-H-10X		C-216S-H-10X-PAK	
Aroclor 1221	C-221S-H-10X		C-221S-H-10X-PAK	
Aroclor 1232	C-232S-H-10X		C-232S-H-10X-PAK	
Aroclor 1242	C-242S-H-10X		C-242S-H-10X-PAK	
Aroclor 1248	C-248S-H-10X		C-248S-H-10X-PAK	
Aroclor 1254	C-254S-H-10X		C-254S-H-10X-PAK	
Aroclor 1260	C-260S-H-10X		C-260S-H-10X-PAK	
Aroclor 1262	C-262S-H-10X		C-262S-H-10X-PAK	
Aroclor 1268	C-268S-H-10X		C-268S-H-10X-PAK	
Set of 9 above	Z-008S-H-10X-SET			

Aroclor Neats (Individuals)

Aroclor #	Neat	Unit
Aroclor 1016	C-216N	50 mg
Aroclor 1221	C-221N-50MG	50 mg
Aroclor 1232	-----	-----
Aroclor 1242	C-242N-50MG	50 mg
Aroclor 1248	C-248N-50MG	50 mg
Aroclor 1254	C-254N-50MG	50 mg
Aroclor 1260	C-260N-50MG	50 mg
Aroclor 1262	C-262N-50MG	50 mg
Aroclor 1268	-----	-----

Solutions in PCB-Free Transformer Oil (Individuals, 2 Concentrations)

Aroclor # CAS No.	Conc. ppm w/w	Individual		PAK SAVE	
		Cat. No.	1 mL	Cat. No.	5 x 1 mL
Aroclor 1016 12674-11-2	50	C-216-ST-1		C-216-ST-1-PAK	
	500	C-216-ST-2		C-216-ST-2-PAK	
Aroclor 1221 11104-28-2	50	C-221-ST-1		C-221-ST-1-PAK	
	500	C-221-ST-2		C-221-ST-2-PAK	
Aroclor 1232 11141-16-5	50	C-232-ST-1		C-232-ST-1-PAK	
	500	C-232-ST-2		C-232-ST-2-PAK	
Aroclor 1242 53469-21-9	50	C-242-ST-1		C-242-ST-1-PAK	
	500	C-242-ST-2		C-242-ST-2-PAK	
Aroclor 1248 12672-29-6	50	C-248-ST-1		C-248-ST-1-PAK	
	500	C-248-ST-2		C-248-ST-2-PAK	
Aroclor 1254 11097-69-1	50	C-254-ST-1		C-254-ST-1-PAK	
	500	C-254-ST-2		C-254-ST-2-PAK	
Aroclor 1260 11096-82-5	50	C-260-ST-1		C-260-ST-1-PAK	
	500	C-260-ST-2		C-260-ST-2-PAK	
Aroclor 1262 37324-23-5	50	C-262-ST-1		C-262-ST-1-PAK	
	500	C-262-ST-2		C-262-ST-2-PAK	
Aroclor 1268 11100-14-4	50	C-268-ST-1		C-268-ST-1-PAK	
	500	C-268-ST-2		C-268-ST-2-PAK	

Aroclor-free Transformer Oil is available as:

T-W130

1 x 1 mL

Technical Note

Major Isomer Components of Aroclor 1254

Aroclor® 1254 was the most commonly used of the industrial PCB fluids. This list contains congeners which constitute the majority of the components in this material. They are offered in both neat form and solution. Solutions are in 35 µg/mL in isooctane.

For 1254 only the following congeners may be found at > 0.5% by weight by Congener Number:

#s 44,49, 52, 56, 64, 66, 70, 74, 82, 84, 85, 87, 91, 92, 95, 97, 99, 101, 105, 110, 118, 128, 130, 132, 135, 136, 138, 141, 146, 149, 151, 153, 156, 158, 163, 170, 180.

- The coplanar polychlorinated biphenyl (PCB) congeners; 3,3',4,4'-Tetrachlorobiphenyl (# 77), 3,3',4,4',5-Pentachlorobiphenyl (# 126), and 3,3',4,4',5,5'-Hexachlorobiphenyl (# 169) are recognized as the most toxic components of Aroclors.
- The major problem in isolation of these PCB congeners is the separation of 2,3,3',4',6-Pentachlorobiphenyl (# 110) from 3,3',4,4'-Tetrachlorobiphenyl (# 77).
- A simple cleanup procedure using alumina is proposed for the fractionation of the Aroclors on alumina which allows the isolation and analysis of the coplanar PCB congeners (1).
- The proposed internal standard 3,3',4,4'-Tetrabromobiphenyl (B-077S) enhances the accuracy of the procedure.

The novel compound 3,3',4,4'-Tetrabromobiphenyl is used as an Internal Standard to identify and quantify the coplanar components of Aroclors (1).

(1) Analysis of coplanar PCB congeners in Aroclors using alumina column cleanup. Jerry W. Anderson, ManTech Environmental Technology, Inc., R.S. Kerr Environmental Research Laboratory, U.S. Environmental Protection Agency, P.O. Box 1198, Ada, OK 74820 - Pittsburgh Conference, March 1992, New Orleans

B-077S 1 x 1 mL
35 µg/mL in Isooctane
3,3',4,4'-Tetrabromobiphenyl

Aroclors

(Industrial PCBs)



Aroclors Similar but Different

Reference Standards of Aroclor Mixtures (by GC Analysis)

Technical mixtures were manufactured by industry in many individual batches using set production conditions. The composition of the mixtures, as is evident from the chromatograms (fingerprints), will be similar but never exactly the same. Sometimes there is a variation in the manufacturing process thereby producing a more radical change in the composition of the product mixture.

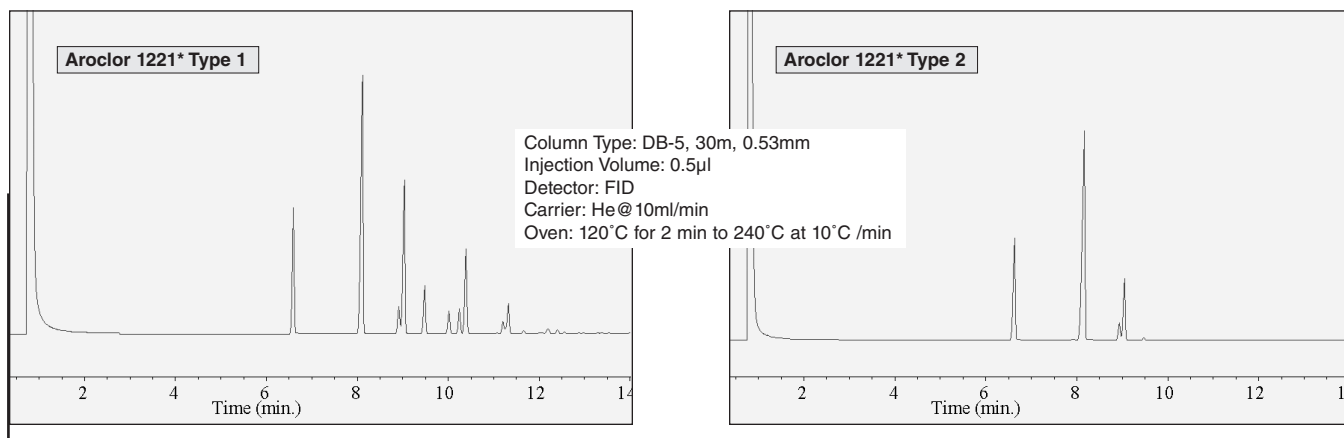
This is the case for Aroclors®, technical mixtures of PCBs made by Monsanto during the period of the 1930s through 1977. A certain batch of Aroclor 1254 (54% Chlorine by weight) that was being made by chlorinating biphenyls was chlorinated in two stages. Normally this was a single stage process. The resulting product of the two stage manufacturing process was a material containing significantly higher concentrations of the non-ortho substituted congeners, which also happen to be more toxic.

Identifying and quantifying Aroclor 1254 in the environment is confusing to the analyst when they encounter what on the surface appears to be 1254 but on closer examination is quite different.

For different reasons there also exist two types of Aroclor 1221. To help you clear up any confusion AccuStandard (as an exclusive) makes available both types of these Aroclors.

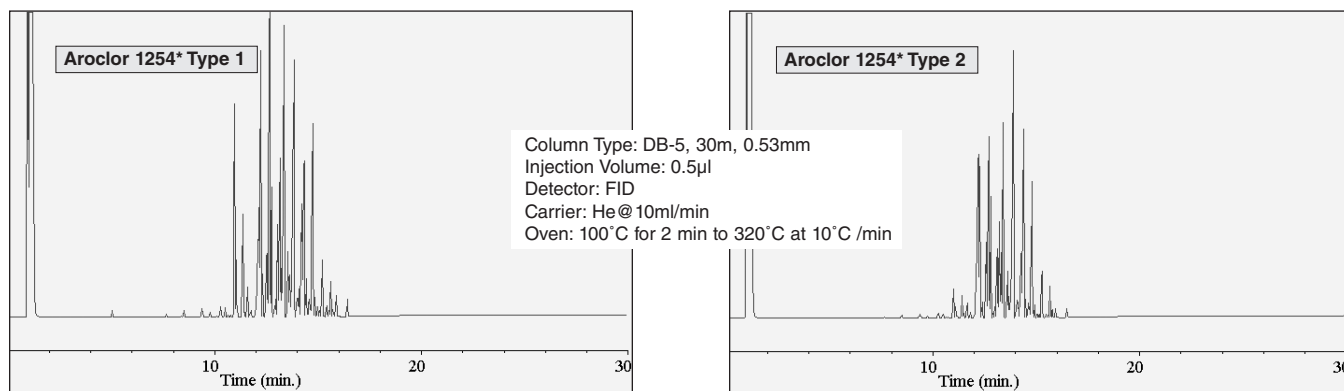
Aroclor 1221 Type 1 & 2 (21% Chlorine by weight)

Aroclor 1221 (21% Chlorine by weight) where two types exist. Type 1 is the one commonly available and contains measurable quantities of certain dichloro- and trichloro- congeners. The peaks found in gas chromatograms attributable to those congeners are absent in Type 2 of Aroclor 1221.



Aroclor 1254 Type 1 & 2 (54% Chlorine by weight)

The commonly occurring Aroclor 1254 (54% Chlorine by weight) is available as **C-254N** and **C-254S-TYPE1** (C-254S), and is the same as the C-254N and C-254S that you have been obtaining from **AccuStandard** for the past 16 years. The second type of Aroclor 1254, that was made by a different manufacturing process is available as **C-254S-TYPE2**.



Set of 1 each C-221S-TYPE1* and C-221S-TYPE2*	C-221-SET	2 x 1 mL
Set of 1 each C-254S-TYPE1* and C-254S-TYPE2*	C-254-SET	2 x 1 mL

Solutions in these sets are 35 µg/mL in Isooctane

* All Standards cited in this monograph are bonafide and unadulterated Monsanto product.



Hydroxy-Chlorobiphenyls

PCBS

Hydroxy-Chlorobiphenyls

Compound	CAS No.	NEAT		Each 100 µg/mL in Isooctane	
		Cat. No.	Unit	Cat. No.	1 mL
2-Hydroxy-5-chlorobiphenyl	607-12-5	HPCB-1001N	5 mg	HPCB-1001S	
4-Hydroxy-2-chlorobiphenyl	23719-22-4	HPCB-1002N	5 mg	HPCB-1002S	
4-Hydroxy-3-chlorobiphenyl	92-04-6	HPCB-1003N	5 mg	HPCB-1003S	
4-Hydroxy-4'-chlorobiphenyl	28034-99-3	HPCB-1004N	10 mg	HPCB-1004S	
2-Hydroxy-2',5'-dichlorobiphenyl	53905-30-9	HPCB-2001N	10 mg	HPCB-2001S	
3-Hydroxy-2',5'-dichlorobiphenyl	53905-29-6	HPCB-2002N	10 mg	HPCB-2002S	
4-Hydroxy-2',5'-dichlorobiphenyl	53905-28-5	HPCB-2003N	10 mg	HPCB-2003S	
4-Hydroxy-3,5-dichlorobiphenyl	1137-59-3	HPCB-2004N	10 mg	HPCB-2004S	
2-Hydroxy-2',3'-dichlorobiphenyl		HPCB-2005N	10 mg	HPCB-2005S	
2-Hydroxy-3',4'-dichlorobiphenyl		HPCB-2006N	10 mg	HPCB-2006S	
2-Hydroxy-2',4',6'-trichlorobiphenyl		HPCB-3001N	10 mg	HPCB-3001S	
2-Hydroxy-2',5,5'-trichlorobiphenyl		HPCB-3002N	10 mg	HPCB-3002S	
3-Hydroxy-2',4',6'-trichlorobiphenyl		HPCB-3003N	10 mg	HPCB-3003S	
4-Hydroxy-2,2',5'-trichlorobiphenyl	53905-33-2	HPCB-3004N	5 mg	HPCB-3004S	
4-Hydroxy-2',3,5'-trichlorobiphenyl		HPCB-3005N	5 mg	HPCB-3005S	
4-Hydroxy-2',4',6'-trichlorobiphenyl	14962-28-8	HPCB-3006N	10 mg	HPCB-3006S	
2-Hydroxy-2',3',4',5'-tetrachlorobiphenyl		HPCB-4001N	10 mg	HPCB-4001S	
2-Hydroxy-2',3',5',6'-tetrachlorobiphenyl		HPCB-4002N	10 mg	HPCB-4002S	
2-Hydroxy-2',4',5,6'-tetrachlorobiphenyl		HPCB-4003N	10 mg	HPCB-4003S	
3-Hydroxy-2',3',4',5'-tetrachlorobiphenyl	67651-37-0	HPCB-4004N	10 mg	HPCB-4004S	
3-Hydroxy-2',3',5',6'-tetrachlorobiphenyl		HPCB-4005N	10 mg	HPCB-4005S	
4-Hydroxy-2,2',4',6'-tetrachlorobiphenyl	150304-08-8	HPCB-4006N	5 mg	HPCB-4006S	
4-Hydroxy-2',3',4',5'-tetrachlorobiphenyl	67651-34-7	HPCB-4007N	10 mg	HPCB-4007S	
4-Hydroxy-2',3,4',6'-tetrachlorobiphenyl		HPCB-4008N	5 mg	HPCB-4008S	
4-Hydroxy-2',3,5,5'-tetrachlorobiphenyl		HPCB-4009N	10 mg	HPCB-4009S	
4-Hydroxy-2',3',5',6'-tetrachlorobiphenyl	14962-32-4	HPCB-4010N	10 mg	HPCB-4010S	
3-Hydroxy-2,2',6,6'-tetrachlorobiphenyl NEW		-----	-----	HPCB-4012S	
5-Hydroxy-2,2',4,6'-tetrachlorobiphenyl NEW		-----	-----	HPCB-4014S	
4,4'-Dihydroxy-2,2',6,6'-tetrachlorobiphenyl NEW		-----	-----	HPCB-4015S	
2-Hydroxy-2',3',4',5,5'-pentachlorobiphenyl	67651-36-9	HPCB-5001N	10 mg	HPCB-5001S	
2-Hydroxy-2',3',5,5',6'-pentachlorobiphenyl		HPCB-5002N	10 mg	HPCB-5002S	
4-Hydroxy-2,2',3',4',5'-pentachlorobiphenyl		HPCB-5003N	5 mg	HPCB-5003S	
4-Hydroxy-2,2',3',5',6'-pentachlorobiphenyl		HPCB-5004N	5 mg	HPCB-5004S	
4-Hydroxy-2',3,3',4',5'-pentachlorobiphenyl	67651-35-8	HPCB-5005N	5 mg	HPCB-5005S	
4-Hydroxy-2',3,3',5',6'-pentachlorobiphenyl		HPCB-5006N	5 mg	HPCB-5006S	
4-Hydroxy-2',3,4',5,6'-pentachlorobiphenyl		HPCB-5007N	10 mg	HPCB-5007S	
2-Hydroxy-2',3,4',5',6'-pentachlorobiphenyl NEW		-----	-----	HPCB-5010S	
3-Hydroxy-2,2',4',5,5'-pentachlorobiphenyl NEW	69278-58-6	-----	-----	HPCB-5008S	
4-Hydroxy-2,2',4',5,5'-pentachlorobiphenyl NEW		-----	-----	HPCB-5009S	
4-Hydroxy-2',3,3',4',5,5'-hexachlorobiphenyl	158076-63-2	HPCB-6001N	10 mg	HPCB-6001S	
4-Hydroxy-2',3,3',5,5',6'-hexachlorobiphenyl		HPCB-6002N	10 mg	HPCB-6002S	
4'-Hydroxy-2,2',3,3',4,5,5'-heptachlorobiphenyl NEW		-----	-----	HPCB-7001S	
3'-Hydroxy-2,2',3,4,4',5,5'-heptachlorobiphenyl NEW		-----	-----	HPCB-7003S	
5-Hydroxy-2,2',3,4,4',5',6'-heptachlorobiphenyl NEW		-----	-----	HPCB-7004S	

Methoxy PCBs

Each 100 µg/mL in Isooctane		Each 100 µg/mL in Isooctane	
Compound	Cat. No.	Compound	Cat. No.
2-Methoxy-5-chlorobiphenyl	MOPCB-1001S	2-Methoxy-2',3',4',5'-tetrachlorobiphenyl	MOPCB-4001S
4-Methoxy-2-chlorobiphenyl	MOPCB-1002S	2-Methoxy-2',3',5',6'-tetrachlorobiphenyl	MOPCB-4002S
4-Methoxy-3-chlorobiphenyl	MOPCB-1003S	2-Methoxy-2',4',5,6'-tetrachlorobiphenyl	MOPCB-4003S
4-Methoxy-4'-chlorobiphenyl	MOPCB-1004S	3-Methoxy-2',3',4',5'-tetrachlorobiphenyl	MOPCB-4004S
3-Methoxy-2',5'-dichlorobiphenyl	MOPCB-2002S	3-Methoxy-2',3',5',6'-tetrachlorobiphenyl	MOPCB-4005S
4-Methoxy-2',5'-dichlorobiphenyl	MOPCB-2003S	4-Methoxy-2',3',4',5'-tetrachlorobiphenyl	MOPCB-4007S
4-Methoxy-3,5-dichlorobiphenyl	MOPCB-2004S	4-Methoxy-2',3,4',6'-tetrachlorobiphenyl	MOPCB-4008S
2-Methoxy-2',3'-dichlorobiphenyl	MOPCB-2005S	4-Methoxy-2',3,5,5'-tetrachlorobiphenyl	MOPCB-4009S
2-Methoxy-2',3'-dichlorobiphenyl	MOPCB-2006S	2-Methoxy-2',3',4',5,5'-pentachlorobiphenyl	MOPCB-5001S
2-Methoxy-2',4',6'-trichlorobiphenyl	MOPCB-3001S	2-Methoxy-2',3',5,5',6'-pentachlorobiphenyl	MOPCB-5002S
2-Methoxy-2',5,5'-trichlorobiphenyl	MOPCB-3002S	4-Methoxy-2,2',3',4',5'-pentachlorobiphenyl	MOPCB-5003S
3-Methoxy-2',4',6'-trichlorobiphenyl	MOPCB-3003S	4-Methoxy-2,2',3',5',6'-pentachlorobiphenyl	MOPCB-5004S
4-Methoxy-2,2',5'-trichlorobiphenyl	MOPCB-3004S	4-Methoxy-2,2',4',5,5'-pentachlorobiphenyl	MOPCB-5009S
4-Methoxy-2',3,5'-trichlorobiphenyl	MOPCB-3005S	2-Methoxy-2',3,4',5',6'-pentachlorobiphenyl	MOPCB-5010S
4-Methoxy-2',4',6'-trichlorobiphenyl	MOPCB-3006S	4-Methoxy-2',3,3',4',5,5'-hexachlorobiphenyl	MOPCB-6001S
		4'-Methoxy-2,2',3,3',4,5,5'-heptachlorobiphenyl* NEW	MOPCB-7001S-0.5X

* in 50 µg/mL



Methylsulfonyl PCB Congeners

Compound	CAS No.	Each 50 µg/mL in Isooctane Cat. No.	1 mL
3-Methylsulfonyl-2,2',4',5'-tetrachlorobiphenyl	116807-52-4	MSCB-3049	
3-Methylsulfonyl-2,2',5,5'-tetrachlorobiphenyl	60640-54-2	MSCB-3052	
3-Methylsulfonyl-2,3',4',5'-tetrachlorobiphenyl	116807-53-5	MSCB-3070	
3-Methylsulfonyl-2,2',3',4',5'-pentachlorobiphenyl	66640-58-2	MSCB-3087	
3-Methylsulfonyl-2,2',4',5,6-pentachlorobiphenyl	149949-86-0	MSCB-3091	
3-Methylsulfonyl-2,2',3',5,6'-pentachlorobiphenyl		MSCB-3095	
3-Methylsulfonyl-2,2',4',5,5'-pentachlorobiphenyl	66640-60-6	MSCB-3101	
3-Methylsulfonyl-2,3',4',5,6-pentachlorobiphenyl	116807-23-9	MSCB-3110	
3-Methylsulfonyl-2,2',3',4',5,6-hexachlorobiphenyl	149949-90-6	MSCB-3132	
3-Methylsulfonyl-2,2',3',4',5,5'-hexachlorobiphenyl	104086-18-2	MSCB-3141	
3-Methylsulfonyl-2,2',4',5,5',6-hexachlorobiphenyl	149949-88-2	MSCB-3149	
3-Methylsulfonyl-2,2',3',4',5,5',6-heptachlorobiphenyl		MSCB-3174	
4-Methylsulfonyl-2,2',4',5-tetrachlorobiphenyl	69797-52-0	MSCB-4049	
4-Methylsulfonyl-2,2',5,5'-tetrachlorobiphenyl	60640-55-3	MSCB-4052	
4-Methylsulfonyl-2,3,4',6-tetrachlorobiphenyl	108736-08-9	MSCB-4064	
4-Methylsulfonyl-2,3',4',5-tetrachlorobiphenyl	69797-51-9	MSCB-4070	
4-Methylsulfonyl-2,2',3',4',5-pentachlorobiphenyl	66640-59-3	MSCB-4087	
4-Methylsulfonyl-2,2',4',5,6-pentachlorobiphenyl	149949-87-1	MSCB-4091	
4-Methylsulfonyl-2,2',3',5,6-pentachlorobiphenyl		MSCB-4095	
4-Methylsulfonyl-2,2',4',5,5'-pentachlorobiphenyl	66640-61-7	MSCB-4101	
4-Methylsulfonyl-2,2',4',5,6-pentachlorobiphenyl		MSCB-4103	
4-Methylsulfonyl-2,3,3',4',6-pentachlorobiphenyl	149949-89-3	MSCB-4110	
4-Methylsulfonyl-2,2',3,3',4',6-hexachlorobiphenyl	104086-16-0	MSCB-4132	
4-Methylsulfonyl-2,2',3',4',5,5'-hexachlorobiphenyl	104086-19-3	MSCB-4141	
4-Methylsulfonyl-2,2',3,4',5',6-hexachlorobiphenyl	116806-76-9	MSCB-4149	
4-Methylsulfonyl-2,2',3',4',5,5',6-heptachlorobiphenyl	153310-30-6	MSCB-4174	

Technical Note

An important group of persistent PCB metabolites, the methylsulfonyl PCBs (MeSO₂-PCBs) have been added. Only the 3- and 4-MeSO₂-PCBs with chlorine atoms in the 2,5- or 2,3,6-position have been found in environmental samples, and therefore only those are offered by AccuStandard.

**Aroclor-free Transformer Oil
is available as:**

T-W130

1 x 1 mL

Hydroxy-Biphenyls

Compound	CAS No.	NEAT Cat. No.	Unit	Solutions 100 µg/mL in MeOH Cat. No.	1 mL
2-Hydroxy-biphenyl	90-43-7	HBP-001N	100 mg	HBP-001S	
3-Hydroxy-biphenyl	580-51-8	HBP-002N	100 mg	HBP-002S	
4-Hydroxy-biphenyl	92-69-3	HBP-003N	100 mg	HBP-003S	
2,2'-Dihydroxy-biphenyl	1806-29-7	HBP-004N	100 mg	HBP-004S	
4,4'-Dihydroxy-biphenyl	92-88-6	HBP-006N	100 mg	HBP-006S	
2,5-Dihydroxy-biphenyl	1079-21-6	HBP-009N	100 mg	HBP-009S	

Purchasing Neat Standards

There are two ways to purchase neat standards: Nominal weight and exact weight. With exact weight, the standards will come with the exact weight contained in the vial indicated on the label. The catalog number will have an X-WT to indicate that this is an exact weight. Rinse the sample out of the vial and cap with solvent and dilute to achieve the desired concentration. Unless specified, neat samples are provided with nominal weights. Typically, the vials contain up to 10 to 20% more product, however it is not known when you receive your standard what the exact amount is in the vial. Below is a standard procedure for removing all the neat material from the vial and determining the exact weight of the material in the vial.

Small amounts (5-10 mg) of powder often are spread over the surface of the vial and cap. If the chemical is a liquid it may coat the walls as a thin layer invisible to the eye.

To recover all of the contents contained in a vial of neat material please use the procedure described below:

1. Wipe the outside of the vial (containing the Standard) clean and dry (including the cap).
2. Weigh the entire unit on an analytical balance. Record the weight to the nearest 0.1 mg.
3. Carefully transfer the contents to a volumetric flask using a suitable solvent. Rinse the cap and vial several times to assure a complete transfer.
4. Dry inside and outside of the vial and cap with mild heat or inert gas.
5. Weigh the empty dry vial on the same analytical balance to the nearest 0.1 mg and calculate by difference the amount of material transferred.



Halogenated Aromatics (other than PCBs)



Perchlorinated Terphenyls

Compound	CAS No.	Neat Cat. No.	Unit	35 µg/mL in Toluene	
				Cat. No.	1 mL
<i>o</i> -Terphenyl	84-15-1	T-001N	100 mg	-----	--
<i>m</i> -Terphenyl	92-06-8	T-002N	100 mg	-----	--
<i>p</i> -Terphenyl	92-94-4	T-003N	100 mg	-----	--
Tetradecachloro- <i>o</i> -terphenyl		-----	-----	T-004S	
Tetradecachloro- <i>m</i> -terphenyl		-----	-----	T-005S	
Tetradecachloro- <i>p</i> -terphenyl		-----	-----	T-006S	
Aroclor 5432	63496-31	-----	-----	T-432S	
Aroclor 5442	12642-23-8	-----	-----	T-442S	
Aroclor 5460	11126-42-4	-----	-----	T-460S	
Aroclor 6050		-----	-----	T-6050S	

Perchlorinated Aromatics

Compound	CAS No.	Neat Cat. No.	Unit	35 µg/mL in Toluene	
				Cat. No.	1 mL
Decachlorobiphenyl	2051-24-3	C-209N	10 mg	-----	--
Hexachlorobenzene	118-74-1	A-012	100 mg	-----	--
Octachlorodibenzofuran	39001-02-0	F-801N	50 mg	-----	--
Octachlorodibenzo- <i>p</i> -dioxin	3268-87-9	D-801N	50 mg	-----	--
Octachloronaphthalene	2234-13-1	N-003N	25 mg	-----	--
Octachlorostyrene	29082-74-4	-----	-----	PC-001S	
Perchlorinated <i>p,p'</i> -DDE		-----	-----	PC-002S	
Tetradecachloro- <i>o</i> -terphenyl		-----	-----	T-004S	
Tetradecachloro- <i>m</i> -terphenyl		-----	-----	T-005S	
Tetradecachloro- <i>p</i> -terphenyl		-----	-----	T-006S	

Polychlorinated Naphthalenes

Halowaxes (Kopper's PCNs)

Compound	CAS No.	Neat Cat. No.	Unit	100 µg/mL in MeOH	
				Cat. No.	1 mL
Halowax 1000 (26 %Cl)	58718-66-4	-----	-----	N-1000S	
Halowax 1001 (50 %Cl)	58718-67-5	-----	-----	N-1001S	
Halowax 1013 (56 %Cl)	1321-64-8	-----	-----	N-1013S	
Halowax 1014 (62 %Cl)	1335-87-1	-----	-----	N-1014S	
Halowax 1051 (70 %Cl)	2234-13-1	-----	-----	N-1051S	
Halowax 1099 (52 %Cl)	39450-05-0	-----	-----	N-1099S	

Polychlorinated Naphthalene Congeners

Compound	CAS No.	Neat Cat. No.	Unit		
				Cat. No.	1 mL
Naphthalene	91-20-3	H-152N	100 mg		
1-Chloronaphthalene	90-13-1	N-001N	100 mg		
2-Chloronaphthalene	91-58-7	N-002N	100 mg		
1,4-Dichloronaphthalene	1825-31-6	N-004N	10 mg		
1,2,3,4-Tetrachloronaphthalene	20020-02-4	N-005N	10 mg		

Chloronitrophenyl Ethers

Compound	CAS No.	1.0 mg/mL in Isooctane	
		Cat. No.	1 mL
2-Chlorophenyl-4-nitrophenyl ether	209-61-4	E-005S	
3-Chlorophenyl-4-nitrophenyl ether	2303-23-3	E-006S	
4-Chlorophenyl-4-nitrophenyl ether	1836-74-4	E-007S	
2,4-Dichlorophenyl-3-methyl-4-nitrophenyl ether NEW	42488-57-3	E-020S	
2,4-Dibromophenyl-4-nitrophenyl ether	2671-93-4	E-004S	
2,3-Dichlorophenyl-4-nitrophenyl ether	82239-20-1	E-008S	
2,4-Dichlorophenyl-4-nitrophenyl ether	1836-75-5	E-009S	
2,5-Dichlorophenyl-4-nitrophenyl ether	391-48-7	E-010S	
2,6-Dichlorophenyl-4-nitrophenyl ether	2093-28-9	E-011S	
3,4-Dichlorophenyl-4-nitrophenyl ether	22532-80-5	E-013S	
3,5-Dichlorophenyl-4-nitrophenyl ether	21105-77-1	E-012S	
4-Nitrophenyl phenyl ether	620-88-2	E-003S	
2,3,4-Trichlorophenyl-4-nitrophenyl ether		E-014S	
2,3,5-Trichlorophenyl-4-nitrophenyl ether		E-015S	
2,3,6-Trichlorophenyl-4-nitrophenyl ether		E-016S	
2,4,5-Trichlorophenyl-4-nitrophenyl ether	22532-68-9	E-017S	
2,4,6-Trichlorophenyl-4-nitrophenyl ether	1836-77-7	E-018S	
3,4,5-Trichlorophenyl-4-nitrophenyl ether		E-019S	

Chlorodiphenyl Ether

Compound	CAS No.	Unit	Cat. No.
Decachlorodiphenyl ether NEW	31710-30-2	10 mg	CDE-209N



Halogenated Aromatics (other than PCBs)					
Compound	CAS No.	Conc	Matrix	Cat. No.	1 mL
Decafluorobiphenyl	434-90-2	10 µg/mL	Acetone	M-551.1-SS	
		0.1 mg/mL	AcCN	M-8310-SS	
		0.2 mg/mL	CH ₂ Cl ₂	M-625-04	
		1 mg/mL	Acetone	M-551.1-SS-100X	
		2 mg/mL	CH ₂ Cl ₂	M-625-04-10X	
4,4'-Dibromobiphenyl	92-86-4	0.1 mg/mL	Ethyl acetate	M-508.1-SS	
		0.2 mg/mL	CH ₂ Cl ₂	M-625-05	
		1 mg/mL	Acetone	M-8111-IS-20X	
		2 mg/mL	CH ₂ Cl ₂	M-625-05-10X	
		0.2 mg/mL	CH ₂ Cl ₂	M-625-06	
4,4'-Dibromooctafluorobiphenyl	10386-84-2	2 mg/mL	CH ₂ Cl ₂	M-625-06-10X	
		0.2 mg/mL	CH ₂ Cl ₂	M-625-07	
2,2'-Difluorobiphenyl	388-82-9	1 mg/mL	MeOH	M-1653-IIS	
		2 mg/mL	CH ₂ Cl ₂	M-625-07-10X	
		5 mg/mL	Acetone	M-1653-IIS-R	
		0.2 mg/mL	CH ₂ Cl ₂	M-625-09	
2-Fluorobiphenyl	321-60-8	2 mg/mL	CH ₂ Cl ₂	M-625-09-10X	
		5 mg/mL	MeOH	AS-E0472	
Halowax 1000	58718-66-4	0.1 mg/mL	MeOH	N-1000S	
Halowax 1001	58718-67-5	0.1 mg/mL	MeOH	N-1001S	
		5 mg/mL	MeOH	AS-E0471	
Halowax 1013	1321-64-8	0.1 mg/mL	MeOH	N-1013S	
Halowax 1014	1335-87-1	0.1 mg/mL	MeOH	N-1014S	
Halowax 1051		0.1 mg/mL	MeOH	N-1051S	
Halowax 1099	39450-05-0	0.1 mg/mL	MeOH	N-1099S	
		5 mg/mL	MeOH	AS-E0470	
1,2,3,4,5,6,7,8-Octachloronaphthalene	2234-13-1	100 µg/mL	MeOH	N-003S	
Tetradecachloro-o-terphenyl		35 µg/mL	Toluene	T-004S	
Tetradecachloro-m-terphenyl		35 µg/mL	Toluene	T-005S	
Tetradecachloro-p-terphenyl	31710-32-4	35 µg/mL	Toluene	T-006S	





Dibenzo-p-dioxin Congeners

The Environmental Protection Agency published its final rule regulating dioxin-containing waste in the Federal Register - Volume 5, 1978-1979, January 14, 1985.

Dibenzo-p-dioxin Congeners Minimum purity 98%

Compound	CAS No.	NEAT		SOLUTION			1 mL
		Cat. No.	Unit	Cat. No.	Conc.	Solvent	
1-Chlorodibenzo-p-dioxin	39227-53-7	D-101N	25 mg	D-101S	50 µg/mL	Isooctane	
2-Chlorodibenzo-p-dioxin	39227-54-8	D-102N	50 mg	D-102S	50 µg/mL	Isooctane	
Dibenzo-p-dioxin	262-12-4	D-100N	10 mg	D-100S	50 µg/mL	Isooctane	
1,2-Dichlorodibenzo-p-dioxin		-----	-----	D-207S	50 µg/mL	Isooctane	
1,3-Dichlorodibenzo-p-dioxin		D-205N	10 mg	D-205S	50 µg/mL	Isooctane	
1,4-Dichlorodibenzo-p-dioxin		D-206N	10 mg	D-206S	50 µg/mL	Isooctane	
1,6-Dichlorodibenzo-p-dioxin	38178-38-0	D-201N	5 mg	D-201S	50 µg/mL	Isooctane	
2,3-Dichlorodibenzo-p-dioxin	29446-15-9	D-202N	5 mg	D-202S	50 µg/mL	Isooctane	
2,7-Dichlorodibenzo-p-dioxin	33857-26-0	D-203N	25 mg	D-203S	50 µg/mL	Isooctane	
2,8-Dichlorodibenzo-p-dioxin		D-204N	5 mg	D-204S	50 µg/mL	Isooctane	
1,2,3-Trichlorodibenzo-p-dioxin	54536-17-3	D-301N	5 mg	D-301S	50 µg/mL	Isooctane	
1,2,4-Trichlorodibenzo-p-dioxin	39227-58-2	D-302N	10 mg	D-302S	50 µg/mL	Isooctane	
1,7,8-Trichlorodibenzo-p-dioxin	82306-65-8	D-303N	5 mg	D-303S	50 µg/mL	Isooctane	
2,3,7-Trichlorodibenzo-p-dioxin	33857-28-2	D-304N	5 mg	D-304S	50 µg/mL	Isooctane	
1,2,3,4-Tetrachlorodibenzo-p-dioxin	30746-58-8	D-401N	50 mg	D-401S	50 µg/mL	Toluene	
1,2,7,8-Tetrachlorodibenzo-p-dioxin	34816-53-0	D-402N	5 mg	D-402S	50 µg/mL	Toluene	
1,3,7,8-Tetrachlorodibenzo-p-dioxin	50585-46-1	D-403N	5 mg	D-403S	50 µg/mL	Toluene	
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	D-404N	1 mg	APP-9-167	5 µg/mL	Toluene	
		-----	-----	M-613	10 µg/mL	Toluene	
		-----	-----	D-404S	50 µg/mL	Toluene	
1,3,6,8-Tetrachlorodibenzo-p-dioxin	33423-92-6	D-405N	5 mg	D-405S	50 µg/mL	Toluene	
1,2,8,9-Tetrachlorodibenzo-p-dioxin	116889-69-1	D-406N	5 mg	D-406S	50 µg/mL	Toluene	
1,3,7,9-Tetrachlorodibenzo-p-dioxin	116889-70-4	D-407N	5 mg	D-407S	50 µg/mL	Toluene	
1,2,6,8-Tetrachlorodibenzo-p-dioxin	67323-56-2	D-408N	1 mg	D-408S	50 µg/mL	Toluene	
1,2,6,7-Tetrachlorodibenzo-p-dioxin	41903-57-5	D-409N	5 mg	D-409S	50 µg/mL	Toluene	
1,2,3,4,7-Pentachlorodibenzo-p-dioxin	39227-61-7	D-503N	1 mg	D-503S	50 µg/mL	Toluene	
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	D-501N	5 mg	APP-9-168	5 µg/mL	Toluene	
		-----	-----	D-501S	50 µg/mL	Toluene	
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	71925-18-3	D-504N	1 mg	D-504S	50 µg/mL	Toluene	
1,2,4,7,8-Pentachlorodibenzo-p-dioxin	58802-08-7	D-502N	5 mg	D-502S	50 µg/mL	Toluene	
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	71998-76-0/ 82291-37-0	D-505N	1 mg	D-505S	50 µg/mL	Toluene	
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	58200-66-1	D-603N	1 mg	D-603S	50 µg/mL	Toluene	
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	D-601N	5 mg	APP-9-169	5 µg/mL	Toluene	
		-----	-----	D-601S	50 µg/mL	Toluene	
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	D-602N	1 mg	D-602S	50 µg/mL	Toluene	
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	39227-62-8/ 58802-09-8	D-604N	1 mg	D-604S	50 µg/mL	Toluene	
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	D-605N	1 mg	D-605S	50 µg/mL	Toluene	
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	D-701N	1 mg	D-701S	50 µg/mL	Toluene	
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	58200-70-7	D-702N	5 mg	D-702S	50 µg/mL	Toluene	
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268-87-9	D-801N	50 mg	D-801S	50 µg/mL	Toluene	

Brominated Dibenzo-p-Dioxins



Compound	Cat. No.	Conc.	Matrix	1 mL
1,3,7-Tribromodibenzo-p-dioxin	BDD-301S	10 µg/mL	Toluene	
	BDD-301S-2.5X	25 µg/mL	Toluene	
1,3,8-Tribromodibenzo-p-dioxin	BDD-302S	10 µg/mL	Toluene	
	BDD-302S-2.5X	25 µg/mL	Toluene	
1,2,3,7-Tetrabromodibenzo-p-dioxin	BDD-401S	10 µg/mL	Toluene	
	BDD-401S-2.5X	25 µg/mL	Toluene	
1,2,3,8-Tetrabromodibenzo-p-dioxin	BDD-402S	10 µg/mL	Toluene	
	BDD-402S-2.5X	25 µg/mL	Toluene	
Tetrabromodibenzo-p-dioxin-Mixed Isomers 1,2,4,7-Tetrabromodibenzo-p-dioxin/ 1,2,4,8-Tetrabromodibenzo-p-dioxin	BDD-403S	10 µg/mL	Toluene	
	BDD-403S-2.5X	25 µg/mL	Toluene	
2,3,7,8-Tetrabromodibenzo-p-dioxin 50585-41-6	X-001	1 mg	NEAT	

Chlorodibenzo-p-dioxin Congeners

Canadian Method, Method 1613, 8280



Dioxins

Canadian Dioxin Mixtures

Custom Window Defining Mixture

D-WD	20,000 ng/mL in Toluene	1 x 1 mL
D-WD-2.5X	50,000 ng/mL in Toluene	1 x 1 mL
		7 comps.

- 1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-*p*-dioxin (Isomer pair)
- 1,2,3,8,9-Pentachlorodibenzo-*p*-dioxin
- 1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-*p*-dioxin (Isomer pair)
- 1,2,3,4,6,7-Hexachlorodibenzo-*p*-dioxin
- 1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin
- 1,2,3,4,6,7,9-Heptachlorodibenzo-*p*-dioxin
- Octachlorodibenzo-*p*-dioxin

High
Concentration
Low Cost

Custom Calibration Mixture

D-CAL	20,000 ng/mL in Toluene	1 x 1 mL
D-CAL-2.5X	50,000 ng/mL in Toluene	1 x 1 mL
		6 comps.

- 1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin
- 1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin
- 1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin
- 1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin
- 1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin
- Octachlorodibenzo-*p*-dioxin

Standards of Interest

For more Canadian Methods see International Regional Section

Method 8280A Dioxins & Furans by HRGC/LRMS

Dioxin Mixture

M-8280A		1 x 1 mL
M-8280A-PAK	SAVE	5 x 1 mL
	5 µg/mL each in Toluene	5 comps.

- 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin
- 1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin
- 1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin
- 1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin
- Octachlorodibenzo-*p*-dioxin

Furan Mixture

M-8280B		1 x 1 mL
M-8280B-PAK	SAVE	5 x 1 mL
	5 µg/mL each in Toluene	5 comps.

- 2,3,7,8-Tetrachlorodibenzofuran
- 1,2,3,7,8-Pentachlorodibenzofuran
- 1,2,3,4,7,8-Hexachlorodibenzofuran
- 1,2,3,4,6,7,8-Heptachlorodibenzofuran
- Octachlorodibenzofuran

Column Performance Check

M-8280-CPC		1 x 1 mL
M-8280-CPC-PAK	SAVE	5 x 1 mL
	5 µg/mL each in Toluene	7 comps.

- 1,2,3,4-Tetrachlorodibenzo-*p*-dioxin
- 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin
- 1,2,3,4,7-Pentachlorodibenzo-*p*-dioxin
- 1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin
- 1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin
- 1,2,3,4,6,7,8,9-Octachlorodibenzo-*p*-dioxin
- 2,3,7,8-Tetrachlorodibenzofuran

Method 1613 Dioxins & Furans by HRGC/HRMS

Method 1613 Precision and Recovery Standard

M-1613-PAR Bold (-04)		1 x 1 mL
M-1613-PAR-PAK	SAVE	5 x 1 mL
All units in ng/mL in Nonane		17 comps.

M-1613-CAL	-01	-02	-03	-04	-05
2,3,7,8-Tetrachlorodibenzo- <i>p</i> -dioxin	0.5	2	10	40	200
2,3,7,8-Tetrachlorodibenzofuran	0.5	2	10	40	200
1,2,3,7,8-Pentachlorodibenzo- <i>p</i> -dioxin	2.5	10	50	200	1000
1,2,3,7,8-Pentachlorodibenzofuran	2.5	10	50	200	1000
2,3,4,7,8-Pentachlorodibenzofuran	2.5	10	50	200	1000
1,2,3,4,7,8-Hexachlorodibenzo- <i>p</i> -dioxin	2.5	10	50	200	1000
1,2,3,6,7,8-Hexachlorodibenzo- <i>p</i> -dioxin	2.5	10	50	200	1000
1,2,3,7,8,9-Hexachlorodibenzo- <i>p</i> -dioxin	2.5	10	50	200	1000
1,2,3,4,7,8-Hexachlorodibenzofuran	2.5	10	50	200	1000
1,2,3,6,7,8-Hexachlorodibenzofuran	2.5	10	50	200	1000
1,2,3,7,8,9-Hexachlorodibenzofuran	2.5	10	50	200	1000
2,3,4,6,7,8-Hexachlorodibenzofuran	2.5	10	50	200	1000
1,2,3,4,6,7,8-Heptachlorodibenzo- <i>p</i> -dioxin	2.5	10	50	200	1000
1,2,3,4,6,7,8-Heptachlorodibenzofuran	2.5	10	50	200	1000
1,2,3,4,7,8,9-Heptachlorodibenzofuran	2.5	10	50	200	1000
1,2,3,4,6,7,8,9-Octachlorodibenzo- <i>p</i> -dioxin	5	20	100	400	2000
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	5	20	100	400	2000

2,3,7,8 Isomers only Mix

This solution is for those labs only determining the concentration of the two most toxic isomers.

M-1613-DF		1 x 1 mL
40 ng/mL each in Nonane		2 comps.

- 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin
- 2,3,7,8-Tetrachlorodibenzofuran

Technical Note

These Native Solutions of the USEPA Method 1613 analytes can also be used for USEPA Method 23, 8280, 8290, EU Method EN-1948 and Japanese Methods JIS-K0311 and K0312.

Calibration Set

M-1613-CAL-SET (-01,-02,-03,-04,-05)	5 x 1 mL
All in ng/mL in Nonane	17 comps.



Chlorinated Dibenzofuran Congeners

Chlorinated Dibenzofuran Congeners Minimum purity 98%

Compound	CAS No.	NEAT Cat. No.	Unit	SOLUTION			
				Cat. No.	Conc.	Solvent	1 mL
2-Chlorodibenzofuran	51230-49-0	-----	-----	F-102S	50 µg/mL	Isooctane	
4-Chlorodibenzofuran	74992-96-4	-----	-----	F-104S	50 µg/mL	Isooctane	
Dibenzofuran	132-64-9	F-100N	50 mg	F-100S	50 µg/mL	Isooctane	
				APP-9-059	100 µg/mL	MeOH	
				APP-9-059-2X	200 µg/mL	MeOH	
				AS-E0261	5 mg/mL	MeOH	
				F-201S	50 µg/mL	Isooctane	
2,8-Dichlorodibenzofuran	5409-83-6	F-201N	10 mg	F-201S	50 µg/mL	Isooctane	
1,2,3,4,6,7,8-Heptachlorodibenzofuran	38998-75-3	-----	-----	F-701S-0.1X	5 µg/mL	Toluene	
				F-701S	50 µg/mL	Toluene	
				APP-9-172	5 µg/mL	Toluene	
1,2,3,4,7,8-Hexachlorodibenzofuran	55684-94-1	-----	-----	APP-9-172	5 µg/mL	Toluene	
3-Nitrodibenzofuran	5410-97-9	R-009N	5 mg	R-009S	100 µg/mL	Toluene	
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001-02-0	F-801N	50 mg	F-801S	50 µg/mL	Toluene	
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	-----	-----	APP-9-171	5 µg/mL	Toluene	
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	-----	-----	F-502S-0.1X	5 µg/mL	Toluene	
1,2,3,4-Tetrachlorodibenzofuran	24478-72-6	-----	-----	F-401S	50 µg/mL	Toluene	
1,3,6,8-Tetrachlorodibenzofuran	30402-14-3	-----	-----	F-403S	50 µg/mL	Toluene	
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	F-402N	1 mg	APP-9-170	5 µg/mL	Toluene	
				F-402S	50 µg/mL	Toluene	
				F-301S	50 µg/mL	Isooctane	
2,4,8-Trichlorodibenzofuran	54589-71-8	-----	-----	F-301S	50 µg/mL	Isooctane	

Custom Synthesized Rare Chemicals

Neat Compounds, except as noted	CAS No.	Cat. No.	Unit
2-Amino-7,8-dibromo-dibenzo- <i>p</i> -dioxin	Solution	X-011	1 mL
	0.1 mg/mL in Toluene		
<i>n,n'</i> -bis(4-isopropylphenyl)urea	113260-74-5	X-012	10 mg
4-Chlorophenyl methyl sulfoxide	934-73-6	X-004	10 mg
4,6-Dinitro- <i>o</i> -toluidine	7477-94-3	X-002	10 mg
1,4-Dioxino(2,3- <i>b</i> :5,6- <i>b'</i>)dipyridine (Dipyridine analog of dibenzo- <i>p</i> -dioxin)	262-16-8	X-005	5 mg
9-Methylacridine	611-64-3	X-008	10 mg
2,3,7,8-Tetrabromodibenzo- <i>p</i> -dioxin	50585-41-6	X-001	1 mg
3,3',4,4'-Tetrachloroazobenzene	14047-09-7	X-009	10 mg
3,3',4,4'-Tetrachloroazoxybenzene	21232-47-3	X-010	10 mg
N,N'-bis(2,4,6-Trichlorophenyl)urea	20632-35-3	X-003	10 mg



Polybrominated Diphenyl Ether (PBDE) Congeners



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PBDES

There are 209 congeners of the PBDEs, (Polybrominated Diphenyl Ethers) but what is actually used commercially as flame retardants are usually a technical mixture of several congeners plus other ingredients. There are several similarities with PCBs, as there are also 209 PCB congeners, and the actual material used were technical mixtures composed of several congeners plus other ingredients.

Of the 209 PBDE congeners, there are only several that make up the majority of the technical products recurring in the environment. These are PBDE 28, 47, 99, 100, 153, 154, 183 and 209. While this simplifies the monitoring, it has now been found that some of the congeners lose bromine. In the last few years, the monitoring has resulted in a growing concern about the toxicological effects of this chemical family. Of additional concern are the metabolites and degradates that form in the environment, such as the hydroxy and methoxy derivatives. These metabolites are currently being investigated to see if they may be even more toxic than the parent compound.

AccuStandard has synthesized **over 180 PBDE congeners**, in addition to more than **40 Hydroxy and Methoxy metabolites**. Metabolites and related solutions such as fluorinated analogs that can be used as internal standards are also available. If you do not see the compound you are looking for, call our Technical Service Department to see how AccuStandard can meet your specific analytical challenge.

Polybrominated Diphenyl Ethers (PBDEs)

Compound	CAS No.	Conc.	Solvent	Cat. No.	1 mL
2-Bromodiphenyl ether	7025-06-1	50 µg/mL	Isooctane	BDE-001S	
3-Bromodiphenyl ether	6876-00-2	50 µg/mL	Isooctane	BDE-002S	
4-Bromodiphenyl ether	101-55-3	50 µg/mL	Isooctane	BDE-003S	
2,2'-Dibromodiphenyl ether	51452-87-0	50 µg/mL	Isooctane	BDE-004S	
2,3-Dibromodiphenyl ether	446254-14-4	50 µg/mL	Isooctane	BDE-005S	
2,3'-Dibromodiphenyl ether	147217-72-9	50 µg/mL	Isooctane	BDE-006S	
2,4-Dibromodiphenyl ether	171977-44-9	50 µg/mL	Isooctane	BDE-007S	
2,4'-Dibromodiphenyl ether	147217-71-8	50 µg/mL	Isooctane	BDE-008S	
2,5-Dibromodiphenyl ether	33513-66-3	50 µg/mL	Isooctane	BDE-009S	
2,6-Dibromodiphenyl ether	51930-04-2	50 µg/mL	Isooctane	BDE-010S	
3,3'-Dibromodiphenyl ether	6903-63-5	50 µg/mL	Isooctane	BDE-011S	
3,4-Dibromodiphenyl ether	189084-59-1	50 µg/mL	Isooctane	BDE-012S	
3,4'-Dibromodiphenyl ether	83694-71-7	50 µg/mL	Isooctane	BDE-013S	
3,5-Dibromodiphenyl ether	46438-88-4	50 µg/mL	Isooctane	BDE-014S	
4,4'-Dibromodiphenyl ether	2050-47-7	50 µg/mL	Isooctane	BDE-015S	
2,2',3-Tribromodiphenyl ether	147217-74-1	50 µg/mL	Isooctane	BDE-016S	
2,2',4-Tribromodiphenyl ether	147217-75-2	50 µg/mL	Isooctane	BDE-017S	
2,2',5-Tribromodiphenyl ether	407606-55-7	50 µg/mL	Isooctane	BDE-018S	
2,2',6-Tribromodiphenyl ether	147217-73-0	50 µg/mL	Isooctane	BDE-019S	
2,3,3'-Tribromodiphenyl ether	147217-76-3	50 µg/mL	Isooctane	BDE-020S	
2,3,4-Tribromodiphenyl ether	337513-67-4	50 µg/mL	Isooctane	BDE-021S	
2,3,4'-Tribromodiphenyl ether	446254-15-5	50 µg/mL	Isooctane	BDE-022S	
2,3,5-Tribromodiphenyl ether	446254-16-6	50 µg/mL	Isooctane	BDE-023S	
2,3',4-Tribromodiphenyl ether	147217-77-4	50 µg/mL	Isooctane	BDE-025S	
2,3',5-Tribromodiphenyl ether	337513-75-4	50 µg/mL	Isooctane	BDE-026S	
2,3',6-Tribromodiphenyl ether	337513-53-8	50 µg/mL	Isooctane	BDE-027S	
2,4,4'-Tribromodiphenyl ether	41318-75-6	50 µg/mL	Isooctane	BDE-028S	
2,4,5-Tribromodiphenyl ether	337513-56-1	50 µg/mL	Isooctane	BDE-029S	
2,4,6-Tribromodiphenyl ether	155999-95-4	50 µg/mL	Isooctane	BDE-030S	
2,4',5-Tribromodiphenyl ether	65075-08-3	50 µg/mL	Isooctane	BDE-031S	
2,4',6-Tribromodiphenyl ether	189084-60-4	50 µg/mL	Isooctane	BDE-032S	
2',3,4-Tribromodiphenyl ether	147217-78-5	50 µg/mL	Isooctane	BDE-033S	
2',3,5-Tribromodiphenyl ether	446254-17-7	50 µg/mL	Isooctane	BDE-034S	
3,3',4-Tribromodiphenyl ether	147217-80-9	50 µg/mL	Isooctane	BDE-035S	
3,3',5-Tribromodiphenyl ether	147217-79-6	50 µg/mL	Isooctane	BDE-036S	
3,4,4'-Tribromodiphenyl ether	147217-81-0	50 µg/mL	Isooctane	BDE-037S	
3,4,5-Tribromodiphenyl ether	337513-54-9	50 µg/mL	Isooctane	BDE-038S	
3,4',5-Tribromodiphenyl ether		50 µg/mL	Isooctane	BDE-039S	

Additional congeners, mixes and metabolites are added continuously. Check our website for updates.

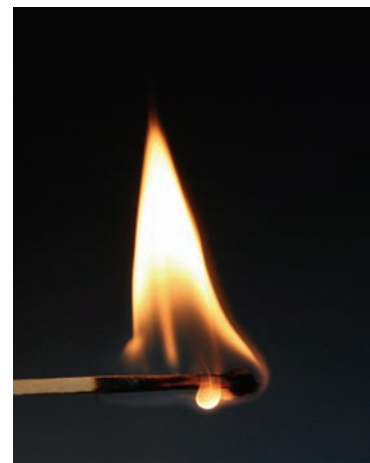


Polybrominated Diphenyl Ether (PBDE) Congeners

PBDES

Polybrominated Diphenyl Ethers (PBDEs)

Compound	CAS No.	Conc.	Solvent	Cat. No.	1 mL
2,2',3,3'-Tetrabromodiphenyl ether		50 µg/mL	Isooctane	BDE-040S	
2,2',3,4'-Tetrabromodiphenyl ether	337513-68-5	50 µg/mL	Isooctane	BDE-041S	
2,2',3,4'-Tetrabromodiphenyl ether	446254-18-8	50 µg/mL	Isooctane	BDE-042S	
2,2',3,5'-Tetrabromodiphenyl ether	446254-19-9	50 µg/mL	Isooctane	BDE-043S	
2,2',3,5'-Tetrabromodiphenyl ether	446254-20-2	50 µg/mL	Isooctane	BDE-044S	
2,2',3,6'-Tetrabromodiphenyl ether	446254-22-4	50 µg/mL	Isooctane	BDE-046S	
2,2',4,4'-Tetrabromodiphenyl ether	5436-43-1	50 µg/mL	Isooctane	BDE-047S	
2,2',4,5'-Tetrabromodiphenyl ether	337513-55-0	50 µg/mL	Isooctane	BDE-048S	
2,2',4,5'-Tetrabromodiphenyl ether	243982-82-3	50 µg/mL	Isooctane	BDE-049S	
2,2',4,6'-Tetrabromodiphenyl ether	446254-23-5	50 µg/mL	Isooctane	BDE-050S	
2,2',4,6'-Tetrabromodiphenyl ether	189084-57-9	50 µg/mL	Isooctane	BDE-051S	
2,2',5,5'-Tetrabromodiphenyl ether	446254-24-6	50 µg/mL	Isooctane	BDE-052S	
2,2',5,6'-Tetrabromodiphenyl ether	446254-25-7	50 µg/mL	Isooctane	BDE-053S	
2,2',6,6'-Tetrabromodiphenyl ether NEW		50 µg/mL	Isooctane	BDE-054S	
2,3,3',4'-Tetrabromodiphenyl ether		50 µg/mL	Isooctane	BDE-055S	
2,3,3',4'-Tetrabromodiphenyl ether		50 µg/mL	Isooctane	BDE-056S	
2,3,3',5'-Tetrabromodiphenyl ether		50 µg/mL	Isooctane	BDE-057S	
2,3,3',5'-Tetrabromodiphenyl ether		50 µg/mL	Isooctane	BDE-058S	
2,3,4,4'-Tetrabromodiphenyl ether	446254-31-5	50 µg/mL	Isooctane	BDE-060S	
2,3,4,5'-Tetrabromodiphenyl ether	446254-32-6	50 µg/mL	Isooctane	BDE-061S	
2,3,4,6'-Tetrabromodiphenyl ether	446254-33-7	50 µg/mL	Isooctane	BDE-062S	
2,3,4,5'-Tetrabromodiphenyl ether	446254-34-8	50 µg/mL	Isooctane	BDE-063S	
2,3',4,4'-Tetrabromodiphenyl ether	189084-61-5	50 µg/mL	Isooctane	BDE-066S	
2,3',4,5'-Tetrabromodiphenyl ether	446254-37-1	50 µg/mL	Isooctane	BDE-067S	
2,3',4,5'-Tetrabromodiphenyl ether	446254-38-2	50 µg/mL	Isooctane	BDE-068S	
2,3',4,6'-Tetrabromodiphenyl ether	327185-09-1	50 µg/mL	Isooctane	BDE-069S	
2,3',4',5'-Tetrabromodiphenyl ether	446254-39-3	50 µg/mL	Isooctane	BDE-070S	
2,3',4',6'-Tetrabromodiphenyl ether	189084-62-6	50 µg/mL	Isooctane	BDE-071S	
2,3',5,5'-Tetrabromodiphenyl ether	446254-40-6	50 µg/mL	Isooctane	BDE-072S	
2,3',5,6'-Tetrabromodiphenyl ether	446254-41-7	50 µg/mL	Isooctane	BDE-073S	
2,4,4',5'-Tetrabromodiphenyl ether	446254-42-8	50 µg/mL	Isooctane	BDE-074S	
2,4,4',6'-Tetrabromodiphenyl ether	189084-63-7	50 µg/mL	Isooctane	BDE-075S	
2',3,4,5'-Tetrabromodiphenyl ether	446254-43-9	50 µg/mL	Isooctane	BDE-076S	
3,3',4,4'-Tetrabromodiphenyl ether	93703-48-1	50 µg/mL	Isooctane	BDE-077S	
3,3',4,5'-Tetrabromodiphenyl ether	446254-45-1	50 µg/mL	Isooctane	BDE-078S	
3,3',4,5'-Tetrabromodiphenyl ether	446254-48-4	50 µg/mL	Isooctane	BDE-079S	
3,3',5,5'-Tetrabromodiphenyl ether	103173-66-6	50 µg/mL	Isooctane	BDE-080S	
3,4,4',5'-Tetrabromodiphenyl ether	446254-50-8	50 µg/mL	Isooctane	BDE-081S	
2,2',3,3',4'-Pentabromodiphenyl ether NEW		50 µg/mL	Isooctane	BDE-082S	
2,2',3,3',5'-Pentabromodiphenyl ether	446254-51-9	50 µg/mL	Isooctane	BDE-083S	
2,2',3,4,4'-Pentabromodiphenyl ether	182346-21-0	50 µg/mL	Isooctane	BDE-085S	
2,2',3,4,5'-Pentabromodiphenyl ether	446254-53-1	50 µg/mL	Isooctane	BDE-086S	
2,2',3,4,5'-Pentabromodiphenyl ether	446254-54-2	50 µg/mL	Isooctane	BDE-087S	
2,2',3,4,6'-Pentabromodiphenyl ether	446254-55-3	50 µg/mL	Isooctane	BDE-088S	
2,2',3,4,6'-Pentabromodiphenyl ether NEW		50 µg/mL	Isooctane	BDE-089S	
2,2',3,4',5'-Pentabromodiphenyl ether	446254-57-5	50 µg/mL	Isooctane	BDE-090S	
2,2',3,5,5'-Pentabromodiphenyl ether	446254-59-7	50 µg/mL	Isooctane	BDE-092S	
2,2',3,5,6'-Pentabromodiphenyl ether	446254-61-1	50 µg/mL	Isooctane	BDE-094S	
2,2',3',4,5'-Pentabromodiphenyl ether	446254-64-4	50 µg/mL	Isooctane	BDE-097S	
2,2',3',4,6'-Pentabromodiphenyl ether	38463-82-0	50 µg/mL	Isooctane	BDE-098S	
2,2',4,4',5'-Pentabromodiphenyl ether	60348-60-9	50 µg/mL	Isooctane	BDE-099S	
2,2',4,4',6'-Pentabromodiphenyl ether	189084-64-8	50 µg/mL	Isooctane	BDE-100S	
2,2',4,5,5'-Pentabromodiphenyl ether	446254-65-5	50 µg/mL	Isooctane	BDE-101S	
2,2',4,5,6'-Pentabromodiphenyl ether	446254-66-6	50 µg/mL	Isooctane	BDE-102S	
2,2',4,5',6'-Pentabromodiphenyl ether	446254-67-7	50 µg/mL	Isooctane	BDE-103S	
2,2',4,6,6'-Pentabromodiphenyl ether	446254-68-8	50 µg/mL	Isooctane	BDE-104S	
2,3,3',4,4'-Pentabromodiphenyl ether	373594-78-6	50 µg/mL	Isooctane	BDE-105S	
2,3,3',4,5'-Pentabromodiphenyl ether	446254-69-9	50 µg/mL	Isooctane	BDE-106S	
2,3,3',4',5'-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-107S	
2,3,3',4,5'-Pentabromodiphenyl ether NEW	446254-71-3	50 µg/mL	Isooctane	BDE-108S	
2,3,3',4,6'-Pentabromodiphenyl ether	446254-72-4	50 µg/mL	Isooctane	BDE-109S	
2,3,3',5,5'-Pentabromodiphenyl ether	446254-74-6	50 µg/mL	Isooctane	BDE-111S	
2,3,4,4',5'-Pentabromodiphenyl ether	446254-77-9	50 µg/mL	Isooctane	BDE-114S	
2,3,4,4',6'-Pentabromodiphenyl ether	446254-78-0	50 µg/mL	Isooctane	BDE-115S	
2,3,4,5,6'-Pentabromodiphenyl ether	189084-65-9	50 µg/mL	Isooctane	BDE-116S	
2,3',4,4',5'-Pentabromodiphenyl ether	446254-80-4	50 µg/mL	Isooctane	BDE-118S	
2,3',4,4',6'-Pentabromodiphenyl ether	189084-66-0	50 µg/mL	Isooctane	BDE-119S	
2,3',4,5,5'-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-120S	
2,3',4,5',6'-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-121S	
2',3,3',4,5'-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-122S	
2',3,4,4',5'-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-123S	
2',3,4,5,5'-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-124S	
2',3,4,5,6'-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-125S	
3,3',4,4',5'-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-126S	
3,3',4,5,5'-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-127S	



Additional congeners, mixes and metabolites are added continuously. Check our website for updates.

Polybrominated Diphenyl Ether (PBDE) Congeners



PBDES

Polybrominated Diphenyl Ethers (PBDEs)

Compound	CAS No.	Conc.	Solvent	Cat. No.	1 mL
2,2',3,3',4,4'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-128S	
2,2',3,3',4,5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-129S	
2,2',3,3',4,5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-130S	
2,2',3,3',4,6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-131S	
2,2',3,3',5,5'-Hexabromodiphenyl ether NEW		50 µg/mL	Isooctane	BDE-133S	
2,2',3,3',6,6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-136S	
2,2',3,4,4',5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-137S	
2,2',3,4,4',5'-Hexabromodiphenyl ether	182677-30-1	50 µg/mL	Isooctane	BDE-138S	
2,2',3,4,4',6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-139S	
2,2',3,4,4',6'-Hexabromodiphenyl ether	243982-83-4	50 µg/mL	Isooctane	BDE-140S	
2,2',3,4,4',5,5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-141S	
2,2',3,4,5,6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-142S	
2,2',3,4,5,6'-Hexabromodiphenyl ether NEW		50 µg/mL	Isooctane	BDE-143S	
2,2',3,4,5',6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-144S	
2,2',3,4,6,6'-Hexabromodiphenyl ether NEW		50 µg/mL	Isooctane	BDE-145S	
2,2',3,4',5,5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-146S	
2,2',3,4',5,6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-148S	
2,2',3,4',6,6'-Hexabromodiphenyl ether NEW		50 µg/mL	Isooctane	BDE-150S	
2,2',4,4',5,5'-Hexabromodiphenyl ether	68631-49-2	50 µg/mL	Isooctane	BDE-153S	
2,2',4,4',5,6'-Hexabromodiphenyl ether	207122-15-4	50 µg/mL	Isooctane	BDE-154S	
2,2',4,4',6,6'-Hexabromodiphenyl ether	35854-94-5	50 µg/mL	Isooctane	BDE-155S	
2,3,3',4,4',5'-Hexabromodiphenyl ether	35854-94-5	50 µg/mL	Isooctane	BDE-156S	
2,3,3',4,4',5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-157S	
2,3,3',4,4',6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-158S	
2,3,3',4,4',5,5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-159S	
2,3,3',4,5,6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-160S	
2,3,3',4,5',6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-161S	
2,3,3',4',5,5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-162S	
2,3,4,4',5,6'-Hexabromodiphenyl ether	189084-58-0	50 µg/mL	Isooctane	BDE-166S	
2,3',4,4',5,5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-167S	
2,3',4,4',5,6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-168S	
3,3',4,4',5,5'-Hexabromodiphenyl ether NEW		50 µg/mL	Isooctane	BDE-169S	
2,2',3,3',4,4',5'-Heptabromodiphenyl ether NEW		50 µg/mL	Isooctane	BDE-170S	
2,2',3,3',4,4',6'-Heptabromodiphenyl ether NEW		50 µg/mL	Isooctane	BDE-171S	
2,2',3,3',4,5,5'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-172S	
2,2',3,3',4,5,6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-173S	
2,2',3,3',4,5',6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-175S	
2,2',3,3',4',6,6'-Heptabromodiphenyl ether NEW		50 µg/mL	Isooctane	BDE-176S	
2,2',3,3',4',5,6'-Heptabromodiphenyl ether NEW		50 µg/mL	Isooctane	BDE-177S	
2,2',3,3',5,5',6'-Heptabromodiphenyl ether NEW		50 µg/mL	Isooctane	BDE-178S	
2,2',3,4,4',5,5'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-180S	
2,2',3,4,4',5,6'-Heptabromodiphenyl ether	189084-67-1	50 µg/mL	Isooctane	BDE-181S	
2,2',3,4,4',5,6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-182S	
2,2',3,4,4',5',6'-Heptabromodiphenyl ether	207122-16-5	50 µg/mL	Isooctane	BDE-183S	
2,2',3,4,4',6,6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-184S	
2,2',3,4,5,5',6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-185S	
2,2',3,4,5,6,6'-Heptabromodiphenyl ether NEW		50 µg/mL	Isooctane	BDE-186S	
2,2',3',4',5,6,6'-Heptabromodiphenyl ether NEW		50 µg/mL	Isooctane	BDE-188S	
2,3,3',4,4',5,5'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-189S	
2,3,3',4,4',5,6'-Heptabromodiphenyl ether	189084-68-2	50 µg/mL	Isooctane	BDE-190S	
2,3,3',4,4',5',6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-191S	
2,3,3',4,4',5,5',6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-192S	
2,3,3',4',5,5',6'-Heptabromodiphenyl ether NEW		50 µg/mL	Isooctane	BDE-193S	
2,2',3,3',4,4',5,5'-Octabromodiphenyl ether NEW		50 µg/mL	Isooctane	BDE-194S	
2,2',3,3',4,4',5,6'-Octabromodiphenyl ether NEW		50 µg/mL	Isooctane	BDE-195S	
2,2',3,3',4,4',5,6'-Octabromodiphenyl ether		50 µg/mL	Isooctane	BDE-196S	
2,2',3,3',4,4',6,6'-Octabromodiphenyl ether		50 µg/mL	Isooctane	BDE-197S	
2,2',3,3',4,5,5',6'-Octabromodiphenyl ether		50 µg/mL	Isooctane	BDE-198S	
2,2',3,3',4,5',6,6'-Octabromodiphenyl ether NEW		50 µg/mL	Isooctane	BDE-201S	
2,2',3,3',5,5',6,6'-Octabromodiphenyl ether NEW		50 µg/mL	Isooctane	BDE-202S	
2,2',3,4,4',5,5',6'-Octabromodiphenyl ether		50 µg/mL	Isooctane	BDE-203S	
2,2',3,4,4',5,6,6'-Octabromodiphenyl ether		50 µg/mL	Isooctane	BDE-204S	
2,3,3',4,4',5,5',6'-Octabromodiphenyl ether		50 µg/mL	Isooctane	BDE-205S	
2,2',3,3',4,4',5,5',6'-Nonabromodiphenyl ether		50 µg/mL	Isooctane	BDE-206S	
2,2',3,3',4,4',5,6,6'-Nonabromodiphenyl ether		50 µg/mL	Isooctane	BDE-207S-R1	
2,2',3,3',4,5,5',6,6'-Nonabromodiphenyl ether		50 µg/mL	Isooctane	BDE-208S	
Decabromodiphenyl ether	1163-19-5	50 µg/mL	Isooctane:Toluene 9:1	BDE-209S	



PBDE Mixtures & Calibration Curve

PBDE Congeners common to Technical Mixtures (Bromkal™)

BDE-BROMKAL 1 x 1 mL
10 µg/mL each in Isooctane 6 comps.

- 2,4,4'-Tribromodiphenyl ether (#28)
- 2,2',4,4'-Tetrabromodiphenyl ether (#47)
- 2,2',4,4',5-Pentabromodiphenyl ether (#99)
- 2,2',4,4',6-Pentabromodiphenyl ether (#100)
- 2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)
- 2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)

PBDE Technical Grade

50 µg/mL in Isooctane	Cat. No.	1 mL
Bromkal DE-70-5 (Pentas)	BDE-705	
Bromkal DE-71 (Pentas)	BDE-710	
Bromkal DE-73-6 (Hexas)	BDE-736	
Bromkal DE-79-8 (Octas)	BDE-798	
FR-300BA (Deca)	FRS-009N / 10 mg	
100 µg/mL in Toluene	FRS-009S	

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Hexabromocyclododecane Isomers

100 µg/mL Toluene in	Cat. No.	1 mL
α-Hexabromocyclododecane	HXBCD-01	
β-Hexabromocyclododecane	HXBCD-02	
γ-Hexabromocyclododecane	HXBCD-03	

California Method 750-M Standard

BDE-CALEWS 1 x 1 mL
10 µg/mL each in Isooctane 13 comps.

- 2,2',4-Tribromodiphenyl ether (#17)
- 2,4,4'-Tribromodiphenyl ether (#28)
- 2,2',4,4'-Tetrabromodiphenyl ether (#47)
- 2,3',4,4'-Tetrabromodiphenyl ether (#66)
- 2,3',4',6-Tetrabromodiphenyl ether (#71)
- 2,2',4,4',5-Pentabromodiphenyl ether (#99)
- 2,2',4,4',6-Pentabromodiphenyl ether (#100)
- 2,2',3,4,4',5'-Hexabromodiphenyl ether (#138)
- 2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)
- 2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)
- 2,2',3,4,4',5',6-Heptabromodiphenyl ether (#183)
- 2,2',3,3',4,4',5,5',6,6'-Decabromodiphenyl ether (#209)
- 2,2',6,6'-Tetrabromobisphenol A

PBDE Congeners common to California Environment

BDE-CAE-1 / 1 x 1 mL
10 µg/mL each in Isooctane 7 comps.

- 2,4,4'-Tribromodiphenyl ether (#28)
- 2',3,4-Tribromodiphenyl ether (#33)
- 2,2',4,4'-Tetrabromodiphenyl ether (#47)
- 2,2',4,4',5-Pentabromodiphenyl ether (#99)
- 2,2',4,4',6-Pentabromodiphenyl ether (#100)
- 2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)
- 2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)

PBDEs in Columbia River

BDE-CR / 1 x 1 mL
10 µg/mL each in Isooctane 12 comps.

- 4,4'-Dibromodiphenyl ether (#15)
- 2,4,4'-Tribromodiphenyl ether (#28)
- 2',3,4-Tribromodiphenyl ether (#33)
- 2,2',4,4'-Tetrabromodiphenyl ether (#47)
- 2,2',4,5'-Tetrabromodiphenyl ether (#49)
- 2,3',4,4'-Tetrabromodiphenyl ether (#66)
- 2,4,4',6-Tetrabromodiphenyl ether (#75)
- 2,2',4,4',5-Pentabromodiphenyl ether (#99)
- 2,2',4,4',6-Pentabromodiphenyl ether (#100)
- 2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)
- 2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)
- 2,2',4,4',6,6'-Hexabromodiphenyl ether (#155)

Bromodiphenyl Ethers Lake Michigan Study

BDE-LMS 1 x 1 mL
10 µg/mL each in Isooctane 9 comps.

- 2,4,4'-Tribromodiphenyl ether (#28)
- 2,2',4,4'-Tetrabromodiphenyl ether (#47)
- 2,3',4,4'-Tetrabromodiphenyl ether (#66)
- 2,2',3,4,4'-Pentabromodiphenyl ether (#85)
- 2,2',4,4',5-Pentabromodiphenyl ether (#99)
- 2,2',4,4',6-Pentabromodiphenyl ether (#100)
- 2,2',3,4,4',5'-Hexabromodiphenyl ether (#138)
- 2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)
- 2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)

DE-71 (Pentas) Great Lakes

BDE-710-GL 1 x 1 mL
50 µg/mL each in Isooctane

Bromkal DE-71

DE-79 (Octas) Great Lakes

BDE-798-GL 1 x 1 mL
50 µg/mL each in Isooctane

DE-79 (Great Lakes)

Common PBDEs in the Environment

BDE-USE 1 x 1 mL
10 µg/mL each in Isooctane 5 comps.

- 2,2',4,4'-Tetrabromodiphenyl ether (#47)
- 2,2',4,4',5-Pentabromodiphenyl ether (#99)
- 2,2',4,4',6-Pentabromodiphenyl ether (#100)
- 2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)
- 2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)

ISO/DIS 22032

ISO/DIS 22032 Calibration Curve Set

ISO/DIS-22032-SET

At stated conc. (ng/mL) in Isooctane

7 x 1 mL
8 comps. each

ISO/DIS-22032	01	02	03	04	05	06	07
2,2',4,4'-Tetrabromodiphenyl ether (#47)	5	12.5	25	50	100	150	250
2,2',4,4',5-Pentabromodiphenyl ether (#99)	5	12.5	25	50	100	150	250
2,2',4,4',6-Pentabromodiphenyl ether (#100)	5	12.5	25	50	100	150	250
2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	5	12.5	25	50	100	150	250
2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	5	12.5	25	50	100	150	250
2,2',3,4,4',5',6-Heptabromodiphenyl ether (#183)	5	12.5	25	50	100	150	250
2,3,3',4,4',5,5',6-Octabromodiphenyl ether (#205)	5	12.5	25	50	100	150	250
2,2',3,3',4,4',5,5',6,6'-Decabromodiphenyl ether (#209)	25	50	100	200	500	700	1000

ISO/DIS 22032 Internal Standard for BDE-47, 99 & 100

ISO22032-IS-1-5ML 1 x 5 mL
ISO22032-IS-1-10ML 1 x 10 mL
100 ng/mL each in Isooctane

2,2',4,4'-Tetrabromodiphenyl ether

ISO/DIS 22032 Internal Standard for BDE-153, 154 & 183

ISO22032-IS-2-5ML 1 x 5 mL
ISO22032-IS-2-10ML 1 x 10 mL
100 ng/mL each in Isooctane

2,2',3,4,4',5,6-Heptabromodiphenyl ether



Mixtures of PBDEs Standard Solution for Accuracy & Precision

BDE-AAP-A	1 x 1 mL	BDE-AAP-A-15X	1 x 1 mL
<i>At stated conc. in Isooctane</i>	39 comps.	<i>At stated conc. in Isooctane</i>	39 comps.
	ng/mL		µg/mL
2-Bromodiphenyl ether (#1)	100	2-Bromodiphenyl ether (#1)	1.5
3-Bromodiphenyl ether (#2)	100	3-Bromodiphenyl ether (#2)	1.5
4-Bromodiphenyl ether (#3)	100	4-Bromodiphenyl ether (#3)	1.5
2,4-Dibromodiphenyl ether (#7)	100	2,4-Dibromodiphenyl ether (#7)	1.5
2,4'-Dibromodiphenyl ether (#8)	100	2,4'-Dibromodiphenyl ether (#8)	1.5
2,6-Dibromodiphenyl ether (#10)	100	2,6-Dibromodiphenyl ether (#10)	1.5
3,3'-Dibromodiphenyl ether (#11)	100	3,3'-Dibromodiphenyl ether (#11)	1.5
3,4-Dibromodiphenyl ether (#12)	100	3,4-Dibromodiphenyl ether (#12)	1.5
3,4'-Dibromodiphenyl ether (#13)	100	3,4'-Dibromodiphenyl ether (#13)	1.5
4,4'-Dibromodiphenyl ether (#15)	100	4,4'-Dibromodiphenyl ether (#15)	1.5
2,2',4,-Tribromodiphenyl ether (#17)	100	2,2',4,-Tribromodiphenyl ether (#17)	1.5
2,3',4-Tribromodiphenyl ether (#25)	100	2,3',4-Tribromodiphenyl ether (#25)	1.5
2,4,4'-Tribromodiphenyl ether (#28)	100	2,4,4'-Tribromodiphenyl ether (#28)	1.5
2,4,6-Tribromodiphenyl ether (#30)	100	2,4,6-Tribromodiphenyl ether (#30)	1.5
2,4',6-Tribromodiphenyl ether (#32)	100	2,4',6-Tribromodiphenyl ether (#32)	1.5
2',3,4-Tribromodiphenyl ether (#33)	100	2',3,4-Tribromodiphenyl ether (#33)	1.5
3,3',4-Tribromodiphenyl ether (#35)	100	3,3',4-Tribromodiphenyl ether (#35)	1.5
3,4,4'-Tribromodiphenyl ether (#37)	100	3,4,4'-Tribromodiphenyl ether (#37)	1.5
2,2',4,4'-Tetrabromodiphenyl ether (#47)	100	2,2',4,4'-Tetrabromodiphenyl ether (#47)	1.5
2,2',4,5'-Tetrabromodiphenyl ether (#49)	100	2,2',4,5'-Tetrabromodiphenyl ether (#49)	1.5
2,3',4,4'-Tetrabromodiphenyl ether (#66)	100	2,3',4,4'-Tetrabromodiphenyl ether (#66)	1.5
2,3',4',6-Tetrabromodiphenyl ether (#71)	100	2,3',4',6-Tetrabromodiphenyl ether (#71)	1.5
2,4,4',6-Tetrabromodiphenyl ether (#75)	100	2,4,4',6-Tetrabromodiphenyl ether (#75)	1.5
3,3',4,4'-Tetrabromodiphenyl ether (#77)	100	3,3',4,4'-Tetrabromodiphenyl ether (#77)	1.5
2,2',3,4,4'-Pentabromodiphenyl ether (#85)	150	2,2',3,4,4'-Pentabromodiphenyl ether (#85)	2.25
2,2',4,4',5-Pentabromodiphenyl ether (#99)	150	2,2',4,4',5-Pentabromodiphenyl ether (#99)	2.25
2,2',4,4',6-Pentabromodiphenyl ether (#100)	150	2,2',4,4',6-Pentabromodiphenyl ether (#100)	2.25
2,3,4,5,6-Pentabromodiphenyl ether (#116)	150	2,3,4,5,6-Pentabromodiphenyl ether (#116)	2.25
2,3',4,4',5-Pentabromodiphenyl ether (#118)	150	2,3',4,4',5-Pentabromodiphenyl ether (#118)	2.25
2,3',4,4',6-Pentabromodiphenyl ether (#119)	150	2,3',4,4',6-Pentabromodiphenyl ether (#119)	2.25
3,3',4,4',5-Pentabromodiphenyl ether (#126)	150	3,3',4,4',5-Pentabromodiphenyl ether (#126)	2.25
2,2',3,4,4',5'-Hexabromodiphenyl ether (#138)	200	2,2',3,4,4',5'-Hexabromodiphenyl ether (#138)	3.0
2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	200	2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	3.0
2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	200	2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	3.0
2,2',4,4',6,6'-Hexabromodiphenyl ether (#155)	200	2,2',4,4',6,6'-Hexabromodiphenyl ether (#155)	3.0
2,3,4,4',5,6-Hexabromodiphenyl ether (#166)	200	2,3,4,4',5,6-Hexabromodiphenyl ether (#166)	3.0
2,2',3,4,4',5,6-Heptabromodiphenyl ether (#181)	250	2,2',3,4,4',5,6-Heptabromodiphenyl ether (#181)	3.75
2,2',3,4,4',5',6-Heptabromodiphenyl ether (#183)	250	2,2',3,4,4',5',6-Heptabromodiphenyl ether (#183)	3.75
2,3,3',4,4',5,6-Heptabromodiphenyl ether (#190)	250	2,3,3',4,4',5,6-Heptabromodiphenyl ether (#190)	3.75

Technical Note

Responding to the need for the analysis of polybrominated diphenyl ether (PBDE) congeners, the EPA has developed Method 1614. Method 1614 is recommended for analysis of aqueous, solid, tissue, and multi-phase environmental samples. Each formulation is prepared using PBDEs which are synthesized and analyzed by AccuStandard.

Method 1614

Additional congeners, mixes and metabolites are added continuously. For an update, check our website. AccuStandard.com

Mixture of Commonly Occurring PBDE Congeners for Precision and Recovery

BDE-COC	1 x 1 mL
<i>At stated conc. in Isooctane</i>	14 comps.
	µg/mL
2,2',4,-Tribromodiphenyl ether (#17)	5
2,4,4'-Tribromodiphenyl ether (#28)	5
2,2',4,4'-Tetrabromodiphenyl ether (#47)	5
2,3',4,4'-Tetrabromodiphenyl ether (#66)	5
2,3',4',6-Tetrabromodiphenyl ether (#71)	5
2,2',3,4,4'-Pentabromodiphenyl ether (#85)	5
2,2',4,4',5-Pentabromodiphenyl ether (#99)	5
2,2',4,4',6-Pentabromodiphenyl ether (#100)	5
2,2',3,4,4',5'-Hexabromodiphenyl ether (#138)	5
2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	5
2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	5
2,2',3,4,4',5,6-Heptabromodiphenyl ether (#183)	5
2,3,3',4,4',5,6-Heptabromodiphenyl ether (#190)	5
Decabromodiphenyl ether (#209)	25

PBDE Congeners of Primary Interest

BDE-CSM	1 x 1 mL
<i>At stated conc. in Isooctane</i>	8 comps.
	µg/mL
2,4,4'-Tribromodiphenyl ether (#28)	20
2,2',4,4'-Tetrabromodiphenyl ether (#47)	20
2,2',4,4',5-Pentabromodiphenyl ether (#99)	20
2,2',4,4',6-Pentabromodiphenyl ether (#100)	20
2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	20
2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	20
2,2',3,4,4',5,6-Heptabromodiphenyl ether (#183)	20
Decabromodiphenyl ether (#209)	200

PBDE Congeners of Primary Interest

Calibration Mix

BDE-CM	1 x 1 mL
<i>At stated conc. in Isooctane</i>	8 comps.
	µg/mL
2,4,4'-Tribromodiphenyl ether (#28)	2.5
2,2',4,4'-Tetrabromodiphenyl ether (#47)	2.5
2,2',4,4',5-Pentabromodiphenyl ether (#99)	2.5
2,2',4,4',6-Pentabromodiphenyl ether (#100)	2.5
2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	2.5
2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	2.5
2,2',3,4,4',5,6-Heptabromodiphenyl ether (#183)	2.5
Decabromodiphenyl ether (#209)	25

Matrix Spiking Solution

BDE-MS	1 x 1 mL
<i>At stated conc. in Isooctane</i>	8 comps.
	ng/mL
2,4,4'-Tribromodiphenyl ether (#28)	1
2,2',4,4'-Tetrabromodiphenyl ether (#47)	1
2,2',4,4',5-Pentabromodiphenyl ether (#99)	1
2,2',4,4',6-Pentabromodiphenyl ether (#100)	1
2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	1
2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	1
2,2',3,4,4',5,6-Heptabromodiphenyl ether (#183)	1
Decabromodiphenyl ether (#209)	10

PBDEs in Method 1614

BDE-EPA-SET	8 x 1 mL
<i>50 µg/mL each in Isooctane</i>	8 comps.
	µg/mL
2,4,4'-Tribromodiphenyl ether (#28)	400
2,2',4,4'-Tetrabromodiphenyl ether (#47)	400
2,2',4,4',5-Pentabromodiphenyl ether (#99)	400
2,2',4,4',6-Pentabromodiphenyl ether (#100)	400
2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	400
2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	400
2,2',3,4,4',5,6-Heptabromodiphenyl ether (#183)	400
Decabromodiphenyl ether (#209)	4000



PBDE Metabolites

PBDEs Metabolites: Hydroxy and Methoxy Polybromodiphenyl Ethers congeners

Hydroxylated and methoxylated PBDEs may be formed as metabolites of the widely used PBDE flame retardants. AccuStandard's aim is to synthesize authentic OH-and MeO-PBDE reference standards for analytical and toxicological studies. Since this is an ongoing project, please check the website for the latest update of this list or request specific congeners to be synthesized.

PBDE Metabolites

Short Form	Compound	Conc.	Solvent	Cat. No.	1 mL
2'-OH-BDE-003	2'-Hydroxy-4-monobromodiphenyl ether	50 µg/mL	AcCN	HBDE-1001S-CN	
3'-OH-BDE-007	3'-Hydroxy-2,4-dibromodiphenyl ether	50 µg/mL	AcCN	HBDE-2001S-CN	
2'-OH-BDE-007	2'-Hydroxy-2,4-dibromodiphenyl ether	10 µg/mL	AcCN	HBDE-2002S-CN-0.2X	
4'-OH-BDE-017	4'-Hydroxy-2,2',4-tribromodiphenyl ether	50 µg/mL	AcCN	HBDE-3001S-CN	
3'-OH-BDE-028	3'-Hydroxy-2,4,4'-tribromodiphenyl ether	50 µg/mL	AcCN	HBDE-3002S-CN	
2'-OH-BDE-028	2'-Hydroxy-2,4,4'-tribromodiphenyl ether NEW	50 µg/mL	AcCN	HBDE-3003S-CN	
4'-OH-BDE-042	4'-Hydroxy-2,2',3,4'-tetrabromodiphenyl ether	10 µg/mL	AcCN	HBDE-4001S-CN-0.2X	
4'-OH-BDE-049	4'-Hydroxy-2,2',4,5'-tetrabromodiphenyl ether	10 µg/mL	AcCN	HBDE-4002S-CN-0.2X	
3'-OH-BDE-047	3'-Hydroxy-2,2',4,4'-tetrabromodiphenyl ether	50 µg/mL	AcCN	HBDE-4003S-CN	
5'-OH-BDE-047	5'-Hydroxy-2,2',4,4'-tetrabromodiphenyl ether	50 µg/mL	AcCN	HBDE-4004S-CN	
6'-OH-BDE-047	6'-Hydroxy-2,2',4,4'-tetrabromodiphenyl ether	10 µg/mL	AcCN	HBDE-4005S-CN-0.2X	
		10 µg/mL	Toluene	HBDE-4005S-T-0.2X	
2'-OH-BDE-068	2'-Hydroxy-2,3,4,5'-tetrabromodiphenyl ether NEW	10 µg/mL	AcCN	HBDE-4006S-CN-0.2X	
		10 µg/mL	Toluene	HBDE-4006S-T-0.2X	
		50 µg/mL	AcCN	HBDE-4006S-CN	
		50 µg/mL	Toluene	HBDE-4006S-T	
2'-OH-BDE-075	2'-Hydroxy-2,4,4',6-tetrabromodiphenyl ether NEW	10 µg/mL	AcCN	HBDE-4007S-CN-0.2X	
4'-OH-BDE-090	4'-Hydroxy-2,2',3,4',5-pentabromodiphenyl ether	10 µg/mL	AcCN	HBDE-5001S-CN-0.2X	
6'-OH-BDE-085	6'-Hydroxy-2,2',3,4,4'-pentabromodiphenyl ether	10 µg/mL	AcCN	HBDE-5002S-CN-0.2X	
6'-OH-BDE-087	6'-Hydroxy-2,2',3,4,5'-pentabromodiphenyl ether	10 µg/mL	AcCN	HBDE-5003S-CN-0.2X	
6'-OH-BDE-082	6'-Hydroxy-2,2',3,3',4-pentabromodiphenyl ether	10 µg/mL	AcCN	HBDE-5005S-CN-0.2X	
6'-OH-BDE-099	6'-Hydroxy-2,2',4,4',5-pentabromodiphenyl ether	10 µg/mL	AcCN	HBDE-5006S-CN-0.2X	
5'-OH-BDE-099	5'-Hydroxy-2,2',4,4',5-pentabromodiphenyl ether NEW	10 µg/mL	AcCN	HBDE-5007S-CN-0.2X	
6'-OH-BDE-157	6'-Hydroxy-2,3,3',4,4',5'-hexabromodiphenyl ether	10 µg/mL	AcCN	HBDE-6001S-CN-0.2X	
6'-OH-BDE-140	6'-Hydroxy-2,2',3,4,4',6'-hexabromodiphenyl ether	10 µg/mL	AcCN	HBDE-6002S-CN-0.2X	
3'-OH-BDE-154	3'-Hydroxy-2,2',4,4',5',6'-hexabromodiphenyl ether NEW	10 µg/mL	AcCN	HBDE-6003S-CN-0.2X	
2'-MeO-BDE-003	2'-Methoxy-4-monobromodiphenyl ether	50 µg/mL	MeOH	MOBDE-1001S	
3'-MeO-BDE-007	3'-Methoxy-2,4-dibromodiphenyl ether	50 µg/mL	MeOH	MOBDE-2001S	
2'-MeO-BDE-007	2'-Methoxy-2,4-dibromodiphenyl ether	10 µg/mL	MeOH	MOBDE-2002S-0.2X	
4'-MeO-BDE-017	4'-Methoxy-2,2',4-tribromodiphenyl ether	50 µg/mL	MeOH	MOBDE-3001S	
3'-MeO-BDE-028	3'-Methoxy-2,4,4'-tribromodiphenyl ether	50 µg/mL	MeOH	MOBDE-3002S	
2'-MeO-BDE-028	2'-Methoxy-2,4,4'-tribromodiphenyl ether	50 µg/mL	MeOH	MOBDE-3003S	
4'-MeO-BDE-042	4'-Methoxy-2,2',3,4'-tetrabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-4001S-0.2X	
4'-MeO-BDE-049	4'-Methoxy-2,2',4,5'-tetrabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-4002S-0.2X	
3'-MeO-BDE-047	3'-Methoxy-2,2',4,4'-tetrabromodiphenyl ether	50 µg/mL	MeOH	MOBDE-4003S	
5'-MeO-BDE-047	5'-Methoxy-2,2',4,4'-tetrabromodiphenyl ether	50 µg/mL	MeOH	MOBDE-4004S	
6'-MeO-BDE-047	6'-Methoxy-2,2',4,4'-tetrabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-4005S-0.2X	
2'-MeO-BDE-068	2'-Methoxy-2,3,4,5'-tetrabromodiphenyl ether NEW	10 µg/mL	MeOH	MOBDE-4006S-0.2X	
2'-MeO-BDE-075	2'-Methoxy-2,4,4',6-tetrabromodiphenyl ether NEW	50 µg/mL	MeOH	MOBDE-4007S	
4'-MeO-BDE-090	4'-Methoxy-2,2',3,4',5-pentabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-5001S-0.2X	
6'-MeO-BDE-085	6'-Methoxy-2,2',3,4,4'-pentabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-5002S-0.2X	
6'-MeO-BDE-087	6'-Methoxy-2,2',3,4,5'-pentabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-5003S-0.2X	
6'-MeO-BDE-082	6'-Methoxy-2,2',3,3',4-pentabromodiphenyl ether NEW	10 µg/mL	MeOH	MOBDE-5005S-0.2X	
6'-MeO-BDE-099	6'-Methoxy-2,2',4,4',5-pentabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-5006S-0.2X	
5'-MeO-BDE-099	5'-Methoxy-2,2',4,4',5-pentabromodiphenyl ether NEW	10 µg/mL	MeOH	MOBDE-5007S-0.2X	
6'-MeO-BDE-157	6'-Methoxy-2,3,3',4,4',5'-hexabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-6001S-0.2X	
6'-MeO-BDE-140	6'-Methoxy-2,2',3,4,4',6'-hexabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-6002S-0.2X	
3'-MeO-BDE-154	3'-Methoxy-2,2',4,4',5',6'-hexabromodiphenyl ether NEW	10 µg/mL	MeOH	MOBDE-6003S-0.2X	

Technical Note

These metabolites can be found wherever there are PBDEs, and they present their own toxicological hazard. This effect is well known with PCBs where the hydroxylated species is often more toxic than the parent compounds.

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Fluorinated PBDEs

Some research suggests that a fluorine substitution of the PBDE parent compound could be used as an internal standard for PBDE analysis, **replacing the more costly ¹³C labeled PBDEs currently used.** In addition, FBDEs can be used for ECD (Electron Capture Detection) analysis where the more expensive ¹³C labeled PBDEs cannot. Experimental testing also suggests that the use of FBDEs as internal standards show improved precision in PBDE analysis. AccuStandard has synthesized the following FBDEs for use as internal standards and has committed to adding to this list based on requests from analytical chemists:



Short Form	Compound	Conc.	Solvent	Cat. No.	1 mL
F-BDE-007	3'-Fluoro-2,4-dibromodiphenyl ether	25 µg/mL	Isooctane	FBDE-2001S-0.5X	
		50 µg/mL	Isooctane	FBDE-2001S	
F-BDE-012	3'-Fluoro-3,4-dibromodiphenyl ether	25 µg/mL	Isooctane	FBDE-2002S-0.5X	
		50 µg/mL	Isooctane	FBDE-2002S	
F-BDE-025	4'-Fluoro-2,3',4-tribromodiphenyl ether	25 µg/mL	Isooctane	FBDE-3001S-0.5X	
		50 µg/mL	Isooctane	FBDE-3001S	
F-BDE-027	4'-Fluoro-2,3',6-tribromodiphenyl ether	25 µg/mL	Isooctane	FBDE-3002S-0.5X	
		50 µg/mL	Isooctane	FBDE-3002S	
F-BDE-028	2'-Fluoro-2,4,4'-tribromodiphenyl ether	25 µg/mL	Isooctane	FBDE-3003S-0.5X	
F-BDE-028	3'-Fluoro-2,4,4'-tribromodiphenyl ether	50 µg/mL	Isooctane	FBDE-3003S	
		25 µg/mL	Isooctane	FBDE-3004S-0.5X	
F-BDE-069	4'-Fluoro-2,3',4,6-tetrabromodiphenyl ether	50 µg/mL	Isooctane	FBDE-3004S	
		25 µg/mL	Isooctane	FBDE-4001S-0.5X	
F-BDE-067	4'-Fluoro-2,3',4,5-tetrabromodiphenyl ether	50 µg/mL	Isooctane	FBDE-4001S	
		25 µg/mL	Isooctane	FBDE-4002S-0.5X	
F-BDE-047	6-Fluoro-2,2',4,4'-tetrabromodiphenyl ether	50 µg/mL	Isooctane	FBDE-4002S	
		25 µg/mL	Isooctane	FBDE-4003S-0.5X	
F-BDE-066	6-Fluoro-2,3',4,4'-tetrabromodiphenyl ether	50 µg/mL	Isooctane	FBDE-4003S	
		25 µg/mL	Isooctane	FBDE-4004S-0.5X	
2F-BDE-047	5,5'-Difluoro-2,2',4,4'-tetrabromodiphenyl ether	50 µg/mL	Isooctane	FBDE-4004S	
		25 µg/mL	Isooctane	FBDE-4005S-0.5X	
F-BDE-100	3-Fluoro-2,2',4,4',6-pentabromodiphenyl ether	50 µg/mL	Isooctane	FBDE-4005S	
		25 µg/mL	Isooctane	FBDE-5002S-0.5X	
2F-BDE-099	3,6-Difluoro-2,2',4,4',5-pentabromodiphenyl ether	50 µg/mL	Isooctane	FBDE-5002S	
		25 µg/mL	Isooctane	FBDE-5003S-0.5X	
2F-BDE-085	5,6-Difluoro-2,2',3,4,4'-pentabromodiphenyl ether	50 µg/mL	Isooctane	FBDE-5003S	
		25 µg/mL	Isooctane	FBDE-5004S-0.5X	
2F-BDE-119	3,5-Difluoro-2,3',4,4',6-pentabromodiphenyl ether	50 µg/mL	Isooctane	FBDE-5004S	
		25 µg/mL	Isooctane	FBDE-5005S-0.5X	
F-BDE-160	4'-Fluoro-2,3,3',4,5,6-hexabromodiphenyl ether	50 µg/mL	Isooctane	FBDE-5005S	
		25 µg/mL	Isooctane	FBDE-6001S-0.5X	
F-BDE-139	3-Fluoro-2,2',4,4',5,6-hexabromodiphenyl ether	50 µg/mL	Isooctane	FBDE-6001S	
		25 µg/mL	Isooctane	FBDE-6002S-0.5X	
2F-BDE-201	4',6-Difluoro-2,2',3,3',4,5,5',6'-octabromodiphenyl ether	50 µg/mL	Isooctane	FBDE-6002S	
		25 µg/mL	Isooctane	FBDE-8001S-0.5X	
F-BDE-208	4'-Fluoro-2,2',3,3',4,5,5',6,6'-nonabromodiphenyl ether	50 µg/mL	Isooctane	FBDE-8001S	
		25 µg/mL	Isooctane	FBDE-9001S-0.5X	
		50 µg/mL	Isooctane	FBDE-9001S	





Flame Retardants

Bromine containing Flame Retardants

Compound	CAS No.	Active Ingredient	Conc.	Matrix	Cat. No.	1 mL
Bromkal™ DE-70-5 (Tech grade) NEW		Penta BDEs	50 µg/mL	Isooctane	BDE-705	
Bromkal DE-71 (Tech grade) NEW		Penta BDEs	50 µg/mL	Isooctane	BDE-710	
Bromkal DE-73-6 (Tech grade) NEW		Hexa BDEs	50 µg/mL	Isooctane	BDE-736	
Bromkal DE-79-8 (Tech grade) NEW		Octa BDEs	50 µg/mL	Isooctane	BDE-798	
4-Bromophenyl phenyl ether	101-55-3		100 µg/mL	MeOH	APP-9-033	
			5 mg/mL	MeOH	AS-E0039	
Dow FR-250	27858-07-7	Octabromobiphenyl	100 µg/mL	Isooctane	B-250S	
			35 µg/mL	Isooctane	B-250S-0.35X	
Firemaster™ BP4A	79-94-7	Tetrabromobisphenol A	10 mg	NEAT	FRS-006N	
			100 µg/mL	Toluene	FRS-006S	
Firemaster BP-6	59536-65-1	Hexabromobiphenyl	10 mg	NEAT	B-600N	
			35 µg/mL	Isooctane	B-600S-0.35X	
			100 µg/mL	Isooctane	B-600S	
Firemaster PHT4	632-79-1	Tetrabromophthalic anhydride	10 mg	NEAT	FRS-007N	
			100 µg/mL	Toluene	FRS-007S	
Firemaster T23P		Tris(2,3-dibromopropyl)phosphate	10 mg	NEAT	FRS-008N	
			100 µg/mL	Toluene	FRS-008S	
Firemaster 680 (Tech grade) NEW	37853-59-1	1,2-Bis(2,4,6-tribromophenoxy)ethane	50 mg	NEAT	FRS-037N	
			100 µg/mL	Toluene	FRS-037S	
Firemaster 2100 (Tech grade) NEW		Decabromodiphenylethane	50 mg	NEAT	FRS-036N	
FR-300BA (Deca)	1163-19-5	Decabromodiphenyl ether 85.5%	10 mg	NEAT	FRS-009N	
			100 µg/mL	Toluene	FRS-009S	
FR-651A	87-84-3	Pentabromochlorocyclohexane	10 mg	NEAT	FRS-010N	
			100 µg/mL	Toluene	FRS-010S	
FR-1138	3296-90-0	Dibromoneopentyl glycol 85.0%	10 mg	NEAT	FRS-011N	
			100 µg/mL	Toluene	FRS-011S	
HCDBCO	51939-55-1	Hexachlorocyclopentadienyl-dibromocyclooctane	10 mg	NEAT	FRS-039N	
			100 µg/mL	Toluene	FRS-039S	
Hexabromobenzene (mich)	87-82-1	Hexabromobenzene (Michigan Chemical)	10 mg	NEAT	FRS-012N	
			100 µg/mL	Toluene	FRS-012S	
Hexabromobenzene (white)	87-82-1	Hexabromobenzene (White Chemical)	10 mg	NEAT	FRS-013N	
			100 µg/mL	Toluene	FRS-013S	
Pentabromobenzylacrylate (Tech)	59447-55-1	Pentabromobenzylacrylate	10 mg	NEAT	FRS-035N	
	NEW		100 µg/mL	Toluene	FRS-035S	
Pentabromobenzylbromide (Tech)	1163-19-5	Pentabromobenzylbromide	10 mg	NEAT	FRS-030N	
	NEW		100 µg/mL	Toluene	FRS-030S	
Pentabromotoluene	87-83-2	Pentabromotoluene	10 mg	NEAT	FRS-018N	
			100 µg/mL	Toluene	FRS-018S	
TBECH NEW	3322-93-8	1,2-Dibromo-4-(1,2-dibromoethyl)cyclohexane	10 mg	NEAT	FRS-038N	
			100 mg/mL	MeOH	FRS-038S	
Tetrabromobisphenol A bis(hydroxyethyl ether) (Tech)	NEW	Tetrabromobisphenol A bis(hydroxyethyl ether)	50 mg	NEAT	FRS-032N	
	4162-45-2		100 µg/mL	Toluene	FRS-032S	
Tetrabromo-o-chlorotoluene		Tetrabromo-o-chlorotoluene	10 mg	NEAT	FRS-021N	
			100 µg/mL	Toluene	FRS-021S	
TP-69		Tris(2,3-dibromopropyl)phosphate	10 mg	NEAT	FRS-023N	
			100 µg/mL	Toluene	FRS-023S	

Other Flame Retardants

Compound	CAS No.	Active Ingredient	Conc.	Matrix	Cat. No.	1 mL
Chlorafin™ 40	63449-39-8	Chlorinated Paraffin	10 mg	NEAT	FRS-002N	
			100 µg/mL	Toluene	FRS-002S	
Chlorendic anhydride	115-27-5	Chlorendic anhydride	10 mg	NEAT	FRS-001N	
			100 µg/mL	Toluene	FRS-001S	
Bis(2-Chloroethyl)ether	111-44-4	Bis(2-Chloroethyl)ether	100 µg/mL	MeOH	APP-9-027	
			5 mg/mL	MeOH	AS-E0016	
4-Chlorophenyl phenyl ether	7005-72-3	4-Chlorophenyl phenyl ether	100 µg/mL	MeOH	APP-9-047	
			5 mg/mL	MeOH	AS-E0038	
Chlorowax™ 500C	63449-39-8	Chlorinated Hydrocarbons 59.0%	10 mg	NEAT	FRS-004N	
			100 µg/mL	Toluene	FRS-004S	
Diable 700X		Chlorinated Hydrocarbons 70.0%	10 mg	NEAT	FRS-005N	
			100 µg/mL	Toluene	FRS-005S	
Hexabromocyclododecane NEW		Hexabromocyclododecane	10 mg	NEAT	FRS-028N	
			100 µg/mL	Toluene	FRS-028S	
Hexachlorobutadiene	87-68-3	Hexachlorobutadiene	10 mg	NEAT	FRS-017N	
			100 µg/mL	Toluene	FRS-017S	
Paroil™ 179-HV	63449-39-8	Chlorinated Paraffin	10 mg	NEAT	FRS-015N	
			100 µg/mL	Toluene	FRS-015S	
Paroil 170-8	63449-39-8	Chlorinated Paraffin	10 mg	NEAT	FRS-016N	
			100 µg/mL	Toluene	FRS-016S	
Phosgard™ C 22-R	4351-70-6	Halogenated organic phosphate ester	10 mg	NEAT	FRS-019N	
			100 µg/mL	Toluene	FRS-019S	
Phosgard 2XC-20		Halogenated organic phosphate ester	10 mg	NEAT	FRS-020N	
			100 µg/mL	Toluene	FRS-020S	
Tetrachlorobisphenol A	79-95-8	Tetrachlorobisphenol A	10 mg	NEAT	FRS-022N	
			100 µg/mL	Toluene	FRS-022S	
Unichlor™ 40-90	63449-39-8	Chlorinated Hydrocarbons 38.5%	10 mg	NEAT	FRS-024N	
			100 µg/mL	Toluene	FRS-024S	
Unichlor 502-50	63449-39-8	Chlorinated Hydrocarbons 52.0%	10 mg	NEAT	FRS-025N	
			100 µg/mL	Toluene	FRS-025S	
Unichlor 70AX	63449-39-8	Chlorinated Hydrocarbons 70.0%	10 mg	NEAT	FRS-026N	
			100 µg/mL	Toluene	FRS-026S	

Flame Retardants



PBDE Congeners

Bromobiphenyl Congeners

Compound	CAS No.	Conc.	Matrix	Cat. No.	1 mL
2-Bromobiphenyl	2052-07-5	50 mg	NEAT	B-001N	
		35 µg/mL	Isooctane	B-001S	
		1 mg/mL	Acetone	M-8081-SS-X	
3-Bromobiphenyl	2113-57-7	50 mg	NEAT	B-002N	
		35 µg/mL	Isooctane	B-002S	
4-Bromobiphenyl	92-66-0	50 mg	NEAT	B-003N	
		35 µg/mL	Isooctane	B-003S	
2,2'-Dibromobiphenyl	13029-09-9	10 mg	NEAT	B-004N	
		35 µg/mL	Isooctane	B-004S	
2,4-Dibromobiphenyl	53592-10-2	25 mg	NEAT	B-007N-10MG	
		35 µg/mL	Isooctane	B-007S	
2,5-Dibromobiphenyl	57422-77-2	25 mg	NEAT	B-009N	
		35 µg/mL	Isooctane	B-009S	
2,6-Dibromobiphenyl	59080-32-9	5 mg	NEAT	B-010N-5MG	
		35 µg/mL	Isooctane	B-010S	
4,4'-Dibromobiphenyl	92-86-4	10 mg	NEAT	B-015N	
		35 µg/mL	Isooctane	B-015S	
2,2',5-Tribromobiphenyl NEW	59080-34-1	10 mg	NEAT	B-018N	
		35 µg/mL	Isooctane	B-018S	
2,3',5-Tribromobiphenyl	59080-35-2	10 mg	NEAT	B-026N	
		35 µg/mL	Isooctane	B-026S	
2,4,5-Tribromobiphenyl NEW	115245-07-3	35 µg/mL	Isooctane	B-029S	
2,4,6-Tribromobiphenyl	59080-33-0	25 mg	NEAT	B-030N	
		35 µg/mL	Isooctane	B-030S	
2,4',5-Tribromobiphenyl	59080-35-3	10 mg	NEAT	B-031N	
		35 µg/mL	Isooctane	B-031S	
2,2',4,5'-Tetrabromobiphenyl	60044-24-8	5 mg	NEAT	B-049N-5MG	
		35 µg/mL	Isooctane	B-049S	
2,2',5,5'-Tetrabromobiphenyl	59080-37-4	10 mg	NEAT	B-052N	
		35 µg/mL	Isooctane	B-052S	
2,2',5,6'-Tetrabromobiphenyl	60044-25-9	5 mg	NEAT	B-053N-5MG	
		35 µg/mL	Isooctane	B-053S	
3,3',4,4'-Tetrabromobiphenyl	77102-82-0	35 µg/mL	Isooctane	B-077S	
3,3',5,5'-Tetrabromobiphenyl	16400-50-3	35 µg/mL	Isooctane	B-080S	
2,2',4,5,5'-Pentabromobiphenyl	67888-96-4	5 mg	NEAT	B-101N	
		35 µg/mL	Isooctane	B-101S	
2,2',4,5',6-Pentabromobiphenyl NEW	59080-39-6	5 mg	NEAT	B-103N	
		35 µg/mL	Isooctane	B-103S	
2,2',4,4',5,5'-Hexabromobiphenyl	59080-40-9	35 µg/mL	Isooctane	B-153S	
2,2',4,4',6,6'-Hexabromobiphenyl	59261-08-4	5 mg	NEAT	B-155N	
		35 µg/mL	Isooctane	B-155S	
3,3',4,4',5,5'-Hexabromobiphenyl	77607-09-1	35 µg/mL	Isooctane	B-169S	
2,2',3,3',4,5',6,6'-Octabromobiphenyl NEW	69887-11-2	35 µg/mL	Isooctane	B-200S	
Decabromobiphenyl	13654-09-6	25 mg	NEAT	B-209N	
		35 µg/mL	Isooctane	B-209S	

Bromo Phenols and Anisoles

Bromo Phenols

Each at 100 µg/mL in Toluene



Compound	CAS No.	Cat. No.	1 mL
3-Bromophenol		BP-003S	
4-Bromophenol		BP-004S	
2,3-Dibromophenol	57383-80-9	BP-023S	
2,4-Dibromophenol		BP-024S	
2,5-Dibromophenol	28165-52-8	BP-025S	
2,6-Dibromophenol		BP-026S	
2,3,4-Tribromophenol		BP-234S	
3,5-Dibromophenol	626-41-5	BP-035S	
2,4,5-Tribromophenol		BP-245S	
2,4,6-Tribromophenol		BP-246S	
3,4,5-Tribromophenol		BP-345S	
2,3,4,5-Tetrabromophenol		BP-2345S	
2,3,4,6-Tetrabromophenol		BP-2346S	
2,3,5,6-Tetrabromophenol		BP-2356S	
Pentabromophenol	608-71-9	BP-23456S	

Bromo Anisoles (Bromophenol methyl ether)

Each at 50 µg/mL in Methanol



Compound	CAS No.	Cat. No.	1 mL
2-Bromoanisole	578-57-4	BAN-01	
3-Bromoanisole	2398-37-0	BAN-02	
4-Bromoanisole	104-92-7	BAN-03	
2,3-Dibromoanisole		BAN-04	
2,4-Dibromoanisole	21702-84-1	BAN-05	
2,5-Dibromoanisole		BAN-06	
2,6-Dibromoanisole		BAN-07	
3,5-Dibromoanisole	74137-36-3	BAN-08	
2,4,5-Tribromoanisole		BAN-09	
2,4,6-Tribromoanisole	607-99-8	BAN-10	

Registered Trademarks

Chlorafin	Hercules Powder Company Corp.	Firemaster	Great Lakes Chemical Corp.	Phosgard	Solutia Inc.
Chlorowax	Dover Chemical Corp.	Paroil	Dover Chemical Corp.	Unichlor	Neville Chemical Co.



Polynuclear Aromatic Hydrocarbons

Polyaromatic Hydrocarbons (PAHs) are hydrocarbon compounds with multiple benzene rings. PAHs are typical components of asphalts, fuels, oils, and greases. They are also called Polycyclic Aromatic Hydrocarbons and have been linked to cancer and hormone disruption. Please contact our Technical Service Department for bulk quantities.

PAHS

Polynuclear Aromatic Hydrocarbons (PAHs)

Purity 98+%, except where indicated

Compound	Solutions at 50 µg/mL in Toluene		CAS No.	Neat Cat. No.	Unit	Solution Cat. No.	1 mL
		Synonym					
Acenaphthene			83-32-9	H-108N	100 mg	H-108S	
Acenaphthylene			208-96-8	H-125N	100 mg	H-125S	
Acridine NEW			260-94-6	H-187N	100 mg	H-187S	
Anthanthrene			191-26-4	H-109N	10 mg	H-109S	
Anthracene			120-12-7	H-110N	100 mg	H-110S	
Azulene			275-51-4	H-127N	10 mg	H-127S	
1,2-Benzanthracene		<i>Tetraphene</i>	56-55-3	H-100N	10 mg	H-100S	
2,3-Benzanthracene			92-24-0	H-159N	10 mg	H-159S	
Benz[a]anthracene-7,12-dione		<i>Benzanthraquinone</i>	2498-66-0	H-111N	10 mg	H-111S	
Benzo[b]chrysene			214-17-5	H-183N	5 mg	H-183S	
Benzo[b]fluoranthene		<i>Benz[e]acephenanthrylene</i>	205-99-2	H-128N	10 mg	H-128S	
Benzo[j]fluoranthene			205-82-3	H-171N	10 mg	H-171S	
Benzo[k]fluoranthene			207-08-9	H-129N	10 mg	H-129S	
1,2-Benzofluorene			238-84-6	-----	-----	H-130S	
2,3-Benzofluorene			243-17-4	H-180N	10 mg	H-180S	
Benzo[g,h,i]perylene		<i>1,12-Benzoperylene</i>	191-24-2	H-103N	10 mg	H-103S	
Benzo[c]phenanthrene			195-19-7	H-244N	10 mg	H-244S	
Benzo[a]pyrene (ACS grade)		<i>3,4-Benzopyrene</i>	50-32-8	H-169N-ACS	10 mg	-----	---
Benzo[a]pyrene (Ames grade)				H-169N	10 mg	H-169S	
Benzo[e]pyrene			192-97-2	H-112N	10 mg	H-112S	
2,3-Benzofuran			271-89-6	H-237N	10 mg	H-237S	
5,6-Benzoquinoline		<i>Benzo[f]quinoline</i>	85-02-9	H-113N-10MG	10 mg	H-113S	
7,8-Benzoquinoline			230-27-3	H-245N	100 mg	H-245S	
2,2'-Binaphthyl			612-78-2	H-239N	50 mg	H-239S	
Biphenyl			92-52-4	H-133N	500 mg	H-133S	
Carbazole			86-74-8	H-114N	100 mg	H-114S	
Chrysene		<i>Benzo[a]phenanthrene</i>	218-01-9	H-115N	100 mg	H-115S	
Coronene			191-07-1	H-116N	5 mg	H-116S	
Cyclopenta[c,d]pyrene NEW			27208-37-3	-----	-----	H-242S	
Dibenz[a,h]acridine			226-36-8	H-172N	10 mg	H-172S	
Dibenz[a,j]acridine			224-42-0	H-173N	10 mg	H-173S	
1,2:3,4-Dibenzanthracene		<i>Dibenz[a,c]anthracene</i>	215-58-7	H-134N	10 mg	H-134S	
1,2:5,6-Dibenzanthracene		<i>Dibenz[a,h]anthracene</i>	53-70-3	H-135N	10 mg	H-135S	
7H-Dibenzof[c,g]carbazole			194-59-2	-----	-----	H-176S	
Dibenzo-p-dioxin		* Solution in Isooctane	262-12-4	D-100N	10 mg	D-100S *	
Dibenzo[a,e]fluoranthene			5385-75-1	H-247N	1 mg	H-247S	
Dibenzofuran			132-64-9	F-100N	50 mg	-----	--
1,2,4,5-Dibenzopyrene		<i>Dibenzo[a,e]pyrene</i>	192-65-4	H-138N	10 mg	H-138S	
Dibenzo[a,h]pyrene			189-64-0	H-177N	10 mg	H-177S	
Dibenzo[a,i]pyrene			189-55-9	H-178N	5 mg	H-178S	
Dibenzo[a,l]pyrene			191-30-0	H-179N	5 mg	H-179S	
Diphenylenesulfide		<i>Dibenzothiophene</i>	132-65-0	H-117N	100 mg	H-117S	
1,2:8,9-Dibenzpentacene			227-09-8	H-139N	10 mg	H-139S	
9,10-Dihydroanthracene			613-31-0	H-140N	100 mg	H-140S	
12,12A-Dihydro-3,9-dimethylbenz[a]anthracene				-----	-----	H-188S	
Diindeno[1,2,3-cd-1',2',3'-1m]perylene		<i>Periflanthene</i>	188-94-3	H-141N	5 mg	H-141S	
2,3-Dimethylanthracene			613-06-9	H-189N	10 mg	H-189S	
9,10-Dimethylanthracene			781-43-1	H-190N	10 mg	H-190S	
3,9-Dimethylbenz[a]anthracene			316-51-8	-----	-----	H-191S	
6,8-Dimethylbenz[a]anthracene			317-64-6	-----	-----	H-192S	
7,12-Dimethylbenz[a]anthracene			57-97-6	H-174N	10 mg	H-174S	
1,12-Dimethylbenzo[c]phenanthrene			4076-43-1	-----	-----	H-193S	
5,8-Dimethylbenzo[c]phenanthrene			54886-63-9	-----	-----	H-194S	
7,10-Dimethylbenzo[a]pyrene			63104-33-6	-----	-----	H-195S	
1,2-Dimethylnaphthalene			573-98-8	H-197N	10 mg	H-197S	
1,3-Dimethylnaphthalene (96%)			575-41-7	H-198N	10 mg	H-198S	
1,4-Dimethylnaphthalene (95%)			571-53-4	H-199N	10 mg	H-199S	
1,5-Dimethylnaphthalene			571-61-9	H-200N	10 mg	H-200S	
1,6-Dimethylnaphthalene			575-43-9	H-201N	10 mg	H-201S	
1,8-Dimethylnaphthalene (95%)			569-41-5	H-202N	10 mg	H-202S	
2,6-Dimethylnaphthalene			581-42-0	H-161N	10 mg	H-161S	
2,7-Dimethylnaphthalene NEW			582-16-1	H-203N	10 mg	H-203S	
3,6-Dimethylphenanthrene			1576-67-6	H-142N-5MG	5 mg	H-142S	
9,10-Diphenylanthracene NEW			1499-10-1	H-185N	100 mg	H-185S	
Dodecahydrotriphenylene			1610-39-5	H-144N	100 mg	H-144S	
6-Ethylchrysene NEW			2732-58-3	H-264N	10 mg	-----	---
Fluoranthene			206-44-0	H-118N	100 mg	H-118S	
Fluorene			86-73-7	H-146N	100 mg	H-146S	

Polynuclear Aromatic Hydrocarbons



PAHS

Polynuclear Aromatic Hydrocarbons (PAHs)		Purity 98+%, except where indicated					
Compound	Solutions at 50 µg/mL in Toluene		CAS No.	Neat Cat. No.	Unit	Solution Cat. No.	1 mL
		Synonym					
Indan			496-11-7	H-231N	100 mg	H-231S	
Indene			95-13-6	H-230N	100 mg	H-230S	
Indeno[1,2,3-cd]pyrene		<i>o</i> -Phenylene pyrene	193-39-5	H-157N	10 mg	H-157S	
Indole			120-72-9	H-236N	100 mg	H-236S	
Isoquinoline			119-65-3	H-232N	100 mg	H-232S	
1-Methylanthracene			610-48-0	H-222N	10 mg	H-222S	
2-Methylanthracene			613-12-7	H-148N	10 mg	H-148S	
9-Methylanthracene			779-02-2	H-149N	10 mg	H-149S	
1-Methylbenz[a]anthracene			2498-77-3	-----	-----	H-213S	
2-Methylbenz[a]anthracene			2498-76-2	-----	-----	H-214S	
3-Methylbenz[a]anthracene			2498-75-1	-----	-----	H-215S	
4-Methylbenz[a]anthracene			316-49-4	-----	-----	H-216S	
5-Methylbenz[a]anthracene			2319-96-2	-----	-----	H-217S	
6-Methylbenz[a]anthracene			316-14-3	-----	-----	H-218S	
7-Methylbenz[a]anthracene			2541-69-7	-----	-----	H-219S	
9-Methylbenz[a]anthracene			2381-16-0	-----	-----	H-220S	
10-Methylbenz[a]anthracene			2381-15-9	-----	-----	H-221S	
1-Methylbenzo[c]phenanthrene			4076-39-5	-----	-----	H-208S	
2-Methylbenzo[c]phenanthrene			2606-85-1	-----	-----	H-209S	
3-Methylbenzo[c]phenanthrene			2381-19-3	-----	-----	H-210S	
4-Methylbenzo[c]phenanthrene			4076-40-8	-----	-----	H-211S	
5-Methylbenzo[c]phenanthrene			652-04-0	-----	-----	H-212S	
7-Methylbenzo[a]pyrene			63041-77-0	H-223N	10 mg	H-223S	
8-Methylbenzo[a]pyrene			63041-76-9	-----	-----	H-205S	
9-Methylbenzo[a]pyrene			70644-19-8	-----	-----	H-206S	
10-Methylbenzo[a]pyrene			63104-32-5	-----	-----	H-207S	
3-Methylcholanthrene		<i>20</i> -Methylcholanthrene	56-49-5	H-170N	10 mg	H-170S	
4-Methylchrysene			3351-30-2	-----	-----	H-228S	
5-Methylchrysene NEW			3697-24-3	-----	-----	H-243S	
6-Methylchrysene			1705-85-7	H-175N	10 mg	H-175S	
2-Methylfluoranthene			33543-31-6	H-182N-5MG	5 mg	H-182S	
				H-182N-25MG	25 mg		
1-Methylnaphthalene			90-12-0	H-001N	100 mg	H-001S	
2-Methylnaphthalene			91-57-6	H-002N	100 mg	H-002S	
9-Methyl-9-phenylfluorene			56849-83-3	H-204N	10 mg	H-204S	
1-Methylphenanthrene			832-69-9	-----	-----	H-162S	
2-Methylphenanthrene			2531-84-2	-----	-----	H-003S	
3-Methylphenanthro[3,4-c]phenanthrene			83844-21-7	-----	-----	H-224S	
1-Methylpyrene			238-71-7	H-233N	10 mg	H-233S	
4,5-Methylenephenanthrene			203-64-5	-----	-----	H-119S	
Naphthalene			91-20-3	H-152N	100 mg	H-152S	
Pentacene			135-48-8	-----	-----	H-154S	
Perylene			198-55-0	H-121N	10 mg	H-121S	
Phenanthrene			85-01-8	H-122N	100 mg	H-122S	
9-Phenylanthracene			602-55-1	H-156N	100 mg	H-156S	
<i>o</i> -Phenylene pyrene		see Indeno[1,2,3-cd]pyrene					
1-Phenylnaphthalene			605-02-7	H-246N	100 mg	H-246S	
2-Phenylnaphthalene			612-94-2	H-158N	5 mg	H-158S	
Picene			213-46-7	-----	-----	H-184S	
Pyrene			129-00-0	H-123N	100 mg	H-123S	
Pyrrole			109-97-7	H-229N	100 mg	H-229S	
Quinoline NEW			91-22-5	H-186N	100 mg	H-186S	
2,3,6,7-Tetraethylbiphenylene				H-225N	10 mg	H-225S	
1,2:3,4-Tetrahydrofluoranthene			42429-92-5	H-165N	10 mg	H-165S	
<i>Tetraphene</i>		see 1,2-Benzanthracene					
Thianaphthene			95-15-8	H-238N	100 mg	H-238S	
Thianthrene NEW			92-85-3	H-241N	100 mg	-----	--
4,6,8-Trimethylazulene			941-81-1	H-226N	10 mg	H-226S	
8,9,11-Trimethylbenz[a]anthracene			74845-58-2	-----	-----	H-227S	
Triphenylene			217-59-4	H-235N	10 mg	H-235S	
Truxene (95%)			548-35-6	H-124N	100 mg	H-124S	



Polynuclear Aromatic Hydrocarbons

PAH Sets and Solutions

AccuStandard has assembled these Polycyclic Aromatic Hydrocarbon Kits for use as reference standards for the predominant species found in ambient air samples. This library of standards was compiled as a working list used by the EPA, based on their research and literature surveys. One kit is offered as individual neat compounds, and the other as individual solutions. The Solution Kit also contains all the compounds in one solution.

All compounds are 98% pure except where indicated

PAH Neat Sets

Z-001-SET

Kit of 20 x 5 mg

Acenaphthene (01)	Chrysene (11)
Anthanthrene (02)	Coronene (12)
Anthracene (03)	Dibenzothiophene (13)
1,2-Benzanthracene (04)	Fluoranthene (14)
Benz[a]anthracene-7,12-dione (95%) (05)	4,5-Methylenepheneanthrene (15)
Benzo[g,h,i]perylene (06)	Naphthalene (16)
Benzo[a]pyrene (07)	Perylene (17)
Benzo[e]pyrene (08)	Phenanthrene (18)
5,6-Benzoquinoline (09)	Pyrene (19)
Carbazole (10)	Truxene (95%) (20)

Z-013N-SET

16 x 10 mg

(set includes, 16 individual neat analytes)

Acenaphthene	Chrysene
Acenaphthylene	Dibenz[a,h]anthracene
Anthracene	Fluoranthene
Benzo[a]anthracene	Fluorene
Benzo[a]pyrene	Indeno[1,2,3-cd]pyrene
Benzo[b]fluoranthene	Naphthalene
Benzo[g,h,i]perylene	Phenanthrene
Benzo[k]fluoranthene	Pyrene

PAH Solutions

All Solutions at 0.2 mg/mL in 1 mL

Compound	Solvent	Cat. No.
Acenaphthene	MeOH	Z-013-01
Acenaphthylene	MeOH	Z-013-02
Anthracene	MeOH	Z-013-03
Benzo[a]anthracene	CH ₂ Cl ₂	Z-013-04
Benzo[a]pyrene	CH ₂ Cl ₂	Z-013-05
Benzo[b]fluoranthene	MeOH	Z-013-06
Benzo[g,h,i]perylene	CH ₂ Cl ₂	Z-013-07
Benzo[k]fluoranthene	CH ₂ Cl ₂	Z-013-08
Chrysene	CH ₂ Cl ₂	Z-013-09
Dibenz[a,h]anthracene	CH ₂ Cl ₂	Z-013-10
Fluoranthene	CH ₂ Cl ₂	Z-013-11
Fluorene	MeOH	Z-013-12
Indeno[1,2,3-cd]pyrene	MeOH	Z-013-13
Naphthalene	MeOH	Z-013-14
Phenanthrene (98%)	CH ₂ Cl ₂	Z-013-15
Pyrene	CH ₂ Cl ₂	Z-013-16

Mixture of the above 16 analytes, at 0.2 mg/mL in MeOH:CH₂Cl₂ (1:1) 16 comps.

Set of the above 16 individual solutions, plus a mixture Z-013-17 (set of 17 x 1 mL) Z-013-SET

PAH Standard (Quebec Ministry of Environmental PAH Mix)

H-QME-01

500 µg/mL each in CH₂Cl₂

1 x 1 mL

24 comps.

Acenaphthene	Benzo[c]phenanthrene	7,12-Dimethylbenz[a]anthracene
Acenaphthylene	Benzo[a]pyrene	Fluoranthene
Anthracene	Benzo[e]pyrene	Fluorene
Benzo[a]anthracene	Chrysene	Indeno[1,2,3-cd]pyrene
Benzo[b]fluoranthene	Dibenz[a,h]anthracene	3-Methylcholanthrene
Benzo[j]fluoranthene	Dibenzo[a,h]pyrene	Naphthalene
Benzo[k]fluoranthene	Dibenzo[a,i]pyrene	Phenanthrene
Benzo[g,h,i]perylene	Dibenzo[a,l]pyrene	Pyrene

AccuLabel™ 2-Part Label System

(used on organic products in ampules)

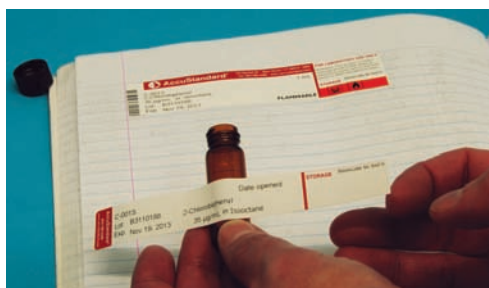
Smudgeproof, tear and solvent resistant *
Kimdura® labels

Accuracy and Convenience

One part duplicates required information for labeling transfer vials with correct information such as catalog number, lot number, expiration date and proper storage conditions.

Second part can be placed into a laboratory journal to document the standard used for the analysis. This label section includes the information described above, and documents AccuStandard as the manufacturer.

* Includes the most common solvents:
Methylene chloride, Methanol and Acetone





The atmosphere of most of the industrialized areas of the world contains Polynuclear Aromatic Hydrocarbons (PAHs) and Nitrogen Oxides (NO_x)¹. Wherever these compounds exist together, they react and form Nitro-PAHs, which are highly mutagenic.

Scientists have found Nitro-PAHs in diesel particulates², carbon black^{3,4} and ambient air particulates⁵. These compounds are the major contributors to the mutagenicity of the pollutants, since the most common Nitro-PAH found is 1-Nitropyrene, a potent mutagen.

AccuStandard has compiled an extensive inventory of Nitro substituted compounds including mono, di and tri Nitro-PAHs, Amino and Hydroxy substituted PAHs, Nitrotoluenes, Nitroanilines and Nitrophenols. Compounds are offered in both neat form and in solution.

References:

- (1) Nitrated PAHs. Edited by C.M. White, Published by Huethig 1985.
- (2) Analysis of Nitrated Polycyclic Aromatic Hydrocarbons in Diesel Particulates, D. Schuetzle et al., Anal. Chem., Vol. 54, pp. 265-71 (1982).
- (3) Mutagenic Activity in Photocopies, G. Lofroth et al., Science, Vol. 209, pp. 1037-9 (1980).
- (4) Nitropyrenes: Isolation, Identification and Reduction of Mutagenic Impurities in Carbon Black and Toners, H.S. Rosenkranz et al., Science, Vol. 290, pp. 1039-43 (1980).
- (5) Atmospheric Reactions of Polycyclic Aromatic Hydrocarbons: Facile Formation of Mutagenic Nitro Derivatives, J.N. Pitts, Jr. et al., Science, Vol. 202, pp. 515-8 (1978).

Nitro-PAHs

Solutions at 100 µg/mL in Toluene		Neat		Solution	
Compound	CAS No.	Cat. No.	Unit	Cat. No.	1 mL
1-Amino-4-nitronaphthalene	776-34-1	R-001N	100 mg	R-001S	
2-Nitroanthracene	3586-69-4	R-105N	5 mg	R-105S	
9-Nitroanthracene	602-60-8	R-003N	5 mg	R-003S	
7-Nitrobenz[a]anthracene	20268-51-3	R-097N	5 mg	R-097S	
6-Nitrobenz[a]pyrene	63041-90-7	-----	-----	R-004S	
2-Nitrobiphenyl	86-00-0	R-005N	100 mg	R-005S	
3-Nitrobiphenyl	2113-58-8	R-006N	100 mg	R-006S	
4-Nitrobiphenyl	92-93-3	R-007N	100 mg	R-007S	
6-Nitrochrysene	7496-02-8	R-008N	5 mg	R-008S	
3-Nitrodibenzofuran	5410-97-9	R-009N	5 mg	R-009S	
2-Nitrodibenzothiophene	6639-36-7	R-010N	5 mg	R-010S	
3-Nitrofluoranthene	892-21-7	R-013N	5 mg	R-013S	
2-Nitrofluorene	607-57-8	R-098N	100 mg	R-098S	
5-Nitroacenaphthene	602-87-9	R-115N	5 mg	R-115S	
1-Nitronaphthalene	86-57-7	R-016N	100 mg	R-016S	
2-Nitronaphthalene	581-89-5	R-085N-10MG	10 mg	R-085S	
3-Nitrophenanthrene	17024-19-0	R-045N	5 mg	R-045S	
9-Nitrophenanthrene	954-46-1	R-020N	5 mg	R-020S	
1-Nitropyrene	5522-43-0	R-022N	5 mg	R-022S	

Di- and Tri- Nitro-PAHs

Solutions at 100 µg/mL in Toluene		Neat		Solution	
Compound	CAS No.	Cat. No.	Unit	Cat. No.	1 mL
9,10-Dinitroanthracene	33685-60-8	R-024N	5 mg	R-024S	
2,2'-Dinitrobiphenyl	2436-96-6	R-025N	100 mg	R-025S	
2,8-Dinitrodibenzothiophene	109041-38-5	R-026N	5 mg	R-026S	
2,7-Dinitrofluorene	5405-53-8	R-027N	100 mg	R-027S	
2,7-Dinitro-9-fluorenone	31551-45-8	R-028N	100 mg	R-028S	
1,3-Dinitronaphthalene	606-37-1	R-029N	100 mg	R-029S	
1,5-Dinitronaphthalene	605-71-0	R-030N	100 mg	R-030S	
1,8-Dinitronaphthalene	602-38-0	R-031N	100 mg	R-031S	
1,3-Dinitropyrene	75321-20-9	R-094N	5 mg	R-094S	
1,6-Dinitropyrene	42397-64-8	R-032N	5 mg	R-032S	
1,8-Dinitropyrene	42397-65-9	-----	-----	R-099S	
2,4,7-Trinitro-9-fluorenone	129-79-3	-----	-----	R-033S	

Nitro-Aromatics

Solutions at 100 µg/mL in Toluene		Neat		Solution	
Compound	CAS No.	Cat. No.	Unit	Cat. No.	1 mL
Nitrobenzene	98-95-3	R-047N	100 mg	R-047S	
2-Nitrotoluene	88-72-2	R-048N	100 mg	R-048S	
2,4-Dinitrotoluene	121-14-2	R-049N	100 mg	R-049S	
2,6-Dinitrotoluene	606-20-2	R-050N	100 mg	R-050S	
2-Nitrophenol	51-28-5	R-051N	100 mg	R-051S	
4-Nitrophenol	100-02-7	R-052N	100 mg	R-052S	
2,4-Dinitrophenol	51-28-5	-----	-----	R-053S	
2-Nitroaniline	88-74-4	R-054N	100 mg	R-054S	
3-Nitroaniline	99-09-2	R-055N	100 mg	R-055S	
4-Nitroaniline	100-01-6	R-056N	100 mg	R-056S	
4,6-Dinitro- <i>o</i> -cresol (2-Methyl-4,6-dinitrophenol)	534-52-1	R-057N	100 mg	R-057S	

PAHs Derivatives continued on next page



Polynuclear Aromatic Hydrocarbons

Derivatives

PAH Derivatives

Amino-PAHs

Compound	Solutions at 100 µg/mL in Toluene		Neat Cat. No.	Unit	Solution	
	CAS No.				Cat. No.	1 mL
2-Acetamidofluorene	53-96-3		R-058N	10 mg	R-058S	
1-Aminoanthracene	610-49-1		R-059N	50 mg	R-059S	
2-Aminoanthracene	613-13-8		R-060N	50 mg	R-060S	
1-Aminoanthraquinone	82-45-1		R-061N	50 mg	R-061S	
2-Aminoanthraquinone	117-79-3		R-093N	5 mg	R-093S	
2-Aminobiphenyl	90-41-5		R-062N	10 mg	R-062S	
4-Aminobiphenyl	92-67-1		R-063N	10 mg	R-063S	
6-Aminochrysene	2642-98-0		R-065N	10 mg	R-065S	
2-Aminofluorene	153-78-6		R-066N	10 mg	R-066S	
1-Aminonaphthalene	134-32-7		R-067N	50 mg	R-067S	
2-Aminonaphthalene	91-59-8		R-084N	10 mg	R-084S	
2,7-Diaminofluorene	525-64-4		R-068N	10 mg	R-068S	
1,8-Diaminonaphthalene	479-27-6		R-069N	100 mg	R-069S	
1,2-Diphenylhydrazine	122-66-7		R-070N	100 mg	R-070S	
N-phenyl-1-naphthylamine	90-30-2		R-071N	50 mg	R-071S	
<i>o</i> -Tolidine (3,3'-Dimethylbenzidine)	119-93-7		R-072N	100 mg	R-072S	

Hydroxy-PAHs

Compound	Solutions at 100 µg/mL in Toluene		Neat Cat. No.	Unit	Solution	
	CAS No.				Cat. No.	1 mL
6-Hydroxychrysene	37515-51-8		R-095N	10 mg	R-095S	
1-Hydroxypyrene	5315-79-7		R-096N	10 mg	R-096S	

Amino-Aromatics

Compound	Solutions at 100 µg/mL in Toluene		Neat Cat. No.	Unit	Solution	
	CAS No.				Cat. No.	1 mL
Benzidine	92-87-5		R-073N	100 mg	R-073S	
3,3'-Diaminobenzidine	91-95-2		R-074N	50 mg	R-074S	
3,3'-Dichlorobenzidine	91-94-1		R-075N	50 mg	R-075S	
3,3'-Dimethoxybenzidine	119-90-4		R-076N	50 mg	R-076S	
4,4'-Diaminodiphenylmethane (4,4'-Methylenedianiline)	101-77-9		R-077N	100 mg	R-077S	
2,4-Diaminotoluene	95-80-7		R-078N	100 mg	R-078S	
4-Dimethylaminoazobenzene	60-11-7		R-079N	10 mg	R-079S	
4,4'-Methylene bis(2-chloroaniline)	101-14-4		R-080N	50 mg	R-080S	
N-Methyl-N'-nitro-N-nitrosoguanidine	70-25-7		R-081N	50 mg	R-081S	
N-Phenyl-2-naphthylamine	135-88-6		R-082N	10 mg	R-082S	
s-Triazine	290-87-9		R-083N	10 mg	R-083S	

DIN-38407-17 Nitroaromatic Compounds

Examination of water, wastewater, and sludge for the determination of selected nitroaromatic compounds by Gas-Liquid Chromatography

DIN38407-17

1 x 1 mL

500 µg/mL each in MeOH

12 comps.

Nitrobenzene	3,4-Dinitrotoluene
2-Nitrotoluene	2-Amino-6-nitrotoluene
4-Nitrotoluene	4-Amino-2-nitrotoluene
1,3-Dinitrobenzene	4-Amino-2,6-dinitrotoluene
2,6-Dinitrotoluene	2-Amino-4,6-dinitrotoluene
2,4-Dinitrotoluene	2,4,6-Trinitrotoluene

Nitrogen Containing Compounds



Nitrogen Containing Compounds

Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
Azobenzene	103-33-3	2 mg/mL	CH ₂ Cl ₂	Z-014B-1	1 mL
2-Chloronitrobenzene	88-73-3	100 mg	NEAT	R-017N	100 mg
		100 µg/mL	Toluene	R-017S	1 mL
2,3-Dichloronitrobenzene	3209-22-1	100 mg	NEAT	R-086N	100 mg
		100 µg/mL	Toluene	R-086S	1 mL
2,4-Dichloronitrobenzene	611-06-3	100 mg	NEAT	R-087N	100 mg
		100 µg/mL	Toluene	R-087S	1 mL
4-Chloronitrobenzene	100-00-5	100 mg	NEAT	R-018N	100 mg
		100 µg/mL	Toluene	R-018S	1 mL
2,5-Dichloronitrobenzene	89-61-2	100 mg	NEAT	R-088N	100 mg
		100 µg/mL	Toluene	R-088S	1 mL
2,2'-Dinitrobiphenyl	2436-96-6	100 mg	NEAT	R-025N	100 mg
		100 µg/mL	Toluene	R-025S	1 mL
2,4-Dinitrophenol	51-28-5	100 µg/mL	Toluene	R-053S	1 mL
2,4-Dinitrotoluene	121-14-2	100 mg	NEAT	R-049N	100 mg
		100 µg/mL	Toluene	R-049S	1 mL
		100 µg/mL	MeOH	APP-9-092	1 mL
		5 mg/mL	MeOH	AS-E0033	1 mL
2,6-Dinitrotoluene	606-20-2	100 mg	NEAT	R-050N	100 mg
		100 µg/mL	Toluene	R-050S	1 mL
		100 µg/mL	MeOH	APP-9-093	1 mL
		5 mg/mL	MeOH	AS-E0034	1 mL
N-methyl-N'-nitro-N-nitrosoguanidine	70-25-7	50 mg	NEAT	R-081N	50 mg
		100 µg/mL	Toluene	R-081S	1 mL
2-Nitrobiphenyl	86-00-0	100 mg	NEAT	R-005N	100 mg
		100 µg/mL	Toluene	R-005S	1 mL
3-Nitrobiphenyl	2113-58-8	100 mg	NEAT	R-006N	100 mg
		100 µg/mL	Toluene	R-006S	1 mL
4-Nitrobiphenyl	92-93-3	100 mg	NEAT	R-007N	100 mg
		100 µg/mL	Toluene	R-007S	1 mL
2-Nitrophenol	88-75-5	100 mg	NEAT	R-051N	100 mg
		100 µg/mL	Toluene	R-051S	1 mL
4-Nitrophenol	100-02-7	100 mg	NEAT	R-052N	100 mg
		100 µg/mL	Toluene	R-052S	1 mL
2-Nitrotoluene	88-72-2	100 mg	NEAT	R-048N	100 mg
		100 µg/mL	Toluene	R-048S	1 mL
Pyridine	110-86-1	100 µg/mL	CH ₂ Cl ₂	APP-9-186	1 mL
		2 mg/mL	CH ₂ Cl ₂	APP-9-186-20X	1 mL
		2 mg/mL	MeOH	APP-9-186-M-20X	1 mL
		5 mg/mL	MeOH	AS-E0271	1 mL
		10 mg/mL	Water	M-8015B/5031-26	1 mL
2,3,4,5-Tetrachloronitrobenzene	879-36-0	100 mg	NEAT	R-091N	100 mg
		100 µg/mL	Toluene	R-091S	1 mL
2,3,5,6-Tetrachloronitrobenzene	117-18-0	100 mg	NEAT	R-092N	100 mg
		100 µg/mL	Toluene	R-092S	1 mL
s-Triazine	290-87-9	10 mg	NEAT	R-083N	10 mg
		100 µg/mL	Toluene	R-083S	1 mL
2,3,4-Trichloronitrobenzene	17700-09-3	100 mg	NEAT	R-089N	100 mg
		100 µg/mL	Toluene	R-089S	1 mL
2,4,5-Trichloronitrobenzene	89-69-0	100 mg	NEAT	R-090N	100 mg
		100 µg/mL	Toluene	R-090S	1 mL

Analytical Capabilities

Agilent System for LC/MS/MS (Quadrupole and Ion Trap) Enhances AccuStandard QC Analytical Capabilities

An Agilent 1100 Series LC/MSD Trap has been added to AccuStandard's extensive analytical capabilities for certifying Chemical Reference Standards. LC/MSD Trap analyzers are particularly useful for characterizing and measuring thermally labile compounds including organophosphorus pesticides and their metabolites. The LC/MSD Trap offers outstanding combinations of scan speed, mass resolution, mass range, and sensitivity. With the addition of the Agilent LC/MSD Trap to the GC, GC/MS, HPLC, ICP, and Low Sulfur Analyzer instrumentation, AccuStandard continues to expand its analytical capability.

Moreover, the LC/MSD Trap's unique SmartFrag collision-energy ramping ensures that every precursor ion receives exactly the energy it needs for optimum fragmentation. The result is greater product ion generation and more structural information from fewer stages of MS.



Purchasing Neat Standards

There are two ways to purchase neat standards: Nominal weight and exact weight. With exact weight, the standards will come with the exact weight contained in the vial indicated on the label. The Cat. No. will have an X-WT to indicate that this is an exact weight. Rinse the sample out of the vial and cap with solvent and dilute to achieve the desired concentration. Unless specified, neat samples are provided with nominal weights. Typically, the vials contain up to 10 to 20% more product, however it is not known when you receive your standard what the exact amount is in the vial. Below is a standard procedure for removing all the neat material from the vial and determining the exact weight of the material in the vial.

Small amounts (5-10 mg) of powder often are spread over the surface of the vial and cap. If the chemical is a liquid it may coat the walls as a thin layer invisible to the eye. To recover all of the contents contained in a vial of neat material please use the procedure described below:

1. Wipe the outside of the vial (containing the Standard) clean and dry (including the cap).
2. Weigh the entire unit on an analytical balance. Record the weight to the nearest 0.1 mg.
3. Carefully transfer the contents to a volumetric flask using a suitable solvent. Rinse the cap and vial several times to assure a complete transfer.
4. Dry inside and outside of the vial and cap with mild heat or inert gas.
5. Weigh the empty dry vial on the same analytical balance to the nearest 0.1 mg and calculate by difference the amount of material transferred.



Pesticides, by-products, metabolites and degradates

Without pesticides the world would not be able to feed as many people as it does. However, pesticides can cause a multitude of health problems. The factors which impact on the risk/benefit balance need to be understood and this is what the research on the presence and toxicity of these products accomplishes.

In addition to many of the pesticides for which production has been discontinued (but are still present in the environment) AccuStandard has synthesized metabolites, degradates, and by-products such as:

- Aldicarb sulfone and sulfoxide
- Endrin aldehyde and ketone
- Oxychlorane and o,p-Methoxychlor
- Fipronyl sulfone, sulfoxide and desulfinyl
- DDT by-products

Over 3,200 Pesticide Standards

Visit our website to search for new and additional pesticide formulations or contact our Technical Service Department

Individual Neats and Solutions	69-83
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Pesticide & Herbicide Kits & Mixtures	85
Phenylurea Pesticide Mixtures	85
Synthesis of rare pesticides	Contact Us

Information on Pesticides Catalog Number's

Pesticide Catalog Numbers have 5 parts:

1. The initial **P**- specifies the product is a Pesticide.
2. The following three numbers are sequentially assigned, and is unique to the chemical.
3. The next character (**an N or S**) specifies whether the product is Neat or in Solution.
4. “-” with letters specify a solvent other than Methanol (MeOH).
5. “-” with an number followed by an X specifies the concentration difference from the 100 µg/mL (ex: -10X is 1000 µg/mL). Check for availability.

Example: P-017S is Chlordane at 100 µg/mL in Methanol
 P-017N is Chlordane neat (10 mg)
 P-017S-H-10X is Chlordane at 1000 µg/mL in Hexane

Key to symbols appearing in the table:

in Acetone (-A) in Hexane (-H) in Toluene (-T)
 in Acetonitrile (-CN) in Isooctane (-TP) In Water (-W)
 in Ethyl acetate (-EA) in Methyl cellosolve (-MC)

Pesticide Standards Neats at 10 mg. Solutions at 100 µg/mL in 1 mL, except as noted.

Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
AAtrax	see Atrazine			Alachlor	15972-60-8	NEAT	P-102N
Abamectin	71751-41-2	NEAT	P-615N			MeOH	P-102S
		MeOH	P-615S	Alanap	132-66-1	NEAT	P-274N
Abaphos	see Abate					MeOH	P-274S
Abar	see Leptophos			Alar	1596-84-5	NEAT	P-174N
Abate	3383-96-8	NEAT	P-101N			MeOH	P-174S
		MeOH	P-101S	Albendazole	54965-21-8	NEAT	P-498N
Abathion	see Abate					MeOH	P-498S
Acalarate	see Chloropropylate			Aldicarb	116-06-3	NEAT	P-001N
Acarben	see Chlorobenzilate					MeOH	P-001S
Acclaim	see Fenoxaprop-ethyl			Aldicarb sulfone	1646-88-4	NEAT	P-130N
		MeOH				MeOH	P-130S
Acephate	30560-19-1	NEAT	P-200N	Aldicarb sulfoxide	1646-87-3	NEAT	P-131N ‡
		Acetone	P-200S-A			MeOH	P-131S
Acetamiprid	135410-20-7	AcCN	P-820S-CN	Aldoxycarb	see Aldicarb sulfone		
Acetochlor	34256-82-1	NEAT	P-465N	Aldrin	309-00-2	NEAT	P-002N
		MeOH	P-465S			MeOH	P-002S
Acifluorfen Δ	50594-66-6	NEAT	P-245N	Alfa-tox	see Diazinon		
		MeOH	P-245S	Allethrin	584-79-2	NEAT	P-267N
		AcCN	P-245S-CN			MeOH	P-267S
Acifluorfen methyl ester	50594-67-7	NEAT	P-246N	Allidochlor	93-71-0	NEAT	P-670N
		MeOH	P-246S			MeOH	P-670S
Acrinathrin	101007-06-1	AcCN	P-842S-CN	Allisan	see Botran		
Actellic	see Pirimphos methyl ester			Altosid	see Methoprene		
Acti-Aid	see Cycloheximide			Alloxydim-sodium	55635-13-7	NEAT	P-510N
Actosin C	see Chlorophacinone					MeOH	P-510S
Admire	see Imidacloprid			Amaze	see Isofenphos		
Afalon	see Linuron			Ambush	see Permethrine		
Affirm	see Avid			Amdro	see Hydramethylnon		
Afugan	see Pyrazophos			Ametryn	834-12-8	NEAT	P-003N
Agritox	see Trichloronate					MeOH	P-003S
Agroxone	see MCPA acid			Amidosulfuron	120923-37-7	NEAT	P-821N
Aimsan	see Phenmedipham					AcCN	P-821S-CN
Akar	see Chlorobenzilate			Amigol	see Amitrole		

EXACT WEIGHT for Neat Pesticides

Listed Catalog neat products are overfilled approximately 10%, however, pesticides can be provided with **EXACT WEIGHT**. Specify EXACT WEIGHT by ordering **X-WT** and the exact weight is noted on the product label. There is an additional charge for this service. Rinse the pesticide out of the vial with the appropriate amount of solvent to get a weight/volume standard and calculate the concentration.

Δ Pesticides containing a carboxyl group will autoesterify in MeOH. The pesticides most likely to have this occur are marked with an Δ. These standards are intended for use as a post-esterification standard for GC analysis. For other types of analysis (ex. HPLC) we suggest a non-hydroxylic solvent such as Acetonitrile.

‡ To delay premature breakdown of thermally labile products in transit we suggest requesting a “Cold Pack”



Pesticides

Pesticide Standards Neats at 10 mg. Solutions at 100 µg/mL in 1 mL, except as noted.

Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
Aminocarb	2032-59-9	NEAT MeOH	P-062N P-062S	<i>Basagran</i>	see Bentazon		
Aminomethylphosphonic acid	1066-51-9	NEAT H ₂ O	P-625N P-625S	<i>Basalin</i>	see Fluchloralin		
4-Aminopyridine	504-24-5	NEAT MeOH	P-407N P-407S	<i>Basudin</i>	see Diazinon		
<i>Aminotriazole</i>	see Amitrole			<i>Bathroid</i>	see Cyfluthrin		
<i>Aminozone</i>	see Alar			Baycarb	3766-81-2	NEAT MeOH	P-347N P-347S
<i>Amiral</i>	see Triadimefon			<i>Baycor</i>	See Bitertanol		
Amitraz Δ	33089-61-1	NEAT AcCN	P-409N P-409S-CN	<i>Bayfidan</i>	see Triadimenol		
Amitrole (ATA)	61-82-5	NEAT MeOH	P-103N P-103S	Baygon	114-26-1	NEAT MeOH	P-009N P-009S
<i>Amizine</i>	see Simazine			<i>Bayleton</i>	see Triadimefon		
<i>Amizol</i>	see Amitrole			<i>Bayluscid</i>	see Niclosamide		
Ammonium sulfamate	7773-06-0	NEAT MeOH	P-530N P-530S	<i>Baytan</i>	see Triadimenol		
<i>AMS</i>	see Ammonium sulfamate			<i>Baytex</i>	see Fenthion		
Ancymidol	12771-68-5	NEAT MeOH	P-410N P-410S	<i>Baythion</i>	see Phoxim		
Anilazine	101-05-3	NEAT Hexane	P-287N P-287S-H	<i>Beam</i>	see Tricyclazole		
<i>Antiphen</i>	see Dichlorophen			Benalaxyl	71626-11-4	NEAT MeOH	P-559N P-559S
<i>Apl-Luster</i>	see Thiabendazole			Benazolin	3813-05-6	NEAT MeOH	P-397N P-397S
<i>Aprocarb</i>	see Baygon			Bendiocarb	22781-23-3	NEAT MeOH	P-203N P-203S
<i>Aracide</i>	see Aramite			<i>Benefin</i>	see Benfluralin		
<i>Aracnol F</i>	see Cyhexatin			<i>Benelux</i>	see Thiofanox		
Aramite	140-57-8	MeOH	P-132S	Benfluralin	1861-40-1	NEAT MeOH	P-237N P-237S
<i>A-Rest</i>	see Ancymidol			Benfuracarb	82560-54-1	NEAT MeOH	P-454N P-454S
<i>Arisan</i>	see Buturon			<i>Benlate</i>	see Benomyl		
<i>Arresin</i>	see Monolinuron			Benodanil	15310-01-7	NEAT MeOH	P-671N P-671S
Aspon	3244-90-4	NEAT MeOH	P-309N P-309S	Benomyl	17804-35-2	NEAT MeOH	P-104N P-104S-CN ‡
<i>Assure</i>	see Quinalofop ethyl			Benoxacor	98730-04-2	NEAT MeOH	P-490N P-490S
Asulam	3337-71-1	NEAT MeOH	P-276N P-276S	Bensulfuron-methyl	83055-99-6	NEAT MeOH	P-597N P-597S
<i>ATA</i>	see Amitrole			Bensulide	741-58-2	NEAT MeOH	P-204N P-204S
<i>Athrobine-K</i>	see Warfarin			Bensultap	17606-31-4	NEAT MeOH	P-678N P-678S
<i>Atratul</i>	see Atrazine			Bentazon Δ	25057-89-0	NEAT Acetone AcCN	P-177N P-177S-A P-177S-CN
<i>Atraton</i>	see Gesatamin			Bentazon methyl	61592-45-8	NEAT MeOH	P-241N P-241S
Atrazine	1912-24-9	NEAT MeOH	P-005N P-005S	<i>Benthiocarb</i>	see Thiobencarb		
Atrazine desethyl	6190-65-4	NEAT MeOH	P-343N P-343S	<i>Benzofuroline</i>	see Resmethrin		
Atrazine-desethyl-desisopropyl	3397-62-4	NEAT	P-428N	Benzoilprop ethyl	22212-55-1	NEAT MeOH	P-340N P-340S
Atrazine-desethyl-2-hydroxy	19988-24-0	Methyl cellosolve	P-544S-MC	<i>Betasan</i>	see Bensulide		
Atrazine-desisopropyl	1007-28-9	NEAT MeOH	P-345N P-345S	<i>Bethrodine</i>	see Benfluralin		
Atrazine-desisopropyl-2-hydroxy	7313-54-4	NEAT Methyl cellosolve	P-344N P-344S-MC	BHC Tech	608-73-1	NEAT MeOH	P-081N P-081S
<i>Avadex</i>	see Diallylate			α-BHC	319-84-6	NEAT MeOH	P-010N P-010S
<i>Avid</i>	see Abamectin			β-BHC	319-85-7	NEAT MeOH	P-011N P-011S
Azadirachtin	11141-17-6	MeOH	P-711S	δ-BHC	319-86-8	NEAT MeOH	P-012N P-012S
Azamethiphos	35575-96-3	NEAT MeOH	P-352N P-352S	<i>γ-BHC</i>	see Lindane		
Azinphos ethyl	2642-71-9	NEAT MeOH	P-201N P-201S	<i>Bidrin</i>	see Dicrotophos		
Azinphos methyl	86-50-0	NEAT MeOH	P-007N P-007S	Bifenox	42576-02-3	NEAT MeOH	P-257N P-257S
Azocyclotin	41083-11-8	NEAT MeOH	P-353N P-353S	Bifenthrin	82657-04-3	NEAT MeOH	P-445N P-445S
Azoxystrobin	131860-33-8	NEAT MeOH	P-719N P-719S	<i>Biflex</i>	see Bifenthrin		
<i>Banvel</i>	see Dicamba			Binapacryl	485-31-4	NEAT MeOH	P-499N P-499S
Barbamate	101-27-9	NEAT MeOH	P-202N P-202S	Bioallethrin	28057-48-9	NEAT MeOH	P-665N P-665S
<i>Barban</i>	see Barbamate			S-Bioallethrin	28424-00-6	NEAT MeOH	P-664N P-664S
<i>Barben</i>	see Barbamate						
Barnon	52756-22-6	NEAT MeOH	P-646N P-646S				

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Pesticides



Pesticide Standards Neats at 10 mg. Solutions at 100 µg/mL in 1 mL, except as noted.

Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
Bioresmethrin	28434-01-7	NEAT MeOH	P-594N P-594S	Butylate	2008-41-5	NEAT MeOH	P-088N P-088S
Bitertanol	55179-31-2	NEAT MeOH	P-351N P-351S	Cadusafos	95465-99-9	NEAT MeOH	P-794N P-794S
Bitrex	3734-33-6	NEAT MeOH	P-679N P-679S	Calixin	see Tridemorph		
Bladafum	see Sulfotep			Camphechlor	see Toxaphene		
Bladan	see Parathion			Caparol	see Prometryne		
Blattanex	see Baygon			Captafol	2425-06-1	NEAT MeOH	P-254N P-254S
Bloc	60168-88-9	NEAT MeOH	P-086N P-086S	Captan	133-06-2	NEAT MeOH	P-182N P-182S ‡
B-Nine	see Alar			Capture	see Bifenthrin		
Bolero	see Thiobencarb			Carbamult	see Promecarb		
Bolstar	35400-43-2	NEAT MeOH	P-108N P-108S	Carbaryl	63-25-2	NEAT MeOH	P-083N P-083S
Bonzi	76738-62-0	NEAT MeOH	P-669N P-669S	Carbendazim	10605-21-7	NEAT MeOH	P-278N P-278S
Boscalid NEW		MeOH	P-811S	Carbetamide	16118-49-3	NEAT MeOH	P-562N P-562S
Botran	99-30-9	NEAT MeOH	P-013N P-013S	Carbexsin	see Oxycarboxin		
BPMC	see Baycarb			Carbicron	see Dicrotophos		
Bravo	see Chlorothalonil			Carbofuran	1563-66-2	NEAT MeOH	P-106N P-106S
Brigade	see Bifenthrin			Carbofuran phenol-3-ketone		MeOH	P-630S
Brodifacoum	56073-10-0	NEAT MeOH	P-677N P-677S	Carbophenothion	786-19-6	NEAT MeOH	P-095N P-095S
Bromacil	314-40-9	NEAT MeOH	P-181N P-181S	Carbophenothion methyl oxygen analog		10 µg/mL in EtOAc	P-637S-EA-0.1X
Bromadiolone	28772-56-7	NEAT MeOH	P-316N P-316S ‡	Carbosulfan	55285-14-8	NEAT MeOH	P-446N P-446S
Bromex	see Dichlofenthion			Carboxin	5234-68-4	NEAT MeOH	P-216N P-216S
Brominal	1689-84-5	NEAT MeOH	P-256N P-256S	Carbyne	see Barbamate		
Brominil	see Brominal			Casoron	see Dichlobenil		
Bromofenoxim	13181-17-4	NEAT MeOH	P-511N P-511S	Cartap	15263-53-3	MeOH	P-577S
Bromophos-ethyl	4824-78-6	NEAT MeOH	P-372N P-372S	CDEC	see Sulfallate		
Bromophos-methyl	2104-96-3	NEAT MeOH	P-484N P-484S	Cekumethion	see Methyl parathion		
Bromopropylate	18181-80-1	NEAT MeOH	P-457N P-457S	Chemathion	see Malathion		
Bromoxynil	see Brominal			Chinomethionate	2439-01-2	NEAT Acetone	P-399N P-399S-A
Bromoxynil methyl ether	3336-39-8	NEAT MeOH	P-573N P-573S	Chloramben	133-90-4	NEAT MeOH	P-243N P-243S
Bromoxynil octanoate	1689-99-2	NEAT MeOH	P-550N P-550S	Chloramben methyl ester	7286-84-2	NEAT MeOH	P-272N P-272S
Bromucanozol	116255-48-2	NEAT AcCN	P-843N P-843S-CN	Chlorbenside	103-17-3	NEAT MeOH	P-107N P-107S
Bucril	see Brominal			Chlorbromuron	13360-45-7	NEAT MeOH	P-520N P-520S
Bueno	2163-80-6	NEAT MeOH	P-279N P-279S	Chlorbufam	1967-16-4	NEAT MeOH	P-558N P-558S
Bupirimate	41483-43-6	NEAT MeOH	P-672N P-672S	Chlordane	57-74-9	NEAT MeOH	P-017N P-017S
Buprofezin	69327-76-0	NEAT MeOH	P-595N P-595S	α-Chlordane	5103-71-9	NEAT MeOH	P-134N P-134S
Busan Δ	21564-17-0	NEAT AcCN	P-072N P-072S-CN	γ-Chlordane	5103-74-2	NEAT MeOH	P-134S-H P-135N P-135S
Butachlor	23184-66-9	NEAT MeOH	P-191N P-191S	cis-Chlordane	see a-Chlordane		
Butisan S	see Metazachlor			trans-Chlordane	see g-Chlordane		
Butocarboxim	34681-10-2	NEAT MeOH	P-518N P-518S	Chlordecone	see Kepone		
Butocarboxim sulfoxide	34681-24-8	NEAT MeOH	P-701N P-701S	Chlordene	3734-48-3	NEAT MeOH	P-136N P-136S
Butoflin	see Deltamethrin			Chlordimeform	6164-98-3	NEAT MeOH	P-333N P-333S
Butox	see Deltamethrin			Chlorfenac	see Fenatrol		
Butoxycarboxim	34681-23-7	NEAT AcCN	P-822N P-822S-CN	Chlorfenson	see Ovex		
2-[2-(2-Butoxyethyl)ethyl]ethane	see Lethron			Chlorfenapyr	122453-73-0	NEAT MeOH	P-807N P-807S
Butralin	33629-47-9	NEAT MeOH	P-574N P-574S	Chlorfenvinphos	470-90-6	NEAT MeOH	P-139N P-139S
Buturon	3766-60-7	NEAT MeOH	P-301N P-301S	Chlorflurecol-methyl ester	2536-31-4	NEAT MeOH	P-401N P-401S

Same Low Price in Neat (10 mg) or Solution (100 µg/mL) form

Most Pesticides are available in 1000 µg/mL (add -10X). Call or visit website for pricing.



Pesticides

Pesticide Standards Neats at 10 mg. Solutions at 100 µg/mL in 1 mL, except as noted.

Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
<i>Chlorflurenol</i>	see Chlorflurecol-methyl ester			<i>Comite</i>	see Propargite		
<i>Chloridazon</i>	see Pyrazon			<i>Command</i>	see Clomazone		
Chlorimuron ethyl	90982-32-4	AcCN	P-284S-CN	<i>Confidor</i>	see Imidacloprid		
Chlormephos	24934-91-6	NEAT	P-329N	<i>Conrac</i>	see Bromadiolone		
Chlormequat chloride	999-81-5	MeOH	P-329S	Copper oxychloride	1332-40-7	NEAT	P-458N
		NEAT	P-338N	<i>Cornox</i>	see MCPA acid		
		MeOH	P-338S	<i>Cotoran</i>	see Fluometuron		
Chlorobenzilate Δ	510-15-6	NEAT	P-133-N	Coumachlor	81-82-3	MeOH	P-684S
		AcCN	P-133S-CN	<i>Coumaphene</i>	see Warfarin		
<i>Chloroea</i>	see Monuron			Coumaphos	56-72-4	NEAT	P-019N
2-Chloro-2',6'-diethylacetanilide		NEAT	P-620N			MeOH	P-019S
		MeOH	P-620S	Coumatetralyl	5836-29-3	NEAT	P-313N
2-Chloro-4-ethylamino-6-methylethylamino-s-triazine		NEAT	P-539N			MeOH	P-313S
		Methyl cellosolve	P-539S-MC	<i>Counter</i>	see Terbufos		
2-Chloro-4-ethylamino-6-propylamino-s-triazine		NEAT	P-537N	4-CPA	122-88-3	NEAT	P-373N
		Methyl cellosolve	P-537S-MC			MeOH	P-373S
2-Chloro-4-methylamino-6-diethylamino-s-triazine		NEAT	P-541N	Crimidine	535-89-7	NEAT	P-561N
		Methyl cellosolve	P-541S-MC			MeOH	P-561S
2-Chloro-4-methylamino-6-sec-butylamino-s-triazine		NEAT	P-540N	<i>Crotoxyphos</i>	see Ciodrin		
		Methyl cellosolve	P-540S-MC	Crufomate	299-86-5	NEAT	P-292N
Chloroneb	2675-77-6	NEAT	P-212N			MeOH	P-292S
		MeOH	P-212S	<i>Curacron</i>	see Profenofos		
Chlorophacinone	3691-35-8	NEAT	P-314N	Cyanazine	21725-46-2	NEAT	P-175N
		MeOH	P-314S			MeOH	P-175S
<i>[3(2-Chlorophenyl)]-1,1-dimethylurea</i>	see 2-Monuron			Cyanofenphos	13067-93-1	NEAT	P-584N
						MeOH	P-584S
<i>4-Chlorophenoxyacetic acid</i>	see 4-CPA			Cyanophos	2636-26-2	NEAT	P-531N
Chloropicrin	76-06-2	NEAT	P-398N			MeOH	P-531S
3-Chloro-1,2-propanediol	96-24-2	MeOH	P-398S	Cycloate	1134-23-2	NEAT	P-248N
		NEAT	P-408N			MeOH	P-248S
Chloropropylate	5836-10-2	MeOH	P-408S	Cycloheximide	66-81-9	MeOH	P-411N
		NEAT	P-213N			MeOH	P-411S
<i>Chlorosulphacide</i>	see Chlorbenside			<i>2-Cyclohexyl-4,6-dinitrophenol</i>	see Dinex		
Chlorothalonil	1897-45-6	NEAT	P-222N	Cycloxydime	101205-02-1	NEAT	P-735N
Chloroxuron	1982-47-4	MeOH	P-222S			MeOH	P-735S
		NEAT	P-402N	Cyfluthrin	68359-37-5	NEAT	P-354N
Chlorpropham	101-21-3	MeOH	P-402S			MeOH	P-354S ‡
		NEAT	P-221N	<i>Cygon</i>	see Dimethoate		
<i>Chlorpyrifos</i>	see Dursban			λ-Cyhalothrin	91465-08-6	NEAT	P-473N
Chlorpyrifos-methyl	5598-13-0	NEAT	P-223N			MeOH	P-473S ‡
		MeOH	P-223S	Cyhexatin	13121-70-5	NEAT	P-375N
Chlorpyrifos-oxon	5598-15-2	NEAT	P-700N			MeOH	P-375S
		MeOH	P-700S	<i>Cyolane</i>	see Phosfolan		
Chlorsulfuron	64902-72-3	NEAT	P-262N	Cymoxanil	57966-95-7	NEAT	P-493N
		AcCN	P-262S-CN			MeOH	P-493S
<i>Chlorthal</i>	see DCPA diacid			Cypermethrin	52315-07-8	NEAT	P-225N
Chlorthiamid	1918-13-4	NEAT	P-673N			MeOH	P-225S
		MeOH	P-673S	α-Cypermethrin	67375-30-8	NEAT	P-548N
Chlorthion	500-28-7	MeOH	P-674S			MeOH	P-548S
Chlorthiophos	60238-56-4	NEAT	P-545N	<i>cis-Cypermethrin</i>	see a-Cypermethrin		
		MeOH	P-545S	Cyphenothrin	39515-40-7	NEAT	P-709N
Chlortoluron	15545-48-9	NEAT	P-434N			MeOH	P-709S
		MeOH	P-434S	<i>Cypona</i>	see Ciodrin		
Chlozolinate	84332-86-5	AcCN	P-683S-CN	Cyprazine	22936-86-3	NEAT	P-420N
Cinosulfuron	94593-91-6	NEAT	P-823N			MeOH	P-420S
		AcCN	P-823S-CN	Cyproconazole (Tech)	113096-99-4	MeOH	P-555S
Ciodrin	7700-17-6	MeOH	P-218S	Cyprodinil	121552-61-2	NEAT	P-720N
						MeOH	P-720S
<i>CIPC</i>	see Chlorpropham			Cyromazine	66215-27-8	NEAT	P-296N
Clarity	104040-79-1	H ₂ O	P-495S-W			MeOH	P-296S
<i>Classic</i>	see Chlorimuron ethyl			<i>Cythion</i>	see Malathion		
Clethodim	99129-21-2	AcCN	P-602S-CN	2,3-D acid Δ	2976-74-1	NEAT	P-470N
Clofentezine	74115-24-5	NEAT	P-472N			MeOH	P-470S
		MeOH	P-472S	2,4-D acid Δ	94-75-7	AcCN	P-470S-CN
Clomazon	81777-89-1	NEAT	P-286S			NEAT	P-020N
		MeOH	P-286S	2,6-D acid Δ	575-90-6	MeOH	P-020S
<i>Clopyralid</i>	see Lontrel					AcCN	P-020S-CN
Clopyralid methyl ester	1532-24-7	MeOH	P-488S	2,4-D butoxyethyl ester	1929-73-3	NEAT	P-690N
						MeOH	P-690S
<i>CMU</i>	see Monuron					AcCN	P-690S-CN
						NEAT	P-438N
						Hexane	P-438S-H

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Pesticides



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Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.		
2,4-D butyl ester	94-80-4	NEAT	P-712N	<i>Delsan</i>	see Thiram				
		MeOH	P-712S	Deltamethrin	52918-63-5	NEAT	P-355N		
2,4-D ethyl ester	533-23-3	NEAT	P-636N			MeOH	P-355S		
		MeOH	P-636S	Demeton	8065-48-3	NEAT	P-031N		
2,4-D ethylhexyl ester	1928-43-4	NEAT	P-439N			MeOH	P-031S		
		Hexane	P-439S-H	Demeton-S	126-75-0	NEAT	P-271N		
2,4-D methyl ester	1928-38-7	NEAT	P-021N			MeOH	P-271S		
		MeOH	P-021S	Demeton-S-methyl	919-86-8	MeOH	P-482S		
2,6-D methyl ester		NEAT	P-691N	Demeton-S-methylsulfone	17040-19-6	NEAT	P-554N		
		MeOH	P-691S			MeOH	P-554S		
<i>Dacamox</i>	see Thiofanox			<i>Demosan</i>	see Chloroneb				
<i>Daconil</i>	see Chlorothalonil			<i>Desethylterbutylazine</i>	see Terbutylazin desethyl				
<i>Dacthal diacid</i>	see DCPA diacid			Desmedipham	13684-56-5	NEAT	P-376N		
<i>Dacthal monoacid</i>	see Monomethyltetrachloroterephthalate					MeOH	P-376S		
Dacthal	1861-32-1	NEAT	P-196N	<i>Desmel</i>	see Tilt				
			P-196S	Desmetryn	1014-69-3	NEAT	P-566N		
Dalapon acid Δ	75-99-0	NEAT	P-140N			MeOH	P-566S		
		MeOH	P-140S	<i>Detamide</i>	see Deet				
Dalapon methyl ester	17640-02-7	AcCN	P-140S-CN	<i>Dethmor</i>	see Warfarin				
		NEAT	P-226N	<i>Devrinol</i>	see Napropamide				
		MeOH	P-226S	<i>Dexon</i>	see Fenaminosulf				
<i>Daminozide</i>	see Alar			<i>Dextrone</i>	see Paraquat CL				
<i>Danicut</i>	see Amitraz			<i>Dialifor</i>	see Dialifos				
<i>Danimen</i>	see Danitol			Dialifos	10311-84-9	NEAT	P-426N		
Danitol	39515-41-8	NEAT	P-263N			MeOH	P-426S		
Dasanit	115-90-2		P-263S	Diallate	2303-16-4	NEAT	P-142N		
		NEAT	P-235N			MeOH	P-142S		
Dazomet	533-74-4	NEAT	P-469N	Diazinon	333-41-5	NEAT	P-033N		
			P-469S			MeOH	P-033S		
2,4-DB acid Δ	94-82-6	NEAT	P-141N	Diazinon oxygen analog	333-41-5-0	NEAT	P-640N		
		MeOH	P-141S			Acetone	P-640S-A		
		AcCN	P-141S-CN	Dibam	128-04-1	NEAT	P-487N		
2,4-DB methyl ester	18625-12-2	NEAT	P-228N			MeOH	P-487S		
			P-228S	<i>Dibrom</i>	see Naled				
<i>DBCP</i>	see Fumazone			Dibutylchlorendate	1770-80-5	NEAT	P-109N		
<i>DCMU</i>	see Karmex					MeOH	P-109S		
<i>DCNA</i>	see Botran			Dicamba Δ	1918-00-9	NEAT	P-008N		
<i>DCPA</i>	see Dacthal					MeOH	P-008S		
DCPA diacid Δ	2136-79-0	NEAT	P-320N			AcCN	P-008S-CN		
o,p'-DDD	53-19-0	NEAT	P-024N	<i>Dicamba diglycolamine (tech)</i>	see Clarity				
		MeOH	P-024S	Dicamba methyl ester	6597-78-0	NEAT	P-071N		
o,p'-DDE	3424-82-6	NEAT	P-026N			MeOH	P-071S		
		MeOH	P-026S	<i>Dicaptan</i>	see Dicapthon				
o,p'-DDT	789-02-6	NEAT	P-028N	Dicapthon	2463-84-5	NEAT	P-035N		
		MeOH	P-028S			MeOH	P-035S		
p,p'-DDA	83-05-6	NEAT	P-444N	Dichlobenil	1194-65-6	NEAT	P-275N		
		MeOH	P-444S			MeOH	P-275S		
p,p'-DDD	72-54-8	NEAT	P-025N	Dichlofenthion	97-17-6	NEAT	P-211N		
		MeOH	P-025S			MeOH	P-211S		
p,p'-DDE	72-55-9	NEAT	P-027N	Dichlofluanid	1085-98-9	NEAT	P-474N		
		MeOH	P-027S			MeOH	P-474S		
p,p'-DDT	50-29-3	NEAT	P-029N	Dichlone	117-80-6	NEAT	P-253N		
		MeOH	P-029S			MeOH	P-253S		
DDT, Tech	50-29-3	NEAT	P-346N	<i>Dichloran</i>	see Botran				
		MeOH	P-346S	Dichlormid	37764-25-3	NEAT	P-675N		
		AcCN	P-346S-CN			MeOH	P-675S		
4,4'-DDMU	1022-22-6	NEAT	P-424N	<i>3,6-Dichloroanisic acid</i>	see Clarity				
		MeOH	P-424S	3,5-Dichlorobenzoic acid Δ	51-36-5	NEAT	P-242N		
<i>DDVP</i>	see Dichlorvos					MeOH	P-242S		
<i>DDVT</i>	see p,p'-DDT			4,4'-Dichlorobenzophenone	90-98-2	AcCN	P-242S-CN		
<i>Dechlorane</i>	see Mirex					NEAT	P-295N		
<i>Decis</i>	see Deltamethrin					MeOH	P-295S		
<i>Decrotox</i>	see Ciodrin			2,4-Dichloro-6-ethylamino-s-triazine		NEAT	P-538N		
<i>Dedevap</i>	see Dichlorvos					MC	P-538S-MC		
Deet	134-62-3	NEAT	P-255N	2,4-Dichlorophenylacetic acid Δ	19719-28-9	NEAT	P-244N		
		MeOH	P-255S			MeOH	P-244S		
DEF 6	78-48-8	NEAT	P-150N			AcCN	P-244S-CN		
		MeOH	P-150S	<i>3-(2,3-Dichlorophenyl)-1,1-dimethylurea</i>	see 2,3-Diuron				
<i>Delnav</i>	see Dioxathion								

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Pesticides

Pesticide Standards Neats at 10 mg. Solutions at 100 µg/mL in 1 mL, except as noted.

Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
Dichlorophen	97-23-4	NEAT MeOH	P-232N P-232S	Dinitramine	29091-05-2	NEAT MeOH	P-575N P-575S
2,4-Dichlorophenylacetic acid Me see Methyl-2,4-dichlorophenylacetate				4,6-Dinitro-o-cresol	534-52-1	NEAT MeOH	P-384N P-384S
Dichlorprop Δ	120-36-5	NEAT MeOH AcCN	P-143N P-143S P-143S-CN	Dinocap	39300-45-3	NEAT MeOH	P-288N P-288S
Dichlorprop methyl ester	57153-17-0	NEAT MeOH	P-229N P-229S	Dinoseb Δ	88-85-7	NEAT MeOH	P-144N P-144S
Dichlorvos	62-73-7	NEAT MeOH	P-036N P-036S	Dinoseb methyl ether	6099-79-2	NEAT MeOH	P-230N P-230S
Diclobutrazol	75736-33-3	NEAT AcCN	P-641N P-641S-CN	Dinoterb	1420-07-1	NEAT MeOH	P-524N P-524S
Diclofop	40843-25-2	NEAT MeOH	P-514N P-514S	Dioxacarb	6988-21-2	NEAT MeOH	P-264N P-264S ‡
Diclofop methyl	51338-27-3	NEAT MeOH	P-303N P-303S	Dioxathion	78-34-2	NEAT MeOH	P-219N P-219S
Dicloran	see Botran			Diphacinone	82-66-6	NEAT MeOH	P-315N P-315S ‡
o,p'-Dicofol		NEAT MeOH	P-606N P-606S	Diphenamid	957-51-7	NEAT MeOH	P-173N P-173S
Dicofol	see Kelthane			Dipropetryn	4147-51-7	NEAT MeOH	P-580N P-580S
Dicrotophos	141-66-2	NEAT MeOH	P-178N P-178S	Diquat dibromide monohydrate	6385-62-2	NEAT MeOH	P-231N P-231S
Dieldrin	60-57-1	NEAT MeOH	P-037N P-037S	Disul-sodium salt	136-78-7	NEAT MeOH	P-513N P-513S
Dieltamid	see Deet			Disulfoton	298-04-4	NEAT MeOH	P-042N P-042S
Diethatyl ethyl	38727-55-8	NEAT MeOH	P-599N P-599S	Disulfoton sulfone	2497-06-5	NEAT MeOH	P-582N P-582S
Diethofencarb	87130-20-9	NEAT MeOH	P-744N P-744S	Disulfoton sulfoxide	2497-07-6	NEAT MeOH	P-593N P-593S
Diethylphosphate	598-02-7	NEAT MeOH	P-534N P-534S	Disyston	see Disulfoton		
Diethyl phosphate (mono- & di-)	598-02-7	NEAT MeOH	P-443N P-443S	Ditalimfos	5131-24-8	NEAT MeOH	P-546N P-546S
Difenoconazole	119446-68-3	NEAT MeOH	P-447N P-447S	Dithane D-14	see Nabam		
Difenoxuron	14214-32-5	NEAT MeOH	P-604N P-604S	Dithianon	3347-22-6	NEAT Acetone	P-725N P-725S-A
Diflubenzuron	35367-38-5	NEAT MeOH	P-377N P-377S	Dithiopyr	97886-45-8	NEAT MeOH	P-741N P-741S
Diflufenican	83164-33-4	NEAT MeOH	P-722N P-722S	Diuron	see DCMU		
2,3-Dihydro-2,2-dimethylbenzofuran-7-ol		NEAT	P-628N	2,3-Diuron	10290-37-6	NEAT MeOH	P-632N P-632S
2,3-Dihydro-2,2-dimethylbenzofuran-3,7-diol	1563-66-2	MeOH	P-628S	DMPA	see Schradan		
2,3-Dihydro-2,2-dimethylbenzofuran-3,7-diol	1563-38-8	MeOH	P-629S	DMST	66840-71-9	MeOH	P-572S
Dimecron	see Phosphamidon			DNBP	see Dinoseb		
Dimefox	115-26-4	NEAT MeOH	P-299N P-299S	DNOC	see 4,6-Dinitro-o-cresol		
Dimefuron	34205-21-5	NEAT MeOH	P-565N P-565S	DNTP	see Parathion		
Dimepax	22936-75-0	NEAT MeOH	P-643N P-643S	Dodemorph acetate	31717-87-0	NEAT MeOH	P-385N P-385S
Dimetate	see Dimethoate			Dodine	2439-10-3	NEAT MeOH	P-386N P-386S
Dimethachlor	50563-36-5	NEAT MeOH	P-642N P-642S	Doguidine	see Dodine		
Dimethenamid	87674-68-8	NEAT MeOH	P-747N P-747S	Dowpon	see Dalapon acid		
Dimethipin	55290-64-7	NEAT MeOH	P-483N P-483S	Dozer	see Fenuron-TCA		
Dimethoate	60-51-5	NEAT MeOH	P-039N P-039S	2,4-DP ethyl hexyl	79270-78-3	NEAT MeOH	P-429N P-429S
Dimethomorph	110488-70-5	NEAT MeOH	P-713N P-713S	Drinox	see Heptachlor		
Dimethyl phosphate	813-78-5	NEAT MeOH	P-442N P-442S	Dropp	see Thidiazuron		
Dimoxystrobin	149961-52-4	AcCN	P-844S-CN	DSMA	144-21-8	NEAT MeOH	P-598N P-598S
Dinex	131-89-5	NEAT MeOH	P-427N P-427S	DTMC	see Kelthane		
Diniconazol	83657-24-3	NEAT AcCN	P-845N P-845N-CN	Dual	see Metolachlor		
				Dursban	2921-88-2	NEAT MeOH	P-094N P-094S
				Dybar	see Fenuron		
				Dyfonate	944-22-9	NEAT MeOH Hexane	P-087N P-087S P-087S-H
				Dylox	see Trichlorfon		

Δ Pesticides containing a carboxyl group will autoesterify in MeOH. The pesticides most likely to have this occur are marked with an Δ. These standards are intended for use as a post-esterification standard for GC analysis. For other types of analysis (ex. HPLC) we suggest a non-hydroxylic solvent such as Acetonitrile.

‡ To delay premature breakdown of thermally labile products in transit we suggest requesting a "Cold Pack"



Pesticide Standards Neats at 10 mg. Solutions at 100 µg/mL in 1 mL, except as noted.

Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
<i>Dymid</i>	see Diphenamid			Ethyl hexanediol (mixed isomers)	94-96-2	NEAT	P-389N
<i>Dyrene</i>	see Anilazine					MeOH	P-389S
<i>EDDP</i>	see Edifenphos			bis(2-Ethylhexyl)adipate	103-23-1	NEAT	P-233N
Edifenphos	17109-49-8	NEAT	P-368N			MeOH	P-233S
		MeOH	P-368S	<i>Ethyl parathion</i>	see Parathion		
<i>Ektafos</i>	see Dicrotophos			2-Ethylthiomethyl phenol		MeOH	P-423S
<i>Elgetol</i>	see 4,6-Dinitro-o-cresol			Etofenprox	80844-07-1	NEAT	P-848N
<i>Eloncron</i>	see Dioxacarb					AcCN	P-848S-CN
Empenthrin	54406-48-3	NEAT	P-708N	<i>Etridiazole</i>	see Terrazole		
Endosulfan I	959-98-8	NEAT	P-091N	Etrimfos	38260-54-7	NEAT	P-480N
		MeOH	P-091S			MeOH	P-480S
Endosulfan II	33213-65-9	NEAT	P-092N	<i>Etolene</i>	see Ronnel		
		MeOH	P-092S	<i>ETU</i>	see Ethylene thiourea		
<i>α-Endosulfan</i>	see Endosulfan I			<i>Expand</i>	see Sethoxyldim		
<i>β-Endosulfan</i>	see Endosulfan II			<i>Famophos</i>	see Famphur		
Endosulfan, mixed isomers	115-29-7	NEAT	P-435N	Famoxadon	131807-57-3	NEAT	P-849N
		MeOH	P-435S			AcCN	P-849S-CN
Endosulfan sulfate	1031-07-8	NEAT	P-145N	Famphur	52-85-7	NEAT	P-147N
		MeOH	P-145S			MeOH	P-147S
Endothal Δ	145-73-3	NEAT	P-183N	<i>Fargo</i>	see Triallate		
		MeOH	P-183S	<i>Fenac</i>	see Fenatrol		
Endothal dimethyl ester		NEAT	P-603N	Fenamidone	161326-34-7	NEAT	P-850N
		MeOH	P-603S			AcCN	P-850S-CN
Endrin	72-20-8	NEAT	P-045N	Fenaminosulf	140-56-7	NEAT	P-058N
		MeOH	P-045S			MeOH	P-058S
Endrin aldehyde	7421-93-4	NEAT	P-046N	Fenamiphos	22224-92-6	NEAT	P-114N
		MeOH	P-046S			MeOH	P-114S
Endrin ketone	53494-70-5	NEAT	P-146N	Fenamiphos sulfone		NEAT	P-623N
		MeOH	P-146S			MeOH	P-623S
<i>Enide</i>	see Diphenamid			Fenamiphos sulfoxide		NEAT	P-622N
EPN	2104-64-5	NEAT	P-220N			MeOH	P-622S
		Acetone	P-220S-A	<i>Fenarimol</i>	see Bloc		
<i>Eptam</i>	see EPTC			Fenatrol	85-34-7	NEAT	P-319N
<i>Eptapur</i>	see Buturon					MeOH	P-319S
EPTC	759-94-4	NEAT	P-238N	Fenazaquin <i>NEW</i>	120928-09-8	Hexane	P-787S-H
		MeOH	P-238S	Fenbuconazole	114369-43-6	MeOH	P-662S
Esfenvalerate	66230-04-4	NEAT	P-525N	Fenbutatin oxide	13356-08-6	NEAT	P-481N
		MeOH	P-525S			Acetone	P-481S-A
<i>Esprocarb</i>	see Bensulfuron-methyl			<i>Fenclorphos</i>	see Ronnel		
Etaconazole	60207-93-4	NEAT	P-644N	Fenhexamid	126833-17-8	NEAT	P-783N
		MeOH	P-644S			MeOH	P-783S
<i>Etazine</i>	see Secbumeton			Fenitrothion	122-14-5	NEAT	P-259N
Ethalfuralin	55283-68-6	NEAT	P-269N			MeOH	P-259S
		MeOH	P-269S	<i>Fenoprop</i>	see Silvex		
Ethephon	16672-87-0	NEAT	P-239N	Fenoxaprop-ethyl	66441-23-4	NEAT	P-365N
		MeOH	P-239S			MeOH	P-365S
Ethidimuron	30043-49-3	NEAT	P-364N	Fenoxaprop-p-ethyl	71238-80-2	NEAT	P-694N
		MeOH	P-364S			MeOH	P-694S
Ethiofencarb	29973-13-5	NEAT	P-448N	Fenoxycarb	79127-80-3	NEAT	P-686N
		MeOH	P-448S			MeOH	P-686S
Ethiofencarb sulfone	53380-23-7	AcCN	P-824S-CN	<i>Fenpropathrin</i>	see Danitol		
Ethiofencarb sulfoxide	5380-22-6	AcCN	P-825S-CN	Fenpropimorph	67564-91-4	NEAT	P-705N
<i>Ethiofencarb metabolite</i>	see 2-Ethylthiomethyl phenol					MeOH	P-705S
Ethion	563-12-2	NEAT	P-048N	Fenpyroximate	111812-58-9	NEAT	P-724N
		MeOH	P-048S			MeOH	P-724S
Ethiozin	64529-56-2	NEAT	P-660N	Fenson	80-38-6	NEAT	P-551N
		MeOH	P-660S			MeOH	P-551S
Ethirimol	23947-60-6	NEAT	P-645N	<i>Fensulfothion</i>	see Dasanit		
		MeOH	P-645S	Fenthion	55-38-9	NEAT	P-148N
Ethofumesate	26225-79-6	NEAT	P-387N			MeOH	P-148S
		MeOH	P-387S	Fentin acetate	900-95-8	NEAT	P-680N
Ethoprop	13194-48-4	NEAT	P-129N			MeOH	P-680S
		MeOH	P-129S	<i>Fentin chloride</i>	see Triphenyltin chloride		
Ethoxyquin	91-53-2	NEAT	P-388N	Fenuron	101-42-8	NEAT	P-004N
		MeOH	P-388S			MeOH	P-004S
Ethoxysulfuron	126801-58-9	NEAT	P-847N	Fenuron TCA	4482-55-7	NEAT	P-006N
		AcCN	P-847S-CN			MeOH	P-006S
Ethyl carbamate	51-79-6	NEAT	P-419N	Fenvalerate	51630-58-1	NEAT	P-194N
		MeOH	P-419S			MeOH	P-194S
<i>Ethylene bisdithiocarbamate, disodium</i>	see Nabam			Ferbam	14484-64-1	NEAT	P-110N
Ethylene thiourea	96-45-7	NEAT	P-588N			MeOH	P-110S
		MeOH	P-588S	<i>Ferber K</i>	see Ferbam		
				<i>Ficam</i>	see Bendiocarb		

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Pesticides

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Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
Fipronil and Its Metabolites:				Formothion	2540-82-1	NEAT	P-149N ‡
Fipronil is in the phenyl pyrazole class of pesticides. It is a broad-spectrum insecticide used in many different applications. It is used in many commercial topical flea and tick treatments for cats and dogs. Fipronil is used in these types of applications because it is not readily absorbed through the skin, and has a comparatively low toxicity if ingested.						AcCN	P-149S-CN
Fipronil produces three notable metabolites: Fipronil Sulfide, Fipronil Sulfone and Fipronil Desulfinyl. These metabolites form under different conditions, and are of particular interest, because unlike the parent compound, they can be more toxic and environmentally persistent.				Fosetyl aluminium	39148-24-8	NEAT	P-532N
Fipronil & Metabolite Kit						MeOH	P-532S
P-FIP-MET-KIT						NEAT	P-828N
				Fosthiazate	98886-44-3		
				<i>Frescon</i>	see Trifenmorph		
				<i>Frumidor</i>	see Thiophanate-methyl		
				Fumazone	96-12-8	NEAT	P-341N
						MeOH	P-341S
				<i>Furadan</i>	see Carbofuran		
				Furalaxyl	57646-30-7	NEAT	P-605N
						MeOH	P-605S
				Furathiocarb	65907-30-4	MeOH	P-569S
				Furmecyclox	60568-05-0	MeOH	P-607S
				<i>Furore</i>	see Fenoxaprop-ethyl		
				<i>Fusilade 5</i>	see Fluazifop butyl		
				<i>Galtak</i>	see Benazolin		
				<i>Gardona</i>	see Tetrachlorvinphos		
				<i>Gardoprim</i>	see Terbutylazine		
				<i>Garlon</i>	see Triclopyr		
				<i>Garrathion</i>	see Carbophenothion		
				<i>Gesaftram</i>	see Prometon		
				<i>Gesagard</i>	see Prometryne		
				<i>Gesamil</i>	see Propazine		
				<i>Gesapax</i>	see Ametryn		
				<i>Gesaprim</i>	see Atrazine		
				Gesatamine	1610-17-9	NEAT	P-189N
						MeOH	P-189S
				<i>Gesatop</i>	see Simazine		
				<i>Gexane</i>	see Lindane		
				Glufosinate, ammonium salt	77182-82-2	NEAT	P-475N
						MeOH	P-475S
				Glyodin	556-22-9	NEAT	P-528N
						MeOH	P-528S
				Glyphosate	1071-83-6	NEAT	P-015N
						H ₂ O	P-015S-W
				<i>Goal</i>	see Oxyfluorfen		
				<i>Goltix</i>	see Metamitron		
				<i>Grasidin</i>	see Sethoxydim		
				<i>Grasp</i>	see Tralkoxydim		
				Guazatine acetate	115044-19-4	MeOH	P-612S
				<i>Gusathion M</i>	see Azinphos-methyl		
				<i>Guthion</i>	see Azinphos-methyl		
				<i>Gy-bon</i>	see Simetryn		
				Haloxypol Δ	69806-34-4	NEAT	P-496N
						MeOH	P-496S
						AcCN	P-496S-CN
				Haloxypol methyl ester	69806-40-2	NEAT	P-497N
						MeOH	P-497S
				<i>Hanane</i>	see Dimefox		
				<i>Hedonal</i>	see MCPP acid		
				<i>Helothion</i>	see Bolstar		
				<i>HEOD</i>	see Dieldrin		
				Heptachlor	76-44-8	NEAT	P-053N
						MeOH	P-053S
				Heptachlor epoxide [Isomer A]	28044-83-9	MeOH	P-294S
				Heptachlor epoxide [Isomer B]	1024-57-3	NEAT	P-054N
						MeOH	P-054S
				<i>2-Hepta-decyl-2-imidazoline</i>	see Glyodin		
				<i>Heptamul</i>	see Heptachlor		
				Heptenophos	23560-59-0	NEAT	P-547N
						MeOH	P-547S
				<i>Heptox</i>	see Heptachlor		
				<i>Herald</i>	see Danitol		
				<i>Herb-All</i>	see MSMA		
				<i>Herkol</i>	see Dichlorvos		
				Hexaconazole	79983-71-4	NEAT	P-500N
						MeOH	P-500S
				Hexaflumuron	86479-06-3	NEAT	P-697N
						MeOH	P-697S
				Hexamethylphosphoramide	680-31-9	NEAT	P-205N
						MeOH	P-205S
				Hexazinone	51235-04-2	NEAT	P-123N
						MeOH	P-123S
<i>Folbex</i>	see Chlorobenzilate						
<i>Folex</i>	see Merphos						
<i>Folosan</i>	see Pentachloronitrobenzene						
Folpet	133-07-3	NEAT	P-258N				
		MeOH	P-258S				
<i>Fonofos</i>	see Dyfonate						
Foramsulfuron	173159-57-4	NEAT	P-852N				
		AcCN	P-852S-CN				
Formetanate HCl	23422-53-9	NEAT	P-431N				
		MeOH	P-431S				

Δ Pesticides containing a carboxyl group will autoesterify in MeOH. The pesticides most likely to have this occur are marked with an Δ. These standards are intended for use as a post-esterification standard for GC analysis. For other types of analysis (ex. HPLC) we suggest a non-hydroxylic solvent such as Acetonitrile.

‡ To delay premature breakdown of thermally labile products in transit we suggest requesting a "Cold Pack"

Pesticides



Pesticide Standards Neats at 10 mg. Solutions at 100 µg/mL in 1 mL, except as noted.

Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
<i>Hexylthiocarbam</i>	see Cycloate			Isoxaben	82558-50-7	NEAT	P-533N
Hexythiazox	78587-05-0	NEAT	P-658N			MeOH	P-533S
		MeOH	P-658S	Isoxaflutole	141112-29-0	NEAT	P-832N
<i>Hoe 2810</i>	see Linuron					AcCN	P-832S-CN
<i>Hoelon</i>	see Dichlofop methyl			<i>Jodfenphos</i>	see Iodofenphos		
<i>Horbadox</i>	see Pendimethalin			Kadethrine	58769-20-3	NEAT	P-367N
<i>Hostathion</i>	see Triazophos					MeOH	P-367S
<i>Hoxan</i>	see Dichlofop methyl			Karbutilate	4849-32-5	NEAT	P-337N
Hydramethylnon	67485-29-4	NEAT	P-403N			MeOH	P-337S
		MeOH	P-403S	Karmex	330-54-1	NEAT	P-227N
2-Hydroxyatrazine	2163-68-0	NEAT	P-326N			MeOH	P-227S
		MeOH	P-326S	Kelthane	115-32-2	NEAT	P-057N
3-Hydroxycarbofuran	16655-82-6	MeOH	P-186S			MeOH	P-057S
1-Hydroxychloridene	24009-05-0	MeOH	P-151S	Kepone	143-50-0	NEAT	P-152N
Hymexazol	100004-44-1	MeOH	P-571S			MeOH	P-152S
<i>Hyvar</i>	see Bromacil			<i>Kerb</i>	see Pronamide		
<i>Illoxan</i>	see Dichlofop methyl			3-Ketocarbofuran		Acetone	P-298S-A
Imazalil	35554-44-0	NEAT	P-332N	<i>Kilprop</i>	see MCPP acid		
		MeOH	P-332S	<i>S-Kinoprene</i>	see Enstar 2		
Imazamethabenz methyl	81405-85-8	NEAT	P-414N	<i>Kothar</i>	see Oxyfluorfen		
		MeOH	P-414S	Kresoxim-methyl	143390-89-0	NEAT	P-740N
Imazapyr Δ	81334-34-1	NEAT	P-589N			MeOH	P-740S
		MeOH	P-589S	<i>Lannate</i>	see Methomyl		
		AcCN	P-589S-CN	<i>Larvadex</i>	see Cyromazine		
Imazaquin	81335-37-7	NEAT	P-283N	<i>Lasso</i>	see Alachlor		
		MeOH	P-283S	<i>Lazo</i>	see Alachlor		
Imazethapyr	81335-77-5	MeOH	P-285S	Lenacil	2164-08-1	NEAT	P-649N
Imazosulfuron	122548-33-8	AcCN	P-853S-CN-0.1X			MeOH	P-649S
Imidacloprid	138261-41-3	NEAT	P-596N	<i>Lentagran</i>	see Pyridate		
		MeOH	P-596S	<i>Lepton</i>	see Leptophos		
Imidan	732-11-6	NEAT	P-055N	Leptophos	21609-90-5	NEAT	P-206N
		MeOH	P-055S			MeOH	P-206S
Indalone	532-34-3	NEAT	P-648N	<i>Lesan</i>	see Fenaminosulf		
		MeOH	P-648S	Lethane 384	112-56-1	NEAT	P-506N
Indoxacarb	144171-61-9	NEAT	P-829N			MeOH	P-506S
		AcCN	P-829S-CN	Lethron		MeOH	P-634S
<i>Ingran 80W</i>	see Prebane			Lindane (γ-BHC)	58-89-9	NEAT	P-059N
<i>INPC</i>	see Propham					MeOH	P-059S
Iodofenphos	18181-70-9	NEAT	P-379N	Linuron	330-55-2	NEAT	P-022N
		MeOH	P-379S			MeOH	P-022S
Iodosulfuron-methyl-sodium	144550-36-7	NEAT	P-830N	<i>Liphadione</i>	see Chlorophacinone		
		AcCN	P-830S-CN	<i>Lonacol</i>	see Zineb		
Ioxynil	1689-83-4	NEAT	P-522N	Lontrel	1702-17-6	NEAT	P-224N
		MeOH	P-522S			MeOH	P-224S
<i>IPB</i>	see Iprobenfos			<i>Lorox</i>	see Linuron		
<i>IPC</i>	see Propham			Lufenuron	103055-07-8	NEAT	P-704N
Iprobenfos	26087-47-8	NEAT	P-609N			MeOH	P-704S
		MeOH	P-609S	<i>Machete</i>	see Butachlor		
Iprodione	36734-19-7	NEAT	P-016N	Malaoxon	1634-78-2	NEAT	P-529N
		Acetone	P-016S-A			MeOH	P-529S
		AcCN	P-016S-CN	<i>Malaspray</i>	see Malathion		
Iprovalicarb	140923-17-7	NEAT	P-831N	Malathion	121-75-5	NEAT	P-060N
		AcCN	P-831S-CN			MeOH	P-060S
Irgarol	28154-98-0	NEAT	P-746N	Maleic hydrazide	123-33-1	NEAT	P-380N
		MeOH	P-746S			MeOH	P-380S
Isazophos	42509-80-8	NEAT	P-449N	<i>Mancozan</i>	see Zineb		
		MeOH	P-449S	Mancozeb	8018-01-7	NEAT	P-322N
Isobenzan	297-78-9	MeOH	P-323S	Maneb	12427-38-2	NEAT	P-282N
Isodrin	465-73-6	NEAT	P-471N	<i>Manzeb</i>	see Mancozeb		
		MeOH	P-471S	<i>Marathon</i>	see Imidacloprid		
Isfenphos	25311-71-1	NEAT	P-018N	<i>Marlate</i>	see Methoxychlor		
		MeOH	P-018S	<i>Matacil</i>	see Aminocarb		
Isoprocab	2631-40-5	NEAT	P-317N	<i>Mataven</i>	see Flamprop-methyl		
		MeOH	P-317S	<i>Mavrik</i>	see Fluvinate		
Isopropalin	33820-53-0	NEAT	P-100N	<i>Maxforce</i>	see Hydramethylnon		
		MeOH	P-100S	MCPA acid Δ	94-74-6	NEAT	P-153N
2-Isopropylamino-4,6-dichloro-s-triazine		NEAT	P-635N			MeOH	P-153S
		MeOH	P-635S	MCPA methyl ester	2436-73-9	AcCN	P-153S-CN
2-Isopropyl-6-methyl-4-pyrimidinol		NEAT	P-631N			NEAT	P-038N
		MeOH	P-631S	MCPB acid	94-81-5	MeOH	P-038S
Isoprothiolane	50512-35-1	NEAT	P-661N			NEAT	P-370N
		MeOH	P-661S			MeOH	P-370S
Isoproturon	34123-59-6	NEAT	P-302N				
		MeOH	P-302S				

Same Low Price in Neat (10 mg) or Solution (100 µg/mL) form

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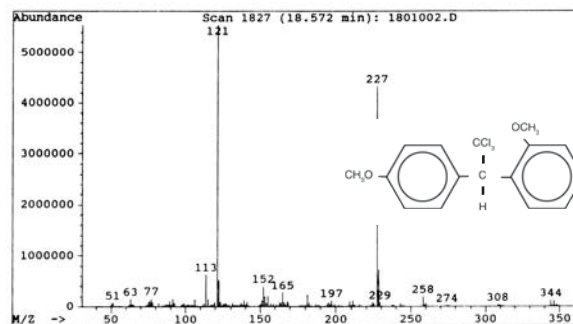


Pesticides

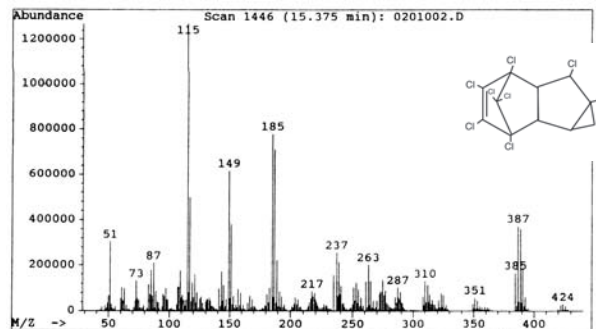
Pesticide Standards Neats at 10 mg. Solutions at 100 µg/mL in 1 mL, except as noted.

Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
MCPB methyl ester	57153-18-1	NEAT	P-371N	Methylamine hydrochloride	593-51-1	NEAT	P-624N
		MeOH	P-371S			MeOH	P-624S
MCPP acid Δ	7085-19-0	NEAT	P-154N	Methyl-3,5-dichlorobenzoate	2905-67-1	NEAT	P-247N
		MeOH	P-154S			MeOH	P-247S
		AcCN	P-154S-CN	2-Methyl-4,6-dinitroanisole	29027-13-2	NEAT	P-611N
MCPP methyl ester	2786-19-7	NEAT	P-040N			MeOH	P-611S
		MeOH	P-040S	2-Methyl-4,6-dinitrophenol methyl ether			
Mecarbam	2595-54-2	NEAT	P-318N	see 2-Methyl-4,6-dinitroanisole			
		MeOH	P-318S	Methyl dursban	see Chlorpyrifos-methyl ester		
Mecoprop	see MCPB acid			Methyl-2,4-dichlorophenylacetate	55954-23-9	NEAT	P-214N
Mecoprop, 2-Ethylhexyl ester		NEAT	P-502N			MeOH	P-214S
		MeOH	P-502S	3-Methyl-4-nitrophenol	2581-34-2	NEAT	P-509N
Mediben	see Dicamba					MeOH	P-509S
Mefenacet	73250-68-7	NEAT	P-745N	Methyl nonyl ketone Δ	112-12-9	NEAT	P-415N
		MeOH	P-745S			MeOH	P-415S
Meltatox	see Dodemorph acetate					AcCN	P-415S-CN
Menaphace	see MCPA acid			Methyl paraoxon	950-35-6	NEAT	P-311N
Mepanipyrim	110235-47-7	NEAT	P-855N			MeOH	P-311S
		AcCN	P-855S-CN	Methyl parathion	298-00-0	NEAT	P-065N
Mephosfolan	950-10-7	NEAT	P-718N			MeOH	P-065S
		MeOH	P-718S	Methylpentachlorophenyl sulfide	1825-19-0	NEAT	P-567N
Mepro	see MCPB acid					MeOH	P-567S
Mepronil	55814-41-0	NEAT	P-736N	Methyl tiofanato	see Thiophanate-methyl		
		MeOH	P-736S	Methyl trithion	953-17-3	MeOH	P-652S
2-Mercaptobenzothiazole monoethanolamine salt				Metiram	9006-42-2	NEAT	P-416N
see Vanicide-20S				Metobromuron	3060-89-7	NEAT	P-436N
Mercaptodimethur	see Methiocarb					MeOH	P-436S
Mercaptophos	see Fenthion			Metolachlor	51218-45-2	NEAT	P-158N
Mercuram	see Thiram					MeOH	P-158S
Merge 823	see MSMA						
Merphos	150-50-5	NEAT	P-124N				
		MeOH	P-124S				
Metacide	see Methyl parathion						
Metalaxyl	57837-19-1	NEAT	P-120N				
		MeOH	P-120S				
Metaldehyde Δ	9002-91-9	NEAT	P-600N				
		MeOH	P-600S				
		AcCN	P-600S-CN				
Metamitron	41394-05-2	NEAT	P-252N				
		MeOH	P-252S				
Metam-sodium	see Metam-sodium dihydrate						
Metam-sodium dihydrate	6734-80-1	NEAT	P-381N				
		MeOH	P-381S				
Metasystox R	see Oxydemeton methyl						
Metazachlor	67129-08-2	NEAT	P-249N				
		MeOH	P-249S				
Metconazole	125116-23-6	AcCN	P-856S-CN-0.1X				
Methabenzthiazuron	18691-97-9	NEAT	P-563N				
		MeOH	P-563S				
Methacrifos	62610-77-9	NEAT	P-556N				
		MeOH	P-556S				
Methamidophos	see Monitor						
Methidathion	950-37-8	NEAT	P-195N				
		MeOH	P-195S				
Methiocarb	2032-65-7	NEAT	P-156N				
		MeOH	P-156S				
Methomyl	16752-77-5	NEAT	P-032N				
		MeOH	P-032S				
Methoprene	40596-69-8	NEAT	P-157N				
		MeOH	P-157S				
Methoprotryne	841-06-5	NEAT	P-564N				
		MeOH	P-564S				
Methoxychlor	72-43-5	NEAT	P-064N				
		MeOH	P-064S				
o,p'-Methoxychlor	30667-99-3	NEAT	P-535N				
		MeOH	P-535S				
		Toluene	P-535S-TP				
p,p'-Methoxychlor-olefin	2132-70-9	MeOH	P-466S				
Methoxy-DDT	see Methoxychlor						
Methoxyfenozide	161050-58-4	NEAT	P-857N				
		AcCN	P-857S-CN				

We have synthesized neat o,p'-Methoxychlor: C₁₀H₁₀Cl₂O₂, M.W. = 344



We have synthesized neat Oxychlordane: C₁₀H₆Cl₈O M.W. = 420



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Pesticides



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Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
Metolcarb	1129-41-5	NEAT	P-494N	Nitralin	4726-14-1	NEAT	P-583N
		MeOH	P-494S			MeOH	P-583S
Metoxuron	19937-59-8	NEAT	P-437N	Nitrapyrin	1929-82-4	NEAT	P-489N
		MeOH	P-437S			MeOH	P-489S
Metribuzin	21087-64-9	NEAT	P-089N	4-Nitroanisole	100-17-4	NEAT	P-273N
		MeOH	P-089S			MeOH	P-273S
<i>Metron</i>	see Methyl parathion			Nitrofen	1836-75-5	NEAT	P-363N
Metsulfuron methyl	74223-64-6	NEAT	P-463N			MeOH	P-363S
Mevinphos	7786-34-7	NEAT	P-074N	Nitrothal-isopropyl	10552-74-6	NEAT	P-695N
		MeOH	P-074S			MeOH	P-695S
Mexacarbate	315-18-4	NEAT	P-030N	<i>Nix-Scald</i>	see Ethoxyquin		
		MeOH	P-030S	<i>Nomersan</i>	see TEPP		
MGK 264	113-48-4	NEAT	P-082N	cis-Nonachlor	5103-73-1	NEAT	P-297N
		MeOH	P-082S			MeOH	P-297S
MGK 326	136-45-8	NEAT	P-342N	trans-Nonachlor	39765-80-5	NEAT	P-184N
		MeOH	P-342S			MeOH	P-184S
<i>Milogard</i>	see Propazine			Norflurazon	27314-13-2	NEAT	P-217N
<i>MIPC</i>	see Isoprocarb					MeOH	P-217S
Mirex	2385-85-5	NEAT	P-066N	<i>Nuarimol</i>	see Trimidal		
		MeOH	P-066S	<i>Nucidol</i>	see Diazinon		
<i>Mitac</i>	see Amitraz			<i>Nuvacron</i>	see Monocrotophos		
<i>Mocap</i>	see Ethoprop			<i>Nuvanol</i>	see Iodofenphos		
Molinate	2212-67-1	NEAT	P-176N	<i>Octachlor</i>	see Chlordane		
		MeOH	P-176S	<i>Octacide 264</i>	see MGK 264		
Monalide	7287-36-7	NEAT	P-373N	<i>Octalox</i>	see Dieldrin		
		MeOH	P-373S	<i>Octamethylpyrophosphoramidate</i>	see Schradan		
<i>Monceren</i>	see Pencycuron			<i>OFF</i>	see Deet		
Monitor	10265-92-6	NEAT	P-155N	<i>Oftanol</i>	see Isofenphos		
		MeOH	P-155S	Ofurace	58810-48-3	10 µg/mL Toluene	P-653S-TP-0.1X
Monocrotophos	6923-22-4	NEAT	P-112N	Omethoate	1113-02-6	NEAT	P-121N
		MeOH	P-112S			MeOH	P-121S
Monolinuron	1746-81-2	NEAT	P-382N	<i>Omite</i>	see Propargite		
		MeOH	P-382S	<i>Omtan</i>	see Isobenzan		
Monomethyltetrachloroteraphthalate	887-54-7	NEAT	P-707N	<i>Option</i>	see Fenoxaprop-ethyl		
		Acetone	P-707S-A	Orbencarb	34622-58-7	NEAT	P-433N
Monuron	150-68-5	NEAT	P-023N	MeOH	P-433S		
		MeOH	P-023S	<i>Orbit</i>	see Tilt		
Monuron TCA	140-41-0	NEAT	P-034N	<i>Ordram</i>	see Molinate		
		MeOH	P-034S	<i>Ornamec</i>	see Fluazifop-p-butyl		
2-Monuron	150-68-5	NEAT	P-633N	<i>Orthene</i>	see Acephate		
		MeOH	P-633S	<i>Orthocide 406</i>	see Captan		
<i>Morestan</i>	see Chinomethionate			Oryzalin	19044-88-3	NEAT	P-043N
<i>MSMA</i>	see Bueno			MeOH	P-043S		
Myclobutanil	88671-89-0	NEAT	P-330N	<i>Outfox</i>	see Cyprazine		
		MeOH	P-330S	Ovex	80-33-1	NEAT	P-425N
Nabam	142-59-6	NEAT	P-383N	MeOH	P-425S		
		MeOH	P-383S	<i>Ovochlor</i>	see Ovex		
Naled	300-76-5	NEAT	P-159N	Oxadiazon	19666-30-9	NEAT	P-236N
		MeOH	P-159S			MeOH	P-236S
1-Naphthalene acetamide	88-86-2	NEAT	P-512N	Oxadixyl	77732-09-3	MeOH	P-560S
		MeOH	P-512S			Oxamyl	23135-22-0
Napropamide	15299-99-7	NEAT	P-179N	MeOH	P-161S		
		MeOH	P-179S	Oxasulfuron		NEAT	P-859N
<i>Naptalam</i>	see Alanap			AcCN	P-859S-CN		
1-Naphthylacetic acid	86-87-3	NEAT	P-461N	Oxycarboxin	5259-88-1	NEAT	P-391N
		MeOH	P-461S	MeOH	P-391S		
<i>Navadel</i>	see Dioxathion			Oxychlordane	27304-13-8 10 µg/mL in	MeOH	P-331S
Neburon	555-37-3	NEAT	P-041N			MeOH	P-331S-0.1X
		MeOH	P-041S	Hexane	P-331S-H		
<i>Neguvon</i>	see Trichlorfon			Oxydemeton-methyl	301-12-2	MeOH	P-290S
<i>Nemacur R</i>	see Fenamiphos			Oxyfluorfen	42874-03-3	NEAT	P-277N
<i>Neocidol</i>	see Diazinon			MeOH	P-277S		
<i>Netrazine</i>	see Cyromazine			<i>Oxythioquinox</i>	see Chinomethionate		
<i>Niagaramite</i>	see Aramite			<i>Paarlan</i>	see Isopropalin		
<i>Nialate</i>	see Ethion			Paraoxon	311-45-5	NEAT	P-453N
Niclosamide	50-65-7	NEAT	P-160N	MeOH	P-453S		
		MeOH	P-160S	Paraquat	1910-42-5	NEAT	P-051N
Nicosulfuron	111991-09-4	NEAT	P-591N	MeOH	P-051S		
		AcCN	P-591S-CN	Parathion	56-38-2	NEAT	P-070N
<i>Niifos</i>	see TEPP			MeOH	P-070S		
Nitenpyram	120738-89-8	NEAT	P-858N	<i>Paridol</i>	see Methyl parathion		
		AcCN	P-858S-CN				

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Pesticides

Pesticide Standards Neats at 10 mg. Solutions at 100 µg/mL in 1 mL, except as noted.

Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
PCA	see Pyrazon			Piperophos	24151-93-7	NEAT	P-656N
PCNB	see Pentachloronitrobenzene			Pirimicarb	23103-98-2	NEAT	P-304N
PCP methyl ether	see Pentachloroanisole					MeOH	P-304S
PDU	see Fenuron			Pirimiphos-ethyl	23505-41-1	NEAT	P-328N
PEBC	see Tillam					MeOH	P-328S
Pebulate	see Tillam			Pirimiphos-methyl	29232-93-7	NEAT	P-305N
Penconazole	66246-88-6	NEAT	P-450N			MeOH	P-305S
		MeOH	P-450S	Pirimor	see Pirimicarb		
Pencycuron	66063-05-6	NEAT	P-358N	Pival	see Pindone		
		MeOH	P-358S	PMA	see Phenyl mercury acetate		
Pendimethalin	40487-42-1	NEAT	P-097N	Polytrin	see Cypermethrin		
		MeOH	P-097S	Potassium dimethyl dithiocarbamate ‡	128-03-0	AcCN	P-714S-CN
Penoxalin	see Pendimethalin			Potassium n-hydroxymethyl-n-methyl dithiocarbamate ‡	51026-28-9	AcCN	P-715S-CN
Pentachloroaniline	527-20-8	NEAT	P-875N				
		AcCN	P-875S-CN	Prallethrin	23031-36-9	MeOH	P-667S
Pentachloroanisole	1825-21-4	NEAT	P-199N	Pramitol	see Prometon		
		MeOH	P-199S	Prebane	886-50-0	NEAT	P-119N
Pentachloronitrobenzene	82-68-8	NEAT	P-113N			MeOH	P-119S
		MeOH	P-113S	Preeglone	see Paraquat CL		
Permethrin (cis/trans)	52645-53-1	NEAT	P-128N	Prefar	see Bensulide		
		MeOH	P-128S	Premerg	see Trichlorfon		
Perthane	72-56-0	NEAT	P-162N	Pretilachlor	51218-49-6	NEAT	P-485N
		MeOH	P-162S			MeOH	P-485S
Peropal	see Azocyclotin			Primatol	see Prometon		
Pestox III	see Schradan			Primatol P	see Propazine		
Phenacide	see Toxaphene			Primatol Q	see Prometryne		
Phenamiphos	see Fenamiphos			Primatol S	see Simazine		
Phenmedipham	13684-63-4	NEAT	P-392N	Primaze	see Prometryne		
		MeOH	P-392S	Primicid	see Pirimiphos-ethyl		
Phenothiazine	92-84-2	NEAT	P-579N	Primisulfuron-methyl	86209-51-0	NEAT	P-833N
		MeOH	P-579S			AcCN	P-833S-CN
Phenothrin	see Sumithrin			Princep	see Simazine		
Phenthoate	2597-03-7	NEAT	P-476N	Probenazole	27605-76-1	NEAT	P-710N
		MeOH	P-476S			Acetone	P-710S-A
Phenyl mercury acetate	62-38-4	NEAT	P-393N	Prochloraz	67747-09-5	NEAT	P-549N
		MeOH	P-393S			MeOH	P-549S
o-Phenylphenol	90-43-7	NEAT	P-460N	Procymidone	32809-16-8	NEAT	P-430N
		MeOH	P-460S			MeOH	P-430S
Phenyl valerate	20115-23-5	NEAT	P-734N	Prodiamine	29091-21-2	NEAT	P-739N
		MeOH	P-734S			MeOH	P-739S
Phorate	298-02-2	NEAT	P-170N	Profenofos	41198-08-7	NEAT	P-260N
		MeOH	P-170S			MeOH	P-260S
Phorate sulfone	2588-04-7	Hexane	P-655S-H	Profluralin	26399-36-0	NEAT	P-099N
Phorate sulfoxide	2588-03-6	NEAT	P-732N			MeOH	P-099S
		MeOH	P-732S	Prolate	see Imidan		
Phosalone	2310-17-0	NEAT	P-163N	Promecarb	2631-37-0	NEAT	P-265N
		MeOH	P-163S			MeOH	P-265S
Phosdrin	see Mevinphos			Prometon	1610-18-0	NEAT	P-077N
Phosethoprop	see Ethoprop					MeOH	P-077S
Phosfolan	947-02-4	NEAT	P-234N	Prometryne	7287-19-6	NEAT	P-078N
		MeOH	P-234S			MeOH	P-078S
Phosmet	see Imidan			Pronamide	23950-58-5	NEAT	P-164N
Phosmet oxon		Toluene	P-733S-T			MeOH	P-164S
Phosphamidon	13171-21-6	NEAT	P-075N	Propachlor	1918-16-7	NEAT	P-215N
		MeOH	P-075S			MeOH	P-215S
Phosphothion	see Malathion			Propamocarb	24579-73-5	NEAT	P-312N
Phosvel	see Leptophos					MeOH	P-312S
Phoxim	14816-18-3	NEAT	P-357N	Propanil	709-98-8	NEAT	P-049N
		MeOH	P-357S			MeOH	P-049S
Phthaltrin	see Tetramethrin			Propargite	2312-35-8	NEAT	P-251N
Picloram	1918-02-1	NEAT	P-047N			MeOH	P-251S
		MeOH	P-047S	Propargite metabolite	see 2-(4-t-Butylphenoxy)cyclohexane		
Picloram methyl ester	14143-55-6	NEAT	P-198N	Propazine	139-40-2	NEAT	P-079N
		MeOH	P-198S			MeOH	P-079S
4-Picoline	see 4-Aminopyridine			Propetamphos	31218-83-4	NEAT	P-417N
Picoxystrobin	117428-22-5	NEAT	P-860N			MeOH	P-417S
		AcCN	P-860S-CN	Propham	122-42-9	NEAT	P-052N
Pindone	83-26-1	NEAT	P-394N			MeOH	P-052S
		MeOH	P-394S	Prophos	see Ethoprop		
Piperalin	3478-94-2	NEAT	P-663N	Propiconazole	see Tilt		
		MeOH	P-663S	Propineb	12071-83-9	NEAT	P-608N
Piperonyl butoxide	51-03-6	NEAT	P-348N				
		MeOH	P-348S	Propoxur	see Baygon		

Δ Pesticides containing a carboxyl group will autoesterify in MeOH. The pesticides most likely to have this occur are marked with an Δ. These standards are intended for use as a post-esterification standard for GC analysis. For other types of analysis (ex. HPLC) we suggest a non-hydroxylic solvent such as Acetonitrile.

‡ To delay premature breakdown of thermally labile products in transit we suggest requesting a "Cold Pack"



Pesticide Standards Neats at 10 mg. Solutions at 100 µg/mL in 1 mL, except as noted.

Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
Propylenethiourea (PTU)	2055-46-1	NEAT	P-861N	<i>Roxion</i>	see Dimethoate		
		AcCN	P-861S-CN	<i>Rubigan</i>	see Bloc		
<i>Propyzamide</i>	see Pronamide			<i>Ruelene</i>	see Crufomate		
Prosulfocarb	52888-80-9	NEAT	P-742N	S421	127-90-2	NEAT	P-749N
		MeOH	P-742S			MeOH	P-749S
Prosulfuron	94125-34-5	NEAT	P-834N	<i>SADH</i>	see Alar		
		AcCN	P-834S-CN	<i>Safrotrin</i>	see Propetamphos		
<i>Protector 3L</i>	see Busan			<i>Sancap</i>	see Dipropetryn		
<i>Protex</i>	see Rotenone			<i>Sanmarton</i>	see Fenvalerate		
<i>Prothiophos</i>	see Tokution			<i>Scepter</i>	see Imazaquin		
<i>Prowl</i>	see Pendimethalin			Schradan	152-16-9	NEAT	P-418N
<i>Pursuit</i>	see Imazethapyr					MeOH	P-418S
Pymetrozin	123312-89-0	NEAT	P-835N	Sebuthylazine	7286-69-3	NEAT	P-432N
		AcCN	P-835S-CN			MeOH	P-432S
<i>Pynamin</i>	see Allethrin			Secbumeton	26259-45-0	NEAT	P-165N
Pyraclifos	77458-01-6	MeOH	P-716S			MeOH	P-165S
Pyraclostrobin	175013-18-0	NEAT	P-863N	<i>Select</i>	see Clethodim		
		AcCN	P-863S-CN	<i>Secor</i>	see Metribuzin		
Pyrazon	1698-60-8	NEAT	P-395N	Sethoxydim	74051-80-2	NEAT	P-306N
		MeOH	P-395S			AcCN	P-306S-CN ‡
Pyrazophos	13457-18-6	NEAT	P-359N	<i>Sevin</i>	see Carbaryl		
		MeOH	P-359S	Siduron	1982-49-6	NEAT	P-063N
Pyrazoxyfen	71561-11-0	NEAT	P-618N			MeOH	P-063S
		MeOH	P-618S	Silafuofen	105024-66-6	NEAT	P-717N
Pyrethrins	8003-34-7	NEAT	P-187N			MeOH	P-717S
		MeOH	P-187S	<i>Silmurix</i>	see Schradan		
<i>Pyrethrum</i>	see Pyrethrins			Silvex Δ	93-72-1	NEAT	P-084N
Pyridaben	96489-71-3	NEAT	P-693N			MeOH	P-084S
		MeOH	P-693S	Silvex 2-ethylhexyl ester		AcCN	P-084S-CN
Pyridaphenthion	119-12-0	MeOH	P-610S			NEAT	P-728N
Pyridate	55512-33-9	NEAT	P-404N			MeOH	P-728S
		MeOH	P-404S	Silvex methyl ester	4841-20-7	NEAT	P-115N
Pyrimethanil	53112-28-0	NEAT	P-723N			MeOH	P-115S
		MeOH	P-723S	Simazine	122-34-9	NEAT	P-085N
<i>Pyriminil</i>	see Vacor					MeOH	P-085S
Pyriphenox	88283-41-4	MeOH	P-668S	Simeton	673-04-1	NEAT	P-501N
Pyriproxyfen	95737-68-1	NEAT	P-795N			MeOH	P-501S
		AcCN	P-795S-CN	Simetryn	1014-70-6	NEAT	P-166N
<i>Pyron</i>	see Pyridate					MeOH	P-166S
Pyroquilon	57369-32-1	NEAT	P-696N	<i>Sinbar</i>	see Terbacil		
		MeOH	P-696S	<i>Siperin</i>	see Cypermethrin		
<i>Queletox</i>	see Fenthion			<i>Sipscasan</i>	see Thiophanate-methyl		
Quinalphos	13593-03-8	NEAT	P-462N		see Metam		
		MeOH	P-462S	Sodium diethyldithiocarbamate trihydrate	148-18-5	NEAT	P-505N
Quinlorac Δ	84087-01-4	NEAT	P-692N			H ₂ O	P-505S-W
		MeOH	P-692S	<i>Solfac</i>	see Cyfluthrin		
		AcCN	P-692S-CN	<i>Sonalan</i>	see Ethalfuralin		
Quinmerac	90717-03-6	NEAT	P-836N	<i>Sonar</i>	see Fluridone		
		AcCN	P-836S-CN	<i>Spike</i>	see Tebuthiuron		
<i>Quintozene</i>	see Pentachloronitrobenzene			Spinosad	168316-95-8	NEAT	P-864N
Quizalofop ethyl	76578-14-8	NEAT	P-293N			AcCN	P-864S-CN
		AcCN	P-293S-CN	Spiroxamine	118134-30-8	NEAT	P-869N
<i>Racumin</i>	see Coumatetralyl					AcCN	P-869S-CN
<i>Radapon</i>	see Dalapon acid			<i>Stam F-34</i>	see Propanil		
<i>Ramrod</i>	see Propachlor			<i>Stirofos</i>	see Tetrachlorvinphos		
<i>Reglone</i>	see Diquat dibromide			<i>Stomp</i>	see Pendimethalin		
Resmethrin	10453-86-8	NEAT	P-325N	Strobane	8001-50-1	NEAT	P-339N
		MeOH	P-325S			MeOH	P-339S
<i>Rezifilm</i>	see Thiram			<i>Suffix</i>	see Benzoylprop ethyl		
Rimsulfuron	122931-48-0	NEAT	P-837N	Sulfallate	95-06-7	NEAT	P-327N
		AcCN	P-837S-CN			MeOH	P-327S
<i>Rogor</i>	see Dimethoate			Sulfometuron methyl ester	74222-97-2	NEAT	P-336N
<i>Rogue</i>	see Propanil					MeOH	P-336S
<i>Ronilan</i>	see Vinclozolin			Sulfoquinoxaline		MeOH	P-681S
Ronnel	299-84-3	NEAT	P-080N	Sulfosulfuron	141776-32-1	AcCN	P-865S-CN-0.1X
		MeOH	P-080S	Sulfotep	3689-24-5	NEAT	P-167N
<i>Ronstar</i>	see Oxadiazon					MeOH	P-167S
<i>Rospin</i>	see Chloropropylate			<i>Sulfox-cide</i>	see Sulfoxide		
Rotenone	83-79-4	NEAT	P-056N	Sulfoxide	120-62-7	NEAT	P-396N
		MeOH	P-056S ‡			MeOH	P-396S
<i>Roundup</i>	see Glyphosate			<i>Sulfoxyl</i>	see Sulfoxide		
<i>Rovral</i>	see Iprodione			<i>Sulprofos</i>	see Bolstar		

Same Low Price in Neat (10 mg) or Solution (100 µg/mL) form
Most Pesticides are available in 1000 µg/mL (add -10X). Call or visit website for pricing.



Pesticides

Pesticide Standards Neats at 10 mg. Solutions at 100 µg/mL in 1 mL, except as noted.

Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
<i>Sumicidin</i>	see Fenvalerate			Terbutol	1918-11-2	NEAT	P-464N
<i>Sumifly</i>	see Fenvalerate					MeOH	P-464S
<i>Sumipower</i>	see Fenvalerate			<i>Terbutryn</i>	see Prebane		
Sumithrin	26002-80-2	NEAT	P-050N	<i>Terpene polychlorinates</i>	see Strobane		
		MeOH	P-050S	<i>Terraclor</i>	see Pentachloronitrobenzene		
<i>Sumitol</i>	see Secbumeton			<i>Terracur P</i>	see Dasanit		
<i>Summit</i>	see Triadimenol			Terrazole	2593-15-9	NEAT	P-190N
<i>Super X</i>	see Terrazole					MeOH	P-190S
<i>Supracide</i>	see Methidathion			<i>Terre-Sytam</i>	see Dimefox		
<i>Surcopur</i>	see Propanil			<i>Tersan</i>	see Thiram		
<i>Surflan</i>	see Oryzalin			<i>Tersan SP</i>	see Chloroneb		
<i>Sutan</i>	see Butylate			2,3,5,6-Tetrachloronitrobenzene	117-18-0	NEAT	P-467N
<i>Swebate</i>	see Abate					MeOH	P-467S
Sweep	1918-18-9	NEAT	P-061N	Tetrachlorvinphos	961-11-5	NEAT	P-125N
		MeOH	P-061S			MeOH	P-125S
<i>Sythane</i>	see Myclobutanil			Tetraconazole	112281-77-3	NEAT	P-721N
<i>Systox</i>	see Demeton					MeOH	P-721S
2,4,5-T acid Δ	93-76-5	NEAT	P-168N	Tetradifon	116-29-0	NEAT	P-261N
		MeOH	P-168S			MeOH	P-261S
		AcCN	P-168S-CN	cis-d₄-Tetrahydrophthalimide	1469-48-3	MeOH	P-116S
2,4,5-T butoxyethyl ester	2545-59-7	NEAT	P-441N	1,2,3,6-Tetrahydrophthalimide	85-40-5	NEAT	P-621N
		AcCN	P-441S-CN			MeOH	P-621S
2,4,5-T n-butyl ester	93-79-8	NEAT	P-440N	Tetramethrin	7696-12-0	NEAT	P-406N
		AcCN	P-440S-CN			MeOH	P-406S
2,4,5-T methyl ester	1928-37-6	NEAT	P-067N	Tetrasul	2227-13-6	NEAT	P-552N
		MeOH	P-067S			MeOH	P-552S
2,4,6-T Δ	575-89-3	NEAT	P-523N	<i>Tetron</i>	see TEPP		
		MeOH	P-523S	Thiabendazole	148-79-8	NEAT	P-068N
		AcCN	P-523S-CN			MeOH	P-068S
<i>Talstar</i>	see Bifenthrin			Thiacloprid	111988-49-9	NEAT	P-838N
<i>Tame</i>	see Danitol					AcCN	P-838S-CN
<i>Tamaron</i>	see Monitor			Thiamethoxam	153719-23-4	NEAT	P-866N
<i>Tamogan</i>	see Bromadiolone					AcCN	P-866S-CN
<i>Target</i>	see MSMA			Thidiazuron	51707-55-2	NEAT	P-369N
<i>TCA</i>	see Trichloroacetic acid					MeOH	P-369S
<i>TCMTB</i>	see Busan			Thifensulfuron methyl	79277-27-3	NEAT	P-468N
<i>TCNB</i>	see Tecnazene					MeOH	P-468S
Tebuconazol	107534-96-3	NEAT	P-451N	<i>Thimet</i>	see Phorate		
		MeOH	P-451S	Thiobencarb	28249-77-6	NEAT	P-180N
Tebufenozide	112410-23-8	NEAT	P-726N			MeOH	P-180S
		MeOH	P-726S	Thiocyclam hydrogen oxalate	31895-22-4	MeOH	P-688S
Tebupirimfos	96182-53-5	NEAT	P-727N	<i>Thiodan I</i>	see Endosulfan I		
		MeOH	P-727S	<i>Thiodan II</i>	see Endosulfan II		
Tebutam		MeOH	P-879S	Thiodicarb	59669-26-0	NEAT	P-477N
Tebuthiuron	34014-18-1	NEAT	P-188N			MeOH	P-477S
		MeOH	P-188S	4,4'-Thiodiphenol	2664-63-3	NEAT	P-117N
<i>Tecto</i>	see Thiabendazole					MeOH	P-117S
<i>Tecnazene</i>	see 2,3,5,6-Tetrachloronitrobenzene			Thiofanox	39196-18-4	NEAT	P-266N
<i>Tedion</i>	see Tetradifon					MeOH	P-266S
Teflubenzuron	83121-18-0	NEAT	P-452N	Thiofanox sulfone		AcCN	P-839S-CN-0.1X
		MeOH	P-452S	Thiofanox sulfoxide	39184-27-5	NEAT	P-702N
Tefluthrin	79538-32-2	MeOH	P-568S ‡			MeOH	P-702S
<i>Telodrin</i>	see Isobenzan			Thiometon	640-15-3	NEAT	P-486N
<i>Temephos</i>	see Abate					MeOH	P-486S
<i>Temik</i>	see Aldicarb			Thionazin	297-97-2	MeOH	P-171S
<i>Temus</i>	see Bromadiolone			Thiophanate Δ	23564-06-9	NEAT	P-321N
<i>Tenoran</i>	see Chloroxuron					MeOH	P-321S
TEPP	107-49-3	NEAT	P-207N			AcCN	P-321S-CN
Terbacil	5902-51-2	NEAT	P-096N	Thiophanate-methyl	23564-05-8	NEAT	P-349N
		MeOH	P-096S			MeOH	P-349S
Terbufos	13071-79-9	NEAT	P-208N	<i>Thiophos</i>	see Parathion		
		MeOH	P-208S	Thiram	137-26-8	NEAT	P-118N
Terbufos sulfone	56070-16-7	MeOH	P-729S			MeOH	P-118S
Terbufos sulfoxide	10548-10-4	NEAT	P-730N	<i>Tiguvon</i>	see Fenthion		
		MeOH	P-730S	Tillam	1114-71-2	NEAT	P-105N
Terbumeton	33693-04-8	NEAT	P-504N			MeOH	P-105S
		MeOH	P-504S	Tiit	60207-90-1	NEAT	P-280N
Terbuthylazine	5915-41-3	NEAT	P-169N			MeOH	P-280S
		MeOH	P-169S	<i>Toamdorane</i>	see 4-CPA		
Terbuthylazine desethyl	30125-63-4	NEAT	P-613N	<i>Tobaz</i>	see Thiabendazole		
		MeOH	P-613S	Tokuthion	34643-46-4	NEAT	P-126N
						MeOH	P-126S
				<i>Tolban</i>	see Profuralin		

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Pesticides



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Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
Tolclofos-methyl	57018-04-9	NEAT	P-557N	Triflumuron	64628-44-0	NEAT	P-689N
		MeOH	P-557S			MeOH	P-689S
Tolyfluanide	731-27-1	NEAT	P-553N	Trifluralin	1582-09-8	NEAT	P-197N
		MeOH	P-553S			MeOH	P-197S
Torak	see Dialifos			Triflurosulfuron-methyl	126535-15-7	NEAT	P-840N
Tordon	see Picloram					AcCN	P-840S-CN
Toxaphene	8001-35-2	NEAT	P-093N	Triforine	26644-46-2	NEAT	P-308N
		MeOH	P-093S			MeOH	P-308S
2,4,5-TP	see Silvex			2,3,5-Triiodobenzoic acid Δ	88-82-4	NEAT	P-507N
2,4,5-TP methyl ester	see Silvex methyl ester					MeOH	P-507S
Tralkoxydim	87820-88-0	NEAT	P-405N			AcCN	P-507S-CN
		MeOH	P-405S	2,3,5-Trimethacarb	2655-15-4	NEAT	P-515N
Tralomethrin	66841-25-6	NEAT	P-478N			MeOH	P-515S
		MeOH	P-478S	3,4,5-Trimethacarb	2686-99-9	NEAT	P-516N
Transfluthrin	118712-89-3	NEAT	P-743N			MeOH	P-516S
		MeOH	P-743S	Trimethyl phosphate	512-56-1	NEAT	P-210N
Treflan	see Trifluralin					MeOH	P-210S
Triadimefon	43121-43-3	NEAT	P-069N	Trimidal	63284-71-9	NEAT	P-422N
		MeOH	P-069S			MeOH	P-422S
Triadimenol	55219-65-3	NEAT	P-361N	Triphenyl phosphate	115-86-6	NEAT	P-192N
		MeOH	P-361S			MeOH	P-192S
Triallate	2303-17-5	NEAT	P-268N	Triphenyltin chloride	639-58-7	NEAT	P-526N
		MeOH	P-268S			MeOH	P-526S
Triasulfuron	82097-50-5	NEAT	P-592N	Trithion	see Carbophenothion		
		MeOH	P-592S	Triticonazole	131983-72-7	Isooctane	P-868S-TP-0.1X
1,2,4-Triazole	288-88-0	NEAT	P-627N	Trucidor	see Vamidithion		
		MeOH	P-627S	Tugon	see Trichlorfon		
Triazophos	24017-47-8	NEAT	P-334N	Tupersan	see Siduron		
		MeOH	P-334S	Uden	see Baygon		
Tribenuron-methyl	101200-48-0	NEAT	P-666N	Urab	see Fenuron-TCA		
		MeOH	P-666S	Urox	see Monuron TCA		
Tribufos	see DEF			Ustilan	see Ethidimuron		
Tributylphosphorothioate	see Merphos			Vacor	53558-25-1	NEAT	P-240N
bis(Tributyltin)oxide	56-35-9	NEAT	P-455N			MeOH	P-240S
		MeOH	P-455S	Vamidithion	2275-23-2	NEAT	P-350N
Trichlorfon	52-68-6	NEAT	P-044N			MeOH	P-350S
		MeOH	P-044S	Vamidoate	see Vamidithion		
Trichloroacetic acid	76-03-9	NEAT	P-459N	Vancide 89	see Captan		
		MeOH	P-459S	Vandyke 264	see MGK 264		
		AcCN	P-459S-CN	Vanicide-20S		NEAT	P-073N
2,3,5-Trichlorobenzoic acid	50-73-7	NEAT	P-508N			MeOH	P-073S
		MeOH	P-508S	Vapona	see Dichlorvos		
Trichloronate	327-98-0	NEAT	P-127N	Vapotone	see TEPP		
		MeOH	P-127S	Vegadex	see Sulfallate		
3,5,6-Trichloro-2-pyridinol	6515-38-4	NEAT	P-626N	Velpar	see Hexazinone		
		MeOH	P-626S	Vernam	see Vernolate		
Trichloropyrifos	see Dursban			Vernolate	1929-77-7	NEAT	P-111N
Triclopyr Δ	55335-06-3	NEAT	P-289N			MeOH	P-111S
		MeOH	P-289S	Vinclozolin	50471-44-8	NEAT	P-122N
		AcCN	P-289S-CN			MeOH	P-122S
Triclopyr-2-butoxy ethyl ester	64700-56-7	NEAT	P-703N	Warbex	see Famphur		
		AcCN	P-703S-CN	Warfarin	81-81-2	NEAT	P-076N
Triclopyr methyl ester		MeOH	P-291S			MeOH	P-076S
Tricresyl phosphate	1330-78-5	NEAT	P-209N	Waylay	see Napropamide		
		MeOH	P-209S	Weedol	see Paraquat CL		
Tricyclazole	41814-78-2	NEAT	P-090N	Weedone	see 2,4,5-T acid		
		MeOH	P-090S	Zectran	see Mexacarbate		
Tridemorph	24602-86-6	NEAT	P-307N	Zerlate	see Ziram		
		MeOH	P-307S	Zinc Phosphide	1314-84-7	NEAT	P-527N
Trietazine	1912-26-1	NEAT	P-492N	Zineb	12122-67-7	NEAT	P-098N
		MeOH	P-492S	Zinophos	see Thionazin		
Triethylphosphate	78-40-0	NEAT	P-335N	Ziram	137-30-4	NEAT	P-324N
		MeOH	P-335S			MeOH	P-324S
o,o,o-Triethylphosphorothioate	126-68-1	NEAT	P-172N	Zolone	see Phosalone		
		MeOH	P-172S				
Trifene	see Fenatrol						
Trifenmorph	1420-06-0	NEAT	P-300N				
		MeOH	P-300S				
Trifloxystrobin	141517-21-7	NEAT	P-867N				
		AcCN	P-867S-CN				
Triflumizole	68694-11-1	AcCN	P-479S-CN				

Same Low Price in Neat (10 mg) or Solution (100 µg/mL) form

Most Pesticides are available in 1000 µg/mL (add -10X). Call or visit website for pricing.



Pesticides

Triazines & Metabolites

Pesticides

Triazines and Metabolites Solutions at 100 µg/mL in MeOH, except as noted

Compound	CAS No.	Neat Cat. No.	10 mg	Solution Cat. No.	1 mL
2,4-bis(Ethylamino)-6-diethylamino-s-triazine		P-536N		P-536S-MC	
2-Chloro-4-ethylamino-6-propylamino-s-triazine		P-537N		P-537S-MC	
2,4-Dichloro-6-ethylamino-s-triazine		P-538N		P-538S-MC	
2-Chloro-4-ethylamino-6-methylethylamino-s-triazine		P-539N		P-539S-MC	
2-Chloro-4-methylamino-6-sec-butylamino-s-triazine		P-540N		P-540S-MC	
2-Chloro-4-methylamino-6-diethylamino-s-triazine		P-541N		P-541S-MC	
2,3-Diuron [3(2,3-Dichlorophenyl)]-1,1-dimethylurea	10290-37-6	P-632N		P-632S	
Atrazine-desethyl-2-hydroxy(4-Amino-2-hydroxy-6-isopropylamino-s-triazine)		-----	----	P-544S-MC	
Desethyl atrazine	6190-65-4	P-343N		P-343S	
Atrazine-desisopropyl	1007-28-9	P-345N		P-345S	
Atrazine-desisopropyl-2-hydroxy		P-344N		P-344S-MC	
Atrazine	1912-24-9	P-005N		P-005S	
Ametryn	834-12-8	P-003N		P-003S	
Cyanazine	21725-46-2	P-175N		P-175S	
Gesatamine	1610-17-9	P-189N		P-189S	
2-Hydroxyatrazine	2163-68-0	P-326N		P-326S-MC	
Imazethapyr	81335-77-5	-----	----	P-285S	
2-Isopropylamino-4,6-dichloro-S-triazine		P-635N		P-635S-A	
Lethron 2-[2-(2-Butoxyethyl)ethyl]ethane thiocyanate		-----	----	P-634S	
2-Monuron [3(2-Chlorophenyl)]-1,1-dimethylurea		P-633N		P-633S	
Prometryne	7287-19-6	P-078N		P-078S	
Propazine	139-40-2	P-079N		P-079S	
Prometon	1610-18-0	P-077N		P-077S	
Sebuthylazine	7286-69-3	P-432N		P-432S	
Simazine	122-34-9	P-085N		P-085S	
Terbuthylazine	5915-41-3	P-169N		P-169S	

Custom Synthesis

If other **Triazine Compounds** are required, contact our Technical Service Department

Solutions:
 -MC (in Methyl cellosolve)
 -A (in Acetone)



Pesticides and Herbicides

Kits & Mixtures



Pesticide Kits and Mixtures

Neat Pesticide Kit

Z-004-SET		set of 20 x 10 mg
Aldrin (01)	Dieldrin (11)	
α-BHC (02)	Heptachlor (12)	
β-BHC (03)	Heptachlor epoxide (13)	
δ-BHC (04)	Lindane (γ-BHC) (14)	
o,p'-DDD (05)	Malathion (15)	
p,p'-DDD (06)	Methoxychlor (16)	
o,p'-DDE (07)	Mirex (17)	
p,p'-DDE (08)	Parathion (18)	
o,p'-DDT (09)	Carbaryl (19)	
p,p'-DDT (10)	Toxaphene (20)	

Pesticide (Solid Waste) Kit

Z-017-SET		set of 6 x 10 mg
2,4-Dichlorophenoxyacetic acid (2,4-D acid)	Methoxychlor	
Endrin	Silvex	
Lindane	Toxaphene	

Pesticide Mixture for Evaluating GC Columns

M-100		1 x 1 mL
At stated conc. in Isooctane		13 comps.
Aldrin (0.050 µg/mL)	p,p'-DDT (0.260 µg/mL)	
α-BHC (0.025 µg/mL)	Dieldrin (0.120 µg/mL)	
β-BHC (0.100 µg/mL)	Endrin (0.200 µg/mL)	
o,p'-DDD (0.200 µg/mL)	Heptachlor (0.025 µg/mL)	
p,p'-DDD (0.190 µg/mL)	Heptachlor epoxide (0.080 µg/mL)	
p,p'-DDE (0.100 µg/mL)	Lindane (γ-BHC) (0.025 µg/mL)	
o,p'-DDT (0.225 µg/mL)		

Technical Note

Designed for evaluating the ability of a column to separate pesticides and their degradation products.

Pesticides in Solutions (Individual and Kits)

Compound (in Isooctane)	Conc.	Cat. No.
Aldrin	200 ng/µL	P-002S-1
	2 ng/µL	P-002S-2
Chlordane, tech	200 ng/µL	P-017S-1
	2 ng/µL	P-017S-2
2,4-D methyl ester	200 ng/µL	P-021S-1
p,p'-DDE	200 ng/µL	P-027S-1
	2 ng/µL	P-027S-2
p,p'-DDT	200 ng/µL	P-029S-1
	2 ng/µL	P-029S-2
Dieldrin	200 ng/µL	P-037S-1
	2 ng/µL	P-037S-2
Endrin	200 ng/µL	P-045S-1
	2 ng/µL	P-045S-2
Heptachlor	200 ng/µL	P-053S-1
	2 ng/µL	P-053S-2
Lindane	200 ng/µL	P-059S-1
	2 ng/µL	P-059S-2
Methoxychlor	200 ng/µL	P-064S-1
	2 ng/µL	P-064S-2
Silvex methyl ester	200 ng/µL	P-115S-1
Toxaphene	200 ng/µL	P-093S-1

Set of above 21 pesticides (21 x 1 mL) Z-023-SET
At stated concentrations

Technical Note

Convenient concentrations in isooctane for use with different GC detectors. The concentrated solutions are suited for FID & TC detectors. The diluted solutions are suited for EC detectors.

Herbicide Kit and Mixtures

Herbicide Kit

Z-031-SET	set of 15 x 1 mL
0.1 mg/mL in MeOH	Individual Standards
Atrazine (01)	Prometryn (09)
Dicamba (02)	Prometone (10)
Benfluralin (03)	Propanil (11)
Bentazon (04) *	Propazine (12)
Dacthal (05)	Simazine (13)
Dichlobenil (06)	Tebuthiuron (14)
Diuron (07)	Trifluralin (15)
Metolachlor (08)	

* in Acetone

Herbicide Mix #1

M-HERB-1	1 x 1 mL
0.1 mg/mL each in EtOAc	13 comps.

Atrazine	Oxyfluorfen
Bromacil	Sencor
Cycloate	Sutan
Eptam	Terbacil
Isopropalin	Tillam
Hexazinone	Trifluralin
Molinate	

Herbicide Mix #2

M-HERB-2	1 x 1 mL
0.1 mg/mL each in EtOAc	9 comps.

Benfluralin	Prowl
Metolachlor	Simazine
Oxadiazon	Tolban
Propachlor	Vernam
Propazine	

Phenylurea Pesticide Mixtures

Phenylurea Pesticide Mixture

PES-PU-001	1 x 1 mL
PES-PU-001-PAK SAVE	5 x 1 mL
200 µg/mL each in AcCN:Acetone	8 comps.

Diflubenzuron	Propanil
Diuron	Siduron
Fluometuron	Tebuthiuron
Linuron	Thidiazuron

Phenylurea Surrogate Mixture

PES-PU-SS	1 x 1 mL
PES-PU-SS-PAK SAVE	5 x 1 mL
500 µg/mL each in MeOH:AcCN	2 comps.

Carbazole	Monuron
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Synthesis Capabilities

Custom Synthesis

The AccuStandard Synthesis Department employs PhD Organic Chemists with many years of academic and industrial experience. This experienced team has developed hundreds of pure chemical compounds for companies and governmental agencies around the world. AccuStandard specializes in synthesizing chemicals of high purity to be used as reference standards, for milligram to kilogram batches. AccuStandard is the only company to synthesize all 209 individual PCB congeners as well as over 180 individual PBDE congeners.



Synthesis Experience

- PCBs (all 209 congeners), PBBs, PCB Metabolites
- Explosives - TNT, RDX, HMX, TATP, HND, HMTD
- PBDEs (over 180 congeners)
- PBDE Metabolites
- FBDEs
- Halo-Dibenzodioxins
- Halo-Dibenzofurans
- PAHs, Nitro-PAHs
- Substituted Diphenylethers
- Pesticides and Metabolites
- Forensics
- Wear Metals
- Pharmaceuticals and Other Rare Chemicals

Lab Resources

- Milligram to Kilogram Scale Glassware
- Equipment to work under N₂/Ar
- Liquid Solid Phase Chrom. (mg to 2 kg)
- Flash Chrom. (mg to 2 kg) including Horizon High Performance Flash Chrom. System
- Microwave Synthesis System
- Preparative TLC
- Buchi Rotary Evaporators
- Vacuum Drying Oven
- Parr Pressure Reactor (high pressure reaction, hydrogenation)
- Distillation Equipment - High Vacuum Distillation, Molecular Distillation (Kugelrohr), and Spinning Band Columns

Analytical Resources

- ¹H-NMR spectrometer - 400 MHZ
- GC/MS, GC/FID, GC/ECD, GC/NPD
- HPLC
- ICP
- ICP/MS
- Low Sulfur Analyzers (Antek, X-Ray Optical)
- LC/MS/MS
- Hg Analyzer

Custom Synthesized Rare Chemicals

Neat Compounds, except as noted	CAS No.	Cat. No.	Unit
2-Amino-7,8-dibromo-dibenzo- <i>p</i> -dioxin	Solution 0.1 mg/mL in Toluene	X-011	1 mL
<i>n,n'</i> -bis(4-isopropylphenyl)urea	113260-74-5	X-012	10 mg
4-Chlorophenyl methyl sulfoxide	934-73-6	X-004	10 mg
4,6-Dinitro- <i>o</i> -toluidine	7477-94-3	X-002	10 mg
1,4-Dioxino(2,3- <i>b</i> :5,6- <i>b'</i>)dipyridine (Dipyridine analog of dibenzo- <i>p</i> -dioxin)	262-16-8	X-005	5 mg
9-Methylacridine	611-64-3	X-008	10 mg
2,3,7,8-Tetrabromodibenzo- <i>p</i> -dioxin	50585-41-6	X-001	1 mg
3,3',4,4'-Tetrachloroazobenzene	14047-09-7	X-009	10 mg
3,3',4,4'-Tetrachloroazoxybenzene	21232-47-3	X-010	10 mg
N,N'-bis(2,4,6-Trichlorophenyl)urea	20632-35-3	X-003	10 mg

Custom Packaging & Bulk Quantity Requirements

AccuStandard has the resources and equipment to meet your custom packaging requirements.

- Automated ampule filling & sealing 0.2 mL up to 20 mL and ampule sizes from 1 mL to 20 mL
- Quantities from 500 to over 500,000 ampules
- Homogeneity testing
- Amber ampules for added product stability
- Private labeling and packaging (OEM)

We can reduce your costs using the Cozzoli Auto Filling/Sealing Machine to package just the right size product for your application. OEM Standards - Privately labeled standards manufactured and tested to your specifications. Cold and under-Nitrogen sealing available.



Volatile Organic Compounds (VOCs)

VOC

Volatile Organic Chemicals (VOCs) are generally classified as compounds that, under normal ambient conditions, can vaporize. This group includes aldehydes, ketones, as well as some light aromatic and straight chain hydrocarbons.

VOCs can enter the environment through many different routes. Many solvents, cleaners, paint thinners, dry cleaning solvents, and degreasers used both in industry and homes contain these compounds. Although not usually water soluble, if these compounds are released to the environment, they can still be found as contaminants in air, soil, as well as waste and drinking water.

EPA Volatile Methods:

Neats are as stated,
Solutions are 1 mL

502 Volatiles (PID/ELCD), Volatile Surrogates & ISTDs	602 Purgeable Aromatics (PID)	8020 Aromatic Volatiles (PID)
503 VOC - Aromatics & Alkenes (PID/ELCD)	603 Acrolein & Acrylonitrile (FID)	8021 Halogenated Volatiles PID/ELCD
504 EDB & DBCP (ECD)	624 Purgeable Volatiles (GC/MS)	8030 Acrolein & Acrylonitrile (GC/FID)
524 Volatiles (GC/MS)	1666 PMI Volatiles (GC/MS)	8031 Acrylonitrile (GC/NPD)
551 Chlorinated Solvents, Trihalomethanes	8010 Halogenated Volatiles (ELCD)	8032 Acrylamide (GC/ECD)
556 Carbonyl Compounds (GC/ECD)	8011 EDB & DBCP (GC/MS)	8033 Acetonitrile (NPD)
601 Purgeable Halocarbons (ELCD)	8015B Non Halogenated Organics (GC/FID)	

VOCs

Compound	Conc.	Matrix	Cat. No.	Compound	Conc.	Matrix	Cat. No.		
Acetonitrile 75-05-8	100 µg/mL	MeOH	APP-9-005	Bromoform 75-25-2	100 mg	NEAT	M-502-05N		
	10 mg/mL	Water	M-8015B/5031-02		0.2 mg/mL	MeOH	M-502-05		
	1 mg/mL	Water	M-8033		2 mg/mL	MeOH	M-502-05-10X		
	1 mg/mL	MeOH	APP-9-005-10X		5 mg/mL	MeOH	AS-E0212		
	5 mg/mL	MeOH	APP-9-005-50X		Bromomethane 74-83-9	100 µg/mL	MeOH	APP-9-032	
5 mg/mL	IPA	AS-E0473	0.2 mg/mL	MeOH		M-502-06			
Acrylamide 79-06-1	1 mg/mL	MeOH	M-8032	2 mg/mL	MeOH	M-502-06-10X			
				Bromotrichloromethane 75-62-7	100 mg	NEAT	K-009N		
Acrylonitrile 107-13-1	100 µg/mL	MeOH	APP-9-008	1,3-Butadiene 106-99-0	0.2 mg/mL	MeOH	S-406A		
	10 mg/mL	Water	M-8015B/5031-04		2 mg/mL	MeOH	S-406A-10X		
	1 mg/mL	MeOH	APP-9-008-10X	n-Butylbenzene 104-51-8	100 mg	NEAT	V-002		
10 mg/mL	MeOH	AS-E0003	1 gram		NEAT	M-502-07N			
Allyl chloride 107-05-1	100 µg/mL	MeOH	APP-9-010	n-Butylbenzene 104-51-8	5 mg/mL	MeOH	AS-E1105		
	2 mg/mL	MeOH	APP-9-010-20X		0.2 mg/mL	MeOH	M-502-07		
n-Amylbenzene 538-68-1	1 mg/mL	MeOH	AS-E0476	2 mg/mL	MeOH	M-502-07-10X			
	100 mg	NEAT	V-001	sec-Butylbenzene 135-98-8	100 mg	NEAT	V-004		
Azobenzene 103-33-3	2 mg/mL	CH ₂ Cl ₂	Z-014B-1		1 gram	NEAT	M-502-08N		
					5 mg/mL	MeOH	AS-E1104		
Benzene 71-43-2	1 gram		M-502-01N		0.2 mg/mL	MeOH	M-502-08		
	100 µg/mL	MeOH	APP-9-015	2 mg/mL	MeOH	M-502-08-10X			
	1 mg/mL	MeOH	AS-E0004	tert-Butylbenzene 98-06-6	1 gram	NEAT	M-502-09N		
	0.2 mg/mL	MeOH	M-502-01		5 mg/mL	MeOH	AS-E1106		
2 mg/mL	MeOH	M-502-01-10X	0.2 mg/mL	MeOH	M-502-09				
Benzene-d₆ 1076-43-3	0.2 mg/mL	MeOH	M-624-SS-01	2 mg/mL	MeOH	M-502-09-10X			
	2 mg/mL	MeOH	M-624-SS-01-10X	Carbon disulfide 75-15-0	100 µg/mL	MeOH	APP-9-035		
Benzyl chloride 100-44-7	0.2 mg/mL	MeOH	M-8010-01		2 mg/mL	MeOH	APP-9-035-20X		
	5 mg/mL	AcCN	AS-E0169		5 mg/mL	MeOH	AS-E0363		
bis(2-Chloroethoxy)methane 111-91-1	100 µg/mL	CH ₂ Cl ₂	APP-9-026	Carbon tetrabromide 558-13-4	100 mg	NEAT	K-006N		
	1 mg/mL	MeOH	APP-9-026-M-10X		Carbon tetrachloride 56-23-5	100 mg	NEAT	K-003N	
	5 mg/mL	MeOH	AS-E0041	1 gram		NEAT	M-502-10N		
2-Bromo-1-chloropropane 3017-95-6	20 mg/mL	MeOH	M-001R-3	100 µg/mL		MeOH	APP-9-036		
	0.2 mg/mL	MeOH	M-624-SS-04	5 mg/mL		MeOH	AS-E0360		
1-Bromo-2-nitrobenzene 577-19-5	1 mg/mL	Acetone	M-8081-IS-DC	0.2 mg/mL	MeOH	M-502-10			
				2 mg/mL	MeOH	M-502-10-10X			
Bromobenzene 108-86-1	1 gram	NEAT	M-502-02N	Chloral hydrate 302-17-0	1 mg/mL	MeOH	M-E-1179-M		
	5 mg/mL	MeOH	AS-E0406		1 mg/mL	Acetone	AS-E1179		
	0.2 mg/mL	MeOH	M-502-02		5 mg/mL	Acetone	M-551B-2		
	2 mg/mL	MeOH	M-502-02-10X		2 mg/mL	MeOH	S-163		
Bromochloroacetonitrile 83463-62-1	1 mg/mL	Acetone	AS-E1186	1-Chloro-2-fluorobenzene 348-51-6	1 mg/mL	Acetone	M-8091-SS-100X		
	5 mg/mL	Acetone	M-551B-1						
2-Bromochlorobenzene 694-80-4	0.2 mg/mL	MeOH	M-624-SS-12	1-Chloro-3-nitrobenzene 121-73-3	1 mg/mL	Acetone	M-8091-SS-100X		
4-Bromochlorobenzene 106-39-8	2 mg/mL	MeOH	M-8020-SS-1					1-Chloro-4-fluorobenzene 352-33-0	0.2 mg/mL
	Bromochloromethane 74-97-5	100 mg	NEAT	K-007N	Chlorobenzene 108-90-7	100 mg	NEAT		
1 gram		NEAT	M-502-03N	1 gram		NEAT	M-502-11N		
10 mg/mL		MeOH	AS-E0136	100 µg/mL		MeOH	APP-9-039		
0.2 mg/mL		MeOH	M-502-03	1 mg/mL		MeOH	AS-E0006		
2 mg/mL		MeOH	M-502-03-10X	0.2 mg/mL		MeOH	M-502-11		
p-Bromofluorobenzene 460-00-4	25 µg/mL	MeOH	CLP-004	2 mg/mL	MeOH	M-502-11-10X			
	250 µg/mL	MeOH	CLP-004-10X	5 mg/mL	MeOH	CLP-PI-3-5X			
	0.15 mg/mL	MeOH	AS-E0233	Chlorobenzene-d₆ 3114-55-4	100 µg/mL	MeOH	APP-9-042		
	25 mg/mL	MeOH	CLP-004-1000X					1 mg/mL	MeOH
	2.5 mg/mL	MeOH	CLP-004-100X	0.2 mg/mL	MeOH	M-502-12			
	2 mg/mL	MeOH	CLP-004-80X				2 mg/mL	MeOH	M-502-12-10X
	0.2 mg/mL	MeOH	M-624-SS-03	Chloroform 67-66-3	1 gram	NEAT			
	2 mg/mL	MeOH	M-624-SS-03-10X				0.2 mg/mL	MeOH	M-502-13
100 µg/mL	Acetone	M-551.1-IS	2 mg/mL						
10 mg/mL	Acetone	M-551.1-IS-100X							

VOCs

Compound	Conc.	Matrix	Cat. No.	Compound	Conc.	Matrix	Cat. No.
1-Chlorohexane 544-10-5	0.2 mg/mL	MeOH	M-8010R-1-04	1,4-Dichlorobenzene 106-46-7	100 mg	NEAT	A-004
	2 mg/mL	MeOH	M-8010R-1-04-10X		1 gram	NEAT	M-502-23N
Chloromethane 74-87-3	100 µg/mL	MeOH	APP-9-044		100 µg/mL	MeOH	APP-9-066
	0.2 mg/mL	MeOH	M-502-14		0.2 mg/mL	MeOH	M-502-23
Chloroprene	2 mg/mL	MeOH	M-502-14-10X		2 mg/mL	MeOH	M-502-23-10X
	100 µg/mL	MeOH	APP-9-048-R1		5 mg/mL	MeOH	AS-E0025
	200 µg/mL	MeOH	APP-9-048-R1-2X		0.2 mg/mL	Acetone	M-8151-IS-2
	1 mg/mL	MeOH	APP-9-048-R1-10X		2.0 mg/mL	Hexane	M-8120-04
3-Chloropropionitrile 542-76-7	2.0 mg/mL	MeOH	APP-9-048-R1-20X		2 mg/mL	MeOH	Z-014J-3-M-0.5X
	1 mg/mL	MeOH	AS-E0375		4 mg/mL	CH ₂ Cl ₂	Z-014J-3
2-Chlorotoluene 95-49-8	1 gram	NEAT	M-502-15N	Dichlorobromomethane 75-27-4	100 mg	NEAT	M-502-04N
	0.2 mg/mL	MeOH	M-502-15	0.2 mg/mL	MeOH	M-502-04	
	2 mg/mL	MeOH	M-502-15-10X	2 mg/mL	MeOH	M-502-04-10X	
	5 mg/mL	MeOH	AS-E0150	5 mg/mL	MeOH	AS-E0046	
3-Chlorotoluene 108-41-8	5 mg/mL	MeOH	AS-E0151	1,4-Dichlorobutane 110-56-5	0.2 mg/mL	MeOH	M-624-SS-05
4-Chlorotoluene 106-43-4	1 gram	NEAT	M-502-16N	20 mg/mL	MeOH	M-001R-2	
	0.2 mg/mL	MeOH	M-502-16	1,4-Dichlorobutane-d ₈ 83547-96-0	0.15 mg/mL	MeOH	AS-E0196
	2 mg/mL	MeOH	M-502-16-10X	Dichlorodifluoromethane 75-71-8	100 µg/mL	MeOH	APP-9-069
Cyclohexane 110-82-7	1 gram	NEAT	TK-102-08N	5000 µg/mL	MeOH	AS-E0346	
	2 mg/mL	MeOH	TK-102-08S-10X	0.2 mg/mL	MeOH	M-502-24	
Decylbenzene 104-72-3	100 mg	NEAT	V-005	2 mg/mL	MeOH	M-502-24-10X	
	1 mg/mL	AcCN	AS-E0623	1,1-Dichloroethane 75-34-3	1 gram	NEAT	M-502-25N
1,2-Dibromochloromethane 124-48-1	100 mg	NEAT	M-502-17N	100 µg/mL	MeOH	APP-9-070	
	0.2 mg/mL	MeOH	M-502-17	0.2 mg/mL	MeOH	M-502-25	
	2 mg/mL	MeOH	M-502-17-10X	1 mg/mL	MeOH	AS-E0012	
1,2-Dibromo-3-chloropropane 96-12-8	1 gram	NEAT	M-502-18N	2 mg/mL	MeOH	M-502-25-10X	
	0.2 mg/mL	MeOH	M-502-18	1 gram	NEAT	M-502-26N	
	2 mg/mL	MeOH	M-502-18-10X	100 µg/mL	MeOH	APP-9-071	
	5 mg/mL	MeOH	AS-E0993	1 mg/mL	MeOH	AS-E0009	
Dibromoacetonitrile 3252-43-5	5 mg/mL	Acetone	M-551B-4	0.2 mg/mL	MeOH	M-502-26	
	1 gram	NEAT	M-502-19N	2 mg/mL	MeOH	M-502-26-10X	
1,2-Dibromoethane 106-93-4	100 µg/mL	MeOH	APP-9-214	0.2 mg/mL	MeOH	M-624-SS-06	
	0.2 mg/mL	MeOH	M-502-19	2.0 mg/mL	MeOH	M-624-SS-06-10X	
	2 mg/mL	MeOH	M-502-19-10X	1,1-Dichloroethene 75-35-4	1 gram	NEAT	M-502-27N
	5 mg/mL	MeOH	AS-E0171	100 µg/mL	MeOH	APP-9-072	
	0.2 mg/mL	MeOH	M-8260-SS-2	0.2 mg/mL	MeOH	M-502-27	
Dibromofluoromethane 1868-53-7	2 mg/mL	MeOH	M-8260-SS-2-10X	2 mg/mL	MeOH	M-502-27-10X	
	100 mg	NEAT	K-004N	1 gram	NEAT	M-502-28N	
Dibromomethane 74-95-3	1 gram	NEAT	M-502-20N	0.2 mg/mL	MeOH	M-502-28	
	100 µg/mL	MeOH	APP-9-062	2 mg/mL	MeOH	M-502-28-10X	
	0.2 mg/mL	MeOH	M-502-20	10 mg/mL	MeOH	AS-E0173	
	2 mg/mL	MeOH	M-502-20-10X	trans-1,2-Dichloroethene 156-60-5	1 gram	NEAT	M-502-29N
	5 mg/mL	MeOH	AS-E1097	100 µg/mL	MeOH	APP-9-073	
a,a-Dibromo-m-xylene 626-15-3	1 mg/mL	Acetone	M-8081-IS-X	0.2 mg/mL	MeOH	M-502-29	
	5 mg/mL	MeOH	M-552-IS	1 mg/mL	MeOH	AS-E0028	
1,2-Dibromopropane 78-75-1	10 mg/mL	Hexane	M-556-IS	2 mg/mL	MeOH	M-502-29-10X	
	1000 µg/mL	MeOH	AS-E0463	Dichlorofluoromethane 75-43-4	0.2 mg/mL	MeOH	M-502-61
1,2-Dibromo-1,1,2,2-tetrafluoroethane 124-73-2	4.2 mg/mL	MeOH	AS-E0170	2 mg/mL	MeOH	M-502-61-10X	
2,3-Dichloro-1-propene 78-88-6	100 µg/mL	MeOH	APP-9-068	Dichloromethane 75-09-2	100 mg	NEAT	K-001N
trans-1,4-Dichloro-2-butene 110-57-6	2 mg/mL	MeOH	APP-9-068-20X	1 gram	NEAT	M-502-39N	
	5 mg/mL	Acetone	M-551B-5	100 µg/mL	MeOH	APP-9-074	
Dichloroacetonitrile 3018-12-0	1,2-Dichlorobenzene 95-50-1	100 mg	NEAT	A-002	0.2 mg/mL	MeOH	M-502-39
1,2-Dichlorobenzene 95-50-1	1 gram	NEAT	M-502-21N	2 mg/mL	MeOH	M-502-39-10X	
	100 µg/mL	MeOH	APP-9-064	1 gram	NEAT	M-502-30N	
	0.2 mg/mL	MeOH	M-502-21	100 µg/mL	MeOH	APP-9-077	
	2 mg/mL	MeOH	M-502-21-10X	0.2 mg/mL	MeOH	M-502-30	
	5 mg/mL	MeOH	AS-E0023	1 mg/mL	MeOH	AS-E0030	
	2.0 mg/mL	Hexane	M-8120-02	2 mg/mL	MeOH	M-502-30-10X	
	1,2-Dichlorobenzene-d ₄ 2199-69-1	0.15 mg/mL	MeOH	AS-E0776	1 gram	NEAT	M-502-31N
1,3-Dichlorobenzene 541-73-1	0.2 mg/mL	MeOH	M-624-SS-11	0.2 mg/mL	MeOH	M-502-31	
	2 mg/mL	MeOH	M-624-SS-11-10X	2 mg/mL	MeOH	M-502-31-10X	
	100 mg	NEAT	A-003	5 mg/mL	MeOH	AS-E1109	
	1 gram	NEAT	M-502-22N	2,2-Dichloropropane 594-20-7	1 gram	NEAT	M-502-32N
100 µg/mL	MeOH	APP-9-065	0.2 mg/mL	MeOH	M-502-32		
0.2 mg/mL	MeOH	M-502-22	2 mg/mL	MeOH	M-502-32-10X		
1 mg/mL	MeOH	AS-E0214	5 mg/mL	MeOH	AS-E1167		
2 mg/mL	MeOH	M-502-22-10X	1,3-Dichloropropene (cis/trans) 542-75-6	1 gram	NEAT	M-502-34N	
2.0 mg/mL	Hexane	M-8120-03	0.2 mg/mL	MeOH	M-502-34		
				0.4 mg/mL	MeOH	M-502-34-R	
				4 mg/mL	MeOH	M-502-34-R-10X	
				0.2 mg/mL	MeOH	M-502-33	
				2 mg/mL	MeOH	M-502-33-10X	
				cis-1,3-Dichloropropene 10061-01-5	100 µg/mL	MeOH	APP-9-078
				trans-1,3-Dichloropropene 10061-02-6	100 µg/mL	MeOH	APP-9-079

VOCs

Compound	Conc.	Matrix	Cat. No.	Compound	Conc.	Matrix	Cat. No.
1,3-Dichloropropylene(cis & trans)	5 mg/mL	MeOH	AS-E0218	Hexachlorobutadiene 87-68-3	1 gram	NEAT	M-502-36N
1,1-Dichloro-1-propylene 563-58-6	5 mg/mL	MeOH	AS-E1166		100 µg/mL	MeOH	APP-9-113
2,4-Dichlorotoluene 95-73-8	5 mg/mL	MeOH	AS-E0149		0.2 mg/mL	MeOH	M-502-36
1,2:3,4-Diepoxybutane 1464-53-5	1 mg/mL	AcCN	AS-E0577		2 mg/mL	MeOH	M-502-36-10X
1,4-Diethylbenzene 105-05-5	100 mg	NEAT	V-008	5 mg/mL	MeOH	AS-E0050	
m-Diethylbenzene 141-93-5	100 µg/mL	Isooctane	M-GRA-ST	2.0 mg/mL	Hexane	M-8120-06	
o-Diethylbenzene 135-01-3	100 mg	NEAT	V-007	Hexachlorocyclopentadiene 77-47-4	100 µg/mL	MeOH	APP-9-114
1,4-Difluorobenzene 540-36-3	0.2 mg/mL	MeOH	M-624-SS-07		1 mg/mL	MeOH	APP-9-114-10X
Dimethyl sulfate 77-78-1	2 mg/mL	MeOH	M-624-SS-07-10X	2.0 mg/mL	Hexane	M-8120-07	
1,3-Dimethyl-2-nitrobenzene 81-20-9	1 mg/mL	AcCN	AS-E0389	Hexachloroethane 67-72-1	100 µg/mL	MeOH	APP-9-115
1,3-Dinitrobenzene 99-65-0	0.2 mg/mL	MtBE	M-507-SS		1 mg/mL	MeOH	AS-E0011
2,5-Dinitrotoluene 619-15-8	100 µg/mL	CH ₂ Cl ₂	APP-9-089	2.0 mg/mL	Hexane	M-8120-08	
3,4-Dinitrotoluene 610-39-9	1 mg/mL	CH ₂ Cl ₂	APP-9-089-10X	Hexachlorophene 70-30-4	100 µg/mL	MeOH	APP-9-116
Dodecylbenzene 123-01-3	5 mg/mL	MeOH	AS-E0527		2 mg/mL	CH ₂ Cl ₂	APP-9-116-D-20X
Epichlorohydrin 106-89-8	100 µg/mL	AcCN	M-8095-SS-03	5 mg/mL	MeOH	AS-E0323	
1,2-Epoxybutane 106-88-7	100 µg/mL	AcCN	M-8095-SS-01	Hexachloropropene 1888-71-7	100 µg/mL	MeOH	APP-9-117
1,2-Epoxypropane(Propylene oxide) 75-56-9	1 mg/mL	AcCN	AS-E0308		1 mg/mL	MeOH	AS-E0364
Ethyl acetate 141-78-6	100 mg	NEAT	V-009	Hexadecylbenzene 1459-09-2	100 mg	NEAT	V-015
Ethyl methacrylate 97-63-2	100 µg/mL	MeOH	APP-9-105		Hexylbenzene 1077-16-3	100 mg	NEAT
Ethyl methanesulfonate 62-50-0	1 mg/mL	MeOH	AS-E0687	iso-Butylbenzene 538-93-2		100 mg	NEAT
Ethylbenzene 100-41-4	100 µg/mL	CH ₂ Cl ₂	APP-9-106		Isopropylbenzene 98-82-8	1 gram	NEAT
Ethylbenzene-d ₆ 25837-05-2	1 mg/mL	AcCN	AS-E0456	0.2 mg/mL		MeOH	M-502-37
Ethylene glycol 107-21-1	100 µg/mL	MeOH	APP-9-104	2 mg/mL	MeOH	M-502-37-10X	
Ethylene oxide 75-21-8	0.2 mg/mL	MeOH	M-502-35	p-Isopropyltoluene (p-Cymene) 99-87-6	1 gram	NEAT	M-502-38N
m-Ethyltoluene 620-14-4	2 mg/mL	MeOH	M-502-35-10X		5 mg/mL	MeOH	AS-E1108
o-Ethyltoluene 611-14-3	10 mg/mL	MeOH	AS-E0036	0.2 mg/mL	MeOH	M-502-38	
p-Ethyltoluene 622-96-8	0.2 mg/mL	MeOH	M-624-SS-08	2 mg/mL	MeOH	M-502-38-10X	
2-Fluoroacetamide 640-19-7	5 mg/mL	AcCN	AS-E0299	Methacrylonitrile 126-98-7	100 µg/mL	MeOH	APP-9-125
Fluorobenzene 462-06-6	0.15 mg/mL	MeOH	AS-E0232		1 mg/mL	MeOH	AS-E0686
Fluorotrichloromethane 75-69-4	0.2 mg/mL	MeOH	M-624-SS-09	Methyl 2,3-dibromopropionate 1729-67-5	1 mg/mL	MtBE	M-552.2-SS-ME
Heptadecylbenzene 14752-75-1	2 mg/mL	MeOH	M-524-IS-2		Methyl 2-bromopropionate 5445-17-0	1 mg/mL	MtBE
Heptylbenzene 1078-71-3	20 mg/mL	MeOH	M-524-IS-2-10X	Methyl bromide 74-83-9		1 mg/mL	AcCN
Hexachlorobenzene 118-74-1	5 mg/mL	MeOH	AS-E0047		Methyl chloride 74-87-3	1 mg/mL	AcCN
				1-Methyl ethyl benzene 98-82-8		5 mg/mL	MeOH
					Methyl iodide 74-88-4	5 mg/mL	MeOH
				Methyl isothiocyanate 556-61-6		100 µg/mL	MeOH
					2.0 mg/mL	MeOH	APP-9-130-20X
				Methyl methacrylate 80-62-6	25 µg/mL	Acetone	M-1659-RPS
					100 µg/mL	MeOH	APP-9-131
				1 mg/mL	MeOH	AS-E0439	
				2 mg/mL	MeOH	APP-9-131-20X	
				Methyl methanesulfonate 66-27-3	100 µg/mL	CH ₂ Cl ₂	APP-9-132
					1 mg/mL	AcCN	AS-E0431
				Methylene chloride 75-09-2	1 mg/mL	MeOH	AS-E0042
					Methylene chloride-d₂ 1665-00-5	2 mg/mL	MeOH
				Naphthalene 91-20-3		1 gram	NEAT
					Nitrobenzene 98-95-3	100 µg/mL	MeOH
				1 mg/mL		MeOH	APP-9-143-10X
				5 mg/mL		MeOH	AS-E0054
				Nitrobenzene-d₅ 4165-60-0	0.2 mg/mL	CH ₂ Cl ₂	M-625-13
					2.0 mg/mL	CH ₂ Cl ₂	M-625-13-10X
				Nonadecylbenzene 29136-19-4	100 mg	NEAT	V-018
					Nonylbenzene 1081-77-2	100 mg	NEAT
				Octadecylbenzene 4445-07-2		100 mg	NEAT
					Octylbenzene 2189-60-8	100 mg	NEAT
				Pentachlorobenzene 608-93-5		100 mg	NEAT
					100 µg/mL	MeOH	APP-9-173
					2.5 mg/mL	MeOH	AS-E0260
				Pentachloroethane 76-01-7	100 µg/mL	MeOH	APP-9-174
					2.0 mg/mL	MeOH	APP-9-174-20X
					5 mg/mL	MeOH	AS-E0300
				Pentadecylbenzene 2131-18-2	100 mg	NEAT	V-021

Neats are as stated,
Solutions are 1 mL

VOCs

Compound	Conc.	Matrix	Cat. No.	Compound	Conc.	Matrix	Cat. No.		
Pentafluorobenzene 363-72-4	0.2 mg/mL	MeOH	M-624-SS-10	1,2,4-Trichlorobenzene 120-82-1	100 mg	NEAT	A-006		
1,2-Propanediol 57-55-6	1 mg/mL	AcCN	AS-E0524		1 gram	NEAT	M-502-48N		
Propionic acid 79-09-4	5 mg/mL	AcCN	AS-E0673		100 µg/mL	MeOH	APP-9-201		
Propionitrile 107-12-0	100 µg/mL	MeOH	APP-9-184		0.2 mg/mL	MeOH	M-502-48		
	5 mg/mL	MeOH	AS-E0338		1 mg/mL	MeOH	AS-E0007		
n-Propylbenzene (1-Phenylpropane) 103-65-1	10 mg/mL	Water	M-8015B/5031-25	2 mg/mL	MeOH	M-502-48-10X			
	100 mg	NEAT	V-022	1,3,5-Trichlorobenzene 108-70-3	100 mg	NEAT	A-007		
	1 gram	NEAT	M-502-41N		5 mg/mL	MeOH	AS-E0176		
0.2 mg/mL	MeOH	M-502-41	1,1,1-Trichloroethane 71-55-6		1 gram	NEAT	M-502-49N		
2 mg/mL	MeOH	M-502-41-10X			100 µg/mL	MeOH	APP-9-202		
5 mg/mL	MeOH	AS-E1112			0.2 mg/mL	MeOH	M-502-49		
Styrene 100-42-5	1 gram	NEAT		M-502-42N	1 mg/mL	MeOH	AS-E0010		
	100 µg/mL	MeOH	APP-9-189	2 mg/mL	MeOH	M-502-49-10X			
	0.2 mg/mL	MeOH	M-502-42	1,1,2-Trichloroethane 79-00-5	1 gram	NEAT	M-502-50N		
	2 mg/mL	MeOH	M-502-42-10X		100 µg/mL	MeOH	APP-9-203		
	5 mg/mL	MeOH	AS-E0257		0.2 mg/mL	MeOH	M-502-50		
TCMX 877-09-8	100 µg/mL	Hexane	M-8082-SS		1 mg/mL	MeOH	AS-E0013		
	1 mg/mL	Hexane	M-8082-SS-10X	2 mg/mL	MeOH	M-502-50-10X			
1,2,3,4-Tetrachlorobenzene 634-66-2	100 mg	NEAT	A-008	Trichloroethene 79-01-6	1 gram	NEAT	M-502-51N		
	1 mg/mL	MeOH	AS-E0225		100 µg/mL	MeOH	APP-9-204		
1,2,3,5-Tetrachlorobenzene 634-90-2	100 mg	NEAT	A-009		0.2 mg/mL	MeOH	M-502-51		
1,2,4,5-Tetrachlorobenzene 95-94-3	100 mg	NEAT	A-010		1 mg/mL	MeOH	AS-E0085		
	100 µg/mL	MeOH	APP-9-191		2 mg/mL	MeOH	M-502-51-10X		
	1.0 mg/mL	MeOH	APP-9-191-10X	Trichlorofluoromethane 75-69-4	100 µg/mL	MeOH	APP-9-205		
	2.0 mg/mL	Hexane	M-8120-09		0.2 mg/mL	MeOH	M-502-52		
	2.5 mg/mL	AcCN	AS-E0177		2 mg/mL	MeOH	M-502-52-10X		
1,1,1,2-Tetrachloroethane 630-20-6	1 gram	NEAT	M-502-43N		1,1,2-Trichloropropane 598-77-6	200 µg/mL	MeOH	S-1321B	
	100 µg/mL	MeOH	APP-9-192	1,2,3-Trichloropropane 96-18-4		1 gram	NEAT	M-502-53N	
	0.2 mg/mL	MeOH	M-502-43		100 µg/mL	MeOH	APP-9-208		
	1 mg/mL	MeOH	AS-E0335		0.2 mg/mL	MeOH	M-502-53		
	1,1,2,2-Tetrachloroethane 79-34-5	2 mg/mL	MeOH	M-502-43-10X	1 mg/mL	MeOH	APP-9-208-10X		
1 gram		NEAT	M-502-44N	2 mg/mL	MeOH	M-502-53-10X			
100 µg/mL		MeOH	APP-9-193	5 mg/mL	MeOH	AS-E0368			
0.2 mg/mL		MeOH	M-502-44	0.2 mg/mL	MeOH	M-624-SS-14			
2 mg/mL		MeOH	M-502-44-10X	a,a,a-Trichlorotoluene 98-07-7	Tridecylbenzene 123-02-4	100 mg	NEAT	V-027	
5 mg/mL	MeOH	AS-E0014	1,2,3-Trimethylbenzene 526-73-8			100 mg	NEAT	V-028	
Tetrachloroethene 127-18-4	1 gram	NEAT		M-502-45N	1,2,4-Trimethylbenzene 95-63-6	100 mg	NEAT	V-029	
	100 µg/mL	MeOH		APP-9-194		1 gram	NEAT	M-502-54N	
	0.2 mg/mL	MeOH		M-502-45		0.2 mg/mL	MeOH	M-502-54	
	2 mg/mL	MeOH		M-502-45-10X		2 mg/mL	MeOH	M-502-54-10X	
	5 mg/mL	MeOH	AS-E0083	5 mg/mL		MeOH	AS-E1107		
Tetrachloro-m-xylene 877-09-8	0.2 mg/mL	MeOH	S-279	1,3,5-Trimethylbenzene 108-67-8	100 mg	NEAT	V-016		
	1 mg/mL	MeOH	S-279-5X		1 gram	NEAT	M-502-55N		
Tetradecylbenzene 1459-10-5	100 mg	NEAT	V-023		0.2 mg/mL	MeOH	M-502-55		
	0.2 mg/mL	MeOH	S-457S		2 mg/mL	MeOH	M-502-55-10X		
Tetrahydrofuran 109-99-9	2 mg/mL	MeOH	S-457S-10X		5 mg/mL	MeOH	AS-E1103		
	1 mg/mL	Water	M-1671A-IS	1,2,3-Trimethylbenzene 526-73-8	3 % w/w	Isocane	M-GRA-FP		
	100 mg	NEAT	V-024		1,3,5-Trimethylbenzene 99-35-4	100 µg/mL	MeOH	APP-9-210	
1,2,3,4-Tetramethylbenzene 488-23-3	100 mg	NEAT	V-025			2 mg/mL	MeOH	M-8270-10	
	1,2,3,5-Tetramethylbenzene 527-53-7	100 mg	NEAT	V-025		2.0 mg/mL	CH ₂ Cl ₂	APP-9-210-D-20X	
		1,2,4,5-Tetramethylbenzene 95-93-2	100 mg	NEAT	V-026	Undecylbenzene 6742-54-7	100 mg	NEAT	V-030
			1 gram	NEAT	M-502-46N		Vinyl acetate 108-05-4	100 µg/mL	MeOH
			100 µg/mL	MeOH	APP-9-198	2 mg/mL		MeOH	APP-9-211-20X
0.2 mg/mL			MeOH	M-502-46	1 mg/mL	AcCN		AS-E0327	
Toluene 108-88-3	1 mg/mL		MeOH	AS-E0084	Vinyl chloride 75-01-4	100 µg/mL	MeOH	APP-9-212	
	2 mg/mL	MeOH	M-502-46-10X	0.2 mg/mL		MeOH	M-502-56		
	Toluene-d₈ 2037-26-5	0.25 mg/mL	MeOH	CLP-PS-3		1 mg/mL	MeOH	AS-E0536	
2.5 mg/mL		MeOH	CLP-PS-3-10X	2 mg/mL		MeOH	M-502-56-10X		
1,3,5-Tribromobenzene 626-39-1		50 µg/mL	Acetone	M-8121-IS		Xylene (total) 1330-20-7	100 µg/mL	MeOH	APP-9-213
	Trichloroacetoneitrile 545-06-2	5 mg/mL	Acetone	M-551B-7	m-Xylene 108-38-3		1 gram	NEAT	M-502-58N
		100 mg	NEAT	A-005			0.2 mg/mL	MeOH	M-502-58
		1 gram	NEAT	M-502-47N			1 mg/mL	MeOH	AS-E0202
		0.2 mg/mL	MeOH	M-502-47			2 mg/mL	MeOH	M-502-58-10X
2 mg/mL		MeOH	M-502-47-10X	o-Xylene 95-47-6		1 gram	NEAT	M-502-57N	
5 mg/mL	MeOH	AS-E0175	0.2 mg/mL		MeOH	M-502-57			
1,2,3-Trichlorobenzene 87-61-6	100 mg	NEAT	A-005		1 mg/mL	MeOH	AS-E0201		
	1 gram	NEAT	M-502-47N		2 mg/mL	MeOH	M-502-57-10X		
	0.2 mg/mL	MeOH	M-502-47		p-Xylene 106-42-3	1 gram	NEAT	M-502-59N	
	2 mg/mL	MeOH	M-502-47-10X	0.2 mg/mL		MeOH	M-502-59		
	5 mg/mL	MeOH	AS-E0175	1 mg/mL		MeOH	AS-E0203		
			2 mg/mL	MeOH		M-502-59-10X			

Neats are as stated,
Solutions are 1 mL

Individuals by Functional Group



In order to make it easier to find individual standards, AccuStandard has now organized them by functional group, as well as by application, and of course they are still listed with their applicable USEPA methods.



Search by
 ✓ **Functional Group**
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See also
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Functional Group

Alcohol EPA Methods include: 1673, 8015

Alcohols				
Compound	CAS No.	Conc.	Matrix	Cat. No.
Allyl alcohol	107-18-6	1 mg/mL	MeOH	AS-E0475
		10 mg/mL	Water	M-8015B/5031-05
Benzyl alcohol	100-51-6	100 µg/mL	MeOH	APP-9-021
		5 mg/mL	MeOH	APP-9-021-50X
		5 mg/mL	AcCN	AS-E0326
1-Butanol	71-36-3	10 mg/mL	Water	M-8015B/5031-06
t-Butanol	75-65-0	10 mg/mL	Water	M-8015B/5031-07
		2 mg/mL	MeOH	S-410
1,3-Dichloro-2-propanol	96-23-1	5 mg/mL	MeOH	AS-E0928
Ethanol	64-17-5	10 mg/mL	Water	M-8015B/5031-11
Ethylene glycol	107-21-1	10 mg/mL	Water	M-8015B/5031-13
Isobutanol (Isobutyl alcohol)	78-83-1	10 mg/mL	Water	M-8015B/5031-15
		100 µg/mL	MeOH	APP-9-120
		2.0 mg/mL	MeOH	APP-9-120-20X
Isopropanol	67-63-0	10 mg/mL	Water	M-8015B/5031-16
Methanol	67-56-1	10 mg/mL	Water	M-8015B/5031-17
2-Methyl-1-propanol (Isobutyl alcohol)	78-83-1	5 mg/mL	MeOH	AS-E0659
Polyethylene glycol (PEG-600)	25322-68-3	2.5 mg/mL	THF	M-1673
1-Propanol	71-23-8	10 mg/mL	Water	M-8015B/5031-24
Propargyl alcohol	107-19-7	1 mg/mL	CH	AS-E0543

Neats are as stated,
Solutions are 1 mL

Aldehydes EPA Methods include: 554, 556, 1667A, 8315, 8315A

Aldehydes and Derivatives				
Compound	CAS No.	Conc.	Matrix	Cat. No.
Acetaldehyde	75-07-0	1 mg/mL	MeOH	M-554-01
		1 mg/mL	Water	M-8315-01
Acetaldehyde-DNPH	1019-57-4	1 mg/mL	MeOH:AcCN	M-554-DNPH-01
		0.1 mg/mL	AcCN	M-8315-R-DNPH-01
Acrolein	107-02-8	100 µg/mL	MeOH:Water	APP-9-007
		1 mg/mL	MeOH:Water	APP-9-007-10X
		100 µg/mL	Water	APP-9-007-W
		1.0 mg/mL	Water	APP-9-007-W-10X
		5 mg/mL	p-Dioxane	AS-E0002
		10 mg/mL	Water	M-8015B/5031-03
Acrolein-DNPH	888-54-0	0.1 mg/mL	AcCN	M-8315-R-DNPH-03
		1 µg/mL	AcCN	S-1275-1-03
Benzaldehyde-DNPH	1157-84-2	0.1 mg/mL	AcCN	M-8315-R-DNPH-04
Butanal	123-72-8	1 mg/mL	MeOH	M-554-02
		1 mg/mL	MeOH:AcCN	M-554-DNPH-02
Butanal-DNPH	1527-98-6	0.1 mg/mL	AcCN	M-8315-R-DNPH-05
		1 mg/mL	AcCN	AS-E0479
Crotonaldehyde	123-73-9	1 mg/mL	MeOH	M-554-03
		10 mg/mL	Water	M-8015B/5031-08
		1 mg/mL	MeOH:AcCN	M-554-DNPH-03
Crotonaldehyde-DNPH	1527-96-4	0.1 mg/mL	AcCN	M-8315-R-DNPH-06
		1 mg/mL	MeOH	M-554-05
Decanal	112-31-2	1 mg/mL	MeOH:AcCN	M-554-DNPH-05
		0.1 mg/mL	AcCN	M-8315-R-DNPH-08
2,5-Dimethylbenzaldehyde-DNPH	152477-96-8	0.1 mg/mL	AcCN	M-8315-R-DNPH-09

Aldehydes continued on next page



Individuals by Functional Group

Functional Group

Aldehydes and Derivatives (continued)

Neats are as stated,
Solutions are 1 mL

Compound	CAS No.	Conc.	Matrix	Cat. No.
Formaldehyde	50-00-0	1 mg/mL	MeOH	M-554-06
		1 mg/mL	Water	M-8315-02
Formaldehyde-DNPH	1081-15-8	1.0 mg/mL	AcCN	M-1667A-DNPH-01
		1 mg/mL	MeOH:AcCN	M-554-DNPH-06
		0.1 mg/mL	AcCN	M-8315-R-DNPH-10
Formamide	75-12-7	50 µg/mL	Water	M-1666A-DI-R-ADD2
2-Furaldehyde-DNPH		1.0 mg/mL	AcCN	M-1667A-DNPH-02
Heptanal	111-71-7	1 mg/mL	MeOH	M-554-07
Heptanal-DNPH		1 mg/mL	MeOH:AcCN	M-554-DNPH-07
		0.1 mg/mL	AcCN	M-8315-R-DNPH-11
Hexanal	66-25-1	1 mg/mL	MeOH	M-554-08
Hexanal-DNPH	1527-97-5	1 mg/mL	MeOH:AcCN	M-554-DNPH-08
		0.1 mg/mL	AcCN	M-8315-R-DNPH-12
Isobutyraldehyde-DNPH		1.0 mg/mL	AcCN	M-1667A-DNPH-03
		0.1 mg/mL	AcCN	M-8315-R-DNPH-13
Nonanal	124-19-6	1 mg/mL	MeOH	M-554-09
Nonanal-DNPH		1 mg/mL	MeOH:AcCN	M-554-DNPH-09
		0.1 mg/mL	AcCN	M-8315-R-DNPH-14
Octanal	124-13-0	1 mg/mL	MeOH	M-554-10
Octanal-DNPH	1726-77-8	1 mg/mL	MeOH:AcCN	M-554-DNPH-10
		0.1 mg/mL	AcCN	M-8315-R-DNPH-15
Paraldehyde	123-63-7	10 mg/mL	Water	M-8015B/5031-21
Pentanal	110-62-3	1 mg/mL	MeOH	M-554-11
Pentanal-DNPH	2057-84-3	1 mg/mL	MeOH:AcCN	M-554-DNPH-11
		0.1 mg/mL	AcCN	M-8315-R-DNPH-16
Propanal	123-38-6	1 mg/mL	MeOH	M-554-12
Propanal-DNPH	725-00-8	1 mg/mL	MeOH:AcCN	M-554-DNPH-12
		0.1 mg/mL	AcCN	M-8315-R-DNPH-17
m-Tolualdehyde-DNPH	2880-05-9	0.1 mg/mL	AcCN	M-8315-R-DNPH-18
o-Tolualdehyde-DNPH	1773-44-0	0.1 mg/mL	AcCN	M-8315-R-DNPH-19
p-Tolualdehyde-DNPH	2571-00-8	0.1 mg/mL	AcCN	M-8315-R-DNPH-20

Ketones EPA Methods include: 554, 556, 8091, 8315, 8315A

Ketones

Compound	CAS No.	Conc.	Matrix	Cat. No.
Acetone	67-64-1	100 µg/mL	MeOH	APP-9-003
		2 mg/mL	MeOH	APP-9-003-20X
		5 mg/mL	MeOH	AS-E0284
		10 mg/mL	Water	M-8015B/5031-01
Acetone-DNPH	1567-89-1	0.1 mg/mL	AcCN	M-8315-R2-DNPH-02
Acetophenone	98-86-2	100 µg/mL	CH ₂ Cl ₂	APP-9-004
		2 mg/mL	CH ₂ Cl ₂	APP-9-004-20X
		5 mg/mL	MeOH	AS-E0411
Cyclohexanone	108-94-1	1 mg/mL	MeOH	M-554-04
Cyclohexanone-DNPH	1589-62-4	500 µg/mL	AcCN	AE-00046
		1 mg/mL	MeOH:AcCN	M-554-DNPH-04
		0.1 mg/mL	AcCN	M-8315-R-DNPH-07
1,1-Dichloro-2-propanone	513-88-2	5 mg/mL	Acetone	M-551B-6
2-Hexanone	591-78-6	100 µg/mL	MeOH	APP-9-118
		2.0 mg/mL	MeOH	APP-9-118-20X
Isophorone	78-59-1	100 µg/mL	MeOH	APP-9-122
		1.0 mg/mL	MeOH	APP-9-122-10X
		1 mg/mL	MeOH	AS-E0052
Methyl ethyl ketone	78-93-3	100 µg/mL	MeOH	APP-9-129
		1 mg/mL	MeOH	APP-9-129-10X
		2 mg/mL	MeOH	APP-9-129-20X
		5 mg/mL	MeOH	AS-E0311
		10 mg/mL	Water	M-8015B/5031-18
4-Methyl-2-pentanone (Methyl isobutyl ketone)	108-10-1	10 mg/mL	Water	M-8015B/5031-19
		100 µg/mL	MeOH	APP-9-135
		2 mg/mL	MeOH	APP-9-135-20X
		5 mg/mL	MeOH	AS-E0349
2-Pentanone	107-87-9	10 mg/mL	Water	M-8015B/5031-22
1,1,1-Trichloro-2-propanone (1,1,1-Trichloroacetone)	918-00-3	5 mg/mL	Acetone	M-551B-8
		1 mg/mL	Acetone	AS-E1181
2',4',5'-Trifluoroacetophenone	129322-83-4	20 µg/mL	AcCN	M-556-SS
		2 mg/mL	AcCN	M-556-SS-100X



Phenols EPA Methods: 558, 604, 642, 8040, 8041, 8085

Phenols

Compound	CAS No.	Conc.	Matrix	Cat. No.
Bisphenol A (BPA)	80-05-7	1000 µg/mL	MeOH	M-1626-01S
4-Chloro-3-cresol (4-Chloro-3-methylphenol)	59-50-7	1.0 mg/mL	MeOH	M-8040-01
		100 µg/mL	MeOH	APP-9-041
2-Chlorophenol	95-57-8	100 mg	NEAT	A-013
		100 µg/mL	MeOH	APP-9-046
		5.0 mg/mL	MeOH	APP-9-046-50X
		2 mg/mL	CH ₂ Cl ₂	APP-9-046-D-20X
		5 mg/mL	MeOH	AS-E0022
3-Chlorophenol	108-43-0	100 mg	NEAT	A-014
		5 mg/mL	MeOH	AS-E0182
4-Chlorophenol	106-48-9	100 mg	NEAT	A-015
		5 mg/mL	MeOH	AS-E0183
2-Chlorophenol-d₄	93951-73-6	0.2 mg/mL	CH ₂ Cl ₂	M-625-20
o-Chlorophenol	95-57-8	1.0 mg/mL	MeOH	M-8040-02
m-Cresol	108-39-4	100 µg/mL	CH ₂ Cl ₂	APP-9-050
		1 mg/mL	CH ₂ Cl ₂	APP-9-050-10X
		5 mg/mL	MeOH	AS-E0251
		1.0 mg/mL	MeOH	M-8040-03
o-Cresol	95-48-7	100 µg/mL	CH ₂ Cl ₂	APP-9-051
		2 mg/mL	CH ₂ Cl ₂	APP-9-051-20X
		1.0 mg/mL	MeOH	M-8040-04
		5 mg/mL	MeOH	AS-E0250
p-Cresol	106-44-5	100 µg/mL	CH ₂ Cl ₂	APP-9-052
		2 mg/mL	CH ₂ Cl ₂	APP-9-052-20X
		1.0 mg/mL	MeOH	M-8040-05
		5 mg/mL	MeOH	AS-E0252
2-Cyclohexyl-4,6-dinitrophenol	131-89-5	1.0 mg/mL	MeOH	M-8040-06
2,4-Dibromophenol	615-58-7	1.6 µg/mL	IPA	M-8041-SS
		16 µg/mL	IPA	M-8041-SS-10X
		160 µg/mL	IPA	M-8041-SS-100X
		1 mg/mL	IPA	M-8041-SS-625X
2,3-Dichlorophenol	576-24-9	100 mg	NEAT	A-016
2,4-Dichlorophenol	120-83-2	100 mg	NEAT	A-017
		100 µg/mL	MeOH	APP-9-075
		1.0 mg/mL	MeOH	M-8040-07
		5 mg/mL	MeOH	APP-9-075-50X
		5 mg/mL	MeOH	AS-E0029
		1 mg/mL	MtBE	M-552A-R-06
2,5-Dichlorophenol	583-78-8	100 mg	NEAT	A-018
2,6-Dichlorophenol	87-65-0	100 mg	NEAT	A-019
		100 µg/mL	CH ₂ Cl ₂	APP-9-076
		1.0 mg/mL	MeOH	M-8040-08
		5 mg/mL	MeOH	APP-9-076-M-50X
3,4-Dichlorophenol	95-77-2	100 mg	NEAT	A-020
3,5-Dichlorophenol	591-35-5	100 mg	NEAT	A-021
2,4-Dimethylphenol	105-67-9	100 µg/mL	MeOH	APP-9-087
		5 mg/mL	MeOH	APP-9-087-50X
		1.0 mg/mL	MeOH	M-8040-09
2,4-Dimethylphenol-3,5,6-d₃	93951-75-8	0.1 mg/mL	Acetone	AS-E0190
4,6-Dinitro-o-cresol	534-52-1	100 mg	NEAT	R-057N
		100 µg/mL	Toluene	R-057S
		1 mg/mL	MeOH	APP-9-090-10X
		5 mg/mL	MeOH	AS-E0058
2,4-Dinitrophenol	51-28-5	100 µg/mL	MeOH	APP-9-091
		1.0 mg/mL	MeOH	M-8040-10
		5 mg/mL	MeOH	APP-9-091-50X
2-Fluorophenol	367-12-4	0.1 mg/mL	Acetone	AS-E0193
		2 mg/mL	MeOH	CLP-AS-1
		0.2 mg/mL	CH ₂ Cl ₂	M-625-16
		2 mg/mL	CH ₂ Cl ₂	M-625-16-10X
2-Methyl-4,6-dinitrophenol	534-52-1	1.0 mg/mL	MeOH	M-8040-12
2-Nitrophenol (o-Nitrophenol)	88-75-5	100 mg	NEAT	R-051N
		100 µg/mL	Toluene	R-051S
		100 µg/mL	MeOH	APP-9-144
		1.0 mg/mL	MeOH	M-8040-13
		5.0 mg/mL	MeOH	APP-9-144-50X
3-Nitrophenol	554-84-7	5 mg/mL	MeOH	AS-E0662
4-Nitrophenol (p-Nitrophenol)	100-02-7	100 µg/mL	MeOH	APP-9-145
		1.0 mg/mL	MeOH	M-8040-14
		5 mg/mL	MeOH	APP-9-145-50X

Phenols continued on next page

Neats are as stated,
Solutions are 1 mL

Phenols and Nitrosamines

Phenols and Nitrosamines can react with the active sites on a column which can sometimes give inconsistent results from run to run. By saturating these sites, the problem should go away. To do this, run a standard that is between 2 to 5 times higher than your highest calibration point. This can be repeated if necessary until the problem is alleviated. Alternatively silylation can be performed on the column (contact column manufacturer for more details).

For New
Nonylphenols and
Octylphenols from ASTM
D7065, see "Methods
other than EPA"
section, page 271.



Individuals by Functional Group

Functional Group

Phenols (continued)

Neats are as stated,
Solutions are 1 mL

Compound	CAS No.	Conc.	Matrix	Cat. No.
Pentachlorophenol	87-86-5	100 mg	NEAT	A-031
		100 µg/mL	MeOH	APP-9-176
		1 mg/mL	MeOH	APP-9-176-10X
		2 mg/mL	CH ₂ Cl ₂	APP-9-176-D-20X
		5 mg/mL	MeOH	AS-E0062
		25 µg/mL	CH ₂ Cl ₂	M-625C-2
		0.2 mg/mL	CH ₂ Cl ₂	M-625C-2-10X
		1.0 mg/mL	MeOH	M-8040-15
Pentachlorophenol- ¹³ C ₅	85380-74-1	0.1 mg/mL	Acetone	AS-E0191
Pentafluorophenol	771-61-9	0.2 mg/mL	CH ₂ Cl ₂	M-625-17
Phenol	108-95-2	100 µg/mL	CH ₂ Cl ₂	APP-9-179
		5 mg/mL	MeOH	AS-E0063
Phenol-d ₅	4165-62-2	0.1 mg/mL	Acetone	AS-E0189
		0.2 mg/mL	CH ₂ Cl ₂	M-625-18
		2 mg/mL	CH ₂ Cl ₂	M-625-18-10X
2,3,4,5-Tetrachlorophenol	4901-51-3	5 mg	NEAT	A-028
2,3,4,6-Tetrachlorophenol	58-90-2	10 mg	NEAT	A-029-10MG
		100 µg/mL	MeOH	APP-9-195
		1.0 mg/mL	MeOH	M-8040-17
		100 mg	NEAT	A-030
2,3,5,6-Tetrachlorophenol	935-95-5	100 mg	NEAT	A-030
2,4,6-Tribromophenol	118-79-6	20 µg/mL	MtBE	M-8085-HERB-SS
		0.2 mg/mL	CH ₂ Cl ₂	M-625-19
		0.2 mg/mL	MeOH	M-604-SS
		2 mg/mL	MeOH	CLP-AS-3
		6 mg/mL	MeOH	CLP-LC-SS-2
2,3,4-Trichlorophenol	15950-66-0	100 mg	NEAT	A-022
2,3,5-Trichlorophenol	933-78-8	100 mg	NEAT	A-023
		5 mg/mL	MeOH	AS-E0222
2,3,6-Trichlorophenol	933-75-5	100 mg	NEAT	A-024
		1 mg/mL	MeOH	AS-E0181
2,4,5-Trichlorophenol	95-95-4	100 mg	NEAT	A-025
		0.1 mg/mL	Acetone	CLP-FC
		100 µg/mL	MeOH	APP-9-206
		1.0 mg/mL	MeOH	M-8040-18
		5 mg/mL	MeOH	AS-E0179
		100 mg	NEAT	A-026
2,4,6-Trichlorophenol	88-06-2	100 µg/mL	MeOH	APP-9-207
		5 mg/mL	MeOH	APP-9-207-50X
		0.1 µg/mL	Acetone	M-1618-SE
		0.1 mg/mL	Acetone	M-1600-SPE
		1 mg/mL	MtBE	M-552A-7
		1.0 mg/mL	MeOH	M-8040-19
		10 mg	NEAT	A-027
		1 mg/mL	MeOH	M-1653-IS
3,4,5-Trichlorophenol	609-19-8	1 mg/mL	Acetone	M-1653-IS-R

Amines, Anilines and Amino Compounds EPA Methods: 605, 607, 620, 625, 1666, 8015, 8095, 8131, 8325

Amines, Anilines and Amino Compounds

Compound	CAS No.	Conc.	Matrix	Cat. No.
2-Amino-4-nitrotoluene	99-55-8	100 µg/mL	AcCN	RAC-03
		1 mg/mL	AcCN	RAC-03-10X
p-Aminoazobenzene	60-09-3	100 µg/mL	AcCN	RAC-21
		1000 µg/mL	AcCN	RAC-21-10X
o-Aminoazotoluene	97-56-3	100 µg/mL	AcCN	RAC-01
		1 mg/mL	AcCN	RAC-01-10X
2-Aminobiphenyl	90-41-5	10 mg	NEAT	R-062N
		100 µg/mL	Toluene	R-062S
		100 µg/mL	AcCN	RAC-22
		1000 µg/mL	AcCN	RAC-22-10X
		10 mg	NEAT	R-063N
4-Aminobiphenyl	92-67-1	100 µg/mL	Toluene	R-063S
		100 µg/mL	CH ₂ Cl ₂	APP-9-011
		100 µg/mL	AcCN	RAC-02
		1 mg/mL	AcCN	RAC-02-10X
		1 mg/mL	MeOH	AS-E0578
		100 mg	NEAT	L-001N
Aniline	62-53-3	100 µg/mL	MeOH	APP-9-012
		1 mg/mL	MeOH	APP-9-012-10X
		5 mg/mL	MeOH	AS-E0542
		0.2 mg/mL	CH ₂ Cl ₂	M-625-01
Aniline-d ₅	4165-61-1	2 mg/mL	CH ₂ Cl ₂	M-625-01-10X
		100 µg/mL	AcCN	RAC-23
o-Anisidine	90-04-0	100 µg/mL	AcCN	RAC-23-10X



Amines, Anilines and Amino Compounds (continued)

Neats are as stated,
Solutions are 1 mL

Compound	CAS No.	Conc.	Matrix	Cat. No.
Benzidine	92-87-5	50 µg/mL	CH ₂ Cl ₂	M-625C-1
		2 mg/mL	CH ₂ Cl ₂	M-625C-1-40X
		100 µg/mL	AcCN	RAC-04
		1 mg/mL	AcCN	RAC-04-10X
Benzidine (as dihydrochloride)	531-85-1	1 mg/mL	MeOH	AS-E0005
2-Bromo-4,6-dinitroaniline	1817-73-8	100 mg	NEAT	L-017N
4-Bromoaniline	106-40-1	100 mg	NEAT	L-007N
4-Chloro-2-nitroaniline	89-63-4	100 mg	NEAT	L-013N
2-Chloro-4,6-dinitroaniline	3531-19-9	100 mg	NEAT	L-015N
2-Chloro-4-nitroaniline	121-87-9	100 mg	NEAT	L-012N
2-Chloroaniline	95-51-2	100 mg	NEAT	L-002N
3-Chloroaniline	108-42-9	100 mg	NEAT	L-003N
4-Chloroaniline (p-Chloroaniline)	106-47-8	100 mg	NEAT	L-004N
		100 µg/mL	AcCN	RAC-05
		1 mg/mL	AcCN	RAC-05-10X
		100 µg/mL	MeOH	APP-9-038
		5 mg/mL	MeOH	AS-E0305
3-Chloro-o-toluidine	87-60-5	100 µg/mL	AcCN	RAC-24
		1000 µg/mL	AcCN	RAC-24-10X
4-Chloro-o-toluidine	95-69-2	100 µg/mL	AcCN	RAC-06
		1 mg/mL	AcCN	RAC-06-10X
p-Cresidine	120-71-8	100 µg/mL	AcCN	RAC-07
		1.0 mg/mL	AcCN	RAC-07-10X
2,4-Diaminoaniline sulfate hydrate	123333-56-2	100 µg/mL	Pyridine	RAC-08
		1 mg/mL	Pyridine	RAC-08-10X
3,3'-Diaminobenzidine	91-95-2	50 mg	NEAT	R-074N
		100 µg/mL	Toluene	R-074S
4,4'-Diaminodiphenylmethane (4,4'-Methylenedianiline)	101-77-9	100 mg	NEAT	R-077N
		100 µg/mL	Toluene	R-077S
		100 µg/mL	AcCN	RAC-09
		1 mg/mL	AcCN	RAC-09-10X
		100 mg	NEAT	R-078N
2,4-Diaminotoluene	95-80-7	100 µg/mL	Toluene	R-078S
		100 µg/mL	AcCN	RAC-10
		1 mg/mL	AcCN	RAC-10-10X
		1 mg/mL	MeOH	AS-E0932
		100 mg	NEAT	L-016N
2,6-Dibromo-4-nitroaniline	827-94-1	100 mg	NEAT	L-014N
2,6-Dichloro-4-nitroaniline	99-30-9	100 mg	NEAT	L-005N
3,4-Dichloroaniline	95-76-1	100 mg	NEAT	R-075N
3,3'-Dichlorobenzidine	91-94-1	50 mg	NEAT	R-075N
		100 µg/mL	MeOH	APP-9-067
		1 mg/mL	MeOH	AS-E0026
		100 µg/mL	Toluene	R-075S
		100 µg/mL	AcCN	RAC-11
		1 mg/mL	AcCN	RAC-11-10X
		2 mg/mL	MeOH	Z-014F-2
3,3'-Dimethoxybenzidine	119-90-4	50 mg	NEAT	R-076N
		100 µg/mL	Toluene	R-076S
		100 µg/mL	AcCN	RAC-12
		1 mg/mL	AcCN	RAC-12-10X
3,3'-Dimethyl-4,4'-diaminodiphenylmethane	838-88-0	100 µg/mL	AcCN	RAC-14
		1 mg/mL	AcCN	RAC-14-10X
4-Dimethylaminoazobenzene	60-11-7	10 mg	NEAT	R-079N
		100 µg/mL	Toluene	R-079S
2,6-Dimethylaniline	87-62-7	100 mg	NEAT	L-018N
		100 µg/mL	AcCN	L-018S-CN
3,3'-Dimethylbenzidine	119-93-7	100 µg/mL	CH ₂ Cl ₂	APP-9-085
		2.0 mg/mL	CH ₂ Cl ₂	APP-9-085-20X
		100 µg/mL	AcCN	RAC-13
		1 mg/mL	AcCN	RAC-13-10X
a,a-Dimethylphenethylamine	122-09-8	100 µg/mL	CH ₂ Cl ₂	APP-9-086
		2.0 mg/mL	CH ₂ Cl ₂	APP-9-086-20X
2,4-Dinitroaniline	97-02-9	100 mg	NEAT	L-011N
Diphenylamine	122-39-4	100 µg/mL	CH ₂ Cl ₂	APP-9-097
		1 mg/mL	MeOH	M-620
		5 mg/mL	MeOH	AS-E0263
Ethylenediamine	107-15-3	1 mg/mL	MeOH	AS-E0358
4-Fluoroaniline	371-40-4	0.2 mg/mL	CH ₂ Cl ₂	M-625-08
		2 mg/mL	CH ₂ Cl ₂	M-625-08-10X
2-Methyl-4-nitroaniline	99-52-5	100 µg/mL	AcCN	M-8095-SS-02
Methylamine	74-89-5	2500 µg/mL	Water	M-1666A-DI-R-ADD1
4,4'-Methylenebis(2-chloroaniline)	101-14-4	50 mg	NEAT	R-080N
		100 µg/mL	Toluene	R-080S
		100 µg/mL	AcCN	RAC-15
		1 mg/mL	AcCN	RAC-15-10X
		5 mg/mL	MeOH	AS-E0322
2-Naphthylamine	91-59-8	100 µg/mL	AcCN	RAC-16
		1 mg/mL	AcCN	RAC-16-10X

Amines, Anilines and Amino
continued on next page



Individuals by Functional Group

Amines, Anilines and Amino Compounds (continued)

Neats are as stated,
Solutions are 1 mL

Compound	CAS No.	Conc.	Matrix	Cat. No.
2-Nitroaniline	88-74-4	100 mg	NEAT	L-008N
		100 mg	NEAT	R-054N
		100 µg/mL	Toluene	R-054S
3-Nitroaniline	99-09-2	100 mg	NEAT	L-009N
		100 µg/mL	Toluene	R-055S
4-Nitroaniline	100-01-6	100 mg	NEAT	L-010N
		100 µg/mL	Toluene	R-056S
m-Nitroaniline	99-09-2	100 µg/mL	CH ₂ Cl ₂	APP-9-141
o-Nitroaniline	88-74-4	100 µg/mL	CH ₂ Cl ₂	APP-9-140
		5 mg/mL	MeOH	AS-E0324
p-Nitroaniline	100-01-6	100 µg/mL	CH ₂ Cl ₂	APP-9-142
		5 mg/mL	MeOH	AS-E0342
		5 mg/mL	AcCN	AS-E0392
5-Nitro-o-toluidine	99-55-8	100 µg/mL	CH ₂ Cl ₂	APP-9-156
		5 mg/mL	MeOH	AS-E0344
N-Nitrosodiethylamine	55-18-5	100 µg/mL	CH ₂ Cl ₂	APP-9-148
		2 mg/mL	CH ₂ Cl ₂	APP-9-148-20X
		5 mg/mL	MeOH	AS-E0334
N-Nitrosodimethylamine	62-75-9	100 µg/mL	CH ₂ Cl ₂	APP-9-149
		1 mg/mL	MeOH	APP-9-149-M-10X
		5 mg/mL	MeOH	AS-E0059
N-Nitrosodi-n-butylamine	924-16-3	100 µg/mL	CH ₂ Cl ₂	APP-9-147
		2 mg/mL	CH ₂ Cl ₂	APP-9-147-20X
		0.5 mg/mL	Water	M-8015B/5031-20
N-Nitrosodi-n-propylamine	621-64-7	100 µg/mL	CH ₂ Cl ₂	APP-9-151
		2.5 mg/mL	CH ₂ Cl ₂	APP-9-151-25X
		5 mg/mL	MeOH	AS-E0061
N-Nitrosodiphenylamine	86-30-6	100 µg/mL	CH ₂ Cl ₂	APP-9-150
		1.0 mg/mL	MeOH	APP-9-150-M-10X
		5 mg/mL	MeOH	AS-E0060
N-Nitrosomethylethylamine	10595-95-6	100 µg/mL	CH ₂ Cl ₂	APP-9-152
N-Nitroso-N-methyl ethylamine		1 mg/mL	MeOH	AS-E0974
1-Nitrosopiperidine	100-75-4	5 mg/mL	MeOH	AS-E0458
4,4'-Oxydianiline	101-80-4	100 µg/mL	AcCN	RAC-17
		1 mg/mL	AcCN	RAC-17-10X
p-Phenylenediamine	106-50-3	100 µg/mL	MeOH	APP-9-180
		1 mg/mL	AcCN	AS-E0275
		2 mg/mL	MeOH	APP-9-180-20X
1-Propanamine	107-10-8	1 mg/mL	MeOH	AS-E0657
Pyridine	110-86-1	100 µg/mL	CH ₂ Cl ₂	APP-9-186
		2 mg/mL	CH ₂ Cl ₂	APP-9-186-20X
		2 mg/mL	MeOH	APP-9-186-M-20X
		5 mg/mL	MeOH	AS-E0271
		10 mg/mL	Water	M-8015B/5031-26
Pyridine-d ₅	7291-22-7	0.2 mg/mL	CH ₂ Cl ₂	M-625-15
		2.0 mg/mL	CH ₂ Cl ₂	M-625-15-10X
3,3',5,5'-Tetramethylbenzidine	54827-17-7	1 mg/mL	AcCN	RAC-IS
		1 mg/mL	Ethyl acetate	RAC-IS-EA
4,4'-Thiodianiline	139-65-1	100 µg/mL	AcCN	RAC-18
		1 mg/mL	AcCN	RAC-18-10X
o-Toluidine	95-53-4	100 µg/mL	MeOH	APP-9-199
		2 mg/mL	MeOH	AS-E0503
		100 µg/mL	AcCN	RAC-19
		1 mg/mL	AcCN	RAC-19-10X
		10 mg/mL	Water	M-8015B/5031-27
2,4,5-Trichloroaniline	636-30-6	100 mg	NEAT	L-006N
2,4,5-Trimethylaniline	137-17-7	100 µg/mL	AcCN	RAC-20
		1 mg/mL	AcCN	RAC-20-10X

Ether EPA Methods: 601, 8150

Ethers

Compound	CAS No.	Conc.	Matrix	Cat. No.
bis(2-Chloroethyl)ether	111-44-4	4.0 mg/mL	MeOH	APP-9-027-40X
2-Chloroethylvinyl ether	110-75-8	2 mg/mL	MeOH	M-601C-10X
2,4-Dichlorophenyl-3-methyl-4-nitrophenyl ether	42488-57-3	1.0 mg/mL	Isocotane	E-020S
Diethyl ether	60-29-7	10 mg/mL	Water	M-8015B/5031-09
Dinoseb methyl ether	6099-79-2	0.2 mg/mL	Hexane	M-8150-08
p-Dioxane	123-91-1	100 µg/mL	MeOH	APP-9-096
		1 mg/mL	MeOH	APP-9-096-10X
		10 mg/mL	MeOH	AS-E0480
1,4-Dioxane	123-91-1	10 mg/mL	Water	M-8015B/5031-10
MtBE	1634-04-4	0.2 mg/mL	MeOH	S-078
		2 mg/mL	MeOH	S-078-10X
TAME	994-05-8	0.2 mg/mL	MeOH	S-1019



Halo Ethers

Neats are as stated,
Solutions are 1 mL

Compound	CAS No.	Conc.	Matrix	Cat. No.
2-Chlorophenyl-4-nitrophenyl ether	209-61-4	1 mg/mL	Isooctane	E-005S
3-Chlorophenyl-4-nitrophenyl ether	2303-23-3	1 mg/mL	Isooctane	E-006S
4-Chlorophenyl-4-nitrophenyl ether	1836-74-4	1 mg/mL	Isooctane	E-007S
2,4-Dibromophenyl-4-nitrophenyl ether	2671-93-4	1 mg/mL	Isooctane	E-004S
2,3-Dichlorophenyl-4-nitrophenyl ether	82239-20-1	1 mg/mL	Isooctane	E-008S
2,5-Dichlorophenyl-4-nitrophenyl ether	391-48-7	1 mg/mL	Isooctane	E-010S
2,6-Dichlorophenyl-4-nitrophenyl ether	2093-28-9	1 mg/mL	Isooctane	E-011S
3,5-Dichlorophenyl-4-nitrophenyl ether	21105-77-1	1 mg/mL	Isooctane	E-012S
2,4-Dichlorophenyl-4-nitrophenyl ether	1836-75-5	1 mg/mL	Isooctane	E-009S
3,4-Dichlorophenyl-4-nitrophenyl ether	22532-80-5	1 mg/mL	Isooctane	E-013S
4-Nitrophenyl phenyl ether	620-88-2	1 mg/mL	Isooctane	E-003S
2,3,5-Trichlorophenyl-4-nitrophenyl ether	142022-59-1	1 mg/mL	Isooctane	E-015S
2,3,6-Trichlorophenyl-4-nitrophenyl ether	142022-58-0	1 mg/mL	Isooctane	E-016S
2,3,4-Trichlorophenyl-4-nitrophenyl ether	142022-61-5	1 mg/mL	Isooctane	E-014S
2,4,5-Trichlorophenyl-4-nitrophenyl ether	22532-68-9	1 mg/mL	Isooctane	E-017S
2,4,6-Trichlorophenyl-4-nitrophenyl ether	1836-77-7	1 mg/mL	Isooctane	E-018S
3,4,5-Trichlorophenyl-4-nitrophenyl ether		1 mg/mL	Isooctane	E-019S

Haloacetic Acids EPA Methods: 552A, 552.1, 522.2, 515

Haloacetic Acids

Compound	CAS No.	Conc.	Matrix	Cat. No.
Bromoacetic acid	79-08-3	1 mg/mL	MtBE	M-552A-1
Bromochloroacetic acid	5589-96-8	40 µg/mL	MtBE	M-552.2A-01
		1 mg/mL	MtBE	M-552A-R-02
Bromodichloroacetic acid	71133-14-7	40 µg/mL	MtBE	M-552.2A-02
Chloroacetic acid	79-11-8	1 mg/mL	MtBE	M-552A-2
Chlorodibromoacetic acid	5278-95-5	100 µg/mL	MtBE	M-552.2A-03
Dibromoacetic acid	631-64-1	20 µg/mL	MtBE	M-552.2A-05
		1 mg/mL	MtBE	M-552A-5
Dichloroacetic acid	79-43-6	60 µg/mL	MtBE	M-552.2A-06
		1 mg/mL	MtBE	M-552A-3
2,4-Dichlorophenylacetic acid	19719-28-9	2 µg/mL	Acetone	M-1618-SA
2,4-Dichlorophenylacetic methyl ester	55954-23-9	0.1 mg/mL	MtBE	M-515-SS
		5 mg/mL	MtBE	M-515-SS-50X
		40 µg/mL	MtBE	M-552.2-02
Methyl bromoacetate	96-32-2	200 µg/mL	MeOH	M-552.1-02
		40 µg/mL	MtBE	M-552.2-03
Methyl bromochloroacetate	20428-74-4	200 µg/mL	MeOH	M-552.1-03
		1 mg/mL	MtBE	M-552-R-03
		40 µg/mL	MtBE	M-552.2-04
		60 µg/mL	MtBE	M-552.2-05
Methyl chloroacetate	96-34-4	300 µg/mL	MeOH	M-552.1-04
		1 mg/mL	MtBE	M-552-R-04
Methyl chlorodibromoacetate	20428-75-5	100 µg/mL	MtBE	M-552.2-06
Methyl dibromoacetate	6482-26-4	20 µg/mL	MtBE	M-552.2-07
		100 µg/mL	MeOH	M-552.1-05
		60 µg/mL	MtBE	M-552.2-08
Methyl dichloroacetate	116-54-1	300 µg/mL	MeOH	M-552.1-06
		200 µg/mL	MtBE	M-552.2-09
Methyl trichloroacetate	598-99-2	20 µg/mL	MtBE	M-552.2-10
Monobromoacetic acid	79-08-3	100 µg/mL	MeOH	M-552.1-07
		40 µg/mL	MtBE	M-552.2A-07
Monochloroacetic acid	79-11-8	60 µg/mL	MtBE	M-552.2A-08
Tribromoacetic acid	75-96-7	200 µg/mL	MtBE	M-552.2A-09
		1 mg/mL	MtBE	M-552A-4
Trichloroacetic acid	76-03-9	20 µg/mL	MtBE	M-552.2A-10

Fatty Acid Ethyl Esters (FAEEs)

Compound	CAS No.	Conc.	Matrix	Cat. No.
Ethyl arachidate	18281-05-5	100 mg	NEAT	FAEE-008N
		10 µg/mL	Hexane	FAEE-008S
Ethyl behenate	5908-87-2	100 mg	NEAT	FAEE-009N
		10 µg/mL	Hexane	FAEE-009S
Ethyl caprate	110-38-3	100 mg	NEAT	FAEE-003N
		10 µg/mL	Hexane	FAEE-003S
Ethyl caprylate	106-32-1	100 mg	NEAT	FAEE-002N
		10 µg/mL	Hexane	FAEE-002S
Ethyl erucate	37910-77-3	100 mg	NEAT	FAEE-011N
		10 µg/mL	Hexane	FAEE-011S

Fatty Acid Ethyl Esters continued on next page



Individuals by Functional Group

Functional Group

Fatty Acid Ethyl Esters (continued)

Neats are as stated,
Solutions are 1 mL

Compound	CAS No.	Conc.	Matrix	Cat. No.
Ethyl heptadecanoate	14010-23-2	100 mg	NEAT	FAEE-015N
		10 µg/mL	Hexane	FAEE-015S
Ethyl laurate	106-33-2	100 mg	NEAT	FAEE-004N
		10 µg/mL	Hexane	FAEE-004S
Ethyl lignocerate	24634-95-5	100 mg	NEAT	FAEE-010N
		10 µg/mL	Hexane	FAEE-010S
Ethyl linoleate	544-35-4	100 mg	NEAT	FAEE-012N
		10 µg/mL	Hexane	FAEE-012S
Ethyl linolenate	1191-41-9	100 mg	NEAT	FAEE-016N
		10 µg/mL	Hexane	FAEE-016S
Ethyl linolenate gamma	31450-14-3	100 mg	NEAT	FAEE-020N
		10 µg/mL	Hexane	FAEE-020S
Ethyl myristate	124-06-1	100 mg	NEAT	FAEE-005N
		10 µg/mL	Hexane	FAEE-005S
Ethyl nervonate	137888-64-3	100 mg	NEAT	FAEE-013N
		10 µg/mL	Hexane	FAEE-013S
Ethyl oleate	111-62-6	100 mg	NEAT	FAEE-014N
		10 µg/mL	Hexane	FAEE-014S
Ethyl palmitate	628-97-7	100 mg	NEAT	FAEE-006N
		10 µg/mL	Hexane	FAEE-006S
Ethyl palmitoleate	56219-10-4	100 mg	NEAT	FAEE-001N
		10 µg/mL	Hexane	FAEE-001S
Ethyl stearate	111-61-5	100 mg	NEAT	FAEE-007N
		10 µg/mL	Hexane	FAEE-007S

Phthalates EPA Methods: 506, 8052

Phthalates

Compound	CAS No.	Conc.	Matrix	Cat. No.
Benzyl butyl phthalate	85-68-7	100 µg/mL	MeOH	APP-9-034
		5 mg/mL	MeOH	AS-E0065
bis(2-Ethylhexyl)phthalate	117-81-7	100 µg/mL	MeOH	APP-9-029
		1 mg/mL	MeOH	APP-9-029-10X
bis(2-Ethylhexyl)phthalate-3,4,5,6-d ₄	93951-87-2	100 mg	NEAT	J-001
		100 µg/mL	MeOH	PHTH-D4-011S
Diallyl phthalate	131-17-9	100 mg	NEAT	J-002
Dibenzylphthalate-d ₄		100 µg/mL	MeOH	PHTH-D4-001S
Dibutyl phthalate	84-74-2	100 mg	NEAT	J-003
Dicyclohexyl phthalate	84-61-7	100 mg	NEAT	J-004
		1 mg/mL	AcCN	AS-E0318
Dicyclohexyl phthalate-3,4,5,6-d ₄	358731-25-6	100 µg/mL	MeOH	PHTH-D4-004S
Diethyl phthalate	84-66-2	100 mg	NEAT	J-005
		100 µg/mL	MeOH	APP-9-081
		1 mg/mL	MeOH	APP-9-081-10X
		5 mg/mL	MeOH	AS-E0068
Diethyl phthalate-3,4,5,6-d ₄	93952-12-6	100 µg/mL	MeOH	PHTH-D4-005S
Di-iso-butyl phthalate-3,4,5,6-d ₄	358730-88-8	100 µg/mL	MeOH	PHTH-D4-003S
Diisodecyl phthalate	26761-40-0	100 mg	NEAT	J-006
Diisohexyl phthalate		100 mg	NEAT	J-007
Diisooctyl phthalate	27554-26-3	100 mg	NEAT	J-008
Dimethyl isophthalate	1459-93-4	100 mg	NEAT	J-009
		100 mg	NEAT	J-010
Dimethyl phthalate	131-11-3	100 µg/mL	MeOH	APP-9-088
		1 mg/mL	MeOH	APP-9-088-10X
		5 mg/mL	MeOH	AS-E0069
		0.1 mg/mL	EtOAc	M-8032-IS
Dimethyl phthalate-3,4,5,6-d ₄	93951-89-4	100 µg/mL	MeOH	PHTH-D4-007S
Di-n-butyl phthalate	84-74-2	100 µg/mL	MeOH	APP-9-063
		1 mg/mL	MeOH	APP-9-063-10X
		5 mg/mL	MeOH	AS-E0066
Di-n-butyl phthalate-d ₄	93952-11-5	100 µg/mL	MeOH	PHTH-D4-002S
Di-n-hexyl phthalate-3,4,5,6-d ₄		100 µg/mL	MeOH	PHTH-D4-006S
Di-n-octyl phthalate	117-84-0	100 mg	NEAT	J-011
		100 µg/mL	MeOH	APP-9-095
		5 mg/mL	MeOH	AS-E0067
Di-n-octyl phthalate-3,4,5,6-d ₄	93952-13-7	100 µg/mL	MeOH	PHTH-D4-008S
Di-n-pentyl phthalate-3,4,5,6-d ₄	358730-89-9	100 µg/mL	MeOH	PHTH-D4-009S
Di-n-propyl phthalate-3,4,5,6-d ₄	358731-29-0	100 µg/mL	MeOH	PHTH-D4-010S
Diphenyl isophthalate	744-45-6	100 mg	NEAT	J-012
Diphenyl phthalate	84-62-8	100 mg	NEAT	J-013
isobutylcyclohexyl phthalate		100 mg	NEAT	J-014
n-Octyl n-decyl phthalate	119-07-3	100 mg	NEAT	J-015

Organic Individuals by Application



Methods by Application:

Many different industries have specific needs for reference standards. In order to make it easy for chemists to find products applicable to their analyses, AccuStandard has created industry specific listings for these different applications.

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Explosives



Fuels and Hydrocarbons



Plastic Additives



Food Analytes



Allergens



Odor

Perfluorooctanoic Acids and Salts

Refrigerants



Dyes



Explosives

Explosive chemicals in solutions are used for several purposes. The major use is as reference standards to aid in the remediation of soil and water. Another use is to train dogs and other animals to detect explosive devices. A third use is to calibrate luggage screening explosives detectors at airports and other secure areas.

Explosives

Explosives

Compound	CAS No.	Conc.	Matrix	Cat. No.	1 mL
2-Amino-4,6-dinitrotoluene ■	35572-78-2	1 mg/mL	AcCN:MeOH	M-8330-13	
		0.1 mg/mL	AcCN:MeOH	M-8330-13-0.1X	
4-Amino-2,6-dinitrotoluene ■	19406-51-0	1 mg/mL	AcCN:MeOH	M-8330-14	
		0.1 mg/mL	AcCN:MeOH	M-8330-14-0.1X	
Ammonium picrate	131-74-8	0.1 mg/mL	AcCN	M-8330-ADD-27	
DEGDN New	693-21-0	100 µg/mL	AcCN:MeOH	M-8330-ADD-36	
1,2-Diaminopropane	78-90-0	0.1 mg/mL	MeOH	M-8330-ADD-9	
2,4-Diamino-6-nitrotoluene ■	6629-29-4	0.1 mg/mL	AcCN	M-8330-ADD-12	
2,6-Diamino-4-nitrotoluene ■	59229-75-3	0.1 mg/mL	AcCN	M-8330-ADD-13	
2,3-Dimethyl-2,3-dinitrobutane (DMNB)	3964-18-9	100 µg/mL	AcCN	M-8330-ADD-21	
3,5-Dinitroaniline	618-87-1	0.1 mg/mL	AcCN:MeOH	M-8330-ADD-4	
1,2-Dinitrobenzene	528-29-0	1 mg/mL	MeOH	M-8330-SS	
1,3-Dinitrobenzene	99-65-0	1 mg/mL	AcCN:MeOH	M-8330-01	
		0.1 mg/mL	AcCN:MeOH	M-8330-01-0.1X	
1,2-Dinitroglycerin New	621-65-8	100 µg/mL	AcCN:MeOH	M-8330-ADD-33	
1,3-Dinitroglycerin New	623-87-0	100 µg/mL	AcCN:MeOH	M-8330-ADD-34	
2,4-Dinitrotoluene ■	121-14-2	1 mg/mL	AcCN:MeOH	M-8330-02	
		0.1 mg/mL	AcCN:MeOH	M-8330-02-0.1X	
2,6-Dinitrotoluene ■	606-20-2	1 mg/mL	AcCN:MeOH	M-8330-03	
		0.1 mg/mL	AcCN:MeOH	M-8330-03-0.1X	
3,4-Dinitrotoluene	610-39-9	1 mg/mL	MeOH	M-8330-IS	
3,5-Dinitrotoluene ■	618-85-9	100 µg/mL	AcCN:MeOH	M-8330-ADD-39	
EGDN	628-96-6	0.1 mg/mL	AcCN	M-8330-ADD-5	
Guanidine nitrate	506-93-7	0.1 mg/mL	MeOH	M-8330-ADD-10	
Hexanitrodiphenylamine New	131-73-7	100 µg/mL	AcCN:MeOH	M-8330-ADD-37	
Hexanitrostilbene (HNS) ■	20062-22-0	0.1 mg/mL	AcCN	M-8330-ADD-26	
Hexamethylenetriperoxide diamine (HMTD)	283-66-9	0.1 mg/mL	AcCN	M-8330-ADD-25	
HMX	2691-41-0	1 mg/mL	AcCN:MeOH	M-8330-04	
		0.1 mg/mL	AcCN:MeOH	M-8330-04-0.1X	
Hydrazine	302-01-2	0.1 mg/mL	MeOH	M-8330-ADD-8	
2-Hydroxylamino-4,6-dinitrotoluene ■ (3 month stability)		0.1 mg/mL	AcCN	M-8330-ADD-18	
4-Hydroxylamino-2,6-dinitrotoluene ■ (3 month stability)		0.1 mg/mL	AcCN	M-8330-ADD-20	
Nitrobenzene ■	98-95-3	1 mg/mL	AcCN:MeOH	M-8330-06	
		0.1 mg/mL	AcCN:MeOH	M-8330-06-0.1X	
N-Nitrodimethylamine New	4164-28-7	100 µg/mL	AcCN	M-8330-ADD-40	
Nitroglycerin	55-63-0	0.1 mg/mL	EtOH	M-8330-ADD-1	
		1.0 mg/mL	EtOH:MeOH (97:3)	M-8330-ADD-1-10X	
1-Nitroglycerin New	624-43-1	100 µg/mL	AcCN:MeOH	M-8330-ADD-31	
2-Nitroglycerin New	620-12-2	100 µg/mL	AcCN:MeOH	M-8330-ADD-32	
Nitroguanidine	556-88-7	0.1 mg/mL	MeOH	M-8330-ADD-6	
Nitromethane	75-52-5	0.1 mg/mL	MeOH	M-8330-ADD-7	
2-Nitrotoluene ■	88-72-2	1 mg/mL	AcCN:MeOH	M-8330-07	
		0.1 mg/mL	AcCN:MeOH	M-8330-07-0.1X	
3-Nitrotoluene ■	99-08-1	1 mg/mL	AcCN:MeOH	M-8330-08	
		0.1 mg/mL	AcCN:MeOH	M-8330-08-0.1X	
4-Nitrotoluene ■	99-99-0	1 mg/mL	AcCN:MeOH	M-8330-09	
		0.1 mg/mL	AcCN:MeOH	M-8330-09-0.1X	
PETN	78-11-5	0.1 mg/mL	AcCN:MeOH	M-8330-ADD-2	
		1.0 mg/mL	AcCN:MeOH	M-8330-ADD-2-10X	
Picramic acid	831-52-7	100 µg/mL	AcCN:MeOH	M-8330-ADD-22	
Picric acid	88-89-1	0.1 mg/mL	AcCN:MeOH	M-8330-ADD-3	
Propyleneglycol dinitrate	6423-43-4	100 µg/mL	MeOH	M-8330-ADD-35	
PYX	38082-89-2	0.1 mg/mL	AcCN	M-8330-ADD-11	
RDX	121-82-4	1 mg/mL	AcCN:MeOH	M-8330-05	
		0.1 mg/mL	AcCN:MeOH	M-8330-05-0.1X	
TATP	17088-37-8	0.1 mg/mL	AcCN	M-8330-ADD-24	
TEGDN New		0.1 mg/mL	AcCN	M-8330-ADD-41	
2,2',6,6'-Tetranitro-4,4'-azotoluene ■		0.1 mg/mL	AcCN	M-8330-ADD-17	
4,4',6,6'-Tetranitro-2,2'-azotoluene ■		0.1 mg/mL	AcCN	M-8330-ADD-19	
2,2',6,6'-Tetranitro-4,4'-azoxytoluene ■		0.1 mg/mL	AcCN	M-8330-ADD-15	
Tetryl	479-45-8	1 mg/mL	AcCN:MeOH	M-8330-10	
		0.1 mg/mL	AcCN:MeOH	M-8330-10-0.1X	
TNT	118-96-7	1 mg/mL	AcCN:MeOH	M-8330-11	
		0.1 mg/mL	AcCN:MeOH	M-8330-11-0.1X	
1,3,5-Triamino-2,4,6-trinitrobenzene	3058-38-6	40 µg/mL	DMF	M-8330-ADD-14-DMF	
2,4,6-Triaminotoluene trihydrochloride	634-87-7	10 mg	NEAT	M-8330-ADD-23N	
Trimethylolethane trinitrate	3032-55-1	100 µg/mL	AcCN:MeOH	M-8330-ADD-28	
1,3,5-Trinitrobenzene ■	99-35-4	1 mg/mL	AcCN:MeOH	M-8330-12	
		0.1 mg/mL	AcCN:MeOH	M-8330-12-0.1X	
2,4,6-Trinitroresorcinol	82-71-3	1.0 mg/mL	AcCN:MeOH	M-8330-ADD-29	

■ TNT Metabolites

Widest selection of Explosives and their Metabolites

HMTD, TATP & HNS

EXCLUSIVELY from AccuStandard

Technical Note
AccuStandard complies with ATF and other regulations for manufacturing and shipping explosives.

Matrix Key
(SOLUTIONS in 1 mL NEATS in mg)
AcCN:MeOH in (1:1 ratio)
AcCN Acetonitrile
DMF Dimethyl formamide
EtOH Ethanol
MeOH Methanol



Method 8330 Multi-Component Formulations for Explosive Analysis

The following A and B mixes provide better resolution between possible coeluting analytes, assisting the chemist to optimize the HPLC system. We suggest when first performing Method 8330 development, to purchase the high concentration 14 x 1 mL set "M-8330-R-10X-SET".

Mix A

M-8330A ‡ 1 x 1 mL
0.1 mg/mL each in AcCN:MeOH (1:1) 7 comps.
M-8330A-10X ‡ 1 x 1 mL
1.0 mg/mL each in AcCN:MeOH (1:1) 7 comps.

1,3-Dinitrobenzene	RDX
2,4-Dinitrotoluene	1,3,5-Trinitrobenzene
HMX	TNT
Nitrobenzene	

Mix B

M-8330B ‡ 1 x 1 mL
0.1 mg/mL each in AcCN:MeOH (1:1) 5 comps.
M-8330B-10X ‡ 1 x 1 mL
1.0 mg/mL each in AcCN:MeOH (1:1) 5 comps.

Tetryl	3-Nitrotoluene
2,6-Dinitrotoluene	4-Nitrotoluene
2-Nitrotoluene	

M-8330A-R ‡ 1 x 1 mL
0.1 mg/mL each in AcCN:MeOH (1:1) 8 comps.
M-8330A-R-10X ‡ 1 x 1 mL
1.0 mg/mL each in AcCN:MeOH (1:1) 8 comps.

2-Amino-4,6-dinitrotoluene	Nitrobenzene
1,3-Dinitrobenzene	RDX
2,4-Dinitrotoluene	1,3,5-Trinitrobenzene
HMX	TNT

M-8330B-R ‡ 1 x 1 mL
0.1 mg/mL each in AcCN:MeOH (1:1) 7 comps.
M-8330B-R-10X ‡ 1 x 1 mL
1.0 mg/mL each in AcCN:MeOH (1:1) 7 comps.

2-Amino-4,6-dinitrotoluene	2-Nitrotoluene
4-Amino-2,6-dinitrotoluene	3-Nitrotoluene
Tetryl	4-Nitrotoluene
2,6-Dinitrotoluene	

Composite Explosive Mixture

M-8330-R 1 x 1 mL
M-8330-R-PAK SAVE 5 x 1 mL
1.0 mg/mL each in MeOH:AcCN (1:1) 14 comps.

1,3-Dinitrobenzene	3-Nitrotoluene
2,4-Dinitrotoluene	4-Nitrotoluene
2,6-Dinitrotoluene	Tetryl
HMX	TNT
RDX	1,3,5-Trinitrobenzene
Nitrobenzene	2-Amino-4,6-dinitrotoluene
2-Nitrotoluene	4-Amino-2,6-dinitrotoluene

M-8330B-R2 ‡ 1 x 1 mL
0.1 mg/mL each in AcCN:MeOH (1:1) 6 comps.
M-8330B-R2-10X ‡ 1 x 1 mL
1.0 mg/mL each in AcCN:MeOH (1:1) 6 comps.

4-Amino-2,6-dinitrotoluene	2-Nitrotoluene
Tetryl	3-Nitrotoluene
2,6-Dinitrotoluene	4-Nitrotoluene

Surrogate Standard

M-8330-SS 1 x 1 mL
1.0 mg/mL in MeOH

1,2-Dinitrobenzene

Internal Standard

M-8330-IS 1 x 1 mL
M-8330-IS-PAK SAVE 5 x 1 mL
1.0 mg/mL in MeOH

3,4-Dinitrotoluene

Explosives by HPLC Set

M-8330-R-SET ‡ 14 x 1 mL
Each at 100 µg/mL in AcCN:MeOH (1:1)
M-8330-R-10X-SET ‡ 14 x 1 mL
Each at 1000 µg/mL in AcCN:MeOH (1:1)

1,3-Dinitrobenzene (01)	3-Nitrotoluene (08)
2,4-Dinitrotoluene (02)	4-Nitrotoluene (09)
2,6-Dinitrotoluene (03)	Tetryl (10)
HMX (04)	TNT (11)
RDX (05)	1,3,5-Trinitrobenzene (12)
Nitrobenzene (06)	2-Amino-4,6-dinitrotoluene (13)
2-Nitrotoluene (07)	4-Amino-2,6-dinitrotoluene (14)

Gun Surveillance Standard

EXP-GSS 1 x 1 mL
At stated conc. (µg/mL) in AcCN 9 comps.

Dimethyl phthalate	200	2,2'-Dinitrodiphenylamine	50
2,4'-Dinitrodiphenylamine	50	4,4'-Dinitrodiphenylamine	50
2,4-Dinitrodiphenylamine	50	Diphenylamine	200
2-Nitrodiphenylamine	50	N-Nitrosodiphenylamine	75
4-Nitrodiphenylamine	50		

DIN 38407-21 Explosives

Examination of water, wastewater, and sludge for determination of selected explosives and related compounds by HPLC with UV detection

DIN38407-21-A 1 x 1 mL
10 µg/mL each in MeOH 12 comps.

Picric acid	Nitroglycerin
HMX	TNT
RDX	2-Nitrotoluene
Tetryl	PETN
EGDN	4-Nitrotoluene
DEGDN	3-Nitrotoluene

DIN 38407-21 Related Compounds

Examination of water, wastewater, and sludge for determination of selected explosives and related compounds by HPLC with UV detection

DIN38407-21-B 1 x 1 mL
10 µg/mL each in MeOH:AcCN (98:2) 8 comps.

1,3,5-Trinitrobenzene
1,3-Dinitrobenzene
4-Amino-2,6-dinitrotoluene
2,2',4,4',6,6'-Hexanitrodiphenylamine
2-Amino-4,6-dinitrotoluene
2,6-Dinitrotoluene
2,4-Dinitrotoluene
Diphenylamine

‡ To delay premature breakdown of thermally labile products in transit we suggest shipping with a "Cold Pack"



Explosive Standards

Explosives

Method 529 Explosive & Related Compounds by SPE & Capillary Column GC/MS

Method 529 Calibration Curve

All in µg/mL in Ethyl acetate

M-529-	01	02	03	04	05	06	07	08	09
2-Amino-4,6-dinitrotoluene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
4-Amino-2,6-dinitrotoluene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
3,5-Dinitroaniline	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
1,3-Dinitrobenzene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
2,4-Dinitrotoluene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
2,6-Dinitrotoluene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
RDX	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
Nitrobenzene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
2-Nitrotoluene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
3-Nitrotoluene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
4-Nitrotoluene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
1,3,5-Trinitrobenzene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
Tetryl	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
TNT	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10

Internal Standard Stock Solution

M-529-IS 1 x 1 mL
2.0 mg/mL Ethyl acetate

3,4-Dinitrotoluene

Internal Standard Fortification Solution

M-529-ISFS 1 x 1 mL
200 µg/mL each in Ethyl acetate
14 comps.

2-Amino-4,6-dinitrotoluene	Nitrobenzene
4-Amino-2,6-dinitrotoluene	2-Nitrotoluene
3,5-Dinitroaniline	3-Nitrotoluene
1,3-Dinitrobenzene	4-Nitrotoluene
2,4-Dinitrotoluene	1,3,5-Trinitrobenzene
2,6-Dinitrotoluene	Tetryl
RDX	TNT

Surrogate Analyte Stock Solutions

M-529-SS1 1 x 1 mL
M-529-SS1-PAK 5 x 1 mL
1000 µg/mL each in MeOH

1,3,5-Trimethyl-2-nitrobenzene 1,2,4-Trimethyl-5-nitrobenzene

SAVE 2 comps.

M-529-SS2 1 x 1 mL
M-529-SS2-PAK 5 x 1 mL
1000 µg/mL each in CH₂Cl₂

Nitrobenzene-d₅

SAVE

Surrogate Analyte Fortification Solution

M-529-SAFS 1 x 1 mL
100 µg/mL each in MeOH
3 comps.

1,3,5-Trimethyl-2-nitrobenzene Nitrobenzene-d₅
1,2,4-Trimethyl-5-nitrobenzene

Method 8095 Explosives by GC/ECD

This method is a companion to EPA Method 8330, utilizing the sensitivity and selectivity of the ECD.

Explosive Stock Solution A

M-8095-SSA-100X 1 x 1 mL
M-8095-SSA-100X-PAK 5 x 1 mL
100 µg/mL each in AcCN:MeOH (1:1)
10 comps.

2-Amino-4,6-dinitrotoluene	1,3,5-Trinitrobenzene
4-Amino-2,6-dinitrotoluene	TNT
1,3-Dinitrobenzene	RDX
2,6-Dinitrotoluene	Tetryl
2,4-Dinitrotoluene	HMX

Explosive Stock Solution B

M-8095-SSB-100X 1 x 1 mL
M-8095-SSB-100X-PAK 5 x 1 mL
At stated conc. in AcCN:MeOH (1:1)
7 comps.

Nitrobenzene (500 µg/mL)	Nitroglycerin (500 µg/mL)
3-Nitrotoluene (500 µg/mL)	PETN (500 µg/mL)
2-Nitrotoluene (500 µg/mL)	3,5-Dinitroaniline (100 µg/mL)
4-Nitrotoluene (500 µg/mL)	

Explosive Surrogate Standards

M-8095-SS-01 1 x 1 mL
M-8095-SS-01-PAK 5 x 1 mL
100 µg/mL in AcCN

3,4-Dinitrotoluene

SAVE

M-8095-SS-03 1 x 1 mL
M-8095-SS-03-PAK 5 x 1 mL
10 µg/mL in AcCN

2,5-Dinitrotoluene

SAVE

M-8095-SS-02 1 x 1 mL
M-8095-SS-02-PAK 5 x 1 mL
100 µg/mL in AcCN

2-Methyl-4-nitroaniline

SAVE





Plastics and other polymeric materials have become indispensable in our everyday lives. Although they offer many benefits, hazardous chemicals may be present in these materials. These hazardous materials can be introduced either intentionally as additives, or unintentionally as pollutants.

AccuStandard has collected or synthesized many of these polymer adjuncts and is pleased to present them in this newest unique product line as Certified Reference Standards for monitoring these chemicals.

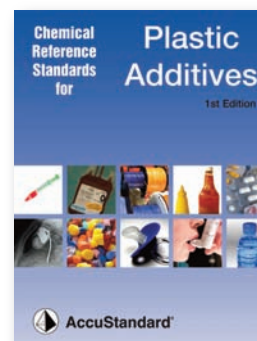
The occurrence, toxicity and analytical methods used in the detection, monitoring (for both presence and levels) of these chemical classes and individual compounds within these classes are more thoroughly described in the book the "Handbook for the Chemical Analysis of Plastic and Polymer Additives" (published in 2007 by CRC Press). Both manufacturers and analytical laboratories will find the CRC book to be an authoritative source of information that compliments this catalog.

Calibrating with Certified Standards adds an additional layer of confidence in the analysis that can aid in meeting regulations, protecting in challenges from governmental regulations, and providing protection from legal issues that could be raised by consumers.

Below find a list of regulations that require analysis of many of these additives:

- EU Directives 2002/96/EC and 2002/95/EC WEEE (Waste Electrical and Electronic Equipment) that establishes limits for the content of a product that must be recyclable or reusable.
- EU Directive 2003/11/EC RoHS (restriction of the use of certain hazardous substances) restricting the use of six toxins from most electronic & electrical equipment.
- EU Directive 2002/72/EC relating to plastic materials and articles intended to come in contact with foodstuffs.
- EU Directive 2002/61/EC aryl amine breakdown products in azo dyes.
- EU Directive 67/548/EEC relating to the packaging of dangerous substances.
- FDA and The United States Code of Federal Regulations (CFR) - 21 CFR Parts 175-178 that regulate adhesives, components of coatings, paper and paperboard components, polymers and adjuvants and production aids.
- United States Environmental Protection Agency (USEPA) - Methods 606, 506-1 and 8061 regulating phthalates and adipates.

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For chemical structures, formula and molecular weight, request catalog or visit our website.

PolyAdd Check™

We have listed the compounds by the most common uses. If you cannot find a particular compound, or are interested in a custom solvent, concentration, or a custom solution containing more than one compound please call our Technical Service Department for a quotation.

Solutions at 1000 µg/mL in Hexane, except where indicated
* Hexane:Acetone, -A Acetone, -T Toluene, -M Methanol, -DMSO

Accelerators

Trade Name	Chemical Name	CAS No.	Neat	50 mg	Solution	1 mL
Accelerator BBTS	N-(1,1-dimethylethyl)2-benzothiazolesulfenamide	95-31-8	PLAS-AC-003N		PLAS-AC-003S	
Accelerator ETU-22 PM *	Ethylene thiourea	96-45-7	PLAS-AC-002N		PLAS-AC-002S	
Accelerator EZ & EZ-SP	Zinc diethyldithiocarbamate	14324-55-1	PLAS-AC-006N		PLAS-AC-006S	
Accelerator MBT, MBT/MG	2-Mercaptobenzothiazole	149-30-4	PLAS-AC-001N		PLAS-AC-001S	
Activator OT Urea **	Urea	57-13-3	PLAS-AC-005N		PLAS-AC-005S-A	
Cure-Rite® IBT	Tetraisobutylthiuram disulfide	3064-73-1	PLAS-AC-004N		PLAS-AC-004S	

Antidegradants

Trade Name	Chemical Name	CAS No.	Neat	50 mg	Solution	1 mL
Ethanox® 314	1,3,5-Tris(3,5-di-tert-butyl-4-hydroxybenzyl)-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione	27676-62-6	PLAS-AX-084N		PLAS-AX-084S	
Ethanox 703	2,6-Di-tert-butyl-N-N-dimethylamino-p-cresol	88-27-7	PLAS-AX-085N		PLAS-AX-085S	
Santoflex 77PD	N,N'-bis(1,4-dimethylpentyl)-p-phenylenediamine	3081-14-9	PLAS-AD-002N		PLAS-AD-002S	
Santoflex IPPD *	N-phenyl-N'-propan-2-yl-benzene-1,4-diamine	101-72-4	PLAS-AD-003N		PLAS-AD-003S	
Wingstay L	Butylated reaction product of p-cresol and dicyclopentadiene	68610-51-5	PLAS-AD-001N		PLAS-AD-001S	

Antifoams

Trade Name	Chemical Name	CAS No.	Neat	50 mg	Solution	1 mL
SF100	Dimethyl silicone fluid	9016-00-6	PLAS-AF-001N		PLAS-AF-001S	

Antiozonants

Trade Name	Chemical Name	CAS No.	Neat	50 mg	Solution	1 mL
Antiozonant NIBUD	Nickel dibutyl diithiocarbamate	13927-77-0	PLAS-AZ-001N		PLAS-AZ-001S	

Trade named products are usually technical mixtures.



Plastic Additives

Plastic Additives

Antioxidants

Trade Name	Chemical Name	CAS No.	Neat	50 mg	Solution	1 mL
Alkanox® P27	bis(2,4-Di-tert-butylphenyl)pentaerythritol diphosphate and magnesium aluminum hydroxy carbonate hydrate	26741-53-7 / 11097-59-9	PLAS-AX-032N		PLAS-AX-032S	
Alkanox TNPP	Tris(mono-nonylphenyl) phosphite with up to 1% triisopropanol amine	26523-78-4	PLAS-AX-077N		PLAS-AX-077S	
Antioxidant 60	2H-benzimidazole-2-thione, 1,3-di-hydro-4(or 5)-methyl	53988-10-6	PLAS-AX-019N		PLAS-AX-019S-M	
Antioxidant S	Benzenamine, N-phenyl, reaction products with 2,4,4-trimethylpentene	68411-46-1	PLAS-AX-057N		PLAS-AX-057S	
Cyanox® 1212	Lauryl stearylthiopropionate	13103-52-1	PLAS-AX-047N		PLAS-AX-047S	
Cyanox 1790	1,3,5-Tris(4-tert-butyl-3-hydroxy-2,6-dimethylbenzyl)-1,3,5-triazine-2,4,6-(1h, 3h,5h)-trione	40601-76-1	PLAS-AX-005N		PLAS-AX-005S	
Cyanox 2246	2,2'-Methylene-bis-(4-methyl-6-tert-butyl-phenol)	119-47-1	PLAS-AX-013N		PLAS-AX-013S	
Cyanox 425	2,2'-Methylene-bis-(4-ethyl-6-tert-butyl-phenol)	88-24-4	PLAS-AX-012N		PLAS-AX-012S	
Cyanox LTDP	Dilaurylthiopropionate	123-28-4	PLAS-AX-041N		PLAS-AX-041S	
Cyanox STDP	Distearylthiopropionate	693-36-7	PLAS-AX-044N		PLAS-AX-044S	
Ethanox® 310	Pentaerythritol tetrakis (3-(3,5-di-t-butyl-4-hydroxyphenyl)propionate	6683-19-8	PLAS-AX-086N		PLAS-AX-086S	
Ethanox 323	Nonylphenol disulfide oligomer		PLAS-AX-082N		PLAS-AX-082S	
Ethanox 330	1,3,5-Trimethyl-2,4,6-tris(3,5-di-tert-butyl-4-hydroxybenzyl) benzene	1709-70-2	PLAS-AX-021N		PLAS-AX-021S	
Ethanox 376	3,5-Di-tert-butyl-4-hydroxyhydrocinnamic acid, octadecyl ester	2082-79-3	PLAS-AX-054N		PLAS-AX-054S	
Ethanox 702	4,4'-Methylenebis(2,6-di-tert-butylphenol)	118-82-1	PLAS-AX-025N		PLAS-AX-025S	
Ethaphos® 368	Tris(2,4-di-tert-butylphenyl) phosphite	31570-04-4	PLAS-AX-074N		PLAS-AX-074S	
Irganox® 1035	Thiodiethylene bis(3,5-di-tert-butyl-4-hydroxyhydrocinnamate)	41484-35-9	PLAS-AX-069N		PLAS-AX-069S	
Irganox 1081	6,6'-Di-tert-butyl-2,2'-thiodi-p-cresol	90-66-4	PLAS-AX-080N		PLAS-AX-080S	
Irganox 1098 *	N,N'-1,6-Hexanediyl bis[3,5-bis(1,1-dimethylethyl)-4-hydroxy-benzenepropanamide]	23128-74-7	PLAS-AX-050N		PLAS-AX-050S	
Irganox 1425 WL	Ethyl 3,5-di-tert-butyl-4-hydroxybenzylphosphonate, calcium salt and polyethylene-wax mixture	65140-91-2 / 9002-88-4	PLAS-AX-079N		-----	---
Irganox 245	Triethyleneglycol bis[3-(3'-tert-butyl-4-hydroxy-5'-methylphenyl)propionate]	36443-68-2	PLAS-AX-070N		PLAS-AX-070S	
Irganox 259	Hexamethylene bis(3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate)	35074-77-2	PLAS-AX-045N		PLAS-AX-045S	
Irganox 3114 FF	1,3,5-Tris(3,5-di-tert-butyl-4-hydroxybenzyl)-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione	27676-62-6	PLAS-AX-078N		PLAS-AX-078S	
Irganox 3125 *	3,5-Di-tert-butyl-4-hydroxyhydrocinnamic ester with 1,3,5-tris[2-hydroxyethyl]-s-triazine-2,4,6[1H,3H,5H]-trione	34137-09-2	PLAS-AX-020N		PLAS-AX-020S	
Irganox 565	2,4-bis(n-Octylthio)-6-(4-hydroxy-3,5-di-tert-butylanilino)-1,3,5-triazine	991-84-4	PLAS-AX-014N		PLAS-AX-014S	
Irganox E 201	alpha-Tocopherol	10191-41-0	PLAS-AX-027N		PLAS-AX-027S	
Irganox MD 1024 *	1,2-bis(3,5-Di-tert-butyl-4-hydroxyhydrocinnamoyl)hydrazide	32687-78-8	PLAS-AX-001N		PLAS-AX-001S	
Isonox® 132	2,6-Di-tert-butyl-4-sec-butylphenol	17540-75-9	PLAS-AX-018N		PLAS-AX-018S	
Isonox 232	2,6-Di-tert-butyl-4-nonylphenol	4306-88-1	PLAS-AX-063N		PLAS-AX-063S	
Lowinox AH25	2,5-bis(1,1-Dimethylpropyl)-1,4-benzenediol	79-74-3	PLAS-AX-016N		PLAS-AX-016S	
Lowinox CPL	Polymeric sterically hindered phenol	68610-51-5	PLAS-AX-059N		PLAS-AX-059S	
Lowinox TBM-6	4,4'-Thiobis(2-tert-butyl-5-methylphenol)	96-69-5	PLAS-AX-024N		PLAS-AX-024S	
Markstat® 60	Polyglycol ester		PLAS-AX-028N		PLAS-AX-028S	
Naugard® 412S	beta-Laurylthiopropionate	29598-76-3	PLAS-AX-030N		PLAS-AX-030S	
Naugard 445	4,4'-bis(alpha,alpha-Dimethylbenzyl)diphenylamine	10081-67-1	PLAS-AX-022N		PLAS-AX-022S	
Naugard 956	Proprietary blend of primary and secondary antioxidants		PLAS-AX-060N		PLAS-AX-060S-T	
Naugard A *	Acetone diphenylamine condensation products	68412-48-6	PLAS-AX-026N		PLAS-AX-026S	
Naugard B-25	1:1 blend of Naugard® 10 and Naugard® 524	6683-19-8 / 31570-04-4	PLAS-AX-061N		PLAS-AX-061S	
Naugard BHT	2,6-Di-tert-butyl-4-methylphenol	128-37-0	PLAS-AX-017N		PLAS-AX-017S	
Naugard HM-22	Blend of phenolic primary and diphenylamine secondary antioxidants (Naugards 76 and 445)		PLAS-AX-033N		PLAS-AX-033S	
Naugard J *	N,N'-Diphenyl-p-phenylenediamine	74-31-7	PLAS-AX-048N		PLAS-AX-048S	
Naugard NBC	Nickel dibutyl diithiocarbamate	13927-77-0	PLAS-AX-051N		PLAS-AX-051S	
Naugard PANA	N-Phenyl-1-naphthylamine	90-30-2	PLAS-AX-058N		PLAS-AX-058S	
Naugard PHR	Tris(mono-nonylphenyl) phosphite with up to 1% triisopropanol amine	26523-78-4	PLAS-AX-076N		PLAS-AX-076S	
Naugard PS-30	Benzenamine, N-phenyl, reaction products with 2,4,4-trimethylpentene	68411-46-1	PLAS-AX-038N		PLAS-AX-038S	
Naugard PS-35	Tris-nonyl phenyl phosphite		PLAS-AX-046N		PLAS-AX-046S	
Naugard Q Extra	1,2-Dihydro-2,2,4-trimethylquinoline (polymerized)	26780-96-1	PLAS-AX-002N		PLAS-AX-002S	
Naugard RM-51	Tris(mono-nonylphenyl)phosphite,2,2'-methylene bis (4-methyl-6-nonyl phenol)	26523-78-4	PLAS-AX-034N		PLAS-AX-034S	
Naugard Super Q	1,2-Dihydro-2,2,4-trimethylquinoline (polymerized)	147-47-7	PLAS-AX-003N		PLAS-AX-003S	
Naugard XL-1 *	2,2'-Oxamidobis[ethyl-3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate]	70331-94-1	PLAS-AX-008N		PLAS-AX-008S	
Santicizer® 278	Benzyl 3-isobutyroxy-1-isopropyl-2,2-dimethylpropyl phthalate	16883-83-3	PLAS-AX-029N		PLAS-AX-029S	
Ultrinox® 626	bis(2,4-Di-tert-butylphenyl)pentaerythritol diphosphate	26741-53-7	PLAS-AX-031N		PLAS-AX-031S	

Trade named products are usually technical mixtures.



Solutions at 1000 µg/mL in Hexane, except where indicated
 * Hexane:Acetone, -A Acetone, -T Toluene, -M Methanol, - DMSO

Blowing Agents, Plasticizers

Trade Name	Chemical Name	CAS No.	Neat	50 mg	Solution	1 mL
Celogen® AZ	Carbamoyliminoura	123-773	PLAS-BA-002N		PLAS-BA-002S-DMSO	
CPW-100	Chlorinated paraffin wax	63449-39-8	PLAS-BA-001N		PLAS-BA-001S	

Coupling Agents

Trade Name	Chemical Name	CAS No.	Neat	50 mg	Solution	1 mL
Silquest® A-187	gamma-Glycidoxypropyltrimethoxysilane	2530-83-8	PLAS-CA-004N		PLAS-CA-004S	
Silquest A-1100	gamma-Aminopropyltriethoxysilane	919-30-2	PLAS-CA-002N		PLAS-CA-002S	
Silquest A-1102	gamma-Aminopropyltriethoxysilane (Tech grade)	919-30-2	PLAS-CA-003N		PLAS-CA-003S	
Silquest A-1289	bis-(Triethoxysilylpropyl)tetrasulfane	211519-85-6	PLAS-CA-001N		PLAS-CA-001S	
Silquest A-137	Octyltriethoxysilane	2943-75-1	PLAS-CA-005N		PLAS-CA-005S	
Silquest A-2171	Vinylmethyldimethoxysilane	16753-62-1	PLAS-CA-006N		PLAS-CA-006S	

Cross-Linking Agents

Trade Name	Chemical Name	CAS No.	Neat	50 mg	Solution	1 mL
F-300, F-1000, F-1500, F-2000, F-3000	Stearic acid	57-11-4	PLAS-CL-006N		PLAS-CL-006S	
Perkacit® DPG *	N,N'-Diphenylguanidine	102-06-7	PLAS-CL-004N		PLAS-CL-004S	
Perkacit MBT	2-Mercaptobenzothiazole	149-30-4	PLAS-CL-002N		PLAS-CL-002S	
Perkacit MBTS	2,2'-Dithiobis(benzothiazole)	120-78-5	PLAS-CL-001N		PLAS-CL-001S	
Perkacit NDBC	Nickel dibutyl dithiocarbamate	13927-77-0	PLAS-CL-005N		PLAS-CL-005S	
Perkacit ZDEC	Zinc diethyldithiocarbamate	14324-55-1	PLAS-CL-007N		PLAS-CL-007S	
Resimene® 3520	Hexamethoxy methyl melamine	3089-11-0	PLAS-CL-003N		PLAS-CL-003S	

Flame Retardants (see PCB and PBDE section for complete listings)

Chemical Name	CAS No.	Matrix	Solution	1 mL
2,2',3,4,4',5',6-Heptabromodiphenyl ether	207122-16-5	50 µg/mL in Isooctane	BDE-183S	
2,2',4,4'-Tetrabromodiphenyl ether	40088-47-9	50 µg/mL in Isooctane	BDE-047S	
2,2',4,4',5-Pentabromodiphenyl ether	32534-81-9	50 µg/mL in Isooctane	BDE-099S	
2,2',4,4',5,5'-Hexabromodiphenyl ether	36483-60-0	50 µg/mL in Isooctane	BDE-153S	
2,2',4,4',5,6'-Hexabromodiphenyl ether	207122-15-4	50 µg/mL in Isooctane	BDE-154S	
2,2',4,4',6-Pentabromodiphenyl ether	189084-64-8	50 µg/mL in Isooctane	BDE-100S	
Aroclor® 1016 (Tech Mix)	12674-11-2	1000 µg/mL in Hexane	C-216S-H-10X	
		50 mg	C-216N-50MG	
Aroclor 1221 (Tech Mix)	11104-28-2	1000 µg/mL in Hexane	C-221S-H-10X	
		50 mg	C-221N-50MG	
Aroclor 1232 (Tech Mix)	11141-16-5	1000 µg/mL in Hexane	C-232S-H-10X	
Aroclor 1242 (Tech Mix)	53469-21-9	1000 µg/mL in Hexane	C-242S-H-10X	
		50 mg	C-242N-50MG	
Aroclor 1248 (Tech Mix)	12672-29-6	1000 µg/mL in Hexane	C-248S-H-10X	
		50 mg	C-248N-50MG	
Aroclor 1254 (Tech Mix)	11097-69-1	1000 µg/mL in Hexane	C-254S-H-10X	
		50 mg	C-254N-50MG	
Aroclor 1260 (Tech Mix)	11096-82-5	1000 µg/mL in Hexane	C-260S-H-10X	
		50 mg	C-260N-50MG	
Aroclor 1262 (Tech Mix)	37324-23-5	1000 µg/mL in Hexane	C-262S-H-10X	
		50 mg	C-262N-50MG	
Aroclor 1268 (Tech Mix)	11100-14-4	1000 µg/mL in Hexane	C-298S-H-10X	
Aroclor 5432 (Tech Mix)	63496-31-1	35 µg/mL in Toluene	T-432S	
Aroclor 5442 (Tech Mix)	12642-23-8	35 µg/mL in Toluene	T-442S	
Aroclor 5460 (Tech Mix)	11126-42-4	35 µg/mL in Toluene	T-440S	
Aroclor 6050 (Tech Mix)		35 µg/mL in Toluene	T-6050S	
Decabromodiphenyl ether	1163-19-5	50 µg/mL in Isooctane:Toluene	BDE-209S	
Firemaster BP4A (4,4'-(1-methylethylidene) bis (2,6-dibromophenol))	79-94-7	100 µg/mL in Toluene	FRS-006S	
		10 mg	FRS-006N	
Halowax 1000 (26 %Cl)	58718-66-4	100 µg/mL in Methanol	N-1000S	
Halowax 1001 (50 %Cl)	58718-67-5	100 µg/mL in Methanol	N-1001S	
Halowax 1013 (56 %Cl)	1321-64-8	100 µg/mL in Methanol	N-1013S	
Halowax 1014 (62 %Cl)	1335-87-1	100 µg/mL in Methanol	N-1014S	
Halowax 1051 (70 %Cl)	2234-13-1	100 µg/mL in Methanol	N-1051S	
Halowax 1099 (52 %Cl)	39450-05-0	100 µg/mL in Methanol	N-1099S	
<i>m</i> -Terphenyl	92-06-8	100 mg	T-002N	
<i>o</i> -Terphenyl	84-15-1	100 mg	T-001N	
<i>p</i> -Terphenyl	92-94-4	100 mg	T-003N	
Tetradecachloro- <i>m</i> -terphenyl		35 µg/mL in Toluene	T-005S	
Tetradecachloro- <i>o</i> -terphenyl		35 µg/mL in Toluene	T-004S	
Tetradecachloro- <i>p</i> -terphenyl		35 µg/mL in Toluene	T-006S	



Plastic Additives

Solutions at 1000 µg/mL in Hexane, except where indicated
* Hexane:Acetone, -A Acetone, -T Toluene, -M Methanol, - DMSO

Plasticizers

Trade Name	Chemical Name	CAS No.	Neat	50 mg	Solution	1 mL
Benzoflex® 2-45	Diethylene glycol, dibenzoate	120-55-8	PLAS-PL-015N		PLAS-PL-015S	
Bisphenol A	4,4'-Dihydroxy-2,2'-diphenylpropane	80-05-7			M-1626-01S	
Celogen® SD-125	50% Azodicarbonamide in a phthalate plasticizer		PLAS-PL-009N		PLAS-PL-009S	
Citroflex® 2	2-Hydroxy-1,2,3-propanetricarboxylic acid, triethyl ester	77-93-0	PLAS-PL-028N		PLAS-PL-028S	
Citroflex 4	2-Hydroxy-1,2,3-propanetricarboxylic acid, tributyl ester	77-94-1	PLAS-PL-030N		PLAS-PL-030S	
Citroflex A-2	2-(Acetyloxy)-1,2,3-propanetricarboxylic acid, triethyl ester	77-89-4	PLAS-PL-001N		PLAS-PL-001S	
Citroflex A-4	2-Acetoxy-1,2,3-propanetricarboxylic acid, tributyl ester	77-90-7	PLAS-PL-002N		PLAS-PL-002S	
Citroflex B-6	n-Butyltri-n-hexyl citrate	82469-79-2	PLAS-PL-025N		PLAS-PL-025S	
Dibutyl Phthalate		84-74-2	PLAS-PL-013N		PLAS-PL-013S	
Diocetyl Phthalate (DOP)		117-81-7	PLAS-PL-019N		PLAS-PL-019S	
Hercoflex® 900	1,3-Isobenzofurandione, polymer with 2,2'-(1,2-ethanediybis(oxy)) bis(ethanol), benzoate	68186-30-1	PLAS-PL-038N		PLAS-PL-038S	
Hi-Point 90 (in DMP)	2-Butanone peroxide (in DMP)	1338-23-4	PLAS-PL-023N-R1		PLAS-PL-023S-R1	
Hi-Point® PD-1	Methyl ethyl ketone peroxide solution	1338-23-4	PLAS-PL-024N		PLAS-PL-024S	
Jayflex® 77	Diisooheptyl phthalate	71888-89-6	PLAS-PL-017N		PLAS-PL-017S	
Jayflex DIDP Plasticizer	Diisodecyl phthalate	68515-49-1	PLAS-PL-016N		PLAS-PL-016S	
Jayflex DINP Plasticizer	Diisononyl phthalate	68515-48-0	PLAS-PL-018N		PLAS-PL-018S	
Jayflex DTDP plasticizer	Diisotridecyl phthalate	68515-47-9	PLAS-PL-020N		PLAS-PL-020S	
Jayflex L11P-E plasticizer	Diundecyl phthalate	3648-20-2	PLAS-PL-021N		PLAS-PL-021S	
Jayflex TINTM plasticizer	Triisononyl trimellitate	53894-23-8	PLAS-PL-029N		PLAS-PL-029S	
Laurex®	Zinc salt of lauric and related fatty acids		PLAS-PL-032N		PLAS-PL-032S	
Markstat® 51	Poly(ethylene glycol) monolaurate	9004-81-3	PLAS-PL-003N		PLAS-PL-003S	
Morfex® 150	Dicyclohexyl phthalate	84-61-7	PLAS-PL-014N		PLAS-PL-014S	
Morfex 190	Butylphthalyl butyl glycolate	85-70-1	PLAS-PL-008N		PLAS-PL-008S	
Morfex 560	Tri-n-hexyl trimellitate	1528-49-0	PLAS-PL-031N		PLAS-PL-031S	
Morfex x-1125	Tridecyl phthalate	119-06-2	PLAS-PL-033N		PLAS-PL-033S	
Paraplex® G-30	Proprietary dibasic acid polyester mixture		PLAS-PL-027N		PLAS-PL-027S	
Plasthall® ESO	Epoxidized soybean oil	8013-07-8	PLAS-PL-035N		PLAS-PL-035S	
Polycizer® Butyl Oleate	Butyl oleate	142-77-8	PLAS-PL-007N		PLAS-PL-007S	
Polycizer DP 500	Dipropylene glycol dibenzoate	27138-31-4	PLAS-PL-011N		PLAS-PL-011S	
Santicizer® 141	2-Ethylhexyldiphenyl phosphate	1241-94-7	PLAS-PL-026N		PLAS-PL-026S	
Santicizer 148	Mixture: isodecylidiphenyl phosphate (80-90%) / diisodecyl phenyl phosphate / triphenyl phosphate	29761-21-5	PLAS-PL-022N		PLAS-PL-022S	
Santicizer 160	Benzyl butyl phthalate	85-68-7	PLAS-PL-004N		PLAS-PL-004S	
Santicizer 261	Benzyl phthalate	68515-40-2	PLAS-PL-005N		PLAS-PL-005S	
Vinsol® powder			PLAS-PL-037N		PLAS-PL-037S	
Vinsol resin	Gum rosin	8050-09-7	PLAS-PL-036N		PLAS-PL-036S	

Processing Aids

Trade Name	Chemical Name	CAS No.	Neat	50 mg	Solution	1 mL
Kemamide® E ultra	Erucamide	112-84-5	PLAS-PA-001N		PLAS-PA-001S	

Retarders

Trade Name	Chemical Name	CAS No.	Neat	50 mg	Solution	1 mL
Retarder AK *	Phthalic anhydride	85-44-9	PLAS-RT-001N		PLAS-RT-001S	

Stearates

Trade Name	Chemical Name	CAS No.	Neat	50 mg	Solution	1 mL
Stearic Acid RG (rubber grade)	Stearic acid	57-11-4	PLAS-ST-001N		PLAS-ST-001S	
Stearic Acid TP	Stearic acid	57-11-4	PLAS-ST-002N		PLAS-ST-002S	

UV Stabilizers

Trade Name	Chemical Name	CAS No.	Neat	50 mg	Solution	1 mL
Tinuvin® PED	2-(-Hydroxy-5-methylphenyl)benzo triazole	2440-22-4	PLAS-UV-005N		PLAS-UV-005S	
Uvinul® 3000	2,4-Dihydroxybenzophenone	131-56-6	PLAS-UV-001N		PLAS-UV-001S	
Uvinul 3008	2-Hydroxy-4-octyloxybenzophenone	1843-05-6	PLAS-UV-002N		PLAS-UV-002S	
Uvinul 3040	2-Hydroxy-4-methoxybenzophenone	131-57-7	PLAS-UV-003N		PLAS-UV-003S	
Uvinul 3049	2,2-Dihydroxy-4,4-dimethoxybenzophenone	131-54-4	PLAS-UV-004N		PLAS-UV-004S	

Vegetable Oils

Trade Name	Chemical Name	CAS No.	Neat	50 mg	Solution	1 mL
Akrofax A	Vulcanized vegetable oil		PLAS-VA-001N		PLAS-VA-001S	
Akrofax B	Vulcanized vegetable oil		PLAS-VA-002N		PLAS-VA-002S	

Trade named products are usually technical mixtures.



Deuterated Phthalates

Chemical Name	CAS No.	Neat	5 mg Each	Solution	1 mL
Dibenzyl phthalate-d ₄		PHTH-D4-001N		PHTH-D4-001S	
Di-n-butyl phthalate-d ₄	93952-11-5	PHTH-D4-002N		PHTH-D4-002S	
Di-iso-butyl phthalate-3,4,5,6-d ₄	358730-88-8	PHTH-D4-003N		PHTH-D4-003S	
Dicyclohexyl phthalate-3,4,5,6-d ₄	358731-25-6	PHTH-D4-004N		PHTH-D4-004S	
Diethyl phthalate-3,4,5,6-d ₄	93952-12-6	PHTH-D4-005N		PHTH-D4-005S	
Di-n-hexyl phthalate-3,4,5,6-d ₄		PHTH-D4-006N		PHTH-D4-006S	
Dimethyl phthalate-3,4,5,6-d ₄	93951-89-4	PHTH-D4-007N		PHTH-D4-007S	
Di-n-octyl phthalate-3,4,5,6-d ₄	93952-13-7	PHTH-D4-008N		PHTH-D4-008S	
Di-n-pentyl phthalate-3,4,5,6-d ₄	358730-89-9	PHTH-D4-009N		PHTH-D4-009S	
Di-n-pentyl phthalate-3,4,5,6-d ₄	358731-29-0	PHTH-D4-010N		PHTH-D4-010S	
Di-n-pentyl phthalate-3,4,5,6-d ₄	93951-87-2	PHTH-D4-011N		PHTH-D4-011S	
Sets of Deuterated Phthalates		PHTH-D4N-SET	11 x 5 mg	PHTH-D4S-SET	11 x 1 mL

Technical Mixtures

When a compound has a purity identified as "Technical" or "Tech Mixture" it means that the standard is not comprised of just one main compound. These are mixtures of multiple chemicals that make up a particular product and every chemical in the mix are components that define the product. The analysis considers all compounds in the product. Aroclors, flame retardants, PBDE technical grade, halowaxes, and some allergens, plastic additives, and dyes may be classified as "Technical Mixtures".

ASTM Method D6042-92 Plastic Packaging Testing Standards

This method is used by both pharmaceutical companies and plastics manufacturers. The test ensures the quality of the plastic product during the manufacturing process, and as delivered to the pharmaceutical customer. Compounds are often added to the method's analyte list by pharmaceutical companies.

Calibration Mix

PLAS-CAL-001		1 x 1 mL
PLAS-CAL-001-PAK	SAVE	5 x 1 mL
50 µg/mL each in Isopropanol		7 comps.
BHT	Irganox 3114	
Erucamide Slip	Irganox 1010	
Vitamin E	Irganox 1076	
Irgafor 128		

Internal Standard Mix

PLAS-IS-001		1 x 1 mL
PLAS-IS-001-PAK	SAVE	5 x 1 mL
51.8 µg/mL in Isopropanol		
Tinuvin P		

Expanded List of Additives

Each at 50 µg/mL in Isopropanol, except Ethanox 703 at 1000 µg/mL

Ultranox 626	PLAS-CAL-002-1	1 mL	Ethanox 702	PLAS-CAL-002-5	1 mL
Santanox R	PLAS-CAL-002-2	1 mL	Ethanox 703	PLAS-CAL-002-6	1 mL
Ethanox 330	PLAS-CAL-002-3	1 mL	Irganox 1035	PLAS-CAL-002-7	1 mL
Ethanox 323	PLAS-CAL-002-4	1 mL			

Component list:

1. Tinuvin® P
2. BHT
3. Erucamide
4. Irganox® 3114
5. Irganox 1010
6. Vitamin E
7. Irganox 1076
8. Irgafos® 168

Analysis Conditions:

10µL injection @ 50ppm each component, ASTM D6042-96 calibration mix and IS mix
Solvent: Isopropanol
Column: 150 X 4.6mm Ultra C8, 5µm, 100Å

Mobile phase: Linear gradient

Solvent A: Water

Solvent B: Acetonitrile

Initial: 25% A 75% B

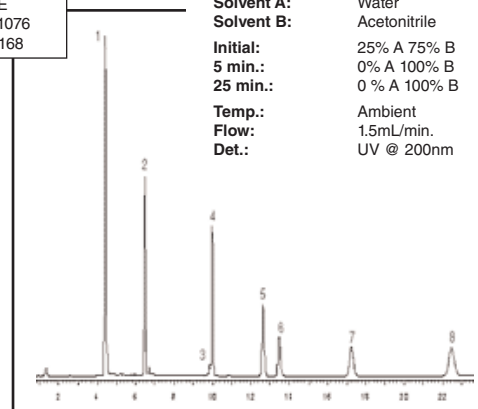
5 min.: 0% A 100% B

25 min.: 0% A 100% B

Temp.: Ambient

Flow: 1.5mL/min.

Det.: UV @ 200nm



The figure shows the separation of the compounds on the method's analyte list, as analyzed by our HPLC specialists. The primary calibration standard mixture contains the common antioxidants and slips listed in ASTM D6042-96.

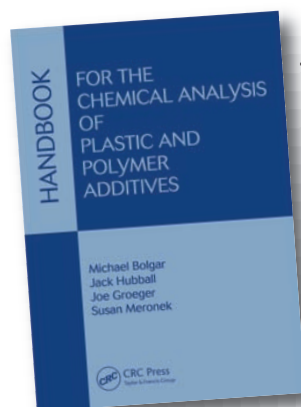
The perfect companion for your analysis!

This CRC Press reference book contains the compounds in this catalog, with important reference data to aid in testing and compliance.

Each Compound has:

- Chemical Information
- Structure
- CAS Number (where applicable)
- RTECS Number (where available)
- Formula
- Molecular Weight
- IUPAC Name, other common names and some popular brand names
- Physical Properties
- Appearance
- Melting and Boiling Points
- Stability
- Solubilities in several common solvents
- Other Important Information
- Application
- Regulatory
- Environmental Impact
- Point of Release
- Toxicological Data
- Analytical Data
- Mass Spectrum with key ions tabulated
- Chromatogram with conditions

As well as information to help with real world examples, tips for analysis in challenging matrices, and much, much more.



BOOK-PLAS-001



Food Analysis

Food Constituents, Lipid Standards

Food chemists routinely use AccuStandard's Analytical Reference Standards for their food analysis. These include Lipid Standards, Vitamin Standards, Preservative Standards and Antimicrobial Standards. Each Standard is methodically prepared, undergoes various quality control analysis and procedures and is then packaged under the strict guidelines of our ISO 9001 and ISO 17025 Quality System.



Food Analysis Contents

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- High Purity confirmed by GLC & TLC
- Packaged in Sealed Ampules under Nitrogen Blanket

- Certificate of Analysis

Unsaturated Methyl Esters

99% minimum purity Compound	(Storage: -20°C, protect from light) CAS No.	Neat 100 mg	Each 10 mg/mL in Hexane Solution 1 mL
Methyl cis-9-hexadecenoate (<i>Palmitoleate</i>) C16:1	1120-25-8	UFA-001N	UFA-001S
Methyl trans-9-hexadecenoate C16:1	10030-74-7	UFA-002N	UFA-002S
Methyl cis-6-octadecenoate (<i>Petroselinate</i>) C18:1	2777-58-4	UFA-003N	UFA-003S
Methyl trans-6-octadecenoate (<i>Petroselaidate</i>) C18:1		UFA-004N	UFA-004S
Methyl cis-9-octadecenoate (<i>Oleate</i>) C18:1	112-62-9	UFA-005N	UFA-005S
Methyl trans-9-octadecenoate (<i>Elaidate</i>) C18:1	2462-84-2	UFA-006N	UFA-006S
Methyl cis-11-octadecenoate (<i>Vaccenate</i>) C18:1	1937-63-9	UFA-007N	UFA-007S
Methyl 12-hydroxy-cis-9-octadecenoate (<i>Ricinoleate</i>) C18:1	141-24-2	UFA-008N	UFA-008S
Methyl linoleate (<i>Linoleate</i>) C18:2	112-63-0	UFA-010N	UFA-010S
Methyl linolelaidate (<i>Linoelaidate</i>) C18:2	2566-97-4	UFA-011N	UFA-011S
Methyl octadecadienoate (<i>Conjugated</i>) C18:2		UFA-012N ‡	UFA-012S
Methyl linolenate (<i>Linolenate</i>) C18:3	301-00-8	UFA-014N ‡	UFA-014S
Methyl g-linolenate (<i>Gamma Linolenate</i>) C18:3	16326-32-2	UFA-015N ‡	UFA-015S
Methyl trans-11-eicosenoate C20:1	69119-90-0	UFA-016N	UFA-016S
Methyl cis-8-eicosenoate C20:1	69119-99-9	UFA-017N	UFA-017S
Methyl cis-11-eicosenoate C20:1	2390-09-2	UFA-018N	UFA-018S
Methyl cis-5-eicosenoate C20:1	20839-34-3	UFA-019N	UFA-019S
Methyl cis-11,14-eicosadienoate C20:2	2463-02-7	UFA-020N ‡	UFA-020S
Methyl cis-8,11,14-eicosatrienoate (<i>Homogamma linolenate</i>) C20:3	1783-84-2	UFA-022N ‡	UFA-022S ‡
Methyl cis-11,14,17-eicosatrienoate C20:3	55682-88-7	UFA-023N ‡	UFA-023S ‡
Methyl arachidonate (<i>Arachidonate</i>) C 20:4	2566-89-4	UFA-024N ‡	UFA-024S
Methyl 5,8,11,14,17-Eicosapentaenoate C20:5	2734-47-6	UFA-025N ‡	UFA-025S ‡
Methyl cis-7,10,13,16,19-Docosapentaenoate (DPA) C22:5	108698-02-8	UFA-026N ‡	UFA-026S ‡
Methyl cis-13-docosenoate (<i>Erucate</i>) C22:1	1120-34-9	UFA-027N	UFA-027S
Methyl trans-13-docosenoate (<i>Brassicdate</i>) C22:1	7439-44-3	UFA-028N	UFA-028S
Methyl cis-13,16-docosadienoate C22:2	61012-47-3	UFA-029N ‡	UFA-029S
Methyl cis-13,16,19-docosatrienoate C22:3	108698-01-7	UFA-030N ‡	UFA-030S ‡
Methyl cis-7,10,13,16-Docosatetraenoate C22:4	13487-42-8	UFA-031N ‡	UFA-031S ‡
Methyl cis-4,7,10,13,16,19-Docosahexenoate C22:6 95%	301-01-9	UFA-032N ‡	UFA-032S ‡
Methyl cis-15-tetracosenoate (<i>Nervonate</i>) C24:1	2733-88-2	UFA-033N	UFA-033S
Set of Unsaturated Fatty Acid Methyl Ester (UFA-001 to UFA-033)	1 x 30 units	UFA-N-SET ‡	UFA-S-SET ‡

‡ To delay premature breakdown of thermally labile products in transit we suggest shipping with a "Cold Pack"

Lipid Standards analyzed by both GLC and TLC are supplied with complete analytical documentation.

Food Analysis

Lipid Standards



Saturated Methyl Esters

Compound	CAS No.	Neat	10 mg/mL in Hexane	
		100 mg	Solution	1 mL
Methyloctanoate (<i>Caprylate</i>) C8:0	111-11-5	SFA-001N	SFA-001S	
Methylnonoate (<i>Pelargonate</i>) C9:0	1731-84-6	SFA-002N	SFA-002S	
Methyldecanoate (<i>Caprate</i>) C10:0	110-42-9	SFA-003N	SFA-003S	
Methylundecanoate C11:0	1731-86-8	SFA-004N	SFA-004S	
Methyldodecanoate (<i>Laurate</i>) C12:0	111-82-0	SFA-005N	SFA-005S	
Methyltridecanoate C13:0	1731-88-0	SFA-006N	SFA-006S	
Methyltetradecanoate (<i>Myristate</i>) C14:0	124-10-7	SFA-007N	SFA-007S	
Methylpentadecanoate C15:0	7132-64-1	SFA-008N	SFA-008S	
Methylhexadecanoate (<i>Palmitate</i>) C16:0	112-39-0	SFA-009N	SFA-009S	
Methylheptadecanoate (<i>Margarate</i>) C17:0	1731-92-6	SFA-010N	SFA-010S	
Methyloctadecanoate (<i>Stearate</i>) C18:0	112-61-8	SFA-011N	SFA-011S	
Methyl 12-hydroxystearate C18:0	141-23-1	SFA-012N	SFA-012S	
Methylnonadecanoate C19:0	1731-94-8	SFA-013N	SFA-013S	
Methyleicosanoate (<i>Arachidate</i>) C20:0	1120-28-1	SFA-014N	SFA-014S	
Methylheneicosanoate C21:0	6064-90-0	SFA-015N	SFA-015S	
Methyldocosanoate (<i>Behenate</i>) C22:0	929-77-1	SFA-016N	SFA-016S	
Methyltricosanoate C23:0	2433-97-8	SFA-017N	SFA-017S	
Methyltetracosanoate (<i>Lignocerate</i>) C24:0	2442-49-1	SFA-018N	SFA-018S	
Set of Saturated Fatty Acids Methyl ester (SFA-001 to SFA-018)	1 x 18 units	SFA-N-SET	SFA-S-SET	

Cold Packs

Cold packs may be recommended or required with certain temperature sensitive products. Some standards are susceptible to change at room temperature or higher. In some of these cases, AccuStandard may recommend or require that these products ship in a "Cold Pak" (styrofoam container that has an ice pack in it). The purpose of the Cold Pak is to delay the exposure of the product to higher temperatures, and NOT to keep the product frozen. The product will not immediately go out of specifications when the Cold Pak melts or when the product reaches room temperature. The Cold Pak simply delays exposure to higher temperatures. When a product is shipped with a Cold Pak, the customer should also consider requesting next-day delivery (where available) and should avoid having the shipment sent on a Friday unless it is approved for Saturday Delivery.

Glycerides

Saturated Glycerides

Compound	CAS No.	Neat
		100 mg
Trioctanoin (<i>Caprylin</i>) C8:0	538-23-8	GS-001N
Dicaprylin C8:0	36354-80-0	GS-002N
Monocaprylin C8:0	19670-49-6	GS-003N
Tridecanoin (<i>Caprin</i>) C10:0	621-71-6	GS-004N
Dicaprin C10:0	53988-07-1	GS-005N
Monocaprin C10:0	26402-22-2	GS-006N
Tridodecanoin (<i>Laurin</i>) C12:0	538-24-9	GS-007N
Dilaurin C12:0	27638-00-2	GS-008N
Monolaurin C12:0	142-18-7	GS-009N
Tritetradecanoin (<i>Myristin</i>) C14:0	555-45-3	GS-010N
Dimyristin C14:0	53563-63-6	GS-011N
Monomyristin C14:0	589-68-4	GS-012N
Trihexadecanoin (<i>Palmitin</i>) C16:0	555-44-2	GS-013N
Dipalmitin C16:0	26657-95-4	GS-014N
Monopalmitin C16:0	542-44-9	GS-015N
Trioctadecanoin (<i>Stearin</i>) C18:0	555-43-1	GS-016N
Distearin C18:0	1323-83-7	GS-017N
Monostearin C18:0	22610-63-5	GS-018N
Trieicosanoin (<i>Arachidin</i>) C20:0	620-64-4	GS-019N
Diarachidin C20:0	60586-60-9	GS-020N
Monoarachidin C20:0		GS-021N
Tridocosanoin (<i>Behenin</i>) C22:0	18641-57-1	GS-022N
Dibehenin C22:0		GS-023N
Monobehenin C22:0	6916-74-1	GS-024N
Set of Saturated glyceride (GS-001 to GS-024)	1 x 24 units	GS-SET

Unsaturated Glycerides

Compound	CAS No.	Neat
		10 mg
Myristolein C14:1 cis		UG-001N
Dimyristolein C14:1		UG-002N
Monomyristolein C14:1	56399-71-4	UG-003N
Palmitolein C16:1 cis	20246-55-3	UG-004N
Dipalmitolein C16:1	113728-10-2	UG-005N
Monopalmitolein C16:1	37515-61-0	UG-006N
Petroselinin 6 C18:1 cis	3296-43-3	UG-007N
Dipetroselinin 6 C18:1		UG-008N
Monopetroselinin 6 C18:1		UG-009N
Olein 9 C18:1 cis	122-32-7	UG-010N
Diolein 9 C18:1	25637-84-7	UG-011N
Monolein 9 C18:1	111-03-5	UG-012N
Trielaidin 9 C18:1 trans	537-39-3	UG-013N
Dielaidin 9 C18:1 trans	98168-52-6	UG-014N
Monoelaidin 9 C18:1 trans	2716-53-2	UG-015N
Vaccenin 11 C18:1 cis		UG-016N
Divaccenin 11 C18:1		UG-017N
Monovaccenin 11 C18:1		UG-018N
Linolein C18:2 cis,cis	537-40-6	UG-019N ‡
Dilinolein C18:2	30606-27-0	UG-020N ‡
Monolinolein C18:2	2277-28-3	UG-021N ‡
Linolenin C18:3 cis,cis,cis	14465-68-0	UG-022N ‡
Dilinolenin C18:3		UG-023N ‡
Monolinolenin C18:3	75685-75-5	UG-024N ‡
Gamma linolenin C18:3 cis,cis,cis		UG-025N ‡
Gamma di-linolenin C18:3		UG-026N ‡
Gamma mono-linolenin C18:3		UG-027N ‡
Triecosenoin C20:1 cis	80380-39-8	UG-028N
Dieicosenoin C20:1	102783-82-4	UG-029N
Monoeicosenoin C20:1		UG-030N
11-14 cis Trieicosadienoin C20:2 cis,cis		UG-031N ‡
Dieicosadienoin C20:2		UG-032N ‡
Monoeicosadienoin C20:2		UG-033N ‡
Set of Unsaturated Glyceride (UFA-001 to UFA-033)	1 x 33 units	UG-N-SET ‡

Lipid Standards analyzed by both GLC and TLC are supplied with complete analytical documentation.

‡ To delay premature breakdown of thermally labile products in transit we suggest shipping with a "Cold Pack"

(Storage: -20°C, protect from light)



Food Analysis

AOCS, NHI/NIH

AOCS, Method Ce1-62 Animal & Vegetable Reference Mixes

AOCS Animal & Vegetable Reference Neat Mixtures)	Cat. No.	Unit
Mix 1: Suitable standard for corn, cottonseed, kapok, poppyseed, rice, safflower, sesame, soybean, sunflower and walnut oils	AOCS-001N ‡	100 mg
Mix 2: Suitable standard for hempseed, linseed, perrilla & rubberseed oils	AOCS-002N ‡	100 mg
Mix 3: Suitable standard for mustard seed, peanut and rapeseed oil	AOCS-003N ‡	100 mg
Mix 4: Suitable standard for neatsfoot, olive and teaseed oils	AOCS-004N ‡	100 mg
Mix 5: Suitable standard for babassu, coconut, ouri-curi & palm kernel oils	AOCS-005N ‡	100 mg
Mix 6: Suitable standard for lard, beef tallow, mutton tallow and palm oil	AOCS-006N ‡	100 mg
AOCS Rapeseed Mix, Suitable standard for modern low erucic acid oils	AOCS-007N ‡	100 mg
AOCS Animal & Vegetable Reference Mix Set (AOCS-001N to AOCS-007N)	AOCS-SET ‡	7 x 100 mg

Food Standards

Methyl Ester (% Composition by Weight)

AOCS Reference Mix	Cat. No.	C8:0 Caprylate	C10:0 Caprate	C12:0 Laurate	C14:0 Myristate	C16:0 Palmitate	C16:1 Palmitoleate	C18:0 Stearate	C18:1 Oleate	C18:2 Linoleate	C18:3 Linolenate	C20:0 Arachidate	C20:1 Eicosenoate	C22:0 Behenate	C22:1 Eurcate	C24:0 Lignocerate
RM-1 ‡	AOCS-001N					6.0		3.0	35.0	50.0	3.0	3.0				
RM-2 ‡	AOCS-002N					7.0		5.0	18.0	36.0	34.0					
RM-3 ‡	AOCS-003N				1.0	4.0		3.0	45.0	15.0	3.0	3.0		3.0	20.0	3.0
RM-4 ‡	AOCS-004N					11.0		3.0	80.0	6.0						
RM-5 ‡	AOCS-005N	7.0	5.0	48.0	15.0	7.0		3.0	12.0	3.0						
RM-6 ‡	AOCS-006N				2.0	30.0	3.0	14.0	41.0	7.0	3.0					
Rapeseed ‡	AOCS-007N				1.0	4.0		3.0	60.0	12.0	5.0	3.0	1.0	3.0	5.0	3.0

NHI/NIH Fatty Acid Methyl Ester Profiling Mixes

Designed to test reliability of chromatographic system when performing quantitative analysis of Fatty Acids.

Methyl Ester (% Composition by Weight)

NHI/NIH Reference Mix	Cat. No.	C8:0 Caprylate 100 mg	C10:0 Caprate	C12:0 Laurate	C14:0 Myristate	C16:0 Palmitate	C16:1 Palmitoleate	C18:0 Stearate	C18:1 Oleate	C20:0 Arachidate	C22:0 Behenate	C24:0 Lignocerate	
NHI-A	NHI-001N					25.0	10.0		65.0				
NHI-B	NHI-002N					4.0	40.0		56.0				
NHI-C ‡	NHI-003N		1.5	3.0	6.0	12	19.4		24.9		33.2		
NHI-D	NHI-004N					11.8	23.6	6.9	13.1	44.6			
NHI-E	NHI-005N		6.3	9.1	12.0	23.3	49.2						
NHI-F ‡	NHI-006N					2.5	4.2		7.3		13.6	25.4	47.0

NHI-SET ‡ 6 x 100 mg
(NHI-001N to NHI-006N)

‡ To delay premature breakdown of thermally labile products in transit we suggest shipping with a "Cold Pack"



Fatty Acid Methyl Esters (FAMES)

These mixes and kits are suitable for determining peak identification & establishing chromatographic retention times.

Saturated Straight Chain Kit

FAME-001-R1-KIT 10 units
Methyl esters, purity 99%, 100 mg each

Me Caproic acid (C6:0)
Me Caprylic acid (C8:0)
Me Capric acid (C10:0)
Me Lauric acid (C12:0)
Me Myristic acid (C14:0)
Me Palmitic acid (C16:0)
Me Stearic acid (C18:0)
Me Arachidic acid (C20:0)
Me Behenic acid (C22:0)
Me Lignoceric acid (C24:0)

Saturated Straight Chain Kit

FAME-002-R1-KIT 19 units
Methyl esters, 99% purity, 100 mg each

Me Caproic acid (6:0)
Me Heptanoic acid (7:0)
Me Caprylic acid (8:0)
Me Nonanoic acid (9:0)
Me Capric acid (10:0)
Me Undecanoic acid (11:0)
Me Lauric Acid (12:0)
Me Tridecanoic acid (13:0)
Me Myristic acid (14:0)
Me Pentadecanoic acid (15:0)
Me Palmitic acid (16:0)
Me Heptadecanoic acid (17:0)
Me Stearic acid (18:0)
Me Nonadecanoic acid (19:0)
Me Arachidic acid (20:0)
Me Heneicosanoic acid (21:0)
Me Behenic acid (22:0)
Me Tricosanoic acid (23:0)
Me Lignoceric acid (24:0)

Odd Carbon Straight Chain Kit

FAME-005-R1-KIT 9 units
Methyl esters, 99+% purity, 100 mg each

Me Heptanoic acid (C7:0)
Me Nonanoic acid (C9:0)
Me Undecanoic acid (C11:0)
Me Tridecanoic acid (C13:0)
Me Pentadecanoic acid (C15:0)
Me Heptadecanoic acid (C17:0)
Me Nonadecanoic acid (C19:0)
Me Heneicosanoic acid (C21:0)
Me Tricosanoic acid (C23:0)

Unsaturated Straight Chain Kit

FAME-003-R1-KIT ‡ 14 units
Storage -20°C, Protect from light
Saturated methyl esters, purity 99%, 10 mg each

Me Myristoleic acid (14:1)
Me Palmitoleic acid (16:1)
Me Petroselinic acid (18:1)
Me Elaidic acid (18:1)
Me cis-Vaccenic acid (18:1, cis)
Me Linoleic acid (18:2, cis)
Me Linolelaidic acid (18:2, trans)
Me Linolenic acid (18:3)
Me cis-11-Eicosenoic acid (20:1)
Me Arachidonic acid (20:4)
Me Erucic acid (22:1)
Me cis-4,7,10,13,16,19-Docosahexaenoic acid (22:6)
Me Nervonic acid (24:1)
Me Oleic acid (18:1)

Methyl Ester Mix #1

FAMQ-001 ‡ 40 mg
Storage: -20°C, Protect from light
Approximately 10 mg of each in a qualitative mix

11-Eicosenoic acid methyl ester (20:1)
11,14-Eicosadienoic acid methyl ester (20:2)
Arachidonic acid methyl ester (20:4)
5,8,11,14,17-Eicosapentaenoic acid methyl ester (20:5)

Fatty Acid Methyl Ester Mix #2

FAMQ-002 ‡ 50 mg
Storage: -20°C, Protect from light
Approximately 10 mg of each in a qualitative mix

11-Eicosenoic acid methyl ester (20:1)
11,14-Eicosadienoic acid methyl ester (20:2)
11,14,17-Eicosatrienoic acid methyl ester (20:3)
Arachidonic acid methyl ester (20:4)
5,8,11,14,17-Eicosapentaenoic acid methyl ester (20:5)

Volatile Acid Standard Solution

FAMQ-004 1 x 100 mL
Storage: Refrigerate
10mM of each component in deionized H₂O.

Formic acid	Isovaleric acid
Acetic acid	n-Valeric acid
Propionic acid	Isocaproic acid (4-Methyl valeric acid)
Isobutyric acid	Hexanoic acid (n-Caproic acid)
Butyric acid	Heptanoic acid

‡ To delay premature breakdown of thermally labile products in transit we suggest shipping with a "Cold Pack"

Standards of Interest

For FAME standards refer to BioFuels in the Petrochemical section.

FAME Quantitative Standard Mix

FAMQ-005 ‡ 1 x 1 mL
Storage: -20°C, Protect from light
At stated conc. in CH₂Cl₂ (total of 10 mg/mL)

	37 comps. mg/mL
Me Butyric acid (C4:0)	0.4
Me Caproic acid (C6:0)	0.4
Me Caprylic acid (C8:0)	0.4
Me Capric acid (C10:0)	0.4
Me Undecanoic acid (C11:0)	0.2
Me Lauric acid (C12:0)	0.4
Me Tridecanoic acid (C13:0)	0.2
Me Myristic acid (C14:0)	0.4
Me Myristoleic acid (C14:1)	0.2
Me Pentadecanoic acid (C15:0)	0.2
Me cis-10-Pentadecenoic acid (C15:1)	0.2
Me Palmitic acid (C16:0)	0.6
Me Palmitoleic acid (C16:1)	0.2
Me Heptadecanoic acid (C17:0)	0.2
Me cis-10-Heptadecenoic acid (C17:1)	0.2
Me Stearic acid (C18:0)	0.4
Me Elaidic acid (C18:1n9t)	0.2
Me Oleic acid (C18:1n9c)	0.4
Me Linolelaidic acid (C18:2n6t)	0.2
Me Linoleic acid (C18:2n6c)	0.2
Me Arachidic acid (C20:0)	0.4
Me g-Linolenic acid (C18:3n6)	0.2
Me cis-11-Eicosenoic acid (C20:1)	0.2
Me Linolenic acid (C18:3n3)	0.2
Me Heneicosanoic acid (C21:0)	0.2
Me cis-11,14-Eicosadienoic acid (C20:2)	0.2
Me Behenic acid (C22:0)	0.4
Me cis-8,11,14-Eicosatrienoic acid (C20:3n6)	0.2
Me Erucic acid (C22:1n9)	0.2
Me cis-11,14,17-Eicosatrienoic acid (C20:3n3)	0.2
Me Arachidonic acid (C20:4n6)	0.2
Me Tricosanoic acid (C23:0)	0.2
Me cis-13,16-Docosadienoic acid (C22:2)	0.2
Me Lignoceric acid (C24:0)	0.4
Me cis-5,8,11,14,17-Eicosapentaenoic acid (C20:5n3)	0.2
Me Nervonic acid (C24:1)	0.2
Me cis-4,7,10,13,16,19-Docosahexaenoic acid (C22:6n3)	0.2



Food Analysis

- 99+% Purity (except as noted)
- Convenient packaging size eliminates costly disposal
- Lot Analysis supplied with each Standard

Melamine Kit

Analysis for Melamine in pet food, formula milk, and other foodstuffs can now be more accurate and reliable with the Melamine Reference Standards Set which contains seven ampules: Melamine, Ammeline, Ammelide, Cyanuric acid, the method recommended Internal Standard, a column clean-up solution, and a Silylating Reagent.

FDA-PROP-001-SET

5 x 1 mL, 2 x 5 mL



		Cat. No.	1 mL
Melamine	1000 µg/mL in Diethylamine:Water (1:4)	FDA-PROP-001A	
Ammeline	1000 µg/mL in Diethylamine:Water (1:4)	FDA-PROP-001B	
Ammelide	1000 µg/mL in Diethylamine:Water (1:4)	FDA-PROP-001C	
Cyanuric acid	1000 µg/mL in Diethylamine:Water (1:4)	FDA-PROP-001D	

Internal Standard

FDA-PROP-001-IS

1 x 1 mL

1000 µg/mL in Pyridine

2,6-Diamino-4-chloropyrimidine

Silylating Reagent

FDA-PROP-001-DER

1 x 5 mL

vol/vol%

BSTFA [bis(trimethylsilyl)trifluoroacetamide] 99
TMCS 1

Column Clean-up Check

FDA-PROP-001-CHK

1 x 5 mL

vol/vol%

Sylon BFT 50
Pyridine 50

EFSA for Isopropylthioxanthone (ITX)

Responding to the hazard found in Italy, France, Spain, and Portugal, we have formulated Isopropylthioxanth-9-one (a photographical chemical) found in baby milk in Italy. The 2-isomer as well as the technical mixture also contains the 4-isomer.

2-Isopropylthioxanthone (ITX)

EFSA-ITX-01

1 x 1 mL

1.0 mg/mL in Isooctane

2-Isopropylthioxanth-9-one

Isopropylthioxanthone (ITX) mixed isomers

EFSA-ITX-02

1 x 1 mL

1.0 mg/mL in Isooctane

2- & 4-Isopropylthioxanth-9-one



Vitamin Standards

Water Soluble		CAS No.	Unit	Cat. No.
Thiamine • HCL	B1	67-03-8	1 gram	VIT-001N
Riboflavin	B2	83-88-5	1 gram	VIT-002N
Pyridoxine • HCL	B6	58-56-0	1 gram	VIT-003N
L-Ascorbic acid	C	50-81-7	1 gram	VIT-004N
Nicotinic acid	Niacin	59-67-6	1 gram	VIT-005N
Nicotinamide		98-92-0	1 gram	VIT-006N
Folic Acid	M	59-30-3	1 gram	VIT-007N
Pantothenic acid		79-83-4	100 mg	VIT-008N
d-Biotin	H	58-85-5	100 mg	VIT-009N-R1
Cyanocobalamin	B12	68-19-9	25 mg	VIT-010N-R1
Water Soluble Vitamin Set, Includes: VIT-001N to VIT-010N			10 units	VIT-WSK-R1-SET
Fat Soluble				
dl-alpha-Tocopherol	E	10191-41-0	100 mg	VIT-012N
Cholecalciferol	D3	67-97-0	100 mg	VIT-013N
Retinol Palmitate	A, Palmitate	79-81-2	100 mg	VIT-014N
dl-alpha-Tocopherol acetate		7695-91-2	100 mg	VIT-015N
Phylloquinone	K1	84-80-0	100 mg	VIT-016N
Menaquinone	K2	11032-49-8	100 mg	VIT-017N
Menadione	K3	58-27-5	100 mg	VIT-018N
β-Carotene (Substantially free of alpha Carotene)		7235-40-7	10 mg	VIT-019N
d-alpha-Tocopherol succinate	E	4345-03-3	100 mg	VIT-020N
Ergocalciferol	D2	50-14-6	100 mg	VIT-022N
Fat Soluble Vitamin Set, Includes: VIT-012N to VIT-022N			10 units	VIT-FSK-R2-SET

Technical Note

AccuStandard Vitamin Standards are thoroughly tested, packaged and stored under an ISO 9001 and 17025 Quality System to provide the highest quality Vitamin Standards available. Remember to always store Standards properly, away from light sources. Each Standard is provided with an actual lot analysis and additional transfer vial and label.

Preservative and Antimicrobial Standards

Compound	Purity	CAS No.	Unit	Cat. No.
Benzoic acid	99 %	65-85-0	1 gram	AP-001N
Sodium benzoate	99 %	532-32-1	1 gram	AP-002N
Potassium nitrite	97 %	7758-09-0	1 gram	AP-003N
Sodium nitrite	99 %	7632-00-0	1 gram	AP-004N
Sodium nitrate	99 %	7631-99-4	1 gram	AP-005N
Potassium nitrate	99 %	7757-79-1	1 gram	AP-006N
Methyl paraben	99 %	99-76-3	1 gram	AP-007N
Ethyl paraben	99 %	120-47-8	1 gram	AP-008N
Butyl paraben	99 %	94-13-3	1 gram	AP-009N
Propionic acid	99 %	79-09-4	1 gram	AP-010N
Sodium propionate	97 %	137-40-6	1 gram	AP-011N
Calcium propionate	97 %	4075-81-4	1 gram	AP-012N
Sorbic acid	99 %	110-44-1	1 gram	AP-013N
Potassium sorbate	99 %	590-00-1	1 gram	AP-014N
Preservative & Antimicrobial Set			14 x 1 gram	AP-SET

Set includes: AP-001N through AP-014N



It has been estimated that 10% of the U.S. population is affected by allergens. Cosmetic allergens can be found in everything from shampoos to skin creams. The average person is now exposed to significantly higher levels of these chemicals than people were exposed to only a generation ago. The resulting synergistic effect, coupled with environmental exposure to chemicals, is the focus of an ever-increasing number of studies.

Some of these chemicals cause, or are suspected of causing, allergic reactions. Some chemicals are toxic. Phthalates are a health issue as well as a food safety concern as an Indirect Food Additive. They tend to migrate from plastic containers and wrappings into food. Finally, pesticides are a cosmetic ingredient issue since they can be present with other ingredients such as lanolin.

AccuStandard now offers AllergenCheck® Standards to meet analytical requirements of the cosmetic, pharmaceutical and food industries. These new products coupled with the widest selection of Certified Reference Standards for pesticide and pesticide metabolite analysis offers one-stop shopping for the analysis of allergens.

Many of the Standards are synthesized by AccuStandard and are not available elsewhere. If you do not see the chemicals or their metabolites that you need, let us know and we may be able to synthesize them. Additionally, if a certain custom mixture of allergens would make your analysis easier, we can provide you with a custom formulation that will save you time.

Allergen Standards are listed as follows:

- Neats and Single Solutions listed alphabetically by compound
- Allergens regulated by the EU
- Allergen standards listed by type

Allergens		Solutions in 1 mL		
Compound	CAS No.	Conc.	Matrix	Cat. No.
2-Acetylpyridine	1122-62-9	100 mg	Neat	ALR-066N
		100 µg/mL	MeOH	ALR-066S
Alanroot (Inula helenium)	97676-35-2	1000 µg/mL	EtOH	ALR-027S-ET-10X
Alkylphenol ethoxylates:				
Nonylphenol-ethylene oxide condensate (Nonoxynol-9)	26027-38-3	100 mg	Neat	ALR-079N
		100 µg/mL	MeOH	ALR-079S
Polyethylene glycol nonaphenyl ether (Triton N-101)	123359-41-1	100 mg	Neat	ALR-078N
		100 µg/mL	MeOH	ALR-078S
Allylthiocyanate	57-06-7	100 mg	Neat	ALR-028N
		1000 µg/mL	EtOH	ALR-028S-ET-10X
Amyl cinnamal	122-40-7	100 mg	Neat	ALR-001N
		1000 µg/mL	AcCN	ALR-001S-CN-10X
Amylcinnamyl alcohol	101-85-9	1000 µg/mL	EtOH	ALR-008S-ET-10X
Anisyl alcohol	105-13-5	100 mg	Neat	ALR-014N
		1000 µg/mL	EtOH	ALR-014S-ET-10X
Arsenic	7440-38-2	1000 µg/mL	2-5% HNO ₃	ALR-MET-01S
Balsam of Peru	8007-00-9	100 mg	Neat	ALR-080N
		100 µg/mL	MeOH	ALR-080S
Benzophenone-3 (Bp-3)	131-57-7	100 mg	Neat	ALR-081N
		100 µg/mL	AcCN	ALR-081S-CN
Benzyl alcohol	100-51-6	100 mg	Neat	ALR-002N
		1000 µg/mL	EtOH	ALR-002S-ET-10X
Benzyl benzoate	120-51-4	100 mg	Neat	ALR-019N
		1000 µg/mL	EtOH	ALR-019S-ET-10X
Benzyl butyl phthalate	85-68-7	100 mg	Neat	ALR-082N
		100 µg/mL	MeOH	ALR-082S
Benzyl cinnamate	103-41-3	100 mg	Neat	ALR-015N
		1000 µg/mL	EtOH	ALR-015S-ET-10X
Benzyl cyanide	140-29-4	100 mg	Neat	ALR-029N
		1000 µg/mL	EtOH	ALR-029S-ET-10X
Benzyl paraben	94-18-8	100 mg	Neat	ALR-083N
		100 µg/mL	MeOH	ALR-083S
Benzyl salicylate	118-58-1	100 mg	Neat	ALR-009N
		1000 µg/mL	AcCN	ALR-009S-CN-10X
Bithionol	97-18-7	100 mg	Neat	ALR-084N
		100 µg/mL	MeOH	ALR-084S
5-Bromo-5-nitro-1,3-dioxane (Bronidox L) (BND)	30007-47-7	100 mg	Neat	ALR-074N
		100 µg/mL	MeOH	ALR-074S
2-Bromo-2-nitropropane-1,3-diol (Bronopol)	52-51-7	100 mg	Neat	ALR-067N
		100 µg/mL	MeOH	ALR-067S
2-(4-tert-Butylbenzyl)propionaldehyde (technical grade)	80-54-6	1000 µg/mL	AcCN	ALR-017S-CN-10X
Butylated hydroxyanisole (BHA)	25013-16-5	100 mg	Neat	ALR-087N
		100 µg/mL	MeOH	ALR-087S
Butylated hydroxytoluene (BHT & 2,6-DBPC)	128-37-0	100 mg	Neat	ALR-088N
		100 µg/mL	MeOH	ALR-088S
Butylene glycol	107-88-0	100 mg	Neat	ALR-089N
		100 µg/mL	MeOH	ALR-089S
Butyl-methoxydibenzoylmethane (B-MDM) Sunblock, Parsol1789	70356-09-1	100 µg/mL	MeOH	ALR-086S
Butyl paraben	94-26-8	100 mg	Neat	ALR-085N
		100 µg/mL	MeOH	ALR-085S



Allergens

Allergens

Solutions in 1 mL

Compound	CAS No.	Conc.	Matrix	Cat. No.
p-tert-Butylphenol	98-54-4	100 mg	Neat	ALR-030N
		1000 µg/mL	EtOH	ALR-030S-ET-10X
Cetone Alpha (technical grade)	127-51-5	1000 µg/mL	AcCN	ALR-024S-CN-10X
Chloroacetamide	79-07-2	100 mg	Neat	ALR-090N
		100 µg/mL	MeOH	ALR-090S
Chloroform	67-66-3	100 mg	Neat	ALR-091N
		100 µg/mL	MeOH	ALR-091S
2-Chloropyridine	109-09-1	100 mg	Neat	ALR-068N
		100 µg/mL	MeOH	ALR-068S
Chromium	7440-47-3	1000 µg/mL	2-5% HNO ₃	ALR-MET-02S
Cinnamal	104-55-2	100 mg	Neat	ALR-010N
		1000 µg/mL	AcCN	ALR-010S-CN-10X
Cinnamyl alcohol	104-54-1	100 mg	Neat	ALR-003N
		1000 µg/mL	EtOH	ALR-003S-ET-10X
Citral	5392-40-5	100 mg	Neat	ALR-004N
		1000 µg/mL	AcCN	ALR-004S-CN-10X
b-Citronellol	106-22-9	100 mg	Neat	ALR-020N
		1000 µg/mL	EtOH	ALR-020S-ET-10X
Coal Tar (black)	8007-45-2	100 mg	Neat	ALR-094N
		100 µg/mL	Toluene	ALR-094S-T
Cobalt	7440-48-4	1000 µg/mL	2-5% HNO ₃	ALR-MET-03S
Coumarin	91-64-5	100 mg	Neat	ALR-011N
		1000 µg/mL	AcCN	ALR-011S-CN-10X
2,4-Diaminoanisole sulfate hydrate	123333-56-2	100 µg/mL	Pyridine	ALR-070S-R1
2,4-Diaminophenol	137-09-7	100 mg	Neat	ALR-063N
		100 µg/mL	MeOH	ALR-063S
Diamyl phthalate	131-18-0	100 mg	Neat	ALR-098N
		100 µg/mL	MeOH	ALR-098S
Diazolidinyl urea	78491-02-8	100 mg	Neat	ALR-106N
		100 µg/mL	MeOH	ALR-106S
Dibromsalon (Halogenated salicylanilides)	87-12-7	100 mg	Neat	ALR-107N
		100 µg/mL	MeOH	ALR-107S
Dicyclohexyl phthalate	84-61-7	100 mg	Neat	ALR-099N
		100 µg/mL	MeOH	ALR-099S
Diethanolamine (DEA)	111-42-2	100 mg	Neat	ALR-109N
		100 µg/mL	MeOH	ALR-109S
Di(2-ethyl hexyl) phthalate (DEHP)	117-81-7	100 mg	Neat	ALR-097N
		100 µg/mL	MeOH	ALR-097S
Diethyl maleate	141-05-9	100 mg	Neat	ALR-033N
		1000 µg/mL	EtOH	ALR-033S-ET-10X
Diethyl phthalate	84-66-2	100 mg	Neat	ALR-110N
		100 µg/mL	MeOH	ALR-110S
Di-hexyl phthalate	84-75-3	100 mg	Neat	ALR-100N
		100 µg/mL	MeOH	ALR-100S
Dihydrocoumarin	119-84-6	100 mg	Neat	ALR-034N
		1000 µg/mL	Acetone	ALR-034S-A-10X
Diisodecyl phthalate	26761-40-0	100 mg	Neat	ALR-101N
		100 µg/mL	MeOH	ALR-101S
Diisononyl phthalate	68515-48-0	100 mg	Neat	ALR-102N
		100 µg/mL	MeOH	ALR-102S
Diisooctyl phthalate	27554-26-3	100 mg	Neat	ALR-103N
		100 µg/mL	MeOH	ALR-103S
Dimethyl citraconate	617-54-9	100 mg	Neat	ALR-038N
		1000 µg/mL	EtOH	ALR-038S-ET-10X
Dimethyl phthalate (DMP)	131-11-3	100 mg	Neat	ALR-111N
		100 µg/mL	MeOH	ALR-111S
6,10-Dimethyl-3,5,9-undecatrien-2-one (Pseudoionone)	141-10-6	100 mg	Neat	ALR-040N
		1000 µg/mL	Acetone	ALR-040S-A-10X
Di-n-butyl phthalate (DBP)	84-74-2	100 mg	Neat	ALR-104N
		100 µg/mL	MeOH	ALR-104S
Di-n-octyl phthalate	117-84-0	100 mg	Neat	ALR-105N
		100 µg/mL	MeOH	ALR-105S
1,4-Dioxane	123-91-1	100 mg	Neat	ALR-062N
		100 µg/mL	MeOH	ALR-062S
Diphenylamine	122-39-4	100 mg	Neat	ALR-041N
		1000 µg/mL	EtOH	ALR-041S-ET-10X
2-Ethoxyethanol	110-80-5	100 mg	Neat	ALR-064N
		100 µg/mL	MeOH	ALR-064S
2-Ethoxyethanol acetate	111-15-9	100 mg	Neat	ALR-065N
		100 µg/mL	MeOH	ALR-065S
Ethyl acrylate	140-88-5	100 mg	Neat	ALR-042N
		1000 µg/mL	EtOH	ALR-042S-ET-10X
Ethyl paraben	120-47-8	100 mg	Neat	ALR-113N
		100 µg/mL	MeOH	ALR-113S
Ethylene diamine dihydrochloride	333-18-6	100 mg	Neat	ALR-114N
		100 µg/mL	MeOH	ALR-114S



Allergens		Solutions in 1 mL		
Compound	CAS No.	Conc.	Matrix	Cat. No.
2-Ethylhexyl salicylate	118-60-5	100 mg	Neat	ALR-174N
		100 µg/mL	AcCN	ALR-114S-CN
Eugenol	97-53-0	100 mg	Neat	ALR-005N
		1000 µg/mL	EtOH	ALR-005S-ET-10X
Farnesol	4602-84-0	100 mg	Neat	ALR-016N
		1000 µg/mL	EtOH	ALR-016S-ET-10X
Formaldehyde	50-00-0	100 µg/mL	Water	ALR-115S-W
Freon #11 Trichlorofluoromethane	75-69-4	200 µg/mL	MeOH	ALR-CFC-013S-2X
Freon #12 Dichlorodifluoromethane	75-71-8	200 µg/mL	MeOH	ALR-CFC-008S-2X
Freon #13 Chlorotrifluoromethane	75-72-9	200 µg/mL	MeOH	ALR-CFC-007S-2X
Freon #13b1 Bromotrifluoromethane	75-63-8	200 µg/mL	MeOH	ALR-CFC-001S-2X
Freon #21 Dichlorofluoromethane	75-43-4	200 µg/mL	MeOH	ALR-CFC-009S-2X
Freon #22 Chlorodifluoromethane	75-45-6	200 µg/mL	MeOH	ALR-CFC-003S-2X
Freon #23 Trifluoromethane	75-46-7	200 µg/mL	MeOH	ALR-CFC-015S-2X
Freon #40 Chloromethane	74-87-3	200 µg/mL	MeOH	ALR-CFC-006S-2X
Freon #113 1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	200 µg/mL	MeOH	ALR-CFC-014S-2X
Freon #114 1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	200 µg/mL	MeOH	ALR-CFC-010S-2X
Freon #115 Chloropentafluoroethane	76-15-3	200 µg/mL	MeOH	ALR-CFC-006S-2X
Freon #134a Tetrafluoroethane	811-97-2	200 µg/mL	MeOH	ALR-CFC-012S-2X
Freon #142b 1-Chloro-1,1-difluoroethane	75-68-3	200 µg/mL	MeOH	ALR-CFC-002S-2X
Freon #152a 1,1-Difluoroethane	75-37-6	200 µg/mL	MeOH	ALR-CFC-011S-2X
Freon #160 Chloroethane	75-00-3	200 µg/mL	MeOH	ALR-CFC-004S-2X
Geraniol	106-24-1	100 mg	Neat	ALR-012N
		1000 µg/mL	EtOH	ALR-012S-ET-10X
		100 mg	Neat	ALR-044N
trans-2-Heptenal	18829-55-5	1000 µg/mL	AcCN	ALR-044S-CN-10X
		100 mg	Neat	ALR-117N
		100 µg/mL	MeOH	ALR-117S
trans-2-Hexenal diethyl acetal	67746-30-9	100 mg	Neat	ALR-045N
		1000 µg/mL	EtOH	ALR-045S-ET-10X
		100 mg	Neat	ALR-046N
trans-2-Hexenal dimethyl acetal	18318-83-7	1000 µg/mL	MeOH	ALR-046S-10X
		100 mg	Neat	ALR-118N
		100 µg/mL	MeOH	ALR-118S
Hexyl cinnamaldehyde	101-86-0	1000 µg/mL	EtOH	ALR-021S-ET-10X
		100 µg/mL	MeOH	ALR-119S
Homosalate (HMS)	118-56-9	100 µg/mL	MeOH	ALR-119S
Hydroabietyl alcohol	13393-93-6	100 mg	Neat	ALR-047N
		1000 µg/mL	EtOH	ALR-047S-ET-10X
		100 mg	Neat	ALR-048N
Hydroquinone monoethyl ether (4-Ethoxyphenol)	622-62-8	1000 µg/mL	EtOH	ALR-048S-ET-10X
		100 mg	Neat	ALR-145N
		100 µg/mL	MeOH	ALR-145S
p-Hydroxyanisole	150-76-5	100 mg	Neat	ALR-069N
		100 µg/mL	AcCN	ALR-069S-CN
4-Hydroxybenzoic acid (Paraben)	99-96-7	100 mg	Neat	ALR-006N
		1000 µg/mL	AcCN	ALR-006S-CN-10X
		100 mg	Neat	ALR-169N
Hydroxy-citronellal	107-75-5	1000 µg/mL	MeOH	ALR-169S
		100 mg	Neat	ALR-013N
		100 µg/mL	AcCN	ALR-013S-CN-10X
tris(Hydroxymethyl)nitromethane (Tris Nitro)	126-11-4	100 mg	Neat	ALR-120N
		1000 µg/mL	AcCN	ALR-120S
		100 µg/mL	MeOH	ALR-171N
Hydroxymethylpentylcyclohexenecarboxaldehyde	31906-04-4	100 mg	Neat	ALR-171S
		1000 µg/mL	AcCN	ALR-171S
		100 µg/mL	MeOH	ALR-172N
Imidazolidinyl urea	39236-46-9	100 mg	Neat	ALR-172S
		1000 µg/mL	AcCN	ALR-121N
		100 µg/mL	MeOH	ALR-121S
a-Ionone	127-41-3	100 mg	Neat	ALR-007N
		1000 µg/mL	EtOH	ALR-007S-ET-10X
		100 µg/mL	MeOH	ALR-122N
b-Ionone	79-77-6	100 mg	Neat	ALR-122S
		1000 µg/mL	AcCN	ALR-123N
		100 µg/mL	MeOH	ALR-123S-A
Isobutyl paraben	4247-02-3	100 mg	Neat	ALR-MET-04S
		1000 µg/mL	AcCN	ALR-022N
		100 µg/mL	MeOH	ALR-022S
Isoeugenol	97-54-1	100 mg	Neat	ALR-022S-ET-10X
		1000 µg/mL	EtOH	ALR-018N
		100 µg/mL	MeOH	ALR-018S-ET-10X
Isopropyl paraben	4191-73-5	100 mg	Neat	ALR-128N
		1000 µg/mL	AcCN	ALR-MET-05S
		100 µg/mL	MeOH	ALR-128S
Lanolin, anhydrous	8006-54-0	100 mg	Neat	ALR-128S
		1000 µg/mL	AcCN	ALR-050N
		100 µg/mL	MeOH	ALR-050S-CN-10X
Lead	7439-92-1	100 mg	Neat	ALR-050N
		1000 µg/mL	2-5% HNO ₃	ALR-050S-CN-10X
		100 µg/mL	MeOH	ALR-128N
d-Limonene	5989-27-5	100 mg	Neat	ALR-128S
		1000 µg/mL	EtOH	ALR-128S
		100 µg/mL	MeOH	ALR-128S
Linalool	78-70-6	100 mg	Neat	ALR-128S
		1000 µg/mL	EtOH	ALR-128S
		100 µg/mL	MeOH	ALR-128S
Mercury	7439-97-6	100 mg	Neat	ALR-128S
		1000 µg/mL	2-5% HNO ₃	ALR-128S
		100 µg/mL	MeOH	ALR-128S
Metabromsalon	2577-72-2	100 mg	Neat	ALR-128S
		1000 µg/mL	AcCN	ALR-128S
		100 µg/mL	MeOH	ALR-128S
7-Methoxycoumarin	531-59-9	100 mg	Neat	ALR-128S
		1000 µg/mL	AcCN	ALR-128S
		100 µg/mL	MeOH	ALR-128S



Allergens

Allergens

Solutions in 1 mL

Compound	CAS No.	Conc.	Matrix	Cat. No.
4-(p-Methoxyphenyl)-3-butene-2-one	943-88-4	1000 µg/mL	AcCN	ALR-051S-CN-10X
4-Methoxy-m-phenylenediamine-sulfate hydrate	6219-67-6	100 mg	Neat	ALR-072N
		100 µg/mL	MeOH	ALR-072S
1-(p-Methoxyphenyl)-1-penten-3-one	104-27-8	100 mg	Neat	ALR-052N
		1000 µg/mL	AcCN	ALR-052S-CN-10X
4-Methyl-benzylidene camphor (4-MBC)	36861-47-9	100 mg	Neat	ALR-073N
		100 µg/mL	MeOH	ALR-073S
6-Methylcoumarin (6-MC)	92-48-8	100 mg	Neat	ALR-075N
		100 µg/mL	MeOH	ALR-075S
7-Methylcoumarin	2445-83-2	100 mg	Neat	ALR-054N
		1000 µg/mL	AcCN	ALR-054S-CN-10X
Methyl heptyne carbonate	111-12-6	100 mg	Neat	ALR-023N
		1000 µg/mL	EtOH	ALR-023S-ET-10X
5-Methyl-2,3-hexanedione (Acetyl isovaleryl)	13706-86-0	100 mg	Neat	ALR-055N
		1000 µg/mL	AcCN	ALR-055S-CN-10X
Methyl methacrylate monomer	80-62-6	100 mg	Neat	ALR-129N
		100 µg/mL	MeOH	ALR-129S
Methyl paraben	99-76-3	100 mg	Neat	ALR-130N
		100 µg/mL	MeOH	ALR-130S
Methyl trans-2-butenate	623-43-8	100 mg	Neat	ALR-053N
		1000 µg/mL	MeOH	ALR-053S-10X
Methylchloroisothiazolinone	26172-55-4	100 mg	Neat	ALR-131N
		100 µg/mL	Water	ALR-131S-W
Methyldibromoglutaronitrile	35691-65-7	100 mg	Neat	ALR-132N
		100 µg/mL	MeOH	ALR-132S
Methylene chloride	75-09-2	100 mg	Neat	ALR-133N
		100 µg/mL	MeOH	ALR-133S
Methyleugenol	93-15-2	100 mg	Neat	ALR-061N
		1000 µg/mL	EtOH	ALR-061S-ET-10X
Monobenzyl phthalate (mBzP)	2528-16-7	100 mg	Neat	ALR-134N
		100 µg/mL	AcCN	ALR-134S-CN
Monobutyl phthalate (mBP)	131-70-4	100 mg	Neat	ALR-135N
		100 µg/mL	AcCN	ALR-135S-CN
Monoethanolamine (MEA) (2-Aminoethanol)	141-43-5	100 mg	Neat	ALR-136N
		100 µg/mL	MeOH	ALR-136S
Monoethyl phthalate (mEP)	2306-33-4	100 mg	Neat	ALR-137N
		100 µg/mL	AcCN	ALR-137S-CN
Monoethylhexyl phthalate (mEHP)	4376-20-9	100 mg	Neat	ALR-138N
		100 µg/mL	AcCN	ALR-138S-CN
Monomethyl phthalate	4376-18-5	100 mg	Neat	ALR-139N
		100 µg/mL	AcCN	ALR-139S-CN
Musk ambrette	83-66-9	1000 µg/mL	AcCN	ALR-056S-CN-10X
Nickel	7440-02-0	1000 µg/mL	2-5% HNO ₃	ALR-MET-06S
N-Phenyl-p-phenylenediamine	101-54-2	100 mg	Neat	ALR-140N
		100 µg/mL	MeOH	ALR-140S
Oak Moss extract	90028-68-5	100 mg	Neat	ALR-026N
		1000 µg/mL	EtOH	ALR-026S-ET-10X
Octyl-dimethyl-PABA (OD-PABA)(Padimate O)	21245-02-3	100 mg	Neat	ALR-146N
		100 µg/mL	MeOH	ALR-146S
Octyl-methoxycinnamate (OMC)	5466-77-3	100 mg	Neat	ALR-144N
		100 µg/mL	MeOH	ALR-144S
4-Phenyl-3-buten-2-one	122-57-6	100 mg	Neat	ALR-058N
		1000 µg/mL	AcCN	ALR-058S-CN-10X
meta-Phenylenediamine (MPD)	108-45-2	100 mg	Neat	ALR-127N
		100 µg/mL	MeOH	ALR-127S
para-Phenylenediamine (PPD)	106-50-3	100 mg	Neat	ALR-147N
		100 µg/mL	MeOH	ALR-147S
Polyethylene glycol (PEG), appr. Molecular weight 200	25322-68-3	100 mg	Neat	ALR-149N-MW200
		100 µg/mL	MeOH	ALR-149S-MW200
Polyethylene glycol (PEG), appr. Molecular weight 400	25322-68-3	100 mg	Neat	ALR-149N-MW400
		100 µg/mL	MeOH	ALR-149S-MW400
Polyethylene glycol (PEG), appr. Molecular weight 600	25322-68-3	100 mg	Neat	ALR-149N-MW600
		100 µg/mL	MeOH	ALR-149S-MW600
Polyethylene glycol (PEG), appr. Molecular weight 1500	25322-68-3	100 mg	Neat	ALR-149N-MW1500
		100 µg/mL	MeOH	ALR-149S-MW1500
Polyethylene glycol (PEG), appr. Molecular weight 4000	25322-68-3	100 mg	Neat	ALR-149N-MW4000
		100 µg/mL	MeOH	ALR-149S-MW4000
Polyvinylpyrrolidone PVP/PA Copolymer	9003-39-8	100 µg/mL	MeOH	ALR-150S
Potassium dichromate	7778-50-9	1000 µg/mL	Water	ALR-MET-07S
Potassium sorbate	24634-61-5	100 mg	Neat	ALR-152N
		100 µg/mL	MeOH	ALR-152S
Propyl paraben	94-13-3	100 mg	Neat	ALR-153N
		100 µg/mL	MeOH	ALR-153S
Propylene glycol (PG)	57-55-6	100 µg/mL	MeOH	ALR-154S
Protocatechuic acid	99-50-3	100 mg	Neat	ALR-155N
		100 µg/mL	AcCN	ALR-155S-CN

Allergens & EU Directive List



Allergens		Solutions in 1 mL		
Compound	CAS No.	Conc.	Matrix	Cat. No.
Pyrocatechol	120-80-9	100 mg	Neat	ALR-156N
		100 µg/mL	MeOH	ALR-156S
Quaternium-15	51229-78-8	100 mg	Neat	ALR-157N
		100 µg/mL	MeOH	ALR-157S
Resorcinol	108-46-3	100 mg	Neat	ALR-158N
		100 µg/mL	MeOH	ALR-158S
Salicylic acid	69-72-7	100 mg	Neat	ALR-173N
		100 µg/mL	Water	ALR-173S-W
Sodium hydroxide	1310-73-2	100 mg	Neat	ALR-159N
		100 µg/mL	MeOH	ALR-159S
Sodium nitrite	7632-00-0	100 mg	Neat	ALR-160N
		100 µg/mL	Water	ALR-160S-W
Talc	14807-96-6	100 mg	Neat	ALR-161N
Tetrachlorosalicylanilide	1154-59-2	100 mg	Neat	ALR-162N
		100 µg/mL	MeOH	ALR-162S
Thimerosal	54-64-8	100 mg	Neat	ALR-163N
		100 µg/mL	MeOH	ALR-163S
Thiuram (Thiram) (Tetramethylthiouam disulfide)	137-26-8	100 mg	Neat	ALR-164N
		100 µg/mL	MeOH	ALR-164S
Tree Moss extract	90028-67-4	100 mg	Neat	ALR-025N
		1000 µg/mL	EtOH	ALR-025S-ET-10X
Tribomsalan	87-10-5	100 mg	Neat	ALR-167N
		100 µg/mL	MeOH	ALR-167S
Triethanolamine (TEA)	102-71-6	100 mg	Neat	ALR-168N
		100 µg/mL	MeOH	ALR-168S
Verbena oil (Lippia citriodora Kunth)	8024-12-2	100 mg	Neat	ALR-060N
		1000 µg/mL	EtOH	ALR-060S-ET-10X
Vinyl chloride	75-01-4	100 µg/mL	MeOH	ALR-170S
Zirconium	7440-67-7	1000 µg/mL	2-5% HNO ₃	ALR-MET-08S

EU Directive 76/768/EEC

EU Directive List of 26 Regulated Contact Allergens:

Set of all 26 EU Allergens (in Solution) **ALR-EU26-R1-SET**
Each at 1000 µg/mL Conc. (1 mL) **26 x 1 mL**

Compound	CAS No.	Cat. No.	1 mL
Amyl cinnamal	122-40-7	ALR-001S-CN-10X	
Amylcinnamyl alcohol	101-85-9	ALR-008S-ET-10X	
Anisyl alcohol	105-13-5	ALR-014S-ET-10X	
Benzyl alcohol	100-51-6	ALR-002S-ET-10X	
Benzyl benzoate	120-51-4	ALR-019S-ET-10X	
Benzyl cinnamate	103-41-3	ALR-015S-ET-10X	
Benzyl salicylate	118-58-1	ALR-009S-CN-10X	
2-(4-tert-Butylbenzyl)propionaldehyde (technical grade)	80-54-6	ALR-017S-CN-10X	
Cetone Alpha (technical grade)	127-51-5	ALR-024S-CN-10X	
Cinnamal	104-55-2	ALR-010S-CN-10X	
Cinnamyl alcohol	104-54-1	ALR-003S-ET-10X	
Citral	5392-40-5	ALR-004S-CN-10X	
b-Citronellol	106-22-9	ALR-020S-ET-10X	
Coumarin	91-64-5	ALR-011S-CN-10X	
Eugenol	97-53-0	ALR-005S-ET-10X	
Farnesol	4602-84-0	ALR-016S-ET-10X	
Geraniol	106-24-1	ALR-012S-ET-10X	
Hexyl cinnamaldehyde	101-86-0	ALR-021S-ET-10X	
Hydroxy-citronellal	107-75-5	ALR-006S-CN-10X	
Hydroxymethylpentylcyclohexene carboxaldehyde	31906-04-4	ALR-013S-CN-10X	
Isoeugenol	97-54-1	ALR-007S-ET-10X	
d-Limonene	5989-27-5	ALR-022S-ET-10X	
Linalool	78-70-6	ALR-018S-ET-10X	
Methyl heptyne carbonate	111-12-6	ALR-023S-ET-10X	
Oak Moss extract	90028-68-5	ALR-026S-ET-10X	
Tree Moss extract	90028-67-4	ALR-025S-ET-10X	

EU Directive List of substances that may be banned:

Set of 25 Allergens (in Solution) **ALR-EU36-R1-SET**
Neats at 100 mg, Solutions are in 1000 µg/mL Conc. (1 mL) **25 x 1 mL**

Compound	CAS No.	Cat. No.	1 mL
Alanroot (Inula helenium)	97676-35-2	ALR-027S-ET-10X	
Allylthiocyanate	57-06-7	ALR-028S-ET-10X	
Benzyl cyanide	140-29-4	ALR-029S-ET-10X	
p-tert-Butylphenol	98-54-4	ALR-030S-ET-10X	
Chenopodium oil (wormseed oil)	8006-99-3	ALR-031N (Only Neat) NOT IN SET	
Diethyl maleate	141-05-9	ALR-033S-ET-10X	
Dihydrocoumarin	119-84-6	ALR-034S-A-10X	
Dimethyl citraconate	617-54-9	ALR-038S-ET-10X	
6,10-Dimethyl-3,5,9-undecatrien-2-one (Pseudoionone)	141-10-6	ALR-040S-A-10X	
Diphenylamine	122-39-4	ALR-041S-ET-10X	
Ethyl acrylate	140-88-5	ALR-042S-ET-10X	
trans-2-Heptenal	18829-55-5	ALR-044S-CN-10X	
trans-2-Hexenal diethyl acetal	67746-30-9	ALR-045S-ET-10X	
trans-2-Hexenal dimethyl acetal	18318-83-7	ALR-046S-10X	
Hydroabietyl alcohol	13393-93-6	ALR-047S-ET-10X	
Hydroquinone monoethyl ether (4-Ethoxyphenol)	622-62-8	ALR-048S-ET-10X	
7-Methoxycoumarin	531-59-9	ALR-050S-CN-10X	
4-(p-Methoxyphenyl)-3-butene-2-one	943-88-4	ALR-051S-CN-10X	
1-(p-Methoxyphenyl)-1-penten-3-one	104-27-8	ALR-052S-CN-10X	
7-Methylcoumarin	2445-83-2	ALR-054S-CN-10X	
5-Methyl-2,3-hexanedione (Acetyl isovaleryl)	13706-86-0	ALR-055S-CN-10X	
Methyl trans-2-butenolate	623-43-8	ALR-053S-10X	
Methyleugenol	95-15-2	ALR-061S-ET-10X	
Musk ambrette (solution only)	83-66-9	ALR-056S-CN-10X	
4-Phenyl-3-buten-2-one	122-57-6	ALR-058S-CN-10X	
Verbena oil (Lippia citriodora Kunth)	8024-12-2	ALR-060S-ET-10X	

Technical Mixtures

When a compound has a purity identified as "Technical" or "Tech Mixture" it means that the standard is not comprised of just one main compound. These are mixtures of multiple chemicals that make up a particular product and every chemical in the mix are components that define the product. The analysis considers all compounds in the product. Aroclors, flame retardants, PBDE technical grade, halowaxes, and some allergens, plastic additives, and dyes are classified as "Technical Mixtures".

Key to Catalog Numbers

N	Neat, 100 mg
S	Solution in Methanol
S-A	Solution in Acetone
S-CN	Solution in Acetonitrile
S-ET	Solution in Ethanol
S-T	Solution in Toluene
S-W	Solution in Water



Allergens

Sun Block

Set of 6 Sun Block Solutions ALR-SUN-SET 6 x 1 mL
Each at 100 µg/mL Conc. (1 mL)

Compound	CAS No.	Cat. No.	1 mL
Benzophenone-3 (Bp-3)	131-57-7	ALR-081S-CN	
Butyl-methoxydibenzoylmethane(B-MDM) Sunblock, Parsol 1789	70356-09-1	ALR-086S	
Homosalate (HMS)	118-56-9	ALR-119S	
4-Methyl-benzylidene camphor (4-MBC)	36861-47-9	ALR-073S	
Octyl-dimethyl-PABA (OD-PABA) (Padimate O)	21245-02-3	ALR-146S	
Octyl-methoxycinnamate (OMC)	5466-77-3	ALR-144S	

Parabens

Set of 11 Paraben Solutions ALR-PAR-SET 11 x 1 mL
Each at 100 µg/mL Conc. (1 mL)

Compound	CAS No.	Cat. No.	1 mL
Benzyl paraben	94-18-8	ALR-083S	
Butyl paraben	94-26-8	ALR-085S	
Ethyl paraben	120-47-8	ALR-113S	
Heptyl paraben		ALR-117S	
4-Hydroxybenzoic acid (Paraben)	99-96-7	ALR-069S-CN	
Isobutyl paraben	4247-02-3	ALR-121S	
Isopropyl paraben	4191-73-5	ALR-122S	
Methyl paraben	99-76-3	ALR-130S	
Potassium sorbate	24634-61-5	ALR-152S	
Propyl paraben	94-13-3	ALR-153S	
Protocatechuic acid	99-50-3	ALR-155S-CN	

Phthalates

Set of 17 Phthalate Solutions ALR-PHT-SET 17 x 1 mL
Each at 100 µg/mL Conc. (1 mL)

Compound	CAS No.	Cat. No.	1 mL
Benzyl butyl phthalate	85-68-7	ALR-082S	
Diamyl phthalate	131-18-0	ALR-098S	
Dicyclohexyl phthalate	84-61-7	ALR-099S	
Di(2-ethyl hexyl) phthalate (DEHP)	117-81-7	ALR-097S	
Diethyl phthalate	84-66-2	ALR-110S	
Di-hexyl phthalate	84-75-3	ALR-100S	
Diisodecyl phthalate	26761-40-0	ALR-101S	
Diisononyl phthalate	68515-48-0	ALR-102S	
Diisooctyl phthalate	27554-26-3	ALR-103S	
Dimethyl phthalate (DMP)	131-11-3	ALR-111S	
Di-n-butyl phthalate (DBP)	84-74-2	ALR-104S	
Di-n-octyl phthalate	117-84-0	ALR-105S	
Monobenzyl phthalate (mBzP)	2528-16-7	ALR-134S-CN	
Monobutyl phthalate (mBP)	131-70-4	ALR-135S-CN	
Monoethyl phthalate (mEP)	2306-33-4	ALR-137S-CN	
Monoethylhexyl phthalate (mEHP)	4376-20-9	ALR-138S-CN	
Monomethyl phthalate	4376-18-5	ALR-139S-CN	

Chlorofluorocarbon Propellants (CFCs)

Set of 15 ALR-CFCs Solutions ALR-CFC-SET 15 x 1 mL
Each at 200 µg/mL Conc. (1 mL)

Freon	Compound	CAS No.	Cat. No.	1 mL
Freon #11	Trichlorofluoromethane	75-69-4	ALR-CFC-013S-2X	
Freon #12	Dichlorodifluoromethane	75-71-8	ALR-CFC-008S-2X	
Freon #13	Chlorotrifluoromethane	75-72-9	ALR-CFC-007S-2X	
Freon #13b1	Bromotrifluoromethane	75-63-8	ALR-CFC-001S-2X	
Freon #21	Dichlorofluoromethane	75-43-4	ALR-CFC-009S-2X	
Freon #22	Chlorodifluoromethane	75-45-6	ALR-CFC-003S-2X	
Freon #23	Trifluoromethane	75-46-7	ALR-CFC-015S-2X	
Freon #40	Chloromethane	74-87-3	ALR-CFC-005S-2X	
Freon #113	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ALR-CFC-014S-2X	
Freon #114	1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	ALR-CFC-010S-2X	
Freon #115	Chloropentafluoroethane	76-15-3	ALR-CFC-006S-2X	
Freon #134a	Tetrafluoroethane	811-97-2	ALR-CFC-012S-2X	
Freon #142b	1-Chloro-1,1-difluoroethane	75-68-3	ALR-CFC-002S-2X	
Freon #152a	1,1-Difluoroethane	75-37-6	ALR-CFC-011S-2X	
Freon #160	Chloroethane	75-00-3	ALR-CFC-004S-2X	

Metals

Set of 8 Metals Solutions ALR-MET-SET 8 x 100 mL
Each at 1000 µg/mL 2-5% HNO₃ except † in Water (100 mL Volume)

Compound	CAS No.	Cat. No.	100 mL
Arsenic	7440-38-2	ALR-MET-01S	
Chromium	7440-47-3	ALR-MET-02S	
Cobalt	7440-48-4	ALR-MET-03S	
Lead	7439-92-1	ALR-MET-04S	
Mercury	7439-97-6	ALR-MET-05S	
Nickel	7440-02-0	ALR-MET-06S	
Potassium dichromate	7778-50-9	ALR-MET-07S †	
Zirconium	7440-67-7	ALR-MET-08S	

† in Water

Key to Catalog Numbers

N	Neat, 100 mg
S	Solution in Methanol
S-A	Solution in Acetone
S-CN	Solution in Acetonitrile
S-ET	Solution in Ethanol
S-T	Solution in Toluene
S-W	Solution in Water

Purchasing Neat Standards

There are two ways to purchase neat standards: Nominal weight and exact weight. With exact weight, the standards will come with the exact weight contained in the vial indicated on the label. The Cat. No. will have an X-WT to indicate that this is an exact weight. Rinse the sample out of the vial and cap with solvent and dilute to achieve the desired concentration. Unless specified, neat samples are provided with nominal weights. Typically, the vials contain up to 10 to 20% more product, however it is not known when you receive your standard what the exact amount is in the vial. Below is a standard procedure for removing all the neat material from the vial and determining the exact weight of the material in the vial.

Small amounts (5-10 mg) of powder often are spread over the surface of the vial and cap. If the chemical is a liquid it may coat the walls as a thin layer invisible to the eye.

To recover all of the contents contained in a vial of neat material please use the procedure described below:

1. Wipe the outside of the vial (containing the Standard) clean and dry (including the cap).
2. Weigh the entire unit on an analytical balance. Record the weight to the nearest 0.1 mg.
3. Carefully transfer the contents to a volumetric flask using a suitable solvent. Rinse the cap and vial several times to assure a complete transfer.
4. Dry inside and outside of the vial and cap with mild heat or inert gas.
5. Weigh the empty dry vial on the same analytical balance to the nearest 0.1 mg and calculate by difference the amount of material transferred.



AllergenCheck®



Azodyes may pose cancer risks and have been restricted in many countries, most notably of the European Union.

Individual Dyes

100 µg/mL in MeOH

Compound	Synonym	CAS No.	Neat Cat. No.	100 mg	Solution Cat. No.	1 mL
2-Amino-3-nitrophenol New		603-85-0	DYE-107N		DYE-107S	
2-Amino-4-chlorophenol New		95-85-2	-----	---	DYE-034S	
2-Amino-5-(diethylamino)toluene monohydrochloride New		2051-79-8	DYE-104N		DYE-104S	
2-Aminophenol New		95-55-6	DYE-108N		DYE-108S	
4-Hydroxyindole			-----	---	DYE-035S	
Acid Red 26	<i>Ponceau Xylidine</i>	3761-53-3	DYE-031N		DYE-031S	
<i>Basic Blue</i>	see <i>Victoria Blue</i>					
Basic Blue 7 New		2390-60-5	DYE-113N		DYE-113S	
Basic Fuchsin New		548-62-9	DYE-049N		DYE-049S	
Basic Red 2 New		477-73-6	DYE-114N		DYE-114S	
Basic Red 9		569-61-9	DYE-030N		DYE-030S	
Basic Violet 1		8004-87-3	DYE-027N		DYE-027S	
Basic Violet 3	see <i>Crystal Violet</i>					
Basic Violet 14		632-99-5	-----	---	DYE-012S	
<i>Congo Red</i>	see <i>Direct Red 28</i>					
Crocein Scarlet 3b New		5413-75-2	DYE-115N		DYE-115S	
Crystal Violet	<i>Basic Violet 3</i>	548-62-9	DYE-028N		DYE-028S	
D & C Red 7		569-61-9	DYE-060N		DYE-060S	
3,4-Diaminobenzoic acid		619-05-6	-----	---	DYE-038S	
2,4-Diaminodiphenylamine New		136-17-4	DYE-102N		DYE-102S	
2,6-Diaminopyridine New		141-86-6	DYE-103N		DYE-103S	
3-Diethylaminophenol			-----	---	DYE-036S	
1,7-Dihydroxynaphthalene		575-38-2	-----	---	DYE-037S	
N,N-Dimethyl-1,4-phenylenediamine New		99-89-9	DYE-106N		DYE-106S	
Direct Black 38		1937-37-7	-----	---	DYE-013S	
Direct Blue 6		2602-46-2	-----	---	DYE-014S	
Direct Red 28	<i>Congo Red</i>	573-58-0	DYE-064N		DYE-064S	
Disperse Blue 1		2475-45-8	-----	---	DYE-001S	
Disperse Blue 3		2475-46-9	-----	---	DYE-004S	
Disperse Blue 7		3179-90-6	-----	---	DYE-015S	
Disperse Blue 26		3860-63-7	-----	---	DYE-016S	
Disperse Blue 35		12222-75-2	-----	---	DYE-009S	
Disperse Blue 102		12222-97-8	-----	---	DYE-017S	
Disperse Blue 124		61951-51-7	-----	---	DYE-010S	
Disperse Brown 1		23355-64-8	DYE-051N		DYE-051S	
Disperse Orange 1		2581-69-3	-----	---	DYE-005S	
Disperse Orange 3		730-40-5	-----	---	DYE-006S	
Disperse Orange 11		82-28-0	-----	---	DYE-002S	
Disperse Orange 37		13301-61-6	-----	---	DYE-011S	
Disperse Red 1		2872-52-8	-----	---	DYE-007S	
Disperse Red 11		2872-48-2	-----	---	DYE-018S	
Disperse Red 17		3179-89-3	-----	---	DYE-019S	
Disperse Yellow 3		2832-40-8	DYE-003N		DYE-003S	
Disperse Yellow 9		6373-73-5	-----	---	DYE-008S	
Eriochrome Black A New		3618-58-4	DYE-109N		DYE-109S	
FD & C Blue 1 New		3844-45-9	DYE-062N		DYE-062S	
FD & C Blue 2		860-22-0	DYE-063N		DYE-063S	
FD & C Red 3		16423-68-0	DYE-057N		DYE-057S	
FD & C Red 40		25956-17-6	DYE-056N		DYE-056S	
FD & C Yellow 5		1934-21-0	DYE-058N		DYE-058S	
FD & C Yellow 6		2783-94-0	DYE-059N		DYE-059S	
Food Yellow 3	<i>Sunset Yellow FCF</i>	2783-94-0	DYE-024N		DYE-024S	
Methyl Violet 2B	<i>Methyl Violet 2B indicator grade</i>	8004-87-3	DYE-040N		DYE-040S	
2,3-Naphthalenediol New		92-44-4	-----	---	DYE-033S	
2-Nitro-1,4-phenylenediamine New		5307-14-2	DYE-110N		DYE-110S	
Para Red		6410-10-2	DYE-026N		DYE-026S	
4-Phenylazoaniline hydrochloride		3457-98-5	DYE-046N		DYE-046S	
Ponceau SX New		4548-53-2	-----	---	DYE-112S	
<i>Ponceau Xylidine</i>	see <i>Acid Red 26</i>					
Solvent Orange 7	<i>Sudan II</i>	3118-97-6	DYE-021N		DYE-021S	
<i>Solvent Orange R</i>	see <i>Solvent Yellow 14</i>					
Solvent Red 1		1229-55-6	-----	---	DYE-039S	
Solvent Red 19	<i>Sudan Red 7B</i>	6368-72-5	DYE-025N		DYE-025S	
Solvent Red 23	<i>Sudan III</i>	85-86-9	DYE-022N		DYE-022S	
Solvent Red 24	<i>Sudan IV</i>	85-83-6	DYE-023N		DYE-023S	
Solvent Yellow 1		3457-98-5	-----	---	DYE-029S	
Solvent Yellow 3		97-56-3	-----	---	DYE-032S	
Solvent Yellow 14	<i>Sudan I, Solvent Orange R</i>	842-07-9	DYE-020N		DYE-020S	
<i>Sudan I</i>	see <i>Solvent Yellow 14</i>					
<i>Sudan II</i>	see <i>Solvent Orange 7</i>					
<i>Sudan III</i>	see <i>Solvent Red 23</i>					
<i>Sudan IV</i>	see <i>Solvent Red 24</i>					
<i>Sudan Red 7B</i>	see <i>Solvent Red 19</i>					
<i>Sudan Red G</i>	see <i>Solvent Red 1</i>					
<i>Sunset Yellow FCF</i>	see <i>Food Yellow 3</i>					
Victoria Blue New	<i>Basic Blue 26</i>	2580-56-5	DYE-111N		DYE-111S	





Dye Standards

EU Directive 2002/61/EC Determination of Aryl Amine Breakdown Products in Azo Dyes

Individual Aryl Amine Standards

Analyte	100 µg/mL in AcCN 1 mL	1000 µg/mL in AcCN 1 mL	10 µg/mL in Ethyl acetate for 10 mL 10 mL
o-Aminoazotoluene (01)	RAC-01	RAC-01-10X	RAC-01-EA-0.1X-10ML
4-Aminobiphenyl (02)	RAC-02	RAC-02-10X	RAC-02-EA-0.1X-10ML
2-Amino-4-nitrotoluene (03)	RAC-03	RAC-03-10X	RAC-03-EA-0.1X-10ML
Benzidine (04)	RAC-04	RAC-04-10X	RAC-04-EA-0.1X-10ML
4-Chloroaniline (05)	RAC-05	RAC-05-10X	RAC-05-EA-0.1X-10ML
4-Chloro-o-toluidine (06)	RAC-06	RAC-06-10X	RAC-06-EA-0.1X-10ML
p-Cresidine (07)	RAC-07	RAC-07-10X	RAC-07-EA-0.1X-10ML
2,4-Diaminoanisole * (08)	RAC-08	RAC-08-10X	RAC-08-EA-0.1X-10ML
4,4'-Diaminodiphenylmethane (09)	RAC-09	RAC-09-10X	RAC-09-EA-0.1X-10ML
2,4-Diaminotoluene (10)	RAC-10	RAC-10-10X	RAC-10-EA-0.1X-10ML
3,3'-Dichlorobenzidine (11)	RAC-11	RAC-11-10X	RAC-11-EA-0.1X-10ML
3,3'-Dimethoxybenzidine (12)	RAC-12	RAC-12-10X	RAC-12-EA-0.1X-10ML
3,3'-Dimethylbenzidine (13)	RAC-13	RAC-13-10X	RAC-13-EA-0.1X-10ML
3,3'-Dimethyl-4,4'-diaminodiphenylmethane (14)	RAC-14	RAC-14-10X	RAC-14-EA-0.1X-10ML
4,4'-Methylenebis(2-chloroaniline) (15)	RAC-15	RAC-15-10X	RAC-15-EA-0.1X-10ML
2-Naphthylamine (16)	RAC-16	RAC-16-10X	RAC-16-EA-0.1X-10ML
4,4'-Oxydianiline (17)	RAC-17	RAC-17-10X	RAC-17-EA-0.1X-10ML
4,4'-Thiodianiline (18)	RAC-18	RAC-18-10X	RAC-18-EA-0.1X-10ML
o-Toluidine (19)	RAC-19	RAC-19-10X	RAC-19-EA-0.1X-10ML
2,4,5-Trimethylaniline (20)	RAC-20	RAC-20-10X	RAC-20-EA-0.1X-10ML
p-Aminoazobenzene (21)	RAC-21	RAC-21-10X	RAC-21-EA-0.1X-10ML
2-Aminobiphenyl (22)	RAC-22	RAC-22-10X	RAC-22-EA-0.1X-10ML
o-Anisidine (23)	RAC-23	RAC-23-10X	RAC-23-EA-0.1X-10ML
3-Chloro-o-toluidine (24)	RAC-24	RAC-24-10X	RAC-24-EA-0.1X-10ML

RAC-R1-SET 24 x 1 mL (Set includes the above ampules) In Acetonitrile
100 µg/mL * In form of the Sulfate hydrate 171 µg/mL in Pyridine (100 µg/mL as the base)

RAC-R1-10X-SET 24 x 1 mL (Set includes the above ampules) In Acetonitrile
1000 µg/mL in AcCN * In form of the Sulfate hydrate 1,710 µg/mL in Pyridine (1000 µg/mL as the base)

EU Directive 67/548/EEC Dyes

Criterion #22 Regulated Dyes

Carcinogenic

Each in 100 µg/mL in MeOH

Compound	Cat. No.	1 mL
Disperse Blue 1	DYE-001S	
Disperse Orange 11	DYE-002S	
Disperse Yellow 3	DYE-003S	
Basic Violet 14	DYE-012S	
Direct Black 38	DYE-013S	
Direct Blue 6	DYE-014S	

Criterion #23 Regulated Dye

Disperse dyes, Sensitizing

Each in 100 µg/mL in MeOH

Compound	Cat. No.	1 mL
Disperse Blue 3	DYE-004S	
Disperse Orange 1	DYE-005S	
Disperse Orange 3	DYE-006S	
Disperse Red 1	DYE-007S	
Disperse Yellow 9	DYE-008S	
Disperse Blue 35	DYE-009S	
Disperse Blue 124	DYE-010S	
Disperse Orange 37	DYE-011S	
Disperse Blue 7	DYE-015S	
Disperse Blue 26	DYE-016S	
Disperse Blue 102	DYE-017S	
Disperse Red 11	DYE-018S	
Disperse Red 17	DYE-019S	

Carcinogenic Aryl Amine Mix

AE-00049-R1 1 x 1 mL
10 µg/mL in Ethyl acetate 23 comps.
AE-00049-SET 2 x 1 mL
Contains **AE-00049-R1** (23 comps. Mix) plus
RAC-08 (2,4-Diaminoanisole) listed on the left
AE-00049-R1-10ML 1 x 10 mL
10 µg/mL in Ethyl acetate 23 comps.

- o-Aminoazotoluene (01)
- 4-Aminobiphenyl (02)
- 2-Amino-4-nitrotoluene (03)
- Benzidine (04)
- 4-Chloroaniline (05)
- 4-Chloro-o-toluidine (06)
- p-Cresidine (07)
- 4,4'-Diaminodiphenylmethane (09)
- 2,4-Diaminotoluene (10)
- 3,3'-Dichlorobenzidine (11)
- 3,3'-Dimethoxybenzidine (12)
- 3,3'-Dimethylbenzidine (13)
- 3,3'-Dimethyl-4,4'-diaminodiphenylmethane (14)
- 4,4'-Methylenebis(2-chloroaniline) (15)
- 2-Naphthylamine (16)
- 4,4'-Oxydianiline (17)
- 4,4'-Thiodianiline (18)
- o-Toluidine (19)
- 2,4,5-Trimethylaniline (20)
- p-Aminoazobenzene (21)
- 2-Aminobiphenyl (22)
- o-Anisidine (23)
- 3-Chloro-o-toluidine (24)

Internal Standards

RAC-IS 1 x 1 mL
1000 µg/mL in AcCN
RAC-IS-EA 1 x 1 mL
1000 µg/mL in Ethyl acetate

3,3',5,5'-Tetramethylbenzidine

EU Directive 76/768/EEC Dyes

Substances contained in Hair Dyes Ban

Compound	CAS No.	Neat Cat. No.	100 mg	Each in 100 µg/mL in MeOH Solution Cat. No.	1 mL
2-Amino-3-nitrophenol	603-85-0	DYE-107N		DYE-107S	
2-Amino-5-(diethylamino)toluene monohydrochloride	2051-79-8	DYE-104N		DYE-104S	
2-Aminophenol	95-55-6	DYE-108N		DYE-108S	
Basic Blue 7	2390-60-5	DYE-113N		DYE-113S	
Basic Red 2	477-73-6	DYE-114N		DYE-114S	
Crocein Scarlet 3b	5413-75-2	DYE-115N		DYE-115S	
2,4-Diaminodiphenylamine	136-17-4	DYE-102N		DYE-102S	
2,6-Diaminopyridine	141-86-6	DYE-103N		DYE-103S	
N,N-Diethyl-1,4-phenylenediamine Sulfate	6283-63-2	DYE-105N		DYE-105S	
N,N-Dimethyl-1,4-phenylenediamine	99-89-9	DYE-106N		DYE-106S	
Eriochrome Black A	3618-58-4	DYE-109N		DYE-109S	
2-Nitro-1,4-phenylenediamine	5307-14-2	DYE-110N		DYE-110S	
Ponceau SX	4548-53-2	DYE-112N		DYE-112S	
Victoria Blue	2580-56-5	DYE-111N		DYE-111S	



PFOA and Odor Standards

Perfluorooctanoic Acid (PFOA)

The acronym PFOA is used to refer to not only the Perfluorooctanoic Acid, but also its principal salts. PFOS is used to refer to Perfluorooctane sulfonate. They are synthetic chemicals that do not occur naturally in the environment and are typically used to aid in the manufacturing of fluoropolymers. These polymers have valuable properties of fire resistance and oil, stain and grease repellence. Another common use is as fire fighting foams. Fluorotelomers will thermally and biologically decompose to form the PFOAs.

The EPA has indicated the potential need for concern and the necessity for additional analytical testing and monitoring. PFOAs have been determined to bioaccumulate and are highly persistent. Continued testing has shown that this class of compounds is widely distributed in the environment. Toxicological studies have shown that exposure to PFOAs can result in developmental/reproductive toxicity, liver damage and possibly cancer.

Compound	CAS No.	Conc.	Matrix	Solutions in 1 mL	
				Cat. No.	
Perfluorooctanoic acid	335-67-1	100 mg	NEAT	PFOA-001N	
		100 µg/mL	MeOH	PFOA-001S	
Perfluorooctane sulfonic acid	1763-23-1	100 mg	NEAT	PFOS-001N	
		100 µg/mL	MeOH	PFOS-001S	
Potassium perfluorooctanesulfonate	2795-39-3	100 mg	NEAT	PFOS-002N	
		100 µg/mL	MeOH	PFOS-002S	
Scotchgard™ Pre-2002 Formulation (Tech mix)		100 µg/mL	MeOH	PFOS-SCG-001S	
Scotchgard™ Post-2002 Formulation (Tech mix)		100 µg/mL	MeOH	PFOS-SCG-002S	



Registered Trademarks
Scotchgard 3M

Odor Standards

The determination of odor in drinking water, waste water, and solids also include Japanese quantitative standards to meet the standard methods odor testing parameters. Odor Chemical Reference Materials, include both Quantitative and Qualitative Standards.

Individual Odor Standards

Solutions are in 1 mL, except * in 10 mL

Storage: Refrig (0-5° C), except ODOR-01S & ODOR-02S

	CAS No.	Conc.	Matrix	Cat. No.
Cumene	98-82-8	10 mg	NEAT	ODOR-06N
(+/-) Geosmin	16423-19-1	2 µg/mL	MeOH	ODOR-01S
Indan	496-11-7	10 mg	NEAT	ODOR-12N
Indene	95-13-6	10 mg	NEAT	ODOR-11N
2-Isobutyl-3-methoxypyrazine *	24683-00-9	1000 µg/mL	MeOH	ODOR-17S-10ML
2-Isopropyl-3-methoxypyrazine *	25773-40-4	1000 µg/mL	MeOH	ODOR-16S-10ML
cis-3-Hexenyl acetate	3681-71-8	10 mg	NEAT	ODOR-08N
cis-3-Hexen-1-ol	928-96-1	10 mg	NEAT	ODOR-09N
2-Methylbenzofuran	4265-25-2	10 mg	NEAT	ODOR-14N
2-Methylisoborneol	2371-42-8	2 µg/mL	MeOH	ODOR-02S
Methyl isobutyl ketone	108-10-1	10 mg	NEAT	ODOR-10N
Naphthalene	91-20-3	10 mg	NEAT	ODOR-13N
trans-2, cis-6-Nonadienal	557-48-2	10 mg	NEAT	ODOR-03N
Styrene	100-42-5	10 mg	NEAT	ODOR-04N
Toluene	108-88-3	10 mg	NEAT	ODOR-05N
2,4,6-Trichloroanisole *	87-41-1	1000 µg/mL	MeOH	ODOR-15S-10ML
m-Xylene	108-38-3	10 mg	NEAT	ODOR-07N



Japan Drinking Water Odor Standard

ODOR-JDWOS 1 x 1 mL
100 µg/mL each in MeOH 2 comps.

(+/-) Geosmin
2-methylisoborneol

Odor Set

ODOR-STM-SET 12 x 10 mg

trans-2, cis-6-Nonadienal	cis-3-Hexen-1-ol
Styrene	Methyl isobutyl ketone
Toluene	Indene
Cumene	Indan
m-Xylene	Naphthalene
cis-3-Hexenyl acetate	2-Methylbenzofuran

Refrigerants - Chlorofluorohydrocarbons (CFCs)

Chlorofluorohydrocarbons (CFCs) are ozone-depleting substances that were used primarily in air-conditioning and refrigeration systems. Under the Clean Air Act, CFCs were to be phased out of production in the U.S. by January 1, 1996. In order to monitor various refrigerants that may be present in the environment, the following single and multi-component mixes are offered to help labs screen for these compounds.

Compound	CAS No.	Conc.	Solvent	Cat. No.	1 mL
Bromochlorodifluoromethane	353-59-3	0.2 mg/mL	MeOH	M-REF-X-01	
Bromotrifluoromethane (Freon #13b1)	75-63-8	0.2 mg/mL	MeOH	M-REF-01	
1-Chloro-1,1-difluoroethane (Freon #142b)	75-68-3	0.2 mg/mL	MeOH	M-REF-02	
2-Chloro-1,1,1,2-tetrafluoroethane (Freon #124)	2837-89-0	0.2 mg/mL	MeOH	M-REF-X-02	
Chlorodifluoromethane (Freon #22)	75-45-6	0.2 mg/mL	MeOH	M-REF-03	
Chloroethane (Freon #160)	75-00-3	0.2 mg/mL	MeOH	M-REF-04	
Chloromethane	74-87-3	0.2 mg/mL	MeOH	M-REF-05	
Chloropentafluoroethane	76-15-3	0.2 mg/mL	MeOH	M-REF-06	
Chlorotrifluoromethane (Freon #13)	75-72-9	0.2 mg/mL	MeOH	M-REF-07	
1,2-Dibromotetrafluoroethane	124-73-2	0.2 mg/mL	MeOH	M-REF-X-03	
1,1-Dichloro-1-fluoroethane (Freon #141B)	1717-00-6	0.2 mg/mL	MeOH	M-REF-X-04	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon #114)	76-14-2	0.2 mg/mL	MeOH	M-REF-10	
2,2-Dichloro-1,1,1-trifluoroethane (Freon #123)	306-83-2	0.2 mg/mL	MeOH	M-REF-X-05	
Dichlorodifluoromethane (Freon #12)	75-71-8	0.2 mg/mL	MeOH	M-REF-08	
Dichlorofluoromethane (Freon #21)	75-43-4	0.2 mg/mL	MeOH	M-REF-09	
1,1-Difluoroethane (Freon 152a)	75-37-6	0.2 mg/mL	MeOH	M-REF-11	
Pentafluoroethane (Freon #125)	354-33-6	0.2 mg/mL	MeOH	M-REF-X-06	
1,1,2,2-Tetrafluoroethane (Freon #134)	359-35-3	0.2 mg/mL	MeOH	M-REF-X-07	
Tetrafluoroethane	811-97-2	0.2 mg/mL	MeOH	M-REF-12	
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.2 mg/mL	MeOH	M-REF-14	
		2.0 mg/mL	MeOH	M-REF-14-10X	
Trichlorofluoromethane	75-69-4	0.2 mg/mL	MeOH	M-REF-13	
1,1,1-Trifluoroethane (Freon #143A)	420-46-2	0.2 mg/mL	MeOH	M-REF-X-08	
Trifluoromethane (Freon #23)	75-46-7	0.2 mg/mL	MeOH	M-REF-15	



Refrigerant Solutions (CFCs)

Individuals

Each at 0.2 mg/mL in MeOH

1 mL

Set

M-REF-SET

15 x 1 mL

Each at 0.2 mg/mL in MeOH

(below 15 comps.)

Multi-Component Solution

M-REF

1 x 1 mL

0.2 mg/mL each in MeOH

(below 15 comps.)

Freon #	Compound	Cat. No.
13b1	Bromotrifluoromethane (01)	M-REF-01
142b	1-Chloro-1,1-difluoroethane (02)	M-REF-02
22	Chlorodifluoromethane (03)	M-REF-03
160	Chloroethane (04)	M-REF-04
40	Chloromethane (05)	M-REF-05
115	Chloropentafluoroethane (06)	M-REF-06
13	Chlorotrifluoromethane (07)	M-REF-07
12	Dichlorodifluoromethane (08)	M-REF-08
21	Dichlorofluoromethane (09)	M-REF-09
114	1,2-Dichloro-1,1,2,2-tetrafluoroethane (10)	M-REF-10
152a	1,1-Difluoroethane (11)	M-REF-11
134a	Tetrafluoroethane (12)	M-REF-12
11	Trichlorofluoromethane (13)	M-REF-13
113	1,1,2-Trichloro-1,2,2-trifluoroethane (14)	M-REF-14
23	Trifluoromethane (15)	M-REF-15

Additional Individual Refrigerant Solutions (CFCs)

Individuals

Each at 0.2 mg/mL in MeOH

1 mL

Set

M-REF-X-R1-SET

set of 9 x 1 mL

Each at 0.2 mg/mL in MeOH

(below 9 comps.)

Multi-Component Solution

M-REF-X

1 x 1 mL

0.2 mg/mL each in MeOH

(below 8 comps., not including Freon 113a)

Freon #	Compound	Cat. No.
12B1	Bromochlorodifluoromethane	M-REF-X-01
124	2-Chloro-1,1,1,2-tetrafluoroethane	M-REF-X-02
114B2	1,2-Dibromotetrafluoroethane	M-REF-X-03
141b	1,1-Dichloro-1-fluoroethane	M-REF-X-04
123	2,2-Dichloro-1,1,1-trifluoroethane	M-REF-X-05
125	Pentafluoroethane	M-REF-X-06
134	1,1,2,2-Tetrafluoroethane	M-REF-X-07
113a	1,1,1-Trichlorotrifluoroethane (Freon 113a)	M-REF-X-09
143a	1,1,1-Trifluoroethane	M-REF-X-08

Qualitative Kits

PolyStandard™



These PolyStandard™ Kits were originally produced by Dr. Seaton Preston of the PolyScience Analytical Division 40 years ago. In 1999, AccuStandard acquired this division and renamed it PolyStandard. AccuStandard offers this selection of kits for qualitative and retention time analysis, and enables identification of unknown components or to analysis of a broad range of chemicals. All kits are in either vials or ampules (amps.) and each kit includes an empty transfer vial.

Alcohols

C₁-C₅ Alcohols

PS-111C-R1-SET

14 amps.

Neats at 1 mL each.

- (01) Methanol
- (02) Ethanol
- (03) 1-Propanol
- (04) 2-Propanol
- (05) 1-Butanol
- (06) 2-Butanol
- (07) 2-Methyl-1-propanol
- (08) 2-Methyl-2-propanol
- (09) 1-Pentanol
- (10) 2-Pentanol
- (11) 3-Pentanol
- (12) 2-Methyl-1-butanol
- (13) 3-Methyl-1-butanol
- (14) 2-Methyl-2-butanol

C₆-C₈ Alcohols

PS-131C-R1-SET

14 amps.

Neats at 1 mL each.

- (01) 1-Hexanol
- (02) 2-Hexanol
- (03) 3-Hexanol
- (04) 2-Methyl-1-pentanol
- (05) 4-Methyl-2-pentanol
- (06) 2-Methyl-3-pentanol
- (07) 3-Methyl-3-pentanol
- (08) 2-Ethyl-1-butanol
- (09) 3,3-Dimethyl-2-butanol
- (10) 1-Heptanol
- (11) 2-Heptanol
- (12) 2,4-Dimethyl-3-pentanol
- (13) 1-Octanol
- (14) 2-Octanol

nC₆-C₂₂ Alcohols

PS-121C-R1-SET

14 amps.

Neat at 10 mg each. Solutions are weight % in Ethylbenzene, 1 mL each.

- | | |
|---------------------|------|
| (01) 1-Hexanol | Neat |
| (02) 1-Heptanol | Neat |
| (03) 1-Octanol | Neat |
| (04) 1-Nonanol | Neat |
| (05) 1-Decanol | Neat |
| (06) 1-Undecanol | Neat |
| (07) 1-Dodecanol | 10% |
| (08) 1-Tridecanol | 10% |
| (09) 1-Tetradecanol | 10% |
| (10) 1-Pentadecanol | 10% |
| (11) 1-Hexadecanol | 10% |
| (12) 1-Octadecanol | 5% |
| (13) 1-Eicosanol | 5% |
| (14) 1-Docosanol | 5% |

Aromatics

Aromatics C₆-C₁₆

PS-251C-R1-SET

14 amps.

Neats at 1 mL each.

- (01) Benzene
- (02) Toluene
- (03) *o*-Xylene
- (04) *m*-Xylene
- (05) *p*-Xylene
- (06) Ethylbenzene
- (07) Cumene
- (08) Mesitylene
- (09) *p*-Cymene
- (10) *n*-Propylbenzene
- (11) *n*-Butylbenzene
- (12) *n*-Hexylbenzene
- (13) *n*-Octylbenzene
- (14) *n*-Decylbenzene

Ketones

Normal Ketones

PS-411C-R1-SET

14 amps.

Neats at 1 mL each.

- (01) 2-Butanone
- (02) 2-Pentanone
- (03) 3-Pentanone
- (04) 2-Hexanone
- (05) 2-Heptanone
- (06) 3-Heptanone
- (07) 4-Heptanone
- (08) 2-Octanone
- (09) 3-Octanone
- (10) 2-Nonanone
- (11) 5-Nonanone
- (12) 2-Methylcyclohexanone
- (13) 3-Methylcyclohexanone
- (14) 4-Methylcyclohexanone

Branched Ketones

PS-421D-R1-SET

14 amps.

Neats at 1 mL each.

- (01) 3-Methyl-2-butanone
- (02) 3,3-Dimethyl-2-butanone
- (03) 2-Methyl-3-pentanone
- (04) 4-Methyl-2-pentanone
- (05) 2,4-Dimethyl-3-pentanone
- (06) 2-Methyl-3-hexanone
- (07) 5-Methyl-2-hexanone
- (08) 2-Methyl-3-heptanone
- (09) 5-Methyl-3-heptanone
- (10) 2,6-Dimethyl-4-heptanone
- (11) Mesityl oxide
- (12) Acetophenone
- (13) Cyclopentanone
- (14) Cyclohexanone

Food Additives

Antioxidants

PS-920CX-R1-SET

15 vials

Neats at 10 mg each.

- (01) BHA (2 and 3-*tert*-Butyl-4-methoxy phenol)
- (02) BHT (2,6-*di-tert*-Butyl-4-methyl phenol)
- (03) 4-Hydroxymethyl-2,6-*di-tert*-butyl phenol
- (04) THBP (2,4,5-Trihydroxybutyrophenone)
- (05) Ethoxyquin (1,2-Dihydro-6-ethoxy-2,2,4-trimethyl quinoline)
- (06) *tert*-Butyl hydroquinone
- (07) DLTDP (Dilaurylthiodipropionate)
- (08) Thioldipmpionic acid
- (09) Propyl gallate
- (10) Ascorbyl palmitate
- (11) Ascorbic acid
- (12) Erythorbic acid (*iso*-Ascorbic acid)
- (13) Tocopherols (mixed)
- (14) Glycine
- (15) Lecithin

Aromatics C₆-C₉

PS-252C-R1-SET

14 amps.

Neats at 1 mL each.

- (01) Toluene
- (02) *o*-Xylene
- (03) *m*-Xylene
- (04) *p*-Xylene
- (05) Ethylbenzene
- (06) Cumene
- (07) Mesitylene
- (08) *n*-Propylbenzene
- (09) 1,2,4-Trimethylbenzene
- (10) 1,2,3-Trimethylbenzene
- (11) 1-Ethyl-2-Methylbenzene
- (12) 1-Ethyl-3-Methylbenzene
- (13) 1-Ethyl-4-Methylbenzene
- (14) Benzene

Sugars & Sugar Alcohols

Sugars & Sugar Alcohols

PS-960C-R1-SET

15 vials

Neats at 10 mg each.

- (01) D-Xylose
- (02) D-Ribose
- (03) L-Arabinose
- (04) D-Fructose
- (05) D-Galactose
- (06) α -D-Glucose
- (07) D-Mannose
- (08) L-Rhamnose monohydrate
- (09) L-Sorbose
- (10) Xylitol
- (11) Ribitol (Adonitol)
- (12) D-Arabitol
- (13) L-Arabitol
- (14) D-Mannitol
- (15) D-Sorbitol



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Qualitative Kits

PolyStandard™

Hydrocarbons

Alkanes nC₆-nC₁₉

PS-211C-R1-SET

14 amps.

Neats at 10 mg each. Solutions are weight % in Ethylbenzene, 1 mL each.

(01) <i>n</i> -Hexane	Neat
(02) <i>n</i> -Heptane	Neat
(03) <i>n</i> -Octane	Neat
(04) <i>n</i> -Nonane	Neat
(05) <i>n</i> -Decane	Neat
(06) <i>n</i> -Undecane	Neat
(07) <i>n</i> -Dodecane	Neat
(08) <i>n</i> -Tridecane	Neat
(09) <i>n</i> -Tetradecane	Neat
(10) <i>n</i> -Pentadecane	Neat
(11) <i>n</i> -Hexadecane	10%
(12) <i>n</i> -Heptadecane	10%
(13) <i>n</i> -Octadecane	10%
(14) <i>n</i> -Nonadecane	10%

Branched Alkanes C₆-C₉

PS-221D-R1-SET

14 amps.

Neats at 1 mL each.

(01) 2-Methylpentane
(02) 3-Methylpentane
(03) 2,2-Dimethylbutane
(04) 2,3-Dimethylbutane
(05) 3-Methylhexane
(06) 2,3-Dimethylpentane
(07) 2,4-Dimethylpentane
(08) 3-Methylheptane
(09) 2,5-Dimethylhexane
(10) 2,2,4-Trimethylpentane
(11) 2,3,4-Trimethylpentane
(12) 2,2,5-Trimethylhexane
(13) Cyclohexane
(14) Methylcyclohexane

Alkanes nC₁₉-nC₄₀

PS-261C-R1-SET

14 amps.

At the stated conc. by weight % in Ethylbenzene, 1 mL each.

(01) <i>n</i> -Nonadecane	10%
(02) <i>n</i> -Eicosane	10%
(03) <i>n</i> -Heneicosane	10%
(04) <i>n</i> -Docosane	10%
(05) <i>n</i> -tricosane	10%
(06) <i>n</i> -Tetracosane	10%
(07) <i>n</i> -Pentacosane	10%
(08) <i>n</i> -Hexacosane	10%
(09) <i>n</i> -Octacosane	10%
(10) <i>n</i> -Triacotane	1%
(11) <i>n</i> -Dotriacontane	1%
(12) <i>n</i> -Hexatriacontane	1%
(13) <i>n</i> -Octatriacontane	1%
(14) <i>n</i> -Tetracontane	1%

Naphthenes C₅-C₁₀

PS-281C-R1-SET

14 amps.

Neats at 1 mL each.

(01) Cyclopentane
(02) Methylcyclopentane
(03) Cyclohexane
(04) Methylcyclohexane
(05) <i>cis</i> -1,2-Dimethylcyclohexane
(06) <i>trans</i> -1,2-Dimethylcyclohexane
(07) <i>cis</i> & <i>trans</i> -1,3-Dimethylcyclohexane
(08) <i>cis</i> & <i>trans</i> -1,4-Dimethylcyclohexane
(09) Ethylcyclohexane
(10) <i>n</i> -Propylcyclohexane
(11) <i>iso</i> -Propylcyclohexane
(12) <i>n</i> -Butylcyclohexane
(13) <i>iso</i> -Butylcyclohexane
(14) <i>tert</i> -Butylcyclohexane

Alkenes C₆-C₁₀

PS-231C-R1-SET

14 amps.

Neats at the stated quantities.

(01) Hexene-1	1 mL
(02) Hexene-2 (<i>cis, trans</i>)	0.5 mL
(03) 2-Methylpentene-1	1 mL
(04) 4-Methylpentene-1	1 mL
(05) 4-Methylpentene-2	0.5 mL
(<i>cis, trans</i>)	
(06) 2-Ethylbutene-1	0.5 mL
(07) Heptene-1	1 mL
(08) Heptene-2 (<i>cis, trans</i>)	0.5 mL
(09) Heptene-3 (<i>cis, trans</i>)	0.5 mL
(10) Octene-1	1 mL
(11) Octene-2	1 mL
(12) 2-Ethylhexene-1	0.5 mL
(13) Nonene-1	1 mL
(14) Decene-1	1 mL

Alkenes C₈-C₂₂

PS-241D-R1-SET

14 vials

Neats at the stated quantities.

(01) 2,4,4-Trimethylpentene-1	1 mL
(02) 2,4,4-Trimethylpentene-2	0.5 mL
(03) Nonene-1	0.5 mL
(04) Nonene-4 (<i>cis, trans</i>)	0.5 mL
(05) 3,5,5-Trimethyl-1-hexene	0.5 mL
(06) Decene-1	1 mL
(07) Undecene-1	1 mL
(08) Dodecene-1	1 mL
(09) Tridecene-1	1 mL
(10) Tetradecene-1	1 mL
(11) Hexadecene-1	1 mL
(12) Octadecene-1	1 mL
(13) Eicosene-1	1 mL
(14) Docosene-1	0.5 mL

Glycols & Glycol Ethers

Glycols C₃-C₁₂

PS-151C-SET

15 amps.

Neats at 1 mL each. Solutions at the stated conc. by weight % in MeOH, at 1 mL each.

(01) 1,2-Propanediol	Neat	(09) 1,6-Hexanediol	10%
(02) 1,3-Propanediol	Neat	(10) 2,5-Hexanediol	10%
(03) 1,2-Butanediol	Neat	(11) 1,7-Heptanediol	10%
(04) 1,3-Butanediol	Neat	(12) 1,8-Octanediol	10%
(05) 1,4-Butanediol	Neat	(13) 1,9-Nonanediol	10%
(06) 2,3-Butanediol	Neat	(14) 1,10-Decanediol	10%
(07) 1,5-Pentanediol	Neat	(15) 1,12-Dodecanediol	10%
(08) 2,4-Pentanediol	Neat		

Glycols Ethers C₃-C₁₀

PS-160C-R-SET

15 amps.

Neats at 1 mL each.

(01) Ethylene glycol methyl ether (2-Methoxyethanol)
(02) Ethylene glycol ethyl ether (2-Ethoxyethanol)
(03) Ethylene glycol <i>n</i> -butyl ether (2- <i>n</i> -Butoxyethanol)
(04) Ethylene glycol <i>n</i> -hexyl ether (2-Hexoxyethanol)
(05) Ethylene glycol phenyl ether (2-Phenoxyethanol)
(06) Diethylene glycol methyl ether [2-(2-Methoxyethoxy)-ethanol]
(07) Diethylene glycol ethyl ether [2-(2-Ethoxyethoxy)-ethanol]
(08) Diethylene glycol <i>n</i> -butyl ether [2-(2- <i>n</i> -Butoxyethoxy)-ethanol]
(09) Diethylene glycol <i>n</i> -hexyl ether [2-(2- <i>n</i> -Hexoxyethoxy)-ethanol]
(10) Propylene glycol methyl ether (1-Methoxy-isopropanol)
(11) Propylene glycol <i>n</i> -propyl ether (1-Propoxy-isopropanol)
(12) Propylene glycol <i>n</i> -butyl ether (1- <i>n</i> -Butoxy-isopropanol)
(13) Dipropylene glycol methyl ether [1-(1-Methoxyisopropoxy)isopropanol]
(14) Tripropylene glycol methyl ether
(15) Glycol ethers Mixture PS-16C
Neat at the stated weight %.
Ethylene glycol ethyl ether 10%
Ethylene glycol butyl ether 10%
Diethylene glycol ethyl ether 30%
Diethylene glycol butyl ether 50%

Calibration Mixture

PS-16C-1ML 1 mL vial

Neats at the stated weight % listed above.

Aldehydes

Aldehydes

PS-450E-R2-SET

15 amps.

Solutions at the stated conc. by weight % in Toluene, at 1 mL each.

(01) Propionaldehyde (<i>Propanal</i>)	Neat
(02) Butyraldehyde (<i>Butanal</i>)	Neat
(03) Isobutyraldehyde (<i>2-Methylpropanal</i>)	Neat
(04) Valeraldehyde (<i>Pentanal</i>)	Neat
(05) Isovaleraldehyde (<i>3-Methylbutanal</i>)	Neat
(06) Caproic aldehyde (<i>Hexanal</i>)	Neat
(07) Enanthaldehyde (<i>Heptanal</i>)	Neat
(08) Caprylaldehyde (<i>Octanal</i>)	Neat
(09) Pelargonaldehyde (<i>Nonanal</i>)	Neat
(10) Capraldehyde (<i>Decanal</i>)	10%
(11) Undecylaldehyde (<i>Hendecanal</i>)	10%
(12) Lauraldehyde (<i>Dodecanal</i>)	10%
(13) Tridecylaldehyde (<i>Tridecanal</i>)	10%
(15) Benzaldehyde (<i>Benzenecarbonal</i>)	Neat

Qualitative Kits

PolyStandard™



Acids & Esters

Saturated Fatty Acids

Methyl Ester

SFA-N-SET 18 vials
Neats at 100 mg each.

- (01) Methyl octanoate (*Caprylate*) C8:0
- (02) Methyl nonanoate (*Pelargonate*) C9:0
- (03) Methyl decanoate (*Caprate*) C10:0
- (04) Methyl undecanoate C11:0
- (05) Methyl dodecanoate (*Laurate*) C12:0
- (06) Methyl tridecanoate C13:0
- (07) Methyl tetradecanoate (*Myristate*) C14:0
- (08) Methyl pentadecanoate C15:0
- (09) Methyl hexadecanoate (*Palmitate*) C16:0
- (10) Methyl heptadecanoate (*Margarate*) C17:0
- (11) Methyl octadecanoate (*Stearate*) C18:0
- (12) Methyl 12-hydroxystearate C18:0
- (13) Methyl nonadecanoate C19:0
- (14) Methyl eicosanoate (*Arachidate*) C20:0
- (15) Methyl heneicosanoate C21:0
- (16) Methyl docosanoate (*Behenate*) C22:0
- (17) Methyl tricosanoate C23:0
- (18) Methyl tetracosanoate (*Lignocerate*) C24:0

Mixture

SFA-N-SET 18 vials
Mixture at 100 mg each.

Ethyl Esters

PS-621C-R1-SET 14 vials
Solution at stated conc. by weight % in Hexane in 1 mL. Neats at 1 mL each.

- (01) Ethyl acetate Neat
- (02) Ethyl propionate Neat
- (03) Ethyl butyrate Neat
- (04) Ethyl valerate Neat
- (05) Ethyl caproate Neat
- (06) Ethyl heptanoate Neat
- (07) Ethyl caprylate Neat
- (08) Ethyl pelargonate Neat
- (09) Ethyl caprate Neat
- (10) Ethyl undecanoate Neat
- (11) Ethyl laurate Neat
- (12) Ethyl myristate 10%
- (13) Ethyl palmitate 10%
- (14) Ethyl stearate 10%

Capillary Column Probe Solutions (also Grob Mixes)

The PS-CP-01 mixture provides a more complete capillary column test because a wider variety of organic compounds is included. Test mixture PS-CP-01 contains interactive and labile components. Refrigerate when not in use.

Non-Polar Columns Test Mix

PS-CP-01-1ML 1 mL
At the stated conc. in CH_2Cl_2 12 comps.

- Methyl decanoate 0.42 mg/mL
- Methyl undecanoate 0.42 mg/mL
- Methyl dodecanoate 0.41 mg/mL
- 2,3-Butanediol 0.53 mg/mL
- Dicyclohexylamine 0.31 mg/mL
- 2,6-Dimethylaniline 0.32 mg/mL
- 2,6-Dimethylphenol 0.32 mg/mL
- 2-Ethylhexanoic acid 0.38 mg/mL
- Nonanal 0.40 mg/mL
- Octanol 0.36 mg/mL
- Undecane 0.29 mg/mL
- Decane 0.28 mg/mL

Fatty Acids C₃-C₁₈

PS-651C-R1-SET 14 vials
Neat at the stated quantities

- (01) Propionic acid 1 mL
- (02) Butyric acid 1 mL
- (03) Valeric acid 1 mL
- (04) Caproic acid 1 mL
- (05) Heptanoic acid 1 mL
- (06) Caprylic acid 1 mL
- (07) Pelargonic acid 1 mL
- (08) Capric acid 1 mL
- (09) *n*-Hendecanoic acid 1 mL
- (10) 10-Hendecenoic acid 10 mg
- (11) Lauric acid 10 mg
- (12) Myristic acid 10 mg
- (13) Palmitic acid 10 mg
- (14) Stearic acid 10 mg

Dicarboxylic Acids

PS-670CX-R1-SET 15 vials
Neats at 10 mg each.

- (01) Oxalic acid
- (02) Malonic acid
- (03) Maleic acid
- (04) Fumaric acid
- (05) Succinic acid
- (06) Glutaric acid
- (07) Adipic acid
- (08) Pimelic acid
- (09) Suberic acid
- (10) Azelaic acid
- (11) Sebacic acid
- (12) 1,12-Dodecanedioic acid
- (13) Phthalic acid
- (14) Isophthalic acid
- (15) Terephthalic acid

Sulfur Compounds

PS-710C-SET 15 amps.
Neats at 1 mL each.

- (01) *iso*-Propyl mercaptan
 - (02) *n*-Propyl mercaptan
 - (03) *iso*-Butyl mercaptan
 - (04) *n*-Butyl mercaptan
 - (05) *sec*-Butyl mercaptan
 - (06) *tert*-Butyl mercaptan
 - (07) *n*-Amyl mercaptan
 - (08) *tert*-Amyl mercaptan
 - (09) *n*-Hexyl mercaptan
 - (10) *n*-Heptyl mercaptan
 - (11) Ethyl sulfide
 - (12) Allyl sulfide
 - (13) Di-*n*-propyl sulfide
 - (14) Di-*n*-butyl sulfide
 - (15) Mercaptan Mixture PS-71C
Neat at the stated weight
- | | |
|-----------------------------|-------|
| <i>Ethyl mercaptan</i> | 13.4% |
| <i>n</i> -Propyl mercaptan | 22.4% |
| <i>iso</i> -Butyl mercaptan | 28.6% |
| <i>n</i> -Butyl mercaptan | 35.6% |

Calibration Mixture

PS-71C 1 mL vial
Neat at the stated weight % listed above.

Amino Acids

L-Amino Acid Kit

PS-970C-R1-SET 22 vials
Neats at 10 mg each.

- (01) L-Alanine
- (02) L-Arginine
- (03) L-Asparagine
- (04) L-Aspartic acid
- (05) L-Cysteine
- (06) L-Cystine
- (07) L-Glutamic acid
- (08) L-Glutamine
- (09) Glycine
- (10) L-Histidine
- (11) *trans*-4-Hydroxy-L-proline
- (12) L-Isoleucine
- (13) L-Leucine
- (14) L-Lycine
- (15) L-Methionine
- (16) L-Phenylalanine
- (17) L-Proline
- (18) L-Serine
- (19) L-Threonine
- (20) L-Tryptophan
- (21) L-Tyrosine
- (22) L-Valine

Phenols

PS-170D-R1-SET 14 vials
At the stated quantities and conc. by weight % in Toluene.

- (01) Phenol 1 mL/Neat
- (02) *o*-Cresol 1 mL/Neat
- (03) *m*-Cresol 1 mL/Neat
- (04) *p*-Cresol 1 mL/Neat
- (05) *o*-Ethylphenol 1 mL/10%
- (06) *p*-Ethylphenol 1 mL/10%
- (07) 2-*iso*-Propylphenol 1 mL/10%
- (08) 2,3-Xylenol 1 mL/10%
- (09) 2,4-Xylenol 1 mL/10%
- (10) 2,5-Xylenol 1 mL/10%
- (11) 2,6-Xylenol 1 mL/10%
- (12) 3,4-Xylenol 1 mL/10%
- (13) 3,5-Xylenol 1 mL/10%
- (14) 2,3,5-Trimethylphenol 1 mL/5%

Phthalate Esters

PS-840C-R1-SET 15 vials
Neats at 1 mL each.

- (01) Dimethyl phthalate
 - (02) Diethyl phthalate
 - (03) Di-*n*-propyl phthalate
 - (04) Di-*iso*-propyl phthalate
 - (05) Di-*n*-butyl phthalate
 - (06) Di-*iso*-butyl phthalate
 - (07) Dipentyl phthalate
 - (08) Dihexyl phthalate
 - (09) Diheptyl phthalate
 - (10) Dioctyl phthalate
 - (11) Dinonyl phthalate
 - (12) Didecyl phthalate
 - (13) Diundecyl phthalate
 - (14) Didodecyl phthalate
 - (15) Phthalate Mixture PS-84C
Neat at stated weight %
- | | |
|------------------------------|-------|
| <i>Dimethyl phthalate</i> | 16.7% |
| <i>Diethyl phthalate</i> | 16.7% |
| <i>Di-n-propyl phthalate</i> | 33.3% |
| <i>Di-n-butyl phthalate</i> | 33.3% |

Calibration Mixture

PS-84C-1ML 1 mL vial
Neat at the stated weight % listed above.

Pesticides & Herbicides

Chlorinated Pesticides

PS-510D-R1-SET 15 amps.
Solution at 0.1% in MeOH, 1 mL each.

- (01) DDT
- (02) BHC
- (03) DDE
- (04) Endrin
- (05) Lindane
- (06) Toxaphene
- (07) Chlordane
- (08) Methoxychlor
- (09) Heptachlor
- (10) Strobane
- (11) Aldrin
- (12) Dieldrin
- (13) TDE
- (14) Endosulfan (mix of isomers)
- (15) Chloropicrin

Organophosphorus Insecticides

PS-520E-R1-SET 13 amps.
Solution at 0.1% in MeOH, 1 mL each.

- (01) Methyl Parathion
- (02) Ethion
- (03) Co-Ral
- (04) Guthion (*Azinphos methyl*)
- (05) Di-Syston (*Disulfoton*)
- (06) Phosdrin
- (07) Naled (*Dibrom*)
- (08) Diazinon
- (09) DDVP (*Vapona*) (*Dichlorvos*)
- (10) Cygon
- (11) Malathion
- (12) Zolone
- (13) Phorate (*Thimet*)

PCBs

PS-590D-R1-SET 15 amps.
At 100 µg/mL in MeOH, 1 mL each.

- (01) Aroclor 1016
- (02) Aroclor 1221
- (03) Aroclor 1232
- (04) Aroclor 1242
- (05) Aroclor 1248
- (06) Aroclor 1254
- (07) Aroclor 1260
- (08) *p,p*-DDT
- (09) *p,p'*-DDE
- (10) *p,p'*-TDE
- (11) Heptachlor
- (12) Heptachlor epoxide
- (13) Aldrin
- (14) Dieldrin
- (15) Lindane

Custom Services

Custom Synthesis

The AccuStandard Synthesis Department employs PhD Organic Chemists with many years of academic and industrial experience. This experienced team has developed hundreds of pure chemical compounds for companies and governmental agencies around the world. AccuStandard specializes in synthesizing chemicals of high purity to be used as reference standards, for milligram to kilogram batches. AccuStandard is the only company to synthesize all 209 individual PCB congeners as well as over 180 individual PBDE congeners.



Synthesis Experience

- PCBs (all 209 congeners), PBBs, PCB Metabolites
- Explosives - TNT, RDX, HMX, TATP, HND, HMTD
- PBDEs (over 180 congeners)
- PBDE Metabolites
- FBDEs
- Halo-Dibenzodioxins
- Halo-Dibenzofurans
- PAHs, Nitro-PAHs
- Substituted Diphenylethers
- Pesticides and Metabolites
- Forensics
- Wear Metals
- Pharmaceuticals
and
Other Rare Chemicals

Lab Resources

- Milligram to Kilogram Scale Glassware
- Equipment to work under N₂/Ar
- Liquid Solid Phase Chrom. (mg to 2 kg)
- Flash Chrom. (mg to 2 kg) including Horizon High Performance Flash Chrom. System
- Microwave Synthesis System
- Preparative TLC
- Buchi Rotary Evaporators
- Vacuum Drying Oven
- Parr Pressure Reactor (high pressure reaction, hydrogenation)
- Distillation Equipment - High Vacuum Distillation, Molecular Distillation (Kugelrohr), and Spinning Band Columns

Analytical Resources

- ¹H-NMR spectrometer - 400 MHZ
- GC/MS, GC/FID, GC/ECD, GC/NPD
- HPLC
- ICP
- ICP/MS
- Low Sulfur Analyzers (Antek, X-Ray Optical)
- LC/MS/MS
- Hg Analyzer

Custom Formulations

With over 40,000 custom and catalog standards, there is a good chance that AccuStandard will have a catalog item to meet your needs. However, if your laboratory requires something specific, our Chemists will manufacture a Custom Standard to meet your unique requirements. Custom Standards are an economical and time saving way to have a Standard prepared for your individual needs.

Custom QC options

1. Gravimetric/Volumetric Certification: Each purity is measured gravimetrically and QC verified instrumentally (where available). Every component in the Standard is guaranteed to be within +/-0.5% of the requested value unless otherwise stated on the Certificate of Analysis. The solutions are diluted to volume using Class A glassware. A Certificate of Analysis accompanies each Standard and documents the gravimetric values used.
2. Full Quantitative Certification: This QA/QC method includes extended GC analysis using both internal calibration standards plus statistical analysis. A data package containing analytical and gravimetric data can be provided if requested during the quotation phase (Organic Customs only).



Custom Packaging & Bulk Quantity Requirements

AccuStandard has the resources and equipment to meet your custom packaging requirements.

- Automated ampule filling & sealing 0.2 mL up to 20 mL and ampule sizes from 1 mL to 20 mL
- Quantities from 500 to over 500,000 ampules
- Homogeneity testing
- Amber ampules for added product stability
- Private labeling and packaging (OEM)

We can reduce your costs using the Cozzoli Auto Filling/Sealing Machine to package just the right size product for your application. OEM Standards - Privately labeled standards manufactured and tested to your specifications. Cold and under-Nitrogen sealing available.



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* These Methods can be found in the SW-846 update II, Nov. 1992, rev. 2

Alphabetical List of Individual Standards for EPA Methods

AccuStandard has compiled an easy to use alphabetical list of all the popular single component solutions available for EPA methods, alphabetized by Chemical Name. Additionally, the CAS number index in the back of the catalog can easily be used to find a component with multiple synonyms.

The following have been excluded from this listing and are shown elsewhere in the catalog:

- PCB Congeners start on page 30 listed by Congener Number.
- PBDE Congeners start on page 53 listed by Congener Number equivalent.
- The complete Appendix IX list can be found pages 212-214.
- A comprehensive list of Pesticides can be found on pages 69-85.

If you would like a different solvent or concentration than is listed, please contact our Technical Service Department.



Analytes in EPA Methods



Solvent Key for Individual Solutions
M Methanol **D** Methylene chloride **H** Hexane **W** Water
A Acetone **CN** Acetonitrile **MT** *tert*-Butyl methyl ether

Analytes in EPA Methods

Analytes in EPA Methods

Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL
Acenaphthene 83-32-9	100	M	APP-9-001		Aniline 62-53-3	100	M	APP-9-012	
Acenaphthene-d₁₀ 15067-26-2	1,000	M	APP-9-001-10X		Aniline-d₈ 4165-61-1	1,000	M	APP-9-012-10X	
Acenaphthylene 208-96-8	500	M	M-548-1-IS		Anthracene 120-12-7	200	D	M-625-01	
Acephate 30560-19-1	100	M	APP-9-002		Anthracene-d₁₀ 1719-06-8	2,000	D	M-625-01-10X	
Acetaldehyde 75-07-0	1,000	A	P-200S-A		Aramite 140-57-8	100	M	APP-9-013	
Acetaldehyde-DNPH 1019-57-4	1,000	A	P-200S-A-10X		Asulam 33377-1-1	1,000	M	APP-9-013-10X	
Acetochlor 34256-82-1	1,000	W	M-8315-01		Atrazine 1912-24-9	200	D	M-625-02	
Acetone 67-64-1	1,000	M	M-554-01 ‡		Atrazine desethyl 6190-65-4	100	M	P-132S	
Acetone-DNPH 1567-89-1	100	CN	M-8315-R-DNPH-01		Atrazine desisopropyl 1007-28-9	100	M	P-276S	
Acetonitrile 75-05-8	100	M	P-465S		Azamethiphos 35575-96-3	100	M	P-005S	
Acetophenone 98-86-2	10,000	W	M-8015B/5031-01		Azinphos-ethyl 2642-71-9	1,000	M	P-005S-10X	
2-Acetylaminofluorene 53-96-3	100	CN	M-8315-R2-DNPH-02		Azinphos-methyl 86-50-0	100	M	P-343S	
Acifluorfen 50594-66-6	100	M	APP-9-005		Azobenzene 103-33-3	1,000	H	P-345S	
Acifluorfen methyl ester 50594-67-7	1,000	M	APP-9-005-10X		Barbamate (Barban) 101-27-9	100	M	P-352S	
Acrolein 107-02-8	100	D	APP-9-004		Baycarb 3766-81-2	100	CN	M-632-02	
Acrolein-DNPH 888-54-0	1,000	M:W	APP-9-007 ‡		Baygon 114-26-1	100	M	P-347S	
Acrylamide 79-06-1	1,000	M:W	APP-9-007-10X ‡		Benazolin 3813-05-6	100	M	P-009S	
Acrylonitrile 107-13-1	100	CN	M-8315-R-DNPH-03		Bendiocarb 22781-23-3	100	CN	M-531-07	
Alachlor 15972-60-8	1,000	CN	M-8315-R-DNPH-03-10X		Benfluralin 1861-40-1	100	M	P-397S	
Alanap 132-66-1	100	M	M-8032		Benfuracarb 82560-54-1	100	M	M-639	
Aldicarb 116-06-3	100	M	APP-9-008		Benomyl 17804-35-2	100	M	P-237S	
Aldicarb sulfone 1646-88-4	1,000	M	APP-9-008-10X		Bensulfuron-methyl 83055-99-6	100	CN	P-104S-CN ‡	
Aldicarb sulfoxide 1646-87-3	100	M	P-131S		Bensulide 741-58-2	100	M	P-597S	
Aldrin 309-00-2	100	CN	M-531-01		Bentazon 25057-89-0	100	CN	M-636	
Allethrin 584-79-2	100	M	P-002S		Bentazon methyl 61592-45-8	100	CN	P-177S-CN	
Allyl alcohol 107-18-6	100	M	P-002S-10X		Benz(a)anthracene 56-55-3	100	M	P-241S	
Allyl chloride 107-05-1	10,000	W	M-8015B/5031-05		Benz(a)anthracene-d₁₂ 1718-53-2	100	M	APP-9-016	
Ametryn 834-12-8	100	M	APP-9-010		Benzaldehyde-DNPH 1157-84-2	1,000	M	APP-9-016-10X	
4-Aminobiphenyl 92-67-1	100	M	P-003S		Benzene 71-43-2	200	D	M-625-03	
Aminocarb 2032-59-9	1,000	M	P-003S-10X		Benzene-d₆ 1076-43-3	2,000	D	M-625-03-10X	
2-Amino-4,6-dinitrotoluene 35572-78-2	100	D	APP-9-011		Benzidine 92-87-5	100	CN	M-8315-R-DNPH-04	
4-Amino-2,6-dinitrotoluene 19406-51-0	100	CN	M-632-01		Benzo[a]pyrene 50-32-8	200	M	M-502-01	
4-Aminopyridine 504-24-5	100	M:CN	M-8330-13-0.1X		Benzo[a]pyrene 205-99-2	2,000	M	M-502-01-10X	
Anilazine 101-05-3	100	M:CN	M-8330-13		Benzo[b]fluoranthene 205-99-2	200	M	M-624-SS-01	
		M:CN	M-8330-14-0.1X		Benzo[g,h,i]perylene 191-24-2	2,000	M	M-624-SS-01-10X	
		M	M-8330-14			50	D	M-625C-1	
		M	P-407S			100	M	APP-9-020	
		H	P-287S-H			500	CN	M-8310-FL-05	
						100	M	APP-9-017	
						1,000	M	APP-9-017-10X	
						100	D	APP-9-019	
						1,000	D	APP-9-019-10X	

‡ A cold pack is required for this product.

Analytes in EPA Methods

Analytes in EPA Methods

Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL
Benzo[k]fluoranthene 207-08-9	100	M	APP-9-018		Bromophos-ethyl 4824-78-6	100	M	P-372S	
	500	CN	M-8310-FL-08			1,000	M	P-372S-10X	
Benzoic acid 65-85-0	2,000	D	Z-014D-1		2-Bromopropanoic acid 598-72-1	1,000	MT	M-552.1-SS	
Benzyl alcohol 100-51-6	100	M	APP-9-021		Bromotrifluoromethane (Freon #13b1)	200	M	M-REF-01	
Benzyl benzoate 120-51-4	5,000	H	M-8061-IS		Bueno 2163-80-6	100	M	P-279S	
Benzyl butyl phthalate 85-68-7	100	M	APP-9-034		Butachlor 23184-66-9	100	M	P-191S	
Benzyl chloride 100-44-7	200	M	M-8010-01			1,000	M	P-191S-10X	
α-BHC 319-84-6	100	M	P-010S		1,3-Butadiene 106-99-0	200	M	S-406A	
β-BHC 319-85-7	1,000	M	P-010S-10X			2,000	M	S-406A-10X	
β-BHC 319-85-7	100	M	P-011S		Butanal 123-72-8	1,000	M	M-554-02 ‡	
δ-BHC 319-86-8	1,000	M	P-011S-10X		Butanal-DNPH 1527-98-6	100	CN	M-8315-R-DNPH-05	
BHC Tech 608-73-1	100	M	P-081S			1,000	M;CN	M-554-DNPH-02	
Bifenox 42576-02-3	100	M	P-257S		1-Butanol 71-36-3	10,000	W	M-8015B/5031-06	
Bifenthrin 82657-04-3	100	M	P-445S		t-Butanol 75-65-0	2,000	M	S-410	
Bitertanol 55179-31-2	100	M	P-351S			10,000	W	M-8015B/5031-07	
Bloc 60168-88-9	100	M	P-086S		Butylate 2008-41-5	100	M	P-088S	
Bolstar 35400-43-2	100	M	P-108S			1,000	M	P-088S-10X	
Botran 99-30-9	1,000	H	M-8140-02		n-Butylbenzene 104-51-8	200	M	M-502-07	
Bromacil 314-40-9	100	M	P-181S			2,000	M	M-502-07-10X	
Brominal 1689-84-5	100	M	P-256S		sec-Butylbenzene 135-98-8	200	M	M-502-08	
Bromoacetic acid 79-08-3	1,000	MT	M-552A-1			2,000	M	M-502-08-10X	
Bromoanisole NEW	50	M	BAN-03		tert-Butylbenzene 98-06-6	200	M	M-502-09	
Bromobenzene 108-86-1	200	M	M-502-02			2,000	M	M-502-09-10X	
2-Bromobiphenyl 2052-07-5	2,000	M	M-502-02-10X		Captafol 2425-06-1	100	M	P-254S	
Bromochloroacetic acid 5589-96-8	1,000	A	M-8081-SS-X		Captan 133-06-2	100	M	P-182S ‡	
Bromochloroacetone nitrile 83463-62-1	5,000	A	M-551B-1		Carbaryl 63-25-2	100	M	P-083S	
2-Bromochlorobenzene 694-80-4	200	M	M-624-SS-12			1,000	M	P-083S-10X	
4-Bromochlorobenzene 106-39-8	2,000	M	M-8020-SS-1		Carbazole 86-74-8	1,000	M	M-634-IS	
Bromochlorodifluoromethane 353-59-3	200	M	M-REF-X-01		Carbendazim 10605-21-7	100	CN	M-631	
Bromochloromethane 74-97-5	200	M	M-502-03		Carbofuran 1563-66-2	100	CN	M-531-08	
2-Bromo-1-chloropropane 3017-95-6	2,000	M	M-502-03-10X		Carbon disulfide 75-15-0	100	M	APP-9-035	
Bromodichloroacetic acid 71133-14-7	40	MT	M-552.2A-01		Carbon tetrachloride 56-23-5	200	M	M-502-10	
Bromodichloromethane 75-27-4	200	M	M-552A-R-02			2,000	M	M-502-10-10X	
4-Bromo-3,5-dimethylphenyl-N-methylcarbamate 672-99-1	2,000	M	M-551B-1		Carbophenothion 786-19-6	100	M	P-095S	
p-Bromofluorobenzene 460-00-4	100	A	M-531-IS		Carbosulfan 55285-14-8	100	M	P-446S	
Bromoform 75-25-2	200	M	M-624-SS-03		Carboxin 5234-68-4	100	M	P-216S	
Bromomethane 74-83-9	2,000	M	M-502-05		Chloral hydrate 302-17-0	5,000	A	M-551B-2	
1-Bromo-2-nitrobenzene 577-19-5	2,000	M	M-502-05-10X		Chloramben 133-90-4	100	M	P-243S	
4-Bromophenyl phenyl ether 101-55-3	200	M	M-502-06		Chloramben methyl ester 7286-84-2	100	M	P-272S	
	2,000	M	M-502-06-10X		Chlorbenside 103-17-3	100	M	P-107S	
	1,000	A	M-8081-IS-DC			1,000	M	P-107S-10X	
	100	M	APP-9-033		α-Chlordane 5103-71-9	100	M	P-134S	
						100	H	P-134S-H	
					Chlordane 57-74-9	100	M	P-017S	
						1,000	M	P-017S-10X	
					γ-Chlordane 5103-74-2	100	M	P-135S	
						1,000	M	P-135S-10X	
					Chlordene 3734-48-3	100	M	P-136S	
					Chlorfenvinphos 470-90-6	100	M	P-139S	
						1,000	H	M-8141A-1-03	
					Chlorflorecol-methyl ester 2536-31-4	100	M	P-401S	
					Chlorimuron ethyl 90982-32-4	100	CN	P-284S-CN	

‡ A cold pack is required for this product.

Analytes in EPA Methods



Solvent Key for Individual Solutions

M Methanol D Methylene chloride H Hexane W Water
A Acetone CN Acetonitrile MT *tert*-Butyl methyl ether

Analytes in EPA Methods

Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL
bis(2-Chloro-1-methylethyl)ether 108-60-1	100	D	APP-9-028		Chlorpropham 101-21-3	100	CN	M-632-05	
Chloroacetic acid 79-11-8	1,000	MT	M-552A-2		Chlorpyrifos 2921-88-2	1,000	H	M-8140-03	
p-Chloroaniline 106-47-8	100	M	APP-9-038		Chlorpyrifos-methyl 5598-13-0	100	M	P-223S	
Chlorobenzene 108-90-7	200	M	M-502-11		Chlorsulfuron 64902-72-3	100	CN	P-262S-CN	
Chlorobenzilate 510-15-6	100	CN	P-133S-CN		Chrysene 218-01-9	100	M	APP-9-049	
Chlorodibromoacetic acid 5278-95-5	1,000	CN	P-133S-CN-10X		Chrysene-d₁₂ 1719-03-5	500	CN	M-8310-FL-09	
1-Chloro-1,1-difluoroethane (Freon #142b)	100	MT	M-552.2A-03		Chrysene-d₁₂ 1719-03-5	4,000	D	Z-014J-2	
Chlorodifluoromethane (Freon #22)	200	M	M-REF-02		Clethodim 99129-21-2	100	CN	P-602S-CN	
Chloroethane 75-00-3	200	M	M-REF-03		Clethodim 99129-21-2	1,000	CN	P-602S-CN-10X	
Chloroethane (Freon #160)	2,000	M	M-502-12-10X		Clopyralid methyl ester 1532-24-7	100	M	P-488S	
bis(2-Chloroethoxy)methane 111-91-1	200	M	M-502-12		Coumaphos 56-72-4	100	M	P-019S	
bis(2-Chloroethyl)ether 111-44-4	1,000	M	APP-9-026		Coumaphos 56-72-4	1,000	H	M-8140-04	
2-Chloroethylvinyl ether 110-75-8	100	D	APP-9-026-M-10X		4-CPA 122-88-3	100	M	P-373S	
1-Chloro-2-fluorobenzene 348-51-6	100	M	APP-9-027		m-Cresol 108-39-4	100	D	APP-9-050	
1-Chloro-4-fluorobenzene 352-33-0	200	M	M-601C		m-Cresol 108-39-4	1,000	D	APP-9-050-10X	
Chloroform 67-66-3	2,000	M	M-601C-10X		p-Cresol 106-44-5	100	D	APP-9-052	
1-Chlorohexane 544-10-5	200	M	S-163		Crotonaldehyde 123-73-9	1,000	M	M-554-03 ‡	
Chloromethane 74-87-3	2,000	M	M-624-SS-13		Crotonaldehyde-DNPH 1527-96-4	100	CN	M-8315-R-DNPH-06	
bis-(Chloromethyl)ether 542-88-1	100	H	M-502-13		Crotonaldehyde-DNPH 1527-96-4	1,000	M:CN	M-554-DNPH-03	
4-Chloro-3-methylphenol 59-50-7	200	M	M-502-13-10X		Cruformate 299-86-5	100	M	P-292S	
2-Chloronaphthalene 91-58-7	200	M	M-8010R-1-04		Cyanazine 21725-46-2	100	CN	M-629	
4-Chloro-3-nitrobenzotrifluoride 121-17-5	2,000	M	M-8010R-1-04-10X		Cyanazine 21725-46-2	100	M	P-248S	
Chloropentafluoroethane 76-15-3	200	M	M-502-14		Cyclohexanone 108-94-1	1,000	M	M-554-04 ‡	
2-Chlorophenol 95-57-8	100	M	M-502-14-10X		Cyclohexanone-DNPH 1589-62-4	100	CN	M-8315-R-DNPH-07	
2-Chlorophenol-d₄ 93951-73-6	200	D	S-006		Cypermethrin 52315-07-8	100	M	P-225S	
4-Chlorophenyl phenyl ether 7005-72-3	100	M	APP-9-041		Cypermethrin 52315-07-8	1,000	M	P-225S-10X ‡	
Chloropicrin 76-06-2	5,000	A	APP-9-045		Cyprazine 22936-86-3	100	M	P-420S	
Chloroprene 126-99-8	100	M	M-8081-SS-DC		Cyromazine 66215-27-8	100	M	P-296S	
3-Chloro-1,2-propanediol 96-24-2	100	M	M-REF-06		2,4-D 94-75-7	100	M	P-020S	
Chloropropylate 5836-10-2	100	M	APP-9-046		2,4-D 94-75-7	1,000	M	P-020S-10X	
2-Chloro-1,1,1,2-tetrafluoroethane (Freon #124)	200	M	APP-9-047		2,6-D acid 575-90-6	100	M	P-690S	
Chlorothalonil 1897-45-6	100	M	M-625-20		2,6-D acid 575-90-6	100	CN	P-690S-CN	
2-Chlorotoluene 95-49-8	200	M	APP-9-047		2,4-D butoxyethyl ester 1929-73-3	100	H	P-438S-H	
4-Chlorotoluene 106-43-4	2,000	M	M-551B-3		2,4-D ethyl ester 533-23-3	1,000	H	P-438S-H-10X	
Chlorotrifluoromethane (Freon #13)	200	M	M-REF-X-02		2,4-D ethylhexyl ester 1928-43-4	100	H	P-439S-H	
	100	M	P-222S		2,4-D methyl ester 1928-38-7	100	M	P-021S	
	1,000	M	P-222S-10X		Dacthal 1861-32-1	200	H	M-8150-01	
	200	M	M-502-15		Dalapon acid 75-99-0	100	M	P-196S	
	2,000	M	M-502-15-10X		Dalapon acid 75-99-0	40	MT	M-552.2A-04	
	200	M	M-502-16		Dalapon acid 75-99-0	100	CN	P-140S-CN	
	2,000	M	M-502-16-10X		Dalapon methyl ester 17640-02-7	200	M	M-552.1-01	
	200	M	M-REF-07		Danitol 39515-41-8	100	M	P-263S	
					Danitol 39515-41-8	1,000	M	P-263S-10X	
					Dasanit 115-90-2	100	M	P-235S	
					Dazomet 533-74-4	25	A	M-1659-MS	
					2,4-D-PFB	100	MT	M-8150-02-PFB	

Analytes in EPA Methods

Analytes in EPA Methods

Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL
2,4-DB acid 94-82-6	100	M	P-141S		Dibromomethane 74-95-3	200	M	M-502-20	
	200	M	M-8150S-A-02			2,000	M	M-502-20-10X	
2,4-DB methyl ester 18625-12-2	100	M	P-228S		a,a-Dibromo-m-xylene 626-15-3	1,000	A	M-8081-IS-X	
	200	H	M-8150-02						
DCPA diacid 2136-79-0	100	M	P-320S		4,4'-Dibromooctafluorobiphenyl 10386-84-2	200	D	M-625-06	
	100	CN	P-320S-CN			2,000	D	M-625-06-10X	
p,p'-DDA 83-05-6	100	M	P-444S		1,2-Dibromopropane 78-75-1	5,000	M	M-552-IS	
o,p'-DDD 53-19-0	100	M	P-024S		10,000	H	M-556-IS		
	100	M	P-025S		2,3-Dibromopropionic acid 600-05-5	1,000	MT	M-552.2-SS	
p,p'-DDD 72-54-8	100	M	P-026S		20,000	MT	M-552-SS		
	100	M	P-027S		1,2-Dibromotetrafluoroethane 124-73-2	200	M	M-REF-X-03	
o,p'-DDE 3424-82-6	100	M	P-026S		Dibutylchloroendate 1770-80-5	100	M	P-109S	
	100	M	P-027S						
p,p'-DDE 72-55-9	100	M	P-424S		Dicamba 1918-00-9	100	M	P-008S	
	100	M	P-028S		1,000	M	P-008S-10X		
4,4'-DDMU 1022-22-6	100	M	P-029S		Dicamba methyl ester 6597-78-0	100	M	P-071S	
	100	M	P-029S			200	H	M-8150-06	
o,p'-DDT 789-02-6	100	M	P-346S-CN		Dicaphon 2463-84-5	100	M	P-035S	
	100	CN	P-346S-CN		1,000	M	P-035S-10X		
p,p'-DDT 50-29-3	100	M	P-346S		Dichlobenil 1194-65-6	100	M	P-275S	
	100	M	P-346S						
DDT, Tech 50-29-3	100	M	P-346S		Dichlofenthion 97-17-6	100	M	P-211S	
Decachlorobiphenyl 2051-24-3	35	TP	C-209S		Dichlone 117-80-6	100	M	P-253S	
	500	MT	M-508-SS-2						
Decafluorobiphenyl 434-90-2	200	D	M-625-04		Dichlormid 37764-25-3	100	M	P-675S	
	2,000	D	M-625-04-10X						
Decafluorotriphenylphosphine 5074-71-5	10	D	M-680-TS		Dichloroacetic acid 79-43-6	60	MT	M-552.2A-06	
	25	D	M-625C-3			1,000	MT	M-552A-3 ‡	
Decanal 112-31-2	1,000	M	M-554-05		Dichloroacetonitrile 3018-12-0	5,000	A	M-551B-5	
Decanal-DNPH	100	CN	M-8315-R-DNPH-08		1,2-Dichlorobenzene 95-50-1	200	M	M-502-21	
	1,000	M:CN	M-554-DNPH-05			2,000	M	M-502-21-10X	
Deet (Off®)	100	M	P-255S		1,3-Dichlorobenzene 541-73-1	200	M	M-502-22	
DEF 6 78-48-8	100	M	P-150S		2,000	M	M-502-22-10X		
	100	M	P-355S		1,4-Dichlorobenzene 106-46-7	200	M	M-502-23	
Deltamethrin 52918-63-5	100	M	P-355S		2,000	M	M-502-23-10X		
Demeton-S 126-75-0	100	M	P-271S		m-Dichlorobenzene 541-73-1	100	M	APP-9-065	
	100	M	P-482S		p-Dichlorobenzene 106-46-7	100	M	APP-9-066	
Demeton-S-methyl 919-86-8	100	M	P-482S		1,2-Dichlorobenzene-d₄ 2199-69-1	200	M	M-624-SS-11	
	50	A	M-1653-TS			2,000	M	M-624-SS-11-10X	
DFTPP 5074-71-5	100	D	M-525-TS		1,4-Dichlorobenzene-d₄ 3855-82-1	2,000	M	Z-014J-3-M-0.5X	
	100	CN	M-553-PC		4,000	D	Z-014J-3		
DFTPPO	100	M	P-142S		3,3'-Dichlorobenzidine 91-94-1	100	M	APP-9-067	
Diallate 2303-16-4	100	M	P-142S		2,000	M	Z-014F-2		
	100	CN	M-8330-ADD-13		3,5-Dichlorobenzoic acid 51-36-5	100	M	P-242S	
2,6-Diamino-4-nitrotoluene 59229-75-3	100	CN	M-8330-ADD-13		1,000	M	P-242S-10X		
	100	CN	M-8330-ADD-12		4,4'-Dichlorobenzophenone 90-98-2	100	M	P-295S	
2,4-Diamino-6-nitrotoluene 6629-29-4	100	M	P-033S		1,000	M	P-295S-10X		
	1,000	M	P-033S-10X		4,4'-Dichlorobiphenyl 2050-68-2	500	MT	M-508-SS	
Diazinon 333-41-5	100	M	APP-9-058		1,4-Dichlorobutane 110-56-5	200	M	M-624-SS-05	
	500	CN	M-8310-FL-10						
Dibenzofuran 132-64-9	100	M	APP-9-059		trans-1,4-Dichloro-2-butene 110-57-6	100	M	APP-9-068	
Dibromoacetic acid 631-64-1	20	MT	M-552.2A-05		Dichlorodifluoromethane 75-71-8	200	M	M-502-24	
	1,000	MT	M-552A-5			2,000	M	M-502-24-10X	
Dibromoacetonitrile 3252-43-5	5,000	A	M-551B-4		Dichlorodifluoromethane (Freon #12)	200	M	M-REF-08	
	200	D	M-625-05		1,1-Dichloroethane 75-34-3	200	M	M-502-25	
4,4'-Dibromobiphenyl 92-86-4	2,000	D	M-625-05-10X		2,000	M	M-502-25-10X		
	200	M	M-502-17		1,2-Dichloroethane 107-06-2	200	M	M-502-26	
Dibromochloromethane 124-48-1	2,000	M	M-502-17-10X		2,000	M	M-502-26-10X		
	200	M	M-502-18		cis-1,2-Dichloroethene 156-59-2	200	M	M-502-28	
1,2-Dibromo-3-chloropropane 96-12-8	200	M	M-502-18		2,000	M	M-502-28-10X		
	2,000	M	M-502-18-10X		1,2-Dichloroethane-d₄ 17060-07-0	200	M	M-624-SS-06	
1,2-Dibromoethane 106-93-4	200	M	M-502-19		2,000	M	M-624-SS-06-10X		
	2,000	M	M-502-19-10X		1,1-Dichloroethene 75-35-4	200	M	M-502-27	
Dibromofluoromethane 1868-53-7	200	M	M-8260-SS-2		2,000	M	M-502-27-10X		
	2,000	M	M-8260-SS-2-10X		trans-1,2-Dichloroethene 156-60-5	200	M	M-502-29	
					2,000	M	M-502-29-10X		

Analytes in EPA Methods



Solvent Key for Individual Solutions

M Methanol D Methylene chloride H Hexane TP Isooctane
A Acetone CN Acetonitrile MT *tert*-Butyl methyl ether

Analytes in EPA Methods

Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL
1,1-Dichloro-1-fluoroethane (Freon #141B)	200	M	M-REF-X-04		Dimethyl phthalate 131-11-3	100 1,000	M M	APP-9-088 APP-9-088-10X	
Dichlorofluoromethane 75-43-4	200 2,000	M M	M-502-61 M-502-61-10X		2,3-Dimethyl-2,3-dinitrobutane (DMNB) 3964-18-9	100	CN	M-8330-ADD-21	
Dichlorofluoromethane (Freon #21)	200	M	M-REF-09		1,3-Dimethyl-2-nitrobenzene 81-20-9	250 1,000	MT MT	M-507-SS M-507-SS-4X	
Dichloromethane 75-09-2	200 2,000	M M	M-502-39 M-502-39-10X		4-Dimethylaminoazobenzene 60-11-7	100	D	APP-9-083	
Dichlorophen 97-23-4	100	M	P-232S		7,12-Dimethylbenz[a]anthracene 57-97-6	100	D	APP-9-084	
2,4-Dichlorophenol 120-83-2	100	M	APP-9-075		2,5-Dimethylbenzaldehyde-DNPH 152477-96-8	100	CN	M-8315-R-DNPH-09	
2,6-Dichlorophenol 87-65-0	100	D	APP-9-076		3,3'-Dimethylbenzidine 119-93-7	100	D	APP-9-085	
2,3-Dichlorophenoxyacetic acid 2976-74-1	100 100	M CN	P-470S P-470S-CN		a,a-Dimethylphenethylamine 122-09-8	100	D	APP-9-086	
2,4-Dichlorophenylacetic acid 19719-28-9	100 1,000	A A	M-8150B-SS M-8150B-SS-10X		2,4-Dimethylphenol 105-67-9	100	M	APP-9-087	
1,2-Dichloropropane 78-87-5	200 2,000	M M	M-502-30 M-502-30-10X		Di-n-butyl phthalate 84-74-2	100 1,000	M M	APP-9-063 APP-9-063-10X	
1,3-Dichloropropane 142-28-9	200 2,000	M M	M-502-31 M-502-31-10X		Dinex 131-89-5	100 1,000	M M	P-427S P-427S-10X	
2,2-Dichloropropane 594-20-7	200 2,000	M M	M-502-32 M-502-32-10X		3,5-Dinitroaniline 618-87-1	100	CN:M	M-8330-ADD-4	
1,1-Dichloro-2-propanone 513-88-2	5,000	A	M-551B-6		1,2-Dinitrobenzene 528-29-0	1,000	M	M-8330-SS	
1,1-Dichloropropene 563-58-6	200 2,000	M M	M-502-33 M-502-33-10X		1,3-Dinitrobenzene 99-65-0	100 1,000	M:CN M:CN	M-8330-01-0.1X M-8330-01	
trans-1,3-Dichloropropene 10061-02-6	100	M	APP-9-079		4,6-Dinitro-o-cresol 534-52-1	100	M	P-384S	
1,3-Dichloropropene (cis/trans) 542-75-6	400 4,000	M M	M-502-34-R M-502-34-R-10X		2,4-Dinitrophenol 51-28-5	100	M	APP-9-091	
cis-1,3-Dichloropropene 10061-01-5	100	M	APP-9-078		2,4-Dinitrophenylhydrazine 119-26-6	1,000	CN	M-1667A-DERV-10ML in 10 mL	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon #114)	200	M	M-REF-10		2,4-Dinitrotoluene 121-14-2	100 1,000	M:CN M:CN	M-8330-02-0.1X M-8330-02	
2,2-Dichloro-1,1,1-trifluoroethane (Freon #123)	200	M	M-REF-X-05		2,5-Dinitrotoluene 619-15-8	100	CN	M-8095-SS-03	
Dichloroprop 120-36-5	100 200	M M	P-143S M-8150S-A-07		2,6-Dinitrotoluene 606-20-2	100 1,000	M:CN M:CN	M-8330-03-0.1X M-8330-03	
Dichloroprop methyl ester 57153-17-0	100 200	M H	P-229S M-8150-07		3,4-Dinitrotoluene 610-39-9	100 1,000	CN M	M-8095-SS-01 M-8330-IS	
Dichlorvos 62-73-7	100 1,000	M H	P-036S M-8140-07		Dinocap 39300-45-3	100	M	P-288S	
Diclofop methyl 51338-27-3	100	M	P-303S		Di-n-octyl phthalate 117-84-0	100	M	APP-9-095	
Dicrotophos 141-66-2	100	M	P-178S		Dinoseb 88-85-7	100 1,000	M M	P-144S P-144S-10X	
Dieldrin 60-57-1	100 1,000	M M	P-037S P-037S-10X		Dinoseb methyl ether 6099-79-2	100 200	M H	P-230S M-8150-08	
Diethyl ether 60-29-7	10,000	W	M-8015B/5031-09		Dioxacarb 6988-21-2	100	M	P-264S	
Diethyl phosphate (mono- & di-) 598-02-7	100	M	P-443S		p-Dioxane 123-91-1	100 1,000	M M	APP-9-096 APP-9-096-10X	
Diethyl phthalate 84-66-2	100 1,000	M M	APP-9-081 APP-9-081-10X		Dioxathion 78-34-2	100 1,000	M H	P-219S P-219S-H-10X	
1,4-Difluorobenzene 540-36-3	200 2,000	M M	M-624-SS-07 M-624-SS-07-10X		Diphenamid 957-51-7	100	M	P-173S	
2,2'-Difluorobiphenyl 388-82-9	200 2,000	D D	M-625-07 M-625-07-10X		Diphenylamine 122-39-4	100 1,000	D M	APP-9-097 M-620	
4,4'-Difluorobiphenyl 398-23-2	100	CN	M-550-IS		Diquat dibromide monohydrate (as Diquat)	100 1,000	M M	P-231S P-231S-10X	
1,1-Difluoroethane (Freon 152a)	200	M	M-REF-11		Disulfoton 298-04-4	100 1,000	M M	P-042S P-042S-10X	
Dimefox 115-26-4	100	M	P-299S		Disulfoton sulfone 2497-06-5	100	M	P-582S	
Dimethoate 60-51-5	100 1,000	M M	P-039S P-039S-10X		2,4-DP ethyl hexyl 79270-78-3	100	M	P-429S	
Dimethyl phosphate 813-78-5	100	M	P-442S		Dursban 2921-88-2	100 1,000	M M	P-094S P-094S-10X	

‡ A cold pack is required for this product.

Analytes in EPA Methods

Analytes in EPA Methods

Analytes in EPA Methods

Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL
Dyfonate 944-22-9	100	M	P-087S		Fenuron 101-42-8	100	M	P-004S	
EGDN 628-96-6	100	CN	M-8330-ADD-5		Fenuron TCA 4482-55-7	100	CN	M-632-07	
Endosulfan I 959-98-8	100	M	P-091S		Fenvalerate 51630-58-1	100	M	P-006S	
Endosulfan II 33213-65-9	1,000	M	P-091S-10X		Ferbam 14484-64-1	100	M	M-632-08	
Endosulfan sulfate 1031-07-8	100	M	P-092S		Fipronil 120068-37-3	100	M	P-194S	
Endothall 145-73-3	1,000	M	P-092S-10X		Fipronil sulfide 120067-83-6	100	A	P-110S	
Endothall dimethyl ester 145-73-3	100	M	P-145S		Fipronil sulfone 120068-36-2	100	A	P-738S-A	
Endothall pentafluorophenyl hydrazine derivative 145-73-3	100	MT	P-183S		Fiamprop-methyl 52756-25-9	100	M	P-781S-A	
Endrin 72-20-8	100	M	P-045S		Fluazifop butyl 69806-50-4	100	M	P-780S-A	
Endrin aldehyde 7421-93-4	1,000	M	P-045S-10X		Fluazifop-p-butyl 79241-46-6	100	M	P-366S	
Endrin ketone 53494-70-5	100	M	P-046S		Fluchloralin 33245-39-5	100	M	P-310S	
EPN 2104-64-5	1,000	M	P-046S-10x		Fluometuron 2164-17-2	100	M	P-601S	
Ethalfuralin 55283-68-6	100	M	P-146S		Fluoranthene 206-44-0	100	M	P-270S	
Ethanol 64-17-5	10,000	W	M-8015B/5031-11		Fluorene 86-73-7	100	M	P-014S	
Ethephon 16672-87-0	100	M	P-239S		4-Fluoroaniline 371-40-4	100	M	P-014S	
Ethion 563-12-2	100	M	P-048S		Fluorobenzene 462-06-6	1,000	M	M-632-09	
Ethoprop 13194-48-4	100	M	P-129S		2-Fluorobiphenyl 321-60-8	200	D	APP-9-108	
Ethyl acetate 141-78-6	1,000	H	M-8140-09		1-Fluoronaphthalene 321-38-0	500	CN	M-8310-FL-11	
Ethyl carbamate 51-79-6	10,000	W	M-8015B/5031-12		2-Fluoronaphthalene 323-09-1	100	M	APP-9-109	
Ethyl methacrylate 97-63-2	100	M	P-419S		2-Fluorophenol 367-12-4	200	D	APP-9-109-10X	
Ethyl methanesulfonate 62-50-0	100	D	APP-9-105		Flurenol methyl ester 1216-44-0	2,000	D	M-625-08	
Ethylbenzene 100-41-4	200	M	M-502-35		Fluridone 59756-60-4	200	M	M-625-08-10X	
Ethylbenzene-d₁₀ 25837-05-2	2,000	M	M-502-35-10X		Tau-Fluvalinate 102851-06-9	200	D	M-524-IS-2	
Ethylene glycol 107-21-1	200	M	M-624-SS-08		Folpet 133-07-3	200	D	M-625-09	
Ethylene oxide 75-21-8	10,000	W	M-8015B/5031-13		Formaldehyde 50-00-0	2,000	D	M-625-09-10X	
bis(2-Ethylhexyl)adipate 103-23-1	5,000	W	M-8015B/5031-14-R1		Formaldehyde-DNPH 1081-15-8	100	M	M-524-IS-2	
bis(2-Ethylhexyl)phthalate 117-81-7	100	M	P-233S		Formothion 2540-82-1	100	M	M-625-16	
Famphur 52-85-7	1,000	M	P-233S-10X		Glyphosate 1071-83-6	100	M	M-625-16-10X	
Fenamiosulf 140-56-7	100	M	APP-9-029		Guanidine nitrate 506-93-7	1,000	W	P-412S	
Fenamiphos 22224-92-6	1,000	H	APP-9-029-10X		Haloxifop 69806-34-4	100	M	P-193S	
Fenitrothion 122-14-5	100	M	P-147S		Haloxifop-methyl 69806-40-2	100	M	P-356S-CN	
Fenoxaprop-ethyl 66441-23-4	100	M	P-147S		Heptachlor 76-44-8	100	M	P-258S	
Fenoxycarb 79127-80-3	100	M	P-058S		Heptachlor epoxide (Isomer A) 28044-83-9	1,000	W	M-8315-02	
Fensulfthion 115-90-2	1,000	M	P-058S-10X		Heptachlor epoxide (Isomer B) 1024-57-3	1,000	M	M-554-06 ‡	
Fenthion 55-38-9	100	M	P-114S		Heptanal 111-71-7	1,000	M:CN	M-8315-R-DNPH-10	
	1,000	M	P-148S		Heptanal-DNPH 111-71-7	100	CN	M-554-DNPH-06	
	1,000	M	P-148S-10X			100	CN	P-149S-CN	
						100	W	P-015S-W	
						1,000	W	P-015S-W-10X	
						100	M	M-8330-ADD-10	
						100	M	P-496S	
						100	CN	P-496S-CN	
						100	M	P-497S	
						100	M	P-053S	
						1,000	M	P-053S-10X	
						100	M	P-294S	
						100	M	P-054S	
						1,000	M	P-054S-10X	
						1,000	M	M-554-07	
						100	CN	M-8315-R-DNPH-11	
						1,000	M:CN	M-554-DNPH-07	

Analytes in EPA Methods



Solvent Key for Individual Solutions

M Methanol D Methylene chloride H Hexane W Water
A Acetone CN Acetonitrile MT *tert*-Butyl methyl ether

Analytes in EPA Methods

Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL
Hexachlorobenzene 118-74-1	100	M	APP-9-112		Lindane (γ-BHC) 58-89-9	100 1,000	M M	P-059S P-059S-10X	
Hexachlorobutadiene 87-68-3	200 2,000	M M	M-502-36 M-502-36-10X		Linuron 330-55-2	100 100	M CN	P-022S M-632-10	
Hexachlorocyclopentadiene 77-47-4	100 1,000	M M	APP-9-114 APP-9-114-10X		Lontrel 1702-17-6	100	M	P-224S	
Hexachloroethane 67-72-1	100	M	APP-9-115		Malathion 121-75-5	1,000	H	M-8141-03	
Hexachlorophene 70-30-4	100	M	APP-9-116		Marathon 138261-41-3	100	M	P-616S	
Hexachloropropene 1888-71-7	100	M	APP-9-117		MCPA acid 94-74-6	100 2,000	M M	P-153S M-8150S-A-09	
Hexanal 66-25-1	1,000	M	M-554-08 ‡		MCPA methyl ester 2436-73-9	100 2,000	M H	P-038S M-8150-09	
Hexanal-DNPH 1527-97-5	100	CN	M-8315-R-DNPH-12		MCPB acid 94-81-5	100	M	P-370S	
2-Hexanone 591-78-6	100	M	APP-9-118 ‡		MCPB methyl ester 57153-18-1	100	M	P-371S	
Hexazinone 51235-04-2	100 1,000	M M	P-123S P-123S-10X		MCPP acid 7085-19-0	100	CN	P-154S-CN	
HMX 2691-41-0	100 1,000	M:CN M:CN	M-8330-04-0.1X M-8330-04		MCPP methyl ester 2786-19-7	100	M	P-040S	
Hydrazine 302-01-2	100	M	M-8330-ADD-8		MCPP methyl ester 2786-19-7	2,000	H	M-8150-10	
2-Hydroxyatrazine 2163-68-0	100	M	P-326S		Mecoprop, 2-Ethylhexyl ester	100	M	P-502S	
3-Hydroxycarbofuran 16655-82-6	100	CN	M-531-05		Mercaptobenzothiazole 149-30-4	100	CN	M-640	
1-Hydroxychlorodene 24009-05-0	100	M	P-151S		Merphos 150-50-5	1,000	H	M-8140-12	
Imidan 732-11-6	100	M	P-055S		Metalaxyl 57837-19-1	100	M	P-120S	
Indeno[1,2,3-cd]pyrene 193-39-5	100	M	APP-9-119		Metaldehyde 9002-91-9	100	M	P-600S	
Iodofenphos 18181-70-9	100	M	P-379S		Metamitron 41394-05-2	100	M	P-252S	
Ioxynil 1689-83-4	100	M	P-522S		Metazachlor 67129-08-2	100	M	P-249S	
Iprodione 36734-19-7	100 100	A CN	P-016S-A P-016S-CN		Methacrylonitrile 126-98-7	100	M	APP-9-125	
Isobutyl alcohol 78-83-1	100 10,000	M W	APP-9-120 M-8015B/5031-15		Methanol 67-56-1	10,000	W	M-8015B/5031-17	
Isodrin 465-73-6	1,000	M	APP-9-121-10X		Methapyrilene 91-80-5	100 1,000	D D	APP-9-126 APP-9-126-10X	
Isofenphos 25311-71-1	100	M	P-018S		Methidathion 950-37-8	100	M	P-195S	
Isophorone 78-59-1	100 1,000	M M	APP-9-122 APP-9-122-10X		Methiocarb 2032-65-7	100 100	M CN	P-156S M-531-11	
Isopropalin 33820-53-0	100	M	P-100S		Methomyl 16752-77-5	100 1,000	CN CN	M-531-04 M-531-04-10X	
Isopropanol 67-63-0	10,000	W	M-8015B/5031-16		Methoprene 40596-69-8	100	M	P-157S	
Isopropylbenzene 98-82-8	200 2,000	M M	M-502-37 M-502-37-10X		Methoxychlor 72-43-5	100 1,000	M M	P-064S P-064S-10X	
p-Isopropyltoluene (p-Cymene) 99-87-6	200 2,000	M M	M-502-38 M-502-38-10X		o,p'-Methoxychlor 30667-99-3	100	M	P-535S	
Isosafrole 120-58-1	100	D	APP-9-123		p,p'-Methoxychlor-olefin 2132-70-9	100 1,000	M M	P-466S P-466S-10X	
Isovaleraldehyde-DNPH 2256-01-1	100	CN	M-8315-R-DNPH-13		Methyl-2,3-dibromopropionate 1729-67-5	1,000	MT	M-552.2-SS-ME	
Karmex 330-54-1	100 100	M CN	P-227S M-632-06		Methyl bromoacetate 96-32-2	200	M	M-552.1-02	
Kelthane 115-32-2	100	M	P-057S		Methyl bromochloroacetate 20428-74-4	200 1,000	M MT	M-552.1-03 M-552-R-03	
Kepone 143-50-0	100 1,000	M M	P-152S P-152S-10X		Methyl bromodichloroacetate 40	40	MT	M-552.2-04	
3-Ketocarbofuran	100	A	P-298S-A		Methyl 2-bromopropionate 5445-17-0	1,000	MT	M-552.1-SS-ME	
Leptophos 21609-90-5	100 1,000	M H	P-206S P-206S-H-10X		Methyl chlorodibromoacetate 20428-75-5	100	MT	M-552.2-06	

‡ A cold pack is required for this product.

Analytes in EPA Methods

Analytes in EPA Methods

Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL
3-Methylcholanthrene 56-49-5	100	D	APP-9-128		Myclobutanil 88671-89-0	100	M	P-330S	
Methyl dibromoacetate 6482-26-4	20	MT	M-552.2-07			1,000	M	P-330S-10X	
	100	M	M-552.1-05		Nabam 142-59-6	100	M	P-383S	
Methyl dichloroacetate 116-54-1	60	MT	M-552.2-08			100	M	P-159S	
	300	M	M-552.1-06		Naled 300-76-5	1,000	H	M-8140-15	
Methyl-3,5-dichlorobenzoate 2905-67-1	100	M	P-247S			200	M	M-502-40	
	1,000	M	P-247S-10X		Naphthalene 91-20-3	2,000	M	M-502-40-10X	
Methyl-2,4-Dichlorophenylacetate 55954-23-9	100	M	P-214S			100	M	P-512S	
Methylene chloride-d₂ 1665-00-5	2,000	M	M-502-IS-2-3		1-Naphthalene acetamide 86-86-2				
						200	D	M-625-12	
Methyl ethyl ketone 78-93-3	1,000	M	APP-9-129-10X ‡		Naphthalene-d₈ 1146-65-2	4,000	D	Z-014J-4	
	10,000	W	M-8015B/5031-18			100	CN	M-531-10	
Methyl iodide 74-88-4	100	M	APP-9-130		1-Naphthol 90-15-3				
Methyl isobutyl ketone 108-10-1	10,000	W	M-8015B/5031-19		1,4-Naphthoquinone 130-15-4	100	D	APP-9-137	
Methyl isothiocyanate 556-61-6	25	A	M-1659-RPS		1-Naphthylamine 134-32-7	100	D	APP-9-138	
Methyl methacrylate 80-62-6	100	M	APP-9-131		2-Naphthylamine 91-59-8	100	D	APP-9-139	
Methyl methanesulfonate 66-27-3	100	D	APP-9-132			100	M	P-179S	
1-Methylnaphthalene 90-12-0	500	CN	M-8310-FL-14		Napropamide 15299-99-7	100	CN	M-632-1-3	
	100	D	APP-9-133			100	M	P-041S	
2-Methylnaphthalene 91-57-6	500	CN	M-8310-FL-15		Neburon 555-37-3	100	CN	M-632-16	
2-Methyl-4-nitroaniline 99-52-5	100	CN	M-8095-SS-02			100	M	P-160S	
3-Methyl-4-nitrophenol 2581-34-2	100	M	P-509S		Niclosamide 50-65-7				
Methyl nonyl ketone 112-12-9	100	M	P-415S		m-Nitroaniline 99-09-2	100	D	APP-9-141	
	100	CN	P-415S-CN		o-Nitroaniline 88-74-4	100	D	APP-9-140	
Methyl paraoxon 298-00-0	100	M	P-311S		p-Nitroaniline 100-01-6	100	D	APP-9-142	
	100	M	P-065S		4-Nitroanisole 100-17-4	100	M	P-273S	
Methyl parathion 298-00-0	1,000	M	P-065S-10X		Nitrobenzene 98-95-3	100	M:CN	M-8330-06-0.1X	
4-Methyl-2-pentanone 108-10-1	100	M	APP-9-135			1,000	M:CN	M-8330-06	
Methyl tribromoacetate 3222-05-7	200	MT	M-552.2-09 ‡		Nitrobenzene-d₅ 4165-60-0	200	D	M-625-13	
						2000	D	M-625-13-10X	
Methyl trichloroacetate 598-99-2	100	M	M-552.1-07		Nitroguanidine 556-88-7	100	M	M-8330-ADD-6	
	200	MT	M-552.2-10		Nitromethane 75-52-5	100	M	M-8330-ADD-7	
Metolachlor 51218-45-2	100	M	P-158S		5-Nitro-o-toluidine 99-55-8	100	D	APP-9-156	
Metribuzin 21087-64-9	100	M	P-089S		o-Nitrophenol 88-75-5	100	M	APP-9-144	
	1,000	M	P-089S-10X		p-Nitrophenol 100-02-7	100	M	APP-9-145	
Metsulfuron methyl 74223-64-6	100	M	P-463S		4-Nitroquinoline-1-oxide 56-57-5	100	D	APP-9-146	
Mevinphos 7786-34-7	100	M	P-074S		N-Nitrosodiethylamine 55-18-5	100	D	APP-9-148	
	1,000	H	M-8140-14		N-Nitrosodimethylamine 62-75-9	100	D	APP-9-149	
Mexacarbate 315-18-4	100	M	P-030S			1,000	M	APP-9-149-M-10X	
	100	CN	M-632-13		N-Nitrosodi-n-butylamine 924-16-3	100	D	APP-9-147	
MGK 264 113-48-4	100	M	P-082S			500	W	M-8015B/5031-20	
MGK 326 136-45-8	100	M	P-342S		N-Nitrosodi-n-propylamine 621-64-7	100	D	APP-9-151	
Mirex 2385-85-5	100	M	P-066S		N-Nitrosodiphenylamine 86-30-6	100	D	APP-9-150	
						1,000	M	APP-9-150-M-10X	
Molinate 2212-67-1	100	M	P-176S		N-Nitrosomethylethylamine 10595-95-6	100	D	APP-9-152	
Monitor 10265-92-6	100	M	P-155S		N-Nitrosomorpholine 59-89-2	100	D	APP-9-153	
Monobromoacetic acid 79-08-3	40	MT	M-552.2A-07		N-Nitrosopiperidine 100-75-4	100	D	APP-9-154	
Monochloroacetic acid 79-11-8	60	MT	M-552.2A-08		N-Nitrosopyrrolidine 930-55-2	100	D	APP-9-155	
Monocrotophos 6923-22-4	100	M	P-112S		2-Nitrotoluene 88-72-2	100	M:CN	M-8330-07-0.1X	
						1,000	M:CN	M-8330-07	
Monuron 150-68-5	100	CN	M-632-14		3-Nitrotoluene 99-08-1	100	M:CN	M-8330-08-0.1X	
						1,000	M:CN	M-8330-08	
Monuron TCA 140-41-0	100	M	P-034S		4-Nitrotoluene 99-99-0	100	M:CN	M-8330-09-0.1X	
	100	CN	M-632-15			1,000	M:CN	M-8330-09	
MtBE 1634-04-4	2,000	M	S-078-10X		cis-Nonachlor 5103-73-1	100	M	P-297S	
						1,000	M	P-297S-10X	

Analytes in EPA Methods



Solvent Key for Individual Solutions
M Methanol **D** Methylene chloride **H** Hexane **W** Water
A Acetone **CN** Acetonitrile **MT** *tert*-Butyl methyl ether

Analytes in EPA Methods

Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL
trans-Nonachlor 39765-80-5	100	M	P-184S		Phenol 108-95-2	100	D	APP-9-179	
Nonanal 124-19-6	1,000	M	M-554-09		Phenol-d₆ 4165-62-2	200 2,000	D	M-625-18 M-625-18-10X	
Nonanal-DNPH	100 1,000	CN M:CN	M-8315-R-DNPH-14 M-554-DNPH-09		Phenothate 2597-03-7	100	M	P-476S	
Octanal 124-13-0	1,000	M	M-554-10		p-Phenylenediamine 106-50-3	100	M	APP-9-180	
Octanal-DNPH	100 1,000	CN M:CN	M-8315-R-DNPH-15 M-554-DNPH-10		o-Phenylphenol 90-43-7	100	M	P-460S	
Omethoate 1113-02-6	100 1,000	M M	P-121S P-121S-10X		Phorate 298-02-2	100 1,000	M M	P-170S P-170S-10X	
Oryzalin 19044-88-3	100	CN	M-638		Phorate sulfone 2588-04-7	100	H	P-655S-H	
Oxadiazon 19666-30-9	100 1,000	M M	P-236S P-236S-10X		Phosalone 2310-17-0	100	M	P-163S	
Oxamyl 23135-22-0	100 100	M CN	P-161S M-531-03		Phosfolan 947-02-4	100 1,000	M M	P-234S P-234S-10X	
Oxycarboxin 5259-88-1	100	M	P-391S		Phosphamidon 13171-21-6	100 1,000	M H	P-075S M-8141A-1-09	
Oxychlorane 27304-13-8	100 100	M H	P-331S P-331S-H		Picloram 1918-02-1	100 1,000	M M	P-047S P-047S-10X	
Oxydemeton-methyl 301-12-2	100	M	P-290S		Picloram methyl ester 14143-55-6	100	M	P-198S	
Oxyfluorfen 42874-03-3	100	M	P-277S		2-Picoline 109-06-8	100 10,000	M W	APP-9-182 M-8015B/5031-23	
Paraaldehyde 123-63-7	10,000	W	M-8015B/5031-21		Picramic acid 831-52-7	100	M	M-8330-ADD-22	
Paraoxon 311-45-5	100 1,000	M M	P-453S P-453S-10X		Picric acid 88-89-1	100	CN:M	M-8330-ADD-3	
Paraquat CL tetrahydrate (as Paraquat) 1910-42-5	100	M	P-051S		Pirimicarb 23103-98-2	100	M	P-304S	
Parathion 56-38-2	100 1,000	M M	P-070S P-070S-10X		Pirimiphos-methyl 29232-93-7	100	M	P-305S	
Pendimethalin 40487-42-1	100 1,000	M M	P-097S P-097S-10X		Prebane 886-50-0	100	M	P-119S	
Pentachloroanisole 1825-21-4	100	M	P-199S		Profenofos 41198-08-7	100	M	P-260S	
Pentachlorobenzene 608-93-5	100	M	APP-9-173		Profluralin 26399-36-0	100 1,000	M M	P-099S P-099S-10X	
Pentachloroethane 76-01-7	100	M	APP-9-174		Promecarb 2631-37-0	100	M	P-265S	
Pentachloronitrobenzene 82-68-8	100 1,000	MT MT	M-508-IS M-508-IS-10X		Prometon 1610-18-0	100	M	P-077S	
Pentachlorophenol 87-86-5	100 1,000	M M	APP-9-176 APP-9-176-10X		Prometryne 7287-19-6	100	M	P-078S	
Pentafluorobenzene 363-72-4	200	M	M-624-SS-10		Pronamide 23950-58-5	100	M	P-164S	
Pentafluoroethane (Freon #125)	200	M	M-REF-X-06		Propachlor 1918-16-7	100 1,000	M M	P-215S P-215S-10X	
Pentafluorophenol 771-61-9	200	D	M-625-17		Propanal 123-38-6	1,000	M	M-554-12 ‡	
Pentanal 110-62-3	1,000	M	M-554-11		Propanal-DNPH 725-00-8	100 1,000	CN M:CN	M-8315-R-DNPH-17 M-554-DNPH-12	
Pentanal-DNPH	100 1,000	CN M:CN	M-8315-R-DNPH-16 M-554-DNPH-11		Propanil 709-98-8	100	CN	M-632-1-2	
2-Pentanone 107-87-9	10,000	W	M-8015B/5031-22		1-Propanol 71-23-8	10,000	W	M-8015B/5031-24	
Permethrin 52645-53-1	100	M	P-128S		Propargite 2312-35-8	100	M	P-251S	
Perthane 72-56-0	100	M	P-162S		Propazine 139-40-2	100	M	P-079S	
PETN 78-11-5	100	M	M-8330-ADD-2		Propham 122-42-9	100	CN	M-632-18	
Phenacetin 62-44-2	100 1,000	D D	APP-9-177 APP-9-177-10X		Propionitrile 107-12-0	100	M	APP-9-184	
Phenanthrene 85-01-8	100 200	M D	APP-9-178 Z-013-15		n-Propylbenzene 103-65-1	200 2,000	M M	M-502-41 M-502-41-10X	
Phenanthrene-d₁₀ 1517-22-2	200	D	M-625-14		Propyleneglycol dinitrate 6423-43-4	100	M	M-8330-ADD-35	

‡ A cold pack is required for this product.

Analytes in EPA Methods

Analytes in EPA Methods

Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL
Pyrazon 1698-60-8	100 1,000	M M	P-395S P-395S-10X		Terbufos 13071-79-9	100 1,000	M H	P-208S P-208S-H-10X	
Pyrazoxyfen 71561-11-0	100	M	P-618S		Terbuthylazine 5915-41-3	100	M	P-169S	
Pyrene 129-00-0	100 1,000	M M	APP-9-185 APP-9-185-10X		p-Terphenyl-d₁₄ 1718-51-0	500	D	M-525-FS-2	
Pyrene-d₁₀ 1718-52-1	50	A	M-525-SS		Terrazole 2593-15-9	100	M	P-190S	
Pyridine 110-86-1	100 10,000	D W	APP-9-186 M-8015B/5031-26		1,2,4,5-Tetrachlorobenzene 95-94-3	100 1,000	M M	APP-9-191 APP-9-191-10X	
Pyridine-d₄ 7291-22-7	200 2000	D D	M-625-15 M-625-15-10X		1,1,1,2-Tetrachloroethane 630-20-6	200 2,000	M M	M-502-43 M-502-43-10X	
PYX 38082-89-2	100	CN	M-8330-ADD-11		1,1,2,2-Tetrachloroethane 79-34-5	200 2,000	M M	M-502-44 M-502-44-10X	
Quisalofop ethyl 76578-14-8	100	M	P-293S		Tetrachloroethene 127-18-4	200 2,000	M M	M-502-45 M-502-45-10X	
RDX 121-82-4	100 1,000	M:CN M:CN	M-8330-05-0.1X M-8330-05		2,3,5,6-Tetrachloronitrobenzene 117-18-0	100	M	P-467S	
Ronnel 299-84-3	100 1,000	M H	P-080S M-8140-17		2,3,4,6-Tetrachlorophenol 58-90-2	100	M	APP-9-195	
Rotenone 83-79-4	100 100	M CN	P-056S ‡ M-635		Tetrachlorvinphos 961-11-5	100 1,000	M CN	P-125S AE-00047	
Safrole 94-59-7	100	M	APP-9-187		Tetradifon 116-29-0	100	M	P-261S	
Secbumeton 26259-45-0	100	M	P-165S		Tetrafluoroethane 811-97-2	200	M	M-REF-12	
Siduron 1982-49-6	100 100	M CN	P-063S M-632-20		1,1,2,2-Tetrafluoroethane (Freon #134)	200	M	M-REF-X-07	
Silvex 93-72-1	100 1,000	M M	P-084S P-084S-10X		Tetrahydrofuran 109-99-9	1,000	W	M-1671A-IS	
Silvex methyl ester 4841-20-7	100	M	P-115S		Tetryl 479-45-8	100 1,000	M:CN M:CN	M-8330-10-0.1X M-8330-10	
Simazine 122-34-9	100 1,000	M M	P-085S P-085S-10X		Thiabendazole 148-79-8	100 100	M CN	P-068S M-641	
Simetryn 1014-70-6	100	M	P-166S		Thiobencarb 28249-77-6	100 1,000	M M	P-180S P-180S-10X	
Stiropfos 961-11-5	1,000	H	M-8140-18		4,4'-Thiodiphenol 2664-63-3	100 1,000	M M	P-117S P-117S-10X	
Styrene 100-42-5	200 2,000	M M	M-502-42 M-502-42-10X		Thiofanox 39196-18-4	100	M	P-266S	
Sulfometuron methyl ester 74222-97-2	100	M	P-336S		Thionazin 297-97-2	100	M	P-171S	
Sulfotep 3689-24-5	100 1,000	M H	P-167S M-8141-06		Thiophanate 23564-06-9	100 100	M CN	P-321S P-321S-CN	
Sulfoxide 120-62-7	100	M	P-396S		Thiram 137-26-8	100 1,000	M M	P-118S P-118S-10X	
Sumithrin 26002-80-2	100	M	P-050S		Tillam 1114-71-2	100 1,000	M M	P-105S P-105S-10X	
Swep 1918-18-9	100 100	M CN	P-061S M-632-21		Tiit 60207-90-1	100	M	P-280S	
2,4,6-T 575-89-3	100 100	M CN	P-523S P-523S-CN		TNT 118-96-7	100 1,000	M:CN M:CN	M-8330-11-0.1X M-8330-11	
2,4,5-T acid 93-76-5	100 1,000	M M	P-168S P-168S-10X		Tokuthion 34643-46-4	100 1,000	M H	P-126S M-8140-19	
2,4,5-T butoxyethyl ester 2545-59-7	100	CN	P-441S-CN		m-Tolualdehyde-DNPH 2880-05-9	100	CN	M-8315-R-DNPH-18	
2,4,5-T methyl ester 1928-37-6	100 200	M H	P-067S M-8150-03		o-Tolualdehyde-DNPH 1773-44-0	100	CN	M-8315-R-DNPH-19	
2,4,5-T n-butyl ester 93-79-8	100	CN	P-440S-CN		p-Tolualdehyde-DNPH 2571-00-8	100	CN	M-8315-R-DNPH-20	
TAME 994-05-8	200	M	S-1019		Toluene 108-88-3	200 2,000	M M	M-502-46 M-502-46-10X	
TCMX 877-09-8	100 1,000	H H	M-8082-SS M-8082-SS-10X		o-Toluidine 95-53-4	100 10,000	M W	APP-9-199 M-8015B/5031-27	
Tebuconazol 107534-96-3	100	M	P-451S		Toxaphene 8001-35-2	1,000 2,500	M A	P-093S-10X M-525-5	
Tebuthiuron 34014-18-1	100	M	P-188S		2,4,5-TP 93-72-1	200	M	M-8150S-A-04	
Tefluthrin 79538-32-2	100	M	P-568S ‡		2,4,5-TP methyl ester 4841-20-7	200	H	M-8150-04	
TEPP 107-49-3	1,000	H	M-8141-07		2,4,5-TP-PFB	100	MT	M-8150-04-PFB	
Terbacil 5902-51-2	100	M	P-096S		Triadimefon 43121-43-3	100	M	P-069S	

Analytes in EPA Methods



Solvent Key for Individual Solutions
 M Methanol D Methylene chloride H Hexane W Water
 A Acetone CN Acetonitrile MT *tert*-Butyl methyl ether

Analytes in EPA Methods

Analytes in EPA Methods

Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL
Triallate 2303-17-5	100	M	P-268S		Triclopyr methyl ester 60825-26-5	100	M	P-291S	
1,2,4-Triazole 288-88-0	100	M	P-627S		Tricresyl phosphate 1330-78-5	100	M	P-209S	
Triazophos 24017-47-8	100	M	P-334S		Tricyclazole 41814-78-2	100	M	P-090S	
Tribromoacetic acid 75-96-7	200	MT	M-552.2A-09		Triethylphosphate 78-40-0	100	M	P-335S	
1,3,5-Tribromobenzene 626-39-1	50	A	M-8121-IS		<i>o,o,o</i> -Triethylphosphorothioate 126-68-1	100 1,000	M H	P-172S P-172S-H-10X	
2,4,6-Tribromophenol 118-79-6	200	D	M-625-19		2',4',5'-Trifluoroacetophenone 129322-83-4	20	CN	M-556-SS	
2,4,6-Tribromophenol-PFB	200	M	M-604-SS-PFB		1,1,1-Trifluoroethane (Freon #143A)	200	M	M-REF-X-08	
Tributylphosphate 126-73-8	1,000	A	M-8141A-SS-01		Trifluoromethane (Freon #23)	200	M	M-REF-15	
Trichlorfon 52-68-6	100	M	P-044S		<i>a,a,a</i> -Trifluorotoluene 98-08-8	200 2,000	M M	M-602-SS M-602-SS-10X	
1,1,2-Trichloro-1,2,2-trifluoroethane 76-13-1	200 2,000	M M	M-REF-14 M-REF-14-10X		Trifluralin 1582-09-8	100 1,000	M M	P-197S P-197S-10X	
1,1,1-Trichloro-2-propanone 918-00-3	5,000	A	M-551B-8		2,3,5-Triiodobenzoic acid 88-82-4	100 100	M CN	P-507S P-507S-CN	
Trichloroacetic acid 76-03-9	20 1,000	MT MT	M-552.2A-10 M-552A-4 ‡		2,3,5-Trimethacarb 2655-15-4	100	M	P-515S	
Trichloroacetonitrile 545-06-2	5,000	A	M-551B-7		3,4,5-Trimethacarb 2686-99-9	100	M	P-516S	
1,2,3-Trichlorobenzene 87-61-6	200 2,000	M M	M-502-47 M-502-47-10X		Trimethyl phosphate 512-56-1	100	M	P-210S	
1,2,4-Trichlorobenzene 120-82-1	200 2,000	M M	M-502-48 M-502-48-10X		1,2,4-Trimethylbenzene 95-63-6	200 2,000	M M	M-502-54 M-502-54-10X	
2,3,5-Trichlorobenzoic acid 50-73-7	100 100	M CN	P-508S P-508S-CN		1,3,5-Trimethylbenzene 108-67-8	200 2,000	M M	M-502-55 M-502-55-10X	
1,1,1-Trichloroethane 71-55-6	200 2,000	M M	M-502-49 M-502-49-10X		1,3,5-Trinitrobenzene 99-35-4	100 1,000	M:CN M:CN	M-8330-12-0.1X M-8330-12	
1,1,2-Trichloroethane 79-00-5	200 2,000	M M	M-502-50 M-502-50-10X		Triphenylphosphate 115-86-6	500 5,000	MT MT	M-507-IS M-507-IS-10X	
Trichloroethene 79-01-6	200 2,000	M M	M-502-51 M-502-51-10X		Vacor 53558-25-1	100 100	M CN	P-240S M-632-1-1	
Trichlorofluoromethane (Freon #11) 75-69-4	200 2,000	M M	M-502-52 M-502-52-10X		Vernolate 1929-77-7	100	M	P-111S	
Trichloronate 327-98-0	100	M	P-127S		Vinclozolin 50471-44-8	100 1,000	M M	P-122S P-122S-10X	
2,4,5-Trichlorophenol 95-95-4	100	M	APP-9-206		Vinyl acetate 108-05-4	100	M	APP-9-211 ‡	
2,4,6-Trichlorophenol 88-06-2	100	M	APP-9-207		Vinyl chloride 75-01-4	200 2,000	M M	M-502-56 M-502-56-10X	
3,4,5-Trichlorophenol 609-19-8	1,000 1,000	M A	M-1653-IS M-1653-IS-R		<i>o</i> -Xylene 95-47-6	200 2,000	M M	M-502-57 M-502-57-10X	
1,1,2-Trichloropropane 598-77-6	200	M	S-1321B		<i>m</i> -Xylene 108-38-3	200 2,000	M M	M-502-58 M-502-58-10X	
1,2,3-Trichloropropane 96-18-4	200 2,000	M M	M-502-53 M-502-53-10X		<i>p</i> -Xylene 106-42-3	200 2,000	M M	M-502-59 M-502-59-10X	
<i>a,a,a</i> -Trichlorotoluene 98-07-7	200	M	M-624-SS-14		Xylene (total) 1330-20-7	100	M	APP-9-213	
Triclopyr 55335-06-3	100 100	M CN	P-289S P-289S-CN		Ziram 137-30-4	100	CN	M-630-1-0.1X	



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‡ A cold pack is required for this product.



Each CLP Standard is furnished with:

- Quantitative analysis of the product by comparison to a separately prepared Standard.
- Target concentration analytically determined to be within a 95% confidence interval.
- A chromatogram of the product lot with analytes listed by order of elution and instrumental parameters shown.
- Certificate showing actual gravimetric/volumetric weights, purities and analyte CAS No.'s.

Certificate of Analysis

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PRODUCT: CLP-024R **EXPIRATION:** Nov 6, 2011

DESCRIPTION: Individual Pesticide Standard

LOT #: B8110036 The maximum uncertainty in the preparation of this standard is ±1%.

SOLVENT: Isooctane

Component	CAS #	Purity % (GC-FID)	Gravimetric Concentration ¹ mg/mL	Analyte Concentration ² mg/mL	±95% C.I.
Aldrin	309-00-2	97.6	53.2	50.0	±
β-BHC	319-85-7	100	51.2	51.2	±
δ-BHC	319-86-8	95.4	53.5	51.0	±
α-Chlordane	5103-71-0	100	51.0	51.0	±
γ-Chlordane	5103-74-2	99.8	51.2	51.1	±
p,p'-DDE	72-55-9	100	102.2	102.2	±
Decachlorobiphenyl	2051-24-3	100	102.1	102.1	±
Endosulfan II	33213-65-9	100	102.1	102.1	±
Endosulfan sulfate	1031-07-8	99.3	102.0	101.3	±
Endrin aldehyde	7421-93-4	100	102.3	102.3	±
Endrin ketone	53494-70-5	100	102.2	102.2	±
Heptachlor epoxide (isomer B)	1024-67-3	100	51.1	51.1	±
Tetrachloro- <i>o</i> -xylene	877-09-8	96.0	53.2	51.1	±

13 Components

1. All weights are traceable through National Institute of Standards & Technology, Test No. 62524600
2. Analyte Concentration - Purity x Gravimetric Concentration

* Weight compensated to 100% purity

Certified by: *R. Cooper*

NOTE: The Lot Number on the actual product may include a suffix to denote lot shown on this certificate (ex. -1A, -2R, etc.)
This is a modifier indicating the lot expiration date has been extended.

AccuStandard is accredited to ISO/IEC 17025:2005 and certified to ISO 9001:2000

Front
and
Back

T-Test

Component	Run #1	Run #2	Run #3	Mean	Std Dev	% RSD	Mean	Std Dev	% RSD	Mean	Std Dev	% RSD	Mean	Std Dev	% RSD	Mean	Std Dev	% RSD	Mean	Std Dev	% RSD
Heptachlor epoxide (isomer B)	9728	9728	9728	9728	1.886	4.0	9728	2.227	2.227	9728	1.445	1.445	9728	1.445	1.445	9728	1.445	1.445	9728	1.445	1.445
β-BHC	3080	3080	3080	3080	1.286	3.3	3080	4.274	4.274	3080	2.760	2.760	3080	2.760	2.760	3080	2.760	2.760	3080	2.760	2.760
α-Chlordane	3080	3080	3080	3080	1.286	2.8	3080	3.328	3.328	3080	3.413	3.413	3080	3.413	3.413	3080	3.413	3.413	3080	3.413	3.413
γ-Chlordane	2924	2924	2924	2924	2.286	2.6	2924	3.191	3.191	2924	3.201	3.201	2924	3.201	3.201	2924	3.201	3.201	2924	3.201	3.201
p,p'-DDE	3007	3007	3007	3007	2.406	2.6	3007	3.580	3.580	3007	3.280	3.280	3007	3.280	3.280	3007	3.280	3.280	3007	3.280	3.280
Endosulfan II	6090	6090	6090	6090	2.406	5.7	6090	6.298	6.298	6090	3.718	3.718	6090	3.718	3.718	6090	3.718	3.718	6090	3.718	3.718
Endosulfan sulfate	5128	5128	5128	5128	2.406	8.3	5128	8.974	8.974	5128	6.674	6.674	5128	6.674	6.674	5128	6.674	6.674	5128	6.674	6.674
Endrin aldehyde	5271	5271	5271	5271	2.406	5.5	5271	5.601	5.601	5271	4.818	4.818	5271	4.818	4.818	5271	4.818	4.818	5271	4.818	4.818
Endrin ketone	5271	5271	5271	5271	2.406	5.5	5271	5.601	5.601	5271	4.818	4.818	5271	4.818	4.818	5271	4.818	4.818	5271	4.818	4.818
Tetrachloro- <i>o</i> -xylene	3268	3268	3268	3268	1.886	4.8	3268	5.921	5.921	3268	6.074	6.074	3268	6.074	6.074	3268	6.074	6.074	3268	6.074	6.074

In 1980, the US Congress addressed the problem of cleaning up abandoned and inactive dump sites by enacting the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA). These acts mandated the clean-up of the worst abandoned or inactive waste sites in the nation as well as leaking underground storage tanks.

These standards are routinely used for other testing protocols. An outgrowth of this legislation was the Contract Laboratory Program (CLP) which was established to perform Superfund analyses.

CLP methods are designed for both volatile and semi-volatile compounds. The most recent EPA Target Compounds are listed in the OLM 04.1 and OLM 04.2 Statement of Work.

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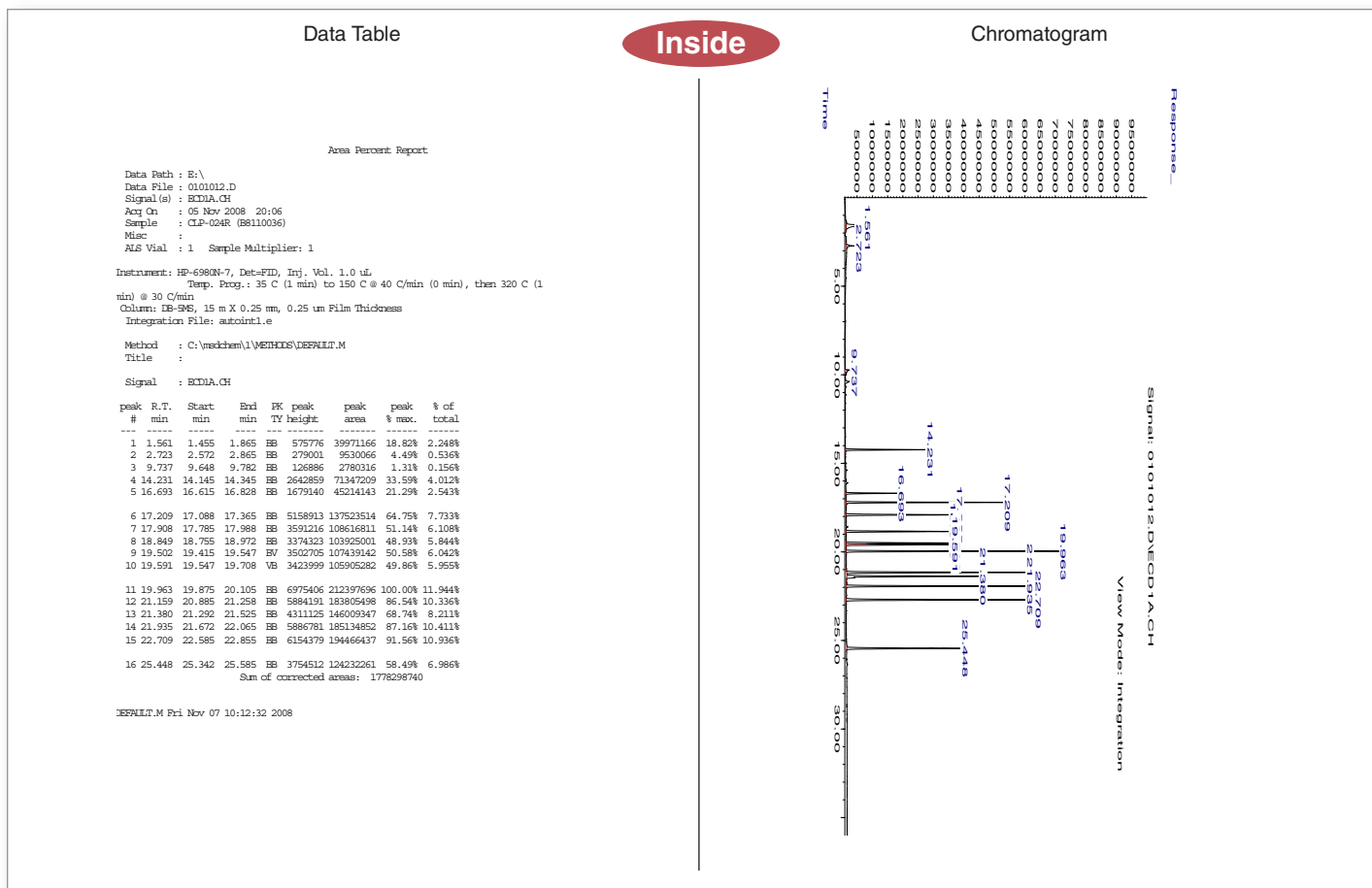
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All the Analytical Documentation required in CLP Analysis



VOC Selected Target Compound Solutions

Volatile Target Compounds List (TCL)

CLP-022-SET ‡ set of 2 x 1 mL
(includes CLP-022-PART-A and CLP-022-PART-B)

Part A

CLP-022-PART-A 1 x 1 mL
0.5 mg/mL each in MeOH 29 comps.

Benzene	1,2-Dichloropropane
Bromodichloromethane	<i>cis</i> -1,3-Dichloropropene *
Bromoform	<i>trans</i> -1,3-Dichloropropene **
Bromomethane	Ethylbenzene
Carbon tetrachloride	1,1,2,2-Tetrachloroethane
Chlorobenzene	Tetrachloroethene
Chloroethane	Toluene
Chloroform	1,1,1-Trichloroethane
Chloromethane	1,1,2-Trichloroethane
Dibromochloromethane	Trichloroethene
1,1-Dichloroethane	Vinyl chloride
Dichloromethane	<i>m</i> -Xylene
1,2-Dichloroethane	<i>p</i> -Xylene
1,1-Dichloroethylene	* <i>cis</i> (1.06 x conc.)
<i>cis</i> -1,2-Dichloroethylene	** <i>trans</i> (0.94 x conc.)
<i>trans</i> -1,2-Dichloroethylene	

Part B

CLP-022-PART-B ‡ 1 x 1 mL
0.5 mg/mL each in MeOH 8 comps.

Acetone	4-Methyl-2-pentanone
2-Butanone	Styrene
Carbendisulfide	Vinyl acetate
2-Hexanone	<i>o</i> -Xylene

Volatile Target Compounds List (TCL)

CLP-022 ‡ 1 x 1 mL
0.2 mg/mL each in MeOH 37 comps.

Acetone	1,2-Dichloropropane
Benzene	<i>cis</i> -1,3-Dichloropropene *
Bromodichloromethane	<i>trans</i> -1,3-Dichloropropene **
Bromoform	Ethylbenzene
Bromomethane	2-Hexanone
2-Butanone	4-Methyl-2-pentanone
Carbendisulfide	Styrene
Carbon tetrachloride	1,1,2,2-Tetrachloroethane
Chlorobenzene	Tetrachloroethene
Chloroethane	Toluene
Chloroform	1,1,1-Trichloroethane
Chloromethane	1,1,2-Trichloroethane
Dibromochloromethane	Trichloroethene
1,1-Dichloroethane	Vinyl acetate
Dichloromethane	Vinyl chloride
1,2-Dichloroethane	<i>m</i> -Xylene
1,1-Dichloroethylene	<i>o</i> -Xylene
<i>cis</i> -1,2-Dichloroethylene	<i>p</i> -Xylene
<i>trans</i> -1,2-Dichloroethylene	* <i>cis</i> (1.06 x conc.)
	** <i>trans</i> (0.94 x conc.)

Volatile Target Compounds List (TCL)

Gases

CLP-022G	0.2 mg/mL each in MeOH		1 x 1 mL
CLP-022G-PAK	0.2 mg/mL each in MeOH	SAVE	5 x 1 mL
CLP-022G-10X	2.0 mg/mL each in MeOH		1 x 1 mL
CLP-022G-10X-PAK	2.0 mg/mL each in MeOH	SAVE	5 x 1 mL
			4 comps.

Bromomethane	Chloromethane
Chloroethane	Vinyl chloride

Ketones

CLP-022K ‡	0.2 mg/mL each in MeOH	1 x 1 mL
CLP-022K-10X ‡	2.0 mg/mL each in MeOH	1 x 1 mL
CLP-022K-25X ‡	5.0 mg/mL each in MeOH	1 x 1 mL
		4 comps.

Acetone	2-Hexanone
2-Butanone	4-Methyl-2-pentanone

Volatile Target Compounds List (TCL)

CLP-022 ‡ 1 x 1 mL
0.2 mg/mL each in MeOH 37 comps.

Acetone	1,2-Dichloropropane
Benzene	<i>cis</i> -1,3-Dichloropropene *
Bromodichloromethane	<i>trans</i> -1,3-Dichloropropene **
Bromoform	Ethylbenzene
Bromomethane	2-Hexanone
2-Butanone	4-Methyl-2-pentanone
Carbendisulfide	Styrene
Carbon tetrachloride	1,1,2,2-Tetrachloroethane
Chlorobenzene	Tetrachloroethene
Chloroethane	Toluene
Chloroform	1,1,1-Trichloroethane
Chloromethane	1,1,2-Trichloroethane
Dibromochloromethane	Trichloroethene
1,1-Dichloroethane	Vinyl acetate
Dichloromethane	Vinyl chloride
1,2-Dichloroethane	<i>m</i> -Xylene
1,1-Dichloroethylene	<i>o</i> -Xylene
<i>cis</i> -1,2-Dichloroethylene	<i>p</i> -Xylene
<i>trans</i> -1,2-Dichloroethylene	* <i>cis</i> (1.06 x conc.)
	** <i>trans</i> (0.94 x conc.)

CLP-022-R2 ‡ 1 x 1 mL
0.2 mg/mL each in MeOH 36 comps.

Acetone	<i>trans</i> -1,2-Dichloroethylene
Benzene	1,2-Dichloropropane
Bromodichloromethane	<i>cis</i> -1,3-Dichloropropene *
Bromoform	<i>trans</i> -1,3-Dichloropropene **
Bromomethane	Ethylbenzene
2-Butanone	2-Hexanone
Carbendisulfide	4-Methyl-2-pentanone
Carbon tetrachloride	Styrene
Chlorobenzene	1,1,2,2-Tetrachloroethane
Chloroethane	Tetrachloroethene
Chloroform	Toluene
Chloromethane	1,1,1-Trichloroethane
Dibromochloromethane	1,1,2-Trichloroethane
1,1-Dichloroethane	Trichloroethene
Dichloromethane	Vinyl chloride
1,2-Dichloroethane	<i>m</i> -Xylene
1,1-Dichloroethylene	<i>o</i> -Xylene
<i>cis</i> -1,2-Dichloroethylene	<i>p</i> -Xylene
	* <i>cis</i> (1.06 x conc.)
	** <i>trans</i> (0.94 x conc.)

Technical Note

AccuStandard provides CLP Volatile Target Compound List in a single solution in two versions. CLP-022-R2 (Vinyl acetate was removed from the TCL PLM03.1), for CLP laboratories following SOW OLM01.8 (August 1994). CLP-022-SET will continue to be available as an alternate source of reference material.

‡ To delay premature breakdown of thermally labile products in transit we suggest shipping with a "Cold Pack"

Volatiles

Volatile Calibration Check Compounds (CCC)

CLP-020	0.2 mg/mL each in MeOH		1 x 1 mL
CLP-020-PAK	0.2 mg/mL each in MeOH	SAVE	5 x 1 mL
CLP-020-10X	2.0 mg/mL each in MeOH		1 x 1 mL
CLP-020-10X-PAK	2.0 mg/mL each in MeOH	SAVE	5 x 1 mL
			6 comps.

Chloroform	Ethylbenzene
1,1-Dichloroethene	Toluene
1,2-Dichloropropane	Vinyl chloride

Volatile System Performance Check Compounds (SPCC)

CLP-021	0.2 mg/mL each in MeOH		1 x 1 mL
CLP-021-PAK	0.2 mg/mL each in MeOH	SAVE	5 x 1 mL
CLP-021-10X	2.0 mg/mL each in MeOH		1 x 1 mL
CLP-021-10X-PAK	2.0 mg/mL each in MeOH	SAVE	5 x 1 mL
			5 comps.

Bromoform	1,1-Dichloroethane
Chlorobenzene	1,1,2,2-Tetrachloroethane
Chloromethane	

Hexadecane Extraction Volatiles

CLP-BTEX	0.2 mg/mL each in MeOH		1 x 1 mL
CLP-BTEX-PAK	0.2 mg/mL each in MeOH	SAVE	5 x 1 mL
CLP-BTEX-10X	2.0 mg/mL each in MeOH		1 x 1 mL
CLP-BTEX-10X-PAK	2.0 mg/mL each in MeOH	SAVE	5 x 1 mL
			6 comps.

Benzene	<i>m</i> -Xylene
Ethylbenzene	<i>o</i> -Xylene
Toluene	<i>p</i> -Xylene

CLP-001B		1 x 1 mL
1.0 mg/mL each in MeOH		2 comps.

<i>n</i> -Decane	<i>n</i> -Nonane
------------------	------------------

Instrument Performance Check Solution

CLP-004	25 µg/mL in MeOH		1 x 1 mL
CLP-004-PAK	25 µg/mL in MeOH	SAVE	5 x 1 mL
CLP-004-10X	250 µg/mL in MeOH		1 x 1 mL
CLP-004-10X-PAK	250 µg/mL in MeOH	SAVE	5 x 1 mL
CLP-004-80X	1200 µg/mL in MeOH		1 x 1 mL
CLP-004-80X-PAK	1200 µg/mL in MeOH	SAVE	5 x 1 mL
CLP-004-100X	2500 µg/mL in MeOH		1 x 1 mL
CLP-004-100X-PAK	2500 µg/mL in MeOH	SAVE	5 x 1 mL

p-Bromofluorobenzene

Purgeable Surrogate Standard

CLP-PS	0.25 mg/mL each in MeOH		1 x 1 mL
CLP-PS-PAK	0.25 mg/mL each in MeOH	SAVE	5 x 1 mL
CLP-PS-4X	1.0 mg/mL each in MeOH		1 x 1 mL
CLP-PS-4X-PAK	1.0 mg/mL each in MeOH	SAVE	5 x 1 mL
CLP-PS-10X	2.5 mg/mL each in MeOH		1 x 1 mL
CLP-PS-10X-PAK	2.5 mg/mL each in MeOH	SAVE	5 x 1 mL
			3 comps.

<i>p</i> -Bromofluorobenzene	Toluene- <i>d</i> ₈
1,2-Dichloroethane- <i>d</i> ₂	

Purgeable Internal Standard

CLP-PI-0.25X	0.25 mg/mL each in MeOH		1 x 1 mL
CLP-PI-0.25X-PAK	0.25 mg/mL each in MeOH	SAVE	5 x 1 mL
CLP-PI	1.0 mg/mL each in MeOH		1 x 1 mL
CLP-PI-PAK	1.0 mg/mL each in MeOH	SAVE	5 x 1 mL
CLP-PI-2.5X	2.5 mg/mL each in MeOH		1 x 1 mL
CLP-PI-2.5X-PAK	2.5 mg/mL each in MeOH	SAVE	5 x 1 mL
			3 comps.

Bromochloromethane	1,4-Difluorobenzene
Chlorobenzene- <i>d</i> ₃	

Purgeable Internal/Surrogate Standard

CLP-PIPS		1 x 1 mL
CLP-PIPS-PAK	SAVE	5 x 1 mL
2.5 mg/mL each in MeOH		6 comps.

Bromochloromethane	1,2-Dichloroethane- <i>d</i> ₂
<i>p</i> -Bromofluorobenzene	1,4-Difluorobenzene
Chlorobenzene- <i>d</i> ₃	Toluene- <i>d</i> ₈

Purgeable Organic Matrix Spiking Solution

CLP-003-R	0.25 mg/mL each in MeOH		1 x 1 mL
CLP-003-R-PAK	0.25 mg/mL each in MeOH	SAVE	5 x 1 mL
CLP-003-R-10X	2.5 mg/mL each in MeOH		1 x 1 mL
CLP-003-R-10X-PAK	2.5 mg/mL each in MeOH	SAVE	5 x 1 mL
			5 comps.

Benzene	Toluene
Chlorobenzene	Trichloroethene
1,1-Dichloroethene	

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Standards containing aldehydes and ketones in methanol are given shorter expiration periods because of their ability to form acetals and ketals. AccuStandard adds stabilizers to inhibit this reaction. To enhance stability, freezer storage is required.

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CLP OLM 04.1 & 04.2 - Volatiles

The set of volatile standards along with a complete semi-volatile series meets OLM 04.1, and also can be used for OLM 04.2.

CLP OLM 04.1 & 04.2 - Volatile Target Compound List

CLP-022-R3 1 x 1 mL
 CLP-022-R3-PAK 5 x 1 mL
 200 µg/mL in MeOH 40 comps.

SAVE

Benzene	1,2-Dichloropropane
Bromodichloromethane	cis-1,3-Dichloropropene
Bromoform	trans-1,3-Dichloropropene
Carbon disulfide	Ethylbenzene
Carbon tetrachloride	Isopropylbenzene
Chlorobenzene	Methyl acetate
Chloroform	Methylcyclohexane
1,2-Dibromo-3-chloropropane	MtBE
Cyclohexane	Styrene
Dibromochloromethane	1,1,2,2-Tetrachloroethane
1,2-Dibromoethane	Tetrachloroethene
1,2-Dichlorobenzene	Toluene
1,3-Dichlorobenzene	1,2,4-Trichlorobenzene
1,4-Dichlorobenzene	1,1,1-Trichloroethane
1,1-Dichloroethane	1,1,2-Trichloroethane
1,2-Dichloroethane	Trichloroethene
1,1-Dichloroethene	1,1,2-Trichloro-1,2,2-trifluoroethane
cis-1,2-Dichloroethene	m-Xylene
trans-1,2-dichloroethene	p-Xylene
Dichloromethane	o-Xylene

Gases

M-601B 1 x 1 mL
 M-601B-PAK 5 x 1 mL
 0.2 mg/mL each in MeOH 6 comps.

SAVE

Bromomethane	Dichlorodifluoromethane
Chloromethane	Trichlorofluoromethane
Chloroethane	Vinyl chloride

Ketones

CLP-022K 1 x 1 mL

0.2 mg/mL each in MeOH

CLP-022K-10X 1 x 1 mL
 2.0 mg/mL each in MeOH 4 comps.

Acetone	2-Hexanone
2-Butanone	4-Methyl-2-pentanone

CLP 04.1 & 04.2 Screening Mix

CLP-BTEX 1 x 1 mL

CLP-BTEX-PAK 5 x 1 mL

0.2 mg/mL each in MeOH 6 comps.

CLP-BTEX-10X 1 x 1 mL

CLP-BTEX-10X-PAK 5 x 1 mL
 2.0 mg/mL each in MeOH 6 comps.

SAVE

SAVE

Benzene	m-Xylene
Ethylbenzene	o-Xylene
Toluene	p-Xylene

CLP OLM 04.1 & 04.2 - Volatiles Set

CLP-VOC-SET 9 x 1 mL

Set includes: CLP-022-R3, M-601B, CLP-022K-10X, CLP-BTEX, CLP-PS-10X, CLP-PI-2.5X, CLP-PIPS, CLP-003R-10X, CLP-004-10X

Purgeable Surrogate Standard

CLP-PS-10X 1 x 1 mL

CLP-PS-10X-PAK 5 x 1 mL

2.5 mg/mL each in MeOH 3 comps.

SAVE

p-Bromofluorobenzene	Toluene-d ₈
1,2-Dichloroethane-d ₄	

Purgeable Internal Standard

CLP-PI-2.5X 1 x 1 mL

CLP-PI-2.5X-PAK 5 x 1 mL

2.5 mg/mL each in MeOH 3 comps.

SAVE

Bromochloromethane	1,4-Difluorobenzene
Chlorobenzene-d ₅	

Purgeable Internal/Surrogate Standard

CLP-PIPS 1 x 1 mL

CLP-PIPS-PAK 5 x 1 mL

2.5 mg/mL each in MeOH 6 comps.

SAVE

Bromochloromethane	1,2-Dichloroethane-d ₄
p-Bromofluorobenzene	1,4-Difluorobenzene
Chlorobenzene-d ₅	Toluene-d ₈

Purgeable Organic Matrix Spiking Solution

CLP-003-R-10X 1 x 1 mL

CLP-003-R-10X-PAK 5 x 1 mL

2.5 mg/mL each in MeOH 5 comps.

SAVE

Benzene	Toluene
Chlorobenzene	Trichloroethene
1,1-Dichloroethene	

Instrument Performance Check Solution

CLP-004-10X 1 x 1 mL

CLP-004-10X-PAK 5 x 1 mL

250 µg/mL in MeOH

CLP-004-100X 1 x 1 mL

CLP-004-100X-PAK 5 x 1 mL

2500 µg/mL in MeOH

SAVE

SAVE

p-Bromofluorobenzene

Low Concentration SOW (10/92) Organic Analysis of Water

Volatile Target Compounds Mix

CLP-022-LC		1 x 1 mL
0.2 mg/mL each in MeOH (except indicated)		
Acetone (1.0 mg/mL)	1,2-Dichloroethane	
Benzene	1,1-Dichloroethylene	
Bromochloromethane	<i>cis</i> -1,2-Dichloroethylene	
Bromodichloromethane	<i>trans</i> -1,2-Dichloroethylene	
Bromoform	1,2-Dichloropropane	
Bromomethane	<i>cis</i> -1,3-Dichloropropene *	
2-Butanone (1.0 mg/mL)	<i>trans</i> -1,3-Dichloropropene **	
Carbon disulfide	Ethylbenzene	
Carbon tetrachloride	2-Hexanone (1.0 mg/mL)	
Chlorobenzene	4-Methyl-2-pentanone (1.0 mg/mL)	
Chloroethane	Styrene	
Chloroform	1,1,2,2-Tetrachloroethane	
Chloromethane	Tetrachloroethene	
Dibromochloromethane	Toluene	
1,2-Dibromo-3-chloropropane	1,1,1-Trichloroethane	
1,2-Dibromoethane	1,1,2-Trichloroethane	
1,2-Dichlorobenzene	Trichloroethene	
1,3-Dichlorobenzene	Vinyl chloride	
1,4-Dichlorobenzene	<i>o</i> -Xylene	
1,1-Dichloroethane	<i>m</i> -Xylene	* <i>cis</i> (1.06 x conc.)
Dichloromethane	<i>p</i> -Xylene	** <i>trans</i> (0.94 x conc.)

Internal Standard Mix

CLP-LC-IS	25 µg/mL each in MeOH	1 x 1 mL
CLP-LC-IS-PAK	25 µg/mL each in MeOH SAVE	5 x 1 mL
CLP-LC-IS-10X	0.25 mg/mL each in MeOH	1 x 1 mL
CLP-LC-IS-10X-PAK	0.25 mg/mL each in MeOH SAVE	5 x 1 mL
CLP-LC-IS-100X	2.5 mg/mL each in MeOH	1 x 1 mL
CLP-LC-IS-100X-PAK	2.5 mg/mL each in MeOH SAVE	5 x 1 mL
		3 comps.

Chlorobenzene-d₅ 1,4-Difluorobenzene
 1,4-Dichlorobenzene-d₄

Tuning Solution / Surrogate Standard Mix

CLP-004	25 µg/mL in MeOH		1 x 1 mL
CLP-004-PAK	25 µg/mL in MeOH	SAVE	5 x 1 mL
CLP-004-10X	0.25 mg/mL in MeOH		1 x 1 mL
CLP-004-10X-PAK	0.25 mg/mL in MeOH	SAVE	5 x 1 mL
CLP-004-100X	2.5 mg/mL in MeOH		1 x 1 mL
CLP-004-100X-PAK	2.5 mg/mL in MeOH	SAVE	5 x 1 mL

p-Bromofluorobenzene

Laboratory Control Sample Spiking Solution

CLP-LCS-V		1 x 1 mL
CLP-LCS-V-PAK	SAVE	5 x 1 mL
0.2 mg/mL each in MeOH		12 comps.

Benzene	1,2-Dichloropropane
Bromoform	<i>cis</i> -1,3-Dichloropropene *
Carbon tetrachloride	Tetrachloroethene
1,2-Dibromoethane	1,1,2-Trichloroethane
1,4-Dichlorobenzene	Trichloroethene
1,2-Dichloroethane	Vinyl chloride

* may contain trace amounts of *trans* isomer

Storage Conditions

All products come with storage conditions listed on the label of the ampule or bottle. Some chemical formulations require refrigeration or freezer storage to inhibit adverse reactions among the components. Other standards require sonication prior to use because they are near their saturation for the particular formulation. It is imperative that these conditions are followed to insure the chemical reference standard will be at the stated concentration.



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Priority Pollutants - Standards for Calibration of Capillary GC/MS

The EPA procedures call for fused silica capillary column analysis of priority pollutants. AccuStandard has assembled the following mixtures to be used in calibrating this analytical system. These mixtures are highly concentrated to aid in the establishment of response factors.

Base/Neutrals - Mix #1

Z-014A 1 x 1 mL
 Z-014A-PAK **SAVE** 5 x 1 mL
 2.0 mg/mL each in CH₂Cl₂ 14 comps.

4-Bromophenylphenyl ether
 Butyl benzyl phthalate
 bis(2-Chloroethoxy)methane
 bis(2-Chloroethyl)ether
 bis(2-Chloro-1-methylethyl)ether
 4-Chlorophenylphenyl ether
 Diethyl phthalate
 Dimethyl phthalate
 Di-*n*-butyl phthalate
 Di-*n*-octyl phthalate
 bis(2-Ethylhexyl)phthalate
 N-Nitrosodimethylamine
 N-Nitrosodi-*n*-propylamine
 N-Nitrosodiphenylamine

Base/Neutrals - Mix #2

Z-014B 1 x 1 mL
 Z-014B-PAK **SAVE** 5 x 1 mL
 2.0 mg/mL each in CH₂Cl₂ 14 comps.

Azobenzene
 2-Chloronaphthalene
 1,2-Dichlorobenzene
 1,3-Dichlorobenzene
 1,4-Dichlorobenzene
 2,4-Dinitrotoluene
 2,6-Dinitrotoluene
 Hexachlorobenzene
 Hexachlorobutadiene
 Hexachlorocyclopentadiene
 Hexachloroethane
 Isophorone
 Nitrobenzene
 1,2,4-Trichlorobenzene

Benzidine Mix

Z-014F 1 x 1 mL
 Z-014F-PAK **SAVE** 5 x 1 mL
 2.0 mg/mL each in MeOH 2 comps.

Benzidine
 3,3'-Dichlorobenzidine

Phenols Mix

Z-014H 1 x 1 mL
 Z-014H-PAK **SAVE** 5 x 1 mL
 2.0 mg/mL each in CH₂Cl₂ 11 comps.

4-Chloro-3-methylphenol
 2-Chlorophenol
 2,4-Dichlorophenol
 2,4-Dimethylphenol
 2,4-Dinitrophenol
 2-Methyl-4,6-dinitrophenol
 2-Nitrophenol
 4-Nitrophenol
 Pentachlorophenol
 Phenol
 2,4,6-Trichlorophenol

Toxic Substances - Mix #1

Z-014D 1 x 1 mL
 Z-014D-PAK **SAVE** 5 x 1 mL
 2.0 mg/mL each in CH₂Cl₂ 4 comps.

Benzoic acid
 2-Methylphenol
 4-Methylphenol
 2,4,5-Trichlorophenol

Toxic Substances - Mix #2

Z-014E 1 x 1 mL
 Z-014E-PAK **SAVE** 5 x 1 mL
 2.0 mg/mL each in CH₂Cl₂ 8 comps.

Aniline
 Benzyl alcohol
 4-Chloroaniline
 Dibenzofuran
 2-Methylnaphthalene
 2-Nitroaniline
 3-Nitroaniline
 4-Nitroaniline

Internal Standards Mixture

Z-014J 1 x 1 mL
 Z-014J-PAK **SAVE** 5 x 1 mL
 4.0 mg/mL each in CH₂Cl₂ 6 comps.

Acenaphthene-d₁₀
 Chrysene-d₁₂
 1,4-Dichlorobenzene-d₄
 Naphthalene-d₈
 Perylene-d₁₂
 Phenanthrene-d₁₀

PAH Mix

Z-014G 1 x 1 mL
 Z-014G-PAK **SAVE** 5 x 1 mL
 2.0 mg/mL each in CH₂Cl₂: Benzene (1:1) 16 comps.

Acenaphthene
 Acenaphthylene
 Anthracene
 Benz[a]anthracene
 Benzo[a]pyrene
 Benzo[b]fluoranthene
 Benzo[g,h,i]perylene
 Benzo[k]fluoranthene
 Chrysene
 Dibenz[a,h]anthracene
 Fluoranthene
 Fluorene
 Indeno[1,2,3-cd]pyrene
 Naphthalene
 Phenanthrene
 Pyrene

PAH Mix

Z-014G-R 1 x 1 mL
 Z-014G-R-PAK **SAVE** 5 x 1 mL
 2.0 mg/mL each in CH₂Cl₂: Benzene (1:1) 17 comps.

Acenaphthene
 Acenaphthylene
 Anthracene
 Benz[a]anthracene
 Benzo[a]pyrene
 Benzo[b]fluoranthene
 Benzo[g,h,i]perylene
 Benzo[k]fluoranthene
 Carbazole
 Chrysene
 Dibenz[a,h]anthracene
 Fluoranthene
 Fluorene
 Indeno[1,2,3-cd]pyrene
 Naphthalene
 Phenanthrene
 Pyrene

Expanded PAH Mix

Z-014G-FL 1 x 1 mL
 2.0 mg/mL each in Dichloromethane: Benzene(1:1) 18 comps.

Acenaphthene
 Acenaphthylene
 Anthracene
 Benz[a]anthracene
 Benzo[a]pyrene
 Benzo[b]fluoranthene
 Benzo[g,h,i]perylene
 Benzo[k]fluoranthene
 Chrysene
 Dibenz[a,h]anthracene
 Fluoranthene
 Fluorene
 Indeno[1,2,3-cd]pyrene
 Naphthalene
 Phenanthrene
 Pyrene
 1-Methylnaphthalene
 2-Methylnaphthalene

Priority Pollutants - Standards for Calibration of Capillary GC/MS - Complete Sets (Continued)

Z-014R-SET	9 x 1 mL	Z-014R-1-SET	9 x 1 mL	Z-014R-2-SET	7 x 1 mL
Set includes:		Set includes:		Set includes:	
Z-014A Base/Neutrals - Mix #1		Z-014A Base/Neutrals - Mix #1		Z-014A Base/Neutrals - Mix #1	
Z-014B Base/Neutrals - Mix #2		Z-014B Base/Neutrals - Mix #2		Z-014B Base/Neutrals - Mix #2	
Z-014C Pesticides - Mix #1		Z-014C-R Pesticides - Mix #2		Z-014D Toxic Substances - Mix #1	
Z-014D Toxic Substances - Mix #1		Z-014D Toxic Substances - Mix #1		Z-014E Toxic Substances - Mix #2	
Z-014E Toxic Substances - Mix #2		Z-014E Toxic Substances - Mix #2		Z-014F Benzidine Mix	
Z-014F Benzidine Mix		Z-014F Benzidine Mix		Z-014G PAH Mix	
Z-014G-R PAH Mix		Z-014G-R PAH Mix		Z-014H Phenols Mix	
Z-014H Phenols Mix		Z-014H Phenols Mix			
Z-014J Internal Standard Mix		Z-014J Internal Standard Mix			

Z-014R-3-SET	7 x 1 mL
Set includes:	
Z-014A Base/Neutrals - Mix #1	
Z-014B Base/Neutrals - Mix #2	
Z-014D Toxic Substances - Mix #1	
Z-014E Toxic Substances - Mix #2	
Z-014F Benzidine Mix	
Z-014G-R PAH Mix	
Z-014H Phenols Mix	

Order a complete Set and Save

Pesticides - Mix #1

Z-014C	1 x 1 mL
Z-014C-PAK SAVE	5 x 1 mL
2.0 mg/mL each in Toluene : Hexane (1:1)	
	16 comps.

Aldrin	Dieldrin
α-BHC	Endosulfan I
β-BHC	Endosulfan II
γ-BHC	Endosulfan sulfate
δ-BHC	Endrin
4,4'-DDD	Endrin aldehyde
4,4'-DDE	Heptachlor
4,4'-DDT	Heptachlor epoxide

Pesticides - Mix #2

Z-014C-R	1 x 1 mL
Z-014C-R-PAK SAVE	5 x 1 mL
2.0 mg/mL each in Toluene : Hexane (1:1)	
	20 comps.

Aldrin	Dieldrin
α-BHC	Endosulfan I
β-BHC	Endosulfan II
γ-BHC	Endosulfan sulfate
δ-BHC	Endrin
α-Chlordane	Endrin aldehyde
γ-Chlordane	Endrin ketone
4,4'-DDD	Heptachlor
4,4'-DDE	Heptachlor epoxide
4,4'-DDT	Methoxychlor

Pesticides - Mix #3

Z-014C-R2	1 x 1 mL
Z-014C-R2-PAK SAVE	5 x 1 mL
2.0 mg/mL each in Toluene : Hexane (1:1)	
	18 comps.

Aldrin	Endosulfan I
α-BHC	Endosulfan II
β-BHC	Endosulfan sulfate
γ-BHC	Endrin
δ-BHC	Endrin aldehyde
4,4'-DDD	Endrin ketone
4,4'-DDE	Heptachlor
4,4'-DDT	Heptachlor epoxide
Dieldrin	Methoxychlor

Tuning Standards for EPA Methods

M-625-TS	1 x 1 mL
M-625-TS-PAK SAVE	5 x 1 mL
50 µg/mL each in CH ₂ Cl ₂	
	4 comps.

Benzidine	DFTPP
p,p'-DDT	Pentachlorophenol

CLP-TS	1 x 1 mL
CLP-TS-PAK SAVE	5 x 1 mL
50 µg/mL in CH ₂ Cl ₂	

Perfluorokerosene

EPA Method 625 GC/MS Calibration Standards

M-625C-SET set of 5 x 1 mL

Individual Solutions M-625C-# each
At stated conc. in CH₂Cl₂

- (1) Benzidine (50 µg/mL)
- (2) Pentachlorophenol (25 µg/mL)
- (3) Decafluorotriphenylphosphine (25 µg/mL)
- (4) Benzidine (50 µg/mL) + DFTPP (25 µg/mL)
- (5) Pentachlorophenol (25 µg/mL) + DFTPP (25 µg/mL)

CLP Target List

The following composite mixes were formulated to allow flexibility of preparing a final semi-volatile mix to meet your laboratory's specific needs. CLP-HC-BN-SET contains 46 of the Base-Neutral analytes on the CLP semi-volatile Target List. These Base-Neutral analytes are now available in a two ampule set to extend the useful life of your stock calibration standards. CLP-HC-A contains the acidic compounds found in the CLP Target List. An additional composite mix can then be selected to complement your exact requirements for semi-volatile analysis.

Base-Neutral

CLP-HC-BN-R

2.0 mg/mL each in Benzene : CH₂Cl₂ : AcCN (2:2:1)

44 comps.

Acenaphthene	Diethyl phthalate
Acenaphthylene	Dimethyl phthalate
Anthracene	2,4-Dinitrotoluene
Azobenzene	2,6-Dinitrotoluene
Benz[a]anthracene	Di- <i>n</i> -octyl phthalate
Benzo[b]fluoranthene	bis(2-Ethylhexyl)phthalate
Benzo[k]fluoranthene	Fluoranthene
Benzo[g,h,i]perylene	Fluorene
Benzo[a]pyrene	Hexachlorobenzene
4-Bromophenyl phenyl ether	Hexachlorobutadiene
Butyl benzyl phthalate	Hexachlorocyclopentadiene
bis(2-Chloroethoxy)methane	Hexachloroethane
bis(2-Chloroethyl)ether	Indeno[1,2,3-cd]pyrene
bis(2-Chloro-1-methylethyl)ether	Isophorone
2-Chloronaphthalene	Naphthalene
4-Chlorophenyl phenyl ether	Nitrobenzene
Chrysene	N-Nitrosodimethylamine
Dibenz[a,h]anthracene	N-Nitrosodiphenylamine
Di- <i>n</i> -butyl phthalate	N-Nitrosodi- <i>n</i> -propylamine
1,2-Dichlorobenzene	Phenanthrene
1,3-Dichlorobenzene	Pyrene
1,4-Dichlorobenzene	1,2,4-Trichlorobenzene

Benzidine

Z-014F

2.0 mg/mL each in MeOH

2 comps.

Benzidine	3,3'-Dichlorobenzidine
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CLP-HC-BN-R

CLP-HC-BN-R-PAK

Z-014F

SAVE

1 x 1 mL

5 x 1 mL

1 x 1 mL

CLP Target List Set

CLP-HC-BN-SET

2 x 1 mL

(CLP-HC-BN-R, Z-014F)

CLP-HC-BN-SET-PAK

SAVE

5 x (2 x 1 mL)

Acid Composite Mix

CLP-HC-A-R

CLP-HC-A-R-PAK

2.0 mg/mL each in CH₂Cl₂

SAVE

1 x 1 mL

5 x 1 mL

19 comps.

Benzoic acid	Ethyl methanesulfonate
4-Chloro-3-methylphenol	Methyl methanesulfonate
2-Chlorophenol	2-Nitrophenol
<i>o</i> -Cresol	4-Nitrophenol
<i>p</i> -Cresol	Pentachlorophenol
2,4-Dichlorophenol	Phenol
2,6-Dichlorophenol	2,3,4,6-Tetrachlorophenol
2,4-Dimethylphenol	2,4,5-Trichlorophenol
4,6-Dinitro-2-methylphenol	2,4,6-Trichlorophenol
2,4-Dinitrophenol	

Technical Note

Azobenzene was substituted for 1,2-Diphenylhydrazine since the 1,2-Diphenylhydrazine oxidizes to azobenzene under GC operating conditions.

Additional Composite Mixtures

Composite #1

Z-014E

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

8 comps.

Aniline	2-Methylnaphthalene
Benzyl alcohol	2-Nitroaniline
4-Chloroaniline	3-Nitroaniline
Dibenzofuran	4-Nitroaniline

Composite #2

Z-014E-R

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

9 comps.

Aniline	2-Nitroaniline
Benzyl alcohol	3-Nitroaniline
4-Chloroaniline	4-Nitroaniline
Dibenzofuran	Pyridine
2-Methylnaphthalene	

Composite #3

Z-014E-R3

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

10 comps.

Aniline	2-Methylnaphthalene
Benzyl alcohol	2-Nitroaniline
Carbazole	3-Nitroaniline
4-Chloroaniline	4-Nitroaniline
Dibenzofuran	Pyridine

GC/MS Analysis of Semi-Volatiles

Method Analytes Mixture

CLP-TCLSV	1 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂	3 comps.
Benzoic acid	N-Nitrosodimethylamine
Benzyl alcohol	

Calibration Check Compounds (CCC)

CLP-011-SET	2 x 1 mL
	(CLP-011A, CLP-011B)

Base/Neutrals

CLP-011A	1 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂	7 comps.
Acenaphthene	Hexachlorobutadiene
Benzo[a]pyrene	Fluoranthene
1,4-Dichlorobenzene	N-Nitroso-diphenylamine
Di- <i>n</i> -octylphthalate	

Acids

CLP-011B	1 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂	6 comps.
4-Chloro-3-methylphenol	Pentachlorophenol
2,4-Dichlorophenol	Phenol
2-Nitrophenol	2,4,6-Trichlorophenol

Base/Neutrals & Acids Matrix Standard Spiking Sets

CLP-007-R-SET	2 x 1 mL (CLP-007A, CLP-007-2)
CLP-007-R-SET-PAK	5 x (2 x 1 mL) (CLP-007A, CLP-007-2)
CLP-007-SET	2 x 1 mL (CLP-007A, CLP-007B)

Base/Neutrals

CLP-007A	1 x 1 mL
1.0 mg/mL each in MeOH	6 comps.
Acenaphthene	N-Nitroso- <i>n</i> -propylamine
1,4-Dichlorobenzene	Pyrene
2,4-Dinitrotoluene	1,2,4-Trichlorobenzene

Acids

CLP-007-2	1 x 1 mL
1.5 mg/mL each in MeOH	5 comps.
CLP-007B	1 x 1 mL
2.0 mg/mL each in MeOH	5 comps.
2-Chlorophenol	Pentachlorophenol
4-Chloro-3-methylphenol	Phenol
4-Nitrophenol	

Surrogate Standard

CLP-BNS-3-2X	1 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂	
4-Terphenyl-d ₁₄	

Internal Standards Mixture

Z-014J	1 x 1 mL
Z-014J-PAK	5 x 1 mL
4.0 mg/mL each in CH ₂ Cl ₂	6 comps.
Acenaphthene-d ₁₀	Naphthalene-d ₈
Chrysene-d ₁₂	Perylene-d ₁₂
1,4-Dichlorobenzene-d ₄	Phenanthrene-d ₁₀

SAVE

System Performance Check Compounds (SPCC)

CLP-010	1 x 1 mL
0.2 mg/mL each in CH ₂ Cl ₂	
CLP-010-10X	1 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂	4 comps.
2,4-Dinitrophenol	4-Nitrophenol
Hexachlorocyclopentadiene	N-nitroso- <i>n</i> -propylamine

Semi-Volatile Organic Extract Calibration (Screening Mix)

CLP-009	1 x 1 mL
0.1 mg/mL each in CH ₂ Cl ₂	
CLP-009-10X	1 x 1 mL
1.0 mg/mL each in CH ₂ Cl ₂	3 comps.
Di- <i>n</i> -octylphthalate	Phenol
Phenanthrene	

Initial Calibration Target Compounds List

CLP-012	1 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂	9 comps.
Benzoic acid	4-Nitroaniline
2,4-Dinitrophenol	4-Nitrophenol
4,6-Dinitro-2-methylphenol	Pentachlorophenol
2-Nitroaniline	2,4,5-Trichlorophenol
3-Nitroaniline	

Acid Surrogate Standard

CLP-AS	1 x 1 mL
CLP-AS-PAK	5 x 1 mL
2.0 mg/mL each in MeOH	
CLP-AS-10X	1 x 1 mL
CLP-AS-10X-PAK	5 x 1 mL
20 mg/mL each in MeOH	3 comps.
2-Fluorophenol	2,4,6-Tribromophenol
Phenol-d ₅	

SAVE

SAVE

Base/Neutrals Surrogate Standard

CLP-BNS	1 x 1 mL
CLP-BNS-PAK	5 x 1 mL
1.0 mg/mL each in CH ₂ Cl ₂	
CLP-BNS-10X	1 x 1 mL
CLP-BNS-10X-PAK	5 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂	3 comps.
2-Fluorobiphenyl	<i>p</i> -Terphenyl-d ₁₄
Nitrobenzene-d ₅	

SAVE

SAVE

August 1994 Statement of Work

Acid Surrogate Standards

CLP-029		1 x 1 mL
CLP-029-PAK	SAVE	5 x 1 mL
2.0 mg/mL each in MeOH		
CLP-029-0.75X		1 x 1 mL
CLP-029-0.75X-PAK	SAVE	5 x 1 mL
1.5 mg/mL each in MeOH		
2-Chlorophenol-d ₄	Phenol-d ₅	
2-Fluorophenol	2,4,6-Tribromophenol	

Semi-Volatile Surrogate Mixture

CLP-031-R		1 x 1 mL
CLP-031-R-PAK	SAVE	5 x 1 mL
At stated conc. in MeOH : CH ₂ Cl ₂ (1:1)		
2-Chlorophenol-d ₄	(1.5 mg/mL)	Nitrobenzene-d ₅ (1.0 mg/mL)
1,2-Dichlorobenzene-d ₄	(1.0 mg/mL)	Phenol-d ₅ (1.5 mg/mL)
2-Fluorobiphenyl	(1.0 mg/mL)	<i>p</i> -Terphenyl-d ₁₄ (1.0 mg/mL)
2-Fluorophenol	(1.5 mg/mL)	2,4,6-Tribromophenol (1.5 mg/mL)

Semi-Volatile Surrogate Mixture

CLP-031-R2		1 x 1 mL
CLP-031-R2-PAK	SAVE	5 x 1 mL
2000 µg/mL each in CH ₂ Cl ₂		
2-Chlorophenol-d ₄		Nitrobenzene-d ₅
1,2-Dichlorobenzene-d ₄		Phenol-d ₅
2-Fluorobiphenyl		<i>p</i> -Terphenyl-d ₁₄
2-Fluorophenol		2,4,6-Tribromophenol

Base/Neutral Surrogate Standard

CLP-030		1 x 1 mL
CLP-030-PAK	SAVE	5 x 1 mL
1.0 mg/mL each in CH ₂ Cl ₂		
1,2-Dichlorobenzene-d ₄	Nitrobenzene-d ₅	
2-Fluorobiphenyl	<i>p</i> -Terphenyl-d ₁₄	

Instrument Performance Check Solution

CLP-033		1 x 1 mL
CLP-033-PAK	SAVE	5 x 1 mL
0.25 mg/mL in CH ₂ Cl ₂		
Decafluorotriphenylphosphine (DFTPP)		

GC/MS Tuning Solution

CLP-TS		1 x 1 mL
CLP-TS-PAK	SAVE	5 x 1 mL
50 µg/mL in CH ₂ Cl ₂		
Perfluorokerosene		

GPC Solutions for Sample Clean-up

Semi-Volatiles (Gel Permeation)

GPC Calibration Standard Solution

CLP-027		1 x 1 mL
CLP-027-PAK	SAVE	5 x 1 mL
At stated conc. in CH ₂ Cl ₂		
Corn Oil	(250 mg/mL)	Perylene (0.2 mg/mL)
bis(2-Ethylhexyl)phthalate	(10 mg/mL)	Sulfur (0.8 mg/mL)
Methoxychlor	(2 mg/mL)	

8/94 SOW OLM03.1

CLP-027-R2		1 x 1 mL
CLP-027-R2-PAK	SAVE	5 x 1 mL
At stated conc. in CH ₂ Cl ₂		
Corn Oil	(250 mg/mL)	Perylene (0.2 mg/mL)
bis(2-Ethylhexyl)phthalate	(5 mg/mL)	Sulfur (0.8 mg/mL)
Methoxychlor	(1 mg/mL)	

Method 3640 - GPC Calibration Solutions and Set

Solution A

CLP-008A		1 x 1 mL
200 mg/mL in CH ₂ Cl ₂		
Corn Oil		

Solution B

CLP-008B-R		1 x 1 mL
4.0 mg/mL each in CH ₂ Cl ₂		
bis(2-Ethylhexyl)phthalate	Pentachlorophenol	

CLP-008-R-SET	2 x 1 mL (CLP-008A, CLP-008B-R)
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Contract Laboratory Program (CLP)

Low Concentration SOW (10/92) for Organic Analysis of Water

CLP

Low Concentration SOW Semi-Volatiles

Base/Neutrals - Mix #1

Z-014A-LC 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 13 comps.

4-Bromophenylphenyl ether
Butyl benzyl phthalate
bis(2-Chloroethoxy)methane
bis(2-Chloroethyl)ether
bis(2-Chloro-1-methylethyl)ether
4-Chlorophenylphenyl ether
Diethyl phthalate
Dimethyl phthalate
Di-n-butyl phthalate
Di-n-octyl phthalate
bis(2-Ethylhexyl)phthalate
N-Nitrosodiphenylamine
N-Nitrosodi-n-propylamine

Base/Neutrals - Mix #2

Z-014B-LC 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 14 comps.

4-Chloroaniline
2-Chloronaphthalene
Dibenzofuran
3,3'-Dichlorobenzidine
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Isophorone
2-Methylnaphthalene
Nitrobenzene
1,2,4-Trichlorobenzene

Base/Neutrals - Mix #3

Z-014K-LC 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 8 comps.

2,4-Dinitrophenol
2-Methyl-4,6-dinitrophenol
2-Nitroaniline
3-Nitroaniline
4-Nitroaniline
4-Nitrophenol
Pentachlorophenol
2,4,5-Trichlorophenol

Technical Note

60 Target Compounds in these five mixtures are designed to conveniently prepare initial and continuing calibration solutions.

Polynuclear Aromatic Hydrocarbon Mix

Z-014G 1 x 1 mL
Z-014G-PAK 5 x 1 mL **SAVE**
2.0 mg/mL each in CH₂Cl₂: Benzene (1:1) 16 comps.

Acenaphthene	Chrysene
Acenaphthylene	Dibenz[a,h]anthracene
Anthracene	Fluoranthene
Benz[a]anthracene	Fluorene
Benzo[a]pyrene	Indeno[1,2,3-cd]pyrene
Benzo[b]fluoranthene	Naphthalene
Benzo[g,h,i]perylene	Phenanthrene
Benzo[k]fluoranthene	Pyrene

Phenols Mixture

Z-014H-LC 1 x 1 mL
Z-014H-LC-PAK 5 x 1 mL **SAVE**
2.0 mg/mL each in CH₂Cl₂ 9 comps.

4-Chloro-3-methylphenol	4-Methylphenol
2-Chlorophenol	2-Nitrophenol
2,4-Dichlorophenol	Phenol
2,4-Dimethylphenol	2,4,6-Trichlorophenol
2-Methylphenol	

Laboratory Control Sample Spiking Solution

CLP-LCS-SV-SET 2 x 1 mL

CLP-LCS-SV-R1 1 x 1 mL
At stated conc. in Acetone:MeOH (9:1) 14 comps.

Benzo[a]pyrene	(20 µg/mL)
2-Chlorophenol	(40 µg/mL)
bis(2-Chloroethyl)ether	(20 µg/mL)
Diethylphthalate	(20 µg/mL)
2,4-Dinitrotoluene	(20 µg/mL)
Hexachlorobenzene	(20 µg/mL)
Hexachloroethane	(20 µg/mL)
Isophorone	(20 µg/mL)
Naphthalene	(20 µg/mL)
N-Nitrosodi-n-propylamine	(20 µg/mL)
N-Nitrosodiphenylamine	(20 µg/mL)
Phenol	(40 µg/mL)
1,2,4-Trichlorobenzene	(20 µg/mL)
2,4,6-Trichlorophenol	(40 µg/mL)

CLP-LCS-SV-ADD 1 x 1 mL
40 µg/mL in Acetone:MeOH (9:1)

4-Chloroaniline

Tuning Solution

M-625C-3-2X 1 x 1 mL
50 µg/mL in CH₂Cl₂
Decafluorotriphenylphosphine

Internal Standard

Z-014J-0.5X 1 x 1 mL
Z-014J-0.5X-PAK 5 x 1 mL **SAVE**
2.0 mg/mL each in CH₂Cl₂ 6 comps.

Acenaphthene-d₁₀
Chrysene-d₁₂
1,4-Dichlorobenzene-d₄
Naphthalene-d₈
Perylene-d₁₂
Phenanthrene-d₁₀

Surrogate Standards

CLP-LC-SS-1 1 x 1 mL
CLP-LC-SS-1-PAK 5 x 1 mL **SAVE**
2.0 mg/mL each in MeOH:CH₂Cl₂ (1:4) 5 comps.

2-Fluorobiphenyl
2-Fluorophenol
Nitrobenzene-d₅
Phenol-d₅
p-Terphenyl-d₁₄

CLP-LC-SS-2 1 x 1 mL
CLP-LC-SS-2-PAK 5 x 1 mL **SAVE**
6.0 mg/mL in MeOH

2,4,6-Tribromophenol

Buy AccuPaks™
Save 20-40% 5 x 1 mL



CLP OLM 04.1 & 04.2 - Semi-Volatiles

CLP OLM 04.1 & 04.2 - Base Neutrals

CLP-HC-SVR-SET 3 x 1 mL
(CLP-HC-SV-MIX1, CLP-HC-SV-MIX2, CLP-HC-SV-MIX4)

Base Neutrals Mix #1

CLP-HC-SV-MIX1 1 x 1 mL
2000 µg/mL each in CH₂Cl₂ 13 comps.

Benzyl butyl phthalate	Diethyl phthalate
4-Bromophenyl phenyl ether	Dimethyl phthalate
bis(2-Chloroethoxy)methane	Di- <i>n</i> -octyl phthalate
bis(2-Chloroethyl)ether	bis(2-Ethylhexyl)phthalate
bis(2-Chloro-1-methylethyl)ether	N-Nitrosodiphenylamine
4-Chlorophenyl phenyl ether	N-Nitrosodi- <i>n</i> -propylamine
Dibutyl phthalate	

CLP Base Neutral & PAH Mix #2

CLP-HC-SV-MIX2 1 x 1 mL
2000 µg/mL each in CH₂Cl₂ 31 comps.

Acenaphthene	Dibenz[a,h]anthracene
Acenaphthylene	2,4-Dinitrotoluene
Acetophenone	2,6-Dinitrotoluene
Anthracene	Fluoranthene
Atrazine	Fluorene
Benzaldehyde	Hexachlorobenzene
Benz[a]anthracene	Hexachlorobutadiene
Benzo[b]fluoranthene	Hexachlorocyclopentadiene
Benzo[k]fluoranthene	Hexachloroethane
Benzo[g,h,i]perylene	Indeno[1,2,3-cd]pyrene
Benzo[a]pyrene	Isophorone
Biphenyl	Naphthalene
e-Caprolactam	Nitrobenzene
Carbazole	Phenanthrene
2-Chloronaphthalene	Pyrene
Chrysene	

CLP Toxic Substance Mix #4

CLP-HC-SV-MIX4 1 x 1 mL
2000 µg/mL each in CH₂Cl₂ 7 comps.

4-Chloroaniline	2-Nitroaniline
Dibenzofuran	3-Nitroaniline
3,3'-Dichlorobenzidine	4-Nitroaniline
2-Methylnaphthalene	

Phenols

CLP-HC-A-R5 1 x 1 mL
CLP-HC-A-R5-PAK **SAVE** 5 x 1 mL
2000 µg/mL each in CH₂Cl₂ 14 comps.

4-Chloro-3-methylphenol	<i>p</i> -Cresol
2,4-Dichlorophenol	2-Nitrophenol
2,4-Dimethylphenol	4-Nitrophenol
2,4-Dinitrophenol	Pentachlorophenol
2-Chlorophenol	Phenol
2-Methyl-4,6-dinitrophenol	2,4,5-Trichlorophenol
<i>o</i> -Cresol	2,4,6-Trichlorophenol

Base/Neutral Matrix Spike Solution

CLP-BN-MS 1 x 1 mL
CLP-BN-MS-PAK **SAVE** 5 x 1 mL
1000 µg/mL each in MeOH 4 comps.

Acenaphthene	N-Nitrosodi- <i>n</i> -propylamine
2,4-Dinitrotoluene	Pyrene

Semi-Volatile Organic Extract Calibration (Screening Mix)

CLP-009-10X 1 x 1 mL
1.0 mg/mL each in CH₂Cl₂ 3 comps.

Di- <i>n</i> -octylphthalate	Phenol
Phenanthrene	

Instrument Performance Check Solution

CLP-033 1 x 1 mL
CLP-033-PAK **SAVE** 5 x 1 mL
0.25 mg/mL in CH₂Cl₂

Decafluorotriphenylphosphine (DFTPP)

Acids

CLP-007-2 1 x 1 mL
1.5 mg/mL each in MeOH 5 comps.

2-Chlorophenol	Pentachlorophenol
4-Chloro-3-methylphenol	Phenol
4-Nitrophenol	

Semi-Volatile Surrogate Mixture

CLP-031-R 1 x 1 mL
CLP-031-R-PAK **SAVE** 5 x 1 mL
At stated conc. in MeOH : CH₂Cl₂ (1:1) 8 comps.

2-Chlorophenol- <i>d</i> ₄ (1.5 mg/mL)	Nitrobenzene- <i>d</i> ₅ (1.0 mg/mL)
1,2-Dichlorobenzene- <i>d</i> ₄ (1.0 mg/mL)	Phenol- <i>d</i> ₅ (1.5 mg/mL)
2-Fluorobiphenyl (1.0 mg/mL)	<i>p</i> -Terphenyl- <i>d</i> ₁₄ (1.0 mg/mL)
2-Fluorophenol (1.5 mg/mL)	2,4,6-Tribromophenol (1.5 mg/mL)

Internal Standards Mixture

Z-014J 1 x 1 mL
Z-014J-PAK **SAVE** 5 x 1 mL
4.0 mg/mL each in CH₂Cl₂ 6 comps.

Acenaphthene- <i>d</i> ₁₀	Naphthalene- <i>d</i> ₈
Chrysene- <i>d</i> ₁₂	Perylene- <i>d</i> ₁₂
1,4-Dichlorobenzene- <i>d</i> ₄	Phenanthrene- <i>d</i> ₁₀

Pesticides Mixture

Z-014C-R 1 x 1 mL
Z-014C-R-PAK **SAVE** 5 x 1 mL
2.0 mg/mL each in Toluene : Hexane (1:1) 20 comps.

Aldrin	Dieldrin
α-BHC	Endosulfan I
β-BHC	Endosulfan II
γ-BHC	Endosulfan sulfate
δ-BHC	Endrin
α-Chlordane	Endrin aldehyde
γ-Chlordane	Endrin ketone
4,4'-DDD	Heptachlor
4,4'-DDE	Heptachlor epoxide
4,4'-DDT	Methoxychlor

Poor Recoveries on Endrin and DDT

Poor recoveries for endrin and DDT can result from an injector port problem. Try cleaning the port or replacing the liner. Most times this will correct the problem. Removing the first few inches of a capillary column can also help. Since elevated temperatures contribute to the breakdown problem, using cool on-column injection methods may avoid this issue.

CLP OLM 04.1 & 04.2 - Semi-Volatiles Set

CLP-SVC-KIT3 11 x 1 mL
Set includes: CLP-HC-SV-MIX1, CLP-HC-SV-MIX2, CLP-HC-SV-MIX4, CLP-HC-A-R5, CLP-BN-MS, CLP-009-10X, CLP-033, CLP-007-2, CLP-031-R, Z-014J, Z-014C-R

Contract Laboratory Program (CLP)

Pesticide Mixtures

CLP

CLP - Pesticide Mixtures

CLP-018-10X			1 x 1 mL
CLP-018-10X-PAK	SAVE		5 x 1 mL
<i>At stated conc. in Isooctane</i>			
Aldrin (1.0 µg/mL)	Endosulfan II (2.0 µg/mL)		
γ-BHC (0.5 µg/mL)	Endrin aldehyde (2.5 µg/mL)		
p,p'-DDT (2.0 µg/mL)	Heptachlor (1.0 µg/mL)		
Dibutylchlorendate (5.0 µg/mL)	Heptachlor epoxide (1.0 µg/mL)		
Dieldrin (1.0 µg/mL)	Methoxychlor (10 µg/mL)		
Endosulfan I (1.0 µg/mL)			

CLP-019-10X			1 x 1 mL
CLP-019-10X-PAK	SAVE		5 x 1 mL
<i>At stated conc. in Isooctane</i>			
Aldrin (1.0 µg/mL)	p,p'-DDD (2.0 µg/mL)		
α-BHC (0.5 µg/mL)	p,p'-DDE (1.0 µg/mL)		
β-BHC (1.0 µg/mL)	Dibutylchlorendate (5.0 µg/mL)		
δ-BHC (1.0 µg/mL)	Endosulfan sulfate (2.0 µg/mL)		
α-Chlordane (1.0 µg/mL)	Endrin (1.0 µg/mL)		
γ-Chlordane (1.0 µg/mL)	Endrin ketone (2.0 µg/mL)		

Pesticide Set

CLP-018/019-10X-SET	2 x 1 mL
	(CLP-018-10X, CLP-019-10X)

CLP - Pesticide Surrogates

CLP-032-R		1 x 1 mL
CLP-032-R-PAK	SAVE	5 x 1 mL
<i>200 µg/mL each in Acetone</i>		

Decachlorobiphenyl Tetrachloro-*m*-xylene

CLP-034		1 x 1 mL
CLP-034-PAK	SAVE	5 x 1 mL
<i>200 µg/mL each in Acetone</i>		

Dibutylchlorendate Tetrachloro-*m*-xylene

CLP-PES-A		1 x 1 mL
CLP-PES-A-PAK	SAVE	5 x 1 mL
<i>200 µg/mL in Acetone</i>		
CLP-PES-A-20X		1 x 1 mL
<i>4000 µg/mL in Acetone</i>		

Dibutylchlorendate

Pesticide Calibration Mixtures - Statement of Work 2/88 to 8/94

Working Level Pesticide Standard

At stated conc. (ng/mL) in Isooctane

Compound	11 comps.				
	Level 1 CLP-023R	2 (-4X)	3 (-10X)	4 (-30X)	5 (-160X)
α-BHC	50	200	500	1,500	8,000
γ-BHC	50	200	500	1,500	8,000
p,p'-DDD	100	400	1,000	3,000	16,000
p,p'-DDT	100	400	1,000	3,000	16,000
Decachlorobiphenyl	100	400	1,000	3,000	16,000
Dieldrin	100	400	1,000	3,000	16,000
Endosulfan I	50	200	500	1,500	8,000
Endrin	100	400	1,000	3,000	16,000
Heptachlor	50	200	500	1,500	8,000
Methoxychlor	500	2,000	5,000	15,000	80,000
Tetrachloro- <i>m</i> -xylene	50	200	500	1,500	8,000

CLP-023R-CAL-SET **3 x 1 mL (Level 1, Level 2, Level 5)**

Level 1	CLP-023R	1 mL
Level 2	CLP-023R-4X	1 mL
Level 3	CLP-023R-10X	1 mL
Level 4	CLP-023R-30X	1 mL
Level 5	CLP-023R-160X	1 mL

Level 2 Daily QC (for mid level curves)

CLP-023R-WL-4X-10ML	1 x 10 mL
CLP-023R-WL-4X-25ML	1 x 25 mL
CLP-023R-WL-4X-100ML	1 x 100 mL
<i>At stated conc. in Isooctane</i>	
	11 comps.

α-BHC (20 ng/mL)	Endosulfan I (20 ng/mL)
γ-BHC (20 ng/mL)	Endrin (40 ng/mL)
p,p'-DDD (40 ng/mL)	Heptachlor (20 ng/mL)
p,p'-DDT (40 ng/mL)	Methoxychlor (200 ng/mL)
Decachlorobiphenyl (40 ng/mL)	Tetrachloro- <i>m</i> -xylene (20 ng/mL)
Dieldrin (40 ng/mL)	

Working Level Pesticide Standard

At stated conc. (ng/mL) in Isooctane

Compound	13 comps.				
	Level 1 CLP-024R	2 (-4X)	3 (-10X)	4 (-30X)	5 (-160X)
Aldrin	50	200	500	1,500	8,000
β-BHC	50	200	500	1,500	8,000
δ-BHC	50	200	500	1,500	8,000
α-Chlordane	50	200	500	1,500	8,000
γ-Chlordane	50	200	500	1,500	8,000
p,p'-DDE	100	400	1,000	3,000	16,000
Decachlorobiphenyl	100	400	1,000	3,000	16,000
Endosulfan II	100	400	1,000	3,000	16,000
Endosulfan sulfate	100	400	1,000	3,000	16,000
Endrin aldehyde	100	400	1,000	3,000	16,000
Endrin ketone	100	400	1,000	3,000	16,000
Heptachlor epoxide	50	200	500	1,500	8,000
Tetrachloro- <i>m</i> -xylene	50	200	500	1,500	8,000

CLP-024R-CAL-SET **3 x 1 mL (Level 1, Level 2, Level 5)**

Level 1	CLP-024R	1 mL
Level 2	CLP-024R-4X	1 mL
Level 3	CLP-024R-10X	1 mL
Level 4	CLP-024R-30X	1 mL
Level 5	CLP-024R-160X	1 mL

Level 2 Daily QC (for mid level curves)

CLP-024R-WL-4X-10ML	1 x 10 mL
CLP-024R-WL-4X-25ML	1 x 25 mL
CLP-024R-WL-4X-100ML	1 x 100 mL
<i>At stated conc. in Isooctane</i>	
	13 comps.

Aldrin (20 ng/mL)	Endosulfan II (40 ng/mL)
β-BHC (20 ng/mL)	Endosulfan sulfate (40 ng/mL)
δ-BHC (20 ng/mL)	Endrin aldehyde (40 ng/mL)
α-Chlordane (20 ng/mL)	Endrin ketone (40 ng/mL)
γ-Chlordane (20 ng/mL)	Heptachlor epoxide (20 ng/mL)
p,p'-DDE (40 ng/mL)	Tetrachloro- <i>m</i> -xylene (20 ng/mL)
Decachlorobiphenyl (40 ng/mL)	

Pesticide Calibration Sets

CLP-023R/024R-SET	2 x 1 mL	CLP-023R/024R-40X-SET	2 x 1 mL
	(CLP-023R, CLP-024R)		(CLP-023R-40X, CLP-024R-40X)
CLP-023R/024R-4X-SET	2 x 1 mL	CLP-023R/024R-160X-SET	2 x 1 mL
	(CLP-023R-4X, CLP-024R-4X)		(CLP-023R-160X, CLP-024R-160X)

CLP - Pesticides

Evaluation Standard Mixture

CLP-017			1 x 1 mL
CLP-017-PAK		SAVE	5 x 1 mL
<i>At stated conc. in Isooctane</i>			
Aldrin	(1 µg/mL)	Dibutylchloroendate	(1 µg/mL)
4,4'-DDT	(2 µg/mL)	Endrin	(2 µg/mL)

Florisil Cartridge Check Solution

CLP-FC			1 x 1 mL
CLP-FC-PAK		SAVE	5 x 1 mL
<i>100 µg/mL in Acetone</i>			
2,4,5-Trichlorophenol			

Pesticide Matrix Spiking Solutions

CLP-026-R2			1 x 1 mL
CLP-026-R2-PAK		SAVE	5 x 1 mL
<i>At stated conc. in Acetone</i>			
Aldrin	(5 µg/mL)	Dieldrin	(10 µg/mL)
γ-BHC	(5 µg/mL)	Endrin	(10 µg/mL)
4,4'-DDT	(10 µg/mL)	Heptachlor	(5 µg/mL)

CLP-026-R2-10X			1 x 1 mL
CLP-026-R2-10X-PAK		SAVE	5 x 1 mL
<i>At stated conc. in Acetone</i>			
Aldrin	(50 µg/mL)	Dieldrin	(100 µg/mL)
γ-BHC	(50 µg/mL)	Endrin	(100 µg/mL)
4,4'-DDT	(100 µg/mL)	Heptachlor	(50 µg/mL)

Pesticide Matrix Spiking Solution

CLP-026-R2-WL			1 x 1 mL
CLP-026-R2-WL-25ML			1 x 25 mL
CLP-026-R2-WL-50ML			1 x 50 mL
<i>At stated conc. in Acetone</i>			
Aldrin	(0.5 µg/mL)	Dieldrin	(1.0 µg/mL)
γ-BHC	(0.5 µg/mL)	Endrin	(1.0 µg/mL)
4,4'-DDT	(1.0 µg/mL)	Heptachlor	(0.5 µg/mL)

Resolution Check Solution

CLP-028-WL			1 x 1 mL
CLP-028-WL-10ML			1 x 10 mL
<i>At stated conc. in Isooctane</i>			
γ-Chlordane	(10 ng/mL)	Endosulfan sulfate	(20 ng/mL)
Endosulfan I	(10 ng/mL)	Endrin ketone	(20 ng/mL)
p,p'-DDE	(20 ng/mL)	Methoxychlor	(100 ng/mL)
Decachlorobiphenyl	(20 ng/mL)	Tetrachloro- <i>m</i> -xylene	(20 ng/mL)
Dieldrin	(20 ng/mL)		

Performance Evaluation Solution

CLP-025			1 x 1 mL
CLP-025-PAK		SAVE	5 x 1 mL
<i>At stated conc. in Isooctane</i>			
α-BHC	(100 ng/mL)	Decachlorobiphenyl	(200 ng/mL)
β-BHC	(100 ng/mL)	Endrin	(500 ng/mL)
γ-BHC	(100 ng/mL)	Methoxychlor	(2500 ng/mL)
4,4'-DDT	(1000 ng/mL)	Tetrachloro- <i>m</i> -xylene	(200 ng/mL)

Resolution Mixture

CLP-028			1 x 1 mL
CLP-028-PAK		SAVE	5 x 1 mL
<i>At stated conc. in Isooctane</i>			
γ-Chlordane	(100 ng/mL)	Endosulfan sulfate	(200 ng/mL)
Endosulfan I	(100 ng/mL)	Endrin ketone	(200 ng/mL)
p,p'-DDE	(200 ng/mL)	Methoxychlor	(1000 ng/mL)
Decachlorobiphenyl	(200 ng/mL)	Tetrachloro- <i>m</i> -xylene	(200 ng/mL)
Dieldrin	(200 ng/mL)		

High Conc. Pesticide Matrix Spiking Solutions

For Water			
CLP-014-1000X			1 x 1 mL
CLP-014-1000X-PAK		SAVE	5 x 1 mL
<i>At stated conc. in MeOH</i>			
Aldrin	(200 µg/mL)	Endrin	(500 µg/mL)
4,4'-DDT	(500 µg/mL)	Heptachlor	(200 µg/mL)
Dieldrin	(500 µg/mL)	Lindane	(200 µg/mL)

For Soil/Sediment

CLP-016-1000X			1 x 1 mL
CLP-016-1000X-PAK		SAVE	5 x 1 mL
<i>At stated conc. in MeOH</i>			
Aldrin	(2,000 µg/mL)	Endrin	(5,000 µg/mL)
4,4'-DDT	(5,000 µg/mL)	Heptachlor	(2,000 µg/mL)
Dieldrin	(5,000 µg/mL)	Lindane	(2,000 µg/mL)

Laboratory Control Sample Spiking Solution

CLP-LCS-P-1000X			1 x 1 mL
CLP-LCS-P-1000X-PAK		SAVE	5 x 1 mL
<i>At stated conc. in Acetone</i>			
γ-BHC	(100 µg/mL)	Endosulfan sulfate	(200 µg/mL)
γ-Chlordane	(100 µg/mL)	Endrin	(200 µg/mL)
Dieldrin	(200 µg/mL)	Heptachlor epoxide	(100 µg/mL)
4,4'-DDE	(200 µg/mL)		

Performance Evaluation Solution

CLP-025-WL			1 x 1 mL
CLP-025-WL-10ML			1 x 10 mL
<i>At stated conc. in Isooctane</i>			
α-BHC	(10 ng/mL)	Decachlorobiphenyl	(20 ng/mL)
β-BHC	(10 ng/mL)	Endrin	(50 ng/mL)
γ-BHC	(10 ng/mL)	Methoxychlor	(250 ng/mL)
4,4'-DDT	(100 ng/mL)	Tetrachloro- <i>m</i> -xylene	(20 ng/mL)

PREP NOTES

The addition of 1 mL of Surrogate / Spiking solution is sufficient to check the extraction efficiency and to verify spike recoveries for the analytical batch.

Pesticide Surrogate Mixtures

CLP-032R-WL-0.2X-10ML		1 x 10 mL
CLP-032R-WL-0.2X-50ML		1 x 50 mL
CLP-032R-WL-0.2X-100ML		1 x 100 mL
<i>0.2 µg/mL each in Acetone</i>		

Decachlorobiphenyl Tetrachloro-*m*-xylene

Pesticide and PCBs

Performance Evaluation Solution

CLP-025			1 x 1 mL
CLP-025-PAK		SAVE	5 x 1 mL
<i>At stated conc. in Isooctane</i>			
α-BHC	(100 ng/mL)	Decachlorobiphenyl	(200 ng/mL)
β-BHC	(100 ng/mL)	Endrin	(500 ng/mL)
γ-BHC	(100 ng/mL)	Methoxychlor	(2500 ng/mL)
4,4'-DDT	(1000 ng/mL)	Tetrachloro- <i>m</i> -xylene	(200 ng/mL)

Resolution Mixture

CLP-028			1 x 1 mL
CLP-028-PAK		SAVE	5 x 1 mL
<i>At stated conc. in Isooctane</i>			
γ-Chlordane	(100 ng/mL)	Endosulfan sulfate	(200 ng/mL)
Endosulfan I	(100 ng/mL)	Endrin ketone	(200 ng/mL)
p,p'-DDE	(200 ng/mL)	Methoxychlor	(1000 ng/mL)
Decachlorobiphenyl	(200 ng/mL)	Tetrachloro- <i>m</i> -xylene	(200 ng/mL)
Dieldrin	(200 ng/mL)		

Polychlorinated Biphenyls, Chlordane & Toxaphene

<i>Each at 1,000 µg/mL in Hexane</i>			
			SAVE
Aroclors #	Cat. No.	1 mL	Cat. No. (5 x 1 mL) PAK
Aroclor 1016	C-216S-H-10X		C-216S-H-10X-PAK
Aroclor 1221	C-221S-H-10X		C-221S-H-10X-PAK
Aroclor 1232	C-232S-H-10X		C-232S-H-10X-PAK
Aroclor 1242	C-242S-H-10X		C-242S-H-10X-PAK
Aroclor 1248	C-248S-H-10X		C-248S-H-10X-PAK
Aroclor 1254	C-254S-H-10X		C-254S-H-10X-PAK
Aroclor 1260	C-260S-H-10X		C-260S-H-10X-PAK
Aroclor 1262	C-262S-H-10X		C-262S-H-10X-PAK
Aroclor 1268	C-268S-H-10X		C-268S-H-10X-PAK
Pesticides			
Chlordane	P-017S-H-10X		P-017S-H-10X-PAK
Toxaphene	P-093S-H-10X		P-093S-H-10X-PAK

Aroclors at Working Levels

Aroclors 1016/1260 with Surrogates

CLP-216/260-WL	1 x 1 mL		
CLP-216/260-WL-5ML	1 x 5 mL		
CLP-216/260-WL-10ML	1 x 10 mL		
At stated conc. in Isooctane		4 comps.	
Aroclor 1016	(100 ng/mL)	Decachlorobiphenyl	(20 ng/mL)
Aroclor 1260	(100 ng/mL)	Tetrachloro- <i>m</i> -xylene	(20 ng/mL)

Aroclor 1221 with Surrogates

CLP-221-WL	1 x 1 mL		
CLP-221-WL-5ML	1 x 5 mL		
CLP-221-WL-10ML	1 x 10 mL		
At stated conc. in Isooctane		3 comps.	
Aroclor 1221	(200 ng/mL)	Tetrachloro- <i>m</i> -xylene	(20 ng/mL)
Decachlorobiphenyl	(20 ng/mL)		

Aroclor 1232 with Surrogates

CLP-232-WL	1 x 1 mL		
CLP-232-WL-5ML	1 x 5 mL		
CLP-232-WL-10ML	1 x 10 mL		
At stated conc. in Isooctane		3 comps.	
Aroclor 1232	(100 ng/mL)	Tetrachloro- <i>m</i> -xylene	(20 ng/mL)
Decachlorobiphenyl	(20 ng/mL)		

Aroclor 1242 with Surrogates

CLP-242-WL	1 x 1 mL		
CLP-242-WL-5ML	1 x 5 mL		
CLP-242-WL-10ML	1 x 10 mL		
At stated conc. in Isooctane		3 comps.	
Aroclor 1242	(100 ng/mL)	Tetrachloro- <i>m</i> -xylene	(20 ng/mL)
Decachlorobiphenyl	(20 ng/mL)		

Aroclor 1248 with Surrogates

CLP-248-WL	1 x 1 mL		
CLP-248-WL-5ML	1 x 5 mL		
CLP-248-WL-10ML	1 x 10 mL		
At stated conc. in Isooctane		3 comps.	
Aroclor 1248	(100 ng/mL)	Tetrachloro- <i>m</i> -xylene	(20 ng/mL)
Decachlorobiphenyl	(20 ng/mL)		

Aroclor 1254 with Surrogates

CLP-254-WL	1 x 1 mL		
CLP-254-WL-5ML	1 x 5 mL		
CLP-254-WL-10ML	1 x 10 mL		
At stated conc. in Isooctane		3 comps.	
Aroclor 1254	(100 ng/mL)	Tetrachloro- <i>m</i> -xylene	(20 ng/mL)
Decachlorobiphenyl	(20 ng/mL)		

Toxaphene with Surrogates

P-093-WL-10X	1 x 1 mL		
P-093-WL-10X-5ML	1 x 5 mL		
P-093-WL-10X-10ML	1 x 10 mL		
At stated conc. in Isooctane		3 comps.	
Toxaphene	(500 ng/mL)	Tetrachloro- <i>m</i> -xylene	(20 ng/mL)
Decachlorobiphenyl	(20 ng/mL)		

Technical Note

The profiles of some Aroclor products may not always look the same, but the percent chlorine by weight will be.



Sample Clean-up Solutions at Working Levels

GPC Calibration Solution

CLP-027-WL-10ML	1 x 10 mL		
At stated conc. in CH ₂ Cl ₂		5 comps.	
Corn Oil	(25 mg/mL)	Perylene	(0.02 mg/mL)
bis(2-Ethylhexyl)phthalate	(1.0 mg/mL)	Sulfur	(0.08 mg/mL)
Methoxychlor	(0.2 mg/mL)		

GPC Calibration Solution for 8/94 SOW OLM03.1

CLP-027-R2-WL-10ML	1 x 10 mL		
At stated conc. in CH ₂ Cl ₂		5 comps.	
Corn Oil	(25 mg/mL)	Perylene	(0.02 mg/mL)
bis(2-Ethylhexyl)phthalate	(0.5 mg/mL)	Sulfur	(0.08 mg/mL)
Methoxychlor	(0.1 mg/mL)		

Florisil Cartridge Check Solution

CLP-FC-WL-10ML	1 x 10 mL
0.1 µg/mL in Acetone	
2,4,5-Trichlorophenol	

GPC Calibration Check Solutions

GPC-CC-A-WL-10ML	1 x 10 mL		
At stated conc. in CH ₂ Cl ₂		6 comps.	
Aldrin	(0.1 µg/mL)	Dieldrin	(0.2 µg/mL)
γ-BHC (<i>Lindane</i>)	(0.1 µg/mL)	Endrin	(0.2 µg/mL)
4,4'-DDT	(0.2 µg/mL)	Heptachlor	(0.1 µg/mL)
GPC-CC-B-WL-10ML	1 x 10 mL		
0.2 µg/mL each in CH ₂ Cl ₂		2 comps.	
Aroclor 1016		Aroclor 1260	

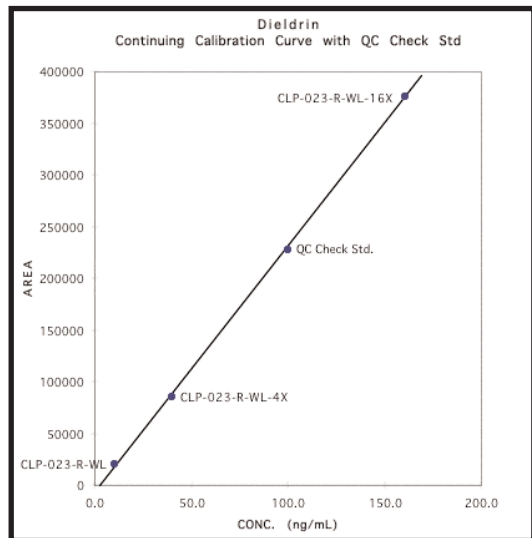
AccuStandard provides the solutions to meet sample clean-up parameters!

Working Levels and Curves

AccuStandard's QC protocol provides assurance & confidence in Working Level Standards:

Each Calibration Set is prepared using raw materials which have been tested for chemical purity and identity by GC/MS. After checking the identity and purity of each analyte, its concentration in the Calibration Solution is confirmed by rigorous analysis.

All individual component responses in the Calibration Set are then plotted using least squares linear regression. The resultant line drawn through the data points must have a coefficient of correlation no less than 0.99. An independently prepared QC check standard, having a concentration at the midpoint is analyzed to verify the accuracy of the calibration curve.

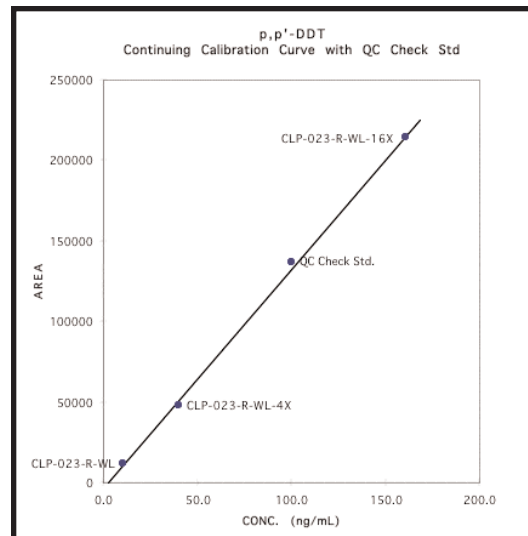


CLP-023R-CAL-SET Analyte: **Dieldrin**

Cat. No.	Lot No.	Conc.	Area
CLP-023-R-WL	025-279	10 ng/mL	20523
CLP-023-R-WL-4X	025-278	40 ng/mL	85767
CLP-023-R-WL-16X	025-277	160 ng/mL	375897

M-8080-WL-25X Lot No. 025-340

TARGET VALUE	100	ANALYTICAL VALUE	98.1
ANALYTICAL AREA	227622	% DIFF. FROM TARGET	-1.9%



CLP-023R-CAL-SET Analyte: **p,p'-DDT**

Cat. No.	Lot No.	Conc.	Area
CLP-023-R-WL	025-279	10 ng/mL	12334
CLP-023-R-WL-4X	025-278	40 ng/mL	48513
CLP-023-R-WL-16X	025-277	160 ng/mL	214379

M-8080-WL-25X Lot No. 025-340

TARGET VALUE	100	ANALYTICAL VALUE	103.4
ANALYTICAL AREA	137012	% DIFF. FROM TARGET	3.4%

AccuStandard's QC protocol thus provides the end user with assurance when calibrating with Working Level Standards. This extra level of confidence will allow your laboratory to concentrate on analyzing samples, rather than preparing calibration solutions.

Documentation of our analysis are available upon request with order.

Validated for You !!



**Working Level Standards &
Continuing Calibration Check (CCC)**

The AccuStandard CCC Product Line Improves Efficiency:

Load the calibration curve Standards at the end of the day with your samples and working level check, and review a verified curve with your sample results the next day.

Standard Mixtures for EPA 500 Series

For Drinking Water



Background Information

In 1974, the Safe Drinking Water Act was passed by the US Congress. Under the Act, the USEPA established national standards for drinking water from both surface and ground water sources. The EPA 500 Series Methods have evolved from the passage of the Clean Water Act, and from several amendments to the original Act.

The 500 Series product line contains standards used in proposed and promulgated methods for the identification and quantification of organic compounds in drinking water. The organic compounds listed in the various methods include volatile organic compounds (VOCs), pesticides, synthetic organic compounds (SOCs), and trihalomethane disinfection by-products.

Analytical techniques used in the identification and quantification include gas chromatography with selective detectors (PID, ELCD, ECD, FID, NPD, FPD), gas chromatography/mass spectrometry (GC/MS) and high performance liquid chromatography (HPLC).

Complete analysis of the target compounds with these 500 Series Methods can be accomplished by using the series of standards formulated by AccuStandard for each method along with the required internal and surrogate standards.

For your convenience we offer either large mixes containing all the target analytes, or smaller sub-mixes at higher concentrations to allow for flexibility in your analysis.

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EPA Hazardous Substances List (Volatiles)

HSL Volatiles Standard Mixture

M-HSL ‡ 1 x 1 mL
2.0 mg/mL each in MeOH 8 comps.

Acetone	4-Methyl-2-pentanone
2-Butanone	Styrene
Carbon disulfide	Vinyl acetate
2-Hexanone	o-Xylene

‡ To delay premature breakdown of thermally labile products in transit we suggest shipping with a "Cold Pack"

Method 501 Trihalomethane Analysis by P & T - GC/ECD or PID

Trihalomethanes

M-501	1 x 1 mL
M-501-PAK	5 x 1 mL
0.2 mg/mL each in MeOH	4 comps.
M-501-SET	set of 5 x 1 mL
<i>Set contain Each component at 0.2 mg/mL in MeOH + M-501 Mix</i>	
M-501-10X	1 x 1 mL
M-501-10X-PAK	5 x 1 mL
2.0 mg/mL each in MeOH	4 comps.

Bromoform
Chloroform

Dibromochloromethane
Dichlorobromomethane



EPA Method 500 Series

Method 502

Method 502.2 Volatile Organic Compounds by PID/ELCD

The following solutions represent a breakdown of Method 502 components into groups containing liquid and gaseous components:

54 Liquid Components

Benzene (01)	1,2-Dibromo-3-chloropropane (18)	1,1-Dichloropropene (33)	Toluene (46)
Bromobenzene (02)	1,2-Dibromoethane (19)	<i>cis</i> -1,3-Dichloropropene (34A) *	1,2,3-Trichlorobenzene (47)
Bromochloromethane (03)	Dibromomethane (20)	<i>trans</i> -1,3-Dichloropropene (34B) **	1,2,4-Trichlorobenzene (48)
Bromodichloromethane (04)	1,2-Dichlorobenzene (21)	Ethylbenzene (35)	1,1,1-Trichloroethane (49)
Bromoform (05)	1,3-Dichlorobenzene (22)	Hexachlorobutadiene (36)	1,1,2-Trichloroethane (50)
<i>n</i> -Butylbenzene (07)	1,4-Dichlorobenzene (23)	Isopropylbenzene (<i>Cumene</i>) (37)	Trichloroethene (51)
<i>sec</i> -Butylbenzene (08)	1,1-Dichloroethane (25)	<i>p</i> -Isopropyltoluene (<i>p-Cymene</i>) (38)	1,2,3-Trichloropropane (53)
<i>tert</i> -Butylbenzene (09)	1,2-Dichloroethane (26)	Methylene chloride (39)	1,2,4-Trimethylbenzene (54)
Carbon tetrachloride (10)	1,1-Dichloroethene (27)	Naphthalene (40)	1,3,5-Trimethylbenzene (55)
Chlorobenzene (11)	<i>cis</i> -1,2-Dichloroethene (28)	<i>n</i> -Propylbenzene (41)	<i>o</i> -Xylene (57)
Chloroform (13)	<i>trans</i> -1,2-Dichloroethene (29)	Styrene (42)	<i>m</i> -Xylene (58)
2-Chlorotoluene (15)	1,2-Dichloropropane (30)	1,1,1,2-Tetrachloroethane (43)	<i>p</i> -Xylene (59)
4-Chlorotoluene (16)	1,3-Dichloropropane (31)	1,1,2,2-Tetrachloroethane (44)	
Dibromochloromethane (17)	2,2-Dichloropropane (32)	Tetrachloroethene (45)	

**cis* (1.06 x conc.) (34A)
***trans* (0.94 x conc.) (34B)

6 Gas Components

Bromomethane (06)	Dichlorodifluoromethane (24)
Chloroethane (12)	Trichlorofluoromethane (52)
Chloromethane (14)	Vinyl chloride (56)

54 Liquid Components

M-502A-R	0.2 mg/mL each in MeOH	1 x 1 mL
M-502A-R-PAK	0.2 mg/mL each in MeOH SAVE	5 x 1 mL
M-502A-R-10X	2.0 mg/mL each in MeOH	1 x 1 mL
M-502A-R-10X-PAK	2.0 mg/mL each in MeOH SAVE	5 x 1 mL

6 Gas Components

M-502B	0.2 mg/mL each in MeOH	1 x 1 mL
M-502B-PAK	0.2 mg/mL each in MeOH SAVE	5 x 1 mL
M-502B-10X	2.0 mg/mL each in MeOH	1 x 1 mL
M-502B-10X-PAK	2.0 mg/mL each in MeOH SAVE	5 x 1 mL

54 Liquid and 6 Gas Component Sets

M-502A-R/B-SET	2 x 1 mL
0.2 mg/mL each in MeOH	(M-502A-R, M-502B)
M-502A-R/B-10X-SET	2 x 1 mL
2.0 mg/mL each in MeOH	(M-502A-R-10X, M-502B-10X)

Internal & Surrogate Standard

M-502-IS/SS	1 x 1 mL
M-502-IS/SS-PAK	5 x 1 mL SAVE
2.0 mg/mL each in MeOH	4 comps.

1-Chloro-3-fluorobenzene	Fluorobenzene
2-Chloropropane	α,α,α -Trifluorotoluene

Technical Note

M-502-IS/SS is useful for DB-624/VRX analysis by GC/ELCD/PID. 2-Chloropropane has been included in the standard to be used as an early eluting Internal Standard. The use of this Internal Standard aids in quantitating the gaseous components in purgeable volatiles.

Internal/Surrogate Standard

M-502-IS-ASL	1 x 1 mL
M-502-IS-ASL-PAK	5 x 1 mL SAVE
2.0 mg/mL each in MeOH	2 comps.



2-Bromo-1-chloropropane	1-Chloro-2-fluorobenzene
-------------------------	--------------------------

o,m,p-Xylenes Mix

M-502-60	0.2 mg/mL in MeOH	1 x 1 mL
M-502-60-10X	2.0 mg/mL in MeOH	1 x 1 mL
		3 comps.
<i>o</i> -Xylene (57)	<i>p</i> -Xylene (59)	
<i>m</i> -Xylene (58)		

Technical Note

Solutions containing volatile components (such as gases) should be chilled before opening to ensure gases are in the solution and not the headspace.

All 60 liquid & gas components in One Solution

Liquids (54 comps.) and Gases (6 comps.)

M-502	1 x 1 mL
M-502-PAK	5 x 1 mL SAVE
0.2 mg/mL each in MeOH	60 comps.
M-502-10X	1 x 1 mL
M-502-10X-PAK	5 x 1 mL SAVE
2.0 mg/mL each in MeOH	60 comps.

Liquids (54 comps.) & Gases (6 comps.) plus *p*-Isopropyltoluene

M-502-R1 NEW	1 x 1 mL (liquid and gases)
M-502-R1-PAK NEW SAVE	5 x 1 mL (liquid and gases)
0.2 mg/mL each in MeOH	61 comps.

Liquids (54 comps.) plus MtBE

M-502A-R3 NEW	1 x 1 mL
0.2 mg/mL each in MeOH	
M-502A-R3-10X NEW	1 x 1 mL
2.0 mg/mL each in MeOH	55 comps.

59 Component Set

As a complete set of each component in individual ampules.

M-502-SET	0.2 mg/mL in MeOH	59 x 1 mL
M-502-10X-SET	2.0 mg/mL in MeOH	59 x 1 mL

Individual Component Solutions

To order, specify identity (#) and conc. (0.2 or 2.0 mg/mL)

M-502-#	0.2 mg/mL in MeOH	1 x 1 mL
M-502-#-10X	2.0 mg/mL in MeOH	1 x 1 mL

M-502-34A & M-502-34B only available as mixture: M-502-34R

M-502-34-R	1 x 1 mL
0.4 mg/mL each in MeOH	
M-502-34-R-10X	1 x 1 mL
4.0 mg/mL each in MeOH	2 comps.

<i>cis</i> -1,3-Dichloropropene	<i>trans</i> -1,3-Dichloropropene
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Individual Component Neats

To order, specify identity

M-502-#N	1 x 1 gram
except,	

1 x 1 gram	1 x 1 gram
------------	------------

M-502-04N	M-502-31N	M-502-49N
M-502-08N	M-502-32N	
M-502-17N	M-502-34N	
M-502-18N	M-502-43N	
M-502-28N	M-502-44N	
M-502-29N		



Method 502.2 (Continued) VOCs by PID/ELCD

The following solutions represent an alternate source formulation of Method 502/524 components based on similar volatility groups.

M-502-K1-SET			6 x 1 mL
	(M-502B-10X, M-502C-02, M-502C-03, M-502C-04, M-502C-05, M-502C-06)		
M-502B-10X			1 x 1 mL
M-502B-10X-PAK	Alternate Source	SAVE	5 x 1 mL
2.0 mg/mL each in MeOH			6 comps.
Bromomethane	Dichlorodifluoromethane		
Chloroethane	Trichlorofluoromethane		
Chloromethane	Vinyl chloride		
M-502C-02			1 x 1 mL
M-502C-02-PAK	Alternate Source	SAVE	5 x 1 mL
2.0 mg/mL each in MeOH			6 comps.
Bromodichloromethane	<i>cis</i> -1,2-Dichloroethylene		
Dibromochloromethane	<i>trans</i> -1,2-Dichloroethylene		
1,1,-Dichloroethylene	Methylene chloride		
M-502C-03			1 x 1 mL
M-502C-03-PAK	Alternate Source	SAVE	5 x 1 mL
2.0 mg/mL each in MeOH			9 comps.
Bromochloromethane	1,1-Dichloroethane		
Bromoform	2,2-Dichloropropane		
Carbon tetrachloride	Tetrachloroethylene		
Chloroform	1,1,1-Trichloroethane		
Dibromomethane			
M-502C-04			1 x 1 mL
M-502C-04-PAK	Alternate Source	SAVE	5 x 1 mL
2.0 mg/mL each in MeOH			14 comps.
1,2-Dibromo-3-chloropropane	Hexachlorobutadiene		
1,2-Dibromoethane	1,1,1,2-Tetrachloroethane		
1,2-Dichloroethane	1,1,2,2-Tetrachloroethane		
1,2-Dichloropropane	1,1,2-Trichloroethane		
1,3-Dichloropropane	Trichloroethylene		
1,1-Dichloropropylene	1,2,3-Trichloropropane		
<i>cis</i> -1,3-Dichloropropene *			
<i>trans</i> -1,3-Dichloropropene **			
			* <i>cis</i> (1.06 x conc.)
			** <i>trans</i> (0.94 x conc.)
M-502C-05			1 x 1 mL
M-502C-05-PAK	Alternate Source	SAVE	5 x 1 mL
2.0 mg/mL each in MeOH			13 comps.
Benzene	Toluene		
Bromobenzene	1,2,3-Trichlorobenzene		
<i>n</i> -Butylbenzene	1,2,4-Trichlorobenzene		
Ethylbenzene	1,2,4-Trimethylbenzene		
<i>p</i> -Isopropyltoluene	1,3,5-Trimethylbenzene		
Naphthalene	<i>m</i> -Xylene		
Styrene			
M-502C-06			1 x 1 mL
M-502C-06-PAK	Alternate Source	SAVE	5 x 1 mL
2.0 mg/mL each in MeOH			12 comps.
<i>sec</i> -Butylbenzene	1,3-Dichlorobenzene		
<i>tert</i> -Butylbenzene	1,4-Dichlorobenzene		
Chlorobenzene	Isopropylbenzene		
2-Chlorotoluene	<i>n</i> -Propylbenzene		
4-Chlorotoluene	<i>o</i> -Xylene		
1,2-Dichlorobenzene	<i>p</i> -Xylene		

Method 502.2 Volatile Organic Mixtures

Custom Unregulated VOC's

M-502C-09			1 x 1 mL
2.0 mg/mL each in MeOH			39 comps.
Bromobenzene	1,1-Dichloropropene		
Bromochloromethane	<i>cis</i> -1,3-Dichloropropene *		
Bromodichloromethane	<i>trans</i> -1,3-Dichloropropene **		
Bromoform	Hexachlorobutadiene		
Bromomethane	Isopropylbenzene (<i>Cumene</i>)		
<i>n</i> -Butylbenzene	<i>p</i> -Isopropyltoluene (<i>p</i> - <i>Cymene</i>)		
<i>sec</i> -Butylbenzene	Dichloromethane (<i>Methylene chloride</i>)		
<i>tert</i> -Butylbenzene	Naphthalene		
Chloroethane	<i>n</i> -Propylbenzene		
Chloroform	1,1,1,2-Tetrachloroethane		
Chloromethane	1,1,2,2-Tetrachloroethane		
2-Chlorotoluene	1,2,3-Trichlorobenzene		
4-Chlorotoluene	1,2,4-Trichlorobenzene		
Dibromochloromethane	1,1,2-Trichloroethane		
Dibromomethane	Trichlorofluoromethane		
1,3-Dichlorobenzene	1,2,3-Trichloropropane		
Dichlorodifluoromethane	1,2,4-Trimethylbenzene		
1,1-Dichloroethane	1,3,5-Trimethylbenzene (<i>Mesitylene</i>)		
1,2-Dichloropropane			* <i>cis</i> (1.06 x conc.)
1,3-Dichloropropane			** <i>trans</i> (0.94 x conc.)
2,2-Dichloropropane			

Wisconsin DNR VOC Mixture

S-989			1 x 1 mL
2.0 mg/mL each in MeOH			52 comps.
Benzene	1,3-Dichloropropane		
Bromobenzene	2,2-Dichloropropane		
Bromodichloromethane	Diisopropyl ether		
<i>n</i> -Butylbenzene	Ethylbenzene		
<i>sec</i> -Butylbenzene	Hexachlorobutadiene		
<i>tert</i> -Butylbenzene	Isopropylbenzene		
Carbon tetrachloride	<i>p</i> -Isopropyltoluene		
Chlorobenzene	Methylene chloride		
Chlorodibromomethane	Methyl <i>tert</i> -butyl ether		
Chloroethane	Naphthalene		
Chloroform	<i>n</i> -Propylbenzene		
Chloromethane	1,1,2,2-Tetrachloroethane		
2-Chlorotoluene	Tetrachloroethene		
4-Chlorotoluene	Toluene		
1,2-Dibromo-3-chloropropane	1,2,3-Trichlorobenzene		
1,2-Dibromoethane	1,2,4-Trichlorobenzene		
1,2-Dichlorobenzene	1,1,1-Trichloroethane		
1,3-Dichlorobenzene	1,1,2-Trichloroethane		
1,4-Dichlorobenzene	Trichloroethene		
Dichlorodifluoromethane	Trichlorofluoromethane		
1,1-Dichloroethane	1,2,4-Trimethylbenzene		
1,2-Dichloroethane	1,3,5-Trimethylbenzene		
1,1-Dichloroethene	Vinyl chloride		
<i>cis</i> -1,2-Dichloroethene	<i>o</i> -Xylene		
<i>trans</i> -1,2-Dichloroethene	<i>m</i> -Xylene		
1,2-Dichloropropane	<i>p</i> -Xylene		

Technical Note

Each ampule contains at least 120% of the stated volume of a solution, allowing easy transfer. Transfer the required amount using a clean calibration syringe. Excess solution can be stored in a tightly capped vial, but this is not recommended. AccuStandard cannot guarantee the integrity of the solution once the ampule has been opened. See the EPA method protocol for storage instructions.

Alternate Source = Matches Competitive Product

AccuStandard enhances your laboratory's analytical results while streamlining your purchasing efforts through the Alternate Source Line (ASL) of Analytical Standards. Use ASLs for Independent lots to other Standard suppliers' formulations.

We compiled a list of most requested CLP, and EPA 500, 600, 8000 series analytical Standard formulations currently offered in the marketplace. See our complete list of ASL products in QC section of this catalog.



Method 502.2 (continued) Volatile Organic Compounds

The solutions below have been designed in cooperation with laboratories in the Contract Laboratory Program and have proven useful in this particular configuration for the separation and quantitation of all of the 60 components on a single column.

M-502D/E/F-SET

set of 3 x 1 mL
(set includes M-502D, M-502E & M-502F)

Mix D

M-502D

0.2 mg/mL each in MeOH

1 x 1 mL

26 comps.

Benzene	Dichlorodifluoromethane
Bromobenzene	2,2-Dichloropropane
Bromochloromethane	Ethyl benzene
Bromoform	Ethylene dibromide
sec-Butyl benzene	Isopropylbenzene
Carbon tetrachloride	Tetrachloroethene
Chloroethane	1,1,1,2-Tetrachloroethane
4-Chlorotoluene	Toluene
Dibromomethane	1,2,3-Trichlorobenzene
1,2-Dichlorobenzene	1,2,4-Trichlorobenzene
1,4-Dichlorobenzene	Trichloroethene
1,1-Dichloroethene	Vinyl chloride
trans-1,2-Dichloroethene	o-Xylene

Mix E

M-502E

0.2 mg/mL each in MeOH

1 x 1 mL

21 comps.

Bromomethane	Hexachlorobutadiene
Chlorobenzene	Methylene chloride
Chloromethane	1,1,1-Trichloroethane
2-Chlorotoluene	1,1,2-Trichloroethane
Dibromochloromethane	Trichlorofluoromethane
1,3-Dichlorobenzene	Styrene
1,1-Dichloroethane	1,2,3-Trichloropropane
1,2-Dichloroethane	1,2,4-Trimethylbenzene
cis-1,2-Dichloroethene	m-Xylene
1,2-Dichloropropane	
cis-1,3-Dichloropropene*	* cis (1.06 x conc.)
trans-1,3-Dichloropropene**	** trans (0.94 x conc.)

Mix F

M-502F

0.2 mg/mL each in MeOH

1 x 1 mL

13 comps.

Bromodichloromethane	p-Isopropyl toluene
n-Butyl benzene	Naphthalene
tert-Butyl benzene	n-Propyl benzene
Chloroform	1,1,2,2-Tetrachloroethane
1,2-Dibromo-3-chloropropane	1,3,5-Trimethyl benzene
1,3-Dichloropropane	p-Xylene
1,1-Dichloropropene	

Mixtures of Internal, Surrogate Standards & Fortification Solutions

Internal Standard

M-502-IS

M-502-IS-PAK
2.0 mg/mL each in MeOH

SAVE

1 x 1 mL

5 x 1 mL

2 comps.

1-Chloro-2-bromopropane	Fluorobenzene
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Internal Standard 2

M-502-IS-2

M-502-IS-2-PAK
2.0 mg/mL each in MeOH

SAVE

1 x 1 mL

5 x 1 mL

3 comps.

1-Chloro-2-bromopropane	Methylene chloride-d ₂
Fluorobenzene	

Internal Standard 3

M-502-IS-2-3

2.0 mg/mL in MeOH



1 x 1 mL

Methylene chloride-d ₂

Internal Standard

M-524-IS

M-524-IS-PAK
2.0 mg/mL each in MeOH

SAVE

1 x 1 mL

5 x 1 mL

2 comps.

1,2-Dichlorobenzene-d ₄	Fluorobenzene
------------------------------------	---------------

Internal Standard 2

M-524-IS-2

M-524-IS-2-PAK
2.0 mg/mL in MeOH

SAVE

1 x 1 mL

5 x 1 mL

Fluorobenzene

Fortification Solution

M-524-FS

M-524-FS-PAK
2.0 mg/mL each in MeOH

SAVE

1 x 1 mL

5 x 1 mL

3 comps.

4-Bromofluorobenzene	Fluorobenzene
1,2-Dichlorobenzene-d ₄	

Surrogate Standard

M-524-SS

M-524-SS-PAK
2.0 mg/mL each in MeOH

SAVE

1 x 1 mL

5 x 1 mL

2 comps.

4-Bromofluorobenzene	1,2-Dichlorobenzene-d ₄
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Method 502.2 Internal and Surrogate Standards

With more proposed and promulgated methods available, analytical chemists are trying to combine analyte lists and shorten run-time while still demonstrating method equivalence. AccuStandard has formulated a core evaluation deuterated solution, and a second conventional internal/surrogate evaluation solution. Use of these formulations allows the analyst to quickly evaluate new ISTD/SS combinations for PID, Hall, FID or GC/MS applications.

Popular Internal Standards

M-502-IS 1 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

1-Chloro-2-bromopropane
Fluorobenzene

M-524-IS-2 1 x 1 mL
2.0 mg/mL in MeOH

Fluorobenzene

M-524-IS 1 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

1,2-Dichlorobenzene-d₄
Fluorobenzene

M-502-IS-2 1 x 1 mL
2.0 mg/mL each in MeOH 3 comps.

1-Chloro-2-bromopropane
Fluorobenzene
Methylene chloride-d₂

M-001R 1 x 1 mL
20 mg/mL each in MeOH 3 comps.

Bromochloromethane
1,4-Dichlorobutane
2-Bromo-1-chloropropane

M-8020-IS 1 x 1 mL
0.2 mg/mL each in MeOH 2 comps.

4-Bromofluorobenzene
 α,α,α -Trifluorotoluene

M-8240/60-IS 1 x 1 mL
0.2 mg/mL each in MeOH 5 comps.

Bromochloromethane
Chlorobenzene-d₅
1,4-Dichlorobenzene-d₄
1,4-Difluorobenzene
Pentafluorobenzene

M-8260-IS-R 1 x 1 mL
0.2 mg/mL each in MeOH 4 comps.

2-Bromo-1-chloropropane
1,4-Difluorobenzene
1,4-Dichlorobenzene-d₄
Pentafluorobenzene

M-8260-IS 1 x 1 mL
0.2 mg/mL each in MeOH 4 comps.

Chlorobenzene-d₅
1,4-Difluorobenzene
1,4-Dichlorobenzene-d₄
Pentafluorobenzene

M-8260A/B-IS 1 x 1 mL
0.2 mg/mL each in MeOH 3 comps.

Chlorobenzene-d₅
1,4-Dichlorobenzene-d₄
Fluorobenzene

ISTD/SS Evaluation Mixtures

Conventional ISTD/SS Evaluation Mixture

M-CONV-IS/SS 1 x 1 mL
200 µg/mL each in MeOH 15 comps.

2-Bromochlorobenzene 2-Chloropropane
4-Bromochlorobenzene Dibromofluoromethane
Bromochloromethane 1,4-Dichlorobutane
p-Bromofluorobenzene 1,4-Difluorobenzene
2-Bromo-1-chloropropane Fluorobenzene
1-Chloro-2-fluorobenzene Pentafluorobenzene
1-Chloro-3-fluorobenzene α,α,α -Trifluorotoluene
1-Chloro-4-fluorobenzene

Deuterated ISTD/SS Evaluation Mixture

M-DEUT-IS/SS 1 x 1 mL
200 µg/mL each in MeOH 8 comps.

Benzene-d₆
Chlorobenzene-d₅
1,2-Dichlorobenzene-d₄
1,4-Dichlorobenzene-d₄
1,2-Dichloroethane-d₄
Ethylbenzene-d₁₀
Methylene chloride-d₂
Toluene-d₈

Popular Surrogate Standards

M-502-IS-ASL 1 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

2-Bromo-1-chloropropane
1-Chloro-2-fluorobenzene

M-524-SS 1 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

4-Bromofluorobenzene
1,2-Dichlorobenzene-d₄

M-624-SS-M 1 x 1 mL
20 mg/mL each in MeOH 3 comps.

4-Bromofluorobenzene
Fluorobenzene
Pentafluorobenzene

M-8020-SS 1 x 1 mL
2.0 mg/mL each in MeOH 3 comps.

4-Bromochlorobenzene
1,4-Difluorobenzene
Fluorobenzene

M-8021-SS 1 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

4-Bromochlorobenzene
1,4-Dichlorobutane

M-8021-SS-M 1 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

Bromochloromethane
1,4-Dichlorobutane

M-8021A-SS 1 x 1 mL
20 mg/mL each in MeOH 4 comps.

4-Bromochlorobenzene 1,4-Dichlorobutane
Bromochloromethane 2-Bromo-1-chloropropane

M-8240/60-SS 1 x 1 mL
0.2 mg/mL each in MeOH 4 comps.

p-Bromofluorobenzene 1,2-Dichloroethane-d₄
Dibromofluoromethane Toluene-d₈

Popular ISTD/SS Standards

M-502-IS/SS 1 x 1 mL
2.0 mg/mL each in MeOH 4 comps.

1-Chloro-3-fluorobenzene
2-Chloropropane
Fluorobenzene
 α,α,α -Trifluorotoluene

M-502-IS-QC 1 x 1 mL
1.0 mg/mL each in MeOH 3 comps.

1-Chloro-2-bromopropane
1-Chloro-2-fluorobenzene
Fluorobenzene

M-524-FS 1 x 1 mL
2.0 mg/mL each in MeOH 3 comps.

4-Bromofluorobenzene
1,2-Dichlorobenzene-d₄
Fluorobenzene

M-8010-IS/SS 1 x 1 mL
150 µg/mL each in MeOH 3 comps.

4-Bromochlorobenzene
Bromochloromethane
4-Bromofluorobenzene

M-8020-IS/SS-ASL 1 x 1 mL
1.5 mg/mL each in MeOH 5 comps.

4-Bromochlorobenzene
p-Bromofluorobenzene
1,4-Difluorobenzene
Fluorobenzene
 α,α,α -Trifluorotoluene

M-8240/60-IS/SS 1 x 1 mL
0.2 mg/mL each in MeOH 9 comps.

Bromochloromethane 1,2-Dichloroethane-d₄
p-Bromofluorobenzene 1,4-Difluorobenzene
Chlorobenzene-d₅ Pentafluorobenzene
Dibromofluoromethane Toluene-d₈
1,4-Dichlorobenzene-d₄

M-8260A/B-IS/SS 1 x 1 mL
200 µg/mL each in MeOH 7 comps.

p-Bromofluorobenzene 1,2-Dichloroethane-d₄
Chlorobenzene-d₅ Fluorobenzene
Dibromofluoromethane Toluene-d₈
1,4-Dichlorobenzene-d₄



EPA Method 500 Series

Method 503-506

Method 503.1 Purgeable Aromatics & Alkenes

Purgeable Aromatics & Alkenes

M-503 1 x 1 mL
 M-503-PAK 5 x 1 mL
 0.2 mg/mL each in MeOH 28 comps. **SAVE**

Benzene	Naphthalene
Bromobenzene	<i>n</i> -Propylbenzene
<i>n</i> -Butylbenzene	Styrene
<i>sec</i> -Butylbenzene	Tetrachloroethene
<i>tert</i> -Butylbenzene	Toluene
Chlorobenzene	1,2,3-Trichlorobenzene
2-Chlorotoluene	1,2,4-Trichlorobenzene
4-Chlorotoluene	Trichloroethene
1,2-Dichlorobenzene	1,2,4-Trimethylbenzene
1,3-Dichlorobenzene	1,3,5-Trimethylbenzene
1,4-Dichlorobenzene	<i>o</i> -Xylene
Ethylbenzene	<i>m</i> -Xylene
Hexachlorobutadiene	<i>p</i> -Xylene
Isopropylbenzene	
4-Isopropyltoluene	

Internal Standard

M-602-SS 1 x 1 mL
 M-602-SS-PAK 5 x 1 mL
 0.2 mg/mL in MeOH **SAVE**

α,α,α -Trifluorotoluene

Method 504 EDB & DBCP by ECD

EDB & DBCP

M-504 1 x 1 mL
 M-504-PAK 5 x 1 mL
 0.2 mg/mL each in MeOH
 M-504-10X 1 x 1 mL
 M-504-10X-PAK 5 x 1 mL
 2.0 mg/mL each in MeOH **SAVE** 2 comps.

1,2-Dibromoethane (EDB)
 1,2-Dibromo-3-chloropropane (DBCP)

Method 504.1 EDB, DBCP & TCP by ECD

Calibration Stock Solution

M-504.1-CSS 1 x 1 mL
 M-504.1-CSS-PAK 5 x 1 mL
 0.2 mg/mL each in MeOH 3 comps. **SAVE**

1,2-Dibromoethane (EDB) 1,2,3-Trichloropropane
 1,2-Dibromo-3-chloropropane (DBCP)

Laboratory Fortified Blank Sample Concentrate

M-504.1-LFB 1 x 1 mL
 M-504.1-LFB-PAK 5 x 1 mL
 0.25 μ g/mL each in MeOH 3 comps. **SAVE**

1,2-Dibromoethane (EDB) 1,2,3-Trichloropropane
 1,2-Dibromo-3-chloropropane (DBCP)

MDL Check Sample Concentrate

M-504.1-MDL 1 x 1 mL
 M-504.1-MDL-PAK 5 x 1 mL
 0.02 μ g/mL each in MeOH 3 comps. **SAVE**

1,2-Dibromoethane (EDB) 1,2,3-Trichloropropane
 1,2-Dibromo-3-chloropropane (DBCP)

Method 504 Set

M-504.1-SET 3 x 1 mL
 (M-504.1-CSS, M-504.1-LFB, M-504.1-MDL)

Method 505 Organohalide Pesticides by Microextraction & GC/ECD

M-505R-2 1 x 1 mL
 M-505R-2-PAK 5 x 1 mL
 At stated conc. in MeOH 16 comps. **SAVE**

Alachlor (10 μ g/mL)	Heptachlor epoxide (1 μ g/mL)
Aldrin (1 μ g/mL)	Hexachlorobenzene (1 μ g/mL)
Atrazine (250 μ g/mL)	Hexachlorocyclopentadiene (1 μ g/mL)
α -Chlordane (1 μ g/mL)	Lindane (1 μ g/mL)
γ -Chlordane (1 μ g/mL)	Methoxychlor (5 μ g/mL)
Dieldrin (1 μ g/mL)	<i>cis</i> -Nonachlor (1 μ g/mL)
Endrin (1 μ g/mL)	<i>trans</i> -Nonachlor (1 μ g/mL)
Heptachlor (1 μ g/mL)	Simazine (250 μ g/mL)

Multi-Component Analytes

(Polychlorinated Biphenyls, Chlordane & Toxaphene)

Each at 1,000 μ g/mL in Hexane **AccuPAK™ (5 x 1 mL)** **SAVE**

Aroclors #	Cat. No.	1 mL	Cat. No.	PAK
Aroclor 1016	C-216S-H-10X		C-216S-H-10X-PAK	
Aroclor 1221	C-221S-H-10X		C-221S-H-10X-PAK	
Aroclor 1232	C-232S-H-10X		C-232S-H-10X-PAK	
Aroclor 1242	C-242S-H-10X		C-242S-H-10X-PAK	
Aroclor 1248	C-248S-H-10X		C-248S-H-10X-PAK	
Aroclor 1254	C-254S-H-10X		C-254S-H-10X-PAK	
Aroclor 1260	C-260S-H-10X		C-260S-H-10X-PAK	
Aroclor 1262	C-262S-H-10X		C-262S-H-10X-PAK	
Aroclor 1268	C-268S-H-10X		C-268S-H-10X-PAK	

Pesticides

Chlordane	P-017S-H-10X	P-017S-H-10X-PAK
Toxaphene	P-093S-H-10X	P-093S-H-10X-PAK

Degradation Standard

P-045S 1 x 1 mL
 100 μ g/mL in MeOH
 Endrin

Method 506 Phthalate Esters by PID

Phthalate Esters

M-506 1 x 1 mL
 M-506-PAK 5 x 1 mL
 1.0 mg/mL each in Isooctane 7 comps. **SAVE**

Benzyl butyl phthalate	bis(2-Ethylhexyl)adipate
Dimethyl phthalate	bis(2-Ethylhexyl)phthalate
Diethyl phthalate	Di- <i>n</i> -octyl phthalate
Di- <i>n</i> -butyl phthalate	

M-506-QC 1 x 1 mL
 M-506-QC-PAK 5 x 1 mL
 At stated conc. in MeOH 7 comps. **SAVE**

Benzyl butyl phthalate (0.25 mg/mL)	bis(2-Ethyl hexyl)adipate (1.2 mg/mL)
Dimethyl phthalate (0.1 mg/mL)	bis(2-Ethylhexyl)phthalate (0.25 mg/mL)
Diethyl phthalate (0.1 mg/mL)	Di- <i>n</i> -octyl phthalate (0.65 mg/mL)
Di- <i>n</i> -butyl phthalate (0.1 mg/mL)	



Method 507 Nitrogen & Phosphorus Containing Pesticides by GC/NPD

Mix A

M-507A		1 x 1 mL
M-507A-PAK	SAVE	5 x 1 mL
1.0 mg/mL each in MtBE		6 comps.
Ametryn	Fenamiphos	
Cycloate	Merphos	
Disulfoton	Prometon	

Mix B

M-507B		1 x 1 mL
M-507B-PAK	SAVE	5 x 1 mL
1.0 mg/mL each in MtBE		9 comps.
Atrazine	Prometryne	
Diphenamid	Propazine	
EPTC	Terbutryn	
Ethoprop	Triadimefon	
Mevinphos		

Mix C

M-507C		1 x 1 mL
M-507C-PAK	SAVE	5 x 1 mL
1.0 mg/mL each in MtBE		9 comps.
Butachlor	MGK-264	
Carboxin	Norflurazon	
Diazinon	Terbufos	
Metolachlor	Vernolate	
Metribuzin		

Mix D

M-507D		1 x 1 mL
M-507D-PAK	SAVE	5 x 1 mL
1.0 mg/mL each in MtBE		10 comps.
Alachlor	Hexazinone	
Atraton	Molinate	
Bromacil	Pronamide	
Butylate	Stirofos	
Chlorpropham	Tricyclazole	

Mix E

M-507E		1 x 1 mL
M-507E-PAK	SAVE	5 x 1 mL
1.0 mg/mL each in MtBE		8 comps.
Dichlorvos	Pebulate (<i>Tillam</i>)	
Fenarimol	Simetryn	
Fluridone	Tebuthiuron	
Napropamide	Terbacil	

Mix F

M-507F-R2		1 x 1 mL
M-507F-R2-PAK	SAVE	5 x 1 mL
1.0 mg/mL each in Acetone		2 comps.
Methyl paraoxon	Simazine	

Mix G

M-507G		1 x 1 mL
M-507G-PAK	SAVE	5 x 1 mL
1.0 mg/mL each in MtBE		8 comps.
Benefin	Oxyfluorfen	
Isopropalin	Propachlor	
Pendimethalin	Profluralin	
Oxadiazon	Trifluralin	

Mix H

M-507H		1 x 1 mL
M-507H-PAK	SAVE	5 x 1 mL
1.0 mg/mL each in MtBE		
DEF (for Merphos quantitation)		

Method 507 Set

M-507-R-SET 8 x 1 mL (M-507A, M-507B, M-507C, M-507D, M-507E, M-507F-R2, M-507G, M-507H)

Performance Check Solution

M-507-QC		1 x 1 mL
M-507-QC-PAK	SAVE	5 x 1 mL
At stated conc. in MtBE		6 comps.
Atrazine (150 ng/mL)	Prometon (300 ng/mL)	
DNB (2500 ng/mL)	TPP (2500 ng/mL)	
Bromacil (5000 ng/mL)	Vernolate (50 ng/mL)	

Surrogate Standard

M-507-SS		1 x 1 mL
M-507-SS-PAK	SAVE	5 x 1 mL
0.25 mg/mL in MtBE		
M-507-SS-4X NEW		1 x 1 mL
1.0 mg/mL in MtBE		
1,3-Dimethyl-2-nitrobenzene		

Internal Standard

M-507-IS		1 x 1 mL
M-507-IS-PAK	SAVE	5 x 1 mL
0.5 mg/mL in MtBE		
M-507-IS-10X		1 x 1 mL
5.0 mg/mL in MtBE		
Triphenyl phosphate		

Mix H

M-507H		1 x 1 mL
M-507H-PAK	SAVE	5 x 1 mL
1.0 mg/mL each in MtBE		
DEF (for Merphos quantitation)		



Method 508 Chlorinated Pesticides by GC/ECD

Chlorinated Pesticides Mix A

M-508P-A			1 x 1 mL
M-508P-A-PAK		SAVE	5 x 1 mL
1.0 mg/mL each in MtBE			
Aldrin	4,4'-DDE	Endrin	
α-BHC	4,4'-DDT	Endrin aldehyde	
β-BHC	Dieldrin	Heptachlor	
δ-BHC	Endosulfan I	Heptachlor epoxide	
γ-BHC	Endosulfan II	Methoxychlor	
4,4'-DDD	Endosulfan sulfate		

Chlorinated Pesticides Mix B

M-508P-B-R			1 x 1 mL
M-508P-B-R-PAK		SAVE	5 x 1 mL
1.0 mg/mL each in MtBE			
α-Chlordane	Chlorpyrifos	cis-Permethrin (0.5 mg/mL)	
γ-Chlordane	DCPA	trans-Permethrin (1.5 mg/mL)	
Chlorobenzilate	Etridiazole	Propachlor	
Chloroneb	Hexachlorobenzene	Trifluralin	
Chlorothalonil			

Certificate will reflect actual cis/trans permethrin ratio

Technical Note

Endrin & DDT can break down in the injection port at elevated temperatures. Breakdown can be monitored by running the Pesticide Degradation Standard (M-8081-DS). The problem can be alleviated by replacing the dirty injection port liner, or by using cool, on-column injection.

Internal Standard

M-508-IS			1 x 1 mL
M-508-IS-PAK		SAVE	5 x 1 mL
0.1 mg/mL in MtBE			
M-508-IS-10X	NEW		1 x 1 mL
1.0 mg/mL in MtBE			
Pentachloronitrobenzene			

M-508P-B-R2			1 x 1 mL
M-508P-B-R2-PAK		SAVE	5 x 1 mL
1.0 mg/mL each in MtBE			
α-Chlordane	Chlorpyrifos	cis-Permethrin (0.5 mg/mL)	
γ-Chlordane	DCPA	trans-Permethrin (1.5 mg/mL)	
Chlorobenzilate	Etridiazole	Propachlor	
Chloroneb	Hexachlorobenzene	Trifluralin	
Chlorothalonil	Cyanazine	trans-Nonachlor	

Certificate will reflect actual cis/trans permethrin ratio

Surrogate Standards

M-508-SS			1 x 1 mL
M-508-SS-PAK		SAVE	5 x 1 mL
0.5 mg/mL in MtBE			
4,4'-Dichlorobiphenyl			
M-508-SS-2			1 x 1 mL
M-508-SS-2-PAK		SAVE	5 x 1 mL
0.5 mg/mL in MtBE			
Decachlorobiphenyl			

Method 508A PCBs by Perchlorination / GC

Aroclor® Stock Solution

M-508A-1			1 x 1 mL
M-508A-1-PAK		SAVE	5 x 1 mL
5.0 mg/mL in MeOH			
Aroclor 1260			

DCB Stock Solution

M-508A-2			1 x 1 mL
M-508A-2-PAK		SAVE	5 x 1 mL
1.0 mg/mL in Toluene			
Decachlorobiphenyl			

Decomposition Solution

M-508-DS-100X			1 x 1 mL
M-508-DS-100X-PAK		SAVE	5 x 1 mL
At stated conc. in MtBE			
p,p'-DDT (200 µg/mL) Endrin (100 µg/mL)			

Perchlorinated Aromatics

Neats	Cat. No.	Unit
Decachlorobiphenyl	C-209N	10 mg
Hexachlorobenzene	A-012	100 mg
Octachlorodibenzofuran	F-801N	50 mg
Octachlorodibenzo-p-dioxin	D-801N	50 mg
Solutions	35 µg/mL in Toluene	1 mL
Octachlorostyrene	PC-001S	
Perchlorinated p,p'-DDE	PC-002S	
Tetradecachloro-o-terphenyl	T-004S	
Tetradecachloro-m-terphenyl	T-005S	
Tetradecachloro-p-terphenyl	T-006S	
Aroclor 5442	T-442S	

Performance Check Solution

M-508-QC			1 x 1 mL
M-508-QC-PAK		SAVE	5 x 1 mL
At stated conc. in MtBE			
δ-BHC (40 ng/mL)	Chlorpyrifos (2 ng/mL)		
Chlorothalonil (50 ng/mL)	Dacthal (50 ng/mL)		



Method 508.1 Chlorinated Pesticides, Herbicides & Organo-Halides by Liquid - Solid Extraction & ECD

Chlorinated Pesticide Mix #1

M-508.1-X1		1 x 1 mL
M-508.1-X1-PAK	SAVE	5 x 1 mL
500 µg/mL each in Ethyl acetate		
Aldrin	Dieldrin	
α-BHC	Endosulfan I	
β-BHC	Endosulfan II	
δ-BHC	Endosulfan sulfate	
γ-BHC	Endrin	
α-Chlordane	Endrin aldehyde	
γ-Chlordane	Heptachlor	
4,4'-DDD	Heptachlor epoxide (B)	
4,4'-DDE	Methoxychlor	
4,4'-DDT		

Chlorinated Pesticide Mix #2

M-508.1-X2		1 x 1 mL
M-508.1-X2-PAK	SAVE	5 x 1 mL
500 µg/mL each in Ethyl acetate		
Alachlor	Hexachlorocyclopentadiene	
Atrazine	Metolachlor	
Chlorobenzilate	Metribuzin	
Chloroneb	cis-Permethrin	
Chlorothalonil	trans-Permethrin	
Cyanazine	Propachlor	
DCPA	Simazine	
Etridiazole	Trifluralin	
Hexachlorobenzene		

Certificate will reflect actual cis/trans permethrin ratio

Decomposition Solution

M-508.1-DS-100X		1 x 1 mL
M-508.1-DS-100X-PAK	SAVE	5 x 1 mL
100 µg/mL each in Ethyl acetate		
4,4'-DDT	Endrin	2 comps.

Internal Standard Solution

M-508.1-IS		1 x 1 mL
M-508.1-IS-PAK	SAVE	5 x 1 mL
100 µg/mL each in Ethyl acetate		
Pentachloronitrobenzene		

Surrogate Standard Solution

M-508.1-SS		1 x 1 mL
M-508.1-SS-PAK	SAVE	5 x 1 mL
100 µg/mL each in Ethyl acetate		
4,4'-Dibromobiphenyl		

Performance Check Solution

M-508.1-QC		1 x 1 mL
M-508.1-QC-PAK	SAVE	5 x 1 mL
At stated conc. in MtBE		
δ-BHC (400 ng/mL)	Chlorpyrifos (20 ng/mL)	
Chlorothalonil (500 ng/mL)	DCPA (500 ng/mL)	

Method 509 Ethylene Thiourea by GC/NPD

Performance Check Solution

M-509-PC		1 x 1 mL
At stated conc. in Ethyl acetate containing 0.1% w/v DTT (scavenger)		
Ethylene thiourea	(10 ng/mL)	3 comps.
4-Methylimidazolidine-2-thione	(100 ng/mL)	
3,4,5,6-Tetrahydro-2-pyrimidinethiol	(1000 ng/mL)	

Ethylene Thiourea Standard

M-509		1 x 1 mL
0.1 mg/mL in Ethyl acetate containing 0.1% w/v DTT (scavenger)		
Ethylene thiourea		

Internal Standard

M-509-IS		1 x 1 mL
0.1 mg/mL in Ethyl acetate containing 0.1% w/v DTT (scavenger)		
3,4,5,6-Tetrahydro-2-pyrimidinethiol (THP)		

Surrogate Standard

M-509-SS		1 x 1 mL
0.1 mg/mL in Ethyl acetate containing 0.1% w/v DTT (scavenger)		
4-Methylimidazolidine-2-thione		

Radical Scavenger Solution

M-509-RS-10ML		1 x 10 mL
1.0 mg/mL in Ethyl acetate		
Dithiothreitol (DTT)		

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EPA Method 500 Series

Method 515

Method 515.1 Chlorinated Acids in Water by GC/ECD

Methyl Derivatives

M-515-R		1 x 1 mL
M-515-R-PAK	SAVE	5 x 1 mL
<i>1.0 mg/mL each in MtBE as methyl derivatives</i>		
Acifluorfen, ME	3,5-Dichlorobenzoic acid, ME	
Bentazon, ME	Dichlorprop, ME	
Chloramben, ME	Dinoseb, ME	
2,4-D, ME	4-Nitrophenol, ME	
Dalapon, ME	Pentachlorophenol, ME	
2,4-DB, ME	Picloram, ME	
DCPA, Di ME	2,4,5-T, ME	
Dicamba, ME	2,4,5-TP, ME	

Underivatized Analytes

M-515A-R2		1 x 1 mL
M-515A-R2-PAK	SAVE	5 x 1 mL
<i>At stated conc. in MeOH</i>		
Acifluorfen (100 µg/mL)	3,5-Dichlorobenzoic acid (100 µg/mL)	
Bentazon (200 µg/mL)	Dichlorprop (300 µg/mL)	
Chloramben (100 µg/mL)	Dinoseb (200 µg/mL)	
2,4-D (200 µg/mL)	4-Nitrophenol (100 µg/mL)	
Dalapon (1300 µg/mL)	Pentachlorophenol (100 µg/mL)	
2,4-DB (800 µg/mL)	Picloram (100 µg/mL)	
DCPA acid (100 µg/mL)	2,4,5-T (100 µg/mL)	
Dicamba (100 µg/mL)	2,4,5-TP (100 µg/mL)	

Technical Note

If you require the complete absence of partial esterification, we recommend M-515.4A and M-515.3A products.

Performance Check Solution

M-515-QC		1 x 1 mL
M-515-QC-R-PAK	SAVE	5 x 1 mL
<i>At stated conc. in MtBE</i>		
3,5-Dichlorobenzoic acid methyl ester	(600 ng/mL)	
Dinoseb methyl ether	(4 ng/mL)	
4-Nitroanisole	(1600 ng/mL)	

Performance Check Solution with ISTD & SS

M-515-QC-R		1 x 1 mL
M-515-QC-R-PAK	SAVE	5 x 1 mL
<i>At stated conc. in MtBE</i>		
4,4'-Dibromooctafluorobiphenyl (ISTD)	(250 ng/mL)	
3,5-Dichlorobenzoic acid methyl ester	(600 ng/mL)	
2,4-Dichlorophenyl acetic acid methyl ester (SS)	(500 ng/mL)	
Dinoseb methyl ether	(4 ng/mL)	
4-Nitroanisole	(1600 ng/mL)	

Internal Standard

M-515-IS		1 x 1 mL
M-515-IS-PAK	SAVE	1 x 1 mL
<i>0.1 mg/mL in MtBE</i>		
4,4'-Dibromooctafluorobiphenyl		

Surrogate Standards

M-515-SS		1 x 1 mL
M-515-SS-PAK	SAVE	5 x 1 mL
<i>0.1 mg/mL in MtBE</i>		
M-515-SS-50X NEW		5 x 1 mL
<i>5.0 mg/mL in MtBE</i>		
2,4-Dichlorophenylacetic acid methyl ester		

P-244S		1 x 1 mL
<i>0.1 mg/mL in MeOH</i>		
2,4-Dichlorophenylacetic acid		

Method 515.2 Chlorinated Acids in Water by GC/ECD

Methyl Derivatives

M-515.2-1		1 x 1 mL
M-515.2-1-PAK	SAVE	5 x 1 mL
<i>At stated conc. in MeOH</i>		
DCPA, ME	(100 µg/mL)	Dinoseb, ME (200 µg/mL)
3,5-Dichlorobenzoic acid, ME (500 µg/mL)		Pentachlorophenol, ME (100 µg/mL)
Dichlorprop, ME (100 µg/mL)		2,4,5-T, ME (100 µg/mL)

M-515.2-2		1 x 1 mL
M-515.2-2-PAK	SAVE	5 x 1 mL
<i>At stated conc. in MeOH</i>		

Acifluorfen, ME (200 µg/mL)	Dicamba, ME (300 µg/mL)
Bentazon, ME (1000 µg/mL)	Picloram, ME (300 µg/mL)
2,4-D, ME (100 µg/mL)	2,4,5-TP, ME (100 µg/mL)
2,4-DB, ME (1000 µg/mL)	

Underivatized Analytes

M-515.2A-1		1 x 1 mL
M-515.2A-1-PAK	SAVE	5 x 1 mL
<i>At stated conc. in MeOH</i>		
DCPA acid (100 µg/mL)	Dinoseb (200 µg/mL)	
3,5-Dichlorobenzoic acid (500 µg/mL)	Pentachlorophenol (100 µg/mL)	
Dichlorprop (100 µg/mL)	2,4,5-T (100 µg/mL)	

M-515.2A-2		1 x 1 mL
M-515.2A-2-PAK	SAVE	5 x 1 mL
<i>At stated conc. in MeOH</i>		

Acifluorfen (200 µg/mL)	Dicamba (300 µg/mL)
Bentazon (1000 µg/mL)	Picloram (300 µg/mL)
2,4-D (100 µg/mL)	2,4,5-TP (100 µg/mL)
2,4-DB (1000 µg/mL)	

Method 515.1 & 515.2 Chlorinated Acids in Water by GC/ECD

Laboratory Performance Check Solution

M-8150/51-LPC-5ML		1 x 5 mL
<i>At stated conc. in Isooctane</i>		
3,5-Dichlorobenzoic acid (600 ng/mL)	DCAA (500 ng/mL)	
Dinoseb (4 ng/mL)	DBOB (250 ng/mL)	
4-Nitrophenol (1600 ng/mL)		



Method 515.3 Chlorinated Acids in Drinking Water by ECD

Underivatized Acids

M-515.3A			1 x 1 mL
M-515.3A-PAK		SAVE	5 x 1 mL
<i>At stated conc. in Acetone</i>			
Acifluorfen (50 µg/mL)	3,5-Dichlorobenzoic acid (50 µg/mL)		17 comps.
Bentazon (100 µg/mL)	Dichlorprop (100 µg/mL)		
Chloramben (50 µg/mL)	Dinoseb (100 µg/mL)		
2,4-D (100 µg/mL)	4-Nitrophenol (100 µg/mL)		
Dalapon (100 µg/mL)	Pentachlorophenol (10 µg/mL)		
2,4-DB (100 µg/mL)	Picloram (100 µg/mL)		
DCPA Diacid (50 µg/mL)	2,4,5-T (25 µg/mL)		
DCPA monoacid (50 µg/mL)	Silvex (25 µg/mL)		
Dicamba (50 µg/mL)			

Laboratory Performance Check

Methyl Derivatives

M-515.3-LPC			1 x 1 mL
M-515.3-LPC-PAK		SAVE	5 x 1 mL
<i>At stated conc. in MtBE</i>			
2,4-DB methyl ester (25 µg/mL)			
Dinoseb methyl ether (25 µg/mL)			
Chloramben methyl ester (12.5 µg/mL)			
4-Nitroanisole (25 µg/mL)			

Independent Check Standard Methyl Derivatives

M-515.3-ICS			1 x 1 mL
M-515.3-ICS-PAK		SAVE	5 x 1 mL
<i>At stated conc. in MtBE</i>			
Acifluorfen methyl ester (50 µg/mL)	Methyl-3,5-Dichlorobenzoate (50 µg/mL)		16 comps.
Bentazon methyl (100 µg/mL)	Dichlorprop methyl ester (100 µg/mL)		
Chloramben methyl ester (50 µg/mL)	Dinoseb methyl ether (100 µg/mL)		
2,4-D methyl ester (100 µg/mL)	4-Nitroanisole (100 µg/mL)		
Dalapon methyl ester (100 µg/mL)	Pentachloroanisole (10 µg/mL)		
2,4-DB methyl ester (100 µg/mL)	Picloram methyl ester (100 µg/mL)		
Dacthal (100 µg/mL)	2,4,5-T methyl ester (25 µg/mL)		
Dicamba methyl ester (50 µg/mL)	Silvex methyl ester (25 µg/mL)		

Internal Standard

M-515-IS			1 x 1 mL
M-515-IS-PAK		SAVE	5 x 1 mL
<i>0.1 mg/mL in MtBE</i>			
4,4'-Dibromooctafluorobiphenyl			

Method 515.4 Chlorinated Acids in Drinking Water by ECD

Underivatized Acids

M-515.4A			1 x 1 mL
M-515.4A-PAK		SAVE	5 x 1 mL
<i>At stated conc. in Acetone</i>			
Acifluorfen (50 µg/mL)	3,5-Dichlorobenzoic acid (50 µg/mL)		17 comps.
Bentazon (100 µg/mL)	Dichlorprop (100 µg/mL)		
Chloramben (50 µg/mL)	Dinoseb (100 µg/mL)		
2,4-D (100 µg/mL)	Pentachlorophenol (10 µg/mL)		
Dalapon (100 µg/mL)	Picloram (50 µg/mL)		
2,4-DB (100 µg/mL)	2,4,5-T (25 µg/mL)		
DCPA Diacid (50 µg/mL)	Silvex (25 µg/mL)		
DCPA monoacid (50 µg/mL)	Quinlorac (50 µg/mL)		
Dicamba (50 µg/mL)			

Underivatized Surrogate

M-8150B-SS			1 x 1 mL
M-8150B-SS-PAK		SAVE	5 x 1 mL
<i>0.1 mg/mL in Acetone</i>			
2,4-Dichlorophenylacetic acid			

Quality Control Sample Methyl Derivatives

M-515.4-QCS			1 x 1 mL
M-515.4-QCS-PAK		SAVE	5 x 1 mL
<i>At stated conc. in MtBE</i>			
Acifluorfen methyl ester (50 µg/mL)	Methyl-3,5-Dichlorobenzoate (50 µg/mL)		16 comps.
Bentazon methyl (100 µg/mL)	Dichlorprop methyl ester (100 µg/mL)		
Chloramben methyl ester (50 µg/mL)	Dinoseb methyl ether (100 µg/mL)		
2,4-D methyl ester (100 µg/mL)	Pentachloroanisole (10 µg/mL)		
Dalapon methyl ester (100 µg/mL)	Picloram methyl ester (50 µg/mL)		
2,4-DB methyl ester (100 µg/mL)	2,4,5-T methyl ester (25 µg/mL)		
Dacthal (100 µg/mL)	Silvex methyl ester (25 µg/mL)		
Dicamba methyl ester (50 µg/mL)	Quinlorac methyl ester (50 µg/mL)		

Technical Note

M-515.3A and M-515.4A are to be used as procedural standards for the calibration of the method. These standards should be carried through the entire extraction and derivatization procedure associated with the samples.

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EPA Method 500 Series

Method 521-524

Method 521 Nitrosamines by SPE & Capillary Column GC

Analyte Stock Solution

M-521 1 x 1 mL
200 µg/mL each in CH₂Cl₂ 7 comps.

N-Nitrosodimethylamine	N-Nitrosodi-n-butylamine
N-Nitrosomethylethylamine	N-Nitrosopyrrolidine
N-Nitrosodiethylamine	N-Nitrosopiperidine
N-Nitrosodi-n-propylamine	

Internal Standard Stock Solution

M-521-IS 1 x 1 mL
M-521-IS-PAK SAVE 5 x 1 mL
1.0 mg/mL in CH₂Cl₂

N-Nitrosodi-n-propylamine-d₁₁

Surrogate Standard Stock Solution

M-521-SS 1 x 1 mL
M-521-SS-PAK SAVE 5 x 1 mL
1.0 mg/mL in CH₂Cl₂

N-Nitrosodimethylamine-d₆

Aldehydes and Ketones in Alcohol Solvents

Standards containing aldehydes and ketones in methanol are given shorter expiration periods because of their ability to form acetals and ketals. AccuStandard adds stabilizers to inhibit this reaction. To enhance stability, freezer storage is required.

Analyzing Volatiles

Special Considerations for Volatile Analytes

Volatile Analytes, especially gases, can be troublesome to analyze. To provide the best possible standard we suggest the following procedures:

1. Keep the ampules cool (follow the storage conditions on the label).
2. Prior to use, invert the ampule several times to ensure the gases are in the solution, not in the headspace. Mixing too vigorously can cause the gases to be lost as well.
3. Use freshly opened ampules whenever possible.
4. When transferring, take care to avoid losses of the very volatile components. For example, holding the barrel of a syringe in your hand can warm it enough to lose some of the most volatile components.
5. If using the purge and trap (PT) system is giving questionable results, try a direct liquid injection. If the results are not as expected, there may be a problem with the PT apparatus.

Method 524.2 Volatile Organic Compounds by GC/MS

See M-502.2 VOCs by PID/ELCD
54 Liquid & 6 Gaseous Compounds

Addition to Method 524.2 (Revision 4.0 August 1992)

M-524R-B 1 x 1 mL
M-524R-B-PAK SAVE 5 x 1 mL
2.0 mg/mL each in MeOH 24 comps.

Acetone	2-Hexanone
Acrylonitrile	Methacrylonitrile
Allyl chloride	Methylacrylate
2-Butanone	Methyl iodide
Carbon disulfide	Methylmethacrylate
Chloroacetonitrile	4-Methyl-2-pentanone
1-Chlorobutane	Methyl-t-butyl ether
trans-1,4-Dichloro-2-butene	Nitrobenzene
1,1-Dichloropropanone	2-Nitropropane
Diethyl ether	Pentachloroethane
Ethyl methacrylate	Propionitrile
Hexachloroethane	Tetrahydrofuran

Mixtures of Internal, Surrogate Standards & Fortification Solutions

Internal Standards

M-502-IS 1 x 1 mL
M-502-IS-PAK SAVE 5 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

1-Chloro-2-bromopropane Fluorobenzene

M-502-IS-2 1 x 1 mL
M-502-IS-2-PAK SAVE 5 x 1 mL
2.0 mg/mL each in MeOH 3 comps.

1-Chloro-2-bromopropane Methylene chloride-d₂
Fluorobenzene

M-524-IS 1 x 1 mL
M-524-IS-PAK SAVE 5 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

1,2-Dichlorobenzene-d₄ Fluorobenzene

M-524-IS-2 1 x 1 mL
M-524-IS-2-PAK SAVE 5 x 1 mL
2.0 mg/mL in MeOH
M-524-IS-2-10X NEW 5 x 1 mL
20 mg/mL in MeOH

Fluorobenzene

Fortification Standard

M-524-FS 1 x 1 mL
M-524-FS-PAK SAVE 5 x 1 mL
2.0 mg/mL each in MeOH 3 comps.

4-Bromofluorobenzene Fluorobenzene
1,2-Dichlorobenzene-d₄

Surrogate Standard

M-524-SS 1 x 1 mL
M-524-SS-PAK SAVE 5 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

4-Bromofluorobenzene 1,2-Dichlorobenzene-d₄

GC/MS Tuning Solution

M-624-SS-03-10X 1 x 1 mL
2.0 mg/mL each in MeOH

p-Bromofluorobenzene



Method 525.1 Organic Compounds in Drinking Water by Liquid-Solid Extraction and Capillary GC/MS

PAH Mixtures

M-525-1		1 x 1 mL
M-525-1-PAK	SAVE	5 x 1 mL
0.1 mg/mL each in Acetone		
M-525-1-5X		1 x 1 mL
M-525-1-5X-PAK	SAVE	5 x 1 mL
0.5 mg/mL each in Acetone		
Acenaphthylene	Chrysene	
Anthracene	Dibenz[a,h]anthracene	
Benz[a]anthracene	Fluorene	
Benzo[b]fluoranthene	Indeno[1,2,3-cd]pyrene	
Benzo[k]fluoranthene	Phenanthrene	
Benzo[a]pyrene	Pyrene	
Benzo[g,h,i]perylene		

PCB Congener Mixtures

M-525-2		1 x 1 mL
M-525-2-PAK	SAVE	5 x 1 mL
0.1 mg/mL each in Acetone		
M-525-2-5X		1 x 1 mL
M-525-2-5X-PAK	SAVE	5 x 1 mL
0.5 mg/mL each in Acetone		
2-Chlorobiphenyl (#1)		
2,3-Dichlorobiphenyl (#5)		
2,2',3,3',4,4',6-Heptachlorobiphenyl (#171)		
2,2',4,4',5,6'-Hexachlorobiphenyl (#154)		
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (#200)		
2,2',3',4,6-Pentachlorobiphenyl (#98)		
2,2',4,4'-Tetrachlorobiphenyl (#47)		
2,4,5-Trichlorobiphenyl (#29)		

Internal Standard

M-525-IS		1 x 1 mL
M-525-IS-PAK	SAVE	5 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂		
Acenaphthene-d ₁₀	Perylene-d ₁₂	
Chrysene-d ₁₂	Phenanthrene-d ₁₀	

Fortification Standards

M-525-FS-1		1 x 1 mL
M-525-FS-1-PAK	SAVE	5 x 1 mL
0.5 mg/mL each in Acetone		
Acenaphthene-d ₁₀	Perylene-d ₁₂	
Chrysene-d ₁₂	Phenanthrene-d ₁₀	
M-525-FS-2		1 x 1 mL
M-525-FS-2-PAK	SAVE	5 x 1 mL
0.5 mg/mL in CH ₂ Cl ₂		
<i>p</i> -Terphenyl-d ₁₄		

Pesticide Mixtures

M-525-3		1 x 1 mL
M-525-3-PAK	SAVE	5 x 1 mL
0.1 mg/mL each in Acetone		
M-525-3-5X		1 x 1 mL
M-525-3-5X-PAK	SAVE	5 x 1 mL
0.5 mg/mL each in Acetone		
Alachlor	Heptachlor	
Aldrin	Heptachlor epoxide	
Atrazine	Lindane	
α-Chlordane	Methoxychlor	
γ-Chlordane	Simazine	
Endrin	<i>trans</i> -Nonachlor	

Semi-Volatile Mixtures

M-525-4		1 x 1 mL
M-525-4-PAK	SAVE	5 x 1 mL
0.1 mg/mL in Acetone (PCP 0.4 mg/mL)		
M-525-4-5X		1 x 1 mL
M-525-4-5X-PAK	SAVE	5 x 1 mL
0.5 mg/mL in Acetone (PCP 2.0 mg/mL)		
Butylbenzylphthalate	Hexachlorobenzene	
di- <i>n</i> -Butylphthalate	Hexachlorocyclopentadiene	
Diethylphthalate	bis(2-Ethylhexyl)phthalate	
bis(2-Ethylhexyl)adipate	Pentachlorophenol (PCP)	
Dimethylphthalate		

Multi-Component / Analyte

M-525-5		1 x 1 mL
M-525-5-PAK	SAVE	5 x 1 mL
2.5 mg/mL in Acetone		
Toxaphene		

Tuning Standards

CLP-TS		1 x 1 mL
CLP-TS-PAK	SAVE	5 x 1 mL
50 µg/mL in CH ₂ Cl ₂		
Perfluorokerosene		

M-525-TS		1 x 1 mL
M-525-TS-PAK	SAVE	5 x 1 mL
0.1 mg/mL in CH ₂ Cl ₂		
DFTPP		

Surrogate Standard

M-525-SS		1 x 1 mL
M-525-SS-PAK	SAVE	5 x 1 mL
0.5 mg/mL in Acetone		
Pyrene-d ₁₀		

Buy the Complete Set and Save

Method 525 Organic Compounds in Drinking Water Sets

M-525-R-SET	5 x 1 mL (M-525-1, M-525-2, M-525-3, M-525-4, M-525-5)
M-525-R-5X-SET	5 x 1 mL (M-525-1-5X, M-525-2-5X, M-525-3-5X, M-525-4-5X, M-525-5)
M-525-SET	7 x 1 mL (M-525-1-5X, M-525-2-5X, M-525-3-5X, M-525-4-5X, M-525-5, M-525-IS, M-525-TS)



EPA Method 500 Series

Method 525.2 (Revision 1.0) Organic Compounds in Drinking Water by Liquid-Solid Extraction and Capillary GC/MS

All 112 analytes (excluding Disulfoton sulfoxide and Disulfoton sulfone which can be found in the Pesticide section) listed in this revision can be found in the mixes below. We realize that many labs will not be analyzing for all of these analytes at one time since it is not practical or necessary in many instances. If all the analytes must be determined, the following multiple calibration mixes are offered to accomplish this task. Several of these mixes are from our current product line and are grouped as nitrogen/phosphorus pesticides, organochlorine pesticides, semi-volatiles, polyaromatics, PCB congeners, and individual multi-component solutions for the Aroclors and Toxaphene. These solutions can be purchased individually or as a complete set to complement your laboratory's particular needs. Additionally, the required surrogate, internal, and tuning standards are offered below.

Nitrogen/Phosphorus Pesticides

M-507A 1.0 mg/mL each in MtBE 1 x 1 mL 6 comps.

Ametryn	Fenamiphos
Cycloate	Merphos
Disulfoton	Prometon

M-507B 1.0 mg/mL each in MtBE 1 x 1 mL 9 comps.

Atrazine	Prometryne
Diphenamid	Propazine
EPTC	Terbutryn
Ethoprop	Triadimefon
Mevinphos	

M-507C 1.0 mg/mL each in MtBE 1 x 1 mL 9 comps.

Butachlor	MGK-264
Carboxin	Norflurazon
Diazinon	Terbufos
Metolachlor	Vernolate
Metribuzin	

M-507D 1.0 mg/mL each in MtBE 1 x 1 mL 10 comps.

Alachlor	Hexazinone
Atraton	Molinat
Bromacil	Pronamide
Butylate	Stirofos
Chlorpropham	Tricyclazole

M-507E 1.0 mg/mL each in MtBE 1 x 1 mL 8 comps.

Dichlorvos	Pebulate (Tillam)
Fenarimol	Simetryn
Fluridone	Tebuthiuron
Napropamide	Terbacil

M-507F-R2 1.0 mg/mL each in Acetone 1 x 1 mL 2 comps.

Methyl paraoxon	Simazine
-----------------	----------

Auxiliary Standards

Internal Standard

M-525.2-IS	SAVE	1 x 1 mL
M-525.2-IS-PAK		5 x 1 mL
0.5 mg/mL each in Acetone		
Acenaphthene-d ₁₀	Phenanthrene-d ₁₀	
Chrysene-d ₁₂		

Surrogate Standard

M-525.2-SS		1 x 1 mL
M-525.2-SS-PAK	SAVE	5 x 1 mL
0.5 mg/mL each in Acetone		
1,3-Dimethyl-2-nitrobenzene	Triphenylphosphate	
Perylene-d ₁₂		

Internal/Surrogate Standard

M-525.2-IS/SS		1 x 1 mL
M-525.2-IS/SS-PAK	SAVE	5 x 1 mL
0.5 mg/mL each in Acetone		
Acenaphthene-d ₁₀	Perylene-d ₁₂	
Chrysene-d ₁₂	Phenanthrene-d ₁₀	
1,3-Dimethyl-2-nitrobenzene	Triphenylphosphate	

Tuning Standard

M-525.2-TS		1 x 1 mL
0.5 mg/mL each in CH ₂ Cl ₂		
4,4'-DDT	Endrin	
DFTPP		

Technical Note

Endrin & DDT can break down in the injection port at elevated temperatures. Breakdown can be monitored by running the Pesticide Degradation standard (M-8081-DS). The problem can be alleviated by replacing the dirty injection port liner, or by using cool, on-column injection.

Multi-Component Technical Solutions

Toxaphene

M-525-5 2.5 mg/mL in Acetone 1 x 1 mL

Aroclor® 1016

C-216S-M-28.5X 1.0 mg/mL in MeOH 1 x 1 mL

Aroclor 1254

C-254S-M-28.5X 1.0 mg/mL in MeOH 1 x 1 mL

Aroclor 1260

C-260S-M-28.5X 1.0 mg/mL in MeOH 1 x 1 mL

Complete Method 525.2 Set

M-525.2-SET					18 x 1 mL
M-507A	M-507D	M-508P-A	M-525.2-5X	M-525.2-IS	C-216S-M-28.5X
M-507B	M-507E	M-508P-B-R2	M-525.4R-5X	M-525.2-SS	C-254S-M-28.5X
M-507C	M-507F-R2	M-525-1-5X	M-525-5	M-525.2-TS	C-260S-M-28.5X



Method 525.2 (Continued) Organic Compounds in Drinking Water by Liquid-Solid Extraction and Capillary GC/MS

Chlorinated Pesticides

Mix A

M-508P-A
M-508P-A-PAK
1.0 mg/mL each in MtBE

SAVE

1 x 1 mL
5 x 1 mL
17 comps.

Aldrin	Endosulfan I
α-BHC	Endosulfan II
β-BHC	Endosulfan sulfate
δ-BHC	Endrin
γ-BHC	Endrin aldehyde
4,4'-DDD	Heptachlor
4,4'-DDE	Heptachlor epoxide
4,4'-DDT	Methoxychlor
Dieldrin	

Mix B

M-508P-B-R2
M-508P-B-R2-PAK
1.0 mg/mL each in MtBE

SAVE

1 x 1 mL
5 x 1 mL
15 comps.

α-Chlordane	Etridiazole
γ-Chlordane	Hexachlorobenzene
Chlorobenzilate	trans-Nonachlor
Chloroneb	cis-Permethrin (0.5 mg/mL)
Chlorothalonil	trans-Permethrin (1.5 mg/mL)
Chlorpyrifos	Propachlor
Cyanazine	Trifluralin
DCPA	

Certificate will reflect actual cis/trans permethrin ratio

Semi-Volatile Analytes

PAH Mixtures

M-525-1-5X
0.5 mg/mL each in Acetone

1 x 1 mL
13 comps.

Acenaphthylene	Chrysene
Anthracene	Dibenz[a,h]anthracene
Benz[a]anthracene	Fluorene
Benzo[b]fluoranthene	Indeno[1,2,3-cd]pyrene
Benzo[k]fluoranthene	Phenanthrene
Benzo[a]pyrene	Pyrene
Benzo[g,h,i]perylene	

PCB Congener Mixtures

M-525-2-5X
0.5 mg/mL each in Acetone

1 x 1 mL
8 comps.

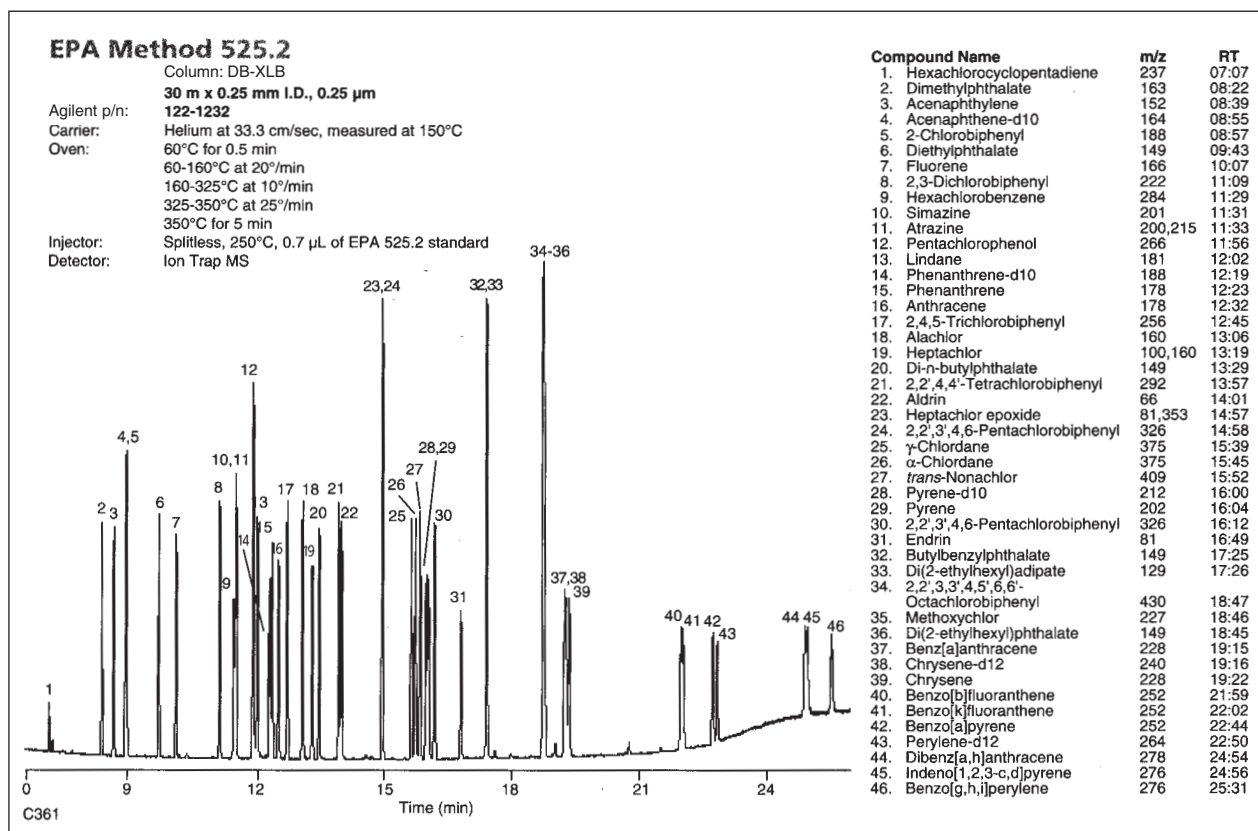
2-Chlorobiphenyl	2,2',3,3',4,5',6,6'-Octachlorobiphenyl
2,3-Dichlorobiphenyl	2,2',3',4,6-Pentachlorobiphenyl
2,2',3,3',4,4',6-Heptachlorobiphenyl	2,2',4,4'-Tetrachlorobiphenyl
2,2',4,4',5,6'-Hexachlorobiphenyl	2,4,5-Trichlorobiphenyl

Semi-Volatile Mixtures

M-525-4-R-5X
0.5 mg/mL each in Acetone

1 x 1 mL
11 comps.

Butylbenzylphthalate	2,6-Dinitrotoluene
di-n-Butylphthalate	Hexachlorocyclopentadiene
Diethylphthalate	bis(2-Ethylhexyl)phthalate
bis(2-Ethylhexyl)adipate	Isophorone
Dimethylphthalate	Pentachlorophenol (2.0 mg/mL)
2,4-Dinitrotoluene	





EPA Method 500 Series

Method 525

Method 525.2 (Continued) Organic Compounds in Drinking Water by Liquid-Solid Extraction and Capillary GC/MS

These solutions are to be used individually or combined for calibration curve development. The Nitrogen Phosphorous Pesticides typically analyzed by NPD were combined into convenient solutions for possible use in other EPA methods such as 507. The Chlorinated Pesticides typically analyzed by ECD were combined into a convenient solution for use in this method or additional methods such as 505 or 508.1.

Nitrogen / Phosphorus Pesticide Mixture

M-525.2-NP1-ASL	Alternate Source	SAVE	1 x 1 mL
M-525.2-NP1-ASL-PAK			5 x 1 mL
100 µg/mL each in Acetone			
Alachlor	Mevinphos		
Ametryn	MGK-264		
Atraton	Molinat		
Atrazine	Napropamide		
Bromacil	Norflurazon		
Butachlor	Pebulate		
Butylate	Prometon		
Chlorpropham	Prometryne		
Dursban	Pronamide		
Cycloate	Propachlor		
Cyanazine	Propazine		
Dichlorvos	Simetryn		
Diphenamid	Tetrachlorvinphos		
EPTC	Tebuthiuron		
Ethoprop	Terbacil		
Fenarimol	Prebane		
Fluridone	Triadimefon		
Hexazinone	Tricyclazole		
Methyl paraoxon	Trifluralin		
Metolachlor	Vernolate		
Metribuzin			

Nitrogen / Phosphorus Pesticide Mixture

M-525.2-NP2-ASL	Alternate Source	SAVE	1 x 1 mL
M-525.2-NP2-ASL-PAK			5 x 1 mL
100 µg/mL each in Acetone			
Carboxin	Fenamiphos		
Diazinon	Merphos		
Disulfoton	Terbufos		

Organochlorine Pesticides

M-525.2-CP-ASL	Alternate Source	SAVE	1 x 1 mL
M-525.2-CP-ASL-PAK			5 x 1 mL
100 µg/mL each in Acetone			
Alachlor	Endosulfan I		
Aldrin	Endosulfan II		
Atrazine	Endosulfan sulfate		
α-BHC	Endrin		
β-BHC	Endrin aldehyde		
δ-BHC	Etridiazole		
γ-BHC	α-Chlordane		
Chlorobenzilate	γ-Chlordane		
Chlorothalonil	Heptachlor		
Chloroneb	Heptachlor epoxide (Isomer B)		
Dacthal	Methoxychlor		
p,p'-DDD	cis-Permethrin		
p,p'-DDE	trans-Permethrin		
p,p'-DDT	Simazine		
Dieldrin	trans-Nonachlor		

Alternate Source

Improves Analytical Results, while Saving Time and Money
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Semi-Volatiles Mixture

M-525.2-SV-ASL	Alternate Source	SAVE	1 x 1 mL
M-525.2-SV-ASL-PAK			5 x 1 mL
100 µg/mL each in Acetone			
Acenaphthylene	2,4-Dinitrotoluene		
Anthracene	2,6-Dinitrotoluene		
Benz[a]anthracene	Fluorene		
Benzo[b]fluoranthene	Hexachlorobenzene		
Benzo[k]fluoranthene	2,2',4,4',5,6'-Hexachlorobiphenyl		
Benzo[g,h,i]perylene	2,2',3,3',4,4',6-Heptachlorobiphenyl		
Benzo[a]pyrene	Hexachlorocyclopentadiene		
Benzyl butyl phthalate	Indeno[1,2,3-cd]pyrene		
2-Chlorobiphenyl	Isophorone		
Chrysene	2,2',3,3',4,5',6,6'-Octachlorobiphenyl		
Dibenz[a,h]anthracene	2,2',3',4,6-Pentachlorobiphenyl		
2,3-Dichlorobiphenyl	Pentachlorophenol (400 µg/mL)		
bis(2-Ethylhexyl)adipate	Phenanthrene		
bis(2-Ethylhexyl)phthalate	Pyrene		
Diethyl phthalate	2,2',4,4'-Tetrachlorobiphenyl		
Dimethyl phthalate	2,4,5-Trichlorobiphenyl		
Dibutyl phthalate			

Regulated Semi-Volatiles Mixture

M-525-REG-ASL	Alternate Source	SAVE	1 x 1 mL
M-525-REG-ASL-PAK			5 x 1 mL
0.5 mg/mL each in Acetone			
Benzo[a]pyrene	Hexachlorobenzene		
bis(2-Ethylhexyl)adipate	Hexachlorocyclopentadiene		
bis(2-Ethylhexyl)phthalate	Pentachlorophenol (2.0 mg/mL)		

ISTD/SS Fortification Solution

M-525.2-FS-ASL	Alternate Source	SAVE	1 x 1 mL
M-525.2-FS-ASL-PAK			5 x 1 mL
500 µg/mL each in Acetone			
Acenaphthene-d ₁₀	Phenanthrene-d ₁₀		
Chrysene-d ₁₂	Pyrene-d ₁₀		
1,3-Dimethyl-2-nitrobenzene	Triphenylphosphate		
Perylene-d ₁₂			

Surrogate Standard

M-525.2-SS2-ASL	Alternate Source	SAVE	1 x 1 mL
M-525.2-SS2-ASL-PAK			5 x 1 mL
500 µg/mL each in Acetone			
1,3-Dimethyl-2-nitrobenzene	Pyrene-d ₁₀		
Perylene-d ₁₂	Triphenylphosphate		

Regulated Semi-Volatiles Mixture

M-525-REG-EA		SAVE	1 x 1 mL
100 µg/mL each in Ethyl acetate			
M-525-REG-EA-5X NEW			25 comps.
500 µg/mL each in Ethyl acetate			
Alachlor	bis(2-Ethylhexyl)phthalate		
Aldrin	Endrin		
Atrazine	Heptachlor		
Benzo(a)pyrene	Heptachlor epoxide (isomer B)		
Butachlor	Hexachlorobenzene		
α-Chlordane	Hexachlorocyclopentadiene		
γ-Chlordane	Lindane		
Cyanazine	Methoxychlor		
Dieldrin	Metolachlor		
2,4-Dinitrotoluene	Metribuzin		
2,6-Dinitrotoluene	trans-Nonachlor		
bis(2-Ethylhexyl)adipate	Propachlor		
	Simazine		



Method 526 Semi-Volatiles by GC/MS

Primary Dilution Standard

M-526-0.2X-EA		1 x 1 mL
M-526-0.2X-EA-PAK	SAVE	5 x 1 mL
200 µg/mL each in Ethyl acetate		
M-526		1 x 1 mL
M-526-PAK	SAVE	5 x 1 mL
1000 µg/mL each in Acetone		

Acetochlor	Dyfonate
Cyanazine	Nitrobenzene
Diazinon	Prometon
2,4-Dichlorophenol	Terbufos
1,2-Diphenylhydrazine	2,4,6-Trichlorophenol
Disulfoton	

Internal/Surrogate Standards

M-526-IS/SS		1 x 1 mL
M-526-IS/SS-PAK	SAVE	5 x 1 mL
500 µg/mL each in Acetone		

Acenaphthene-d ₁₀	Phenanthrene-d ₁₀
Chrysene-d ₁₂	Triphenylphosphate
1,3-Dimethyl-2-nitrobenzene	

M-525-TS-0.05X	1 x 1 mL
5 µg/mL in CH ₂ C ₂	

DFTPP

Internal Standard

M-525.2-IS		1 x 1 mL
M-525.2-IS-PAK	SAVE	5 x 1 mL
500 µg/mL each in Acetone		

Acenaphthene-d ₁₀	Phenanthrene-d ₁₀
Chrysene-d ₁₂	

Surrogate Standard

M-526-SS		1 x 1 mL
M-526-SS-PAK	SAVE	5 x 1 mL
500 µg/mL each in Acetone		

1,3-Dimethyl-2-nitrobenzene	Triphenylphosphate
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Storage Conditions

All products come with storage conditions listed on the label of the ampule or bottle. Some chemical formulations require refrigeration or freezer storage to slow down reactions among the components. Other standards require sonication prior to use because they are near their saturation for the particular formulation. It is imperative that these conditions are followed to ensure the chemical reference standard will be at the stated concentration.

Method 527 Pesticides & Flame Retardants in Drinking Water by SPE & Capillary GC/MS

PBDE Standard

M-527-BDE	1 x 1 mL
50 µg/mL each in Isooctane:Ethyl Acetate (8:2)	

2,2',4,4'-Tetrabromodiphenyl ether	2,2',4,4',5,5'-Hexabromodiphenyl ether
2,2',4,4',6-Pentabromodiphenyl ether	2,2',4,4',5,5'-Hexabromobiphenyl
2,2',4,4',5-Pentabromodiphenyl ether	

Pesticide Mix A

M-527-PEST-A	1 x 1 mL
500 µg/mL each in MeOH	

Atrazine	Kepone
Bioallethrin, S-cyclopentyl isomer	Norflurazon
Bromacil	Oxychlorodane isomer
Esfenvalerate	Prometryne
Fenvalerate	Propazine
Hexazinone	

Pesticide Mix B

M-527-PEST-B	1 x 1 mL
500 µg/mL each in MeOH	

Bifenthrin	Nitrofen
Dimethoate	Parathion
Dursban	Terbufos sulfone
Fenamiphos	Thiazopyr
Malathion	Thiobencarb
Mirex	Vinclozolin

Internal Standard

M-525.2-IS		1 x 1 mL
M-525.2-IS-PAK	SAVE	5 x 1 mL
0.5 mg/mL each in Acetone		

Acenaphthene-d ₁₀	Phenanthrene-d ₁₀
Chrysene-d ₁₂	

Surrogate Standard

M-525.2-SS	1 x 1 mL
0.5 mg/mL each in Acetone	

1,3-Dimethyl-2-nitrobenzene	Triphenylphosphate
Perylene-d ₁₂	



EPA Method 500 Series

Method 528-529

Method 528 Phenols by GC/MS

Stock Calibration Standard

M-528-CONC		1 x 1 mL
M-528-CONC-PAK	SAVE	5 x 1 mL
2000 µg/mL each in CH ₂ Cl ₂		
4-Chloro-3-methylphenol	2-Methyl-4,6-Dinitrophenol	
2-Chlorophenol	2-Nitrophenol	
o-Cresol	4-Nitrophenol	
2,4-Dichlorophenol	Pentachlorophenol	
2,4-Dimethylphenol	Phenol	
2,4-Dinitrophenol	2,4,6-Trichlorophenol	

Internal Standard

M-528-IS		1 x 1 mL
M-528-IS-PAK	SAVE	5 x 1 mL
At stated conc. in CH ₂ Cl ₂		
1,2-Dimethyl-3-nitrobenzene	(1000 µg/mL)	
2,3,4,5-Tetrachlorophenol	(2000 µg/mL)	

Peak Tailing Factor Standard

M-528-PTF		1 x 1 mL
M-528-PTF-PAK	SAVE	5 x 1 mL
10 µg/mL each in CH ₂ Cl ₂		
2,4-Dimethylphenol	4-Nitrophenol	
2-Methyl-4,6-dinitrophenol	Pentachlorophenol	

Analyte Fortification Solution

M-528-AFS		1 x 1 mL
M-528-AFS-PAK	SAVE	5 x 1 mL
At stated conc. in MeOH		
4-Chloro-3-methylphenol (100 µg/mL)	2-Methyl-4,6-Dinitrophenol (500 µg/mL)	
2-Chlorophenol (100 µg/mL)	2-Nitrophenol (100 µg/mL)	
o-Cresol (100 µg/mL)	4-Nitrophenol (500 µg/mL)	
2,4-Dichlorophenol (100 µg/mL)	Pentachlorophenol (500 µg/mL)	
2,4-Dimethylphenol (100 µg/mL)	Phenol (100 µg/mL)	
2,4-Dinitrophenol (500 µg/mL)	2,4,6-Trichlorophenol (100 µg/mL)	

Surrogate Standards

M-528-SS		1 x 1 mL
M-528-SS-PAK	SAVE	5 x 1 mL
At stated conc. in MeOH		
2-Chlorophenol-d ₄	(1000 µg/mL)	
2,4-Dimethylphenol-3,5,6-d ₃	(1000 µg/mL)	
2,4,6-Tribromophenol	(2500 µg/mL)	

M-528-SS2		1 x 1 mL
M-528-SS2-PAK	SAVE	5 x 1 mL
At stated conc. in MeOH		

2-Chlorophenol-d ₄	(1000 µg/mL)
2,4-Dimethylphenol-3,5,6-d ₃	(1000 µg/mL)
2,4,6-Tribromophenol	(2000 µg/mL)

Method 529 Explosive & Related Compounds by SPE & Capillary Column GC/MS

Method 529 Calibration Curve

M-529-	Storage Cond.: Freeze (<-10°C)								
	01	02	03	04	05	06	07	08	09
2-Amino-4,6-dinitrotoluene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
4-Amino-2,6-dinitrotoluene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
3,5-Dinitroaniline	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
1,3-Dinitrobenzene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
2,4-Dinitrotoluene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
2,6-Dinitrotoluene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
RDX	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
Nitrobenzene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
2-Nitrotoluene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
3-Nitrotoluene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
4-Nitrotoluene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
1,3,5-Trinitrobenzene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
Tetryl	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
TNT	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10

Internal Standard Stock Solution

M-529-IS	1 x 1 mL
2.0 mg/mL Ethyl acetate	
3,4-Dinitrotoluene	

Internal Standard Fortification Solution

M-529-ISFS	1 x 1 mL
200 µg/mL Ethyl acetate	
2-Amino-4,6-dinitrotoluene	Nitrobenzene
4-Amino-2,6-dinitrotoluene	2-Nitrotoluene
3,5-Dinitroaniline	3-Nitrotoluene
1,3-Dinitrobenzene	4-Nitrotoluene
2,4-Dinitrotoluene	1,3,5-Trinitrobenzene
2,6-Dinitrotoluene	Tetryl
RDX	TNT

Surrogate Analyte Stock Solutions

M-529-SS1	1 x 1 mL
M-529-SS1-PAK	SAVE
1000 µg/mL each in MeOH	
1,3,5-Trimethyl-2-nitrobenzene	1,2,4-Trimethyl-5-nitrobenzene

M-529-SS2	1 x 1 mL
M-529-SS2-PAK	SAVE
1000 µg/mL each in CH ₂ Cl ₂	
Nitrobenzene-d ₅	

Surrogate Analyte Fortification Solution

M-529-SAFS	1 x 1 mL
100 µg/mL each in MeOH	
1,3,5-Trimethyl-2-nitrobenzene	Nitrobenzene-d ₅
1,2,4-Trimethyl-5-nitrobenzene	

Full Scan MS Calibration Set

M-529-MS-SET	6 x 1 mL
M-529-03, M-529-05, M-529-06, M-529-07, M-529-08, M-529-09	

SIM Calibration Set

M-529-SIM-SET	7 x 1 mL
M-529-01, M-529-02, M-529-03, M-529-04, M-529-05, M-529-06, M-529-07	

Storage Condition.: Freeze (<-10°C)



Method 531 + 531.1 N-Methyl carbamoyl oximes & N-Methyl carbamates by HPLC

M-531-SET set of 11 x 1 mL
Each at 0.1 mg/mL in AcCN Analytes listed below

Each at 0.1 mg/mL in AcCN	Cat. No.	1 mL
Aldicarb sulfoxide	M-531-01	
Aldicarb sulfone	M-531-02	
Oxamyl	M-531-03	
Methomyl	M-531-04	
3-Hydroxycarbofuran	M-531-05	
Aldicarb	M-531-06	
Propoxur	M-531-07	
Carbofuran	M-531-08	
Carbaryl	M-531-09	
1-Naphthol	M-531-10	
Methiocarb	M-531-11	

M-531M 1 x 1 mL
M-531M-PAK NEW SAVE 5 x 1 mL
0.1 mg/mL each in AcCN 11 comps.

Performance Check Solution

M-531-QC-R 1 x 1 mL
At stated conc. in AcCN 4 comps.

Aldicarb sulfoxide (100 µg/mL)	3-Hydroxycarbofuran (2 µg/mL)
BDMC (10 µg/mL)	Methiocarb (20 µg/mL)

Internal Standard

M-531-IS 1 x 1 mL
0.1 mg/mL in AcCN

4-Bromo-3,5-dimethylphenyl N-methylcarbamate (BDMC)

Carbamate Pesticide Mix

M-531-REG-ASL 1 x 1 mL
M-531-REG-ASL-PAK SAVE 5 x 1 mL
100 µg/mL in MeOH 2 comps.

Carbofuran Oxamyl

Method 535 Acetamide-Herbicide Degradates

Ethanesulfonic acid (ESA) and oxanilic acid (OA) degradation products of acetanilide/acetamide herbicides have been found in U.S. ground waters and surface waters. The substitution of the sulfonic acid or the carbonic acid for the chlorine atom greatly increases the water solubility of degradates relative to the parent compound and contributes to the increased potential for leaching into groundwater. As a result, alachlor ESA and other acetanilide degradation products were listed on the 1998 Safe Drinking Water Act Contaminant Candidate List (CCL). One acetamide and five acetanilide herbicides are currently registered for agricultural use in the U.S. The next step in the CCL-process is to collect data on the concentrations and occurrence of these compounds in the nation's drinking water supplies. However, the existing analytical methods for measuring chloroacetanilide degradates do not address issues specific to analyzing these compounds in drinking water. Because many of the methods were developed for ground water, dechlorination was not addressed nor was the method tested in all types of drinking water matrices. In addition, existing methods do not address all twelve ESA and OA degradates of the six U.S. registered acetanilide/acetamide herbicides. The focus of this research was to develop a sensitive and specific analytical method for the analysis of alachlor ESA and other chloroacetanilide degradates in drinking water.

M-535-SET 14 x 1 mL
At stated conc. in MeOH

Acetochlor ESA	50 µg/mL	Propachlor ESA	20 µg/mL
Acetochlor OA	50 µg/mL	Propachlor OA	20 µg/mL
Alachlor ESA	50 µg/mL	Dimethenamid ESA	10 µg/mL
Alachlor OA	50 µg/mL	Dimethenamid OA	10 µg/mL
Flufenacet ESA	20 µg/mL	Internal Standard	
Flufenacet OA	20 µg/mL	Butachlor ESA sodium salt	20 µg/mL
Metolachlor ESA	50 µg/mL	Surrogate Standard	
Metolachlor OA	50 µg/mL	Dimethachlor ESA sodium salt	20 µg/mL



Method 532 Phenylureas by HPLC

Phenylurea Concentrate Standard

M-532-CONC1 1 x 1 mL
M-532-CONC1-PAK SAVE 5 x 1 mL
5.0 mg/mL each in MeOH 6 comps.

Karmex	Propanil
Fluometuron	Siduron
Linuron	Tebuthiuron

Phenylurea Concentrate Standard

M-532-CONC2 1 x 1 mL
M-532-CONC2-PAK SAVE 5 x 1 mL
5.0 mg/mL each in Acetone 2 comps.

Diflubenuron	Thidiazuron
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Phenylurea Primary Dilution Standard

M-532 1 x 1 mL
M-532-PAK SAVE 5 x 1 mL
100 µg/mL each in MeOH, except Siduron 8 comps.

Diflubenuron	Propanil
Karmex	Siduron (200 µg/mL)
Fluometuron	Tebuthiuron
Linuron	Thidiazuron

Phenylurea Surrogate Standard

M-532-SS 1 x 1 mL
M-532-SS-PAK SAVE 5 x 1 mL
500 µg/mL each in MeOH 2 comps.

Carbazole	Monuron
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EPA Method 500 Series

Method 547-551

Method 547 Glyphosate by HPLC

M-547 1 x 1 mL

0.1 mg/mL in Deionized water

M-547-10X NEW 1 x 1 mL

1.0 mg/mL in Deionized water

Glyphosate

Glyphosate Metabolite

M-547-02 1 x 1 mL

0.1 mg/mL in Deionized water

Aminomethyl phosphonic acid (AMPA)

Method 548 Endothall by GC/ECD

M-548A 1 x 1 mL

10 µg/mL in Deionized water

M-548B 1 x 1 mL

50 µg/mL in Deionized water

Endothall

Internal Standard

M-548-IS 1 x 1 mL

10 µg/mL in MtBE

Endosulfan I

Calibration Standard

M-548-CAL 1 x 1 mL

100 µg/mL in MtBE

Endothall pentafluorophenyl hydrazine derivative

Method 548.1 Endothall by GC/MS

P-183S 1 x 1 mL

100 µg/mL in MeOH

Endothall

Internal Standard

M-548.1-IS 1 x 1 mL

500 µg/mL in MeOH

Acenaphthene-d₁₀

Methyl Derivative

M-548.1-ME 1 x 1 mL

100 µg/mL in MeOH

Dimethyl endothall

Method 549.1/549.2 Diquat & Paraquat Liquid - Solid Extraction & HPLC

M-549.1 1 x 1 mL

1.0 mg/mL each in Deionized water as non-hydrated species 2 comps.

Diquat - H₂O (1.97 mg/mL)

Paraquat - 4 H₂O (1.77 mg/mL)

Method 550 + 550.1 PAHs by HPLC & Internal Standard

M-550-QC 1 x 1 mL

At stated conc. in AcCN

16 comps.

Acenaphthene (1000 µg/mL)	Chrysene (50 µg/mL)
Acenaphthylene (1000 µg/mL)	Dibenz[a,h]anthracene (10 µg/mL)
Anthracene (50 µg/mL)	Fluoranthene (2.5 µg/mL)
Benz[a]anthracene (1 µg/mL)	Fluorene (100 µg/mL)
Benzo[a]pyrene (5 µg/mL)	Indeno[1,2,3-cd]pyrene (10 µg/mL)
Benzo[b]fluoranthene (1 µg/mL)	Naphthalene (1000 µg/mL)
Benzo[g,h,i]perylene (5 µg/mL)	Phenanthrene (50 µg/mL)
Benzo[k]fluoranthene (1 µg/mL)	Pyrene (50 µg/mL)

Internal Standard

M-550-IS 1 x 1 mL

0.1 mg/mL in AcCN

4,4'-Difluorobiphenyl

Method 551 Chlorinated Organic Solvents + Trihalomethanes by GC/ECD

M-551A 1 x 1 mL

M-551A-PAK SAVE 5 x 1 mL

5.0 mg/mL each in MeOH

10 comps.

Bromodichloromethane	1,2-Dibromoethane
Bromoform	1,2-Dibromo-3-chloropropane
Carbon tetrachloride	Tetrachloroethene
Chlorodibromomethane	1,1,1-Trichloroethane
Chloroform	Trichloroethene

Disinfection By-products

M-551B 1 x 1 mL

5.0 mg/mL each in Acetone

8 comps.

M-551B-SET set of 8 x 1 mL

Each at 5.0 mg/mL in Acetone

	Cat. No.	1 mL
Bromochloroacetonitrile	M-551B-1	
Chloral hydrate	M-551B-2	
Chloropicrin	M-551B-3	
Dibromoacetonitrile	M-551B-4	
Dichloroacetonitrile	M-551B-5	
1,1-Dichloro-2-propanone	M-551B-6	
Trichloroacetonitrile	M-551B-7	
1,1,1-Trichloro-2-propanone	M-551B-8	

Expiration Dates

Expiration dates are determined by short-term and long-term stability studies, experience and knowledge of chemical interactions. As part of our long-term studies, standards are analyzed at the end of their assigned period and sometimes can be recertified for an additional length of time. Please contact our Customer or Technical Service Department for more information.



Method 551.1A Chlorinated Solvents, Trihalomethanes Disinfection By-products & Halogenated Pesticides/Herbicides in Drinking Water by GC/ECD

Chlorinated Organic Solvents + Trihalomethanes

M-551.1A 1 x 1 mL
M-551.1A-PAK SAVE 5 x 1 mL
 At stated conc. in Acetone 12 comps.

Bromodichloromethane	(1000 µg/mL)
Bromoform	(1000 µg/mL)
Carbon tetrachloride	(500 µg/mL)
Chloroform	(1000 µg/mL)
Dibromochloromethane	(1000 µg/mL)
1,2-Dibromo-3-chloropropane	(1000 µg/mL)
1,2-Dibromoethane	(1000 µg/mL)
Tetrachloroethene	(500 µg/mL)
1,1,1-Trichloroethane	(1000 µg/mL)
1,1,2-Trichloroethane	(10,000 µg/mL)
Trichloroethene	(1000 µg/mL)
1,2,3-Trichloropropane	(10,000 µg/mL)

Disinfection By-products

M-551.1B 1 x 1 mL
M-551.1B-PAK SAVE 5 x 1 mL
 1000 µg/mL each in Acetone 8 comps.

Bromochloroacetonitrile	Dichloroacetonitrile
Chloral hydrate	1,1-Dichloro-2-propanone
Chloropicrin	Trichloroacetonitrile
Dibromoacetonitrile	1,1,1-Trichloro-2-propanone

Pesticide/Herbicide Mixture

M-551.1C 1 x 1 mL
M-551.1C-PAK SAVE 5 x 1 mL
 At stated conc. in Acetone 17 comps.

Alachlor	(10 µg/mL)	Hexachlorobenzene	(1 µg/mL)
Atrazine	(200 µg/mL)	Hexachlorocyclopentadiene	(1 µg/mL)
Bromacil	(10 µg/mL)	Lindane	(1 µg/mL)
Cyanazine	(30 µg/mL)	Methoxychlor	(5 µg/mL)
Endrin	(2 µg/mL)	Metolachlor	(10 µg/mL)
Endrin aldehyde	(2 µg/mL)	Metribuzin	(5 µg/mL)
Endrin ketone	(2 µg/mL)	Simazine	(200 µg/mL)
Heptachlor	(1 µg/mL)	Trifluralin	(1 µg/mL)
Heptachlor epoxide (isomer B)	(1 µg/mL)		

Technical Note

1. Method 551.1A analytes are formulated into **3 separate solutions** to meet various analytical laboratory testing requirements. Each solution is intended for use as a stand-alone formulation or in combination with the other two solutions.

2. **Chloral hydrate** is a DEA schedule IV drug. AccuStandard has the necessary license and exemption approval to offer this analyte in a multi-component formulation. This multi-component formulation containing chloral hydrate is tested for stability. In addition, the solution is manufactured in small batches to insure the freshest product.

Using the 3 mixture version not only provides versatility but also eliminates running two separate 5 point calibration curves (one for the core analytes and a separate Chloral hydrate curve).

Method 551.1A Auxiliary Standards by ECD

Laboratory Performance Check Solutions

Pentane Extracts

M-551.1-LPC-P 1 x 1 mL
M-551.1-LPC-P-PAK SAVE 5 x 1 mL
 At stated conc. in Pentane 7 comps.

Alachlor	(83 µg/mL)	Hexachlorocyclopentadiene	(20 µg/mL)
Bromacil	(83 µg/mL)	Lindane	(0.2 µg/mL)
Bromodichloromethane	(30 µg/mL)	Trichloroethene	(30 µg/mL)
Endrin	(30 µg/mL)		

MtBE Extracts

M-551.1-LPC 1 x 1 mL
M-551.1-LPC-PAK SAVE 5 x 1 mL
 At stated conc. in MtBE 7 comps.

Alachlor	(83 µg/mL)	Hexachlorocyclopentadiene	(20 µg/mL)
Bromacil	(83 µg/mL)	Lindane	(0.2 µg/mL)
Bromodichloromethane	(30 µg/mL)	Trichloroethene	(30 µg/mL)
Endrin	(30 µg/mL)		

Internal Standard Solutions

M-551.1-IS 1 x 1 mL
M-551.1-IS-PAK SAVE 5 x 1 mL
 100 µg/mL in Acetone
M-551.1-IS-100X 1 x 1 mL
M-551.1-IS-100X-PAK SAVE 5 x 1 mL
 10,000 µg/mL in Acetone

p-Bromofluorobenzene

Modified Laboratory Performance Check Solutions

Pentane Extracts

M-551.1-MLPC-P 1 x 1 mL
M-551.1-MLPC-P-PAK SAVE 5 x 1 mL
 At stated conc. in Pentane 4 comps.

γ-BHC	(0.2 µg/mL)	Hexachlorocyclopentadiene	(20 µg/mL)
Bromodichloromethane	(30 µg/mL)	Trichloroethene	(30 µg/mL)

MtBE Extracts

M-551.1-MLPC 1 x 1 mL
M-551.1-MLPC-PAK SAVE 5 x 1 mL
 At stated conc. in MtBE 4 comps.

γ-BHC	(0.2 µg/mL)	Hexachlorocyclopentadiene	(20 µg/mL)
Bromodichloromethane	(30 µg/mL)	Trichloroethene	(30 µg/mL)

Surrogate Standard Solutions

M-551.1-SS 1 x 1 mL
M-551.1-SS-PAK SAVE 5 x 1 mL
 10 µg/mL in Acetone
M-551.1-SS-100X 1 x 1 mL
M-551.1-SS-100X-PAK SAVE 5 x 1 mL
 1,000 µg/mL in Acetone

Decafluorobiphenyl



EPA Method 500 Series

Method 552

Method 552 Haloacetic Acids by ECD

Methyl Derivatives

M-552-R 1 x 1 mL
1.0 mg/mL each in MtBE 8 comps.
M-552-R-SET set of 8 x 1 mL
Each at 1.0 mg/mL in MtBE

	Cat. No.	1 mL
2,4-Dichloroanisole	M-552-R-01	
Methyl bromoacetate	M-552-R-02	
Methyl bromochloroacetate	M-552-R-03	
Methyl chloroacetate	M-552-R-04	
Methyl dibromoacetate	M-552-R-05	
Methyl dichloroacetate	M-552-R-06	
Methyl trichloroacetate	M-552-R-07	
2,4,6-Trichloroanisole	M-552-R-08	

Underivatized Analytes

M-552A-R 1 x 1 mL
1.0 mg/mL each in MtBE 8 comps.
M-552A-R-SET set of 8 x 1 mL
Each at 1.0 mg/mL in MtBE

	Cat. No.	1 mL
Bromoacetic acid	M-552A-R-01	
Bromochloroacetic acid	M-552A-R-02	
Chloroacetic acid	M-552A-R-03	
Dibromoacetic acid	M-552A-R-04	
Dichloroacetic acid	M-552A-R-05	
2,4-Dichlorophenol	M-552A-R-06	
Trichloroacetic acid	M-552A-R-07	
2,4,6-Trichlorophenol	M-552A-R-08	

Internal Standards

APP-9-208-10X 1 x 1 mL
APP-9-208-10X-PAK **SAVE** 5 x 1 mL
1.0 mg/mL in MeOH

1,2,3-Trichloropropane

M-552-IS 1 x 1 mL
M-552-IS-PAK **SAVE** 5 x 1 mL
5.0 mg/mL in MeOH

1,2-Dibromopropane

Surrogate Standards as Acids & Methyl esters

P-242S-10X 1 x 1 mL
P-242S-10X-PAK **SAVE** 5 x 1 mL
1.0 mg/mL in MeOH

3,5-Dichlorobenzoic acid

P-247S-10X 1 x 1 mL
P-247S-10X-PAK **SAVE** 5 x 1 mL
1.0 mg/mL in MeOH

3,5-Dichlorobenzoic acid methyl ester

M-552-SS 1 x 1 mL
M-552-SS-PAK **SAVE** 5 x 1 mL
20 mg/mL in MtBE

2,3-Dibromopropionic acid

M-552-SS-ME 1 x 1 mL
M-552-SS-ME-PAK **SAVE** 5 x 1 mL
20 mg/mL in MtBE

2,3-Dibromopropionic acid methyl ester

Method 552.1 Haloacetic Acids by ECD

Methyl Derivatives

M-552.1 1 x 1 mL
At stated conc. in MeOH 7 comps.
M-552.1-SET set of 7 x 1 mL
Each at stated conc. in MeOH

		Cat. No.	1 mL
Dalapon ME	(200 µg/mL)	M-552.1-01	
Methyl bromoacetate	(200 µg/mL)	M-552.1-02	
Methyl bromochloroacetate	(200 µg/mL)	M-552.1-03	
Methyl chloroacetate	(300 µg/mL)	M-552.1-04	
Methyl dibromoacetate	(100 µg/mL)	M-552.1-05	
Methyl dichloroacetate	(300 µg/mL)	M-552.1-06	
Methyl trichloroacetate	(100 µg/mL)	M-552.1-07	

Underivatized Analytes

M-552.1A 1 x 1 mL
At stated conc. in MeOH 7 comps.
M-552.1A-SET set of 7 x 1 mL
Each at stated conc. in MeOH

Dalapon	(200 µg/mL)
Bromoacetic acid	(200 µg/mL)
Bromochloroacetic acid	(200 µg/mL)
Chloroacetic acid	(300 µg/mL)
Dibromoacetic acid	(100 µg/mL)
Dichloroacetic acid	(300 µg/mL)
Trichloroacetic acid	(100 µg/mL)

Internal Standard

M-552.1-IS 1 x 1 mL
M-552.1-IS-PAK **SAVE** 5 x 1 mL
1.0 mg/mL in MtBE

1,2,3-Trichloropropane

Surrogate Standards

M-552.1-SS 1 x 1 mL
M-552.1-SS-PAK **SAVE** 5 x 1 mL
1.0 mg/mL in MtBE

2-Bromopropionic acid

M-552.1-SS-ME 1 x 1 mL
M-552.1-SS-ME-PAK **SAVE** 5 x 1 mL
1.0 mg/mL in MtBE

Methyl 2-bromopropionate

Buy AccuPaks™
Save 20-40% 5 x 1 mL





Method 552.2 Haloacetic Acids & Dalapon in Drinking Water by L-L extraction, Derivatization & GC by ECD

These convenient sets of 10 individual ampules for Method 552.2, each containing a single analyte or its methyl derivative were formulated with both the acids & their methyl derivatives and with and without the surrogate.

Methyl Derivatives

Haloacetic Acid Methyl Derivatives without Surrogates

M-552.2-R1	1 x 1 mL
At stated conc. in MtBE	10 comps.
M-552.2-SET	set of 10 x 1 mL
M-552.3-R1 NEW	1 x 1 mL
100 µg/mL each in MtBE	

		Cat. No.	1 mL
Dalapon methyl ester	(40 µg/mL)	M-552.2-01	
Methyl bromoacetate	(40 µg/mL)	M-552.2-02	
Methyl bromochloroacetate	(40 µg/mL)	M-552.2-03	
Methyl bromodichloroacetate	(40 µg/mL)	M-552.2-04	
Methyl chloroacetate	(60 µg/mL)	M-552.2-05	
Methyl chlorodibromoacetate	(100 µg/mL)	M-552.2-06	
Methyl dibromoacetate	(20 µg/mL)	M-552.2-07	
Methyl dichloroacetate	(60 µg/mL)	M-552.2-08	
Methyl tribromoacetate	(200 µg/mL)	M-552.2-09	
Methyl trichloroacetate	(20 µg/mL)	M-552.2-10	

Haloacetic Acid Methyl Derivatives with Surrogate (Methyl-2,3-dibromopropionate)

M-552.2	1 x 1 mL
At stated conc. in MtBE	11 comps.
M-552.3 NEW	1 x 1 mL
100 µg/mL each in MtBE	11 comps.

Dalapon methyl ester	(40 µg/mL)
Methyl bromoacetate	(40 µg/mL)
Methyl bromochloroacetate	(40 µg/mL)
Methyl bromodichloroacetate	(40 µg/mL)
Methyl chloroacetate	(60 µg/mL)
Methyl chlorodibromoacetate	(100 µg/mL)
Methyl dibromoacetate	(20 µg/mL)
Methyl dichloroacetate	(60 µg/mL)
Methyl tribromoacetate	(200 µg/mL)
Methyl trichloroacetate	(20 µg/mL)
Methyl-2,3-dibromopropionate (Surr.)	(100 µg/mL)

Surrogate Standard - Haloacetic Acid Methyl Derivative

M-552.2-SS-ME	1 x 1 mL
1000 µg/mL in MtBE	

Methyl 2,3-dibromopropionate

Laboratory Performance Check Solution

M-552.2-LPC	1 x 1 mL
M-552.2-LPC-PAK	5 x 1 mL
At stated conc. in MtBE	4 comps.

SAVE

Methyl bromochloroacetate	(4 µg/mL)
Methyl chloroacetate	(6 µg/mL)
Methyl chlorodibromoacetate	(10 µg/mL)
Methyl-2,3-dibromopropionate	(10 µg/mL)

Working Level

M-552.2-LPC-WL-25ML	1 x 25 mL
M-552.2-LPC-WL-50ML	1 x 50 mL
At stated conc. in MtBE	4 comps.

Methyl bromochloroacetate	(0.004 µg/mL)
Methyl chloroacetate	(0.006 µg/mL)
Methyl chlorodibromoacetate	(0.010 µg/mL)
Methyl-2,3-dibromopropionate	(0.010 µg/mL)

Haloacetic Acids

Haloacetic Acid without Surrogate

M-552.2A-R1	1 x 1 mL
At stated conc. in MtBE	10 comps.
M-552.2A-SET	set of 10 x 1 mL
M-552.3A-R1 NEW	1 x 1 mL
100 µg/mL each in MtBE	

		Cat. No.	1 mL
Dalapon acid	(40 µg/mL)	M-552.2-04	
Monobromoacetic acid	(40 µg/mL)	M-552.2-07	
Bromochloroacetic acid	(40 µg/mL)	M-552.2-01	
Bromodichloroacetic acid	(40 µg/mL)	M-552.2-02	
Monochloroacetic acid	(60 µg/mL)	M-552.2-08	
Chlorodibromoacetic acid	(100 µg/mL)	M-552.2-03	
Dibromoacetic acid	(20 µg/mL)	M-552.2-05	
Dichloroacetic acid	(60 µg/mL)	M-552.2-06	
Tribromoacetic acid	(200 µg/mL)	M-552.2-09	
Trichloroacetic acid	(20 µg/mL)	M-552.2-10	

Haloacetic Acid Mix with Surrogate (2,3-Dibromopropionic acid)

M-552.2A	1 x 1 mL
At stated conc. in MtBE	11 comps.

Dalapon acid	(40 µg/mL)
Monobromoacetic acid	(40 µg/mL)
Bromochloroacetic acid	(40 µg/mL)
Bromodichloroacetic acid	(40 µg/mL)
Monochloroacetic acid	(60 µg/mL)
Chlorodibromoacetic acid	(100 µg/mL)
Dibromoacetic acid	(20 µg/mL)
Dichloroacetic acid	(60 µg/mL)
Tribromoacetic acid	(200 µg/mL)
Trichloroacetic acid	(20 µg/mL)
2,3-Dibromopropionic acid (Surr.)	(100 µg/mL)

Surrogate Standards - Haloacetic Acid

M-552.2-SS	1 x 1 mL
1000 µg/mL in MtBE	

2,3-Dibromopropionic acid

M-552.2-SS2	1 x 1 mL
10 mg/mL in MtBE	

2-Bromobutanoic acid



Internal Standard

M-552.2-IS	1 x 1 mL
1000 µg/mL in MtBE	

1,2,3-Trichloropropane



EPA Method 500 Series

Method 553-556

Method 553 Benzidines & Nitrogen containing Pesticides by L-L or L-S Extraction & RP HPLC/Particle Beam/MS

Analytes

M-553 ‡		1 x 1 mL
<i>At stated conc. in AcCN:MeOH (1:1)</i>		
Benzidine	(250 µg/mL)	3,3'-Dimethylbenzidine (350 µg/mL)
Benzoylprop ethyl	(350 µg/mL)	Diuron (450 µg/mL)
Caffeine	(300 µg/mL)	Linuron (1,300 µg/mL)
Carbaryl	(1,000 µg/mL)	Monuron (400 µg/mL)
o-Chlorophenyl thiourea	(750 µg/mL)	Rotenone (3,200 µg/mL)
3,3'-Dichlorobenzidine	(250 µg/mL)	Siduron (450 µg/mL)
3,3'-Dimethoxybenzidine	(750 µg/mL)	

‡ To delay premature breakdown of thermally labile products in transit we suggest shipping with a "Cold Pack"

Performance Check Solution

M-553-PC 1 x 1 mL
0.1 mg/mL in AcCN

DFTPPO (Decafluorotriphenylphosphine oxide)

Method 554 Carbonyl Compounds as DNPH Derivatives by HPLC

Carbonyl Compounds

M-554-R1 1 x 1 mL
1.0 mg/mL each in AcCN

Acetaldehyde	Heptanal
Butanal	Hexanal
Crotonaldehyde	Nonanal
Cyclohexanone	Octanal
Decanal	Pentanal
Formaldehyde	Propanal

DNPH Derivatives

M-554-DNPH 1 x 1 mL
1.0 mg/mL each in MeOH:AcCN (19:1)
12 comps.

M-554-DNPH-SET set of 12 x 1 mL
Each at 1.0 mg/mL in MeOH:AcCN (19:1)

	Cat. No.	1 mL
Acetaldehyde-DNPH ‡	M-554-DNPH-01	
Butanal-DNPH	M-554-DNPH-02	
Crotonaldehyde-DNPH ‡	M-554-DNPH-03	
Cyclohexanone-DNPH	M-554-DNPH-04	
Decanal-DNPH	M-554-DNPH-05	
Formaldehyde-DNPH	M-554-DNPH-06	
Heptanal-DNPH	M-554-DNPH-07	
Hexanal-DNPH	M-554-DNPH-08	
Nonanal-DNPH	M-554-DNPH-09	
Octanal-DNPH	M-554-DNPH-10	
Pentanal-DNPH	M-554-DNPH-11	
Propanal-DNPH	M-554-DNPH-12	

‡ To delay premature breakdown of thermally labile products in transit we suggest shipping with a "Cold Pack"

Method 555 Chlorinated Acids by HPLC

Mix A

M-555A 1 x 1 mL
1.0 mg/mL each in AcCN

Acifluorfen	Dicamba
Bentazon	Dichlorprop
Chloramben	Picloram
2,4-D	2,4,5-TP

Mix B

M-555B 1 x 1 mL
1.0 mg/mL each in AcCN

2,4-DB	MCPP
3,5-Dichlorobenzoic acid	4-Nitrophenol
Dinoseb	Pentachlorophenol
MCPA	2,4,5-T

Method 556/556.1 Carbonyl Compounds by PFBHA Derivative with analysis by GC/ECD

Mix A

M-556-MIXA 1 x 1 mL
1.0 mg/mL each in AcCN

Acetaldehyde	Heptanal
Benzaldehyde	Hexanal
Butanal	Nonanal
Crotonaldehyde	Octanal
Cyclohexanone	Pentanal
Decanal	Propanal
Formaldehyde	

Mix B

M-556-MIXB 1 x 1 mL
1.0 mg/mL each in AcCN

Glyoxal	Methyl glyoxal
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Technical Note

Difference between Method 556 & 556.1

This product (M-556) was designed to meet both versions of the carbonyl methods. The primary difference between method 556 and 556.1 is that crotonaldehyde has been removed from the analyte list in the 556.1 method. If you require a formulation without the crotonaldehyde, we can custom formulate a standard to meet your exact requirements.

Procedural Calibration Standard

M-556 is to be used as a procedural standard for calibration of the method. As a procedural calibration standard it should be carried through the entire extraction and derivatization procedure associated with the samples. The oxime derivatives are analyzed by GC/ECD. Our Synthesis Department has the capability to manufacture the actual oxime derivatives. If your lab has an application for the actual derivatives, contact our technical department and we can provide a quotation to meet your requirements.

Internal Standard

M-556-IS 1 x 1 mL
M-556-IS-PAK 5 x 1 mL
10 mg/mL in Hexane

1,2-Dibromopropane

Surrogate Standards

M-556-SS 1 x 1 mL
M-556-SS-PAK 5 x 1 mL
20 µg/mL in AcCN

M-556-SS-100X 1 x 1 mL
M-556-SS-100X-PAK 5 x 1 mL
2.0 mg/mL in AcCN

2',4',5'-Trifluoroacetophenone

PFBHA Reagent

M-556-DER-10ML 1 x 10 mL
M-556-DER-10ML-PAK 5 x 10 mL
15 mg/mL in Water

O-(2,3,4,5,6-Pentafluorobenzyl)hydroxylamine hydrochloride

Working Level (Internal Standard)

M-556-IS-WL-5ML-VAP 10 x 5 mL
400 µg/L in Hexane

1,2-Dibromopropane

Custom Services

Custom Synthesis

The AccuStandard Synthesis Department employs PhD Organic Chemists with many years of academic and industrial experience. This experienced team has developed hundreds of pure chemical compounds for companies and governmental agencies around the world. AccuStandard specializes in synthesizing chemicals of high purity to be used as reference standards, for milligram to kilogram batches. AccuStandard is the only company to synthesize all 209 individual PCB congeners as well as over 180 individual PBDE congeners.



Synthesis Experience

- PCBs (all 209 congeners), PBBs, PCB Metabolites
- Explosives - TNT, RDX, HMX, TATP, HND, HMTD
- PBDEs (over 180 congeners)
- PBDE Metabolites
- FBDEs
- Halo-Dibenzodioxins
- Halo-Dibenzofurans
- PAHs, Nitro-PAHs
- Substituted Diphenylethers
- Pesticides and Metabolites
- Forensics
- Wear Metals
- Pharmaceuticals
and
Other Rare Chemicals

Lab Resources

- Milligram to Kilogram Scale Glassware
- Equipment to work under N₂/Ar
- Liquid Solid Phase Chrom. (mg to 2 kg)
- Flash Chrom. (mg to 2 kg) including Horizon High Performance Flash Chrom. System
- Microwave Synthesis System
- Preparative TLC
- Buchi Rotary Evaporators
- Vacuum Drying Oven
- Parr Pressure Reactor (high pressure reaction, hydrogenation)
- Distillation Equipment - High Vacuum Distillation, Molecular Distillation (Kugelrohr), and Spinning Band Columns

Analytical Resources

- ¹H-NMR spectrometer - 400 MHZ
- GC/MS, GC/FID, GC/ECD, GC/NPD
- HPLC
- ICP
- ICP/MS
- Low Sulfur Analyzers (Antek, X-Ray Optical)
- LC/MS/MS
- Hg Analyzer

Custom Formulations

With over 40,000 custom and catalog standards, there is a good chance that AccuStandard will have a catalog item to meet your needs. However, if your laboratory requires something specific, our Chemists will manufacture a Custom Standard to meet your unique requirements. Custom Standards are an economical and time saving way to have a Standard prepared for your individual needs.

Custom QC options

1. Gravimetric/Volumetric Certification: Each purity is measured gravimetrically and QC verified instrumentally (where available). Every component in the Standard is guaranteed to be within +/-0.5% of the requested value unless otherwise stated on the Certificate of Analysis. The solutions are diluted to volume using Class A glassware. A Certificate of Analysis accompanies each Standard and documents the gravimetric values used.
2. Full Quantitative Certification: This QA/QC method includes extended GC analysis using both internal calibration standards plus statistical analysis. A data package containing analytical and gravimetric data can be provided if requested during the quotation phase (Organic Customs only).



Custom Packaging & Bulk Quantity Requirements

AccuStandard has the resources and equipment to meet your custom packaging requirements.

- Automated ampule filling & sealing 0.2 mL up to 20 mL and ampule sizes from 1 mL to 20 mL
- Quantities from 500 to over 500,000 ampules
- Homogeneity testing
- Amber ampules for added product stability
- Private labeling and packaging (OEM)

We can reduce your costs using the Cozzoli Auto Filling/Sealing Machine to package just the right size product for your application. OEM Standards - Privately labeled standards manufactured and tested to your specifications. Cold and under-Nitrogen sealing available.





National Primary Drinking Water Standards

EPA Safe Drinking Water Act (SDWA) Amendment National Primary Drinking Water Standards

The **Safe Drinking Water Act (SDWA)** amendment of 1996 established a new charter for the Nation's public water systems. The Environmental Protection Agency sets standards for protecting the safety of drinking water. The regulatory section of this act eliminates the requirement for the EPA to regulate 25 additional contaminants every three years. Instead, every 5 years from enactment of the amendment, the EPA will determine whether or not to regulate at least 5 new contaminants from a list being published within 18 months of the enactment of the amendment. The following two pages of National Primary Drinking Water Standards are formulated to provide convenience and flexibility when analyzing regulated contaminants from the Drinking Water Priority list.

Volatiles

Phase I

VOCs

M-502C-07

2.0 mg/mL each in MeOH

1 x 1 mL

12 comps.

Benzene	1,4-Dichlorobenzene
Bromodichloromethane	1,2-Dichloroethane
Bromoform	1,1-Dichloroethylene
Carbon tetrachloride	1,1,1-Trichloroethane
Chloroform	Trichloroethylene
Dibromochloromethane	Vinyl chloride

Phase II

VOCs

M-502C-08

2.0 mg/mL each in MeOH

1 x 1 mL

12 comps.

Chlorobenzene	Styrene
1,2-Dichlorobenzene	Tetrachloroethylene
cis-1,2-Dichloroethylene	Toluene
trans-1,2-Dichloroethylene	o-Xylene
1,2-Dichloropropane	m-Xylene
Ethylbenzene	p-Xylene

Phase V

Additions

M-502C-10

2.0 mg/mL in MeOH

1 x 1 mL

3 comps.

Dichloromethane	1,1,2-Trichloroethane
1,2,4-Trichlorobenzene	

Phase VIB

Additions

M-502C-11

2.0 mg/mL each in MeOH

1 x 1 mL

7 comps.

Acrylonitrile	Hexachlorobutadiene
Bromomethane	1,1,1,2-Tetrachloroethane
cis-1,3-Dichloropropene *	1,2,3-Trichloropropane
trans-1,3-Dichloropropene **	

* cis (1.06 x conc.)
** trans (0.94 x conc.)

Combined Phase I, Phase II, Phase V

Volatiles

M-502-REG

M-502-REG-PAK

0.2 mg/mL each in MeOH

M-502-REG-10X NEW

M-502-REG-10X-PAK NEW

2.0 mg/mL each in MeOH

SAVE

SAVE

1 x 1 mL

5 x 1 mL

27 comps.

1 x 1 mL

5 x 1 mL

27 comps.

Benzene	1,2-Dichloropropane
Bromodichloromethane	Ethylbenzene
Bromoform	Styrene
Carbon tetrachloride	Tetrachloroethylene
Chlorobenzene	Toluene
Chloroform	1,2,4-Trichlorobenzene
Dibromochloromethane	1,1,1-Trichloroethane
1,2-Dichlorobenzene	1,1,2-Trichloroethane
1,4-Dichlorobenzene	Trichloroethylene
1,2-Dichloroethane	Vinyl chloride
1,1-Dichloroethylene	m-Xylene
cis-1,2-Dichloroethylene	o-Xylene
trans-1,2-Dichloroethylene	p-Xylene
Dichloromethane	

Method 504 EDB & DBCP

M-504

M-504-PAK

0.2 mg/mL each in MeOH

SAVE

1 x 1 mL

5 x 1 mL

2 comps.

1,2-Dibromoethane (EDB)	1,2-Dibromo-3-chloropropane (DBCP)
-------------------------	------------------------------------

Method Specific Individual Standards

Compounds	Method	Concentration	Cat. No.
Diquat	549.1	100 µg/mL in MeOH	P-231S
Endothal	548.1	100 µg/mL in MeOH	P-183S
Ethylene thiourea ††	509	0.1 mg/mL in 0.17 w/v DTT in Ethyl acetate	M-509
Glyphosate	547	100 µg/mL in H ₂ O	M-547
2,3,7,8-TCDD	525	500 µg/mL in Toluene	D-404S
Toxaphene	525	2.5 mg/mL in Acetone	M-525-5

Water Treatment Chemicals

Acrylamide	8032	1.0 mg/mL in MeOH	M-8032
Epichlorohydrin	8260B	2000 µg/mL in MeOH	M-8260B-02

†† Proposed Phase VIB Additions, 0.1% w/v DDT as a scavenger

Technical Note

If you require formulations with additional analytes found on the contaminant list, please contact our Technical Department.



EPA Safe Drinking Water Act (SDWA) Amendment National Primary Drinking Water Standards (continued)

Regulated Herbicide Mixture (Non-derivatized)

M-515-REG			1 x 1 mL
<i>At stated conc. in Acetone</i>			8 comps.
Acifluorfen ††	(100 µg/mL)	Dinoseb	(200 µg/mL)
2,4-D	(300 µg/mL)	Pentachlorophenol	(100 µg/mL)
Dalapon	(1000 µg/mL)	Picloram	(100 µg/mL)
Dicamba ††	(100 µg/mL)	2,4,5-TP	(100 µg/mL)

Regulated Herbicide Mixtures (Methyl Derivatives)

M-515-REG-ME			1 x 1 mL
<i>At stated conc. MtBE</i>			8 comps.
Acifluorfen methyl ester ††	(250 ng/mL)	Dinoseb methyl ether	(500 ng/mL)
2,4-D methyl ester	(500 ng/mL)	Pentachloroanisole	(100 ng/mL)
Dalapon methyl ester	(2000 ng/mL)	Picloram methyl ester	(250 ng/mL)
Dicamba methyl ester ††	(500 ng/mL)	2,4,5-TP methyl ester	(500 ng/mL)

M-515-REG-ME-1000X			1 x 1 mL
<i>At stated conc. MtBE</i>			8 comps.
Acifluorfen methyl ester ††	(250 µg/mL)	Dinoseb methyl ether	(500 µg/mL)
2,4-D methyl ester	(500 µg/mL)	Pentachloroanisole	(100 µg/mL)
Dalapon methyl ester	(2000 µg/mL)	Picloram methyl ester	(250 µg/mL)
Dicamba methyl ester ††	(500 µg/mL)	2,4,5-TP methyl ester	(500 µg/mL)

Regulated Semi-Volatiles Mixture

M-525-REG-EA		1 x 1 mL	
<i>0.1 mg/mL each in Ethyl Acetate</i>		25 comps.	
M-525-REG-EA-5X		1 x 1 mL	
<i>0.5 mg/mL each in Ethyl Acetate</i>		25 comps.	
Alachlor	Endrin		
Aldrin †	Heptachlor		
Atrazine	Heptachlor epoxide		
Benzo[a]pyrene	Hexachlorobenzene		
Butachlor †	Hexachlorocyclopentadiene		
α-Chlordane	Lindane		
γ-Chlordane	Methoxychlor		
Cyanazine ††	Metolachlor ††		
Dieldrin †	Metribuzin ††		
2,4-Dinitrotoluene ††	trans-Nonachlor		
2,6-Dinitrotoluene ††	Propachlor †		
bis(2-Ethylhexyl)adipate	Simazine		
bis(2-Ethylhexyl)phthalate			

† Unregulated Additions
†† Proposed Phase VIB Additions

Regulated Pesticide Mixture

M-531-REG		1 x 1 mL
<i>0.1 mg/mL each in Acetonitrile</i>		8 comps.
Aldicarb	Carbofuran	
Aldicarb sulfone	3-Hydrocarbofuran †	
Aldicarb sulfoxide	Methomyl ††	
Carbaryl †	Oxamyl	

Proposed Phase VIA Additions

Disinfectant By-products

Bromoform ††	}	see Method 501 Total Trihalomethanes
Chloroform ††		
Dibromochloromethane ††		
Dichlorobromomethane ††		
		Method 551, Chlorinated Solvents + Disinfectant By-products

Bromoacetic acid ††	}	Haloacetic acids see Method 552.2
Chloroacetic acid ††		
Dibromoacetic acid ††		
Dichloroacetic acid ††		
Trichloroacetic acid ††		

Regulated Pesticide Mixture

M-508.1-ASL	Alternate Source	SAVE	1 x 1 mL
M-508.1-ASL-PAK			5 x 1 mL
<i>100 µg/mL each in MtBE</i>			17 comps.
Alachlor		Heptachlor epoxide (Isomer B)	
Aldrin		Hexachlorobenzene	
Atrazine		Hexachlorocyclopentadiene	
γ-BHC		Methoxychlor	
α-Chlordane		Metolachlor	
γ-Chlordane		Metribuzin	
Dieldrin		Propachlor	
Endrin		Simazine	
Heptachlor			

Regulated Semi-Volatiles Mixture

M-525-REG-ASL	Alternate Source	SAVE	1 x 1 mL
M-525-REG-ASL-PAK			5 x 1 mL
<i>0.5 mg/mL each in Acetone</i>			6 comps.
Benzo[a]pyrene		Hexachlorobenzene	
bis(2-Ethylhexyl)adipate		Hexachlorocyclopentadiene	
bis(2-Ethylhexyl)phthalate		Pentachlorophenol (2.0 mg/mL)	

Carbamate Pesticide Mixture

M-531-REG-ASL	Alternate Source	SAVE	1 x 1 mL
M-531-REG-ASL-PAK			5 x 1 mL
<i>100 µg/mL each in MeOH</i>			2 comps.
Carbofuran		Oxamyl	

Alternate Source

Validates Analytical Results, while Saving Time and Money
The Alternate Source Line (ASL) is AccuStandard products that exactly matches another vendor's products. These ASL products can be used as independent standards for your primary supplier.

For additional Cross Referencing, visit our Website



EPA Consent Decree

Water Protocol

Water Protocol EPA Consent Decree

Purgeable A

M-001A 1 x 1 mL
0.2 mg/mL each in MeOH 11 comps.

Carbon tetrachloride
Chlorobenzene
Chloroform
Dibromochloromethane
1,1-Dichloroethane
1,1-Dichloroethylene
1,2-Dichloropropane
Methylene chloride
Tetrachloroethylene
1,1,2-Trichloroethane
Trichloroethylene

Purgeable B

M-001B-R 1 x 1 mL
0.2 mg/mL each in MeOH 13 comps.

Benzene
Bromodichloromethane
Bromoform
2-Chloroethyl vinyl ether
1,2-Dichloroethane
trans-1,2-Dichloroethylene
cis-1,3-Dichloropropene *
trans-1,3-Dichloropropene **
Ethylbenzene
1,1,2,2-Tetrachloroethane
Toluene
1,1,1-Trichloroethane
Trichlorofluoromethane

* *cis* (1.06 x conc.)
** *trans* (0.94 x conc.)

Purgeable C (Gases)

M-001C 1 x 1 mL
0.2 mg/mL each in MeOH 5 comps.

Bromomethane
Chloroethane
Chloromethane
Dichlorodifluoromethane
Vinyl chloride

Base/Neutral 1

M-001D 1 x 1 mL
At stated conc. in MeOH
M-001D-D 1 x 1 mL
At stated conc. in CH₂Cl₂ 12 comps.

Acenaphthylene (0.2 mg/mL)
Benzo[b]fluoranthene (0.1 mg/mL)
4-Bromophenyl phenyl ether (0.2 mg/mL)
bis(2-Chloroethyl)ether (0.2 mg/mL)
bis(2-Chloro-1-methylethyl)ether (0.2 mg/mL)
1,4-Dichlorobenzene (0.2 mg/mL)
3,3-Dichlorobenzidine (0.2 mg/mL)
Dimethyl phthalate (0.2 mg/mL)
Di-*n*-butyl phthalate (0.2 mg/mL)
2,6-Dinitrotoluene (0.2 mg/mL)
bis(2-Ethylhexyl)phthalate (0.2 mg/mL)
Nitrobenzene (0.2 mg/mL)

Base/Neutral 2

M-001E 1 x 1 mL
At stated conc. in MeOH
M-001E-D 1 x 1 mL
At stated conc. in CH₂Cl₂ 15 comps.

Acenaphthene (0.2 mg/mL)
Anthracene (0.2 mg/mL)
Benz[a]anthracene (0.1 mg/mL)
Chrysene (0.1 mg/mL)
Dibenz[a,h]anthracene (0.1 mg/mL)
1,2-Dichlorobenzene (0.2 mg/mL)
1,3-Dichlorobenzene (0.2 mg/mL)
Diethyl phthalate (0.2 mg/mL)
2,4-Dinitrotoluene (0.2 mg/mL)
Fluorene (0.2 mg/mL)
Hexachlorobenzene (0.2 mg/mL)
Hexachlorobutadiene (0.2 mg/mL)
Naphthalene (0.2 mg/mL)
bis(2-Chloroethoxy)methane (0.2 mg/mL)
Pyrene (0.1 mg/mL)

Base/Neutral 3

M-001F 1 x 1 mL
At stated conc. in MeOH
M-001F-D 1 x 1 mL
At stated conc. in CH₂Cl₂ 11 comps.

Butyl benzyl phthalate (0.2 mg/mL)
2-Chloronaphthalene (0.2 mg/mL)
1,2-Diphenylhydrazine (0.2 mg/mL)
Fluoranthene (0.1 mg/mL)
Hexachlorocyclopentadiene (0.2 mg/mL)
Hexachloroethane (0.2 mg/mL)
Isophorone (0.2 mg/mL)
N-Nitroso-*di-n*-propylamine (0.2 mg/mL)
N-Nitrosodiphenylamine (0.2 mg/mL)
Phenanthrene (0.2 mg/mL)
1,2,4-Trichlorobenzene (0.2 mg/mL)

Base/Neutral 4

M-001G 1 x 1 mL
At stated conc. in MeOH:CH₂Cl₂(1:1)
M-001G-D 1 x 1 mL
At stated conc. in CH₂Cl₂ 9 comps.

Benzidine (0.2 mg/mL)
Benzo[k]fluoranthene (0.1 mg/mL)
Benzo[g,h,i]perylene (0.1 mg/mL)
Benzo[a]pyrene (0.1 mg/mL)
2-Chloroethyl vinyl ether (0.2 mg/mL)
4-Chlorophenylphenyl ether (0.2 mg/mL)
Di-*n*-octyl phthalate (0.2 mg/mL)
Indeno[1,2,3-*cd*]pyrene (0.1 mg/mL)
N-Nitrosodimethylamine (0.2 mg/mL)

Pesticide Mixture

M-001H 1 x 1 mL
At stated conc. in MeOH 16 comps.

Aldrin (0.1 mg/mL)
 α -BHC (0.1 mg/mL)
 β -BHC (0.1 mg/mL)
 γ -BHC (0.1 mg/mL)
 δ -BHC (0.1 mg/mL)
p,p'-DDT (0.6 mg/mL)
p,p'-DDE (0.2 mg/mL)
p,p'-DDD (0.6 mg/mL)
Dieldrin (0.2 mg/mL)
Endosulfan I (0.2 mg/mL)
Endosulfan II (0.2 mg/mL)
Endosulfan sulfate (0.6 mg/mL)
Endrin (0.2 mg/mL)
Endrin aldehyde (0.6 mg/mL)
Heptachlor (0.1 mg/mL)
Heptachlor epoxide (0.1 mg/mL)

Phenol Mixture

M-001P 1 x 1 mL
At stated conc. in MeOH
M-001P-D 1 x 1 mL
1.0 mg/mL each in CH₂Cl₂ 11 comps.

4-Chloro-3-methylphenol (2.5 mg/mL)
2-Chlorophenol (0.5 mg/mL)
2,4-Dichlorophenol (0.5 mg/mL)
2,4-Dimethylphenol (0.5 mg/mL)
2,4-Dinitrophenol (1.5 mg/mL)
2-Nitrophenol (0.5 mg/mL)
4-Nitrophenol (2.5 mg/mL)
2-Methyl-4,6-dinitrophenol (2.5 mg/mL)
Pentachlorophenol (2.5 mg/mL)
Phenol (0.5 mg/mL)
2,4,6-Trichlorophenol (1.5 mg/mL)

Polychlorinated Biphenyls

Each Aroclor® is a mixture of numerous comps., and considerable overlap in composition occurs between Aroclors.
Both at 0.2 mg/mL each in MeOH

Aroclor Mix 1

M-001K 1 x 1 mL
Aroclor 1016 Aroclor 1248
Aroclor 1232 Aroclor 1260

Aroclor Mix 2

M-001L 1 x 1 mL
Aroclor 1221 Aroclor 1254
Aroclor 1242

Chlordane & Toxaphene

M-001J 1 x 1 mL
At stated conc. in MeOH 2 comps.

Chlordane (0.02 mg/mL)
Toxaphene (0.20 mg/mL)

Acrolein & Acrylonitrile

M-603 1 x 1 mL
1.0 mg/mL each in H₂O 2 comps.

Internal Standard - Anthracene-d₁₀

M-001N 1 x 1 mL
2.0 mg/mL in CH₂Cl₂

Used as a GC/MS internal standard in the analysis of the base/neutral extractables.

M-001R 1 x 1 mL
20 mg/mL each in MeOH 3 comps.

Bromochloromethane
1,4-Dichlorobutane
2-Bromo-1-chloropropane

Recommended for use as internal standards for purgeables.

Complete Water Standard Kit

Z-009-R-SET

15 x 1 mL

(M-001A, M-001B-2, M-001C, M-001D, M-001E, M-001F, M-001G, M-001H, M-001P, M-001K, M-001L, M-001J, M-603A, M-001N, M-001R)

Purgeable A
Purgeable B
Purgeable C (Gases)

Base/Neutral 1
Base/Neutral 2
Base/Neutral 3
Base/Neutral 4

Pesticide Mixture
Phenol Mixture
Chlordane & Toxaphene
Aroclor Mix 1

Aroclor Mix 2
Acrolein-Acrylonitrile
Anthracene-d₁₀
Internal Standard

Standard Mixtures for EPA 600 Series

For Waste Water



Background Information

The EPA Methods for evaluating municipal and industrial wastewater pollutants are designated in the EPA 600 Series. This Series of methods evolved from the 1976 agreement by the EPA to study and, if necessary, to regulate 65 "priority pollutants". Several laboratories within the EPA collaborated on research projects that led to the 600 Series Methods.

Methods 601-612 were first published in 1979, along with a GC/MS method for the measurement of TCDD. AccuStandard followed the expansion of the 600 series methods by formulating analytical standards for additional 600 series methods listed in the EPA book "Methods for the Determination of Nonconventional Pesticides in Municipal and Industrial Wastewater."

The 600 Series product line contains standards used in the proposed and promulgated methods for the identification and quantification of organic compounds in municipal and industrial waste water. The organic compounds listed in the various methods include volatile organic compounds (VOCs), pesticides and synthetic organic compounds (SOCs).

Detectors

Analytical techniques used in the identification and quantification of the above compounds include gas chromatography with selective detectors (PID, ELCD, ECD, FID, NPD, FPD), gas chromatography/mass spectrometry (GC/MS) and high performance liquid chromatography (HPLC). The 600 series methods typically utilize packed columns, but chromatographic conditions can be modified (i.e. incorporation of advances in technology like capillary columns) if the modifications do not decrease the accuracy or lessen the precision of the method.

Comprehensive

Complete analysis of the target compounds by these 600 Series Methods can be accomplished using the series of standards formulated by AccuStandard for each method along with the suggested internal and surrogate standards. Formulations have been developed as easy to use large core mixes containing the target compounds and as high concentration sub-mixes for combination with other formulations to meet laboratory specific analyte detection requirements.

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EPA Method 600 Series

Method 601

Method 601 Purgeable Halocarbons by Purge & Trap - GC/MS

Liquids

M-601A		1 x 1 mL
M-601A-PAK	SAVE	5 x 1 mL
<i>0.2 mg/mL each in MeOH</i>		
M-601A-10X		1 x 1 mL
M-601A-10X-PAK	SAVE	5 x 1 mL
<i>20 mg/mL each in MeOH</i>		

Carbon tetrachloride	<i>cis</i> -1,3-Dichloropropylene *
Chlorobenzene	<i>trans</i> -1,3-Dichloropropylene **
1,2-Dichlorobenzene	Methylene chloride
1,3-Dichlorobenzene	1,1,2,2-Tetrachloroethane
1,4-Dichlorobenzene	Tetrachloroethylene
1,1-Dichloroethane	1,1,1-Trichloroethane
1,2-Dichloroethane	1,1,2-Trichloroethane
1,1-Dichloroethylene	Trichloroethylene
<i>trans</i> -1,2-Dichloroethylene	
1,2-Dichloropropane	

* *cis* (1.06 x conc.)
 ** *trans* (0.94 x conc.)

Gases

M-502B		1 x 1 mL
M-502B-PAK	SAVE	5 x 1 mL
<i>0.2 mg/mL each in MeOH</i>		
M-502B-10X		1 x 1 mL
M-502B-10X-PAK	SAVE	5 x 1 mL
<i>2.0 mg/mL each in MeOH</i>		

Bromomethane	Dichlorodifluoromethane
Chloromethane	Trichlorofluoromethane
Chloroethane	Vinyl chloride

Liquid Component

M-601C		1 x 1 mL
M-601C-PAK	SAVE	5 x 1 mL
<i>0.2 mg/mL each in MeOH</i>		
M-601C-10X		1 x 1 mL
M-601C-10X-PAK	SAVE	5 x 1 mL
<i>2.0 mg/mL each in MeOH</i>		

2-Chloroethylvinyl ether

Trihalomethanes

M-501		1 x 1 mL
M-501-PAK	SAVE	5 x 1 mL
<i>0.2 mg/mL each in MeOH</i>		
M-501-10X		1 x 1 mL
<i>2.0 mg/mL each in MeOH</i>		

Bromoform	Dichlorobromomethane
Chloroform	Dibromochloromethane

Purgeable Halocarbon Sets

M-601-SET		4 x 1 mL
<i>0.2 mg/mL each in MeOH</i>		
M-601-10X-SET		4 x 1 mL
<i>2.0 mg/mL each in MeOH</i>		
(M-601A, M-502B, M-601C, M-501)		
(M-601A-10X, M-502B-10X, M-601C-10X, M-501-10X)		

Purgeable Internal Standards

M-001R		1 x 1 mL
M-001R-PAK	SAVE	5 x 1 mL
<i>20 mg/ml each in MeOH</i>		
Bromochloromethane	2-Bromo-1-chloropropane	
1,4-Dichlorobutane		

Purgeable Halocarbon Mix

M-601-ASL	Alternate Source	1 x 1 mL
M-601-ASL-PAK	SAVE	5 x 1 mL
<i>100 µg/mL each in MeOH</i>		
Bromodichloromethane	1,2-Dichloroethane	
Bromoform	1,1-Dichloroethene	
Bromomethane	<i>trans</i> -1,2-Dichloroethene	
Carbon tetrachloride	1,2-Dichloropropane	
Chlorobenzene	<i>cis</i> -1,3-Dichloropropene	
Chloroethane	<i>trans</i> -1,3-Dichloropropene	
Chloroform	Dichloromethane	
Chloromethane	1,1,2,2-Tetrachloroethane	
Dibromochloromethane	Tetrachloroethene	
1,2-Dichlorobenzene	1,1,1-Trichloroethane	
1,3-Dichlorobenzene	1,1,2-Trichloroethane	
1,4-Dichlorobenzene	Trichloroethene	
Dichlorodifluoromethane	Trichlorofluoromethane	
1,1-Dichloroethane	Vinyl chloride	

Performance Check Solution

S-532-ASL	Alternate Source	1 x 1 mL
S-532-ASL-PAK	SAVE	5 x 1 mL
<i>0.2 mg/mL each in MeOH</i>		

Benzene	1,1-Dichloroethene
Carbon tetrachloride	1,1,1-Trichloroethane
1,4-Dichlorobenzene	Trichloroethene
1,2-Dichloroethane	Vinyl chloride

Technical Note

2 alternate approaches to perform Method 601 analysis:

Option 1 Use of the 4 ampule set (M-601) allows you to differentiate the more volatile analytes (M-502B) or less stable analytes (M-601C) and the THMs from the stable Method 601 liquids, which can then be ordered less frequently to optimize economy.

Option 2 The M-601-ASL formulation will serve as a convenient single injection standard for all analytes other than 2-Chloroethylvinyl ether. It can also be used as a Second Source or QC Standard.

Buy AccuPaks™
Save 20-40% 5 x 1 mL





Method 601/602 Purgeable Halocarbons by GC/MS

Purgeable Halocarbons & Aromatics

M-601/602		1 x 1 mL
M-601/602-PAK	SAVE	5 x 1 mL
0.2 mg/mL each in MeOH		
Benzene	1,2-Dichloropropane	
Bromoform	cis-1,3-Dichloropropylene *	
Carbon tetrachloride	trans-1,3-Dichloropropylene **	
Chlorobenzene	Ethylbenzene	
Chloroform	Methylene chloride	
Dibromochloromethane	1,1,2,2-Tetrachloroethane	
1,2-Dichlorobenzene	Tetrachloroethylene	
1,3-Dichlorobenzene	Toluene	
1,4-Dichlorobenzene	1,1,1-Trichloroethane	
Dichlorobromomethane	1,1,2-Trichloroethane	
1,1-Dichloroethane	Trichloroethylene	
1,2-Dichloroethane		
1,1-Dichloroethylene	* cis (1.06 x conc.)	
trans-1,2-Dichloroethylene	** trans (0.94 x conc.)	

Gases

M-601B		1 x 1 mL
M-601B-PAK	SAVE	5 x 1 mL
0.2 mg/mL each in MeOH		
Bromomethane	Dichlorodifluoromethane	
Chloromethane	Trichlorofluoromethane	
Chloroethane	Vinyl chloride	

Liquids

M-601C		1 x 1 mL
M-601C-PAK	SAVE	5 x 1 mL
0.2 mg/mL in MeOH		
2-Chloroethylvinyl ether		

Purgeable Aromatics

M-602		1 x 1 mL
M-602-PAK	SAVE	5 x 1 mL
0.2 mg/mL each in MeOH		
Benzene	1,4-Dichlorobenzene	
Chlorobenzene	Ethylbenzene	
1,2-Dichlorobenzene	Toluene	
1,3-Dichlorobenzene		

Purgeable Aromatics - Gasoline ID

M-602-GAS		1 x 1 mL
M-602-GAS-PAK	SAVE	5 x 1 mL
0.2 mg/mL each in MeOH		
M-602-GAS-10X		1 x 1 mL
M-602-GAS-10X-PAK	SAVE	5 x 1 mL
2.0 mg/mL each in MeOH		
Benzene	Toluene	
Chlorobenzene	o-Xylene	
1,2-Dichlorobenzene	p-Xylene	
1,3-Dichlorobenzene	m-Xylene	
1,4-Dichlorobenzene	MtBE	
Ethylbenzene		

Surrogate Standard

M-602-SS		1 x 1 mL
M-602-SS-PAK	SAVE	5 x 1 mL
0.2 mg/mL in MeOH		
M-602-SS-100X NEW		1 x 1 mL
20 mg/mL in MeOH		

α,α,α-Trifluorotoluene

Combined 601/602 Purgeable Halocarbon & Aromatic Gasoline ID Mixture with MtBE

M-601-CHG		1 x 1 mL
M-601-CHG-PAK	SAVE	5 x 1 mL
100 µg/mL each in MeOH		
Benzene	1,2-Dichloropropane	
Bromodichloromethane	cis-1,3-Dichloropropene *	
Bromoform	trans-1,3-Dichloropropene **	
Bromomethane	Dichloromethane	
Carbon tetrachloride	Ethylbenzene	
Chlorobenzene	MtBE	
Chloroethane	1,1,2,2-Tetrachloroethane	
Chloroform	Tetrachloroethene	
Chloromethane	Toluene	
Dibromochloromethane	1,1,1-Trichloroethane	
1,2-Dichlorobenzene	1,1,2-Trichloroethane	
1,3-Dichlorobenzene	Trichloroethene	
1,4-Dichlorobenzene	Trichlorofluoromethane	
Dichlorodifluoromethane	m-Xylene	
1,1-Dichloroethane	o-Xylene	
1,2-Dichloroethane	p-Xylene	
1,1-Dichloroethene	Vinyl chloride	
trans-1,2-Dichloroethene	* cis (1.06 x conc.)	
	** trans (0.94 x conc.)	

Technical Note

AccuStandard designed two sets of formulations for those laboratories analyzing Method 601/602 analytes by PID/HALL in series allowing for simultaneous screening of gasoline contamination:

M-601/602 The first set of formulations provide the analytical chemist with the method analytes in a core mix of liquids and a separate mix of the more volatile gases. By providing the six gases in a separate solution the chemist can replace the volatile gases on a more frequent basis.

M-601-CHG The second formulation has the Method 601/602 analytes plus the oxygenate MtBE in one convenient solution. Since the oxygenate MtBE is added to gasoline, its presence on a chromatogram can provide early detection of gasoline contamination at the monitoring well.

Target Analytes

M-601/602/BTEX		1 x 1 mL
0.2 mg/mL each in MeOH		
M-601/602/BTEX-10X		1 x 1 mL
2.0 mg/mL each in MeOH		
Benzene	1,1,1-Trichloroethane	
Carbon tetrachloride	1,1,2,2-Tetrachloroethane	
Chlorobenzene	1,1,2-Trichloroethane	
Chloroethane	1,1-Dichloroethane	
Ethylbenzene	1,1-Dichloroethene	
Methyl-t-butyl ether	1,2-Dichlorobenzene	
Methylene chloride	1,2-Dichloroethane	
Tetrachloroethene	1,2-Dichloropropane	
Toluene	o-Xylene	
Trichloroethene	m-Xylene	
cis-1,3-Dichloropropene	p-Xylene	
cis-1,2-Dichloroethene	1,3-Dichlorobenzene	
trans-1,2-Dichloroethene	1,4-Dichlorobenzene	
trans-1,3-Dichloropropene		

Gasoline Oxygenate - MtBE

S-078		1 x 1 mL
200 µg/mL in MeOH		
S-078-10X		1 x 1 mL
2.0 mg/mL in MeOH		
Methyl t-butyl ether (MtBE)		



EPA Method 600 Series

Method 603-608

Method 603 Acrolein & Acrylonitrile by GC/FID

M-603 1 x 1 mL
M-603-PAK SAVE 5 x 1 mL
 1.0 mg/mL each in Water 2 comps.
M-603-M-5X 1 x 1 mL
 5.0 mg/mL each in MeOH:Water 90:10 2 comps.

Acrolein Acrylonitrile

Method 604 Phenols by GC/FID

M-604 1 x 1 mL
M-604-PAK SAVE 5 x 1 mL
 0.5 mg/mL each in MeOH 11 comps.

4-Chloro-3-methylphenol 2-Nitrophenol
 2-Chlorophenol 4-Nitrophenol
 2,4-Dichlorophenol Pentachlorophenol
 2,4-Dimethylphenol Phenol
 2,4-Dinitrophenol 2,4,6-Trichlorophenol
 2-Methyl-4,6-dinitrophenol

Surrogate Standard

M-604-SS 1 x 1 mL
M-604-SS-PAK SAVE 5 x 1 mL
 0.2 mg/mL each in MeOH

2,4,6-Tribromophenol

Phenol as Pentafluorobenzyl Derivatives by GC/ECD

M-604-PFB 1 x 1 mL
M-604-PFB-PAK SAVE 5 x 1 mL
 0.2 mg/mL each in MeOH 11 comps.

4-Chloro-3-methylphenol 2-Nitrophenol
 2-Chlorophenol 4-Nitrophenol
 2,4-Dichlorophenol Pentachlorophenol
 2,4-Dimethylphenol Phenol
 2,4-Dinitrophenol 2,4,6-Trichlorophenol
 2-Methyl-4,6-dinitrophenol

Surrogate Standard

M-604-SS-PFB 1 x 1 mL
M-604-SS-PFB-PAK SAVE 5 x 1 mL
 0.2 mg/mL each in MeOH

2,4,6-Tribromophenol-PFB

Method 605 Benzidines by HPLC

M-605-10X 1 x 1 mL
M-605-10X-PAK SAVE 5 x 1 mL
 1.0 mg/mL each in MeOH 2 comps.

Benzidine 3,3'-Dichlorobenzidine

Method 606 Phthalate Esters by GC/ECD

M-606 1 x 1 mL
M-606-PAK SAVE 5 x 1 mL
 0.2 mg/mL each in MeOH 6 comps.

Benzyl butyl phthalate Di-*n*-butyl phthalate
 Dimethyl phthalate Di-*n*-octyl phthalate
 Diethyl phthalate bis(2-Ethylhexyl)phthalate

Method 607 Nitrosamines by GC/NPD

M-607 1 x 1 mL
M-607-PAK SAVE 5 x 1 mL
 At stated conc. in MeOH 3 comps.

N-Nitrosodimethylamine (0.2 mg/mL)
 N-Nitrosodiphenylamine (0.4 mg/mL)
 N-Nitrosodi-*n*-propylamine (0.2 mg/mL)

Method 608 Pesticides and PCBs by GC/ECD

Pesticides and PCBs Set

M-608-SET 4 x 1 mL
 (M-001H, M-001J, M-001K, M-001L)

M-001H 1 x 1 mL
 At stated conc. in MeOH 16 comps.

Aldrin (0.1 mg/mL)	Dieldrin (0.2 mg/mL)
α-BHC (0.1 mg/mL)	Endosulfan I (0.2 mg/mL)
β-BHC (0.1 mg/mL)	Endosulfan II (0.2 mg/mL)
δ-BHC (0.1 mg/mL)	Endosulfan sulfate (0.6 mg/mL)
γ-BHC (0.1 mg/mL)	Endrin (0.2 mg/mL)
4,4'-DDD (0.6 mg/mL)	Endrin aldehyde (0.6 mg/mL)
4,4'-DDE (0.2 mg/mL)	Heptachlor (0.1 mg/mL)
4,4'-DDT (0.6 mg/mL)	Heptachlor epoxide (0.1 mg/mL)

M-001J 1 x 1 mL
 At stated conc. in MeOH 2 comps.

Chlordane (0.02 mg/mL) Toxaphene (0.20 mg/mL)

M-001K 1 x 1 mL
 0.2 mg/mL each in MeOH 4 comps.

Aroclor 1016 Aroclor 1248
 Aroclor 1232 Aroclor 1260

M-001L 1 x 1 mL
 0.2 mg/mL each in MeOH 3 comps.

Aroclor 1221 Aroclor 1254
 Aroclor 1242

Performance Check Solution

M-608-QC 1 x 1 mL
M-608-QC-PAK SAVE 5 x 1 mL
 At stated conc. in MeOH 17 comps.

Aldrin (0.02 mg/mL)	Endosulfan I (0.02 mg/mL)
α-BHC (0.02 mg/mL)	Endosulfan II (0.10 mg/mL)
β-BHC (0.02 mg/mL)	Endosulfan sulfate (0.10 mg/mL)
δ-BHC (0.02 mg/mL)	Endrin (0.10 mg/mL)
γ-BHC (0.02 mg/mL)	Endrin aldehyde (0.02 mg/mL)
4,4'-DDD (0.10 mg/mL)	Heptachlor (0.02 mg/mL)
4,4'-DDE (0.02 mg/mL)	Heptachlor epoxide (0.02 mg/mL)
4,4'-DDT (0.10 mg/mL)	Methoxychlor (0.02 mg/mL)
Dieldrin (0.02 mg/mL)	

Pesticides

M-608-ASL 1 x 1 mL
M-608-ASL-PAK SAVE 5 x 1 mL
 20 µg/mL each in MeOH 16 comps.

Aldrin	γ-BHC	Dieldrin	Endrin
α-BHC	p,p'-DDD	Endosulfan I	Endrin aldehyde
β-BHC	p,p'-DDE	Endosulfan II	Heptachlor
δ-BHC	p,p'-DDT	Endosulfan sulfate	Heptachlor epoxide (Isomer B)

Technical Mix Analytes - Aroclors

(Polychlorinated Biphenyls) **AccuPAK™ (5 x 1 mL)**
 Each at 1,000 µg/mL in Hexane SAVE

Aroclors #	Cat. No.	1 mL	Cat. No.	PAK
Aroclor 1016	C-216S-H-10X		C-216S-H-10X-PAK	
Aroclor 1221	C-221S-H-10X		C-221S-H-10X-PAK	
Aroclor 1232	C-232S-H-10X		C-232S-H-10X-PAK	
Aroclor 1242	C-242S-H-10X		C-242S-H-10X-PAK	
Aroclor 1248	C-248S-H-10X		C-248S-H-10X-PAK	
Aroclor 1254	C-254S-H-10X		C-254S-H-10X-PAK	
Aroclor 1260	C-260S-H-10X		C-260S-H-10X-PAK	
Aroclor 1262	C-262S-H-10X		C-262S-H-10X-PAK	
Aroclor 1268	C-268S-H-10X		C-268S-H-10X-PAK	



Method 608.1 & 608.2 Organochlorine Pesticides in Municipal & Industrial Wastewater by GC/ECD

M-608.1		1 x 1 mL
M-608.1-PAK	SAVE	5 x 1 mL
100 µg/mL each in Isooctane		7 comps.
Chlorobenzilate	Etridiazole	
Chloroneb	PCNB	
Chloropropylate	Propachlor	
Dibromochloropropane		

M-608.2		1 x 1 mL
M-608.2-PAK	SAVE	5 x 1 mL
100 µg/mL each in Isooctane		6 comps.
Chlorothalonil	Methoxychlor	
DCPA	cis-Permethrin *	
Dichloram	trans-Permethrin *	

* Actual concentrations stated on Certificate of Product Data

Method 609 Nitroaromatics & Isophorone by GC/ECD/FID

M-609R-SET	2 x 1 mL (M-609A-R, M-609B-R)
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M-609A-R	1 x 1 mL
1.0 mg/mL each in Hexane	2 comps.

Isophorone	Nitrobenzene
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M-609B-R	1 x 1 mL
1.0 mg/mL each in Hexane	2 comps.

2,4-Dinitrotoluene	2,6-Dinitrotoluene
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Performance Check Solution

M-609-QC	1 x 1 mL
At stated conc. in Acetone	4 comps.
Isophorone (100 µg/mL)	2,4-Dinitrotoluene (20 µg/mL)
Nitrobenzene (100 µg/mL)	2,6-Dinitrotoluene (20 µg/mL)

Method 610 PAHs by GC/FID or HPLC

M-610	1 x 1 mL
At stated conc. in MeOH:CH ₂ Cl ₂ (1:1)	16 comps.
M-610A	1 x 1 mL
At stated conc. in MeOH:CH ₂ Cl ₂ (1:1)	16 comps.
M-610-QC	1 x 1 mL
At stated conc in AcCN	16 comps.

Compound	M-610 (mg/mL)	M-610A (mg/mL)	M-610-QC (mg/mL)
Acenaphthene	0.1	1.0	0.1
Acenaphthylene	0.1	2.0	0.1
Anthracene	0.1	0.1	0.1
Benzo[a]anthracene	0.1	0.1	0.01
Benzo[a]pyrene	0.1	0.1	0.01
Benzo[b]fluoranthene	0.1	0.2	0.01
Benzo[g,h,i]perylene	0.1	0.2	0.01
Benzo[k]fluoranthene	0.1	0.1	0.005
Chrysene	0.1	0.1	0.01
Dibenz[a,h]anthracene	0.1	0.2	0.01
Fluoranthene	0.1	0.2	0.01
Fluorene	0.1	0.2	0.1
Indeno[1,2,3-cd]pyrene	0.1	0.1	0.01
Naphthalene	0.1	1.0	0.1
Phenanthrene	0.1	0.1	0.1
Pyrene	0.1	0.1	0.01

Method 611 Haloethers by GC/ECD or ECLD

M-611	1 x 1 mL
0.2 mg/mL each in MeOH	5 comps.
bis(2-Chloroethyl)ether	4-Bromophenyl phenyl ether
bis(2-Chloroethoxy)methane	4-Chlorophenyl phenyl ether
bis(2-Chloro-1-methylethyl)ether	

Method 612 Chlorinated Hydrocarbons by GC/ECD

M-612	1 x 1 mL
At stated conc. in Isooctane	9 comps.
2-Chloronaphthalene (400 µg/mL)	Hexachlorobutadiene (1 µg/mL)
1,2-Dichlorobenzene (200 µg/mL)	Hexachloroethane (1 µg/mL)
1,3-Dichlorobenzene (200 µg/mL)	Hexachlorocyclopentadiene (1 µg/mL)
1,4-Dichlorobenzene (400 µg/mL)	1,2,4-Trichlorobenzene (40 µg/mL)
Hexachlorobenzene (1 µg/mL)	

Method 613 2,3,7,8-TCDD by GC/MS

M-613	1 x 1 mL
M-613-PAK	5 x 1 mL
10 µg/mL in Toluene	
	SAVE
2,3,7,8-Tetrachlorodibenzo-p-dioxin	

Method 614 & 614.1 Organophosphorus Pesticides by GC/NPD

M-614	1 x 1 mL
1,000 µg/mL each in Acetone:Hexane (1:1)	8 comps.

Azinphos methyl	Ethion
Demeton (mix of O & S isomers)	Malathion
Diazinon	Parathion
Disulfoton	Parathion methyl

M-614.1	1 x 1 mL
1,000 µg/mL each in Acetone:Hexane (1:1)	4 comps.

Dioxathion	Ethion
EPN	Terbufos

M-614.1-ASL	1 x 1 mL
At stated conc. in Hexane	4 comps.

Dioxathion (10 µg/mL)	Ethion (100 µg/mL)
EPN (200 µg/mL)	Terbufos (4 µg/mL)

Alternate Source

Matrix Spiking Solution

M-610-MS	1 x 1 mL
M-610-MS-PAK	5 x 1 mL
At stated conc. in AcCN	6 comps.
	SAVE
Benz[a]pyrene (0.5 mg/mL)	2-Methylnaphthalene (5.0 mg/mL)
Chrysene (0.5 mg/mL)	Phenanthrene (0.5 mg/mL)
1-Methylnaphthalene (5.0 mg/mL)	Pyrene (0.5 mg/mL)

For additional formulations also see Method 8310



EPA Method 600 Series

Method 615-622

Method 615 Chlorinated Herbicides

Chlorinated Herbicides

Each at 0.2 mg/mL * Compound	Herbicide Acids	Methyl Derivatives	1 mL
	In MeOH Cat. No.	In Hexane Cat. No.	
2,4-D	M-8150S-A-01	M-8150-01	
2,4-DB	M-8150S-A-02	M-8150-02	
2,4,5-T	M-8150S-A-03	M-8150-03	
2,4,5-TP	M-8150S-A-04	M-8150-04	
Dalapon	M-8150S-A-05	M-8150-05	
Dicamba	M-8150S-A-06	M-8150-06	
Dichlorprop	M-8150S-A-07	M-8150-07	
Dinoseb	M-8150S-A-08	M-8150-08	
MCPA (2.0 mg/mL) *	M-8150S-A-09	M-8150-09	
MCPP (2.0 mg/mL) *	M-8150S-A-10	M-8150-10	
Set of 10 x 1 mL	M-8150A-SET	M-8150-SET	
Each Solution at 0.2 mg/mL, except MCPA & MCPP Above analytes			

Underivatized

M-8150A 1 x 1 mL
0.1 mg/mL in MEOH, except MCPA and MCPP 10 comps.

2,4-D	Dinoseb
Dalapon	MCPA (10 mg/mL)
2,4-DB	MCPP (10 mg/mL)
Dicamba	2,4,5-TP
Dichlorprop	2,4,5-T

Methyl Derivatives

M-8150 1 x 1 mL
0.1 mg/mL in MEOH, except MCPA and MCPP 10 comps.

2,4-D	Dinoseb
Dalapon	MCPA (10 mg/mL)
2,4-DB	MCPP (10 mg/mL)
Dicamba	2,4,5-TP
Dichlorprop	2,4,5-T

Method 617 Chlorinated Pesticides & PCBs by GC/ECD

Mix #1 - Analytes

Z-014C-R2 1 x 1 mL
Z-014C-R2-PAK 5 x 1 mL
2.0 mg/mL each in Hexane : Toluene (1:1) 18 comps.

Aldrin	4,4'-DDE	Endrin
α-BHC	4,4'-DDT	Endrin ketone
β-BHC	Dieldrin	Endrin aldedhyde
γ-BHC	Endosulfan I	Heptachlor
δ-BHC	Endosulfan II	Heptachlor epoxide
4,4'-DDD	Endosulfan sulphate	Methoxychlor

Mix #2 - Analytes

M-617-2 1 x 1 mL
2.0 mg/mL each in Hexane : Toluene (1:1) 9 comps.

Captan	Dicofol	PCNB
Carbophenothion	Isodrin	Perthane
Dichloran	Mirex	Trifluralin

Chlordane

P-017S-20X 1 x 1 mL
2.0 mg/mL in MeOH

Toxaphene

P-093S-40X 1 x 1 mL
4.0 mg/mL in MeOH

Method 618 Volatile Pesticides by GC/ECD

Volatile Pesticides

M-618 1 x 1 mL
20 mg/mL each in Isooctane 2 comps.

Chloropicrin	Ethylene dibromide
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Internal Standard

M-618-IS 1 x 1 mL
20 mg/mL in Isooctane

Bromoform

Method 619 Triazine Herbicides by GC/NPD

Triazine Herbicides

Each at 0.1 mg/mL in MeOH

Compound	Cat. No.	1 mL	Compound	Cat. No.	1 mL
Ametryn	M-619-01		Secbumeton	M-619-07	
Atraton	M-619-02		Simetryn	M-619-08	
Atrazine	M-619-03		Simazine	M-619-09	
Prometon	M-619-04		Terbutylazine	M-619-10	
Prometryn	M-619-05		Terbutryn	M-619-11	
Propazine	M-619-06				

M-619-SET 11 x 1 mL
Each at 0.1 mg/mL in MeOH Above 11 compounds

M-619M 1 x 1 mL
0.1 mg/mL each in MeOH Above 11 compounds

Method 620 Diphenylamine by GC/NPD

Diphenylamine

M-620 1 x 1 mL
1000 µg/mL each in MeOH

Diphenylamine

To delay premature breakdown of thermally labile product in transit we suggest requesting a Cold Pack.

Method 622 Organophosphorus Pesticides by GC/NPD

Organophosphorus Pesticides

M-622-SET 27 x 1 mL
1000 µg/mL each in Hexane

Azinphos methyl (01)	Merphos (15)
Bolstar (Sulprofos) (02)	Mevinphos (16)
Chlorpyrifos (03)	Monocrotophos (17)
Coumaphos (04)	Naled (18)
Demeton, O & S (05)	Parathion ethyl (19)
Diazinon (06)	Parathion methyl (20)
Dichlorvos (07)	Phorate (21)
Dimethoate (08)	Ronnel (22)
Disulfoton (09)	Stirophos (23)
EPN (10)	Sulfotep (24)
Ethoprop (11)	TEPP (25)
Fensulfthion (12)	Tokuthion (26)
Fenthion (13)	Trichloronate (27)
Malathion (14)	



Method 622.1 Thiophosphate Pesticides by GC/NPD

Thiophosphate Pesticides

M-622.1 1 x 1 mL
 1.0 mg/mL each in MtBE 7 comps.

Aspon	Fonophos
Dichlofenthion	Phosmet
Famphur	Thionazin
Fenitrothion	

Method 624 Purgeables by GC/MS

Purgeables

M-624 1 x 1 mL
 0.2 mg/mL each in MeOH 31 comps.

Benzene	<i>trans</i> -1,2-Dichloroethene
Bromodichloromethane	1,2-Dichloropropane
Bromoform	<i>cis</i> -1,3-Dichloropropene *
Bromomethane	<i>trans</i> -1,3-Dichloropropene **
Carbon tetrachloride	Ethylbenzene
Chlorobenzene	Methylene chloride
Chloroethane	1,1,2,2-Tetrachloroethane
2-Chloroethylvinyl ether	Tetrachloroethene
Chloroform	Toluene
Chloromethane	1,1,1-Trichloroethane
Dibromochloromethane	1,1,2-Trichloroethane
1,2-Dichlorobenzene	Trichloroethene
1,3-Dichlorobenzene	Trichlorofluoromethane
1,4-Dichlorobenzene	Vinyl chloride
1,1-Dichloroethane	
1,2-Dichloroethane	* <i>cis</i> (1.06 x conc.)
1,1-Dichloroethene	** <i>trans</i> (0.94 x conc.)

Surrogates

Each at 0.2 mg/mL in MeOH

Component	Cat. No.	1 mL
Benzene-d ₆	M-624-SS-01	
Bromochloromethane	M-624-SS-02	
4-Bromofluorobenzene	M-624-SS-03	
1-Chloro-2-bromopropane	M-624-SS-04	
1,4-Dichlorobutane	M-624-SS-05	
1,2-Dichloroethane-d ₄	M-624-SS-06	
1,4-Difluorobenzene	M-624-SS-07	
Ethylbenzene-d ₁₀	M-624-SS-08	
Fluorobenzene	M-624-SS-09	
Pentafluorobenzene	M-624-SS-10	
1,2-Dichlorobenzene-d ₄	M-624-SS-11	
2-Bromochlorobenzene	M-624-SS-12	
4-Chlorofluorobenzene	M-624-SS-13	
a,a,a-Trichlorotoluene	M-624-SS-14	

Surrogate Standards

M-624-SS-M 1 x 1 mL
M-624-SS-M-PAK 5 x 1 mL
 20 mg/mL each in MeOH 3 comps.

4-Bromofluorobenzene	Pentafluorobenzene
Fluorobenzene	

Internal Standard

M-001R 1 x 1 mL
M-001R-PAK 5 x 1 mL
 20 mg/mL each in MeOH 3 comps.

Bromochloromethane	2-Bromo-1-chloropropane
1,4-Dichlorobutane	

Tens of thousands of Standards Ready-to-Ship



Method 622-624



EPA Method 600 Series

Method 625 Semi-Volatiles Analysis by GC/MS

The following composite mixtures were formulated to allow the flexibility of preparing a complete semi-volatile mix to meet your laboratory's specific needs. These Base/Neutral analytes are also available in a two ampule set to extend the useful life of your stock calibration standards.

Base-Neutral Analytes (44 comps.)

Acenaphthene	Diethyl phthalate
Acenaphthylene	Dimethyl phthalate
Anthracene	2,4-Dinitrotoluene
Azobenzene	2,6-Dinitrotoluene
Benz[a]anthracene	Di- <i>n</i> -octyl phthalate
Benzo[b]fluoranthene	bis(2-Ethylhexyl)phthalate
Benzo[k]fluoranthene	Fluoranthene
Benzo[g,h,i]perylene	Fluorene
Benzo[a]pyrene	Hexachlorobenzene
4-Bromophenyl phenyl ether	Hexachlorobutadiene
Butyl benzyl phthalate	Hexachlorocyclopentadiene
bis(2-Chloroethoxy)methane	Hexachloroethane
bis(2-Chloroethyl)ether	Indeno[1,2,3- <i>cd</i>]pyrene
bis(2-Chloro-1-methylethyl)ether	Isophorone
2-Chloronaphthalene	Naphthalene
4-Chlorophenyl phenyl ether	Nitrobenzene
Chrysene	N-Nitrosodimethylamine
Dibenz[a,h]anthracene	N-Nitrosodiphenylamine
Di- <i>n</i> -butyl phthalate	N-Nitrosodi- <i>n</i> -propylamine
1,2-Dichlorobenzene	Phenanthrene
1,3-Dichlorobenzene	Pyrene
1,4-Dichlorobenzene	1,2,4-Trichlorobenzene

Benzidine Analytes (2 comps.)

Benzidine	3,3'-Dichlorobenzidine
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Base-Neutral Mix

CLP-HC-BN-R	1 x 1 mL
2.0 mg/mL each in Benzene : CH ₂ Cl ₂ : AcCN (2:2:1)	44 comps.
CLP-HC-BN-R-PAK	5 x 1 mL
2.0 mg/mL each in Benzene : CH ₂ Cl ₂ : AcCN (2:2:1)	44 comps.

Benzidine Analytes (2 comps.)

Z-014F	1 x 1 mL
2.0 mg/mL each in MeOH	2 comps.

M-625-BN	1 x 1 mL
M-625-BN-PAK	5 x 1 mL
0.1 mg/mL each in CH ₂ Cl ₂	44 Base-Neutrals and 2 Benzidines

M-625-BN-5X	1 x 1 mL
M-625-BN-5X-PAK	5 x 1 mL
0.5 mg/mL each in CH ₂ Cl ₂	44 Base-Neutrals and 2 Benzidines

CLP-HC-BN	1 x 1 mL
CLP-HC-BN-PAK	5 x 1 mL
2.0 mg/mL each in Benzene : CH ₂ Cl ₂ : AcCN (2:2:1)	44 Base-Neutrals and 2 Benzidines

CLP-HC-BN-SET	2 x 1 mL
CLP-HC-BN-SET-PAK	5 x (2 x 1 mL)
	CLP-HC-BN-R & Z-014F

Method 625 Modification Standard

M-625-MOD	1 x 1 mL
M-625-MOD-PAK	5 x 1 mL
2000 µg/mL each in CH ₂ Cl ₂	17 comps.

Acetophenone	<i>n</i> -Dodecane
Aniline	<i>n</i> -Eicosane
Benzoic acid	<i>n</i> -Hexadecane
Carbazole	1-Methylphenanthrene
<i>p</i> -Cresol	<i>n</i> -Octadecane
<i>o</i> -Cresol	Pyridine
2,3-Dichloroaniline	<i>a</i> -Terpineol
<i>n</i> -Decane	<i>n</i> -Tetradecane
<i>n</i> -Docosane	

Daily QA/QC Standards

M-625-BN-1		1 x 1 mL
M-625-BN-1-PAK	SAVE	5 x 1 mL
0.5 mg/mL each in CH ₂ Cl ₂		12 comps.

Acenaphthylene	3,3'-Dichlorobenzidine
Benzo[b]fluoranthene	Dimethyl phthalate
4-Bromophenylphenyl ether	Di- <i>n</i> -butyl phthalate
bis(2-Chloroethyl)ether	2,6-Dinitrotoluene
bis(2-Chloro-1-methylethyl)ether	bis(2-Ethylhexyl)phthalate
1,4-Dichlorobenzene	Nitrobenzene

M-625-BN-2		1 x 1 mL
M-625-BN-2-PAK	SAVE	5 x 1 mL
0.5 mg/mL each in CH ₂ Cl ₂		15 comps.

Acenaphthene	Diethyl phthalate
Anthracene	2,4-Dinitrotoluene
Benz[a]anthracene	Fluorene
bis(2-Chloroethoxy)methane	Hexachlorobenzene
Chrysene	Hexachlorobutadiene
Dibenz[a,h]anthracene	Naphthalene
1,2-Dichlorobenzene	Pyrene
1,3-Dichlorobenzene	

M-625-BN-3		1 x 1 mL
M-625-BN-3-PAK	SAVE	5 x 1 mL
0.5 mg/mL each in CH ₂ Cl ₂		11 comps.

Azobenzene	Isophorone
Benzyl butyl phthalate	N-Nitrosodi- <i>n</i> -propylamine
2-Chloronaphthalene	N-Nitrosodiphenylamine
Fluoranthene	Phenanthrene
Hexachlorocyclopentadiene	1,2,4-Trichlorobenzene
Hexachloroethane	

M-625-BN-4		1 x 1 mL
M-625-BN-4-PAK	SAVE	5 x 1 mL
0.5 mg/mL each in CH ₂ Cl ₂		8 comps.

Benzidine	4-Chlorophenylphenyl ether
Benzo[a]pyrene	Di- <i>n</i> -octyl phthalate
Benzo[g,h,i]perylene	Indeno[1,2,3- <i>cd</i>]pyrene
Benzo[k]fluoranthene	N-Nitrosodimethylamine

Technical Note

These 4 standards can be combined for use in daily QA/QC, as a second source lot or as spiking and duplicates.

High Concentration Acid Extractables Phenol Mix

Z-014H		1 x 1 mL
Z-014H-PAK	SAVE	5 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂		11 comps.

4-Chloro-3-methylphenol	2-Nitrophenol
2-Chlorophenol	4-Nitrophenol
2,4-Dichlorophenol	Pentachlorophenol
2,4-Dimethylphenol	Phenol
2,4-Dinitrophenol	2,4,6-Trichlorophenol
2-Methyl-4,6-dinitrophenol	



Method 625 Semi-Volatiles Analysis by GC/MS (Continued)

Acid Extractables Mixture

M-625A		1 x 1 mL
M-625A-PAK	SAVE	5 x 1 mL
20 µg/mL each in MeOH		
4-Chloro-3-methylphenol	2-Nitrophenol	
2-Chlorophenol	4-Nitrophenol	
2,4-Dichlorophenol	Pentachlorophenol	
2,4-Dimethylphenol	Phenol	
2,4-Dinitrophenol	2,4,6-Trichlorophenol	
4,6-Dinitro-2-methylphenol		

Single Component Surrogates & Internal Standards

Base/Neutrals

Individual solutions at 0.2 mg/mL in CH₂Cl₂

Component	Cat. No.	1 mL
Aniline-d ₅	M-625-01	
Anthracene-d ₁₀	M-625-02	
Benz[a]anthracene-d ₁₂	M-625-03	
Decafluorobiphenyl	M-625-04	
4,4'-Dibromobiphenyl	M-625-05	
4,4'-Dibromooctafluorobiphenyl	M-625-06	
2,2'-Difluorobiphenyl	M-625-07	
4-Fluoroaniline	M-625-08	
2-Fluorobiphenyl	M-625-09	
1-Fluoronaphthalene	M-625-10	
2-Fluoronaphthalene	M-625-11	
Naphthalene-d ₈	M-625-12	
Nitrobenzene-d ₅	M-625-13	
Phenanthrene-d ₁₀	M-625-14	
Pyridine-d ₅	M-625-15	

Acids

Individual solution at 0.2 mg/mL in CH₂Cl₂

Component	Cat. No.	1 mL
2-Fluorophenol	M-625-16	
Pentafluorophenol	M-625-17	
Phenol-d ₅	M-625-18	
2,4,6-Tribromophenol	M-625-19	
2-Chlorophenol-d ₄	M-625-20	

Pesticide Extractables Mixture

M-625P		1 x 1 mL
M-625P-PAK	SAVE	5 x 1 mL
20 µg/mL each in MeOH		
Aldrin	Dieldrin	
β-BHC	Endosulfan sulfate	
δ-BHC	Endrin aldehyde	
4,4'-DDD	Heptachlor	
4,4'-DDE	Heptachlor epoxide	
4,4'-DDT		

GC/MS Calibration Standards

M-625C-SET set of 5 x 1 mL
5 solutions each at stated conc. in CH₂Cl₂

Component	Cat. No.	1 mL
Benzidine (50 µg/mL)	M-625C-1	
Pentachlorophenol (25 µg/mL)	M-625C-2	
Decafluorotriphenylphosphine (DFTPP) (25 µg/mL)	M-625C-3	
Benzidine (50 µg/mL) + DFTPP (25 µg/mL)	M-625C-4	
Pentachlorophenol(25 µg/mL) + DFTPP(25 µg/mL)	M-625C-5	

GC/MS Tuning Standards

M-625-TS		1 x 1 mL
M-625-TS-PAK	SAVE	5 x 1 mL
50 µg/mL each in CH ₂ Cl ₂		
M-625-TS-20X		1 x 1 mL
M-625-TS-20X-PAK	SAVE	5 x 1 mL
2000 µg/mL each in CH ₂ Cl ₂		
Benzidine	DFTPP	
p,p'-DDT	Pentachlorophenol	
CLP-TS		1 x 1 mL
CLP-TS-PAK	SAVE	5 x 1 mL
50 µg/mL in CH ₂ Cl ₂		
Perfluorokerosene		

Multi-Component Analytes (Polychlorinated Biphenyls, Chlordane & Toxaphene)

Each at 1,000 µg/mL in Hexane

Aroclors #	Cat. No.	1 mL	Cat. No.	PAK
Aroclor 1016	C-216S-H-10X		C-216S-H-10X-PAK	
Aroclor 1221	C-221S-H-10X		C-221S-H-10X-PAK	
Aroclor 1232	C-232S-H-10X		C-232S-H-10X-PAK	
Aroclor 1242	C-242S-H-10X		C-242S-H-10X-PAK	
Aroclor 1248	C-248S-H-10X		C-248S-H-10X-PAK	
Aroclor 1254	C-254S-H-10X		C-254S-H-10X-PAK	
Aroclor 1260	C-260S-H-10X		C-260S-H-10X-PAK	
Aroclor 1262	C-262S-H-10X		C-262S-H-10X-PAK	
Aroclor 1268	C-268S-H-10X		C-268S-H-10X-PAK	
Pesticides				
Chlordane	P-017S-H-10X		P-017S-H-10X-PAK	
Toxaphene	P-093S-H-10X		P-093S-H-10X-PAK	

Chlordane and Toxaphene

M-001J		1 x 1 mL
M-001J-PAK	SAVE	5 x 1 mL
At stated conc. in MeOH		
Chlordane (0.02 mg/mL)	Toxaphene (0.20 mg/mL)	2 comps.

Polychlorinated Biphenyls

Aroclor Mix #1

M-001K		1 x 1 mL
0.2 mg/mL each in MeOH		
Aroclor 1016	Aroclor 1248	
Aroclor 1232	Aroclor 1260	

Aroclor Mix #2

M-001L		1 x 1 mL
0.2 mg/mL each in MeOH		
Aroclor 1221	Aroclor 1254	
Aroclor 1242		

Internal Standard Mix

Z-014J		1 x 1 mL
Z-014J-PAK	SAVE	5 x 1 mL
4.0 mg/mL each in CH ₂ Cl ₂		
Acenaphthene-d ₆	Naphthalene-d ₈	
Chrysene-d ₆	Perylene-d ₁₂	
1,4-Dichlorobenzene-d ₂	Phenanthrene-d ₁₀	



EPA Method 600 Series

Method 625

Method 625 Priority Pollutant Standards

The EPA procedures call for fused silica capillary column analysis of priority pollutants. AccuStandard has assembled the following mixtures to be used in calibrating this analytical system. These mixtures are highly concentrated to aid in the establishment of response factors.

Base/Neutrals - Mix #1

Z-014A 1 x 1 mL
Z-014A-PAK 5 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 14 comps. **SAVE**

- | | |
|----------------------------------|------------------------------------|
| 4-Bromophenylphenyl ether | Dimethyl phthalate |
| Butyl benzyl phthalate | Di- <i>n</i> -butyl phthalate |
| bis(2-Chloroethoxy)methane | Di- <i>n</i> -octyl phthalate |
| bis(2-Chloroethyl)ether | bis(2-Ethylhexyl)phthalate |
| bis(2-Chloro-1-methylethyl)ether | N-Nitrosodimethylamine |
| 4-Chlorophenylphenyl ether | N-Nitrosodi- <i>n</i> -propylamine |
| Diethyl phthalate | N-Nitrosodiphenylamine |

Base/Neutrals - Mix #2

Z-014B 1 x 1 mL
Z-014B-PAK 5 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 14 comps. **SAVE**

- | | |
|---------------------|---------------------------|
| Azobenzene | Hexachlorobenzene |
| 2-Chloronaphthalene | Hexachlorobutadiene |
| 1,2-Dichlorobenzene | Hexachlorocyclopentadiene |
| 1,3-Dichlorobenzene | Hexachloroethane |
| 1,4-Dichlorobenzene | Isophorone |
| 2,4-Dinitrotoluene | Nitrobenzene |
| 2,6-Dinitrotoluene | 1,2,4-Trichlorobenzene |

Toxic Substances - Mix #1

Z-014D 1 x 1 mL
Z-014D-PAK 5 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 4 comps. **SAVE**

- | | |
|----------------|-----------------------|
| Benzoic acid | 4-Methylphenol |
| 2-Methylphenol | 2,4,5-Trichlorophenol |

Toxic Substances - Mix #2

Z-014E 1 x 1 mL
Z-014E-PAK 5 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 8 comps. **SAVE**

- | | |
|-----------------|---------------------|
| Aniline | 2-Methylnaphthalene |
| Benzyl alcohol | 2-Nitroaniline |
| 4-Chloroaniline | 3-Nitroaniline |
| Dibenzofuran | 4-Nitroaniline |

Benzidine Mix

Z-014F 1 x 1 mL
Z-014F-PAK 5 x 1 mL
2.0 mg/mL each in MeOH 2 comps. **SAVE**

- | | |
|-----------|------------------------|
| Benzidine | 3,3'-Dichlorobenzidine |
|-----------|------------------------|

PAH Mix

Z-014G 1 x 1 mL
Z-014G-PAK 5 x 1 mL
2.0 mg/mL each in CH₂Cl₂: Benzene (1:1) 16 comps. **SAVE**

- | | |
|----------------------|------------------------|
| Acenaphthene | Chrysene |
| Acenaphthylene | Dibenz[a,h]anthracene |
| Anthracene | Fluoranthene |
| Benz[a]anthracene | Fluorene |
| Benzo[a]pyrene | Indeno[1,2,3-cd]pyrene |
| Benzo[b]fluoranthene | Naphthalene |
| Benzo[g,h,i]perylene | Phenanthrene |
| Benzo[k]fluoranthene | Pyrene |

PAH Mix

Z-014G-R 1 x 1 mL
Z-014G-R-PAK 5 x 1 mL
2.0 mg/mL each in CH₂Cl₂: Benzene (1:1) 17 comps. **SAVE**

- | | |
|----------------------|------------------------|
| Acenaphthene | Chrysene |
| Acenaphthylene | Dibenz[a,h]anthracene |
| Anthracene | Fluoranthene |
| Benz[a]anthracene | Fluorene |
| Benzo[a]pyrene | Indeno[1,2,3-cd]pyrene |
| Benzo[b]fluoranthene | Naphthalene |
| Benzo[g,h,i]perylene | Phenanthrene |
| Benzo[k]fluoranthene | Pyrene |
| Carbazole | |

Phenols Mix

Z-014H 1 x 1 mL
Z-014H-PAK 5 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 11 comps. **SAVE**

- | | |
|----------------------------|-----------------------|
| 4-Chloro-3-methylphenol | 2-Nitrophenol |
| 2-Chlorophenol | 4-Nitrophenol |
| 2,4-Dichlorophenol | Pentachlorophenol |
| 2,4-Dimethylphenol | Phenol |
| 2,4-Dinitrophenol | 2,4,6-Trichlorophenol |
| 2-Methyl-4,6-dinitrophenol | |

Internal Standard Mix

Z-014J 1 x 1 mL
Z-014J-PAK 5 x 1 mL
4.0 mg/mL each in CH₂Cl₂ 6 comps. **SAVE**

- | | |
|------------------------------------|------------------------------|
| Acenaphthene-d ₆ | Naphthalene-d ₈ |
| Chrysene-d ₆ | Perylene-d ₁₂ |
| 1,4-Dichlorobenzene-d ₂ | Phenanthrene-d ₁₀ |

Order a complete Set
Save 25%

Method 625 Priority Pollutant Set

Z-014R-SET	set of 9 x 1 mL	Z-014R-1-SET	set of 9 x 1 mL	Z-014R-2-SET	set of 7 x 1 mL	Z-014R-3-SET	set of 7 x 1 mL
Set includes:		Set includes:		Set includes:		Set includes:	
Z-014A	Base/Neutrals - Mix #1	Z-014A	Base/Neutrals - Mix #1	Z-014A	Base/Neutrals - Mix #1	Z-014A	Base/Neutrals - Mix #1
Z-014B	Base/Neutrals - Mix #2	Z-014B	Base/Neutrals - Mix #2	Z-014B	Base/Neutrals - Mix #2	Z-014B	Base/Neutrals - Mix #2
Z-014C	Pesticides - Mix #1	Z-014C-R	Pesticides - Mix #2	Z-014D	Toxic Substances - Mix #1	Z-014D	Toxic Substances - Mix #1
Z-014D	Toxic Substances - Mix #1	Z-014D	Toxic Substances - Mix #1	Z-014E	Toxic Substances - Mix #2	Z-014E	Toxic Substances - Mix #2
Z-014E	Toxic Substances - Mix #2	Z-014E	Toxic Substances - Mix #2	Z-014F	Benzidine Mix	Z-014F	Benzidine Mix
Z-014F	Benzidine Mix	Z-014F	Benzidine Mix	Z-014G	PAH Mix	Z-014G-R	PAH Mix
Z-014G-R	PAH Mix	Z-014G-R	PAH Mix	Z-014H	Phenols Mix	Z-014H	Phenols Mix
Z-014H	Phenols Mix	Z-014H	Phenols Mix				
Z-014J	Internal Standard Mix	Z-014J	Internal Standard Mix				



Method 625 (continued) Priority Pollutant Standards

Pesticides - Mix #1

Z-014C			1 x 1 mL
Z-014C-PAK		SAVE	5 x 1 mL
2.0 mg/mL each in Toluene : Hexane (1:1)			16 comps.
Aldrin	4,4'-DDE	Endosulfan sulfate	
α-BHC	4,4'-DDT	Endrin	
β-BHC	Dieldrin	Endrin aldehyde	
γ-BHC	Endosulfan I	Heptachlor	
δ-BHC	Endosulfan II	Heptachlor epoxide	
4,4'-DDD			

Pesticides - Mix #2

Z-014C-R			1 x 1 mL
Z-014C-R-PAK		SAVE	5 x 1 mL
2.0 mg/mL each in Toluene : Hexane (1:1)			20 comps.
Aldrin	4,4'-DDD	Endrin	
α-BHC	4,4'-DDE	Endrin aldehyde	
β-BHC	4,4'-DDT	Endrin ketone	
γ-BHC	Dieldrin	Heptachlor	
δ-BHC	Endosulfan I	Heptachlor epoxide	
α-Chlordane	Endosulfan II	Methoxychlor	
γ-Chlordane	Endosulfan sulfate		

Pesticides - Mix #3

Z-014C-R2			1 x 1 mL
Z-014C-R2-PAK		SAVE	5 x 1 mL
2.0 mg/mL each in Toluene : Hexane (1:1)			18 comps.
Aldrin	4,4'-DDE	Endrin	
α-BHC	4,4'-DDT	Endrin aldehyde	
β-BHC	Dieldrin	Endrin ketone	
γ-BHC	Endosulfan I	Heptachlor	
δ-BHC	Endosulfan II	Heptachlor epoxide	
4,4'-DDD	Endosulfan sulfate	Methoxychlor	

Tuning Standards

M-625-TS			1 x 1 mL
M-625-TS-PAK		SAVE	5 x 1 mL
50 µg/mL each in CH ₂ Cl ₂			4 comps.
Benzidine	DFTPP		
p,p'-DDT	Pentachlorophenol		
CLP-TS			1 x 1 mL
CLP-TS-PAK		SAVE	5 x 1 mL
50 µg/mL in CH ₂ Cl ₂			
Perfluorokerosene			

EPA Method 625 GC/MS Calibration Standards

M-625C-SET		set of 5 x 1 mL
5 solutions each at stated conc. in CH ₂ Cl ₂		
Compound	Cat. No.	
Benzidine (50 µg/mL)	M-625C-1	
Pentachlorophenol (25 µg/mL)	M-625C-2	
Decafluorotriphenylphosphine (DFTPP) (25 µg/mL)	M-625C-3	
Benzidine (50 µg/mL) + DFTPP (25 µg/mL)	M-625C-4	
Pentachlorophenol(25 µg/mL) + DFTPP(25 µg/mL)	M-625C-5	

Method 627 Dinitroaniline Pesticides by GC/ECD

Dinitroaniline Pesticide Mixes

M-627			1 x 1 mL
1.0 mg/mL each in MeOH			4 comps.
Ethalfuralin	Tolban (Profluralin)		
Paarlan (Isopropalin)	Trifluralin		
M-627-R			1 x 1 mL
1.0 mg/mL each in MeOH			5 comps.
Benfluralin	Tolban (Profluralin)		
Ethalfuralin	Trifluralin		
Paarlan (Isopropalin)			

Method 632 Carbamates & Urea Pesticides in Waste Water by HPLC

Carbamates & Urea Pesticides in Waste Water

M-632-SET			set of 21 x 1 mL
Individual Solutions, in 0.1 mg/mL in AcCN			
M-632M			1 x 1 mL
Mixture containing the 21 analytes @ 0.1 mg/mL each in AcCN			
M-632M-10X			1 x 1 mL
Mixture containing the 21 analytes @ 1.0 mg/mL each in AcCN			

	Cat. No.		Cat. No.
Aminocarb	M-632-01	Methomyl	M-632-12
Barban	M-632-02	Mexacarbate	M-632-13
Carbaryl	M-632-03	Monuron	M-632-14
Carbofuran	M-632-04	Monuron-TCA	M-632-15
Chlorpropham	M-632-05	Neburon	M-632-16
Diuron	M-632-06	Oxamyl	M-632-17
Fenuron	M-632-07	Propham	M-632-18
Fenuron-TCA	M-632-08	Propoxur	M-632-19
Fluometuron	M-632-09	Siduron	M-632-20
Linuron	M-632-10	Swep	M-632-21
Methiocarb	M-632-11		

Method 632.1 Carbamates & Amides in Waste Water by HPLC

Carbamates & Amides in Waste Water

M-632.1-SET			set of 4 x 1 mL
Each in 0.1 mg/mL in AcCN			
Vacor	M-632.1-1	Napropamide	M-632.1-3
Propanil	M-632.1-2	Carbaryl	M-632.1-4

Method 633 Organonitrogen Pesticides by GC/NPD

Organonitrogen Pesticides Mix

M-633			1 x 1 mL
0.1 mg/mL each in MeOH			6 comps.
Bromacil	Hexazinone	Terbacil	
Deet	Metribuzin	Triadimefon	

Method 634 Thiocarbamate Pesticides by GC/NPD

Thiocarbamate Pesticides Mix

M-634			1 x 1 mL
1.0 mg/mL each in MeOH			6 comps.
Butylate	EPTC	Pebulate	
Cycloate	Molinat	Vernolate	

Internal Standard

M-634-IS		1 x 1 mL
1.0 mg/mL in MeOH		
Carbazole		



EPA Method 600 Series

Method 645-680

Method 645 Amino Pesticides & Lethane by GC/NPD

Amino Pesticides Mix

M-645 **1 x 1 mL**
 1.0 mg/mL each in Hexane 6 comps.

Alachlor	Diphenamid	Lethane
Butachlor	Fluridone	Norflurazon

HPLC 600's Additional Methods for Pesticides in Waste Water by HPLC

Method	Solutions at 0.1 mg/mL in AcCN	Cat. No.	Method	Solutions at 0.1 mg/mL in AcCN	Cat. No.
604.1	Hexachlorophene & Dichlorophene	M-604.1	639	Bendiocarb	M-639
629	Cyanazine	M-629	640	Mercaptobenzothiazole	M-640
631	Carbendazim	M-631	641	Thiabendazole	M-641
635	Rotenone	M-635	642	Biphenyl & o-Phenylphenol	M-642
636	Bensulide	M-636	643	Bentazon (<i>Basagran</i>)	M-643
638	Oryzalin	M-638	644	Picloram	M-644

Method 680 Determination of Pesticides & PCBs in Water & Soil/Sediment by GC/MS

PCB Isomer Calibration Mix

M-680A **1 x 1 mL**
 At stated conc. in Hexane 9 comps.

2-Chlorobiphenyl	(50 µg/mL)
2,3-Dichlorobiphenyl	(50 µg/mL)
2,4,5-Trichlorobiphenyl	(50 µg/mL)
2,2',4,6-Tetrachlorobiphenyl	(100 µg/mL)
2,2',3,4,5'-Pentachlorobiphenyl	(100 µg/mL)
2,2',4,4',5,6'-Hexachlorobiphenyl	(100 µg/mL)
2,2',3,4',5,6'-Heptachlorobiphenyl	(150 µg/mL)
2,2',3,3',4,5',6,6'-Octachlorobiphenyl	(150 µg/mL)
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl	(250 µg/mL)

Method 680 PCB Isomer Calibration Set

M-680-SET **2 x 1 mL (M-680A, M-680B)**

The EPA has designated the following isomers for use in quantifying PCB's by GC/MS. The PCBs are identified and measured as isomer groups (i.e., by level of chlorination). A concentration is measured for each PCB isomer group; total PCB concentration in each sample extract is obtained by summing isomer group concentrations.

Level of Chlorination	Isomer Selected	Congener Number	RF Value vs. Chrysene-d ₁₂	Mean RF Value vs. Chrysene-d ₁₂
1	2-mono	1	0.899	0.925
2	2,3-di	5	0.651	0.642
3	2,4,5-tri	29	0.411	0.411
4	2,2',4,6-tetra	50	0.305	0.431
5	2,2',3,4,5'-penta	87	0.299	0.287
6	2,2',4,4',5,6'-hexa	154	0.254	0.254
7	2,2',3,4',5,6,6'-hepta	188	0.164	0.160
8	2,2',3,3',4,5',6,6'-octa	201	0.207	0.191
9,10	2,2',3,3',4,4',5,5',6,6'-deca	209	0.144	0.150

Internal Standard

M-680B **1 x 1 mL**
 250 µg/mL in Toluene

Chrysene-d₁₂

Pesticide Mix

M-680P **1 x 1 mL**
M-680P-PAK **5 x 1 mL** **SAVE**
 At stated conc. in Toluene : Hexane (1:1) 22 comps.

Aldrin (1,000 µg/mL)	Endosulfan I (2,000 µg/mL)
α-BHC (1,000 µg/mL)	Endosulfan II (2,000 µg/mL)
β-BHC (1,000 µg/mL)	Endosulfan sulfate (1,000 µg/mL)
γ-BHC (1,000 µg/mL)	Endrin (1,000 µg/mL)
δ-BHC (1,000 µg/mL)	Endrin aldehyde (1,000 µg/mL)
α-Chlordane (1,000 µg/mL)	Endrin ketone (1,000 µg/mL)
γ-Chlordane (1,000 µg/mL)	Heptachlor (1,000 µg/mL)
4,4'-DDD (1,000 µg/mL)	Heptachlor epoxide (Isomer B) (1,000 µg/mL)
4,4'-DDE (1,000 µg/mL)	Methoxychlor (1,000 µg/mL)
4,4'-DDT (1,000 µg/mL)	cis-Nonachlor (1,000 µg/mL)
Dieldrin (1,000 µg/mL)	trans-Nonachlor (1,000 µg/mL)

Pesticide Mid-Level Check

M-680P-MLC **1 x 1 mL**
M-680P-MLC-PAK **5 x 1 mL** **SAVE**
 At stated conc. Toluene : Hexane (1:1) 21 comps.

Aldrin (1,000 µg/mL)	Endosulfan I (2,000 µg/mL)
α-BHC (1,000 µg/mL)	Endosulfan II (2,000 µg/mL)
β-BHC (1,000 µg/mL)	Endosulfan sulfate (1,000 µg/mL)
γ-BHC (1,000 µg/mL)	Endrin (1,000 µg/mL)
δ-BHC (1,000 µg/mL)	Endrin ketone (1,000 µg/mL)
α-Chlordane (1,000 µg/mL)	Heptachlor (1,000 µg/mL)
γ-Chlordane (1,000 µg/mL)	Heptachlor epoxide (Isomer B) (1,000 µg/mL)
4,4'-DDD (1,000 µg/mL)	Methoxychlor (1,000 µg/mL)
4,4'-DDE (1,000 µg/mL)	cis-Nonachlor (1,000 µg/mL)
4,4'-DDT (1,000 µg/mL)	trans-Nonachlor (1,000 µg/mL)
Dieldrin (1,000 µg/mL)	

Retention Time Calibration Standard

M-680-RT **1 x 1 mL**
M-680-RT-PAK **5 x 1 mL** **SAVE**
 At stated conc. in Hexane 3 comps.

3,3',4,4'-Tetrachlorobiphenyl (100 µg/mL)
 2,2',4,6,6'-Pentachlorobiphenyl (100 µg/mL)
 2,2',3,3',4,5',6,6'-Nonachlorobiphenyl (200 µg/mL)

Internal Standard

M-680-IS **1 x 1 mL**
M-680-IS-PAK **5 x 1 mL** **SAVE**
 75 µg/mL each in Toluene : Hexane (1:1) 2 comps.
M-680-IS-10X **1 x 1 mL**
M-680-IS-10X-PAK **5 x 1 mL** **SAVE**
 750 µg/mL each in Hexane : CH₂Cl₂ (1:1) 2 comps.

Chrysene-d₁₂ Phenanthrene-d₁₀

Technical Note

Method 680¹ - EPA-PCB Isomer Calibration Kit

The EPA has designated 3,3',4,4'-Tetrachlorobiphenyl (#77), 2,2',4,6,6'-Pentachlorobiphenyl (#104), & 2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (BZ# 208) for use in quantifying PCB's by GC/MS. All response factors are calculated using Chrysene-d₁₂, which is also included in the kit.

(1) Determination of Pesticides and PCBs in Water and Soil Sediment by GC/MS. Method 680 EMSL/EPA Cincinnati, Ohio by Ann Alford Stevens, Thomas A. Bellar, James W. Eichelberger and William L. Budde.

Tuning Standard

M-680-TS **1 x 1 mL**
M-680-TS-PAK **5 x 1 mL** **SAVE**
 10 µg/mL in CH₂Cl₂

Decafluorotriphenylphosphine (DFTPP)

Method 1311 Toxicity Characteristic Leaching Procedure (TCLP)

Volatile Spiking Mixture

TCLP-VOC 5.0 mg/mL each in MeOH, except 2-Butanone	1 x 1 mL 11 comps.
Benzene	1,2-Dichloroethane
2-Butanone (10 mg/mL)	1,1-Dichloroethene
Carbon tetrachloride	Tetrachloroethene
Chlorobenzene	Trichloroethene
Chloroform	Vinyl chloride
1,4-Dichlorobenzene	

Semi-Volatile Spiking Mix

TCLP-BNA TCLP-BNA-PAK 2.0 mg/mL each in CH ₂ Cl ₂	1 x 1 mL 5 x 1 mL 13 comps.	SAVE
o-Cresol	Hexachloroethane	
m-Cresol	Nitrobenzene	
p-Cresol	Pentachlorophenol	
1,4-Dichlorobenzene	Pyridine	
2,4-Dinitrotoluene	2,4,5-Trichlorophenol	
Hexachlorobenzene	2,4,6-Trichlorophenol	
Hexachlorobutadiene		

Semi-Volatile Spiking Set

TCLP-BNA-SET set of 2 x 1 mL (TCLP-A and TCLP-BN)

TCLP-A TCLP-A-PAK 2.0 mg/mL each in MeOH	1 x 1 mL 5 x 1 mL 6 comps.	SAVE
o-Cresol	Pentachlorophenol	
m-Cresol	2,4,5-Trichlorophenol	
p-Cresol	2,4,6-Trichlorophenol	

TCLP-BN TCLP-BN-PAK 2.0 mg/mL each in Acetone	1 x 1 mL 5 x 1 mL 7 comps.	SAVE
1,4-Dichlorobenzene	Hexachloroethane	
2,4-Dinitrotoluene	Nitrobenzene	
Hexachlorobenzene	Pyridine	
Hexachlorobutadiene		

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* Includes the most common solvents: Methylene chloride, Methanol and Acetone



Pesticide Spiking Mix

TCLP-PES TCLP-PES-PAK 2.0 mg/mL each in MeOH, except Toxaphene	1 x 1 mL 5 x 1 mL 7 comps.	SAVE
Chlordane	Lindane	
Endrin	Methoxychlor	
Heptachlor	Toxaphene (4.0 mg/mL)	
Heptachlor epoxide		

Pesticide Spiking Set

TCLP-PES-1/2-SET	set of 2 x 1 mL (CLP-PES-1 and TCLP-PES-2)	
TCLP-PES-1 TCLP-PES-1-PAK 2.0 mg/mL each in MeOH	1 x 1 mL 5 x 1 mL 5 comps.	SAVE
Endrin	Lindane	
Heptachlor	Methoxychlor	
Heptachlor epoxide		

TCLP-PES-2 TCLP-PES-2-PAK At stated conc. in MeOH	1 x 1 mL 5 x 1 mL 2 comps.	SAVE
Chlordane (2.0 mg/mL)	Toxaphene (4.0 mg/mL)	

Herbicide, PFB Derivative Mixture

TCLP-HERB-PFB 0.1 mg/mL each in MtBE	1 x 1 mL 2 comps.
2,4-D-PFB	2,4,5-TP-PFB

Herbicide, PFB Derivatives

M-8150-02-PFB 0.1 mg/mL in MtBE	1 x 1 mL
2,4-D-PFB	
M-8150-04-PFB 0.1 mg/mL in MtBE	1 x 1 mL
2,4,5-TP-PFB	

Herbicide Spiking Mixtures

TCLP-HERB TCLP-HERB-PAK 2.0 mg/mL each in MeOH	1 x 1 mL 5 x 1 mL 2 comps.	SAVE
2,4-D	2,4,5-TP	

TCLP-HERB-ME TCLP-HERB-ME-PAK 2.0 mg/mL each in MeOH	1 x 1 mL 5 x 1 mL 2 comps.	SAVE
2,4-D, Me	2,4,5-TP, Me	

Method 1311 TCLP and 1312 Synthetic Leaching Procedure on next page

Method 1311 TCLP Regulatory Level Mixtures

Volatiles

TCLP-QC			1 x 1 mL
TCLP-QC-PAK		SAVE	5 x 1 mL
<i>At stated conc. in MeOH</i>			
Benzene	(5 µg/mL)	1,2-Dichloroethane	(5 µg/mL)
2-Butanone	(2000 µg/mL)	1,1-Dichloroethene	(7 µg/mL)
Carbon tetrachloride	(5 µg/mL)	Tetrachloroethene	(7 µg/mL)
Chlorobenzene	(1000 µg/mL)	Trichloroethene	(5 µg/mL)
Chloroform	(60 µg/mL)	Vinyl chloride	(2 µg/mL)

Pesticides

TCLP-PES-1/2-QC-SET **set of 2 x 1 mL**
(includes TCLP-PEST-1-QC & TCLP-PEST-2-QC)

TCLP-PES-1-QC			1 x 1 mL
TCLP-PES-1-QC-PAK		SAVE	5 x 1 mL
<i>At stated conc. in MeOH</i>			
Endrin	(0.2 µg/mL)	Lindane	(4.0 µg/mL)
Heptachlor	(0.4 µg/mL)	Methoxychlor	(100 µg/mL)
Heptachlor epoxide	(0.04 µg/mL)		

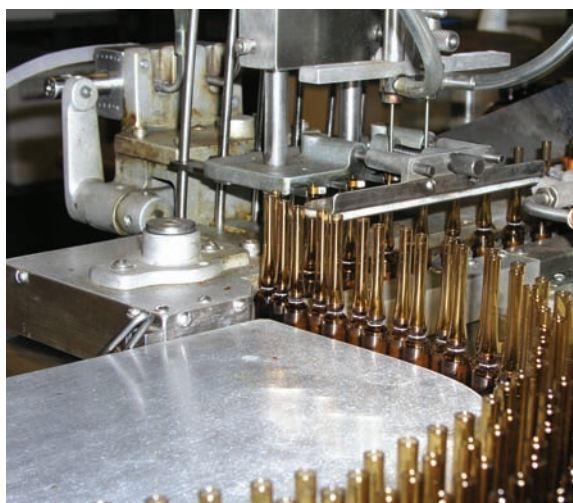
TCLP-PES-2-QC			1 x 1 mL
TCLP-PES-2-QC-PAK		SAVE	5 x 1 mL
<i>At stated conc. in MeOH</i>			
Chlordane	(0.3 µg/mL)	Toxaphene	(5.0 µg/mL)

Semi-Volatiles

TCLP-BNA-QC			1 x 1 mL
<i>At stated conc. in CH₂Cl₂</i>			
<i>o</i> -Cresol	(2000 µg/mL)	Hexachloroethane	(30 µg/mL)
<i>m</i> -Cresol	(2000 µg/mL)	Nitrobenzene	(20 µg/mL)
<i>p</i> -Cresol	(2000 µg/mL)	Pentachlorophenol	(1000 µg/mL)
1,4-Dichlorobenzene	(75 µg/mL)	Pyridine	(50 µg/mL)
2,4-Dinitrotoluene	(1.3 µg/mL)	2,4,5-Trichlorophenol	(4000 µg/mL)
Hexachlorobenzene	(1.3 µg/mL)	2,4,6-Trichlorophenol	(20 µg/mL)
Hexachlorobutadiene	(5 µg/mL)		

Herbicides

TCLP-HERB-ME-QC			1 x 1 mL
TCLP-HERB-ME-QC-PAK		SAVE	5 x 1 mL
<i>At stated conc. in MeOH</i>			
Concentration as Methyl Derivative		as Acid	
2,4-D, ME	(106.3 µg/mL)		(100 µg/mL)
2,4,5-TP, ME	(10.5 µg/mL)		(10 µg/mL)



Method 1312 Synthetic Leaching Procedure

Semi-Volatiles

TCLP-BNA-1312			1 x 1 mL
TCLP-BNA-1312-PAK		SAVE	5 x 1 mL
<i>2.0 mg/mL each in CH₂Cl₂</i>			
Acenaphthene		2,4-Dinitrophenol	
β-BHC		2,4-Dinitrotoluene	
γ-BHC		<i>o</i> -Cresol	
bis-2-Chloroethylether		2,4-Dimethylphenol	
2-Chlorophenol		Hexachlorobenzene	
1,2-Dichlorobenzene		Hexachlorobutadiene	
1,4-Dichlorobenzene		Nitrobenzene	



Method	Description	199-210
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Method 1613

Method 1613 Dioxins & Furans by HRGC/HRMS

Precision and Recovery Standard

M-1613-PAR Bold (-04)

M-1613-PAR-PAK

All units in ng/mL in Nonane

M-1613-CAL	-01	-02	-03	-04	-05
2,3,7,8-Tetrachlorodibenzo-p-dioxin	0.5	2	10	40	200
2,3,7,8-Tetrachlorodibenzofuran	0.5	2	10	40	200
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	2.5	10	50	200	1000
1,2,3,7,8-Pentachlorodibenzofuran	2.5	10	50	200	1000
2,3,4,7,8-Pentachlorodibenzofuran	2.5	10	50	200	1000
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	2.5	10	50	200	1000
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	2.5	10	50	200	1000
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	2.5	10	50	200	1000
1,2,3,4,7,8-Hexachlorodibenzofuran	2.5	10	50	200	1000
1,2,3,6,7,8-Hexachlorodibenzofuran	2.5	10	50	200	1000
1,2,3,7,8,9-Hexachlorodibenzofuran	2.5	10	50	200	1000
2,3,4,6,7,8-Hexachlorodibenzofuran	2.5	10	50	200	1000
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	2.5	10	50	200	1000
1,2,3,4,6,7,8-Heptachlorodibenzofuran	2.5	10	50	200	1000
1,2,3,4,7,8,9-Heptachlorodibenzofuran	2.5	10	50	200	1000
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	5	20	100	400	2000
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	5	20	100	400	2000

1 x 1 mL
5 x 1 mL
17 comps.

Calibration Set

M-1613-CAL-SET (-01,-02,-03,-04,-05)

All in ng/mL in Nonane

5 x 1 mL
17 comps.

Technical Note

Native Solutions of the USEPA Method 1613 analytes can also be used for USEPA Method 23, 8280, 8290, EU Method EN-1948 and Japanese Methods JIS-K0311 and JIS-K0312.

2,3,7,8 Isomers only Mix

This solution is for those labs only determining the concentration of the two most toxic isomers.

M-1613-DF

40 ng/mL each in Nonane

1 x 1 mL
2 comps.

2,3,7,8-Tetrachlorodibenzo-p-dioxin
2,3,7,8-Tetrachlorodibenzofuran



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Method 1614 Bromodiphenyl Ether Mixtures

Responding to the need for the analysis of polybrominated diphenyl ether (PBDE) congeners, the EPA has developed Method 1614. Method 1614 is recommended for analysis of aqueous, solid, tissue, and multi-phase environmental samples. AccuStandard has the largest offering of synthesized PBDEs, see Flame Retardant section for complete listing.

PBDEs Standard Solution for Accuracy & Precision

At stated conc. in Isooctane

Component	39 comps.	
	BDE-AAP-A 1 mL ng/mL	BDE-AAP-A-15X 1 mL µg/mL
2-Bromodiphenyl ether (#1)	100	1.5
3-Bromodiphenyl ether (#2)	100	1.5
4-Bromodiphenyl ether (#3)	100	1.5
2,4-Dibromodiphenyl ether (#7)	100	1.5
2,4'-Dibromodiphenyl ether (#8)	100	1.5
2,6-Dibromodiphenyl ether (#10)	100	1.5
3,3'-Dibromodiphenyl ether (#11)	100	1.5
3,4-Dibromodiphenyl ether (#12)	100	1.5
3,4'-Dibromodiphenyl ether (#13)	100	1.5
4,4'-Dibromodiphenyl ether (#15)	100	1.5
2,2',4-Tribromodiphenyl ether (#17)	100	1.5
2,3',4-Tribromodiphenyl ether (#25)	100	1.5
2,4,4'-Tribromodiphenyl ether (#28)	100	1.5
2,4,6-Tribromodiphenyl ether (#30)	100	1.5
2,4',6-Tribromodiphenyl ether (#32)	100	1.5
2',3,4-Tribromodiphenyl ether (#33)	100	1.5
3,3',4-Tribromodiphenyl ether (#35)	100	1.5
3,4,4'-Tribromodiphenyl ether (#37)	100	1.5
2,2',4,4'-Tetrabromodiphenyl ether (#47)	100	1.5
2,2',4,5'-Tetrabromodiphenyl ether (#49)	100	1.5
2,3',4,4'-Tetrabromodiphenyl ether (#66)	100	1.5
2,3',4',6-Tetrabromodiphenyl ether (#71)	100	1.5
2,4,4',6-Tetrabromodiphenyl ether (#75)	100	1.5
3,3',4,4'-Tetrabromodiphenyl ether (#77)	100	1.5
2,2',3,4,4'-Pentabromodiphenyl ether (#85)	150	2.25
2,2',4,4',5-Pentabromodiphenyl ether (#99)	150	2.25
2,2',4,4',6-Pentabromodiphenyl ether (#100)	150	2.25
2,3,4,5,6-Pentabromodiphenyl ether (#116)	150	2.25
2,3',4,4',5-Pentabromodiphenyl ether (#118)	150	2.25
2,3',4,4',6-Pentabromodiphenyl ether (#119)	150	2.25
3,3',4,4',5-Pentabromodiphenyl ether (#126)	150	2.25
2,2',3,4,4',5'-Hexabromodiphenyl ether (#138)	200	3.0
2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	200	3.0
2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	200	3.0
2,2',4,4',6,6'-Hexabromodiphenyl ether (#155)	200	3.0
2,3,4,4',5,6-Hexabromodiphenyl ether (#166)	200	3.0
2,2',3,4,4',5,6-Heptabromodiphenyl ether (#181)	250	3.75
2,2',3,4,4',5',6-Heptabromodiphenyl ether (#183)	250	3.75
2,3,3',4,4',5,6-Heptabromodiphenyl ether (#190)	250	3.75

Commonly Occurring PBDE Congeners for Precision and Recovery

BDE-COC

At stated conc. in Isooctane

	1 x 1 mL 14 comps.
2,2',4-Tribromodiphenyl ether (#17)	5 µg/mL
2,4,4'-Tribromodiphenyl ether (#28)	5
2,2',4,4'-Tetrabromodiphenyl ether (#47)	5
2,3',4,4'-Tetrabromodiphenyl ether (#66)	5
2,3',4',6-Tetrabromodiphenyl ether (#71)	5
2,2',3,4,4'-Pentabromodiphenyl ether (#85)	5
2,2',4,4',5-Pentabromodiphenyl ether (#99)	5
2,2',4,4',6-Pentabromodiphenyl ether (#100)	5
2,2',3,4,4',5'-Hexabromodiphenyl ether (#138)	5
2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	5
2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	5
2,2',3,4,4',5',6-Heptabromodiphenyl ether (#183)	5
2,3,3',4,4',5,6-Heptabromodiphenyl ether (#190)	5
Decabromodiphenyl ether (#209)	25

PBDE Congeners of Primary Interest

BDE-CSM

At stated conc. in Isooctane:Toluene

	1 x 1 mL 8 comps.
2,4,4'-Tribromodiphenyl ether (#28)	20 µg/mL
2,2',4,4'-Tetrabromodiphenyl ether (#47)	20
2,2',4,4',5-Pentabromodiphenyl ether (#99)	20
2,2',4,4',6-Pentabromodiphenyl ether (#100)	20
2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	20
2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	20
2,2',3,4,4',5',6-Heptabromodiphenyl ether (#183)	20
Decabromodiphenyl ether (#209)	200

Calibration Mix

BDE-CM

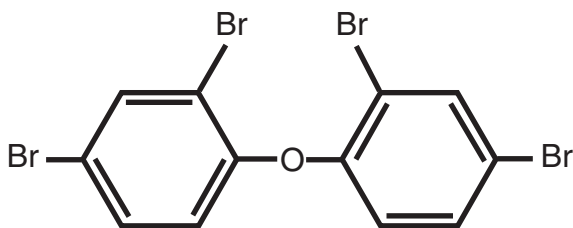
At stated conc. in Isooctane

Matrix Spiking Solution

BDE-MS

At stated conc. in Isooctane

	1 x 1 mL 8 comps.	1 x 1 mL 8 comps.
	BDE-CM µg/mL	BDE-MS ng/mL
2,4,4'-Tribromodiphenyl ether (#28)	2.5	1
2,2',4,4'-Tetrabromodiphenyl ether (#47)	2.5	1
2,2',4,4',5-Pentabromodiphenyl ether (#99)	2.5	1
2,2',4,4',6-Pentabromodiphenyl ether (#100)	2.5	1
2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	2.5	1
2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	2.5	1
2,2',3,4,4',5',6-Heptabromodiphenyl ether (#183)	2.5	1
Decabromodiphenyl ether (#209)	25	10



Method 1618 Organo-halide, Organo-phosphorus Pesticides and Phenoxyacid Herbicides by Wide Bore Capillary Column GC

Method 1618 was developed by the Industrial Technology Division (ITD) within the United States Environmental Protection Agency's (US EPA) Office of Water Regulations and Standards (OWRS) to provide improved precision and accuracy of analysis of pollutants in aqueous and solid matrices in order to determine the level of these pollutants in industrial discharges. Method 1618 is used with wide bore GC columns to analyze for organo-halide and organo-phosphorus pesticides, phenoxy-acid herbicides and herbicide esters, polychlorinated biphenyls (PCBs) and other compounds amenable to extraction and analysis by wide bore capillary column gas chromatography with halogen-specific and organo-phosphorus detectors.

The chemical compounds in the AccuStandard mixtures that follow may be determined in waters, soils, sediments and sludges by this method. The method is a consolidation of EPA Methods 608, 608.1, 614, 615, 617, 622 and 701.

Organochlorine Pesticides

M-1618-1			1 x 1 mL
M-1618-1-PAK	SAVE		5 x 1 mL
<i>At stated conc. in Isooctane</i>			
Aldrin (100 ng/mL)	Endosulfan II (200 ng/mL)		
Captan (200 ng/mL)	Endrin aldehyde (100 ng/mL)		
Chlorobenzilate (500 ng/mL)	Heptachlor (100 ng/mL)		
Diallate (250 ng/mL)	Heptachlor epoxide (100 ng/mL)		
p,p'-DDE (200 ng/mL)	Lindane (100 ng/mL)		
p,p'-DDT (200 ng/mL)	Methoxychlor (200 ng/mL)		
Endosulfan I (200 ng/mL)	Isodrin (100 ng/mL)		

M-1618-2			1 x 1 mL
<i>At stated conc. in Isooctane</i>			
α-BHC (100 ng/mL)	Dichlone (100 ng/mL)		
β-BHC (100 ng/mL)	Dieldrin (100 ng/mL)		
δ-BHC (100 ng/mL)	Endrin (100 ng/mL)		
α-Chlordane (100 ng/mL)	Endosulfan sulfate (100 ng/mL)		
γ-Chlordane (100 ng/mL)	Endrin ketone (100 ng/mL)		
Carbophenothion (1000 ng/mL)	Mirex (100 ng/mL)		
Captafol (200 ng/mL)	PCNB (100 ng/mL)		
p,p'-DDD (100 ng/mL)	Trifluralin (200 ng/mL)		

Organophosphate Pesticides

M-1618-3			1 x 1 mL
<i>At stated conc. in Isooctane</i>			
Azinphos methyl (100 ng/mL)	Merphos (200 ng/mL)		
Coumaphos (50 ng/mL)	Methyl parathion (100 ng/mL)		
Diazinon (100 ng/mL)	Malathion (100 ng/mL)		
Dichlorvos (50 ng/mL)	Phorate (100 ng/mL)		
Dimethoate (100 ng/mL)	Ronnel (100 ng/mL)		
EPN (100 ng/mL)	Sulprofos (50 ng/mL)		
Ethyl parathion (100 ng/mL)	Terbufos (100 ng/mL)		
Ethoprop (100 ng/mL)	Tetrachlorvinphos (100 ng/mL)		
Ethyl azinphos (100 ng/mL)	Trichlorofon (100 ng/mL)		
Fensulfothion (200 ng/mL)			

M-1618-4			1 x 1 mL
<i>At stated conc. in Isooctane</i>			
Chlorfenvinphos (50 ng/mL)	Ethion (100 ng/mL)		
Chlorpyrifos (50 ng/mL)	Famphur (200 ng/mL)		
Chlorpyrifos methyl (100 ng/mL)	Fenthion (100 ng/mL)		
Crotoxyphos (200 ng/mL)	Leptophos (100 ng/mL)		
Dichlorofenthion (100 ng/mL)	Mevinphos (100 ng/mL)		
Demeton (400 ng/mL)	Naled (100 ng/mL)		
Dioxathion (600 ng/mL)	Phosmet (200 ng/mL)		
Disulfoton (100 ng/mL)	Sulfotep (50 ng/mL)		

Phenoxyacid Herbicides

M-8150M			1 x 1 mL
M-8150M-PAK	SAVE		5 x 1 mL
<i>20 µg/mL each in Hexane</i>			
2,4-D	Dalapon		
2,4-DB	Dicamba		
2,4,5-T	Dichlorprop		
2,4,5-TP	Dinoseb		

M-8150M-2			1 x 1 mL
M-8150M-2-PAK	SAVE		5 x 1 mL
<i>2.0 mg/mL in Hexane</i>			
MCPA	MCPP		

Surrogate Standards

Organochlorine Pesticide

M-1618-SS			1 x 1 mL
M-1618-SS-PAK	SAVE		5 x 1 mL
<i>2 µg/mL in Acetone</i>			
Dibutylchloroendate			

Organophosphate Pesticide

M-1618-SP			1 x 1 mL
<i>2 µg/mL each in Acetone</i>			
Tributyl phosphate	Triphenyl phosphate		

Phenoxyacid Herbicide

M-1618-SA			1 x 1 mL
<i>2 µg/mL in Acetone</i>			
2,4-Dichlorophenyl acetic acid			

Decomposition Solution

M-1618D			1 x 1 mL
M-1618D-PAK	SAVE		5 x 1 mL
<i>At stated conc. in Acetone</i>			
p,p'-DDT (2.0 µg/mL)	Endrin (1.0 µg/mL)		

GPC Calibration Solution

M-1618-GP-5ML			1 x 5 mL
<i>At stated conc. in Acetone</i>			
Corn oil (300.0 mg/mL)	Perylene (0.1 mg/mL)		
bis(2-Ethylhexyl)phthalate (15.0 mg/mL)	Sulfur (0.5 mg/mL)		
Pentachlorophenol (1.4 mg/mL)			

SPE Cartridge Calibration Solution

M-1618-SE			1 x 1 mL
M-1618-SE-PAK	SAVE		5 x 1 mL
<i>0.1 µg/mL in Acetone</i>			
2,4,6-Trichlorophenol			

Method 1653 Chlorinated Phenolics in Pulp and Paper Effluents

Method 1653 is designed to determine Chlorinated Phenolics (chlorinated phenols, guaiacols, catechols, vanillins, syringaldehydes) and other compounds in wastewater amenable to in-situ acetylation and analysis by GC/MS.

M-1653A-D-R-SET set of 4 x 1 mL
(set includes M-1653A, B, C, D-AC)

M-1653A 1 x 1 mL
M-1653A-PAK 5 x 1 mL
 0.1 mg/mL each in MeOH 7 comps.

4-Chlorophenol 2,4,6-Trichlorophenol
 2,4-Dichlorophenol 2,3,4,6-Tetrachlorophenol
 2,6-Dichlorophenol Pentachlorophenol
 2,4,5-Trichlorophenol

M-1653B 1 x 1 mL
 0.1 mg/mL each in MeOH 8 comps.

4-Chloroguaiacol 3,4,5-Trichloroguaiacol
 3,4-Dichloroguaiacol 3,4,6-Trichloroguaiacol
 4,5-Dichloroguaiacol 4,5,6-Trichloroguaiacol
 4,6-Dichloroguaiacol Tetrachloroguaiacol

M-1653C 1 x 1 mL
 0.1 mg/mL each in MeOH 7 comps.

4-Chlorocatechol 3,4,5-Trichlorocatechol
 3,4-Dichlorocatechol 3,4,6-Trichlorocatechol
 3,6-Dichlorocatechol Tetrachlorocatechol
 4,5-Dichlorocatechol

M-1653D-AC 1 x 1 mL
 0.1 mg/mL each in Acetone 6 comps.

5-Chlorovanillin 2-Chlorosyringaldehyde
 6-Chlorovanillin 2,6-Dichlorosyringaldehyde
 5,6-Dichlorovanillin Trichlorosyringol

Internal Standard

M-1653-IS 1 x 1 mL

1.0 mg/mL in MeOH

M-1653-IS-R 1 x 1 mL

1.0 mg/mL in Acetone

3,4,5-Trichlorophenol

Instrument Internal Standard

M-1653-IIS 1 x 1 mL

1.0 mg/mL in MeOH

M-1653-IIS-R 1 x 1 mL

5.0 mg/mL in Acetone

2,2'-Difluorobiphenyl

M-1653A-D-R2-SET set of 4 x 1 mL
(set includes M-1653A-R, B-R, C-R, D-R)

M-1653A-R 1 x 1 mL
 At stated conc. in Acetone 7 comps.

4-Chlorophenol (25 µg/mL) 2,4,6-Trichlorophenol (50 µg/mL)
 2,4-Dichlorophenol (50 µg/mL) 2,3,4,6-Tetrachlorophenol (50 µg/mL)
 2,6-Dichlorophenol (50 µg/mL) Pentachlorophenol (100 µg/mL)
 2,4,5-Trichlorophenol (50 µg/mL)

M-1653B-R 1 x 1 mL
 At stated conc. in Acetone 8 comps.

4-Chloroguaiacol (25 µg/mL) 3,4,5-Trichloroguaiacol (50 µg/mL)
 3,4-Dichloroguaiacol (50 µg/mL) 3,4,6-Trichloroguaiacol (50 µg/mL)
 4,5-Dichloroguaiacol (50 µg/mL) 4,5,6-Trichloroguaiacol (50 µg/mL)
 4,6-Dichloroguaiacol (50 µg/mL) Tetrachloroguaiacol (100 µg/mL)

M-1653C-R 1 x 1 mL
 At stated conc. in Acetone 7 comps.

4-Chlorocatechol (25 µg/mL) 3,4,5-Trichlorocatechol (100 µg/mL)
 3,4-Dichlorocatechol (50 µg/mL) 3,4,6-Trichlorocatechol (100 µg/mL)
 3,6-Dichlorocatechol (50 µg/mL) Tetrachlorocatechol (100 µg/mL)
 4,5-Dichlorocatechol (50 µg/mL)

M-1653D-R 1 x 1 mL
 At stated conc. in Acetone 6 comps.

5-Chlorovanillin (50 µg/mL) 2-Chlorosyringaldehyde (50 µg/mL)
 6-Chlorovanillin (50 µg/mL) 2,6-Dichlorosyringaldehyde (100 µg/mL)
 5,6-Dichlorovanillin (100 µg/mL) Trichlorosyringol (50 µg/mL)

US EPA Pulp, Paper & Paperboard Cluster Rule

M-PAPCLUS 1 x 1 mL

M-PAPCLUS-PAK 5 x 1 mL

0.1 mg/mL each in Water 4 comps.

Methanol Propionaldehyde
 Acetaldehyde Methyl ethyl ketone

Instrument Performance Check Solution

M-1653-TS 1 x 1 mL

50 µg/mL in Acetone

DFTPP

Method 1656 Organo-Halide Pesticides in Municipal & Industrial Wastewater by HSD

Method 1656 is a consolidation of several EPA wastewater methods used to determine the organo-halide pesticides and polychlorinated biphenyls (PCBs) associated with the Clean Water Act, the Resource Conservation and Recovery Act, and the Comprehensive Environmental Response, Compensation and Liability Act; and other compounds amenable to extraction and analysis by wide-bore capillary column GC with a HSD.

GPC Calibration Solution

M-1600-GPC-5ML 1 x 5 mL
 At stated conc. in CH₂Cl₂ 5 comps.

Corn oil (300 mg/mL) Perylene (0.1 mg/mL)
 bis(2-Ethylhexyl)phthalate (15 mg/mL) Sulfur (0.5 mg/mL)
 Pentachlorophenol (1.4 mg/mL)

Solid-phase Extraction Cartridge Calibration Solution

M-1600-SPE 1 x 1 mL

0.1 mg/mL in Acetone

2,4,6-Trichlorophenol

Decomposition Test Solution

M-1656-DS 1 x 1 mL
 At stated conc. in Isooctane 2 comps.

4,4'-DDT (2 µg/mL) Endrin (1 µg/mL)

Surrogate Spiking Solutions

CLP-PES-A 1 x 1 mL
 0.2 mg/mL in Acetone

Dibutylchlorendate

CLP-032-R 1 x 1 mL
 0.2 mg/mL each in Acetone 2 comps.

Decachlorobiphenyl Tetrachloro-*m*-xylene

CLP-034 1 x 1 mL
 0.2 mg/mL each in Acetone 2 comps.

Dibutylchlorendate Tetrachloro-*m*-xylene

EPA Method 1600 Series

Pesticides and Herbicides

1600

Method 1656 (continued) Calibration Solutions & Suggested Calibration Groups

M-1656-CAL-SET

7 x (3 x 1 mL) (contains all 7 calibration groups at respective low, medium and igh ranges)

Calibration Group 1

M-1656-01-CAL-SET 3 x 1 mL
All solutions in Isooctane 14 comps.

Components (units in ng/mL)	Low (1X)	Medium (5X)	High (20X)
Acephate	2,000	10,000	40,000
Alachlor	20	100	400
Atrazine	1,000	5,000	20,000
β-BHC	10	50	200
Bromoxynil octanoate	50	250	1,000
Captafol	200	1,000	4,000
Diallate	200	1,000	4,000
Decachlorobiphenyl	10	50	200
Endosulfan sulfate	10	50	200
Endrin	20	100	400
Isodrin	10	50	200
Pendimethalin	50	250	1,000
Permethrin (cis & trans) *200	1,000	4,000	
Tetrachloro- <i>m</i> -xylene	5	25	100

* Actual isomer concentration is stated on certificate of product data

Calibration Group 2

M-1656-02-CAL-SET 3 x 1 mL
All solutions in Isooctane 11 comps.

Components (units in ng/mL)	Low (1X)	Medium (5X)	High (20X)
α-BHC	5	25	100
DCPA	5	25	100
4,4'-DDE	10	50	200
4,4'-DDT	10	50	200
Decachlorobiphenyl	10	50	200
Dichlone	20	100	400
Ethalfuralin	10	50	200
Fenarimol	20	100	400
Methoxychlor	20	100	400
Metribuzin	10	50	200
Tetrachloro- <i>m</i> -xylene	5	25	100

Calibration Group 3

M-1656-03-CAL-SET 3 x 1 mL
All solutions in Isooctane 10 comps.

Components (units in ng/mL)	Low (1X)	Medium (5X)	High (20X)
γ-BHC	5	25	100
γ-Chlordane	5	25	100
Decachlorobiphenyl	10	50	200
Endrin ketone	10	50	200
Heptachlor epoxide	5	25	100
Isopropalin	20	100	400
Nitrofen	20	100	400
PCNB	5	25	100
Tetrachloro- <i>m</i> -xylene	5	25	100
Trifluralin	10	50	200

Calibration Group 4

M-1656-04-CAL-SET 3 x 1 mL
All solutions in Isooctane 10 comps.

Components (units in ng/mL)	Low (1X)	Medium (5X)	High (20X)
Benfluralin	20	100	400
Chlorobenzilate	50	250	1,000
Decachlorobiphenyl	10	50	200
Dieldrin	5	25	100
Endosulfan I	10	50	200
Mirex	20	100	400
Terbacil	200	1,000	4,000
Terbuthylazine	500	2,500	10,000
Tetrachloro- <i>m</i> -xylene	5	25	100
Triadimefon	100	500	2,000

Calibration Group 5

M-1656-05-CAL-SET 3 x 1 mL
All solutions in Isooctane 8 comps.

Components (units in ng/mL)	Low (1X)	Medium (5X)	High (20X)
Benfluralin	20	100	400
Captan	100	500	2,000
Chlorothalonil	20	100	400
4,4'-DDD	20	100	400
Decachlorobiphenyl	10	50	200
Norflurazon	100	500	2,000
Simazine	800	4,000	16,000
Tetrachloro- <i>m</i> -xylene	5	25	100

Calibration Group 6

M-1656-06-CAL-SET 3 x 1 mL
All solutions in Isooctane 9 comps.

Components (units in ng/mL)	Low (1X)	Medium (5X)	High (20X)
Aldrin	20	100	400
δ-BHC	5	25	100
Bromacil	100	500	2,000
Butachlor	50	250	1,000
Decachlorobiphenyl	10	50	200
Endosulfan II	10	50	200
Heptachlor	10	50	200
Kepone	100	500	2,000
Tetrachloro- <i>m</i> -xylene	5	25	100

Calibration Group 7

M-1656-07-CAL-SET 3 x 1 mL
All solutions in Isooctane 13 comps.

Components (units in ng/mL)	Low (1X)	Medium (5X)	High (20X)
Carbophenothion	80	400	1,600
Chloroneb	300	1,500	6,000
Chloropropylate	200	1,000	4,000
DBCP	25	125	500
Decachlorobiphenyl	10	50	200
Dicofol	300	1,500	6,000
Endrin aldehyde	80	400	1,600
Etridiazole	80	400	1,600
Perthane	1,000	5,000	20,000
Propachlor	500	2,500	10,000
Propanil	200	1,000	4,000
Propazine	1,000	5,000	20,000
Tetrachloro- <i>m</i> -xylene	5	25	100



Working Level Standards & Continuing Calibration Check (CCC)

Method 1656

Method 1657 Organo-Phosphorus Pesticides in Municipal & Industrial Wastewater by FPD

Method 1657 is a consolidation of several EPA wastewater methods used to determine the organo-phosphorus pesticides associated with the Clean Water Act, the Resource and Conservation and Recovery Act, & the Comprehensive Environmental Response, Compensation and Liability Act; and other compounds amenable to extraction and analysis by wide-bore capillary column gas chromatography with a flame photometric detector (FPD).

GPC Calibration Solution

M-1600-GPC-5ML	1 x 5 mL
At stated conc. in CH ₂ Cl ₂	5 comps.
Corn oil	(300 mg/mL)
bis(2-Ethylhexyl)phthalate	(15 mg/mL)
Pentachlorophenol	(1.4 mg/mL)
Perylene	(0.1 mg/mL)
Sulfur	(0.5 mg/mL)

Solid-phase Extraction Cartridge Calibration Solution

M-1600-SPE	1 x 1 mL
0.1 mg/mL in Acetone	
2,4,6-Trichlorophenol	

Surrogate Spiking Solution

M-1657-SS	1 x 1 mL
0.2 mg/mL each in Acetone	2 comps.
Tributyl phosphate	
Triphenyl phosphate	

Method 1657 Calibration Solutions & Suggested Calibration Groups

M-1657-CAL-SET

4 x (3 x 1 mL)

Contains all 4 calibration groups at the respective Low, Medium and High Ranges

Calibration Group 1

M-1657-01-R1-CAL-SET	3 x 1 mL
All solutions in Isooctane	9 comps.

Components (units in ng/mL)	Low (1X)	Medium (5X)	High (20X)
Azinphos methyl	100	500	2,000
Dichlorvos	500	2,500	10,000
Disulfoton	200	1,000	4,000
Fenthion	200	1,000	4,000
Merphos (A + B)	400	2,000	8,000
Ronnel	200	1,000	4,000
Sulprofos	200	1,000	4,000
Tributyl phosphate	200	1,000	4,000
Triphenyl phosphate	200	1,000	4,000

Calibration Group 2

M-1657-02-CAL-SET	3 x 1 mL
All solutions in Isooctane	12 comps.

Components (units in ng/mL)	Low (1X)	Medium (5X)	High (20X)
Chlorfenvinphos	200	1,000	4,000
Chlorpyrifos	200	1,000	4,000
Demeton (O + S)	400	2,000	8,000
Dichlofenthion	200	1,000	4,000
Dimethoate	100	500	2,000
Famphur	500	2,500	10,000
Leptophos	200	1,000	4,000
Methyl parathion	200	1,000	4,000
Tributyl phosphate	200	1,000	4,000
Trichlorofon	500	2,500	10,000
Tricresylphosphate	100	500	2,000
Triphenyl phosphate	200	1,000	4,000

Calibration Group 3

M-1657-03-CAL-SET	3 x 1 mL
All solutions in Isooctane	14 comps.

Components (units in ng/mL)	Low (1X)	Medium (5X)	High (20X)
Azinphos ethyl	200	1,000	4,000
Crotoxyphos	500	2,500	10,000
DEF	200	1,000	4,000
Fensulfthion	500	2,500	10,000
Methyl chlorpyrifos	200	1,000	4,000
Mevinphos	500	2,500	10,000
Naled	500	2,500	10,000
Parathion	200	1,000	4,000
Phosmet	500	2,500	10,000
Phosphamidon (E + Z)	100	500	2,000
Sulfotepp	200	1,000	4,000
Terbufos	200	1,000	4,000
Tributyl phosphate	200	1,000	4,000
Triphenyl phosphate	200	1,000	4,000

Calibration Group 4

M-1657-04-CAL-SET	3 x 1 mL
All solutions in Isooctane	11 comps.

Components (units in ng/mL)	Low (1X)	Medium (5X)	High (20X)
Coumaphos	500	2,500	10,000
Diazinon	200	1,000	4,000
EPN	200	1,000	4,000
Ethion	200	1,000	4,000
Ethoprop	200	1,000	4,000
Malathion	200	1,000	4,000
Phorate	200	1,000	4,000
Tetrachlorvinphos	200	1,000	4,000
Tributyl phosphate	200	1,000	4,000
Trichloronate	200	1,000	4,000
Triphenyl phosphate	200	1,000	4,000



Method 1658 Phenoxy-Acid Herbicides

Method 1658 consolidates several EPA wastewater methods used to determine Phenoxy-Acid Herbicides & Herbicide esters associated with the CWA, RCRA, & CERCLA; & other compounds amenable to extraction & analysis by wide-bore capillary column GC/ECD.

M-1658-CAL-SET

All solutions in Isooctane

Components (units in ng/mL)	3 x 1 mL 12 comps.		
	Low (1X)	Medium (10X)	High (100X)
2,4-D	100	1,000	10,000
Dalapon	50	500	5,000
2,4-DB	200	2,000	20,000
2,4-Dichlorophenylacetic acid (Surrogate)	10	100	1,000
Dicamba	20	200	2,000
Dichlorprop	100	1,000	10,000
Dinoseb	50	500	5,000
MCPA	5,000	50,000	500,000
MCPP	5,000	50,000	500,000
Picloram	50	500	5,000
2,4,5-T	20	200	2,000
2,4,5-TP	20	200	2,000

Method 1659 Dazomet in Municipal & Industrial Wastewater by NPD

Method 1659 is used to determine Dazomet by base hydrolysis to Methyl Isothiocyanate (MITC) and subsequent determination of MITC by wide-bore fused-silica capillary column gas chromatography with a Nitrogen Phosphorus Detector (NPD).

Recovery & Precision Solution

M-1659-RPS
25 µg/mL in Acetone

1 x 1 mL

Methyl isothiocyanate (MITC)

Matrix Spiking Solution

M-1659-MS
25 µg/mL in Acetone

1 x 1 mL

Dazomet

Calibration Solutions

M-1659-CAL-SET 3 x 1 mL
 M-1659-CAL-1X 0.2 mg/mL in Acetone 1 mL
 M-1659-CAL-5X 1.0 mg/mL in Acetone 1 mL
 M-1659-CAL-25X 5.0 mg/mL in Acetone 1 mL

Methyl isothiocyanate (MITC)

Method 1664 See Petrochemical or Inorganic Sections

Method 1665 Semi-Volatile Organic Compounds Specific to the PMI by Isotope Dilution GC/MS

The following method series is designed to meet PMI (Pharmaceutical Manufacturing Industry) methods promulgated in 40 CFR part 136. It is used to monitor the discharge of pollutants into surface waters. It can also be used to identify and measure purgeable and non-purgeable volatiles, semi-volatiles, and certain organic pollutants specific to PMI discharge in water, soils, and municipal sludges.

PMI Semi-Volatile Set

M-1665-SET

5 x 1 mL
(M-1618-GP-5ML, M-1653-TS, M-625-07-10X, M-1665, M-1665-LAB)

GPC Calibration Solution

M-1618-GP-5ML
At stated conc. in Acetone

1 x 5 mL
5 comps.

Corn oil	(300.0 mg/mL)	Perylene	(0.1 mg/mL)
bis(2-Ethylhexyl)phthalate	(15.0 mg/mL)	Sulfur	(0.5 mg/mL)
Pentachlorophenol	(1.4 mg/mL)		

PMI Stock Standard

M-1665
2000 µg/mL each in CH₂Cl₂

1 x 1 mL
6 comps.

Aniline	Dimethylformamide
N,N-Dimethylacetamide	2-Picoline
N,N-Dimethylaniline	Pyridine

Instrument Performance Check Solution

M-1653-TS
50 µg/mL in Acetone

1 x 1 mL

DFTPP

PMI Labeled Stock Standard (Not for individual sale)

M-1665-LAB
500 µg/mL each in CH₂Cl₂

1 x 1 mL
5 comps.

Aniline-d ₅	2-Picoline-d ₅
N,N-Dimethylaniline-d ₅	Pyridine-d ₅
Dimethylformamide-d ₅	

PMI Internal Standard

M-625-07-10X
2.0 mg/mL in CH₂Cl₂

1 x 1 mL

2,2'-Difluorobiphenyl

Method 1666A (Rev. July 1998) Volatile Organic Compounds Specific to the PMI by Isotope Dilution GC/MS

PMI Purgeable Analytes

M-1666A-R2-SET 5 x 1 mL
 M-1666A-SSA-ADD, M-1666A-SSA-R2, M-1666A-SSB
 M-1666A-SSC, M-1666A-LAB

M-1666A-SSA-ADD 1 x 1 mL
 1000 µg/mL in MeOH

Isopropyl ether

PMI Stock Standard A

M-1666A-SSA-R2 1 x 1 mL
 At stated conc. in Water 7 comps.

1-Butanol (2500 µg/mL)	Isopropanol (1000 µg/mL)
t-Butanol (2500 µg/mL)	4-Methyl-2-pentanone (1000 µg/mL)
2-Furaldehyde (2500 µg/mL)	1-Pentanol (2500 µg/mL)
Isobutyraldehyde (2500 µg/mL)	

PMI Stock Standard B

M-1666A-SSB 1 x 1 mL
 At stated conc. in MeOH 9 comps.

Cyclohexane (1000 µg/mL)	Trifluoromethane (1000 µg/mL)
N-Heptane (1000 µg/mL)	m-Xylene (1000 µg/mL)
n-Hexane (1000 µg/mL)	o-Xylene (1000 µg/mL)
Methyl formate (2500 µg/mL)	p-Xylene (1000 µg/mL)
Tetrahydrofuran (1000 µg/mL)	

PMI Stock Standard C

M-1666A-SSC 1 x 1 mL
 1000 µg/mL each in MeOH 4 comps.

Butyl acetate	Isopropyl acetate
Ethyl acetate	Pentyl acetate

PMI Labeled Stock Standard

M-1666A-LAB 1 x 1 mL
 At stated conc. in MeOH 8 comps.

L-Butanol-d ₁₀ (500 µg/mL)	n-Hexane-d ₁₄ (50 µg/mL)
Cyclohexane-d ₁₂ (50 µg/mL)	Tetrahydrofuran-d ₈ (50 µg/mL)
Ethyl Acetate-C ₁₃ (50 µg/mL)	o-Xylene-d ₁₀ (50 µg/mL)
N-Heptane-d ₁₆ (50 µg/mL)	m-Xylene-d ₁₀ (50 µg/mL)

PMI Direct Injection Analytes

M-1666A-DI-R1-SET 4 x 1 mL
 Set includes 4 products listed below

PMI Standard Direct Injection

M-1666A-DI-R1 1 x 1 mL
 At stated conc. in Water 10 comps.

Acetonitrile (1000 µg/mL)	Ethylene glycol (2500 µg/mL)
Diethylamine (2500 µg/mL)	Methanol (1000 µg/mL)
Dimethylamine (1000 µg/mL)	2-Methoxyethanol (1000 µg/mL)
Dimethyl sulfoxide (1000 µg/mL)	1-Propanol (1000 µg/mL)
Ethanol (1000 µg/mL)	Triethylamine (2500 µg/mL)

M-1666A-DI-R-ADD1 1 x 1 mL 2500 µg/mL in Water
 M-1666A-DI-R-ADD2 1 x 1 mL 5000 µg/mL in Water

Methylamine	Formamide
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PMI Labeled Standard Direct Injection

M-1666A-DI-LAB 1 x 1 mL
 1000 µg/mL each in Water 6 comps.

Acetonitrile-d ₃	Methanol-d ₃
Dimethyl sulfoxide-d ₆	n-Propanol-1-d ₁
Ethanol-d ₅	Tetrahydrofuran-d ₈

PMI Instrument Performance

Purgeable Internal Standard

CLP-PI 1 x 1 mL
 CLP-PI-PAK 5 x 1 mL
 1.0 mg/mL each in MeOH 3 comps.

Bromochloromethane	1,4-Difluorobenzene
Chlorobenzene-d ₂	

PMI Resolution Standard

M-1666A-RES 1 x 1 mL
 M-1666A-RES-PAK 5 x 1 mL
 100 µg/mL each in MeOH 2 comps.

o-Xylene	o-Xylene-d ₁₀
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Instrument Performance Check Solution

CLP-004-10X 1 x 1 mL
 CLP-004-10X-PAK 5 x 1 mL
 250 µg/mL in MeOH

p-Bromofluorobenzene

EPA Method 1600 Series

Pharmaceutical Waste Discharge Standards

1600

Method 1667

Method 1667A Formaldehyde, Isobutylaldehyde & Furfural by Derivatization followed by HPLC for PMI pollutants

PMI Carbonyl Set

M-1667A-SET			3 x 1 mL
<i>Each at 1.0 mg/mL in AcCN</i>			
	Cat. No.	1 mL	
Formaldehyde	M-1667A-01		
2-Furaldehyde	M-1667A-02		
Isobutylaldehyde	M-1667A-03		

PMI Carbonyl DNPH Set

M-1667A-DNPH-SET			3 x 1 mL
<i>Each at 1.0 mg/mL in AcCN</i>			
	Cat. No.	1 mL	
Formaldehyde-DNPH	M-1667A-DNPH-01		
2-Furaldehyde-DNPH	M-1667A-DNPH-02		
Isobutylaldehyde-DNPH	M-1667A-DNPH-03		

PMI QA/QC Carbonyl Mixture

M-1667A-M			1 x 1 mL
M-1667A-M-PAK	SAVE		5 x 1 mL
<i>250 µg/mL each in AcCN</i>			
Formaldehyde		Isobutylaldehyde	
2-Furaldehyde			

PMI QA/QC Carbonyl Derivative DNPH Mixture

M-1667A-DNPH			1 x 1 mL
M-1667A-DNPH-PAK	SAVE		5 x 1 mL
<i>250 µg/mL each in AcCN</i>			
Formaldehyde-DNPH		Isobutylaldehyde-DNPH	
2-Furaldehyde-DNPH			

PMI Derivatization Reagent

M-1667A-DERV-10ML			10 mL
M-1667A-DERV-10ML-PAK	SAVE		5 x 10 mL
<i>1.0 mg/mL in AcCN</i>			
2,4-Dinitrophenylhydrazine (DNPH)			



Method 1668 Congener Set - 209 Chlorinated Biphenyl Congeners by HRGC/HRMS

Congener specific determination of all 209 PCB congeners for calibration on a SPB-Octyl capillary column.

M-1668A-0.01X-SET

5 x 1 mL (M-1668A-1-0.01X, M-1668A-2-0.01X, M-1668A-3-0.01X, M-1668A-4-0.01X, M-1668A-5-0.01X)

PCB Congener Mix #1

M-1668A-1-0.01X

At stated conc. in Isooctane

PCB Congener Mix #2

M-1668A-2-0.01X

At stated conc. in Isooctane

M-1668A-1-0.01X		M-1668A-2-0.01X	
At stated conc. in Isooctane		1 x 1 mL 83 comps.	1 x 1 mL 54 comps.
3-Chlorobiphenyl	(2.5 µg/mL)	2,3',4,5,5'-Pentachlorobiphenyl	(5.0 µg/mL)
2,6-Dichlorobiphenyl	(2.5 µg/mL)	2',3,4,5,5'-Pentachlorobiphenyl	(5.0 µg/mL)
2,5-Dichlorobiphenyl	(2.5 µg/mL)	2,3,3',4,5-Pentachlorobiphenyl	(5.0 µg/mL)
2,3'-Dichlorobiphenyl	(2.5 µg/mL)	2',3,3',4,5-Pentachlorobiphenyl	(5.0 µg/mL)
2,4'-Dichlorobiphenyl	(2.5 µg/mL)	2,3,3',4,4'-Pentachlorobiphenyl	(5.0 µg/mL)
3,5-Dichlorobiphenyl	(2.5 µg/mL)	3,3',4,5,5'-Pentachlorobiphenyl	(5.0 µg/mL)
3,3'-Dichlorobiphenyl	(2.5 µg/mL)	2,2',3,5,6,6'-Hexachlorobiphenyl	(5.0 µg/mL)
2,4,6-Trichlorobiphenyl	(2.5 µg/mL)	2,2',3,3',6,6'-Hexachlorobiphenyl	(5.0 µg/mL)
2,3',6-Trichlorobiphenyl	(2.5 µg/mL)	2,2',3,4',5,6'-Hexachlorobiphenyl	(5.0 µg/mL)
2,4',6-Trichlorobiphenyl	(2.5 µg/mL)	2,2',3,5,5',6'-Hexachlorobiphenyl	(5.0 µg/mL)
2',3,5-Trichlorobiphenyl	(2.5 µg/mL)	2,2',3,4,5,6'-Hexachlorobiphenyl	(5.0 µg/mL)
2,3',5-Trichlorobiphenyl	(2.5 µg/mL)	2,2',3,4,5,6'-Hexachlorobiphenyl	(5.0 µg/mL)
2,4',5-Trichlorobiphenyl	(2.5 µg/mL)	2,2',3,4,5,6'-Hexachlorobiphenyl	(5.0 µg/mL)
2',3,4-Trichlorobiphenyl	(2.5 µg/mL)	2,2',3,3',5,5'-Hexachlorobiphenyl	(5.0 µg/mL)
3,3',5-Trichlorobiphenyl	(2.5 µg/mL)	2,3,3',4,4',5'-Hexachlorobiphenyl	(5.0 µg/mL)
3,4,5-Trichlorobiphenyl	(2.5 µg/mL)	2,2',4,4',5,5'-Hexachlorobiphenyl	(5.0 µg/mL)
3,3',4-Trichlorobiphenyl	(2.5 µg/mL)	2,2',3,3',4,5'-Hexachlorobiphenyl	(5.0 µg/mL)
2,2',4,6-Tetrachlorobiphenyl	(5.0 µg/mL)	2,2',3,3',4,5'-Hexachlorobiphenyl	(5.0 µg/mL)
2,2',3,6-Tetrachlorobiphenyl	(5.0 µg/mL)	2,3,4,4',5,6'-Hexachlorobiphenyl	(5.0 µg/mL)
2,2',5,5'-Tetrachlorobiphenyl	(5.0 µg/mL)	2,3,3',4,5,5'-Hexachlorobiphenyl	(5.0 µg/mL)
2,2',4,5'-Tetrachlorobiphenyl	(5.0 µg/mL)	2,3',4,4',5,5'-Hexachlorobiphenyl	(5.0 µg/mL)
2,4,4',6-Tetrachlorobiphenyl	(5.0 µg/mL)	2,3,3',4,4',5'-Hexachlorobiphenyl	(5.0 µg/mL)
2,2',3,4-Tetrachlorobiphenyl	(5.0 µg/mL)	2,2',3,3',5,6,6'-Heptachlorobiphenyl	(5.0 µg/mL)
2,3',5,5'-Tetrachlorobiphenyl	(5.0 µg/mL)	2,2',3,3',4,6,6'-Heptachlorobiphenyl	(5.0 µg/mL)
2,3,3',5-Tetrachlorobiphenyl	(5.0 µg/mL)	2,2',3,3',5,5',6-Heptachlorobiphenyl	(5.0 µg/mL)
2,3,4',5-Tetrachlorobiphenyl	(5.0 µg/mL)	2,2',3,3',4,5',6-Heptachlorobiphenyl	(5.0 µg/mL)
2,3',4,4'-Tetrachlorobiphenyl	(5.0 µg/mL)	2,2',3,4,4',5',6-Heptachlorobiphenyl	(5.0 µg/mL)
3,3',4,5'-Tetrachlorobiphenyl	(5.0 µg/mL)	2,2',3,3',4',5,6-Heptachlorobiphenyl	(5.0 µg/mL)
3,3',4,5-Tetrachlorobiphenyl	(5.0 µg/mL)	2,2',3,3',4,4',6-Heptachlorobiphenyl	(5.0 µg/mL)
3,4,4',5-Tetrachlorobiphenyl	(5.0 µg/mL)	2,2',3,3',4,5,5'-Heptachlorobiphenyl	(5.0 µg/mL)
2,2',3,6,6'-Pentachlorobiphenyl	(5.0 µg/mL)	2,3,3',4,4',5',6-Heptachlorobiphenyl	(5.0 µg/mL)
2,2',4,5',6-Pentachlorobiphenyl	(5.0 µg/mL)	2,2',3,3',4,4',5-Heptachlorobiphenyl	(5.0 µg/mL)
2,2',3,5,6-Pentachlorobiphenyl	(5.0 µg/mL)	2,3,3',4,4',5,6-Heptachlorobiphenyl	(5.0 µg/mL)
2,2',3,4,6-Pentachlorobiphenyl	(5.0 µg/mL)	2,2',3,3',4,5,6'-Octachlorobiphenyl	(7.5 µg/mL)
2,2',3,5,5'-Pentachlorobiphenyl	(5.0 µg/mL)	2,2',3,4,4',5,6,6'-Octachlorobiphenyl	(7.5 µg/mL)
2,3,3',5',6-Pentachlorobiphenyl	(5.0 µg/mL)	2,2',3,3',4,5,6,6'-Octachlorobiphenyl	(7.5 µg/mL)
2,2',3,3',5-Pentachlorobiphenyl	(5.0 µg/mL)	2,2',3,3',4,5,5',6-Octachlorobiphenyl	(7.5 µg/mL)
2,3',4,4',6-Pentachlorobiphenyl	(5.0 µg/mL)	2,2',3,3',4,4',5',6-Octachlorobiphenyl	(7.5 µg/mL)
2,2',3,4,5'-Pentachlorobiphenyl	(5.0 µg/mL)	2,2',3,3',4,4',5,6-Octachlorobiphenyl	(7.5 µg/mL)
2,2',3,4,4'-Pentachlorobiphenyl	(5.0 µg/mL)	2,2',3,3',4,4',5,5'-Octachlorobiphenyl	(7.5 µg/mL)
2,2',3,3',4-Pentachlorobiphenyl	(5.0 µg/mL)	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	(7.5 µg/mL)

PCB Congener Mix #3

M-1668A-3-0.01X

At stated conc. in Isooctane

M-1668A-3-0.01X		M-1668A-4-0.01X	
At stated conc. in Isooctane		1 x 1 mL 29 comps.	1 x 1 mL 29 comps.
3,4'-Dichlorobiphenyl	(2.5 µg/mL)	2,2',3,4,5-Pentachlorobiphenyl	(5.0 µg/mL)
2,2',4-Trichlorobiphenyl	(2.5 µg/mL)	2,3,4,5,6-Pentachlorobiphenyl	(5.0 µg/mL)
2,4,5-Trichlorobiphenyl	(2.5 µg/mL)	2,3,3',4',5-Pentachlorobiphenyl	(5.0 µg/mL)
2,3,3'-Trichlorobiphenyl	(2.5 µg/mL)	2,2',4,4',5,6'-Hexachlorobiphenyl	(5.0 µg/mL)
2,2',3,6'-Tetrachlorobiphenyl	(5.0 µg/mL)	2,2',3,4',5,6'-Hexachlorobiphenyl	(5.0 µg/mL)
2,3,5,6-Tetrachlorobiphenyl	(5.0 µg/mL)	2,2',3,4,4',6'-Hexachlorobiphenyl	(5.0 µg/mL)
2,3,3',6-Tetrachlorobiphenyl	(5.0 µg/mL)	2,2',3,4',5,5'-Hexachlorobiphenyl	(5.0 µg/mL)
2,2',3,3'-Tetrachlorobiphenyl	(5.0 µg/mL)	2,2',3,4,5,5'-Hexachlorobiphenyl	(5.0 µg/mL)
2,3',4,5-Tetrachlorobiphenyl	(5.0 µg/mL)	2,2',3,4,5,5'-Hexachlorobiphenyl	(5.0 µg/mL)
2',3,4,5-Tetrachlorobiphenyl	(5.0 µg/mL)	2,3,3',4',5',6-Hexachlorobiphenyl	(5.0 µg/mL)
3,3',5,5'-Tetrachlorobiphenyl	(5.0 µg/mL)	2,3,3',4,4',6-Hexachlorobiphenyl	(5.0 µg/mL)
2,2',3,5,6-Pentachlorobiphenyl	(5.0 µg/mL)	2,2',3,4,4',5,6'-Heptachlorobiphenyl	(5.0 µg/mL)
2,2',3,3',6-Pentachlorobiphenyl	(5.0 µg/mL)	2,2',3,3',4,5,6'-Heptachlorobiphenyl	(5.0 µg/mL)
2,2',4,5,5'-Pentachlorobiphenyl	(5.0 µg/mL)	2,2',3,3',4,5,6-Heptachlorobiphenyl	(5.0 µg/mL)
2,3,3',5,6-Pentachlorobiphenyl	(5.0 µg/mL)	2,3,3',4',5,5',6-Heptachlorobiphenyl	(5.0 µg/mL)

All 209 Individual PCB Congeners are listed in PCB Section.

Method 1668 (Continued) Congener Set - 209 Chlorinated Biphenyl Congeners by HRGC/HRMS

PCB Congener Mix #4

M-1668A-4-0.01X 1 x 1 mL
At stated conc. in Isooctane 15 comps.

2,3',4'-Trichlorobiphenyl	(2.5 µg/mL)
2,3,4'-Trichlorobiphenyl	(2.5 µg/mL)
2,3',4,6'-Tetrachlorobiphenyl	(5.0 µg/mL)
2,2',4,4'-Tetrachlorobiphenyl	(5.0 µg/mL)
2,2',3,4'-Tetrachlorobiphenyl	(5.0 µg/mL)
2,3,4',6'-Tetrachlorobiphenyl	(5.0 µg/mL)
2,3',4',5'-Tetrachlorobiphenyl	(5.0 µg/mL)
2,2',4,5,6'-Pentachlorobiphenyl	(5.0 µg/mL)
2,2',3',4,5'-Pentachlorobiphenyl	(5.0 µg/mL)
2,3,4,4',6'-Pentachlorobiphenyl	(5.0 µg/mL)
2',3,4,4',5'-Pentachlorobiphenyl	(5.0 µg/mL)
2,2',3,3',5,6'-Hexachlorobiphenyl	(5.0 µg/mL)
2,2',3,3',4,6'-Hexachlorobiphenyl	(5.0 µg/mL)
2,3,3',4',5,6'-Hexachlorobiphenyl	(5.0 µg/mL)
2,2',3,4,4',5,5'-Heptachlorobiphenyl	(5.0 µg/mL)

PCB Congener Mix #5

M-1668A-5-0.01X 1 x 1 mL
At stated conc. in Isooctane 28 comps.

2-Chlorobiphenyl	(2.5 µg/mL)	2,2',3',4,6'-Pentachlorobiphenyl	(5.0 µg/mL)
4-Chlorobiphenyl	(2.5 µg/mL)	2',3,4,5,6'-Pentachlorobiphenyl	(5.0 µg/mL)
2,2'-Dichlorobiphenyl	(2.5 µg/mL)	2,3,3',4',6'-Pentachlorobiphenyl	(5.0 µg/mL)
4,4'-Dichlorobiphenyl	(2.5 µg/mL)	3,3',4,4',5'-Pentachlorobiphenyl	(5.0 µg/mL)
2,2',6'-Trichlorobiphenyl	(2.5 µg/mL)	2,2',4,4',6,6'-Hexachlorobiphenyl	(5.0 µg/mL)
2,2',3'-Trichlorobiphenyl	(2.5 µg/mL)	2,2',3,4,4',5'-Hexachlorobiphenyl	(5.0 µg/mL)
3,4,4'-Trichlorobiphenyl	(2.5 µg/mL)	3,3',4,4',5,5'-Hexachlorobiphenyl	(5.0 µg/mL)
2,2',6,6'-Tetrachlorobiphenyl	(5.0 µg/mL)	2,2',3,4',5,6,6'-Heptachlorobiphenyl	(5.0 µg/mL)
2,2',3,5'-Tetrachlorobiphenyl	(5.0 µg/mL)	2,3,3',4,4',5,5'-Heptachlorobiphenyl	(5.0 µg/mL)
2,2',3,5'-Tetrachlorobiphenyl	(5.0 µg/mL)	2,2',3,3',5,5',6,6'-Octachlorobiphenyl	(7.5 µg/mL)
2,4,4',5'-Tetrachlorobiphenyl	(5.0 µg/mL)	2,3,3',4,4',5,5',6'-Octachlorobiphenyl	(7.5 µg/mL)
2,3,3',4'-Tetrachlorobiphenyl	(5.0 µg/mL)	2,2',3,3',4,4',5,5',6,6'-Nonachlorobiphenyl	(7.5 µg/mL)
3,3',4,4'-Tetrachlorobiphenyl	(5.0 µg/mL)	2,2',3,3',4,4',5,5',6'-Nonachlorobiphenyl	(7.5 µg/mL)
2,2',4,6,6'-Pentachlorobiphenyl	(5.0 µg/mL)	Decachlorobiphenyl	(7.5 µg/mL)

Method 1668 Level of Chlorination Calibration / Spike

Level of Chlorination Calibration / Spike Set

M-1668A-LOC-SET

2 x 1 mL (M-1668A-NAT, M-1668A-PAR)

Native PCB Calibration Mix

M-1668A-NAT 1 x 1 mL
At stated conc. in Isooctane 19 comps.

4-Chlorobiphenyl	(5 µg/mL)
4,4'-Dichlorobiphenyl	(5 µg/mL)
2,4,4'-Trichlorobiphenyl	(5 µg/mL)
3,3',4,4'-Tetrachlorobiphenyl	(1 µg/mL)
2,3,3',4,4'-Pentachlorobiphenyl	(5 µg/mL)
2,3,4,4',5'-Pentachlorobiphenyl	(5 µg/mL)
2,3',4,4',5'-Pentachlorobiphenyl	(5 µg/mL)
2',3,4,4',5'-Pentachlorobiphenyl	(5 µg/mL)
3,3',4,4',5'-Pentachlorobiphenyl	(5 µg/mL)
2,3,3',4,4',5'-Hexachlorobiphenyl	(10 µg/mL)
2,3,3',4,4',5'-Hexachlorobiphenyl	(10 µg/mL)
2,3',4,4',5,5'-Hexachlorobiphenyl	(10 µg/mL)
3,3',4,4',5,5'-Hexachlorobiphenyl	(10 µg/mL)
2,2',3,3',4,4',5'-Heptachlorobiphenyl	(10 µg/mL)
2,2',3,4,4',5,5'-Heptachlorobiphenyl	(10 µg/mL)
2,3,3',4,4',5,5'-Heptachlorobiphenyl	(10 µg/mL)
2,2',3,3',4,4',5,5'-Octachlorobiphenyl	(10 µg/mL)
2,2',3,3',4,4',5,5',6'-Nonachlorobiphenyl	(10 µg/mL)
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl	(20 µg/mL)

PAR PCB Spike Mix

M-1668A-PAR 1 x 1 mL
At stated conc. in Isooctane 19 comps.

4-Chlorobiphenyl	(10 µg/mL)
4,4'-Dichlorobiphenyl	(10 µg/mL)
2,4,4'-Trichlorobiphenyl	(10 µg/mL)
3,3',4,4'-Tetrachlorobiphenyl	(0.2 µg/mL)
2,3,3',4,4'-Pentachlorobiphenyl	(10 µg/mL)
2,3,4,4',5'-Pentachlorobiphenyl	(10 µg/mL)
2,3',4,4',5'-Pentachlorobiphenyl	(10 µg/mL)
2',3,4,4',5'-Pentachlorobiphenyl	(10 µg/mL)
3,3',4,4',5'-Pentachlorobiphenyl	(1 µg/mL)
2,3,3',4,4',5'-Hexachlorobiphenyl	(10 µg/mL)
2,3,3',4,4',5'-Hexachlorobiphenyl	(10 µg/mL)
2,3',4,4',5,5'-Hexachlorobiphenyl	(10 µg/mL)
3,3',4,4',5,5'-Hexachlorobiphenyl	(2 µg/mL)
2,2',3,3',4,4',5'-Heptachlorobiphenyl	(2 µg/mL)
2,2',3,4,4',5,5'-Heptachlorobiphenyl	(10 µg/mL)
2,3,3',4,4',5,5'-Heptachlorobiphenyl	(2 µg/mL)
2,2',3,3',4,4',5,5'-Octachlorobiphenyl	(10 µg/mL)
2,2',3,3',4,4',5,5',6'-Nonachlorobiphenyl	(10 µg/mL)
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl	(20 µg/mL)

Method 1668A - Combined Congener Standard

M-1668A-C-NT-LOC-WD 1 x 1 mL
20 µg/mL each in Isooctane 33 comps.

2-Chlorobiphenyl	2,2',4,4',6,6'-Hexachlorobiphenyl
4-Chlorobiphenyl	2,3,3',4,4',5'-Hexachlorobiphenyl
2,2'-Dichlorobiphenyl	2,3,3',4,4',5'-Hexachlorobiphenyl
4,4'-Dichlorobiphenyl	2,3',4,4',5,5'-Hexachlorobiphenyl
2,2',6'-Trichlorobiphenyl	3,3',4,4',5,5'-Hexachlorobiphenyl
2,3,5'-Trichlorobiphenyl	2,2',3,3',4,4',5'-Heptachlorobiphenyl
2',3,5'-Trichlorobiphenyl	2,2',3,4,4',5,5'-Heptachlorobiphenyl
3,4,4'-Trichlorobiphenyl	2,2',3,4,4',5,6'-Heptachlorobiphenyl
2,2',6,6'-Tetrachlorobiphenyl	2,2',3,4',5,5',6'-Heptachlorobiphenyl
3,3',4,4'-Tetrachlorobiphenyl	2,2',3,4',5,6,6'-Heptachlorobiphenyl
3,4,4',5'-Tetrachlorobiphenyl	2,3,3',4,4',5,5'-Heptachlorobiphenyl
2,2',4,6,6'-Pentachlorobiphenyl	2,2',3,3',5,5',6'-Octachlorobiphenyl
2,3,3',4,4'-Pentachlorobiphenyl	2,3,3',4,4',5,5',6'-Octachlorobiphenyl
2,3,4,4',5'-Pentachlorobiphenyl	2,2',3,3',4,4',5,5',6'-Nonachlorobiphenyl
2,3',4,4',5'-Pentachlorobiphenyl	2,2',3,3',4,4',5,5',6'-Nonachlorobiphenyl
2',3,4,4',5'-Pentachlorobiphenyl	2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl
3,3',4,4',5'-Pentachlorobiphenyl	

Method 1668A - QC Standard

M-1668A-QC 1 x 1 mL
M-1668A-QC-PAK 5 x 1 mL
At stated conc. in Isooctane 13 comps.

3,3',4,4'-Tetrachlorobiphenyl	(0.2 µg/mL)
2,3,3',4,4'-Pentachlorobiphenyl	(10 µg/mL)
2,3,4,4',5'-Pentachlorobiphenyl	(10 µg/mL)
2,3',4,4',5'-Pentachlorobiphenyl	(10 µg/mL)
2',3,4,4',5'-Pentachlorobiphenyl	(10 µg/mL)
3,3',4,4',5'-Pentachlorobiphenyl	(1 µg/mL)
2,3,3',4,4',5'-Hexachlorobiphenyl	(10 µg/mL)
2,3,3',4,4',5'-Hexachlorobiphenyl	(10 µg/mL)
2,3',4,4',5,5'-Hexachlorobiphenyl	(2 µg/mL)
2,2',3,3',4,4',5'-Heptachlorobiphenyl	(2 µg/mL)
2,2',3,4,4',5,5'-Heptachlorobiphenyl	(10 µg/mL)
2,3,3',4,4',5,5'-Heptachlorobiphenyl	(2 µg/mL)

Method 1671 VOCs Specific to PMI by GC/FID

PMI Internal Standard

M-1671A-IS		1 x 1 mL
M-1671A-IS-PAK	SAVE	5 x 1 mL
1.0 mg/mL in Water		

Tetrahydrofuran

Custom Formulations

Contact our Technical Service Department for different composition PEG materials. AccuStandard can obtain PEG with different mixtures of oligomers having molecular weights centered around 200, 300, 400, 550, 1000, 1450, 3350, 8000, 10,000 ca.

Method 1673 Polyethylene glycol-600 by Derivative & HPLC

Poly(ethylene glycol)-600

M-1673		1 x 1 mL
M-1673-PAK	SAVE	5 x 1 mL
2.5 mg/mL in Tetrahydrofuran		

Polyethylene glycol-600

Surrogate Standard

M-1673-SS		1 x 1 mL
M-1673-SS-PAK	SAVE	5 x 1 mL
1.0 mg/mL in Tetrahydrofuran		

Diethylene glycol monoethyl ether

Derivatization Reagent

M-1673-DERV-5ML		1 x 5 mL
10 mg/mL in Tetrahydrofuran		

3,5-Dinitrobenzyl chloride

Method 5041 VOCs from Stack Gas Effluents

VOCs From Stack Gas Effluents of Hazardous Waste Incinerators Using Volatile Organic Sampling Train (VOST) Methodology by Wide-Bore Capillary Column Technique

M-5041		1 x 1 mL
0.2 mg/mL each in MeOH		37 comps.

Acetone	<i>cis</i> -1,3-Dichloropropene *
Acrylonitrile	<i>trans</i> -1,3-Dichloropropene **
Benzene	Ethylbenzene
Bromodichloromethane	Iodomethane
Bromoform	Methylene chloride
Bromomethane	Stryrene
Carbon disulfide	1,1,2,2-Tetrachloroethane
Carbon tetrachloride	Tetrachloroethene
Chlorobenzene	Toluene
Chlorodibromomethane	1,1,1-Trichloroethane
Chloroethane	1,1,2-Trichloroethane
Chloroform	Trichloroethene
Chloromethane	Trichlorofluoromethane
Dibromomethane	1,2,3-Trichloropropane
1,1-Dichloroethane	Vinyl chloride
1,2-Dichloroethane	<i>o</i> -Xylenes
1,1-Dichloroethene	<i>m</i> -Xylenes
<i>trans</i> -1,2-Dichloroethene	<i>p</i> -Xylenes
1,2-Dichloropropane	* <i>cis</i> (1.06 x conc.)
	** <i>trans</i> (0.94 x conc.)

Internal/Surrogate Standard

CLP-PIPS		1 x 1 mL
CLP-PIPS-PAK	SAVE	5 x 1 mL
2.5 mg/mL each in MeOH		6 comps.

Bromochloromethane	1,2-Dichloroethane-d ₂
<i>p</i> -Bromofluorobenzene	1,4-Difluorobenzene
Chlorobenzene-d ₆	Toluene-d ₈

Calibration Check Compounds (CCC)

CLP-020-10X		1 x 1 mL
CLP-020-10X-PAK	SAVE	5 x 1 mL
2.0 mg/mL each in MeOH		6 comps.

Chloroform	Ethylbenzene
1,1-Dichloroethene	Toluene
1,2-Dichloropropane	Vinyl chloride

System Performance Check Compounds (SPCC)

CLP-021-10X		1 x 1 mL
CLP-021-10X-PAK	SAVE	5 x 1 mL
2.0 mg/mL each in MeOH		5 comps.

Bromoform	1,1-Dichloroethane
Chlorobenzene	1,1,2,2-Tetrachloroethane
Chloromethane	

Instrument Performance Check Solution

CLP-004-100X		1 x 1 mL
CLP-004-100X-PAK	SAVE	5 x 1 mL
2500 µg/mL in MeOH		

p-Bromofluorobenzene

Buy AccuPaks™
Save 20-40% 5 x 1 mL



Standard Mixtures for EPA Method 8000 Series

For Solid Waste



Background Information

The analytical methods used to identify and quantify organic compounds in solid waste are provided in US EPA SW-846, also known as the 8000 series methods.

These methods were developed in response to environmental problem areas such as Love Canal, N.Y. and Times Beach, MO. A historical perspective of the evolution of this series includes the Resource and Conservation Recovery Act (RCRA), which was amended by the Hazardous and Solid Waste Act (HSWA). HSWA also addressed previously exempted underground storage tanks containing petroleum and some hazardous substances.

The 8000 Series product line contains standards used in the proposed and promulgated methods for the identification and quantitation of organic compounds on the EPA's Appendix VIII and Appendix IX lists in ground water, waste water, and solids at hazardous waste treatment, storage, and disposal sites. An additional method Toxicity Characteristic Leaching Procedure (TCLP) Method 1311 is used with 8000 series methods to estimate the toxicity of solid waste materials under the leaching conditions found in a landfill.

The organic compounds listed in these methods include volatile organic compounds (VOCs), pesticides, synthetic organic compounds (SOCs), and disinfection by-products.

Detectors

Analytical techniques used in identification and quantification include gas chromatography with selective detectors (AED, PID, ELCD, ECD, FID, FTIR, NPD, FPD, TEA, TCD) gas chromatography /mass spectrometry, and high performance liquid chromatography.

Comprehensive

Complete analysis of target compounds by these 8000 Series Methods can be accomplished using the series of standards formulated by AccuStandard for each method along with the required internal and surrogate standards. Formulations for 8000 series methods have been developed as easy-to-use large core mixes containing target compounds and as high concentration sub mixes for combination with other formulations to meet laboratory specific analyte detection requirements.

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* These Methods can be found in the SW-846 update II, Nov. 1992, rev. 2



EPA Method 8000 Series

Appendix IX Compounds

AccuStandard has assembled the compounds appearing below to aid the analyst in identifying all the contaminants the EPA has regulated for groundwater monitoring. This list (214 compounds), commonly called the Appendix IX list, was first published in July 1987. Federal Register Vol. 52, No. 131.

The entire list of compounds can be purchased as a complete set as:

APP-9-SET

214 x 1 mL

Appendix IX Compounds All solutions are in 100 µg/mL in 1 mL

Compound	CAS No.	Solv.	Cat. No.	Compound	CAS No.	Solv.	Cat. No.
Acenaphthene	83-32-9	MeOH	APP-9-001	1,1-Dichloroethane	75-34-3	MeOH	APP-9-070
Acenaphthylene	208-96-8	MeOH	APP-9-002	1,2-Dichloroethane	107-06-2	MeOH	APP-9-071
Acetone ‡	67-64-1	MeOH	APP-9-003	1,1-Dichloroethylene	75-34-2	MeOH	APP-9-072
Acetonitrile	75-05-8	MeOH	APP-9-005	<i>trans</i> -1,2-Dichloroethylene	156-60-5	MeOH	APP-9-073
Acetophenone	98-86-2	CH ₂ Cl ₂	APP-9-004	Dichloromethane	75-09-2	MeOH	APP-9-074
2-Acetylaminofluorene	53-96-3	CH ₂ Cl ₂	APP-9-006	2,4-Dichlorophenol	120-83-2	MeOH	APP-9-075
Acrolein ‡	107-02-8	M:W	APP-9-007	2,6-Dichlorophenol	87-65-0	CH ₂ Cl ₂	APP-9-076
Acrylonitrile	107-13-1	MeOH	APP-9-008	1,2-Dichloropropane	78-87-5	MeOH	APP-9-077
Aldrin	309-00-2	MeOH	APP-9-009	<i>cis</i> -1,3-Dichloropropene	10061-01-5	MeOH	APP-9-078
Allyl chloride	107-05-1	MeOH	APP-9-010	<i>trans</i> -1,3-Dichloropropene	10061-02-6	MeOH	APP-9-079
4-Aminobiphenyl	92-67-1	CH ₂ Cl ₂	APP-9-011	Dieldrin	60-57-1	MeOH	APP-9-080
Aniline	62-53-3	MeOH	APP-9-012	Diethyl phthalate	84-66-2	MeOH	APP-9-081
Anthracene	120-12-7	MeOH	APP-9-013	Dimethoate	60-51-5	MeOH	APP-9-082
Aramite	140-57-8	MeOH	APP-9-014	<i>p</i> -(Dimethylamino)azobenzene	60-11-7	CH ₂ Cl ₂	APP-9-083
Benz[a]anthracene	56-55-3	MeOH	APP-9-016	7,12-Dimethylbenz[a]anthracene	57-97-6	CH ₂ Cl ₂	APP-9-084
Benzene	71-43-2	MeOH	APP-9-015	3,3'-Dimethylbenzidine	119-93-7	CH ₂ Cl ₂	APP-9-085
Benzo[b]fluoranthene	205-99-2	MeOH	APP-9-017	<i>a,a</i> -Dimethylphenethylamine	122-09-8	CH ₂ Cl ₂	APP-9-086
Benzo[k]fluoranthene	2070-08-9	MeOH	APP-9-018	2,4-Dimethylphenol	105-67-9	MeOH	APP-9-087
Benzo[g,h,i]perylene	191-24-2	CH ₂ Cl ₂	APP-9-019	Dimethyl phthalate	131-11-3	MeOH	APP-9-088
Benzo[a]pyrene	50-32-8	MeOH	APP-9-020	<i>m</i> -Dinitrobenzene	99-65-0	CH ₂ Cl ₂	APP-9-089
Benzyl alcohol	100-51-6	MeOH	APP-9-021	4,6-Dinitro- <i>o</i> -cresol	534-52-1	MeOH	APP-9-090
α-BHC	319-84-6	MeOH	APP-9-022	2,4-Dinitrophenol	51-28-5	MeOH	APP-9-091
β-BHC	319-85-7	MeOH	APP-9-023	2,4-Dinitrotoluene	121-14-2	MeOH	APP-9-092
δ-BHC	319-86-8	MeOH	APP-9-024	2,6-Dinitrotoluene	606-20-2	MeOH	APP-9-093
γ-BHC (Lindane)	58-89-9	MeOH	APP-9-025	Dinoseb	88-85-7	MeOH	APP-9-094
bis(2-Chloroethoxy)methane	111-91-1	CH ₂ Cl ₂	APP-9-026	Di- <i>n</i> -octyl phthalate	117-84-0	MeOH	APP-9-095
bis(2-Chloroethyl)ether	111-44-4	MeOH	APP-9-027	1,4-Dioxane	123-91-1	MeOH	APP-9-096
bis(2-Chloro-1-methylethyl)ether (2,2-Dichlorodisopropyl ether)	108-60-1	CH ₂ Cl ₂	APP-9-028	Diphenylamine	122-39-4	CH ₂ Cl ₂	APP-9-097
bis(2-Ethylhexyl)phthalate	117-81-7	MeOH	APP-9-029	Disulfoton	298-04-4	MeOH	APP-9-098
Bromodichloromethane	75-27-4	MeOH	APP-9-030	Endosulfan I	959-98-8	MeOH	APP-9-099
Bromoform	75-25-2	MeOH	APP-9-031	Endosulfan II	33213-65-9	MeOH	APP-9-100
Bromomethane	74-83-9	MeOH	APP-9-032	Endosulfan sulfate	1031-07-8	MeOH	APP-9-101
4-Bromophenyl phenyl ether	101-55-3	MeOH	APP-9-033	Endrin	72-20-8	MeOH	APP-9-102
Butyl benzyl phthalate	85-68-7	MeOH	APP-9-034	Endrin aldehyde	7421-93-4	MeOH	APP-9-103
Carbon disulfide	75-15-0	MeOH	APP-9-035	Ethylbenzene	100-41-4	MeOH	APP-9-104
Carbon tetrachloride	56-23-5	MeOH	APP-9-036	Ethyl methacrylate	97-63-2	MeOH	APP-9-105
Chlordane	57-74-9	MeOH	APP-9-037	Ethylmethanesulfonate	62-50-0	CH ₂ Cl ₂	APP-9-106
<i>p</i> -Chloroaniline	106-47-8	MeOH	APP-9-038	Famphur	52-85-7	MeOH	APP-9-107
Chlorobenzene	108-90-7	MeOH	APP-9-039	Fluoranthene	206-44-0	MeOH	APP-9-108
Chlorobenzilate	510-15-6	CH ₂ Cl ₂	APP-9-040	Fluorene	86-73-7	MeOH	APP-9-109
<i>p</i> -Chloro- <i>m</i> -cresol	59-50-7	MeOH	APP-9-041	Heptachlor	76-44-8	MeOH	APP-9-110
Chloroethane	75-00-3	MeOH	APP-9-042	Heptachlor epoxide [Isomer B]	1024-57-3	MeOH	APP-9-111
Chloroform	67-66-3	MeOH	APP-9-043	Hexachlorobenzene	118-74-1	MeOH	APP-9-112
Chloromethane	74-87-3	MeOH	APP-9-044	Hexachlorobutadiene	87-68-3	MeOH	APP-9-113
2-Chloronaphthalene	91-58-7	MeOH	APP-9-045	Hexachlorocyclopentadiene	77-47-4	MeOH	APP-9-114
2-Chlorophenol	95-57-8	MeOH	APP-9-046	Hexachloroethane	67-72-1	MeOH	APP-9-115
4-Chlorophenyl phenyl ether	7005-72-3	MeOH	APP-9-047	Hexachlorophene	70-30-4	MeOH	APP-9-116
Chloroprene (Xylene-Free)	126-99-8	MeOH	APP-9-048-R1	Hexachloropropene	1888-71-7	MeOH	APP-9-117
Chrysene	218-01-9	MeOH	APP-9-049	2-Hexanone ‡	591-78-6	MeOH	APP-9-118
<i>m</i> -Cresol	108-39-4	CH ₂ Cl ₂	APP-9-050	Indeno[1,2,3- <i>cd</i>]pyrene	193-39-5	MeOH	APP-9-119
<i>o</i> -Cresol	95-48-7	CH ₂ Cl ₂	APP-9-051	Isobutyl alcohol	78-83-1	MeOH	APP-9-120
<i>p</i> -Cresol	106-44-5	CH ₂ Cl ₂	APP-9-052	Isodrin	465-73-6	MeOH	APP-9-121
2,4-D	94-75-7	MeOH	APP-9-053	Isophorone	78-59-1	MeOH	APP-9-122
4,4'-DDD	72-54-8	MeOH	APP-9-054	Isosafrole	120-58-1	CH ₂ Cl ₂	APP-9-123
4,4'-DDE	72-55-9	MeOH	APP-9-055	Kepone	143-50-0	MeOH	APP-9-124
4,4'-DDT	50-29-3	MeOH	P-029S	Methacrylonitrile	126-98-7	MeOH	APP-9-125
Diallate	2303-16-4	MeOH	APP-9-057	Methapyrilene	91-80-5	CH ₂ Cl ₂	APP-9-126
Dibenz[a,h]anthracene	53-70-3	MeOH	APP-9-058	Methoxychlor	72-43-5	MeOH	APP-9-127
Dibenzofuran	132-64-9	MeOH	APP-9-059	3-Methylcholanthrene	56-49-5	CH ₂ Cl ₂	APP-9-128
Dibromochloromethane	124-48-1	MeOH	APP-9-060	Methyl ethyl ketone; MEK ‡	78-93-3	MeOH	APP-9-129
1,2-Dibromo-3-chloropropane	96-12-8	MeOH	APP-9-061	Methyl iodide; Iodomethane	74-88-4	MeOH	APP-9-130
Dibromomethane	74-95-3	MeOH	APP-9-062	Methyl methacrylate	80-62-6	MeOH	APP-9-131
1,2-Dibromoethane, EDB	107-06-2	MeOH	APP-9-214	Methyl methanesulfonate	66-27-3	CH ₂ Cl ₂	APP-9-132
Di- <i>n</i> -butyl phthalate	84-74-2	MeOH	APP-9-063	2-Methylnaphthalene	91-57-6	CH ₂ Cl ₂	APP-9-133
<i>o</i> -Dichlorobenzene	95-50-1	MeOH	APP-9-064	Methyl parathion	298-00-0	MeOH	APP-9-134
<i>m</i> -Dichlorobenzene	541-73-1	MeOH	APP-9-065	4-Methyl-2-pentanone (MIBK)	108-10-1	MeOH	APP-9-135
<i>p</i> -Dichlorobenzene	106-46-7	MeOH	APP-9-066	Naphthalene	91-20-3	CH ₂ Cl ₂	APP-9-136
3,3'-Dichlorobenzidine	91-94-1	MeOH	APP-9-067	1,4-Naphthoquinone	130-15-4	CH ₂ Cl ₂	APP-9-137
<i>trans</i> -1,4-Dichloro-2-butene	110-57-6	MeOH	APP-9-068	1-Naphthylamine	134-32-7	CH ₂ Cl ₂	APP-9-138
Dichlorodifluoromethane	75-71-8	MeOH	APP-9-069	2-Naphthylamine	91-59-8	CH ₂ Cl ₂	APP-9-139
				<i>o</i> -Nitroaniline	88-74-4	CH ₂ Cl ₂	APP-9-140

‡ To delay premature breakdown of thermally labile products in transit we suggest requesting a "Cold Pack"

EPA Method 8000 Series

Appendix IX Compounds & Mixtures



Custom Appendix IX formulations are available.
Please use our Custom Quotation Request on our website or fax us for any custom mixture you may need.

The entire list of compounds can be purchased as a complete set as:
APP-9-SET 214 x 1 mL

Appendix IX Compounds All solutions are in 100 µg/mL in 1 mL

Compound	CAS No.	Solv.	Cat. No.	Compound	CAS No.	Solv.	Cat. No.
<i>m</i> -Nitroaniline	99-09-2	CH ₂ Cl ₂	APP-9-141	Pentachlorobenzene	608-93-5	MeOH	APP-9-173
<i>p</i> -Nitroaniline	100-01-6	CH ₂ Cl ₂	APP-9-142	Pentachloroethane	76-01-7	MeOH	APP-9-174
Nitrobenzene	98-95-3	MeOH	APP-9-143	Pentachloronitrobenzene	82-68-8	MeOH	APP-9-175
<i>o</i> -Nitrophenol	88-75-5	MeOH	APP-9-144	Pentachlorophenol	87-86-5	MeOH	APP-9-176
<i>p</i> -Nitrophenol	100-02-7	MeOH	APP-9-145	Phenacetin	62-44-2	CH ₂ Cl ₂	APP-9-177
4-Nitroquinoline-1-oxide	56-57-5	CH ₂ Cl ₂	APP-9-146	Phenanthrene	85-01-8	MeOH	APP-9-178
N-Nitrosodi- <i>n</i> -butylamine	924-16-3	CH ₂ Cl ₂	APP-9-147	Phenol	108-95-2	CH ₂ Cl ₂	APP-9-179
N-Nitrosodiethylamine	55-18-5	CH ₂ Cl ₂	APP-9-148	<i>p</i> -Phenylenediamine	106-50-3	MeOH	APP-9-180
N-Nitrosodimethylamine	62-75-9	CH ₂ Cl ₂	APP-9-149	Phorate	298-02-2	MeOH	APP-9-181
N-Nitrosodiphenylamine	86-30-6	CH ₂ Cl ₂	APP-9-150	2-Picoline	109-06-8	MeOH	APP-9-182
N-Nitrosodipropylamine	621-64-7	CH ₂ Cl ₂	APP-9-151	Pronamide	23950-58-5	MeOH	APP-9-183
N-Nitrosomethylethylamine	10595-95-6	CH ₂ Cl ₂	APP-9-152	Propionitrile	107-12-0	MeOH	APP-9-184
N-Nitrosomorpholine	59-89-2	CH ₂ Cl ₂	APP-9-153	Pyrene	129-00-0	MeOH	APP-9-185
N-Nitrosopiperidine	100-75-4	CH ₂ Cl ₂	APP-9-154	Pyridine	110-86-1	CH ₂ Cl ₂	APP-9-186
N-Nitrosopyrrolidine	930-55-2	CH ₂ Cl ₂	APP-9-155	Safrole	94-59-7	MeOH	APP-9-187
5-Nitro- <i>o</i> -toluidine	99-55-8	CH ₂ Cl ₂	APP-9-156	Silvex (2,4,5-TP)	93-72-1	MeOH	APP-9-188
Parathion	56-38-2	MeOH	APP-9-157	Styrene	100-42-5	MeOH	APP-9-189
Polychlorinated biphenyls:				2,4,5-Trichlorophenoxy acetic acid	93-76-5	MeOH	APP-9-190
Aroclor® 1016	12674-11-2	MeOH	APP-9-158	1,2,4,5-Tetrachlorobenzene	95-94-3	MeOH	APP-9-191
Aroclor 1221	11104-28-2	MeOH	APP-9-159	1,1,1,2-Tetrachloroethane	630-20-6	MeOH	APP-9-192
Aroclor 1232	11141-16-5	MeOH	APP-9-160	1,1,2,2-Tetrachloroethane	79-34-5	MeOH	APP-9-193
Aroclor 1242	53469-21-9	MeOH	APP-9-161	Tetrachloroethylene	127-18-4	MeOH	APP-9-194
Aroclor 1248	12672-29-6	MeOH	APP-9-162	2,3,4,6-Tetrachlorophenol	58-90-2	MeOH	APP-9-195
Aroclor 1254	11097-69-1	MeOH	APP-9-163	Tetraethyl dithiopyrophosphate (Sulfotep)	3689-24-5	MeOH	APP-9-196
Aroclor 1260	11096-82-5	MeOH	APP-9-164	Thionazin	297-97-2	MeOH	APP-9-197
Aroclor 1262	37324-23-5	MeOH	APP-9-165	Toluene	108-88-3	MeOH	APP-9-198
Aroclor 1268	11100-14-4	MeOH	APP-9-166	<i>o</i> -Toluidine	95-53-4	MeOH	APP-9-199
	0.5 mg/mL in	MeOH	APP-9-166-5X	Toxaphene	8001-35-2	MeOH	APP-9-200
Dioxins:				1,2,4-Trichlorobenzene	120-82-1	MeOH	APP-9-201
2,3,7,8-TCDD (5 µg/mL)	1746-01-6	Toluene	APP-9-167	1,1,1-Trichloroethane	71-55-6	MeOH	APP-9-202
1,2,3,7,8-PCCD (5 µg/mL)	40321-76-4	Toluene	APP-9-168	1,1,2-Trichloroethane	79-00-5	MeOH	APP-9-203
1,2,3,4,7,8-HCDD (5 µg/mL)	39227-28-6	Toluene	APP-9-169	Trichloroethylene	79-01-6	MeOH	APP-9-204
Polychlorinated dibenzofurans:				Trichlorofluoromethane	75-69-4	MeOH	APP-9-205
2,3,7,8-TCDF (5 µg/mL)	51207-31-9	Toluene	APP-9-170	2,4,5-Trichlorophenol	95-95-4	MeOH	APP-9-206
1,2,3,7,8-PCDF (5 µg/mL)	57117-41-6	Toluene	APP-9-171	2,4,6-Trichlorophenol	88-06-2	MeOH	APP-9-207
1,2,3,4,7,8-HCDF (5 µg/mL)	55684-94-1	Toluene	APP-9-172	1,2,3-Trichloropropane	96-18-4	MeOH	APP-9-208
				O,O,O-Triethyl phosphorothioate	126-68-1	MeOH	APP-9-209
				sym-Trinitrobenzene	99-35-4	MeOH	APP-9-210
				Vinyl acetate †	108-05-4	MeOH	APP-9-211
				Vinyl chloride	75-01-4	MeOH	APP-9-212
				Xylene (total)	1330-20-7	MeOH	APP-9-213

Volatile Appendix IX Mixtures

M-8240A ‡	1 x 1 mL	M-502B	1 x 1 mL	M-8240C	1 x 1 mL
0.2 mg/mL each in MeOH	41 comps.	M-502B-PAK <i>SAVE</i>	5 x 1 mL	0.2 mg/mL each in MeOH	17 comps.
		0.2 mg/mL each in MeOH	6 comps.		
Acetone	<i>cis</i> -1,3-Dichloropropene *	Bromomethane	Acetonitrile	Allyl chloride	
Acrolein	<i>trans</i> -1,3-Dichloropropene **	Chloromethane	1,2-Dibromo-3-chloropropane	Dibromomethane	
Acrylonitrile	Ethanol	Chloroethane	1,2-Dibromoethane	1,4-Dioxane	
Benzene	Ethylbenzene	Dichlorodifluoromethane	Ethyl methacrylate	Isobutyl alcohol	
Bromodichloromethane	2-Hexanone	Trichlorofluoromethane	Methacrylonitrile	Methyl methacrylate	
Bromoform	Iodomethane	Vinyl chloride	Methyl methacrylate	Nitrobenzene	
2-Butanone	4-Methyl-2-pentanone		Pentachloroethane	Propionitrile	
Carbon disulfide	Methylene chloride		Pyridine	1,1,1,2-Tetrachloroethane	
Carbon tetrachloride	Styrene		1,1,1,2-Tetrachloroethane	1,2,4-Trichlorobenzene	
Chlorobenzene	1,1,2,2-Tetrachloroethane		1,2,3-Trichloropropane		
Chloroform	Tetrachloroethene				
Dibromochloromethane	Toluene				
<i>cis</i> -1,4-Dichloro-2-butene +	1,1,1-Trichloroethane				
<i>trans</i> -1,4-Dichloro-2-butene ++	1,1,2-Trichloroethane				
1,2-Dichlorobenzene	Trichloroethene				
1,3-Dichlorobenzene	Vinyl acetate				
1,4-Dichlorobenzene	<i>o</i> -Xylene				
1,1-Dichloroethane	<i>m</i> -Xylene				
1,2-Dichloroethane	<i>p</i> -Xylene				
1,1-Dichloroethene					
<i>trans</i> -1,2-Dichloroethene					
1,2-Dichloropropane					

* *cis* (1.06 x conc.)
** *trans* (0.94 x conc.)
+ *cis* (0.1 mg/mL)
++ *trans* (0.1 mg/mL)

Special Mixtures for Laboratories Testing Appendix IX Analytes

Laboratories analyzing Appendix IX analytes have requested that we prepare particular mixtures for them. You can benefit from these custom formulation mixtures that are available from our stock inventory.

Volatile Mixtures

S-168A <i>0.5 mg/mL each in MeOH</i>	1 x 1 mL 14 comps.	S-181M <i>0.1 mg/mL each in MeOH</i>	1 x 1 mL 6 comps.
Acetonitrile Acrolein Acrylonitrile Allyl chloride 1,2-Dibromoethane (<i>Ethylene dibromide</i>) 1,2-Dibromo-3-chloropropane (<i>Fumazone</i>) Dibromomethane	1,4-Dioxane Ethyl cyanide (<i>Propionitrile</i>) Iodomethane Isobutanol Methacrylonitrile 1,1,1,2-Tetrachloroethane 1,2,3-Trichloropropane	bis(2-Chloro-1-methylethyl)ether Dichlorodifluoromethane Ethyl methacrylate	Methyl methacrylate Pentachloroethane Pyridine

Semi-Volatile Mixtures

S-168-SET **2 x 1 mL**
(S-168-MIXA, S-168-MIXB)



Mix 1

S-168-MIXA **1 x 1 mL**
500 µg/mL each in CH₂Cl₂ 5 comps.

3,3'-Dimethylbenzidine	4-Nitroquinoline-1-oxide
α,α -Dimethylphenethylamine	<i>p</i> -Phenylenediamine
1,4-Naphthoquinone	

Mix 2

S-168-MIXB **1 x 1 mL**
500 µg/mL each in CH₂Cl₂ 38 comps.

Acetophenone	Methyl methanesulfonate
2-Acetylaminofluorene	1-Naphthylamine
4-Aminobiphenyl	2-Naphthylamine
Aramite	N-Nitrosodi- <i>n</i> -butylamine
2-sec-Butyl-4,6-dinitrophenol	N-Nitrosodiethylamine
<i>m</i> -Cresol	N-Nitrosomethylethylamine
2,6-Dichlorophenol	N-Nitrosomorpholine
<i>p</i> -Dimethylamino azobenzene	N-Nitrosopyrrolidine
(<i>Methyl Yellow</i>)	5-Nitro- <i>o</i> -toluidine
7,12-Dimethylbenz[a]anthracene	Pentachlorobenzene
<i>m</i> -Dinitrobenzene	Pentachloroethane
Ethyl methacrylate	Pentachloronitrobenzene
Ethyl methanesulfonate	Phenacetin
Hexachlorophene	2-Picoline
Hexachloropropene	Pronamide
Isosafrole	Pyridine
Methapyrilene	Safrole
3-Methylcholanthrene	1,2,4,5-Tetrachlorobenzene
Methyl methacrylate	2,3,4,6-Tetrachlorophenol
	<i>o</i> -Toluidine

S-184 **1 x 1 mL**
0.1 mg/mL each in CH₂Cl₂ 19 comps.

2-Acetylaminofluorene	<i>p</i> -Nitroaniline
4-Aminobiphenyl	4-Nitroquinoline-1-oxide
<i>p</i> -(Dimethylamino)azobenzene	N-Nitrosodimethylamine
α,α -Dimethylphenethylamine	N-Nitrosomethylethylamine
Diphenylamine	N-Nitrosomorpholine
1,4-Naphthoquinone	N-Nitrosopiperidine
1-Naphthylamine	N-Nitrosopyrrolidine
2-Naphthylamine	5-Nitro- <i>o</i> -toluidine
<i>o</i> -Nitroaniline	<i>p</i> -Phenylenediamine
<i>m</i> -Nitroaniline	

S-183-PAK **5 x 1 mL**
0.1 mg/mL each in CH₂Cl₂ 18 comps.

Acetophenone	3-Methylcholanthrene
Chlorobenzilate	Methyl methanesulfonate
7,12-Dimethylbenz[a]anthracene	2-Methylnaphthalene
3,3'-Dimethylbenzidine	Pentachlorobenzene
<i>m</i> -Dinitrobenzene	Pentachloronitrobenzene
Ethyl methanesulfonate	Phenacetin
1,2,4,5-Tetrachlorobenzene	2-Picoline
Isosafrole	Safrole
Methapyrilene	O,O,O-Triethyl phosphorothioate

S-182-PAK **5 x 1 mL**
0.1 mg/mL each in CH₂Cl₂ 6 comps.

<i>o</i> -Cresol	2,6-Dichlorophenol
<i>m</i> -Cresol	2,3,4,6-Tetrachlorophenol
<i>p</i> -Cresol	2,4,5-Trichlorophenol



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EPA Method 8000 Series

Volatile Internal (ISTD) / Surrogate(SS) Standards



With more proposed and promulgated methods available, analytical chemists are trying to combine analyte lists and shorten run times while still demonstrating method equivalence. AccuStandard has formulated a core evaluation deuterated solution and a second conventional internal/surrogate evaluation solution. Use of these formulations allow the analyst to quickly evaluate ISTD/SS combinations for PID, Hall, FID or GC/MS applications.

Volatile ISTD & SS

Popular Internal Standards	
M-502-IS 2.0 mg/mL each in MeOH 1-Chloro-2-bromopropane Fluorobenzene	1 x 1 mL 2 comps.
M-524-IS-2 2.0 mg/mL in MeOH Fluorobenzene	1 x 1 mL
M-524-IS 2.0 mg/mL each in MeOH 1,2-Dichlorobenzene-d ₄ Fluorobenzene	1 x 1 mL 2 comps.
M-502-IS-2 2.0 mg/mL each in MeOH 1-Chloro-2-bromopropane Fluorobenzene Methylene chloride-d ₂	1 x 1 mL 3 comps.
M-001R 20 mg/mL each in MeOH Bromochloromethane 1,4-Dichlorobutane 2-Bromo-1-chloropropane	1 x 1 mL 3 comps.
M-8020-IS 0.2 mg/mL each in MeOH 4-Bromofluorobenzene α,α,α-Trifluorotoluene	1 x 1 mL 2 comps.
M-8240/60-IS 0.2 mg/mL each in MeOH Bromochloromethane Chlorobenzene-d ₅ 1,4-Dichlorobenzene-d ₄ 1,4-Difluorobenzene Pentafluorobenzene	1 x 1 mL 5 comps.
M-8260-IS-R 0.2 mg/mL each in MeOH 2-Bromo-1-chloropropane 1,4-Difluorobenzene 1,4-Dichlorobenzene-d ₄ Pentafluorobenzene	1 x 1 mL 4 comps.
M-8260-IS 0.2 mg/mL each in MeOH Chlorobenzene-d ₅ 1,4-Difluorobenzene 1,4-Dichlorobenzene-d ₄ Pentafluorobenzene	1 x 1 mL 4 comps.
M-8260A/B-IS 0.2 mg/mL each in MeOH Chlorobenzene-d ₅ 1,4-Dichlorobenzene-d ₄ Fluorobenzene	1 x 1 mL 3 comps.

ISTD/SS Evaluation Mixtures	
Conventional ISTD/SS Evaluation Mix	
M-CONV-IS/SS 200 µg/mL each in MeOH 2-Bromochlorobenzene 4-Bromochlorobenzene Bromochloromethane p-Bromofluorobenzene 2-Bromo-1-chloropropane 1-Chloro-2-fluorobenzene 1-Chloro-3-fluorobenzene 1-Chloro-4-fluorobenzene	1 x 1 mL 15 comps.
2-Chloropropane Dibromofluoromethane 1,4-Dichlorobutane 1,4-Difluorobenzene Fluorobenzene Pentafluorobenzene α,α,α-Trifluorotoluene	
Deuterated ISTD/SS Evaluation Mix	
M-DEUT-IS/SS 200 µg/mL each in MeOH Benzene-d ₆ Chlorobenzene-d ₅ 1,2-Dichlorobenzene-d ₄ 1,4-Dichlorobenzene-d ₄	1 x 1 mL 8 comps.
1,2-Dichlorobethane-d ₄ Ethylbenzene-d ₁₀ Methylene chloride-d ₂ Toluene-d ₈	

Popular Surrogate Standards	
M-502-IS-ASL 2.0 mg/mL each in MeOH 2-Bromo-1-chloropropane 1-Chloro-2-fluorobenzene	1 x 1 mL 2 comps.
M-524-SS 2.0 mg/mL each in MeOH 4-Bromofluorobenzene 1,2-Dichlorobenzene-d ₄	1 x 1 mL 2 comps.
M-624-SS-M 20 mg/mL each in MeOH 4-Bromofluorobenzene Fluorobenzene Pentafluorobenzene	1 x 1 mL 3 comps.
M-8020-SS 2.0 mg/mL each in MeOH 4-Bromochlorobenzene 1,4-Difluorobenzene Fluorobenzene	1 x 1 mL 3 comps.
M-8021-SS 2.0 mg/mL each in MeOH 4-Bromochlorobenzene 1,4-Dichlorobutane	1 x 1 mL 2 comps.
M-8021-SS-M 2.0 mg/mL each in MeOH Bromochloromethane 1,4-Dichlorobutane	1 x 1 mL 2 comps.
M-8021A-SS 20 mg/mL each in MeOH 4-Bromochlorobenzene Bromochloromethane 1,4-Dichlorobutane 2-Bromo-1-chloropropane	1 x 1 mL 4 comps.
M-8240/60-SS 0.2 mg/mL each in MeOH p-Bromofluorobenzene Dibromofluoromethane 1,2-Dichloroethane-d ₄ Toluene-d ₈	1 x 1 mL 4 comps.

Popular ISTD/SS Standards	
M-502-IS/SS 2.0 mg/mL each in MeOH 1-Chloro-3-fluorobenzene 2-Chloropropane Fluorobenzene α,α,α-Trifluorotoluene	1 x 1 mL 4 comps.
M-524-FS 2.0 mg/mL each in MeOH 4-Bromofluorobenzene 1,2-Dichlorobenzene-d ₄ Fluorobenzene	1 x 1 mL 3 comps.
M-8010-IS/SS 150 µg/mL each in MeOH 4-Bromochlorobenzene Bromochloromethane 4-Bromofluorobenzene	1 x 1 mL 3 comps.
M-8020-IS/SS-ASL 1.5 mg/mL each in MeOH 4-Bromochlorobenzene p-Bromofluorobenzene 1,4-Difluorobenzene Fluorobenzene α,α,α-Trifluorotoluene	1 x 1 mL 5 comps.
M-8240/60-IS/SS 0.2 mg/mL each in MeOH Bromochloromethane p-Bromofluorobenzene Chlorobenzene-d ₅ Dibromofluoromethane 1,4-Dichlorobenzene-d ₄ 1,2-Dichloroethane-d ₄ 1,4-Difluorobenzene Pentafluorobenzene Toluene-d ₈	1 x 1 mL 9 comps.
M-8260A/B-IS/SS 200 µg/mL each in MeOH p-Bromofluorobenzene Chlorobenzene-d ₅ Dibromofluoromethane 1,4-Dichlorobenzene-d ₄ 1,2-Dichloroethane-d ₄ Fluorobenzene Toluene-d ₈	1 x 1 mL 7 comps.



EPA Method 8000 Series

Method 8010

Method 8010 Halogenated VOCs by GC/ELCD (Hall)

Method 8010 Purgeable Halocarbon Set

M-601-SET	4 x 1 mL
0.2 mg/mL in MeOH	(M-601A, M-502B, M-601C, M-501)
M-601-10X-SET	4 x 1 mL
2.0 mg/mL in MeOH	(M-601A-10X, M-502B-10X, M-601C-10X, M-501-10X)

Liquids

M-601A	1 x 1 mL
M-601A-PAK	5 x 1 mL
0.2 mg/mL each in MeOH	SAVE
M-601A-10X	1 x 1 mL
2.0 mg/mL each in MeOH	18 comps.
Carbon tetrachloride	1,2-Dichloropropane
Chlorobenzene	<i>cis</i> -1,3-Dichloropropylene *
1,2-Dichlorobenzene	<i>trans</i> -1,3-Dichloropropylene **
1,3-Dichlorobenzene	Methylene chloride
1,4-Dichlorobenzene	1,1,2,2-Tetrachloroethane
1,1-Dichloroethane	Tetrachloroethylene
1,2-Dichloroethane	1,1,1-Trichloroethane
1,1-Dichloroethylene	1,1,2-Trichloroethane * <i>cis</i> (1.06 x conc.)
<i>trans</i> -1,2-Dichloroethylene	Trichloroethylene ** <i>trans</i> (0.94 x conc.)

Gases

M-502B	1 x 1 mL
M-502B-PAK	5 x 1 mL
0.2 mg/mL each in MeOH	SAVE
M-502B-10X	1 x 1 mL
2.0 mg/mL each in MeOH	6 comps.
Bromomethane	Dichlorodifluoromethane
Chloromethane	Trichlorofluoromethane
Chloroethane	Vinyl chloride

Liquid Component

M-601C	1 x 1 mL
M-601C-PAK	5 x 1 mL
0.2 mg/mL in MeOH	SAVE
M-601C-10X	1 x 1 mL
2.0 mg/mL in MeOH	
2-Chloroethylvinyl ether	

Trihalomethanes

M-501	1 x 1 mL
M-501-PAK	5 x 1 mL
0.2 mg/mL each in MeOH	SAVE
M-501-10X	1 x 1 mL
2.0 mg/mL each in MeOH	4 comps.
Bromoform	Dichlorobromomethane
Chloroform	Dibromochloromethane

Method 8010 Additional Analytes

M-8010R-1	1 x 1 mL
0.2 mg/mL each in MeOH	9 comps.
Benzylchloride	4-Chlorotoluene
Bromobenzene	Dibromomethane
bis(2-Chloroethoxy)methane	1,1,1,2-Tetrachloroethane
1-Chlorohexane	1,2,3-Trichloropropane
Chloromethylmethyl ether	

Surrogate Standard

M-001R	1 x 1 mL
M-001R-PAK	5 x 1 mL
20 mg/mL each in MeOH	SAVE
Bromochloromethane	2-Bromo-1-chloropropane
1,4-Dichlorobutane	

Halogenated VOCs by GC/ECLD (Hall)

M-8010A-SET	2 x 1 mL
	(M-8010A-M, M-601C)

Method 8010A (Methanol Version)

M-8010A-M	1 x 1 mL
0.2 mg/mL each in MeOH	33 comps.
Benzylchloride	1,2-Dichloroethane
Bromobenzene	1,1-Dichloroethylene
Bromoform	<i>trans</i> -1,2-Dichloroethylene
Bromomethane	1,2-Dichloropropane
Carbon tetrachloride	<i>cis</i> -1,3-Dichloropropylene *
Chlorobenzene	<i>trans</i> -1,3-Dichloropropylene **
Chloroethane	Methylene chloride
Chloroform	1,1,1,2-Tetrachloroethane
Chloromethane	1,1,2,2-Tetrachloroethane
Dibromochloromethane	Tetrachloroethylene
Dibromomethane	1,1,1-Trichloroethane
1,2-Dichlorobenzene	1,1,2-Trichloroethane
1,3-Dichlorobenzene	Trichloroethylene
1,4-Dichlorobenzene	Trichlorofluoromethane
Dichlorobromomethane	1,2,3-Trichloropropane
Dichlorodifluoromethane	Vinyl chloride
1,1-Dichloroethane	

* 1.06 times conc.
** 0.94 times conc.

M-601C	1 x 1 mL
0.2 mg/mL in MeOH	
2-Chloroethylvinyl ether	

Method 8010A Acetonitrile Version

Method 8010A (Acetonitrile Version)

M-8010A	1 x 1 mL	
0.2 mg/mL each in AcCN	34 comps.	
Benzylchloride	1,2-Dichlorobenzene	Methylene chloride
Bromobenzene	1,3-Dichlorobenzene	1,1,1,2-Tetrachloroethane
Bromoform	1,4-Dichlorobenzene	1,1,2,2-Tetrachloroethane
Bromomethane	Dichlorobromomethane	Tetrachloroethylene
Carbon tetrachloride	Dichlorodifluoromethane	1,1,1-Trichloroethane
Chlorobenzene	1,1-Dichloroethane	1,1,2-Trichloroethane
Chloroethane	1,2-Dichloroethane	Trichloroethylene
2-Chloroethylvinyl ether	1,1-Dichloroethylene	Trichlorofluoromethane
Chloroform	<i>trans</i> -1,2-Dichloroethylene	1,2,3-Trichloropropane
Chloromethane	1,2-Dichloropropane	Vinyl chloride
Dibromochloromethane	<i>cis</i> -1,3-Dichloropropylene *	
Dibromomethane	<i>trans</i> -1,3-Dichloropropylene **	

*1.06 times conc.
**0.94 times conc.

Internal & Surrogate Standard

M-8010-IS/SS	1 x 1 mL
M-8010-IS/SS-PAK	5 x 1 mL
150 µg/mL each in MeOH	SAVE
	3 comps.

4-Bromochlorobenzene
4-Bromofluorobenzene
Bromochloromethane



Method 8010B Halogenated VOCs by GC/ELCD (Hall)

Halogenated Volatiles (Acetonitrile Version)

M-8010A	1 x 1 mL
0.2 mg/mL each in AcCN	34 comps.
Benzylchloride	1,1-Dichloroethane
Bromobenzene	1,2-Dichloroethane
Bromoform	1,1-Dichloroethylene
Bromomethane	trans-1,2-Dichloroethylene
Carbon tetrachloride	1,2-Dichloropropane
Chlorobenzene	cis-1,3-Dichloropropylene *
Chloroethane	trans-1,3-Dichloropropylene **
2-Chloroethylvinyl ether	Methylene chloride
Chloroform	1,1,1,2-Tetrachloroethane
Chloromethane	1,1,2,2-Tetrachloroethane
Dibromochloromethane	Tetrachloroethylene
Dibromomethane	1,1,1-Trichloroethane
1,2-Dichlorobenzene	1,1,2-Trichloroethane
1,3-Dichlorobenzene	Trichloroethylene
1,4-Dichlorobenzene	Trichlorofluoromethane
Dichlorobromomethane	1,2,3-Trichloropropane
Dichlorodifluoromethane	Vinyl chloride

* 1.06 times conc.
** 0.94 times conc.

Halogenated Volatiles (Methanol Versions)

Mix #1	
M-8010B	1 x 1 mL
0.2 mg/mL each in MeOH	40 comps.
Allyl chloride	1,1-Dichloroethane
Bromobenzene	1,2-Dichloroethane
Bromoform	1,1-Dichloroethane
Bromomethane	trans-1,2-Dichloroethane
Carbon tetrachloride	1,2-Dichloropropane
Chlorobenzene	1,3-Dichloro-2-propanol
Chloroethane	cis-1,3-Dichloropropene *
2-Chloroethanol	trans-1,3-Dichloropropene **
Chloroform	Ethylene dibromide
1-Chlorohexane	Methylene chloride
Chloromethane	1,1,1,2-Tetrachloroethane
4-Chlorotoluene	1,1,2,2-Tetrachloroethane
Dibromochloromethane	Tetrachloroethene
1,2-Dibromo-3-chloropropane	1,1,1-Trichloroethane
Dibromomethane	1,1,2-Trichloroethane
1,2-Dichlorobenzene	Trichloroethene
1,3-Dichlorobenzene	Trichlorofluoromethane
1,4-Dichlorobenzene	1,2,3-Trichloropropane
Dichlorobromomethane	Vinyl chloride
1,4-Dichloro-2-butene	
Dichlorodifluoromethane	

* 1.06 times conc.
** 0.94 times conc.

Mix #2

M-8021B-X1	1 x 1 mL
0.2 mg/mL each in MeOH	5 comps.
Benzyl chloride	bis(2-Chloro-1-methylethyl)ether
bis(2-Chloroethoxy)methane	Epichlorohydrin
2-Chloroethylvinyl ether	

Internal and Surrogate Standard

M-8010-IS/SS		1 x 1 mL
M-8010-IS/SS-PAK	SAVE	5 x 1 mL
150 µg/mL each in MeOH		3 comps.
4-Bromochlorobenzene	4-Bromofluorobenzene	
Bromochloromethane		

Surrogate Standard

M-001R		1 x 1 mL
M-001R-PAK	SAVE	5 x 1 mL
20 mg/mL each in MeOH		3 comps
Bromochloromethane	2-Bromo-1-chloropropane	
1,4-Dichlorobutane		

Halogenated Volatiles

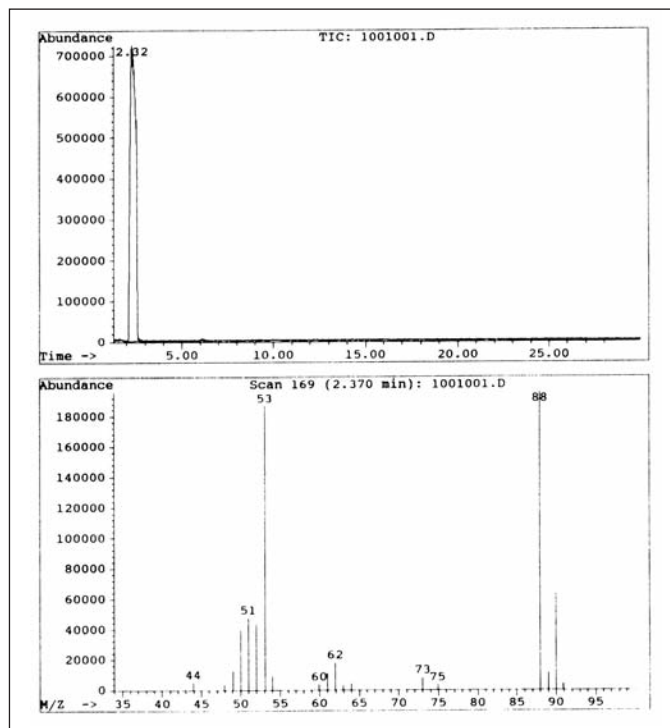
M-8021B-X2	1 x 1 mL
0.2 mg/mL each in Pentane	2 comps.
Bromoacetone	Chloromethylmethyl ether
APP-9-030	1 x 1 mL
100 µg/mL in MeOH	
Bromodichloromethane	
APP-9-130	1 x 1 mL
100 µg/mL in MeOH	
Methyl iodide	

Chloroprene (Xylene-Free)

APP-9-048-R1	1 x 1 mL
100 µg/mL in MeOH	
APP-9-048-R1-2X	1 x 1 mL
200 µg/mL in MeOH	
APP-9-048-R1-20X	1 x 1 mL
2000 µg/mL in MeOH	
Chloroprene	

We have synthesized Pure Chloroprene !!

Unlike traditional sources, this Chloroprene does not contain any xylenes and is not contaminated with extraneous solvents and by-products of commercial Chloroprene. It will facilitate quantification of analytes by **EPA Methods 524.2, 502.2, 8010, 8021 and 8240/8260** without interference from the xylenes previously present.



Method 8011 DBCP & EDB by GC/MS

M-504-10X		1 x 1 mL
M-504-10X-PAK	SAVE	5 x 1 mL
2.0 mg/mL each in MeOH		2 comps.
1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (EDB)	



EPA Method 8000 Series

Method 8015-8020

Method 8015A (Rev 1, July 1992) Non-Halogenated Volatile Organics by GC/FID

M-8015A 0.2 mg/mL each in MeOH	1 x 1 mL 4 comps.
M-8015A-10X 2.0 mg/mL each in MeOH	1 x 1 mL 4 comps.
Diethyl ether	Methyl ethyl ketone
Ethanol	Methyl isobutyl ketone

Non-Halogenated Volatile Organics

M-8015-ASL 100 µg/mL each in MeOH	1 x 1 mL 12 comps.	Alternate Source
Acetonitrile	Ethyl methacrylate	
Acrylamide	Isobutyl alcohol	
2-Butanone	Methacrylonitrile	
Diethyl ether	Methyl methacrylate	
1,4-Dioxane	4-Methyl-2-pentanone	
Ethanol	Propionitrile	

Internal Standard

M-8015B-IS-10X 2.0 mg/mL each in Water	1 x 1 mL 3 comps.
2-Chloroacrylonitrile	Hexafluoro-2-propanol
Hexafluoro-2-methyl-2-propanol	

Method 8015B Non-Halogenated Organics by GC/FID

M-8015B/5031-R-SET set of 27 x 1 mL
Each at 10 mg/mL in H₂O

Compound	Cat. No.	1 mL
Acetone	M-8015B/5031-01	
Acetonitrile	M-8015B/5031-02	
Acrolein	M-8015B/5031-03	
Acrylonitrile	M-8015B/5031-04	
Allyl alcohol	M-8015B/5031-05	
1-Butanol	M-8015B/5031-06	
t-Butanol	M-8015B/5031-07	
Crotonaldehyde	M-8015B/5031-08	
Diethyl ether	M-8015B/5031-09	
p-Dioxane	M-8015B/5031-10	
Ethanol	M-8015B/5031-11	
Ethyl acetate	M-8015B/5031-12	
Ethylene glycol	M-8015B/5031-13	
Ethylene oxide (5.0 mg/mL)	M-8015B/5031-14-R1	
Isobutyl alcohol	M-8015B/5031-15	
Isopropanol	M-8015B/5031-16	
Methanol	M-8015B/5031-17	
Methyl ethyl ketone	M-8015B/5031-18	
4-Methyl-2-pentanone	M-8015B/5031-19	
N-Nitrosodi-n-butylamine (0.5 mg/mL)	M-8015B/5031-20	
Paraldehyde	M-8015B/5031-21	
2-Pentanone	M-8015B/5031-22	
2-Picoline	M-8015B/5031-23	
1-Propanol	M-8015B/5031-24	
Propionitrile	M-8015B/5031-25	
Pyridine	M-8015B/5031-26	
o-Toluidine	M-8015B/5031-27	

Method 5031 GC/FID Internal Standards for Method 8015B/5031 Azeotropic Distillation

M-8260/5031-IS-FID 5.0 mg/mL each in H ₂ O	1 x 1 mL 3 comps.
2-Chloroacetonitrile	Hexafluoro-2-propanol
Hexafluoro-2-methyl-2-propanol	

Technical Note

Method 5031 describes the separation procedures for non-purgeable, water-soluble and volatile organic compounds in aqueous samples of leachates from solid matrices using azeotropic distillation.

Method 8015B is the GC/FID analytical method of analysis. Fuels referenced for analysis by method 8015B can be found in LUFT/LUST.

Method 8020 Aromatic Volatiles by PID

Aromatic Volatile Analytes

M-8020 NEW 0.2 mg/mL each in MeOH	1 x 1 mL 10 comps.
M-8020-10X	1 x 1 mL
M-8020-10X-PAK	5 x 1 mL
2.0 mg/mL each in MeOH	10 comps.

SAVE

Benzene	Ethylbenzene
Chlorobenzene	Toluene
1,2-Dichlorobenzene	o-Xylene
1,3-Dichlorobenzene	m-Xylene
1,4-Dichlorobenzene	p-Xylene

M-8020B-R1	1 x 1 mL
M-8020B-R1-PAK	5 x 1 mL
2.0 mg/mL each in MeOH	13 comps.

SAVE

Benzene	Pyridine
Chlorobenzene	Thiophenol
1,2-Dichlorobenzene	Toluene
1,3-Dichlorobenzene	o-Xylene
1,4-Dichlorobenzene	m-Xylene
Ethylbenzene	p-Xylene
2-Picoline	

Performance Check Solution

M-8020-QC	1 x 1 mL
M-8020-QC-PAK	5 x 1 mL
2.0 mg/mL in MeOH	

SAVE

Methyl t-butyl ether

Internal Standards

M-8020-IS	1 x 1 mL
M-8020-IS-PAK	5 x 1 mL
0.2 mg/mL each in MeOH	2 comps.
M-8020-IS-10X	1 x 1 mL
M-8020-IS-10X-PAK	5 x 1 mL
2.0 mg/mL each in MeOH	2 comps.

SAVE

SAVE

4-Bromofluorobenzene α,α,α-Trifluorotoluene

Surrogate Standards

M-8020-SS	1 x 1 mL
M-8020-SS-PAK	5 x 1 mL
2.0 mg/mL each in MeOH	3 comps.

SAVE

4-Bromochlorobenzene Fluorobenzene
1,4-Difluorobenzene

M-8020-SS-1	1 x 1 mL
2.0 mg/mL each in MeOH	

4-Bromochlorobenzene

Combined ISTD/SS Solution

M-8020-IS/SS-ASL	1 x 1 mL
M-8020-IS/SS-ASL-PAK	5 x 1 mL
1.5 mg/mL each in MeOH	5 comps.

SAVE

4-Bromochlorobenzene Fluorobenzene
p-Bromofluorobenzene α,α,α-Trifluorotoluene
1,4-Difluorobenzene



Method 8021B Purgeable Volatiles by PID/ELCD in Series

Method 8021 is used to determine volatile organic compounds in a variety of solid waste matrices using PID/ELCD detectors in series. AccuStandard segregated the analyte list into formulations that provide the widest adaptability to various types of samples and appropriate sample introduction techniques mentioned in the method.

54 Liquid Components

Benzene (01)	1,1-Dichloropropene (33)
Bromobenzene (02)	<i>cis</i> -1,3-Dichloropropene (34A) *
Bromochloromethane (03)	<i>trans</i> -1,3-Dichloropropene (34B) **
Bromodichloromethane (04)	Ethylbenzene (35)
Bromoform (05)	Hexachlorobutadiene (36)
<i>n</i> -Butylbenzene (07)	Isopropylbenzene (<i>Cumene</i>) (37)
<i>sec</i> -Butylbenzene (08)	<i>p</i> -Isopropyltoluene (<i>p-Cymene</i>) (38)
<i>tert</i> -Butylbenzene (09)	Methylene chloride (39)
Carbon tetrachloride (10)	Naphthalene (40)
Chlorobenzene (11)	<i>n</i> -Propylbenzene (41)
Chloroform (13)	Styrene (42)
2-Chlorotoluene (15)	1,1,1,2-Tetrachloroethane (43)
4-Chlorotoluene (16)	1,1,2,2-Tetrachloroethane (44)
Dibromochloromethane (17)	Tetrachloroethene (45)
1,2-Dibromo-3-chloropropane (18)	Toluene (46)
1,2-Dibromoethane (19)	1,2,3-Trichlorobenzene (47)
Dibromomethane (20)	1,2,4-Trichlorobenzene (48)
1,2-Dichlorobenzene (21)	1,1,1-Trichloroethane (49)
1,3-Dichlorobenzene (22)	1,1,2-Trichloroethane (50)
1,4-Dichlorobenzene (23)	Trichloroethene (51)
1,1-Dichloroethane (25)	1,2,3-Trichloropropane (53)
1,2-Dichloroethane (26)	1,2,4-Trimethylbenzene (54)
1,1-Dichloroethene (27)	1,3,5-Trimethylbenzene (55)
<i>cis</i> -1,2-Dichloroethene (28)	<i>o</i> -Xylene (57)
<i>trans</i> -1,2-Dichloroethene (29)	<i>m</i> -Xylene (58)
1,2-Dichloropropane (30)	<i>p</i> -Xylene (59)
1,3-Dichloropropane (31)	
2,2-Dichloropropane (32)	

* *cis* (1.06 x conc.)
** *trans* (0.94 x conc.)

6 Gas Components

Bromomethane (06)	Dichlorodifluoromethane (24)
Chloroethane (12)	Trichlorofluoromethane (52)
Chloromethane (14)	Vinyl chloride (56)

All 60 liquid & gas components in One Solution

Liquids (54 comps.) and Gases (6 comps.)

M-502		1 x 1 mL
M-502-PAK	SAVE	5 x 1 mL
0.2 mg/mL each in MeOH		
M-502-10X		1 x 1 mL
M-502-10X-PAK	SAVE	5 x 1 mL
2.0 mg/mL each in MeOH		
		60 comps.

59 Component Set

As a complete set of each component in individual ampules.

M-502-SET	0.2 mg/mL in MeOH	59 x 1 mL
M-502-10X-SET	2.0 mg/mL in MeOH	59 x 1 mL

Individual Component Solutions

To order, specify identity (#) and conc. (0.2 or 2.0 mg/mL)

M-502-#	0.2 mg/mL in MeOH	1 x 1 mL
M-502-#-10X	2.0 mg/mL in MeOH	1 x 1 mL

M-502-34A & M-502-34B only available as mixture: M-502-34R		
M-502-34-R		1 x 1 mL
0.4 mg/mL each in MeOH		
M-502-34-R-10X		1 x 1 mL
4.0 mg/mL each in MeOH		

cis-1,3-Dichloropropene *trans*-1,3-Dichloropropene

Individual Component Neats

To order, specify identity

M-502-#N	1 x 1 gram
except M-502-32N & M-502-43N	1 x 1 gram

Halogenated Non-Aromatic Volatiles Solution #1

M-8021B-NAV		1 x 1 mL
M-8021B-NAV-PAK	SAVE	5 x 1 mL
0.2 mg/mL each in MeOH		
Bromochloromethane	Dichloromethane	
Bromodichloromethane	1,2-Dichloropropane	
Bromoform	1,3-Dichloropropane	
Bromomethane	2,2-Dichloropropane	
Carbon tetrachloride	1,1-Dichloropropene	
Chloroethane	<i>cis</i> -1,3-Dichloropropene	
Chloroform	<i>trans</i> -1,3-Dichloropropene	
Chlorodibromomethane	Hexachlorobutadiene	
Chloromethane	Tetrachloroethene	
1,2-Dibromo-3-chloropropane	1,1,1,2-Tetrachloroethane	
1,2-Dibromoethane	1,1,2,2-Tetrachloroethane	
Dibromomethane	Trichloroethene	
Dichlorodifluoromethane	1,1,1-Trichloroethane	
1,1-Dichloroethane	1,1,2-Trichloroethane	
1,2-Dichloroethane	Trichlorofluoromethane	
1,1-Dichloroethene	1,2,3-Trichloropropane	
<i>cis</i> -1,2-Dichloroethene	Vinyl chloride	
<i>trans</i> -1,2-Dichloroethene		

Aromatic Volatiles Solution #2

M-8021B-AV		1 x 1 mL
M-8021B-AV-PAK	SAVE	5 x 1 mL
0.2 mg/mL each in MeOH		
Benzene	<i>p</i> -Isopropyltoluene	
Bromobenzene	Naphthalene	
<i>n</i> -Butylbenzene	<i>n</i> -Propylbenzene	
<i>sec</i> -Butylbenzene	Styrene	
<i>tert</i> -Butylbenzene	Toluene	
Chlorobenzene	1,2,3-Trichlorobenzene	
2-Chlorotoluene	1,2,4-Trichlorobenzene	
4-Chlorotoluene	1,2,4-Trimethylbenzene	
1,2-Dichlorobenzene	1,3,5-Trimethylbenzene	
1,3-Dichlorobenzene	<i>o</i> -Xylene	
1,4-Dichlorobenzene	<i>m</i> -Xylene	
Ethylbenzene	<i>p</i> -Xylene	
Isopropylbenzene		

Halogenated Volatiles Solution #3

M-8021B-X1		1 x 1 mL
0.2 mg/mL each in MeOH		
Allyl chloride	bis(2-Chloroisopropyl)ether	
Benzyl chloride	Chloroprene (Xylene-free)	
2-Chloroethanol	1,3-Dichloro-2-propanol	
2-Chloroethylvinyl ether	Epichlorohydrin	

Halogenated Volatiles Solution #4

M-8021B-X2		1 x 1 mL
0.2 mg/mL each in Pentane		
Bromoacetone	Chloromethyl methyl ether	



EPA Method 8000 Series

Method 8021-8033

Method 8021B Purgeable Volatiles by PID/ELCD (Hall)

Internal Standard Solutions

M-8021B-IS		1 x 1 mL
M-8021B-IS-PAK	SAVE	5 x 1 mL
<i>5 µg/mL each in MeOH</i>		
M-8021B-IS-10X		1 x 1 mL
M-8021B-IS-10X-PAK	SAVE	5 x 1 mL
<i>50 µg/mL each in MeOH</i>		
M-8021B-IS-100X		1 x 1 mL
M-8021B-IS-100X-PAK	SAVE	5 x 1 mL
<i>500 µg/mL each in MeOH</i>		
2-Bromo-1-chloropropane	Fluorobenzene	

Purgeable Internal Standards

M-001R-0.75X		1 x 1 mL
M-001R-0.75X-PAK	SAVE	5 x 1 mL
<i>15 mg/mL each in MeOH</i>		
M-001R-0.075X		1 x 1 mL
M-001R-0.075X-PAK	SAVE	5 x 1 mL
<i>1.5 mg/mL each in MeOH</i>		
M-001R-0.0075X		1 x 1 mL
M-001R-0.0075X-PAK	SAVE	5 x 1 mL
<i>150 µg/mL each in MeOH</i>		
Bromochloromethane	2-Bromo-1-chloropropane	
1,4-Dichlorobutane		

Surrogate Standard Solutions

M-8021B-SS		1 x 1 mL
M-8021B-SS-PAK	SAVE	5 x 1 mL
<i>15 µg/mL each in MeOH</i>		
M-8021B-SS-10X		1 x 1 mL
M-8021B-SS-10X-PAK	SAVE	5 x 1 mL
<i>150 µg/mL each in MeOH</i>		
M-8021B-SS-100X		1 x 1 mL
M-8021B-SS-100X-PAK	SAVE	5 x 1 mL
<i>1,500 µg/mL each in MeOH</i>		
4-Bromochlorobenzene	1,4-Dichlorobutane	

Surrogate Standards

M-8021-SS		1 x 1 mL
M-8021-SS-PAK	SAVE	5 x 1 mL
<i>2.0 mg/mL each in MeOH</i>		
4-Bromochlorobenzene	1,4-Dichlorobutane	

M-8021-SS-M		1 x 1 mL
M-8021-SS-M-PAK	SAVE	5 x 1 mL
<i>2.0 mg/mL each in MeOH</i>		
Bromochloromethane	1,4-Dichlorobutane	

M-001R		1 x 1 mL
M-001R-PAK	SAVE	5 x 1 mL
<i>20 mg/mL each in MeOH</i>		
Bromochloromethane	2-Bromo-1-chloropropane	
1,4-Dichlorobutane		

M-8021A-SS		1 x 1 mL
M-8021A-SS-PAK	SAVE	5 x 1 mL
<i>20 mg/mL each in MeOH</i>		
4-Bromochlorobenzene	1,4-Dichlorobutane	
Bromochloromethane	2-Bromo-1-chloropropane	

Chloroprene Solution (Xylene-Free)

APP-9-048-R1-2X		1 x 1 mL
<i>0.2 mg/mL in MeOH</i>		
Chloroprene		

Method 8030A Acrolein & Acrylonitrile by GC/FID

M-603-10X		1 x 1 mL
<i>10 mg/mL each in Water</i>		
Acrolein	Acrylonitrile	2 comps.

Method 8031 Acrylonitrile by GC/NPD

APP-9-008-10X		1 x 1 mL
APP-9-008-10X-PAK	SAVE	5 x 1 mL
<i>1.0 mg/mL in MeOH</i>		
Acrylonitrile		

Method 8032/8032A Acrylamide by GC/ECD

Acrylamide		
M-8032		1 x 1 mL
M-8032-PAK	SAVE	5 x 1 mL
<i>1.0 mg/mL in MeOH</i>		
Acrylamide		

Brominated Analyte

M-8032B		1 x 1 mL
M-8032B-PAK	SAVE	5 x 1 mL
<i>0.1 mg/mL in Ethyl acetate</i>		
2,3-Dibromopropionamide		

Internal Standard

M-8032-IS		1 x 1 mL
M-8032-IS-PAK	SAVE	5 x 1 mL
<i>0.1 mg/mL in Ethyl acetate</i>		
Dimethyl phthalate		

Method 8033 Acrylonitrile by GC/NPD

Acrylonitrile		
M-8033		1 x 1 mL
M-8033-PAK	SAVE	5 x 1 mL
<i>1,000 µg/mL in H₂O</i>		
Acrylonitrile		

Buy AccuPaks™
Save 20-40% 5 x 1 mL



Technical Note

AccuStandard's R & D dept. synthesized Xylene-free Chloroprene. Since it contains no significant chemical impurities, the APP-9-048-R1-2X can be combined with any of the other formulations.



Method 8040 Phenols, PFB Derivatives by GC/ECD

Phenols, PFB Derivatives Set

M-8040-PFB-SET 19 x 1 mL
Each at 0.2 mg/mL in Isopropyl alcohol

- | | |
|---|---------------------------------|
| (01) 4-Chloro-3-cresol | (11) Dinoseb |
| (02) o-Chlorophenol | (12) 2-Methyl-4,6-dinitrophenol |
| (03) m-Cresol | (13) o-Nitrophenol |
| (04) o-Cresol | (14) p-Nitrophenol |
| (05) p-Cresol | (15) Pentachlorophenol |
| (06) 2-Cyclohexyl-4,6-dinitrophenol (Dinex) | (16) Phenol |
| (07) 2,4-Dichlorophenol | (17) 2,3,4,6-Tetrachlorophenol |
| (08) 2,6-Dichlorophenol | (18) 2,4,5-Trichlorophenol |
| (09) 2,4-Dimethylphenol | (19) 2,4,6-Trichlorophenol |
| (10) 2,4-Dinitrophenol | |

Phenols, PFB Derivatives - Mix A

M-8040A-R-PFB 1 x 1 mL
M-8040A-R-PFB-PAK SAVE 5 x 1 mL
0.2 mg/mL each in MeOH 10 comps.

- | | |
|--|-----------------------|
| 4-Chloro-3-cresol | o-Nitrophenol |
| o-Cresol | p-Nitrophenol |
| 2-Cyclohexyl-4,6-dinitrophenol (Dinex) | 2,4,6-Trichlorophenol |
| 2,4-Dichlorophenol | Pentachlorophenol |
| 2-Methyl-4,6-dinitrophenol | Phenol |

Phenols, PFB Derivatives - Mix B

M-8040B-R-PFB 1 x 1 mL
M-8040B-R-PFB-PAK SAVE 5 x 1 mL
0.2 mg/mL each in MeOH 9 comps.

- | | |
|--------------------|---------------------------|
| o-Chlorophenol | 2,4-Dinitrophenol |
| m-Cresol | Dinoseb |
| p-Cresol | 2,3,4,6-Tetrachlorophenol |
| 2,6-Dichlorophenol | 2,4,5-Trichlorophenol |
| 2,4-Dimethylphenol | |

Technical Note

With our synthesis capabilities, AccuStandard is the first standards manufacturing company to also offer the PFB derivatives. We provide the largest selection of certified standards, which allows your laboratory to optimize instrumentation efficiency.

Surrogate Standard

M-8040-SS 1 x 1 mL
M-8040-SS-PAK SAVE 5 x 1 mL
2.0 mg/mL each in Isopropyl alcohol 2 comps.

- | | |
|----------------|----------------------|
| 2-Fluorophenol | 2,4,6-Tribromophenol |
|----------------|----------------------|

Surrogate Standard, PFB Derivatives

M-8040-SS-PFB 1 x 1 mL
M-8040-SS-PFB-PAK SAVE 5 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

- | | |
|----------------|----------------------|
| 2-Fluorophenol | 2,4,6-Tribromophenol |
|----------------|----------------------|

Method 8040A Phenols by GC/FID

Phenol Set

M-8040-SET 19 x 1 mL
Each at 1.0 mg/mL in MeOH

- | | |
|---|---------------------------------|
| (01) 4-Chloro-3-cresol | (11) Dinoseb |
| (02) o-Chlorophenol | (12) 2-Methyl-4,6-dinitrophenol |
| (03) m-Cresol | (13) o-Nitrophenol |
| (04) o-Cresol | (14) p-Nitrophenol |
| (05) p-Cresol | (15) Pentachlorophenol |
| (06) 2-Cyclohexyl-4,6-dinitrophenol (Dinex) | (16) Phenol |
| (07) 2,4-Dichlorophenol | (17) 2,3,4,6-Tetrachlorophenol |
| (08) 2,6-Dichlorophenol | (18) 2,4,5-Trichlorophenol |
| (09) 2,4-Dimethylphenol | (19) 2,4,6-Trichlorophenol |
| (10) 2,4-Dinitrophenol | |

Mix A

M-8040A-R 1 x 1 mL
M-8040A-R-PAK SAVE 5 x 1 mL
2.0 mg/mL each in Isopropyl alcohol 10 comps.

- | | |
|--|-----------------------|
| 4-Chloro-3-cresol | o-Nitrophenol |
| o-Cresol | p-Nitrophenol |
| 2-Cyclohexyl-4,6-dinitrophenol (Dinex) | 2,4,6-Trichlorophenol |
| 2,4-Dichlorophenol | Pentachlorophenol |
| 2-Methyl-4,6-dinitrophenol | Phenol |

Mix B

M-8040B-R 1 x 1 mL
M-8040B-R-PAK SAVE 5 x 1 mL
2.0 mg/mL each in Isopropyl alcohol 9 comps.

- | | |
|--------------------|---------------------------|
| o-Chlorophenol | 2,4-Dinitrophenol |
| m-Cresol | Dinoseb |
| p-Cresol | 2,3,4,6-Tetrachlorophenol |
| 2,6-Dichlorophenol | 2,4,5-Trichlorophenol |
| 2,4-Dimethylphenol | |

Phenols QC Check Standard

M-8040A-ASL 1 x 1 mL
M-8040A-ASL-PAK Alternate Source SAVE 1 x 1 mL
100 µg/mL each in Isopropyl alcohol
M-8040A-ASL-20X 1 x 1 mL
2000 µg/mL each in Isopropyl alcohol 19 comps.

- | | |
|--------------------------------|---------------------------|
| Dinoseb | 4,6-Dinitro-o-cresol |
| 4-Chloro-3-methylphenol | 2,4-Dinitrophenol |
| 2-Chlorophenol | 2-Nitrophenol |
| o-Cresol | 4-Nitrophenol |
| m-Cresol | Pentachlorophenol |
| p-Cresol | Phenol |
| 2-Cyclohexyl-4,6-dinitrophenol | 2,3,4,6-Tetrachlorophenol |
| 2,4-Dichlorophenol | 2,4,5-Trichlorophenol |
| 2,6-Dichlorophenol | 2,4,6-Trichlorophenol |
| 2,4-Dimethylphenol | |

Method 8040/8040A Bromo Phenols and Anisoles

Bromo Phenols

Each at 100 µg/mL in Toluene

Compound	Cat. No.	1 mL	Compound	Cat. No.	1 mL
3-Bromophenol	BP-003S		2,4,5-Tribromophenol	BP-245S	
4-Bromophenol	BP-004S		2,4,6-Tribromophenol	BP-246S	
2,3-Dibromophenol	BP-023S		3,4,5-Tribromophenol	BP-345S	
2,4-Dibromophenol	BP-024S		2,3,4,5-Tetrabromophenol	BP-2345S	
2,5-Dibromophenol	BP-025S		2,3,4,6-Tetrabromophenol	BP-2346S	
2,6-Dibromophenol	BP-026S		2,3,5,6-Tetrabromophenol	BP-2356S	
2,3,4-Tribromophenol	BP-234S		Pentabromophenol	BP-23456S	
3,5-Dibromophenol	BP-035S				



Bromo Anisoles (Methyl Esters)

Each at 50 µg/mL in Methanol

Compound	Cat. No.	1 mL
2-Bromoanisole	BAN-01	
3-Bromoanisole	BAN-02	
4-Bromoanisole	BAN-03	
2,3-Dibromoanisole	BAN-04	
2,4-Dibromoanisole	BAN-05	
2,5-Dibromoanisole	BAN-06	
2,6-Dibromoanisole	BAN-07	
3,5-Dibromoanisole	BAN-08	
2,4,5-Tribromoanisole	BAN-09	
2,4,6-Tribromoanisole	BAN-10	



EPA Method 8000 Series

Method 8041-8061

Method 8041 Phenols by GC-FID or ECD as the Derivatives

RCRA Target Phenols Solution

M-8041		1 x 1 mL
M-8041-PAK	SAVE	5 x 1 mL
1.0 mg/mL each in Isopropanol		
4-Chloro-3-methylphenol	4-Methylphenol (<i>p</i> -Cresol)	
2-Chlorophenol	2-Nitrophenol	
2-Cyclohexyl-4,6-dinitrophenol	4-Nitrophenol	
2,4-Dichlorophenol	Pentachlorophenol	
2,6-Dichlorophenol	Phenol	
2,4-Dimethylphenol	2,3,4,5-Tetrachlorophenol	
Dinoseb (<i>DNBP</i>)	2,3,4,6-Tetrachlorophenol	
2,4-Dinitrophenol	2,3,5,6-Tetrachlorophenol	
2-Methyl-4,6-dinitrophenol	2,4,5-Trichlorophenol	
2-Methylphenol (<i>o</i> -Cresol)	2,4,6-Trichlorophenol	
3-Methylphenol (<i>m</i> -Cresol)		

Technical Note

The method analytes were formulated into two distinct solutions to meet the needs of laboratories analyzing only the RCRA analytes or the combined RCRA/non-RCRA analytes.

Non-RCRA Target Phenols Solution

M-8041-X1		1 x 1 mL
M-8041-X1-PAK	SAVE	5 x 1 mL
1.0 mg/mL each in Isopropanol		
2-Chloro-5-methylphenol	2,5-Dimethylphenol	
4-Chloro-2-methylphenol	2,6-Dimethylphenol	
3-Chlorophenol	3,4-Dimethylphenol	
4-Chlorophenol	2,5-Dinitrophenol	
2,3-Dichlorophenol	3-Nitrophenol	
2,5-Dichlorophenol	2,3,4-Trichlorophenol	
3,4-Dichlorophenol	2,3,5-Trichlorophenol	
3,5-Dichlorophenol	2,3,6-Trichlorophenol	
2,3-Dimethylphenol	3,4,5-Trichlorophenol	

Internal Standards

M-8041-IS		1 x 1 mL
M-8041-IS-PAK	SAVE	5 x 1 mL
50 µg/mL each in Isopropanol		
M-8041-IS-10X		1 x 1 mL
M-8041-IS-10X-PAK	SAVE	5 x 1 mL
0.5 mg/mL each in Isopropanol		
M-8041-IS-20X		1 x 1 mL
M-8041-IS-20X-PAK	SAVE	5 x 1 mL
1.0 mg/mL each in Isopropanol		
2,5-Dibromotoluene	2,2',5,5'-Tetrabromobiphenyl	

Surrogate Standards

M-8041-SS		1 x 1 mL
M-8041-SS-PAK	SAVE	5 x 1 mL
1.6 µg/mL in Isopropanol		
M-8041-SS-10X		1 x 1 mL
M-8041-SS-10X-PAK	SAVE	5 x 1 mL
16 µg/mL in Isopropanol		
M-8041-SS-100X		1 x 1 mL
M-8041-SS-100X-PAK	SAVE	5 x 1 mL
160 µg/mL in Isopropanol		
M-8041-SS-625X		1 x 1 mL
M-8041-SS-625X-PAK	SAVE	5 x 1 mL
1.0 mg/mL in Isopropanol		
2,4-Dibromophenol		

Method 8060 Phthalate Esters by GC/ECD

Phthalate Esters

M-8060		1 x 1 mL
M-8060-PAK	SAVE	5 x 1 mL
2.0 mg/mL each in Isooctane		

Benzyl butyl phthalate	Di- <i>n</i> -butyl phthalate
Diethyl phthalate	Di- <i>n</i> -octyl phthalate
Dimethyl phthalate	bis(2-Ethylhexyl)phthalate

M-8060-QC		1 x 1 mL
M-8060-QC-PAK	SAVE	5 x 1 mL
At stated conc. in MeOH		

Benzyl butyl phthalate (0.1 mg/mL)	Di- <i>n</i> -butyl phthalate (0.25 mg/mL)
Diethyl phthalate (0.25 mg/mL)	Di- <i>n</i> -octyl phthalate (0.5 mg/mL)
Dimethyl phthalate (0.25 mg/mL)	bis(2-Ethylhexyl)phthalate (0.5 mg/mL)

Method 8061A Phthalate Esters by GC/ECD

Phthalate Esters

M-8061-R1		1 x 1 mL
M-8061-R1-PAK	SAVE	5 x 1 mL
1.0 mg/mL each in Hexane		

bis(2- <i>n</i> -Butoxyethyl)phthalate	Dimethyl phthalate
Butyl benzyl phthalate	Dinonyl phthalate
Diamyl phthalate	Di- <i>n</i> -octyl phthalate
Di- <i>n</i> -butyl phthalate	bis(2-Ethoxyethyl)phthalate
Dicyclohexyl phthalate	bis(2-Ethylhexyl)phthalate
Diethyl phthalate	bis(2-Methoxyethyl)phthalate
Dihexyl phthalate	bis(4-Methyl-2-pentyl)phthalate
Diisobutyl phthalate	

M-8061A		1 x 1 mL
M-8061A-PAK	SAVE	5 x 1 mL
1.0 mg/mL each in Hexane		

Butyl benzyl phthalate	Diethyl phthalate
bis(2-Ethylhexyl)phthalate	Dimethyl phthalate
Di- <i>n</i> -butyl phthalate	Di- <i>n</i> -octyl phthalate

Matrix Spike Solution

M-8061A-MS		1 x 1 mL
M-8061A-MS-PAK	SAVE	5 x 1 mL
2.0 mg/mL each in Acetone		

Butyl benzyl phthalate	bis(2-Ethylhexyl)phthalate
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Internal Standard

M-8061-IS		1 x 1 mL
M-8061-IS-PAK	SAVE	5 x 1 mL
5.0 mg/mL in Hexane		

Benzyl benzoate

Surrogate Standards

M-8061-SS		1 x 1 mL
M-8061-SS-PAK	SAVE	5 x 1 mL
50 µg/mL each in Acetone		
M-8061-SS-10X		1 x 1 mL
M-8061-SS-10X-PAK	SAVE	5 x 1 mL
500 µg/mL each in Acetone		

Dibenzyl phthalate	Diphenyl phthalate
Diphenyl isophthalate	



Method 8070A Nitrosamines by NPD/Reductive Hall or TEA

Nitrosamines

M-8070

1 x 1 mL

M-8070-PAK

SAVE

5 x 1 mL

2.0 mg/mL each in MeOH

3 comps.

N-Nitrosodimethylamine
N-Nitrosodiphenylamine

N-Nitrosodi-*n*-propylamine

Nitrosamines Mix

M-8270-03-ASL

1 x 1 mL

2.0 mg/mL each in CH₂Cl₂

9 comps.

Alternate Source

N-Nitrosodi-*n*-butylamine
N-Nitrosodiethylamine
N-Nitrosodimethylamine
N-Nitrosodiphenylamine
N-Nitrosodi-*n*-propylamine

N-Nitrosomethylethylamine
N-Nitrosomorpholine
N-Nitrosopiperidine
N-Nitrosopyrrolidine

Standards of Interest

Additional Nitrosamines

AccuStandard offers over 20 individual Nitrosamine analytes in various solutions, plus a number of multi-component formulations designed for specific customer applications.

Technical Note

Each ampule contains at least 120% of the stated volume of a solution, allowing easy transfer. Transfer the required amount using a clean calibration syringe. Excess solution can be stored in a tightly capped vial, but this is not recommended. AccuStandard cannot guarantee the integrity of the solution once the ampule has been opened. See the EPA method protocol for storage instructions





EPA Method 8000 Series

Method 8080-8081

Method 8080A Organochlorine Pesticides and PCBs by GC/ECD

Organochlorine Pesticides

M-8080 1 x 1 mL
 M-8080-PAK 5 x 1 mL
 2.0 mg/mL each in Acetone 17 comps.

SAVE

Aldrin	Endosulfan I
α-BHC	Endosulfan II
β-BHC	Endosulfan sulfate
δ-BHC	Endrin
γ-BHC	Endrin aldehyde
4,4'-DDD	Heptachlor
4,4'-DDE	Heptachlor epoxide
4,4'-DDT	Methoxychlor
Dieldrin	

Organochlorine Pesticide QC Standard

M-8080-QC-R 1 x 1 mL
 M-8080-QC-R-PAK 5 x 1 mL
 At stated conc. in Acetone 17 comps.

SAVE

Aldrin (0.02 mg/mL)	Endosulfan I (0.02 mg/mL)
α-BHC (0.02 mg/mL)	Endosulfan II (0.1 mg/mL)
β-BHC (0.02 mg/mL)	Endosulfan sulfate (0.1 mg/mL)
δ-BHC (0.02 mg/mL)	Endrin (0.1 mg/mL)
γ-BHC (0.02 mg/mL)	Endrin aldehyde (0.02 mg/mL)
4,4'-DDD (0.1 mg/mL)	Heptachlor (0.02 mg/mL)
4,4'-DDE (0.02 mg/mL)	Heptachlor epoxide (0.02 mg/mL)
4,4'-DDT (0.1 mg/mL)	Methoxychlor (0.02 mg/mL)
Dieldrin (0.02 mg/mL)	

Internal Standard

M-508-IS 1 x 1 mL
 M-508-IS-PAK 5 x 1 mL
 0.1 mg/mL in MtBE

SAVE

Pentachloronitrobenzene

Surrogate Standard

CLP-032-R 1 x 1 mL
 CLP-032-R-PAK 5 x 1 mL
 0.2 mg/mL each in Acetone 2 comps.

SAVE

Decachlorobiphenyl Tetrachloro-*m*-xylene

Multi-Component Analytes

Polychlorinated Biphenyls, Chlordane & Toxaphene

Each at 1,000 µg/mL in Hexane AccuPAK™ (5 x 1 mL)

SAVE

Aroclors® #	Cat. No.	1 mL	Cat. No.	PAK
Aroclor 1016	C-216S-H-10X		C-216S-H-10X-PAK	
Aroclor 1221	C-221S-H-10X		C-221S-H-10X-PAK	
Aroclor 1232	C-232S-H-10X		C-232S-H-10X-PAK	
Aroclor 1242	C-242S-H-10X		C-242S-H-10X-PAK	
Aroclor 1248	C-248S-H-10X		C-248S-H-10X-PAK	
Aroclor 1254	C-254S-H-10X		C-254S-H-10X-PAK	
Aroclor 1260	C-260S-H-10X		C-260S-H-10X-PAK	
Aroclor 1262	C-262S-H-10X		C-262S-H-10X-PAK	
Aroclor 1268	C-268S-H-10X		C-268S-H-10X-PAK	

Pesticides

Chlordane	P-017S-H-10X	P-017S-H-10X-PAK
Toxaphene	P-093S-H-10X	P-093S-H-10X-PAK

Decomposition Solution

M-1618D 1 x 1 mL
 M-1618D-PAK 5 x 1 mL
 At stated conc. in Acetone 2 comps.

SAVE

p,p'-DDT (2 µg/mL) Endrin (1 µg/mL)

o,p'-DDT and Metabolites

M-8080-OP 1 x 1 mL
 M-8080-OP-PAK 5 x 1 mL
 0.25 mg/mL each in Hexane : Toluene (1:1) 3 comps.

SAVE

o,p'-DDD o,p'-DDE o,p'-DDE o,p'-DDT

Organochlorine Pesticide Mixture

Alternate Source

M-8080A-ASL 1 x 1 mL
 M-8080A-ASL-PAK 5 x 1 mL
 250 µg/mL each in Hexane : Toluene (1:1) 17 comps.

SAVE

Aldrin	Endosulfan I
α-BHC	Endosulfan II
β-BHC	Endosulfan sulfate
δ-BHC	Endrin
γ-BHC	Endrin aldehyde
p,p'-DDD	Heptachlor
p,p'-DDE	Heptachlor epoxide (Isomer B)
p,p'-DDT	Methoxychlor (1000 µg/mL)
Dieldrin	

Method 8080/8081 Matrix Spike Solutions & Surrogates at Working Level

Matrix Spiking Solutions

For Water Samples

CLP-014-5ML 1 x 5 mL
 CLP-014-25ML 1 x 25 mL
 At stated conc. in MeOH 6 comps.

Aldrin (200 ng/mL)	Endrin (500 ng/mL)
4,4'-DDT (500 ng/mL)	Heptachlor (200 ng/mL)
Dieldrin (500 ng/mL)	Lindane (200 ng/mL)

For Waste Samples

CLP-014-5X-5ML 1 x 5 mL
 CLP-014-5X-25ML 1 x 25 mL
 At stated conc. in MeOH 6 comps.

Aldrin (1,000 ng/mL)	Endrin (2,500 ng/mL)
4,4'-DDT (2,500 ng/mL)	Heptachlor (1,000 ng/mL)
Dieldrin (2,500 ng/mL)	Lindane (1,000 ng/mL)

Surrogate Solutions

For Water Samples

CLP-032R-WL-10ML 1 x 10 mL
 CLP-032R-WL-50ML 1 x 50 mL
 CLP-032R-WL-100ML 1 x 100 mL
 1 µg/mL each in Acetone 2 comps.

Decachlorobiphenyl Tetrachloro-*m*-xylene

For Waste Samples

CLP-032R-WL-5X-10ML 1 x 10 mL
 CLP-032R-WL-5X-50ML 1 x 50 mL
 CLP-032R-WL-5X-100ML 1 x 100 mL
 5 µg/mL each in Acetone 2 comps.

Decachlorobiphenyl Tetrachloro-*m*-xylene

EPA Method 8080 / 8081

Ready-to-Inject Working Level Pesticide Standards



Method 8080/8081 7 Point Working Level Pesticide Curves

AccuStandard has expanded the existing organo-halide pesticide standard line to include the working level **Continuing Calibration Check Standard Line** for Method 8080/8081. The working level **CCC Line** revolutionizes the way the analytical chemist prepares standards for pesticide analysis.

M-8080-CAL-SET

All solutions in Isooctane

Components (units in ng/mL)	Level 1	Level 2 (2.5X)	Level 3 (5X)	Level 4 (10X)	Level 5 (25X)	Level 6 (50X)	7 x 1 mL	
							21 comps.	Level 7 (100X)
Aldrin	2	5	10	20	50	100	200	
α-BHC	2	5	10	20	50	100	200	
β-BHC	2	5	10	20	50	100	200	
γ-BHC	2	5	10	20	50	100	200	
δ-BHC	2	5	10	20	50	100	200	
α-Chlordane	2	5	10	20	50	100	200	
γ-Chlordane	2	5	10	20	50	100	200	
4,4'-DDD	4	10	20	40	100	200	400	
4,4'-DDE	4	10	20	40	100	200	400	
4,4'-DDT	4	10	20	40	100	200	400	
Dieldrin	4	10	20	40	100	200	400	
Endosulfan I	2	5	10	20	50	100	200	
Endosulfan II	4	10	20	40	100	200	400	
Endosulfan sulfate	4	10	20	40	100	200	400	
Endrin	4	10	20	40	100	200	400	
Endrin aldehyde	4	10	20	40	100	200	400	
Heptachlor	2	5	10	20	50	100	200	
Heptachlor epoxide	2	5	10	20	50	100	200	
Methoxychlor	20	50	100	200	500	1,000	2,000	
Tetrachloro- <i>m</i> -xylene	2	5	10	20	50	100	200	
Decachlorobiphenyl	4	10	20	40	100	200	400	

Level 3 Daily QC Working Level CCC (for low level curves)

M-8080-WL-5X-10ML	1 x 10 mL
M-8080-WL-5X-25ML	1 x 25 mL
M-8080-WL-5X-50ML	1 x 50 mL

At stated conc. in Isooctane

Level 4 Daily QC Working Level CCC (for higher level curves)

M-8080-WL-10X-10ML	1 x 10 mL
M-8080-WL-10X-25ML	1 x 25 mL
M-8080-WL-10X-50ML	1 x 50 mL

At stated conc. in Isooctane

Level 5 Daily QC Working Level CCC (for higher level curves)

M-8080-WL-25X-10ML	1 x 10 mL
M-8080-WL-25X-25ML	1 x 25 mL
M-8080-WL-25X-50ML	1 x 50 mL

At stated conc. in Isooctane

M-8080-R2-CAL-SET

All solutions in Isooctane

Components (units in ng/mL)	Level 1	Level 2 (2.5X)	Level 3 (5X)	Level 4 (10X)	Level 5 (25X)	Level 6 (50X)	7 x 1 mL	
							23 comps.	Level 7 (100X)
Aldrin	2	5	10	20	50	100	200	
α-BHC	2	5	10	20	50	100	200	
β-BHC	2	5	10	20	50	100	200	
γ-BHC	2	5	10	20	50	100	200	
δ-BHC	2	5	10	20	50	100	200	
α-Chlordane	2	5	10	20	50	100	200	
γ-Chlordane	2	5	10	20	50	100	200	
4,4'-DDD	4	10	20	40	100	200	400	
4,4'-DDE	4	10	20	40	100	200	400	
4,4'-DDT	4	10	20	40	100	200	400	
Dieldrin	4	10	20	40	100	200	400	
Endosulfan I	2	5	10	20	50	100	200	
Endosulfan II	4	10	20	40	100	200	400	
Endosulfan sulfate	4	10	20	40	100	200	400	
Endrin	4	10	20	40	100	200	400	
Endrin aldehyde	4	10	20	40	100	200	400	
Endrin ketone	4	10	20	40	100	200	400	
Heptachlor	2	5	10	20	50	100	200	
Heptachlor epoxide	2	5	10	20	50	100	200	
Isodrin	2	5	10	20	50	100	200	
Methoxychlor	20	50	100	200	500	1,000	2,000	
Tetrachloro- <i>m</i> -xylene	2	5	10	20	50	100	200	
Decachlorobiphenyl	4	10	20	40	100	200	400	

Level 3 Daily QC Working Level CCC (for low level curves)

M-8080-R2-WL-5X-10ML	1 x 10 mL
M-8080-R2-WL-5X-25ML	1 x 25 mL
M-8080-R2-WL-5X-50ML	1 x 50 mL

At stated conc. in Isooctane

Level 4 Daily QC Working Level CCC (for higher level curves)

M-8080-R2-WL-10X-10ML	1 x 10 mL
M-8080-R2-WL-10X-25ML	1 x 25 mL
M-8080-R2-WL-10X-50ML	1 x 50 mL

At stated conc. in Isooctane

Level 5 Daily QC Working Level CCC (for higher level curves)

M-8080-R2-WL-25X-10ML	1 x 10 mL
M-8080-R2-WL-25X-25ML	1 x 25 mL
M-8080-R2-WL-25X-50ML	1 x 50 mL

At stated conc. in Isooctane

The AccuStandard CCC Product Line Improves Efficiency:
 Load the calibration curve Standards at the end of the day with your samples and working level check, and review a verified curve with your sample results the next day.
 No time wasted on Standard dilutions and less worry about your CCC meeting data quality objectives (DQOs).



Working Level Standards & Continuing Calibration Check (CCC)



Pesticide & Aroclor® Analysis

Ready-to-Inject Working Level Standards for Aroclors

Method 8080/8081 Aroclor Calibration Curves

Aroclor 1016/1260 Calibration Curve

C-216/260-CAL-SET

All solutions in Isooctane

6 x 1 mL
4 comps.

Components (units in ng/mL)	Level 1	Level 2 (2X)	Level 3 (5X)	Level 4 (10X)	Level 5 (15X)	Level 6 (20X)
Aroclor 1016	50	100	250	500	750	1000
Aroclor 1260	50	100	250	500	750	1000
Decachlorobiphenyl	10	20	50	100	150	200
Tetrachloro- <i>m</i> -xylene	10	20	50	100	150	200

Level 3 Daily Working Level CCC (for low level curves)

C-216/260-WL-5X-5ML

1 x 5 mL

C-216/260-WL-5X-10ML

1 x 10 mL

At stated conc. in Isooctane

Level 4 Daily Working Level CCC (for higher level curves)

C-216/260-WL-10X-5ML

1 x 5 mL

C-216/260-WL-10X-10ML

1 x 10 mL

At stated conc. in Isooctane

Aroclor 1221 Calibration Curve

C-221-CAL-SET

All solutions in Isooctane

6 x 1 mL
3 comps.

Components (units in ng/mL)	Level 1	Level 2 (2X)	Level 3 (5X)	Level 4 (10X)	Level 5 (15X)	Level 6 (20X)
Aroclor 1221	50	100	250	500	750	1000
Decachlorobiphenyl	10	20	50	100	150	200
Tetrachloro- <i>m</i> -xylene	10	20	50	100	150	200

Level 3 Daily Working Level CCC (for low level curves)

C-221-WL-5X-5ML

1 x 5 mL

C-221-WL-5X-10ML

1 x 10 mL

At stated conc. in Isooctane

Level 4 Daily Working Level CCC (for higher level curves)

C-221-WL-10X-5ML

1 x 5 mL

C-221-WL-10X-10ML

1 x 10 mL

At stated conc. in Isooctane

Aroclor 1232 Calibration Curve

C-232-CAL-SET

All solutions in Isooctane

6 x 1 mL
3 comps.

Components (units in ng/mL)	Level 1	Level 2 (2X)	Level 3 (5X)	Level 4 (10X)	Level 5 (15X)	Level 6 (20X)
Aroclor 1232	50	100	250	500	750	1000
Decachlorobiphenyl	10	20	50	100	150	200
Tetrachloro- <i>m</i> -xylene	10	20	50	100	150	200

Level 3 Daily Working Level CCC (for low level curves)

C-232-WL-5X-5ML

1 x 5 mL

C-232-WL-5X-10ML

1 x 10 mL

At stated conc. in Isooctane

Level 4 Daily Working Level CCC (for higher level curves)

C-232-WL-10X-5ML

1 x 5 mL

C-232-WL-10X-10ML

1 x 10 mL

At stated conc. in Isooctane

Aroclor 1242 Calibration Curve

C-242-CAL-SET

All solutions in Isooctane

6 x 1 mL
3 comps.

Components (units in ng/mL)	Level 1	Level 2 (2X)	Level 3 (5X)	Level 4 (10X)	Level 5 (15X)	Level 6 (20X)
Aroclor 1242	50	100	250	500	750	1000
Decachlorobiphenyl	10	20	50	100	150	200
Tetrachloro- <i>m</i> -xylene	10	20	50	100	150	200

Level 3 Daily Working Level CCC (for low level curves)

C-242-WL-5X-5ML

1 x 5 mL

C-242-WL-5X-10ML

1 x 10 mL

At stated conc. in Isooctane

Level 4 Daily Working Level CCC (for higher level curves)

C-242-WL-10X-5ML

1 x 5 mL

C-242-WL-10X-10ML

1 x 10 mL

At stated conc. in Isooctane

Aroclor 1248 Calibration Curve

C-248-CAL-SET

All solutions in Isooctane

6 x 1 mL
3 comps.

Components (units in ng/mL)	Level 1	Level 2 (2X)	Level 3 (5X)	Level 4 (10X)	Level 5 (15X)	Level 6 (20X)
Aroclor 1248	50	100	250	500	750	1000
Decachlorobiphenyl	10	20	50	100	150	200
Tetrachloro- <i>m</i> -xylene	10	20	50	100	150	200

Level 3 Daily Working Level CCC (for low level curves)

C-248-WL-5X-5ML

1 x 5 mL

C-248-WL-5X-10ML

1 x 10 mL

At stated conc. in Isooctane

Level 4 Daily Working Level CCC (for higher level curves)

C-248-WL-10X-5ML

1 x 5 mL

C-248-WL-10X-10ML

1 x 10 mL

At stated conc. in Isooctane



Method 8080/8081 Aroclor Calibration Curves (Continued)

Aroclor 1254 Calibration Curve

C-254-CAL-SET

All solutions in Isooctane

6 x 1 mL
3 comps.

Components (units in ng/mL)	Level 1	Level 2 (2X)	Level 3 (5X)	Level 4 (10X)	Level 5 (15X)	Level 6 (20X)
Aroclor 1254	50	100	250	500	750	1000
Decachlorobiphenyl	10	20	50	100	150	200
Tetrachloro- <i>m</i> -xylene	10	20	50	100	150	200

Level 3 Daily Working Level CCC (for low level curves)

C-254-WL-5X-5ML

1 x 5 mL

C-254-WL-5X-10ML

1 x 10 mL

At stated conc. in Isooctane

Level 4 Daily Working Level CCC (for higher level curves)

C-254-WL-10X-5ML

1 x 5 mL

C-254-WL-10X-10ML

1 x 10 mL

At stated conc. in Isooctane

Toxaphene Calibration Curve

P-093-CAL-SET

All solutions in Isooctane

6 x 1 mL
3 comps.

Components (units in ng/mL)	Level 1	Level 2 (2X)	Level 3 (5X)	Level 4 (10X)	Level 5 (15X)	Level 6 (20X)
Toxaphene	50	100	250	500	750	1000
Decachlorobiphenyl	2	4	10	20	30	40
Tetrachloro- <i>m</i> -xylene	2	4	10	20	30	40

Level 3 Daily Working Level CCC (for low level curves)

P-093-WL-5X-5ML

1 x 5 mL

P-093-WL-5X-10ML

1 x 10 mL

At stated conc. in Isooctane

Level 4 Daily Working Level CCC (for higher level curves)

P-093-WL-10X-5ML

1 x 5 mL

P-093-WL-10X-10ML

1 x 10 mL

At stated conc. in Isooctane

Chlordane Calibration Curve

P-017-CAL-SET

All solutions in Isooctane

6 x 1 mL
3 comps.

Components (units in ng/mL)	Level 1	Level 2 (2X)	Level 3 (5X)	Level 4 (10X)	Level 5 (15X)	Level 6 (20X)
Chlordane	50	100	250	500	750	1000
Decachlorobiphenyl	20	40	70	100	150	200
Tetrachloro- <i>m</i> -xylene	20	40	70	100	150	200

Level 3 Daily Working Level CCC (for low level curves)

P-017R-WL-5X-5ML

1 x 5 mL

P-017R-WL-5X-10ML

1 x 10 mL

At stated conc. in Isooctane

Level 4 Daily Working Level CCC (for higher level curves)

P-017R-WL-10X-5ML

1 x 5 mL

P-017R-WL-10X-10ML

1 x 10 mL

At stated conc. in Isooctane

Additional 8080/8081 formulations - Continued on Next Page

GPC Standards Sample Clean-up Solutions at Working Level

GPC Calibration Solution

CLP-027-WL-10ML

At stated conc. in CH₂Cl₂

1 x 10 mL
5 comps.

Corn Oil	(25 mg/mL)	Perylene	(0.02 mg/mL)
bis(2-Ethylhexyl)phthalate	(1.0 mg/mL)	Sulfur	(0.08 mg/mL)
Methoxychlor	(0.2 mg/mL)		

GPC Calibration Solution for 8/94 SOW OLM03.1

CLP-027-R2-WL-10ML

At stated conc. in CH₂Cl₂

1 x 10 mL
5 comps.

Corn Oil	(25 mg/mL)	Perylene	(0.02 mg/mL)
bis(2-Ethylhexyl)phthalate	(0.5 mg/mL)	Sulfur	(0.08 mg/mL)
Methoxychlor	(0.1 mg/mL)		

Florisol Cartridge Check Solution

CLP-FC-WL-10ML

0.1 µg/mL in Acetone

1 x 10 mL

2,4,5-Trichlorophenol

GPC Calibration Check Solutions

GPC-CC-A-WL-10ML

At stated conc. in CH₂Cl₂

1 x 10 mL
6 comps.

Aldrin	(0.1 µg/mL)	Dieldrin	(0.2 µg/mL)
γ-BHC (Lindane)	(0.1 µg/mL)	Endrin	(0.2 µg/mL)
4,4'-DDT	(0.2 µg/mL)	Heptachlor	(0.1 µg/mL)

GPC-CC-B-WL-10ML

0.2 µg/mL each in CH₂Cl₂

1 x 10 mL
2 comps.

Aroclor 1016

Aroclor 1260



Aroclor® Analysis

Ready-to-Inject Working Level Aroclor Standards

Method 8080/8081A/8081B Organochlorine Pesticides by Capillary Column GC/ECD

Single/Dual Column Organochlorine Pesticides

M-8081-SC		1 x 1 mL
M-8081-SC-PAK	SAVE	5 x 1 mL
1.0 mg/mL each in Toluene : Hexane (1:1)		
Aldrin	Dieldrin	
α-BHC	Endosulfan I	
β-BHC	Endosulfan II	
γ-BHC	Endosulfan sulfate	
δ-BHC	Endrin	
α-Chlordane	Endrin aldehyde	
γ-Chlordane	Endrin ketone	
4,4'-DDD	Heptachlor	
4,4'-DDE	Heptachlor epoxide	
4,4'-DDT	Methoxychlor	

Technical Note

M-8081A-SC was formulated for use in combination with M-8081-SC when performing single or dual column pesticide analysis. These two product formulations provide the typically analyzed pesticides in one core mixture (M-8081-SC) with the additional 7 analytes (M-8081A-SC) to meet the 27 analytes listed in Method 8081 (January 1995).

Organochlorine Pesticide Mixtures

M-8081A-SC		1 x 1 mL
M-8081A-SC-PAK	SAVE	5 x 1 mL
1.0 mg/mL each in Hexane:Toluene (1:1)		
Chlorobenzilate	Hexachlorocyclopentadiene	
DBCP	Isodrin	
Diallate	Kepone	
Hexachlorobenzene		

M-8081A-SC-R		1 x 1 mL
M-8081A-SC-R-PAK	SAVE	5 x 1 mL
1.0 mg/mL each in Hexane : Toluene (1:1)		
Chlorobenzilate	Hexachlorobenzene	
1,2-Dibromo-3-chloropropane	Hexachlorocyclopentadiene	
Diallate	Isodrin	

Dual Column Organochlorine Pesticides

M-8081-DC		1 x 1 mL
1.0 mg/mL each in Hexane : Toluene (1:1)		
Alachlor	Etridiazole	
Captafol	Hexachlorobenzene	
Captan	Hexachlorocyclopentadiene	
Chlorobenzilate	Isodrin	
Chloroneb	Mirex	
Chloropropylate	trans-Nonachlor	
Chlorothalonil	PCNB	
DBCP	Perthane	
DCPA	Propachlor	
Diallate	Permethrin * (cis & trans)	
Dicofol	Trifluralin	

* isomer concentration as stated on certificate of product data

Tailing Test Standard

M-8081-T		1 x 1 mL
1.0 mg/mL each in Hexane : Toluene (1:1)		
Carbophenothion	Kepone	
Dichlone	Nitrofen	

M-8081-T-R		1 x 1 mL
1.0 mg/mL each in Hexane : Toluene (1:1)		
Carbophenothion	Nitrofen	
Dichlone		

Surrogate Standards

CLP-032-R		1 x 1 mL
CLP-032-R-PAK	SAVE	5 x 1 mL
0.2 mg/mL each in Acetone		

Decachlorobiphenyl	Tetrachloro- <i>m</i> -xylene
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CLP-034		1 x 1 mL
CLP-034-PAK	SAVE	5 x 1 mL
0.2 mg/mL each in Acetone		

Dibutylchlorendate	Tetrachloro- <i>m</i> -xylene
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M-8081-SS-X		1 x 1 mL
M-8081-SS-X-PAK	SAVE	5 x 1 mL
1.0 mg/mL in Acetone		

2-Bromobiphenyl

For Dual Column

M-8081-SS-DC		1 x 1 mL
M-8081-SS-DC-PAK	SAVE	5 x 1 mL
1.0 mg/mL in Acetone		

4-Chloro-3-nitrobenzotrifluoride

Internal Standards

M-8081-IS		1 x 1 mL
M-8081-IS-PAK	SAVE	5 x 1 mL
1.0 mg/mL in Acetone		

Pentachloronitrobenzene (PCNB)

M-8081-IS-X		1 x 1 mL
M-8081-IS-X-PAK	SAVE	5 x 1 mL
1.0 mg/mL in Acetone		

α,α-Dibromo- <i>m</i> -xylene

For Dual Column

M-8081-IS-DC		1 x 1 mL
M-8081-IS-DC-PAK	SAVE	5 x 1 mL
1.0 mg/mL in Acetone		

1-Bromo-2-nitrobenzene

Decomposition Standard

M-8081-DS		1 x 1 mL
M-8081-DS-PAK	SAVE	5 x 1 mL
0.2 mg/mL each in Hexane		

4,4'-DDT	Endrin
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Method 8080/8081



Method 8082/8082A PCBs by Capillary Column GC by ECD or ELCD

PCB Congeners Mixture

M-8082			1 x 1 mL
M-8082-PAK	SAVE		5 x 1 mL
100 µg/mL each in Hexane			
No.	No.		19 comps.
1	2-Chlorobiphenyl	137	2,2',3,4,4',5'-Hexachlorobiphenyl
5	2,3-Dichlorobiphenyl	141	2,2',3,4,5,5'-Hexachlorobiphenyl
18	2,2',5-Trichlorobiphenyl	151	2,2',3,5,5',6'-Hexachlorobiphenyl
31	2,4,5-Trichlorobiphenyl	153	2,2',4,4',5,5'-Hexachlorobiphenyl
44	2,2',3,5'-Tetrachlorobiphenyl	170	2,2',3,3',4,4',5'-Heptachlorobiphenyl
52	2,2',5,5'-Tetrachlorobiphenyl	180	2,2',3,4,4',5,5'-Heptachlorobiphenyl
66	2,3',4,4'-Tetrachlorobiphenyl	183	2,2',3,4,4',5,6'-Heptachlorobiphenyl
87	2,2',3,4,5'-Pentachlorobiphenyl	187	2,2',3,4',5,5',6'-Heptachlorobiphenyl
101	2,2',4,5,5'-Pentachlorobiphenyl	206	2,2',3,3',4,4',5,5',6'-Nonachlorobiphenyl
110	2,3,3',4',6'-Pentachlorobiphenyl		

Reformulated PCB Congeners Mixture

M-8082A			1 x 1 mL
M-8082A-PAK	SAVE		5 x 1 mL
100 µg/mL each in Hexane			
No.	No.		19 comps.
1	2-Chlorobiphenyl	138	2,2',3,4,4',5'-Hexachlorobiphenyl
5	2,3-Dichlorobiphenyl	141	2,2',3,4,5,5'-Hexachlorobiphenyl
18	2,2',5-Trichlorobiphenyl	151	2,2',3,5,5',6'-Hexachlorobiphenyl
31	2,4,5-Trichlorobiphenyl	153	2,2',4,4',5,5'-Hexachlorobiphenyl
44	2,2',3,5'-Tetrachlorobiphenyl	170	2,2',3,3',4,4',5'-Heptachlorobiphenyl
52	2,2',5,5'-Tetrachlorobiphenyl	180	2,2',3,4,4',5,5'-Heptachlorobiphenyl
66	2,3',4,4'-Tetrachlorobiphenyl	183	2,2',3,4,4',5,6'-Heptachlorobiphenyl
87	2,2',3,4,5'-Pentachlorobiphenyl	187	2,2',3,4',5,5',6'-Heptachlorobiphenyl
101	2,2',4,5,5'-Pentachlorobiphenyl	206	2,2',3,3',4,4',5,5',6'-Nonachlorobiphenyl
110	2,3,3',4',6'-Pentachlorobiphenyl		

Technical Note

AccuStandard has formulated these standards for use in determining the concentrations of Aroclors (Industrial PCBs), specific PCB congeners, or "total PCBs". Additional Aroclor stock solutions are available at higher concentrations and in other solvents.

Internal & Surrogate Standard

CLP-032-H-5X		1 x 1 mL
1.0 mg/mL each in Hexane		
Decachlorobiphenyl	Tetrachloro- <i>m</i> -xylene	2 comps.

Surrogate Standards

M-8082-SSA-WL-10ML		1 x 10 mL
M-8082-SSA-WL-10ML-PAK	SAVE	5 x 10 mL
5 µg/mL in Acetone		
Decachlorobiphenyl		

M-8082-SS		1 x 1 mL
100 µg/mL in Hexane		
M-8082-SS-10X		1 x 1 mL
1.0 mg/mL in Hexane		
Tetrachloro- <i>m</i> -xylene		

Internal Standards

M-8082-ISC-WL-10ML		1 x 10 mL
M-8082-ISC-WL-10ML-PAK	SAVE	5 x 10 mL
5 µg/mL in Hexane		
Decachlorobiphenyl		
M-8082-SSC-WL-10ML		1 x 10 mL
M-8082-SSC-WL-10ML-PAK	SAVE	5 x 10 mL
5 µg/mL in Acetone		
Tetrachloro- <i>m</i> -xylene		

Method 8082 Aroclor 1016/1260 Calibration Curve

Aroclor 1016/1260 Calibration Curve

C-216/260-CAL-SET 6 x 1 mL
All solutions in Isooctane 4 comps.

Components (units in ng/mL)	Level 1	Level 2 (2X)	Level 3 (5X)	Level 4 (10X)	Level 5 (15X)	Level 6 (20X)
Aroclor 1016	50	100	250	500	750	1000
Aroclor 1260	50	100	250	500	750	1000
Decachlorobiphenyl	10	20	50	100	150	200
Tetrachloro- <i>m</i> -xylene	10	20	50	100	150	200

Level 3 Daily Working Level CCC (for low level curves)

C-216/260-WL-5X-5ML 1 x 5 mL
C-216/260-WL-5X-10ML 1 x 10 mL
At stated conc. in Isooctane

Level 4 Daily Working Level CCC (for higher level curves)

C-216/260-WL-10X-5ML 1 x 5 mL
C-216/260-WL-10X-10ML 1 x 10 mL
At stated conc. in Isooctane

Method 8082A Polychlorinated Biphenyl (PCBs) by GC/ECD

Individual PCB Congener Solutions

Congener	35 µg/mL in Isooctane	100 µg/mL in Isooctane	1 mL
2-Chlorobiphenyl	C-001S	C-001S-TP	
2,3-Dichlorobiphenyl	C-005S	C-005S-TP	
2,2',5-Trichlorobiphenyl	C-018S	C-018S-TP	
2,4',5-Trichlorobiphenyl	C-031S	C-031S-TP	
2,2',3,5'-Tetrachlorobiphenyl	C-044S	C-044S-TP	
2,2',5,5'-Tetrachlorobiphenyl	C-052S	C-052S-TP	
2,3',4,4'-Tetrachlorobiphenyl	C-066S	C-066S-TP	
2,2',3,4,5'-Pentachlorobiphenyl	C-087S	C-087S-TP	
2,2',4,5,5'-Pentachlorobiphenyl	C-101S	C-101S-TP	
2,2',3,4,4',6'-Pentachlorobiphenyl	C-110S	C-110S-TP	
2,2',3,4,4',5'-Hexachlorobiphenyl	C-137S	C-137S-TP	
2,2',3,4,4',5'-Hexachlorobiphenyl	C-138S	C-138S-TP	
2,2',3,4,5,5'-Hexachlorobiphenyl	C-141S	C-141S-TP	
2,2',3,5,5',6'-Hexachlorobiphenyl	C-151S	C-151S-TP	
2,2',4,4',5,5'-Hexachlorobiphenyl	C-153S	C-153S-TP	
2,2',3,3',4,4',5'-Heptachlorobiphenyl	C-170S	C-170S-TP	
2,2',3,4,4',5,5'-Heptachlorobiphenyl	C-180S	C-180S-TP	
2,2',3,4,4',5,6'-Heptachlorobiphenyl	C-183S	C-183S-TP	
2,2',3,4',5,5',6'-Heptachlorobiphenyl	C-187S	C-187S-TP	
2,2',3,3',4,4',5,5',6'-Nonachlorobiphenyl	C-206S	C-206S-TP	

Internal Standards

C-209S-H		1 x 1 mL
100 µg/mL in Hexane		
C-209S-H-10X		1 x 1 mL
1.0 mg/mL in Hexane		
Decachlorobiphenyl		

Internal & Surrogate Standard

CLP-032-H-5X		1 x 1 mL
1.0 mg/mL each in Hexane		
Decachlorobiphenyl	Tetrachloro- <i>m</i> -xylene	2 comps.

Surrogate Standard

M-8082-SS		1 x 1 mL
100 µg/mL in Hexane		
M-8082-SS-10X		1 x 1 mL
1.0 mg/mL in Hexane		
Tetrachloro- <i>m</i> -xylene		

Method 8082



EPA Method 8000 Series

Method 8085 Pesticides by GC/AED

Nitrogen Containing Pesticides Mix #1

M-8085-N1			1 x 5 mL
<i>At stated conc. in MtBE</i>			
Alachlor	(18 µg/mL)	Norflurazon	(10 µg/mL)
Atrazine	(5 µg/mL)	Oxyfluorfen	(20 µg/mL)
Bromacil	(20 µg/mL)	Pendimethalin	(7.5 µg/mL)
Dichlobenil	(10 µg/mL)	Prometryne	(5 µg/mL)
Diphenamid	(15 µg/mL)	Pronamide	(20 µg/mL)
Ethalfuralin	(7.5 µg/mL)	Propachlor	(12 µg/mL)
Fluridone	(30 µg/mL)	Simazine	(5 µg/mL)
Metolachlor	(20 µg/mL)	Tebuthiuron	(7.5 µg/mL)
Metribuzin	(5 µg/mL)	Terbacil	(15 µg/mL)
Napropamide	(15 µg/mL)	Trifluralin	(7.5 µg/mL)

Mix #2

M-8085-N2			1 x 5 mL
<i>At stated conc. in MtBE</i>			
Ametryn	(5 µg/mL)	Molinate	(10 µg/mL)
Benfluralin	(7.5 µg/mL)	Prebane	(5 µg/mL)
Butylate	(10 µg/mL)	Profluralin	(12 µg/mL)
Chlorpropham	(20 µg/mL)	Prometon	(5 µg/mL)
Chlorothalonil	(12 µg/mL)	Propargite	(10 µg/mL)
Cyanazine	(7.5 µg/mL)	Propazine	(5 µg/mL)
Cycloate	(10 µg/mL)	Tillam	(10 µg/mL)
EPTC	(10 µg/mL)	Triallate	(13 µg/mL)
Hexazinone	(7.5 µg/mL)	Vernolate	(10 µg/mL)

Mix #3

M-8085-N3			1 x 5 mL
<i>At stated conc. in MtBE</i>			
Butachlor	(30 µg/mL)	Metalaxyl	(30 µg/mL)
Carboxin	(30 µg/mL)	MGK-264	(40 µg/mL)
Diallate	(35 µg/mL)	cis-Permethrin	(10 µg/mL)
Fenarimol	(15 µg/mL)	Resmethrin	(10 µg/mL)
Fenvalerate	(20 µg/mL)	Sumithrin	(10 µg/mL)
Gesatamine	(7.5 µg/mL)	Triadimefon	(13 µg/mL)
Hexazinone	(7.5 µg/mL)	Triallate	(15 µg/mL)
Karmex	(30 µg/mL)		

Technical Note

These standards are for those laboratories participating in the analysis of pesticides by EPA Method 8085 Pesticide Screening and Compound Independent Elemental Quantitation by Gas Chromatography with Atomic Emission Detection (AED).

Chlorinated Pesticides

Mix #1

M-8085-C1			1 x 5 mL
<i>2.5 µg/mL each in Hexane</i>			
Aldrin		Endosulfan II	
α-BHC		Endosulfan sulfate	
β-BHC		Endrin	
γ-BHC		Endrin aldehyde	
δ-BHC		Endrin ketone	
γ-Chlordane		Heptachlor	
α-Chlordane		Heptachlor epoxide (Isomer B)	
p,p'-DDD		Methoxychlor	
p,p'-DDE		cis-nonachlor	
p,p'-DDT		Oxychlordane	
Dieldrin		Pentachloroanisole	
Endosulfan I			

Mix #2

M-8085-C2			1 x 5 mL
<i>At stated conc. in Hexane</i>			
Captan	(6.75 µg/mL)	Hexachlorobenzene	(2.5 µg/mL)
Captafol	(12.5 µg/mL)	Kelthane	(10 µg/mL)
o,p'-DDE	(2.5 µg/mL)	Mirex	(2.5 µg/mL)
o,p'-DDD	(2.5 µg/mL)	trans-Nonachlor	(2.5 µg/mL)
o,p'-DDT	(2.5 µg/mL)		

Organo Phosphorous Pesticides Mix #1

M-8085-P1			1 x 5 mL
<i>At stated conc. in MtBE</i>			
Azinphos ethyl	(8 µg/mL)	EPN	(5 µg/mL)
Carbophenothion	(5 µg/mL)	Ethion	(3.5 µg/mL)
Chlorpyrifos methyl ester	(4 µg/mL)	Fenamiphos	(5 µg/mL)
Demeton (mixed isomers)	(7 µg/mL)	Fenitrothion	(3.5 µg/mL)
Disulfoton	(3 µg/mL)	Malathion	(4 µg/mL)
Dursban	(4 µg/mL)	Merphos	(6 µg/mL)
Dyfonate	(3 µg/mL)	Sulfotep	(3 µg/mL)

Mix #2

M-8085-P2			1 x 5 mL
<i>At stated conc. in MtBE</i>			
Azinphos methyl	(8 µg/mL)	Fenthion	(3.5 µg/mL)
Bolstar	(3.5 µg/mL)	Imidan	(5.5 µg/mL)
Diazinon	(4 µg/mL)	Methyl parathion	(3.5 µg/mL)
Dimethoate	(4 µg/mL)	Parathion	(4 µg/mL)
Ethoprop	(4 µg/mL)	Phorate	(3.5 µg/mL)
Fensulfthion	(5 µg/mL)	Ronnel	(3.5 µg/mL)

Herbicides as Methyl Derivatives Mix #1

M-8085-H1-M			1 x 5 mL
<i>At stated conc. in MtBE</i>			
Acifluorfen methyl ester	(20 µg/mL)	4-Nitroanisole	(10 µg/mL)
Bentazon methyl ester	(7.5 µg/mL)	Pentachloroanisole	(2.5 µg/mL)
Bromoxynil methyl ether	(5 µg/mL)	2,3,4,5-Tetrachloroanisole	(2.75 µg/mL)
Chloramben methyl ester	(5 µg/mL)	2,3,4,6-Tetrachloroanisole	(2.75 µg/mL)
Dinoseb methyl ether	(7.5 µg/mL)	2,4,5-Trichloroanisole	(3 µg/mL)
MCPA methyl ester	(10 µg/mL)	2,4,6-Trichloroanisole	(3 µg/mL)
MCPP methyl ester	(10 µg/mL)		

Mix #2

M-8085-H2-M			1 x 5 mL
<i>At stated conc. in MtBE</i>			
Dalapon methyl ester	(4 µg/mL)	ioxynil methyl ether	(5 µg/mL)
2,4-D methyl ester	(5 µg/mL)	Methyl 3,5-Dichlorobenzoate	(5 µg/mL)
2,4-DB methyl ester	(6 µg/mL)	Picloram methyl ester	(5 µg/mL)
DCPA methyl ester	(4 µg/mL)	Silvex methyl ester	(4 µg/mL)
Dicamba methyl ester	(5 µg/mL)	2,4,5-T methyl ester	(4 µg/mL)
Dichlorprop methyl ester	(5.5 µg/mL)	Triclopyr methyl ester	(4 µg/mL)
Diclofop methyl	(7.5 µg/mL)		

Surrogates

M-8085-PEST-S5			1 x 5 mL
<i>At stated conc. in MtBE</i>			
Decachlorobiphenyl	(10 µg/mL)	1,3-Dimethyl-2-nitrobenzene	(20 µg/mL)
4,4'-Dibromooctafluorobiphenyl	(20 µg/mL)	Triphenylphosphate	(20 µg/mL)

Method 8085 continued on next page



Method 8085 (Continued) Pesticides by GC/AED

Alternate Surrogates

M-8085-PEST-SS2 1 x 5 mL
20 µg/mL each in MtBE 2 comps.

Dibutylchloroendate TCMX

Herbicide Surrogate

M-8085-HERB-SS 1 x 5 mL
20 µg/mL in MtBE

2,4,6-Tribromophenol

Compound Independent Calibration (CIC) Mix

M-8085-CIC 1 x 5 mL
At stated conc. in MtBE 15 comps.

Decachlorobiphenyl (492 ng/mL)	Pentachloronitrobenzene (1690 ng/mL)
Diazinon (9800 ng/mL)	Phorate (2100 ng/mL)
4,4'-Dibromooctafluorobiphenyl (1000 ng/mL)	Silvex methyl ester (400 ng/mL)
Dichlobenil (6140 ng/mL)	Terbufos (7600 ng/mL)
Dursban (5680 ng/mL)	2,4,6-Tribromoanisole (2870 ng/mL)
Ethoprop (391 ng/mL)	1,2,3-Trichlorobenzene (6810 ng/mL)
loxynil methyl ether (500 ng/mL)	Trifluralin (16000 ng/mL)
Malathion (1070 ng/mL)	

Method 8090 Nitroaromatics & Isophorone by GC/TCD or FID

Analyte Calibration Set (609)

M-609-10X-SET set of 2 x 1 mL
(set includes M-609A-10X & M-609B-10X)

M-609A-10X 1 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

Isophorone Nitrobenzene

M-609B-10X 1 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

2,4-Dinitrotoluene 2,6-Dinitrotoluene

M-609-QC 1 x 1 mL
At stated conc. in Acetone 4 comps.

Isophorone (100 µg/mL) 2,6-Dinitrotoluene (20 µg/mL)
2,4-Dinitrotoluene (20 µg/mL) Nitrobenzene (100 µg/mL)

Analyte Calibration Set (8090)

M-8090-10X-SET set of 2 x 1 mL
(set includes M-8090-10X & M-609B-10X)

M-8090-10X 1 x 1 mL
2.0 mg/mL each in MeOH 4 comps.

1,3-Dinitrobenzene 1,4-Naphthoquinone
Isophorone Nitrobenzene

M-609B-10X 1 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

2,4-Dinitrotoluene 2,6-Dinitrotoluene

M-8090-QC 1 x 1 mL
At stated conc. in Acetone 6 comps.

1,3-Dinitrobenzene (40 µg/mL) Isophorone (100 µg/mL)
2,4-Dinitrotoluene (20 µg/mL) 1,4-Naphthoquinone (40 µg/mL)
2,6-Dinitrotoluene (20 µg/mL) Nitrobenzene (100 µg/mL)

Method 8091 Nitroaromatics & Cyclic Ketones by GC/ECD or NPD

RCRA Analytes

M-8091 1 x 1 mL
1.0 mg/mL each in Isooctane : Toluene (1:1) 6 comps.

1,4-Dinitrobenzene 1,4-Naphthoquinone
2,4-Dinitrotoluene Nitrobenzene
2,6-Dinitrotoluene Pentachloronitrobenzene

Chloronitroaromatics: non-RCRA Analytes

M-8091-X1 1 x 1 mL
1.0 mg/mL each in Isooctane 17 comps.

1-Chloro-2,4-dinitrobenzene 3,5-Dichloronitrobenzene
1-Chloro-3,4-dinitrobenzene 3,4-Dichloronitrobenzene
1-Chloro-2-nitrobenzene 2,5-Dichloronitrobenzene
1-Chloro-4-nitrobenzene 2,3,5,6-Tetrachloronitrobenzene
2-Chloro-6-nitrotoluene 2,3,4,5-Tetrachloronitrobenzene
4-Chloro-2-nitrotoluene 1,2,3-Trichloro-4-nitrobenzene
4-Chloro-3-nitrotoluene 1,2,4-Trichloro-5-nitrobenzene
2,3-Dichloronitrobenzene 2,4,6-Trichloronitrobenzene
2,4-Dichloronitrobenzene

Internal Standard

M-8091-IS-20X 1 x 1 mL
M-8091-IS-20X-PAK 5 x 1 mL
1.0 mg/mL in Isooctane **SAVE**

Hexachlorobenzene

Surrogate Standard

M-8091-SS-100X 1 x 1 mL
M-8091-SS-100X-PAK 5 x 1 mL
1.0 mg/mL in Isooctane **SAVE**

1-Chloro-3-nitrobenzene



Method 8095 Explosives by GC/ECD

This method is a companion to EPA Method 8330 found later in this section. Utilizing the sensitivity and selectivity of the ECD as well as the resolution capabilities of capillary columns allows the chemist to quantitatively analyze for the typical explosives. The method uses familiar extraction techniques which reduce sample preparation time.

Explosive Stock Solution A

M-8095-SSA-100X **1 x 1 mL**
M-8095-SSA-100X-PAK **5 x 1 mL**
100 µg/mL each in AcCN:MeOH (1:1) **10 comps.** **SAVE**

2-Amino-4,6-dinitrotoluene	1,3,5-Trinitrobenzene
4-Amino-2,6-dinitrotoluene	TNT
1,3-Dinitrobenzene	RDX
2,6-Dinitrotoluene	Tetryl
2,4-Dinitrotoluene	HMX

Explosive Stock Solution B

M-8095-SSB-100X **1 x 1 mL**
M-8095-SSB-100X-PAK **5 x 1 mL**
At stated conc. in AcCN : MeOH (1:1) **7 comps.** **SAVE**

Nitrobenzene (500 µg/mL)	Nitroglycerin (500 µg/mL)
3-Nitrotoluene (500 µg/mL)	PETN (500 µg/mL)
2-Nitrotoluene (500 µg/mL)	3,5-Dinitroaniline (100 µg/mL)
4-Nitrotoluene (500 µg/mL)	

Explosive Surrogate Standards

M-8095-SS-01 **1 x 1 mL**
M-8095-SS-01-PAK **5 x 1 mL**
100 µg/mL in AcCN **SAVE**

3,4-Dinitrotoluene

M-8095-SS-02 **1 x 1 mL**
M-8095-SS-02-PAK **5 x 1 mL**
100 µg/mL in AcCN **SAVE**

2-Methyl-4-nitroaniline

M-8095-SS-03 **1 x 1 mL**
M-8095-SS-03-PAK **5 x 1 mL**
10 µg/mL in AcCN **SAVE**

2,5-Dinitrotoluene

Method 8100 PAHs by GC/FID

Polynuclear Aromatic Hydrocarbon Mix

Z-014G-R **1 x 1 mL**
Z-014G-R-PAK **5 x 1 mL**
2.0 mg/mL each in CH₂Cl₂: Benzene (1:1) **17 comps.** **SAVE**

Acenaphthene	Chrysene
Acenaphthylene	Dibenz[a,h]anthracene
Anthracene	Fluoranthene
Benz[a]anthracene	Fluorene
Benzo[a]pyrene	Indeno[1,2,3-cd]pyrene
Benzo[b]fluoranthene	Naphthalene
Benzo[g,h,i]perylene	Phenanthrene
Benzo[k]fluoranthene	Pyrene
Carbazole	

PAH Additions to Method 8100 by GC/FID

M-8100-R **1 x 1 mL**
1.0 mg/mL each in CH₂Cl₂ **8 comps.**

Benzo[j]fluoranthene	Dibenzo[a,e]pyrene
Dibenz[a,h]acridine	Dibenzo[a,h]pyrene
Dibenz[a,i]acridine	Dibenzo[a,i]pyrene
7H-Dibenzo[c,g]carbazole	3-Methylcholanthrene

PAH QC Mix

M-8100-QC **1 x 1 mL**
M-8100-QC-PAK **5 x 1 mL**
At stated conc. in AcCN **24 comps.** **SAVE**

Acenaphthene (100 µg/mL)	Dibenz[a,h]anthracene (10 µg/mL)
Acenaphthylene (100 µg/mL)	7H-Dibenzo[c,g]carbazole (10 µg/mL)
Anthracene (100 µg/mL)	Dibenzo[a,e]pyrene (10 µg/mL)
Benz[a]anthracene (10 µg/mL)	Dibenzo[a,h]pyrene (10 µg/mL)
Benzo[b]fluoranthene (10 µg/mL)	Dibenzo[a,i]pyrene (10 µg/mL)
Benzo[j]fluoranthene (10 µg/mL)	Fluoranthene (10 µg/mL)
Benzo[k]fluoranthene (5 µg/mL)	Fluorene (100 µg/mL)
Benzo[g,h,i]perylene (10 µg/mL)	Indeno[1,2,3-cd]pyrene (10 µg/mL)
Benzo[a]pyrene (10 µg/mL)	3-Methylcholanthrene (10 µg/mL)
Chrysene (10 µg/mL)	Naphthalene (100 µg/mL)
Dibenz[a,h]acridine (10 µg/mL)	Phenanthrene (100 µg/mL)
Dibenz[a,i]acridine (10 µg/mL)	Pyrene (10 µg/mL)

Surrogate Standard

M-8100-SS **1 x 1 mL**
M-8100-SS-PAK **5 x 1 mL**
2.0 mg/mL each in CH₂Cl₂ **2 comps.** **SAVE**

2-Fluorobiphenyl	1-Fluoronaphthalene
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Method 8110 Haloethers by GC/FID

Haloethers

M-611-10X **1 x 1 mL**
2.0 mg/mL each in MeOH **5 comps.**

4-Bromophenyl phenyl ether	bis(2-Chloro-1-methylethyl)ether
bis(2-Chloroethoxy)methane	4-Chlorophenyl phenyl ether
bis(2-Chloroethyl)ether	

Buy AccuPaks™
Save 20-40% 5 x 1 mL





Method 8111 Haloethers Mix: non-RCRA Analytes

Haloethers Mix

M-8111-X1 1 x 1 mL
1.0 mg/mL each in Isooctane 19 comps.
Individual products each at 1.0 mg/mL in Isooctane

Compound	Cat.No.	1 mL
4-Bromophenyl phenyl ether	E-001S	
2-Chlorophenyl-4-nitrophenyl ether	E-005S	
3-Chlorophenyl-4-nitrophenyl ether	E-006S	
4-Chlorophenyl-4-nitrophenyl ether	E-007S	
2,4-Dibromophenyl-4-nitrophenyl ether	E-004S	
2,4-Dichlorophenyl-3-methyl-4-nitrophenyl ether	E-020S	
2,6-Dichlorophenyl-4-nitrophenyl ether	E-011S	
3,5-Dichlorophenyl-4-nitrophenyl ether	E-012S	
2,5-Dichlorophenyl-4-nitrophenyl ether	E-010S	
2,4-Dichlorophenyl-4-nitrophenyl ether	E-009S	
2,3-Dichlorophenyl-4-nitrophenyl ether	E-008S	
3,4-Dichlorophenyl-4-nitrophenyl ether	E-013S	
4-Nitrophenyl phenyl ether	E-003S	
2,4,6-Trichlorophenyl-4-nitrophenyl ether	E-018S	
2,3,6-Trichlorophenyl-4-nitrophenyl ether	E-016S	
2,3,5-Trichlorophenyl-4-nitrophenyl ether	E-015S	
2,4,5-Trichlorophenyl-4-nitrophenyl ether	E-017S	
3,4,5-Trichlorophenyl-4-nitrophenyl ether	E-019S	
2,3,4-Trichlorophenyl-4-nitrophenyl ether	E-014S	

Haloethers Mix: RCRA Analytes

M-8111 1 x 1 mL
M-8111-PAK **SAVE** 5 x 1 mL
1.0 mg/mL each in Isooctane 4 comps.
bis(2-chloroethoxy)methane bis(2-Chloro-1-methylethyl)ether
bis(2-Chloroethyl)ether 4-Chlorophenyl phenyl ether

Internal Standard

M-8111-IS-20X 1 x 1 mL
M-8111-IS-20X-PAK **SAVE** 5 x 1 mL
1,000 µg/mL in Acetone
4,4'-Dibromobiphenyl

Surrogate Standard

M-8111-SS-50X 1 x 1 mL
1,000 µg/mL each in Acetone 2 comps.
2,4-Dichlorophenyl phenyl ether 2,3,4-Trichlorophenyl phenyl ether

Method 8120 & 8120A Chlorinated Hydrocarbons by GC/ECD

Chlorinated Hydrocarbons

M-8120 1 x 1 mL
2.0 mg/mL each in Hexane 10 comps.
Individuals each in 2.0 mg/mL each in Hexane **NEW**

Compound	Cat.No.	1 mL
2-Chloronaphthalene	M-8120-01	
1,2-Dichlorobenzene	M-8120-02	
1,3-Dichlorobenzene	M-8120-03	
1,4-Dichlorobenzene	M-8120-04	
Hexachlorobenzene	M-8120-05	
Hexachlorobutadiene	M-8120-06	
Hexachlorocyclopentadiene	M-8120-07	
Hexachloroethane	M-8120-08	
1,2,4,5-Tetrachlorobenzene	M-8120-09	
1,2,4-Trichlorobenzene	M-8120-10	

Performance Check Solution

M-8120-QC 1 x 1 mL
At stated conc. in Acetone 10 comps.
2-Chloronaphthalene (1.0 mg/mL) Hexachlorobutadiene (0.1 mg/mL)
1,2-Dichlorobenzene (1.0 mg/mL) Hexachlorocyclopentadiene (0.1 mg/mL)
1,3-Dichlorobenzene (1.0 mg/mL) Hexachloroethane (0.1 mg/mL)
1,4-Dichlorobenzene (1.0 mg/mL) 1,2,4,5-Tetrachlorobenzene (1.0 mg/mL)
Hexachlorobenzene (0.1 mg/mL) 1,2,4-Trichlorobenzene (1.0 mg/mL)

Method 8121 Chlorinated Hydrocarbons by GC/ECD

Chlorinated Hydrocarbons

M-8121 1 x 1 mL
1.0 mg/mL each in Hexane 22 comps.

Benzal chloride	Hexachlorobenzene
Benzotrichloride	Hexachlorobutadiene
Benzyl chloride	Hexachlorocyclopentadiene
α-BHC	Hexachloroethane
β-BHC	Pentachlorobenzene
γ-BHC	1,2,3,4-Tetrachlorobenzene
δ-BHC	1,2,3,5-Tetrachlorobenzene
2-Chloronaphthalene	1,2,4,5-Tetrachlorobenzene
1,2-Dichlorobenzene	1,2,3-Trichlorobenzene
1,3-Dichlorobenzene	1,2,4-Trichlorobenzene
1,4-Dichlorobenzene	1,3,5-Trichlorobenzene

Internal Standards

M-8121-IS 1 x 1 mL
M-8121-IS-PAK **SAVE** 5 x 1 mL
50 µg/mL in Acetone
1,3,5-Tribromobenzene

M-8121-IS-M 1 x 1 mL
M-8121-IS-M-PAK **SAVE** 5 x 1 mL
50 µg/mL each in Acetone 3 comps.
2,5-Dibromotoluene 1,3,5-Tribromobenzene
α,α'-Dibromo-*m*-xylene

Surrogate Standard

M-8121-SS 1 x 1 mL
M-8121-SS-PAK **SAVE** 5 x 1 mL
At stated conc. in Acetone 3 comps.
1,4-Dichloronaphthalene (1 µg/mL) α,2,6-Trichlorotoluene (10 µg/mL)
2,3,4,5,6-Pentachlorotoluene (1 µg/mL)

Varied Concentration QC Mix

M-8121-QC 1 x 1 mL
At stated conc. in Hexane 22 comps.
Benzal chloride (100 µg/mL) Hexachlorobenzene (10 µg/mL)
Benzotrichloride (100 µg/mL) Hexachlorobutadiene (10 µg/mL)
Benzyl chloride (100 µg/mL) Hexachlorocyclopentadiene (10 µg/mL)
α-BHC (100 µg/mL) Hexachloroethane (10 µg/mL)
β-BHC (100 µg/mL) Pentachlorobenzene (10 µg/mL)
γ-BHC (100 µg/mL) 1,2,3,4-Tetrachlorobenzene (100 µg/mL)
δ-BHC (100 µg/mL) 1,2,3,5-Tetrachlorobenzene (100 µg/mL)
2-Chloronaphthalene (2,000 µg/mL) 1,2,4,5-Tetrachlorobenzene (100 µg/mL)
1,2-Dichlorobenzene (1,000 µg/mL) 1,2,3-Trichlorobenzene (100 µg/mL)
1,3-Dichlorobenzene (1,000 µg/mL) 1,2,4-Trichlorobenzene (100 µg/mL)
1,4-Dichlorobenzene (1,000 µg/mL) 1,3,5-Trichlorobenzene (100 µg/mL)

Method 8131 Aniline & Selected Derivatives by GC/NPD, GC/AFD, GC/TSD

Aniline & Selected Derivatives

M-8131 1 x 1 mL
1.0 mg/mL each in Toluene 19 comps.
Aniline 2,6-Dibromo-4-nitroaniline
4-Bromoaniline 3,4-Dichloroaniline
2-Bromo-6-chloro-4-nitroaniline 2,6-Dichloro-4-nitroaniline
2-Bromo-4,6-dinitroaniline 2,4-Dinitroaniline
2-Chloroaniline 2-Nitroaniline
3-Chloroaniline 3-Nitroaniline
4-Chloroaniline 4-Nitroaniline
2-Chloro-4,6-dinitroaniline 2,4,6-Trichloroaniline
2-Chloro-4-nitroaniline 2,4,5-Trichloroaniline
4-Chloro-2-nitroaniline



EPA Method 8000 Series

Method 8140-8141

Method 8140 Organophosphorous Pesticides by GC/NPD/ELCD/FPD

Organophosphorous Pesticides

M-8140M		1 x 1 mL
M-8140M-PAK	SAVE	5 x 1 mL
0.04 mg/mL each in Hexane		
M-8140M-5X		1 x 1 mL
M-8140M-5X-PAK	SAVE	5 x 1 mL
0.2 mg/mL each in Hexane:Acetone (19:1)		

Azinphosmethyl (<i>Guthion</i>) (01)	Diazinon (06)	Fenthion (11)	Phorate (<i>Thimet</i>) (16)
Bolstar (02)	Dichlorovos (07)	Merphos (12)	Ronnel (17)
Chlorpyrifos (03)	Disulfoton (<i>Di-Syston</i>) (08)	Methyl parathion (13)	Stirophos (18)
Coumaphos (04)	Ethoprop (09)	Mevinphos (<i>Phosdrin</i>) (14)	Tokuthion (19)
Demeton (05)	Fensulfthion (10)	Naled (<i>Dibrom</i>) (15)	Trichloronate (<i>Agritox</i>) (20)

Organophosphorous Pesticide Set

M-8140-SET	20 x 1 mL
Individual solutions listed below, each at 1.0 mg/mL in Hexane	

Method 8141A Additions to Method 8140 Organophosphorus Pesticides by GC/NPD

Mix #1

M-8141M		1 x 1 mL
M-8141M-PAK	SAVE	5 x 1 mL
Mixture, 0.2 mg/mL each in Hexane		
M-8141-SET		7 comps.
Individual solutions, Each at 1.0 mg/mL in Hexane, Dimethoate is in Hexane:Acetone (9:1)		

Compound	Cat. No.	1 mL
Dimethoate	M-8141-01	
EPN	M-8141-02	
Malathion	M-8141-03	
Monocrotophos	M-8141-04	
Ethyl parathion	M-8141-05	
Sulfotep	M-8141-06	
TEPP	M-8141-07	

Mix #2

M-8141A-1M		1 x 1 mL
Mixture, 0.2 mg/mL each in Hexane		
M-8141A-1-SET		10 x 1 mL
Individual solutions, Each at 1.0 mg/mL in Hexane		

Compound	Cat. No.	1 mL
Azinphos ethyl	M-8141A-1-01	
Carbophenothion	M-8141A-1-02	
Chlorfenvinphos	M-8141A-1-03	
Dioxathion	P-129S-H-10X	
Ethion	P-148S-H-10X	
Famphur	M-8141A-1-06	
Leptophos	P-206S-H-10X	
Phosmet	M-8141A-1-08	
Phosphamidon	M-8141A-1-09	
Terbuphos	P-208S-H-10X	

Mix #3

M-8141A-2M		1 x 1 mL
Mixture, 0.2 mg/mL each in Hexane		
M-8141A-2-SET		9 x 1 mL
Individual solutions, Each at 1.0 mg/mL in Hexane		

Aspon (01)	Fenitrothion (06)
Chlorpyrifos methyl ester (02)	Fonophos (07)
Crotoxyphos (03)	Thionazin (08)
Dichlofenthion (04)	Trichlorfon (09)
Dicrotophos (05)	

Internal Standard for NPD

M-8141A-IS		1 x 1 mL
M-8141A-IS-PAK	SAVE	5 x 1 mL
1.0 mg/mL in Acetone		

1-Bromo-2-nitrobenzene

Industrial Chemicals & Triazine Herbicides

M-8141A-IC		1 x 1 mL
0.2 mg/mL each in Hexane		
Hexamethylphosphoramide (<i>HMPA</i>)	Tri- <i>o</i> -cresylphosphate (<i>TOCP</i>)	2 comps.

M-8141A-TH		1 x 1 mL
M-8141A-TH-PAK	SAVE	5 x 1 mL
0.2 mg/mL each in Acetone		

Atrazine Simazine

M-8141B-HSD		1 x 1 mL
M-8141B-HSD-PAK	SAVE	5 x 1 mL
0.2 mg/mL each in Hexane		

Chlorpyrifos	Ronnel
Coumaphos	Stirophos
Dichlorvos	Trichloronate
EPN	Tokuthion
Naled	

Technical Note

For use with a halogen-specific detector (i.e., electrolytic conductivity or microcoulometry). ECD should only be used when previous analyses have demonstrated that interferences do not adversely affect quantitation.

Surrogate Standard for NPD & FPD

M-8141A-SS		1 x 1 mL
M-8141A-SS-PAK	SAVE	5 x 1 mL
1.0 mg/mL each in Acetone		

Tributylphosphate Triphenylphosphate

Surrogate Standard for NPD only

M-8141A-SS-X		1 x 1 mL
M-8141A-SS-X-PAK	SAVE	5 x 1 mL
1.0 mg/mL in Acetone		

4-Chloro-3-nitrobenzotrifluoride



Method 8150/8151 7 Point Working Level Phenoxy-Herbicide Methyl Derivative Curve

AccuStandard is the first standard manufacturing company to offer a 7 point calibration curve for Phenoxy-Acid Herbicide determination. The CCC Line for Herbicide analysis provides the necessary free acid and derivatized solutions to establish a calibration curve, perform the required daily QC checks and validate extraction efficiencies through the use of surrogates and matrix spikes.

M-8150/51-CAL-SET

At stated conc. (ng/mL) in Isooctane

7 x 1 mL
11 comps.

Components	Level 1 M-8150/51-WL	Level 2 (-2X)	Level 3 (-4X)	Level 4 (-10X)	Level 5 (-25X)	Level 6 (-35X)	Level 7 (-50X)
2,4-D	20	40	80	200	500	700	1000
2,4-DB	20	40	80	200	500	700	1000
2,4,5-TP	5	10	20	50	125	175	250
2,4,5-T	5	10	20	50	125	175	250
Dalapon	10	20	40	100	250	350	500
Dicamba	10	20	40	100	250	350	500
Dichloroprop	20	40	80	200	500	700	1000
Dinoseb	5	10	20	50	125	175	250
MCPA	2000	4000	8,000	20,000	50,000	70,000	100,000
MCPP	2000	4000	8,000	20,000	50,000	70,000	100,000
DCAA	20	40	80	200	500	700	1000

Level 1	M-8150/51-WL	1 mL
Level 2	M-8150/51-WL-2X	1 mL
Level 3	M-8150/51-WL-4X	1 mL
Level 4	M-8150/51-WL-10X	1 mL
Level 5	M-8150/51-WL-25X	1 mL
Level 6	M-8150/51-WL-35X	1 mL
Level 7	M-8150/51-WL-50X	1 mL

Level 3 Daily QC Working Level CCC (for low level curves)

M-8150/51-WL-4X-10ML	1 x 10 mL
M-8150/51-WL-4X-25ML	1 x 25 mL
M-8150/51-WL-4X-50ML	1 x 50 mL

At stated conc. in Isooctane

Level 4 Daily QC Working Level CCC (for higher level curves)

M-8150/51-WL-10X-10ML	1 x 10 mL
M-8150/51-WL-10X-25ML	1 x 25 mL
M-8150/51-WL-10X-50ML	1 x 50 mL

At stated conc. in Isooctane

Level 5 Daily QC Working Level CCC (for higher level curves)

M-8150/51-WL-25X-10ML	1 x 10 mL
M-8150/51-WL-25X-25ML	1 x 25 mL
M-8150/51-WL-25X-50ML	1 x 50 mL

At stated conc. in Isooctane

Table I: Herbicide Molecular Weights

The Certificate of Product Data for the Working Level Herbicide calibration curves and Daily QC check standards lists both the methyl derivative and acid equivalent concentrations. Since the EPA method for Herbicide analysis requires the final analytical results to be calculated and reported as the acid equivalent, AccuStandard provides both formats to ease calculations.

Equivalency conversion to the free acid:

$$\text{ng (free acid)} = \frac{\text{M.W. Herbicide acid}}{\text{M.W. methylated Herbicide}} \times \text{ng (methylated acid)}$$

The molecular weights for conversion of methyl esters to the acid equivalent concentrations are provided above.

Herbicide	Free Acid M.W.	Methylated M.W.
2,4-D	221.04	235.07
Dalapon	143.97	157.00
2,4-DB	249.09	263.12
Dicamba	221.04	235.07
Dichloroprop	235.07	249.09
Dinoseb	240.22	254.24
MCPA	200.62	214.65
MCPP	214.65	228.67
Silvex (2,4,5-TP)	269.51	283.54
2,4,5-T	255.48	269.51

Method 8150/8151 Working Level Herbicide Standards

Prep Note

To validate instrument response, 10 µL of internal standard is added to a 10 mL herbicide sample extract.

Internal Standard - Herbicide Solution 1

M-8151-IS	1 x 1 mL
M-8151-IS-PAK	5 x 1 mL

SAVE

250 µg/mL in Acetone

4,4'-Dibromooctafluorobiphenyl

Internal Standard - Herbicide Solution 2

M-8151-IS-2	1 x 1 mL
M-8151-IS-2-PAK	5 x 1 mL

SAVE

250 µg/mL in Acetone

1,4-Dichlorobenzene

Laboratory Performance Check Solution

M-8150/51-LPC-5ML	1 x 5 mL
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At stated conc. in Isooctane

3,5-Dichlorobenzoic acid	(600 ng/mL)
Dinoseb	(4 ng/mL)
4-Nitrophenol	(1600 ng/mL)
DCAA	(500 ng/mL)
DBOB	(250 ng/mL)

Prep Note

To verify extraction efficiency, 1 mL of surrogate is added to a herbicide sample.

Herbicide Surrogate Spiking Solution

M-8150/51-SS-WL-25ML	1 x 25 mL
M-8150/51-SS-WL-50ML	1 x 50 mL

2 µg/mL in MeOH

2,4-Dichlorophenylacetic acid (DCAA)

Prep Note

To verify QA/QC for the analytical batch, 1 mL of matrix spike is added to an herbicide sample.

Herbicide Matrix Spike (Components as Acids)

M-8150/51-MS-WL-10ML	1 x 10 mL
M-8150/51-MS-WL-25ML	1 x 25 mL
M-8150/51-MS-WL-50ML	1 x 50 mL

At stated conc. in MeOH

2,4-D	(2 µg/mL)	Dalapon	(1 µg/mL)
2,4-DB	(2 µg/mL)	Dicamba	(1 µg/mL)
2,4,5-TP (Silvex)	(0.8 µg/mL)		



EPA Method 8000 Series

Method 8150A Chlorinated Herbicides by GC/ECD

Chlorinated Herbicides in Ground Water (Rev. 1, July 1992) & their Methyl Derivatives

Compound	Herbicides Acids		Methyl Derivative	
	(mg/mL) Conc.	(in MeOH) Cat. No.	(in Hexane) Cat. No.	1 mL
2,4-D	0.2	M-8150S-A-01	M-8150-01	
2,4-DB	0.2	M-8150S-A-02	M-8150-02	
2,4,5-T	0.2	M-8150S-A-03	M-8150-03	
2,4,5-TP	0.2	M-8150S-A-04	M-8150-04	
Dalapon	0.2	M-8150S-A-05	M-8150-05	
Dicamba	0.2	M-8150S-A-06	M-8150-06	

Compound	Herbicides Acids		Methyl Derivative	
	(mg/mL) Conc.	(in MeOH) Cat. No.	(in Hexane) Cat. No.	1 mL
Dichlorprop	0.2	M-8150S-A-07	M-8150-07	
Dinoseb	0.2	M-8150S-A-08	M-8150-08	
MCPA	2.0	M-8150S-A-09	M-8150-09	
MCPP	2.0	M-8150S-A-10	M-8150-10	

Set of 10 x 1 mL	M-8150A-SET	M-8150-SET
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Underivatized Solution (Varied Concentration)

M-8150A **1 x 1 mL**
M-8150A-PAK **5 x 1 mL** **SAVE**
0.1 mg/mL in MeOH, except MCPA and MCPP 10 comps.

2,4-D	Dinoseb
Dalapon	MCPA (10 mg/mL)
2,4-DB	MCPP (10 mg/mL)
Dicamba	2,4,5-TP
Dichlorprop	2,4,5-T

Methyl Derivatives Solutions (Varied Concentration)

M-8150 **1 x 1 mL**
0.1 mg/mL in MeOH, except MCPA and MCPP 10 comps.

2,4-D ME	Dinoseb ME
Dalapon ME	MCPA ME (10 mg/mL)
2,4-DB ME	MCPP ME (10 mg/mL)
Dicamba ME	2,4,5-TP ME
Dichlorprop ME	2,4,5-T ME

Underivatized Solution (Equal Concentration)

M-8150M-A **1 x 1 mL**
M-8150M-A-PAK **5 x 1 mL** **SAVE**
0.2 mg/mL each in MeOH 10 comps.

2,4-D	Dinoseb
Dalapon	MCPA
2,4-DB	MCPP
Dicamba	2,4,5-TP
Dichlorprop	2,4,5-T

Methyl Derivatives Solutions (Equal Concentration)

M-8150M-SET **2 x 1 mL**
(M-8150M, M-8150M-2)
M-8150M **1 x 1 mL**
M-8150M-PAK **5 x 1 mL** **SAVE**
20 µg/mL each in Hexane 8 comps.

2,4-D ME	Dichlorprop ME
Dalapon ME	Dinoseb ME
2,4-DB ME	2,4,5-TP ME
Dicamba ME	2,4,5-T ME

Underivatized Surrogate Standards

M-8150B-SS **1 x 1 mL**
M-8150B-SS-PAK **5 x 1 mL** **SAVE**
0.1 mg/mL in Acetone
M-8150B-SS-10X **1 x 1 mL**
1.0 mg/mL in Acetone

2,4-Dichlorophenylacetic acid

M-8150M-2 **1 x 1 mL**
M-8150M-2-PAK **5 x 1 mL**
2,000 µg/mL each in Hexane 2 comps.
MCPA ME MCPPP ME

Methyl Derivative Surrogate Standard

M-515-SS **1 x 1 mL**
M-515-SS-PAK **5 x 1 mL** **SAVE**
0.1 mg/mL in MtBE

2,4-Dichlorophenylacetic acid methyl ester

Internal Standard

M-8151-IS **1 x 1 mL**
M-8151-IS-PAK **5 x 1 mL** **SAVE**
0.25 mg/mL in Acetone

4,4'-Dibromooctafluorobiphenyl



Method 8151/8151A Chlorinated Herbicides by GC/ECD

Methyl Derivatives

M-8151		1 x 1 mL
0.1 mg/mL each in MtBE, except MCPA & MCPP		
Acifluorfen	Dichlorprop	
Bentazon	Dinoseb	
Chloramben	MCPA (10 mg/mL)	
2,4-D	MCPA (10 mg/mL)	
Dalapon	4-Nitrophenol	
2,4-DB	Pentachlorophenol	
DCPA	Picloram	
Dicamba	2,4,5-TP	
3,5-Dichlorobenzoic acid	2,4,5-T	

Underivatized

M-8151A		1 x 1 mL
M-8151A-PAK	SAVE	5 x 1 mL
0.1 mg/mL each in Acetone, except MCPA & MCPP		
Acifluorfen	Dichlorprop	
Bentazon	Dinoseb	
Chloramben	MCPA (10 mg/mL)	
2,4-D	MCPA (10 mg/mL)	
Dalapon	4-Nitrophenol	
2,4-DB	Pentachlorophenol	
DCPA diacid	Picloram	
Dicamba	2,4,5-TP	
3,5-Dichlorobenzoic acid	2,4,5-T	

PFB Derivatized Chlorinated Herbicides

M-8150-02-PFB		1 x 1 mL
0.1 mg/mL in MtBE		
2,4-D-PFB		
M-8150-04-PFB		1 x 1 mL
0.1 mg/mL in MtBE		
2,4,5-TP-PFB		

Internal Standards

M-8151-IS		1 x 1 mL
M-8151-IS-PAK	SAVE	5 x 1 mL
0.25 mg/mL in Acetone		
4,4'-Dibromooctafluorobiphenyl		
M-8151-IS-2		1 x 1 mL
M-8151-IS-2-PAK	SAVE	5 x 1 mL
0.25 mg/mL in Acetone		
1,4-Dichlorobenzene		

Surrogate Standards

M-515-SS		1 x 1 mL
M-515-SS-PAK	SAVE	5 x 1 mL
0.1 mg/mL in MtBE		
2,4-Dichlorophenylacetic acid methyl ester		
M-8150B-SS		1 x 1 mL
M-8150B-SS-PAK	SAVE	5 x 1 mL
0.1 mg/mL in Acetone		
M-8150B-SS-10X		1 x 1 mL
1.0 mg/mL in Acetone		
2,4-Dichlorophenylacetic acid		

Method 8240 Volatile Organics by GC/MS

M-8240A ‡		1 x 1 mL
0.2 mg/mL each in MeOH		
Acetone	1,2-Dichloropropane	
Acrolein	<i>cis</i> -1,3-Dichloropropene *	
Acrylonitrile	<i>trans</i> -1,3-Dichloropropene **	
Benzene	Ethanol	
Bromodichloromethane	Ethylbenzene	
Bromoform	2-Hexanone	
2-Butanone	Iodomethane	
Carbon disulfide	4-Methyl-2-pentanone	
Carbon tetrachloride	Methylene chloride	
Chlorobenzene	Styrene	
Chloroform	1,1,2,2-Tetrachloroethane	
Dibromochloromethane	Tetrachloroethene	
<i>cis</i> -1,4-Dichloro-2-butene +	Toluene	
<i>trans</i> -1,4-Dichloro-2-butene ++	1,1,1-Trichloroethane	
1,2-Dichlorobenzene	1,1,2-Trichloroethane	
1,3-Dichlorobenzene	Trichloroethene	
1,4-Dichlorobenzene	Vinyl acetate	
1,1-Dichloroethane	<i>o</i> -Xylene	* <i>cis</i> (1.06 x conc.)
1,2-Dichloroethane	<i>m</i> -Xylene	** <i>trans</i> (0.94 x conc.)
1,1-Dichloroethene	<i>p</i> -Xylene	+ <i>cis</i> (0.1 mg/mL)
<i>trans</i> -1,2-Dichloroethene		++ <i>trans</i> (0.1 mg/mL)

Auxiliary Standards for all 8240 Methods (VOC analysis) see Catalog Number Index

Surrogate Standard	see CLP-PS-10X
Internal Standard	see CLP-PI-2.5X
Gases	see M-601B
Matrix Spiking Solution	see CLP-003R
Tuning Standard	see CLP-004
System Performance	see CLP-021
Calibration Check Compounds	see CLP-020

Method 8240A Volatiles by GC/MS

APP-9-048-R1-2X		1 x 1 mL
0.2 mg/mL in MeOH		
Chloroprene (Xylene-free)		
S-354-2		1 x 1 mL
0.2 mg/mL in Isooctane		
Ethylene oxide		

‡ To delay premature breakdown of thermally labile products in transit we suggest shipping with a "Cold Pack"



EPA Method 8000 Series

Method 8240 & 8260 Volatile Organic Compounds by GC/MS

The following solutions can be used to construct a single calibration curve containing the volatile analytes in Appendix IX for analysis by either Method 8240 or Method 8260 by GC/MS.

Bromochloromethane is excluded in the calibration solutions since it is used as an internal standard in Method 8240. If Method 8260 methodology is used, the addition of bromochloromethane from the internal standard mix can serve as the source for bromochloromethane to complement the target compound list.

Liquids (53 components, does not include Bromochloromethane)

Benzene (01)	1,1-Dichloropropene (33)
Bromobenzene (02)	<i>cis</i> -1,3-Dichloropropene (34A) *
Bromodichloromethane (04)	<i>trans</i> -1,3-Dichloropropene (34B) **
Bromoform (05)	Ethylbenzene (35)
<i>n</i> -Butylbenzene (07)	Hexachlorobutadiene (36)
<i>sec</i> -Butylbenzene (08)	Isopropylbenzene (37)
<i>tert</i> -Butylbenzene (09)	<i>p</i> -Isopropyltoluene (38)
Carbon tetrachloride (10)	Methylene chloride (39)
Chlorobenzene (11)	Naphthalene (40)
Chloroform (13)	<i>n</i> -Propylbenzene (41)
2-Chlorotoluene (15)	Styrene (42)
4-Chlorotoluene (16)	1,1,1,2-Tetrachloroethane (43)
Dibromochloromethane (17)	1,1,2,2-Tetrachloroethane (44)
1,2-Dibromo-3-chloropropane (18)	Tetrachloroethene (45)
1,2-Dibromoethane (19)	Toluene (46)
Dibromomethane (20)	1,2,3-Trichlorobenzene (47)
1,2-Dichlorobenzene (21)	1,2,4-Trichlorobenzene (48)
1,3-Dichlorobenzene (22)	1,1,1-Trichloroethane (49)
1,4-Dichlorobenzene (23)	1,1,2-Trichloroethane (50)
1,1-Dichloroethane (25)	Trichloroethene (51)
1,2-Dichloroethane (26)	1,2,3-Trichloropropane (53)
1,1-Dichloroethene (27)	1,2,4-Trimethylbenzene (54)
<i>cis</i> -1,2-Dichloroethene (28)	1,3,5-Trimethylbenzene (55)
<i>trans</i> -1,2-Dichloroethene (29)	<i>o</i> -Xylene (57)
1,2-Dichloropropane (30)	<i>m</i> -Xylene (58)
1,3-Dichloropropane (31)	<i>p</i> -Xylene (59)
2,2-Dichloropropane (32)	

* *cis* (1.06 x conc.)
** *trans* (0.94 x conc.)

6 Gas Components

Bromomethane (06)	Dichlorodifluoromethane (24)
Chloroethane (12)	Trichlorofluoromethane (52)
Chloromethane (14)	Vinyl chloride (56)

Liquids (53 components)

M-502A-R2	1 x 1 mL
M-502A-R2-PAK	5 x 1 mL
0.2 mg/mL each in MeOH	
M-502A-R2-10X	1 x 1 mL
M-502A-R2-10X-PAK	5 x 1 mL
2.0 mg/mL each in MeOH	53 comps.

Gases (6 components)

M-502B	1 x 1 mL
M-502B-PAK	5 x 1 mL
0.2 mg/mL each in MeOH	
M-502B-10X	1 x 1 mL
M-502B-10X-PAK	5 x 1 mL
2.0 mg/mL each in MeOH	6 comps.

Liquid and Gas Sets

M-502A-R2/B-SET	2 x 1 mL
0.2 mg/mL each in MeOH	(M-502A-R2, M-502B)
M-502A-R2/B-10X-SET	2 x 1 mL
2.0 mg/mL each in MeOH	(M-502A-R2-10X, M-502B-10X)

All 60 liquid and gas components in One Solution

Liquids (54 comps.) and Gases (6 comps.)

M-502	1 x 1 mL
M-502-PAK	5 x 1 mL
0.2 mg/mL each in MeOH	
M-502-10X	1 x 1 mL
M-502-10X-PAK	5 x 1 mL
2.0 mg/mL each in MeOH	60 comps.

Appendix IX Volatiles

M-8240C-R3 1 x 1 mL
At stated conc. in MeOH 12 comps.

Acetonitrile	(2.0 mg/mL)	Ethyl methacrylate	(0.2 mg/mL)
Allyl chloride	(0.2 mg/mL)	Isobutyl alcohol	(4.0 mg/mL)
<i>cis</i> -1,4-Dichloro-2-butene	(0.2 mg/mL)	Methacrylonitrile	(2.0 mg/mL)
<i>trans</i> -1,4-Dichloro-2-butene	(0.2 mg/mL)	Methyl methacrylate	(0.2 mg/mL)
1,4-Dioxane	(4.0 mg/mL)	Pentachloroethane	(0.2 mg/mL)
Ethanol	(4.0 mg/mL)	Propionitrile	(2.0 mg/mL)

M-8240C-R3-10X 1 x 1 mL
At stated conc. in MeOH 12 comps.

Acetonitrile	(20 mg/mL)	Ethyl methacrylate	(2.0 mg/mL)
Allyl chloride	(2.0 mg/mL)	Isobutyl alcohol	(40 mg/mL)
<i>cis</i> -1,4-Dichloro-2-butene	(2.0 mg/mL)	Methacrylonitrile	(20 mg/mL)
<i>trans</i> -1,4-Dichloro-2-butene	(2.0 mg/mL)	Methyl methacrylate	(20 mg/mL)
1,4-Dioxane	(40 mg/mL)	Pentachloroethane	(2.0 mg/mL)
Ethanol	(40 mg/mL)	Propionitrile	(20 mg/mL)

Same as M-8240C-R3-10X without Pentachloroethane

M-8240C-R6 1 x 1 mL
At stated conc. in MeOH 11 comps.

Acetonitrile	(20 mg/mL)	Ethyl methacrylate	(2.0 mg/mL)
Allyl chloride	(2.0 mg/mL)	Isobutyl alcohol	(40 mg/mL)
<i>cis</i> -1,4-Dichloro-2-butene	(2.0 mg/mL)	Methacrylonitrile	(20 mg/mL)
<i>trans</i> -1,4-Dichloro-2-butene	(2.0 mg/mL)	Methyl methacrylate	(2.0 mg/mL)
1,4-Dioxane	(40 mg/mL)	Propionitrile	(20 mg/mL)
Ethanol	(40 mg/mL)		

M-8260-ADD ‡ 1 x 1 mL
0.2 mg/mL each in MeOH 8 comps.

M-8260-ADD-10X ‡ 1 x 1 mL
M-8260-ADD-10X-PAK ‡ NEW 5 x 1 mL
2.0 mg/mL each in MeOH 8 comps. **SAVE**

Acetone	2-Hexanone
2-Butanone	Iodomethane
Carbon disulfide	4-Methyl-2-pentanone
2-Chloroethylvinyl ether	Vinyl acetate

M-603 1 x 1 mL
1.0 mg/mL each in H₂O 2 comps.

M-603-10X 1 x 1 mL
10.0 mg/mL each in MeOH:Water (9:1) 2 comps.

M-603-M-0.1X NEW 1 x 1 mL
100 µg/mL each in MeOH:Water (9:1) 2 comps.

Acrolein Acrylonitrile

See also Method 8240 & 8260

‡ To delay premature breakdown of thermally labile products in transit we suggest shipping with a "Cold Pack"



Method 8260B Volatile Organic Compounds by GC/MS

The following standard formulations have been put together for a complete 8260B target compound list. We have utilized our standard M-502A-R containing the 54 typical analytes found in this method and a number of other EPA methods. In addition, we have tried to minimize the number of additional standards required to get the complete analyte list, while still addressing the various chromatographic problems associated to specific analytes.

Liquids

M-502A-R 0.2 mg/mL each in MeOH	1 x 1 mL 54 comps.
Benzene (01) Bromobenzene (02) Bromochloromethane (03) Bromodichloromethane (04) Bromoform (05) n-Butylbenzene (07) sec-Butylbenzene (08) tert-Butylbenzene (09) Carbon tetrachloride (10) Chlorobenzene (11) Chloroform (13) 2-Chlorotoluene (15) 4-Chlorotoluene (16) Dibromochloromethane (17) 1,2-Dibromo-3-chloropropane (18) 1,2-Dibromoethane (19) Dibromomethane (20) 1,2-Dichlorobenzene (21) 1,3-Dichlorobenzene (22) 1,4-Dichlorobenzene (23) 1,1-Dichloroethane (25) 1,2-Dichloroethane (26) 1,1-Dichloroethene (27) cis-1,2-Dichloroethene (28) trans-1,2-Dichloroethene (29) 1,2-Dichloropropane (30) 1,3-Dichloropropane (31)	2,2-Dichloropropane (32) 1,1-Dichloropropene (33) cis-1,3-Dichloropropene (34A) * trans-1,3-Dichloropropene (34B) ** Ethylbenzene (35) Hexachlorobutadiene (36) Isopropylbenzene (Cumene) (37) p-Isopropyltoluene (p-Cymene) (38) Methylene chloride (39) Naphthalene (40) n-Propylbenzene (41) Styrene (42) 1,1,1,2-Tetrachloroethane (43) 1,1,2,2-Tetrachloroethane (44) Tetrachloroethene (45) Toluene (46) 1,2,3-Trichlorobenzene (47) 1,2,4-Trichlorobenzene (48) 1,1,1-Trichloroethane (49) 1,1,2-Trichloroethane (50) Trichloroethene (51) 1,2,3-Trichloropropane (53) 1,2,4-Trimethylbenzene (54) 1,3,5-Trimethylbenzene (55) o-Xylene (57) m-Xylene (58) p-Xylene (59)
	* cis (1.06 x conc.) ** trans (0.94 x conc.)

Gases

M-502B 0.2 mg/mL each in MeOH	1 x 1 mL 6 comps.
Bromomethane (06) Chloroethane (12) Chloromethane (14)	Dichlorodifluoromethane (24) Trichlorofluoromethane (52) Vinyl chloride (56)

Volatile Organic Compounds (VOC) Set

M-502A-R/B-SET set of 2 x 1 mL
(includes 1 mL of 54 liquids and 1 mL of 6 gas components)

M-603 1.0 mg/mL each in water	1 x 1 mL 2 comps.
Acrolein	Acrylonitrile

M-8240C-R3-10X At stated conc. in MeOH	1 x 1 mL 12 comps.
Acetonitrile (20 mg/mL) Allyl chloride (2.0 mg/mL) cis-1,4-Dichloro-2-butene (2.0 mg/mL) trans-1,4-Dichloro-2-butene (2.0 mg/mL) 1,4-Dioxane (40 mg/mL) Ethanol (40 mg/mL)	Ethyl methacrylate (2.0 mg/mL) Isobutyl alcohol (40 mg/mL) Methacrylonitrile (20 mg/mL) Methyl methacrylate (2.0 mg/mL) Pentachloroethane (2.0 mg/mL) Propionitrile (20 mg/mL)

Storage Conditions

All products come with storage conditions listed on the label of the ampule or bottle. Some chemical formulations require refrigeration or freezer storage to inhibit adverse reactions among the components. Other standards require sonication prior to use because they are near their saturation for the particular formulation. It is imperative that these conditions are followed to insure the chemical reference standard will be at the stated concentration.

Additional VOCs by Method 8260B

M-8260B-01 M-8260B-01-PAK 2000 µg/mL each in MeOH	1 x 1 mL 5 x 1 mL 11 comps.
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Benzyl chloride 1-Chlorobutane 1-Chlorohexane 1,2,3,4-Diepoxybutane Diethyl ether Nitrobenzene	2-Nitropropane Dibromofluoromethane Methyl acrylate MtBE Pentafluorobenzene
---	---

M-8260B-02 M-8260B-02-PAK 2000 µg/mL each in MeOH	1 x 1 mL 5 x 1 mL 10 comps.
---	---

Allyl alcohol 1-Butanol Chloroacetonitrile 3-Chloropropionitrile Epichlorohydrin	Ethyl acetate Hexachloroethane 2-Hydroxypropionitrile Malonitrile Pyridine
--	--

M-8260B-03 M-8260B-03-PAK 2000 µg/mL each in MeOH : Water 9: 1	1 x 1 mL 5 x 1 mL 4 comps.
--	--

N-Nitrosodi-n-butylamine 2-Picoline	Propylamine o-Toluidine
--	----------------------------

M-8260B-04 M-8260B-04-PAK 2000 µg/mL each in MeOH	1 x 1 mL 5 x 1 mL 6 comps.
---	--

t-Butanol 2-Chloroethanol 1,3-Dichloro-2-propanol	1-Propanol Isopropanol Propargyl alcohol
---	--

M-8260B-05 ‡ M-8260B-05-PAK ‡ 2000 µg/mL each in MeOH	1 x 1 mL 5 x 1 mL 2 comps.
---	--

Crotonaldehyde	Paraldehyde
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M-8260B-06-PAK ‡ 2000 µg/mL each in MeOH	5 x 1 mL 3 comps.
--	-----------------------------

Bromoacetone 2-Pentanone	b-Propiolactone
-----------------------------	-----------------

Chloroprene (Xylene-Free)

APP-9-048-R1-10X 1.0 mg/mL in MeOH	1 x 1 mL
APP-9-048-R1-20X NEW 2.0 mg/mL in MeOH	1 x 1 mL

Ethylene oxide

M-8015B/5031-14-R1 5 mg/mL in H ₂ O	1 x 1 mL
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Chloral hydrate

M-E-1179-M 1.0 mg/mL in MeOH	1 x 1 mL
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M-8260B continued to the next page

Method 8260B (Continued) Volatile Organic Compounds by GC/MS

Internal Standards

M-8260-IS		1 x 1 mL
M-8260-IS-PAK	SAVE	5 x 1 mL
<i>0.2 mg/mL each in MeOH</i>		
M-8260-IS-10X		4 comps.
M-8260-IS-10X-PAK	SAVE	1 x 1 mL
<i>2.0 mg/mL each in MeOH</i>		
		5 x 1 mL
		4 comps.

Chlorobenzene-d ₅	1,4-Dichlorobenzene-d ₄
1,4-Difluorobenzene	Pentafluorobenzene

M-8260-IS-R		1 x 1 mL
M-8260-IS-R-PAK	SAVE	5 x 1 mL
<i>0.2 mg/mL each in MeOH</i>		
M-8260-IS-R-10X		4 comps.
M-8260-IS-R-10X-PAK	SAVE	1 x 1 mL
<i>2.0 mg/mL each in MeOH</i>		
		5 x 1 mL
		4 comps.

2-Bromo-1-chloropropane	1,4-Dichlorobenzene-d ₄
1,4-Difluorobenzene	Pentafluorobenzene

M-8260A/B-IS		1 x 1 mL
M-8260A/B-IS-PAK	SAVE	5 x 1 mL
<i>0.2 mg/mL each in MeOH</i>		
M-8260A/B-IS-10X		3 comps.
M-8260A/B-IS-10X-PAK	SAVE	1 x 1 mL
<i>2.0 mg/mL each in MeOH</i>		
		5 x 1 mL
		3 comps.

Chlorobenzene-d ₅	Fluorobenzene
1,4-Dichlorobenzene-d ₄	

Combined Internal/Surrogate Standard VOA Mix

M-8260A/B-IS/SS		1 x 1 mL
M-8260A/B-IS/SS-PAK	SAVE	5 x 1 mL
<i>200 µg/mL each in MeOH</i>		
M-8260A/B-IS/SS-10X		7 comps.
M-8260A/B-IS/SS-10XPAK	SAVE	1 x 1 mL
<i>2.0 mg/mL each in MeOH</i>		
		5 x 1 mL
		7 comps.

p-Bromofluorobenzene	1,2-Dichloroethane-d ₂
Chlorobenzene-d ₅	Fluorobenzene
Dibromofluoromethane	Toluene-d ₈
1,4-Dichlorobenzene-d ₄	

Surrogate Standards

M-8260-SS		1 x 1 mL
M-8260-SS-PAK	SAVE	5 x 1 mL
<i>0.2 mg/mL each in MeOH</i>		
M-8260-SS-10X NEW		3 comps.
M-8260-SS-10X-PAK NEW	SAVE	1 x 1 mL
<i>2.0 mg/mL each in MeOH</i>		
		5 x 1 mL
		3 comps.

4-Bromofluorobenzene	Toluene-d ₈
Dibromofluoromethane	

M-8260A/B-SS-2 NEW		1 x 1 mL
<i>0.2 mg/mL in MeOH</i>		
M-8260A/B-SS-2-10X NEW		1 x 1 mL
<i>2.0 mg/mL in MeOH</i>		

Dibromofluoromethane

M-8260A/B-SS		1 x 1 mL
M-8260A/B-SS-PAK	SAVE	5 x 1 mL
<i>0.2 mg/mL each in MeOH</i>		
M-8260A/B-SS-10X		4 comps.
M-8260A/B-SS-10X-PAK	SAVE	1 x 1 mL
<i>2.0 mg/mL each in MeOH</i>		
		5 x 1 mL
		4 comps.

p-Bromofluorobenzene	1,2-Dichloroethane-d ₂
Dibromofluoromethane	Toluene-d ₈





Method 8240 & 8260 Volatile Organic Compounds Auxiliary Standards

Internal Standard VOA

M-8240/60-IS		1 x 1 mL
M-8240/60-IS-PAK	SAVE	5 x 1 mL
0.2 mg/mL each in MeOH		5 comps.
M-8240/60-IS-10X		1 x 1 mL
M-8240/60-IS-10X-PAK	SAVE	5 x 1 mL
2.0 mg/mL each in MeOH		5 comps.
Bromochloromethane	1,4-Difluorobenzene	
Chlorobenzene-d ₅	Pentafluorobenzene	
1,4-Dichlorobenzene-d ₄		

Surrogate Standard VOA

M-8240/60-SS		1 x 1 mL
M-8240/60-SS-PAK	SAVE	5 x 1 mL
0.2 mg/mL each in MeOH		4 comps.
M-8240/60-SS-10X		1 x 1 mL
M-8240/60-SS-10X-PAK	SAVE	5 x 1 mL
2.0 mg/mL each in MeOH		4 comps.
p-Bromofluorobenzene	1,2-Dichloroethane-d ₄	
Dibromofluoromethane	Toluene-d ₈	

Internal / Surrogate Standard VOA

M-8240/60-IS/SS		1 x 1 mL
M-8240/60-IS/SS-PAK	SAVE	5 x 1 mL
0.2 mg/mL each in MeOH		9 comps.
M-8240/60-IS/SS-10X		1 x 1 mL
M-8240/60-IS/SS-10XPAK	SAVE	5 x 1 mL
2.0 mg/mL each in MeOH		9 comps.
Bromochloromethane	1,2-Dichloroethane-d ₄	
p-Bromofluorobenzene	1,4-Difluorobenzene	
Chlorobenzene-d ₅	Pentafluorobenzene	
Dibromofluoromethane	Toluene-d ₈	
1,4-Dichlorobenzene-d ₄		

Volatile Calibration Check Compounds (CCC)

CLP-020		1 x 1 mL
CLP-020-PAK	SAVE	5 x 1 mL
0.2 mg/mL each in MeOH		6 comps.
CLP-020-10X		1 x 1 mL
CLP-020-10X-PAK	SAVE	5 x 1 mL
2.0 mg/mL each in MeOH		6 comps.
Chloroform	Ethylbenzene	
1,1-Dichloroethene	Toluene	
1,2-Dichloropropane	Vinyl chloride	

Volatile System Performance Check Compounds (SPCC)

CLP-021		1 x 1 mL
CLP-021-PAK	SAVE	5 x 1 mL
0.2 mg/mL each in MeOH		5 comps.
CLP-021-10X		1 x 1 mL
CLP-021-10X-PAK	SAVE	5 x 1 mL
2.0 mg/mL each in MeOH		5 comps.
Bromoform	1,1-Dichloroethane	
Chlorobenzene	1,1,2,2-Tetrachloroethane	
Chloromethane		

Instrument Performance Check Solutions

CLP-004		1 x 1 mL
CLP-004-PAK	SAVE	5 x 1 mL
25 µg/mL in MeOH		
CLP-004-10X		1 x 1 mL
CLP-004-10X-PAK	SAVE	5 x 1 mL
250 µg/mL in MeOH		
CLP-004-100X		1 x 1 mL
CLP-004-100X-PAK	SAVE	5 x 1 mL
2500 µg/mL in MeOH		

p-Bromofluorobenzene

Purgeable Organic Matrix Spiking Solutions

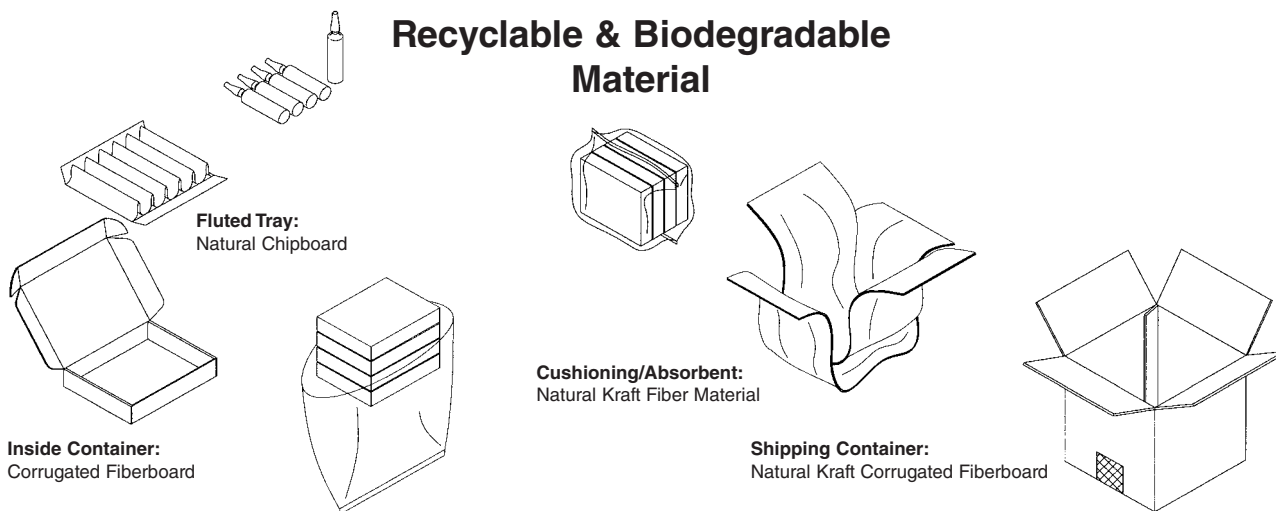
CLP-003-R		1 x 1 mL
CLP-003-R-PAK	SAVE	5 x 1 mL
0.25 mg/mL each in MeOH		5 comps.
CLP-003-R-10X		1 x 1 mL
CLP-003-R-10X-PAK	SAVE	5 x 1 mL
2.5 mg/mL each in MeOH		5 comps.

Benzene
Chlorobenzene
1,1-Dichloroethene

Toluene
Trichloroethene

AccuStandard has Environmentally Friendly Packaging

Recyclable & Biodegradable Material



Package compliant with DOT Title 49, CFR 173.4.

Method 8270C/D Semi-Volatile by GC/MS as core mixtures

The primary analytes typically analyzed in Method 8270 version C and D have been formulated based on one of the following considerations: large core mixes, analyte retention time association to ISTD's, similar functional groups, Third Party Certified Standards or as working level Ready-to-Inject standards

Use of these Method 8270C/D components in 5 mixtures can save you time and money in preparing your calibration curves. Four high concentration solutions CLP-HC-BN-SET, CLP-HC-A-R, CLP-HC-X1 and Z-014E can be combined to give you the 92 typical analytes needed for Method 8270C/D. Product Z-014E-R can be used in lieu of Z-014E for those labs interested in adding pyridine to their target list.

These mixtures can also serve as your **second source** requirements since they are independently prepared from product M-8270 (7 x 1 mL).

Base-Neutral Mixture (44 components)

CLP-HC-BN-R

Acenaphthene	4-Chlorophenyl phenyl ether	Hexachlorobenzene
Acenaphthylene	Chrysene	Hexachlorobutadiene
Anthracene	Dibenz[a,h]anthracene	Hexachlorocyclopentadiene
Azobenzene	Di- <i>n</i> -butyl phthalate	Hexachloroethane
Benz[a]anthracene	1,2-Dichlorobenzene	Indeno[1,2,3- <i>cd</i>]pyrene
Benzo[b]fluoranthene	1,3-Dichlorobenzene	Isophorone
Benzo[k]fluoranthene	1,4-Dichlorobenzene	Naphthalene
Benzo[g,h,i]perylene	Diethyl phthalate	Nitrobenzene
Benzo[a]pyrene	Dimethyl phthalate	N-Nitrosodimethylamine
4-Bromophenyl phenyl ether	2,4-Dinitrotoluene	N-Nitrosodiphenylamine
Butyl benzyl phthalate	2,6-Dinitrotoluene	N-Nitrosodi- <i>n</i> -propylamine
bis(2-Chloroethoxy)methane	Di- <i>n</i> -octyl phthalate	Phenanthrene
bis(2-Chloroethyl)ether	bis(2-Ethylhexyl)phthalate	Pyrene
bis(2-Chloro-1-methylethyl)ether	Fluoranthene	1,2,4-Trichlorobenzene
2-Chloronaphthalene	Fluorene	

Benzidine Mixture (2 comps.)

Z-014F

Benzidine
3,3'-Dichlorobenzidine

Alternate Source Line (ASL)

For complete listing of competitive 8270 see the QC Section

Technical Note

Azobenzene was substituted for 1,2-diphenylhydrazine since it oxidizes to azobenzene under GC operating conditions.

Base-Neutrals

CLP-HC-BN-R

2.0 mg/mL each in Benzene : CH₂Cl₂ : AcCN (2:2:1)

CLP-HC-BN-R-PAK

2.0 mg/mL each in Benzene : CH₂Cl₂ : AcCN (2:2:1)

Benzidine

Z-014F

2.0 mg/mL each in MeOH

1 x 1 mL

44 comps.

5 x 1 mL

44 comps.

1 x 1 mL

2 comps.

Base-Neutral and Benzidine Sets

CLP-HC-BN-SET

CLP-HC-BN-SET-PAK

2 x 1 mL

(CLP-HC-BN-R, Z-014F)

5 x (2 x 1 mL)

5 x (CLP-HC-BN-R, Z-014F)

Additional Analyte Solutions

Acid Composite Mixture

CLP-HC-A-R

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

19 comps.

Benzoic acid
4-Chloro-3-methylphenol
2-Chlorophenol
<i>o</i> -Cresol
<i>p</i> -Cresol
2,4-Dichlorophenol
2,6-Dichlorophenol
2,4-Dimethylphenol
4,6-Dinitro-2-methylphenol
2,4-Dinitrophenol
Ethyl methanesulfonate
Methyl methanesulfonate
2-Nitrophenol
4-Nitrophenol
Pentachlorophenol
Phenol
2,3,4,6-Tetrachlorophenol
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol

Composite #1

Z-014E

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

8 comps.

Aniline	2-Methylnaphthalene
Benzyl alcohol	2-Nitroaniline
4-Chloroaniline	3-Nitroaniline
Dibenzofuran	4-Nitroaniline

Composite #2

Z-014E-R

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

9 comps.

Aniline	2-Nitroaniline
Benzyl alcohol	3-Nitroaniline
4-Chloroaniline	4-Nitroaniline
Dibenzofuran	Pyridine
2-Methylnaphthalene	

Composite #3A

CLP-HC-X1

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

19 comps.

Acetophenone
4-Aminobiphenyl
1-Chloronaphthalene
Dibenz[a,j]acridine
<i>p</i> -Dimethylaminoazobenzene
7,12-Dimethylbenz[a]anthracene
α,α -Dimethylphenethylamine
Diphenylamine
3-Methylcholanthrene
1-Naphthylamine
2-Naphthylamine
N-Nitrosodi- <i>n</i> -butylamine
N-Nitrosopiperidine
Pentachlorobenzene
Pentachloronitrobenzene
Phenacetin
2-Picoline
Pronamide
1,2,4,5-Tetrachlorobenzene

M-8270-07

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

15 comps.

Aramite	Kepone
Chlorobenzilate	Methyl parathion
Diallate	Parathion
2,4-D	Phorate
Dimethoate	Silvex (2,4,5-TP)
Dinoseb	Sulfotep
Disulfoton	Thionazin
Famphur	

M-8270-08

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

9 comps.

3,3'-Dimethyl benzidine	N-Nitrosopyrrolidine
4-Nitroquinoline-1-oxide	5-Nitro- <i>o</i> -toluidine
N-Nitrosodiethylamine	<i>p</i> -Phenylenediamine
N-Nitrosomethylethylamine	<i>o</i> -Toluidine
N-Nitrosomorpholine	

M-8270-09

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

10 comps.

2-Acetyl aminofluorene	Isosafrole
<i>m</i> -Dinitrobenzene	Methapyrilene
Hexachlorophene	1,4-Naphthoquinone
Hexachloropropene	Safrole
Isodrin	0,0,0-Triethyl phosphorothioate



Method 8270C/D (Continued) Auxiliary Standards

Internal Standard

Z-014J		1 x 1 mL
Z-014J-PAK	SAVE	5 x 1 mL
4.0 mg/mL each in CH ₂ Cl ₂		6 comps.
Acenaphthene-d ₁₀	Naphthalene-d ₈	
Chrysene-d ₁₂	Perylene-d ₁₂	
1,4-Dichlorobenzene-d ₄	Phenanthrene-d ₁₀	

Surrogate Standards

M-8270-SS		1 x 1 mL
M-8270-SS-PAK	SAVE	5 x 1 mL
4.0 mg/mL each in CH ₂ Cl ₂		6 comps.
2-Fluorobiphenyl	Phenol-d ₅	
2-Fluorophenol	<i>p</i> -Terphenyl-d ₁₄	
Nitrobenzene-d ₅	2,4,6-Tribromophenol	

M-8270-SS-R		1 x 1 mL
M-8270-SS-R-PAK	SAVE	5 x 1 mL
At stated conc. each in CH ₂ Cl ₂ : MeOH (4:1)		6 comps.

2-Fluorobiphenyl (1.0 mg/mL)	Phenol-d ₅ (2.0 mg/mL)
2-Fluorophenol (2.0 mg/mL)	Terphenyl-d ₁₄ (1.0 mg/mL)
Nitrobenzene-d ₅ (1.0 mg/mL)	2,4,6-Tribromophenol (2.0 mg/mL)

Base/Neutrals & Acids - Matrix Standard Spiking Solutions

CLP-007-SET		2 x 1 mL
CLP-007-SET-PAK	SAVE	5 x (2 x 1 mL)
		(CLP-007A, CLP-007B)

Base/Neutrals

CLP-007A		1 x 1 mL
1.0 mg/mL each in MeOH		6 comps.
Acenaphthene	N-nitroso-di- <i>n</i> -propylamine	
1,4-Dichlorobenzene	Pyrene	
2,4-Dinitrotoluene	1,2,4-Trichlorobenzene	

Acids

CLP-007B		1 x 1 mL
2.0 mg/mL each in MeOH		5 comps.
2-Chlorophenol	Pentachlorophenol	
4-Chloro-3-methylphenol	Phenol	
4-Nitrophenol		

GC/MS Tuning Standard

M-625-TS-20X		1 x 1 mL
1.0 mg/mL each in CH ₂ Cl ₂		4 comps.
Benzidine	DFTPP	
<i>p,p'</i> -DDT	Pentachlorophenol	

Calibration Check Compounds (CCC)

CLP-011-SET		set of 2 x 1 mL
		(includes CLP-011A and CLP-011B)

Base/Neutrals

CLP-011A		1 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂		7 comps.
Acenaphthene	Hexachlorobutadiene	
Benzo[a]pyrene	Fluoranthene	
1,4-Dichlorobenzene	N-nitroso-diphenylamine	
Di- <i>n</i> -octylphthalate		

Acids

CLP-011B		1 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂		6 comps.
4-Chloro-3-methylphenol	Pentachlorophenol	
2,4-Dichlorophenol	Phenol	
2-Nitrophenol	2,4,6-Trichlorophenol	

System Performance Check Compounds (SPCC)

CLP-010		1 x 1 mL
0.2 mg/mL each in CH ₂ Cl ₂		4 comps.
CLP-010-10X		1 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂		4 comps.
2,4-Dinitrophenol	4-Nitrophenol	
Hexachlorocyclopentadiene	N-nitroso- <i>di-n</i> -propylamine	

Multi-Component Analytes Polychlorinated Biphenyls, Chlordane & Toxaphene

Each at 1,000 µg/mL in Hexane **AccuPAK™ (5 x 1 mL)**
SAVE

Aroclors #	Cat. No.	1 mL	Cat. No.	PAK
Aroclor 1016	C-216S-H-10X		C-216S-H-10X-PAK	
Aroclor 1221	C-221S-H-10X		C-221S-H-10X-PAK	
Aroclor 1232	C-232S-H-10X		C-232S-H-10X-PAK	
Aroclor 1242	C-242S-H-10X		C-242S-H-10X-PAK	
Aroclor 1248	C-248S-H-10X		C-248S-H-10X-PAK	
Aroclor 1254	C-254S-H-10X		C-254S-H-10X-PAK	
Aroclor 1260	C-260S-H-10X		C-260S-H-10X-PAK	
Aroclor 1262	C-262S-H-10X		C-262S-H-10X-PAK	
Aroclor 1268	C-268S-H-10X		C-268S-H-10X-PAK	
Pesticides				
Chlordane	P-017S-H-10X		P-017S-H-10X-PAK	
Toxaphene	P-093S-H-10X		P-093S-H-10X-PAK	

Method 8270C/D (Continued) Semi-Volatiles by Capillary Column GC/MS

These Method 8270C/D formulations are designed based on the association of the analyte to a specific internal standard. These formulations allow for easy preparation of the typical analytes in the calibration curve. In addition, instrument/method problems can be rapidly diagnosed by examining those specific analytes and the associated internal standard in the affected part of the analysis.

Save
when ordering a complete set over
individual solutions

Complete 8270 Method Mixture Set

M-8270-SET
M-8270-R-SET

7 x 1 mL (M-8270-01, M-8270-02, M-8270-03, M-8270-04A, M-8270-04B, M-8270-05, M-8270-06)
7 x 1 mL (M-8270-01, M-8270-02, M-8270-03, M-8270-04A, M-8270-04B-R1, M-8270-05, M-8270-06)

M-8270-01 2.0 mg/mL each in CH ₂ Cl ₂	1 x 1 mL 17 comps.	M-8270-02 2.0 mg/mL each in CH ₂ Cl ₂	1 x 1 mL 18 comps.	M-8270-03 2.0 mg/mL each in CH ₂ Cl ₂	1 x 1 mL 24 comps.
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Aniline
Benzyl alcohol
bis(2-Chloroethyl)ether
bis(2-Chloro-1-methylethyl)ether
2-Chlorophenol
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
Ethylmethanesulfonate
Hexachloroethane
Methylmethanesulfonate
2-Methylphenol
4-Methylphenol
N-Nitrosodimethylamine
N-Nitrosodi-*n*-propylamine
Phenol
2-Picoline

Acetophenone
Benzoic acid
bis(2-Chloroethoxy)methane
4-Chloroaniline
4-Chloro-3-methylphenol
2,4-Dichlorophenol
2,6-Dichlorophenol
 α,α -Dimethylphenethylamine
2,4-Dimethylphenol
Hexachlorobutadiene
Isophorone
2-Methylnaphthalene
Naphthalene
Nitrobenzene
2-Nitrophenol
N-Nitroso-di-*n*-butylamine
N-Nitrosopiperidine
1,2,4-Trichlorobenzene

Acenaphthene
Acenaphthylene
1-Chloronaphthalene
2-Chloronaphthalene
4-Chlorophenyl phenyl ether
Dibenzofuran
Diethyl phthalate
Dimethyl phthalate
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Fluorene
Hexachlorocyclopentadiene
1-Naphthylamine
2-Naphthylamine
2-Nitroaniline
3-Nitroaniline
4-Nitroaniline
4-Nitrophenol
Pentachlorobenzene
1,2,4,5-Tetrachlorobenzene
2,3,4,6-Tetrachlorophenol
2,4,6-Trichlorophenol
2,4,5-Trichlorophenol

M-8270-04A
2.0 mg/mL each in CH₂Cl₂

1 x 1 mL
9 comps.

4-Aminobiphenyl
Anthracene
4-Bromophenyl phenyl ether
Di-*n*-butyl phthalate
4,6-Dinitro-2-methylphenol
Fluoranthene
Hexachlorobenzene
Pentachlorophenol
Phenanthrene

M-8270-04B
2.0 mg/mL each in CH₂Cl₂

1 x 1 mL
6 comps.

Diphenylamine
1,2-Diphenylhydrazine
N-Nitrosodiphenylamine
Pentachloronitrobenzene
Phenacetin
Pronamide

M-8270-05
2.0 mg/mL each in CH₂Cl₂

1 x 1 mL
8 comps.

Benidine
Benzo[a]anthracene
bis(2-Ethylhexyl)phthalate
Butylbenzylphthalate
Chrysene
3,3'-Dichlorobenzidine
p-Dimethylaminoazobenzene
Pyrene

M-8270-06
2.0 mg/mL each in CH₂Cl₂

1 x 1 mL
10 comps.

Benzo[b]fluoranthene
Benzo[k]fluoranthene
Benzo[g,h,i]perylene
Benzo[a]pyrene
Dibenz[a,j]acridine
Dibenz[a,h]anthracene
7,12-Dimethylbenz[a]anthracene
Di-*n*-octylphthalate
Indeno[1,2,3-*cd*]pyrene
3-Methylcholanthrene

Technical Note

Under EPA recommended GC conditions (Method 8270) the analyte 1,2-Diphenylhydrazine is converted in varying degrees to Azobenzene and breakdown products. According to our study, the use of an injection port temperature range (240°C - 300°C) will cause the 1,2-Diphenylhydrazine to break down.

Substituting Azobenzene for 1,2-Diphenylhydrazine will allow analysis yielding a single peak regardless of the EPA recommended injection port temperature range used.

Alternate Formulation

M-8270-04B-R1
2.0 mg/mL each in CH₂Cl₂

1 x 1 mL
6 comps.

Azobenzene
Diphenylamine
N-Nitrosodiphenylamine
Pentachloronitrobenzene
Phenacetin
Pronamide

M-8270-07
2.0 mg/mL each in CH₂Cl₂

1 x 1 mL
15 comps.

Aramite
Chlorobenzilate
Diallate
2,4-D
Dimethoate
Dinoseb
Disulfoton
Famphur
Kepone
Methyl parathion
Parathion
Phorate
Silvex (2,4,5-TP)
Sulfotep
Thionazin

M-8270-08
2.0 mg/mL each in CH₂Cl₂

1 x 1 mL
9 comps.

3,3'-Dimethyl benzidine
4-Nitroquinoline-1-oxide
N-Nitrosodiethylamine
N-Nitrosomethylamine
N-Nitrosomorpholine
N-Nitrosopyrrolidine
5-Nitro-*o*-toluidine
p-Phenylenediamine
o-Toluidine

M-8270-09
2.0 mg/mL each in CH₂Cl₂

1 x 1 mL
10 comps.

2-Acetyl aminofluorene
1,3-Dinitrobenzene
Hexachlorophene
Hexachloropropene
Isodrin
Isosafrole
Methapyrilene
1,4-Naphthoquinone
Safrole
O,O,O-Triethylphosphorothioate



Method 8270C/D (Continued) Appendix IX Semi-Volatiles Analyzed by Method 8270

M-8270-10 1 x 1 mL
2.0 mg/mL in MeOH

sym-Trinitrobenzene

M-8270-10-R 1 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

Pyridine sym-Trinitrobenzene

Additions to Method 8270

M-8270-13-SET 2 x 1 mL
(M-8270-13A-R, M-8270-13B-R)

M-8270-13A-R 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 12 comps.

4-Aminoazobenzene	4,4'-Methylenebis(N,N-dimethylaniline)
3-Amino-9-ethylcarbazole	4,4'-Methylene bis(2-chloroaniline)
o-Anisidine	4,4'-Oxydianiline
5-Chloro-2-methylaniline	2-Picoline
p-Cresidine	Pyridine
2,4-Diaminotoluene	2,4,5-Trimethylaniline

M-8270-13B-R 1 x 1 mL
2.0 mg/mL each in THF 3 comps.

2-Aminoanthraquinone 4-Chloro-1,3-phenylenediamine
4-Chloro-1,2-phenylenediamine

M-8270-14-SET 3 x 1 mL
(M-8270-14A, M-8270-14B, M-8270-14C)

M-8270-14A 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 6 comps.

m-Cresol	Thiophenol
o-Cresol	tris(2,3-Dibromopropyl)phosphate
Resorcinol	Tri-p-tolyl phosphate

M-8270-14B 1 x 1 mL
2.0 mg/mL each in THF 5 comps.

p-Benzoquinone	Phthalic anhydride
Hydroquinone	Trimethyl phosphate
Maleic anhydride	

M-8270-14C 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂:MeOH (3:1) 5 comps.

1-Acetyl-2-thiourea	3-Picolyl chloride HCL
Diethyl sulfate	Toluene diisocyanate
Hexamethylphosphoramide	

M-8270-15 1 x 1 mL
1.0 mg/mL each in CH₂Cl₂:MeOH (19:1) 13 comps.

Dibenzo[a,e]pyrene	Nicotine
1,2-Dibromo-3-chloropropane	5-Nitroacenaphthene
Diethyl stilbestrol	5-Nitro-o-anisidine
1,2-Dinitrobenzene	4-Nitrobiphenyl
1,4-Dinitrobenzene	Propylthiouracil
5,5-Diphenylhydantoin	Strychnine
Mestranol	

Pesticides

M-8270-16 1 x 1 mL
1000 µg/mL each in CH₂Cl₂ 10 comps.

Anilazine	Dioxathion
Azinphos methyl	Mirex
Barbamate	Sulfoxide
Demeton (mixed isomers)	Sulfallate
Dichlone	Trifluralin

M-8270-17 1 x 1 mL
1000 µg/mL each in CH₂Cl₂ 7 comps.

Brominal	Dinocap
Captafol	Fluchloralin
Captan	Nitrofen
Dinex	

Carbamates/Pesticides

M-8270-18 1 x 1 mL
1000 µg/mL each in CH₂Cl₂ 6 comps.

Carbaryl	Mexacarbate
Carbofuran	Schradan (Octamethylpyrophosphoramidate)
Ethyl carbamate	Phenobarbital

Pesticides

M-8270-19 1 x 1 mL
1000 µg/mL each in CH₂Cl₂ 12 comps.

Carbophenothion	Leptophos
Coumaphos	Malathion
EPN	Phosalone
Ethion	Imidan (Phosmet)
Fensulfothion	Terbufos
Fenthion	Tetrachlorvinphos

M-8270-20 1 x 1 mL
1000 µg/mL each in CH₂Cl₂ 9 comps.

Chlorfenvinphos	Monocrotophos
Ciodrin (Crotoxyphos)	Naled
Dichlorvos	Phosphamidon
Dicrotophos	TEPP (Tetraethyl pyrophosphate)
Mevinphos	

Azo Dye

RAC-12-10X 1 x 1 mL
1.0 mg/mL in CH₂Cl₂

3,3'-Dimethoxybenzidine

Pesticide Mix

Z-014C-R 1 x 1 mL
Z-014C-R-PAK 5 x 1 mL
2.0 mg/mL each in Toluene : Hexane (1:1) 20 comps.

Aldrin	Dieldrin
α-BHC	Endosulfan I
β-BHC	Endosulfan II
γ-BHC	Endosulfan sulfate
δ-BHC	Endrin
α-Chlordane	Endrin aldehyde
γ-Chlordane	Endrin ketone
4,4'-DDD	Heptachlor
4,4'-DDE	Heptachlor epoxide
4,4'-DDT	Methoxychlor

Alternate Source Line
For complete listing of
competitive 8270 see the QC Section

EPA Method 8000 Series

Ready-to-Inject Working Level Semi-Volatile Standards

Method 8270

Method 8270C/D 5 point Semi-Volatile Calibration Curve

AccuStandard provides a 5 point semi-volatile calibration curve in 2 formats. One calibration curve already incorporates the internal standards in each level of the curve. To begin analysis, the chemist just cracks the ampule open and transfers the content to the autosampler vial. The second semi-volatile curve does not contain the internal standard.

The analytical chemist will need to add 10 µL of internal standard to each level of the curve and the environmental samples as the vials are placed on the GC/MS. AccuStandard offers both types of curves to meet your laboratory's preference regarding the addition of internal standards.

Target Analytes (Semi-Volatiles)

Acenaphthene	Carbazole	Di- <i>n</i> -butyl phthalate	bis(2-Ethylhexyl)phthalate	Nitrobenzene
Acenaphthylene	4-Chloroaniline	1,2-Dichlorobenzene	Fluoranthene	2-Nitrophenol
Aniline	bis(2-Chloroethoxy)methane	1,3-Dichlorobenzene	Fluorene	4-Nitrophenol
Anthracene	bis(2-Chloroethyl)ether	1,4-Dichlorobenzene	Hexachlorobenzene	N-Nitrosodimethylamine
Azobenzene	bis(2-Chloro-1-methylethyl)ether	3,3'-Dichlorobenzidine	Hexachlorobutadiene	N-Nitrosodiphenylamine
Benz[a]anthracene	4-Chloro-3-methylphenol	2,4-Dichlorophenol	Hexachlorocyclopentadiene	N-Nitrosodi- <i>n</i> -propylamine
Benztidine	2-Chloronaphthalene	Diethyl phthalate	Hexachloroethane	Pentachlorophenol
Benzo[b]fluoranthene	2-Chlorophenol	2,4-Dimethylphenol	Indeno[1,2,3- <i>cd</i>]pyrene	Phenanthrene
Benzo[k]fluoranthene	4-Chlorophenyl phenyl ether	Dimethyl phthalate	Isophorone	Phenol
Benzoic acid	Chrysene	4,6-Dinitro-2-methylphenol	2-Methylnaphthalene	Pyrene
Benzo[g,h,i]perylene	<i>o</i> -Cresol	2,4-Dinitrophenol	Naphthalene	Pyridine
Benzo[a]pyrene	<i>p</i> -Cresol	2,4-Dinitrotoluene	2-Nitroaniline	1,2,4-Trichlorobenzene
Benzyl alcohol	Dibenz[a,h]anthracene	2,6-Dinitrotoluene	3-Nitroaniline	2,4,5-Trichlorophenol
4-Bromophenyl phenyl ether	Dibenzofuran	Di- <i>n</i> -octyl phthalate	4-Nitroaniline	2,4,6-Trichlorophenol
Butyl benzyl phthalate				

Surrogates Analytes

2-Fluorobiphenyl	Phenol- <i>d</i> ₅
2-Fluorophenol	<i>p</i> -Terphenyl- <i>d</i> ₁₄
Nitrobenzene- <i>d</i> ₅	2,4,6-Tribromophenol

Technical Note

AccuStandard has prepared both Semi-Volatile curves from special high concentration stocks. The useful shelf life for these 5 point curves is similar to the shelf life experienced at the environmental laboratory when the standard is prepared from previously used high concentrate stocks.

Internal Standard Analytes

Acenaphthene- <i>d</i> ₁₀	Naphthalene- <i>d</i> ₈
Chrysene- <i>d</i> ₁₂	Perylene- <i>d</i> ₁₂
1,4-Dichlorobenzene- <i>d</i> ₄	Phenanthrene- <i>d</i> ₁₀

Working Level Semi-Volatiles Curve With Internal Standards

M-8270-CAL-IS-SET
All solutions in CH₂Cl₂

5 x 1 mL
83 comps.

Components (units in µg/mL)	Level 1	Level 2 (2.5X)	Level 3 (4X)	Level 4 (6X)	Level 5 (8X)
Target Analytes	20	50	80	120	160
Surrogate Analytes	20	50	80	120	160
Internal Analytes	40	40	40	40	40

Level 2 Daily QC Working Level CCC (with Internal Standard)

M-8270-IS-WL-2.5X-5ML
M-8270-IS-WL-2.5X-10ML
At stated conc. in CH₂Cl₂

1 x 5 mL
1 x 10 mL

Working Level Semi-Volatiles Curve Without Internal Standards

M-8270-CAL-SET
All solutions in CH₂Cl₂

5 x 1 mL
77 comps.

Components (units in µg/mL)	Level 1	Level 2 (2.5X)	Level 3 (4X)	Level 4 (6X)	Level 5 (8X)
Target Analytes	20	50	80	120	160
Surrogate Analytes	20	50	80	120	160

Level 2 Daily QC Working Level CCC (without Internal Standard)

M-8270-WL-2.5X-5ML
M-8270-WL-2.5X-10ML
At stated conc. in CH₂Cl₂

1 x 5 mL
1 x 10 mL

EPA Method 8000 Series

Ready-to-Inject Working Level Semi-Volatile Standards



Method 8270-8275

Method 8270C/D (Continued)

Matrix Spike (SW 846)

CLP-007-WL-50ML			1 x 50 mL
At stated conc. in MeOH			11 comps.
4-Chloro-3-methyl phenol	(200 µg/mL)	1,4-Dichlorobenzene	(100 µg/mL)
2-Chlorophenol	(200 µg/mL)	2,4-Dinitrotoluene	(100 µg/mL)
4-Nitrophenol	(200 µg/mL)	N-Nitrosodi-n-propylamine	(100 µg/mL)
Pentachlorophenol	(200 µg/mL)	Pyrene	(100 µg/mL)
Phenol	(200 µg/mL)	1,2,4-Trichlorobenzene	(100 µg/mL)
Acenaphthene	(100 µg/mL)		

Prep Note

To help maximize instrument performance, add 10 µL of internal standard to a 1 mL sample extract.

Internal Standard

Z-014J			1 x 1 mL
Z-014J-PAK	SAVE		5 x 1 mL
4.0 mg/mL each in CH ₂ Cl ₂			6 comps.
Acenaphthene-d ₁₀		Naphthalene-d ₈	
Chrysene-d ₁₂		Perylene-d ₁₂	
1,4-Dichlorobenzene-d ₄		Phenanthrene-d ₁₀	

Benzidine Solution

M-625C-1-40X			1 x 1 mL
2.0 mg/mL in CH ₂ Cl ₂			
Benzidine			

GC/MS Tuning Solution

M-625-TS			1 x 1 mL
M-625-TS-PAK	SAVE		5 x 1 mL
50 µg/mL each in CH ₂ Cl ₂			4 comps.
Benzidine		DFTPP	
p,p'-DDT		Pentachlorophenol	

DFTPP GC/MS Tuning Solution

M-625C-3			1 x 1 mL
M-625C-3-PAK	SAVE		5 x 1 mL
25 µg/mL in CH ₂ Cl ₂			
Decafluorotriphenylphosphine (DFTPP)			

Matrix Spike (3/90 SOW)

CLP-007R-WL-50ML			1 x 50 mL
At stated conc. in MeOH			11 comps.
4-Chloro-3-methyl phenol	(150 µg/mL)	1,4-Dichlorobenzene	(100 µg/mL)
2-Chlorophenol	(150 µg/mL)	2,4-Dinitrotoluene	(100 µg/mL)
4-Nitrophenol	(150 µg/mL)	N-Nitrosodi-n-propylamine	(100 µg/mL)
Pentachlorophenol	(150 µg/mL)	Pyrene	(100 µg/mL)
Phenol	(150 µg/mL)	1,2,4-Trichlorobenzene	(100 µg/mL)
Acenaphthene	(100 µg/mL)		

Technical Note

AccuStandard has found that benzidine degrades in multi-component semi-volatile solutions. For this reason, the benzidine in any calibration curve should be used as a qualitative retention time marker. Reported hits for benzidine should be quantitatively determined by analyzing a single benzidine solution or by using the benzidine response observed in the Daily GC/MS tuning solution.

Method 8270 Surrogate Spiking Solution

M-8270-SS-R-WL-PAK			5 x 10 mL
M-8270-SS-R-WL-VAP			10 x 10 mL
At stated conc. in CH ₂ Cl ₂ : MeOH (4:1)			6 comps.
2-Fluorobiphenyl	(100 µg/mL)	Phenol-d ₅	(200 µg/mL)
2-Fluorophenol	(200 µg/mL)	Terphenyl-d ₁₄	(100 µg/mL)
Nitrobenzene-d ₅	(100 µg/mL)	2,4,6-Tribromophenol	(200 µg/mL)

M-8270-SS-R			1 x 1 mL
M-8270-SS-R-PAK	SAVE		5 x 1 mL
At stated conc. in CH ₂ Cl ₂ : MeOH (4:1)			6 comps.

2-Fluorobiphenyl	(1000 µg/mL)	Phenol-d ₅	(2000 µg/mL)
2-Fluorophenol	(2000 µg/mL)	Terphenyl-d ₁₄	(1000 µg/mL)
Nitrobenzene-d ₅	(1000 µg/mL)	2,4,6-Tribromophenol	(2000 µg/mL)

Prep Note

To ensure extraction efficiency add, 1 mL of Surrogate to the sample.

CLP Surrogate Spiking Solution

CLP-031-R-WL-25ML			1 x 25 mL
CLP-031-R-WL-50ML			1 x 50 mL
At stated conc. in MeOH			8 comps.
2-Chlorophenol-d ₄	(150 µg/mL)	Nitrobenzene-d ₅	(100 µg/mL)
1,2-Dichlorobenzene-d ₄	(100 µg/mL)	Phenol-d ₆	(150 µg/mL)
2-Fluorobiphenyl	(100 µg/mL)	p-Terphenyl-d ₁₄	(100 µg/mL)
2-Fluorophenol	(150 µg/mL)	2,4,6-Tribromophenol	(150 µg/mL)

Method 8275A (Thermal Extraction/GC/FID/MS) Semi-Volatiles by Thermal Chromatography

Semi-Volatiles

M-8275			1 x 1 mL
1.0 mg/mL each in Acetone			17 comps.
Aldrin		2,4-Dinitrotoluene	
Benzo[k]fluoranthene		Diphenylamine	
Benzo[a]pyrene		Fluorene	
Carbazole		Hexachlorobenzene	
4-Chloro-3-methylphenol		4-Methylphenol	
1-Chloronaphthalene		Naphthalene	
2-Chlorophenol		Phenanthrene	
Dibenzothiophene		Pyrene	
2,4-Dichlorophenol			

Internal Standard

Z-014J			1 x 1 mL
Z-014J-PAK	SAVE		5 x 1 mL
4.0 mg/mL each in CH ₂ Cl ₂			6 comps.
Acenaphthene-d ₁₀		Naphthalene-d ₈	
Chrysene-d ₁₂		Perylene-d ₁₂	
1,4-Dichlorobenzene-d ₄		Phenanthrene-d ₁₀	

Alternate Source Line

For complete listing of competitive 8270 see the QC Section

Method 8280A Dioxins & Furans by HRGC/LRMS

Dioxin Mixture

M-8280A		1 x 1 mL
M-8280A-PAK	SAVE	5 x 1 mL
5 µg/mL each in Toluene		
2,3,7,8-Tetrachlorodibenzo- <i>p</i> -dioxin	1,2,3,4,6,7,8-Heptachlorodibenzo- <i>p</i> -dioxin	
1,2,3,7,8-Pentachlorodibenzo- <i>p</i> -dioxin	Octachlorodibenzo- <i>p</i> -dioxin	
1,2,3,4,7,8-Hexachlorodibenzo- <i>p</i> -dioxin		

Furan Mixture

M-8280B		1 x 1 mL
M-8280B-PAK	SAVE	5 x 1 mL
5 µg/mL each in Toluene		
2,3,7,8-Tetrachlorodibenzofuran	1,2,3,4,6,7,8-Heptachlorodibenzofuran	
1,2,3,7,8-Pentachlorodibenzofuran	Octachlorodibenzofuran	
1,2,3,4,7,8-Hexachlorodibenzofuran		

Column Performance Check

M-8280-CPC		1 x 1 mL
5 µg/mL each in Toluene		
1,2,3,4-Tetrachlorodibenzo- <i>p</i> -dioxin	1,2,3,4,6,7,8-Heptachlorodibenzo- <i>p</i> -dioxin	
2,3,7,8-Tetrachlorodibenzo- <i>p</i> -dioxin	1,2,3,4,6,7,8,9-Octachlorodibenzo- <i>p</i> -dioxin	
1,2,3,4,7-Pentachlorodibenzo- <i>p</i> -dioxin	2,3,7,8-Tetrachlorodibenzofuran	
1,2,3,4,7,8-Hexachlorodibenzo- <i>p</i> -dioxin		

Canadian Environmental Method Multi-Component Dioxin Mixtures

Custom Window Defining Mixture

D-WD	20,000 ng/mL in Toluene	1 x 1 mL
D-WD-2.5X	50,000 ng/mL in Toluene	1 x 1 mL
7 comps.		
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo- <i>p</i> -dioxin (Isomer pair)		
1,2,3,8,9-Pentachlorodibenzo- <i>p</i> -dioxin		
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo- <i>p</i> -dioxin (Isomer pair)		
1,2,3,4,6,7-Hexachlorodibenzo- <i>p</i> -dioxin		
1,2,3,4,6,7,8-Heptachlorodibenzo- <i>p</i> -dioxin		
1,2,3,4,6,7,9-Heptachlorodibenzo- <i>p</i> -dioxin		
Octachlorodibenzo- <i>p</i> -dioxin		

Custom Calibration Mixture

D-CAL	20,000 ng/mL in Toluene	1 x 1 mL
D-CAL-2.5X	50,000 ng/mL in Toluene	1 x 1 mL
6 comps.		
1,2,3,7,8-Pentachlorodibenzo- <i>p</i> -dioxin		
1,2,3,4,7,8-Hexachlorodibenzo- <i>p</i> -dioxin		
1,2,3,6,7,8-Hexachlorodibenzo- <i>p</i> -dioxin		
1,2,3,7,8,9-Hexachlorodibenzo- <i>p</i> -dioxin		
1,2,3,4,6,7,8-Heptachlorodibenzo- <i>p</i> -dioxin		
Octachlorodibenzo- <i>p</i> -dioxin		

Column Performance Check

M-8280-CPC		1 x 1 mL
5.0 µg/mL each in Toluene		
7 comps.		
1,2,3,4-Tetrachlorodibenzo- <i>p</i> -dioxin		
2,3,7,8-Tetrachlorodibenzo- <i>p</i> -dioxin		
1,2,3,4,7-Pentachlorodibenzo- <i>p</i> -dioxin		
1,2,3,4,7,8-Hexachlorodibenzo- <i>p</i> -dioxin		
1,2,3,4,6,7,8-Heptachlorodibenzo- <i>p</i> -dioxin		
1,2,3,4,6,7,8,9-Octachlorodibenzo- <i>p</i> -dioxin		
2,3,7,8-Tetrachlorodibenzofuran		

Standards of Interest

For more Canadian Methods see the Regional Section of this catalog, pages 256-258.

Method 8310 PAHs by HPLC

PAH Mixture

M-8310		1 x 1 mL
M-8310-PAK	SAVE	5 x 1 mL
0.5 mg/mL each in AcCN		
Acenaphthene	Chrysene	
Acenaphthylene	Dibenz[a,h]anthracene	
Anthracene	Fluoranthene	
Benz[a]anthracene	Fluorene	
Benzo[a]pyrene	Indeno[1,2,3-cd]pyrene	
Benzo[b]fluoranthene	Naphthalene	
Benzo[g,h,i]perylene	Phenanthrene	
Benzo[k]fluoranthene	Pyrene	

PAH Quality Control Calibration Mixture

M-610-QC		1 x 1 mL
At stated conc. in AcCN		
Acenaphthene (0.1 mg/mL)	Chrysene (0.01 mg/mL)	
Acenaphthylene (0.1 mg/mL)	Dibenz[a,h]anthracene (0.01 mg/mL)	
Anthracene (0.1 mg/mL)	Fluoranthene (0.01 mg/mL)	
Benzo[a]anthracene (0.01 mg/mL)	Fluorene (0.1 mg/mL)	
Benzo[a]pyrene (0.01 mg/mL)	Indeno[1,2,3-cd]pyrene (0.01 mg/mL)	
Benzo[b]fluoranthene (0.01 mg/mL)	Naphthalene (0.1 mg/mL)	
Benzo[g,h,i]perylene (0.01 mg/mL)	Phenanthrene (0.1 mg/mL)	
Benzo[k]fluoranthene (0.005 mg/mL)	Pyrene (0.01 mg/mL)	

Surrogate Standard

M-8310-SS		1 x 1 mL
M-8310-SS-PAK	SAVE	5 x 1 mL
0.1 mg/mL in Acetonitrile		
Decafluorobiphenyl		

Internal Standard Post Supercritical Fluid Extraction

M-8310-SFE-IS-100X		1 x 1 mL
M-8310-SFE-IS-100X-PAK	SAVE	5 x 1 mL
20,000 µg/mL in AcCN:THF (1:1)		
Biphenyl		

Florida Method PAH Mixture

Z-014G-FL		1 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂ :Benzene		
Acenaphthene	Dibenz[a,h]anthracene	
Acenaphthylene	Fluoranthene	
Anthracene	Fluorene	
Benz[a]anthracene	Indeno[1,2,3-cd]pyrene	
Benzo[a]pyrene	Naphthalene	
Benzo[b]fluoranthene	Phenanthrene	
Benzo[g,h,i]perylene	Pyrene	
Benzo[k]fluoranthene	1-Methylnaphthalene	
Chrysene	2-Methylnaphthalene	



Florida Administrative Code (continued) PAHs by HPLC

Performance Check Solution

M-610-QC-FL 1 x 1 mL
M-610-QC-FL-PAK SAVE 5 x 1 mL
 At stated conc. in AcCN 18 comps.

Acenaphthene (0.1 mg/mL)	Dibenz[a,h]anthracene (0.01 mg/mL)
Acenaphthylene (0.1 mg/mL)	Fluoranthene (0.01 mg/mL)
Anthracene (0.1 mg/mL)	Fluorene (0.1 mg/mL)
Benz[a]anthracene (0.01 mg/mL)	Indeno[1,2,3-cd]pyrene (0.01 mg/mL)
Benzo[a]pyrene (0.01 mg/mL)	1-Methyl naphthalene (0.1 mg/mL)
Benzo[b]fluoranthene (0.01 mg/mL)	2-Methyl naphthalene (0.1 mg/mL)
Benzo[g,h,i]perylene (0.01 mg/mL)	Naphthalene (0.1 mg/mL)
Benzo[k]fluoranthene (0.005 mg/mL)	Phenanthrene (0.1 mg/mL)
Chrysene (0.01 mg/mL)	Pyrene (0.01 mg/mL)

Matrix Spiking Solution

M-610-MS 1 x 1 mL
M-610-MS-PAK SAVE 5 x 1 mL
 At stated conc. in AcCN 6 comps.

Benzo[a]pyrene (0.5 mg/mL)	2-Methylnaphthalene (5.0 mg/mL)
Chrysene (0.5 mg/mL)	Phenanthrene (0.5 mg/mL)
1-Methylnaphthalene (5.0 mg/mL)	Pyrene (0.5 mg/mL)

PAH Mix Additions

H-001S/002S-M-20X 1 x 1 mL
 1.0 mg/mL each in MeOH 2 comps.

1-Methyl naphthalene 2-Methyl naphthalene

Polynuclear Aromatic Hydrocarbons (HPLC)

M-8310-FL 1 x 1 mL
M-8310-FL-PAK SAVE 5 x 1 mL
 0.5 mg/mL each in AcCN 18 comps.
M-8310-FL-SET 18 x 1 mL

Acenaphthene	M-8310-FL-01
Acenaphthylene	M-8310-FL-02
Anthracene	M-8310-FL-03
Benz[a]anthracene	M-8310-FL-04
Benzo[a]pyrene	M-8310-FL-05
Benzo[b]fluoranthene	M-8310-FL-06
Benzo[g,h,i]perylene	M-8310-FL-07
Benzo[k]fluoranthene	M-8310-FL-08
Chrysene	M-8310-FL-09
Dibenz[a,h]anthracene	M-8310-FL-10
Fluoranthene	M-8310-FL-11
Fluorene	M-8310-FL-12
Indeno[1,2,3-cd]pyrene	M-8310-FL-13
1-Methylnaphthalene	M-8310-FL-14
2-Methylnaphthalene	M-8310-FL-15
Naphthalene	M-8310-FL-16
Phenanthrene	M-8310-FL-17
Pyrene	M-8310-FL-18

Polynuclear Aromatic Hydrocarbons (HPLC)

M-8310-QC-AT1 1 x 1 mL
M-8310-QC-AT1-PAK SAVE 5 x 1 mL
 At stated conc. in AcCN 18 comps.

Acenaphthene (1000 µg/mL)	Dibenz[a,h]anthracene (200 µg/mL)
Acenaphthylene (2000 µg/mL)	Fluoranthene (200 µg/mL)
Anthracene (100 µg/mL)	Fluorene (200 µg/mL)
Benz[a]anthracene (100 µg/mL)	Indeno[1,2,3-cd]pyrene (100 µg/mL)
Benzo[a]pyrene (100 µg/mL)	1-Methylnaphthalene (1000 µg/mL)
Benzo[b]fluoranthene (200 µg/mL)	2-Methylnaphthalene (1000 µg/mL)
Benzo[g,h,i]perylene (200 µg/mL)	Naphthalene (1000 µg/mL)
Benzo[k]fluoranthene (100 µg/mL)	Phenanthrene (100 µg/mL)
Chrysene (100 µg/mL)	Pyrene (100 µg/mL)

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Florida Method



AccuStandard's Environmental Efforts

1. As part of a recent facility expansion, and in cooperation with the local utilities, AccuStandard invested almost \$100,000 on energy conservation and controls. The estimated impact on the environment is similar to that of planting 19 acres of trees.

2. Many customers avoid the environmental impact and cost of disposing of unused standards. One of the only standards manufacturers to offer this, AccuStandard's "On-Going Stability Program" allows us to extend the expiration date on a standard if our testing over time on a specific lot warrants it.

3. Many every day steps such as using recycled paper for the tens of thousands of catalogs every year, educating customers on the value of using standards as pre-made solutions rather than buying large quantities of neat.



EPA Method 8000 Series

Method 8315-8318

Method 8315/8315A Ketones/Aldehydes by HPLC

Aldehyde Mixture

M-8315 1 x 1 mL
 M-8315-PAK 5 x 1 mL
 1.0 mg/mL each in H₂O SAVE 2 comps.

Acetaldehyde Formaldehyde

Aldehyde Individuals

Acetaldehyde (1.0 mg/mL in H₂O) M-8315-01 1 x 1 mL
 Formaldehyde (1.0 mg/mL in H₂O) M-8315-02 1 x 1 mL

Aldehyde as DNPH Derivatives

M-8315-DNPH-10ML 1 x 10 mL
 1.0 mg/mL each in MeOH 2 comps. as DNPH Derivatives

Acetaldehyde Formaldehyde

Option 1 (Samples Collected from Water, Air, Soil, Waste or Stacks by Method 0011)

Carbonyl Mixture

M-8315-R1 1 x 1 mL
 1.0 mg/mL each in AcCN 12 comps.

Acetaldehyde Heptanal
 Butanal (*Butyraldehyde*) Hexanal (*Hexaldehyde*)
 Crotonaldehyde Nonanal
 Cyclohexanone Octanal
 Decanal Pentanal (*Valeraldehyde*)
 Formaldehyde Propanal (*Propionaldehyde*)

Carbonyl DNPH Derivative Mixture

M-8315-R1-DNPH 1 x 1 mL
 0.1 mg/mL each in AcCN 12 comps. as DNPH derivatives

Acetaldehyde Heptanal
 Butanal (*Butyraldehyde*) Hexanal (*Hexaldehyde*)
 Crotonaldehyde Nonanal
 Cyclohexanone Octanal
 Decanal Pentanal (*Valeraldehyde*)
 Formaldehyde Propanal (*Propionaldehyde*)

Option 2 (Samples Collected from Indoor Air by Method 0100)

Carbonyl Mixture

M-8315-R2 1 x 1 mL
 1.0 mg/mL each in AcCN 15 comps.

Acetaldehyde Hexanal (*Hexaldehyde*)
 Acetone Isovaleraldehyde
 Acrolein Pentanal (*Valeraldehyde*)
 Benzaldehyde Propanal (*Propionaldehyde*)
 Butanal (*Butyraldehyde*) *m*-Tolualdehyde
 Crotonaldehyde *o*-Tolualdehyde
 2,5-Dimethylbenzaldehyde *p*-Tolualdehyde
 Formaldehyde

Method 8316 Acrolein, Acrylamide, Acrylonitrile by HPLC

M-8316 1 x 1 mL
 1.0 mg/mL each in Water 3 comps.

Acrolein Acrylonitrile
 Acrylamide

Carbonyl DNPH Derivative Mixture

M-8315-R2-DNPH 1 x 1 mL
 0.1 mg/mL each in AcCN 15 comps. as DNPH derivatives

Acetaldehyde Hexanal (*Hexaldehyde*)
 Acetone Isovaleraldehyde
 Acrolein Pentanal (*Valeraldehyde*)
 Benzaldehyde Propanal (*Propionaldehyde*)
 Butanal (*Butyraldehyde*) *m*-Tolualdehyde
 Crotonaldehyde *o*-Tolualdehyde
 2,5-Dimethylbenzaldehyde *p*-Tolualdehyde
 Formaldehyde

Carbonyl Compound Set

M-8315-R3-10X-SET 20 x 1 mL
 Each at 1.0 mg/mL in AcCN

Acetaldehyde (01) Heptanal (11)
 Acetone (02) Hexanal (12)
 Acrolein (03) Isovaleraldehyde (13)
 Benzaldehyde (04) Nonanal (14)
 Butanal (05) Octanal (15)
 Crotonaldehyde (06) Pentanal (16)
 Cyclohexanone (07) Propanal (17)
 Decanal (08) *m*-Tolualdehyde (18)
 2,5-Dimethylbenzaldehyde (09) *o*-Tolualdehyde (19)
 Formaldehyde (10) *p*-Tolualdehyde (20)

Carbonyl DNPH Derivative Set

M-8315-R-DNPH-SET 20 x 1 mL
 Each at 0.1 mg/mL in AcCN 20 comps. as DNPH Derivatives

Acetaldehyde (01) Heptanal (11)
 Acetone (02) Hexanal (*Hexaldehyde*) (12)
 Acrolein (03) Isovaleraldehyde (13)
 Benzaldehyde (04) Nonanal (14)
 Butanal (*Butyraldehyde*) (05) Octanal (15)
 Crotonaldehyde (06) Pentanal (*Valeraldehyde*) (16)
 Cyclohexanone (07) Propanal (*Propionaldehyde*) (17)
 Decanal (08) *m*-Tolualdehyde (18)
 2,5-Dimethylbenzaldehyde (09) *o*-Tolualdehyde (19)
 Formaldehyde (10) *p*-Tolualdehyde (20)

Technical Note

For initial Method 8315 development, AccuStandard offers individual analyte sets (20 x 1 mL) for both the Carbonyl compounds and their corresponding DNPH derivatives. Use of these sets will allow the analytical chemist to rapidly establish individual analyte retention times and to troubleshoot possible extraction recovery problems.

Method 8318 N-Methylcarbamates by HPLC

N-Methylcarbamates

M-8318-SET 10 x 1 mL
 Each at 0.1 mg/mL in MeOH

M-8318M 1 x 1 mL
 Mixture, 0.1 mg/mL each in MeOH 10 comps.

Aldicarb (01) 3-Hydroxycarbofuran (06)
 Aldicarb sulfone (02) Methiocarb (07)
 Carbaryl (03) Methomyl (08)
 Carbofuran (04) Promecarb (09)
 Dioxacarb (05) Propoxur (10)



Method 8321 Non-Volatile Compounds by HPLC/TSP/MS or UV Solvent Extractable

Chlorinated Phenoxyacid Herbicide Mix

M-8321-HERB	1 x 1 mL
0.1 mg/mL each in AcCN	14 comps.
Dalapon	Dinoseb
Dicamba	MCPA
2,4-D	MCPP
2,4-D, butoxyethanol ester	Silvex (2,4,5-TP)
2,4-D, ethylhexyl ester	2,4,5-T
2,4-DB	2,4,5-T, butyl ester
Dichlorprop	2,4,5-T, butoxyethanol ester

Organophosphorus Pesticide Mix

M-8321-OP	1 x 1 mL
0.1 mg/mL each in AcCN	15 comps.
Asulam	Methyl parathion
Dichlorvos	Monocrotophos
Dimethoate	Naled
Disulfoton	Phorate
Famphur	Thiofanox
Fensulfothion	Trichlorfon
Merphos	Tris(2,3-Dibromopropyl)phosphate
Methomyl	

Method 8325 Benzidines & Nitrogen containing Pesticides by L-L or L-S Extraction & RP HPLC/Particle Beam/MS

Benzidine/Pesticide Mix

M-553	1 x 1 mL
At stated conc. in AcCN : MeOH (1:1)	13 comps.
Benzidine (250 µg/mL)	3,3'-Dimethylbenzidine (350 µg/mL)
Benzoylprop ethyl (350 µg/mL)	Diuron (450 µg/mL)
Caffeine (300 µg/mL)	Linuron (1,300 µg/mL)
Carbaryl (1,000 µg/mL)	Monuron (400 µg/mL)
o-Chlorophenyl thiourea (750 µg/mL)	Rotenone (3,200 µg/mL)
3,3'-Dichlorobenzidine (250 µg/mL)	Siduron (450 µg/mL)
3,3'-Dimethoxybenzidine (750 µg/mL)	

Performance Check Solution

M-553-PC	1 x 1 mL
0.1 mg/mL in AcCN	
DFTPPO (Decafluorotriphenylphosphine oxide)	

‡ To delay premature breakdown of thermally labile products in transit we suggest shipping with a "Cold Pack"

Method 8323 Organometallic Tin Analysis by Electrospray Ion Trap Mass Spectrometry

The following Organo-Tin standards were originally formulated to meet custom applications for a number of our customers. AccuStandard has introduced the below set of standards as regular catalog items to meet the increased requests for Organo-Tin standards. The environmental interest in these compounds stems from their addition to the list of endocrine disrupters. Organo-Tin compounds such as Tributyl-Tin were used as marine antifouling agents and Triphenyl-Tin as a crop pesticide.

Organometallic Butyltin Chloride Standard

OMT-001	1 x 1 mL
OMT-001-PAK SAVE	5 x 1 mL
2000 µg/mL each in CH ₂ Cl ₂	4 comps.
Butyltin trichloride	Tetrabutyltin
Dibutyltin dichloride	Tributyltin chloride

Tri-n-propyltin Surrogate Standard

OMT-003	1 x 1 mL
OMT-003-PAK SAVE	5 x 1 mL
2000 µg/mL in CH ₂ Cl ₂	
Tri-n-propyltin chloride	

Tetra-n-propyl tin Internal Standard

OMT-005	1 x 1 mL
OMT-005-PAK SAVE	5 x 1 mL
2000 µg/mL in CH ₂ Cl ₂	
Tetra-n-propyl tin	

Organometallic Phenyltin Chloride Standard

OMT-002	1 x 1 mL
OMT-002-PAK SAVE	5 x 1 mL
2000 µg/mL each in CH ₂ Cl ₂	4 comps.
Diphenyltin dichloride	Tetraphenyltin
Phenyltin trichloride	Triphenyltin chloride

Triphenyltin Chloride Surrogate Standard

OMT-004	1 x 1 mL
OMT-004-PAK SAVE	5 x 1 mL
2000 µg/mL in CH ₂ Cl ₂	
Triphenyltin chloride	

Tetraphenyltin Internal Standard

OMT-006	1 x 1 mL
OMT-006-PAK SAVE	5 x 1 mL
2000 µg/mL in CH ₂ Cl ₂	
Tetraphenyltin	



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Method 8330 TNT Metabolites

Analyte	Concentration (µg/mL)	Solvent	Cat. No.	(1 mL)
1,3-Dinitrobenzene	100	AcCN : MeOH (1:1)	M-8330-01-0.1X	
2,4-Dinitrotoluene	100	AcCN : MeOH (1:1)	M-8330-02-0.1X	
2,6-Dinitrotoluene	100	AcCN : MeOH (1:1)	M-8330-03-0.1X	
Nitrobenzene	100	AcCN : MeOH (1:1)	M-8330-06-0.1X	
2-Nitrotoluene	100	AcCN : MeOH (1:1)	M-8330-07-0.1X	
3-Nitrotoluene	100	AcCN : MeOH (1:1)	M-8330-08-0.1X	
4-Nitrotoluene	100	AcCN : MeOH (1:1)	M-8330-09-0.1X	
TNT	100	AcCN : MeOH (1:1)	M-8330-11-0.1X	
1,3,5-Trinitrobenzene	100	AcCN : MeOH (1:1)	M-8330-12-0.1X	
2-Amino-4,6-dinitrotoluene	100	AcCN : MeOH (1:1)	M-8330-13-0.1X	
4-Amino-2,6-dinitrotoluene	100	AcCN : MeOH (1:1)	M-8330-14-0.1X	
2,4-Diamino-6-nitrotoluene	100	AcCN	M-8330-ADD-12	
2,4-Diamino-4-nitrotoluene	100	AcCN	M-8330-ADD-13	
2,2',6,6'-Tetranitro-4,4'-azoxytoluene	100	AcCN : MeOH (1:1)	M-8330-ADD-15	
2,2',6,6'-Tetranitro-4,4'-azotoluene	100	AcCN	M-8330-ADD-17	
4,4',6,6'-Tetranitro-2,2'-azotoluene	100	AcCN	M-8330-ADD-19	
2-Hydroxylamino-4,6-dinitrotoluene *	100	AcCN	M-8330-ADD-18	
4-Hydroxylamino-2,6-dinitrotoluene *	100	AcCN	M-8330-ADD-20	
Hexanitrostilbene (HNS) NEW	100	AcCN	M-8330-ADD-26	
3,5-Dinitrotoluene NEW	100	AcCN : MeOH (1:1)	M-8330-ADD-39	

* (3 month stability)

Explosives by HPLC Set

M-8330-R-SET ‡ 14 x 1 mL
Each at 100 µg/mL in AcCN : MeOH (1:1)

M-8330-R-10X-SET ‡ 14 x 1 mL
Each at 1000 µg/mL in AcCN : MeOH (1:1)

- 1,3-Dinitrobenzene (01)
- 2,4-Dinitrotoluene (02)
- 2,6-Dinitrotoluene (03)
- HMX (04)
- RDX (05)
- Nitrobenzene (06)
- 2-Nitrotoluene (07)
- 3-Nitrotoluene (08)
- 4-Nitrotoluene (09)
- Tetryl (10)
- TNT (11)
- 1,3,5-Trinitrobenzene (12)
- 2-Amino-4,6-dinitrotoluene (13)
- 4-Amino-2,6-dinitrotoluene (14)

Method 8330 Additional Explosives by HPLC

Analyte	Concentration (µg/mL)	Solvent	Cat. No.	(1 mL)
1,3-Dinitrobenzene	100	AcCN : MeOH (1:1)	M-8330-01-0.1X	
HMX	100	AcCN : MeOH (1:1)	M-8330-04-0.1X	
RDX	100	AcCN : MeOH (1:1)	M-8330-05-0.1X	
Tetryl	100	AcCN : MeOH (1:1)	M-8330-10-0.1X	
Nitroglycerin	100	EtOH	M-8330-ADD-1	
	1000	EtOH	M-8330-ADD-1-10X	
PETN	100	MeOH	M-8330-ADD-2	
	1000	MeOH	M-8330-ADD-2-10X	
Picric acid	100	AcCN : MeOH (1:1)	M-8330-ADD-3	
3,5-Dinitroaniline	100	AcCN : MeOH (1:1)	M-8330-ADD-4	
EGDN	100	AcCN	M-8330-ADD-5	
Nitroguanidine	100	MeOH	M-8330-ADD-6	
Nitromethane	100	MeOH	M-8330-ADD-7	
Hydrazine	100	MeOH	M-8330-ADD-8	
1,2-Diaminopropane	100	MeOH	M-8330-ADD-9	
Guanidine nitrate	100	MeOH	M-8330-ADD-10	
PYX(2,6-bis,bis-(picrylamine)-3,5-dinitropyridine	100	AcCN	M-8330-ADD-11	
1,3,5-Triamino-2,4,6-trinitrobenzene (TATB)	40	Dimethyl formamide	M-8330-ADD-14-DMF	
2,3-Dimethyl-2,3-dinitrobutane (DMNB)	100	AcCN	M-8330-ADD-21	
Picramic acid	100	AcCN : MeOH (1:1)	M-8330-ADD-22	
2,4,6-Triaminotoluene trihydrochloride	N/A	10 mg	M-8330-ADD-23N	
Triacetone triperoxide (TATP)	100	AcCN	M-8330-ADD-24	
Hexamethylenetriperoxide diamine (HMTD)	100	AcCN	M-8330-ADD-25	
Hexanitrostilbene (HNS)	100	AcCN	M-8330-ADD-26	
Ammonium picrate	100	AcCN	M-8330-ADD-27	
Trimethylolethane trinitrate	100	AcCN : MeOH (1:1)	M-8330-ADD-28	
2,4,6-Trinitroresorcinol NEW	100	AcCN : MeOH (1:1)	M-8330-ADD-29	
1-Nitroglycerin NEW	100	AcCN : MeOH (1:1)	M-8330-ADD-31	
2-Nitroglycerin NEW	100	AcCN : MeOH (1:1)	M-8330-ADD-32	
1,2-Dinitroglycerin NEW	100	AcCN : MeOH (1:1)	M-8330-ADD-33	
1,3-Dinitroglycerin NEW	100	AcCN : MeOH (1:1)	M-8330-ADD-34	
DEGDN NEW	100	AcCN : MeOH (1:1)	M-8330-ADD-36	
Hexanitrodiphenylamine NEW	100	AcCN : MeOH (1:1)	M-8330-ADD-37	
N-Nitrodimethylamine NEW	100	AcCN	M-8330-ADD-40	
TEGDN NEW	100	AcCN	M-8330-ADD-41	

Technical Note

AccuStandard complies with ATF and other regulations for manufacturing and shipping explosives.

Technical Note

DMNB (M-8330-ADD-21) is a required taggant added to commercially manufactured plastic explosives.

Additional Explosive Standards

Method 529
Explosive & Related Compounds by
SPE & Capillary Column GC/MS

Method 8095
Also see Explosive Intermediate
(GC/ECD)

‡ To delay premature breakdown of thermally labile products in transit we suggest shipping with a "Cold Pack"



Method 8330 Multi-Component Formulations for Explosive Analysis

The following A and B mixes provide better resolution between possible coeluting analytes, assisting the chemist to optimize the HPLC system. We suggest, when first performing Method 8330 development, to purchase the high concentration 14 x 1 mL set "M-8330-R-10X-SET":

M-8330A ‡ 0.1 mg/mL each in AcCN:MeOH (1:1)		1 x 1 mL
M-8330A-10X ‡ 1.0 mg/mL each in AcCN:MeOH (1:1)		1 x 1 mL 7 comps.
1,3-Dinitrobenzene	RDX	
2,4-Dinitrotoluene	1,3,5-Trinitrobenzene	
HMX	TNT	
Nitrobenzene		

M-8330A-R ‡ 0.1 mg/mL each in AcCN:MeOH (1:1)		1 x 1 mL
M-8330A-R-10X ‡ 1.0 mg/mL each in AcCN:MeOH (1:1)		1 x 1 mL 8 comps.
2-Amino-4,6-dinitrotoluene	Nitrobenzene	
1,3-Dinitrobenzene	RDX	
2,4-Dinitrotoluene	1,3,5-Trinitrobenzene	
HMX	TNT	

Composite Explosive Mixture

M-8330-R		1 x 1 mL
M-8330-R-PAK	SAVE	5 x 1 mL
1.0 mg/mL each in MeOH:AcCN (1:1)		14 comps.
1,3-Dinitrobenzene	3-Nitrotoluene	
2,4-Dinitrotoluene	4-Nitrotoluene	
2,6-Dinitrotoluene	Tetryl	
HMX	TNT	
RDX	1,3,5-Trinitrobenzene	
Nitrobenzene	2-Amino-4,6-dinitrotoluene	
2-Nitrotoluene	4-Amino-2,6-dinitrotoluene	

Internal Standard

M-8330-IS		1 x 1 mL
M-8330-IS-PAK	SAVE	5 x 1 mL
1.0 mg/mL in MeOH		
3,4-Dinitrotoluene		

Method 8410 Semi-Volatiles by GC/FTIR

Internal Standard

M-8410-IS		1 x 1 mL
M-8410-IS-PAK	SAVE	5 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂		2 comps.
1-Fluoronaphthalene	p-Terphenyl-d ₄	

Method 8430 bis(2-Chloroethyl)ether & Hydrolysis Products

M-8430		1 x 1 mL
1.0 mg/mL each in Water		5 comps.
bis(2-Chloroethyl)ether	Diethylene glycol	
2-Chloroethanol	Ethylene glycol	
2-(2-Chloroethoxy)-ethanol		

M-8330B ‡ 0.1 mg/mL each in AcCN:MeOH (1:1)		1 x 1 mL
M-8330B-10X ‡ 1.0 mg/mL each in AcCN:MeOH (1:1)		1 x 1 mL 5 comps.
Tetryl	3-Nitrotoluene	
2,6-Dinitrotoluene	4-Nitrotoluene	
2-Nitrotoluene		

M-8330B-R ‡ 0.1 mg/mL each in AcCN:MeOH (1:1)		1 x 1 mL
M-8330B-R-10X ‡ 1.0 mg/mL each in AcCN:MeOH (1:1)		1 x 1 mL 7 comps.
2-Amino-4,6-dinitrotoluene	2-Nitrotoluene	
4-Amino-2,6-dinitrotoluene	3-Nitrotoluene	
Tetryl	4-Nitrotoluene	
2,6-Dinitrotoluene		

M-8330B-R2 ‡ 0.1 mg/mL each in AcCN:MeOH (1:1)		1 x 1 mL
M-8330B-R2-10X ‡ 1.0 mg/mL each in AcCN:MeOH (1:1)		1 x 1 mL 6 comps.
4-Amino-2,6-dinitrotoluene	2-Nitrotoluene	
Tetryl	3-Nitrotoluene	
2,6-Dinitrotoluene	4-Nitrotoluene	

‡ To delay premature breakdown of thermally labile products in transit we suggest shipping with a "Cold Pack"

Surrogate Standard

M-8330-SS		1 x 1 mL
1.0 mg/mL in MeOH		
1,2-Dinitrobenzene		

Method 8440 Total Petroleum Hydrocarbon

Total Recoverable Petroleum Hydrocarbon Mix

M-8440		1 x 1 mL
M-8440-PAK	SAVE	5 x 1 mL
At stated conc. in Tetrachloroethene		3 comps.
Chlorobenzene	(0.10 w/w %)	Isooctane (0.15 w/w %)
n-Hexadecane	(0.15 w/w %)	

Silica Gel Cleanup Calibration Solution

M-8440-SGC		1 x 1 mL
M-8440-SGC-PAK	SAVE	5 x 1 mL
10.0 mg/mL in Tetrachloroethene		
Corn Oil		

Total Petroleum Hydrocarbon Concentrate Mix

M-8440-CON		1 x 1 mL
M-8440-CON-PAK	SAVE	5 x 1 mL
		3 comps.
Chlorobenzene	(25.0 vol %)	Isooctane (37.5 vol %)
n-Hexadecane	(37.5 vol %)	



REACH Statement

In an effort to ensure that all chemicals are tested and used in safe ways, the European Union has adopted a plan (REACH - Registration, Evaluation, Authorization and Restriction of Chemicals), which went into effect on June 1, 2007. This plan originated out of the desire to replace the patchwork of existing regulations in Europe with a more comprehensive law that encompasses all chemicals, including those placed on the market prior to 1981 when the industry did not have to provide documented health and safety information.

Listed below are the important dates outlined in the REACH directive.

- June 1, 2007** The REACH Directive takes effect
- June 1, 2008** Pre-registration for existing substances and Registration for new substances begins
- November 30, 2008** Pre-registration for existing substances ends
- December 1, 2008** Registration for existing substances that have not been pre-registered begins
- January 1, 2009** List of pre-registered substances is published
- June 1, 2009** First recommendation of priority substances to be considered for authorization published
- December 1, 2010** PHASE 1 - The following pre-registered 'phase-in' substances should have been registered when supplied at:
 - ≥ 1000 tons per year or;
 - ≥ 100 tons per year and classified under CHIP as very toxic to aquatic organisms or;
 - ≥ 1 ton per year and classified under CHIP as Category 1 or 2 carcinogens, mutagens or reproductive toxicants
- June 1, 2013** PHASE 2 - Deadline for registration of substances supplied at ≥ 100 tons per year
- June 1, 2018** PHASE 3 - Deadline for registration of substances supplied at ≥ 1 ton per year

AccuStandard fully supports the efforts and objectives of the REACH Directive and will continue to monitor any changes in the scope of this regulation. Changes may include newly banned substances, expiring exemptions or lowered maximum concentration levels. We will take the necessary actions to continue to sell our products in the European markets.



EUROPEAN COMMISSION
JOINT RESEARCH CENTRE
Institute for Reference Materials and Measurements
Reference Materials Unit

Geel, November 2008
D02 HE/mt D2008/28987

"...In short, the consequences for reference material producers seem to be:

- No registration of reference materials is required for materials produced at less than 1 ton per year, regardless of the nature of the substance and/or certified parameters."

As a leading manufacturer of chemical reference standards in the world, AccuStandard will take all necessary actions under REACH in order to continue to expand the supply of our products in Europe. For other guidance on REACH, please go to the ECHA-website (www.echa.europa.eu).



Standards for International Testing Protocols

AccuStandard has researched and developed standard solutions that meet the requirements of various governmental bodies around the world. If you do not locate a solution that meets your requirements, please contact our Technical Department, and we will quickly develop a formulation that meets your requirements.

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For additional mixtures, see Persistent Organic Pollutants (POPs) in the Table of Contents.

Available at www.AccuStandard.com

Cross References are available at the AccuStandard web site for analytical standards for many general categories that cross chemical groups.

Endocrine Disruptors (EU and US)	Allergens RoHS	Dyes Oeko-Tex Labeling
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The text of methods from various governmental agencies and non-governmental agencies can be downloaded from the AccuStandard web site or from the agency sites.

EU Directives	EPA Methods
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Also, new product listings can be found on the AccuStandard website as soon as they are available. Please visit the website often for the latest updates.



Regional Standards

Canadian Methodologies

PCB Congeners

Toxicity and Abundance based PCB Congener Formulations

These formulations have been selected by the Institute for Biological Sciences of Canada. The concentration level for these formulations is selected so that 1 mL of standard diluted into 100 mL will show equal response by ECD.

PCB Congener Set

C-CAN-SET

4 x 1 mL (C-CAN-01, C-CAN-02, C-CAN-03, C-CAN-04)

PCB Congener Mix #1

C-CAN-01	1 x 1 mL
<i>At stated conc. in Isooctane</i>	14 comps.
(Congener No.)	µg/mL
2,2',5-Trichlorobiphenyl (18)	11.8
2,4',5-Trichlorobiphenyl (31)	6.6
2,2',3,3'-Tetrachlorobiphenyl (40)	4.9
2,2',3,5'-Tetrachlorobiphenyl (44)	5.9
2,2',4,5'-Tetrachlorobiphenyl (49)	7.6
2,2',6,6'-Tetrachlorobiphenyl (54)	16.6
3,3',4,4'-Tetrachlorobiphenyl (77)	5.5
2,2',3,4,5-Pentachlorobiphenyl (86)	2.9
2,2',3,4,5'-Pentachlorobiphenyl (87)	3.8
2,3',4,5',6-Pentachlorobiphenyl (121)	3.1
2,2',4,4',5,5'-Hexachlorobiphenyl (153)	2.1
2,3,3',4,4',5-Hexachlorobiphenyl (156)	1.5
2,3,3',4,5,5'-Hexachlorobiphenyl (159)	1.2
Decachlorobiphenyl (209)	1.7

PCB Congener Mix #3

C-CAN-03	1 x 1 mL
<i>At stated conc. in Isooctane</i>	15 comps.
(Congener No.)	µg/mL
4,4'-Dichlorobiphenyl (15)	138.1
2,3,4,4',5-Pentachlorobiphenyl (114)	6.3
2,2',3,3',4,5-Hexachlorobiphenyl (129)	8.3
2,2',3,4,4',5-Hexachlorobiphenyl (137)	7.4
2,2',4,4',5,5'-Hexachlorobiphenyl (153)	7.3
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)	5.2
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)	6.6
2,2',3,4,4,5,5',6-Heptachlorobiphenyl (185)	3.5
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)	4.7
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)	5
2,2',3,3',4,5',6'-Octachlorobiphenyl (201)	4.8
2,2',3,3',4,5,5',6'-Octachlorobiphenyl (199)	7
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)	5.1
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (206)	6.7
Decachlorobiphenyl (209)	5.1

PCB Congener Mix #2

C-CAN-02	1 x 1 mL
<i>At stated conc. in Isooctane</i>	15 comps.
(Congener No.)	µg/mL
4,4'-Dichlorobiphenyl (15)	91.9
2,2',5,5'-Tetrachlorobiphenyl (52)	15.2
2,3,4,4'-Tetrachlorobiphenyl (60)	3.9
2,2',4,5',6-Pentachlorobiphenyl (103)	10.8
2,3,3',4,4'-Pentachlorobiphenyl (105)	4
2,2',3,3',4,4'-Hexachlorobiphenyl (128)	4.9
2,2',3,4,5,6'-Hexachlorobiphenyl (143)	5.7
2,2',4,4',5,6'-Hexachlorobiphenyl (154)	6.2
2,2',3,3',4,5,6-Heptachlorobiphenyl (173)	2.3
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)	3.8
2,2',3,3',5,5',6,6'-Octachlorobiphenyl (202)	3.6
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)	3.2
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (207)	3.8
2,2',3,3',4,4,5,5',6,6'-Nonachlorobiphenyl (208)	2.4
Decachlorobiphenyl (209)	2.8

PCB Congener Mix #4

C-CAN-04	1 x 1 mL
<i>At stated conc. in Isooctane</i>	15 comps.
(Congener No.)	µg/mL
4,4'-Dichlorobiphenyl (14)	76.7
2,2',4,5,5'-Pentachlorobiphenyl (101)	8.9
2,3',4,4',5-Pentachlorobiphenyl (118)	3.9
2,2',3,4,4',5'-Hexachlorobiphenyl (138)	4.2
2,2',3,4,5,5'-Hexachlorobiphenyl (141)	2.8
2,2',3,5,5',6-Hexachlorobiphenyl (151)	5
2,2',4,4',5,5'-Hexachlorobiphenyl (153)	3.3
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)	3
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)	2.8
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)	3.2
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)	2.4
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)	2.6
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)	3.3
2,2',3,3',4,5,5',6'-Octachlorobiphenyl (199)	3.6
Decachlorobiphenyl (209)	2.7

PCB Congener Formulation Quebec Ministry of Environment

PCB Congener Mix

C-QME-01	1 x 1 mL
<i>At stated conc. in Isooctane</i>	41 comps.
(Congener No.)	ng/mL
2,2',4-Trichlorobiphenyl (17)	500
2,2',5-Trichlorobiphenyl (18)	2000
2,4,4'-Trichlorobiphenyl (28)	2000
2,4',5-Trichlorobiphenyl (31)	1500
2',3,4-Trichlorobiphenyl (33)	2000
2,2',3,5'-Tetrachlorobiphenyl (44)	2000
2,2',4,5'-Tetrachlorobiphenyl (49)	2000
2,2',5,5'-Tetrachlorobiphenyl (52)	2000
2,3',4',5-Tetrachlorobiphenyl (74)	2000
2,2',3,3',4-Pentachlorobiphenyl (82)	500
2,2',3,4,5'-Pentachlorobiphenyl (87)	2000
2,2',3,5',6-Pentachlorobiphenyl (95)	1000
2,2',4,4',5-Pentachlorobiphenyl (99)	2000
2,2',4,5,5'-Pentachlorobiphenyl (101)	2000
2,3,3',4,5-Pentachlorobiphenyl (105)	500
2,3,3',4',6-Pentachlorobiphenyl (110)	2000
2,3',4,4',5-Pentachlorobiphenyl (118)	2000
2,2',3,3',4,4'-Hexachlorobiphenyl (128)	2000
2,2',3,3',4,6'-Hexachlorobiphenyl (132)	1000
2,2',3,4,4',5'-Hexachlorobiphenyl (138)	2000
2,2',3,4',5',6-Hexachlorobiphenyl (149)	2000
2,2',3,5,5',6-Hexachlorobiphenyl (151)	2000
2,2',4,4',5,5'-Hexachlorobiphenyl (153)	2000
2,3,3',4,4',5-Hexachlorobiphenyl (156)	2000
2,3,3',4,4',6-Hexachlorobiphenyl (158)	500
3,3',4,4',5,5'-Hexachlorobiphenyl (169)	2000
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)	2000
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)	2000
2,2',3,3',4,5,6-Heptachlorobiphenyl (177)	2000
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)	2000
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)	2000
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)	2000
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)	2000
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)	2000
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)	2000
2,2',3,3',4,5,5',6'-Octachlorobiphenyl (199)	1500
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)	2000
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (206)	2000
2,2',3,3',4,4,5,5',6'-Nonachlorobiphenyl (208)	2000
Decachlorobiphenyl (209)	2000

Dioxins: Calibration & Window Defining Mixtures (Canadian Environmental Methods)

Custom Window Defining Mixture

D-WD	1 x 1 mL
<i>20,000 ng/mL in Toluene</i>	
D-WD-2.5X	1 x 1 mL
<i>50,000 ng/mL in Toluene</i>	7 comps.
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin (Isomer pair)	
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin (Isomer pair)	
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	
Octachlorodibenzo-p-dioxin	

Custom Calibration Mixture

D-CAL	1 x 1 mL
<i>20,000 ng/mL in Toluene</i>	
D-CAL-2.5X	1 x 1 mL
<i>50,000 ng/mL in Toluene</i>	6 comps.
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	
Octachlorodibenzo-p-dioxin	



PAH Mixture Quebec Ministry of Environment

PAH Standard

H-QME-01 1 x 1 mL
500 µg/mL each in CH₂Cl₂:Benzene (1:1)
24 comps

Acenaphthene
Acenaphthylene
Anthracene
Benz[a]anthracene
Benzo[b]fluoranthene
Benzo[j]fluoranthene
Benzo[k]fluoranthene
Benzo[g,h,i]perylene
Benzo[c]phenanthrene
Benzo[a]pyrene
Benzo[e]pyrene
Chrysene
Dibenz[a,h]anthracene
Dibenzo[a,h]pyrene
Dibenzo[a,i]pyrene
Dibenzo[a,l]pyrene
7,12-Dimethylbenz[a]anthracene
Fluoranthene
Fluorene
Indeno[1,2,3-cd]pyrene
3-Methylcholanthrene
Naphthalene
Phenanthrene
Pyrene



Petroleum Brownfield Regulation

The Brownfield Regulation has been approved by the Canadian Ministry of the Environment as of October 1, 2004.

Light Petroleum Fraction

CCME-LPF-SET 5 x 1 mL
At stated conc. (µg/mL) in MeOH 8 comps.

Compound	0.05X	0.1X	0.2X	0.5X	1X
n-Decane	12.5	25	50	125	250
n-Hexane	12.5	25	50	125	250
Toluene	12.5	25	50	125	250
Benzene	12.5	25	50	125	250
o-Xylene	12.5	25	50	125	250
m-Xylene	6.25	12.5	25	62.5	125
p-Xylene	6.25	12.5	25	62.5	125
Ethylbenzene	12.5	25	50	125	250

Medium & Heavy Petroleum Fraction

CCME-MHPF-SET 3 x 1 mL
At stated conc. (µg/mL) in n-Hexane 3 comps.

Compound	0.1X	0.5X	1X
n-Decane	40	200	400
n-Hexadecane	40	200	400
n-Tetraatriacontane	40	200	400

Performance Check Standard

CCME-QC 1 x 1 mL
CCME-QC-PAK 5 x 1 mL
40 µg/mL each in n-Hexane:Cyclohexane (1:1)
2 comps.
n-Pentacontane
n-Tetracontane

Spike Standard

CCME-SPIKE 1 x 1 mL
2500 µg/mL each in n-Hexane 2 comps.
SAE 30W Motor Oil - Non-Detergent Formula
#2 Diesel Fuel - 50% Weathered

Canadian Drinking Water Brownfield Regulation

Phenoxyacid Herbicides Mix

CCME-CDW-PHERB 1 x 1 mL
1000 µg/mL each in Acetone 11 comps.

Bromoxynil
2,4-D
Dicamba
2,4-Dichlorophenol
Diclofop methyl
Dinoseb
Pentachlorophenol
Picloram
2,4,5-T
2,3,4,6-Tetrachlorophenol
2,4,6-Trichlorophenol

Carbamates Mix

CCME-CDW-CARB 1 x 1 mL
100 µg/mL each in AcCN 5 comps.

Aldicarb
Bendiocarb
Carbaryl
Carbofuran
Triallate

Chlorinated Pesticide Mix

CCME-CDW-CPEST 1 x 1 mL
200 µg/mL each in Hexane:Toluene (1:1)
14 comps.

Aldrin
g-BHC
a-Chlordane
g-Chlordane
2,4'-DDE
4,4'-DDE
2,4'-DDT
4,4'-DDT
Dieldrin
Heptachlor
Heptachlor epoxide (Isomer B)
Methoxychlor
Oxychlordane Isomer
Trifluralin



Regional Standards

Municipal & Industrial Strategy for Abatement (MISA) - Canadian

MISA Analytical Test Groups

Set MISA-VH-1/VH-2-SET 2 x 1 mL (MISA-VH-1, MISA-VH-2)

Group 16: Volatiles, Halogenated

MISA-VH-1 MISA-VH-1-PAK 0.5 mg/mL each in MeOH	1 x 1 mL SAVE	5 x 1 mL 22 comps.
Bromoform	<i>trans</i> -1,2-Dichloroethene	
Carbon tetrachloride	1,1-Dichloroethene	
Chlorobenzene	1,2-Dichloropropane	
Chloroform	<i>cis</i> -1,3-Dichloropropene*	
Dibromochloromethane	<i>trans</i> -1,3-Dichloropropene**	
1,2-Dibromoethane	Methylene chloride	
1,2-Dichlorobenzene	1,1,2,2-Tetrachloroethane	
1,3-Dichlorobenzene	Tetrachloroethene	
1,4-Dichlorobenzene	1,1,1-Trichloroethane	
1,2-Dichloroethane	1,1,2-Trichloroethane	* <i>cis</i> (1.06 x conc.)
1,1-Dichloroethane	Trichloroethene	** <i>trans</i> (0.94 x conc.)

MISA-VH-2 MISA-VH-2-PAK 0.5 mg/mL each in MeOH	SAVE	1 x 1 mL 5 x 1 mL 5 comps.
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Bromomethane	Trichlorofluoromethane
Chloroethane	Vinyl chloride
Chloromethane	

Group 17: Volatiles, Non-Halogenated

MISA-VNH MISA-VNH-PAK 0.5 mg/mL each in MeOH	1 x 1 mL SAVE	5 x 1 mL 7 comps.
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Benzene	<i>o</i> -Xylene
Ethylbenzene	<i>m</i> -Xylene
Styrene	<i>p</i> -Xylene
Toluene	

Group 18: Volatiles, Water Soluble

MISA-VWS 2.0 mg/mL each in Water	1 x 1 mL	2 comps.
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Acrolein	Acrylonitrile
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Group 19: Extractables, Base-Neutral

Z-014G Z-014G-PAK 2.0 mg/mL each in CH ₂ Cl ₂ ; Benzene (1:1)	SAVE	1 x 1 mL 5 x 1 mL 16 comps.
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Acenaphthene	Chrysene
Acenaphthylene	Dibenz[a,h]anthracene
Anthracene	Fluoranthene
Benz[a]anthracene	Fluorene
Benzo[a]pyrene	Indeno[1,2,3-cd]pyrene
Benzo[b]fluoranthene	Naphthalene
Benzo[ghi]perylene	Phenanthrene
Benzo[k]fluoranthene	Pyrene

MISA-BN-1 2.0 mg/mL each in CH ₂ Cl ₂	1 x 1 mL	8 comps.
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Biphenyl	1-Methylnaphthalene
Camphene	2-Methylnaphthalene
1-Chloronaphthalene	5-Nitroacenaphthene
2-Chloronaphthalene	Perylene

MISA-BN-2 2.0 mg/mL each in CH ₂ Cl ₂	1 x 1 mL	8 comps.
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Benzylbutylphthalate	4-Chlorophenyl phenyl ether
4-Bromophenyl phenyl ether	Di- <i>n</i> -butyl phthalate
bis(2-Chloroethyl)ether	Di- <i>n</i> -octyl phthalate
bis(2-Chloroisopropyl)ether	bis(2-Ethylhexyl)phthalate

MISA-BN-3 2.0 mg/mL each in CH ₂ Cl ₂	1 x 1 mL	8 comps.
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bis(2-Chloroethoxy)methane	Diphenylether
2,4-Dinitrotoluene	Indole
2,6-Dinitrotoluene	N-Nitroso-diphenylamine
Diphenylamine	N-Nitroso-di- <i>n</i> -propyl amine

Group 20: Extractables, Acid (Phenolics)

MISA-A MISA-A-PAK 2.0 mg/mL each in CH ₂ Cl ₂	SAVE	1 x 1 mL 5 x 1 mL 20 comps.
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4-Chloro-3-methylphenol	4-Nitrophenol
2-Chlorophenol	Pentachlorophenol
2-Cresol	Phenol
3-Cresol	2,3,4,5-Tetrachlorophenol
4-Cresol	2,3,4,6-Tetrachlorophenol
2,4-Dichlorophenol	2,3,5,6-Tetrachlorophenol
2,6-Dichlorophenol	2,3,4-Trichlorophenol
2,4-Dimethylphenol	2,3,5-Trichlorophenol
4,6-Dinitro-2-cresol	2,4,5-Trichlorophenol
2,4-Dinitrophenol	2,4,6-Trichlorophenol

Group 22: Organochlorine Pesticides

MISA-PEST MISA-PEST-PAK 2.0 mg/mL each in Acetone	SAVE	1 x 1 mL 5 x 1 mL 18 comps.
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Aldrin	Endosulfan I
α -BHC	Endosulfan II
β -BHC	Endosulfan sulfate
γ -BHC	Endrin
δ -BHC	Endrin aldehyde
4,4'-DDD	Endrin ketone
4,4'-DDE	Heptachlor
4,4'-DDT	Heptachlor epoxide isomer B
Dieldrin	Methoxychlor

Group 23: Extractables, Chlorinated Neutrals

MISA-NC 2.0 mg/mL each in CH ₂ Cl ₂	1 x 1 mL	12 comps.
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Hexachlorobenzene	1,2,3,4-Tetrachlorobenzene
Hexachlorobutadiene	1,2,3,5-Tetrachlorobenzene
Hexachlorocyclopentadiene	1,2,4,5-Tetrachlorobenzene
Hexachloroethane	1,2,3-Trichlorobenzene
Octachlorostyrene	1,2,4-Trichlorobenzene
Pentachlorobenzene	2,4,5-Trichlorotoluene

Group 27: Polychlorinated Biphenyls

Solutions and Sets

Each at 35 μ g/mL	Isooctane	MeOH	1 mL
Aroclor 1016	C-216S	C-216S-M	
Aroclor 1221	C-221S	C-221S-M	
Aroclor 1232	C-232S	C-232S-M	
Aroclor 1242	C-242S	C-242S-M	
Aroclor 1248	C-248S	C-248S-M	
Aroclor 1254	C-254S	C-254S-M	
Aroclor 1260	C-260S	C-260S-M	
Aroclor 1262	C-262S	C-262S-M	
Aroclor 1268	C-268S	C-268S-M	
Set of 9 above	Z-008S-SET	Z-008S-M-SET	

Neat Set

Z-008-SET	Set of 9 vials
Aroclor 1016)	100 mg
Aroclor 1221	100 mg
Aroclor 1232	10 mg
Aroclor 1242	100 mg
Aroclor 1248	10 mg
Aroclor 1254	100 mg
Aroclor 1260	10 mg
Aroclor 1262	10 mg
Aroclor 1268	10 mg

PCB Congener Standards

PCB Congener Mixture

PCB-W22	1 x 1 mL
10 µg/mL each in Isooctane	15 comps.
PCB-W22-PAK SAVE	5 x 1 mL
PCB-W22-SET	15 x 1 mL
100 µg/mL in Isooctane (Set of Individual Solutions)	

No.	
18	2,2',5'-Trichlorobiphenyl (01)
20	2,3,3'-Trichlorobiphenyl (02)
28	2,4,4'-Trichlorobiphenyl (03)
31	2,4',5'-Trichlorobiphenyl (04)
44	2,2',3,5'-Tetrachlorobiphenyl (05)
52	2,2',5,5'-Tetrachlorobiphenyl (06)
101	2,2',4,5,5'-Pentachlorobiphenyl (07)
105	2,3,3',4,4'-Pentachlorobiphenyl (08)
118	2,3',4,4',5'-Pentachlorobiphenyl (09)
138	2,2',3,4,4',5'-Hexachlorobiphenyl (10)
149	2,2',3,4',5',6'-Hexachlorobiphenyl (11)
153	2,2',4,4',5,5'-Hexachlorobiphenyl (12)
170	2,2',3,3',4,4',5'-Heptachlorobiphenyl (13)
180	2,2',3,4,4',5,5'-Heptachlorobiphenyl (14)
194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl (15)

Internal Standard

C-EU-IS-10ML	1 x 10 mL
At stated conc. in Isooctane	2 comps.

2,4,6-Trichlorobiphenyl
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl

ISO 6468 PCB Standard

ISO6468-PCB	1 x 1 mL
10 µg/mL each in Hexane	7 comps.

2,4,4'-Trichlorobiphenyl
2,2',5,5'-Tetrachlorobiphenyl
2,2',4,5,5'-Pentachlorobiphenyl
2,2',3,4,4',5'-Hexachlorobiphenyl
2,2',4,4',5,5'-Hexachlorobiphenyl
2,2',3,4,4',5,5'-Heptachlorobiphenyl
2,2',3,3',4,4',5,5'-Octachlorobiphenyl

PCB Congener Content Evaluation Mix #1

AE-00059	1 x 1 mL
AE-00059-10ML	1 x 10 mL
10 µg/mL each in Isooctane	6 comps.

No.	
28	2,4,4'-Trichlorobiphenyl
52	2,2',5,5'-Tetrachlorobiphenyl
101	2,2',4,5,5'-Pentachlorobiphenyl
138	2,2',3,4,4',5'-Hexachlorobiphenyl
153	2,2',4,4',5,5'-Hexachlorobiphenyl
180	2,2',3,4,4',5,5'-Heptachlorobiphenyl

PCB Congener Content Evaluation Mix #2

AE-00060	1 x 1 mL
AE-00060-10ML	1 x 10 mL
10 µg/mL each in Isooctane	3 comps.

No.	
77	3,3',4,4'-Tetrachlorobiphenyl
126	3,3',4,4',5'-Pentachlorobiphenyl
169	3,3',4,4',5,5'-Hexachlorobiphenyl

Congener Calibration Mix #27

AE-00081-10ML	1 x 1 mL
100 µg/mL each in Isooctane	10 comps.

2,4,4'-Trichlorobiphenyl
2,2',5,5'-Tetrachlorobiphenyl
2,2',4,5,5'-Pentachlorobiphenyl
2,3,3',4,4'-Pentachlorobiphenyl
2,3',4,4',5'-Pentachlorobiphenyl
2,2',3,4,4',5'-Hexachlorobiphenyl
2,2',4,4',5,5'-Hexachlorobiphenyl
2,3,3',4,4',5'-Hexachlorobiphenyl
2,2',3,4,4',5,5'-Heptachlorobiphenyl
Decachlorobiphenyl

Congener Calibration Mix

AE-00061	1 x 1 mL
AE-00061-10ML	1 x 10 mL
10 µg/mL each in Isooctane	14 comps.

No.	
18	2,2',5'-Trichlorobiphenyl
28	2,4,4'-Trichlorobiphenyl
31	2,4',5'-Trichlorobiphenyl
44	2,2',3,5'-Tetrachlorobiphenyl
52	2,2',5,5'-Tetrachlorobiphenyl
101	2,2',4,5,5'-Pentachlorobiphenyl
118	2,3',4,4',5'-Pentachlorobiphenyl
138	2,2',3,4,4',5'-Hexachlorobiphenyl
149	2,2',3,4',5',6'-Hexachlorobiphenyl
153	2,2',4,4',5,5'-Hexachlorobiphenyl
170	2,2',3,3',4,4',5'-Heptachlorobiphenyl
180	2,2',3,4,4',5,5'-Heptachlorobiphenyl
194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl
209	Decachlorobiphenyl

Internal Standards

Each in 100 µg/mL in Isooctane

C-030S-TP	1 x 1 mL
2,4,6-Trichlorobiphenyl	
C-209S-TP	1 x 1 mL
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl	

Technical Note

These Congener Content Evaluation Mixes have proven useful for European Laboratories estimating the PCB content of a sample when following EU guideline 96/59/EU for cleanup of PCBs.

Custom Standards

When you have a need for unique Analytical Standards, let the experts at AccuStandard assist in designing your formulation. Our technical group, with over 80 years of combined analytical experience, will review your request, suggest the most economical and stable formulation, and provide pricing all within 24 hours.



Volatiles

DIN 38407-2 Benzene Standard

Determination of water, waste water and sludge for low volatile halogenated hydrocarbons by GC.

DIN38407-2-BENZ 1 x 1 mL
10 µg/mL each in *n*-Hexane 5 comps.

Hexachlorobenzene
Pentachlorobenzene
Pentachloronitrobenzene
1,2,4,5-Tetrachlorobenzene
1,2,4-Trichlorobenzene

DIN 38407-9 Benzene Mix

Determination of Benzene and Benzene derivatives in water, wastewater and sludge by GC.

DIN38407-9-BENZ 1 x 1 mL
100 µg/mL each in MeOH 8 comps.

Benzene 1,4-Dichlorobenzene
Toluene *o*-Xylene
Ethylbenzene *m*-Xylene
Chlorobenzene *p*-Xylene

DIN EN ISO 10301 - Halogenated VOCs

Determination of water, waste water and sludge for low volatile halogenated hydrocarbons by GC.

DINENISO-10301 1 x 1 mL
1 µg/mL each in MeOH 17 comps.

Dichloromethane 1,2-Dichloropropane
Trichloromethane 1,3-Dichloropropane
Carbon tetrachloride 1,3-Dichloropropene
1,1-Dichloroethane Dibromomethane
1,2-Dichloroethane Tribromoethene
1,1,1-Trichloroethane Bromochloromethane
1,1,2-Trichloroethane Bromodichloromethane
Trichloroethene Dibromochloromethane
Tetrachloroethene

Volatile Standard

AE-00048 1 x 1 mL
100 µg/mL each in MeOH 5 comps.

1,1,1-Trichloroethane Dichloromethane
Trichloroethene Tetrachloromethane
Tetrachloroethene

Calibration Solution

Set of 5 ampules with a conc. each in MeOH of 1 µg/mL, 5 µg/mL, 10 µg/mL, 50 µg/mL and 100 µg/mL

Compound	Cat. No.	Unit
1,1,1-Trichloroethane	AE-00034-CAL-SET	5 x 1 mL
Trichloroethene	AE-00035-CAL-SET	5 x 1 mL
Tetrachloroethene	AE-00036-CAL-SET	5 x 1 mL
Dichloromethane	AE-00037-CAL-SET	5 x 1 mL
Carbon tetrachloride	AE-00038-CAL-SET	5 x 1 mL

Volatiles Calibration Curve Mix 1

AE-00039-CAL-SET 5 x 1 mL
1 µg/mL, 5 µg/mL, 10 µg/mL, 50 µg/mL,
100 µg/mL each comp. in MeOH 5 comps.

Dichloromethane 1,1,1-Trichloroethane
Tetrachloroethene Trichloroethene
Tetrachloromethane

Volatiles Calibration Curve Mix 2

AE-00040-CAL-SET 5 x 1 mL
1 µg/mL, 5 µg/mL, 10 µg/mL, 50 µg/mL,
100 µg/mL each comp. in MeOH 6 comps.

Chloroform Tetrachloromethane
Dichloromethane 1,1,1-Trichloroethane
Trichloroethene Trichloroethene

Chlorinated Organic Volatile

Calibration Standards

Appendix 2, Drinking Water Regulation of May 22, 1986.

Compound	Cat. No.	Unit
1,1,1-Trichloroethane	APP-9-202	1 mL
Trichloroethene	APP-9-204	
Tetrachloroethene	APP-9-194	
Dichloromethane	APP-9-074	
Carbon tetrachloride	APP-9-036	

Nitroaromatic Compounds

DIN-38407-17 Nitroaromatic Compounds

Examination of water, wastewater, and sludge for the determination of selected nitroaromatic compounds by Gas-Liquid Chromatography

DIN38407-17 1 x 1 mL
500 µg/mL each in MeOH 12 comps.

Nitrobenzene 3,4-Dinitrotoluene
2-Nitrotoluene 2-Amino-6-nitrotoluene
4-Nitrotoluene 4-Amino-2-nitrotoluene
1,3-Dinitrobenzene 4-Amino-2,6-dinitrotoluene
2,6-Dinitrotoluene 2-Amino-4,6-dinitrotoluene
2,4-Dinitrotoluene 2,4,6-Trinitrotoluene

Explosives

DIN 38407-21 Explosives

Examination of water, wastewater, and sludge for determination of selected explosives and related compounds by HPLC with UV detection

DIN38407-21-A 1 x 1 mL
10 µg/mL each in MeOH 12 comps.

Picric acid Nitroglycerin
HMX TNT
RDX 2-Nitrotoluene
Tetryl PETN
EGDN 4-Nitrotoluene
DEGDN 3-Nitrotoluene

DIN 38407-21 Related Compounds

Examination of water, wastewater, and sludge for determination of selected explosives and related compounds by HPLC with UV detection

DIN38407-21-B 1 x 1 mL
10 µg/mL each in MeOH:AcCN (98:2) 8 comps.

1,3,5-Trinitrobenzene
1,3-Dinitrobenzene
4-Amino-2,6-dinitrotoluene
2,2',4,4',6,6'-Hexanitrodiphenylamine
2-Amino-4,6-dinitrotoluene
2,6-Dinitrotoluene
2,4-Dinitrotoluene
Diphenylamine

PAHs

DIN 38407-8 PAH Mix (WHO 6 List)

Determination of PAH in water, wastewater and sludge by HPLC.

DIN38407-8-PAH

2 µg/mL each in Acetonitrile

1 x 1 mL
6 comps.

Fluoranthene	Benzo(a)pyrene
Benzo(b)fluoranthene	Benzo(k)fluoranthene
Benzo(g,h,i)perylene	Indeno(1,2,3-cd)pyrene

DIN 38407-18 PAH Solution

Examination of water, wastewater, and sludge for the determination of 15 polycyclic aromatic hydrocarbons (PAH) by HPLC with fluorescence detection.

DIN38407-18

10 µg/mL each in Acetonitrile

1 x 1 mL
15 comps.

Naphthalene	Benzo(k)fluoranthene
Acenaphthene	Benzo(a)pyrene (Ames grade)
Fluorene	Dibenz(a,h)anthracene
Phenanthrene	Benzo(g,h,i)perylene
Anthracene	Pyrene
Fluoranthene	Benz(a)anthracene
Chrysene	Indeno(1,2,3-cd)pyrene
Benzo(b)fluoranthene	

DIN 38414-23 PAHs

Determination of 15 PAHs in water, waste water and sludge by HPLC and Fluorescence detection.

DIN38414-23

10 µg/mL each in Acetonitrile

1 x 1 mL
15 comps.

Naphthalene	Benzo(k)fluoranthene
Acenaphthene	Benzo(a)pyrene (Ames grade)
Fluorene	Dibenz(a,h)anthracene
Phenanthrene	Benzo(g,h,i)perylene
Anthracene	Pyrene
Fluoranthene	Benz(a)anthracene
Chrysene	Indeno(1,2,3-cd)pyrene
Benzo(b)fluoranthene	

PAH Standard Kits and Solutions

The following mixtures and kits have been prepared to meet the needs of laboratories utilizing European and USEPA methodologies. Minimum purity 99%, except where indicated.

PAH Mix #1

Regulations for drinking water analysis, (E-DIN 38407-F-18, E-DIN 38414-F-21). Regulations for sediment and sludge

AE-00025

1 x 1 mL

AE-00025-10ML

1 x 10 mL

At stated conc. in Acetonitrile

16 comps.

Acenaphthene (25 µg/mL)	Chrysene (20 µg/mL)
Acenaphthylene (25 µg/mL)	Dibenz[a,h]anthracene (40 µg/mL)
Anthracene (25 µg/mL)	Fluoranthene (40 µg/mL)
Benz[a]anthracene (10 µg/mL)	Fluorene (40 µg/mL)
Benzo[b]fluoranthene (25 µg/mL)	Indeno[1,2,3-cd]pyrene (25 µg/mL)
Benzo[k]fluoranthene (10 µg/mL)	Naphthalene (50 µg/mL)
Benzo[g,h,i]perylene (25 µg/mL)	Phenanthrene (98%) (30 µg/mL)
Benzo[a]pyrene (20 µg/mL)	Pyrene (40 µg/mL)

PAH Mix #2

For European methods according to customer requests.

AE-00045

1 x 1 mL

AE-00045-10ML

1 x 10 mL

At stated conc. in Acetonitrile

7 comps.

Benzo[b]fluoranthene (2 µg/mL)	Fluoranthene (10 µg/mL)
Benzo[k]fluoranthene (2 µg/mL)	Indeno[1,2,3-cd]pyrene (2 µg/mL)
Benzo[g,h,i]perylene (2 µg/mL)	Perylene (10 µg/mL)
Benzo[a]pyrene (2 µg/mL)	

PAH Mix #3

German method for drinking water analysis.

AE-00032

1 x 1 mL

AE-00032-10ML

1 x 10 mL

10 µg/mL each in Acetonitrile

7 comps.

Benzo[b]fluoranthene	Fluoranthene
Benzo[k]fluoranthene	Indeno[1,2,3-cd]pyrene
Benzo[g,h,i]perylene	Perylene
Benzo[a]pyrene	

PAH Mix #4

For European methods according to customer requests.

AE-00033

1 x 1 mL

AE-00033-10ML

1 x 10 mL

In Acetonitrile

7 comps.

Benzo[b]fluoranthene (20 µg/mL)	Fluoranthene (50 µg/mL)
Benzo[k]fluoranthene (20 µg/mL)	Indeno[1,2,3-cd]pyrene (40 µg/mL)
Benzo[g,h,i]perylene (20 µg/mL)	Perylene (20 µg/mL)
Benzo[a]pyrene (20 µg/mL)	

ISO/DIS 22032 PBDEs in Sediment & Sludge

DRAFT INTERNATIONAL STANDARD

ISO/DIS 22032 Calibration Curve Set

ISO/DIS-22032-SET

At stated conc. (ng/mL) in Isooctane

7 x 1 mL
8 comps. each

(Congener No.)	01	02	03	04	05	06	07
ISO/DIS-22032							
2,2',4,4'-Tetrabromodiphenyl ether (#47)	5	12.5	25	50	100	150	250
2,2',4,4',5-Pentabromodiphenyl ether (#99)	5	12.5	25	50	100	150	250
2,2',4,4',6-Pentabromodiphenyl ether (#100)	5	12.5	25	50	100	150	250
2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	5	12.5	25	50	100	150	250
2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	5	12.5	25	50	100	150	250
2,2',3,4,4',5,6'-Heptabromodiphenyl ether (#183)	5	12.5	25	50	100	150	250
2,3,3',4,4',5,5',6-Octabromodiphenyl ether (#205)	5	12.5	25	50	100	150	250
2,2',3,3',4,4',5,5',6,6'-Decabromodiphenyl ether (#209)	25	50	100	200	500	700	1000

Internal Standard for

BDE# 47, 99 and 100

ISO22032-IS-1-5ML 1 x 5 mL

ISO22032-IS-1-10ML 1 x 10 mL

100 ng/mL each in Isooctane

3,3',4,4'-Tetrabromodiphenyl ether

Internal Standard for

BDE# 153, 154 and 183

ISO22032-IS-2-5ML 1 x 5 mL

ISO22032-IS-2-10ML 1 x 10 mL

100 ng/mL each in Isooctane

2,2',3,4,4',5,6-Heptabromodiphenyl ether

Aliphatic, Aromatic Amines and Derivatives

Aryl Amine Multi-Component Solution

AE-00049-SET		2 x 1 mL
10 µg/mL each in Ethyl acetate	24 comps. (Includes AE-00049-R1 plus RAC-08)	
AE-00049-R1		1 mL
10 µg/mL each in Ethyl acetate	23 comps.	

o-Aminoazotoluene	3,3'-Dimethyl-4,4'-diaminodiphenylmethane
4-Aminobiphenyl	4,4'-Methylenebis(2-chloroaniline)
2-Amino-4-nitrotoluene	2-Naphthylamine
Benzidine	4,4'-Oxydianiline
4-Chloroaniline	4,4'-Thiodianiline
4-Chloro-o-toluidine	o-Toluidine
p-Cresidine	2,4,5-Trimethylaniline
4,4'-Diaminodiphenylmethane	p-Aminoazobenzene
2,4-Diaminotoluene	2-Aminobiphenyl
3,3'-Dichlorobenzidine	o-Anisidine
3,3'-Dimethoxybenzidine	3-Chloro-o-toluidine
3,3'-Dimethylbenzidine	

RAC-08		1 mL
100 µg/mL each in Pyridine		

2,4-Diaminoanisole

Halo Acetic Acids

DIN 38407-25 Selected Halo Acetic Acids

DIN38407-25	1 x 1 mL
10 µg/mL in MtBE	7 comps.

Bromochloroacetic acid
Dalapon
Dibromoacetic acid
Dichloroacetic acid
Bromoacetic acid
Chloroacetic acid
Trichloroacetic acid

EFSA for Isopropylthioxanthone (ITX)

Responding to the hazard found in Italy, France, Spain, and Portugal, we have formulated Isopropylthioxanth-9-one (a photographic chemical) found in baby milk in Italy. The 2-isomer as well as the technical mixture also contains the 4-isomer.

2-Isopropylthioxanthone (ITX)

EFSA-ITX-01	1 x 1 mL
1.0 mg/mL in Isooctane	
2-Isopropylthioxanth-9-one	

Isopropylthioxanthone (ITX)

Mixed Isomers	
EFSA-ITX-02	1 x 1 mL
1.0 mg/mL in Isooctane	
2- and 4- Isopropylthioxanth-9-one	

Pesticide Standards

The following Pesticide Standards are for German Regulations - For residue thresholds. Swiss Regulations - For components and contaminants in food. DFG collected methods.

Pesticide / Congener Mix #1

AE-00010 1 x 1 mL
AE-00010-10ML 1 x 10 mL
At stated conc. (µg/mL) in Toluene 31 comps.

2,4,4'-Trichlorobiphenyl	1
2,2',5,5'-Tetrachlorobiphenyl	1
2,2',4,5,5'-Pentachlorobiphenyl	1
2,2',3,4,4',5'-Hexachlorobiphenyl	1
2,2',4,4',5,5'-Hexachlorobiphenyl	1
2,2',3,4,4',5,5'-Heptachlorobiphenyl	1
Aldrine	10
cis-Chlordane	10
trans-Chlordane	10
oxy-Chlordane	10
o,p'-DDD	10
p,p'-DDD	10
o,p'-DDE	10
p,p'-DDE	10
o,p'-DDT	10
p,p'-DDT	10
Dieldrine	10
Endosulfan I	10
Endosulfan II	10
Endrine	10
α-HCH	10
β-HCH	10
γ-HCH	10
δ-HCH	10
Heptachlor	10
cis-Heptachlorepoxyde	10
trans-Heptachlorepoxyde	10
Hexachlorbenzene	10
Isodrin	10
Methoxychlor	10
Mirex	10

Pesticide Mix #2

AE-00011 1 x 1 mL
AE-00011-10ML 1 x 10 mL
10 µg/mL each in Toluene 22 comps.

Anilazine	Tecnacene
Captan	Tetradifon
Chlorthalonil	Tetrasul
Clorfenson	Tridiamefon
Dichlofluanid	Tridiamenol
Dicofol	Trifluarin
Endosulfane-sulfate	Pentachloroaniline
Fenson	Procymidon
Folpet	Propyzamid
Imazalil	Quintozen
Iprodion	Vinclozolin

Pesticide Mix #3

AE-00012 1 x 1 mL
AE-00012-10ML 1 x 10 mL
At stated conc. (µg/mL) in Toluene 10 comps.

Captafol	200
Captan	100
Demethon-S-methyl	500
Demethon-S-methyl-sulfone	500
Dicofol	200
Pentachlorophenol	100
Tetrachlorvinphos	10
Trichlorfon	100
Tolyfluanid	100
Vamidithion	200

Pesticide Mix #4

AE-00013 1 x 1 mL
AE-00013-10ML 1 x 10 mL
At stated conc. (µg/mL) in Toluene 5 comps.

Cyproconazole	500
Hexaconazole	500
Penconazole	500
Tebuconazole	500
Tetrachlorvinphos	10

Pesticide Mix #5

AE-00014 1 x 1 mL
AE-00014-10ML 1 x 10 mL
At stated conc. (µg/mL) in Ethyl acetate 8 comps.

Atrazine	200
Cyanazine	200
Desmertryn	500
Metribuzin	500
Prometryne	500
Simazine	200
Terbutryn	500
Tetrachlorvinphos	10

Tetrachlorvinphos Surrogate / Internal Standard

AE-00047 1 x 1 mL
1000 µg/mL in Acetonitrile

Tetrachlorvinphos

Pesticide Mix #6

AE-00015 1 x 1 mL
AE-00015-10ML 1 x 10 mL
At stated conc. (µg/mL) in Toluene 8 comps.

Chlorpyrifos-methyl	100
Diazinon	100
Ethion	100
Etrimfos	50
Iodofenphos	200
Malathion	100
Phosphamidon	200
Tetrachlorvinphos	10

Pesticide Mix #7

AE-00016 1 x 1 mL
AE-00016-10ML 1 x 10 mL
At stated conc. (µg/mL) in Toluene 8 comps.

Bromophos-methyl	100
Bromophos-ethyl	150
Fenitrothion	200
Methacryfos	150
Omethoate	150
Phosalone	100
Tetrachlorvinfos	10
Tolclofos-methyl	100

Pesticide Mix #8

AE-00017 1 x 1 mL
AE-00017-10ML 1 x 10 mL
At stated conc. (µg/mL) in Toluene:Acetone:Hexane (18:1:1) 6 comps.

Chlorbufam	500
Chlorpropham	500
Dichlobenil	200
Imazalil	500
Pyrazon	500
2,3,5,6-Tetrachloronitrobenzene	100

Pesticide Mix #9

AE-00018 1 x 1 mL
AE-00018-10ML 1 x 10 mL
At stated conc. (µg/mL) in Toluene 9 comps.

Azinophos-ethyl	100
Fenchlorvos	100
Fonophos	150
Methidathion	100
Mevinphos	200
Parathion-ethyl	150
Parathion-methyl	100
Pirimiphos-methyl	100
Tetrachlorvinphos	10

Pesticide Mix #10

AE-00019 1 x 1 mL
AE-00019-10ML 1 x 10 mL
At stated conc. (µg/mL) in Toluene 7 comps.

Benalaxyl	500
Carbaryl	500
Oxadixyl	500
Terbutylazine	250
Tetrachlorvinphos	10
Triadimefon	500
Triadimenol	500

Pesticide Standards continued on next page

Pesticide Standards

The following Pesticide Standards are for German Regulations - For residue thresholds. Swiss Regulations - For components and contaminants in food. DFG collected methods.

Pesticide Mix #11

AE-00020 1 x 1 mL
AE-00020-10ML 1 x 10 mL
10 µg/mL each in Toluene 19 comps.

Aldrin	β-HCH
Chloridazon	γ-HCH
o,p'-DDD	δ-HCH
p,p'-DDD	Heptachlor
o,p'-DDE	cis-Heptachlorepoxyde
p,p'-DDE	trans-Heptachlorepoxyde
o,p'-DDT	Hexachlorobenzene
p,p'-DDT	Tecnacene
Endrin	Tetrachlorvinphos
α-HCH	

Pesticide Mix #12

AE-00021 1 x 1 mL
AE-00021-10ML 1 x 10 mL
At stated conc. (µg/mL) in Toluene 9 comps.

Carbophenothion	100
Disulfoton	150
Fenthion	100
Methamidophos	100
Phorate	150
Phorate-sulfatone	100
Phorate-sulfone	150
Tetrachlorvinphos	10
Thiomethon	100

Pesticide Mix #13

AE-00022 1 x 1 mL
AE-00022-10ML 1 x 10 mL
At stated conc. (µg/mL) in Toluene 8 comps.

Chlorfenvinphos (CFVP)	100
Chlorpyrifos	100
Dichlorvos	100
Dimethoate	100
Heptenophos	100
Quinalphos	100
Tetrachlorvinphos	10
Triazophos	100

Pesticide Mix #14

AE-00023 1 x 1 mL
AE-00023-10ML 1 x 10 mL
At stated conc. (µg/mL) in Toluene 10 comps.

Cyfluthrin	500
λ-Cyhalothrin	500
Cypermethrin	500
Deltamethrin	500
Dichloran	100
Fenvalerate	500
Pendimethalin	100
Permethrin	500
Tefluthrin	100
Tetrachlorvinphos	10

Regulations for drinking water and water used in food manufacturing, May 27, 1986, BGBl, I, S. 760.

Pesticide Mix #15

AE-00024 1 x 1 mL
AE-00024-10ML 1 x 10 mL
0.02 µg/mL each in Ethyl acetate 33 comps.

Atrazine	Linuron
Bifenox	Pencycuron
Bromacil	Pendimethalin
Carbetamide	Prometryne
Chloridazo	Propazine
Chloroxuron	Metamitron
Chlorpropham	Metazachlor
Chlortoluron	Methabenzthiazuron
Crimidine	Methoprotryne
Cyanazine	Metobromuron
Desethylatrazine	Metolachlor
Desisopropylatrazine	Monolinuron
Desethylterbutylazine	Sebutylazin
Dimefuron	Simazine
Diuron	Terbutryn
Isoproturon	Terbutylazine
Karbutilate	

Regulations for drinking water analysis, (E-DIN 38407-F-18, E-DIN 38414-F-21)
 Regulations for sediment and sludge.

Pesticide Mix #16

AE-00030 1 x 1 mL
AE-00030-10ML 1 x 10 mL
10 µg/mL each in Ethyl acetate 20 comps.

Aldicarb	Lindane
Atrazine	MCPA *
Bentazone *	Mecoprop *
Chlortofuron	Metazachlor
Cyanazine	Metobromuron
2,4-D *	Metoxuron
Dichlorprop *	Sebutylazin
1,3-Dichloropropene	Simazine
Endosulfan I	Terbutylazine
Endosulfan II	
Isoproturon	* Underivatized

Regulations - Test methods for organochlorine and organophosphorus compounds and pyrethroide
 Current Science and Technology, German Book of Medicine (1996).

Pesticide Mix #17

AE-00027 1 x 1 mL
AE-0027-10ML 1 x 10 mL
10 µg/mL each in Toluene 14 comps.

Alachlor	Methyl pentachlorophenyl sulfide
Bromopropylate	Pentachloraniline
Carbophenothion	cis-Permethrin
Cypermethrin	trans-Permethrin
Deltamethrin	Piperonyl butoxide
Endosulfane sulfate	Pyrethrins
Fenvalerate	Quintozene

Pesticide Mix #18

AE-00028 1 x 1 mL
AE-00028-10ML 1 x 10 mL
10 µg/mL each in Toluene 16 comps.

Azinphos-methyl	Ethyl parathion
Carbophenothion	Fenitrothion
Chlorfenvinphos	Fonofos
Chlorpyrifos-ethyl	Methyl parathion
Chlorpyrifos-methyl	Malathion
Diazinon	Methidathion
Dichlorphos	Phosalone
Ethion	Pirimiphos-methyl

Pesticide Mix #19

AE-00029 1 x 1 mL
AE-00029-10ML 1 x 10 mL
10 µg/mL each in Toluene 13 comps.

Chlorpyrifos-methyl	Fenitrothion
p,p'-DDT	Lindane
Deltamethrin	Methyl parathion
Dichlorvos	Phosalone
Dieldrin	Quintozene
Endosulfan sulfate	Tecnacene
Ethion	

Pesticide Standards

Pesticide Mix #20

AE-00050 1 x 1 mL
AE-00050-10ML 1 x 10 mL
 10 µg/mL each in Ethyl acetate 20 comps.

Aldicarb	Isoproturon
Atrazine	γ-BHC
Bentazon	MCPA
Chlortoluron	MCPP acid
Cyanazine	Metazachlor
2,4-D	Metobromuron
Dichlorprop	Metoxuron
1,1-Dichloropropene	Sebutylazin
Endosulfan I	Simazine
Endosulfan II	Terbutylazine

Pesticide Mix #20

Regulation DIN V 38407 Part 12 Method F12
AE-00031 1 x 1 mL
AE-00031-10ML 1 x 10 mL
 10 µg/mL each in Ethyl acetate 17 comps.

Atrazine	Methabenzthiazuron
Chlortoluron	Metobromuron
Cyanazine	Metolachlor
Desethyl atrazine	Metoxuron
Hexazinone	Monolinuron
Isoproturon	Sebutylazin
Karmex	Simazine
Linuron	Terbutylazine
Metazachlor	

Pesticide Mix #21

AE-00051 1 x 1 mL
 10 µg/mL each in Cyclohexane 16 comps.

Aldrin	Endrin
p,p'-DDD	Heptachlor
p,p'-DDE	Heptachlor epoxide (isomer B)
o,p'-DDT	Hexachlorobenzene
p,p'-DDT	α-BHC
Dieldrin	β-BHC
Endosulfan I	γ-BHC
Endosulfan II	Methoxychlor

Pesticide Mix #22

AE-00052 1 x 1 mL
AE-00052-10ML 1 x 10 mL
 10 µg/mL each in Acetonitrile 8 comps.

Atrazine	Metoxuron
Desethyl atrazine	Propazine
Bromacil	Simazine
Chloridazon	Terbutylazine

Pesticide Mix #23

AE-00053 1 x 1 mL
AE-00053-10ML 1 x 10 mL
 10 µg/mL each in Acetonitrile 6 comps.

2,4-D	MCPA
2,4-DB	MCPB
Dichlorprop	MCPP acid

Pesticide Mix #24

AE-00054 1 x 1 mL
AE-00054-10ML 1 x 10 mL
 At stated conc. (µg/mL) in Cyclohexane 6 comps.

Aldrin	0.2	α-BHC	0.15
p,p'-DDT	0.4	γ-BHC	0.15
Dieldrin	0.3	Heptachlor	0.2

Pesticide Mix #25

AE-00055 1 x 1 mL
AE-00055-10ML 1 x 10 mL
 10 µg/mL each in Cyclohexane 4 comps.

α-BHC	γ-BHC
β-BHC	δ-BHC

Pesticide Mix #26

AE-00056 1 x 1 mL
AE-00056-10ML 1 x 10 mL
 1.0 µg/mL each in Cyclohexane 5 comps.

α-BHC	δ-BHC
β-BHC	ε-BHC
γ-BHC	

Pesticide Mix #27

AE-00057 1 x 1 mL
AE-00057-10ML 1 x 10 mL
 1.0 µg/mL each in Isooctane 13 comps.

α-BHC	p,p'-DDE
β-BHC	Dieldrin
γ-BHC	Endrin
δ-BHC	Heptachlor epoxide (isomer B)
o,p'-DDD	Methoxychlor
p,p'-DDD	Mirex
o,p'-DDE	

Pesticide Standards

ISO 6468 Pesticide Standard

Water quality determination of certain organochlorine insecticides, polychlorine biphenyls and chlorobenzenes by GC after liquid-liquid extraction.

ISO6468-PEST **1 x 1 mL**
10 µg/mL each in *n*-Hexane 19 comps.

α-BHC	Methoxychlor
β-BHC	Aldrin
γ-BHC	Dieldrin
δ-BHC	Endrin
o,p'-DDE	Heptachlor
p,p'-DDE	Heptachlor epoxide (Isomer A)
o,p'-DDD	Heptachlor epoxide (Isomer B)
p,p'-DDD	Endosulfan I
o,p'-DDT	Endosulfan II
p,p'-DDT	

EN ISO 10695 Pesticide Mix

Water quality determination of selected organic nitrogen and phosphorous compound by GC.

ENISO10695-PEST **1 x 1 mL**
10 µg/mL each in Acetone 12 comps.

Atrazine	Propazine
Cyanazine	Sebuthylazin
Metazachlor	Simazine
Parathion	Terbuthylazine
Methyl parathion	Trifluralin
Pendimethalin	Vinclozolin

DIN 38407-2 Pesticide Standard

Determination of water, waste water and sludge for low volatile halogenated hydrocarbons by GC.

DIN38407-2-PEST **1 x 1 mL**
10 µg/mL each in *n*-Hexane 17 comps.

Aldrin	Endrin
p,p'-DDD	Heptachlor
o,p'-DDE	Heptachlor epoxide (Isomer A)
p,p'-DDE	Heptachlor epoxide (Isomer B)
o,p'-DDT	α-BHC
p,p'-DDT	β-BHC
Dieldrin	γ-BHC
Endosulfan I	Methoxychlor
Endosulfan II	

EN ISO 11369 Pesticide Mix 20

Regulation DIN V 38407 Part 12 Method F12

AE-00031 **1 x 1 mL**
AE-00031-10ML **1 x 10 mL**
10 µg/mL each in Ethyl acetate 17 comps.

Atrazine	Methabenzthiazuron
Chlortoluron	Metobromuron
Cyanazine	Metolachlor
Desethyl atrazine	Metoxuron
Hexazinone	Monolinuron
Isoproturon	Sebuthylazin
Karmex (Diuron)	Simazine
Linuron	Terbuthylazine
Metazachlor	

DIN V 38407-11 Pesticide Mix

Scope: Determination of plant protection agents in water, wastewater and sludge.

DINV38407-11-PST **1 x 1 mL**
DINV38407-11-PST-PAK **5 x 1 mL**
5 µg/mL each in Acetonitrile 21 comps.

Alachlor	Monuron
Atrazine	Parathion
Chlorfenvinphos	Pendimethalin
Chlortoluron	Propazine
Cyanazine	Sebuthylazin
2,4-D	Simazine
MCPA acid	2,4,5-T
Metazachlor	Terbuthylazine
Metobromuron	Trifluralin
Metolachlor	Vinclozolin
Metoxuron	

DIN 38407-14 Methyl Esters Mix

Examination of water, wastewater and sludge for phenoxyalkyl carbonic acids by GC and MS detection after solid-liquid extraction and derivatization.

DIN38407-14-ME **1 x 1 mL**
500 µg/mL each in *n*-Hexane 8 comps.

Mecoprop methyl ester
MCPA methyl ester
Dichlorprop methyl ester
2,4-D methyl ester
Fenoprop methyl ester
MCPB methyl ester
2,4,5-T methyl ester
2,4-DB methyl ester

DIN 38407-22Glyphosate & AMPA

Examination of water, wastewater, and sludge for Glyphosate and Aminomethyl phosphonic acid (AMPA)

DIN38407-22 **1 x 1 mL**
100 µg/mL each in Water 2 comps.

Glyphosate
Aminomethylphosphonic acid

Pesticide Mix 16

Regulations for drinking water analysis, (E-DIN 38407-F-18, E-DIN 38414-F-21) Regulations for sediment and sludge.

AE-00030 **1 x 1 mL**
AE-00030-10ML **1 x 10 mL**
10 µg/mL each in Ethyl acetate 20 comps.

Aldicarb	Lindane
Atrazine	MCPA *
Bentazone *	Mecoprop *
Chlortoluron	Metazachlor
Cyanazine	Metobromuron
2,4-D *	Metoxuron
Dichlorprop *	Sebuthylazine
1,3-Dichlorpropene	Simazine
Endosulfan I	Terbuthylazine
Endosulfan II	
Isoproturon	* Underivatized

DIN 38407-14 Acid Mix

Examination of water, wastewater and sludge for phenoxyalkyl carbonic acids by GC and MS detection after solid-liquid extraction and derivatization.

DIN38407-14-ACID **1 x 1 mL**
500 µg/mL each in *n*-Hexane 8 comps.

Mecoprop acid
MCPA acid
Dichlorprop acid
2,4-D acid
Fenoprop acid
MCPB acid
2,4,5-T acid
2,4-DB acid

Phenols & Derivatives

DIN EN 12673 Chlorophenols

Scope: Determination of selected chlorophenols in water by GC

DINEN-12673

At stated conc. (µg/mL) in Ethanol

1 x 1 mL
19 comps.

2-Chlorophenol	30	2,3,5-Trichlorophenol	3
3-Chlorophenol	30	2,3,6-Trichlorophenol	3
4-Chlorophenol	30	2,4,5-Trichlorophenol	3
2,3-Dichlorophenol	4	2,4,6-Trichlorophenol	3
2,4-Dichlorophenol	4	3,4,5-Trichlorophenol	3
2,5-Dichlorophenol	4	2,3,4,5-Tetrachlorophenol	2
2,6-Dichlorophenol	4	2,3,4,6-Tetrachlorophenol	2
3,4-Dichlorophenol	4	2,3,5,6-Tetrachlorophenol	2
3,5-Dichlorophenol	4	Pentachlorophenol	1
2,3,4-Trichlorophenol	3		

DIN EN ISO 17495 Nitrophenols

Scope: determination of selected nitrophenols by solid-phase extraction and gas chromatography with mass spectrometric detection.

DINENISO-17495 **1 x 1 mL**
500 µg/mL each in Acetone 14 comps.

2,4-Dinitrophenol	2-Nitrophenol
2,5-Dinitrophenol	3-Nitrophenol
2,6-Dinitrophenol	4-Nitrophenol
2-Methyl-4,6-dinitrophenol	4-Methyl-2-nitrophenol
2,6-Dimethyl-4-nitrophenol	3-Methyl-4-nitrophenol
2,4-Dichlor-6-nitrophenol	5-Methyl-2-nitrophenol
2,6-Dichlor-4-nitrophenol	3-Methyl-2-nitrophenol

ENISO 9377 Hydrocarbon in Oil

Diesel #2/Mineral Oil Standard

ENISO9377-2-1 1 x 1 mL
10000 µg/mL total hydrocarbons in Hexane
2 comps.

#2 Diesel Fuel (5000 µg/mL)
Mineral Oil (5000 µg/mL)

Quality Control Standard Mix

ISO/DIS9377-4-1 1 x 1 mL
1000 µg/mL total hydrocarbons in Acetone
2 comps.

#2 Diesel Fuel (500 µg/mL)
Mineral Oil (500 µg/mL)

Extraction Solvent Stock Solution

ENISO9377-2-3 1 x 5 mL
At stated conc. in Hexane 2 comps.

n-Decane (20 µl/L)
n-Tetracontane (20 mg/L)

System Performance Standard of n-alkanes

ENISO9377-2-2 1 x 1 mL
50 µg/mL each in Hexane 16 comps.

n-Decane	n-Hexacosane
n-Dodecane	n-Octacosane
n-Tetradecane	n-Triacontane
n-Hexadecane	n-Dotriacontane
n-Octadecane	n-Tetracontane
n-Eicosane	n-Hexatriacontane
n-Docosane	n-Octatriacontane
n-Tetracosane	n-Tetracontane

Stearyl Stearate Test Solution

ISO/DIS9377-4-2 1 x 10 mL
2000 µg/mL in Cyclohexane

Stearyl stearate

ISO/DIS 9377-4 Standard Mix Stock Solution

TPH-006-10X 1 x 1 mL
TPH-006-10X-PAK SAVE 5 x 1 mL
5000 µg/mL each in Cyclohexane 2 comps.

#2 Diesel fuel
Mineral oil

Florilil Cartridge QC Standard Mix

ENISO9377-2-4 1 x 10 mL
2000 µg/mL total hydrocarbons in Hexane 2 comps.

#2 Diesel Fuel (1000 µg/mL)
Mineral Oil (1000 µg/mL)

European Equivalents of Alcohol Oxidation Products in Automotive Engine Exhaust by HPLC of DNPH Derivatives

Carbonyl-DNPH Mix #1

AE-00043 1 x 1 mL
20 µg/mL each in Acetonitrile 13 comps.

Acetaldehyde-DNPH	Formaldehyde-DNPH (40 µg/mL)
Acetone-DNPH	Hexanal-DNPH
Acrolein-DNPH	Methacrolein-DNPH
Benzaldehyde-DNPH	Propionaldehyde-DNPH
Butanonal-DNPH	p-Tolualdehyde-DNPH
Methyl ethyl ketone-DNPH	Valeraldehyde-DNPH
Crotonaldehyde-DNPH	

Carbonyl-DNPH Mix #2

AE-00044 1 x 1 mL
2 µg/mL each in Acetonitrile 14 comps.

Acetaldehyde-DNPH	Cyclohexanone-DNPH (5 µg/mL)
Acetone-DNPH	Formaldehyde-DNPH (4 µg/mL)
Acrolein-DNPH	Hexanal-DNPH
Benzaldehyde-DNPH	Methacrolein-DNPH
Butanone-DNPH	Propionaldehyde-DNPH
n-Butyraldehyde-DNPH	p-Tolualdehyde-DNPH
Crotonaldehyde-DNPH	Valeraldehyde-DNPH

Cyclohexanone

AE-00046 1 x 1 mL
500 µg/mL in Acetonitrile

Cyclohexanone-DNPH



Regional Standards

Pacific Rim Methodologies

Japan Ministry of Health and Welfare Standards

Volatile Organic Solution

JMHW-001
JMHW-001-PAK **SAVE**
1000 µg/mL each in MeOH

1 x 1 mL
5 x 1 mL
23 comps.

- Benzene
- Bromodichloromethane
- Bromoform
- Carbon tetrachloride
- Chloroform
- Dibromochloromethane
- 1,4-Dichlorobenzene
- 1,2-Dichloroethane
- 1,1-Dichloroethene
- cis-1,2-Dichloroethene
- trans-1,2-Dichloroethene
- Dichloromethane
- 1,2-Dichloropropane
- cis-1,3-Dichloropropene
- trans-1,3-Dichloropropene
- Tetrachloroethene
- Toluene
- 1,1,1-Trichloroethane
- 1,1,2-Trichloroethane
- Trichloroethene
- m-Xylene
- o-Xylene
- p-Xylene

Volatile Organic Solution

JMHW-002
JMHW-002-PAK **SAVE**
2000 µg/mL each in MeOH

1 x 1 mL
5 x 1 mL
16 comps.

- Benzene
- Bromodichloromethane
- Bromoform
- Carbon tetrachloride
- Chloroform
- Dibromochloromethane
- 1,2-Dichloroethane
- 1,1-Dichloroethene
- cis-1,2-Dichloroethene
- Dichloromethane
- cis-1,3-Dichloropropene
- trans-1,3-Dichloropropene
- Tetrachloroethene
- 1,1,1-Trichloroethane
- 1,1,2-Trichloroethane
- Trichloroethene

Volatile Organic Solution B

JMHW-003
JMHW-003-PAK **SAVE**
2000 µg/mL each in MeOH

1 x 1 mL
5 x 1 mL
7 comps.

- 1,4-Dichlorobenzene
- trans-1,2-Dichloroethene
- 1,2-Dichloropropane
- Toluene
- m-Xylene
- o-Xylene
- p-Xylene

Tuning Solution/Surrogate Standard Mixture

CLP-004-100X
CLP-004-100X-PAK **SAVE**
2.5 mg/mL in MeOH

1 x 1 mL
5 x 1 mL

- p-Bromofluorobenzene

Method of Interests

Japanese Methods JIS-K0311 and JIS-K0312
See EPA Method 1613 Dioxins & Furans which can be used for EPA Method 23, 8280, 8290 and EU Method EN-1948

Japan Environmental Agency Standards

Volatile Organic Solution

JEAM-001
JEAM-001-PAK **SAVE**
1000 µg/mL each in MeOH

1 x 1 mL
5 x 1 mL
12 comps.

- Benzene
- Carbon Tetrachloride
- 1,1-Dichloroethene
- cis-1,2-Dichloroethene
- Dichloromethane
- 1,2-Dichloroethane
- cis-1,3-Dichloropropene
- trans-1,3-Dichloropropene
- Tetrachloroethene
- 1,1,1-Trichloroethane
- 1,1,2-Trichloroethane
- Trichloroethene

Method Aldehydes as DNPH Derivatives

JEAM-002
JEAM-002-PAK **SAVE**
100 µg/mL each in Ethyl acetate

1 x 1 mL
5 x 1 mL
6 comps.

- Acetaldehyde-DNPH
- Butyraldehyde-DNPH
- Isobutyraldehyde-DNPH
- Isovaleraldehyde-DNPH
- Propionaldehyde-DNPH
- Pentanal-DNPH

Internal Standard

M-524-IS
M-524-IS-PAK **SAVE**
2.0 mg/mL each in MeOH

1 x 1 mL
5 x 1 mL
2 comps.

- 1,2-Dichlorobenzene-d₄
- Fluorobenzene

Drinking Water Odor Standard

ODOR-JDWOS
100 µg/mL each in MeOH

1 x 1 mL
2 comps.

- (+/-) Geosmin
- 2-methylisoborneol

Korean Drinking Water Regulations Standards

VOC Mix A

KDWR-001
KDWR-001-PAK **SAVE**
100 µg/mL each in MeOH

1 x 1 mL
5 x 1 mL
15 comps.

- Benzene
- Bromodichloromethane
- Bromoform
- Chloroform
- Dibromochloromethane
- Ethylbenzene
- Dichloromethane
- Phenol
- Tetrachloroethene
- Toluene
- 1,1,1-Trichloroethane
- Trichloroethene
- m-Xylene
- p-Xylene
- o-Xylene

VOC Mix B

KDWR-002
KDWR-002-PAK **SAVE**
100 µg/mL each in MeOH

1 x 1 mL
5 x 1 mL
8 comps.

- Bromodichloromethane
- Bromoform
- Chloroform
- Dibromochloromethane
- Dichloromethane
- Tetrachloroethene
- 1,1,1-Trichloroethane
- Trichloroethene

Pesticide Mix

KDWR-003
KDWR-003-PAK **SAVE**
1000 µg/mL each in MeOH

1 x 1 mL
5 x 1 mL
5 comps.

- Carbaryl
- Diazinon
- Fenitrothion
- Malathion
- Parathion

California Methods

California Air Resources Board Method 1004 Carbonyl Compounds as DNPH derivatives by HPLC

M-1004 1 x 1 mL
At stated conc. in AcCN 13 comps.
M-1004-10X 1 x 1 mL
At 10 times the stated conc. in AcCN 13 comps.

Carbonyl Compound	DNPH Derivative
Acetaldehyde	3.0 µg/mL
Acetone	3.0 µg/mL
Acrolein	3.0 µg/mL
Benzaldehyde	3.0 µg/mL
2-Butanone (MEK)	3.0 µg/mL
n-Butyraldehyde	3.0 µg/mL
Crotonaldehyde	3.0 µg/mL
Formaldehyde	3.0 µg/mL
Hexanal	3.0 µg/mL
Methacrolein	3.0 µg/mL
Propionaldehyde	3.0 µg/mL
m-Tolualdehyde	3.0 µg/mL
Valeraldehyde	3.0 µg/mL

CAR-DNPH 1 x 1 mL
At stated conc. in AcCN as DNPH derivatives 7 comps.

Acetaldehyde-DNPH	1000 µg/mL	Butyraldehyde-DNPH	500 µg/mL
Acetone-DNPH	500 µg/mL	Formaldehyde-DNPH	1500 µg/mL
Acrolein-DNPH	500 µg/mL	Propionaldehyde-DNPH	500 µg/mL
Benzaldehyde-DNPH	500 µg/mL		

Reference Gas Oil Sample

RGS-001 1 x 1 mL
Hydrocarbon Mixture (boiling point range 250-850°F)

California Method 750-M Standard

BDE-CALEWS 1 x 1 mL
10 µg/mL each in Isooctane 13 comps.

- 2,2',4'-Tribromodiphenyl ether (#17)
- 2,4,4'-Tribromodiphenyl ether (#28)
- 2,2',4,4'-Tetrabromodiphenyl ether (#47)
- 2,3',4,4'-Tetrabromodiphenyl ether (#66)
- 2,3',4',6'-Tetrabromodiphenyl ether (#71)
- 2,2',4,4',5'-Pentabromodiphenyl ether (#99)
- 2,2',4,4',6'-Pentabromodiphenyl ether (#100)
- 2,2',3,4,4',5'-Hexabromodiphenyl ether (#138)
- 2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)
- 2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)
- 2,2',3,4,4',5',6'-Heptabromodiphenyl ether (#183)
- 2,2',3,3',4,4',5,5',6,6'-Decabromodiphenyl ether (#209)
- 2,2',6,6'-Tetrabromobisphenol A

Florida Methods PAH by HPLC

Z-014G-FL 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂:Benzene 18 comps.

Acenaphthene	Dibenz[a,h]anthracene
Acenaphthylene	Fluoranthene
Anthracene	Fluorene
Benz[a]anthracene	Indeno[1,2,3-cd]pyrene
Benzo[a]pyrene	Naphthalene
Benzo[b]fluoranthene	Phenanthrene
Benzo[g,h,i]perylene	Pyrene
Benzo[k]fluoranthene	1-Methylnaphthalene
Chrysene	2-Methylnaphthalene

Performance Check Solution

M-610-QC-FL 1 x 1 mL
M-610-QC-FL-PAK SAVE 5 x 1 mL
At stated conc. in AcCN 18 comps.

Acenaphthene (0.1 mg/mL)	Dibenz[a,h]anthracene (0.01 mg/mL)
Acenaphthylene (0.1 mg/mL)	Fluoranthene (0.01 mg/mL)
Anthracene (0.1 mg/mL)	Fluorene (0.1 mg/mL)
Benz[a]anthracene (0.01 mg/mL)	Indeno[1,2,3-cd]pyrene (0.01 mg/mL)
Benzo[a]pyrene (0.01 mg/mL)	1-Methyl naphthalene (0.1 mg/mL)
Benzo[b]fluoranthene (0.01 mg/mL)	2-Methyl naphthalene (0.1 mg/mL)
Benzo[g,h,i]perylene (0.01 mg/mL)	Naphthalene (0.1 mg/mL)
Benzo[k]fluoranthene (0.005 mg/mL)	Phenanthrene (0.1 mg/mL)
Chrysene (0.01 mg/mL)	Pyrene (0.01 mg/mL)

Matrix Spiking Solution

M-610-MS 1 x 1 mL
M-610-MS-PAK SAVE 5 x 1 mL
At stated conc. in AcCN 6 comps.

Benz[a]pyrene (0.5 mg/mL)	2-Methylnaphthalene (5.0 mg/mL)
Chrysene (0.5 mg/mL)	Phenanthrene (0.5 mg/mL)
1-Methylnaphthalene (5.0 mg/mL)	Pyrene (0.5 mg/mL)

PAH Mix Additions

H-001S/002S-M-20X 1 x 1 mL
1.0 mg/mL each in MeOH 2 comps.

- 1-Methyl naphthalene
- 2-Methyl naphthalene

Polynuclear Aromatic Hydrocarbons (HPLC)

M-8310-FL 1 x 1 mL
M-8310-FL-PAK SAVE 5 x 1 mL
0.5 mg/mL each in AcCN 18 comps.
M-8310-FL-SET 18 x 1 mL

Acenaphthene	M-8310-FL-01
Acenaphthylene	M-8310-FL-02
Anthracene	M-8310-FL-03
Benzo[a]anthracene	M-8310-FL-04
Benzo[a]pyrene	M-8310-FL-05
Benzo[b]fluoranthene	M-8310-FL-06
Benzo[g,h,i]perylene	M-8310-FL-07
Benzo[k]fluoranthene	M-8310-FL-08
Chrysene	M-8310-FL-09
Dibenz[a,h]anthracene	M-8310-FL-10
Fluoranthene	M-8310-FL-11
Fluorene	M-8310-FL-12
Indeno[1,2,3-cd]pyrene	M-8310-FL-13
1-Methylnaphthalene	M-8310-FL-14
2-Methylnaphthalene	M-8310-FL-15
Naphthalene	M-8310-FL-16
Phenanthrene	M-8310-FL-17
Pyrene	M-8310-FL-18

Polynuclear Aromatic Hydrocarbons (HPLC)

M-8310-QC-ATI 1 x 1 mL
M-8310-QC-ATI-PAK SAVE 5 x 1 mL
At stated conc. in AcCN 18 comps.

Acenaphthene (1000 µg/mL)	Dibenz[a,h]anthracene (200 µg/mL)
Acenaphthylene (2000 µg/mL)	Fluoranthene (200 µg/mL)
Anthracene (100 µg/mL)	Fluorene (200 µg/mL)
Benz[a]anthracene (100 µg/mL)	Indeno[1,2,3-cd]pyrene (100 µg/mL)
Benzo[a]pyrene (100 µg/mL)	1-Methylnaphthalene (1000 µg/mL)
Benzo[b]fluoranthene (200 µg/mL)	2-Methylnaphthalene (1000 µg/mL)
Benzo[g,h,i]perylene (200 µg/mL)	Naphthalene (1000 µg/mL)
Benzo[k]fluoranthene (100 µg/mL)	Phenanthrene (100 µg/mL)
Chrysene (100 µg/mL)	Pyrene (100 µg/mL)

Minnesota Method 465-D

List of Volatiles

Liquids

M-502A-R

M-502A-R-PAK

0.2 mg/mL each in MeOH

Benzene (01)
 Bromobenzene (02)
 Bromochloromethane (03)
 Bromodichloromethane (04)
 Bromoform (05)
n-Butylbenzene (07)
sec-Butylbenzene (08)
tert-Butylbenzene (09)
 Carbon tetrachloride (10)
 Chlorobenzene (11)
 Chloroform (13)
 2-Chlorotoluene (15)
 4-Chlorotoluene (16)
 Dibromochloromethane (17)
 1,2-Dibromo-3-chloropropane (18)
 1,2-Dibromoethane (19)
 Dibromomethane (20)
 1,2-Dichlorobenzene (21)
 1,3-Dichlorobenzene (22)
 1,4-Dichlorobenzene (23)
 1,1-Dichloroethane (25)
 1,2-Dichloroethane (26)
 1,1-Dichloroethene (27)
cis-1,2-Dichloroethene (28)
trans-1,2-Dichloroethene (29)
 1,2-Dichloropropane (30)
 1,3-Dichloropropane (31)

2,2-Dichloropropane (32)
 1,1-Dichloropropene (33)
cis-1,3-Dichloropropene (34A) *
trans-1,3-Dichloropropene (34B) **
 Ethylbenzene (35)
 Hexachlorobutadiene (36)
 Isopropylbenzene (*Cumene*) (37)
p-Isopropyltoluene (*p*-*Cymene*) (38)
 Methylene chloride (39)
 Naphthalene (40)
n-Propylbenzene (41)
 Styrene (42)
 1,1,1,2-Tetrachloroethane (43)
 1,1,2,2-Tetrachloroethane (44)
 Tetrachloroethene (45)
 Toluene (46)
 1,2,3-Trichlorobenzene (47)
 1,2,4-Trichlorobenzene (48)
 1,1,1-Trichloroethane (49)
 1,1,2-Trichloroethane (50)
 Trichloroethene (51)
 1,2,3-Trichloropropane (53)
 1,2,4-Trimethylbenzene (54)
 1,3,5-Trimethylbenzene (55)
o-Xylene (57) * *cis* (1.06 x conc.) (34A)
m-Xylene (58) ** *trans* (0.94 x conc.) (34B)
p-Xylene (59)

SAVE

1 x 1 mL
 5 x 1 mL
 54 comps.

Gases

M-465B-10X

M-465B-10X-PAK

0.2 mg/mL each in MeOH

Bromomethane
 Chloroethane
 Chloromethane
 Dichlorodifluoromethane

Dichlorofluoromethane
 Trichlorofluoromethane
 Vinyl chloride

SAVE

1 x 1 mL
 5 x 1 mL
 7 comps.

M-465D-ADD-R ‡

0.2 mg/mL each in MeOH

Acetone
 Allyl chloride
 Ethyl ether
 Methyl ethyl ketone

Methyl isobutyl ketone
 Methyl-*t*-butyl ether
 Tetrahydrofuran
 Trichlorotrifluoroethane

1 x 1 mL
 8 comps.

‡ To delay premature breakdown of thermally labile products in transit we suggest shipping with a "Cold Pack"

Method 465-D Volatiles Set

M-465D-SET

3 x 1 mL

(M-502A-R, M-465B-10X, M-465D-ADD-R)

M-465D-SET-PAK

SAVE

5 x (3 x 1 mL)

List 1 - Pesticide Standard

MDA-PEST-01-R1

MDA-PEST-01-R1-PAK

500 µg/mL each in CH₂Cl₂

Acetochlor
 Alachlor
 Atrazine
 Atrazine-desisopropyl
 Cyanazine
 Desethyl atrazine

Dimethenamid
 Dursban
 Dyfonate
 EPTC
 Ethalfuralin
 Metolachlor

Metribuzin
 Pendimethalin
 Phorate
 Propachlor
 Prometon

Propazine
 Simazine
 Terbufos
 Triallate
 Trifluralin

SAVE

1 x 1 mL
 5 x 1 mL
 22 comps.

P-088S-10X

100 µg/mL in MeOH

1 x 1 mL

Butylate

Pesticides & Herbicides

List 2 - Herbicide Acids Standards

MDA-HERB-01

At stated conc. in Acetone

2,4-D (0.1 mg/mL)
 2,4-DB (0.1 mg/mL)
 2,4,5-T (0.1 mg/mL)
 Silvex (0.1 mg/mL)
 Bentazon (0.1 mg/mL)

Dicamba (0.1 mg/mL)
 MCPA (10 mg/mL)
 Picloram (0.1 mg/mL)
 Triclopyr (0.1 mg/mL)

1 x 1 mL
 9 comps.

Technical Note

This expanded analyte list for Method 465-D contains all the analytes in one multi-component standard, at a high concentration. This eliminates the need to combine more than one standard to cover the complete analyte list. The "Butylate" pesticide in conjunction with the MDA Method 465 formulation has all the required analytes for the Wisconsin DATCP pesticide program. Since many labs perform work in both Minnesota and Wisconsin, a single calibration curve can be used to monitor analytes covered by both methods.

Wisconsin DNR VOC Mixture

S-989

2.0 mg/mL each in MeOH

1 x 1 mL

52 comps.

Benzene
 Bromobenzene
 Bromodichloromethane
n-Butylbenzene
sec-Butylbenzene
tert-Butylbenzene
 Carbon tetrachloride
 Chlorobenzene
 Chlorodibromomethane
 Chloroethane
 Chloroform
 Chloromethane
 2-Chlorotoluene
 4-Chlorotoluene
 1,2-Dibromo-3-chloropropane
 1,2-Dibromoethane
 1,2-Dichlorobenzene
 1,3-Dichlorobenzene

1,4-Dichlorobenzene
 Dichlorodifluoromethane
 1,1-Dichloroethane
 1,2-Dichloroethane
 1,1-Dichloroethene
cis-1,2-Dichloroethene
trans-1,2-Dichloroethene
 1,2-Dichloropropane
 1,3-Dichloropropane
 2,2-Dichloropropane
 Diisopropyl ether
 Ethylbenzene
 Hexachlorobutadiene
 Isopropylbenzene
p-Isopropyltoluene
 Methylene chloride
 Methyl *tert*-butyl ether
 Naphthalene

n-Propylbenzene
 1,1,2,2-Tetrachloroethane
 Tetrachloroethene
 Toluene
 1,2,3-Trichlorobenzene
 1,2,4-Trichlorobenzene
 1,1,1-Trichloroethane
 1,1,2-Trichloroethane
 Trichloroethene
 Trichlorofluoromethane
 1,2,4-Trimethylbenzene
 1,3,5-Trimethylbenzene
 Vinyl chloride
o-Xylene
m-Xylene
p-Xylene

Methods Other Than EPA

ASTM D7065-06 4-tert-Octylphenol, 4-Nonylphenol and their Tech Equivalents, Mono and Multi-Ethoxylates

Nonylphenol ethoxylates and alkylphenol ethoxylates have been produced in large quantities in the U.S and around the world. They are used in many different applications: oil-soluble detergents, emulsifiers, wetting agents, lubricants, and antistatic agents. Breakdown products have been shown to be possible endocrine disruptors.



In January of 2004, the US EPA proposed ambient water quality criteria for nonylphenol. The EPA is working with ASTM to develop and validate a method for nonylphenol and alkylphenol ethoxylates.

Nonylphenol Calibration Standard Solution

M-1626 1 x 1 mL
At stated conc. in CH₂Cl₂ 7 comps.

Nonylphenol	(160 µg/mL)
Nonylphenol monoethoxylate	(320 µg/mL)
Nonylphenol diethoxylate	(640 µg/mL)
4-tert-Octylphenol	(32 µg/mL)
Bisphenol A (BPA)	(32 µg/mL)
4-Nonylphenol	(32 µg/mL)
4-Nonylphenol monoethoxylate	(32 µg/mL)

Nonylphenol Internal Standard

M-1626-IS 1 x 1 mL
2000 µg/mL each in CH₂Cl₂ 2 comps.

Acenaphthene-d ₁₀	Phenanthrene-d ₁₀
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Nonylphenol Target Component Spike Standard

M-1626-S 1 x 1 mL
At stated conc. in MeOH 5 comps.

Nonylphenol	(160 µg/mL)
Nonylphenol monoethoxylate	(320 µg/mL)
Nonylphenol diethoxylate	(640 µg/mL)
4-tert-Octylphenol	(32 µg/mL)
Bisphenol A	(32 µg/mL)

Nonylphenol Surrogate Component Spike Standard

M-1626-SS 1 x 1 mL
32 µg/mL each in MeOH 2 comps.

4-Nonylphenol	4-Nonylphenol monoethoxylate
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M-1626-01S 1 x 1 mL
1000 µg/mL in MeOH

Bisphenol A (BPA)

Method USP 467 VOCs from Stack Gas Effluents

USP/National Formulary VOC Mixtures

NF-467 1 x 1 mL
NF-467-PAK 5 x 1 mL
At stated conc. in MeOH 5 comps.

Benzene	(200 µg/mL)	Methylene chloride	(200 µg/mL)
Chloroform	(100 µg/mL)	Trichloroethene	(200 µg/mL)
1,4-Dioxane	(200 µg/mL)		

SAVE

NF-467-R 1 x 1 mL
NF-467-R-PAK 5 x 1 mL
At stated conc. in DMSO 6 comps.

Benzene	(200 µg/mL)	Ethylene oxide	(20 µg/mL)
Chloroform	(100 µg/mL)	Methylene chloride	(200 µg/mL)
1,4-Dioxane	(200 µg/mL)	Trichloroethene	(200 µg/mL)

SAVE

NF-467-R3 1 x 1 mL
NF-467-R3-PAK 5 x 1 mL
At stated conc. in MeOH 5 comps.

Benzene	(2 µg/mL)	Dichloromethane	(600 µg/mL)
Chloroform	(60 µg/mL)	Trichloroethene	(80 µg/mL)
p-Dioxane	(380 µg/mL)		

SAVE

NF-467-R4 1 x 1 mL
NF-467-R4-PAK 5 x 1 mL
At stated conc. in Dimethyl sulfoxide 5 comps.

Benzene	(2 µg/mL)	Dichlorometane	(600 µg/mL)
Chloroform	(60 µg/mL)	Trichloroethene	(80 µg/mL)
p-Dioxane	(380 µg/mL)		

SAVE



NF-467-R6 1 x 1 mL
NF-467-R6-PAK 5 x 1 mL
At stated conc. in Dimethyl sulfoxide 5 comps.

Benzene	(100 µg/mL)	Dichlorometane	(500 µg/mL)
Chloroform	(50 µg/mL)	Trichloroethene	(100 µg/mL)
p-Dioxane	(100 µg/mL)		

SAVE



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Phenols, USP 467

Methods Other Than EPA

F-List Hazardous Waste

F-List Hazardous Waste from Non-Specific Sources

F001 & F002 Solvent List Components

FL-0102 2.0 mg/mL each in MeOH		1 x 1 mL 10 comps.
Carbon tetrachloride	Tetrachloroethene	Trichloroethene
Chlorobenzene	1,1,1-Trichloroethane	1,1,2-Trichloro-1,2,2-trifluoroethane
1,2-Dichlorobenzene	1,1,2-Trichloroethane	Trichlorofluoromethane
Methylene chloride		

F003 List Components (excluding MeOH as analyte)

FL-0003 2.0 mg/mL in MeOH		1 x 1 mL 10 comps.
Acetone	Ethylbenzene	<i>m</i> -Xylene
<i>n</i> -Butanol	Ethyl ether	<i>o</i> -Xylene
Cyclohexanone	Methyl isobutyl ketone	<i>p</i> -Xylene
Ethyl acetate		

Additional Alcohol Solvents

FL-OADD 2.0 mg/mL each in H ₂ O		1 x 1 mL 3 comps.
Ethanol	Isopropanol	Methanol

F004 List Component Mixes

FL-0004-CR 2.0 mg/mL in MeOH		1 x 1 mL 3 comps.
<i>m</i> -Cresol	<i>p</i> -Cresol	
<i>o</i> -Cresol		

FL-0004-CA 2.0 mg/mL in MeOH		1 x 1 mL
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Cresylic acid (technical mixture of phenol, cresols & xylenes)

F005 List Components (includes Nitrobenzene)

FL-0005-NB 2.0 mg/mL each in MeOH		1 x 1 mL 9 comps.
Benzene	Nitrobenzene	
Carbon disulfide	2-Nitropropane	
2-Ethoxyethanol	Pyridine	
Isobutanol	Toluene	
Methyl ethyl ketone		

