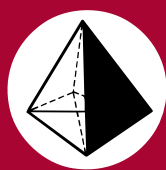
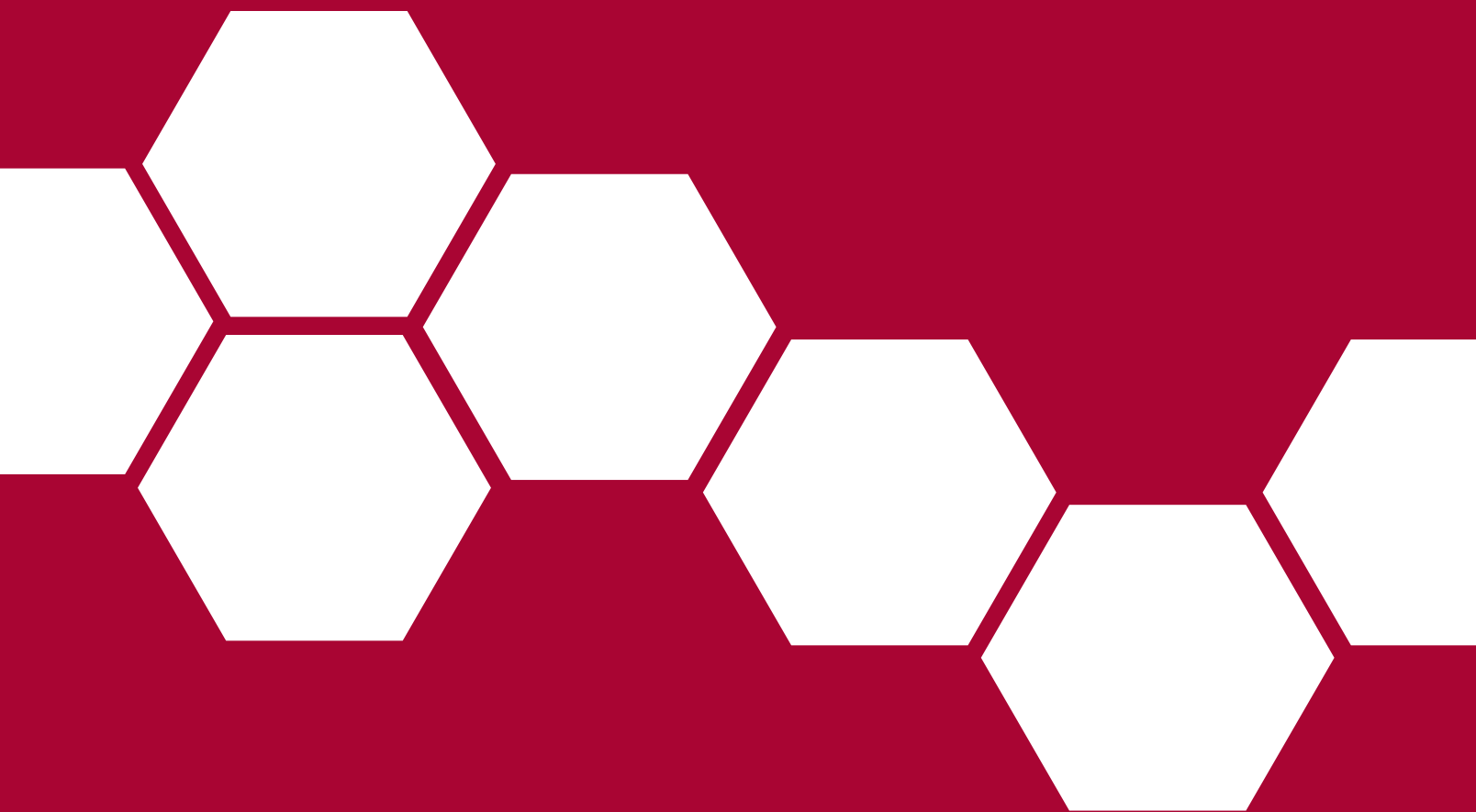


Organic Standards



AccuStandard[®]

About AccuStandard

AccuStandard, Inc., founded in 1986 by Michael and Alice Bolgar, is a recognized leader in the production of Certified Reference Materials (CRMs) and Reference Materials (RMs). Originally located in New Haven's Science Park, the company moved in 1998 to a larger facility, which houses its offices, warehouse, and multiple laboratories.

AccuStandard provides an extensive range of organic, inorganic, and petroleum reference standards for chemical analysis, serving scientists in over 130 countries through a broad network of global distributors.

Known for its commitment to environmental responsibility and rapid product innovation, AccuStandard's product portfolio includes a comprehensive pesticide product line, per- and polyfluoroalkyl substances (PFAS), hydroxy and methoxy PBDE congeners, as well as bromo/chloro hydroxy and methoxy diphenyl ethers, organophosphate flame retardants, biofuels, plastic additives, and rare explosives.

The company's synthesis department continues to develop cutting-edge and custom standards. They have successfully synthesized all 209 PCB and PBDE congeners, created fluorinated PBDEs for use as internal standards, and produced numerous halogenated dioxins, dibenzofurans, PAHs, pesticides, and metabolites such as tetradecabromodiphenoxybenzene (TDBDPB), in addition to many of the newly emerging PFAS.

AccuStandard is accredited as a Reference Material Producer and upholds a comprehensive quality management system. For the most current certifications and accreditations, visit

www.accustandard.com.

The company's success is built on the dedication, expertise, and loyalty of its staff. AccuStandard is grateful to its customers and remains committed to supporting the environmental science community for years to come.



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ISO 17034 • 17025 • 9001

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For additional information, contact our Technical Department
+1 203-786-5290, press 3, techservice@accustandard.com or
visit AccuStandard.com

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Quality System

Our organic analysis methods include GC, GC/MS, LC-MS, LC-MS/MS, FTIR, and NMR, utilizing both internal calibration standards and advanced statistical analysis. Each product is accompanied by a comprehensive Certificate of Analysis (COA), prepared in accordance with ISO 17034.

We supply Certified Reference Materials (CRM) and Reference Materials (RM) that meet our rigorous specifications and comply with international standards, including ISO 17034, ISO/IEC 17025, and ISO 9001 accreditations.

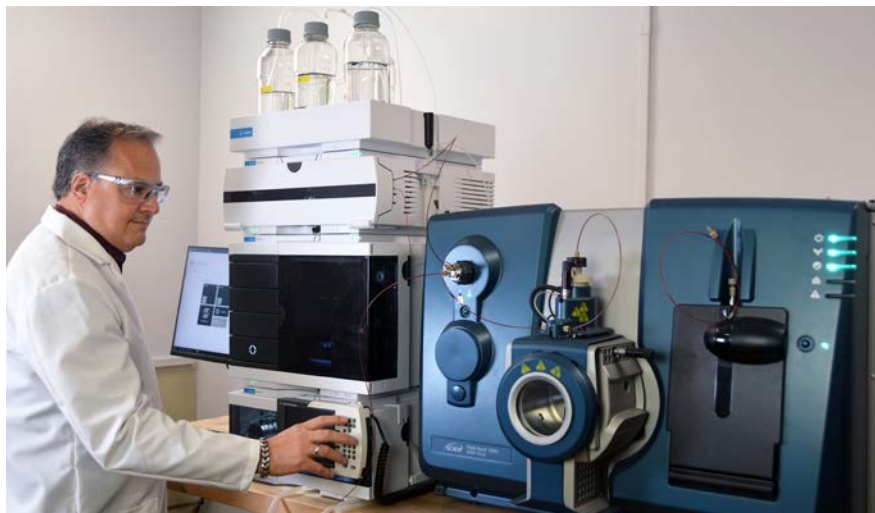
With over 40 years of experience in the analytical reference standards industry, AccuStandard combines deep technical expertise, a wide range of best practices, and a collaborative culture to drive innovation and deliver breakthrough products. Our team continually enhances our quality systems through data-driven improvements, reaffirming our commitment to providing the highest-quality resources in the industry.

Certificates of Analysis are prepared in accordance with ISO 17034 and include information such as:

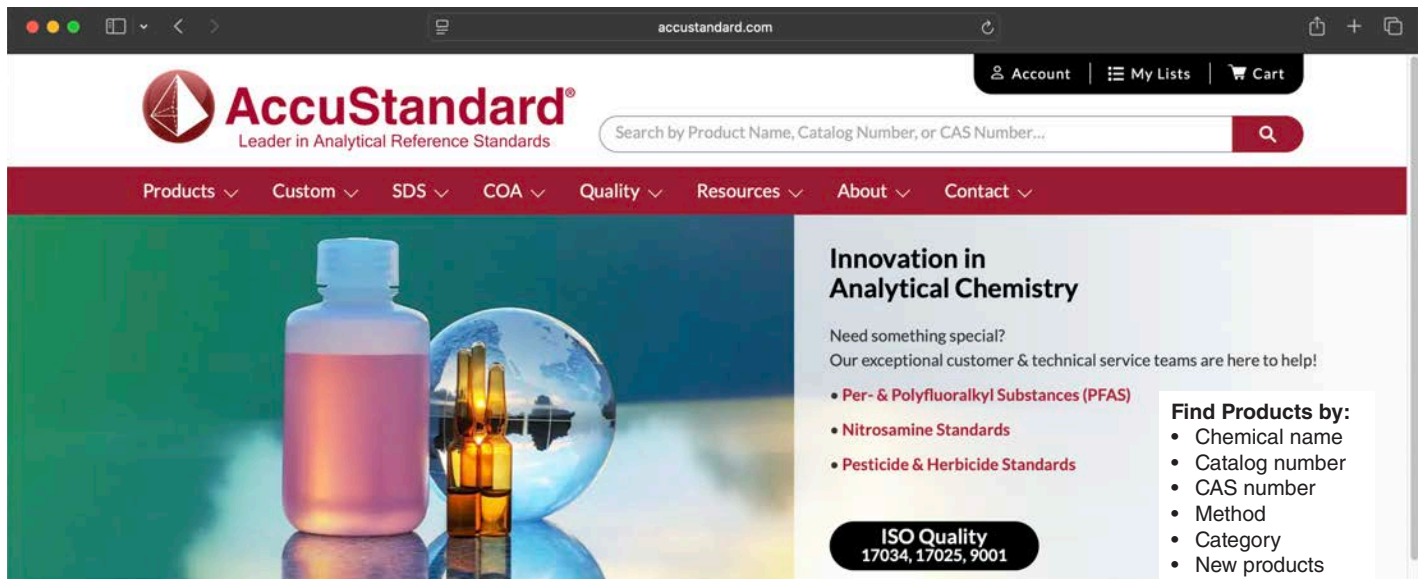
- Prepared and certified analyte concentration
- Chemical purity
- Analytical Method
- Expiration date
- Certification date
- Uncertainty and traceability information and statements
- Neat material identity (For neat products)
- CAS number (if available). It is a unique identifier assigned to a chemical by the Chemical Abstracts Service. This number is used worldwide.

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<https://www.accustandard.com/quality-accreditations>

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Website



Access website using desktop or mobile device



Filter search results by

- Concentration
- Component count
- Unit size

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Certificate of Analysis and Label

125 Market Street
New Haven, CT 06513
USA



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Fax (203)786-5287
www.AccuStandard.com

CERTIFICATE OF ANALYSIS

Catalog No: M-537.1
Description: EPA 537.1 Method Standard
Lot: 225031460
Solvent: Methanol
Hazards: Refer to SDS for complete safety information

Date Certified: Apr 7, 2025
Expiration: May 7, 2027
Sample Size: 1 mL
Components: 18
Storage Condition: Refrig (0-5 °C)



Signal Word: Danger

Certified Reference Material



Component	CAS #	Purity* %	Prepared Concentration* (µg/mL)	Certified Analyte Concentration* (µg/mL)
Perfluoro(2-methyl-3-oxahexanoic) acid	13252-13-6	95.7	2.112*	2.021
N-ethylperfluoro-1-octanesulfonamidoacetic acid **	2991-50-6	92.5	2.180*	2.017
N-methylperfluoro-1-octanesulfonamidoacetic acid ***	2355-31-9	98.4	2.000	1.968
Perfluorobutane-1-sulfonic acid	375-73-5	100.0	2.028	2.028
Perfluoro-n-decanoic acid	335-76-2	98.0	2.024	1.984
Perfluoro-n-dodecanoic acid	307-55-1	100.0	2.036	2.036
Perfluoro-n-heptanoic acid	375-85-9	99.0	2.028	2.008
Perfluorohexane-1-sulfonic acid	355-46-4	96.4	2.084*	2.009
Perfluoro-n-hexanoic acid	307-24-4	99.0	2.004	1.984
			2.092*	
			2.072*	
			2.004	
			2.068*	
			2.008	
			2.036	
			2.080*	
			2.065*	
			2.138*	

This Certified Reference Material was verified in accordance with ISO/IEC 17025 (AT-15).

* Weight compensated to 100% purity.

** 22.3% branched and 70.2% linear.

*** 18.1% branched, 80.3% linear isomers

**** 15.2% branched, 82.7% linear isomers

A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot number has had its expiration date extended and is identical to the same lot number without the suffix.

* Certified Analyte Concentration = Purity x Prepared Concentration.

The Uncertainty associated with the certified concentration reported on this certificate is ±2.4% and was determined in accordance with ISO 17034. This value is the combined expanded uncertainty and represents an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

* All weights are traceable through NIST, Test No. 884/291344-18 & 684/292805-19

* Purity/identity determined by one or more of the following methods: GC/MS, LC/MS, NMR, FTIR, Melting Point.

Labels and certificates follow U.S. Conventions in reporting numerical values: A comma (,) is used to separate units of one-thousand or greater. A period (.) is used as a decimal place marker.

The information on this certificate may not be reproduced without the express permission of the manufacturer. See reverse side for additional information.

Hazard Information: Please refer to the SDS for information regarding the hazards associated with using this material.

This product was prepared according to in-house procedures and is guaranteed to be homogeneous.

Certified By: 
Larry Decker, Organic QC Manager

For use in routine laboratory analysis.

AccuStandard is accredited to ISO 17034, ISO/IEC 17025 and certified to ISO 9001:2015

QH-010-IND-001 Rev. 7/00

2-Part Labels (ampules or vials)

Part One can be placed into a laboratory journal to document the standard used for the analysis. This label section includes the catalog number, description, lot number, expiration date, safety information, proper storage conditions and documents AccuStandard as the manufacturer.

Part Two duplicates required information for labeling transfer vial(s) with correct information.

Quick access to product information such as SDS and COAs





Label material is smudgeproof, tear and solvent resistant to common solvents, such as methylene chloride, methanol and acetone.

Per- and Polyfluoroalkyl Substances (PFAS)



Per- and polyfluoroalkyl substances (PFAS) belong to a continuously expanding family of thousands of man-made chemical pollutants. The amphiphilic ability of PFAS has led to the manufacturing of PFAS in oils and water-repellent industrial and consumer products such as firefighting foams, cleaners, cosmetics, paints, adhesives and pesticides. However, environmental chemists and biologists have uncovered that PFAS have harmful toxicological effects and may pose a significant risk to the public. The high thermal and chemical stability of PFAS make them persistent in the environment and nearly non-biodegradable, necessitating chemical reference standards to test the concentration of PFAS in drinking water, soil, food, biosolids and different consumer products.

Visit our website for the latest PFAS compounds updates <https://www.accustandard.com/pfas-standards>

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PFAS Compounds

Perfluoroalkylsulfonates

	CAS No.	Conc.	Matrix	Cat. No.	Unit
Potassium perfluoro-1-octanesulfonate	2795-39-3		NEAT	PFOS-002N-10MG	10 mg
		100 µg/mL	MeOH	PFOS-002S	1 mL
Potassium perfluoro-1-butanedisulfonate (PPBS)	29420-49-3	50 µg/mL	MeOH	PFOS-005S	1 mL
Sodium perfluoro-1-pentanesulfonate	630402-22-1	50 µg/mL	MeOH	PFOS-006S	1 mL
Potassium perfluoro-1-hexanesulfonate	3871-99-6	50 µg/mL	MeOH	PFOS-007S	1 mL
Sodium perfluoro-1-heptanesulfonate (PFHpS, Sodium salt)	21934-50-9	100 µg/mL	MeOH	PFOS-008S	1 mL
Sodium perfluoro-1-nonanesulfonate	98789-57-2	100 µg/mL	MeOH	PFOS-009S	1 mL
Sodium perfluoro-1-decanesulfonate	2806-15-7	100 µg/mL	MeOH	PFOS-010S	1 mL
Potassium 11-chloroicosanfluoro-3-oxaundecane-1-sulfonate	83329-89-9	100 µg/mL	MeOH	PFOS-021S-M	1 mL
Potassium 9-chlorohexadecafluoro-3-oxanone-1-sulfonate	73606-19-6	100 µg/mL	MeOH	PFOS-022S-M	1 mL
Sodium perfluorododecanesulfonate	1260224-54-1	100 µg/mL	ACN	PFOS-038S-CN	1 mL
Potassium perfluoro-4-ethylcyclohexane sulfonate (PFECHS)	335-24-0	2 µg/mL	MeOH	PFOS-041S-0.02X	1 mL
Sodium perfluoro-1-propanesulfonate	359868-82-9	100 µg/mL	MeOH	PFOS-050S	1 mL
1H,1H,2H,2H-Perfluorododecanesulfonate sodium salt (10:2 FTS)	108026-35-3	100 µg/mL	MeOH	PFOS-052S	1 mL
Tetraethylammonium perfluorooctanesulfonate	56773-42-3	100 µg/mL	ACN	PFOS-070S-CN	1 mL

Perfluoroalkylcarboxylic acids and Salts

Perfluoro(2-methyl-3-oxahexanoic) acid (HFPO-DA)	13252-13-6	2 µg/mL	MeOH	PFAS-002S-0.02X	1 mL
		100 µg/mL	MeOH	PFAS-002S	1 mL
Perfluoro-n-octanoic acid	335-67-1		NEAT	PFOA-001N	100 mg
		100 µg/mL	MeOH	PFOA-001S	1 mL
Perfluoro-n-butyric acid (PFBA)	375-22-4	100 µg/mL	MeOH	PFOA-002S	1 mL
Perfluoro-n-decanoic acid (PFDA)	335-76-2	100 µg/mL	MeOH	PFOA-003S	1 mL
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	100 µg/mL	MeOH	PFOA-004S	1 mL
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	100 µg/mL	MeOH	PFOA-005S	1 mL
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	100 µg/mL	MeOH	PFOA-006S	1 mL
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	100 µg/mL	MeOH	PFOA-007S	1 mL
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	100 µg/mL	MeOH	PFOA-008S	1 mL
Perfluoro-n-undecanoic acid (PFUnA)	2058-94-8	100 µg/mL	MeOH	PFOA-009S	1 mL
2H,2H,3H,3H-Perfluoroundecanoic acid (8:3 FTCA)	34598-33-9	100 µg/mL	MeOH	PFOA-010S	1 mL
2,2,3,3,3-Pentafluoropropionic acid (PFPrA)	422-64-0	2 µg/mL	MeOH	PFOA-015S-0.02X	1 mL
		100 µg/mL	MeOH	PFOA-015S	1 mL
Perfluoro-n-tridecanoic acid (PFTriA)	72629-94-8	50 µg/mL	MeOH:Water	PFOA-016S-M-W	1 mL
Perfluoro-n-tetradecanoic acid (PFTreA)	376-06-7	50 µg/mL	MeOH:Water	PFOA-017S-M-W	1 mL
Nonfluoro-3,6-dioxahexanoic acid (NFDHA)	151772-58-6	2 µg/mL	MeOH	PFOA-018S-0.02X	1 mL
		100 µg/mL	MeOH	PFOA-018S	1 mL
Perfluoro-3-methoxypropanoic acid (PFMPA)	377-73-1	2 µg/mL	MeOH	PFOA-020S-0.02X	1 mL
		100 µg/mL	MeOH	PFOA-020S	1 mL
Perfluoro(4-methoxybutanoic) acid (PFMBA)	863090-89-5	2 µg/mL	MeOH	PFOA-021S-0.02X	1 mL
		100 µg/mL	MeOH	PFOA-021S	1 mL
2H,2H,3H,3H-Perfluorooctanoic acid (5:3 FTCA)	914637-49-3	2 µg/mL	MeOH	PFOA-022S-0.02X	1 mL
		100 µg/mL	MeOH	PFOA-022S	1 mL
2H,2H,3H,3H-Perfluorodecanoic acid (7:3 FTCA)	812-70-4	2 µg/mL	MeOH	PFOA-023S-0.02X	1 mL
		100 µg/mL	MeOH	PFOA-023S	1 mL
2H-Perfluoro-2-octenoic acid (FHUEA)	70887-88-6	2 µg/mL	MeOH	PFOA-024S-0.02X	1 mL
		100 µg/mL	MeOH	PFOA-024S	1 mL
3-Perfluoropropyl Propanoic acid (3:3 FTCA)	356-02-5	100 µg/mL	MeOH	PFOA-026S	1 mL
2H-Perfluoro-2-decenoic acid (FOUEA)	70887-84-2	2 µg/mL	MeOH	PFOA-027S-0.02X	1 mL
		100 µg/mL	MeOH	PFOA-027S	1 mL
Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	100 µg/mL	ACN	PFOA-028S-CN	1 mL
Perfluorooctadecanoic acid (PFODA)	16517-11-6	2 µg/mL	MeOH	PFOA-029S-0.02X	1 mL
		100 µg/mL	MeOH	PFOA-029S	1 mL
2H,2H-Perfluorooctanoic acid (6:2 FTCA)	53826-12-3	100 µg/mL	ACN	PFOA-030S-CN	1 mL
2H,2H-Perfluorododecanoic acid (10:2 FTCA)	53826-13-4	100 µg/mL	MeOH:Water(75:25)	PFOA-031S	1 mL
2H,2H-Perfluorodecanoic acid (8:2 FTCA)	27854-31-5	100 µg/mL	ACN	PFOA-032S-CN	1 mL
Ammonium perfluoro-3,6-dioxaoctanoate	908020-52-0	100 µg/mL	ACN	PFOA-049S-CN	1 mL
2H,2H,3H,3H-Perfluorononanoic acid (6:3 FTCA)	27854-30-4	2 µg/mL	MeOH	PFOA-043S-0.02X	1 mL
		100 µg/mL	MeOH	PFOA-043S	1 mL
2H-Perfluoro-2-dodecenoic acid (10:2 FTUCA)	70887-94-4	100 µg/mL	ACN	PFOA-044S-CN	1 mL
7H-Perfluoroheptanoic acid	1546-95-8	100 µg/mL	MeOH	PFOA-045S	1 mL
Trifluoroacetic acid (TFA)	76-05-1	100 µg/mL	MeOH	PFOA-048S	1 mL
		100 µg/mL	ACN	PFOA-048S-CN	1 mL
Perfluoro-3,7-dimethyloctanoic acid	172155-07-6	100 µg/mL	ACN	PFOA-051S-CN	1 mL

PFAS compounds continued on next page

Per- and polyfluoroalkyl substances (PFAS)

PFAS Compounds (continued)

Perfluoroalkylcarboxylic acids and Salts (continued)

	CAS No.	Conc.	Matrix	Cat. No.	Unit
Methyl perfluorooctanoate	376-27-2	100 µg/mL	ACN	PFOA-052S-CN	1 mL
2,3,3,3-Tetrafluoropropanoic acid	359-49-9	100 µg/mL	ACN	PFOA-053S-CN	1 mL
2,2,3,3-Tetrafluoropropionic acid	756-09-2	100 µg/mL	ACN	PFOA-055S-CN	1 mL
Difluoroacetic acid (DFA)	381-73-7	100 µg/mL	ACN	PFOA-065S-CN	1 mL
2H, 2H-Perfluorohexanoic acid (4:2-FTCA)	70887-89-7	100 µg/mL	ACN	PFOA-067S-CN	1 mL
Sodium heptafluorobutyrate	2218-54-4	100 µg/mL	MeOH	PFOS-044S	1 mL

Perfluorooctylsulfonamidoacetic acids

N-methylperfluoro-1-octanesulfonamidoacetic acid (NMeFOSAA)	2355-31-9	2 µg/mL	MeOH	PFOS-014S-0.02X	1 mL
		100 µg/mL	MeOH	PFOS-014S	1 mL
N-ethylperfluoro-1-octanesulfonamidoacetic acid (NEtFOSAA)	2991-50-6	2 µg/mL	MeOH	PFOS-015S-0.02X	1 mL
		100 µg/mL	MeOH	PFOS-015S	1 mL
Perfluorooctane sulfonamidoacetic acid (FOSAA) Mix of Isomers	2806-24-8	100 µg/mL	ACN	PFOS-067S-CN	1 mL

Perfluoroamides

Perfluorobutyramide	662-50-0	100 µg/mL	ACN	PFOA-054S-CN	1 mL
Bis(trifluoromethane)sulfonimide lithium salt (HQ-115)	90076-65-6	100 µg/mL	MeOH	PFOS-030S	1 mL
N-Methylperfluoro-1-octanesulfonamide (NMeFOSA)	31506-32-8	2 µg/mL	MeOH	PFOS-032S-0.02X	1 mL
		100 µg/mL	MeOH	PFOS-032S	1 mL
N-Methylperfluorooctanesulfonamidoethanol (NMeFOSE)	24448-09-7	2 µg/mL	MeOH	PFOS-033S-0.02X	1 mL
		100 µg/mL	MeOH	PFOS-033S	1 mL
Perfluorooctane sulfonamide (PFOSA)	754-91-6	2 µg/mL	MeOH	PFOS-035S-0.02X	1 mL
		100 µg/mL	MeOH	PFOS-035S	1 mL
Sulfuramid (NEtFOSA)	4151-50-2	2 µg/mL	MeOH	PFOS-036S-0.02X	1 mL
		100 µg/mL	MeOH	PFOS-036S	1 mL
N-Ethyl-N-(2-hydroxyethyl)perfluorooctylsulfonamide (NEtFOSE)	1691-99-2	2 µg/mL	MeOH	PFOS-039S-0.02X	1 mL
		100 µg/mL	MeOH	PFOS-039S	1 mL
N-Methyl-perfluorohexane-1-sulfonamide (MeFHxSA)	68259-15-4	100 µg/mL	MeOH	PFOS-043S	1 mL
Perfluoro-1-butanedisulfonamide (FBSA)	30334-69-1	100 µg/mL	MeOH	PFOS-057S	1 mL
Perfluoro-1-hexanedisulfonamide (FHxSA)	41997-13-1	100 µg/mL	MeOH	PFOS-058S	1 mL
2-(N-(Perfluorobutylsulfonyl)-N-methylamino)ethanol	34454-97-2	100 µg/mL	MeOH	PFOS-059S	1 mL
N-Ethyl perfluorohexane sulfonamide	87988-56-5	100 µg/mL	MeOH	PFOS-062S	1 mL
N-Ethyl-N-(2-hydroxyethyl)perfluorohexanesulfonamide (EtFHxSE)	34455-03-3	100 µg/mL	MeOH	PFOS-063S	1 mL
Perfluorooctanamide	423-54-1	100 µg/mL	MeOH	PFOS-066S	1 mL

Perfluoroalkyl phosphates (PAPs)

Mono[2-(perfluorooctyl)ethyl] phosphate (8:2-MonoPAP)	57678-03-2	2 µg/mL	MeOH	PFAP-001S-M-0.02X	1 mL
		100 µg/mL	ACN	PFAP-001S	1 mL
Bis[2-(perfluorohexyl)ethyl]phosphate (6:2-DiPAP)	57677-95-9	2 µg/mL	MeOH	PFAP-002S-M-0.02X	1 mL
		100 µg/mL	ACN	PFAP-002S	1 mL
Sodium Bis(1H,1H,2H,2H-Perfluorodecyl)phosphate (8:2-DiPAP)	114519-85-6	100 µg/mL	ACN	PFAP-003S	1 mL
Mono[2-(perfluorohexyl)ethyl] phosphate (6:2-MonoPAP)	57678-01-0	100 µg/mL	ACN	PFAP-004S	1 mL
Tris[2-(perfluorohexyl)ethyl] phosphate (6:2 TriPAPS)	165325-62-2	20 µg/mL	ACN	PFAP-005S-0.2X	1 mL
Bis(2-(ethyl((perfluorooctyl)sulfonyl)amino)ethyl) hydrogen phosphate	2965-52-8	2 µg/mL	MeOH	PFAP-006S-M-0.02X	1 mL
		100 µg/mL	ACN	PFAP-006S	1 mL
Bis[2-(perfluorodecyl)ethyl] phosphate (10:2 diPAP)	1895-26-7	2 µg/mL	MeOH	PFAP-007S-M-0.02X	1 mL
[2-(perfluorooctyl)ethyl], [2-(perfluorohexyl)ethyl] phosphate (6:2/8:2 diPAP)		2 µg/mL	MeOH	PFAP-008S-M-0.02X	1 mL
Bis[2-(perfluorooctyl)ethyl] phosphate (8:2-DiPAP)	678-41-1	2 µg/mL	MeOH	PFAS-001S-0.02X	1 mL
		100 µg/mL	MeOH	PFAS-001S	1 mL

Sulfonic acids

Perfluoro-n-octane sulfonic acid (PFOS)	1763-23-1	100 µg/mL	MeOH	PFOS-001S	1 mL
Perfluoroheptanesulfonic acid (PFHpS)	375-92-8	2 µg/mL	MeOH	PFOS-024S-0.02X	1 mL
		100 µg/mL	MeOH	PFOS-024S	1 mL
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	2 µg/mL	MeOH	PFOS-028S-0.02X	1 mL
		100 µg/mL	MeOH	PFOS-028S	1 mL
Perfluorohexane-1-sulfonic acid (PFHxS)	355-46-4	2 µg/mL	MeOH	PFOS-029S-0.02X	1 mL
		100 µg/mL	MeOH	PFOS-029S	1 mL
Perfluorononanesulfonic acid (PFNS)	68259-12-1	2 µg/mL	MeOH	PFOS-031S-0.02X	1 mL
		100 µg/mL	MeOH	PFOS-031S	1 mL
Perfluorobutane-1-sulfonic acid (PFBS)	375-73-5	2 µg/mL	MeOH	PFOS-034S-0.02X	1 mL
		100 µg/mL	MeOH	PFOS-034S	1 mL
Pentafluoroethanesulfonic acid (PFETs)	354-88-1	100 µg/mL	ACN	PFOS-046S-CN	1 mL
Trifluoromethanesulfonic acid (TFMS)	1493-13-6	100 µg/mL	ACN	PFOS-047S-CN	1 mL
Perfluoroundecanesulfonic acid (PFUnDS)	749786-16-1	2 µg/mL	ACN	PFOS-061S-CN-0.02X	1 mL
Perfluorodecane-1-sulfonic acid (PFDS)	335-77-3	100 µg/mL	ACN	PFOA-011S-CN	1 mL
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	757124-72-4	2 µg/mL	MeOH	PFOA-013S-0.02X	1 mL
		100 µg/mL	MeOH	PFOA-013S	1 mL
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	39108-34-4	2 µg/mL	MeOH	PFOA-014S-0.02X	1 mL
		100 µg/mL	MeOH	PFOA-014S	1 mL
Perfluoro(2-ethoxyethane)sulphonic acid (PFEEsA)	113507-82-7	2 µg/mL	MeOH	PFOA-019S-0.02X	1 mL
		100 µg/mL	MeOH	PFOA-019S	1 mL
Perfluoropentanesulfonic acid (PFPeS)	2706-91-4	2 µg/mL	MeOH	PFOA-025S-0.02X	1 mL
		100 µg/mL	MeOH	PFOA-025S	1 mL
Perfluoroundecanesulfonic acid (PFUnDS)	749786-16-1	2 µg/mL	ACN	PFOS-061S-CN-0.02X	1 mL
Perfluoro-3,6-dioxa-4-methyl-7-octenesulfonic acid	29311-67-9	100 µg/mL	ACN	PFOA-064S-CN	1 mL

Per- and polyfluoroalkyl substances (PFAS)

PFAS Compounds (continued)

Telomer sulfonates

	CAS No.	Conc.	Matrix	Cat. No.	Unit
Sodium 1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4:2 FTS)	27619-93-8	100 µg/mL	MeOH	PFOS-011S	1 mL
Sodium 1H,1H,2H,2H-perfluoro-1-octanesulfonate (6:2 FTS)	27619-94-9	100 µg/mL	MeOH	PFOS-012S	1 mL
Sodium 1H,1H,2H,2H-perfluoro-1-decanesulfonate (8:2 FTS)	27619-96-1	100 µg/mL	MeOH	PFOS-013S	1 mL
Ammonium perfluoro(2-methyl-3-oxahexanoate) (GenX)	62037-80-3	---	NEAT	PFOS-019N-10MG	10 mg

Fluorinated gases (F-Gases)

1,1,1-Trifluoroethane (Freon #143a)	420-46-2	200 µg/mL	PT MeOH	M-REF-X-08	1 mL
1,1,2,2-Tetrafluoroethane (Freon #134)	359-35-3	200 µg/mL	PT MeOH	M-REF-X-07	1 mL
1,1,2-Trifluoroethane (Freon #143)	430-66-0	200 µg/mL	PT MeOH	M-REF-22	1 mL
1,1-Difluoroethane (Freon 152a)	75-37-6	200 µg/mL	PT MeOH	M-REF-11	1 mL
Difluoromethane (Freon #32)	75-10-5	200 µg/mL	PT MeOH	M-REF-20	1 mL
Fluoroethylene	75-02-5	200 µg/mL	PT MeOH	M-REF-23	1 mL
Fluoromethane	593-53-3	200 µg/mL	PT MeOH	M-REF-21	1 mL
Pentafluoroethane (Freon #125)	354-33-6	200 µg/mL	PT MeOH	M-REF-X-06	1 mL
Tetrafluoroethane (Freon #134a)	811-97-2	200 µg/mL	PT MeOH	M-REF-12	1 mL
Trifluoromethane (Freon #23)	75-46-7	200 µg/mL	PT MeOH	M-REF-15	1 mL

Fluorinated telomer alcohols

2,2-Difluoropropan-1-ol 3H,3H,3H (2:1 FTOH)	33420-52-9	100 µg/mL	PT MeOH	FTOH-001S	1 mL
3,3,3-Trifluoropropan-1-ol (1:2 FTOH)	2240-88-2	100 µg/mL	PT MeOH	FTOH-002S	1 mL
2,2,3,3,3-Pentafluoropropan-1-ol	422-05-9	100 µg/mL	PT MeOH	FTOH-003S	1 mL
1H,1H,2H,2H,3H,3H-Perfluorobutan-1-ol (1:3 FTOH)	461-18-7	100 µg/mL	PT MeOH	FTOH-004S	1 mL
1H,1H-Perfluorobutan-1-ol (3:1 FTOH)	375-01-9	100 µg/mL	PT MeOH	FTOH-005S	1 mL
1H,1H,2H,2H-Perfluorobutan-1-ol (2:2 FTOH)	54949-74-5	100 µg/mL	PT MeOH	FTOH-006S	1 mL
1H,1H,5H-Perfluoropentan-1-ol (5H 4:1 FTOH)	355-80-6	100 µg/mL	PT MeOH	FTOH-007S	1 mL
2-(Perfluorobutyl)ethanol (4:2)	2043-47-2	100 µg/mL	PT MeOH	FTOH-008S	1 mL
1H,1H,2H,2H,3H,3H-Perfluorohexan-1-ol (3:3 FTOH)	679-02-7	100 µg/mL	PT MeOH	FTOH-009S	1 mL
1H,1H,5H-Perfluoropentan-1-ol (5H 4:1 FTOH)	423-46-1	100 µg/mL	PT MeOH	FTOH-010S	1 mL
1H,1H,7H-Perfluoroheptan-1-ol (7H 6:1 FTOH)	335-99-9	100 µg/mL	PT MeOH	FTOH-011S	1 mL
1H,1H-Perfluoroheptan-1-ol (6:1 FTOH)	375-82-6	100 µg/mL	PT MeOH	FTOH-012S	1 mL
1H,1H,2H,2H-Perfluorooctan-1-ol (6:2)	647-42-7	100 µg/mL	PT MeOH	FTOH-013S	1 mL
1H,1H,2H,2H,1H,1H,8H-Perfluorooctan-1-ol (8H 7:1 FTOH)	10331-08-5	100 µg/mL	PT MeOH	FTOH-014S	1 mL
1H,1H-Perfluorooctan-1-ol (7:1 FTOH)	307-30-2	100 µg/mL	PT MeOH	FTOH-015S	1 mL
1H,1H,2H,2H,3H,3H-Perfluorononan-1-ol (6:3 FTOH)	80806-68-4	100 µg/mL	PT MeOH	FTOH-016S	1 mL
1H,1H,9H-Perfluorononan-1-ol (9H 8:1 FTOH)	376-18-1	100 µg/mL	PT MeOH	FTOH-018S	1 mL

Fluorinated telomer alcohols (FTOHs) are known as precursors for PFAS compounds. FTOHs can biodegrade (oxidize) to the poly- and perfluorinated acids (PFCA) derivative. PFCAs are part of the PFAS target compounds in different EPA, ASTM, and ISO test methods.

Fluorotelomer Alcohols Mix 1

FTOH-MIX-001

100 µg/mL each in PT MeOH

1 x 1 mL
12 comps.

1H,1H,2H,2H-Perfluorohexan-1-ol (2-Perfluorobutyl ethanol)	1H,1H,2H,2H-Perfluoro-9-methyldecane-1-ol	1H,1H,2H,2H,3H,3H-Perfluorononan-1-ol			
1H,1H,2H,2H-Perfluorododecan-1-ol	1H,1H-Perfluorooctan-1-ol	1H,1H-Perfluorononan-1-ol			
1H,1H,2H,2H-Perfluoro-1-decanol	1H,1H,2H,2H-Perfluorotetradecan-1-ol	1H,1H-Perfluorohexan-1-ol			
1H,1H,2H,2H-Perfluorooctan-1-ol	1H,1H,10H,10H-Perfluoro-1,10-decanediol	1H,1H,5H-Perfluoropentan-1-ol			
1H,1H-Perfluorononan-1-ol (8:1 FTOH)	423-56-3	100 µg/mL	PT MeOH	FTOH-019S	1 mL
1H,1H,10H,10H-Perfluoro-1,10-decanediol (1:8:1 FTdiOH)	754-96-1	100 µg/mL	PT MeOH	FTOH-020S	1 mL
1H,1H,2H,2H-Perfluoro-1-decanol (8:2)	678-39-7	100 µg/mL	PT MeOH	FTOH-021S	1 mL
1H,1H-Perfluorodecan-1-ol (9:1 FTOH)	307-37-9	100 µg/mL	PT MeOH	FTOH-022S	1 mL
1H,1H,2H,2H-Perfluoro-9-methyldecane-1-ol (9Me 8:2 FTOH)	31200-98-3	100 µg/mL	PT MeOH	FTOH-024S	1 mL
1H,1H-Perfluoroundecan-1-ol (10:1 FTOH)	307-46-0	100 µg/mL	PT MeOH	FTOH-026S	1 mL
1H,1H,2H,2H-Perfluorododecan-1-ol (10:2)	865-86-1	100 µg/mL	PT MeOH	FTOH-027S	1 mL
1H,1H,13H-Perfluorotridecan-1-ol (13H 12:1 FTOH)	423-72-3	100 µg/mL	PT MeOH	FTOH-028S	1 mL
1H,1H,2H,2H-Perfluorotetradecan-1-ol (12:2 FTOH)	39239-77-5	100 µg/mL	PT MeOH	FTOH-029S	1 mL
1H,1H-Perfluorotetradecan-1-ol (13:1 FTOH)	15622-57-8	100 µg/mL	PT MeOH	FTOH-030S	1 mL
1H,1H,2H,3H-Perfluoronon-2-en-1-ol (Allylic 6:3 FTOH)	38550-47-9	100 µg/mL	PT MeOH	FTOH-034S	1 mL
3-(Perfluorooctyl)propanol	1651-41-8	100 µg/mL	PT MeOH	FTOH-035S	1 mL

Fluorotelomer methacrylates

2-(Perfluorohexyl)ethyl methacrylate (6:2 FTMAC)	2144-53-8	100 µg/mL	MeOH	FTMAC-001S	1 mL
2-(Perfluorooctyl)ethyl methacrylate (8:2 FTMAC)	1996-88-9	100 µg/mL	MeOH	FTMAC-002S	1 mL
2-(Perfluorodecyl)ethyl methacrylate (10:2 FTMAC)	2144-54-9	100 µg/mL	MeOH	FTMAC-003S	1 mL
1H,1H-Perfluorooctyl methacrylate	3934-23-4	100 µg/mL	MeOH	FTMAC-004S	1 mL

Fluorotelomer acrylates

2-(Perfluorodecyl)ethyl acrylate (10:2 FTAC)	17741-60-5	100 µg/mL	MeOH	FTAC-001S	1 mL
2-(Perfluorooctyl)ethyl acrylate (8:2 FTAC)	27905-45-9	100 µg/mL	MeOH	FTAC-002S	1 mL
2-(Perfluorohexyl)ethyl acrylate (TFOA)	17527-29-6	100 µg/mL	MeOH	FTAC-003S	1 mL

Perfluoroalkyl acetates

2-Perfluorooctylethyl acetate (8:2 FTOAc)	37858-04-1	100 µg/mL	MeOH	FTOA-001S	1 mL
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Volatile Organic Fluorides

Hexadecafluoroheptane	335-57-9	100 µg/mL	PT MeOH	VOF-001S	1 mL
1H-Perfluoropentane	375-61-1	100 µg/mL	PT MeOH	VOF-002S	1 mL

PFAS compounds continued on next page

PFAS EPA Methods

PFAS Compounds (continued)

Technical grades and other PFAS

	CAS No.	Conc.	Matrix	Cat. No.	Unit
1H,1H,2H,2H-1-Iodoperfluoro(7-methyloctane)	18017-20-4	100 µg/mL	MeOH	PFAS-006S	1 mL
1-Iodo-1H,1H,2H,2H-perfluorodecane	2043-53-0	100 µg/mL	MeOH	PFAS-007S	1 mL
Capstone A	80475-32-7	2 µg/mL	MeOH	PFOA-047S-0.02X	1 mL
Capstone B	34455-29-3	2 µg/mL	MeOH	PFOA-046S-0.02X	1 mL
Perfluoro(2-methyl-3-oxahexanoyl) chloride	72848-57-8	100 µg/mL	ACN	PFOA-050S-CN	1 mL
Ammonium perfluoro(2-methyl-3-oxahexanoate) (GenX)	62037-80-3	100 µg/mL	MeOH	PFOS-019S	1 mL
F-53B (Tech mix)			NEAT	PFOS-019N-10MG	10 mg
		2 µg/mL	MeOH	PFOS-040S-0.02X	1 mL
		100 µg/mL	MeOH	PFOS-040S	1 mL
N-Perfluorobutanesulfonylglycine (FBSAA)	347872-22-4	100 µg/mL	ACN	PFOS-069S-CN	1 mL
Scotchgard™ Pre-2002 Formulation (Tech mix)		100 µg/mL	MeOH	PFOS-SCG-001S	1 mL
Scotchgard™ Post-2002 Formulation (Tech mix)		100 µg/mL	MeOH	PFOS-SCG-002S	1 mL

Other PFAS Standards

Heptadecafluoro-1-iodooctane	507-63-1	100 µg/mL	MeOH	PFAS-005S	1 mL
7H-Perfluoro-4-methyl-3,6-dioxaoctanesulfonic acid (PFESA BP 2)	749836-20-2	100 µg/mL	MeOH	PFOS-055S	1 mL
Bis(trifluoromethanesulfonyl)imide	82113-65-3	100 µg/mL	MeOH	PFOS-068S	1 mL

EPA Drinking Water Target PFAS

PFAS in Drinking Water Standard

PFAS-EPA-DW-01

20 µg/mL each in ACN

1 mL
6 comps.

Perfluoro-n-octanoic acid	Perfluorohexane-1-sulfonic acid
Perfluorooctane-1-sulfonic acid	Perfluorobutane-1-sulfonic acid
Perfluoro-n-nonanoic acid	Perfluoro(2-methyl-3-oxahexanoic) acid

Method 533 PFAS in Drinking Water

PFAS in Drinking Water Standard

M-533

2 µg/mL each in MeOH:Water (95:5)

1 mL
25 comps.

11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	Perfluoro-n-dodecanoic acid	Perfluoro(4-methoxybutanoic) acid
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid	Perfluoro(2-ethoxyethane)sulphonic acid	Perfluoro-n-nonanoic acid
4,8-Dioxa-3H-perfluorononanoic acid	Perfluoroheptanesulfonic acid	1H,1H,2H,2H-Perfluorooctane sulfonic acid
Perfluoro(2-methyl-3-oxahexanoic) acid	Perfluoro-n-heptanoic acid	Perfluorooctane-1-sulfonic acid
Nonafluoro-3,6-dioxaheptanoic acid	1H,1H,2H,2H-Perfluorohexanesulfonic acid	Perfluoro-n-octanoic acid
Perfluoro-n-butanoic acid	Perfluorohexane-1-sulfonic acid	Perfluoro-n-pentanoic acid
Perfluorobutane-1-sulfonic acid	Perfluoro-n-hexanoic acid	Perfluoropentanesulfonic acid
1H,1H,2H,2H-Perfluorodecanesulfonic acid	Perfluoro-3-methoxypropanoic acid	Perfluoro-n-undecanoic acid
Perfluoro-n-decanoic acid		

Method 537.1

This updated version of USEPA Method 537 can be used for the quantitative analysis of 18 analytes by Solid Phase Extraction (SPE) and Liquid Chromatography/Tandem Mass Spectrometry (LC-MS/MS).

EPA 537.1 Method Standard

M-537.1

2 µg/mL each in MeOH

1 mL
18 comps.

Perfluoro(2-methyl-3-oxahexanoic) acid	Perfluorooctane-1-sulfonic acid
N-ethylperfluoro-1-octanesulfonamidoacetic acid	Perfluoro-n-octanoic acid
N-methylperfluoro-1-octanesulfonamidoacetic acid	Perfluoro-n-tetradecanoic acid
Perfluorobutane-1-sulfonic acid	Perfluoro-n-tridecanoic acid
Perfluoro-n-decanoic acid	Perfluoro-n-undecanoic acid
Perfluoro-n-dodecanoic acid	11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid
Perfluoro-n-heptanoic acid	9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid
Perfluorohexane-1-sulfonic acid	4,8-Dioxa-3H-perfluorononanoic acid
Perfluoro-n-hexanoic acid	
Perfluoro-n-nonanoic acid	

Technical Notes

LC-MS/MS is preferable for low detection limit analysis, and for regulatory compliance for EPA, ASTM D7979 or other methods.

PFAS compounds exist in both linear and branched forms in nature. Each lot manufactured may carry a different ratio than previous lots. A ratio of linear and branched isomers will be provided on each standard's Certificate of Analysis if both linear and branched isomers are present. If no ratio appears, then the standard contains only the linear isomer. Contact our Technical Department if the ratio of our current lots must be known prior to placing an order.

Technical Notes

NaOH is added for stability to some PFAS standards to improve stability. When applicable, the COA will state the percentage of NaOH added

PFAS EPA Methods

Method 537 Native Compounds

This was one of the first test methods introduced for the determination of 14 PFAS in drinking water using Solid Phase Extraction (SPE) and Liquid Chromatography/Tandem Mass Spectrometry (LC-MS/MS). The method was updated in 2018 by the USEPA to 537.1 which expanded the scope to 18 PFAS compounds.

Native Compound Standard

M-537

50 µg/mL each in ACN:Water (95:5)

1 mL

14 comps.

Perfluoro-n-hexanoic acid	Perfluoro-n-tridecanoic acid
Perfluoro-n-heptanoic acid	Perfluoro-n-tetradecanoic acid
Perfluoro-n-octanoic acid	N-Methylperfluorooctanesulfonamidoacetic acid
Perfluoro-n-nonanoic acid	N-Ethylperfluorooctanesulfonamidoacetic acid
Perfluoro-n-decanoic acid	Perfluoro-n-butane sulfonic acid
Perfluoro-n-undecanoic acid	Perfluoro-n-hexane sulfonic acid
Perfluoro-n-dodecanoic acid	Perfluoro-n-octane sulfonic acid

Technical Note

PFAS compounds may exist in linear and branched forms, with each lot potentially having a different ratio. If both isomers are present, the ratio will be listed on the COA. If no ratio appears, the standard contains only the linear isomer.

Method 1621 Adsorbable Organic Fluorine (AOF) in Aqueous Matrices by CIC

Fluorine Working Standard

M-1621-WS-1

100 µg/mL in Water

Fluoride

1 mL

Adsorbable Organic Fluorine Standard (AOF)

AOF-001S

100 µg/mL in MeOH

4-Fluorobenzoic acid

1 mL

Method 1633 PFAS/PFOA in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS

These standards contain the 40 PFAS described in USEPA Method 1633. Method 1633 is for the analysis of PFAS in aqueous, solid, biosolids and tissue samples using LC-MS/MS technique.

Method 1633 Mix 1

M-1633-1-CN-10X

At stated conc. (µg/mL) in ACN

1 mL

11 comps.

Perfluoro-n-butanoic acid	80
Perfluoro-n-pentanoic acid	40
Perfluoro-n-hexanoic acid	20
Perfluoro-n-heptanoic acid	20
Perfluoro-n-octanoic acid	20
Perfluoro-n-nonanoic acid	20
Perfluoro-n-decanoic acid	20
Perfluoro-n-undecanoic acid	20
Perfluoro-n-dodecanoic acid	20
Perfluoro-n-tridecanoic acid	20
Perfluoro-n-tetradecanoic acid	20

Method 1633 Mix 3A

M-1633-3A-CN-10X

20 µg/mL each in ACN

1 mL

5 comps.

Sulfuramid
Perfluorooctane sulfonamide
N-Methylperfluoro-1-octanesulfonamide
N-Ethylperfluoro-1-octanesulfonamidoacetic acid
N-Methylperfluoro-1-octanesulfonamidoacetic acid

Method 1633 Mix 3B

M-1633-3B-CN-10X

100 µg/mL each in ACN

1 mL

2 comps.

N-Methylperfluorooctanesulfonamidoethanol
N-Ethyl-N-(2-hydroxyethyl)perfluorooctylsulfonamide

Method 1633 Mix 4A

M-1633-4A-CN-R1-5X *

At stated conc (µg/mL) in ACN

1 mL

8 comps.

Perfluoro-3-methoxypropanoic acid	10
Perfluoro(4-methoxybutanoic) acid	10
Nonfluoro-3,6-dioxahexanoic acid	10
Perfluoro(2-ethoxyethane)sulphonic acid	10
3-Perfluoropropyl propanoic acid	20
2H,2H,3H,3H-Perfluorooctanoic acid	100
2H,2H,3H,3H-Perfluorodecanoic acid	100
4,8-Dioxo-3H-perfluorononanoic acid	10

Method 1633 Mix 4B

M-1633-4B-CN

100 µg/mL each in ACN

1 mL

2 comps.

9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid

Method 1633 Mix 2

M-1633-2-CN-10X

At stated conc. (µg/mL) in ACN

1 mL

11 comps.

Perfluorobutane-1-sulfonic acid	20
Perfluoropentanesulfonic acid	20
Perfluorohexane-1-sulfonic acid	20
Perfluoroheptanesulfonic acid	20
Perfluorooctane-1-sulfonic acid	20
Perfluorononanesulfonic acid	20
Perfluorodecane-1-sulfonic acid	20
Perfluorododecanesulfonic acid	20
1H,1H,2H,2H-Perfluorohexanesulfonic acid	80
1H,1H,2H,2H-Perfluorooctane sulfonic acid	80
1H,1H,2H,2H-Perfluorodecanesulfonic acid	80

Technical Notes

For improved stability, PFAS-002S is offered separately from Mix 4A

PFAS-002S

100 µg/mL in MeOH

1 mL

Perfluoro(2-methyl-3-oxahexanoic) acid (HFPO-DA)

Method 8327 Native PFAS Reference Standard for Ground, Surface, and Wastewater

This Certified Reference Material (CRM) contains the 24 PFAS based on EPA Method 8327 which is suitable for testing PFAS in surface water, groundwater and wastewater matrices. Our two CRMs M-8327-10X and M-8327 are offered at a high and a low concentration to meet the specific needs of your testing.

Native PFAS Reference Standard

M-8327

2 µg/mL each in MeOH

1 mL

24 comps.

M-8327-10X

20 µg/mL each in MeOH

1 mL

24 comps.

Perfluorobutane-1-sulfonic acid	1H,1H,2H,2H-Perfluorooctane sulfonic acid	Perfluoro-n-decanoic acid
Perfluoropentanesulfonic acid	1H,1H,2H,2H-Perfluorodecanesulfonic acid	Perfluoro-n-undecanoic acid
Perfluorohexane-1-sulfonic acid	Perfluoro-n-butanoic acid	Perfluoro-n-dodecanoic acid
Perfluoroheptanesulfonic acid	Perfluoro-n-pentanoic acid	Perfluoro-n-tridecanoic acid
Perfluorooctane-1-sulfonic acid	Perfluoro-n-hexanoic acid	Perfluoro-n-tetradecanoic acid
Perfluorononanesulfonic acid	Perfluoro-n-heptanoic acid	N-ethylperfluoro-1-octanesulfonamidoacetic acid
Perfluorodecane-1-sulfonic acid	Perfluoro-n-octanoic acid	N-methylperfluoro-1-octanesulfonamidoacetic acid
1H,1H,2H,2H-Perfluorohexanesulfonic acid	Perfluoro-n-nonanoic acid	Perfluorooctane sulfonamide

PFAS ASTM Methods

ASTM D7968 Polyfluorinated Compounds in Soil by LC-MS/MS

Native PFAS in Soil Standard

D-7968

2 µg/mL each in MeOH

1 mL
21 comps.

Perfluoro-n-tetradecanoic acid	Perfluoro-n-nonanoic acid	Perfluorobutane-1-sulfonic acid	2H,2H-Perfluorododecanoic acid
Perfluoro-n-tridecanoic acid	Perfluoro-n-octanoic acid	Perfluoro-n-pentanoic acid	2H-Perfluoro-2-decenoic acid
Perfluoro-n-dodecanoic acid	Perfluorohexane-1-sulfonic acid	Perfluoro-n-butanoic acid	2H,2H,3H,3H-Perfluorodecanoic acid
Perfluoro-n-undecanoic acid	Perfluoro-n-heptanoic acid	2H,2H-Perfluorooctanoic acid	2H-Perfluoro-2-octenoic acid
Perfluoro-n-decanoic acid	Perfluoro-n-hexanoic acid	2H,2H-Perfluorodecanoic acid	Perfluoro-4-ethylcyclohexane sulfonic acid
Perfluorooctane-1-sulfonic acid			

ASTM D7979 PFAS Substances in Water, Sludge, Influent, Effluent, and Wastewater by LC-MS/MS

PFAS in Wastewater Standard

D-7979

2 µg/mL each in MeOH

1 mL
21 comps.

Potassium perfluoro-1-butanesulfonate	Perfluoro-n-heptanoic acid	Perfluoro-n-dodecanoic acid	2H,2H-Perfluorododecanoic acid
Potassium perfluoro-1-hexanesulfonate	Perfluoro-n-octanoic acid	Perfluoro-n-tridecanoic acid	2H,2H-Perfluorodecanoic acid
Perfluorooctane-1-sulfonic acid	Perfluoro-n-nonanoic acid	Perfluoro-n-tetradecanoic acid	2H-Perfluoro-2-octenoic acid
Perfluoro-n-butanoic acid	Perfluoro-n-decanoic acid	2H,2H,3H,3H-Perfluorodecanoic acid	2H,2H-Perfluorooctanoic acid
Perfluoro-n-pentanoic acid	Perfluoro-n-undecanoic acid	2H-Perfluoro-2-decenoic acid	Perfluoro-4-ethylcyclohexane sulfonic acid
Perfluoro-n-hexanoic acid			

ASTM D8421 PFAS / PFOA in Aqueous Matrices by LC-MS/MS

ASTM Test Method D8421 is for the determination of PFAS in aqueous matrices by co-solvation and using LC-MS/MS technique. These target spike standards include 44 native PFAS listed in the test method at a varied concentration.

Native PFAS/PFOA Target Spike 1 Standard

D-8421-TS-1

2 µg/mL in each in MeOH:Water (95:5)

1 mL
22 comps.

Perfluoro-n-tetradecanoic acid	Perfluorooctane-1-sulfonic acid
Perfluoro-n-tridecanoic acid	Perfluoroheptanesulfonic acid
Perfluoro-n-dodecanoic acid	Perfluorohexane-1-sulfonic acid
Perfluoro-n-undecanoic acid	Perfluoropentanesulfonic acid
Perfluoro-n-decanoic acid	Perfluorobutane-1-sulfonic acid
Perfluoro-n-nonanoic acid	Perfluorooctane sulfonamide
Perfluoro-n-octanoic acid	1H,1H,2H,2H-Perfluorodecanesulfonic acid
Perfluoro-n-heptanoic acid	1H,1H,2H,2H-Perfluorooctane sulfonic acid
Perfluoro-n-hexanoic acid	1H,1H,2H,2H-Perfluorohexanesulfonic acid
Perfluorodecane-1-sulfonic acid	N-ethylperfluoro-1-octanesulfonamidoacetic acid
Perfluorononanesulfonic acid	N-methylperfluoro-1-octanesulfonamidoacetic acid

PFAS/PFOA Target Spike 2 Standard

D-8421-TS-2

2 µg/mL each in MeOH:Water (95:5)

1 mL
19 comps.

Perfluorododecanesulfonic acid
N-Methylperfluoro-1-octanesulfonamide
Sulfluramid
N-Methylperfluorooctanesulfonamidoethanol
N-Ethyl-N-(2-hydroxyethyl)perfluorooctylsulphonamide
Perfluoro(2-methyl-3-oxahexanoic) acid
4,8-Dioxo-3H-perfluorononanoic acid
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid
Nonafluoro-3,6-dioxahexanoic acid
Perfluoro(2-ethoxyethane)sulphonic acid
Perfluoro-3-methoxypropanoic acid
Perfluoro(4-methoxybutanoic) acid
3-Perfluoropropyl propanoic acid
2H,2H,3H,3H-Perfluorooctanoic acid
2H,2H,3H,3H-Perfluorodecanoic acid
2H-Perfluoro-2-octenoic acid
2H-Perfluoro-2-decenoic acid
Bis(trifluoromethane)sulfonimide lithium salt

D8421 Native PFAS/PFOA Target Spike 3 Standard

D-8421-TS-3

10 µg/mL each in MeOH:Water (95:5)

1 mL
3 comps.

Perfluoro-n-pentanoic acid	2,2,3,3,3-Pentafluoropropionic acid
Perfluoro-n-butanoic acid	

ASTM D8535 PFAS in Soil/Biosolids by LC-MS/MS

PFAS in Soil/Biosolids Target Spike 1

D-8535-TS-1

2 µg/mL in each MeOH:Water (95:5)

1 mL
22 comps.

Perfluoro-n-tetradecanoic acid	Perfluorooctane-1-sulfonic acid
Perfluoro-n-tridecanoic acid	Perfluoroheptanesulfonic acid
Perfluoro-n-dodecanoic acid	Perfluorohexane-1-sulfonic acid
Perfluoro-n-undecanoic acid	Perfluoropentanesulfonic acid
Perfluoro-n-decanoic acid	Perfluorobutane-1-sulfonic acid
Perfluoro-n-nonanoic acid	Perfluorooctane sulfonamide
Perfluoro-n-octanoic acid	1H,1H,2H,2H-Perfluorodecanesulfonic acid
Perfluoro-n-heptanoic acid	1H,1H,2H,2H-Perfluorooctane sulfonic acid
Perfluoro-n-hexanoic acid	1H,1H,2H,2H-Perfluorohexanesulfonic acid
Perfluorodecane-1-sulfonic acid	N-ethylperfluoro-1-octanesulfonamidoacetic acid
Perfluorononanesulfonic acid	N-methylperfluoro-1-octanesulfonamidoacetic acid

PFAS in Soil/Biosolids Target Spike 2

D-8535-TS-2

2 µg/mL in each MeOH:Water (95:5)

1 mL
19 comps.

Perfluorododecanesulfonic acid
N-Methylperfluoro-1-octanesulfonamide
Sulfluramid
N-Methylperfluorooctanesulfonamidoethanol
N-Ethyl-N-(2-hydroxyethyl)perfluorooctylsulphonamide
Perfluoro(2-methyl-3-oxahexanoic) acid
4,8-Dioxo-3H-perfluorononanoic acid
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid
Nonafluoro-3,6-dioxahexanoic acid
Perfluoro(2-ethoxyethane)sulphonic acid
Perfluoro-3-methoxypropanoic acid
Perfluoro(4-methoxybutanoic) acid
3-Perfluoropropyl propanoic acid
2H,2H,3H,3H-Perfluorooctanoic acid
2H,2H,3H,3H-Perfluorodecanoic acid
2H-Perfluoro-2-octenoic acid
2H-Perfluoro-2-decenoic acid
Bis(trifluoromethane)sulfonimide lithium salt

PFAS in Soil/Biosolids Target Spike 3

D-8535-TS-3

10 µg/mL in each MeOH:Water (95:5)

1 mL
3 comps.

Perfluoro-n-pentanoic acid	2,2,3,3,3-Pentafluoropropionic acid
Perfluoro-n-butanoic acid	

PFAS ASTM, ISO, and AOAC Methods

ASTM D8591 Determination of Fluorotelomer Alcohols (FTOHs) in Test Chamber Air by TD-GC-MS/MS

Fluorotelomer Alcohols Stock Solution

D-8591

500 µg/mL each in PT MeOH

1 mL

4 comps.

1H,1H,2H,2H-Perfluorohexan-1-ol (2-Perfluorobutyl ethanol)
1H,1H,2H,2H-Perfluorooctan-1-ol

1H,1H,2H,2H-Perfluoro-1-decanol
1H,1H,2H,2H-Perfluorododecan-1-ol

ISO 21675:2019 PFAS in Water by LC-MS/MS

This CRM supports the testing for PFAS in non-filtered water such as drinking water and waste water using LC-MS/MS and according to the International Standards. This ISO 21675 CRM includes the 30 native PFAS required by the test method.

Native PFAS Reference Standard

ISO21675-PFAS-SET

2 x 1 mL (ISO21675-PFAS-R1, PFOA-029S-0.02X)

ISO21675-PFAS-R1

2 µg/mL each in MeOH

1 mL

29 comps.

Perfluoro-n-butanoic acid
Perfluoro-n-pentanoic acid
Perfluoro-n-hexanoic acid
Perfluoro-n-heptanoic acid
Perfluoro-n-octanoic acid
Perfluoro-n-nonanoic acid
Perfluoro-n-decanoic acid
Perfluoro-n-undecanoic acid
Perfluoro-n-dodecanoic acid
Perfluoro-n-tridecanoic acid

Perfluoro-n-tetradecanoic acid
Perfluorohexadecanoic acid
Perfluorooctane sulfonamide
N-Methylperfluoro-1-octanesulfonamide
Sulfuramid
N-methylperfluoro-1-octanesulfonamidoacetic acid
N-ethylperfluoro-1-octanesulfonamidoacetic acid
2H-Perfluoro-2-decenoic acid
Perfluoro(2-methyl-3-oxahexanoic) acid
Perfluorobutane-1-sulfonic acid

Perfluorohexane-1-sulfonic acid
Perfluoroheptanesulfonic acid
Perfluorooctane-1-sulfonic acid
Perfluorodecane-1-sulfonic acid
1H,1H,2H,2H-Perfluorooctane sulfonic acid
1H,1H,2H,2H-Perfluorodecanesulfonic acid
Sodium dodecafluoro-3H-4,8-dioxanonoate
Potassium 9-chlorohexadecafluoro-3-oxanone-1-sulfonate
Bis[2-(perfluorooctyl)ethyl] phosphate

Perfluorooctadecanoic acid (PFODA)

PFOA-029S-0.02X

1 mL

2 µg/mL in MeOH

ISO 25101:2009 PFOS and PFOA in Water by LC-MS

PFOS and PFOA Reference Standard

ISO25101

10 µg/mL each in MeOH

1 mL

2 comps.

Perfluorooctane-1-sulfonic acid

Perfluoro-n-octanoic acid

Technical Note

Although PFOA and PFOS production has significantly been reduced in recent years, both compounds continue to contaminate water sources due to their environmental persistence. This CRM is to test PFOA and PFOS in drinking water, ground water and surface water using (HPLC-MS/MS.)

AOAC SMPR 2023.003 PFAS in Food

These CRMs encompass all targeted compounds in AOAC SMPR 2023.003 for PFAS contaminants commonly found in produce, beverages, dairy products, eggs and other food dietary products.

PFAS in Food Reference Standard

AOAC-PFAS-MIX-001

2 µg/mL each in ACN

1 mL

30 comps.

Perfluoro-n-butanoic acid
Perfluoro-n-pentanoic acid
Perfluoro-n-hexanoic acid
Perfluoro-n-heptanoic acid
Perfluoro-n-octanoic acid
Perfluoro-n-nonanoic acid
Perfluoro-n-decanoic acid

Perfluoro-n-undecanoic acid
Perfluoro-n-dodecanoic acid
Perfluoro-n-tridecanoic acid
Perfluoro-n-tetradecanoic acid
Perfluorobutane-1-sulfonic acid
Perfluoropentanesulfonic acid
Perfluorohexane-1-sulfonic acid

Perfluoroheptanesulfonic acid
Perfluorooctane-1-sulfonic acid
Perfluorononanesulfonic acid
Perfluorodecane-1-sulfonic acid
Perfluoroundecanesulfonic acid
Perfluorododecanesulfonic acid
Perfluorotridecanesulfonic acid
Perfluorooctane sulfonamide

9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid
Perfluoro(2-methyl-3-oxahexanoic) acid
4,8-Dioxa-3H-perfluorononanoic acid
1H,1H,2H,2H-Perfluorohexanesulfonic acid
1H,1H,2H,2H-Perfluorooctane sulfonic acid
1H,1H,2H,2H-Perfluorodecanesulfonic acid
1H,1H,2H,2H-Perfluorododecane sulfonic acid

PFAS in Food Reference Standard 3

AOAC-PFAS-MIX-003

2 µg/mL each in ACN : MeOH (96:04)

1 mL

2 comps.

Capstone A

Capstone B

PFAS in Food Reference Standard 4

AOAC-PFAS-MIX-004

2 µg/mL each in ACN : MeOH (96:04)

1 mL

4 comps.

1H,1H,2H,2H-Perfluorohexan-1-ol (2-Perfluorobutyl ethanol)
1H,1H,2H,2H-Perfluorooctan-1-ol

1H,1H,2H,2H-Perfluoro-1-decanol
1H,1H,2H,2H-Perfluorododecan-1-ol

PFAS in Food Reference Singles

Each in 100 µg/mL in ACN

Mono[2-(perfluorooctyl)ethyl] phosphate (8:2-MonoPAP)

PFAP-001S

1 mL

Bis[2-(perfluorohexyl)ethyl]phosphate (6:2-DiPAP)

PFAP-002S

1 mL

1H,1H,2H,2H-Perfluoro-1-decanol

PFAP-004S

1 mL

1H,1H,2H,2H-Perfluorododecan-1-ol

PFAS-001S

1 mL

AOAC 2023.003 PFAS in Food Set

AOAC-PFAS-SET

7 x 1 mL

AOAC-PFAS-MIX-001, AOAC-PFAS-MIX-003, AOAC-PFAS-MIX-004,
PFAP-001S, PFAP-002S, PFAP-003S, PFAP-003S

International Methods other than USEPA are located in the Regional Section

Other PFAS Methods

EN 17892:2024 PFAS in Drinking Water

EN 17892:2024 PFAS in Drinking Water

EN-17892-PFAS

2 µg/mL each in ACN : MeOH (96:04)

1 mL
29 comps.

Perfluoro-n-butanoic acid	Perfluorononanesulfonic acid
Perfluoro-n-pentanoic acid	Perfluorodecane-1-sulfonic acid
Perfluoro-n-hexanoic acid	Perfluoroundecanesulfonic acid
Perfluoro-n-heptanoic acid	Perfluorododecanesulfonic acid
Perfluoro-n-octanoic acid	Perfluorotridecanesulfonic acid
Perfluoro-n-nonanoic acid	1H,1H,2H,2H-Perfluorohexanesulfonic acid
Perfluoro-n-decanoic acid	1H,1H,2H,2H-Perfluorooctane sulfonic acid
Perfluoro-n-undecanoic acid	1H,1H,2H,2H-Perfluorodecanesulfonic acid
Perfluoro-n-dodecanoic acid	Perfluorooctane sulfonamide
Perfluoro-n-tridecanoic acid	N-ethylperfluoro-1-octanesulfonamidoacetic acid
Perfluorobutane-1-sulfonic acid	Perfluoro(2-methyl-3-oxahexanoic) acid
Perfluoropentanesulfonic acid	4,8-Dioxa-3H-perfluorononanoic acid
Perfluorohexane-1-sulfonic acid	Perfluoro-3-methoxypropanoic acid
Perfluoroheptanesulfonic acid	9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid
Perfluorooctane-1-sulfonic acid	

Massachusetts PFAS in Drinking Water

This PFAS CRM is formulated to include compounds published in the PFAS public drinking water standard by the Massachusetts DEP. Known as PFAS6, these compounds have been targeted due to its high abundance in drinking water sources in addition to the adverse health effects associated with its exposure.

Massachusetts PFAS Reference Standard

PFC-MA

2 µg/mL each in MeOH

1 mL
6 comps.

Perfluorooctane-1-sulfonic acid	Perfluoro-n-nonanoic acid
Perfluoro-n-octanoic acid	Perfluoro-n-heptanoic acid
Perfluorohexane-1-sulfonic acid	Perfluoro-n-decanoic acid

FDA Method C-010.02 PFAS and Revised Method C-010.03

Due to major health risks associated with exposure to PFAS, USFDA has developed test method C-010.02 for PFAS Testing in Processed Food. This method is intended to test for PFAS in different food matrices such as infant formula, bread and pancake syrup. This formulation includes all native PFAS compounds listed in the method to offer efficiency and confidence when testing for these chemicals.

Method C-010.02 PFAS Reference Standard

PFAS-FDA

2 µg/mL each in MeOH

1 mL
16 comps.

Perfluoro-n-butanoic acid	Perfluoropentanesulfonic acid
Perfluoro-n-pentanoic acid	Perfluorohexane-1-sulfonic acid (Linear & Branched)
Perfluoro-n-hexanoic acid	Perfluoroheptanesulfonic acid
Perfluoro-n-heptanoic acid	Perfluorooctane-1-sulfonic acid
Perfluoro-n-octanoic acid	Ammonium perfluoro(2-methyl-3-oxahexanoate) (GenX)
Perfluoro-n-nonanoic acid	Potassium 9-chlorohexadecafluoro-3-oxanone-1-sulfonate
Perfluoro-n-decanoic acid	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid
Perfluorobutane-1-sulfonic acid	Sodium dodecafluoro-3H-4,8-dioxanonoate

FDA C-010.03 PFAS in Food Standard

PFAS-FDA-R1

2 µg/mL each in MeOH:MeOH (96:4)

1 mL
30 comps.

Perfluoro-n-butanoic acid	Perfluorooctane-1-sulfonic acid
Perfluoro-n-pentanoic acid	Perfluorononanesulfonic acid
Perfluoro-n-hexanoic acid	Perfluorodecane-1-sulfonic acid
Perfluoro-n-heptanoic acid	Perfluoroundecanesulfonic acid
Perfluoro-n-octanoic acid	Perfluorododecanesulfonic acid
Perfluoro-n-nonanoic acid	Perfluorotridecanesulfonic acid
Perfluoro-n-decanoic acid	Perfluorooctane sulfonamide
Perfluoro-n-undecanoic acid	9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid
Perfluoro-n-dodecanoic acid	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid
Perfluoro-n-tridecanoic acid	Perfluoro(2-methyl-3-oxahexanoic) acid
Perfluoro-n-tetradecanoic acid	4,8-Dioxa-3H-perfluorononanoic acid
Perfluorobutane-1-sulfonic acid	1H,1H,2H,2H-Perfluorohexanesulfonic acid
Perfluoropentanesulfonic acid	1H,1H,2H,2H-Perfluorooctane sulfonic acid
Perfluorohexane-1-sulfonic acid	1H,1H,2H,2H-Perfluorodecanesulfonic acid
Perfluoroheptanesulfonic acid	1H,1H,2H,2H-Perfluorododecane sulfonic acid

Technical Notes

NaOH is added for stability to some PFAS standards to improve stability. When applicable, the COA will state the percentage of NaOH added

PFAS in Textiles

PFAS in Textiles Reference Standard

PFAS-TXTL-MIX-001

2 µg/mL each in ACN

1 mL
6 comps.

Perfluoro-n-dodecanoic acid
Perfluoro-n-decanoic acid
Perfluoro-n-tridecanoic acid
Perfluoro-n-tetradecanoic acid
Perfluoro-n-undecanoic acid
Perfluoro-n-nonanoic acid

Technical Notes

PFAS compounds may exist in linear and branched forms, with each lot potentially having a different ratio. If both isomers are present, the ratio will be listed on the COA. If no ratio appears, the standard contains only the linear isomer.

Other PFAS Methods

PFAS in Food Contact Materials

PFAS in Food Contact Materials Set

PFAS-FCM-SET

Each at 2 µg/mL in MeOH, except where indicated

8 x 1 mL

Mono[2-(perfluorooctyl)ethyl] phosphate (8:2-MonoPAP)	PFAP-001S-M-0.02X	1 mL	PFAS-FCM-MIX-001	1 mL
Bis[2-(perfluorohexyl)ethyl]phosphate (6:2-DiPAP)	PFAP-002S-M-0.02X	1 mL	PFAS-FCM-MIX-002	1 mL
Bis(2-(ethyl((perfluorooctyl)sulfonyl)amino)ethyl) hydrogen phosphate	PFAP-006S-M-0.02X	1 mL		
Bis[2-(perfluorodecyl)ethyl] phosphate (10:2 diPAP)	PFAP-007S-M-0.02X	1 mL		
[2-(perfluorooctyl)ethyl], [2-(perfluorohexyl)ethyl] phosphate (6:2/8:2 diPAP)	PFAP-008S-M-0.02X	1 mL		
Bis[2-(perfluorooctyl)ethyl] phosphate (8:2-DiPAP)	PFAS-001S-0.02X	1 mL		

PFAS in Food Contact Materials Mix 1

PFAS-FCM-MIX-001

2 µg/mL each in ACN:MeOH (96:4)

1 mL
28 comps.

1H,1H,2H,2H-Perfluorooctane sulfonic acid	Perfluoro-n-pentanoic acid
1H,1H,2H,2H-Perfluorodecanesulfonic acid	Perfluoro-n-hexanoic acid
Perfluorooctane sulfonamide	Perfluoro-n-heptanoic acid
1H,1H,2H,2H-Perfluorohexanesulfonic acid	Perfluoro-n-octanoic acid
Perfluorobutane-1-sulfonic acid	Perfluoro-n-nonanoic acid
Perfluoropentanesulfonic acid	Perfluoro-n-decanoic acid
Perfluorohexane-1-sulfonic acid	Perfluoro-n-undecanoic acid
Perfluorooctane-1-sulfonic acid	Perfluoro-n-dodecanoic acid
Perfluorononanesulfonic acid	Perfluoro-n-tridecanoic acid
Perfluorodecane-1-sulfonic acid	Perfluoro-n-tetradecanoic acid
Perfluoroundecanesulfonic acid	4,8-Dioxa-3H-perfluorononanoic acid
Perfluorododecanesulfonic acid	11-Chloroicosafuoro-3-oxaundecane-1-sulfonic acid
Perfluorotridecanesulfonic acid	Perfluoroheptanesulfonic acid
Perfluoro-n-butanoic acid	9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid

PFAS in Food Contact Materials Mix 2

PFAS-FCM-MIX-002

2 µg/mL each in ACN

1 mL
18 comps.

1H,1H,2H,2H-Perfluorododecane sulfonic acid
2-(Perfluorohexyl)ethyl methacrylate
2H-Perfluoro-2-octenoic acid
2H-Perfluoro-2-dodecenoic acid
2H,2H-Perfluorodecanoic acid
2H,2H-Perfluorododecanoic acid
3-Perfluoropropyl propanoic acid
2H,2H,3H,3H-Perfluorooctanoic acid
2H,2H,3H,3H-Perfluorodecanoic acid
1H,1H,2H,2H-Perfluorooctan-1-ol
1H,1H,2H,2H-Perfluoro-1-decanol
1H,1H,2H,2H-Perfluorododecan-1-ol
Perfluorooctane sulfonamidoacetic acid
N-ethylperfluoro-1-octanesulfonamidoacetic acid
2-(Perfluorohexyl)ethyl acrylate
2H,2H-Perfluorooctanoic acid
Perfluorohexadecanoic acid
Perfluoro(2-methyl-3-oxahexanoic) acid

Consumer Protection Safety Committee (CPSC)

PFAS in Consumer Products Mix 1

PFAS-CPSC-01

2 µg/mL each in MeOH:Water (95:5)

1 mL
22 comps.

Perfluoro-n-tetradecanoic acid	Perfluorooctane-1-sulfonic acid
Perfluoro-n-tridecanoic acid	Perfluoroheptanesulfonic acid
Perfluoro-n-dodecanoic acid	Perfluorohexane-1-sulfonic acid
Perfluoro-n-undecanoic acid	Perfluoropentanesulfonic acid
Perfluoro-n-decanoic acid	Perfluorobutane-1-sulfonic acid
Perfluoro-n-nonanoic acid	Perfluorooctane sulfonamide
Perfluoro-n-octanoic acid	1H,1H,2H,2H-Perfluorodecanesulfonic acid
Perfluoro-n-heptanoic acid	1H,1H,2H,2H-Perfluorooctane sulfonic acid
Perfluoro-n-hexanoic acid	1H,1H,2H,2H-Perfluorohexanesulfonic acid
Perfluorodecane-1-sulfonic acid	N-ethylperfluoro-1-octanesulfonamidoacetic acid
Perfluorononanesulfonic acid	N-methylperfluoro-1-octanesulfonamidoacetic acid

PFAS in Consumer Products Mix 3

PFAS-CPSC-03

10 µg/mL each in MeOH:Water (95:5)

1 mL
3 comps.

Perfluoro-n-pentanoic acid	2,2,3,3,3-Pentafluoropropionic acid
Perfluoro-n-butanoic acid	

PFAS in Consumer Products Mix 4

PFAS-CPSC-04

10 µg/mL each in MeOH:Water (95:5)

1 mL
2 comps.

Bis[2-(perfluorohexyl)ethyl]phosphate
Bis[2-(perfluorooctyl)ethyl] phosphate

PFAS in Consumer Products Mix 2

PFAS-CPSC-02

2 µg/mL in MeOH:Water (95:5)

1 mL
19 comps.

Perfluorododecanesulfonic acid	Perfluoro(2-ethoxyethane)sulphonic acid
N-Methylperfluoro-1-octanesulfonamide	Perfluoro-3-methoxypropanoic acid
Sulfuramid	Perfluoro(4-methoxybutanoic) acid
N-Methylperfluorooctanesulfonamidoethanol	3-Perfluoropropyl propanoic acid
N-Ethyl-N-(2-hydroxyethyl)perfluorooctylsulfonamide	2H,2H,3H,3H-Perfluorooctanoic acid
Perfluoro(2-methyl-3-oxahexanoic) acid	2H,2H,3H,3H-Perfluorodecanoic acid
4,8-Dioxa-3H-perfluorononanoic acid	2H-Perfluoro-2-octenoic acid
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid	2H-Perfluoro-2-decenoic acid
11-Chloroicosafuoro-3-oxaundecane-1-sulfonic acid	Bis(trifluoromethane)sulfonimide lithium salt
Nonafuoro-3,6-dioxaheptanoic acid	

Technical Notes

NaOH is added for stability to some PFAS standards to improve stability. When applicable, the COA will state the percentage of NaOH added

Pesticide Standards



We offer a comprehensive list of pesticide CRMs listed as neat, single-component, and multi-component solutions that will help meet your laboratory needs for pesticide testing. This list includes thousands of high-quality standards that meet the requirements of test methods published by different regulatory bodies and regions, such as USEPA, ASTM, Canada, Europe, and Asia. Our offerings include calibration mixtures that can be used for a wide range of residual pesticide analysis in different matrices such as fruit, vegetables, and cannabis.

Research on the presence and toxicity of pesticides is an important factor in understanding the risk/benefit balance of their use. To aid in this research, our catalog has over 1200 individual pesticide and herbicide compounds, including carbamates, organophosphates, triazines, triazinones, neonicotinoids, and fipronils. We offer standards for many pesticides that are no longer commercially produced but are still present in the environment, as well as their metabolites and by-products, such as aldicarb sulfone and sulfoxide, endrin aldehyde and ketone, oxychlordane, o,p'-methoxychlor, fipronil sulfone, sulfoxide and desulfinyl, and DDT by-products.

Pesticide Content

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see USEPA Method section and Regional Pesticide Method Index

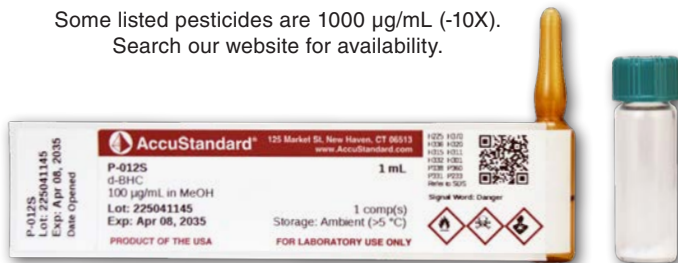
CLP	Pesticides	600 Series	Pesticide Methods for Wastewater (continued)
500 Series	Pesticide Methods for Drinking Water	632	Carbamates & Urea Pesticides
505	Organohalide Pesticides by Microextraction	632.1	Carbamates & Amides
507	Nitrogen/Phosphorous Pesticides	633	Organonitrogen Pesticides
508	Chlorinated Pesticides	634	Thiocarbamate Pesticides
508.1	Chlorinated Pesticides, Herbicides & Organo-halides	645	Amino Pesticides & Lethane
515.1 & 515.2	Chlorinated Acids in Water	680	Pesticides in Water/Soil
515.3 & 515.4	Chlorinated Acids in Drinking Water		
525.1 & 525.2	Organic Pesticides by Liquid Solid Extraction	1300 Series	Pesticide Methods
527	Pesticides & Flame Retardants	1300	Toxicity Characteristic Leaching Procedure (TCLP)
531 & 531.1	Carbamates	1600 Series	Pesticide Methods
532	Phenylureas	1618	Organochloride & Phosphorus Pesticides
535	Acetamide-Herbicide Degradates	1656	Organo Halide Pesticides
547	Glyphosate	1657	Organo Phosphorus Pesticides & Dazomet
548	Endothall	1658	Phenoyl-Acid Herbicides
548.1	Endothall	1659	Dazometin Municipal & Wastewater
549.1 & 549.2	Diquat & Paraquat		
551 & 551.1A	Chlorinated Organic Solvents	8000 Series	Pesticide Methods for Solid Waste
553	Benzidines & Nitrogen Pesticides	8080A	Organochlorine Pesticides
555	Chlorinated Pesticides	8080/8081A/B	Organochlorine Pesticides
		8085	Pesticides (GC/AED)
600 Series	Pesticide Methods for Wastewater	8140	Organophosphorous Pesticides
608.1, 608.2	Organochlorine Pesticides	8141A	Additions to Method 8140
609	Nitroaromatics & Isophorone	8150A/8150B	Chlorinated Herbicides
614 & 614.1	Organophosphorus Pesticides	8151/8151A	Chlorinated Herbicides
615	Chlorinated Herbicides	8270C/D	Semi-Volatile Pesticides
617	Chlorinated Pesticides	8318	N-Methylcarbamates
618	Volatile Pesticides	8321	Non-Volatile Pesticides
619	Triazine Herbicides	8325	Benzidines & Nitrogen containing Pesticides
622	Organophosphorus Pesticides		
622.1	Thiophosphate Pesticides		
625	Priority Pollutant Standards		
627	Dinitroaniline Pesticides		
		Regional Pesticide Methods see Regional Section	
		ASTM / DIN / ISO / GB Europe, Canadian, Asian, and U.S. States	

Pesticides

Over 1,200 Pesticide Standards from Abamectin to Ziram

Search our website. Pesticides can have many trade names; if you can't find a specific pesticide compound, search by CAS numbers. or use the indices in the back of catalog.

Some listed pesticides are 1000 µg/mL (-10X).
Search our website for availability.



Search our website for listed pesticide compounds in variations concentration and solvent.

Search "P-012"

P-012N	10 mg
P-012S	100 µg/mL in MeOH
P-012S-A	100 µg/mL in Acetone
P-012S-10X	1000 µg/mL in MeOH

Solubility Key

A	Acetone	IPA	Isopropanol
CN	Acetonitrile (ACN)	MeOH	Methanol
D	Methylene chloride	MC	Methyl cellosolve
DMSO	Dimethyl sulfoxide	T	Toluene
EA	Ethyl acetate	TP	Isooctane
H	Hexane	W	Water

Purchased Standards vs In-house Standards

- **Safety** - Ready-to-use CRMs reduce your lab personnel's exposure to chemicals. Using bulk neat standards to prepare your own standards may involve handling and storage of dangerous chemicals and following special safety protocols.
- **Certification** - Many laboratories are required to use independently produced reference standards. We are accredited to ISO 17034 for the preparation and certification of reference materials.
- **Technical Support** - Experienced and knowledgeable product support team available to provide technical advice and assist when needed.
- **Cost effective** - Purchasing bulk neat standards of pesticides and making solutions in-house is usually more expensive than using a pre-made solution due to storage and disposal expenses.

Usage and Handling of Neat CRMs

Pesticide Neat CRMs can be either:

- Nominal weight: Standard is overfilled by approximately 10% and the exact amount is NOT provided.
- Exact weight: Standard is filled with a known amount of material.

How to prepare a pesticide standard using AccuStandard's pesticide neat CRMs

NOTE: 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.

Exact weight for neat pesticides

Neat pesticides are typically overfilled by approximately 10%. However, an exact weight service is available for an additional charge. The exact weight of the material is printed on the label. Specify X-WT when placing your order. Rinse the pesticide out of the vial with the desired solvent and dilute to volume to get a weight/volume standard.



Pesticides

NEATS in 10 mg, SOLUTIONS at 100 µg/mL in 1 mL, except as noted.

Pesticide Compounds									
Compound	CAS No.	Matrix	Cat. No.	Unit	Compound	CAS No.	Matrix	Cat. No.	Unit
Abamectin	71751-41-2	NEAT	P-615N	10 mg	Anilofos	64249-01-0	NEAT	P-973N	10 mg
		MeOH	P-615S	1 mL			ACN	P-973S-CN	1 mL
Acephate	30560-19-1	NEAT	P-200N	10 mg	Aramite	140-57-8	MeOH	P-132S	1 mL
		Acetone	P-200S-A	1 mL			MeOH	P-309S	1 mL
Acequinocyl	57960-19-7	NEAT	P-1037N	10 mg	Asulam	3337-71-1	NEAT	P-276N	10 mg
		ACN	P-1037S-CN	1 mL			MeOH	P-276S	1 mL
Acetamiprid	135410-20-7	NEAT	P-820N	10 mg	Atraton (Gesatamine)	1610-17-9	NEAT	P-189N	10 mg
		ACN	P-820S-CN	1 mL			MeOH	P-189S	1 mL
Acetamiprid-N-desmethyl	190604-92-3	ACN	P-1430S-CN	1 mL	Atrazine	1912-24-9	NEAT	P-005N	10 mg
Acetochlor	34256-82-1	NEAT	P-465N	10 mg			MeOH	P-005S	1 mL
		MeOH	P-465S	1 mL	Atrazine-desethyl	6190-65-4	NEAT	P-343N	10 mg
Acetochlor ESA sodium salt	187022-11-3	MeOH	P-911S	1 mL			MeOH	P-343S	1 mL
Acetochlor OA sodium salt		MeOH	P-912S	1 mL	Atrazine-desethyl-desisopropyl	3397-62-4	NEAT	P-428N	10 mg
Acibenzolar acid	35272-27-6	ACN	P-1432S-CN	1 mL			MeOH	P-544S	1 mL
Acibenzolar-S-methyl	135158-54-2	NEAT	P-895N	10 mg	Atrazine-desisopropyl	1007-28-9	NEAT	P-345N	10 mg
		MeOH	P-895S	1 mL			MeOH	P-345S	1 mL
Acifluorfen	50594-66-6	NEAT	P-245N	10 mg	Atrazine-desisopropyl-2-hydroxy	7313-54-4	NEAT	P-344N	10 mg
		MeOH	P-245S ▲	1 mL			MeOH	P-344S	1 mL
		ACN	P-245S-CN	1 mL	Azaconazole	60207-31-0	NEAT	P-971N	10 mg
Acifluorfen methyl ester	50594-67-7	NEAT	P-246N	10 mg			ACN	P-971S-CN	1 mL
		MeOH	P-246S	1 mL	Azadirachtin	11141-17-6	ACN	P-1499S-CN	1 mL
Aclonifen	74070-46-5	ACN	P-890S-CN	1 mL	Azadirachtin (Natural Extract) Tech Mix		ACN	P-711S-CN	1 mL
Acrinathrin	101007-06-1	ACN	P-842S-CN	1 mL	Azamethiphos	35575-96-3	NEAT	P-352N	10 mg
Alachlor	15972-60-8	NEAT	P-102N	10 mg			MeOH	P-352S	1 mL
		MeOH	P-102S	1 mL	Azimsulfuron	120162-55-2 50 µg/mL	ACN	P-1036S-CN	1 mL
Alachlor ESA sodium salt	140939-15-7	MeOH	P-909S	1 mL			ACN	P-1036S-CN-0.5X	1 mL
Alachlor OA sodium salt		MeOH	P-910S	1 mL	Azinphos-ethyl	2642-71-9	NEAT	P-201N	10 mg
Alanap	132-66-1	NEAT	P-274N	10 mg			MeOH	P-201S	1 mL
		ACN	P-274S-CN	1 mL	Azinphos-methyl	86-50-0	NEAT	P-007N	10 mg
Albendazole	54965-21-8	NEAT	P-498N	10 mg			MeOH	P-007S	1 mL
		MeOH	P-498S	1 mL	Azinphos-methyl oxon	961-22-8	Toluene	P-1327S-T	1 mL
Aldicarb	116-06-3	NEAT	P-001N	10 mg			NEAT	P-353N	10 mg
		MeOH	P-001S	1 mL	Azoxystrobin	131860-33-8	MeOH	P-353S	1 mL
Aldicarb sulfone	1646-88-4	NEAT	P-130N	10 mg			NEAT	P-719N	10 mg
		MeOH	P-130S	1 mL	Benbamate	101-27-9	MeOH	P-719S	1 mL
Aldicarb sulfoxide	1646-87-3	NEAT	P-131N	10 mg			NEAT	P-202N	10 mg
		MeOH	P-131S	1 mL	Beflubutamid	113614-08-7	MeOH	P-202S	1 mL
Aldrin	309-00-2	NEAT	P-002N	10 mg			NEAT	P-1041N	10 mg
		MeOH	P-002S	1 mL	Benalaxyl	71626-11-4	MeOH	P-1041S	1 mL
Allethrin	584-79-2	NEAT	P-267N	10 mg			NEAT	P-559N	10 mg
		MeOH	P-267S	1 mL	Benazolin	3813-05-6	MeOH	P-559S	1 mL
Allidochlor	93-71-0	NEAT	P-670N	10 mg			NEAT	P-397N	10 mg
		MeOH	P-670S	1 mL	Bendiocarb	22781-23-3	MeOH	P-397S	1 mL
Alloxydim-sodium	55635-13-7	NEAT	P-510N	10 mg			NEAT	P-203N	10 mg
		ACN	P-510S-CN	1 mL	Benfluralin	1861-40-1	MeOH	P-203S	1 mL
Ametoctradin	865318-97-4	NEAT	P-1039N	10 mg			NEAT	P-237N	10 mg
		MeOH	P-1039S	1 mL	Benfuracarb	82560-54-1	MeOH	P-237S	1 mL
Ametryn	834-12-8	NEAT	P-003N	10 mg			NEAT	P-454N	10 mg
		MeOH	P-003S	1 mL	Benfuresate	68505-69-1	ACN	P-454S-CN	1 mL
Amicarbazone	129909-90-6	ACN	P-1152S-CN	1 mL			NEAT	P-1080N	10 mg
Amidosulfuron	120923-37-7	NEAT	P-821N	10 mg	Benodanil	15310-01-7	MeOH	P-1080S	1 mL
		ACN	P-821S-CN	1 mL			NEAT	P-671N	10 mg
Aminocarb	2032-59-9	NEAT	P-062N	10 mg			MeOH	P-671S	1 mL
		MeOH	P-062S	1 mL	Benomyl	17804-35-2	NEAT	P-104N	10 mg
2-Amino-4,6-dichloro-1,3,5-triazine	933-20-0	NEAT	P-1444N	10 mg			ACN	P-104S-CN	1 mL
		ACN	P-1444S-CN	1 mL	Benoxacor	98730-04-2	NEAT	P-490N	10 mg
Aminomethylphosphonic acid	1066-51-9	NEAT	P-625N	10 mg			MeOH	P-490S	1 mL
		Water	P-625S-W	1 mL	Bensulfuron-methyl	83055-99-6	NEAT	P-597N	10 mg
Aminopyralid	150114-71-9	NEAT	P-1048N	10 mg			ACN	P-597S-CN	1 mL
		MeOH	P-1048S	1 mL	Bensulide	741-58-2	NEAT	P-204N	10 mg
4-Aminopyridine	504-24-5	NEAT	P-407N	10 mg			MeOH	P-204S	1 mL
		MeOH	P-407S	1 mL	Bensultap	17606-31-4	NEAT	P-678N	10 mg
Amisulbrom	348635-87-0	MeOH	P-998S	1 mL			MeOH	P-678S	1 mL
Amitraz	33089-61-1	NEAT	P-409N	10 mg	Bentazon	25057-89-0	NEAT	P-177N	10 mg
		ACN	P-409S-CN	1 mL			Acetone	P-177S-A	1 mL
Amitrole (ATA)	61-82-5	NEAT	P-103N	10 mg			ACN	P-177S-CN	1 mL
		MeOH	P-103S	1 mL	Bentazon methyl	61592-45-8	NEAT	P-241N	10 mg
Ammonium sulfamate	7773-06-0	NEAT	P-530N	10 mg			MeOH	P-241S	1 mL
		MeOH	P-530S	1 mL	Benthiavalicarb-isopropyl	177406-68-7	10 µg/mL Acetone	P-1049S-A-0.1X	1 mL
3-sec-Amylphenyl N-Methylcarbamate	2282-34-0	ACN	P-1478S-CN	1 mL			ACN	P-1099S-CN	1 mL
Ancymidol	12771-68-5	NEAT	P-410N	10 mg	Benzobicyclon	156963-66-5	ACN	P-801S-CN	1 mL
		MeOH	P-410S	1 mL			ACN	P-801S-CN	1 mL
Anilazine	101-05-3 Hexane : Acetone (80:20)	NEAT	P-287N	10 mg	Benzoylprop-ethyl	22212-55-1	NEAT	P-340N	10 mg
			P-287S-H	1 mL			MeOH	P-340S	1 mL

Pesticides

NEATS in 10 mg, SOLUTIONS at 100 µg/mL in 1 mL, except as noted.

Pesticide Compounds (continued)									
Compound	CAS No.	Matrix	Cat. No.	Unit	Compound	CAS No.	Matrix	Cat. No.	Unit
Benzyladenine	1214-39-7	NEAT	P-901N	10 mg	Butocarboxim sulfoxide	34681-24-8	NEAT	P-701N	10 mg
Benzyltrimethyldecylammonium chloride	965-32-2	ACN	P-1433S-CN	1 mL			MeOH	P-701S	1 mL
BHC Tech	608-73-1	NEAT	P-081N	10 mg	2-(2-Butoxyethoxy)ethyl thiocyanate	112-56-1	NEAT	P-506N	10 mg
		MeOH	P-081S	1 mL			MeOH	P-506S	1 mL
α-BHC	319-84-6	NEAT	P-010N	10 mg	Butoxycarboxim	34681-23-7	NEAT	P-822N	10 mg
		MeOH	P-010S	1 mL			ACN	P-822S-CN	1 mL
β-BHC	319-85-7	NEAT	P-011N	10 mg	Butralin	33629-47-9	NEAT	P-574N	10 mg
		MeOH	P-011S	1 mL			MeOH	P-574S	1 mL
δ-BHC	319-86-8	NEAT	P-012N	10 mg	Butoxydim	138164-12-2	MeOH	P-1394S	1 mL
		MeOH	P-012S	1 mL	Buturon	3766-60-7	NEAT	P-301N	10 mg
Bifenazate	149877-41-8	NEAT	P-772N	10 mg			ACN	P-301S-CN	1 mL
		MeOH	P-772S	1 mL	Butylate	2008-41-5	NEAT	P-088N	10 mg
Bifenoxy	42576-02-3	NEAT	P-257N	10 mg			MeOH	P-088S	1 mL
		MeOH	P-257S	1 mL	sec-Butylamine	13952-84-6	ACN	P-1527S-CN	1 mL
Bifenthrin	82657-04-3	NEAT	P-445N	10 mg	Cadusafos	95465-99-9	NEAT	P-794N	10 mg
		MeOH	P-445S	1 mL			MeOH	P-794S	1 mL
Binapacryl	485-31-4	NEAT	P-499N	10 mg	Cafenstrole	125306-83-4	ACN	P-1214S-CN	1 mL
		MeOH	P-499S	1 mL	Calcium arsenate	7778-44-1	NEAT	P-1076N	10 mg
Bioallethrin	260359-57-7	NEAT	P-665N	10 mg	Captafol	2425-06-1	NEAT	P-254N	10 mg
		MeOH	P-665S	1 mL			MeOH	P-254S	1 mL
S-Bioallethrin	28424-00-6	NEAT	P-664N	10 mg	Captan	133-06-2	NEAT	P-182N	10 mg
		MeOH	P-664S	1 mL			MeOH	P-182S	1 mL
Bioresmethrin	28434-01-7	NEAT	P-594N	10 mg	Carbaryl	63-25-2	NEAT	P-083N	10 mg
		MeOH	P-594S	1 mL			MeOH	P-083S	1 mL
Bistrifluron	201593-84-2	ACN	P-1360S-CN	1 mL	Carbendazim	10605-21-7	NEAT	P-278N	10 mg
Bitertanol	55179-31-2	NEAT	P-351N	10 mg			MeOH	P-278S	1 mL
		MeOH	P-351S	1 mL	Carbetamide	16118-49-3	NEAT	P-562N	10 mg
Bixafen	581809-46-3	NEAT	P-1186N	10 mg			MeOH	P-562S	1 mL
		ACN	P-1186S-CN	1 mL	Carbofuran	1563-66-2	NEAT	P-106N	10 mg
Bloc	60168-88-9	NEAT	P-086N	10 mg			MeOH	P-106S	1 mL
		MeOH	P-086S	1 mL	Carbofuran phenol-3-ketone	17781-16-7	MeOH	P-630S	1 mL
Bomyl	122-10-1	MeOH	P-1377S	1 mL	Carbophenothion	786-19-6	NEAT	P-095N	10 mg
Boscalid	188425-85-6	NEAT	P-811N	10 mg			MeOH	P-095S	1 mL
		MeOH	P-811S	1 mL	Carbophenothion methyl-o-analog	7332-32-3	EtOAc	P-637S-EA-0.1X	1 mL
Brodifacoum	56073-10-0	NEAT	P-677N	10 mg	Carbosulfan	55285-14-8	NEAT	P-446N	10 mg
		MeOH	P-677S	1 mL			ACN	P-446S-CN	1 mL
Broflanilide	1207727-04-5	ACN	P-1520S-CN	1 mL	Carboxin	5234-68-4	NEAT	P-216N	10 mg
Bromacil	314-40-9	NEAT	P-181N	10 mg			MeOH	P-216S	1 mL
		MeOH	P-181S	1 mL	Carfentrazone-ethyl	128639-02-1	ACN	P-957S-CN	1 mL
Bromadiolone	28772-56-7	NEAT	P-316N	10 mg	Carpropamid	104030-54-8	ACN	P-1162S-CN	1 mL
		MeOH	P-316S	1 mL	Cartap	15263-53-3	MeOH : ACN	P-577S-M-CN	1 mL
Brominal	1689-84-5	NEAT	P-256N	10 mg	Cartap hydrochloride	22042-59-7	NEAT	P-949N	10 mg
		MeOH	P-256S	1 mL	Chinomethionate	2439-01-2	NEAT	P-399N	10 mg
Bromobutide	74712-19-9	MeOH	P-1059S	1 mL			Acetone	P-399S-A	1 mL
Bromofenoxim	13181-17-4	NEAT	P-511N	10 mg	Chloramben	133-90-4	NEAT	P-243N	10 mg
		MeOH	P-511S	1 mL			MeOH	P-243S	1 mL
Bromophos-ethyl	4824-78-6	NEAT	P-372N	10 mg	Chloramben methyl ester	7286-84-2	NEAT	P-272N	10 mg
		MeOH	P-372S	1 mL			MeOH	P-272S	1 mL
Bromophos-methyl	2104-96-3	NEAT	P-484N	10 mg	Chlorantraniliprole	500008-45-7	NEAT	P-952N	10 mg
		MeOH	P-484S	1 mL			MeOH	P-952S	1 mL
Bromopropylate	18181-80-1	NEAT	P-457N	10 mg	Chlorbenside	103-17-3	NEAT	P-107N	10 mg
		MeOH	P-457S	1 mL			MeOH	P-107S	1 mL
Bromoxynil-heptanoate	56634-95-8	MeOH	P-1012S	1 mL	Chlorbenzuron	57160-47-1	ACN	P-1163S-CN	1 mL
Bromoxynil methyl ether	3336-39-8	NEAT	P-573N	10 mg	Chlorbromuron	13360-45-7	NEAT	P-520N	10 mg
		MeOH	P-573S	1 mL			MeOH	P-520S	1 mL
Bromoxynil octanoate	1689-99-2	NEAT	P-550N	10 mg	Chlorbufam	1967-16-4	NEAT	P-558N	10 mg
		MeOH	P-550S	22			MeOH	P-558S	1 mL
Bromuconazol	116255-48-2	NEAT	P-843N	10 mg	Chlordane (Tech)	12789-03-6	NEAT	P-017N	10 mg
		ACN	P-843S-CN	1 mL			MeOH	P-017S	1 mL
Bupirimate	41483-43-6	NEAT	P-672N	10 mg	α-Chlordane	5103-71-9	NEAT	P-134N	10 mg
		MeOH	P-672S	1 mL			MeOH	P-134S	1 mL
Buprofezin	69327-76-0	NEAT	P-595N	10 mg			Hexane	P-134S-H	1 mL
		MeOH	P-595S	1 mL	γ-Chlordane	5103-74-2	NEAT	P-135N	10 mg
Butachlor	23184-66-9	NEAT	P-191N	10 mg			MeOH	P-135S	1 mL
		MeOH	P-191S	1 mL	Chlordene	3734-48-3	NEAT	P-136N	10 mg
Butachlor ESA sodium salt	1173022-75-7	MeOH	P-913S	1 mL			MeOH	P-136S	1 mL
Butafenacil	134605-64-4	NEAT	P-940N	10 mg	Chlordimeform	6164-98-3	NEAT	P-333N	10 mg
		MeOH	P-940S	1 mL			MeOH	P-333S-CN	1 mL
Butocarboxim	34681-10-2	NEAT	P-518N	10 mg	Chlorethoxyfos	54593-83-8	NEAT	P-1017N	10 mg
		MeOH	P-518S	1 mL			ACN	P-1017S-CN	1 mL
					Chlorfenapyr	122453-73-0	NEAT	P-807N	10 mg
							MeOH	P-807S	1 mL

▲ May esterify in methanol

✦ V-Rated packaging surcharge applies for international shipments.

Pesticide Compounds continued on next page

Pesticides

Pesticide Compounds (continued)

Compound	CAS No.	Matrix	Cat. No.	Unit	Compound	CAS No.	Matrix	Cat. No.	Unit
Chlorfenson	80-33-1	NEAT	P-425N	10 mg	Clodinafop	114420-56-3	NEAT	P-1009N	10 mg
		MeOH	P-425S	1 mL			MeOH	P-1009S	1 mL
Chlorfenvinphos	470-90-6	NEAT	P-139N ❖	1 mL	Clodinafop-propargyl	105512-06-9	NEAT	P-755N	10 mg
		MeOH	P-139S	1 mL			ACN	P-755S-CN	1 mL
Chlorfluazuron	71422-67-8	ACN	P-771S-CN	1 mL	Clofentezine	74115-24-5	NEAT	P-472N	10 mg
Chlorflurecol-methyl ester	2536-31-4	NEAT	P-401N	10 mg			MeOH	P-472S	1 mL
		MeOH	P-401S	1 mL	Clomazon	81777-89-1	MeOH	P-286S	1 mL
Chlorimuron-ethyl	90982-32-4	ACN	P-284S-CN	1 mL	Clomeprop	84496-56-0	5 mg	P-1065N-5MG	5 mg
Chlormephos	24934-91-6	NEAT	P-329N	10 mg			Acetone	P-1065S-A	1 mL
		MeOH	P-329S	1 mL	Clopyralid methyl ester	1532-24-7	MeOH	P-488S	1 mL
Chlormequat chloride	999-81-5	NEAT	P-338N	10 mg	Cloquintocet-mexyl	99607-70-2	NEAT	P-929N	10 mg
		MeOH	P-338S	1 mL			MeOH	P-929S	1 mL
Chlornitrofen	1836-77-7	NEAT	P-816N-5MG	5 mg	Cloransulam-methyl	147150-35-4	ACN	P-981S-CN	1 mL
		ACN	P-816S-CN	1 mL	Clothianidin	210880-92-5	NEAT	P-947N	10 mg
Chlorobenzilate	510-15-6	NEAT	P-133N	10 mg			MeOH	P-947S	1 mL
		ACN	P-133S-CN	1 mL	Copper(II)carbonate	12069-69-1	NEAT	P-1074N	10 mg
2-Chloro-2',6'-diethylacetanilide	6967-29-9	NEAT	P-620N	10 mg			MeOH	P-1074S	1 mL
		MeOH	P-620S	1 mL	Copper oxychloride	1332-40-7	NEAT	P-458N	10 mg
2-Chloroethanol	107-07-3	NEAT	P-1079N	10 mg	Coumachlor	81-82-3	MeOH	P-684S	1 mL
		MeOH	P-1079S	1 mL	Coumaphos	56-72-4	NEAT	P-019N	10 mg
2-Chloro-4-ethylamino-6-methylethylamino-s-triazine		NEAT	P-539N	10 mg			MeOH	P-019S	1 mL
3084-92-2		MC	P-539S-MC	1 mL	Coumatetralyl	5836-29-3	NEAT	P-313N	10 mg
2-Chloro-4-ethylamino-6-propylamino-s-triazine		NEAT	P-537N	10 mg			MeOH	P-313S	1 mL
90952-64-0		MC	P-537S-MC	1 mL	4-CPA	122-88-3	NEAT	P-373N	10 mg
2-Chloro-4-methylamino-6-diethylamino-s-triazine		NEAT	P-541N	10 mg			MeOH	P-373S	1 mL
83807-82-3		MC	P-541S-MC	1 mL	Crimidine	535-89-7	NEAT	P-561N	10 mg
2-Chloro-4-methylamino-6-sec-butylamino-s-triazine		NEAT	P-540N	10 mg			MeOH	P-561S	1 mL
33692-99-8		MC	P-540S-MC	1 mL	Crotoxyphos	7700-17-6	NEAT	P-218N	10 mg
4-Chloro-2-methylphenol	1570-64-5	NEAT	P-1026N	10 mg			MeOH	P-218S	1 mL
		MeOH	P-1026S	1 mL	Cruformate	299-86-5	NEAT	P-292N	10 mg
1-(3-Chloro-4-methylphenyl)-3-methylurea		ACN	P-1368S-CN	1 mL			MeOH	P-292S	1 mL
22175-22-0					Cryolite	15096-52-3	NEAT	P-1071N	10 mg
Chloroneb	2675-77-6	NEAT	P-212N	10 mg	Cumyluron	99485-76-4	ACN	P-1135S-CN	1 mL
		MeOH	P-212S	1 mL	Cyanazine	21725-46-2	NEAT	P-175N	10 mg
Chlorophacinone	3691-35-8	NEAT	P-314N	10 mg			MeOH	P-175S	1 mL
		MeOH	P-314S	1 mL	Cyanazine acid	36576-43-9	ACN	P-1440S-CN	1 mL
1,1-bis(4-Chlorophenyl)ethylene		NEAT	P-1054N	10 mg	Cyanazine amide	36576-42-8	ACN	P-1441S-CN	1 mL
2642-81-1		MeOH	P-1054S	1 mL	Cyanofenphos	13067-93-1	NEAT	P-584N	10 mg
Chloropicrin	76-06-2	NEAT	P-398N ❖	10 mg			ACN	P-584S-CN	1 mL
		MeOH	P-398S	1 mL	Cyanophos	2636-26-2	NEAT	P-531N	10 mg
3-Chloro-1,2-propanediol	96-24-2	NEAT	P-408N	10 mg			MeOH	P-531S	1 mL
		MeOH	P-408S	1 mL	Cyazofamid	120116-88-3	NEAT	P-969N	10 mg
Chloropropylate	5836-10-2	NEAT	P-213N	10 mg			MeOH	P-969S-CN	1 mL
		MeOH	P-213S	1 mL	Cybutryne	28159-98-0	NEAT	P-746N	10 mg
6-Chloropyridine-3-carboxylic acid	5326-23-8	NEAT	P-1267N	10 mg			MeOH	P-746S	1 mL
		MeOH	P-1267S	1 mL	Cyclanilide	113136-77-9	ACN	P-982S-CN	1 mL
Chlorothalonil	1897-45-6	NEAT	P-222N	10 mg	Cyclaniliprole	1031756-98-5	NEAT	P-1445N	10 mg
		MeOH	P-222S	1 mL			MeOH	P-1445S	1 mL
Chloroxuron	1982-47-4	NEAT	P-402N	10 mg	Cycloate	1134-23-2	NEAT	P-248N	10 mg
		MeOH	P-402S	1 mL			MeOH	P-248S	1 mL
Chlorpropham	101-21-3	NEAT	P-221N	10 mg	Cycloheximide	66-81-9	MeOH	P-411N	10 mg
		MeOH	P-221S	1 mL			MeOH	P-411S	1 mL
Chlorpyrifos	2921-88-2	NEAT	P-094N	10 mg	Cycloprate	54460-46-7	NEAT	P-1069N	10 mg
		MeOH	P-094S	1 mL			MeOH	P-1069S	1 mL
Chlorpyrifos-methyl	5598-13-0	NEAT	P-223N	10 mg	Cycloprothrin	63935-38-6	NEAT	P-1205N	10 mg
		MeOH	P-223S	1 mL			ACN	P-1205S-CN	1 mL
Chlorpyrifos-oxon	5598-15-2	NEAT	P-700N	10 mg	Cyclosulfamuron	136849-15-5	MeOH	P-1086N	1 mL
		ACN	P-700S-CN	1 mL			ACN	P-1086S-CN	1 mL
Chlorsulfuron	64902-72-3	NEAT	P-262N	10 mg	Cycloxydime	101205-02-1	NEAT	P-735N	10 mg
		ACN	P-262S-CN	1 mL			MeOH	P-735S	1 mL
Chlorthiamid	1918-13-4	NEAT	P-673N	10 mg	Cycluron	2163-69-1	ACN	P-791S-CN	1 mL
		MeOH	P-673S	1 mL	Cyflufenamide	180409-60-3	ACN	P-975S-CN	1 mL
Chlorthion	500-28-7	MeOH	P-674S	1 mL	Cyfluthrin - Mix of Isomers	68359-37-5	NEAT	P-354N	10 mg
Chlorthiophos	60238-56-4	NEAT	P-545N	10 mg			MeOH	P-354S	1 mL
		MeOH	P-545S	1 mL	Cyhalofop-butyl	122008-85-9	5 mg	P-944N-5MG	5 mg
Chlortoluron	15545-48-9	NEAT	P-434N	10 mg			MeOH	P-944S	1 mL
		MeOH	P-434S	1 mL	Cyhalothrin	68085-85-8	Acetone	P-1118S-A	1 mL
Chlozolinate	84332-86-5	ACN	P-683S-CN	1 mL	λ-Cyhalothrin	91465-08-6	NEAT	P-473N	10 mg
Chromafenozide	143807-66-3	ACN	P-974S-CN-10X	1 mL			MeOH	P-473S	1 mL
Cinmethylin	87818-31-3	NEAT	P-1157N	10 mg	Cyhexatin	13121-70-5	NEAT	P-375N	10 mg
		ACN	P-1157S-CN	1 mL			MeOH	P-375S	1 mL
Cinosulfuron	94593-91-6	NEAT	P-823N	10 mg	Cymoxanil	57966-95-7	NEAT	P-493N	10 mg
		ACN	P-823S-CN	1 mL			MeOH	P-493S	1 mL
Clarity	104040-79-1	Water	P-495S-W	1 mL	Cypermethrin	52315-07-8	NEAT	P-225N	10 mg
Clethodim	99129-21-2	NEAT	P-602N	10 mg			MeOH	P-225S	1 mL
		ACN	P-602S-CN	1 mL	α-Cypermethrin	67375-30-8	NEAT	P-548N	10 mg
							ACN	P-548S-CN	1 mL

Pesticides

NEATS in 10 mg, SOLUTIONS at 100 µg/mL in 1 mL, except as noted.

Pesticide Compounds (continued)

Compound	CAS No.	Matrix	Cat. No.	Unit	Compound	CAS No.	Matrix	Cat. No.	Unit
Cyphenothrin	39515-40-7	NEAT	P-709N	10 mg	Deltamethrin	52918-63-5	NEAT	P-355N	10 mg
		MeOH	P-709S	1 mL			MeOH	P-355S	1 mL
Cyprazine	22936-86-3	NEAT	P-420N	10 mg	Demeton (mixed isomers)	8065-48-3	NEAT	P-031N	10 mg
		MeOH	P-420S	1 mL			MeOH	P-031S	1 mL
Cyproconazole	94361-06-5	MeOH	P-555S	1 mL	Demeton-o-sulfoxide	5286-73-7	ACN	P-1510S-CN	1 mL
Cyprodinil	121552-61-2	NEAT	P-720N	10 mg	O-Demeton	298-03-3	ACN	P-1033S-CN	1 mL
		MeOH	P-720S	1 mL	Demeton-S	126-75-0	NEAT	P-271N	10 mg
Cyromazine	66215-27-8	NEAT	P-296N	10 mg			MeOH	P-271S	1 mL
		MeOH	P-296S	1 mL	Demeton-S-methyl	919-86-8	NEAT	P-482N	10 mg
2,4-D	94-75-7	NEAT	P-020N	10 mg			MeOH	P-482S	1 mL
		MeOH	P-020S	1 mL	Demeton-S-methylsulfone	17040-19-6	NEAT	P-554N	10 mg
		ACN	P-020S-CN	1 mL			MeOH	P-554S	1 mL
2,6-D acid	575-90-6	NEAT	P-690N	10 mg	Denatonium benzoate	3734-33-6	NEAT	P-679N	10 mg
		MeOH	P-690S	1 mL			MeOH	P-679S	1 mL
		ACN	P-690S-CN	1 mL	Desmedipham	13684-56-5	NEAT	P-376N	10 mg
2,4-D butoxyethyl ester	1929-73-3	NEAT	P-438N	10 mg			MeOH	P-376S	1 mL
2,4-D butyl ester	94-80-4	NEAT	P-712N	10 mg	N-Desmethylthiamethoxam	171103-04-1	MeOH	P-1266S	1 mL
		MeOH	P-712S	1 mL	Desmetryn	1014-69-3	NEAT	P-566N	10 mg
2,4-D ethyl ester	533-23-3	NEAT	P-636N	10 mg			MeOH	P-566S	1 mL
		MeOH	P-636S	1 mL	Diafenthiuron	80060-09-9	NEAT	P-1064N	10 mg
2,4-D ethylhexyl ester	1928-43-4	NEAT	P-439N	10 mg			Acetone	P-1064S-A	1 mL
		Hexane	P-439S-H	1 mL	Dialifos	10311-84-9	NEAT	P-426N	10 mg
2,4-D isobutyl ester	1713-15-1	NEAT	P-1027N	10 mg			MeOH	P-426S	1 mL
		ACN	P-1027S-CN	1 mL	Diallate	2303-16-4	NEAT	P-142N	10 mg
2,4-D methyl ester	1928-38-7	NEAT	P-021N	10 mg			MeOH	P-142S	1 mL
		MeOH	P-021S	1 mL	Diazald	80-11-5	NEAT	P-1463N	10 mg
2,6-D methyl ester		NEAT	P-691N	10 mg			MeOH	P-1463S	1 mL
		MeOH	P-691S	1 mL	Diazinon	333-41-5	NEAT	P-033N	10 mg
Dacthal	1861-32-1	NEAT	P-196N	10 mg			MeOH	P-033S	1 mL
		MeOH	P-196S	1 mL	Diazinon-o-analog	962-58-3	NEAT	P-640N	10 mg
Daimuron	42609-52-9	ACN	P-1087S-CN	1 mL			Acetone	P-640S-A	1 mL
Dalapon acid	75-99-0	NEAT	P-140N	10 mg	Dibutyl chlorendate	1770-80-5	NEAT	P-109N	10 mg
		MeOH	P-140S	1 mL			Acetone	P-109S-A	1 mL
		ACN	P-140S-CN	1 mL	Dicamba	1918-00-9	NEAT	P-008N	10 mg
Dalapon methyl ester	17640-02-7	NEAT	P-226N	10 mg			MeOH	P-008S	1 mL
		MeOH	P-226S	1 mL			ACN	P-008S-CN	1 mL
Daminozide	1596-84-5	NEAT	P-174N	10 mg	Dicamba methyl ester	6597-78-0	NEAT	P-071N	10 mg
		MeOH	P-174S	1 mL			MeOH	P-071S	1 mL
Dasanit	115-90-2	NEAT	P-235N	10 mg	Dicapthon	2463-84-5	NEAT	P-035N	10 mg
		MeOH	P-235S	1 mL			ACN	P-035S-CN	1 mL
Dazomet	533-74-4	NEAT	P-469N	10 mg	Dichlobenil	1194-65-6	NEAT	P-275N	10 mg
		MeOH	P-469S	1 mL			MeOH	P-275S	1 mL
2,4-DB acid	94-82-6	NEAT	P-141N	10 mg	Dichlofenthion	97-17-6	NEAT	P-211N	10 mg
		MeOH	P-141S	1 mL			MeOH	P-211S	1 mL
		ACN	P-141S-CN	1 mL	Dichlofluanid	1085-98-9	NEAT	P-474N	10 mg
2,4-DB methyl ester	18625-12-2	NEAT	P-228N	10 mg			MeOH	P-474S	1 mL
		MeOH	P-228S	1 mL	Dichlone	117-80-6	NEAT	P-253N	10 mg
DCPA diacid	2136-79-0	NEAT	P-320N	10 mg			ACN	P-253S-CN	1 mL
		MeOH	P-320S	1 mL	Dichlormid	37764-25-3	NEAT	P-675N	10 mg
		ACN	P-320S-CN	1 mL			MeOH	P-675S	1 mL
o,p'-DDD	53-19-0	NEAT	P-024N	10 mg	2,4-Dichloro-6-ethylamino-s-triazine	3440-19-5	NEAT	P-538N	10 mg
		MeOH	P-024S	1 mL			ACN	P-538S-CN	1 mL
o,p'-DDE	3424-82-6	NEAT	P-026N	10 mg	3,5-Dichloroaniline	626-43-7	NEAT	P-1008N	10 mg
		MeOH	P-026S	1 mL			MeOH	P-1008S	1 mL
p,p'-DDA	83-05-6	NEAT	P-444N	10 mg	2,6-Dichlorobenzamide	2008-58-4	NEAT	P-1035N	10 mg
		MeOH	P-444S	1 mL			MeOH	P-1035S	1 mL
p,p'-DDD	72-54-8	NEAT	P-025N	10 mg	3,5-Dichlorobenzoic acid	51-36-5	NEAT	P-242N	10 mg
		MeOH	P-025S	1 mL			MeOH	P-242S	1 mL
p,p'-DDE	72-55-9	NEAT	P-027N	10 mg			ACN	P-242S-CN	1 mL
		MeOH	P-027S	1 mL	4,4'-Dichlorobenzophenone	90-98-2	NEAT	P-295N	10 mg
4,4'-DDMU	1022-22-6	NEAT	P-424N	10 mg			MeOH	P-295S	1 mL
		MeOH	P-424S	1 mL	Dichloro-isopropyl-chlorantraniliprole		MeOH	P-1459S	1 mL
DDT (Tech)	8017-34-3	NEAT	P-346N	10 mg	Dichlorophen	97-23-4	NEAT	P-232N	10 mg
		MeOH	P-346S	1 mL			MeOH	P-232S	1 mL
o,p'-DDT	789-02-6	NEAT	P-028N	10 mg	2,3-Dichloronitrobenzene	3209-22-1	NEAT	P-1005N	10 mg
		MeOH	P-028S	1 mL			Toluene	P-1005S-T	1 mL
p,p'-DDT	50-29-3	NEAT	P-029N	10 mg	2,3-Dichlorophenoxyacetic acid	2976-74-1	NEAT	P-470N	10 mg
		MeOH	P-029S	1 mL			MeOH	P-470S	1 mL
Deethylcyanazine acid	36749-35-6	ACN	P-1439S-CN	1 mL			ACN	P-470S-CN	1 mL
N-Deethylcyanazine	21725-40-6	ACN	P-1443S-CN	1 mL	1-(3,4-Dichlorophenyl)-3-methylurea	3567-62-2	NEAT	P-1038N	10 mg
N-Deethylcyanazine amide	36556-77-1	ACN	P-1442S-CN	1 mL			MeOH	P-1038S	1 mL

❖ V-Rated packaging surcharge applies for international shipments.

▲ May esterify in methanol

Pesticide Compounds continued on next page

Pesticides

Pesticide Compounds (continued)

Compound	CAS No.	Matrix	Cat. No.	Unit	Compound	CAS No.	Matrix	Cat. No.	Unit
2,4-Dichlorophenylacetic acid	19719-28-9	NEAT	P-244N	10 mg	Dimethyl phosphate	813-78-5	NEAT	P-442N	10 mg
		MeOH	P-244S	1 mL			MeOH	P-442S	1 mL
		ACN	P-244S-CN	1 mL	Dimethylarsinic acid	75-60-5	NEAT	P-1075N	10 mg
Dichlorprop	120-36-5	NEAT	P-143N	10 mg			MeOH	P-1075S	1 mL
		MeOH	P-143S	1 mL	N-(2,4-Dimethylphenyl)formamide	60397-77-5	ACN	P-1100S-CN	1 mL
		ACN	P-143S-CN	1 mL	Dimethylvinphos (Z type)	67628-93-7	Acetone	P-1057S-A	1 mL
Dichlorprop methyl ester	57153-17-0	NEAT	P-229N	10 mg	Dimetilan	644-64-4	ACN	P-905S-CN	1 mL
		MeOH	P-229S	1 mL	Dimoxystrobin	149961-52-4	ACN	P-844S-CN	1 mL
Dichlorvos	62-73-7	NEAT	P-036N	10 mg	Dinex	131-89-5	NEAT	P-427N	10 mg
		MeOH	P-036S	1 mL			MeOH	P-427S	1 mL
Diclobutrazol	75736-33-3	NEAT	P-641N	10 mg	Diniconazol	83657-24-3	NEAT	P-845N	10 mg
		ACN	P-641S-CN	1 mL			ACN	P-845S-CN	1 mL
Diclofop	40843-25-2	NEAT	P-514N	10 mg	Dinitramine	29091-05-2	NEAT	P-575N	10 mg
		MeOH	P-514S	1 mL			MeOH	P-575S	1 mL
Dieltomazine	62865-36-5	ACN	P-1206S-CN	1 mL	4,6-Dinitro-o-cresol	534-52-1	NEAT	P-384N	10 mg
Dicofol	115-32-2	NEAT	P-057N	10 mg			MeOH	P-384S	1 mL
		MeOH	P-057S	1 mL	Dinocap	39300-45-3	NEAT	P-288N	10 mg
Diclofop methyl	51338-27-3	NEAT	P-303N	10 mg			MeOH	P-288S	1 mL
		MeOH	P-303S	1 mL	Dinoseb	88-85-7	NEAT	P-144N	10 mg
Dicloran	99-30-9	NEAT	P-013N	10 mg			MeOH	P-144S	1 mL
		MeOH	P-013S	1 mL	Dinoseb acetate	2813-95-8	NEAT	P-779N	10 mg
Diclosulam	145701-21-9	MeOH	P-904S	1 mL			MeOH	P-779S	1 mL
o,p'-Dicofol	10606-46-9	NEAT	P-606N	10 mg	Dinoseb methyl ether	6099-79-2	NEAT	P-230N	10 mg
		MeOH	P-606S	1 mL			MeOH	P-230S	1 mL
Dicrotophos	141-66-2	NEAT	P-178N	10 mg	Dinotefuran	165252-70-0	ACN	P-986S-CN	1 mL
		MeOH	P-178S	1 mL	Dinoterb	1420-07-1	MeOH	P-524S	1 mL
Dieldrin	60-57-1	NEAT	P-037N	10 mg	Dioxacarb	6988-21-2	NEAT	P-264N	10 mg
		MeOH	P-037S	1 mL			MeOH	P-264S	1 mL
Dienochlor	2227-17-0	ACN	P-1268S-CN	1 mL	Dioxathion	78-34-2	NEAT	P-219N	10 mg
Diethatyl ethyl	38727-55-8	NEAT	P-599N	10 mg			MeOH	P-219S	1 mL
		MeOH	P-599S	1 mL	Diphacinone	82-66-6	NEAT	P-315N	10 mg
Diethofencarb	87130-20-9	NEAT	P-744N	10 mg			ACN	P-315S-CN	1 mL
		MeOH	P-744S	1 mL	Diphenamid	957-51-7	NEAT	P-173N	10 mg
Diethyl phosphate	598-02-7	NEAT	P-534N	10 mg			MeOH	P-173S	1 mL
		MeOH	P-534S	1 mL	Dipropetryn	4147-51-7	NEAT	P-580N	10 mg
Diethyl phosphate (mono- & di-)	37203-76-2	NEAT	P-443N	10 mg			MeOH	P-580S	1 mL
		MeOH	P-443S	1 mL	Diquat dibromide monohydrate	6385-62-2	NEAT	P-231N	10 mg
N,N-Diethyl-m-toluamide	134-62-3	NEAT	P-255N	10 mg			MeOH	P-231S	1 mL
		MeOH	P-255S	1 mL	Disodium methane arsonate hexahydrate	144-21-8	NEAT	P-598N	10 mg
Difenacoum	56073-07-5	ACN	P-1151S-CN	1 mL			MeOH	P-598S	1 mL
Difenoconazole	119446-68-3	NEAT	P-447N	10 mg	Disul, sodium salt	136-78-7	NEAT	P-513N	10 mg
		MeOH	P-447S	1 mL			MeOH	P-513S	1 mL
Difenoxyuron	14214-32-5	NEAT	P-604N	10 mg	Disulfoton	298-04-4	NEAT	P-042N	10 mg
		MeOH	P-604S	1 mL			MeOH	P-042S	1 mL
Difenzquat methyl sulfate	43222-48-6	NEAT	P-1330N	10 mg	Disulfoton sulfone	2497-06-5	NEAT	P-582N	10 mg
		MeOH	P-1330S	1 mL			MeOH	P-582S	1 mL
Diflubenzuron	35367-38-5	NEAT	P-377N	10 mg	Disulfoton sulfoxide	2497-07-6	NEAT	P-593N	10 mg
		MeOH	P-377S	1 mL			MeOH	P-593S	1 mL
Diflufenican	83164-33-4	NEAT	P-722N	10 mg	Ditalimfos	5131-24-8	NEAT	P-546N	10 mg
		MeOH	P-722S	1 mL			ACN	P-546S-CN	1 mL
Diflufenzopyr	109293-97-2	NEAT	P-1210N	10 mg	Dithianon	3347-22-6	NEAT	P-725N	10 mg
2,3-Dihydro-2,2-dimethylbenzofuran-7-ol	1563-38-8	NEAT	P-628N	10 mg			Acetone	P-725S-A	1 mL
		MeOH	P-628S	1 mL	Dithiopyr	97886-45-8	NEAT	P-741N	10 mg
2,6-Diisopropyl-naphthalene	24157-81-1	Acetone	P-1291S-A	1 mL			MeOH	P-741S	1 mL
Dimefox	115-26-4	NEAT	P-299N	10 mg	Diuron	330-54-1	NEAT	P-227N	10 mg
		MeOH	P-299S	1 mL			MeOH	P-227S	1 mL
Dimefuron	34205-21-5	NEAT	P-565N	10 mg	2,3-Diuron	10290-37-6	NEAT	P-632N	10 mg
		MeOH	P-565S	1 mL			MeOH	P-632S	1 mL
Dimepax	22936-75-0	NEAT	P-643N	10 mg	DMST	66840-71-9	MeOH	P-572S	1 mL
		MeOH	P-643S	1 mL	Dodemorph acetate	31717-87-0	NEAT	P-385N	10 mg
Dimepiperate	61432-55-1	50 µg/mL Acetone	P-1020S-A-0.5X	1 mL			MeOH	P-385S	1 mL
Dimethachlor	50563-36-5	NEAT	P-642N	10 mg	Dodine	2439-10-3	NEAT	P-386N	10 mg
		MeOH	P-642S	1 mL			MeOH	P-386S	1 mL
Dimethachlor ESA sodium salt		MeOH	P-914S	1 mL	Doramectin	117704-25-3	NEAT	P-935N	10 mg
Dimethenamid	87674-68-8	NEAT	P-747N	10 mg			ACN	P-935S-CN	1 mL
		MeOH	P-747S	1 mL	2,4-DP ethyl hexyl	79270-78-3	NEAT	P-429N	10 mg
Dimethenamid ESA sodium salt	205939-58-8	MeOH	P-917S	1 mL			MeOH	P-429S	1 mL
Dimethenamid OA sodium salt		MeOH	P-918S	1 mL	DPA sodium	127-20-8	NEAT	P-1348N	10 mg
Dimethenamide-P	163515-14-8	NEAT	P-934N	10 mg			MeOH	P-1348S	1 mL
		MeOH	P-934S	1 mL	Dyfonate	944-22-9	NEAT	P-087N	10 mg
Dimethipin	55290-64-7	NEAT	P-483N	10 mg			MeOH	P-087S	1 mL
		MeOH	P-483S	1 mL			Hexane	P-087S-H	1 mL
Dimethoate	60-51-5	NEAT	P-039N	10 mg	Edifenphos	17109-49-8	NEAT	P-368N	10 mg
		MeOH	P-039S	1 mL			MeOH	P-368S	1 mL
Dimethomorph	110488-70-5	NEAT	P-713N	10 mg	Emamectin-benzoate	155569-91-8	NEAT	P-996N-5MG	5 mg
		MeOH	P-713S	1 mL			MeOH	P-996S	1 mL

Pesticides

NEATS in 10 mg, SOLUTIONS at 100 µg/mL in 1 mL, except as noted.

Pesticide Compounds (continued)									
Compound	CAS No.	Matrix	Cat. No.	Unit	Compound	CAS No.	Matrix	Cat. No.	Unit
Empenthrin	54406-48-3	NEAT	P-708N	10 mg	bis(2-Ethylhexyl) adipate	103-23-1	NEAT	P-233N	10 mg
Endosulfan I	959-98-8	NEAT	P-091N	10 mg			MeOH	P-233S	1 mL
		MeOH	P-091S	1 mL	2-Ethylthiomethyl phenol	65370-06-1	MeOH	P-423S	1 mL
Endosulfan II	33213-65-9	NEAT	P-092N	10 mg	Etobenzanid	79540-50-4	ACN	P-1136S-CN	1 mL
		MeOH	P-092S	1 mL	Etofenprox	80844-07-1	NEAT	P-848N	10 mg
Endosulfan, mixed isomers	115-29-7	NEAT	P-435N	10 mg			ACN	P-848S-CN	1 mL
		MeOH	P-435S	1 mL	Etoxazole	153233-91-1	MeOH	P-991S	1 mL
Endosulfan sulfate	1031-07-8	NEAT	P-145N	10 mg	Etrinfos	38260-54-7	NEAT	P-480N	10 mg
		MeOH	P-145S	1 mL			MeOH	P-480S	1 mL
Endothall	145-73-3	NEAT	P-183N	10 mg	Etrofol	3942-54-9	ACN	P-1362S-CN	1 mL
		MeOH	P-183S	1 mL	Famoxadon	131807-57-3	ACN	P-849S-CN	1 mL
Endothall dimethyl ester		NEAT	P-603N	10 mg	Famphur	52-85-7	NEAT	P-147N	10 mg
		MeOH	P-603S	1 mL			MeOH	P-147S	1 mL
Endrin	72-20-8	NEAT	P-045N	10 mg	Fenamidone	161326-34-7	NEAT	P-850N	10 mg
		MeOH	P-045S	1 mL			ACN	P-850S-CN	1 mL
Endrin aldehyde	7421-93-4	MeOH	P-046S	1 mL	Fenaminosulf	140-56-7	NEAT	P-058N	10 mg
Endrin ketone	53494-70-5	NEAT	P-146N	10 mg	Fenamiphos	22224-92-6	NEAT	P-114N	10 mg
		MeOH	P-146S	1 mL			MeOH	P-114S	1 mL
EPN	2104-64-5	NEAT	P-220N	10 mg	Fenamiphos sulfone	31972-44-8	NEAT	P-623N	10 mg
		Acetone	P-220S-A	1 mL			MeOH	P-623S	1 mL
EPN Oxon	2012-00-2	Acetone	P-1345S-A	1 mL	Fenamiphos sulfoxide	31972-43-7	NEAT	P-622N	10 mg
Epoxiconazole	133855-98-8	NEAT	P-784N	10 mg			MeOH	P-622S	1 mL
		MeOH	P-784S	1 mL	Fenatrol	85-34-7	NEAT	P-319N	10 mg
Eprinomectin	123997-26-2	ACN	P-959S-CN	1 mL			MeOH	P-319S	1 mL
EPTC	759-94-4	NEAT	P-238N	10 mg	Fenazaquin	120928-09-8	NEAT	P-787N	10 mg
		MeOH	P-238S	1 mL			Hexane	P-787S-H	1 mL
Esfenvalerate	66230-04-4	NEAT	P-525N	10 mg	Fenbuconazole	114369-43-6	NEAT	P-662N	10 mg
		ACN	P-525S-CN-R1	1 mL			MeOH	P-662S	1 mL
Esprocarb	85785-20-2	MeOH	P-617S	1 mL	Fenbutatin oxide	13356-08-6	NEAT	P-481N	10 mg
Etaconazole	60207-93-4	NEAT	P-644N	10 mg			Acetone	P-481S-A	1 mL
		MeOH	P-644S	1 mL	Fenchlorphos	299-84-3	NEAT	P-080N	10 mg
Ethaboxam	162650-77-3	ACN	P-1115S-CN	1 mL			MeOH	P-080S	1 mL
Ethalfuralin	55283-68-6	NEAT	P-269N	10 mg	Fencloirim	3740-92-9	MeOH	P-1293S	1 mL
		MeOH	P-269S	1 mL	Fenfuram	24691-80-3	NEAT	P-896N	10 mg
Ethametsulfuron-methyl	97780-06-8	ACN	P-1098S-CN	1 mL			MeOH	P-896S	1 mL
Ethanedial dioxime	557-30-2	NEAT	P-1070N	10 mg	Fenhexamid	126833-17-8	NEAT	P-783N	10 mg
		MeOH	P-1070S	1 mL			MeOH	P-783S	1 mL
Ethephon	16672-87-0	NEAT	P-239N	10 mg	Fenitrothion	122-14-5	NEAT	P-259N	10 mg
		MeOH	P-239S	1 mL			MeOH	P-259S	1 mL
Ethidimuron	30043-49-3	NEAT	P-364N	10 mg	Fenobucarb	3766-81-2	NEAT	P-347N	10 mg
		MeOH	P-364S	1 mL			MeOH	P-347S	1 mL
Ethiofencarb	29973-13-5	NEAT	P-448N	10 mg	Fenothiocarb	62850-32-2	MeOH	P-1021S	1 mL
		MeOH	P-448S	1 mL	Fenoxanil	115852-48-7	NEAT	P-997N	10 mg
Ethiofencarb sulfone	53380-23-7	ACN	P-824S-CN	1 mL			MeOH	P-997S	1 mL
Ethiofencarb sulfoxide	53380-22-6	ACN	P-825S-CN	1 mL	Fenoxaprop	95617-09-7	NEAT	P-884N	10 mg
Ethiolat	2941-55-1	NEAT	P-785N	10 mg			ACN	P-884S-CN	1 mL
		ACN	P-785S-CN	1 mL	Fenoxaprop-ethyl	66441-23-4	NEAT	P-365N	10 mg
Ethion	563-12-2	NEAT	P-048N	10 mg			MeOH	P-365S	1 mL
		MeOH	P-048S	1 mL	Fenoxaprop-p-ethyl	71283-80-2	NEAT	P-694N	10 mg
Ethiozin	64529-56-2	NEAT	P-660N	10 mg			MeOH	P-694S	1 mL
		MeOH	P-660S	1 mL	Fenoxycarb	72490-01-8	NEAT	P-686N	10 mg
Ethiprole	181587-01-9	NEAT	P-964N	10 mg			MeOH	P-686S	1 mL
		ACN	P-964S-CN	1 mL	Fenpropathrin	39515-41-8	NEAT	P-263N	10 mg
Ethirimol	23947-60-6	NEAT	P-645N	10 mg			MeOH	P-263S	1 mL
		MeOH	P-645S	1 mL	Fenpropidin	67306-00-7	NEAT	P-802N	10 mg
Ethofumesate	26225-79-6	NEAT	P-387N	10 mg			MeOH	P-802S	1 mL
		MeOH	P-387S	1 mL	Fenpropimorph	67564-91-4	NEAT	P-705N	10 mg
Ethoprop	13194-48-4	NEAT	P-129N	10 mg			MeOH	P-705S	1 mL
		MeOH	P-129S	1 mL	Fenpyroximate	111812-58-9	NEAT	P-724N	10 mg
Ethoxyquin	91-53-2	NEAT	P-388N	10 mg			MeOH	P-724S	1 mL
		ACN	P-388S-CN	1 mL	Fenson	80-38-6	NEAT	P-551N	10 mg
Ethoxysulfuron	126801-58-9	NEAT	P-847N	10 mg			MeOH	P-551S	1 mL
2,4-bis(Ethylamino)-6-diethylamino-s-triazine		NEAT	P-536N	10 mg	Fenthion	55-38-9	NEAT	P-148N	10 mg
3-(1-Ethylpropyl)phenyl methylcarbamate	672-04-8	ACN	P-1477S-CN	1 mL			MeOH	P-148S	1 mL
Ethyl carbamate	51-79-6	NEAT	P-419N	10 mg	Fenthion sulfone	3761-42-0	NEAT	P-953N	10 mg
		MeOH	P-419S	1 mL			ACN	P-953S-CN	1 mL
Ethyl hexanediol (mixed isomers)	94-96-2	NEAT	P-389N	10 mg	Fenthion sulfoxide	3761-41-9	NEAT	P-1052N	10 mg
		MeOH	P-389S	1 mL			CH ₂ Cl ₂	P-1052S-D	1 mL
Ethylene thiourea	96-45-7	NEAT	P-588N	10 mg	Fentin acetate	900-95-8	NEAT	P-680N	10 mg
		MeOH	P-588S	1 mL			MeOH	P-680S	1 mL
					Fentin hydroxide	76-87-9	NEAT	P-1042N	10 mg
							ACN	P-1042S-CN	1 mL

▲ May esterify in methanol

✦ V-Rated packaging surcharge applies for international shipments.

Pesticide Compounds continued on next page

Pesticides

Pesticide Compounds (continued)

Compound	CAS No.	Matrix	Cat. No.	Unit	Compound	CAS No.	Matrix	Cat. No.	Unit
Fenuron	101-42-8	NEAT	P-004N	10 mg	Flurodifen	15457-05-3	NEAT	P-676N	10 mg
		MeOH	P-004S	1 mL			MeOH	P-676S	1 mL
Fenuron-TCA	4482-55-7	NEAT	P-006N	10 mg	Fluroxypyr	69377-81-7	NEAT	P-521N	10 mg
		MeOH	P-006S	1 mL			MeOH	P-521S	1 mL
Fenvalerate	51630-58-1	NEAT	P-194N	10 mg	Fluroxypyr-1-methylheptyl ester	81406-37-3	NEAT	P-927N	10 mg
		MeOH	P-194S	1 mL			MeOH	P-927S	1 mL
Ferbam	14484-64-1	NEAT	P-110N	10 mg	Flurprimidol	56425-91-3	NEAT	P-1155N	10 mg
Ferimzone	89269-64-7	ACN	P-978S-CN-10X	1 mL	Flurtamone	96525-23-4	ACN	P-956S-CN-10X	1 mL
(E)-Ferimzone	77359-18-3	ACN	P-1453S-CN	1 mL	Flusilazole	85509-19-9	NEAT	P-578N	10 mg
Fipronil	120068-37-3	NEAT	P-738N	10 mg			MeOH	P-578S	1 mL
		MeOH	P-738S	1 mL	Flusulfamide	106917-52-6	ACN	P-1088S-CN	1 mL
		Acetone	P-738S-A	1 mL	Fluthiacet-methyl	117337-19-6	ACN	P-1095S-CN	1 mL
Fipronil desulfinyl	205650-65-3	Acetone	P-782S-A	1 mL	Flutianil	958647-10-4	NEAT	P-1382N	10 mg
Fipronil sulfide	120067-83-6	Acetone	P-781S-A	1 mL			MeOH	P-1382S	1 mL
		NEAT	P-781N-5MG	5 mg	Flutolanil	66332-96-5	NEAT	P-587N	10 mg
Fipronil sulfone	120068-36-2	Acetone	P-780S-A	1 mL			MeOH	P-587S	1 mL
Flamprop	58667-63-3	ACN	P-1431S-CN	1 mL	Flutriafol	76674-21-0	NEAT	P-699N	10 mg
Flamprop-isopropyl	52756-22-6	NEAT	P-646N	10 mg			MeOH	P-699S	1 mL
		MeOH	P-646S	1 mL	Tau-Fluvalinate	102851-06-9	NEAT	P-356N	10 mg
Flupropanate	756-09-2	ACN	P-1516S-CN	1 mL			ACN	P-356S-CN	1 mL
Flamprop-methyl	52756-25-9	NEAT	P-366N	10 mg	Fluxapyroxad	907204-31-3	ACN	P-1150S-CN	1 mL
		MeOH	P-366S	1 mL	Folpet	133-07-3	NEAT	P-258N	10 mg
Flonicamid	158062-67-0	NEAT	P-926N	10 mg			MeOH	P-258S	1 mL
		MeOH	P-926S	1 mL	Fomesafen	72178-02-0	NEAT	P-907N	10 mg
Florasulam	145701-23-1	ACN	P-827S-CN-0.1X	1 mL			MeOH	P-907S	1 mL
Fluacrypyrim	229977-93-9	MeOH	P-1056S	1 mL	Foramsulfuron	173159-57-4	NEAT	P-852N	10 mg
Fluazifop-butyl	69806-50-4	NEAT	P-310N	10 mg			ACN	P-852S-CN	1 mL
		MeOH	P-310S	1 mL	Forchlorfenuron	68157-60-8	NEAT	P-753N	10 mg
Fluazifop-p-butyl	79241-46-6	NEAT	P-601N	10 mg			MeOH	P-753S	1 mL
		MeOH	P-601S	1 mL	Formetanate HCl	23422-53-9	NEAT	P-431N	10 mg
Fluazinam	79622-59-6	NEAT	P-586N	10 mg			MeOH	P-431S-CN	1 mL
		MeOH	P-586S	1 mL	Formothion	2540-82-1	NEAT	P-149N	10 mg
Flubendiamide	272451-65-7	NEAT	P-1025N	10 mg			ACN	P-149S-CN	1 mL
		ACN	P-1025S-CN	1 mL	Fosetyl aluminum	39148-24-8	Water	P-1173S-W	1 mL
Flucarbazone-sodium	181274-17-9	NEAT	P-1124N	10 mg	Fosetyl aluminum (Tech Mix)	N/A	NEAT	P-532N	10 mg
		ACN	P-1124S-CN	1 mL			Water	P-532S-W	1 mL
Flucetosulfuron	412928-75-7	ACN	P-1218S-CN	1 mL	Fosthiazate	98886-44-3	ACN	P-828S-CN	1 mL
Fluchloralin	33245-39-5	NEAT	P-270N	10 mg	Fthalide (4,5,6,7-Tetrachlorophthalide)	27355-22-2	Acetone	P-1128S-A	1 mL
		MeOH	P-270S	1 mL	Fuberidazole	3878-19-1	ACN	P-789S-CN	1 mL
Flucythrinate	70124-77-5	MeOH	P-378S	1 mL	Fumazone	96-12-8	NEAT	P-341N	10 mg
Fludioxonil	131341-86-1	NEAT	P-698N	10 mg			MeOH	P-341S	1 mL
		MeOH	P-698S	1 mL	Furalaxyl	57646-30-7	NEAT	P-605N	10 mg
Fluensulfone	318290-98-1	NEAT	P-1324N	10 mg			MeOH	P-605S	1 mL
Flufenacet	142459-58-3	ACN	P-902S-CN	1 mL	Furathiocarb	65907-30-4	MeOH	P-569S	1 mL
Flufenacet ESA sodium salt	947601-87-8	MeOH	P-920S	1 mL	Furilazole	121776-33-8	ACN	P-810S-CN	1 mL
Flufenacet OA sodium salt		MeOH	P-922S	1 mL	Furmecycloz	60568-05-0	MeOH	P-607S	1 mL
Flufenoxuron	101463-69-8	NEAT	P-687N	10 mg	Gibberellic acid	77-06-5	MeOH	P-906S-10X	1 mL
		MeOH	P-687S	1 mL	Glufosinate, ammonium salt	77182-82-2	NEAT	P-475N	10 mg
Flufenpyr-ethyl	188489-07-8	ACN	P-1160S-CN	1 mL			MeOH	P-475S	1 mL
Flumethrin	69770-45-2	ACN	P-946S-CN	1 mL	Glyodin	556-22-9	NEAT	P-528N	10 mg
Flumetralin	62924-70-3	NEAT	P-491N	10 mg			MeOH	P-528S	1 mL
		MeOH	P-491S	1 mL	Glyphosate	1071-83-6	NEAT	P-015N	10 mg
Flumetsulam	98967-40-9	NEAT	P-659N	10 mg			Water	P-015S-W	1 mL
		MeOH	P-659S	1 mL	Guazatine acetate	115044-19-4	MeOH	P-612S	1 mL
Flumiclorac-pentyl	87546-18-7	NEAT	P-993N	10 mg	Halaluxifen-methyl	943831-98-9	ACN	P-1519S-CN	1 mL
		ACN	P-993S-CN	1 mL	Halifenprox	111872-58-3	MeOH	P-1050S-0.1X	1 mL
Flumioxazin	103361-09-7	CH ₂ Cl ₂	P-992S-D	1 mL	Halofenozide	112226-61-6	ACN	P-804S-CN	1 mL
Fluometuron	2164-17-2	NEAT	P-014N	10 mg	Halosulfuron methyl	100784-20-1	ACN	P-1089S-CN	1 mL
		MeOH	P-014S-CN	1 mL	Haloxypop	69806-34-4	NEAT	P-496N	10 mg
Fluopicolide	239110-15-7	NEAT	P-1024N	10 mg			MeOH	P-496S	1 mL
		Acetone	P-1024S-A	1 mL			ACN	P-496S-CN	1 mL
Fluopyram	658066-35-4	NEAT	P-1094N	10 mg	Haloxypop-methyl	69806-40-2	NEAT	P-497N	10 mg
		MeOH	P-1094S	1 mL			MeOH	P-497S	1 mL
Fluoxastrobin	361377-29-9	NEAT	P-963N	10 mg	Heptachlor	76-44-8	NEAT	P-053N	10 mg
		ACN	P-963S-CN	1 mL			MeOH	P-053S	1 mL
Flupoxam	119126-15-7	ACN	P-1349S-CN	1 mL	Heptachlor epoxide (Isomer A)	28044-83-9	MeOH	P-294S	1 mL
Flupyradifurone	951659-40-8	NEAT	P-1286N	10 mg	Heptachlor epoxide (Isomer B)	1024-57-3	NEAT	P-054N	10 mg
		ACN	P-1286S-CN	1 mL			MeOH	P-054S	1 mL
Fluquinconazole	136426-54-5	NEAT	P-878N	10 mg	Heptenophos	23560-59-0	NEAT	P-547N	10 mg
		ACN	P-878S-CN	1 mL			MeOH	P-547S	1 mL
Fluralaner	864731-61-3	ACN	P-766S-CN	1 mL	Hexaconazole	79983-71-4	NEAT	P-500N	10 mg
Flurenol methyl ester	1216-44-0	NEAT	P-412N	10 mg			MeOH	P-500S	1 mL
		MeOH	P-412S	1 mL	Hexaflumuron	86479-06-3	NEAT	P-697N	10 mg
Fluridone	59756-60-4	NEAT	P-193N	10 mg			MeOH	P-697S	1 mL
		MeOH	P-193S	1 mL	Hexamethylphosphoramide	680-31-9	NEAT	P-205N	10 mg
Flurochloridon	61213-25-0	NEAT	P-647N	10 mg			MeOH	P-205S	1 mL
		MeOH	P-647S	1 mL					

Pesticides

NEATS in 10 mg, SOLUTIONS at 100 µg/mL in 1 mL, except as noted.

Pesticide Compounds (continued)									
Compound	CAS No.	Matrix	Cat. No.	Unit	Compound	CAS No.	Matrix	Cat. No.	Unit
Hexazinone	51235-04-2	NEAT	P-123N	10 mg	Isocarbophos	24353-61-5	NEAT	P-893N	10 mg
		MeOH	P-123S	1 mL			ACN	P-893S-CN	1 mL
Hexythiazox	78587-05-0	NEAT	P-658N	10 mg	Isodrin	465-73-6	NEAT	P-471N	10 mg
		MeOH	P-658S	1 mL			MeOH	P-471S	1 mL
Hydramethylnon	67485-29-4	NEAT	P-403N	10 mg	Isofenphos	25311-71-1	NEAT	P-018N	10 mg
		MeOH	P-403S	1 mL			MeOH	P-018S	1 mL
2-Hydroxyatrazine	2163-68-0	(99:1)	P-326S-R1	1 mL	Isofenphos-methyl	99675-03-3	NEAT	P-984N	10 mg
	MeOH : H ₃ PO ₄						MeOH	P-984S	1 mL
3-Hydroxycarbofuran	16655-82-6	MeOH	P-186S	1 mL	Isoproc carb	2631-40-5	NEAT	P-317N	10 mg
6-Hydroxypyridine-3-carboxylic acid	5006-66-6	NEAT	P-1226N	10 mg			MeOH	P-317S	1 mL
		MeOH	P-1226S	1 mL	Isopropalin	33820-53-0	NEAT	P-100N	10 mg
Hymexazol	10004-44-1	MeOH	P-571S	1 mL			MeOH	P-100S	1 mL
Imazalil	35554-44-0	NEAT	P-332N	10 mg	2-Isopropylamino-4,6-dichloro-s-triazine	3703-10-4	NEAT	P-635N	10 mg
		MeOH	P-332S	1 mL			ACN	P-635S-CN	1 mL
Imazamethabenz methyl	81405-85-8	NEAT	P-414N	10 mg	2-Isopropyl-6-methyl-4-pyrimidinol	2814-20-2	NEAT	P-631N	10 mg
		MeOH	P-414S	1 mL			MeOH	P-631S	1 mL
Imazamox	114311-32-9	NEAT	P-806N	10 mg	1-(4-Isopropylphenyl)-3-methylurea	34123-57-4	MeOH	P-1040S	1 mL
		ACN	P-806S-CN	1 mL	N-Isopropylaniline	768-52-5	ACN	P-1403S-CN	1 mL
Imazamox methyl ester	114526-46-4	ACN	P-1419S-CN	1 mL	Isoprothiolane	50512-35-1	NEAT	P-661N	10 mg
Imazapic	104098-48-8	NEAT	P-1063N	10 mg			MeOH	P-661S	1 mL
		ACN	P-1063S-CN	1 mL	Isoproturon	34123-59-6	NEAT	P-302N	10 mg
Imazapyr	81334-34-1	NEAT	P-589N	10 mg			MeOH	P-302S	1 mL
		MeOH	P-589S	1 mL	Isopyrazam	881685-58-1	ACN	P-1159S-CN	1 mL
		ACN	P-589S-CN	1 mL	Isotianil	224049-04-1	Acetone	P-1292S-A	1 mL
Imazaquin	81335-37-7	NEAT	P-283N	10 mg	Isoxaben	82558-50-7	NEAT	P-533N	10 mg
		MeOH	P-283S	1 mL			MeOH	P-533S	1 mL
Imazethapyr	81335-77-5	ACN	P-285S-CN	1 mL	Isoxaflutole	141112-29-0	NEAT	P-832N	10 mg
Imazosulfuron	122548-33-8	NEAT	P-853N	10 mg			ACN	P-832S-CN	1 mL
		ACN	P-853S-CN	1 mL	Isoxathion	18854-01-8	NEAT	P-1096N	10 mg
Imibenconazole	86598-92-7	ACN	P-1019S-CN-0.5X	1 mL			ACN	P-1096S-CN	1 mL
Imicyafos	140163-89-9	ACN	P-1215S-CN	1 mL	Ivermectin	70288-86-7	ACN	P-1084S-CN	1 mL
Imidacloprid	138261-41-3	NEAT	P-596N	10 mg	Kadethrine	58769-20-3	NEAT	P-367N	10 mg
		MeOH	P-596S	1 mL			MeOH	P-367S	1 mL
Imidacloprid-olefin	115086-54-9	ACN	P-1366S-CN	1 mL	Karbutilate	4849-32-5	NEAT	P-337N	10 mg
Imidacloprid urea	120868-66-8	ACN	P-1365S-CN	1 mL			MeOH	P-337S	1 mL
Imidan	732-11-6	NEAT	P-055N	10 mg	Kepone	143-50-0	NEAT	P-152N	10 mg
2-Imidazolidone	120-93-4	NEAT	P-1224N	10 mg			MeOH	P-152S	1 mL
		MeOH	P-1224S	1 mL	3-Ketocarbonylurea	16709-30-1	Acetone	P-298S-A	1 mL
Imiprothrin	72963-72-5	ACN	P-983S-CN	1 mL	Kresoxim-methyl	143390-89-0	NEAT	P-740N	10 mg
Inabenfide	82211-24-3	A:ACN	P-1219S-A-CN	1 m			MeOH	P-740S	1 mL
Indalone	532-34-3	NEAT	P-648N	10 mg	Lactofen	77501-63-4	NEAT	P-979N	10 mg
		MeOH	P-648S	1 mL			ACN	P-979S-CN	1 mL
Indanofan	133220-30-1	NEAT	P-988N	10 mg	Lenacil	2164-08-1	NEAT	P-649N	10 mg
		Acetone	P-988S-A	1 mL			MeOH	P-649S	1 mL
Indaziflam	950782-86-2	ACN	P-1168S-CN	1 mL	Leptophos	21609-90-5	NEAT	P-206N	10 mg
3-Indoleacetic acid	87-51-4	ACN	P-1423S-CN	1 mL			MeOH	P-206S	1 mL
Indoxacarb	144171-61-9	NEAT	P-829N	10 mg	LLindane (γ-BHC)	58-89-9	NEAT	P-059N	10 mg
		ACN	P-829S-CN	1 mL			MeOH	P-059S	1 mL
Iodofenphos	18181-70-9	NEAT	P-379N	10 mg	Linuron	330-55-2	NEAT	P-022N	10 mg
		MeOH	P-379S	1 mL			MeOH	P-022S	1 mL
Iodosulfuron-methyl-sodium	144550-36-7	NEAT	P-830N	10 mg	Lontrel	1702-17-6	NEAT	P-224N	10 mg
		ACN	P-830S-CN	1 mL			MeOH	P-224S	1 mL
Ioxynil	1689-83-4	NEAT	P-522N	10 mg	Lufenuron	103055-07-8	NEAT	P-704N	10 mg
		MeOH	P-522S	1 mL			MeOH	P-704S	1 mL
Ioxynil octanoate	3861-47-0	ACN	P-1329S-CN	1 mL	Malaoxon	1634-78-2	NEAT	P-529N	10 mg
Ipconazole	125225-28-7	ACN	P-958S-CN	1 mL			MeOH	P-529S	1 mL
Ipfencarbazone	212201-70-2	ACN	P-1402S-CN	1 mL	Malathion	121-75-5	NEAT	P-060N	10 mg
Iprobenfos	26087-47-8	NEAT	P-609N	10 mg			MeOH	P-060S	1 mL
		MeOH	P-609S	1 mL	Maleic hydrazide	123-33-1	NEAT	P-380N	10 mg
Iprodione	36734-19-7	NEAT	P-016N	10 mg			MeOH	P-380S	1 mL
		Acetone	P-016S-A	1 mL	Mancozeb	8018-01-7	NEAT	P-322N	10 mg
		ACN	P-016S-CN	1 mL	Mandipropamid	374726-62-2	NEAT	P-1023N	10 mg
Iprovalicarb	140923-17-7	NEAT	P-831N	10 mg			ACN	P-1023S-CN	1 mL
		ACN	P-831S-CN	1 mL	Maneb	12427-38-2	NEAT	P-282N	10 mg
Isazophos	42509-80-8	NEAT	P-449N	10 mg	MCPA acid	94-74-6	NEAT	P-153N	10 mg
		MeOH	P-449S	1 mL			MeOH	P-153S	1 mL
Isobenzan	297-78-9	MeOH	P-323S	1 mL			ACN	P-153S-CN	1 mL
1-Isobenzofuranone	87-41-2	NEAT	P-1022N	10 mg	MCPA 2-ethylhexyl ester	29450-45-1	NEAT	P-1082N	10 mg
		MeOH	P-1022S	1 mL			MeOH	P-1082S	1 mL
Isocarbamid	30979-48-7	ACN	P-880S-CN	1 mL	MCPA methyl ester	2436-73-9	NEAT	P-038N	10 mg
							MeOH	P-038S	1 mL
					MCPB acid	94-81-5	NEAT	P-370N	10 mg
							MeOH	P-370S	1 mL

▲ May esterify in methanol

✦ V-Rated packaging surcharge applies for international shipments.

Pesticide Compounds continued on next page

Pesticides

Pesticide Compounds (continued)

Compound	CAS No.	Matrix	Cat. No.	Unit	Compound	CAS No.	Matrix	Cat. No.	Unit
MCPB-ethyl	10443-70-6	ACN	P-1347S-CN	1 mL	p,p'-Methoxychlor-olefin	2132-70-9	MeOH	P-466S	1 mL
MCPB methyl ester	57153-18-1	NEAT	P-371N	10 mg	Methoxyfenozide	161050-58-4	NEAT	P-857N	10 mg
		MeOH	P-371S	1 mL			ACN	P-857S-CN	1 mL
MCPP acid	7085-19-0	NEAT	P-154N	10 mg	Methyl-3,5-dichlorobenzoate	2905-67-1	NEAT	P-247N	10 mg
		MeOH	P-154S	1 mL			MeOH	P-247S	1 mL
		ACN	P-154S-CN	1 mL	Methyl-2,4-dichlorophenylacetate		NEAT	P-214N	10 mg
MCPP methyl ester	23844-56-6	NEAT	P-040N	10 mg		55954-23-9	MeOH	P-214S	1 mL
		MeOH	P-040S	1 mL	2-Methyl-4,6-dinitroanisole	29027-13-2	NEAT	P-611N	10 mg
Mecarbam	2595-54-2	NEAT	P-318N	10 mg			MeOH	P-611S	1 mL
		MeOH	P-318S	1 mL	3-Methyl-4-nitrophenol	2581-34-2	NEAT	P-509N	10 mg
Mecoprop, 2-ethylhexyl ester	71526-69-7	NEAT	P-502N	10 mg			MeOH	P-509S	1 mL
		MeOH	P-502S	1 mL	Methyl nonyl ketone	112-12-9	NEAT	P-415N	10 mg
Mecoprop-1-octyl ester	161922-37-8	ACN	P-1028S-CN	1 mL			MeOH	P-415S	1 mL
Mecoprop-2-octyl ester	28473-03-2	NEAT	P-1029N	10 mg			ACN	P-415S-CN	1 mL
		ACN	P-1029S-CN	1 mL	Methyl paraoxon	950-35-6	NEAT	P-311N	10 mg
Mecoprop-p	16484-77-8	NEAT	P-1053N	10 mg			MeOH	P-311S	1 mL
		Acetone	P-1053S-A	1 mL	Methyl parathion	298-00-0	NEAT	P-065N	10 mg
Mefenacet	73250-68-7	NEAT	P-745N	10 mg			MeOH	P-065S	1 mL
		MeOH	P-745S	1 mL	Methyl trithion	953-17-3	MeOH	P-652S	1 mL
Mefenpyr-diethyl	135590-91-9	NEAT	P-1010N	10 mg	Methylamine hydrochloride	593-51-1	NEAT	P-624N	10 mg
		MeOH	P-1010S	1 mL			MeOH	P-624S	1 mL
MEP Oxon	2255-17-6	ACN	P-1344S-CN	1 mL	Methylpentachlorophenyl sulfide	1825-19-0	NEAT	P-567N	10 mg
Mepanipyrim	110235-47-7	NEAT	P-855N	10 mg			MeOH	P-567S	1 mL
		ACN	P-855S-CN	1 mL	Metiram	9006-42-2	NEAT	P-416N	10 mg
Mephosfolan	950-10-7	NEAT	P-718N	10 mg	Metobromuron	3060-89-7	NEAT	P-436N	10 mg
		MeOH	P-718S	1 mL			MeOH	P-436S	1 mL
Mepiquat chloride	24307-26-4	NEAT	P-1062N	10 mg	Metolachlor	51218-45-2	NEAT	P-158N	10 mg
		MeOH	P-1062S	1 mL			MeOH	P-158S	1 mL
Mepronil	55814-41-0	NEAT	P-736N	10 mg	Metolachlor ESA sodium salt	947601-85-6	MeOH	P-915S	1 mL
		MeOH	P-736S	1 mL	Metolachlor OA sodium salt		MeOH	P-916S	1 mL
Meptyldinocap	131-72-6	MeOH	P-1043S	1 mL	S-Metolachlor	87392-12-9	NEAT	P-1013N	10 mg
Merphos	150-50-5	NEAT	P-124N	10 mg			MeOH	P-1013S	1 mL
		MeOH	P-124S	1 mL	Metolcarb	1129-41-5	NEAT	P-494N	10 mg
Mesosulfuron-methyl	208465-21-8	NEAT	P-1044N	10 mg			MeOH	P-494S	1 mL
		ACN	P-1044S-CN	1 mL	(E)-Metominostrobin	133408-50-1	NEAT	P-1164N	10 mg
Mesotrione	104206-82-8	ACN	P-962S-CN	1 mL			ACN	P-1164S-CN	1 mL
Metaflumizone	139968-49-3	ACN	P-1090S-CN	1 mL	(Z)-Metominostrobin	133408-51-2	NEAT	P-1493N	10 mg
Metalaxyl	57837-19-1	NEAT	P-120N	10 mg	Metosulam	139528-85-1	ACN	P-900S-CN	1 mL
		MeOH	P-120S	1 mL	Metoxuron	19937-59-8	NEAT	P-437N	10 mg
Metalaxyl-M	70630-17-0	NEAT	P-874N	10 mg			ACN	P-437S-CN	1 mL
		MeOH	P-874S	1 mL	Metrafenone	220899-03-6	NEAT	P-1032N	10 mg
Metaldehyde	9002-91-9	NEAT	P-600N	10 mg			ACN	P-1032S-CN	1 mL
		MeOH	P-600S	1 mL	Metribuzin	21087-64-9	NEAT	P-089N	10 mg
		ACN	P-600S-CN	1 mL			MeOH	P-089S	1 mL
Metam-sodium dihydrate	6734-80-1	NEAT	P-381N	10 mg	Metribuzin-Desamino-Diketo	52236-30-3	ACN	P-1416S-CN	1 mL
Metamifop	256412-89-2	ACN	P-1114S-CN	1 mL	Metisulfuron methyl	74223-64-6	NEAT	P-463N	10 mg
Metamitron	41394-05-2	NEAT	P-252N	10 mg			MeOH	P-463S	1 mL
		MeOH	P-252S	1 mL	Mevinphos	7786-34-7	NEAT	P-074N	10 mg
Metazachlor	67129-08-2	NEAT	P-249N	10 mg			MeOH	P-074S	1 mL
		MeOH	P-249S	1 mL	E-Mevinphos	26718-65-0	MeOH	P-1483S	1 mL
Metazosulfuron	868680-84-6	ACN	P-1220S-CN	1 mL	Mexacarbate	315-18-4	NEAT	P-030N	10 mg
Metconazole	125116-23-6	NEAT	P-856N	10 mg			MeOH	P-030S	1 mL
		ACN	P-856S-CN	1 mL	MGK-264	113-48-4	NEAT	P-082N	10 mg
Methabenzthiazuron	18691-97-9	NEAT	P-563N	10 mg			MeOH	P-082S	1 mL
		MeOH	P-563S	1 mL	MGK-326	136-45-8	NEAT	P-342N	10 mg
Methacrifos	62610-77-9	NEAT	P-556N	10 mg			ACN	P-342S-CN	1 mL
		ACN	P-556S-CN	1 mL	Mirex	2385-85-5	NEAT	P-066N	10 mg
Methfuroxam	28730-17-8	ACN	P-881S-CN	1 mL			MeOH	P-066S	1 mL
Methidathion	950-37-8	NEAT	P-195N	10 mg	Molinate	2212-67-1	NEAT	P-176N	10 mg
		MeOH	P-195S	1 mL			MeOH	P-176S	1 mL
Methiocarb	2032-65-7	NEAT	P-156N	10 mg	Monalide	7287-36-7	NEAT	P-737N	10 mg
		ACN	P-156S-CN	1 mL			MeOH	P-737S	1 mL
Methiocarb sulfone	2179-25-1	NEAT	P-570N	10 mg	Methamidophos	10265-92-6	NEAT	P-155N	10 mg
		ACN	P-570S-CN	1 mL			MeOH	P-155S	1 mL
Methiocarb sulfoxide	2635-10-1	NEAT	P-650N	10 mg	Monocrotophos	6923-22-4	NEAT	P-112N	10 mg
		MeOH	P-650S	1 mL			MeOH	P-112S	1 mL
Methomyl	16752-77-5	NEAT	P-032N	10 mg	Monolinuron	1746-81-2	NEAT	P-382N	10 mg
		MeOH	P-032S	1 mL			MeOH	P-382S	1 mL
Methoprene	40596-69-8	NEAT	P-157N	10 mg	Monomethyltetrachloroterephthalate	887-54-7	NEAT	P-707N	10 mg
		MeOH	P-157S	1 mL			Acetone	P-707S-A	1 mL
Methoprotryne	841-06-5	NEAT	P-564N	10 mg	Monosodium acid methane arsonate	2163-80-6	NEAT	P-279N	10 mg
		MeOH	P-564S	1 mL			MeOH	P-279S	1 mL
Methoxychlor	72-43-5	NEAT	P-064N	10 mg	Monuron	150-68-5	NEAT	P-023N	10 mg
		MeOH	P-064S	1 mL			MeOH	P-023S	1 mL
o,p'-Methoxychlor	30667-99-3	MeOH	P-535S	1 mL	Monuron TCA	140-41-0	NEAT	P-034N	10 mg
		Isocetane	P-535S-TP	1 mL			MeOH	P-034S	1 mL

Pesticides

NEATS in 10 mg, SOLUTIONS at 100 µg/mL in 1 mL, except as noted.

Pesticide Compounds (continued)

Compound	CAS No.	Matrix	Cat. No.	Unit	Compound	CAS No.	Matrix	Cat. No.	Unit
2-Monuron	582-44-5	NEAT	P-633N	10 mg	Oxychlordane Isomer	27304-13-8	MeOH	P-331S	1 mL
		MeOH	P-633S	1 mL			Hexane	P-331S-H	1 mL
Morfamquat dichloride	4636-83-3	MeOH	P-1374S	1 mL	Oxydemeton-methyl	301-12-2	MeOH	P-290S	1 mL
Moxidectin	113507-06-5	ACN	P-961S-CN	1 mL	Oxyfluorfen	42874-03-3	NEAT	P-277N	10 mg
Myclobutanil	88671-89-0	NEAT	P-330N	10 mg			MeOH	P-277S	1 mL
		MeOH	P-330S	1 mL	Paclobutrazol (Bonzi)	76738-62-0	NEAT	P-669N	10 mg
Naled	300-76-5	NEAT	P-159N	10 mg			MeOH	P-669S	1 mL
		ACN	P-159S-CN	1 mL	Paraoxon	311-45-5	NEAT	P-453N	10 mg
1-Naphthalene acetamide	86-86-2	NEAT	P-512N	10 mg			Isocetane	P-453S-TP	1 mL
		MeOH	P-512S	1 mL			ACN	P-453S-CN	1 mL
1-Naphthol	90-15-3	NEAT	P-1007N	10 mg	Paraquat dichloride tetrahydrate	1910-42-5	NEAT	P-051N ♦	10 mg
		MeOH	P-1007S	1 mL			MeOH	P-051S	1 mL
2-Naphthoxy acetic acid	120-23-0	ACN	P-1526S-CN	1 mL	Parathion	56-38-2	NEAT	P-070N	10 mg
1-Naphthylacetic acid	86-87-3	NEAT	P-461N	10 mg			MeOH	P-070S	1 mL
		MeOH	P-461S	1 mL	Penconazole	66246-88-6	NEAT	P-450N	10 mg
Naproanilide	52570-16-8	Acetone	P-1343S-A	1 mL			MeOH	P-450S	1 mL
Napropamide	15299-99-7	NEAT	P-179N	10 mg	Pencycuron	66063-05-6	NEAT	P-358N	10 mg
		MeOH	P-179S	1 mL			MeOH	P-358S	1 mL
Neburon	555-37-3	NEAT	P-041N	10 mg	Pendimethalin	40487-42-1	NEAT	P-097N	10 mg
		MeOH	P-041S	1 mL			MeOH	P-097S	1 mL
Niclosamide	50-65-7	NEAT	P-160N	10 mg	Penflufen	494793-67-8	MeOH	P-1235S	1 mL
		ACN	P-160S-CN	1 mL	Penoxsulam	219714-96-2	MeOH	P-1046S	1 mL
Nicosulfuron	111991-09-4	NEAT	P-591N	10 mg	Pentachloroaniline	527-20-8	NEAT	P-875N	10 mg
		ACN	P-591S-CN	1 mL			ACN	P-875S-CN	1 mL
Nitenpyram	150824-47-8	NEAT	P-858N	10 mg	Pentachloroanisole	1825-21-4	NEAT	P-199N	10 mg
		ACN	P-858S-CN	1 mL			MeOH	P-199S	1 mL
Nitralin	4726-14-1	NEAT	P-583N	10 mg	Pentachloronitrobenzene	82-68-8	NEAT	P-113N	10 mg
		MeOH	P-583S	1 mL			MeOH	P-113S	1 mL
Nitrapyrin	1929-82-4	NEAT	P-489N	10 mg	Pentanochlor	2307-68-8	NEAT	P-1067N	10 mg
		MeOH	P-489S	1 mL			MeOH	P-1067S	1 mL
4-Nitroanisole	100-17-4	NEAT	P-273N	10 mg	Penthiopyrad	183675-82-3	NEAT	P-1131N	10 mg
		MeOH	P-273S	1 mL			ACN	P-1131S-CN	1 mL
Nitrofen	1836-75-5	NEAT	P-363N	10 mg	Pentoxazone	110956-75-7	MeOH	P-1051S-0.1X	1 mL
		MeOH	P-363S	1 mL	Permethrin (cis/trans)	52645-53-1	NEAT	P-128N	10 mg
Nitrothal-isopropyl	10552-74-6	NEAT	P-695N	10 mg			MeOH	P-128S	1 mL
		MeOH	P-695S	1 mL	cis-Permethrin	61949-76-6	ACN	P-815S-CN	1 mL
cis-Nonachlor	5103-73-1	NEAT	P-297N	10 mg	trans-Permethrin	61949-77-7	ACN	P-814S-CN	1 mL
		MeOH	P-297S	1 mL	Perthane	72-56-0	NEAT	P-162N	10 mg
trans-Nonachlor	39765-80-5	NEAT	P-184N	10 mg			MeOH	P-162S	1 mL
		MeOH	P-184S	1 mL	Pethoxamid	106700-29-2	NEAT	P-1047N	10 mg
Norflurazon	27314-13-2	NEAT	P-217N	10 mg			MeOH	P-1047S	1 mL
		MeOH	P-217S	1 mL	Phenmedipham	13684-63-4	NEAT	P-392N	10 mg
Norflurazon-desmethyl	23576-24-1	ACN	P-1129S-CN	1 mL			MeOH	P-392S	1 mL
Novaluron	116714-46-6	NEAT	P-966N-5MG	5 mg	Phenothiazine	92-84-2	NEAT	P-579N	10 mg
		MeOH	P-966S	1 mL			MeOH	P-579S	1 mL
Noviflumuron	121451-02-3	ACN	P-967S-CN	1 mL	Phenthoate	2597-03-7	NEAT	P-476N	10 mg
Octhilinone	26530-20-1	NEAT	P-788N	10 mg			MeOH	P-476S	1 mL
Ofurace	58810-48-3	Isocetane	P-653S-TP-0.1X	1 mL	Phenyl mercury acetate	62-38-4	NEAT	P-393N	10 mg
Omethoate	1113-02-6	NEAT	P-121N	10 mg			MeOH	P-393S	1 mL
		MeOH	P-121S	1 mL	Phenyl valerate	20115-23-5	NEAT	P-734N	10 mg
Orbencarb	34622-58-7	NEAT	P-433N	10 mg			MeOH	P-734S	1 mL
		MeOH	P-433S	1 mL	o-Phenylphenol	90-43-7	NEAT	P-460N	10 mg
Oryzalin	19044-88-3	NEAT	P-043N	10 mg			MeOH	P-460S	1 mL
		ACN	P-043S-CN	1 mL	Phorate	298-02-2	NEAT	P-170N ♦	10 mg
Oxabetrinil	74782-23-3	NEAT	P-995N	10 mg			MeOH	P-170S	1 mL
		MeOH	P-995S	1 mL	Phorate-oxon	2600-69-3	ACN	P-1018S-CN	1 mL
Oxadiazyl	39807-15-3	NEAT	P-1031N	10 mg	Phorate-oxon sulfone	2588-06-9	ACN	P-1161S-CN	1 mL
		ACN	P-1031S-CN	1 mL	Phorate-oxon sulfoxide	2588-05-8	ACN	P-1153S-CN	1 mL
Oxadiazon	19666-30-9	NEAT	P-236N	10 mg	Phorate sulfone	2588-04-7	Hexane	P-655S-H	1 mL
		MeOH	P-236S	1 mL	Phorate sulfoxide	2588-03-6	NEAT	P-732N	10 mg
Oxadixyl	77732-09-3	NEAT	P-560N	10 mg			ACN	P-732S-CN	1 mL
		MeOH	P-560S	1 mL	Phosalone	2310-17-0	NEAT	P-163N	10 mg
Oxamyl	23135-22-0	NEAT	P-161N	10 mg			MeOH	P-163S	1 mL
		MeOH	P-161S	1 mL	Phosfolan	947-02-4	NEAT	P-234N	10 mg
Oxamyl oxime	30558-43-1	ACN	P-1138S-CN	1 mL			MeOH	P-234S	1 mL
Oxasulfuron	144651-06-9	NEAT	P-859N	10 mg	Phosmet oxon	3735-33-9	ACN	P-733S-CN	1 mL
		ACN	P-859S-CN	1 mL	Phosphamidon	13171-21-6	NEAT	P-075N	10 mg
Oxathiapiprolin	1003318-67-9	MeOH	P-1379S	1 mL			MeOH	P-075S	1 mL
Oxaziclomefone	153197-14-9	MeOH	P-1066S	1 mL	Phoxim	14816-18-3	NEAT	P-357N	10 mg
Oxolinic acid	14698-29-4	NEAT	P-1204N	10 mg			MeOH	P-357S	1 mL
		ACN	P-1204S-CN	1 mL	Picloram	1918-02-1	NEAT	P-047N	10 mg
Oxycarboxin	5259-88-1	NEAT	P-391N	10 mg			MeOH	P-047S	1 mL
		ACN	P-391S-CN	1 mL					

▲ May esterify in methanol

Pesticide Compounds continued on next page

Pesticides

Pesticide Compounds (continued)

Compound	CAS No.	Matrix	Cat. No.	Unit	Compound	CAS No.	Matrix	Cat. No.	Unit
Picloram methyl ester	14143-55-6	NEAT	P-198N	10 mg	Propoxur	114-26-1	NEAT	P-009N	10 mg
		MeOH	P-198S	1 mL			MeOH	P-009S	1 mL
Picolinafen	137641-05-5	NEAT	P-1061N	10 mg	Propoxycarbazone-sodium	181274-15-7	NEAT	P-1014N	10 mg
		MeOH	P-1061S	1 mL		50 µg/mL in	Water	P-1014S-W-0.5X	1 mL
Picoxystrobin	117428-22-5	NEAT	P-860N	10 mg	Propylenethiourea (PTU)	2122-19-2	NEAT	P-861N	10 mg
		ACN	P-860S-CN	1 mL			ACN	P-861S-CN	1 mL
Pindone	83-26-1	NEAT	P-394N	10 mg	Propyrisulfuron	570415-88-2	ACN	P-1166S-CN	1 mL
		MeOH	P-394S	1 mL	Proquinazid	189278-12-4	ACN	P-1156S-CN	1 mL
Pinoxaden	243973-20-8	NEAT	P-1154N	10 mg	Prosulfocarb	52888-80-9	NEAT	P-742N	10 mg
		ACN	P-1154S-CN	1 mL			MeOH	P-742S	1 mL
Piperalin	3478-94-2	NEAT	P-663N	10 mg	Prosulfuron	94125-34-5	NEAT	P-834N	10 mg
		ACN	P-663S-CN	1 mL			ACN	P-834S-CN	1 mL
Piperonyl butoxide	51-03-6	NEAT	P-348N	10 mg	Prothioconazole	178928-70-6	ACN	P-965S-CN	1 mL
		MeOH	P-348S	1 mL	Prothiofos	34643-46-4	NEAT	P-126N	10 mg
Piperophos	24151-93-7	NEAT	P-656N	10 mg			ACN	P-126S-CN	1 mL
Pirimicarb	23103-98-2	NEAT	P-304N	10 mg	Prothoate	2275-18-5	MeOH	P-657S	1 mL
		MeOH	P-304S	1 mL	Proximpham	2828-42-4	NEAT	P-1081N	10 mg
Pirimicarb-desmethyl	30614-22-3	ACN	P-1139S-CN	1 mL			MeOH	P-1081S	1 mL
Pirimiphos-ethyl	23505-41-1	NEAT	P-328N	10 mg	Pymetrozin	123312-89-0	NEAT	P-835N	10 mg
		MeOH	P-328S	1 mL			ACN	P-835S-CN	1 mL
Pirimiphos-methyl	29232-93-7	NEAT	P-305N	10 mg	Pyracarbolid	24691-76-7	ACN	P-792S-CN	1 mL
		MeOH	P-305S	1 mL	Pyraclofos	77458-01-6	MeOH	P-716S	1 mL
Pirimiphos-methyl-N-desethyl	67018-59-1	ACN	P-1331S-CN	1 mL	Pyraclonil	158353-15-2	ACN	P-1167S-CN	1 mL
Potassium n-hydroxymethyl-n-methyl dithiocarbamate	51026-28-9	ACN	P-715S-CN	1 mL	Pyraclostrobin	175013-18-0	NEAT	P-863N	10 mg
							ACN	P-863S-CN	1 mL
Prallethrin	23031-36-9	MeOH	P-667S	1 mL	Pyraflufen-ethyl	129630-19-9	NEAT	P-1015N	10 mg
Pretilachlor	51218-49-6	NEAT	P-485N	10 mg			Acetone	P-1015S-A	1 mL
		MeOH	P-485S	1 mL	Pyrasulfotole	365400-11-9	ACN	P-1144S-CN	1 mL
Primisulfuron-methyl	86209-51-0	NEAT	P-833N	10 mg	Pyrazolate	58011-68-0	ACN	P-1209S-CN	1 mL
		ACN	P-833S-CN	1 mL	Pyrazon	1698-60-8	NEAT	P-395N	10 mg
Probenazole	27605-76-1	NEAT	P-710N	10 mg			MeOH	P-395S	1 mL
		Acetone	P-710S-A	1 mL	Pyrazophos	13457-18-6	NEAT	P-359N	10 mg
Prochloraz	67747-09-5	NEAT	P-549N	10 mg			MeOH	P-359S	1 mL
		MeOH	P-549S	1 mL	Pyrazosulfuron-ethyl	93697-74-6	ACN	P-1332S-CN	1 mL
Procymidone	32809-16-8	NEAT	P-430N	10 mg	Pyrazoxyfen	71561-11-0	NEAT	P-618N	10 mg
		MeOH	P-430S	1 mL			MeOH	P-618S	1 mL
Prodiamine	29091-21-2	NEAT	P-739N	10 mg	Pyrethrins	8003-34-7	NEAT	P-187N	10 mg
		MeOH	P-739S	1 mL			MeOH	P-187S	1 mL
Profenofos	41198-08-7	NEAT	P-260N	10 mg	Pyribenzoxim	168088-61-7	ACN	P-1116S-CN	1 mL
		MeOH	P-260S	1 mL	Pyributicarb	88678-67-5	MeOH	P-987S	1 mL
Profluoralin	26399-36-0	NEAT	P-099N	10 mg	Pyridaben	96489-71-3	NEAT	P-693N	10 mg
		MeOH	P-099S	1 mL			MeOH	P-693S	1 mL
Prohexadione	88805-35-0	NEAT	P-1498N	10 mg	Pyridalyl	179101-81-6	NEAT	P-990N	10 mg
		ACN	P-1498S-CN	1 mL			MeOH	P-990S	1 mL
Prohexadione-calcium	127277-53-6	NEAT	P-1068N	10 mg	Pyridaphenthion	119-12-0	MeOH	P-610S	1 mL
Prohydrojasmon (Tech)	158474-72-7	MeOH	P-1342S	1 mL	Pyridate	55512-33-9	NEAT	P-404N	10 mg
Promecarb	2631-37-0	NEAT	P-265N	10 mg			ACN	P-404S-CN	1 mL
		MeOH	P-265S	1 mL	Pyrifluquinazon	337458-27-2	NEAT	P-1093N	10 mg
Prometon	1610-18-0	NEAT	P-077N	10 mg			ACN	P-1093S-CN	1 mL
		MeOH	P-077S	1 mL	Pyritalid	135186-78-6	ACN	P-1212S-CN	1 mL
Prometryne	7287-19-6	NEAT	P-078N	10 mg	Pyrimethanil	53112-28-0	NEAT	P-723N	10 mg
		MeOH	P-078S	1 mL			MeOH	P-723S	1 mL
Pronamide	23950-58-5	NEAT	P-164N	10 mg	Pyrimidifen	105779-78-0	MeOH	P-989S	1 mL
		MeOH	P-164S	1 mL	(E)-Pyriminobac-methyl	147411-69-6	MeOH	P-1030S-0.5X	1 mL
Propachlor	1918-16-7	NEAT	P-215N	10 mg	(Z)-Pyriminobac-methyl	147411-70-9	MeOH	P-1111S	1 mL
		MeOH	P-215S	1 mL	Pyrimisulfan	221205-90-9	ACN	P-1203S-CN	1 mL
Propachlor ESA sodium salt	947601-88-9	MeOH	P-919S	1 mL	Pyrinuron	53558-25-1	NEAT	P-240N	10 mg
Propachlor OA sodium salt		MeOH	P-921S	1 mL			MeOH	P-240S	1 mL
Propamocarb	24579-73-5	NEAT	P-312N	10 mg	Pyriofenone	688046-61-9	NEAT	P-1457N	10 mg
		MeOH	P-312S	1 mL			MeOH	P-1457S	1 mL
Propamocarb hydrochloride	25606-41-1	ACN	P-1137S-CN	1 mL	Pyriphenox	88283-41-4	MeOH	P-668S	1 mL
Propanil	709-98-8	NEAT	P-049N	10 mg	Pyriproxyfen	95737-68-1	NEAT	P-795N	10 mg
		MeOH	P-049S	1 mL			ACN	P-795S-CN	1 mL
Propaquizafop	111479-05-1	NEAT	P-908N	10 mg	Pyroquilon	57369-32-1	NEAT	P-696N	10 mg
		MeOH	P-908S	1 mL			MeOH	P-696S	1 mL
Propargite	2312-35-8	NEAT	P-251N	10 mg	Pyroxsulam	422556-08-9	NEAT	P-1060N	10 mg
		MeOH	P-251S	1 mL			MeOH	P-1060S	1 mL
Propazine	139-40-2	NEAT	P-079N	10 mg	Quinalphos	13593-03-8	NEAT	P-462N	10 mg
		MeOH	P-079S	1 mL			MeOH	P-462S	1 mL
Propetamphos	31218-83-4	NEAT	P-417N	10 mg	Quinclorac	84087-01-4	NEAT	P-692N	10 mg
		MeOH	P-417S	1 mL			MeOH	P-692S	1 mL
Propham	122-42-9	NEAT	P-052N	10 mg			ACN	P-692S-CN	1 mL
		MeOH	P-052S	1 mL	Quinclorac methyl ester	84087-33-2	ACN	P-770S-CN	1 mL
Propiconazole (Tilt)	60207-90-1	NEAT	P-280N	10 mg	Quinmerac	90717-03-6	NEAT	P-836N	10 mg
		MeOH	P-280S	1 mL			ACN	P-836S-CN	1 mL
Propineb	12071-83-9	NEAT	P-608N	10 mg	Quinoclamine	2797-51-5	NEAT	P-985N	10 mg
Propisochlor	86763-47-5	ACN	P-1158S-CN	1 mL			MeOH	P-985S	1 mL

Pesticides

NEATS in 10 mg, SOLUTIONS at 100 µg/mL in 1 mL, except as noted.

Pesticide Compounds (continued)

Compound	CAS No.	Matrix	Cat. No.	Unit	Compound	CAS No.	Matrix	Cat. No.	Unit
Quinoxifen	124495-18-7	NEAT	P-882N-SMG	5 mg	Sulfosulfuron	141776-32-1	ACN	P-865S-CN-0.1X	1 mL
		MeOH	P-882S	1 mL	Sulfotep	3689-24-5	NEAT	P-167N	10 mg
Quizalofop ethyl	76578-14-8	NEAT	P-293N	10 mg			ACN	P-167S-CN	1 mL
		ACN	P-293S-CN	1 mL	Sulfoxaflor	946578-00-3	NEAT	P-1133N	10 mg
Quizalofop-P-tefuryl	119738-06-6	ACN	P-1399S-CN	1 mL			MeOH	P-1133S	1 mL
Resmethrin	10453-86-8	NEAT	P-325N	10 mg	Sulfoxide	120-62-7	NEAT	P-396N	10 mg
		MeOH	P-325S	1 mL			MeOH	P-396S	1 mL
Rimsulfuron	122931-48-0	NEAT	P-837N	10 mg	Sulprofos	35400-43-2	NEAT	P-108N	10 mg
		ACN	P-837S-CN	1 mL			MeOH	P-108S	1 mL
Rotenone	83-79-4	NEAT	P-056N	10 mg	Sumithrin	26002-80-2	NEAT	P-050N	10 mg
		MeOH	P-056S	1 mL			MeOH	P-050S	1 mL
S421	127-90-2	NEAT	P-749N	10 mg	Swep	1918-18-9	NEAT	P-061N	10 mg
		MeOH	P-749S	1 mL			MeOH	P-061S	1 mL
Saflufenacil	372137-35-4	NEAT	P-1078N	10 mg	2,4,6-T	575-89-3	NEAT	P-523N	10 mg
		MeOH	P-1078S	1 mL			MeOH	P-523S	1 mL
Schradan	152-16-9	NEAT	P-418N	10 mg			ACN	P-523S-CN	1 mL
		MeOH	P-418S	1 mL	2,4,5-T acid	93-76-5	NEAT	P-168N	10 mg
Sebuthylazin	7286-69-3	NEAT	P-432N	10 mg			MeOH	P-168S	1 mL
		MeOH	P-432S	1 mL			ACN	P-168S-CN	1 mL
Secbumeton	26259-45-0	NEAT	P-165N	10 mg	2,4,5-T butoxyethyl ester	2545-59-7	NEAT	P-441N	10 mg
		MeOH	P-165S	1 mL			ACN	P-441S-CN	1 mL
Sedaxane	874967-67-6	MeOH	P-1312S	1 mL	2,4,5-T n-butyl ester	93-79-8	NEAT	P-440N	10 mg
Sethoxydim	74051-80-2	NEAT	P-306N	10 mg			ACN	P-440S-CN	1 mL
		ACN	P-306S-CN	1 mL	2,4,5-T methyl ester	1928-37-6	NEAT	P-067N	10 mg
Siduron	1982-49-6	NEAT	P-063N	10 mg			MeOH	P-067S	1 mL
		MeOH	P-063S	1 mL	TCMTB (Busan)	21564-17-0	ACN	P-072S-CN	1 mL
Silafluofen	105024-66-6	NEAT	P-717N	10 mg	Tebuconazol	107534-96-3	NEAT	P-451N	10 mg
		MeOH	P-717S	1 mL			MeOH	P-451S	1 mL
Silvex	93-72-1	NEAT	P-084N	10 mg	Tebufenozide	112410-23-8	NEAT	P-726N	10 mg
		MeOH	P-084S	1 mL			MeOH	P-726S	1 mL
		ACN	P-084S-CN	1 mL	Tebufenpyrad	119168-77-3	NEAT	P-877N	10 mg
Silvex 2-ethylhexyl ester	53404-76-5	NEAT	P-728N	10 mg			MeOH	P-877S	1 mL
		MeOH	P-728S	1 mL	Tebupirimfos	96182-53-5	NEAT	P-727N	10 mg
Silvex methyl ester	4841-20-7	NEAT	P-115N	10 mg			MeOH	P-727S	1 mL
		MeOH	P-115S	1 mL	Tebutam	35256-85-0	MeOH	P-879S	1 mL
Simazine	122-34-9	NEAT	P-085N	10 mg	Tebuthiuron	34014-18-1	NEAT	P-188N	10 mg
		MeOH	P-085S	1 mL			MeOH	P-188S	1 mL
Simazine-2-hydroxy	2599-11-3		P-1191S	1 mL	Teflubenzuron	83121-18-0	NEAT	P-452N	10 mg
	MeOH : H3PO4	(99:1)					MeOH	P-452S	1 mL
Simeconazole	149508-90-7	Acetone	P-976S-A-10X	1 mL	Tefluthrin	79538-32-2	MeOH	P-568S	1 mL
Simeton	673-04-1	NEAT	P-501N	10 mg	Tefuryltrione	473278-76-1	ACN	P-1501S-CN	1 mL
		MeOH	P-501S	1 mL	Tembotrione	335104-84-2	NEAT	P-1109N	10 mg
Simetryn	1014-70-6	NEAT	P-166N	10 mg			ACN	P-1109S-CN	1 mL
		MeOH	P-166S	1 mL	Temephos	3383-96-8	NEAT	P-101N	10 mg
Sodium diethyldithiocarbamate trihydrate		NEAT	P-505N	10 mg			MeOH	P-101S	1 mL
	20624-25-3	ACN	P-505S-CN	1 mL	TEPP	107-49-3	NEAT	P-207N	10 mg
Sodium dimethyldithiocarbamate dihydrate		NEAT	P-487N	10 mg			Hexane	P-207S-H-10X	1 mL
Sodium fluoroacetate	62-74-8	NEAT	P-1328N	10 mg	Tepraloxymid	149979-41-9	ACN	P-1011S-CN	1 mL
Spinetoram	935545-74-7	NEAT	P-1083N	10 mg	Terbacil	5902-51-2	NEAT	P-096N	10 mg
		ACN	P-1083S-CN	1 mL			MeOH	P-096S	1 mL
Spinosad	168316-95-8	NEAT	P-864N	10 mg	Terbufos	13071-79-9	NEAT	P-208N	10 mg
		ACN	P-864S-CN	1 mL			MeOH	P-208S	1 mL
Spirodiclofen	148477-71-8	NEAT	P-938N	10 mg	Terbufos sulfone	56070-16-7	ACN	P-729S-CN	1 mL
		MeOH	P-938S	1 mL	Terbufos sulfoxide	10548-10-4	NEAT	P-730N	10 mg
Spiromesifen	283594-90-1	ACN	P-960S-CN	1 mL			ACN	P-730S-CN	1 mL
Spiromesifen metabolite M01	148476-30-6	ACN	P-1505S-CN	1 mL	Terbumeton	33693-04-8	NEAT	P-504N	10 mg
Spirotetramat	203313-25-1	NEAT	P-1077N	10 mg			MeOH	P-504S	1 mL
		ACN	P-1077S-CN	1 mL	Terbuthylazine	5915-41-3	NEAT	P-169N	10 mg
Spirotetramet-enol	203312-38-3	NEAT	P-1323N-SMG	5 mg			MeOH	P-169S	1 mL
Spiroxamine	118134-30-8	NEAT	P-869N	10 mg	Terbuthylazine desethyl	30125-63-4	NEAT	P-613N	10 mg
		ACN	P-869S-CN	1 mL			MeOH	P-613S	1 mL
Strobane	8001-50-1	NEAT	P-339N	10 mg	Terbutol	1918-11-2	NEAT	P-464N	10 mg
		MeOH	P-339S	1 mL			MeOH	P-464S	1 mL
Sulcontrione	99105-77-8	NEAT	P-951N	10 mg	Terbufos-oxon	56070-14-5	ACN	P-1388S-CN	1 mL
		ACN	P-951S-CN	1 mL	Terbufos oxon sulfone	56070-15-6	ACN	P-1389S-CN	1 mL
Sulfallate	95-06-7	NEAT	P-327N	10 mg	Terbutryn	886-50-0	NEAT	P-119N	10 mg
		MeOH	P-327S	1 mL			MeOH	P-119S	1 mL
Sulfaquinoxaline	59-40-5	MeOH	P-681S	1 mL	Terrazole	2593-15-9	NEAT	P-190N	10 mg
Sulfentrazone	122836-35-5	NEAT	P-798N	10 mg			MeOH	P-190S	1 mL
		ACN	P-798S-CN	1 mL	1,2,3,4-Tetrachlorobenzene	634-66-2	NEAT	P-999N	10 mg
Sulfometuron methyl ester	74222-97-2	NEAT	P-336N	10 mg			MeOH	P-999S	1 mL
					1,2,3,5-Tetrachlorobenzene	634-90-2	NEAT	P-1001N	10 mg
							Isocetane	P-1001S-TP	1 mL

▲ May esterify in methanol

✦ V-Rated packaging surcharge applies for international shipments.

Pesticide Compounds continued on next page

Pesticides

Pesticide Compounds (continued)

Compound	CAS No.	Matrix	Cat. No.	Unit	Compound	CAS No.	Matrix	Cat. No.	Unit
1,2,4,5-Tetrachlorobenzene	95-94-3	NEAT	P-1003N	10 mg	Toxaphene (Tech)	8001-35-2	NEAT	P-093N	10 mg
		MeOH	P-1003S	1 mL			MeOH	P-093S	1 mL
1,2,3,4-Tetrachloro-5-nitrobenzene	879-39-0	NEAT	P-1000N	10 mg	Tralkoxydim	87820-88-0	NEAT	P-405N	10 mg
		MeOH	P-1000S	1 mL			MeOH	P-405S	1 mL
2,3,5,6-Tetrachloronitrobenzene	117-18-0	NEAT	P-467N	10 mg	Tralomehrin	66841-25-6	NEAT	P-478N	10 mg
		MeOH	P-467S	1 mL			MeOH	P-478S	1 mL
Tetrachlorvinphos	22248-79-9	NEAT	P-125N	10 mg	Transfluthrin	118712-89-3	NEAT	P-743N	10 mg
		MeOH	P-125S	1 mL			MeOH	P-743S	1 mL
Tetraconazole	112281-77-3	NEAT	P-721N	10 mg	Triadimefon	43121-43-3	NEAT	P-069N	10 mg
		MeOH	P-721S	1 mL			MeOH	P-069S	1 mL
Tetradifon	116-29-0	NEAT	P-261N	10 mg	Triadimenol	55219-65-3	NEAT	P-361N	10 mg
		MeOH	P-261S	1 mL			MeOH	P-361S	1 mL
1,2,3,6-Tetrahydrophthalimide	85-40-5	NEAT	P-621N	10 mg	Triallate	2303-17-5	NEAT	P-268N	10 mg
		MeOH	P-621S	1 mL			MeOH	P-268S	1 mL
cis-1,2,3,6-Tetrahydrophthalimide	1469-48-3	MeOH	P-116S	1 mL	Triasulfuron	82097-50-5	NEAT	P-592N	10 mg
Tetramethrin	7696-12-0	NEAT	P-406N	10 mg			ACN	P-592S-CN	1 mL
		MeOH	P-406S	1 mL	Triaziflam	131475-57-5	MeOH	P-1346S	1 mL
Tetraniliprole	1229654-66-3	ACN	P-1509S-CN	1 mL	1,2,4-Triazole	288-88-0	NEAT	P-627N	10 mg
Tetrasul	2227-13-6	NEAT	P-552N	10 mg			MeOH	P-627S	1 mL
		MeOH	P-552S	1 mL	Triazophos	24017-47-8	NEAT	P-334N	10 mg
Thenylchlor	96491-05-3	ACN	P-1194S-CN	1 mL			MeOH	P-334S	1 mL
Thiabendazole	148-79-8	NEAT	P-068N	10 mg	Tribenuron-methyl	101200-48-0	NEAT	P-666N	10 mg
		MeOH	P-068S	1 mL			ACN	P-666S-CN	1 mL
Thiacloprid	111988-49-9	NEAT	P-838N	10 mg	Tribufos (DEF)	78-48-8	NEAT	P-150N	10 mg
		ACN	P-838S-CN	1 mL			MeOH	P-150S	1 mL
Thiacloprid-amide	676228-91-4	NEAT	P-1223N	10 mg	bis(Tributyltin)oxide	56-35-9	NEAT	P-455N	10 mg
		MeOH	P-1223S	1 mL	Trichlorfon	52-68-6	NEAT	P-044N	10 mg
Thiamethoxam	153719-23-4	NEAT	P-866N	10 mg			MeOH	P-044S	1 mL
		ACN	P-866S-CN	1 mL	Trichloroacetic acid	76-03-9	MeOH	P-459S	1 mL
Thiazopyr	117718-60-2	NEAT	P-808N	10 mg			ACN	P-459S-CN	1 mL
		MeOH	P-808S	1 mL	1,2,3-Trichlorobenzene	87-61-6	NEAT	P-1002N	10 mg
Thidiazuron	51707-55-2	NEAT	P-369N	10 mg			Isocetane	P-1002S-TP	1 mL
		MeOH	P-369S	1 mL	1,2,4-Trichlorobenzene	120-82-1	NEAT	P-1004N	10 mg
Thifensulfuron methyl	79277-27-3	NEAT	P-468N	10 mg			MeOH	P-1004S	1 mL
		ACN	P-468S-CN	1 mL	2,3,5-Trichlorobenzoic acid	50-73-7	NEAT	P-508N	10 mg
Thifluzamide	130000-40-7	NEAT	P-1055N	10 mg			MeOH	P-508S	1 mL
		MeOH	P-1055S	1 mL	Trichloronate	327-98-0	NEAT	P-127N	10 mg
Thiobencarb	28249-77-6	NEAT	P-180N	10 mg			MeOH	P-127S	1 mL
		MeOH	P-180S	1 mL	2,4,6-Trichlorophenol	88-06-2	NEAT	P-1006N	10 mg
Thiocyclam hydrogen oxalate	31895-22-4	MeOH	P-688S	1 mL			MeOH	P-1006S	1 mL
Thiodicarb	59669-26-0	NEAT	P-477N	10 mg	3,5,6-Trichloro-2-pyridinol	6515-38-4	NEAT	P-626N	10 mg
		MeOH	P-477S	1 mL			MeOH	P-626S	1 mL
4,4'-Thiodiphenol	2664-63-3	NEAT	P-117N	10 mg	Triclopyr	55335-06-3	NEAT	P-289N	10 mg
		MeOH	P-117S	1 mL			MeOH	P-289S	1 mL
Thiofanox	39196-18-4	NEAT	P-266N	10 mg			ACN	P-289S-CN	1 mL
		MeOH	P-266S	1 mL	Triclopyr-2-butoxy ethyl ester	64700-56-7	ACN	P-703S-CN	1 mL
Thiofanox sulfone	39184-59-3	ACN	P-839S-CN-0.1X	1 mL	Triclopyr methyl ester	60825-26-5	MeOH	P-291S	1 mL
Thiofanox sulfoxide	39184-27-5	NEAT	P-702N	10 mg	Tricresyl phosphate	1330-78-5	NEAT	P-209N	10 mg
		MeOH	P-702S	1 mL			MeOH	P-209S	1 mL
Thiometon	640-15-3	NEAT	P-486N	10 mg	Tricyclazole	41814-78-2	NEAT	P-090N	10 mg
		MeOH	P-486S	1 mL			MeOH	P-090S	1 mL
Thionazin	297-97-2	MeOH	P-171S	1 mL	Tridemorph	24602-86-6	NEAT	P-307N	10 mg
Thiophanate	23564-06-9	NEAT	P-321N	10 mg			MeOH	P-307S	1 mL
		MeOH	P-321S	1 mL	Trietazine	1912-26-1	NEAT	P-492N	10 mg
		ACN	P-321S-CN	1 mL			MeOH	P-492S	1 mL
Thiophanate-methyl	23564-05-8	NEAT	P-349N	10 mg	Triethylphosphate	78-40-0	NEAT	P-335N	10 mg
		MeOH	P-349S	1 mL			MeOH	P-335S	1 mL
Thiram	137-26-8	NEAT	P-118N	10 mg	O,O,O-Triethylphosphorothioate	126-68-1	NEAT	P-172N	10 mg
		MeOH	P-118S	1 mL			MeOH	P-172S	1 mL
Tiadinil	223580-51-6	ACN	P-1112S-CN	1 mL	Trifenmorph	1420-06-0	NEAT	P-300N	10 mg
Tillam	1114-71-2	NEAT	P-105N	10 mg			ACN	P-300S-CN	1 mL
		MeOH	P-105S	1 mL	Trifloxystrobin	141517-21-7	NEAT	P-867N	10 mg
Tioxazafen	330459-31-9	ACN	P-1508S-CN	1 mL			ACN	P-867S-CN	1 mL
Tolclofos-methyl	57018-04-9	NEAT	P-557N	10 mg	Trifloxysulfuron	145099-21-4	ACN	P-1169S-CN	1 mL
		Acetone	P-557S-A	1 mL	Trifludimoxazin	1258836-72-4	ACN	P-1528S-CN	1 mL
Tolfenpyrad	129558-76-5	NEAT	P-1097N	10 mg	Triflumizole	68694-11-1	ACN	P-479S-CN	1 mL
		ACN	P-1097S-CN-10X	1 mL	Triflururon	64628-44-0	NEAT	P-689N	10 mg
Tolpyralate	1101132-67-5	NEAT	P-1497N	10 mg			MeOH	P-689S	1 mL
		ACN	P-1497S-CN	1 mL	Trifluralin	1582-09-8	NEAT	P-197N	10 mg
Toltrazuril	69004-03-1	ACN	P-1515S-CN	1 mL			MeOH	P-197S	1 mL
Tolyfluanide	731-27-1	NEAT	P-553N	10 mg	Triflusaluron-methyl	126535-15-7	NEAT	P-840N	10 mg
		MeOH	P-553S	1 mL			ACN	P-840S-CN	1 mL
Topramezone	210631-68-8	NEAT	P-1241N	10 mg	Triforine	26644-46-2	NEAT	P-308N	10 mg
							MeOH	P-308S	1 mL
					2,3,5-Triiodobenzoic acid	88-82-4	NEAT	P-507N	10 mg
							MeOH	P-507S	1 mL
							ACN	P-507S-CN	1 mL

▲ May esterify in methanol

Pesticides

NEATS in 10 mg, SOLUTIONS at 100 µg/mL in 1 mL, except as noted.

Pesticide Compounds (continued)

Compound	CAS No.	Matrix	Cat. No.	Unit	Compound	CAS No.	Matrix	Cat. No.	Unit
2,3,5-Trimethacarb	2655-15-4	NEAT	P-515N	10 mg	Uniconazole-P	83657-17-4	ACN	P-1113S-CN	1 mL
		MeOH	P-515S	1 mL	Vamidothion	2275-23-2	NEAT	P-350N	10 mg
3,4,5-Trimethacarb	2686-99-9	NEAT	P-516N	10 mg			ACN	P-350S-CN	1 mL
		MeOH	P-516S	1 mL	Vamidothion-sulfone	70898-34-9	ACN	P-1500S-CN	1 mL
Trimethyl phosphate	512-56-1	NEAT	P-210N	10 mg	Vamidothion-sulfoxide	20300-00-9	ACN	P-1296S-CN	1 mL
		MeOH	P-210S	1 mL	Vanicide-20S	5902-85-2	NEAT	P-073N	10 mg
Trimethylsulfonium iodide	2181-42-2	NEAT	P-1016N	10 mg			MeOH	P-073S	1 mL
		MeOH	P-1016S	1 mL	Vernolate	1929-77-7	NEAT	P-111N	10 mg
Trimidal	63284-71-9	NEAT	P-422N	10 mg			MeOH	P-111S	1 mL
		MeOH	P-422S	1 mL	Vinclozolin	50471-44-8	NEAT	P-122N	10 mg
Trinexapac-ethyl	95266-40-3	NEAT	P-1034N	10 mg			MeOH	P-122S	1 mL
		MeOH	P-1034S	1 mL	Warfarin	81-81-2	NEAT	P-076N	10 mg
O,O,O-Triphenyl thiophosphate	597-82-0	ACN	P-1507S-CN	1 mL			MeOH	P-076S	1 mL
Triphenylphosphate	115-86-6	NEAT	P-192N	10 mg	XMC	2655-14-3	NEAT	P-1085N	10 mg
		MeOH	P-192S	1 mL			MeOH	P-1085S	1 mL
Triphenyltin chloride	639-58-7	NEAT	P-526N	10 mg	Zineb	12122-67-7	NEAT	P-098N	10 mg
		MeOH	P-526S	1 mL	Ziram	137-30-4	NEAT	P-324N	10 mg
Triticonazole	131983-72-7	ACN	P-868S-CN	1 mL			MeOH	P-324S	1 mL
Trixylyl phosphate	3862-12-2	MeOH	P-1503S	1 mL	Zoxamide	156052-68-5	ACN	P-970S-CN	1 mL
Uniconazole	83657-22-1	ACN	P-1092S-CN	1 mL					



Pesticides

Triazines, Phenylureas, Neonicotinoids and Fipronils

Triazines and Metabolite Compounds

Compound	CAS No.	NEAT Cat. No.	Unit	SOLUTION Cat. No.	Unit
2,4-bis(Ethylamino)-6-diethylamino-s-triazine		P-536N	10 mg	P-536S-MC	1 mL
2-Chloro-4-ethylamino-6-propylamino-s-triazine	90952-64-0	P-537N	10 mg	P-537S-MC	1 mL
2,4-Dichloro-6-ethylamino-s-triazine	3440-19-5	P-538N	10 mg	P-538S-CN	1 mL
2-Chloro-4-ethylamino-6-methylethylamino-s-triazine	3084-92-2	P-539N	10 mg	P-539S-MC	1 mL
2-Chloro-4-methylamino-6-sec-butylamino-s-triazine	33692-99-8	P-540N	10 mg	P-540S-MC	1 mL
2-Chloro-4-methylamino-6-diethylamino-s-triazine	83807-82-3	P-541N	10 mg	P-541S-MC	1 mL
2,3-Diuron	10290-37-6	P-632N	10 mg	P-632S	1 mL
Atrazine desethyl	6190-65-4	P-343N	10 mg	P-343S	1 mL
Atrazine-desisopropyl	1007-28-9	P-345N	10 mg	P-345S	1 mL
Atrazine-desisopropyl-2-hydroxy	7313-54-4	P-344N	10 mg	P-344S	1 mL
Atrazine	1912-24-9	P-005N	10 mg	P-005S	1 mL
Ametryn	834-12-8	P-003N	10 mg	P-003S	1 mL
Cyanazine	21725-46-2	P-175N	10 mg	P-175S	1 mL
Atraton (Gesatamine)	1610-17-9	P-189N	10 mg	P-189S	1 mL
2-Hydroxyatrazine	2163-68-0	-----	----	P-326S-MC	1 mL
Imazethapyr	81335-77-5	-----	----	P-285S-CN	1 mL
2-Isopropylamino-4,6-dichloro-s-triazine	3703-10-4	P-635N	10 mg	P-635S-CN	1 mL
2-Monuron	582-44-5	P-633N	10 mg	P-633S	1 mL
Prometryne	7287-19-6	P-078N	10 mg	P-078S	1 mL
Propazine	139-40-2	P-079N	10 mg	P-079S	1 mL
Prometon	1610-18-0	P-077N	10 mg	P-077S	1 mL
Sebuthylazin	7286-69-3	P-432N	10 mg	P-432S	1 mL
Simazine	122-34-9	P-085N	10 mg	P-085S	1 mL
Terbutylazine	5915-41-3	P-169N	10 mg	P-169S	1 mL

Solutions at 100 µg/mL in MeOH, except -MC (in Methyl cellosolve), -CN (in Acetonitrile)

Phenylureas

Phenylurea Pesticide Mix

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

Diflubenzuron	Propanil
Diuron	Siduron
Fluometuron	Tebuthiuron
Linuron	Thidiazuron

Phenylurea Surrogate Mix

PES-PU-SS 1 x 1 mL
500 µg/mL each in MeOH:ACN 2 comps.

Carbazole	Monuron
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Neonicotinoids and Fipronil Compounds

Honeybee colony collapse disorder (CCD) has revealed that this group of pesticides may be a responsible factor to honeybee decline. Included in this group are the Neonicotinoids as well as Fipronil and Fipronil metabolites, all of which have been suspected as possible causative agents.

Neonicotinoid Compounds

		Solutions at 100 µg/mL							
Compound	Matrix	Cat. No.	Unit	Compound	Matrix	Cat. No.	Unit	Compound	Matrix
Acetamiprid	NEAT	P-820N	10 mg	Imidacloprid	NEAT	P-596N	10 mg		
135410-20-7	ACN	P-820S-CN	1 mL	138261-41-3	MeOH	P-596S	1 mL		
6-Chloropyridine-3-carboxylic acid	NEAT	P-1267N	10 mg	2-Imidazolidone	NEAT	P-1224N	10 mg		
5326-23-8	MeOH	P-1267S	1 mL	120-93-4	MeOH	P-1224S	1 mL		
Clothianidin	NEAT	P-947N	10 mg	Nitenpyram	NEAT	P-858N	10 mg		
210880-92-5	MeOH	P-947S	1 mL	150824-47-8	ACN	P-858S-CN	1 mL		
N-Desmethylthiamethoxam	MeOH	P-1266S	1 mL	Sulfoxaflor	NEAT	P-1133N	10 mg		
171103-04-1				946578-00-3	MeOH	P-1133S	1 mL		
Dinotefuran	ACN	P-986S-CN	1 mL	Thiacloprid	NEAT	P-838N	10 mg		
165252-70-0				111988-49-9	ACN	P-838S-CN	1 mL		
Furathiocarb	MeOH	P-569S	1 mL	Thiacloprid-amide	NEAT	P-1223N	10 mg		
65907-30-4				676228-91-4	MeOH	P-1223S	1 mL		
6-Hydroxypyridine-3-carboxylic acid	NEAT	P-1226N	10 mg	Thiamethoxam	NEAT	P-866N	10 mg		
5006-66-6	MeOH	P-1226S	1 mL	153719-23-4	ACN	P-866S-CN	1 mL		

Fipronil and Metabolite Compounds

Compound	Matrix	Cat. No.	Unit	Compound	Matrix	Cat. No.	Unit
Fipronil	NEAT	P-738N	10 mg	Fipronil sulfide	NEAT	P-781N-5MG	5 mg
120068-37-3	MeOH	P-738S	1 mL	120067-83-6	Acetone	P-781S-A	1 mL
	Acetone	P-738S-A	1 mL	Fipronil sulfone	Acetone	P-780S-A	1 mL
Fipronil desulfinyl	Acetone	P-782S-A	1 mL	120068-36-2			
205650-65-3							

Fipronil and Metabolite Set

P-FIP-MET-KIT 4 x 1mL
P-738S-A, P-782S-A,
P-781S-A, P-780S-A

Pesticides and Herbicides

Kits, Sets and Mixes

Pesticide Sets and Mixes

Neat Pesticide Set

Z-004-SET ❖

Aldrin	p,p'-DDE
α-BHC	o,p'-DDT
β-BHC	p,p'-DDT
δ-BHC	Dieldrin
o,p'-DDD	Heptachlor
p,p'-DDD	Heptachlor epoxide (Isomer B)
o,p'-DDE	Lindane (γ-BHC)

20 x 10 mg

Malathion
Methoxychlor
Mirex
Parathion
Carbaryl
Toxaphene

Pesticide (Solid Waste) Set

Z-017-SET

6 x 10 mg

2,4-D	Lindane	Silvex
Endrin	Methoxychlor	Toxaphene

❖ V-Rated packaging surcharge applies for international shipments.

Chlorinated Hydrocarbon Pesticide Mix

M-CL-1

1 x 1 mL

At stated conc. (µg/mL) in Acetone 3 comps.

Endrin	5	Methoxychlor	75
Lindane	5		

Chlorinated Hydrocarbon Pesticides Mix 2

M-CHP-2

1 x 1 mL

At stated conc. (µg/mL) in Acetone 6 comps.

a-BHC	2	Endosulfan II	10
b-BHC	2	Heptachlor epoxide	2
Endrin aldehyde	10	(Isomer B)	
Endosulfan I	2		

GC/MS Pesticides - Mix 1

M-GPE-1

1 x 1 mL

100 µg/mL each in Acetone 7 comps.

a-BHC	Endrin
g-BHC	Heptachlor
4,4'-DDD	Heptachlor epoxide (Isomer B)
Dieldrin	

Chlorinated Hydrocarbon Pesticide Mix 1

M-CHP-1

1 x 1 mL

At stated conc. (µg/mL) in Acetone 6 comps.

Aldrin	2	4,4'-DDE	2
Dieldrin	2	4,4'-DDT	10
4,4'-DDD	10	Heptachlor	2

2,4-D & 2,4,5-TP

M-HER

1 x 1 mL

50 µg/mL each in MeOH 2 comps.

GC/MS Pesticides - Mix 2

M-GPE-2

1 x 1 mL

100 µg/mL each in Acetone 6 comps.

Aldrin	Endosulfan I
b-BHC	Endosulfan II
4,4'-DDE	p,p'-DDT

Herbicide Mixes

Herbicide Mix #1

M-HERB-1

1 x 1 mL

0.1 mg/mL each in EtOAc

13 comps.

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

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	

Nitrosamines

Food and Pharmaceuticals



As a process contaminant, N-nitrosamines form as a by-product during the manufacturing of food and pharmaceuticals. Due to their known carcinogenic and genotoxic characteristics, selective analysis for different nitrosamines is important to reduce consumer's exposure to these toxic contaminants.

Nitrosamine Contents

Nitrosamine Compounds	28
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Nitrosamine Compounds

Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
N-Nitroso fluoxetine	150494-06-7	100 µg/mL	MeOH	NAS-016S	1 mL
N-Nitrosodicyclohexylamine	947-92-2	100 µg/mL	MeOH	NAS-017S	1 mL
N-Nitroso- <i>n</i> -methyl-4-aminobutyric acid	61445-55-4	100 µg/mL	MeOH	NAS-018S	1 mL
N-Nitroso-ditertbutylamine	63819-70-5	100 µg/mL	MeOH	NAS-019S	1 mL
N-Nitrosodiethanolamine (NDELA)	1116-54-7	100 µg/mL	MeOH	NAS-020S	1 mL
1-Cyclopentyl-4-nitrosopiperazine (CPNP)	61379-66-6	100 µg/mL	MeOH	NAS-021S	1 mL
1-Methyl-4-nitrosopiperazine (MNP)	16339-07-4	100 µg/mL	MeOH	NAS-022S	1 mL
N-Nitrosodiisopropylamine (NDIPA)	601-77-4	100 µg/mL	MeOH	NAS-023S	1 mL
N-Nitroso- <i>n</i> -ethyl-2-propanamine (NEIPA)	16339-04-1	100 µg/mL	MeOH	NAS-024S	1 mL
N-Nitrosodiisobutylamine (NDIBA)	997-95-5	100 µg/mL	MeOH	NAS-025S	1 mL
N-Nitrososarcosine (NSAR)	13256-22-9	100 µg/mL	MeOH	NAS-026S	1 mL
N-Nitroso- <i>n</i> -methylaniline (NMPA)	614-00-6	100 µg/mL	MeOH	NAS-027S	1 mL
N-Nitrosodibenzylamine	5336-53-8	100 µg/mL	MeOH	NAS-028S	1 mL
N-Nitrosodiisopropanolamine (NDIPLA)	53609-64-6	100 µg/mL	MeOH	NAS-029S	1 mL
N'-Nitrosornicotine (NNN)	80508-23-2	100 µg/mL	MeOH	NAS-030S	1 mL
N-Methyl- <i>n</i> -nitroso-2-propanamine (NMIPA)	30533-08-5	100 µg/mL	MeOH	NAS-031S	1 mL
N-Nitroso- <i>n</i> -methylbutylamine (MBNA)	7068-83-9	100 µg/mL	MeOH	NAS-033S	1 mL
N,N'-bis(2-hydroxybenzylidene)-1,2-propanediamine	94-91-7	100 µg/mL	MeOH	NAS-034S	1 mL
N-Nitroso-1-(2-methoxyphenyl)piperazine	2219339-64-5	100 µg/mL	MeOH	NAS-035S	1 mL
4-Nitrosopiperazine-1-ethanol	48121-20-6	100 µg/mL	MeOH	NAS-036S	1 mL
4-(Methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK)	64091-91-4	100 µg/mL	ACN	NAS-037S-CN	1 mL
N-Methyl-N-nitroso-2-phenylethylamine (NMPEA)	13256-11-6	100 µg/mL	MeOH	NAS-039S	1 mL
N-Nitroso duloxetine	2680527-91-5	100 µg/mL	MeOH	NAS-040S	1 mL
N-Nitroso-N,N-di(3,5,5-trimethylhexyl)amine	1207995-62-7	100 µg/mL	MeOH	NAS-041S	1 mL
N-Nitrosodi- <i>n</i> -propylamine-d ₁₄	93951-96-3	100 µg/mL	MeOH	NAS-D-001S	1 mL
N-Nitrosodiethylamine-d ₁₀	1219794-54-3	100 µg/mL	MeOH	NAS-D-003S	1 mL
N-Nitrosodi- <i>n</i> -butylamine-d ₁₈	1219798-82-9	100 µg/mL	MeOH	NAS-D-002S	1 mL
N-Nitrosodimethylamine-d ₆	17829-05-9	100 µg/mL	MeOH	NAS-D-004S	1 mL
N-Nitrosodiethanolamine-d ₈	1173019-53-8	100 µg/mL	MeOH	NAS-D-020S	1 mL
N'-Nitrosornicotine-d ₄	66148-19-4	100 µg/mL	MeOH	NAS-D-030S	1 mL
4-(Methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK)	64091-91-4	100 µg/mL	ACN	NAS-037S-CN	1 mL
4-(Methylnitrosamino)-1-(3-pyridyl)-1-butanone-d ₄ (NNK-d ₄)	764661-24-7	100 µg/mL	ACN	NAS-D-037S-CN	1 mL
N-Nitrosornortriptyline	55855-42-0	100 µg/mL	MeOH	NAS-038S	1 mL
N-Nitrosodi- <i>n</i> -butylamine (NDBA)	924-16-3	100 µg/mL	CH ₂ Cl ₂	APP-9-147	1 mL
		2000 µg/mL	CH ₂ Cl ₂	APP-9-147-20X	1 mL
		500 µg/mL	Water	M-8015B-5031-20	1 mL
N-Nitrosodiethylamine (NDEA)	55-18-5	100 µg/mL	CH ₂ Cl ₂	APP-9-148	1 mL
		2000 µg/mL	CH ₂ Cl ₂	APP-9-148-20X	1 mL
		5000 µg/mL	MeOH	AS-E0334	1 mL
N-Nitrosodimethylamine (NDMA)	62-75-9	100 µg/mL	CH ₂ Cl ₂	APP-9-149	1 mL
		1000 µg/mL	MeOH	APP-9-149-M-10X	1 mL
		100 µg/mL	CH ₂ Cl ₂	APP-9-150	1 mL
N-Nitrosodiphenylamine	86-30-6	1000 µg/mL	MeOH	APP-9-150-M-10X	1 mL
		5000 µg/mL	MeOH	AS-E0060	1 mL
		100 µg/mL	CH ₂ Cl ₂	APP-9-151	1 mL
N-Nitrosodi- <i>n</i> -propylamine (NDPA)	621-64-7	2500 µg/mL	CH ₂ Cl ₂	APP-9-151-25X	1 mL
		5000 µg/mL	MeOH	AS-E0061	1 mL
		100 µg/mL	CH ₂ Cl ₂	APP-9-152	1 mL
N-Nitrosomethylethylamine	10595-95-6	1000 µg/mL	MeOH	AS-E0974	1 mL

Nitrosamines

U.S. FDA and USEPA Methods

FDA Method Nitrosamine Impurities in Drugs

FDA-001S

100 µg/mL each in Methanol

1 mL
8 comps.

N-Nitrosodimethylamine
N-Nitrosodiethylamine
N-Nitroso-*n*-ethyl-2-propanamine

N-Nitrosodiisopropylamine
N-Nitrosodi-*n*-propylamine
N-Nitroso-*n*-methylaniline

N-Nitrosodi-*n*-butylamine
N-Nitroso-*n*-methyl-4-aminobutyric acid

EPA Method 521 Nitrosamines in Drinking Water by SPE and Capillary Column GC

The USEPA has developed multiple test methods for the determination of Nitrosamines in drinking water, underground water and municipal and industrial wastewater. Monitoring contaminants such as NDMA, NDEA and other emerging nitrosamines is important for both regulation compliance as well as reducing exposure to these toxins.

Analyte Stock Solution

M-521

200 µg/mL each in CH₂Cl₂

1 x 1 mL
7 comps.

N-Nitrosodimethylamine
N-Nitrosomethylethylamine
N-Nitrosodiethylamine
N-Nitrosodi-*n*-propylamine

N-Nitrosodi-*n*-butylamine
N-Nitrosopyrrolidine
N-Nitrosopiperidine

Internal Standard Stock Solution

M-521-IS

M-521-IS-PAK

1.0 mg/mL in CH₂Cl₂

1 x 1 mL
SAVE 5 x 1 mL

N-Nitrosodi-*n*-propylamine-d₁₄

Surrogate Standard Stock Solution

M-521-SS

M-521-SS-PAK

1.0 mg/mL in CH₂Cl₂

1 x 1 mL
SAVE 5 x 1 mL

N-Nitrosodimethylamine-d₆

EPA Method 607 Nitrosamines in Wastewater by GC/NPD

Nitrosamine Mix

M-607

M-607-PAK

At stated conc. (mg/mL) in MeOH

1 x 1 mL
SAVE 5 x 1 mL
3 comps.

N-Nitrosodimethylamine 0.2
N-Nitrosodiphenylamine 0.4

N-Nitrosodi-*n*-propylamine 0.2

EPA Method 8070A Detection of Nitrosamines by NPD / Reductive Hall or TEA

Nitrosamines

M-8070

M-8070-PAK

2.0 mg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
3 comps.

N-Nitrosodimethylamine
N-Nitrosodiphenylamine

N-Nitrosodi-*n*-propylamine

EPA Method 8270 Nitrosamines in Aqueous Matrices by Capillary Column GC/MS

Semi-Volatile by Capillary Column GC/MS

Mix 1

M-8270-01

2 mg/mL each in CH₂Cl₂

1 x 1 mL
17 comps.

Aniline
Benzyl alcohol
bis(2-Chloroethyl) ether
bis(2-Chloroisopropyl) ether
2-Chlorophenol
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
Ethylmethanesulfonate

Hexachloroethane
Methylmethanesulfonate
o-Cresol
p-Cresol
N-Nitrosodimethylamine
N-Nitrosodi-*n*-propylamine
Phenol
2-Picoline

Semi-Volatile by Capillary Column GC/MS

Mix 2

M-8270-02

2 mg/mL each in CH₂Cl₂

1 x 1 mL
18 comps.

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

Semi-Volatile by Capillary Column GC/MS

Mix 2 Rev.

M-8270-02-R1

2 mg/mL each in CH₂Cl₂

1 x 1 mL
17 comps.

Acetophenone
Benzoic acid
bis(2-Chloroethoxy)methane
4-Chloroaniline
4-Chloro-3-methylphenol
2,4-Dichlorophenol
2,6-Dichlorophenol
2,4-Dimethylphenol
Hexachlorobutadiene

Isophorone
2-Methylnaphthalene
Naphthalene
Nitrobenzene
2-Nitrophenol
N-Nitrosodi-*n*-butylamine
N-Nitrosopiperidine
1,2,4-Trichlorobenzene

Nitrosamines Alternate Mix

M-8270-03-ASL

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL
9 comps.

N-Nitrosodi-*n*-butylamine
N-Nitrosodiethylamine
N-Nitrosodimethylamine
N-Nitrosodiphenylamine
N-Nitrosodi-*n*-propylamine

N-Nitrosomethylethylamine
N-Nitrosomorpholine
N-Nitrosopiperidine
N-Nitrosopyrrolidine

Nitrosamines

International Methods

ASTM D8456 Nitrosamines in Water

ASTM D8456 is designed to test for N-nitrosamines in groundwater, surface water, wastewater influents, and wastewater effluents.

Nitrosamines in Water

D-8456

2 µg/mL each in Water:Methanol (98:2)

N-Nitrosodimethylamine
N-Nitrosomorpholine
N-Nitroso-*n*-methyl-4-aminobutyric acid
N-Nitrosopyrrolidine
N-Nitrosoethylmethylamine

N-Nitrosodiethylamine
N-Nitrosopiperidine
N-Nitroso-*n*-ethyl-2-propanamine
N-Nitrosodiisopropylamine

N-Nitrosodi-*n*-propylamine
N-Nitrosodi-*n*-butylamine
N-Nitroso-*n*-methylaniline
N-Nitrosodiphenylamine

1 mL

13 comps.

Nitrosamines in Water (Internal Standard)

D-8456-IS

2 µg/mL each in
Water:Methanol (98:2)

1 mL

2 comps.

N-Nitrosodimethylamine- d_6
N-Nitrosodiethylamine- d_{10}

EU Method EN 71-12 Nitrosamines in Toys

EN 71-12 was published to provide test method specifications to help reduce N-Nitrosamines (N-NAs) exposure for children by quantifying traces of these dangerous toxins in toys such as finger paint and balloons.

EN-7112

1000 µg/mL each in MeOH

N-Nitrosodi-*n*-butylamine
N-Nitrosodiethylamine
N-Nitrosodimethylamine
N-Nitrosodi-*n*-propylamine
N-Nitrosomorpholine

N-Nitrosopiperidine
N-Nitroso-*n*-methylaniline
N-Nitroso-*n*-ethylaniline
N-Nitrosodibenzylamine

N-Nitrosodiisopropylamine
N-Nitrosodiethanolamine
N-Nitroso-*n*,*n*-di(3,5,5-trimethylhexyl)amine
N-Nitrosodiisobutylamine

1 x 1 mL

13 comps.

Chinese Methods GBT 24153 and HJ 809 for Nitrosamines by GC/MS

GBT 24153 Nitrosamines Standard

GBS-003S

100 µg/mL each in MeOH

N-Nitrosodimethylamine
N-Nitrosodiethylamine
N-Nitrosodi-*n*-propylamine
N-Nitrosodi-*n*-butylamine
N-Nitrosopiperidine
N-Nitrosopyrrolidine

N-Nitrosomorpholine
N-Nitroso-*n*-methylaniline
N-Nitroso-*n*-ethylaniline
N-Nitrosodibenzylamine
N-Nitrosoethylmethylamine
N-Nitrosodiphenylamine

1 mL
12 comps.

HJ 809 Nitrosamines Standard

GBS-004S

2000 µg/mL each in MeOH

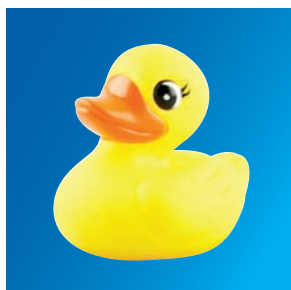
N-Nitrosoethylmethylamine
N-Nitrosodi-*n*-butylamine
N-Nitrosodi-*n*-propylamine
N-Nitrosodiethylamine
N-Nitrosodimethylamine

N-Nitrosodiphenylamine
N-Nitrosomorpholine
N-Nitrosopiperidine
N-Nitrosopyrrolidine

1 mL
9 comps.



Phthalates



see USEPA Phthalate Method sections

506 606 8061A
525.3 8060

Phthalate Contents

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Phthalates, also known as plasticizers, are chemicals added to plastics to enhance flexibility and durability. They are widely used in products like cosmetics, personal care items, food containers, building materials, and pharmaceuticals due to their low cost and effectiveness. Phthalates are categorized into Higher Molecular Weight (HMW) and Lower Molecular Weight (LMW) types based on the alcohol used in their production. LMW phthalates (e.g., DBP, DEHP) are more prone to leaching into the environment, especially as materials age, leading to widespread contamination.

These chemicals are environmental pollutants and pose serious health risks including cancer, hormonal disruption, and reduced fertility. Regulatory bodies like the USFDA and ECHA have restricted or banned several phthalates in consumer goods, particularly in children's products. Analytical methods have been developed to detect and measure phthalates, primarily focusing on LMW types, and some alternatives like terephthalates and isophthalates are being explored.

Phthalate Compounds

Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
2-Butoxy-2-oxoethyl butyl phthalate	85-70-1		NEAT	J-115	100 mg
Benzyl 2-Ethylhexyl phthalate	27215-22-1		NEAT	ALR-165N	100 mL
		100 µg/mL	MeOH	ALR-165S	1 mL
Benzyl butyl phthalate (BBP)	85-68-7		NEAT	ALR-082N	100 mg
		100 µg/mL	MeOH	ALR-082S	1 mL
		5 mg/mL	MeOH	AS-E0065	1 mL
bis(2-Ethoxyethyl)phthalate	605-54-9		NEAT	J-111	100 mg
bis(2-ethylhexyl)cyclohexane-1,2-dicarboxylate	84-71-9	100 µg/mL	Hexane	PTH-029S-H	1 mL
bis(2-n-Butoxyethyl)phthalate (DBEP)	117-83-9		NEAT	J-112	100 mg
bis(2-Ethylhexyl)phthalate (DEHP)	117-81-7		NEAT	ALR-097N	100 mg
		100 µg/mL	MeOH	ALR-097S	1 mL
		1000 µg/mL	MeOH	AS-E0064	1 mL
bis(2-Methoxyethyl)phthalate	117-82-8		NEAT	J-106	100 mg
bis(4-Methyl-2-pentyl)phthalate	146-50-9		NEAT	J-109-10MG	10 mg
			NEAT	J-109	100 mg
bis(4-Methylpentyl)phthalate	71850-09-4		NEAT	PTH-022N	10 mg
			NEAT	PTH-022S	100 mg
Butyl decyl phthalate	89-19-0	100 µg/mL	Hexane	PTH-027S-H	1 mL
Di-iso-undecyl phthalate	96507-86-7		NEAT	PTH-023N	100 mg
		100 µg/mL	MeOH	PTH-023S	1 mL
Di-n-heptyl phthalate	3648-21-3		NEAT	PTH-020N	100 mg
		100 µg/mL	MeOH	PTH-020S	1 mL
Di-n-octyl phthalate (DNOP)	117-84-0		NEAT	ALR-105N	100 mg
		100 µg/mL	MeOH	ALR-105S	1 mL
		5 mg/mL	MeOH	AS-E0067	1 mL
Diallyl phthalate	131-17-9		NEAT	J-002	100 mg
Diamyl phthalate (DPNP)	131-18-0		NEAT	ALR-098N	100 mg
		100 µg/mL	MeOH	ALR-098S	1 mL
Di-n-butyl phthalate (DBP)	84-74-2		NEAT	ALR-104N	100 mg
		100 µg/mL	MeOH	ALR-104S	1 mL
		1000 µg/mL	MeOH	APP-9-063-10X	1 mL
		5 mg/mL	MeOH	AS-E0066	1 mL
Dibutyl phthalate	84-74-2		NEAT	PLAS-PL-013N	50 mg
		100 µg/mL	MeOH	PLAS-PL-013S	1 mL
Dicyclohexyl phthalate (DCHP)	84-61-7		NEAT	ALR-099N	100 mg
		100 µg/mL	MeOH	ALR-099S	1 mL
		1 mg/mL	ACN	AS-E0318	1 mL
Didecyl phthalate	84-77-5		NEAT	J-120	100 mg
Didodecyl phthalate	2432-90-8		NEAT	PTH-018N	100 mg
		100 µg/mL	MeOH	PTH-018S	1 mL
Diethyl phthalate (DEP)	84-66-2		NEAT	ALR-110N	100 mg
		100 µg/mL	MeOH	ALR-110S	1 mL
		1000 µg/mL	MeOH	APP-9-081-10X	1 mL
		5 mg/mL	MeOH	AS-E0068	1 mL
Dihexyl phthalate (DHP)	84-75-3		NEAT	ALR-100N	100 mg
		100 µg/mL	MeOH	ALR-100S	1 mL
Diisobutyl phthalate (DIBP)	84-69-5		NEAT	J-113	100 mg
Diisopentyl phthalate (Diisoamyl phthalate) (DIPP)	605-50-5		NEAT	J-127	100 mg
Diisopropyl phthalate	605-45-8		NEAT	PTH-019N	100 mg
		100 µg/mL	MeOH	PTH-019S	1 mL

Phthalate Compounds continued on next page

Phthalates

Phthalate Compounds (continued)

Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
Diisotridecyl phthalate	75359-31-8	100 µg/mL	Hexane	PHTH-025S-H	1 mL
Dimethyl phthalate (DMP)	131-11-3	100 mg	NEAT	ALR-111N	100 mg
		100 µg/mL	MeOH	ALR-111S	1 mL
		1 mg/mL	MeOH	APP-9-088-10X	1 mL
		5 mg/mL	MeOH	AS-E0069	1 mL
		0.1 mg/mL	EtOAc	M-8032-IS	1 mL
Dinonyl phthalate	84-76-4		NEAT	J-105	100 mg
Diphenyl phthalate	84-62-8		NEAT	J-013	100 mg
Diethyl phthalate (DEHP)	117-81-7		NEAT	PLAS-PL-019N	50 mg
		1000 µg/mL	Hexane	PLAS-PL-019S	1 mL
		100 µg/mL	Hexane	PHTH-024S-H	1 mL
Ditridecyl phthalate	119-06-2		NEAT	PHTH-021N	100 mg
Diundecyl phthalate	3648-20-2		NEAT	PHTH-021S	1 mL
Ethylphthalyl ethyl glycolate	84-72-0	100 µg/mL	Hexane	PHTH-030S-H	1 mL
n-Octyl n-decyl phthalate	119-07-3	100 µg/mL	Hexane	PHTH-031S-H	1 mL
n-Pentyl-isopentyl phthalate	776297-69-9	100 µg/mL	Hexane	PHTH-032S-H	1 mL
n-Butyl benzyl phthalate	85-68-7		NEAT	PHTH-014N	10 mg
		100 µg/mL	MeOH	PHTH-014S	1 mL
Pentyl decyl phthalate	7493-81-4	100 µg/mL	Hexane	PHTH-028S-H	1 mL
n-Pentyl-isopentyl phthalate	776297-69-9	100 µg/mL	Hexane	PHTH-032S-H	1 mL

Set of 17 Phthalate Solutions

17 x 1 mL

ALR-PHT-SET

Each at 100 µg/mL

Benzyl butyl phthalate (BBP)	ALR-082S	Diisodecyl phthalate (DIDP) (Tech Mix)	ALR-101S	Monobenzyl phthalate (mBzP)	ALR-134S-CN
Diamyl phthalate (DPNP)	ALR-098S	Diisononyl phthalate (DINP) (Tech Mix)	ALR-102S	Monobutyl phthalate (mBP)	ALR-135S-CN
Dicyclohexyl phthalate (DCHP)	ALR-099S	Diisooctyl phthalate (DIOP) (Tech Mix)	ALR-103S	Monoethyl phthalate (mEP)	ALR-137S-CN
Di(2-ethyl hexyl) phthalate (DEHP)	ALR-097S	Dimethyl phthalate (DMP)	ALR-111S	Monoethylhexyl phthalate (mEHP)	ALR-138S-CN
Diethyl phthalate (DEP)	ALR-110S	Di-n-butyl phthalate (DBP)	ALR-104S	Monomethyl phthalate	ALR-139S-CN
Di-hexyl phthalate (DHP)	ALR-100S	Di-n-octyl phthalate (DNOP)	ALR-105S		

Isophthalate Compounds

Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
Dimethyl isophthalate	1459-93-4		NEAT	J-009	100 mg
Diphenyl isophthalate	744-45-6		NEAT	J-012	100 mg

Terephthalate Compounds

Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
bis(2-Ethylhexyl) terephthalate	6422-86-2		NEAT	J-121	100 mg
Diethyl terephthalate	636-09-9		NEAT	J-123	100 mg
Dimethyl terephthalate	120-61-6		NEAT	J-101	100 mg

Monophthalate Compounds

Mono-phthalate esters are the primary phthalate metabolites formed via hydrolysis of one ester bond. It is these compounds that are thought to be toxic agents and are receiving interest as a possible human health issue. Studies have shown that they can produce estrogenic and immune-suppressive effects in humans. 13 listed mono-phthalates including the mono-ethylhexyl (mEHP) which is the metabolite of the plasticizer with the greatest yearly production and use on a global basis.

Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
Monobenzyl phthalate (mBzP)	2528-16-7		NEAT	ALR-134N	100 mg
		100 µg/mL	ACN	ALR-134S-CN	1 mL
Monobutyl phthalate (mBP)	131-70-4		NEAT	ALR-135N	100 mg
		100 µg/mL	ACN	ALR-135S-CN	1 mL
Monoethyl phthalate (mEP)	2306-33-4		NEAT	ALR-137N	100 mg
		100 µg/mL	ACN	ALR-137S-CN	1 mL
Monoethylhexyl phthalate (mEHP)	4376-20-9		NEAT	ALR-138N	100 mg
		100 µg/mL	ACN	ALR-138S-CN	1 mL
Monomethyl phthalate	4376-18-5		NEAT	ALR-139N	100 mg
		100 µg/mL	ACN	ALR-139S-CN	1 mL
Monooctyl phthalate	5393-19-1		NEAT	ALR-141N	100 mg
		100 µg/mL	ACN	ALR-141S-CN	1 mL

Phthalates continued on next page

Phthalates

Monophthalate Compounds (continued)

Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
Mono-2-heptyl phthalate			NEAT	ALR-143N	100 mg
		100 µg/mL	ACN	ALR-143S-CN	1 mL
Monohexyl phthalate	24539-57-9		NEAT	ALR-175N	100 mg
		100 µg/mL	ACN	ALR-175S-CN	1 mL
Monoisobutyl phthalate	30833-53-5		NEAT	ALR-176N	100 mg
		100 µg/mL	ACN	ALR-176S-CN	1 mL
Mono-n-pentyl phthalate	24539-56-8		NEAT	ALR-177N	100 mg
		100 µg/mL	ACN	ALR-177S-CN	1 mL
Monocyclohexyl phthalate	7517-36-4		NEAT	ALR-178N	100 mg
		100 µg/mL	ACN	ALR-178S-CN	1 mL
Monoisopropyl phthalate	35118-50-4		NEAT	ALR-179N	100 mg
		100 µg/mL	ACN	ALR-179S-CN	1 mL

Deuterated Phthalates

Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
Dibenzylphthalate-d ₄	1015854-62-2	100 µg/mL	MeOH	PHTH-D4-001S	1 mL
Di-n-butyl phthalate-d ₄	93952-11-5	100 µg/mL	MeOH	PHTH-D4-002S	1 mL
Di-iso-butyl phthalate-3,4,5,6-d ₄	358730-88-8	100 µg/mL	MeOH	PHTH-D4-003S	1 mL
Dicyclohexyl phthalate-3,4,5,6-d ₄	358731-25-6	100 µg/mL	MeOH	PHTH-D4-004S	1 mL
		100 µg/mL	Hexane	PHTH-D4-004S-H	1 mL
Diethyl phthalate-3,4,5,6-d ₄	93952-12-6	100 µg/mL	MeOH	PHTH-D4-005S	1 mL
Di-n-hexyl phthalate-3,4,5,6-d ₄	1015854-55-3	100 µg/mL	MeOH	PHTH-D4-006S	1 mL
		100 µg/mL	Hexane	PHTH-D4-006S-H	1 mL
Dimethyl phthalate-3,4,5,6-d ₄	93951-89-4	100 µg/mL	MeOH	PHTH-D4-007S	1 mL
Di-n-octyl phthalate-3,4,5,6-d ₄	93952-13-7	100 µg/mL	MeOH	PHTH-D4-008S	1 mL
		100 µg/mL	Hexane	PHTH-D4-008S-H	1 mL
Di-n-pentyl phthalate-3,4,5,6-d ₄	358730-89-9	100 µg/mL	MeOH	PHTH-D4-009S	1 mL
Di-n-propyl phthalate-3,4,5,6-d ₄	358731-29-0	100 µg/mL	MeOH	PHTH-D4-010S	1 mL
bis(2-Ethylhexyl) phthalate-3,4,5,6-d ₄	93951-87-2	100 µg/mL	MeOH	PHTH-D4-011S	1 mL
		100 µg/mL	Hexane	PHTH-D4-011S-H	1 mL
Dimethyl terephthalate-2,3,5,6-d ₄	74079-01-9	100 µg/mL	MeOH	PHTH-D4-012S	1 mL
Di-n-nonyl Phthalate-3,4,5,6-d ₄	1202865-43-7	100 µg/mL	MeOH	PHTH-D4-013S	1 mL
bis(2-Ethoxyethyl) phthalate-3,4,5,6-d ₄	1398066-12-0	100 µg/mL	Hexane	PHTH-D4-014S-H	1 mL
bis(2-Ethoxyethyl) phthalate-3,4,5,6-d ₄	1398065-61-6	100 µg/mL	Hexane	PHTH-D4-015S-H	1 mL
bis(2-Butoxyethyl) phthalate-3,4,5,6-d ₄	1398065-96-7	100 µg/mL	Hexane	PHTH-D4-016S-H	1 mL
bis(2-Methoxyethyl) phthalate-3,4,5,6-d ₄	398065-54-7	100 µg/mL	Hexane	PHTH-D4-017S-H	1 mL
Benzyl butyl phthalate-d ₄	93951-88-3	100 µg/mL	Hexane	PHTH-D4-018S-H	1 mL

Phthalates Technical Mixes

The high molecular weight (HMW) phthalates have more than six carbons in the backbone and are synthesized from phthalic acid and mixtures of C₉ and C₁₀ alcohols. The two major HMW products are diisononyl phthalate (DINP) and diisodecyl phthalate (DIDP). In recent years, HMW phthalates have been commonly used as a plasticizer in consumer production making testing for these compounds as important as testing for the LMW phthalates. Unlike LMW phthalates which are typically observed as a single peak isomer during GC analysis, HMW phthalates are generally Technical Mixture standards comprised of multiple peaks representing different isomers of the same parent compound. Isomer ratio can vary depending on the synthesis route and the starting precursor alcohol used.

Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
Butyl cyclohexyl phthalate	84-64-0	---	NEAT	J-122	100 mg
n-Butyl iso-butyl phthalate		---	NEAT	PHTH-013N	10 mg
		100 µg/mL	MeOH	PHTH-013S	1 mL
Butyl octyl phthalate	84-78-5	---	NEAT	J-001	100 mg
Decyl octyl phthalate		---	NEAT	PHTH-012N	10 mg
		100 µg/mL	MeOH	PHTH-012S	1 mL
Diisodecyl phthalate (DIDP)	26761-40-0	---	NEAT	ALR-101N	100 mg
		100 µg/mL	MeOH	ALR-101S	1 mL
Diisoheptyl phthalate		---	NEAT	PHTH-017N	50 mg
		100 µg/mL	MeOH	PHTH-017S	1 mL
Diisohexyl phthalate	68515-50-4	---	NEAT	J-007-10MG	10 mg
Diisooctyl phthalate	27554-26-3	---	NEAT	J-008	100 mg
Diisononyl phthalate (C8 to C10 Isomers) (DINP)		---	NEAT	ALR-102N	100 mg
		100 µg/mL	MeOH	ALR-102S	1 mL
Diisooctyl phthalate (C8 Isomers) (DIOP)	27554-26-3	---	NEAT	ALR-103N	100 mg
		100 µg/mL	MeOH	ALR-103S	1 mL
Hexyl 2-ethylhexyl phthalate	75673-16-4	---	NEAT	J-016	100 mg
Iso-butyl benzyl phthalate		---	NEAT	PHTH-015N	10 mg
		100 µg/mL	MeOH	PHTH-015S	1 mL
Isobutylcyclohexyl phthalate	5334-09-8	---	NEAT	J-014	100 mg
Pentyl isopentyl phthalate	84777-06-0	---	NEAT	PHTH-016N	10 mg
		100 µg/mL	MeOH	PHTH-016S	1 mL
n-Octyl n-decyl phthalate			NEAT	J-015	100 mg

Phthalates

Regional Methods

AOAC (Association of Official Analytical Chemists) International Phthalates

Phthalates in Water-Based Adhesive

AOAC-PHTH-01

1000 µg/mL each in n-Hexane

1 mL

9 comps.

bis(2-Methoxyethyl)phthalate	Dihexyl phthalate
Dipentyl phthalate	bis(2-n-butoxyethyl)phthalate
Benzyl butyl phthalate	Di-n-octyl phthalate
Diphenyl phthalate	bis(2-Ethylhexyl)phthalate
Dicyclohexyl phthalate	

Phthalates in Water-Based Adhesive Internal Standard

AOAC-PHTH-01-IS

100 µg/mL each in n-Hexane

1 mL

10 comps.

bis(2-methoxyethyl) Phthalate-3,4,5,6-d ₄	Dicyclohexyl Phthalate-3,4,5,6-d ₄
di-n-pentyl phthalate-d ₄	Di-n-hexyl Phthalate-3,4,5,6-d ₄
bis(2-ethoxyethyl) Phthalate-3,4,5,6-d ₄	bis(2-butoxyethyl) Phthalate-3,4,5,6-d ₄
Benzyl butyl phthalate-d ₄	Di-n-octyl Phthalate-3,4,5,6-d ₄
Diphenyl Phthalate-3,4,5,6-d ₄	bis(2-ethylhexyl)phthalate-d ₄

ISO 14389 Phthalates in Textiles by GC/MS

ISO14389 Phthalates Reference Standard

ISO14389

1000 µg/mL each in Hexane

1 mL

15 comps.

Dicyclohexyl phthalate	Dipentyl phthalate
Diisononyl phthalate	Diisoheptyl phthalate
bis(2-Ethylhexyl)phthalate	bis(2-Methoxyethyl)phthalate
Di-n-octyl phthalate	Diisopentyl phthalate
Diisodecyl phthalate	Dihexyl phthalate
Benzyl butyl phthalate	n-Pentyl-isopentyl phthalate
Dibutyl phthalate	bis(4-Methylpentyl)phthalate
Diisobutyl phthalate	

ISO 16465 Phthalates in Oils by GC/MS

Compounds	CAS	500 µg/mL in Toluene	
bis(2-ethylhexyl)phthalate	117-81-7	ISO16465-A	1 mL
Internal Standards			
bis(2-ethylhexyl)phthalate-d ₄	93951-87-2	ISO16465-A-IS	1 x 1 mL
		ISO16465-A-IS-PAK	5 x 1 mL

Phthalates in Fat and Oil Reference Standard

ISO16465-B

500 µg/mL each in Toluene

1 x 1 mL

8 comps.

Dimethyl phthalate	Dibutyl phthalate	Diisononyl phthalate
Diethyl phthalate	Benzyl butyl phthalate	Diisodecyl phthalate
Diisobutyl phthalate	bis(2-Ethylhexyl)phthalate	

International Methods other than USEPA are located in the Regional Section

ENISO18856 Phthalates in Water by GC/MS

Phthalates Reference Standard

ENISO18856

1000 µg/mL each in Ethyl acetate

1 x 1 mL

10 comps.

Benzyl butyl phthalate	Dibutyl phthalate	Diethyl phthalate
bis(2-Ethylhexyl)phthalate	Dicyclohexyl phthalate	Diisobutyl phthalate
Di-n-octyl phthalate	Didecyl phthalate	Dimethyl phthalate
Di-n-propyl phthalate		

Chinese Method GB 509.271-2016 Phthalates in Food by GC/MS.

GB 509.271 Phthalates Standard

GBS-005S

1000 µg/mL each in Hexane

1 mL

18 comps.

Diallyl phthalate	bis(2-Ethoxyethyl)phthalate	bis(2-n-butoxyethyl)phthalate	Dipentyl phthalate	Dihexyl phthalate	Dinonyl phthalate
Diisononyl phthalate	bis(2-Ethylhexyl)phthalate	bis(4-Methyl-2-pentyl)phthalate	Dicyclohexyl phthalate	Diisobutyl phthalate	Dibutyl phthalate
Benzyl butyl phthalate	bis(2-Methoxyethyl)phthalate	Di-n-octyl phthalate	Diethyl phthalate	Dimethyl phthalate	Diphenyl phthalate

Additional Phthalate Mixes

Appendix IX Phthalate Mix

APP-9-PHTH-MIX

1000 µg/mL each in Cyclohexane

1 x 1 mL

6 comps.

bis(2-Ethylhexyl)phthalate	Diisodecyl phthalate
Dibutyl phthalate	Diisooxyl phthalate
Di-n-octyl phthalate	Benzyl butyl phthalate

Adipate and Phthalate Standard

WS-PHTH-001

1000 µg/mL each in Acetone

1 x 1 mL

2 comps.

bis(2-Ethylhexyl)phthalate	bis(2-Ethylhexyl)adipate
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Phthalate Mix

ASM-146

1.0 mg/mL each in MeOH

1 x 1 mL

6 comps.

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

Phthalate Esters Mix

M-PHE

M-PHE-PAK

At stated conc.(µg/mL) in Acetone

1 x 1 mL

SAVE 5 x 1 mL

6 comps.

Benzyl butyl phthalate	10	Dimethyl phthalate	25
bis(2-Ethylhexyl)phthalate	50	Di-n-butyl phthalate	25
Diethyl phthalate	25	Di-n-octyl phthalate	50

Polycyclic Aromatic Hydrocarbons (PAHs)



Polycyclic Aromatic Hydrocarbons (PAHs) - also commonly called Polynuclear Aromatic Hydrocarbons are compounds that are composed of multiple fused benzene rings. These compounds occur naturally in coal, crude oil, asphalt and gasoline. They are also formed by combustion of coal, oil, gas, wood, garbage and tobacco.

PAHs have been identified as endocrine disruptors, and have been linked to several types of cancers. They are persistent in the environment, and can bioaccumulate. These compounds are regulated by many different agencies around the world to protect human health and the environment.

USEPA PAH Methods Index

Method 550	Method 610	Method 8310
Method 550.1	Method 8272	

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Polycyclic Aromatic Hydrocarbons (PAHs) Compounds

Compound Synonym	CAS Conc.	Matrix	Cat. No.	Unit	Compound Synonym	CAS. Conc.	Matrix	Cat. No.	Unit
Acenaphthene	83-32-9	NEAT	H-108N	100 mg	Dibenz[a,h]acridine	226-36-8	NEAT	H-172N	10 mg
	50 µg/mL	Toluene	H-108S	1 mL		50 µg/mL	Toluene	H-172S	1 mL
Acenaphthylene	208-96-8	NEAT	H-125N	100 mg	Dibenz[a,i]acridine	224-42-0	NEAT	H-173N	10 mg
	50 µg/mL	Toluene	H-125S	1 mL		50 µg/mL	Toluene	H-173S	1 mL
Acridine	260-94-6	NEAT	H-187N	100 mg	Dibenz[a,c]anthracene	215-58-7	NEAT	H-134N	10 mg
	50 µg/mL	Toluene	H-187S	1 mL	1,2:3,4-Dibenzanthracene	50 µg/mL	Toluene	H-134S	1 mL
Anthanthrene	191-26-4	NEAT	H-109N	10 mg	Dibenz[a,h]anthracene	53-70-3	NEAT	H-135N	10 mg
	50 µg/mL	Toluene	H-109S	1 mL		50 µg/mL	Toluene	H-135S	1 mL
Anthracene	120-12-7	NEAT	H-110N	100 mg	Dibenz[a,e]fluoranthene	5385-75-1	----	-----	-----
	50 µg/mL	Toluene	H-110S	1 mL		50 µg/mL	Toluene	H-247S	1 mL
Azulene	275-51-4	NEAT	H-127N	10 mg	Dibenz[a,e]pyrene	192-65-4	----	-----	-----
	50 µg/mL	Toluene	H-127S	1 mL	1,2,4,5-Dibenzopyrene	50 µg/mL	Toluene	H-138S	1 mL
Benz[a]anthracene	56-55-3	NEAT	H-100N	10 mg	Dibenz[a,h]pyrene	189-64-0	NEAT	H-177N	10 mg
1,2-Benzanthracene	50 µg/mL	Toluene	H-100S	1 mL		50 µg/mL	Toluene	H-177S	1 mL
Benz[a]anthracene-7,12-dione	2498-66-0	NEAT	H-111N	10 mg	Dibenz[a,i]pyrene	189-55-9	NEAT	H-178N	5 mg
1,2-Benzoanthraquinone	50 µg/mL	Toluene	H-111S	1 mL		50 µg/mL	Toluene	H-178S	1 mL
Benz[a]fluorene	238-84-6	----	-----	-----	Dibenz[a,l]pyrene	191-30-0	----	-----	-----
1,2-Benzofluorene	50 µg/mL	Toluene	H-130S	1 mL		50 µg/mL	Toluene	H-179S	1 mL
Benz[a]pyrene	50-32-8	NEAT	H-169N	10 mg	7H-Dibenzo[c,g]carbazole	194-59-2	----	-----	-----
3,4-Benzopyrene	50 µg/mL	Toluene	H-169S	1 mL		50 µg/mL	Toluene	H-176S	1 mL
Benz[e]pyrene	192-97-2	NEAT	H-112N	10 mg	Dibenzo-p-dioxin	262-12-4	NEAT	D-100N	10 mg
	50 µg/mL	Toluene	H-112S	1 mL		50 µg/mL	Isocotane	D-100S	1 mL
Benzo[b]anthracene	92-24-0	----	-----	-----	Dibenzofuran	132-64-9	NEAT	F-100N	50 mg
	50 µg/mL	Toluene	H-159S	1 mL		50 µg/mL	Isocotane	F-100S	1 mL
Benzo[b]chrysene	214-17-5	NEAT	H-183N	5 mg	Dibenzothiophene	132-65-0	NEAT	H-117N	100 mg
	50 µg/mL	Toluene	H-183S	1 mL	Diphenylene sulfide	50 µg/mL	Toluene	H-117S	1 mL
Benzo[b]fluoranthene	205-99-2	NEAT	H-128N	10 mg	9,10-Dihydroanthracene	613-31-0	----	-----	-----
Benz[e]acephenanthrylene	50 µg/mL	Toluene	H-128S	1 mL		50 µg/mL	Toluene	H-140S	1 mL
Benzo[j]fluoranthene	205-82-3	NEAT	H-171N	10 mg	2,3-Dimethylantracene	613-06-9	NEAT	H-189N	10 mg
	50 µg/mL	Toluene	H-171S	1 mL		50 µg/mL	Toluene	H-189S	1 mL
Benzo[k]fluoranthene	207-08-9	NEAT	H-129N	10 mg	9,10-Dimethylantracene	781-43-1	NEAT	H-190N	10 mg
	50 µg/mL	Toluene	H-129S	1 mL		50 µg/mL	Toluene	H-190S	1 mL
Benzo[b]fluorene	243-17-4	----	-----	-----	3,9-Dimethylbenz[a]anthracene	316-51-8	----	-----	-----
2,3-Benzofluorene	50 µg/mL	Toluene	H-180S	1 mL		50 µg/mL	Toluene	H-191S	1 mL
Benzo[g,h,i]perylene	191-24-2	NEAT	H-103N	10 mg	6,8-Dimethylbenz[a]anthracene	317-64-6	----	-----	-----
1,12-Benzoperylene	50 µg/mL	Toluene	H-103S	1 mL		50 µg/mL	Toluene	H-192S	1 mL
Benzo[c]phenanthrene	195-19-7	NEAT	H-244N	10 mg	7,12-Dimethylbenz[a]anthracene	57-97-6	NEAT	H-174N	10 mg
	50 µg/mL	Toluene	H-244S	1 mL		50 µg/mL	Toluene	H-174S	1 mL
2,3-Benzofuran	271-89-6	NEAT	H-237N	10 mg	7,10-Dimethylbenz[a]pyrene	63104-33-6	----	-----	-----
	50 µg/mL	Toluene	H-237S	1 mL		50 µg/mL	Toluene	H-195S	1 mL
5,6-Benzoquinoline	85-02-9	NEAT	H-113N-10MG	10 mg	1,12-Dimethylbenzo[c]phenanthrene	4076-43-1	----	-----	-----
Benzo[f]quinoline	50 µg/mL	Toluene	H-113S	1 mL		50 µg/mL	Toluene	H-193S	1 mL
7,8-Benzoquinoline	230-27-3	NEAT	H-245N	100 mg	1,2-Dimethylnaphthalene	573-98-8	NEAT	H-197N	10 mg
	50 µg/mL	Toluene	H-245S	1 mL		50 µg/mL	Toluene	H-197S	1 mL
2,2'-Binaphthyl	612-78-2	NEAT	H-239N	50 mg	1,3-Dimethylnaphthalene (96%)	575-41-7	NEAT	H-198N	10 mg
	50 µg/mL	Toluene	H-239S	1 mL		50 µg/mL	Toluene	H-198S	1 mL
Biphenyl	92-52-4	NEAT	H-133N	500 mg	1,4-Dimethylnaphthalene (95%)	571-58-4	NEAT	H-199N	10 mg
	50 µg/mL	Toluene	H-133S	1 mL		50 µg/mL	Toluene	H-199S	1 mL
Carbazole	86-74-8	NEAT	H-114N	100 mg	1,5-Dimethylnaphthalene	571-61-9	----	-----	-----
	50 µg/mL	Toluene	H-114S	1 mL		50 µg/mL	Toluene	H-200S	1 mL
Chrysene	218-01-9	NEAT	H-115N	100 mg	1,6-Dimethylnaphthalene	575-43-9	NEAT	H-201N	10 mg
Benzo[a]phenanthrene	50 µg/mL	Toluene	H-115S	1 mL		50 µg/mL	Toluene	H-201S	1 mL
Coronene	191-07-1	NEAT	H-116N	5 mg	1,8-Dimethylnaphthalene (95%)	569-41-5	NEAT	H-202N	10 mg
	50 µg/mL	Toluene	H-116S	1 mL		50 µg/mL	Toluene	H-202S	1 mL
Cyclopenta[c,d]pyrene	27208-37-3	----	-----	-----	2,6-Dimethylnaphthalene	581-42-0	NEAT	H-161N	10 mg
	50 µg/mL	Toluene	H-242S	1 mL		50 µg/mL	Toluene	H-161S	1 mL

PAH Compounds continued on next page

Polycyclic Aromatic Hydrocarbons (PAHs)

Polycyclic Aromatic Hydrocarbons (PAHs) (continued)

Compound Synonym	CAS Conc.	Matrix	Cat. No.	Unit	Compound Synonym	CAS. Conc.	Matrix	Cat. No.	Unit
2,7-Dimethylnaphthalene	582-16-1 50 µg/mL	---- Toluene	----- H-203S	----- 1 mL	3-Methylcholanthrene	56-49-5 50 µg/mL	NEAT Toluene	H-170N H-170S	10 mg 1 mL
3,6-Dimethylphenanthrene	1576-67-6 50 µg/mL	NEAT Toluene	H-142N-5MG H-142S	5 mg 1 mL	4-Methylchrysene	3351-30-2 50 µg/mL	----- Toluene	----- H-228S	----- 1 mL
9,10-Diphenylanthracene	1499-10-1 50 µg/mL	NEAT Toluene	H-185N H-185S	100 mg 1 mL	5-Methylchrysene	3697-24-3 50 µg/mL	----- Toluene	----- H-243S	----- 1 mL
Dodecahydrotriphenylene	1610-39-5 50 µg/mL	----- Toluene	----- H-144S	----- 1 mL	6-Methylchrysene	1705-85-7 50 µg/mL	NEAT Toluene	H-175N H-175S	10 mg 1 mL
6-Ethylchrysene	2732-58-3	NEAT	H-264N	10 mg	2-Methylfluoranthene	33543-31-6 50 µg/mL	NEAT Toluene	H-182N-5MG H-182S	5 mg 1 mL
Fluoranthene	206-44-0 50 µg/mL	NEAT Toluene	H-118N H-118S	100 mg 1 mL	1-Methylnaphthalene	90-12-0 50 µg/mL	NEAT Toluene	H-001N H-001S	100 mg 1 mL
Fluorene	86-73-7 50 µg/mL	NEAT Toluene	H-146N H-146S	100 mg 1 mL	2-Methylnaphthalene	91-57-6 50 µg/mL	NEAT Toluene	H-002N H-002S	100 mg 1 mL
Indan	496-11-7 50 µg/mL	NEAT Toluene	H-231N H-231S	100 mg 1 mL	9-Methyl-9-phenylfluorene	56849-83-3 50 µg/mL	NEAT Toluene	H-204N H-204S	10 mg 1 mL
Indene	95-13-6 50 µg/mL	NEAT Toluene	H-230N H-230S	100 mg 1 mL	1-Methylphenanthrene	832-69-9 50 µg/mL	----- Toluene	----- H-162S	----- 1 mL
Indeno[1,2,3-cd]pyrene	193-39-5 50 µg/mL	NEAT Toluene	H-157N H-157S	10 mg 1 mL	2-Methylphenanthrene	2531-84-2 50 µg/mL	----- Toluene	----- H-003S	----- 1 mL
Indole	120-72-9 50 µg/mL	NEAT Toluene	H-236N H-236S	100 mg 1 mL	3-Methylphenanthro[3,4-c]phenanthrene	83844-21-7 50 µg/mL	----- Toluene	----- H-224S	----- 1 mL
Isoquinoline	119-65-3 50 µg/mL	NEAT Toluene	H-232N H-232S	100 mg 1 mL	1-Methylpyrene	2381-71-7 50 µg/mL	----- Toluene	----- H-233S	----- 1 mL
1-Methylantracene	610-48-0 50 µg/mL	NEAT Toluene	H-222N H-222S	10 mg 1 mL	4,5-Methylenephenanthrene	203-64-5 50 µg/mL	----- Toluene	----- H-119S	----- 1 mL
2-Methylantracene	613-12-7 50 µg/mL	NEAT Toluene	H-148N H-148S	10 mg 1 mL	Naphthalene	91-20-3 50 µg/mL	NEAT Toluene	H-152N H-152S	100 mg 1 mL
9-Methylantracene	779-02-2 50 µg/mL	NEAT Toluene	H-149N H-149S	10 mg 1 mL	Perylene	198-55-0 50 µg/mL	NEAT Toluene	H-121N H-121S	10 mg 1 mL
1-Methylbenz[a]anthracene	2498-77-3 50 µg/mL	----- Toluene	----- H-213S	----- 1 mL	Phenanthrene	85-01-8 50 µg/mL	NEAT Toluene	H-122N H-122S	100 mg 1 mL
2-Methylbenz[a]anthracene	2498-76-2 50 µg/mL	----- Toluene	----- H-214S	----- 1 mL	9-Phenylanthracene	602-55-1 50 µg/mL	----- Toluene	----- H-156S	----- 1 mL
3-Methylbenz[a]anthracene	2498-75-1 50 µg/mL	----- Toluene	----- H-215S	----- 1 mL	1-Phenylnaphthalene	605-02-7 50 µg/mL	NEAT Toluene	H-246N H-246S	100 mg 1 mL
4-Methylbenz[a]anthracene	316-49-4 50 µg/mL	----- Toluene	----- H-216S	----- 1 mL	2-Phenylnaphthalene	612-94-2 50 µg/mL	----- Toluene	----- H-158S	----- 1 mL
5-Methylbenz[a]anthracene	2319-96-2 50 µg/mL	----- Toluene	----- H-217S	----- 1 mL	Picene	213-46-7 50 µg/mL	----- Toluene	----- H-184S	----- 1 mL
6-Methylbenz[a]anthracene	316-14-3 50 µg/mL	----- Toluene	----- H-218S	----- 1 mL	Pyrene	129-00-0 50 µg/mL	NEAT Toluene	H-123N H-123S	100 mg 1 mL
7-Methylbenz[a]anthracene	2541-69-7 50 µg/mL	----- Toluene	----- H-219S	----- 1 mL	Pyrrole	109-97-7 50 µg/mL	NEAT Toluene	H-229N H-229S	100 mg 1 mL
9-Methylbenz[a]anthracene	2381-16-0 50 µg/mL	----- Toluene	----- H-220S	----- 1 mL	Quinoline	91-22-5 50 µg/mL	NEAT Toluene	H-186N H-186S	100 mg 1 mL
10-Methylbenz[a]anthracene	2381-15-9 50 µg/mL	----- Toluene	----- H-221S	----- 1 mL	2,3:6,7-Tetraethylbiphenylene	50 µg/mL	NEAT Toluene	H-225N H-225S	10 mg 1 mL
7-Methylbenz[a]pyrene	63041-77-0 50 µg/mL	----- Toluene	----- H-223S	----- 1 mL	1,2,3,4-Tetrahydrofluoranthene	20279-21-4 50 µg/mL	NEAT Toluene	H-165N H-165S	10 mg 1 mL
8-Methylbenz[a]pyrene	63041-76-9 50 µg/mL	----- Toluene	----- H-205S	----- 1 mL	Thianaphthene	95-15-8 50 µg/mL	NEAT Toluene	H-238N H-238S	100 mg 1 mL
10-Methylbenz[a]pyrene	63104-32-5 50 µg/mL	----- Toluene	----- H-207S	----- 1 mL	Thianthrene	92-85-3	NEAT	H-241N	100 mg
1-Methylbenzo[c]phenanthrene	4076-39-5 50 µg/mL	----- Toluene	----- H-208S	----- 1 mL	4,6,8-Trimethylazulene	941-81-1 50 µg/mL	----- Toluene	----- H-226S	----- 1 mL
2-Methylbenzo[c]phenanthrene	2606-85-1 50 µg/mL	----- Toluene	----- H-209S	----- 1 mL	8,9,11-Trimethylbenz[a]anthracene	74845-58-2 50 µg/mL	----- Toluene	----- H-227S	----- 1 mL
3-Methylbenzo[c]phenanthrene	2381-19-3 50 µg/mL	----- Toluene	----- H-210S	----- 1 mL	1,6,7-Trimethylnaphthalene	2245-38-7 50 µg/mL	NEAT Toluene	H-268N-5MG H-268S	5 mg 1 mL
4-Methylbenzo[c]phenanthrene	4076-40-8 50 µg/mL	----- Toluene	----- H-211S	----- 1 mL	Triphenylene	217-59-4 50 µg/mL	NEAT Toluene	H-235N H-235S	10 mg 1 mL
5-Methylbenzo[c]phenanthrene	652-04-0 50 µg/mL	----- Toluene	----- H-212S	----- 1 mL	Truxene (95%)	548-35-6 50 µg/mL	NEAT Toluene	H-124N H-124S	100 mg 1 mL

PAHs, Nitro-Polycyclic Aromatic Hydrocarbons

PAH Sets

These Polycyclic Aromatic Hydrocarbon sets are used 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.

PAH Sets (Solutions & Neats) and Mix

Z-013-SET

Each at 0.2 mg/mL at stated solvent, plus Z-013-17 Mix

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

Z-013-17

0.2 mg/mL each in MeOH:CH₂Cl₂ (50:50)

17 x 1 mL

1 x 1 mL

above 16 comps.

PAH Neat Set

Z-001-SET

Acenaphthene	Chrysene
Anthanthrene	Coronene
Anthracene	Dibenzothiophene
1,2-Benzanthracene	Fluoranthene
Benz[a]anthracene-7,12-dione (95%)	4,5-Methylene phenanthrene
Benzo[g,h,i]perylene	Naphthalene
Benz[a]pyrene	Perylene
Benzo[e]pyrene	Phenanthrene
5,6-Benzoquinoline	Pyrene
Carbazole	Truxene (95%)

20 x 5 mg

Nitro-PAHs

The atmosphere of most industrialized areas of the world contains Polynuclear Aromatic Polycyclic (PAHs) and Nitrogen Oxides (NOx). Wherever these compounds exist together they react and form Nitro-PAHs, which are highly mutagenic. Scientists have found Nitro-PAHs in diesel particulates, carbon black and ambient air particulates. These compounds are the major contributors to the mutagenicity of the pollutants since the most common Nitro-PAH found, 1-Nitropyrene, is a potent mutagen.

This list contain of Nitro substituted compounds including mono, di and tri Nitro-PAHs, Amino and Hydroxy substituted PAHs, Nitrotoluenes, Nitroanilines, and Nitrophenols. Most compounds are in both neat form and in solution.

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

Di- and Tri- Nitro-PAHs

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

Polycyclic Aromatic Hydrocarbons (PAHs)

Derivatives

Nitro-Aromatics

Compound	CAS Conc.	Matrix	Cat. No.	Unit	Compound <i>Synonym</i>	CAS Conc.	Matrix	Cat. No.	Unit
Nitrobenzene	98-95-3	NEAT	R-047N	100 mg	2,4-Dinitrophenol	51-28-5	----	-----	-----
	100 µg/mL	Toluene	R-047S	1 mL		100 µg/mL	Toluene	R-053S	1 mL
2-Nitrotoluene	88-72-2	NEAT	R-048N	100 mg	2-Nitroaniline	88-74-4	NEAT	R-054N	100 mg
	100 µg/mL	Toluene	R-048S	1 mL		100 µg/mL	Toluene	R-054S	1 mL
2,4-Dinitrotoluene	121-14-2	NEAT	R-049N	100 mg	3-Nitroaniline	99-09-2	NEAT	R-055N	100 mg
	100 µg/mL	Toluene	R-049S	1 mL		100 µg/mL	Toluene	R-055S	1 mL
2,6-Dinitrotoluene	606-20-2	NEAT	R-050N	100 mg	4-Nitroaniline	100-01-6	NEAT	R-056N	100 mg
	100 µg/mL	Toluene	R-050S	1 mL		100 µg/mL	Toluene	R-056S	1 mL
2-Nitrophenol	88-75-5	NEAT	R-051N	100 mg	4,6-Dinitro-o-cresol	534-52-1	NEAT	R-057N	100 mg
	100 µg/mL	Toluene	R-051S	1 mL		100 µg/mL	Toluene	R-057S	1 mL
4-Nitrophenol	100-02-7	NEAT	R-052N	100 mg					
	100 µg/mL	Toluene	R-052S	1 mL					

Amino-PAHs

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

Hydroxy-PAHs

Compound	CAS Conc.	Matrix	Cat. No.	Unit	Compound	CAS Conc.	Matrix	Cat. No.	Unit
6-Hydroxychrysene	37515-51-8	NEAT	R-095N	10 mg	1-Hydroxypyrene	5315-79-7	NEAT	R-096N	10 mg
	100 µg/mL	Toluene	R-095S	1 mL		100 µg/mL	Toluene	R-096S	1 mL

Amino-Aromatics

Compound <i>Synonym</i>	CAS Conc.	Matrix	Cat. No.	Unit	Compound <i>Synonym</i>	CAS Conc.	Matrix	Cat. No.	Unit
2-Acetamidofluorene	53-96-3	NEAT	R-058N	10 mg	2,4-Diaminotoluene	95-80-7	NEAT	R-078N	100 mg
	100 µg/mL	Toluene	R-058S	1 mL		100 µg/mL	Toluene	R-078S	1 mL
1-Aminoanthracene	610-49-1	NEAT	R-059N	50 mg	4-Dimethylaminoazobenzene	60-11-7	NEAT	R-079N	10 mg
	100 µg/mL	Toluene	R-059S	1 mL		100 µg/mL	Toluene	R-079S	1 mL
Benzidine †	92-87-5	NEAT	R-073N	100 mg	4,4'-Methylene bis(2-chloroaniline)	101-14-4	NEAT	R-080N	50 mg
	100 µg/mL	Toluene	R-073S	1 mL		100 µg/mL	Toluene	R-080S	1 mL
3,3'-Diaminobenzidine †	91-95-2	NEAT	R-074N	50 mg	N-Methyl-N'-nitro-N-nitrosoguanidine	70-25-7	NEAT	R-081N	50 mg
	100 µg/mL	Toluene	R-074S	1 mL		100 µg/mL	Toluene	R-081S	1 mL
3,3'-Dichlorobenzidine †	91-94-1	NEAT	R-075N	50 mg	N-Phenyl-2-naphthylamine	135-88-6	NEAT	R-082N	10 mg
	100 µg/mL	Toluene	R-075S	1 mL		100 µg/mL	Toluene	R-082S	1 mL
3,3'-Dimethoxybenzidine †	119-90-4	NEAT	R-076N	50 mg	s-Triazine	290-87-9	NEAT	R-083N	10 mg
	100 µg/mL	Toluene	R-076S	1 mL		100 µg/mL	Toluene	R-083S	1 mL
4,4'-Diaminodiphenylmethane	101-77-9	NEAT	R-077N	100 mg					
4,4'-Methylenedianiline	100 µg/mL	Toluene	R-077S	1 mL					

† Subject to oxidation

Polycyclic Aromatic Hydrocarbons (PAHs)

PAH Base/Neutral Mixes by GC/MS

GC/MS Base/Neutrals - Mix 1

M-GBN-1

100 µg/mL each in MeOH

1 x 1 mL

19 comps.

Benz(a)anthracene	1,3-Dichlorobenzene	Hexachlorobutadiene
Benzo(k)fluoranthene	Diethyl phthalate	Isophorone
bis(2-Chloroethoxy)methane	2,4-Dinitrotoluene	N-Nitroso-di-n-propylamine
bis(2-Chloroethyl)ether	2,6-Dinitrotoluene	Phenanthrene
2-Chloronaphthalene	Di-n-octyl phthalate	Pyrene
Dibutyl phthalate	Hexachlorobenzene	1,2,4-Trichlorobenzene
1,2-Dichlorobenzene		

GC/MS Base/Neutrals - Mix 2

M-005B

0.2 mg/mL each in CH₂Cl₂

1 x 1 mL

27 comps.

Anthracene	7,12-Dimethylbenz(a)anthracene
Benzo(a)anthracene	Dimethyl phthalate
Benzo(b)fluoranthene	Di-n-butyl phthalate
Benzo(k)fluoranthene	Di-n-octyl phthalate
Benz[a]pyrene	Indene
bis(2-Ethylhexyl)phthalate	Fluoranthene
Butyl benzyl phthalate	6-Methyl chrysene
Chrysene	1-Methylnaphthalene
Dibenz(a,h)acridine	Naphthalene
Dibenz(a,h)anthracene	Phenanthrene
o-Dichlorobenzene	Pyrene
m-Dichlorobenzene	Pyridine
p-Dichlorobenzene	Quinoline
Diethyl phthalate	

GC/MS Base/Neutrals - Mix 2

M-GBN-2

100 µg/mL each in MeOH : CH₂Cl₂

1 x 1 mL

17 comps.

Anthracene	bis(2-Ethylhexyl)phthalate	Benz[a]pyrene
Benzo(b)fluoranthene	Fluoranthene	4-Bromophenyl phenyl ether
Fluorene	Dibenz(a,h)anthracene	Butyl benzyl phthalate
Hexachloroethane	Acenaphthene	4-Chlorophenyl phenyl ether
Naphthalene	Dimethyl phthalate	Chrysene
1,4-Dichlorobenzene	Benzo(g,h,i)perylene	

PAH Mixes for Waste Water and Ground Water

PAH Mix for Waste Water

M-PNA-1

At stated conc. (µg/mL) in ACN

1 x 1 mL

7 comps.

Acenaphthene	100	Indeno(1,2,3-cd)pyrene	10
Anthracene	100	Naphthalene	100
Benzo(k)fluoranthene	5	Pyrene	10
Chrysene	10		

PAH Mix for Waste Water

M-PNA-2

M-PNA-2-PAK

At stated conc. (µg/mL) in ACN

1 x 1 mL

SAVE 5 x 1 mL

8 comps.

Acenaphthylene	100	Benz[a]pyrene	10
Benzo(a)anthracene	10	Dibenz(a,h)anthracene	10
Benzo(b)fluoranthene	10	Fluoranthene	10
Benzo(g,h,i)perylene	10	Phenanthrene	100

Polynuclear Aromatic Hydrocarbons (HPLC)

M-8310-QC-ATI

M-8310-QC-ATI-PAK

At stated conc. (µg/mL) in ACN

1 x 1 mL

SAVE 5 x 1 mL

18 comps.

Acenaphthene	1000	Dibenz[a,h]anthracene	200
Acenaphthylene	2000	Fluoranthene	200
Anthracene	100	Fluorene	200
Benzo(a)anthracene	100	Indeno[1,2,3-cd]pyrene	100
Benz[a]pyrene	100	1-Methylnaphthalene	1000
Benzo(b)fluoranthene	200	2-Methylnaphthalene	1000
Benzo(g,h,i)perylene	200	Naphthalene	1000
Benzo(k)fluoranthene	100	Phenanthrene	100
Chrysene	100	Pyrene	100

PAH Mix Additions

H-001S-002S-M-20X

1.0 mg/mL each in MeOH

1 x 1 mL

2 comps.

1-Methyl naphthalene	2-Methyl naphthalene
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Nitroaromatics/Isophorone Mix

M-NAI

At stated conc. (µg/mL) in Acetone

1 x 1 mL

4 comps.

2,4-Dinitrotoluene	100	Isophorone	25
2,6-Dinitrotoluene	50	Nitrobenzene	80

Florida Method PAH by HPLC

Expanded PAH Mix

Z-014G-FL

2.0 mg/mL each in CH₂Cl₂:Benzene (50:50)

1 x 1 mL

18 comps.

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

Performance Check Solution

M-610-QC-FL

M-610-QC-FL-PAK

At stated conc. (mg/mL) in ACN

1 x 1 mL

SAVE 5 x 1 mL

18 comps.

Acenaphthene	0.1	Dibenz[a,h]anthracene	0.01
Acenaphthylene	0.1	Fluoranthene	0.01
Anthracene	0.1	Fluorene	0.1
Benz[a]anthracene	0.01	Indeno[1,2,3-cd]pyrene	0.01
Benz[a]pyrene	0.01	1-Methyl naphthalene	0.1
Benzo(b)fluoranthene	0.01	2-Methyl naphthalene	0.1
Benzo[g,h,i]perylene	0.01	Naphthalene	0.1
Benzo(k)fluoranthene	0.005	Phenanthrene	0.1
Chrysene	0.01	Pyrene	0.01

Matrix Spiking Solution

M-610-MS

M-610-MS-PAK

At stated conc. (mg/mL) in ACN

1 x 1 mL

SAVE 5 x 1 mL

6 comps.

Benz[a]pyrene	0.5	2-Methylnaphthalene	5.0
Chrysene	0.5	Phenanthrene	0.5
1-Methylnaphthalene	5.0	Pyrene	0.5

Polynuclear Aromatic Hydrocarbons (HPLC)

M-8310-FL

M-8310-FL-PAK

0.5 mg/mL each in ACN

1 x 1 mL

SAVE 5 x 1 mL

18 comps.

M-8310-FL-SET

18 x 1 mL

Acenaphthene	M-8310-FL-01	Dibenz[a,h]anthracene	M-8310-FL-10
Acenaphthylene	M-8310-FL-02	Fluoranthene	M-8310-FL-11
Anthracene	M-8310-FL-03	Fluorene	M-8310-FL-12
Benz[a]anthracene	M-8310-FL-04	Indeno[1,2,3-cd]pyrene	M-8310-FL-13
Benz[a]pyrene	M-8310-FL-05	1-Methylnaphthalene	M-8310-FL-14
Benzo(b)fluoranthene	M-8310-FL-06	2-Methylnaphthalene	M-8310-FL-15
Benzo[g,h,i]perylene	M-8310-FL-07	Naphthalene	M-8310-FL-16
Benzo(k)fluoranthene	M-8310-FL-08	Phenanthrene	M-8310-FL-17
Chrysene	M-8310-FL-09	Pyrene	M-8310-FL-18

Polycyclic Aromatic Hydrocarbons (PAHs)

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		NEAT	R-017N	100 mg
		100 µg/mL	Toluene	R-017S	1 mL
4-Chloronitrobenzene	100-00-5		NEAT	R-018N	100 mg
		100 µg/mL	Toluene	R-018S	1 mL
2,3-Dichloronitrobenzene	3209-22-1		NEAT	R-086N	100 mg
		100 µg/mL	Toluene	R-086S	1 mL
2,4-Dichloronitrobenzene	611-06-3		NEAT	R-087N	100 mg
		100 µg/mL	Toluene	R-087S	1 mL
2,5-Dichloronitrobenzene	89-61-2		NEAT	R-088N	100 mg
		100 µg/mL	Toluene	R-088S	1 mL
2,2'-Dinitrobiphenyl	2436-96-6		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		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		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		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		NEAT	R-006N	100 mg
		100 µg/mL	Toluene	R-006S	1 mL
4-Nitrobiphenyl	92-93-3		NEAT	R-007N	100 mg
		100 µg/mL	Toluene	R-007S	1 mL
2-Nitrophenol	88-75-5		NEAT	R-051N	100 mg
		100 µg/mL	Toluene	R-051S	1 mL
4-Nitrophenol	100-02-7		NEAT	R-052N	100 mg
		100 µg/mL	Toluene	R-052S	1 mL
2-Nitrotoluene	88-72-2		NEAT	R-048N	100 mg
		100 µg/mL	Toluene	R-048S	1 mL
Pyridine	110-86-1	100 µg/mL	MeOH	APP-9-186-M	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	879-39-0		NEAT	R-091N	100 mg
		100 µg/mL	Toluene	R-091S	1 mL
2,3,5,6-Tetrachloronitrobenzene	117-18-0		NEAT	R-092N	100 mg
		100 µg/mL	Toluene	R-092S	1 mL
s-Triazine	290-87-9		NEAT	R-083N	10 mg
		100 µg/mL	Toluene	R-083S	1 mL
2,3,4-Trichloronitrobenzene	17700-09-3		NEAT	R-089N	100 mg
		100 µg/mL	Toluene	R-089S	1 mL
2,4,5-Trichloronitrobenzene	89-69-0		NEAT	R-090N	100 mg
		100 µg/mL	Toluene	R-090S	1 mL

Chlorobiphenyl Congeners (PCBs)



209 Congeners Mix		
PCB-209-AG		1 x 1 mL
1 µg/mL each in Isooctane		209 comps.
209 Solutions Set		
<i>Each in Isooctane</i>		
C-35-SET	35 µg/mL	209 x 1 mL
C-100-SET	100 µg/mL	209 x 1 mL

see PCB Regional Method Index

ASTM, ISO, BPD, EN, DIN, NRC-IBS,
MELCC (QME), MISA, IADN, GB

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Polychlorinated biphenyls (PCBs) were manufactured worldwide for a large number of technical applications. The chemical stability of PCB's made them exceptionally suitable as coolants and insulating fluids for transformers and capacitors. Other applications included carbonless copy paper, paints, hydraulic fluids, plasticizers, plastic additives and flame retardants. Estimates suggest that the total global production volume of PCBs exceeded 1.5 million tons. As late as 1984, about 758 million pounds were still in use in the United States alone.

The toxicity associated with PCBs was already documented in medical cases in the 1920's and 30's. Factory workers involved in the manufacturing of PCBs exhibited detrimental health effects like severe skin conditions.

NEATS and SOLUTIONS in other solvents, concentrations and quantities are available upon request.

Chlorobiphenyl Congeners (PCBs) Compounds

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

PCB Congeners continued on next page

Chlorobiphenyl Congeners (PCBs)

Chlorobiphenyl Congeners (PCBs) (continued)

No.	Compound	CAS No.	Purity 99+%		NEAT		SOLUTION			
							35 µg/mL in Isooctane		100 µg/mL in Isooctane	
					Cat. No.	Unit	Cat. No.	Unit	Cat. No.	Unit
40	2,2',3,3'-Tetrachlorobiphenyl	38444-93-8			C-040N	50 mg	C-040S	1 mL	C-040S-TP	1 mL
41	2,2',3,4'-Tetrachlorobiphenyl	52663-59-9			C-041N	5 mg	C-041S	1 mL	C-041S-TP	1 mL
42	2,2',3,4'-Tetrachlorobiphenyl	36559-22-5			C-042N	5 mg	C-042S	1 mL	C-042S-TP	1 mL
43	2,2',3,5'-Tetrachlorobiphenyl	70362-46-8			C-043N	5 mg	C-043S	1 mL	C-043S-TP	1 mL
44	2,2',3,5'-Tetrachlorobiphenyl	41464-39-5			C-044N	25 mg	C-044S	1 mL	C-044S-TP	1 mL
45	2,2',3,6'-Tetrachlorobiphenyl	70362-45-7			C-045N	5 mg	C-045S	1 mL	C-045S-TP	1 mL
46	2,2',3,6'-Tetrachlorobiphenyl	41464-47-5			C-046N	5 mg	C-046S	1 mL	C-046S-TP	1 mL
47	2,2',4,4'-Tetrachlorobiphenyl	2437-79-8			C-047N	50 mg	C-047S	1 mL	C-047S-TP	1 mL
48	2,2',4,5'-Tetrachlorobiphenyl	70362-47-9			C-048N	20 mg	C-048S	1 mL	C-048S-TP	1 mL
49	2,2',4,5'-Tetrachlorobiphenyl	41464-40-8			C-049N	20 mg	C-049S	1 mL	C-049S-TP	1 mL
50	2,2',4,6'-Tetrachlorobiphenyl	62796-65-0			C-050N	5 mg	C-050S	1 mL	C-050S-TP	1 mL
51	2,2',4,6'-Tetrachlorobiphenyl	68194-04-7			C-051N	5 mg	C-051S	1 mL	C-051S-TP	1 mL
52	2,2',5,5'-Tetrachlorobiphenyl	35693-99-3			C-052N	10 mg	C-052S	1 mL	C-052S-TP	1 mL
53	2,2',5,6'-Tetrachlorobiphenyl	41464-41-9			C-053N	25 mg	C-053S	1 mL	C-053S-TP	1 mL
54	2,2',6,6'-Tetrachlorobiphenyl	15968-05-5			C-054N	50 mg	C-054S	1 mL	C-054S-TP	1 mL
55	2,3,3',4'-Tetrachlorobiphenyl	74338-24-2			C-055N	5 mg	C-055S	1 mL	C-055S-TP	1 mL
56	2,3,3',4'-Tetrachlorobiphenyl	41464-43-1			C-056N	5 mg	C-056S	1 mL	C-056S-TP	1 mL
57	2,3,3',5'-Tetrachlorobiphenyl	70424-67-8			C-057N	5 mg	C-057S	1 mL	C-057S-TP	1 mL
58	2,3,3',5'-Tetrachlorobiphenyl	41464-49-7			C-058N	5 mg	C-058S	1 mL	C-058S-TP	1 mL
59	2,3,3',6'-Tetrachlorobiphenyl	74472-33-6			C-059N	5 mg	C-059S	1 mL	C-059S-TP	1 mL
60	2,3,4,4'-Tetrachlorobiphenyl	33025-41-1			C-060N	5 mg	C-060S	1 mL	C-060S-TP	1 mL
61	2,3,4,5'-Tetrachlorobiphenyl	33284-53-6			C-061N	50 mg	C-061S	1 mL	C-061S-TP	1 mL
62	2,3,4,6'-Tetrachlorobiphenyl	54230-22-7			C-062N	5 mg	C-062S	1 mL	C-062S-TP	1 mL
63	2,3,4',5'-Tetrachlorobiphenyl	74472-34-7			C-063N	5 mg	C-063S	1 mL	C-063S-TP	1 mL
64	2,3,4',6'-Tetrachlorobiphenyl	52663-58-8			C-064N	5 mg	C-064S	1 mL	C-064S-TP	1 mL
65	2,3,5,6'-Tetrachlorobiphenyl	33284-54-7			C-065N	25 mg	C-065S	1 mL	C-065S-TP	1 mL
66	2,3',4,4'-Tetrachlorobiphenyl	32598-10-0			C-066N	20 mg	C-066S	1 mL	C-066S-TP	1 mL
67	2,3',4,5'-Tetrachlorobiphenyl	73557-53-8			C-067N	5 mg	C-067S	1 mL	C-067S-TP	1 mL
68	2,3',4,5'-Tetrachlorobiphenyl	73575-52-7			C-068N	5 mg	C-068S	1 mL	C-068S-TP	1 mL
69	2,3',4,6'-Tetrachlorobiphenyl	60233-24-1			C-069N	5 mg	C-069S	1 mL	C-069S-TP	1 mL
70	2,3',4',5'-Tetrachlorobiphenyl	32598-11-1			C-070N	10 mg	C-070S	1 mL	C-070S-TP	1 mL
71	2,3',4',6'-Tetrachlorobiphenyl	41464-46-4			C-071N	5 mg	C-071S	1 mL	C-071S-TP	1 mL
72	2,3',5,5'-Tetrachlorobiphenyl	41464-42-0			C-072N	25 mg	C-072S	1 mL	C-072S-TP	1 mL
73	2,3',5',6'-Tetrachlorobiphenyl	74338-23-1			C-073N	5 mg	C-073S	1 mL	C-073S-TP	1 mL
74	2,4,4',5'-Tetrachlorobiphenyl	32690-93-0			C-074N	5 mg	C-074S	1 mL	C-074S-TP	1 mL
75	2,4,4',6'-Tetrachlorobiphenyl	32598-12-2			C-075N	5 mg	C-075S	1 mL	C-075S-TP	1 mL
76	2',3,4,5'-Tetrachlorobiphenyl	70362-48-0			C-076N	5 mg	C-076S	1 mL	C-076S-TP	1 mL
77	3,3',4,4'-Tetrachlorobiphenyl	32598-13-3			C-077N	25 mg	C-077S	1 mL	C-077S-TP	1 mL
78	3,3',4,5'-Tetrachlorobiphenyl	70362-49-1			C-078N	5 mg	C-078S	1 mL	C-078S-TP	1 mL
79	3,3',4,5'-Tetrachlorobiphenyl	41464-48-6			C-079N	5 mg	C-079S	1 mL	C-079S-TP	1 mL
80	3,3',5,5'-Tetrachlorobiphenyl	33284-52-5			C-080N	5 mg	C-080S	1 mL	C-080S-TP	1 mL
81	3,4,4',5'-Tetrachlorobiphenyl	70362-50-4			C-081N	5 mg	C-081S	1 mL	C-081S-TP	1 mL
82	2,2',3,3',4'-Pentachlorobiphenyl	52663-62-4			C-082N	5 mg	C-082S	1 mL	C-082S-TP	1 mL
83	2,2',3,3',5'-Pentachlorobiphenyl	60145-20-2			C-083N	5 mg	C-083S	1 mL	C-083S-TP	1 mL
84	2,2',3,3',6'-Pentachlorobiphenyl	52663-60-2			C-084N	5 mg	C-084S	1 mL	C-084S-TP	1 mL
85	2,2',3,4,4'-Pentachlorobiphenyl	65510-45-4			C-085N	5 mg	C-085S	1 mL	C-085S-TP	1 mL
86	2,2',3,4,5'-Pentachlorobiphenyl	55312-69-1			C-086N	5 mg	C-086S	1 mL	C-086S-TP	1 mL
87	2,2',3,4,5'-Pentachlorobiphenyl	38380-02-8			C-087N	10 mg	C-087S	1 mL	C-087S-TP	1 mL
88	2,2',3,4,6'-Pentachlorobiphenyl	55215-17-3			C-088N	5 mg	C-088S	1 mL	C-088S-TP	1 mL
89	2,2',3,4,6'-Pentachlorobiphenyl	73575-57-2			C-089N	5 mg	C-089S	1 mL	C-089S-TP	1 mL
90	2,2',3,4',5'-Pentachlorobiphenyl	68194-07-0			C-090N	5 mg	C-090S	1 mL	C-090S-TP	1 mL
91	2,2',3,4',6'-Pentachlorobiphenyl	68194-05-8			C-091N	5 mg	C-091S	1 mL	C-091S-TP	1 mL
92	2,2',3,5,5'-Pentachlorobiphenyl	52663-61-3			C-092N	5 mg	C-092S	1 mL	C-092S-TP	1 mL
93	2,2',3,5,6'-Pentachlorobiphenyl	73575-56-1			C-093N	5 mg	C-093S	1 mL	C-093S-TP	1 mL
94	2,2',3,5,6'-Pentachlorobiphenyl	73575-55-0			C-094N	5 mg	C-094S	1 mL	C-094S-TP	1 mL
95	2,2',3,5',6'-Pentachlorobiphenyl	38379-99-6			C-095N	5 mg	C-095S	1 mL	C-095S-TP	1 mL
96	2,2',3,6,6'-Pentachlorobiphenyl	73575-54-9			C-096N	5 mg	C-096S	1 mL	C-096S-TP	1 mL
97	2,2',3',4,5'-Pentachlorobiphenyl	41464-51-1			C-097N	10 mg	C-097S	1 mL	C-097S-TP	1 mL
98	2,2',3',4,6'-Pentachlorobiphenyl	60233-25-2			C-098N	5 mg	C-098S	1 mL	C-098S-TP	1 mL
99	2,2',4,4',5'-Pentachlorobiphenyl	38380-01-7			C-099N	5 mg	C-099S	1 mL	C-099S-TP	1 mL
100	2,2',4,4',6'-Pentachlorobiphenyl	39485-83-1			C-100N	5 mg	C-100S	1 mL	C-100S-TP	1 mL
101	2,2',4,5,5'-Pentachlorobiphenyl	37680-73-2			C-101N	10 mg	C-101S	1 mL	C-101S-TP	1 mL
102	2,2',4,5,6'-Pentachlorobiphenyl	68194-06-9			C-102N	5 mg	C-102S	1 mL	C-102S-TP	1 mL
103	2,2',4,5',6'-Pentachlorobiphenyl	60145-21-3			C-103N	10 mg	C-103S	1 mL	C-103S-TP	1 mL
104	2,2',4,6,6'-Pentachlorobiphenyl	56558-16-8			C-104N	5 mg	C-104S	1 mL	C-104S-TP	1 mL
105	2,3,3',4,4'-Pentachlorobiphenyl	32598-14-4			C-105N	5 mg	C-105S	1 mL	C-105S-TP	1 mL
106	2,3,3',4,5'-Pentachlorobiphenyl	70424-69-0			C-106N	5 mg	C-106S	1 mL	C-106S-TP	1 mL
107	2,3,3',4',5'-Pentachlorobiphenyl	70424-68-9			C-107N	5 mg	C-107S	1 mL	C-107S-TP	1 mL
108	2,3,3',4,5'-Pentachlorobiphenyl	70362-41-3			C-108N	5 mg	C-108S	1 mL	C-108S-TP	1 mL
109	2,3,3',4,6'-Pentachlorobiphenyl	74472-35-8			C-109N	5 mg	C-109S	1 mL	C-109S-TP	1 mL
110	2,3,3',4',6'-Pentachlorobiphenyl	38380-03-9			C-110N	5 mg	C-110S	1 mL	C-110S-TP	1 mL
111	2,3,3',5,5'-Pentachlorobiphenyl	39635-32-0			C-111N	5 mg	C-111S	1 mL	C-111S-TP	1 mL
112	2,3,3',5,6'-Pentachlorobiphenyl	74472-36-9			C-112N	5 mg	C-112S	1 mL	C-112S-TP	1 mL

Chlorobiphenyl Congeners (PCBs)

Chlorobiphenyl Congeners (PCBs) (continued)

		Purity 99+%	NEAT		SOLUTION			
					35 µg/mL in Isooctane		100 µg/mL in Isooctane	
No.	Compound	CAS No.	Cat. No.	Unit	Cat. No.	Unit	Cat. No.	Unit
113	2,3,3',5',6-Pentachlorobiphenyl	68194-10-5	C-113N	5 mg	C-113S	1 mL	C-113S-TP	1 mL
114	2,3,4,4',5-Pentachlorobiphenyl	74472-37-0	C-114N	5 mg	C-114S	1 mL	C-114S-TP	1 mL
115	2,3,4,4',6-Pentachlorobiphenyl	74472-38-1	C-115N	5 mg	C-115S	1 mL	C-115S-TP	1 mL
116	2,3,4,5,6-Pentachlorobiphenyl	18259-05-7	C-116N	10 mg	C-116S	1 mL	C-116S-TP	1 mL
117	2,3,4',5,6-Pentachlorobiphenyl	68194-11-6	C-117N	5 mg	C-117S	1 mL	C-117S-TP	1 mL
118	2,3',4,4',5-Pentachlorobiphenyl	31508-00-6	C-118N	5 mg	C-118S	1 mL	C-118S-TP	1 mL
119	2,3',4,4',6-Pentachlorobiphenyl	56558-17-9	C-119N	5 mg	C-119S	1 mL	C-119S-TP	1 mL
120	2,3',4,5,5'-Pentachlorobiphenyl	68194-12-7	C-120N	5 mg	C-120S	1 mL	C-120S-TP	1 mL
121	2,3',4,5',6-Pentachlorobiphenyl	56558-18-0	C-121N	5 mg	C-121S	1 mL	C-121S-TP	1 mL
122	2',3,3',4,5-Pentachlorobiphenyl	76842-07-4	C-122N	5 mg	C-122S	1 mL	C-122S-TP	1 mL
123	2',3,4,4',5-Pentachlorobiphenyl	65510-44-3	C-123N	5 mg	C-123S	1 mL	C-123S-TP	1 mL
124	2',3,4,5,5'-Pentachlorobiphenyl	70424-70-3	C-124N	5 mg	C-124S	1 mL	C-124S-TP	1 mL
125	2',3,4,5,6'-Pentachlorobiphenyl	74472-39-2	C-125N	5 mg	C-125S	1 mL	C-125S-TP	1 mL
126	3,3',4,4',5-Pentachlorobiphenyl	57465-28-8	C-126N	5 mg	C-126S	1 mL	C-126S-TP	1 mL
127	3,3',4,5,5'-Pentachlorobiphenyl	39635-33-1	C-127N	5 mg	C-127S	1 mL	C-127S-TP	1 mL
128	2,2',3,3',4,4'-Hexachlorobiphenyl	38380-07-3	C-128N	20 mg	C-128S	1 mL	C-128S-TP	1 mL
129	2,2',3,3',4,5-Hexachlorobiphenyl	55215-18-4	C-129N	5 mg	C-129S	1 mL	C-129S-TP	1 mL
130	2,2',3,3',4,5'-Hexachlorobiphenyl	52663-66-8	C-130N	5 mg	C-130S	1 mL	C-130S-TP	1 mL
131	2,2',3,3',4,6-Hexachlorobiphenyl	61798-70-7	C-131N	5 mg	C-131S	1 mL	C-131S-TP	1 mL
132	2,2',3,3',4,6'-Hexachlorobiphenyl	38380-05-1	C-132N	5 mg	C-132S	1 mL	C-132S-TP	1 mL
133	2,2',3,3',5,5'-Hexachlorobiphenyl	35694-04-3	C-133N	5 mg	C-133S	1 mL	C-133S-TP	1 mL
134	2,2',3,3',5,6-Hexachlorobiphenyl	52704-70-8	C-134N	5 mg	C-134S	1 mL	C-134S-TP	1 mL
135	2,2',3,3',5,6'-Hexachlorobiphenyl	52744-13-5	C-135N	5 mg	C-135S	1 mL	C-135S-TP	1 mL
136	2,2',3,3',6,6'-Hexachlorobiphenyl	38411-22-2	C-136N	20 mg	C-136S	1 mL	C-136S-TP	1 mL
137	2,2',3,4,4',5-Hexachlorobiphenyl	35694-06-5	C-137N	5 mg	C-137S	1 mL	C-137S-TP	1 mL
138	2,2',3,4,4',5'-Hexachlorobiphenyl	35065-28-2	C-138N	5 mg	C-138S	1 mL	C-138S-TP	1 mL
139	2,2',3,4,4',6-Hexachlorobiphenyl	56030-56-9	C-139N	5 mg	C-139S	1 mL	C-139S-TP	1 mL
140	2,2',3,4,4',6'-Hexachlorobiphenyl	59291-64-4	C-140N	5 mg	C-140S	1 mL	C-140S-TP	1 mL
141	2,2',3,4,5,5'-Hexachlorobiphenyl	52712-04-6	C-141N	5 mg	C-141S	1 mL	C-141S-TP	1 mL
142	2,2',3,4,5,6-Hexachlorobiphenyl	41411-61-4	C-142N	5 mg	C-142S	1 mL	C-142S-TP	1 mL
143	2,2',3,4,5,6'-Hexachlorobiphenyl	68194-15-0	C-143N	5 mg	C-143S	1 mL	C-143S-TP	1 mL
144	2,2',3,4,5',6-Hexachlorobiphenyl	68194-14-9	C-144N	5 mg	C-144S	1 mL	C-144S-TP	1 mL
145	2,2',3,4,6,6'-Hexachlorobiphenyl	74472-40-5	C-145N	5 mg	C-145S	1 mL	C-145S-TP	1 mL
146	2,2',3,4',5,5'-Hexachlorobiphenyl	51908-16-8	C-146N	5 mg	C-146S	1 mL	C-146S-TP	1 mL
147	2,2',3,4',5,6-Hexachlorobiphenyl	68194-13-8	C-147N	5 mg	C-147S	1 mL	C-147S-TP	1 mL
148	2,2',3,4',5,6'-Hexachlorobiphenyl	74472-41-6	C-148N	5 mg	C-148S	1 mL	C-148S-TP	1 mL
149	2,2',3,4',5',6-Hexachlorobiphenyl	38380-04-0	C-149N	5 mg	C-149S	1 mL	C-149S-TP	1 mL
150	2,2',3,4',6,6'-Hexachlorobiphenyl	68194-08-1	C-150N	5 mg	C-150S	1 mL	C-150S-TP	1 mL
151	2,2',3,5,5',6-Hexachlorobiphenyl	52663-63-5	C-151N	5 mg	C-151S	1 mL	C-151S-TP	1 mL
152	2,2',3,5,6,6'-Hexachlorobiphenyl	68194-09-2	C-152N	5 mg	C-152S	1 mL	C-152S-TP	1 mL
153	2,2',4,4',5,5'-Hexachlorobiphenyl	35065-27-1	C-153N	10 mg	C-153S	1 mL	C-153S-TP	1 mL
154	2,2',4,4',5,6'-Hexachlorobiphenyl	60145-22-4	C-154N	5 mg	C-154S	1 mL	C-154S-TP	1 mL
155	2,2',4,4',6,6'-Hexachlorobiphenyl	33979-03-2	C-155N	50 mg	C-155S	1 mL	C-155S-TP	1 mL
156	2,3,3',4,4',5-Hexachlorobiphenyl	38380-08-4	C-156N	5 mg	C-156S	1 mL	C-156S-TP	1 mL
157	2,3,3',4,4',5'-Hexachlorobiphenyl	69782-90-7	C-157N	5 mg	C-157S	1 mL	C-157S-TP	1 mL
158	2,3,3',4,4',6-Hexachlorobiphenyl	74472-42-7	C-158N	5 mg	C-158S	1 mL	C-158S-TP	1 mL
159	2,3,3',4,5,5'-Hexachlorobiphenyl	39635-35-3	C-159N	5 mg	C-159S	1 mL	C-159S-TP	1 mL
160	2,3,3',4,5,6-Hexachlorobiphenyl	41411-62-5	C-160N	5 mg	C-160S	1 mL	C-160S-TP	1 mL
161	2,3,3',4,5',6-Hexachlorobiphenyl	74472-43-8	C-161N	5 mg	C-161S	1 mL	C-161S-TP	1 mL
162	2,3,3',4',5,5'-Hexachlorobiphenyl	39635-34-2	C-162N	5 mg	C-162S	1 mL	C-162S-TP	1 mL
163	2,3,3',4',5,6-Hexachlorobiphenyl	74472-44-9	C-163N	5 mg	C-163S	1 mL	C-163S-TP	1 mL
164	2,3,3',4',5',6-Hexachlorobiphenyl	74472-45-0	C-164N	5 mg	C-164S	1 mL	C-164S-TP	1 mL
165	2,3,3',5,5',6-Hexachlorobiphenyl	74472-46-1	C-165N	5 mg	C-165S	1 mL	C-165S-TP	1 mL
166	2,3,4,4',5,6-Hexachlorobiphenyl	41411-63-6	C-166N	5 mg	C-166S	1 mL	C-166S-TP	1 mL
167	2,3',4,4',5,5'-Hexachlorobiphenyl	52663-72-6	C-167N	5 mg	C-167S	1 mL	C-167S-TP	1 mL
168	2,3',4,4',5',6-Hexachlorobiphenyl	59291-65-5	C-168N	5 mg	C-168S	1 mL	C-168S-TP	1 mL
169	3,3',4,4',5,5'-Hexachlorobiphenyl	32774-16-6	C-169N	5 mg	C-169S	1 mL	C-169S-TP	1 mL
170	2,2',3,3',4,4',5-Heptachlorobiphenyl	35065-30-6	C-170N	5 mg	C-170S	1 mL	C-170S-TP	1 mL
171	2,2',3,3',4,4',6-Heptachlorobiphenyl	52663-71-5	C-171N	5 mg	C-171S	1 mL	C-171S-TP	1 mL
172	2,2',3,3',4,5,5'-Heptachlorobiphenyl	52663-74-8	C-172N	5 mg	C-172S	1 mL	C-172S-TP	1 mL
173	2,2',3,3',4,5,6-Heptachlorobiphenyl	68194-16-1	C-173N	5 mg	C-173S	1 mL	C-173S-TP	1 mL
174	2,2',3,3',4,5,6'-Heptachlorobiphenyl	38411-25-5	C-174N	5 mg	C-174S	1 mL	C-174S-TP	1 mL
175	2,2',3,3',4,5',6-Heptachlorobiphenyl	40186-70-7	C-175N	5 mg	C-175S	1 mL	C-175S-TP	1 mL
176	2,2',3,3',4,6,6'-Heptachlorobiphenyl	52663-65-7	C-176N	5 mg	C-176S	1 mL	C-176S-TP	1 mL
177	2,2',3,3',4',5,6-Heptachlorobiphenyl	52663-70-4	C-177N	5 mg	C-177S	1 mL	C-177S-TP	1 mL
178	2,2',3,3',5,5',6-Heptachlorobiphenyl	52663-67-9	C-178N	5 mg	C-178S	1 mL	C-178S-TP	1 mL
179	2,2',3,3',5,6,6'-Heptachlorobiphenyl	52663-64-6	C-179N	5 mg	C-179S	1 mL	C-179S-TP	1 mL
180	2,2',3,4,4',5,5'-Heptachlorobiphenyl	35065-29-3	C-180N	5 mg	C-180S	1 mL	C-180S-TP	1 mL
181	2,2',3,4,4',5,6-Heptachlorobiphenyl	74472-47-2	C-181N	5 mg	C-181S	1 mL	C-181S-TP	1 mL
182	2,2',3,4,4',5',6-Heptachlorobiphenyl	60145-23-5	C-182N	5 mg	C-182S	1 mL	C-182S-TP	1 mL
183	2,2',3,4,4',5',6'-Heptachlorobiphenyl	52663-69-1	C-183N	5 mg	C-183S	1 mL	C-183S-TP	1 mL
184	2,2',3,4,4',6,6'-Heptachlorobiphenyl	74472-48-3	C-184N	5 mg	C-184S	1 mL	C-184S-TP	1 mL

PCB Congeners continued on next page

Chlorobiphenyl Congeners (PCBs)

PCB Congeners and Instrument Test Solutions

Chlorobiphenyl Congeners (PCBs) (continued)

No.	Compound	CAS No.	Purity 99+%		NEAT		SOLUTION	
							35 µg/mL in Isooctane	100 µg/mL in Isooctane
					Cat. No.	Unit	Cat. No.	Unit
185	2,2',3,4,5,5',6-Heptachlorobiphenyl	52712-05-7			C-185N	5 mg	C-185S	1 mL
186	2,2',3,4,5,6,6'-Heptachlorobiphenyl	74472-49-4			C-186N	5 mg	C-186S	1 mL
187	2,2',3,4',5,5',6-Heptachlorobiphenyl	52663-68-0			C-187N	5 mg	C-187S	1 mL
188	2,2',3,4',5,6,6'-Heptachlorobiphenyl	74487-85-7			C-188N	5 mg	C-188S	1 mL
189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	39635-31-9			C-189N	5 mg	C-189S	1 mL
190	2,3,3',4,4',5,6-Heptachlorobiphenyl	41411-64-7			C-190N	5 mg	C-190S	1 mL
191	2,3,3',4,4',5',6-Heptachlorobiphenyl	74472-50-7			C-191N	5 mg	C-191S	1 mL
192	2,3,3',4,5,5',6-Heptachlorobiphenyl	74472-51-8			C-192N	5 mg	C-192S	1 mL
193	2,3,3',4',5,5',6-Heptachlorobiphenyl	69782-91-8			C-193N	5 mg	C-193S	1 mL
194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl	35694-08-7			C-194N	5 mg	C-194S	1 mL
195	2,2',3,3',4,4',5,6-Octachlorobiphenyl	52663-78-2			C-195N	5 mg	C-195S	1 mL
196	2,2',3,3',4,4',5,6'-Octachlorobiphenyl	42740-50-1			C-196N	5 mg	C-196S	1 mL
197	2,2',3,3',4,4',6,6'-Octachlorobiphenyl	33091-17-7			C-197N	5 mg	C-197S	1 mL
198	2,2',3,3',4,5,5',6-Octachlorobiphenyl	68194-17-2			C-198N	5 mg	C-198S	1 mL
199	2,2',3,3',4,5,5',6-Octachlorobiphenyl	52663-75-9			C-199N-R1	5 mg	C-199S-R1	1 mL
200	2,2',3,3',4,5,6,6'-Octachlorobiphenyl	52663-73-7			C-200N-R1	5 mg	C-200S-R1	1 mL
201	2,2',3,3',4,5',6,6'-Octachlorobiphenyl	40186-71-8			C-201N-R1	5 mg	C-201S-R1	1 mL
202	2,2',3,3',5,5',6,6'-Octachlorobiphenyl	2136-99-4			C-202N	5 mg	C-202S	1 mL
203	2,2',3,4,4',5,5',6-Octachlorobiphenyl	52663-76-0			C-203N	5 mg	C-203S	1 mL
204	2,2',3,4,4',5,6,6'-Octachlorobiphenyl	74472-52-9			C-204N	5 mg	C-204S	1 mL
205	2,3,3',4,4',5,5',6-Octachlorobiphenyl	74472-53-0			C-205N	5 mg	C-205S	1 mL
206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	40186-72-9			C-206N	5 mg	C-206S	1 mL
207	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	52663-79-3			C-207N	5 mg	C-207S	1 mL
208	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	52663-77-1			C-208N	5 mg	C-208S	1 mL
209	Decachlorobiphenyl	2051-24-3			C-209N	10 mg	C-209S	1 mL

Instrument Test Solutions

PCB Window Defining Mix

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

	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	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.

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	Decachlorobiphenyl

PCB/Selective Ion Monitoring Solution

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

1	2-Chlorobiphenyl	10
5	2,3-Dichlorobiphenyl	10
29	2,4,5-Trichlorobiphenyl	10
104	2,2',4,6,6'-Pentachlorobiphenyl	20
87	2,2',3,4,5'-Pentachlorobiphenyl	20
208	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	40
50	2,2',4,6-Tetrachlorobiphenyl	20
209	Decachlorobiphenyl	50
77	3,3',4,4'-Tetrachlorobiphenyl	20
200	2,2',3,3',4,5',6,6'-Octachlorobiphenyl	30
186	2,2',3,4',5,6,6'-Heptachlorobiphenyl	30
154	2,2',4,4',5,6'-Hexachlorobiphenyl	20

PCBs Methods

EPA Method 525.3 and 680

Canada PCB Methods see Regional Section

- Institute for Biological Sciences of Canada - Toxicity and Abundance based on 4 PCB congener formulations
- The Integrated Atmospheric Deposition Network is composed of five agencies: the US EPA, Environment Canada (EC: Metrological Service, National Water Research Institute (NWRI), Ecosystem Health Division of Ontario Region (EHD), and the Ontario Ministry of Environment (OME). 3 congener formulations
- Quebec Ministry of Environment, officially known as Ministry of the Environment, the Fight against Climate Change, Wildlife and Parks (MELCC). 3 congener formulations

Method 525.3 PCBs and PAHs in Drinking Water by GC/MS

Method 525.3 PCB and PAH Standard

M-525.3-01

500 µg/mL each in Acetone

2-Chlorobiphenyl	2,2',5,5'-Tetrachlorobiphenyl	2,2',4,4',5,5'-Hexachlorobiphenyl	Benzo(k)fluoranthene	Hexachlorobenzene
4-Chlorobiphenyl	2,3',4',5'-Tetrachlorobiphenyl	2,2',3,4,4',5,5'-Heptachlorobiphenyl	Benzo(g,h,i)perylene	Indeno(1,2,3-cd)pyrene
2,4'-Dichlorobiphenyl	2,3,3',4',6-Pentachlorobiphenyl	Acenaphthylene	Benz[a]pyrene	Isophorone
2,2',5-Trichlorobiphenyl	2,3',4,4',5-Pentachlorobiphenyl	Anthracene	Chrysene	Pentachlorophenol
2,4,4'-Trichlorobiphenyl	2,2',3,4,4',5'-Hexachlorobiphenyl	Benz(a)anthracene	Dibenz(a,h)anthracene	Phenanthrene
2,2',3,5'-Tetrachlorobiphenyl	2,2',3,4',5',6-Hexachlorobiphenyl	Benzo(b)fluoranthene	Fluorene	Pyrene

1 x 1 mL
30 comps.

Method 680 PCBs in Water and Soil by GC/MS

Internal Standards

M-680-IS

1 x 1 mL

M-680-IS-PAK

SAVE 5 x 1 mL

75 µg/mL each in Hexane:Toluene (50:50) 2 comps.

M-680-IS-10X

1 x 1 mL

M-680-IS-10X-PAK

SAVE 5 x 1 mL

750 µg/mL each in Hexane:Toluene (50:50) 2 comps.

Chrysene-d₁₂

Phenanthrene-d₁₀

PCB Locator Mixture

M-PCBL

1 x 1 mL

At stated conc. (µg/mL) in Isooctane 5 comps.

Aroclor 1242	0.5	3-Chlorobiphenyl	0.1
Aroclor 1260	0.5	Decachlorobiphenyl	0.1
2-Chlorobiphenyl	0.1		

Retention Time Calibration Standard

M-680-RT

1 x 1 mL

M-680-RT-PAK

SAVE 5 x 1 mL

At stated conc. (µg/mL) in Hexane 3 comps.

77	3,3',4,4'-Tetrachlorobiphenyl	100
104	2,2',4,6,6'-Pentachlorobiphenyl	100
208	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	200

Tuning Standard

M-680-TS

1 x 1 mL

M-680-TS-PAK

SAVE 5 x 1 mL

10 µg/mL in CH₂Cl₂

Decafluorotriphenylphosphine (DFTPP)

The EPA has designated the following isomers for use in quantifying PCBs by GC/MS. The PCBs are identified and measured as isomer groups (i.e., by level of chlorination). 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	deca	209	0.144	0.150

PCB Isomer Calibration Mix

M-680A

1 x 1 mL

At stated conc. (µg/mL) in Hexane

9 comps.

1	2-Chlorobiphenyl	50
5	2,3-Dichlorobiphenyl	50
29	2,4,5-Trichlorobiphenyl	50
50	2,2',4,6-Tetrachlorobiphenyl	100
87	2,2',3,4,5'-Pentachlorobiphenyl	100
154	2,2',4,4',5,6'-Hexachlorobiphenyl	100
188	2,2',3,4',5,6,6'-Heptachlorobiphenyl	150
201	2,2',3,3',4,5',6,6'-Octachlorobiphenyl	150
209	Decachlorobiphenyl	250

Internal Standard

M-680B

1 x 1 mL

250 µg/mL in Toluene

Chrysene-d₁₂

PCB Isomer Calibration Set

M-680-SET

2 x 1 mL

M-680A, M-680B

PCBs Methods

EPA Method 1668

Method 1668 209 PCBs by HRGC/HRMS

Method 1668 Congener Congeners Set

M-1668A-0.01X-SET

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

5 x 1 mL

PCB Congener Mix #1

M-1668A-1-0.01X

At stated conc. (µg/mL) in Isooctane

1 x 1 mL

83 comps.

2	3-Chlorobiphenyl	2.5	120	2,3',4,5,5'-Pentachlorobiphenyl	5.0
10	2,6-Dichlorobiphenyl	2.5	124	2',3,4,5,5'-Pentachlorobiphenyl	5.0
9	2,5-Dichlorobiphenyl	2.5	106	2,3,3',4,5-Pentachlorobiphenyl	5.0
6	2,3'-Dichlorobiphenyl	2.5	122	2',3,3',4,5-Pentachlorobiphenyl	5.0
8	2,4'-Dichlorobiphenyl	2.5	105	2,3,3',4,4'-Pentachlorobiphenyl	5.0
14	3,5-Dichlorobiphenyl	2.5	127	3,3',4,5,5'-Pentachlorobiphenyl	5.0
11	3,3'-Dichlorobiphenyl	2.5	152	2,2',3,5,6,6'-Hexachlorobiphenyl	5.0
30	2,4,6-Trichlorobiphenyl	2.5	136	2,2',3,3',6,6'-Hexachlorobiphenyl	5.0
27	2,3',6-Trichlorobiphenyl	2.5	148	2,2',3,4',5,6'-Hexachlorobiphenyl	5.0
32	2,4',6-Trichlorobiphenyl	2.5	151	2,2',3,5',5,6'-Hexachlorobiphenyl	5.0
34	2',3,5-Trichlorobiphenyl	2.5	144	2,2',3,4,5',6'-Hexachlorobiphenyl	5.0
26	2,3',5-Trichlorobiphenyl	2.5	143	2,2',3,4,5,6'-Hexachlorobiphenyl	5.0
31	2,4',5-Trichlorobiphenyl	2.5	142	2,2',3,4,5,6'-Hexachlorobiphenyl	5.0
33	2',3,4-Trichlorobiphenyl	2.5	133	2,2',3,3',5,5'-Hexachlorobiphenyl	5.0
36	3,3',5-Trichlorobiphenyl	2.5	161	2,3,3',4,5',6'-Hexachlorobiphenyl	5.0
38	3,4,5-Trichlorobiphenyl	2.5	153	2,2',4,4',5,5'-Hexachlorobiphenyl	5.0
35	3,3',4-Trichlorobiphenyl	2.5	130	2,2',3,3',4,5'-Hexachlorobiphenyl	5.0
50	2,2',4,6-Tetrachlorobiphenyl	5.0	129	2,2',3,3',4,5'-Hexachlorobiphenyl	5.0
45	2,2',3,6-Tetrachlorobiphenyl	5.0	166	2,3,4,4',5,6'-Hexachlorobiphenyl	5.0
52	2,2',5,5'-Tetrachlorobiphenyl	5.0	159	2,3,3',4,5,5'-Hexachlorobiphenyl	5.0
49	2,2',4,5'-Tetrachlorobiphenyl	5.0	167	2,3',4,4',5,5'-Hexachlorobiphenyl	5.0
75	2,4,4',6-Tetrachlorobiphenyl	5.0	156	2,3,3',4,4',5'-Hexachlorobiphenyl	5.0
41	2,2',3,4-Tetrachlorobiphenyl	5.0	179	2,2',3,3',5,6,6'-Heptachlorobiphenyl	5.0
72	2,3',5,5'-Tetrachlorobiphenyl	5.0	176	2,2',3,3',4,6,6'-Heptachlorobiphenyl	5.0
57	2,3,3',5-Tetrachlorobiphenyl	5.0	178	2,2',3,3',5,5',6-Heptachlorobiphenyl	5.0
63	2,3,4',5-Tetrachlorobiphenyl	5.0	175	2,2',3,3',4,5',6-Heptachlorobiphenyl	5.0
66	2,3',4,4'-Tetrachlorobiphenyl	5.0	183	2,2',3,4,4',5',6-Heptachlorobiphenyl	5.0
79	3,3',4,5'-Tetrachlorobiphenyl	5.0	177	2,2',3,3',4',5,6-Heptachlorobiphenyl	5.0
78	3,3',4,5-Tetrachlorobiphenyl	5.0	171	2,2',3,3',4,4',6-Heptachlorobiphenyl	5.0
81	3,4,4',5-Tetrachlorobiphenyl	5.0	172	2,2',3,3',4,5,5'-Heptachlorobiphenyl	5.0
96	2,2',3,6,6'-Pentachlorobiphenyl	5.0	191	2,3,3',4,4',5',6-Heptachlorobiphenyl	5.0
103	2,2',4,5',6-Pentachlorobiphenyl	5.0	170	2,2',3,3',4,4',5-Heptachlorobiphenyl	5.0
95	2,2',3,5',6-Pentachlorobiphenyl	5.0	190	2,3,3',4,4',5,6-Heptachlorobiphenyl	5.0
88	2,2',3,4,6-Pentachlorobiphenyl	5.0	201	2,2',3,3',4,5',6'-Octachlorobiphenyl	7.5
89	2,2',3,4,6'-Pentachlorobiphenyl	5.0	204	2,2',3,4,4',5,6,6'-Octachlorobiphenyl	7.5
92	2,2',3,5,5'-Pentachlorobiphenyl	5.0	200	2,2',3,3',4,5,6,6'-Octachlorobiphenyl	7.5
113	2,3,3',5',6-Pentachlorobiphenyl	5.0	198	2,2',3,3',4,5,5',6-Octachlorobiphenyl	7.5
83	2,2',3,3',5-Pentachlorobiphenyl	5.0	196	2,2',3,3',4,4',5',6-Octachlorobiphenyl	7.5
119	2,3',4,4',6-Pentachlorobiphenyl	5.0	195	2,2',3,3',4,4',5,6-Octachlorobiphenyl	7.5
87	2,2',3,4,5'-Pentachlorobiphenyl	5.0	194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl	7.5
85	2,2',3,4,4'-Pentachlorobiphenyl	5.0	207	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	7.5
82	2,2',3,3',4-Pentachlorobiphenyl	5.0			

PCB Congener Mix #2

M-1668A-2-0.01X

At stated conc. (µg/mL) in Isooctane

1 x 1 mL

54 comps.

7	2,4-Dichlorobiphenyl	2.5	117	2,3,4',5,6-Pentachlorobiphenyl	5.0
5	2,3-Dichlorobiphenyl	2.5	111	2,3,3',5,5'-Pentachlorobiphenyl	5.0
12	3,4-Dichlorobiphenyl	2.5	108	2,3,3',4,5'-Pentachlorobiphenyl	5.0
18	2,2',5-Trichlorobiphenyl	2.5	118	2,3',4,4',5-Pentachlorobiphenyl	5.0
24	2,3,6-Trichlorobiphenyl	2.5	114	2,3,4,4',5-Pentachlorobiphenyl	5.0
23	2,3,5-Trichlorobiphenyl	2.5	150	2,2',3,4',6'-Hexachlorobiphenyl	5.0
28	2,4,4'-Trichlorobiphenyl	2.5	145	2,2',3,4,6,6'-Hexachlorobiphenyl	5.0
22	2,3,4'-Trichlorobiphenyl	2.5	135	2,2',3,3',5,6'-Hexachlorobiphenyl	5.0
39	3,4',5-Trichlorobiphenyl	2.5	149	2,2',3,4',5',6-Hexachlorobiphenyl	5.0
53	2,2',5,6'-Tetrachlorobiphenyl	5.0	139	2,2',3,4,4',6-Hexachlorobiphenyl	5.0
51	2,2',4,6'-Tetrachlorobiphenyl	5.0	132	2,2',3,3',4,6'-Hexachlorobiphenyl	5.0
73	2,3',5',6-Tetrachlorobiphenyl	5.0	165	2,3,3',5,5',6-Hexachlorobiphenyl	5.0
48	2,2',4,5-Tetrachlorobiphenyl	5.0	168	2,3',4,4',5',6-Hexachlorobiphenyl	5.0
62	2,3,4,6-Tetrachlorobiphenyl	5.0	137	2,2',3,4,4',5-Hexachlorobiphenyl	5.0
71	2,3',4',6-Tetrachlorobiphenyl	5.0	160	2,3,3',4,5,6-Hexachlorobiphenyl	5.0
68	2,3',4,5'-Tetrachlorobiphenyl	5.0	128	2,2',3,3',4,4'-Hexachlorobiphenyl	5.0
58	2,3,3',5-Tetrachlorobiphenyl	5.0	162	2,3,3',4',5,5'-Hexachlorobiphenyl	5.0
61	2,3,4,5-Tetrachlorobiphenyl	5.0	157	2,3,3',4,4',5'-Hexachlorobiphenyl	5.0
55	2,3,3',4-Tetrachlorobiphenyl	5.0	184	2,2',3,4,4',6'-Heptachlorobiphenyl	5.0
60	2,3,4,4'-Tetrachlorobiphenyl	5.0	186	2,2',3,4,5,6,6'-Heptachlorobiphenyl	5.0
94	2,2',3,5,6'-Pentachlorobiphenyl	5.0	187	2,2',3,4',5,5',6-Heptachlorobiphenyl	5.0
100	2,2',4,4',6-Pentachlorobiphenyl	5.0	185	2,2',3,4,5,5',6-Heptachlorobiphenyl	5.0
91	2,2',3,4',6-Pentachlorobiphenyl	5.0	181	2,2',3,4,4',5,6-Heptachlorobiphenyl	5.0
121	2,3',4,5',6-Pentachlorobiphenyl	5.0	192	2,3,3',4,5,5',6-Heptachlorobiphenyl	7.5
90	2,2',3,4',5-Pentachlorobiphenyl	5.0	197	2,2',3,3',4,4',6,6'-Octachlorobiphenyl	7.5
99	2,2',4,4',5-Pentachlorobiphenyl	5.0	199	2,2',3,3',4,4',5,5',6-Octachlorobiphenyl	7.5
109	2,3,3',4,6-Pentachlorobiphenyl	5.0	203	2,2',3,4,4',5,5',6-Octachlorobiphenyl	7.5

PCB Congener Mix #3

M-1668A-3-0.01X

At stated conc. (µg/mL) in Isooctane

1 x 1 mL

29 comps.

13	3,4'-Dichlorobiphenyl	2.5
17	2,2',4-Trichlorobiphenyl	2.5
29	2,4,5-Trichlorobiphenyl	2.5
20	2,3,3'-Trichlorobiphenyl	2.5
46	2,2',3,6'-Tetrachlorobiphenyl	5.0
65	2,3,5,6-Tetrachlorobiphenyl	5.0
59	2,3,3',6-Tetrachlorobiphenyl	5.0
40	2,2',3,3'-Tetrachlorobiphenyl	5.0
67	2,3',4,5-Tetrachlorobiphenyl	5.0
76	2',3,4,5-Tetrachlorobiphenyl	5.0
80	3,3',5,5'-Tetrachlorobiphenyl	5.0
93	2,2',3,5,6-Pentachlorobiphenyl	5.0
84	2,2',3,3',6-Pentachlorobiphenyl	5.0
101	2,2',4,4',5,5'-Pentachlorobiphenyl	5.0
112	2,3,3',5,6-Pentachlorobiphenyl	5.0
86	2,2',3,4,5-Pentachlorobiphenyl	5.0
116	2,3,4,5,6-Pentachlorobiphenyl	5.0
107	2,3,3',4',5-Pentachlorobiphenyl	5.0
154	2,2',4,4',5,6'-Hexachlorobiphenyl	5.0
147	2,2',3,4',5,6-Hexachlorobiphenyl	5.0
140	2,2',3,4,4',6'-Hexachlorobiphenyl	5.0
146	2,2',3,4',5,5'-Hexachlorobiphenyl	5.0
141	2,2',3,4,5,5'-Hexachlorobiphenyl	5.0
164	2,3,3',4',5',6-Hexachlorobiphenyl	5.0
158	2,3,3',4,4',6-Hexachlorobiphenyl	5.0
182	2,2',3,4,4',5,6'-Heptachlorobiphenyl	5.0
174	2,2',3,3',4,5,6'-Heptachlorobiphenyl	5.0
173	2,2',3,3',4,5,6-Heptachlorobiphenyl	5.0
193	2,3,3',4',5,5',6-Heptachlorobiphenyl	5.0

PCB Congener Mix #4

M-1668A-4-0.01X

At stated conc. (µg/mL) in Isooctane

1 x 1 mL

15 comps.

25	2,3',4-Trichlorobiphenyl	2.5
21	2,3,4-Trichlorobiphenyl	2.5
69	2,3',4,6-Tetrachlorobiphenyl	5.0
47	2,2',4,4'-Tetrachlorobiphenyl	5.0
42	2,2',3,4'-Tetrachlorobiphenyl	5.0
64	2,3,4',6-Tetrachlorobiphenyl	5.0
70	2,3',4,5-Tetrachlorobiphenyl	5.0
102	2,2',4,5,6'-Pentachlorobiphenyl	5.0
97	2,2',3',4,5-Pentachlorobiphenyl	5.0
115	2,3,4,4',6-Pentachlorobiphenyl	5.0
123	2',3,4,4',5-Pentachlorobiphenyl	5.0
134	2,2',3,3',5,6-Hexachlorobiphenyl	5.0
131	2,2',3,3',4,5,6-Hexachlorobiphenyl	5.0
163	2,3,3',4',5,6-Hexachlorobiphenyl	5.0
180	2,2',3,4,4',5,5'-Heptachlorobiphenyl	5.0

PCB Congener Mix #5

M-1668A-5-0.01X

At stated conc. (µg/mL) in Isooctane

1 x 1 mL

28 comps.

1	2-Chlorobiphenyl	2.5
3	4-Chlorobiphenyl	2.5
4	2,2'-Dichlorobiphenyl	2.5
15	4,4'-Dichlorobiphenyl	2.5
19	2,2',6-Trichlorobiphenyl	2.5
16	2,2',3-Trichlorobiphenyl	2.5
37	3,4,4'-Trichlorobiphenyl	2.5
54	2,2',6,6'-Tetrachlorobiphenyl	5.0
43	2,2',3,5-Tetrachlorobiphenyl	5.0
44	2,2',3,5'-Tetrachlorobiphenyl	5.0
74	2,4,4',5-Tetrachlorobiphenyl	5.0
56	2,3,3',4'-Tetrachlorobiphenyl	5.0
77	3,3',4,4'-Tetrachlorobiphenyl	5.0
104	2,2',4,6,6'-Pentachlorobiphenyl	5.0
98	2,2',3',4,6-Pentachlorobiphenyl	5.0
125	2',3,4,5,6'-Pentachlorobiphenyl	5.0
110	2,3,3',4',6-Pentachlorobiphenyl	5.0
126	3,3',4,4',5-Pentachlorobiphenyl	5.0
155	2,2',4,4',6,6'-Hexachlorobiphenyl	5.0
138	2,2',3,4,4',5'-Hexachlorobiphenyl	5.0
169	3,3',4,4',5,5'-Hexachlorobiphenyl	5.0
188	2,2',3,4',5,6,6'-Heptachlorobiphenyl	5.0
189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	5.0
202	2,2',3,3',5,5',6,6'-Octachlorobiphenyl	7.5
205	2,3,3',4,4',5,5',6-Octachlorobiphenyl	7.5
208	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	7.5
206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	7.5
209	Decachlorobiphenyl	7.5

PCBs Methods

EPA Method 1668

Method 1668 and 1668A 209 PCBs by GC/HRMS

M-1668A-C-NT-LOC-WD

M-1668A-C-NT-LOC-WD-PAK

20 µg/mL each in Isooctane

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

GPC Calibration Solution

CLP-027-R2-WL-10ML

At stated conc. (mg/mL) in CH₂Cl₂

1 x 10 mL
5 comps.

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

1	2-Chlorobiphenyl	155	2,2',4,4',6,6'-Hexachlorobiphenyl
3	4-Chlorobiphenyl	156	2,3,3',4,4',5-Hexachlorobiphenyl
4	2,2'-Dichlorobiphenyl	157	2,3,3',4,4',5'-Hexachlorobiphenyl
15	4,4'-Dichlorobiphenyl	167	2,3',4,4',5,5'-Hexachlorobiphenyl
19	2,2',6-Trichlorobiphenyl	169	3,3',4,4',5,5'-Hexachlorobiphenyl
23	2,3,5-Trichlorobiphenyl	170	2,2',3,3',4,4',5-Heptachlorobiphenyl
34	2',3,5-Trichlorobiphenyl	180	2,2',3,4,4',5,5'-Heptachlorobiphenyl
37	3,4,4'-Trichlorobiphenyl	182	2,2',3,4,4',5,6'-Heptachlorobiphenyl
54	2,2',6,6'-Tetrachlorobiphenyl	187	2,2',3,4',5,5',6-Heptachlorobiphenyl
77	3,3',4,4'-Tetrachlorobiphenyl	188	2,2',3,4',5,6,6'-Heptachlorobiphenyl
81	3,4,4',5-Tetrachlorobiphenyl	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl
104	2,2',4,6,6'-Pentachlorobiphenyl	202	2,2',3,3',5,5',6'-Octachlorobiphenyl
105	2,3,3',4,4'-Pentachlorobiphenyl	205	2,3,3',4,4',5,5',6-Octachlorobiphenyl
114	2,3,4,4',5-Pentachlorobiphenyl	206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl
118	2,3',4,4',5-Pentachlorobiphenyl	208	2,2',3,3',4,4',5,5',6'-Nonachlorobiphenyl
123	2',3,4,4',5-Pentachlorobiphenyl	209	Decachlorobiphenyl
126	3,3',4,4',5-Pentachlorobiphenyl		

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. (µg/mL) in Isooctane

1 x 1 mL
19 comps.

3	4-Chlorobiphenyl	5.0
15	4,4'-Dichlorobiphenyl	5.0
28	2,4,4'-Trichlorobiphenyl	5.0
77	3,3',4,4'-Tetrachlorobiphenyl	1.0
105	2,3,3',4,4'-Pentachlorobiphenyl	5.0
114	2,3,4,4',5-Pentachlorobiphenyl	5.0
118	2,3',4,4',5-Pentachlorobiphenyl	5.0
123	2',3,4,4',5-Pentachlorobiphenyl	5.0
126	3,3',4,4',5-Pentachlorobiphenyl	5.0
156	2,3,3',4,4',5-Hexachlorobiphenyl	10
157	2,3,3',4,4',5'-Hexachlorobiphenyl	10
167	2,3',4,4',5,5'-Hexachlorobiphenyl	10
169	3,3',4,4',5,5'-Hexachlorobiphenyl	10
170	2,2',3,3',4,4',5-Heptachlorobiphenyl	10
180	2,2',3,4,4',5,5'-Heptachlorobiphenyl	10
189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	10
194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl	10
206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	10
209	Decachlorobiphenyl	20

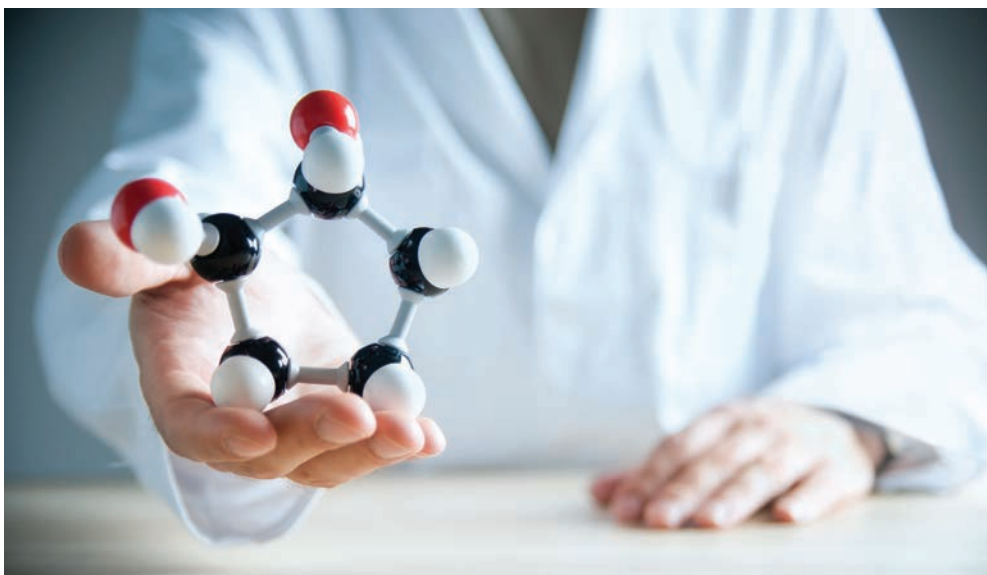
PAR PCB Spike Mix

M-1668A-PAR

At stated conc. (µg/mL) in Isooctane

1 x 1 mL
19 comps.

3	4-Chlorobiphenyl	10
15	4,4'-Dichlorobiphenyl	10
28	2,4,4'-Trichlorobiphenyl	10
77	3,3',4,4'-Tetrachlorobiphenyl	0.2
105	2,3,3',4,4'-Pentachlorobiphenyl	10
114	2,3,4,4',5-Pentachlorobiphenyl	10
118	2,3',4,4',5-Pentachlorobiphenyl	10
123	2',3,4,4',5-Pentachlorobiphenyl	10
126	3,3',4,4',5-Pentachlorobiphenyl	1.0
156	2,3,3',4,4',5-Hexachlorobiphenyl	10
157	2,3,3',4,4',5'-Hexachlorobiphenyl	10
167	2,3',4,4',5,5'-Hexachlorobiphenyl	10
169	3,3',4,4',5,5'-Hexachlorobiphenyl	2.0
170	2,2',3,3',4,4',5-Heptachlorobiphenyl	2.0
180	2,2',3,4,4',5,5'-Heptachlorobiphenyl	10
189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	2.0
194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl	10
206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	10
209	Decachlorobiphenyl	20



Congener Specific PCB Analysis

EPA Method 8082

Method 8080/8081 Aroclor Calibration Curves see 8000 series method section

Method 8082/8082A PCBs by Capillary Column GC by ECD or ELCD

PCB Congeners Mix

M-8082			1 x 1 mL
M-8082-PAK		SAVE	5 x 1 mL
100 µg/mL each in Hexane			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 Mix

M-8082A			1 x 1 mL
M-8082A-PAK		SAVE	5 x 1 mL
100 µg/mL each in Hexane			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		

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-*m*-xylene (TCMX)

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 and Surrogate Standard

CLP-032-H-5X		1 x 1 mL
1.0 mg/mL each in Hexane		

Decachlorobiphenyl

Tetrachloro-*m*-xylene (TCMS)

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-*m*-xylene (TCMX)

Method 8082 Aroclor 1016/1260 Calibration Check

Aroclor 1016/1260 Calibration Check Set

C-216-260-CAL-SET

At stated conc. (ng/mL) in Isooctane

6 x 1 mL
4 comps.

Components	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

Low level check

C-216-260-WL-5X-5ML

1 x 5 mL

C-216-260-WL-5X-10ML

1 x 10 mL

At stated conc. (ng/mL) in Isooctane

Level 4 Daily Working Level

Higher level check

C-216-260-WL-10X-5ML

1 x 5 mL

C-216-260-WL-10X-10ML

1 x 10 mL

At stated conc. (ng/mL) in Isooctane

Method 8082A Polychlorinated Biphenyl (PCBs) by GC/ECD

Individual PCB Congener Solutions

Congener	35 µg/mL Isooctane	100 µg/mL Isooctane	Unit
2-Chlorobiphenyl	C-001S	C-001S-TP	1 mL
2,3-Dichlorobiphenyl	C-005S	C-005S-TP	1 mL
2,2',5-Trichlorobiphenyl	C-018S	C-018S-TP	1 mL
2,4',5-Trichlorobiphenyl	C-031S	C-031S-TP	1 mL
2,2',3,5'-Tetrachlorobiphenyl	C-044S	C-044S-TP	1 mL
2,2',5,5'-Tetrachlorobiphenyl	C-052S	C-052S-TP	1 mL
2,3',4,4'-Tetrachlorobiphenyl	C-066S	C-066S-TP	1 mL
2,2',3,4,5'-Pentachlorobiphenyl	C-087S	C-087S-TP	1 mL
2,2',4,5,5'-Pentachlorobiphenyl	C-101S	C-101S-TP	1 mL
2,3,3',4',6-Pentachlorobiphenyl	C-110S	C-110S-TP	1 mL
2,2',3,4,4',5-Hexachlorobiphenyl	C-137S	C-137S-TP	1 mL
2,2',3,4,4',5'-Hexachlorobiphenyl	C-138S	C-138S-TP	1 mL
2,2',3,4,5,5'-Hexachlorobiphenyl	C-141S	C-141S-TP	1 mL
2,2',3,5,5',6-Hexachlorobiphenyl	C-151S	C-151S-TP	1 mL
2,2',4,4',5,5'-Hexachlorobiphenyl	C-153S	C-153S-TP	1 mL
2,2',3,3',4,4',5-Heptachlorobiphenyl	C-170S	C-170S-TP	1 mL
2,2',3,4,4',5,5'-Heptachlorobiphenyl	C-180S	C-180S-TP	1 mL
2,2',3,4,4',5,6-Heptachlorobiphenyl	C-183S	C-183S-TP	1 mL
2,2',3,4',5,5',6-Heptachlorobiphenyl	C-187S	C-187S-TP	1 mL
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	C-206S	C-206S-TP	1 mL

Congener Specific PCB Analysis

Formulations for Toxicity and Abundance Studies

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 developed 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".

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).

Complete Set of PCB Congeners C-SCA-SET

5 x 1 mL
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 1 x 1 mL
10 µg/mL each in Isooctane 3 comps.
77 3,3',4,4'-Tetrachlorobiphenyl 169 3,3',4,4',5,5'-Hexachlorobiphenyl
126 3,3',4,4',5-Pentachlorobiphenyl

Mix #2 Group 1b (Mixed Type Inducers)

C-SCA-02 1 x 1 mL
10 µg/mL each in Isooctane 6 comps.
105 2,2',3,3',4,4'-Pentachlorobiphenyl 138 2,2',3,4,4',5'-Hexachlorobiphenyl
118 2,3',4,4',5-Pentachlorobiphenyl 156 2,3,3',4,4',5-Hexachlorobiphenyl
128 2,2',3,3',4,4'-Hexachlorobiphenyl 170 2,2',3,3',4,4',5-Heptachlorobiphenyl

Mix #3 Group 2 (PB Type Inducers)

C-SCA-03 1 x 1 mL
10 µg/mL each in Isooctane 7 comps.
87 2,2',3,4,5'-Pentachlorobiphenyl 180 2,2',3,4,4',5,5'-Heptachlorobiphenyl
99 2,2',4,4',5-Pentachlorobiphenyl 183 2,2',3,4,4',5,6-Heptachlorobiphenyl
101 2,2',4,5,5'-Pentachlorobiphenyl 194 2,2',3,3',4,4',5,5'-Octachlorobiphenyl
153 2,2',4,4',5,5'-Hexachlorobiphenyl

Mix #4 Group 3 (Non-Inducer Type)

C-SCA-04 1 x 1 mL
10 µg/mL each in Isooctane 10 comps.
18 2,2',5-Trichlorobiphenyl 74 2,4,4',5-Tetrachlorobiphenyl
44 2,2',3,5'-Tetrachlorobiphenyl 151 2,2',3,5,5',6-Hexachlorobiphenyl
49 2,2',4,5'-Tetrachlorobiphenyl 177 2,2',3,3',4',5,6-Heptachlorobiphenyl
52 2,2',5,5'-Tetrachlorobiphenyl 187 2,2',3,4',5,5',6-Heptachlorobiphenyl
70 2,3',4',5-Tetrachlorobiphenyl 199 2,2',3,3',4,5,5',6-Octachlorobiphenyl

Mix #5 Group 4

(Mixed Type Inducers present at very low levels)
C-SCA-05 1 x 1 mL
10 µg/mL each in Isooctane 10 comps.
37 3,4,4'-Trichlorobiphenyl 157 2,3,3',4,4',5'-Hexachlorobiphenyl
81 3,4,4',5-Tetrachlorobiphenyl 158 2,3,3',4,4',6-Hexachlorobiphenyl
114 2,3,4,4',5-Pentachlorobiphenyl 167 2,3',4,4',5,5'-Hexachlorobiphenyl
119 2,3',4,4',6-Pentachlorobiphenyl 168 2,3',4,4',5,6-Hexachlorobiphenyl
123 2',3,4,4',5-Pentachlorobiphenyl 189 2,3,3',4,4',5,5'-Heptachlorobiphenyl

Mix #6 (Food & Human Tissue analysis)

C-SCA-06 1 x 1 mL
10 µg/mL each in Isooctane 32 comps.
8 2,4'-Dichlorobiphenyl 114 2,3,4,4',5-Pentachlorobiphenyl
28 2,4,4'-Trichlorobiphenyl 118 2,3',4,4',5-Pentachlorobiphenyl
37 3,4,4'-Trichlorobiphenyl 126 3,3',4,4',5-Pentachlorobiphenyl
44 2,2',3,5'-Tetrachlorobiphenyl 128 2,2',3,3',4,4'-Hexachlorobiphenyl
49 2,2',4,5'-Tetrachlorobiphenyl 138 2,2',3,4,4',5'-Hexachlorobiphenyl
52 2,2',5,5'-Tetrachlorobiphenyl 153 2,2',4,4',5,5'-Hexachlorobiphenyl
60 2,3,4,4'-Tetrachlorobiphenyl 156 2,3,3',4,4',5-Hexachlorobiphenyl
66 2,3',4,4'-Tetrachlorobiphenyl 158 2,3,3',4,4',6-Hexachlorobiphenyl
70 2,3',4',5-Tetrachlorobiphenyl 166 2,3,4,4',5,6-Hexachlorobiphenyl
74 2,4,4',5-Tetrachlorobiphenyl 169 3,3',4,4',5,5'-Hexachlorobiphenyl
77 3,3',4,4'-Tetrachlorobiphenyl 170 2,2',3,3',4,4',5-Heptachlorobiphenyl
82 2,2',3,3',4-Pentachlorobiphenyl 179 2,2',3,3',5,6,6'-Heptachlorobiphenyl
87 2,2',3,4,5'-Pentachlorobiphenyl 180 2,2',3,4,4',5,5'-Heptachlorobiphenyl
99 2,2',4,4',5-Pentachlorobiphenyl 183 2,2',3,4,4',5,6-Heptachlorobiphenyl
101 2,2',4,5,5'-Pentachlorobiphenyl 187 2,2',3,4',5,5',6-Heptachlorobiphenyl
105 2,3,3',4,4'-Pentachlorobiphenyl 189 2,3,3',4,4',5,5'-Heptachlorobiphenyl

Non-Ortho Substituted PCBs

C-SCA-DIOXLIX 1 x 1 mL
10 µg/mL each in Isooctane 4 comps.
77 3,3',4,4'-Tetrachlorobiphenyl 169 3,3',4,4',5,5'-Hexachlorobiphenyl
126 3,3',4,4',5-Pentachlorobiphenyl 81 3,4,4',5-Tetrachlorobiphenyl

Internal Standard

C-EU-IS-10ML 1 x 10 mL
At stated conc.(µg/mL) in Isooctane 2 comps.
30 2,4,6-Trichlorobiphenyl (300) 209 Decachlorobiphenyl (100)

Dutch Seven PCBs Standard

PCB-DUTCH7-SET 7 x 1 mL
Each at 100 µg/mL in Isooctane
PCB-DUTCH7 1 x 1 mL
10 µg/mL each in Isooctane 7 comps.
28 2,4,4'-Trichlorobiphenyl 138 2,2',3,4,4',5'-Hexachlorobiphenyl
52 2,2',5,5'-Tetrachlorobiphenyl 153 2,2',4,4',5,5'-Hexachlorobiphenyl
101 2,2',4,5,5'-Pentachlorobiphenyl 180 2,2',3,4,4',5,5'-Heptachlorobiphenyl
118 2,3',4,4',5-Pentachlorobiphenyl

Congener Specific PCB Analysis

Other PCB Methods

PCB Congener Mix for West Coast Fish Studies

C-WCFS

25 µg/mL each in Isooctane

1 x 1 mL

24 comps.

31 2,4',5'-Trichlorobiphenyl	132 2,2',3,3',4,6'-Hexachlorobiphenyl
33 2',3,4'-Trichlorobiphenyl	141 2,2',3,4,5,5'-Hexachlorobiphenyl
49 2,2',4,5'-Tetrachlorobiphenyl	149 2,2',3,4',5',6'-Hexachlorobiphenyl
56 2,3,3',4'-Tetrachlorobiphenyl	151 2,2',3,5,5',6'-Hexachlorobiphenyl
60 2,3,4,4'-Tetrachlorobiphenyl	156 2,3,3',4,4',5'-Hexachlorobiphenyl
70 2,3',4',5'-Tetrachlorobiphenyl	158 2,3,3',4,4',6'-Hexachlorobiphenyl
74 2,4,4',5'-Tetrachlorobiphenyl	174 2,2',3,3',4,5,6'-Heptachlorobiphenyl
87 2,2',3,4,5'-Pentachlorobiphenyl	177 2,2',3,3',4',5,6'-Heptachlorobiphenyl
95 2,2',3,5',6'-Pentachlorobiphenyl	183 2,2',3,4,4',5',6'-Heptachlorobiphenyl
97 2,2',3',4,5'-Pentachlorobiphenyl	194 2,2',3,3',4,4',5,5'-Octachlorobiphenyl
99 2,2',4,4',5'-Pentachlorobiphenyl	198 2,2',3,3',4,5,5',6'-Octachlorobiphenyl
110 2,3,3',4',6'-Pentachlorobiphenyl	203 2,2',3,4,4',5,5',6'-Octachlorobiphenyl

WHO/NIST/NOAA Congener List

C-WNN

C-WNN-PAK

10 µg/mL each in Isooctane

1 x 1 mL

SAVE 5 x 1 mL

28 comps.

8 2,4'-Dichlorobiphenyl	128 2,2',3,3',4,4'-Hexachlorobiphenyl
18 2,2',5'-Trichlorobiphenyl	138 2,2',3,4,4',5'-Hexachlorobiphenyl
28 2,4,4'-Trichlorobiphenyl	153 2,2',4,4',5,5'-Hexachlorobiphenyl
44 2,2',3,5'-Tetrachlorobiphenyl	156 2,3,3',4,4',5'-Hexachlorobiphenyl
52 2,2',5,5'-Tetrachlorobiphenyl	157 2,3,3',4,4',5'-Hexachlorobiphenyl
66 2,3',4,4'-Tetrachlorobiphenyl	167 2,3',4,4',5,5'-Hexachlorobiphenyl
77 3,3',4,4'-Tetrachlorobiphenyl	169 3,3',4,4',5,5'-Hexachlorobiphenyl
81 3,4,4',5'-Tetrachlorobiphenyl	170 2,2',3,3',4,4',5'-Heptachlorobiphenyl
101 2,2',4,5,5'-Pentachlorobiphenyl	180 2,2',3,4,4',5,5'-Heptachlorobiphenyl
105 2,3,3',4,4'-Pentachlorobiphenyl	187 2,2',3,4',5,5',6'-Heptachlorobiphenyl
114 2,3,4,4',5'-Pentachlorobiphenyl	189 2,3,3',4,4',5,5'-Heptachlorobiphenyl
118 2,3',4,4',5'-Pentachlorobiphenyl	195 2,2',3,3',4,4',5,6'-Octachlorobiphenyl
123 2',3,4,4',5'-Pentachlorobiphenyl	206 2,2',3,3',4,4',5,5',6'-Nonachlorobiphenyl
126 3,3',4,4',5'-Pentachlorobiphenyl	209 Decachlorobiphenyl

World Health Organization Congener Mix

C-WHO-01

2.0 µg/mL each in Isooctane

1 x 1 mL

12 comps.

77 3,3',4,4'-Tetrachlorobiphenyl	118 2,3',4,4',5'-Pentachlorobiphenyl	157 2,3,3',4,4',5'-Hexachlorobiphenyl
81 3,4,4',5'-Tetrachlorobiphenyl	123 2',3,4,4',5'-Pentachlorobiphenyl	167 2,3',4,4',5,5'-Hexachlorobiphenyl
105 2,3,3',4,4'-Pentachlorobiphenyl	126 3,3',4,4',5'-Pentachlorobiphenyl	169 3,3',4,4',5,5'-Hexachlorobiphenyl
114 2,3,4,4',5'-Pentachlorobiphenyl	156 2,2',3,3',4,4',5'-Hexachlorobiphenyl	189 2,3,3',4,4',5,5'-Heptachlorobiphenyl

DCMA-PCB Isomer Mix

M-002

M-002-PAK

At stated conc. (µg/mL) in Hexane

1 x 1 mL

SAVE 5 x 1 mL

10 comps.

1 2-Chlorobiphenyl	100	136 2,2',3,3',6,6'-Hexachlorobiphenyl	10
11 3,3'-Dichlorobiphenyl	100	185 2,2',3,4,5,5',6'-Heptachlorobiphenyl	5
29 2,4,5-Trichlorobiphenyl	10	194 2,2',3,3',4,4',5,5'-Octachlorobiphenyl	5
47 2,2',4,4'-Tetrachlorobiphenyl	10	206 2,2',3,3',4,4',5,5',6'-Nonachlorobiphenyl	5
121 2,3',4,5',6'-Pentachlorobiphenyl	10	209 Decachlorobiphenyl	5

Technical Note

The Dry Color Manufacturer's Association (DCMA) recommends this type of mixture to monitor their process streams for PCBs.

CEN's Workgroup #22 for PCBs in Waste Oil

PCB-W22

10 µg/mL each in Isooctane

PCB-W22-PAK

PCB-W22-SET

Each at 100 µg/mL in Isooctane

1 x 1 mL

15 comps.

SAVE 5 x 1 mL

15 x 1 mL

18 2,2',5'-Trichlorobiphenyl	52 2,2',5,5'-Tetrachlorobiphenyl	149 2,2',3,4',5',6'-Hexachlorobiphenyl
20 2,3,3'-Trichlorobiphenyl	101 2,2',4,5,5'-Pentachlorobiphenyl	153 2,2',4,4',5,5'-Hexachlorobiphenyl
28 2,4,4'-Trichlorobiphenyl	105 2,3,3',4,4'-Pentachlorobiphenyl	170 2,2',3,3',4,4',5'-Heptachlorobiphenyl
31 2,4',5'-Trichlorobiphenyl	118 2,3',4,4',5'-Pentachlorobiphenyl	180 2,2',3,4,4',5,5'-Heptachlorobiphenyl
44 2,2',3,5'-Tetrachlorobiphenyl	138 2,2',3,4,4',5'-Hexachlorobiphenyl	194 2,2',3,3',4,4',5,5'-Octachlorobiphenyl

Technical Note

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

Dioxin-Like Congeners

C-DIOXLIK

At stated conc. (ng/mL) in Nonane

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

C-DIOXLIK-02	C-DIOXLIK-08	C-DIOXLIK-03	C-DIOXLIK-09	C-DIOXLIK-04	C-DIOXLIK-10
C-DIOXLIK-04	C-DIOXLIK-10	C-DIOXLIK-05	C-DIOXLIK-11	C-DIOXLIK-06	C-DIOXLIK-12
C-DIOXLIK-06		C-DIOXLIK-07		C-DIOXLIK-08	

Levels can be individually purchased.

C-DIOXLIK-01 1 x 1 mL

Aroclors (Industrial PCBs)

Aroclors

Aroclor Neat and Solutions in Isooctane, at Listed Concentration (Individuals, Packs, Sets)

Neats & Solutions	N Neat	TP Isooctane Matrix	M Methanol	Isooctane 35 µg/mL	Unit	SAVE 5 x 1 mL	Isooctane 100 µg/mL	Unit
Aroclor 1016	C-216N	NEAT	100 mg	C-216S	1 mL	C-216S-PAK	C-216S-TP	1 mL
	C-216S-TP-10X	1000 µg/mL	1 mL					
Aroclor 1221	C-221N-50MG	NEAT	50 mg	C-221S	1 mL	C-221S-PAK	C-221S-TP	1 mL
Aroclor 1232	----	----		C-232S	1 mL	C-232S-PAK	C-232S-TP	1 mL
Aroclor 1242	C-242N-50MG	NEAT	50 mg	C-242S	1 mL	C-242S-PAK	C-242S-TP	1 mL
Aroclor 1248	C-248N-50MG	NEAT	50 mg	C-248S	1 mL	C-248S-PAK	C-248S-TP	1 mL
Aroclor 1254	C-254N-50MG	NEAT	50 mg	C-254S	1 mL	C-254S-PAK	C-254S-TP	1 mL
Aroclor 1260	C-260S-TP-10X	100 µg/mL	1 mL	C-260S	1 mL	C-260S-PAK	C-260S-TP	1 mL
	C-260S-M-143X	5000 µg/mL	1 mL					
Aroclor 1262	C-262N-50MG	NEAT	50 mg	C-262S	1 mL	C-262S-PAK	C-262S-TP	1 mL
Aroclor 1268	----	----	----	C-268S	1 mL	C-268S-PAK	C-268S-TP	1 mL
SET				Z-008S-SET	9 x 1 mL			

Aroclor Solutions in Methanol, 3 Concentrations (Individuals, Packs, Sets)

Aroclor #	MeOH 35 µg/mL	Unit	SAVE 5 x 1 mL	MeOH 100 µg/mL	Unit	MeOH 1000 µg/mL	Unit
Aroclor 1016	C-216S-M	1 mL	C-216S-M-PAK	C-216S-M-2.85X	1 mL	C-216S-M-28.5X	1 mL
Aroclor 1221	C-221S-M	1 mL	C-221S-M-PAK	C-221S-M-2.85X	1 mL	----	----
Aroclor 1232	C-232S-M	1 mL	C-232S-M-PAK	C-232S-M-2.85X	1 mL	----	----
Aroclor 1242	C-242S-M	1 mL	C-242S-M-PAK	C-242S-M-2.85X	1 mL	----	----
Aroclor 1248	C-248S-M	1 mL	C-248S-M-PAK	C-248S-M-2.85X	1 mL	----	----
Aroclor 1254	C-254S-M	1 mL	C-254S-M-PAK	C-254S-M-2.85X	1 mL	C-254S-M-28.5X	1 mL
Aroclor 1260	C-260S-M	1 mL	C-260S-M-PAK	C-260S-M-2.85X	1 mL	C-260S-M-28.5X	1 mL
Aroclor 1262	C-262S-M	1 mL	C-262S-M-PAK	C-262S-M-2.85X	1 mL	----	----
Aroclor 1268	C-268S-M	1 mL	C-268S-M-PAK	C-268S-M-2.85X	1 mL	----	----
SET				Z-008S-M-SET	9 x 1 mL		

Aroclor Solutions in Hexane, 2 Concentrations (Indiv., Packs, Sets)

Aroclor #	Hexane 100 µg/mL	Unit	Hexane 1000 µg/mL	Unit	SAVE 5 x 1 mL
Aroclor 1016	C-216S-H	1 mL	C-216S-H-10X	1 mL	C-216S-H-10X-PAK
Aroclor 1221	C-221S-H	1 mL	C-221S-H-10X	1 mL	C-221S-H-10X-PAK
Aroclor 1232	C-232S-H	1 mL	C-232S-H-10X	1 mL	C-232S-H-10X-PAK
Aroclor 1242	C-242S-H	1 mL	C-242S-H-10X	1 mL	C-242S-H-10X-PAK
Aroclor 1248	C-248S-H	1 mL	C-248S-H-10X	1 mL	C-248S-H-10X-PAK
Aroclor 1254	C-254S-H	1 mL	C-254S-H-10X	1 mL	C-254S-H-10X-PAK
Aroclor 1260	C-260S-H	1 mL	C-260S-H-10X	1 mL	C-260S-H-10X-PAK
Aroclor 1262	C-262S-H	1 mL	C-262S-H-10X	1 mL	C-262S-H-10X-PAK
Aroclor 1268	C-268S-H	1 mL	C-268S-H-10X	1 mL	C-268S-H-10X-PAK
SETS			Z-008S-H-SET	9 x 1 mL	Z-008S-H-10X-SET 9 x 1 mL

Aroclors 1221 & 1254 Similar but Different
C-221S-SET 2 x 1 mL

C-221S-TYPE1* and C-221S-TYPE2*

C-254S-SET 2 x 1 mL

C-254S-TYPE1* and C-254S-TYPE2*

Solutions in these sets are 35 µg/mL in Isooctane

All standards cited in this monograph are bonafide and unadulterated Monsanto products.

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

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

Reference Standards of Aroclor Mixtures (GC Analysis)

Technical mixtures of PCBs (Aroclors) were manufactured by Monsanto from the 1930s through 1977. In some instances there was an alteration in the manufacturing process which resulted in a more radical components change than the usual variations. This was the case for a particular batch of Aroclor 1254 (54% Chlorine by weight) that was chlorinated in two stages rather than the usual one. The product of the two stage manufacturing process was a material containing higher concentrations of the more toxic non-ortho substituted congeners.

Consequently, the analyst may have to identify and quantify two distinct types of Aroclor 1254. For different reasons there also exist two distinct types of Aroclor 1221. To eliminate any confusion when encountering these Aroclors, we offer all four variations.

Aroclor-free Transformer Oil
T-W130 1 x 1 mL

PCB Congener Calibration

9 Mixtures provide All 209 Congeners - Present in Aroclors (not present in Aroclors on next page)

PCB Congener Mix #1

C-CS-01

10 µg/mL each in Isooctane

1 x 1 mL

39 comps.

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',4,4',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

10 µg/mL each in Isooctane

1 x 1 mL

22 comps.

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'-Octachlorobiphenyl
202	2,2',3,3',5,5',6,6'-Octachlorobiphenyl

PCB Congener Mix #2

C-CS-02

10 µg/mL each in Isooctane

1 x 1 mL

36 comps.

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	2,3,3',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	2,3,3',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

10 µg/mL each in Isooctane

1 x 1 mL

20 comps.

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

10 µg/mL each in Isooctane

1 x 1 mL

27 comps.

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'-Tetrachlorobiphenyl
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	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 are marginally above 0.05 Wt. %, except #43 @ 0.24 Wt. % in Aroclor 1242.

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

PCB Congener Calibration

9 Mixtures provide All 209 Congeners - NOT Present in Aroclors

PCB Congener Mix #6

C-CS-06

10 µg/mL each in Isooctane

1 x 1 mL

18 comps.

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'-Pentachlorobiphenyl	✕
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 #7

C-CS-07

10 µg/mL each in Isooctane

1 x 1 mL

14 comps.

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	✕

PCB Congener Mix #8

C-CS-08

10 µg/mL each in Isooctane

1 x 1 mL

12 comps.

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

10 µg/mL each in Isooctane

1 x 1 mL

21 comps.

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	✕

Congener Calibration Solution Sets

Containing all 209 PCB congeners

C-CSQ-SET

9 x 1 mL

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

Non-Aroclor congeners

C-CSN-SET

4 x 1 mL

C-CS-06

C-CS-08

C-CS-09

C-CS-07

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.

In Aroclor 1254 only the following congeners may be found at > 0.5% by weight include: 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 77, 126, and 169 are recognized as the most toxic components of Aroclors.
- The major problem in isolation of these PCB congeners is the separation of 110 from 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.

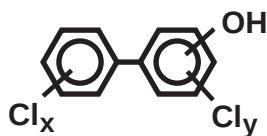
3,3',4,4'-Tetrabromobiphenyl is used as an Internal Standard to identify and quantify the coplanar components of Aroclors

(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

PCB Metabolites

Hydroxy PCB Compounds

Compound	CAS No.	NEAT Cat. No.	Unit	100 µg/mL in Isooctane Cat. No.	Unit
2-Hydroxy-5-chlorobiphenyl	607-12-5	HPCB-1001N	5 mg	HPCB-1001S	1 mL
4-Hydroxy-2-chlorobiphenyl	23719-22-4	HPCB-1002N	5 mg	HPCB-1002S	1 mL
4-Hydroxy-3-chlorobiphenyl	92-04-6	HPCB-1003N	5 mg	HPCB-1003S	1 mL
4-Hydroxy-4'-chlorobiphenyl	28034-99-3	HPCB-1004N	10 mg	HPCB-1004S	1 mL
2-Hydroxy-2',5'-dichlorobiphenyl	53905-30-9	HPCB-2001N	10 mg	HPCB-2001S	1 mL
3-Hydroxy-2',5'-dichlorobiphenyl	53905-29-6	HPCB-2002N	10 mg	HPCB-2002S	1 mL
4-Hydroxy-2',5'-dichlorobiphenyl	53905-28-5	HPCB-2003N	10 mg	HPCB-2003S	1 mL
4-Hydroxy-3,5-dichlorobiphenyl	1137-59-3	HPCB-2004N	10 mg	HPCB-2004S	1 mL
2-Hydroxy-2',3'-dichlorobiphenyl		HPCB-2005N	10 mg	HPCB-2005S	1 mL
2-Hydroxy-3',4'-dichlorobiphenyl		HPCB-2006N	10 mg	HPCB-2006S	1 mL
2-Hydroxy-2',4',6'-trichlorobiphenyl		HPCB-3001N	10 mg	HPCB-3001S	1 mL
2-Hydroxy-2',5,5'-trichlorobiphenyl		HPCB-3002N	10 mg	HPCB-3002S	1 mL
3-Hydroxy-2',4',6'-trichlorobiphenyl		HPCB-3003N	10 mg	HPCB-3003S	1 mL
4-Hydroxy-2,2',5'-trichlorobiphenyl	53905-33-2	HPCB-3004N	5 mg	HPCB-3004S	1 mL
4-Hydroxy-2',3,5'-trichlorobiphenyl		HPCB-3005N	5 mg	HPCB-3005S	1 mL
4-Hydroxy-2',4',6'-trichlorobiphenyl	14962-28-8	HPCB-3006N	10 mg	HPCB-3006S	1 mL
2-Hydroxy-2',3',4',5'-tetrachlorobiphenyl		HPCB-4001N	10 mg	HPCB-4001S	1 mL
2-Hydroxy-2',3',5',6'-tetrachlorobiphenyl		HPCB-4002N	10 mg	HPCB-4002S	1 mL
2-Hydroxy-2',4',5,6'-tetrachlorobiphenyl		HPCB-4003N	10 mg	HPCB-4003S	1 mL
3-Hydroxy-2',3',4',5'-tetrachlorobiphenyl	67651-37-0	HPCB-4004N	10 mg	HPCB-4004S	1 mL
3-Hydroxy-2',3',5',6'-tetrachlorobiphenyl		HPCB-4005N	10 mg	HPCB-4005S	1 mL
4-Hydroxy-2,2',4',6'-tetrachlorobiphenyl	150304-08-8	HPCB-4006N	5 mg	HPCB-4006S	1 mL
4-Hydroxy-2',3',4',5'-tetrachlorobiphenyl	67651-34-7	HPCB-4007N	10 mg	HPCB-4007S	1 mL
4-Hydroxy-2',3,4',6'-tetrachlorobiphenyl		HPCB-4008N	5 mg	HPCB-4008S	1 mL
4-Hydroxy-2',3,5,5'-tetrachlorobiphenyl	245084-57-5	HPCB-4009N	10 mg	HPCB-4009S	1 mL
4-Hydroxy-2',3',5',6'-tetrachlorobiphenyl	14962-32-4	HPCB-4010N	10 mg	HPCB-4010S	1 mL
4'-Hydroxy-3,3',4,5'-tetrachlorobiphenyl	111810-41-4	-----	-----	HPCB-4011S	1 mL
3-Hydroxy-2,2',6,6'-tetrachlorobiphenyl		-----	-----	HPCB-4012S	1 mL
2-Hydroxy-2',3,5,6'-tetrachlorobiphenyl		-----	-----	HPCB-4013S	1 mL
5-Hydroxy-2,2',4,6'-tetrachlorobiphenyl		-----	-----	HPCB-4014S	1 mL
4,4'-Dihydroxy-2,2',6,6'-tetrachlorobiphenyl		-----	-----	HPCB-4015S	1 mL
4,6'-Dihydroxy-2,2',4',6'-tetrachlorobiphenyl		-----	-----	HPCB-4016S	1 mL
2-Hydroxy-2',3',4',5,5'-pentachlorobiphenyl	67651-36-9	HPCB-5001N	10 mg	HPCB-5001S	1 mL
2-Hydroxy-2',3',5,5',6'-pentachlorobiphenyl		HPCB-5002N	10 mg	HPCB-5002S	1 mL
4-Hydroxy-2,2',3',4',5'-pentachlorobiphenyl		HPCB-5003N	5 mg	HPCB-5003S	1 mL
4-Hydroxy-2,2',3',5',6'-pentachlorobiphenyl		HPCB-5004N	5 mg	HPCB-5004S	1 mL
4-Hydroxy-2',3,3',4',5'-pentachlorobiphenyl	192190-09-3	HPCB-5005N	5 mg	HPCB-5005S	1 mL
4-Hydroxy-2',3,3',5',6'-pentachlorobiphenyl		HPCB-5006N	5 mg	HPCB-5006S	1 mL
4-Hydroxy-2',3,4',5,6'-pentachlorobiphenyl		HPCB-5007N	10 mg	HPCB-5007S	1 mL
3-Hydroxy-2,2',4',5,5'-pentachlorobiphenyl	69278-58-6	-----	-----	HPCB-5008S	1 mL
4-Hydroxy-2,2',4',5,5'-pentachlorobiphenyl		-----	-----	HPCB-5009S	1 mL
2-Hydroxy-2',3,4',5',6'-pentachlorobiphenyl		-----	-----	HPCB-5010S	1 mL
4-Hydroxy-2',3,3',4',5,5'-hexachlorobiphenyl	158076-63-2	HPCB-6001N	10 mg	HPCB-6001S	1 mL
4-Hydroxy-2',3,3',5,5',6'-hexachlorobiphenyl		HPCB-6002N	10 mg	HPCB-6002S	1 mL
5-Hydroxy-2,2',3,4,4',5'-hexachlorobiphenyl		-----	-----	HPCB-6003S	1 mL
4'-Hydroxy-2,2',3,3',4,5,5'-heptachlorobiphenyl		-----	-----	HPCB-7001S	1 mL
3'-Hydroxy-2,2',3,4,4',5,6'-heptachlorobiphenyl		-----	-----	HPCB-7002S	1 mL
3'-Hydroxy-2,2',3,4,4',5,5'-heptachlorobiphenyl		-----	-----	HPCB-7003S	1 mL
5-Hydroxy-2,2',3,4,4',5,6'-heptachlorobiphenyl		-----	-----	HPCB-7004S	1 mL



Metabolite and Degradation Reference Material Importance to the Environment

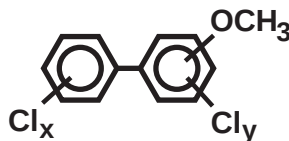
As environmental testing progresses researchers realize that often the original compounds are not the ones found in the ecosystem. In real-world samples, metabolites and degradation products of well-known common chemical pollutants, such as PCBs and BDEs, are becoming much more prevalent. These compounds are found in soil, water, and wildlife samples. This occurs as the parent compounds are leached out of waste and are exposed to rainwater, sunlight, and other environmental factors. The original materials form new compounds, most often the methoxy or the hydroxy derivatives of the original molecule. Sometimes substitutions of the halogens occur and chlorinated moieties are found.

The problem with these newly found pollutants is that they are not commercial chemicals. This means they are not readily available as reference materials. Not having a reference material makes the identification and quantification of these materials extremely difficult. In order to support the research into these degradates, AccuStandard has worked with many different researchers to synthesize the novel compounds that they require for their work. By having these materials available, scientists can learn more about the environmental fate and true impact of pollutants.

PCB Metabolites

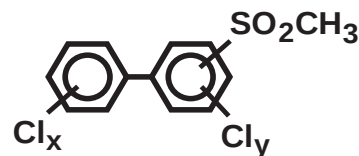
Methoxy PCBs Compounds

100 µg/mL in Isooctane			* 50 µg/mL, 100 µg/mL in Isooctane		
Compound	Cat. No.	Unit	Compound	Cat. No.	Unit
2-Methoxy-5-chlorobiphenyl	MOPCB-1001S	1 mL	2-Methoxy-2',3',4',5'-tetrachlorobiphenyl	MOPCB-4001S	1 mL
4-Methoxy-2-chlorobiphenyl	MOPCB-1002S	1 mL	2-Methoxy-2',3',5',6'-tetrachlorobiphenyl	MOPCB-4002S	1 mL
4-Methoxy-3-chlorobiphenyl	MOPCB-1003S	1 mL	2-Methoxy-2',4',5',6'-tetrachlorobiphenyl	MOPCB-4003S	1 mL
4-Methoxy-4'-chlorobiphenyl	MOPCB-1004S	1 mL	3-Methoxy-2',3',4',5'-tetrachlorobiphenyl	MOPCB-4004S	1 mL
2-Methoxy-3-chlorobiphenyl	MOPCB-1005S	1 mL	3-Methoxy-2',3',5',6'-tetrachlorobiphenyl	MOPCB-4005S	1 mL
3-Methoxy-5-chlorobiphenyl	MOPCB-1006S	1 mL	4-Methoxy-2',3',4',5'-tetrachlorobiphenyl	MOPCB-4007S	1 mL
2-Methoxy-3'-chlorobiphenyl	MOPCB-1007S	1 mL	4-Methoxy-2',3',4',6'-tetrachlorobiphenyl	MOPCB-4008S	1 mL
3-Methoxy-3'-chlorobiphenyl	MOPCB-1008S	1 mL	4-Methoxy-2',3,5,5'-tetrachlorobiphenyl	MOPCB-4009S	1 mL
4-Methoxy-3'-chlorobiphenyl	MOPCB-1009S	1 mL	4-Methoxy-2',3',5',6'-tetrachlorobiphenyl	MOPCB-4010S	1 mL
2-Methoxy-2',5'-dichlorobiphenyl	MOPCB-2001S	1 mL	3-Methoxy-2,2',6,6'-tetrachlorobiphenyl	MOPCB-4012S-0.5X *	1 mL
3-Methoxy-2',5'-dichlorobiphenyl	MOPCB-2002S	1 mL	2-Methoxy-2',3',4',5,5'-pentachlorobiphenyl	MOPCB-5001S	1 mL
4-Methoxy-2',5'-dichlorobiphenyl	MOPCB-2003S	1 mL	2-Methoxy-2',3',5,5',6'-pentachlorobiphenyl	MOPCB-5002S	1 mL
4-Methoxy-3,5-dichlorobiphenyl	MOPCB-2004S	1 mL	4-Methoxy-2,2',3',4',5'-pentachlorobiphenyl	MOPCB-5003S	1 mL
2-Methoxy-2',3'-dichlorobiphenyl	MOPCB-2005S	1 mL	4-Methoxy-2,2',3',5',6'-pentachlorobiphenyl	MOPCB-5004S	1 mL
2-Methoxy-3',4'-dichlorobiphenyl	MOPCB-2006S	1 mL	4-Methoxy-2',3,4',5,6'-pentachlorobiphenyl	MOPCB-5007S	1 mL
2-Methoxy-2',4',6'-trichlorobiphenyl	MOPCB-3001S	1 mL	4-Methoxy-2,2',4',5,5'-pentachlorobiphenyl	MOPCB-5009S	1 mL
2-Methoxy-2',5,5'-trichlorobiphenyl	MOPCB-3002S	1 mL	2-Methoxy-2',3,4',5,6'-pentachlorobiphenyl	MOPCB-5010S	1 mL
3-Methoxy-2',4',6'-trichlorobiphenyl	MOPCB-3003S	1 mL	4-Methoxy-2',3,3',4',5,5'-hexachlorobiphenyl	MOPCB-6001S	1 mL
4-Methoxy-2,2',5'-trichlorobiphenyl	MOPCB-3004S	1 mL	5-Methoxy-2,2',3,4,4',5'-hexachlorobiphenyl	MOPCB-6003S	1 mL
4-Methoxy-2',3,5'-trichlorobiphenyl	MOPCB-3005S	1 mL	4'-Methoxy-2,2',3,3',4,4',5'-heptachlorobiphenyl	MOPCB-7001S-0.5X *	1 mL
4-Methoxy-2',4',6'-trichlorobiphenyl	MOPCB-3006S	1 mL	5-Methoxy-2,2',3,4,4',5',6'-heptachlorobiphenyl	MOPCB-7004S-0.5X *	1 mL



Methylsulfonyl PCB Congeners

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



Technical Note

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.

Hydroxybiphenyl Compounds

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

Halogenated Aromatics (other than PCBs)

Polychlorinated Terphenyls (PCTs) Compounds

Polychlorinated Terphenyls (PCTs) have physical and chemical properties similar to PCBs, and may contain up to 10% of PCBs within the product matrix. They have been used as plasticizers, fire retardants, and in various types of coatings. We offer 20 PCT congeners to aid in the monitoring and environmental impact of these pollutants.

Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
o-Terphenyl	84-15-1		NEAT	T-001N	100 mg
m-Terphenyl	92-06-8		NEAT	T-002N	100 mg
p-Terphenyl	92-94-4		NEAT	T-003N	100 mg
Tetradecachloro-o-terphenyl		35 µg/mL	Toluene	T-004S	1 mL
Tetradecachloro-m-terphenyl	42429-88-9	35 µg/mL	Toluene	T-005S	1 mL
Tetradecachloro-p-terphenyl		35 µg/mL	Toluene	T-006S	1 mL
4-Chloro-o-terphenyl		50 µg/mL	Toluene	T-007S	1 mL
4-Chloro-p-terphenyl	1762-83-0	50 µg/mL	Toluene	T-008S	1 mL
2,4-Dichloro-p-terphenyl	61576-83-8	50 µg/mL	Toluene	T-009S	1 mL
2,5-Dichloro-o-terphenyl	61577-02-4	50 µg/mL	Toluene	T-010S	1 mL
2,5-Dichloro-m-terphenyl		50 µg/mL	Toluene	T-011S	1 mL
2,5-Dichloro-p-terphenyl	61576-86-1	50 µg/mL	Toluene	T-012S	1 mL
2,4,6-Trichloro-p-terphenyl	57346-61-9	50 µg/mL	Toluene	T-013S	1 mL
2,3,5,6-Tetrachloro-p-terphenyl	61576-99-6	50 µg/mL	Toluene	T-014S	1 mL
2,4,4",6-Tetrachloro-p-terphenyl	61576-97-4	50 µg/mL	Toluene	T-015S	1 mL
2,3,4,5,6-Pentachloro-p-terphenyl	61577-01-3	50 µg/mL	Toluene	T-016S	1 mL
Aroclor 5432	63496-31-1	35 µg/mL	Toluene	T-432S	1 mL
Aroclor 5442	12642-23-8	35 µg/mL	Toluene	T-442S	1 mL
Aroclor 5460	11126-42-4	35 µg/mL	Toluene	T-460S	1 mL
Aroclor 6050		35 µg/mL	Toluene	T-6050S	1 mL

Perchlorinated Aromatics Compounds

Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
Decachlorobiphenyl	2051-24-3			C-209S	1 mL
Hexachlorobenzene	118-74-1		NEAT	A-012	100 mg
Octachlorodibenzofuran	39001-02-0		NEAT	F-801N	50 mg
		50 µg/mL	Toluene	F-801S	1 mL
Octachlorodibenzo-p-dioxin	3268-87-9		NEAT	D-801N	50 mg
		50 µg/mL	Toluene	D-801S	1 mL
Octachloronaphthalene	2234-13-1	100 µg/mL	MeOH	N-003S	1 mL
Octachlorostyrene	29082-74-4	35 µg/mL	Toluene	PC-001S	1 mL
Perchlorinated p,p'-DDE		35 µg/mL	Toluene	PC-002S	1 mL
Tetradecachloro-o-terphenyl	42429-88-9	35 µg/mL	Toluene	T-004S	1 mL
Tetradecachloro-m-terphenyl	42429-89-0	35 µg/mL	Toluene	T-005S	1 mL
Tetradecachloro-p-terphenyl		35 µg/mL	Toluene	T-006S	1 mL

Halogenated Aromatics (other than PCBs) Compounds

Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
Decafluorobiphenyl	434-90-2	10 µg/mL	Acetone	M-551.1-SS	1 mL
		0.1 mg/mL	ACN	M-8310-SS	1 mL
		0.2 mg/mL	CH ₂ Cl ₂	M-625-04	1 mL
		1 mg/mL	Acetone	M-551.1-SS-100X	1 mL
		2 mg/mL	CH ₂ Cl ₂	M-625-04-10X	1 mL
4,4'-Dibromobiphenyl	92-86-4	0.1 mg/mL	Ethyl acetate	M-508.1-SS	1 mL
		0.2 mg/mL	CH ₂ Cl ₂	M-625-05	1 mL
		1 mg/mL	Acetone	M-8111-IS-20X	1 mL
		2 mg/mL	CH ₂ Cl ₂	M-625-05-10X	1 mL
4,4'-Dibromooctafluorobiphenyl	10386-84-2	0.2 mg/mL	CH ₂ Cl ₂	M-625-06	1 mL
		2 mg/mL	CH ₂ Cl ₂	M-625-06-10X	1 mL
2,2'-Difluorobiphenyl	388-82-9	0.2 mg/mL	CH ₂ Cl ₂	M-625-07	1 mL
		2 mg/mL	CH ₂ Cl ₂	M-625-07-10X	1 mL
4,4'-Difluorobiphenyl	398-23-2	0.1 mg/mL	ACN	M-550-IS	1 mL
2-Fluorobiphenyl	321-60-8	0.2 mg/mL	CH ₂ Cl ₂	M-625-09	1 mL
		2 mg/mL	CH ₂ Cl ₂	M-625-09-10X	1 mL
Halowax 1000	58718-66-4		NEAT	N-1000N	10 mg
Halowax 1001	58718-67-5		NEAT	N-1001N	10 mg
Halowax 1013	1321-64-8	0.1 mg/mL	MeOH	N-1013S	1 mL
Halowax 1014	1335-87-1	0.1 mg/mL	MeOH	N-1014S	1 mL
Halowax 1051		0.1 mg/mL	MeOH	N-1051S	1 mL
Halowax 1099	39450-05-0	0.1 mg/mL	MeOH	N-1099S	1 mL
Octachloronaphthalene	2234-13-1	100 µg/mL	MeOH	N-003S	1 mL

Halogenated Aromatics (other than PCBs)

Polychlorinated Naphthalenes Compounds

Polychlorinated Naphthalenes (PCNs) were produced in high volumes from the 1920s through the 1950s. They were used primarily as wood preservatives, engine oil additives, and raw materials for dye production. Primary exposure sources are from waste incineration emissions, landfill disposal of items containing PCNs, treatment of municipal drinking water with chlorine, and food contamination. Recent data indicates that PCNs are widespread in foods throughout the world.

Halowaxes (Koppers PCNs)

Compound	CAS No.	Conc	Matrix	Cat. No.	Unit
Halowax 1000	58718-66-4		NEAT	N-1000N	10 mg
Halowax 1001	58718-67-5		NEAT	N-1001N	10 mg
Halowax 1013 (56 %Cl)	1321-64-8	100 µg/mL	MeOH	N-1013S	1 mL
Halowax 1014 (62 %Cl)	1335-87-1	100 µg/mL	MeOH	N-1014S	1 mL
Halowax 1051 (70 %Cl)		100 µg/mL	MeOH	N-1051S	1 mL
Halowax 1099 (52 %Cl)	39450-05-0		NEAT	N-1099N	10 mg
		100 µg/mL	MeOH	N-1099S	1 mL

Polychlorinated Naphthalene Congeners

Naphthalene	91-20-3		NEAT	H-152N	100 mg
		50 µg/mL	Toluene	H-152S	1 mL
1-Chloronaphthalene	90-13-1		NEAT	N-001N	100 mg
2-Chloronaphthalene	91-58-7		NEAT	N-002N	100 mg
1,4-Dichloronaphthalene	1825-31-6		NEAT	N-004N	10 mg
Octachloronaphthalene	2234-13-1	100 µg/mL	MeOH	N-003S	1 mL
1,2,3,4-Tetrachloronaphthalene	20020-02-4		NEAT	N-005N	10 mg

Chlorinated Diphenyl Ethers Compounds

Compound	CAS No.	Conc	Matrix	Cat. No.	Unit
4-Chlorodiphenyl ether	7005-72-3		NEAT	CDE-003N	10 mg
		50 µg/mL	Isooctane	CDE-003S	1 mL
2,4-Dichlorodiphenyl ether			NEAT	CDE-007N	10 mg
		50 µg/mL	Isooctane	CDE-007S	1 mL
4,4'-Dichlorodiphenyl ether	2444-89-5		NEAT	CDE-015N	10 mg
		50 µg/mL	Isooctane	CDE-015S	1 mL
2,2',4,4'-Tetrachlorodiphenyl ether		50 µg/mL	Isooctane	CDE-047S	1 mL
3,3',4,4'-Tetrachlorodiphenyl ether		50 µg/mL	Isooctane	CDE-077S	1 mL
3,3',5,5'-Tetrachlorodiphenyl ether		50 µg/mL	Isooctane	CDE-080S	1 mL
2,2',4,4',5-Pentachlorodiphenyl ether		50 µg/mL	Isooctane	CDE-099S	1 mL
2,2,4,4',6-Pentachlorodiphenyl ether		50 µg/mL	Isooctane	CDE-100S	1 mL
2,3,3',4,4'-Pentachlorodiphenyl ether		50 µg/mL	Isooctane	CDE-105S	1 mL
2,3',4,4',5-Pentachlorodiphenyl ether	60123-65-1		NEAT	CDE-118N	1 mL
		50 µg/mL	Isooctane	CDE-118S	1 mL
2,2',4,4',5,5'-Hexachlorodiphenyl ether		50 µg/mL	Isooctane	CDE-153S	1 mL
2,2',4,4',5,6'-Hexachlorodiphenyl ether		50 µg/mL	Isooctane	CDE-154S	1 mL
Decachlorodiphenyl ether	31710-30-2	10 mg	NEAT	CDE-209N	10 mg
		50 µg/mL	Isooctane	CDE-209S	1 mL

Additional PCB Standards

PCB Congener Standards

PCB Congener Mix

PCB-W22 1 x 1 mL
PCB-W22-PAK **SAVE** 5 x 1 mL
 10 µg/mL each in Isooctane 15 comps.

PCB-W22-SET 15 x 1 mL
 100 µg/mL each in Isooctane

18	2,2',5-Trichlorobiphenyl
20	2,3,3'-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
105	2,3,3',4,4'-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

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.

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
 10 µg/mL each in Isooctane 3 comps.

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.

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

C-030S-TP 1 x 1 mL
 100 µg/mL in Isooctane

2,4,6-Trichlorobiphenyl

C-209S-TP 1 x 1 mL
 100 µg/mL in Isooctane

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.

PCB Congener Mixes - Calibration for Insulating Liquid Contamination

Mix #1

AE-00059 1 x 1 mL
AE-00059-10ML 1 x 10 mL
 10 µg/mL each in Isooctane 6 comps.

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
 10 µg/mL each in Isooctane 3 comps.

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.

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
 Decachlorobiphenyl

Technical Note

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".

PCB Congener Mixes

PCB Congeners Mix

M-PCG 1 x 1 mL
 3 µg/mL each in Isooctane 19 comps.

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

PCB Locator Mix

M-PCBL 1 x 1 mL
 At stated conc. (µg/mL) Isooctane 5 comps.

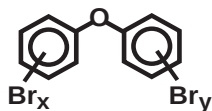
Aroclor 1242	0.5	3-Chlorobiphenyl	0.1
Aroclor 1260	0.5	Decachlorobiphenyl	0.1
2-Chlorobiphenyl	0.1		

Brominated Flame Retardants



see BFR Regional Method Index

EN, DIN, ISO, GB
NRC-IBS, MELCC (QME)



Brominated Flame Retardants (BFRs) such as polybrominated diphenyl ethers (PBDEs) have become global environmental contaminants because of their widespread use in numerous household and commercial products. They have been detected in sediments, biota, house dust, sewage sludge, air, water samples, and human and wildlife tissues. In recent years an impressive amount of information has been gained on the persistence, bioaccumulative, and toxic properties of PBDEs.

Some PBDEs break down further in the environment and in biota to other congeners or analogues. We have synthesized all 209 congeners and over 80 of their hydroxy and methoxy metabolites, and a comprehensive list of PBDE mixtures and calibration sets which are designed for US EPA and International PBDE monitoring.

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Polybrominated Diphenyl Ethers (PBDEs) Congeners

No.	Compound	CAS No.	Conc.	Solvent	Cat. No.	Unit
1	2-Bromodiphenyl ether	7025-06-1	50 µg/mL	Isooctane	BDE-001S	1 mL
2	3-Bromodiphenyl ether	6876-00-2	50 µg/mL	Isooctane	BDE-002S	1 mL
3	4-Bromodiphenyl ether	101-55-3	50 µg/mL	Isooctane	BDE-003S	1 mL
4	2,2'-Dibromodiphenyl ether	51452-87-0	50 µg/mL	Isooctane	BDE-004S	1 mL
5	2,3-Dibromodiphenyl ether	446254-14-4	50 µg/mL	Isooctane	BDE-005S	1 mL
6	2,3'-Dibromodiphenyl ether	147217-72-9	50 µg/mL	Isooctane	BDE-006S	1 mL
7	2,4-Dibromodiphenyl ether	171977-44-9	50 µg/mL	Isooctane	BDE-007S	1 mL
8	2,4'-Dibromodiphenyl ether	147217-71-8	50 µg/mL	Isooctane	BDE-008S	1 mL
9	2,5-Dibromodiphenyl ether	337513-66-3	50 µg/mL	Isooctane	BDE-009S	1 mL
10	2,6-Dibromodiphenyl ether	51930-04-2	50 µg/mL	Isooctane	BDE-010S	1 mL
11	3,3'-Dibromodiphenyl ether	6903-63-5	50 µg/mL	Isooctane	BDE-011S	1 mL
12	3,4-Dibromodiphenyl ether	189084-59-1	50 µg/mL	Isooctane	BDE-012S	1 mL
13	3,4'-Dibromodiphenyl ether	83694-71-7	50 µg/mL	Isooctane	BDE-013S	1 mL
14	3,5-Dibromodiphenyl ether	46438-88-4	50 µg/mL	Isooctane	BDE-014S	1 mL
15	4,4'-Dibromodiphenyl ether	2050-47-7	50 µg/mL	Isooctane	BDE-015S	1 mL
16	2,2',3-Tribromodiphenyl ether	147217-74-1	50 µg/mL	Isooctane	BDE-016S	1 mL
17	2,2',4-Tribromodiphenyl ether	147217-75-2	50 µg/mL	Isooctane	BDE-017S	1 mL
18	2,2',5-Tribromodiphenyl ether	407606-55-7	50 µg/mL	Isooctane	BDE-018S	1 mL
19	2,2',6-Tribromodiphenyl ether	147217-73-0	50 µg/mL	Isooctane	BDE-019S	1 mL
20	2,3,3'-Tribromodiphenyl ether	147217-76-3	50 µg/mL	Isooctane	BDE-020S	1 mL
21	2,3,4-Tribromodiphenyl ether	337513-67-4	50 µg/mL	Isooctane	BDE-021S	1 mL
22	2,3,4'-Tribromodiphenyl ether	446254-15-5	50 µg/mL	Isooctane	BDE-022S	1 mL
23	2,3,5-Tribromodiphenyl ether	446254-16-6	50 µg/mL	Isooctane	BDE-023S	1 mL
24	2,3,6-Tribromodiphenyl ether	218304-36-0	50 µg/mL	Isooctane	BDE-024S	1 mL
25	2,3',4-Tribromodiphenyl ether	147217-77-4	50 µg/mL	Isooctane	BDE-025S	1 mL
26	2,3',5-Tribromodiphenyl ether	337513-75-4	50 µg/mL	Isooctane	BDE-026S	1 mL
27	2,3',6-Tribromodiphenyl ether	337513-53-8	50 µg/mL	Isooctane	BDE-027S	1 mL
28	2,4,4'-Tribromodiphenyl ether	41318-75-6	50 µg/mL	Isooctane	BDE-028S	1 mL
29	2,4,5-Tribromodiphenyl ether	337513-56-1	50 µg/mL	Isooctane	BDE-029S	1 mL
30	2,4,6-Tribromodiphenyl ether	155999-95-4	50 µg/mL	Isooctane	BDE-030S	1 mL
31	2,4',5-Tribromodiphenyl ether	65075-08-3	50 µg/mL	Isooctane	BDE-031S	1 mL
32	2,4',6-Tribromodiphenyl ether	189084-60-4	50 µg/mL	Isooctane	BDE-032S	1 mL
33	2',3,4-Tribromodiphenyl ether	147217-78-5	50 µg/mL	Isooctane	BDE-033S	1 mL
34	2',3,5-Tribromodiphenyl ether	446254-17-7	50 µg/mL	Isooctane	BDE-034S	1 mL
35	3,3',4-Tribromodiphenyl ether	147217-80-9	50 µg/mL	Isooctane	BDE-035S	1 mL
36	3,3',5-Tribromodiphenyl ether	147217-79-6	50 µg/mL	Isooctane	BDE-036S	1 mL
37	3,4,4'-Tribromodiphenyl ether	147217-81-0	50 µg/mL	Isooctane	BDE-037S	1 mL
38	3,4,5-Tribromodiphenyl ether	337513-54-9	50 µg/mL	Isooctane	BDE-038S	1 mL
39	3,4',5-Tribromodiphenyl ether	407606-57-9	50 µg/mL	Isooctane	BDE-039S	1 mL
40	2,2',3,3'-Tetrabromodiphenyl ether	337513-77-6	50 µg/mL	Isooctane	BDE-040S	1 mL
41	2,2',3,4-Tetrabromodiphenyl ether	337513-68-5	50 µg/mL	Isooctane	BDE-041S	1 mL
42	2,2',3,4'-Tetrabromodiphenyl ether	446254-18-8	50 µg/mL	Isooctane	BDE-042S	1 mL
43	2,2',3,5-Tetrabromodiphenyl ether	446254-19-9	50 µg/mL	Isooctane	BDE-043S	1 mL
44	2,2',3,5'-Tetrabromodiphenyl ether	446254-20-2	50 µg/mL	Isooctane	BDE-044S	1 mL
45	2,2',3,6-Tetrabromodiphenyl ether	446254-21-3	50 µg/mL	Isooctane	BDE-045S	1 mL
46	2,2',3,6'-Tetrabromodiphenyl ether	446254-22-4	50 µg/mL	Isooctane	BDE-046S	1 mL
47	2,2',4,4'-Tetrabromodiphenyl ether	5436-43-1	50 µg/mL	Isooctane	BDE-047S	1 mL
48	2,2',4,5-Tetrabromodiphenyl ether	337513-55-0	50 µg/mL	Isooctane	BDE-048S	1 mL
49	2,2',4,5'-Tetrabromodiphenyl ether	243982-82-3	50 µg/mL	Isooctane	BDE-049S	1 mL
50	2,2',4,6-Tetrabromodiphenyl ether	446254-23-5	50 µg/mL	Isooctane	BDE-050S	1 mL
51	2,2',4,6'-Tetrabromodiphenyl ether	189084-57-9	50 µg/mL	Isooctane	BDE-051S	1 mL

PFAS compounds continued on next page

Polybrominated Diphenyl Ether (PBDE)

Polybrominated Diphenyl Ethers (PBDEs) (continued)

No.	Compound	CAS No.	Conc.	Solvent	Cat. No.	Unit
52	2,2',5,5'-Tetrabromodiphenyl ether	446254-24-6	50 µg/mL	Isooctane	BDE-052S	1 mL
53	2,2',5,6'-Tetrabromodiphenyl ether	446254-25-7	50 µg/mL	Isooctane	BDE-053S	1 mL
54	2,2',6,6'-Tetrabromodiphenyl ether	446254-26-8	50 µg/mL	Isooctane	BDE-054S	1 mL
55	2,3,3',4'-Tetrabromodiphenyl ether	40088-47-9	50 µg/mL	Isooctane	BDE-055S	1 mL
56	2,3,3',4'-Tetrabromodiphenyl ether	446254-28-0	50 µg/mL	Isooctane	BDE-056S	1 mL
57	2,3,3',5'-Tetrabromodiphenyl ether	337513-82-3	50 µg/mL	Isooctane	BDE-057S	1 mL
58	2,3,3',5'-Tetrabromodiphenyl ether	446254-29-1	50 µg/mL	Isooctane	BDE-058S	1 mL
59	2,3,3',6'-Tetrabromodiphenyl ether	446254-30-4	50 µg/mL	Isooctane	BDE-059S	1 mL
60	2,3,4,4'-Tetrabromodiphenyl ether	446254-31-5	50 µg/mL	Isooctane	BDE-060S	1 mL
61	2,3,4,5'-Tetrabromodiphenyl ether	446254-32-6	50 µg/mL	Isooctane	BDE-061S	1 mL
62	2,3,4,6'-Tetrabromodiphenyl ether	446254-33-7	50 µg/mL	Isooctane	BDE-062S	1 mL
63	2,3,4',5'-Tetrabromodiphenyl ether	446254-34-8	50 µg/mL	Isooctane	BDE-063S	1 mL
64	2,3,4',6'-Tetrabromodiphenyl ether	446254-35-9	50 µg/mL	Isooctane	BDE-064S	1 mL
65	2,3,5,6'-Tetrabromodiphenyl ether	446254-36-0	50 µg/mL	Isooctane	BDE-065S	1 mL
66	2,3',4,4'-Tetrabromodiphenyl ether	189084-61-5	50 µg/mL	Isooctane	BDE-066S	1 mL
67	2,3',4,5'-Tetrabromodiphenyl ether	446254-37-1	50 µg/mL	Isooctane	BDE-067S	1 mL
68	2,3',4,5'-Tetrabromodiphenyl ether	446254-38-2	50 µg/mL	Isooctane	BDE-068S	1 mL
69	2,3',4,6'-Tetrabromodiphenyl ether	327185-09-1	50 µg/mL	Isooctane	BDE-069S	1 mL
70	2,3',4',5'-Tetrabromodiphenyl ether	446254-39-3	50 µg/mL	Isooctane	BDE-070S	1 mL
71	2,3',4',6'-Tetrabromodiphenyl ether	189084-62-6	50 µg/mL	Isooctane	BDE-071S	1 mL
72	2,3',5,5'-Tetrabromodiphenyl ether	446254-40-6	50 µg/mL	Isooctane	BDE-072S	1 mL
73	2,3',5',6'-Tetrabromodiphenyl ether	446254-41-7	50 µg/mL	Isooctane	BDE-073S	1 mL
74	2,4,4',5'-Tetrabromodiphenyl ether	446254-42-8	50 µg/mL	Isooctane	BDE-074S	1 mL
75	2,4,4',6'-Tetrabromodiphenyl ether	189084-63-7	50 µg/mL	Isooctane	BDE-075S	1 mL
76	2',3,4,5'-Tetrabromodiphenyl ether	446254-43-9	50 µg/mL	Isooctane	BDE-076S	1 mL
77	3,3',4,4'-Tetrabromodiphenyl ether	93703-48-1	50 µg/mL	Isooctane	BDE-077S	1 mL
78	3,3',4,5'-Tetrabromodiphenyl ether	446254-45-1	50 µg/mL	Isooctane	BDE-078S	1 mL
79	3,3',4,5'-Tetrabromodiphenyl ether	446254-48-4	50 µg/mL	Isooctane	BDE-079S	1 mL
80	3,3',5,5'-Tetrabromodiphenyl ether	103173-66-6	50 µg/mL	Isooctane	BDE-080S	1 mL
81	3,4,4',5'-Tetrabromodiphenyl ether	446254-50-8	50 µg/mL	Isooctane	BDE-081S	1 mL
82	2,2',3,3',4'-Pentabromodiphenyl ether	327185-11-5	50 µg/mL	Isooctane	BDE-082S	1 mL
83	2,2',3,3',5'-Pentabromodiphenyl ether	446254-51-9	50 µg/mL	Isooctane	BDE-083S	1 mL
84	2,2',3,3',6'-Pentabromodiphenyl ether	446254-52-0	50 µg/mL	Isooctane	BDE-084S	1 mL
85	2,2',3,4,4'-Pentabromodiphenyl ether	182346-21-0	50 µg/mL	Isooctane	BDE-085S	1 mL
86	2,2',3,4,5'-Pentabromodiphenyl ether	446254-53-1	50 µg/mL	Isooctane	BDE-086S	1 mL
87	2,2',3,4,5'-Pentabromodiphenyl ether	446254-54-2	50 µg/mL	Isooctane	BDE-087S	1 mL
88	2,2',3,4,6'-Pentabromodiphenyl ether	446254-55-3	50 µg/mL	Isooctane	BDE-088S	1 mL
89	2,2',3,4,6'-Pentabromodiphenyl ether	446254-56-4	50 µg/mL	Isooctane	BDE-089S	1 mL
90	2,2',3,4',5'-Pentabromodiphenyl ether	446254-57-5	50 µg/mL	Isooctane	BDE-090S	1 mL
91	2,2',3,4',6'-Pentabromodiphenyl ether	446254-58-6	50 µg/mL	Isooctane	BDE-091S	1 mL
92	2,2',3,5,5'-Pentabromodiphenyl ether	446254-59-7	50 µg/mL	Isooctane	BDE-092S	1 mL
93	2,2',3,5,6'-Pentabromodiphenyl ether	446254-60-0	50 µg/mL	Isooctane	BDE-093S	1 mL
94	2,2',3,5,6'-Pentabromodiphenyl ether	446254-61-1	50 µg/mL	Isooctane	BDE-094S	1 mL
95	2,2',3,5',6'-Pentabromodiphenyl ether	446254-62-2	50 µg/mL	Isooctane	BDE-095S	1 mL
96	2,2',3,6,6'-Pentabromodiphenyl ether	446254-63-3	50 µg/mL	Isooctane	BDE-096S	1 mL
97	2,2',3',4,5'-Pentabromodiphenyl ether	446254-64-4	50 µg/mL	Isooctane	BDE-097S	1 mL
98	2,2',3',4,6'-Pentabromodiphenyl ether	38463-82-0	50 µg/mL	Isooctane	BDE-098S	1 mL
99	2,2',4,4',5'-Pentabromodiphenyl ether	60348-60-9	50 µg/mL	Isooctane	BDE-099S	1 mL
100	2,2',4,4',6'-Pentabromodiphenyl ether	189084-64-8	50 µg/mL	Isooctane	BDE-100S	1 mL
101	2,2',4,5,5'-Pentabromodiphenyl ether	446254-65-5	50 µg/mL	Isooctane	BDE-101S	1 mL
102	2,2',4,5,6'-Pentabromodiphenyl ether	446254-66-6	50 µg/mL	Isooctane	BDE-102S	1 mL
103	2,2',4,5',6'-Pentabromodiphenyl ether	446254-67-7	50 µg/mL	Isooctane	BDE-103S	1 mL
104	2,2',4,6,6'-Pentabromodiphenyl ether	446254-68-8	50 µg/mL	Isooctane	BDE-104S	1 mL
105	2,3,3',4,4'-Pentabromodiphenyl ether	373594-78-6	50 µg/mL	Isooctane	BDE-105S	1 mL
106	2,3,3',4,5'-Pentabromodiphenyl ether	446254-69-9	50 µg/mL	Isooctane	BDE-106S	1 mL
107	2,3,3',4',5'-Pentabromodiphenyl ether	446254-70-2	50 µg/mL	Isooctane	BDE-107S	1 mL
108	2,3,3',4,5'-Pentabromodiphenyl ether	446254-71-3	50 µg/mL	Isooctane	BDE-108S	1 mL
109	2,3,3',4,6'-Pentabromodiphenyl ether	446254-72-4	50 µg/mL	Isooctane	BDE-109S	1 mL
110	2,3,3',4',6'-Pentabromodiphenyl ether	446254-73-5	50 µg/mL	Isooctane	BDE-110S	1 mL
111	2,3,3',5,5'-Pentabromodiphenyl ether	446254-74-6	50 µg/mL	Isooctane	BDE-111S	1 mL
112	2,3,3',5,6'-Pentabromodiphenyl ether	446254-75-7	50 µg/mL	Isooctane	BDE-112S	1 mL
113	2,3,3',5',6'-Pentabromodiphenyl ether	446254-76-8	50 µg/mL	Isooctane	BDE-113S	1 mL
114	2,3,4,4',5'-Pentabromodiphenyl ether	446254-77-9	50 µg/mL	Isooctane	BDE-114S	1 mL
115	2,3,4,4',6'-Pentabromodiphenyl ether	446254-78-0	50 µg/mL	Isooctane	BDE-115S	1 mL
116	2,3,4,5,6'-Pentabromodiphenyl ether	189084-65-9	50 µg/mL	Isooctane	BDE-116S	1 mL
117	2,3,4',5,6'-Pentabromodiphenyl ether	446254-79-1	50 µg/mL	Isooctane	BDE-117S	1 mL
118	2,3',4,4',5'-Pentabromodiphenyl ether	446254-80-4	50 µg/mL	Isooctane	BDE-118S	1 mL
119	2,3',4,4',6'-Pentabromodiphenyl ether	189084-66-0	50 µg/mL	Isooctane	BDE-119S	1 mL
120	2,3',4,5,5'-Pentabromodiphenyl ether	417727-71-0	50 µg/mL	Isooctane	BDE-120S	1 mL
121	2,3',4,5',6'-Pentabromodiphenyl ether	446254-81-5	50 µg/mL	Isooctane	BDE-121S	1 mL
122	2',3,3',4,5'-Pentabromodiphenyl ether	446254-82-6	50 µg/mL	Isooctane	BDE-122S	1 mL
123	2',3,4,4',5'-Pentabromodiphenyl ether	446254-83-7	50 µg/mL	Isooctane	BDE-123S	1 mL
124	2',3,4,5,5'-Pentabromodiphenyl ether	446254-84-8	50 µg/mL	Isooctane	BDE-124S	1 mL
125	2',3,4,5,6'-Pentabromodiphenyl ether	446254-85-9	50 µg/mL	Isooctane	BDE-125S	1 mL
126	3,3',4,4',5'-Pentabromodiphenyl ether	366791-32-4	50 µg/mL	Isooctane	BDE-126S	1 mL
127	3,3',4,5,5'-Pentabromodiphenyl ether	446254-86-0	50 µg/mL	Isooctane	BDE-127S	1 mL

Polybrominated Diphenyl Ether (PBDE)

Polybrominated Diphenyl Ethers (PBDEs) (continued)

No.	Compound	CAS No.	Conc.	Solvent	Cat. No.	Unit
128	2,2',3,3',4,4'-Hexabromodiphenyl ether	182677-28-7	50 µg/mL	Isooctane	BDE-128S	1 mL
129	2,2',3,3',4,5'-Hexabromodiphenyl ether	446254-87-1	50 µg/mL	Isooctane	BDE-129S	1 mL
130	2,2',3,3',4,5'-Hexabromodiphenyl ether	446254-88-2	50 µg/mL	Isooctane	BDE-130S	1 mL
131	2,2',3,3',4,6'-Hexabromodiphenyl ether	446254-89-3	50 µg/mL	Isooctane	BDE-131S	1 mL
132	2,2',3,3',4,6'-Hexabromodiphenyl ether	446254-90-6	50 µg/mL	Isooctane	BDE-132S	1 mL
133	2,2',3,3',5,5'-Hexabromodiphenyl ether	446254-91-7	50 µg/mL	Isooctane	BDE-133S	1 mL
134	2,2',3,3',5,6'-Hexabromodiphenyl ether	446254-92-8	50 µg/mL	Isooctane	BDE-134S	1 mL
135	2,2',3,3',5,6'-Hexabromodiphenyl ether	446254-93-9	50 µg/mL	Isooctane	BDE-135S	1 mL
136	2,2',3,3',6,6'-Hexabromodiphenyl ether	446254-94-0	50 µg/mL	Isooctane	BDE-136S	1 mL
137	2,2',3,4,4',5'-Hexabromodiphenyl ether	446254-95-1	50 µg/mL	Isooctane	BDE-137S	1 mL
138	2,2',3,4,4',5'-Hexabromodiphenyl ether	182677-30-1	50 µg/mL	Isooctane	BDE-138S	1 mL
139	2,2',3,4,4',6'-Hexabromodiphenyl ether	446254-96-2	50 µg/mL	Isooctane	BDE-139S	1 mL
140	2,2',3,4,4',6'-Hexabromodiphenyl ether	243982-83-4	50 µg/mL	Isooctane	BDE-140S	1 mL
141	2,2',3,4,5,5'-Hexabromodiphenyl ether	446254-97-3	50 µg/mL	Isooctane	BDE-141S	1 mL
142	2,2',3,4,5,6'-Hexabromodiphenyl ether	446254-98-4	50 µg/mL	Isooctane	BDE-142S	1 mL
143	2,2',3,4,5,6'-Hexabromodiphenyl ether	446254-99-5	50 µg/mL	Isooctane	BDE-143S	1 mL
144	2,2',3,4,5',6'-Hexabromodiphenyl ether	446255-00-1	50 µg/mL	Isooctane	BDE-144S	1 mL
145	2,2',3,4,6,6'-Hexabromodiphenyl ether	446255-01-2	50 µg/mL	Isooctane	BDE-145S	1 mL
146	2,2',3,4',5,5'-Hexabromodiphenyl ether	446255-02-3	50 µg/mL	Isooctane	BDE-146S	1 mL
147	2,2',3,4',5,6'-Hexabromodiphenyl ether	116995-33-6	50 µg/mL	Isooctane	BDE-147S	1 mL
148	2,2',3,4',5,6'-Hexabromodiphenyl ether	446255-03-4	50 µg/mL	Isooctane	BDE-148S	1 mL
149	2,2',3,4',5',6'-Hexabromodiphenyl ether	446255-04-5	50 µg/mL	Isooctane	BDE-149S	1 mL
150	2,2',3,4',6,6'-Hexabromodiphenyl ether	446255-05-6	50 µg/mL	Isooctane	BDE-150S	1 mL
151	2,2',3,5,5',6'-Hexabromodiphenyl ether	446255-06-7	50 µg/mL	Isooctane	BDE-151S	1 mL
152	2,2',3,5,6,6'-Hexabromodiphenyl ether	446255-07-8	50 µg/mL	Isooctane	BDE-152S	1 mL
153	2,2',4,4',5,5'-Hexabromodiphenyl ether	68631-49-2	50 µg/mL	Isooctane	BDE-153S	1 mL
154	2,2',4,4',5,6'-Hexabromodiphenyl ether	207122-15-4	50 µg/mL	Isooctane	BDE-154S	1 mL
155	2,2',4,4',6,6'-Hexabromodiphenyl ether	35854-94-5	50 µg/mL	Isooctane	BDE-155S	1 mL
156	2,3,3',4,4',5'-Hexabromodiphenyl ether	405237-85-6	50 µg/mL	Isooctane	BDE-156S	1 mL
157	2,3,3',4,4',5'-Hexabromodiphenyl ether	446255-08-9	50 µg/mL	Isooctane	BDE-157S	1 mL
158	2,3,3',4,4',6'-Hexabromodiphenyl ether	446255-09-0	50 µg/mL	Isooctane	BDE-158S	1 mL
159	2,3,3',4,5,5'-Hexabromodiphenyl ether	446255-10-3	50 µg/mL	Isooctane	BDE-159S	1 mL
160	2,3,3',4,5,6'-Hexabromodiphenyl ether	446255-11-4	50 µg/mL	Isooctane	BDE-160S	1 mL
161	2,3,3',4,5',6'-Hexabromodiphenyl ether	446255-12-5	50 µg/mL	Isooctane	BDE-161S	1 mL
162	2,3,3',4',5,5'-Hexabromodiphenyl ether	446255-13-6	50 µg/mL	Isooctane	BDE-162S	1 mL
163	2,3,3',4',5,6'-Hexabromodiphenyl ether	446255-14-7	50 µg/mL	Isooctane	BDE-163S	1 mL
164	2,3,3',4',5',6'-Hexabromodiphenyl ether	446255-15-8	50 µg/mL	Isooctane	BDE-164S	1 mL
165	2,3,3',5,5',6'-Hexabromodiphenyl ether	446255-16-9	50 µg/mL	Isooctane	BDE-165S	1 mL
166	2,3,4,4',5,6'-Hexabromodiphenyl ether	189084-58-0	50 µg/mL	Isooctane	BDE-166S	1 mL
167	2,3',4,4',5,5'-Hexabromodiphenyl ether	446255-17-0	50 µg/mL	Isooctane	BDE-167S	1 mL
168	2,3',4,4',5',6'-Hexabromodiphenyl ether	53551-87-4	50 µg/mL	Isooctane	BDE-168S	1 mL
169	3,3',4,4',5,5'-Hexabromodiphenyl ether	446255-18-1	50 µg/mL	Isooctane	BDE-169S	1 mL
170	2,2',3,3',4,4',5-Heptabromodiphenyl ether	327185-13-7	50 µg/mL	Isooctane	BDE-170S	1 mL
171	2,2',3,3',4,4',6-Heptabromodiphenyl ether	446255-19-2	50 µg/mL	Isooctane	BDE-171S	1 mL
172	2,2',3,3',4,5,5'-Heptabromodiphenyl ether	407606-59-1	50 µg/mL	Isooctane	BDE-172S	1 mL
173	2,2',3,3',4,5,6-Heptabromodiphenyl ether	446255-20-5	50 µg/mL	Isooctane	BDE-173S	1 mL
174	2,2',3,3',4,5,6'-Heptabromodiphenyl ether	446255-21-6	50 µg/mL	Isooctane	BDE-174S	1 mL
175	2,2',3,3',4,5',6-Heptabromodiphenyl ether	446255-22-7	50 µg/mL	Isooctane	BDE-175S	1 mL
176	2,2',3,3',4,6,6'-Heptabromodiphenyl ether	407606-61-5	50 µg/mL	Isooctane	BDE-176S	1 mL
177	2,2',3,3',4',5,6-Heptabromodiphenyl ether	446255-23-8	50 µg/mL	Isooctane	BDE-177S	1 mL
178	2,2',3,3',5,5',6-Heptabromodiphenyl ether	446255-24-9	50 µg/mL	Isooctane	BDE-178S	1 mL
179	2,2',3,3',5,6,6'-Heptabromodiphenyl ether	446255-25-0	50 µg/mL	Isooctane	BDE-179S	1 mL
180	2,2',3,4,4',5,5'-Heptabromodiphenyl ether	446255-26-1	50 µg/mL	Isooctane	BDE-180S	1 mL
181	2,2',3,4,4',5,6-Heptabromodiphenyl ether	189084-67-1	50 µg/mL	Isooctane	BDE-181S	1 mL
182	2,2',3,4,4',5,6'-Heptabromodiphenyl ether	442690-45-1	50 µg/mL	Isooctane	BDE-182S	1 mL
183	2,2',3,4,4',5',6-Heptabromodiphenyl ether	207122-16-5	50 µg/mL	Isooctane	BDE-183S	1 mL
184	2,2',3,4,4',6,6'-Heptabromodiphenyl ether	117948-63-7	50 µg/mL	Isooctane	BDE-184S	1 mL
185	2,2',3,4,5,5',6-Heptabromodiphenyl ether	405237-86-7	50 µg/mL	Isooctane	BDE-185S	1 mL
186	2,2',3,4,5,6,6'-Heptabromodiphenyl ether	446255-27-2	50 µg/mL	Isooctane	BDE-186S	1 mL
187	2,2',3,4',5,5',6-Heptabromodiphenyl ether	446255-28-3	50 µg/mL	Isooctane	BDE-187S	1 mL
188	2,2',3,4',5,6,6'-Heptabromodiphenyl ether	116995-32-5	50 µg/mL	Isooctane	BDE-188S	1 mL
189	2,3,3',4,4',5,5'-Heptabromodiphenyl ether	259087-35-9	50 µg/mL	Isooctane	BDE-189S	1 mL
190	2,3,3',4,4',5,6-Heptabromodiphenyl ether	189084-68-2	50 µg/mL	Isooctane	BDE-190S	1 mL

PBDE Congeners continued on next page

How do flame retardants work?

Flame retardants work by interfering and/or suppressing the combustion process. These modes of action may be chemical or physical. Chemical actions can include:

- Reaction in the gas phase - flammable gases cannot be generated which results in a cooling of the combustion process.
- Reaction in the solid phase - the flame retardant compounds, acting as a barrier against the flame.

Physical action can occur by:

- Additives that cool the substrate to a temperature below a level for sustainable combustion.
- Formation of a protective layer much like the process mentioned above.
- Dilution of flammable gases by additives/fillers (inorganics) that create non-flammable gases.

Polybrominated Diphenyl Ether (PBDE)

Tech Grade PBDE and US State Methods

Polybrominated Diphenyl Ethers (PBDEs) (continued)

No.	Compound	CAS No.	Conc.	Solvent	Cat. No.	Unit
191	2,3,3',4,4',5',6-Heptabromodiphenyl ether	446255-30-7	50 µg/mL	Isooctane	BDE-191S	1 mL
192	2,3,3',4,5,5',6-Heptabromodiphenyl ether	407578-53-4	50 µg/mL	Isooctane	BDE-192S	1 mL
193	2,3,3',4',5,5',6-Heptabromodiphenyl ether	446255-34-1	50 µg/mL	Isooctane	BDE-193S	1 mL
194	2,2',3,3',4,4',5,5'-Octabromodiphenyl ether	85446-17-9	50 µg/mL	Isooctane	BDE-194S	1 mL
195	2,2',3,3',4,4',5,6-Octabromodiphenyl ether	446255-38-5	50 µg/mL	Isooctane	BDE-195S	1 mL
196	2,2',3,3',4,4',5,6'-Octabromodiphenyl ether	446255-39-6	50 µg/mL	Isooctane	BDE-196S	1 mL
197	2,2',3,3',4,4',6,6'-Octabromodiphenyl ether	117964-21-3	50 µg/mL	Isooctane	BDE-197S	1 mL
198	2,2',3,3',4,5,5',6-Octabromodiphenyl ether	446255-42-1	50 µg/mL	Isooctane	BDE-198S	1 mL
199	2,2',3,3',4,5,5',6'-Octabromodiphenyl ether	446255-43-2	25 µg/mL	Isooctane	BDE-199S-0.5X	1 mL
200	2,2',3,3',4,5,6,6'-Octabromodiphenyl ether	446255-46-5	25 µg/mL	Isooctane	BDE-200S-0.5X	1 mL
201	2,2',3,3',4,5',6,6'-Octabromodiphenyl ether	446255-50-1	50 µg/mL	Isooctane	BDE-201S	1 mL
202	2,2',3,3',5,5',6,6'-Octabromodiphenyl ether	67797-09-5	50 µg/mL	Isooctane	BDE-202S	1 mL
203	2,2',3,4,4',5,5',6-Octabromodiphenyl ether	337513-72-1	50 µg/mL	Isooctane	BDE-203S	1 mL
204	2,2',3,4,4',5,6,6'-Octabromodiphenyl ether	446255-54-5	50 µg/mL	Isooctane	BDE-204S	1 mL
205	2,3,3',4,4',5,5',6-Octabromodiphenyl ether	446255-56-7	50 µg/mL	Isooctane	BDE-205S	1 mL
206	2,2',3,3',4,4',5,5',6-Nonabromodiphenyl ether	63387-28-0	50 µg/mL	Isooctane	BDE-206S	1 mL
207	2,2',3,3',4,4',5,6,6'-Nonabromodiphenyl ether	437701-79-6	50 µg/mL	Isooctane	BDE-207S-R1	1 mL
208	2,2',3,3',4,5,5',6,6'-Nonabromodiphenyl ether	437701-78-5	50 µg/mL	Isooctane	BDE-208S	1 mL
209	Decabromodiphenyl ether	1163-19-5	50 µg/mL	Isooctane:	BDE-209S	1 mL
Internal Standard		Toluene (50:50)				
4'-Chloro-2,2',3,3',4,5,5',6,6'-nonabromodiphenyl ether		Short Form (4'-Cl-BDE-208)	10 µg/mL	Isooctane	CBDE-001S-0.2X	1 mL
			50 µg/mL	Isooctane	CBDE-001S	1 mL

Technical Grade PBDEs

PBDE Technical Grade

50 µg/mL in Isooctane	Cat. No.	Unit
Bromkal™ DE-70-5 (Pentas)	BDE-705	1 mL
Bromkal™ DE-71 (Pentas)	BDE-710	1 mL
Bromkal™ DE-73-6 (Hexas)	BDE-736	1 mL
Bromkal™ DE-79-8 (Octas)	BDE-798S-GL	1 mL
FR-300BA (Deca)	FRS-009S	1 mL
100 µg/mL in Toluene		
Bromkal™ is a registered trademark of Chemische Fabrik Kalk		

PBDE Congeners common to Technical Mixtures (Bromkal)

BDE-BROMKAL	1 x 1 mL
10 µg/mL each in Isooctane	6 comps.
28 2,4,4'-Tribromodiphenyl ether	
47 2,2',4,4'-Tetrabromodiphenyl ether	
99 2,2',4,4',5-Pentabromodiphenyl ether	
100 2,2',4,4',6-Pentabromodiphenyl ether	
153 2,2',4,4',5,5'-Hexabromodiphenyl ether	
154 2,2',4,4',5,6'-Hexabromodiphenyl ether	

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-798S-GL	1 x 1 mL
50 µg/mL each in Isooctane	
DE-79 (Great Lakes)	

USA State Mixes

PBDEs Common in the U.S.

Environment

BDE-USE	1 x 1 mL
10 µg/mL each in Isooctane	5 comps.
47 2,2',4,4'-Tetrabromodiphenyl ether	
99 2,2',4,4',5-Pentabromodiphenyl ether	
100 2,2',4,4',6-Pentabromodiphenyl ether	
153 2,2',4,4',5,5'-Hexabromodiphenyl ether	
154 2,2',4,4',5,6'-Hexabromodiphenyl ether	

PBDEs - Columbia River Study

BDE-CR	1 x 1 mL
10 µg/mL each in Isooctane	12 comps.
15 4,4'-Dibromodiphenyl ether	
28 2,4,4'-Tribromodiphenyl ether	
33 2',3,4-Tribromodiphenyl ether	
47 2,2',4,4'-Tetrabromodiphenyl ether	
49 2,2',4,5'-Tetrabromodiphenyl ether	
66 2,3',4,4'-Tetrabromodiphenyl ether	
75 2,4,4',6-Tetrabromodiphenyl ether	
99 2,2',4,4',5-Pentabromodiphenyl ether	
100 2,2',4,4',6-Pentabromodiphenyl ether	
153 2,2',4,4',5,5'-Hexabromodiphenyl ether	
154 2,2',4,4',5,6'-Hexabromodiphenyl ether	
155 2,2',4,4',6,6'-Hexabromodiphenyl ether	

PBDEs Common to California

Environment

BDE-CAE-1	1 x 1 mL
10 µg/mL each in Isooctane	7 comps.
28 2,4,4'-Tribromodiphenyl ether	
33 2',3,4-Tribromodiphenyl ether	
47 2,2',4,4'-Tetrabromodiphenyl ether	
99 2,2',4,4',5-Pentabromodiphenyl ether	
100 2,2',4,4',6-Pentabromodiphenyl ether	
153 2,2',4,4',5,5'-Hexabromodiphenyl ether	
154 2,2',4,4',5,6'-Hexabromodiphenyl ether	

PBDEs - Lake Michigan Study

BDE-LMS	1 x 1 mL
10 µg/mL each in Isooctane	9 comps.
28 2,4,4'-Tribromodiphenyl ether	
47 2,2',4,4'-Tetrabromodiphenyl ether	
66 2,3',4,4'-Tetrabromodiphenyl ether	
85 2,2',3,4,4'-Pentabromodiphenyl ether	
99 2,2',4,4',5-Pentabromodiphenyl ether	
100 2,2',4,4',6-Pentabromodiphenyl ether	
138 2,2',3,4,4',5'-Hexabromodiphenyl ether	
153 2,2',4,4',5,5'-Hexabromodiphenyl ether	
154 2,2',4,4',5,6'-Hexabromodiphenyl ether	

California Method 750-M Standard

BDE-CALEWS	1 x 1 mL
10 µg/mL each in Isooctane	13 comps.
17 2,2',4-Tribromodiphenyl ether	
28 2,4,4'-Tribromodiphenyl ether	
47 2,2',4,4'-Tetrabromodiphenyl ether	
66 2,3',4,4'-Tetrabromodiphenyl ether	
71 2,3',4,6-Tetrabromodiphenyl ether	
99 2,2',4,4',5-Pentabromodiphenyl ether	
100 2,2',4,4',6-Pentabromodiphenyl ether	
138 2,2',3,4,4',5'-Hexabromodiphenyl ether	
153 2,2',4,4',5,5'-Hexabromodiphenyl ether	
154 2,2',4,4',5,6'-Hexabromodiphenyl ether	
183 2,2',3,4,4',5',6-Heptabromodiphenyl ether	
209 Decabromodiphenyl ether	
2,2',6,6'-Tetrabromobisphenol A	

Polybrominated Diphenyl Ether (PBDE)

EPA Methods

Method 527 Pesticides & Flame Retardants in Drinking Water by SPE and GC/MS

M-527-BDE

50 µg/mL each in Isooctane:Ethyl Acetate (80:20)

1 x 1 mL

5 comps.

2,2',4,4'-Tetrabromodiphenyl ether
2,2',4,4',6-Pentabromodiphenyl ether

2,2',4,4',5-Pentabromodiphenyl ether
2,2',4,4',5,5'-Hexabromodiphenyl ether

2,2',4,4',5,5'-Hexabromobiphenyl

Method 1614 Brominated Diphenyl Ethers in Water, Soil, Sediment and Tissue by HRGC/HRMS

Method 1614 is recommended for analysis of aqueous, solid, tissue, and multi-phase environmental samples.

PBDEs Standard Solution Accuracy and Precision

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

PBDE Congeners of Primary Interest

At stated conc. (µg/mL) in Isooctane:Toluene (80:20)		BDE-CSM	1 x 1 mL 8 comps.
28	2,4,4'-Tribromodiphenyl ether		20 µg/mL
47	2,2',4,4'-Tetrabromodiphenyl ether		20 µg/mL
99	2,2',4,4',5-Pentabromodiphenyl ether		20 µg/mL
100	2,2',4,4',6-Pentabromodiphenyl ether		20 µg/mL
153	2,2',4,4',5,5'-Hexabromodiphenyl ether		20 µg/mL
154	2,2',4,4',5,6'-Hexabromodiphenyl ether		20 µg/mL
183	2,2',3,4,4',5',6-Heptabromodiphenyl ether		20 µg/mL
209	Decabromodiphenyl ether		200 µg/mL

PBDE Congeners Calibration Mix

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

PBDE Congeners Matrix Spiking Solution

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

Commonly Occurring PBDE Congeners Precision and Recovery

BDE-COC

At stated conc. in Isooctane:Toluene (97.5:2.5)

1 x 1 mL

14 comps.

17	2,2',4-Tribromodiphenyl ether	5 µg/mL
28	2,4,4'-Tribromodiphenyl ether	5 µg/mL
47	2,2',4,4'-Tetrabromodiphenyl ether	5 µg/mL
66	2,3',4,4'-Tetrabromodiphenyl ether	5 µg/mL
71	2,3',4,6-Tetrabromodiphenyl ether	5 µg/mL
85	2,2',3,4,4'-Pentabromodiphenyl ether	5 µg/mL
99	2,2',4,4',5-Pentabromodiphenyl ether	5 µg/mL
100	2,2',4,4',6-Pentabromodiphenyl ether	5 µg/mL
138	2,2',3,4,4',5'-Hexabromodiphenyl ether	5 µg/mL
153	2,2',4,4',5,5'-Hexabromodiphenyl ether	5 µg/mL
154	2,2',4,4',5,6'-Hexabromodiphenyl ether	5 µg/mL
183	2,2',3,4,4',5',6-Heptabromodiphenyl ether	5 µg/mL
190	2,3,3',4,4',5,6-Heptabromodiphenyl ether	5 µg/mL
209	Decabromodiphenyl ether	25 µg/mL

Method 1614 PBDEs Set

Each in 50 µg/mL in Isooctane		BDE-EPA-SET	8 x 1 mL 8 comps.
28	2,4,4'-Tribromodiphenyl ether		1 mL
47	2,2',4,4'-Tetrabromodiphenyl ether		1 mL
99	2,2',4,4',5-Pentabromodiphenyl ether		1 mL
100	2,2',4,4',6-Pentabromodiphenyl ether		1 mL
153	2,2',4,4',5,5'-Hexabromodiphenyl ether		1 mL
154	2,2',4,4',5,6'-Hexabromodiphenyl ether		1 mL
183	2,2',3,4,4',5',6-Heptabromodiphenyl ether		1 mL
209	Decabromodiphenyl ether		1 mL

PBDE Metabolites

Hydroxylated (OH-BDEs) and Methoxylated (MeO-BDEs)

Hydroxy and Methoxy Polybromodiphenyl Ether Congeners

Hydroxylated and methoxylated PBDEs may be formed as metabolites of the PBDE flame retardants. Hydroxylated PBDEs (OH-PBDEs) have been detected in human blood, mice, rats, fish, and birds. They have been studied for their potential to disrupt the endocrine (hormone) system in mammals. One important aspect of these studies is the structural similarity of some of the OH-PBDEs with the thyroid hormones which affect every cell in the body. We have synthesized a variety of hydroxylated and methoxylated PBDEs. HBDE-3007 (T2-like), HBDE-4010 (T3-like), and HBDE-5010 (T4-like) display the closest similarity to the halogen substitution pattern of those thyroid hormones.

Hydroxylated PBDEs

Short Form	Compound	Conc.	Solvent	Cat. No.	Unit
2'-OH-BDE-003	2'-Hydroxy-4-monobromodiphenyl ether	50 µg/mL	ACN	HBDE-1001S-CN	1 mL
3'-OH-BDE-007	3'-Hydroxy-2,4-dibromodiphenyl ether	50 µg/mL	ACN	HBDE-2001S-CN	1 mL
2'-OH-BDE-007	2'-Hydroxy-2,4-dibromodiphenyl ether	10 µg/mL	ACN	HBDE-2002S-CN-0.2X	1 mL
2'-OH-BDE-009	2'-Hydroxy-2,5-dibromodiphenyl ether	50 µg/mL	ACN	HBDE-2003S-CN	1 mL
4'-OH-BDE-007	4'-Hydroxy-2,4-dibromodiphenyl ether	10 µg/mL	ACN	HBDE-2004S-CN-0.2X	1 mL
		50 µg/mL	ACN	HBDE-2004S-CN	1 mL
4'-OH-BDE-017	4'-Hydroxy-2,2',4'-tribromodiphenyl ether	50 µg/mL	ACN	HBDE-3001S-CN	1 mL
3'-OH-BDE-028	3'-Hydroxy-2,4,4'-tribromodiphenyl ether	50 µg/mL	ACN	HBDE-3002S-CN	1 mL
2'-OH-BDE-028	2'-Hydroxy-2,4,4'-tribromodiphenyl ether	50 µg/mL	ACN	HBDE-3003S-CN	1 mL
5'-OH-BDE-025	5'-Hydroxy-2,3',4'-tribromodiphenyl ether	50 µg/mL	ACN	HBDE-3004S-CN	1 mL
3'-OH-BDE-029	3'-Hydroxy-2,4,5-tribromodiphenyl ether	50 µg/mL	ACN	HBDE-3005S-CN	1 mL
3'-OH-BDE-030	3'-Hydroxy-2,4,6-tribromodiphenyl ether	50 µg/mL	ACN	HBDE-3006S-CN	1 mL
4'-OH-BDE-030	4'-Hydroxy-2,4,6-tribromodiphenyl ether	50 µg/mL	ACN	HBDE-3007S-CN	1 mL
4'-OH-BDE-042	4'-Hydroxy-2,2',3,4'-tetrabromodiphenyl ether	10 µg/mL	ACN	HBDE-4001S-CN-0.2X	1 mL
4'-OH-BDE-049	4'-Hydroxy-2,2',4,5'-tetrabromodiphenyl ether	10 µg/mL	ACN	HBDE-4002S-CN-0.2X	1 mL
3'-OH-BDE-047	3'-Hydroxy-2,2',4,4'-tetrabromodiphenyl ether	50 µg/mL	ACN	HBDE-4003S-CN	1 mL
5'-OH-BDE-047	5'-Hydroxy-2,2',4,4'-tetrabromodiphenyl ether	50 µg/mL	ACN	HBDE-4004S-CN	1 mL
6'-OH-BDE-047	6'-Hydroxy-2,2',4,4'-tetrabromodiphenyl ether	10 µg/mL	ACN	HBDE-4005S-CN-0.2X	1 mL
		10 µg/mL	Toluene	HBDE-4005S-T-0.2X	1 mL
2'-OH-BDE-068	2'-Hydroxy-2,3',4,5'-tetrabromodiphenyl ether	10 µg/mL	ACN	HBDE-4006S-CN-0.2X	1 mL
		10 µg/mL	Toluene	HBDE-4006S-T-0.2X	1 mL
		50 µg/mL	ACN	HBDE-4006S-CN	1 mL
		50 µg/mL	Toluene	HBDE-4006S-T	1 mL
6'-OH-BDE-066	6'-Hydroxy-2,3',4,4'-tetrabromodiphenyl ether	50 µg/mL	ACN	HBDE-4008S-CN	1 mL
5'-OH-BDE-069	5'-Hydroxy-2,3',4,6-tetrabromodiphenyl ether	50 µg/mL	ACN	HBDE-4009S-CN	1 mL
4'-OH-BDE-069	4'-Hydroxy-2,3',4,6-tetrabromodiphenyl ether	50 µg/mL	ACN	HBDE-4010S-CN	1 mL
4'-OH-BDE-048	4'-Hydroxy-2,2',4,5-tetrabromodiphenyl ether	50 µg/mL	ACN	HBDE-4011S-CN	1 mL
6'-OH-BDE-061	6'-Hydroxy-2,3,4,5-tetrabromodiphenyl ether	50 µg/mL	Isooctane	HBDE-4012S	1 mL
4'-OH-BDE-090	4'-Hydroxy-2,2',3,4',5-pentabromodiphenyl ether	10 µg/mL	ACN	HBDE-5001S-CN-0.2X	1 mL
6'-OH-BDE-085	6'-Hydroxy-2,2',3,4,4'-pentabromodiphenyl ether	10 µg/mL	ACN	HBDE-5002S-CN-0.2X	1 mL
6'-OH-BDE-087	6'-Hydroxy-2,2',3,4,5'-pentabromodiphenyl ether	10 µg/mL	ACN	HBDE-5003S-CN-0.2X	1 mL
5'-OH-BDE-100	5'-Hydroxy-2,2',3,4,4',6-pentabromodiphenyl ether	10 µg/mL	ACN	HBDE-5004S-CN-0.2X	1 mL
6'-OH-BDE-082	6'-Hydroxy-2,2',3,3',4'-pentabromodiphenyl ether	10 µg/mL	ACN	HBDE-5005S-CN-0.2X	1 mL
6'-OH-BDE-099	6'-Hydroxy-2,2',4,4',5'-pentabromodiphenyl ether	10 µg/mL	ACN	HBDE-5006S-CN-0.2X	1 mL
5'-OH-BDE-099	5'-Hydroxy-2,2',4,4',5'-pentabromodiphenyl ether	10 µg/mL	ACN	HBDE-5007S-CN-0.2X	1 mL
3'-OH-BDE-100	3'-Hydroxy-2,2',4,4',6-pentabromodiphenyl ether	50 µg/mL	ACN	HBDE-5008S-CN	1 mL
4'-OH-BDE-101	4'-Hydroxy-2,2',4,5,5'-pentabromodiphenyl ether	50 µg/mL	ACN	HBDE-5009S-CN	1 mL
4'-OH-BDE-121	4'-Hydroxy-2,2',3,3',4,4',6-pentabromodiphenyl ether	50 µg/mL	ACN	HBDE-5010S-CN	1 mL
6'-OH-BDE-123	6'-Hydroxy-2',3,4,4',5'-pentabromodiphenyl ether	50 µg/mL	ACN	HBDE-5011S-CN	1 mL
6'-OH-BDE-157	6'-Hydroxy-2,3,3',4,4',5'-hexabromodiphenyl ether		NEAT	HBDE-6001N-5MG	5 mg
6'-OH-BDE-140	6'-Hydroxy-2,2',3,4,4',6'-hexabromodiphenyl ether	10 µg/mL	ACN	HBDE-6002S-CN-0.2X	1 mL
3'-OH-BDE-154	3'-Hydroxy-2,2',4,4',5,6'-hexabromodiphenyl ether	10 µg/mL	ACN	HBDE-6003S-CN-0.2X	1 mL
6'-OH-BDE-137	6'-Hydroxy-2,2',3,4,4',5'-hexabromodiphenyl ether	10 µg/mL	ACN	HBDE-6004S-CN-0.2X	1 mL
3'-OH-BDE-155	3'-Hydroxy-2,2'-4,4',6,6'-hexabromodiphenyl ether	10 µg/mL	ACN	HBDE-6005S-CN-0.2X	1 mL
		50 µg/mL	ACN	HBDE-6005S-CN	1 mL
4'-OH-BDE-146	4'-Hydroxy-2,2',3,4',5,5'-hexabromodiphenyl ether	10 µg/mL	ACN	HBDE-6006S-CN-0.2X	1 mL
		50 µg/mL	ACN	HBDE-6006S-CN	1 mL
		50 µg/mL	Isooctane	HBDE-6006S	1 mL
4'-OH-BDE-187	4'-Hydroxy-2,2',3,4',5,5',6'-heptabromodiphenyl ether	50 µg/mL	ACN	HBDE-7001S-CN	1 mL
6'-OH-BDE-180	6'-Hydroxy-2,2',3,4,4',5,5'-heptabromodiphenyl ether	50 µg/mL	ACN	HBDE-7002S-CN	1 mL
4'-OH-BDE-188	4'-Hydroxy-2,2',3,4',5,6,6'-heptabromodiphenyl ether	50 µg/mL	ACN	HBDE-7003S-CN	1 mL
6'-OH-BDE-182	6'-Hydroxy-2,2',3,4,4',5,6'-heptabromodiphenyl ether	10 µg/mL	ACN	HBDE-7004S-CN-0.2X	1 mL
6'-OH-BDE-170	6'-Hydroxy-2,2',3,3',4,4',5'-heptabromodiphenyl ether	50 µg/mL	Isooctane	HBDE-7005S	1 mL
4'-OH-BDE-201	4'-Hydroxy-2,2',3,3',4,4',5,6'-octabromodiphenyl ether	50 µg/mL	ACN	HBDE-8001S-CN	1 mL
6'-OH-BDE-196	6'-Hydroxy-2,2',3,3',4,4',5,6'-octabromodiphenyl ether	50 µg/mL	ACN	HBDE-8002S-CN	1 mL
6'-OH-BDE-199	6'-Hydroxy-2,2',3,3',4,5,5',6'-octabromodiphenyl ether	50 µg/mL	ACN	HBDE-8003S-CN	1 mL

Methoxylated PBDEs

Short Form	Compound	Conc.	Solvent	Cat. No.	Unit
2'-MeO-BDE-003	2'-Methoxy-4-monobromodiphenyl ether	50 µg/mL	MeOH	MOBDE-1001S	1 mL
3'-MeO-BDE-007	3'-Methoxy-2,4-dibromodiphenyl ether	50 µg/mL	MeOH	MOBDE-2001S	1 mL
2'-MeO-BDE-007	2'-Methoxy-2,4-dibromodiphenyl ether	10 µg/mL	MeOH	MOBDE-2002S-0.2X	1 mL
2'-MeO-BDE-009	2'-Methoxy-2,5-dibromodiphenyl ether	50 µg/mL	MeOH	MOBDE-2003S	1 mL
4'-MeO-BDE-007	4'-Methoxy-2,4-dibromodiphenyl ether	10 µg/mL	MeOH	MOBDE-2004S-0.2X	1 mL
		50 µg/mL	MeOH	MOBDE-2004S	1 mL
4'-MeO-BDE-017	4'-Methoxy-2,2',4'-tribromodiphenyl ether	50 µg/mL	MeOH	MOBDE-3001S	1 mL
3'-MeO-BDE-028	3'-Methoxy-2,4,4'-tribromodiphenyl ether	50 µg/mL	MeOH	MOBDE-3002S	1 mL
2'-MeO-BDE-028	2'-Methoxy-2,4,4'-tribromodiphenyl ether	50 µg/mL	MeOH	MOBDE-3003S	1 mL
5'-MeO-BDE-025	5'-Methoxy-2,3',4'-tribromodiphenyl ether	50 µg/mL	MeOH	MOBDE-3004S	1 mL
3'-MeO-BDE-029	3'-Methoxy-2,4,5-tribromodiphenyl ether	50 µg/mL	MeOH	MOBDE-3005S	1 mL

PBDE Metabolites

Methoxy Polybromodiphenyl Ether Congeners (continued)

Short Form	Compound	Conc.	Solvent	Cat. No.	Unit
3'-MeO-BDE-030	3'-Methoxy-2,4,6-tribromodiphenyl ether	50 µg/mL	MeOH	MOBDE-3006S	1 mL
4'-MeO-BDE-030	4'-Methoxy-2,4,6-tribromodiphenyl ether	50 µg/mL	MeOH	MOBDE-3007S	1 mL
4-MeO-BDE-042	4-Methoxy-2,2',3,4'-tetrabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-4001S-0.2X	1 mL
4'-MeO-BDE-049	4'-Methoxy-2,2',4,5'-tetrabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-4002S-0.2X	1 mL
3-MeO-BDE-047	3-Methoxy-2,2',4,4'-tetrabromodiphenyl ether	50 µg/mL	MeOH	MOBDE-4003S	1 mL
5-MeO-BDE-047	5-Methoxy-2,2',4,4'-tetrabromodiphenyl ether	50 µg/mL	MeOH	MOBDE-4004S	1 mL
6-MeO-BDE-047	6-Methoxy-2,2',4,4'-tetrabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-4005S-0.2X	1 mL
2'-MeO-BDE-068	2'-Methoxy-2,3',4,5'-tetrabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-4006S-0.2X	1 mL
2'-MeO-BDE-075	2'-Methoxy-2,4,4',6-tetrabromodiphenyl ether	50 µg/mL	MeOH	MOBDE-4007S	1 mL
6'-MeO-BDE-066	6'-Methoxy-2,3',4,4'-tetrabromodiphenyl ether	50 µg/mL	MeOH	MOBDE-4008S	1 mL
5'-MeO-BDE-069	5'-Methoxy-2,3',4,6-tetrabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-4009S-0.2X	1 mL
		50 µg/mL	MeOH	MOBDE-4009S	1 mL
4'-MeO-BDE-069	4'-Methoxy-2,3',4,6-tetrabromodiphenyl ether	50 µg/mL	MeOH	MOBDE-4010S	1 mL
4'-MeO-BDE-048	4'-Methoxy-2,2',4,5'-tetrabromodiphenyl ether	50 µg/mL	MeOH	MOBDE-4011S	1 mL
6-MeO-BDE-061	6-Methoxy-2,3,4,5-tetrabromodiphenyl ether	50 µg/mL	Isooctane	MOBDE-4012S-TP	1 mL
4-MeO-BDE-090	4-Methoxy-2,2',3,4',5-pentabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-5001S-0.2X	1 mL
6-MeO-BDE-085	6-Methoxy-2,2',3,4,4'-pentabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-5002S-0.2X	1 mL
6-MeO-BDE-087	6-Methoxy-2,2',3,4,5'-pentabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-5003S-0.2X	1 mL
5'-MeO-BDE-100	5'-Methoxy-2,2',4,4',6-pentabromodiphenyl ether	50 µg/mL	MeOH	MOBDE-5004S	1 mL
6-MeO-BDE-082	6-Methoxy-2,2',3,3',4-pentabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-5005S-0.2X	1 mL
6'-MeO-BDE-099	6'-Methoxy-2,2',4,4',5-pentabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-5006S-0.2X	1 mL
5'-MeO-BDE-099	5'-Methoxy-2,2',4,4',5-pentabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-5007S-0.2X	1 mL
3-MeO-BDE-100	3-Methoxy-2,2',4,4',6-pentabromodiphenyl ether	50 µg/mL	MeOH	MOBDE-5008S	1 mL
4'-MeO-BDE-101	4'-Methoxy-2,2',4,5,5'-pentabromodiphenyl ether	50 µg/mL	MeOH	MOBDE-5009S	1 mL
4'-MeO-BDE-121	4'-Methoxy-2,3',4,5',6-pentabromodiphenyl ether	50 µg/mL	MeOH	MOBDE-5010S	1 mL
6-MeO-BDE-123	6-Methoxy-2',3,4,4',5-pentabromodiphenyl ether	50 µg/mL	MeOH	MOBDE-5011S	1 mL
6-MeO-BDE-157	6-Methoxy-2,3,3',4,4',5'-hexabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-6001S-0.2X	1 mL
6-MeO-BDE-140	6-Methoxy-2,2',3,4,4',6'-hexabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-6002S-0.2X	1 mL
3'-MeO-BDE-154	3'-Methoxy-2,2',4,4',5,6'-hexabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-6003S-0.2X	1 mL
6-MeO-BDE-137	6-Methoxy-2,2',3,4,4',5'-hexabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-6004S-0.2X	1 mL
3-MeO-BDE-155	3-Methoxy-2,2',4,4',6,6'-hexabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-6005S-0.2X	1 mL
		50 µg/mL	MeOH	MOBDE-6005S	1 mL
4-MeO-BDE-146	4-Methoxy-2,2',3,4',5,5'-hexabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-6006S-0.2X	1 mL
4-MeO-BDE-187	4-Methoxy-2,2',3,4',5,5',6-heptabromodiphenyl ether	50 µg/mL	MeOH	MOBDE-7001S	1 mL
6-MeO-BDE-180	6-Methoxy-2,2',3,4,4',5,5'-heptabromodiphenyl ether	50 µg/mL	MeOH	MOBDE-7002S	1 mL
4-MeO-BDE-188	4-Methoxy-2,2',3,4',5,6,6'-heptabromodiphenyl ether	50 µg/mL	MeOH	MOBDE-7003S	1 mL
6-MeO-BDE-182	6-Methoxy-2,2',3,3',4,4',5-heptabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-7004S-0.2X	1 mL
6-MeO-BDE-170	6-Methoxy-2,2',3,4,4',5,6'-heptabromodiphenyl ether	50 µg/mL	Isooctane	MOBDE-7005S-TP	1 mL
4'-MeO-BDE-201	4'-Methoxy-2,2',3,3',4,5',6,6'-octabromodiphenyl ether	50 µg/mL	MeOH	MOBDE-8001S	1 mL
6-MeO-BDE-196	6-Methoxy-2,2',3,3',4,4',5,6'-octabromodiphenyl ether	50 µg/mL	ACN	MOBDE-8002S-CN	1 mL
6-MeO-BDE-199	6-Methoxy-2,2',3,3',4,5,5',6'-octabromodiphenyl ether	50 µg/mL	ACN	MOBDE-8003S-CN	1 mL

Mixed Bromo/Chloro Hydroxylated Diphenyl Ethers

The abundance of PBDEs in the environment led to the increased detection of hydroxylated PBDEs (OH-PBDEs) as well as their chlorinated derivatives (OH-PBCDEs), especially in aquatic environments. In saltwater systems some of the OH-PBCDEs are being produced naturally, while in freshwater systems, atmospheric and wastewater treatment oxidation seems to be the major source of these compounds.

We have synthesized three OH-PBCDEs and their methylated counterparts to provide reference standards for this new group of compounds. All three chlorinated OH-PBDEs are based on the structure of BDE-47, the most common BDE congener found in environmental samples.

Compound (Short Form)	Conc.	Solvent	Cat. No.	Unit
Hydroxy				
3-Chloro-6-hydroxy-2,2',4,4'-tetrabromodiphenyl ether (3-Cl-6-OH-BDE-047)	25 µg/mL	Toluene	HCBDE-4001S-T-0.5X	1 mL
	50 µg/mL	Toluene	HCBDE-4001S-T	1 mL
3,5-Dichloro-6-hydroxy-2,2',4,4'-tetrabromodiphenyl ether (3,5-Cl ₂ -6-OH-BDE-047)	25 µg/mL	ACN	HCBDE-4002S-0.5X	1 mL
	50 µg/mL	ACN	HCBDE-4002S	1 mL
5-Chloro-6-hydroxy-2,2',4,4'-tetrabromodiphenyl ether (5-Cl-6-OH-BDE-047)	25 µg/mL	ACN	HCBDE-4003S-0.5X	1 mL
	50 µg/mL	ACN	HCBDE-4003S	1 mL
Methoxy				
3-Chloro-6-methoxy-2,2',4,4'-tetrabromodiphenyl ether (3-Cl-6-MeO-BDE-047)	25 µg/mL	MeOH	MOCBDE-4001S-0.5X	1 mL
	50 µg/mL	MeOH	MOCBDE-4001S	1 mL
3,5-Dichloro-6-methoxy-2,2',4,4'-tetrabromodiphenyl ether (3,5-Cl ₂ -6-MeO-BDE-047)	25 µg/mL	MeOH	MOCBDE-4002S-0.5X	1 mL
	50 µg/mL	MeOH	MOCBDE-4002S	1 mL
5-Chloro-6-methoxy-2,2',4,4'-tetrabromodiphenyl ether (5-Cl-6-MeO-BDE-047)	25 µg/mL	MeOH	MOCBDE-4003S-0.5X	1 mL
	50 µg/mL	MeOH	MOCBDE-4003S	1 mL

PBDE Metabolites

Tetradecabromodiphenoxy Benzene (TDBDPB)

Brominated flame retardants (BFRs) are widely used in various commercial products such as furniture, textiles, plastics, paints, and electronic appliances as additive and reactive substances to reduce flammability and hinder fire ignition.

There are at least 75 different BFRs which have been used in commercial products. One of them is Tetradecabromo-diphenoxybenzene (TDBDPB), a compound with a high molecular weight due to its 14 bromine atoms. It was promoted as a compound with low rates of bioaccumulation and excellent thermal and photolytic stability.

Studies have shown that TDBDPB undergoes UV and natural sunlight degradation. The findings do not stop at the expected debromination products. Most recently, various methoxylated debrominated TDBDPB metabolites were found in Herring Gull eggs from the Great Lakes of North America. G. Su et al have identified the spectra base structure of four MeO-pentabromodPBs, a MeO-hexabromodPB and a MeO-tetrabromodPB as the metabolites.

To aid the ongoing research regarding the metabolism and environmental impact of TDBDPB we have synthesized and now provide a variety of hydroxylated and methoxylated polybrominated diphenoxybenzene metabolites, as well as polybrominated diphenoxybenzene degradation products as reference standards.

Tetradecabromodiphenoxybenzene (TDBDPB) Metabolites

Compound	Conc.	Solvent	Cat. No.	Unit
4"-Hydroxy-2,2',2'',4-tetrabromodiphenoxybenzene	50 µg/mL	ACN	HBDPB-401S	1 mL
4"-Hydroxy-2,2',3',4-tetrabromodiphenoxybenzene	50 µg/mL	ACN	HBDPB-402S	1 mL
4"-Hydroxy-2,2'',4,6-tetrabromodiphenoxybenzene	50 µg/mL	ACN	HBDPB-403S	1 mL
6"-Hydroxy-2,2',4,5"-tetrabromodiphenoxybenzene	50 µg/mL	ACN	HBDPB-404S	1 mL
4"-Hydroxy-2,2'',4,5-tetrabromodiphenoxybenzene	50 µg/mL	ACN	HBDPB-405S	1 mL
6"-Hydroxy-2,2',3',4-tetrabromodiphenoxybenzene	50 µg/mL	ACN	HBDPB-406S	1 mL
6"-Hydroxy-2,3',3'',4-tetrabromodiphenoxybenzene	50 µg/mL	ACN	HBDPB-407S	1 mL
4"-Hydroxy-2,3',3'',4-tetrabromodiphenoxybenzene	50 µg/mL	ACN	HBDPB-408S	1 mL
4"-Hydroxy-2,2',3',4-tetrabromodiphenoxybenzene	50 µg/mL	ACN	HBDPB-409S	1 mL
6"-Hydroxy-2,2',2'',4-tetrabromodiphenoxy benzene	50 µg/mL	ACN	HBDPB-410S	1 mL
4"-Hydroxy-2,2',2'',4,5-pentabromodiphenoxybenzene	50 µg/mL	ACN	HBDPB-501S	1 mL
6"-Hydroxy-2,2',3',4,5"-pentabromodiphenoxybenzene	50 µg/mL	ACN	HBDPB-502S	1 mL
6"-Hydroxy-2,2'',4,5',6-pentabromodiphenoxybenzene	50 µg/mL	ACN	HBDPB-503S	1 mL
4"-Hydroxy-2,2',4,6,6'-pentabromodiphenoxybenzene	50 µg/mL	ACN	HBDPB-504S	1 mL
6"-Hydroxy-2,2',2'',4,5"-pentabromodiphenoxybenzene	50 µg/mL	ACN	HBDPB-505S	1 mL
4"-Hydroxy-2,2',3'',4,5-pentabromodiphenoxybenzene	50 µg/mL	ACN	HBDPB-507S	1 mL
4"-Hydroxy-2,2',2'',4,6-pentabromodiphenoxybenzene	50 µg/mL	ACN	HBDPB-508S	1 mL
4"-Hydroxy-2,2',4,4',6-pentabromodiphenoxybenzene	50 µg/mL	Toluene	HBDPB-513S-T	1 mL
4"-Hydroxy-2,3',4,4',6-pentabromodiphenoxybenzene	50 µg/mL	Toluene	HBDPB-514S-T	1 mL
4"-Methoxy-2,2',2'',4-tetrabromodiphenoxybenzene	50 µg/mL	ACN	MOBDPB-401S	1 mL
4"-Methoxy-2,2',3',4-tetrabromodiphenoxybenzene	50 µg/mL	ACN	MOBDPB-402S	1 mL
4"-Methoxy-2,2'',4,6-tetrabromodiphenoxybenzene	50 µg/mL	ACN	MOBDPB-403S	1 mL
6"-Methoxy-2,2'',4,5"-tetrabromodiphenoxybenzene	50 µg/mL	ACN	MOBDPB-404S	1 mL
4"-Methoxy-2,2',4,5-tetrabromodiphenoxybenzene	50 µg/mL	ACN	MOBDPB-405S	1 mL
6"-Methoxy-2,2',3',4-tetrabromodiphenoxybenzene	50 µg/mL	ACN	MOBDPB-406S	1 mL
6"-Methoxy-2,3',3'',4-tetrabromodiphenoxybenzene	50 µg/mL	ACN	MOBDPB-407S	1 mL
4"-Methoxy-2,3',3'',4-tetrabromodiphenoxybenzene	50 µg/mL	ACN	MOBDPB-408S	1 mL
4"-Methoxy-2,2',3',4-tetrabromodiphenoxybenzene	50 µg/mL	ACN	MOBDPB-409S	1 mL
6"-Methoxy-2,2',2'',4-tetrabromodiphenoxy benzene	50 µg/mL	ACN	MOBDPB-410S	1 mL
4"-Methoxy-2,2',2'',4,5-pentabromodiphenoxybenzene	50 µg/mL	ACN	MOBDPB-501S	1 mL
6"-Methoxy-2,2',3',4,5"-pentabromodiphenoxybenzene	50 µg/mL	ACN	MOBDPB-502S	1 mL
6"-Methoxy-2,2'',4,5',6-pentabromodiphenoxybenzene	50 µg/mL	ACN	MOBDPB-503S	1 mL
4"-Methoxy-2,2',4,6,6'-pentabromodiphenoxybenzene	50 µg/mL	ACN	MOBDPB-504S	1 mL
6"-Methoxy-2,2',2'',4,5"-pentabromodiphenoxy benzene	50 µg/mL	ACN	MOBDPB-505S	1 mL
4"-Methoxy-2,2',3',4,5-pentabromodiphenoxybenzene	50 µg/mL	ACN	MOBDPB-507S	1 mL
4"-Methoxy-2,2',2'',4,6-pentabromodiphenoxybenzene	50 µg/mL	ACN	MOBDPB-508S	1 mL
5"-Methoxy-2,2',4,4',6-pentabromodiphenoxybenzene	50 µg/mL	Toluene	MOBDPB-513S-T	1 mL
5"-Methoxy-2,3',4,4',6-pentabromodiphenoxybenzene	50 µg/mL	Toluene	MOBDPB-514S-T	1 mL
2,2',4,4"-Tetrabromodiphenoxybenzene	50 µg/mL	ACN	BDPB-401S	1 mL
2,2',2'',4-Tetrabromodiphenoxybenzene	50 µg/mL	ACN	BDPB-402S	1 mL
2,2',4,6-Tetrabromodiphenoxybenzene	50 µg/mL	ACN	BDPB-404S	1 mL
2,2',2'',4,4"-Pentabromodiphenoxybenzene	50 µg/mL	ACN	BDPB-501S	1 mL

Reference Papers

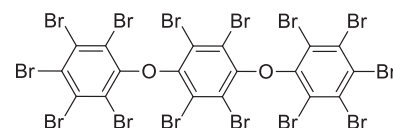
In Vitro Metabolism of Photolytic Breakdown products of Tetradecabromo-1,4-diphenoxybenzene Flame Retadant in Herring Gull and Rat Liver Microsomal Assays. Environ. Sci. Technology, 2016, 50 (15), pp8335-8343

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In Vitro and in Silico Competitive Binding Brominated Polyphenyl Ether Contaminants with Human and Gull Throid Hormone Transport Proteins.

Environ. Sci. Technology, 2018, 52 (3), pp1533-1541

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Fluorinated PBDE Congeners

Internal Standards for PBDE Analysis

As with PCBs, the separation and identification of PBDE congeners and related metabolites present a significant analytical challenge due to the co-elution of compounds and nearly identical mass spectra. The traditional approach of using ¹³C labeled compounds has been successfully utilized for both internal standard quantification and as an internal standard for calculating relative retention indices. However, this approach is expensive and cannot be used with electron capture detector methods. AccuStandard has synthesized a selection of mono and di-fluorinated analogs of the native BDEs that can be used as a replacement.

Fluorinated PBDE Congeners

Compound	CAS	Conc.	Solvent	Cat. No.	Unit
4'-Fluoro-4-bromodiphenyl ether		25 µg/mL	Isooctane	FBDE-1001S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-1001S	1 mL
3'-Fluoro-2,4-dibromodiphenyl ether		25 µg/mL	Isooctane	FBDE-2001S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-2001S	1 mL
3'-Fluoro-3,4-dibromodiphenyl ether		25 µg/mL	Isooctane	FBDE-2002S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-2002S	1 mL
2-Fluoro-4,4'-dibromodiphenyl ether		25 µg/mL	Isooctane	FBDE-2003S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-2003S	1 mL
4'-Fluoro-2,3',4-tribromodiphenyl ether	863314-85-6	25 µg/mL	Isooctane	FBDE-3001S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-3001S	1 mL
4'-Fluoro-2,3',6-tribromodiphenyl ether	863314-86-7	25 µg/mL	Isooctane	FBDE-3002S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-3002S	1 mL
2'-Fluoro-2,4,4'-tribromodiphenyl ether	906085-85-6	25 µg/mL	Isooctane	FBDE-3003S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-3003S	1 mL
3'-Fluoro-2,4,4'-tribromodiphenyl ether	876310-22-4	25 µg/mL	Isooctane	FBDE-3004S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-3004S	1 mL
4'-Fluoro-2,3',4,6-tetrabromodiphenyl ether	863314-87-8	25 µg/mL	Isooctane	FBDE-4001S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-4001S	1 mL
4'-Fluoro-2,3',4,5-tetrabromodiphenyl ether	876310-23-5	25 µg/mL	Isooctane	FBDE-4002S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-4002S	1 mL
6-Fluoro-2,2',4,4'-tetrabromodiphenyl ether		25 µg/mL	Isooctane	FBDE-4003S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-4003S	1 mL
6-Fluoro-2,3',4,4'-tetrabromodiphenyl ether		25 µg/mL	Isooctane	FBDE-4004S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-4004S	1 mL
5,5'-Difluoro-2,2',4,4'-tetrabromodiphenyl ether		25 µg/mL	Isooctane	FBDE-4005S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-4005S	1 mL
3-Fluoro-2,3',4,5-tetrabromodiphenyl ether		25 µg/mL	Isooctane	FBDE-4006S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-4006S	1 mL
5-Fluoro-3,3',4,4'-tetrabromodiphenyl ether		25 µg/mL	Isooctane	FBDE-4007S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-4007S	1 mL
6'-Fluoro-2,2',4,4',5-pentabromodiphenyl ether		25 µg/mL	Isooctane	FBDE-5001S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-5001S	1 mL
3-Fluoro-2,2',4,4',6-pentabromodiphenyl ether	887401-80-1	25 µg/mL	Isooctane	FBDE-5002S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-5002S	1 mL
3,6-Difluoro-2,2',4,4',5-pentabromodiphenyl ether		25 µg/mL	Isooctane	FBDE-5003S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-5003S	1 mL
5,6-Difluoro-2,2',3,4,4'-pentabromodiphenyl ether		25 µg/mL	Isooctane	FBDE-5004S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-5004S	1 mL
3,5-Difluoro-2,3',4,4',6-pentabromodiphenyl ether		25 µg/mL	Isooctane	FBDE-5005S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-5005S	1 mL
3'-Fluoro-2',3,4,5,5'-pentabromodiphenyl ether		25 µg/mL	Isooctane	FBDE-5006S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-5006S	1 mL
5'-Fluoro-2,3',4,4',5-pentabromodiphenyl ether		25 µg/mL	Isooctane	FBDE-5007S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-5007S	1 mL
5'-Fluoro-3,3',4,4',5-pentabromodiphenyl ether		25 µg/mL	Isooctane	FBDE-5008S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-5008S	1 mL
4'-Fluoro-2,3,3',4,5,6-hexabromodiphenyl ether	863314-88-9	25 µg/mL	Isooctane	FBDE-6001S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-6001S	1 mL
5-Fluoro-2,2',3,4,4',6-hexabromodiphenyl ether		25 µg/mL	Isooctane	FBDE-6002S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-6002S	1 mL
3-Fluoro-2,3',4,4',5',6-hexabromodiphenyl ether		25 µg/mL	Isooctane	FBDE-6004S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-6004S	1 mL
5-Fluoro-2,2',3,4,4',5',6-heptabromodiphenyl ether		25 µg/mL	Isooctane	FBDE-7001S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-7001S	1 mL
4',6-Difluoro-2,2',3,3',4,5,5',6'-octabromodiphenyl ether		25 µg/mL	Isooctane	FBDE-8001S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-8001S	1 mL
4'-Fluoro-2,2',3,3',4,5,5',6'-nonabromodiphenyl ether		25 µg/mL	Isooctane	FBDE-9001S-0.5X	1 mL
		50 µg/mL	Isooctane	FBDE-9001S	1 mL

Polybrominated Diphenyl Ether (PBDE)

ABFRs, HBCD and Dechlorane Plus Isomers, and Bromobiphenyls

Aromatic Brominated Flame Retardants (ABFRs)

Aromatic Brominated Flame Retardants (ABFRs) are a class of Brominated Flame Retardants (BFRs) with one or more bromine atoms bonded to an aromatic carbon ring. ABFRs are used in electronics, construction materials and textiles to help slow the spread of fire. The European Chemicals Agency (ECHA) has raised concern for over 50 ABFR compounds that are bioaccumulative and toxic, presenting concerns for human health and the environment.

Compound	CAS	Conc.	Matrix	Cat. No.	Unit
3-Bromophenol	591-20-8	100 µg/mL	Toluene	BP-003S	1 mL
2,4,6-Tribromophenol	118-79-6	100 µg/mL	Toluene	BP-246S	1 mL
Firemaster PHT4	632-79-1	---	NEAT	FRS-007N	10 mg
		100 µg/mL	Toluene	FRS-007S	1 mL
Tetrabromobisphenol A bis(hydroxyethyl ether)	4162-45-2	---	NEAT	FRS-032N-50MG	50 mg
		100 µg/mL	Toluene	FRS-032S	1 mL
Tetrabromobisphenol A bis(2,3-dibromopropyl ether)	21850-44-2	---	NEAT	FRS-034N-50MG	1 mL
		100 µg/mL	Toluene	FRS-034S	1 mL
Pentabromobenzyl acrylate	59447-55-1	---	NEAT	FRS-035N	10 mg
		100 µg/mL	Toluene	FRS-35SS	1 mL
FireMaster 2100	84852-53-9	---	NEAT	FRS-036N-50MG	50 mg
		100 µg/mL	Toluene	FRS-036S	1 mL
FireMaster 680	37853-59-1	---	NEAT	FRS-037N-50MG	50 mg
		100 µg/mL	Toluene	FRS-037S	1 mL
Di(2-ethylhexyl)tetrabromophthalate	26040-51-7	---	NEAT	FRS-040N	10 mg
		100 µg/mL	Toluene	FRS-040S	1 mL
Tetrabromobisphenol A diallyl ether	25327-89-3	---	NEAT	FRS-045N	10 mg
		100 µg/mL	Toluene	FRS-045S	1 mL
Saytex BT-93	32588-76-4	50 µg/mL	Toluene	FRS-053S-0.5X	1 mL
SAYTEX-RB-79	77098-07-8	100 µg/mL	Toluene	FRS-054S	1 mL
Tetrabromobisphenol A bismethyl ether	37853-61-5	---	NEAT	FRS-069N	10 mg
		100 µg/mL	Toluene	FRS-069S	1 mL
Tetrabromobisphenol A bisglycidyl ether	3072-84-2	---	---	FRS-073N	10 mg
Tetrabromobisphenol A	79-94-7	100 µg/mL	Toluene	FRS-074S	1 mL
Tetrabromoterephthalic acid	5411-70-1	100 µg/mL	Toluene	FRS-087S	1 mL
2,4-Dibromophenyl glycidyl ether	20217-01-0	100 µg/mL	Toluene	FRS-088S	1 mL
2-Bromo-4-tert-butylphenol	2198-66-5	100 µg/mL	Toluene	FRS-089S	1 mL
2,4,6-Tribromophenol	118-79-6	200 µg/mL	MeOH	M-604-SS	1 mL

Hexabromocyclododecane (HBCD) Isomers

Compound	CAS	Conc.	Matrix	Cat. No.	Unit
α-Hexabromocyclododecane	134237-50-6	100 µg/mL	Toluene	HXBCD-01	1 mL
β-Hexabromocyclododecane	134237-51-7	100 µg/mL	Toluene	HXBCD-02	1 mL
γ-Hexabromocyclododecane	134237-52-8	100 µg/mL	Toluene	HXBCD-03	1 mL
HBCD SP-75C (Great Lakes)	3194-55-6	---	NEAT	FRS-028N	10 mg
		100 µg/mL	Toluene	FRS-028S	1 mL

Dechlorane Plus Isomers

Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
Dechlorane 602	31107-44-5	50 µg/mL	Toluene	FRS-076S-0.5X	1 mL
Dechlorane 604 Component A	34571-16-9	50 µg/mL	Toluene	FRS-078S-0.5X	1 mL
Dechlorane Plus "Anti"	135821-74-8	50 µg/mL	Toluene	FRS-061S-0.5X	1 mL
Dechlorane Plus "Syn"	135821-03-3	50 µg/mL	Toluene	FRS-062S-0.5X	1 mL
Dechlorane Plus (Mixed isomers)	13560-89-9	---	NEAT	FRS-033N	10 mg
		100 µg/mL	Toluene	FRS-033S	1 mL

Bromobiphenyl Congeners

Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
2-Bromobiphenyl	2052-07-5	---	NEAT	B-001N	10 mg
		35 µg/mL	Isooctane	B-001S	1 mL
		1 mg/mL	Acetone	M-8081-SS-X	1 mL
3-Bromobiphenyl	2113-57-7	--	NEAT	B-002N	10 mg
		35 µg/mL	Isooctane	B-002S	1 mL
4-Bromobiphenyl	92-66-0	--	NEAT	B-003N	10 mg
		35 µg/mL	Isooctane	B-003S	1 mL
2,2'-Dibromobiphenyl	13029-09-9	--	NEAT	B-004N	10 mg
		35 µg/mL	Isooctane	B-004S	1 mL
2,4-Dibromobiphenyl	53592-10-2	--	NEAT	B-007N-10MG	10 mg
		35 µg/mL	Isooctane	B-007S	1 mL
2,5-Dibromobiphenyl	57422-77-2	--	NEAT	B-009N	10 mg
		35 µg/mL	Isooctane	B-009S	1 mL
2,6-Dibromobiphenyl	59080-32-9	--	NEAT	B-010N-5MG	5 mg
		35 µg/mL	Isooctane	B-010S	1 mL
4,4'-Dibromobiphenyl	92-86-4	--	NEAT	B-015N	10 mg
		35 µg/mL	Isooctane	B-015S	1 mL
2,2',5-Tribromobiphenyl	59080-34-1	--	NEAT	B-018N	10 mg
		35 µg/mL	Isooctane	B-018S	1 mL
2,3',5-Tribromobiphenyl	59080-35-2	--	NEAT	B-026N	10 mg
		35 µg/mL	Isooctane	B-026S	1 mL
2,4,5-Tribromobiphenyl	115245-07-3	35 µg/mL	Isooctane	B-029S	1 mL
2,4,6-Tribromobiphenyl	59080-33-0	--	NEAT	B-030N	10 mg
		35 µg/mL	Isooctane	B-030S	1 mL
2,4',5-Tribromobiphenyl	59080-36-3	--	NEAT	B-031N	10 mg
		35 µg/mL	Isooctane	B-031S	1 mL

Polybrominated Diphenyl Ether (PBDE)

Bromobiphenyls, Chlorinated Diphenyl Ethers, Bromophenols, Bromoanisoles

Bromobiphenyl Congeners (continued)

Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
3,4,5-Tribromobiphenyl	115245-08-4	--	NEAT	B-038N	10 mg
2,2',4,5'-Tetrabromobiphenyl	60044-24-8	--	NEAT	B-049N-5MG	5 mg
		35 µg/mL	Isooctane	B-049S	1 mL
2,2',5,5'-Tetrabromobiphenyl	59080-37-4	--	NEAT	B-052N	10 mg
		35 µg/mL	Isooctane	B-052S	1 mL
2,2',5,6'-Tetrabromobiphenyl	60044-25-9	--	NEAT	B-053N-5MG	5 mg
		35 µg/mL	Isooctane	B-053S	1 mL
3,3',4,4'-Tetrabromobiphenyl	77102-82-0	35 µg/mL	Isooctane	B-077S	1 mL
3,3',5,5'-Tetrabromobiphenyl	16400-50-3	35 µg/mL	Isooctane	B-080S	1 mL
2,2',4,5,5'-Pentabromobiphenyl	67888-96-4	--	NEAT	B-101N	10 mg
		35 µg/mL	Isooctane	B-101S	1 mL
2,2',4,5',6-Pentabromobiphenyl	59080-39-6	--	NEAT	B-103N	10 mg
		35 µg/mL	Isooctane	B-103S	1 mL
2,3,4,4',5-Pentabromobiphenyl	96551-70-1	35 µg/mL	Isooctane	B-114S	1 mL
2,2',3,4,4',5-Hexabromobiphenyl	81381-52-4	35 µg/mL	Isooctane	B-137S	1 mL
2,2',3,4,5,5'-Hexabromobiphenyl	120991-47-1	35 µg/mL	Isooctane	B-141S	1 mL
2,2',4,4',5,5'-Hexabromobiphenyl	59080-40-9	--	NEAT	B-153N-5MG	5 mg
		35 µg/mL	Isooctane	B-153S	1 mL
2,2',4,4',6,6'-Hexabromobiphenyl	59261-08-4	--	NEAT	B-155N	10 mg
		35 µg/mL	Isooctane	B-155S	1 mL
2,3,3',4,4',5-Hexabromobiphenyl	77607-09-1	35 µg/mL	Isooctane	B-156S	1 mL
2,3,3',4,5,5'-Hexabromobiphenyl	120991-48-2	35 µg/mL	Isooctane	B-159S	1 mL
3,3',4,4',5,5'-Hexabromobiphenyl	60044-26-0	35 µg/mL	Isooctane	B-169S	1 mL
2,2',3,4,4',5,5'-Heptabromobiphenyl	67733-52-2	35 µg/mL	Isooctane	B-180S	1 mL
2,3,3',4,4',5,5'-Heptabromobiphenyl	88700-06-5	35 µg/mL	Isooctane	B-189S	1 mL
2,2',3,3',4,4',5,5'-Octabromobiphenyl	67889-00-3	35 µg/mL	Isooctane	B-194S	1 mL
2,2',3,3',4,4',6,6'-Octabromobiphenyl	119264-59-4	35 µg/mL	Isooctane	B-197S	1 mL
2,2',3,3',4,5,5',6'-Octabromobiphenyl	69887-11-2	35 µg/mL	Isooctane	B-199S	1 mL
2,2',3,3',4,5',6,6'-Octabromobiphenyl	1254976-38-9	35 µg/mL	Isooctane	B-200S-R1	1 mL
2,2',3,3',4,5',6,6'-Octabromobiphenyl	119264-60-7	35 µg/mL	Isooctane	B-201S-R1	1 mL
2,2',3,3',5,5',6,6'-Octabromobiphenyl	59080-41-0	35 µg/mL	Isooctane	B-202S	1 mL
2,2',3,4,4',5,5',6-Octabromobiphenyl	942505-36-4	35 µg/mL	Isooctane	B-203S	1 mL
2,2',3,4,4',5,6,6'-Octabromobiphenyl	119264-61-8	35 µg/mL	Isooctane	B-204S	1 mL
Decabromobiphenyl	13654-09-6	--	NEAT	B-209N	10 mg
		35 µg/mL	Isooctane : Acetone (98:2)	B-209S	1 mL

Bromophenols

Each at 100 µg/mL in Toluene

Compound	CAS No.	Cat. No.	Unit
2-Bromophenol	95-56-7	BP-002S	1 mL
3-Bromophenol	591-20-8	BP-003S	1 mL
4-Bromophenol	106-41-2	BP-004S	1 mL
2,3-Dibromophenol	57383-80-9	BP-023S	1 mL
2,4-Dibromophenol	615-58-7	BP-024S	1 mL
2,5-Dibromophenol	28165-52-8	BP-025S	1 mL
2,6-Dibromophenol	608-33-3	BP-026S	1 mL
3,4-Dibromophenol	615-56-5	BP-034S	1 mL
3,5-Dibromophenol	626-41-5	BP-035S	1 mL
2,3,4-Tribromophenol	138507-65-0	BP-234S	1 mL
2,3,5-Tribromophenol	57383-81-0	BP-235S	1 mL
2,3,6-Tribromophenol		BP-236S	1 mL
2,4,5-Tribromophenol	14401-61-7	BP-245S	1 mL
2,4,6-Tribromophenol	118-79-6	BP-246S	1 mL
3,4,5-Tribromophenol	116434-90-3	BP-345S	1 mL
2,3,4,5-Tetrabromophenol	36313-15-2	BP-2345S	1 mL
2,3,4,6-Tetrabromophenol	14400-94-3	BP-2346S	1 mL
2,3,5,6-Tetrabromophenol		BP-2356S	1 mL
Pentabromophenol	608-71-9	BP-23456S	1 mL

Bromoanisoles

Each at 50 µg/mL in MeOH

Compound	CAS No.	Cat. No.	Unit
2-Bromoanisole	578-57-4	BAN-01S	1 mL
3-Bromoanisole	2398-37-0	BAN-02S	1 mL
4-Bromoanisole	104-92-7	BAN-03S	1 mL
2,3-Dibromoanisole	95970-22-2	BAN-04S	1 mL
2,4-Dibromoanisole	21702-84-1	BAN-05S	1 mL
2,5-Dibromoanisole	95970-08-4	BAN-06S	1 mL
2,6-Dibromoanisole	38603-09-7	BAN-07S	1 mL
3,4-Dibromoanisole	62415-74-1	BAN-12S	1 mL
3,5-Dibromoanisole	74137-36-3	BAN-08S	1 mL
2,4,5-Tribromoanisole	95970-10-8	BAN-09S	1 mL
2,4,6-Tribromoanisole	607-99-8	BAN-10S	1 mL
2,3,5-Tribromoanisole	73931-44-9	BAN-11S	1 mL
2,3,4-Tribromoanisole	95970-13-1	BAN-13S	1 mL
2,3,6-Tribromoanisole	95970-19-7	BAN-14S	1 mL
3,4,5-Tribromoanisole	73557-60-5	BAN-15S	1 mL
2,3,4,5-Tetrabromoanisole		BAN-16S	1 mL
2,3,4,6-Tetrabromoanisole		BAN-17S	1 mL
2,3,5,6-Tetrabromoanisole	95970-18-6	BAN-18S	1 mL
2,3,4,5,6-Pentabromoanisole	1825-26-9	BAN-19S	1 mL

Chlorinated Diphenyl Ether (CDEs)

Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
4-Chlorophenyl phenyl ether	7005-72-3	--	NEAT	CDE-003N	10 mg
		50 µg/mL	Isooctane	CDE-003S	1 mL
2,4-Dichlorodiphenyl ether	51892-26-3	--	NEAT	CDE-007N	10 mg
		50 µg/mL	Isooctane	CDE-007S	1 mL
4,4'-Dichlorodiphenyl ether	2444-89-5	--	NEAT	CDE-015N	10 mg
		50 µg/mL	Isooctane	CDE-015S	1 mL
2,2',4,4'-Tetrachlorodiphenyl ether	28076-73-5	50 µg/mL	Isooctane	CDE-047S	1 mL
3,3',4,4'-Tetrachlorodiphenyl ether		50 µg/mL	Isooctane	CDE-077S	1 mL
3,3',5,5'-Tetrachlorodiphenyl ether	85918-34-9	50 µg/mL	Isooctane	CDE-080S	1 mL
2,2',4,4',5-Pentachlorodiphenyl ether	60123-64-0	50 µg/mL	Isooctane	CDE-099S	1 mL
2,2',4,4',6-Pentachlorodiphenyl ether		50 µg/mL	Isooctane	CDE-100S	1 mL
2,3,3',4,4'-Pentachlorodiphenyl ether		50 µg/mL	Isooctane	CDE-105S	1 mL
2,3',4,4',5-Pentachlorodiphenyl ether	60123-65-1	--	NEAT	CDE-118N	10 mg
		50 µg/mL	Isooctane	CDE-118S	1 mL
2,2',4,4',5,5'-Hexachlorodiphenyl ether	71859-30-8	50 µg/mL	Isooctane	CDE-153S	1 mL
2,2',4,4',5,6'-Hexachlorodiphenyl ether		50 µg/mL	Isooctane	CDE-154S	1 mL
Decachlorodiphenyl ether	31710-30-2	--	NEAT	CDE-209N	10 mg
		50 µg/mL	Isooctane	CDE-209S	1 mL

Industrial Flame Retardants

Bromine-Containing Industrial Flame Retardants BFRs

Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
1,2-Dibromo-4-(1,2-dibromoethyl)cyclohexane (TBECH)	3322-93-8	---	NEAT	FRS-038N	10 mg
		100 mg/mL	Toluene	FRS-038S	1 mL
3,4-Dibromophenol	615-56-5	100 µg/mL	Toluene	BP-034S	1 mL
2,3-Dibromo-1-propanol	96-13-9	100 µg/mL	Toluene	FRS-083S	1 mL
tris(2,3-Dibromopropyl) isocyanurate	52434-90-9	---	NEAT	FRS-042N	10 mg
		100 µg/mL	Toluene	FRS-042S	1 mL
tris(2,3-Dibromopropyl)phosphate	126-72-7	---	NEAT	FRS-057N	10 mg
		100 µg/mL	Toluene	FRS-057S	1 mL
(2,3-Dibromopropyl)(2,4,6-tribromophenyl) ether (DPTE)	35109-60-5	---	NEAT	FRS-044N	10 mg
		100 µg/mL	Toluene	FRS-044S	1 mL
Di(2-ethylhexyl)tetrabromophthalate	26040-51-7	---	NEAT	FRS-040N	10 mg
		100 µg/mL	Toluene	FRS-040S	1 mL
2-Ethylhexyl 2,3,4,5-tetrabromobenzoate	183658-27-7	---	NEAT	FRS-041N	10 mg
		100 µg/mL	Toluene	FRS-041S	1 mL
Firemaster™ FF-1	67774-32-7	---	NEAT	FRS-082N	10 mg
		100 µg/mL	Toluene	FRS-082S	1 mL
a-Hexabromocyclododecane	134237-50-6	100 µg/mL	Toluene	HXBCD-01	1 mL
b-Hexabromocyclododecane	134237-51-7	100 µg/mL	Toluene	HXBCD-02	1 mL
g-Hexabromocyclododecane	134237-52-8	100 µg/mL	Toluene	HXBCD-03	1 mL
Hexachlorocyclopentadienyl-dibromocyclooctane (HCDBCO)	51936-55-1	---	NEAT	FRS-039N	10 mg
		100 µg/mL	Toluene	FRS-039S	1 mL
2,2',3,3',4,4',6,6'-Octabromobiphenyl	119264-59-4	35 µg/mL	Isooctane	B-197S	1 mL
2,2',3,3',4,5,5',6'-Octabromobiphenyl	69887-11-2	35 µg/mL	Isooctane	B-199S	1 mL
2,2',3,3',4,5,6,6'-Octabromobiphenyl	1254976-38-9	35 µg/mL	Isooctane	B-200S-R1	1 mL
2,2',3,3',4,5',6,6'-Octabromobiphenyl	119264-60-7	35 µg/mL	Isooctane	B-201S-R1	1 mL
2,2',3,3',5,5',6,6'-Octabromobiphenyl	59080-41-0	35 µg/mL	Isooctane	B-202S	1 mL
2,2',3,4,4',5,5',6'-Octabromobiphenyl	942505-36-4	35 µg/mL	Isooctane	B-203S	1 mL
2,2',3,4,4',5,6,6'-Octabromobiphenyl	119264-61-8	35 µg/mL	Isooctane	B-204S	1 mL
Pentabromobenzene	608-90-2	---	NEAT	FRS-064N	10 mg
		50 µg/mL	Toluene	FRS-064S-0.5X	1 mL
Pentabromobenzylacrylate	59447-55-1	---	NEAT	FRS-035N	10 mg
		100 µg/mL	Toluene	FRS-035S	1 mL
Pentabromobenzylbromide	38521-51-6	---	NEAT	FRS-030N	10 mg
		100 µg/mL	Toluene	FRS-030S	1 mL
Pentabromoethylbenzene	85-22-3	100 µg/mL	Toluene	FRS-048S	1 mL
1,2-Bis(pentabromophenoxy)ethane	61262-53-1	100 µg/mL	Toluene	FRS-031S	1 mL
1,4-bis(Pentabromophenoxy)tetrabromobenzene	58965-66-5	---	NEAT	FRS-052N	10 mg
		100 µg/mL	Toluene	FRS-052S	1 mL
Tetrabromobisphenol A	79-94-7	---	NEAT	FRS-074N-100MG	100 mg
		100 µg/mL	Toluene	FRS-074S	1 mL
Tetrabromobisphenol A bis(2,3-dibromopropyl) ether	21850-44-2	---	NEAT	FRS-034N-50MG	50 mg
		100 µg/mL	Toluene	FRS-034S	1 mL
Tetrabromobisphenol A bis(hydroxyethyl) ether	4162-45-2	---	NEAT	FRS-032N-50MG	50 mg
		100 µg/mL	Toluene	FRS-032S	1 mL
Tetrabromobisphenol A bismethyl ether	37853-61-5	---	NEAT	FRS-069N	10 mg
		100 µg/mL	Toluene	FRS-069S	1 mL
Tetrabromobisphenol A diallyl ether	25327-89-3	---	NEAT	FRS-045N	10 mg
		100 µg/mL	Toluene	FRS-045S	1 mL
Tetrabromobisphenol S	39635-79-5	---	NEAT	FRS-070N	10 mg
		50 µg/mL	ACN	FRS-070S-CN	1 mL
Tetrabromobisphenol S bis(2,3-dibromopropyl) ether	42757-55-1	---	NEAT	FRS-075N	10 mg
1,2,5,6-Tetrabromocyclooctane	3194-57-8	---	NEAT	FRS-068N	10 mg
		100 µg/mL	Toluene	FRS-068S	1 mL
2,3,5-Tribromophenol	57383-81-0	100 µg/mL	Toluene	BP-235S	1 mL
Tetrabromophthalic acid	13810-83-8	---	NEAT	FRS-065N	10 mg
		100 µg/mL	Toluene	FRS-065S	1 mL
Tribromoneopentyl alcohol	1522-92-5	---	NEAT	FRS-046N	10 mg
		100 µg/mL	Toluene	FRS-046S	1 mL
tris(Tribromoneopentyl) phosphate	19186-97-1	---	NEAT	FRS-047N	10 mg
		100 µg/mL	Toluene	FRS-047S	1 mL
1,2-bis(2,4,6-Tribromophenoxy)ethane	37853-59-1	---	NEAT	FRS-037N-50MG	50 mg
		100 µg/mL	Toluene	FRS-037S	1 mL
2,4,6-tris(2,4,6-Tribromophenoxy)-1,3,5-triazine	25713-60-4	100 µg/mL	Toluene	FRS-049S	1 mL
2,4,6-Tribromophenyl allyl ether	3278-89-5	---	NEAT	FRS-043N	10 mg
		100 µg/mL	Toluene	FRS-043S	1 mL

Additional BFRs see Bromobiphenyl Congener section

Industrial Flame Retardants

Bromine-Containing (Commercial Grade) Industrial Flame Retardants

Compound	CAS No.	Active Ingredient	Conc.	Matrix	Cat. No.	Unit
Bromkal™ DE-70-5	32534-81-9	Penta BDEs	50 µg/mL	Isooctane	BDE-705	1 mL
Bromkal™ DE-71		Penta BDEs	50 µg/mL	Isooctane	BDE-710	1 mL
Bromkal DE-71 (Pentas) Great Lakes			50 µg/mL	Isooctane	BDE-710-GL	1 mL
Bromkal™ DE-73-6		Hexa BDEs	50 µg/mL	Isooctane	BDE-736	1 mL
Bromkal™ DE-79-8		Octa BDEs	50 µg/mL	Isooctane	BDE-798	1 mL
Dow FR-250	27858-07-7	Mix of Octa and Nonabromobiphenyl	35 µg/mL	Isooctane	B-250S-0.35X	1 mL
			100 µg/mL	Isooctane	B-250S	1 mL
Firemaster™ BP4A	79-94-7	Tetrabromobisphenol A	100 µg/mL	Toluene	FRS-006S	1 mL
Firemaster™ BP-6	59536-65-1	Hexabromobiphenyl	35 µg/mL	Isooctane	B-600S-0.35X	1 mL
			100 µg/mL	Isooctane	B-600S	1 mL
Firemaster™ PHT4	632-79-1	Tetrabromophthalic anhydride	---	NEAT	FRS-007N	10 mg
			100 µg/mL	Toluene	FRS-007S	1 mL
Firemaster™ T23P (Michigan Chemical)	126-72-7	tris(2,3-Dibromopropyl)phosphate	---	NEAT	FRS-008N	10 mg
			100 µg/mL	Toluene	FRS-008S	1 mL
Firemaster™ 680 (Great Lakes)	37853-59-1	1,2-bis(2,4,6-Tribromophenoxy)ethane	---	NEAT	FRS-037N-50MG	50 mg
			100 µg/mL	Toluene	FRS-037S	1 mL
Firemaster™ 2100 (Great Lakes)	84852-53-9	Decabromodiphenylethane	---	NEAT	FRS-036N-50MG	50 mg
			100 µg/mL	Toluene	FRS-036S	1 mL
FR-300BA	1163-19-5	Decabromodiphenyl ether 85.5%	100 µg/mL	Toluene	FRS-009S	1 mL
FR-651A (Dow)	87-84-3	Pentabromochlorocyclohexane	---	NEAT	FRS-010N	10 mg
			100 µg/mL	Toluene	FRS-010S	1 mL
FR-1138 (Dow)	3296-90-0	Dibromoneopentyl glycol 85.0%	---	NEAT	FRS-011N	10 mg
			100 µg/mL	Toluene	FRS-011S	1 mL
HBCD SP-75C (Great Lakes)	3194-55-6	Hexabromocyclododecane	---	NEAT	FRS-028N	10 mg
			100 µg/mL	Toluene	FRS-028S	1 mL
Hexabromobenzene (Michigan Chemical)	87-82-1	Hexabromobenzene	---	NEAT	FRS-012N	10 mg
			100 µg/mL	Toluene	FRS-012S	1 mL
Pentabromotoluene (White Chemical)	87-83-2	Pentabromotoluene	---	NEAT	FRS-018N	10 mg
			100 µg/mL	Toluene	FRS-018S	1 mL
Saytex® BT-93	32588-76-4	Ethylene bis(tetrabromophthalimide)	50 µg/mL	Toluene	FRS-053S-0.5X	1 mL
Saytex® RB-79	77058-07-8		---	NEAT	FRS-054N	10 mg
1,2-Benzenedicarboxylic acid, 3,4,5,6-tetrabromo-2-(2-hydroxyethoxy)ethyl 2-hydroxypropyl ester			100 µg/mL	Toluene	FRS-054S	1 mL
Tetrabromo-o-chlorotoluene (White Chemical)	39569-21-6	Tetrabromo-o-chlorotoluene (98%)	---	NEAT	FRS-021N	10 mg
			100 µg/mL	Toluene	FRS-021S	1 mL
TP-69 (Great Lakes)	126-72-7	tris-(2,3-Dibromopropyl)phosphate	---	NEAT	FRS-023N	10 mg
			100 µg/mL	Toluene	FRS-023S	1 mL

Other BFR Related Chemicals

Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
2-Bromoallyl-2,4,6-tribromophenyl ether	99717-56-3	---	NEAT	FRS-063N	10 mg
		100 µg/mL	Toluene	FRS-063S	1 mL
3-Bromostyrene	2039-86-3	---	NEAT	FRS-050N	10 mg
		100 µg/mL	Toluene	FRS-050S	1 mL
4-Bromostyrene	2039-82-9	---	NEAT	FRS-051N	10 mg
		100 µg/mL	Toluene	FRS-051S	1 mL
2,3,4,5-Tetrabromobenzoic acid (Metabolite)	27581-13-1	100 µg/mL	Toluene:THF (85:15)	FRS-066S	1 mL
Tetrabromobisphenol A bisglycidyl ether	3072-84-2	---	NEAT	FRS-073N	10 mg
		100 µg/mL	Toluene	FRS-073S	1 mL
Tetrabromobisphenol S bisglycidyl ether	70156-79-5	---	NEAT	FRS-072N	10 mg
		100 µg/mL	Toluene	FRS-072S	1 mL
		---	NEAT	FRS-071N	10 mg
Tetrabromobisphenol S bismethyl ether	70156-79-5	---	NEAT	FRS-071N	10 mg
		100 µg/mL	Toluene	FRS-071S	1 mL
2,4,6-Tribromophenol (Metabolite)	118-79-6	100 µg/mL	Toluene	BP-246S	1 mL

Chlorine-Containing Industrial Flame Retardants (CFRs)

Compound	CAS No.	Active Ingredient	Conc.	Matrix	Cat. No.	Unit
Chlorafin™ 40	63449-39-8-1	Chlorinated Paraffin	---	NEAT	FRS-002N	10 mg
			100 µg/mL	Toluene	FRS-002S	1 mL
Chlorendic anhydride	115-27-5	Chlorendic anhydride	---	NEAT	FRS-001N	10 mg
			100 µg/mL	Toluene	FRS-001S	1 mL
bis(2-Chloroethyl)ether	111-44-4	bis(2-Chloroethyl)ether	100 µg/mL	MeOH	APP-9-027	1 mL
			5 mg/mL	MeOH	AS-E0016	1 mL
			100 µg/mL	MeOH	APP-9-047	1 mL
4-Chlorophenyl phenyl ether	7005-72-3	4-Chlorophenyl phenyl ether	5 mg/mL	MeOH	AS-E0038	1 mL
			---	NEAT	FRS-079N	10 mg
			100 µg/mL	Toluene	FRS-079S	1 mL
Chlorowax™ 40			100 µg/mL	Toluene	FRS-080S	1 mL
Chlorowax™ 50			---	NEAT	FRS-081N	10 mg
Chlorowax™ 55			100 µg/mL	Toluene	FRS-081S	1 mL

CFRs continued on next page

Flame Retardants

Chlorine-Containing Commercial Flame Retardants (CFRs) continued

Compound	CAS No.	Active Ingredient	Conc.	Matrix	Cat. No.	Unit
Chlorowax™ 70			---	NEAT	FRS-003N	10 mg
			100 µg/mL	Toluene	FRS-003S	1 mL
Chlorowax™ 500C		Chlorinated Hydrocarbons 59.0%	---	NEAT	FRS-004N	10 mg
			100 µg/mL	Toluene	FRS-004S	1 mL
Dechlorane 602	31107-44-5		50 µg/mL	Toluene	FRS-076S-0.5X	1 mL
Dechlorane 603	13560-92-4		50 µg/mL	Toluene	FRS-077S-0.5X	1 mL
Dechlorane Plus (Mixed isomers)	13560-89-9	Dechlorane Plus	---	NEAT	FRS-033N	10 mg
			100 µg/mL	Toluene	FRS-033S	1 mL
Diablo 700X		Chlorinated Hydrocarbons 70.0%	---	NEAT	FRS-005N	10 mg
			100 µg/mL	Toluene	FRS-005S	1 mL
Hexachlorobutadiene	87-68-3	Hexachlorobutadiene	100 µg/mL	Toluene	FRS-017S	1 mL
Paroi™ 179-HV	634493-98-4	Chlorinated Paraffin	---	NEAT	FRS-015N	10 mg
			100 µg/mL	Toluene	FRS-015S	1 mL
Paroi™ 170-8		Chlorinated Paraffin	100 µg/mL	Toluene	FRS-016S	1 mL
Phosgard™ C 22-R	4351-70-6	Halogenated organic phosphate ester	---	NEAT	FRS-019N	10 mg
			100 µg/mL	Toluene	FRS-019S	1 mL
Phosgard™ 2XC-20, V6	38051-10-4	Halogenated organic phosphate ester	100 µg/mL	Toluene	FRS-020S	1 mL
Tetrachlorobisphenol A	79-95-8	Tetrachlorobisphenol A	---	NEAT	FRS-022N	10 mg
			100 µg/mL	Toluene	FRS-022S	1 mL
Unichlor™ 40-90	63449-39-8-5	Chlorinated Hydrocarbons 38.5%	---	NEAT	FRS-024N	10 mg
			100 µg/mL	Toluene	FRS-024S	1 mL
Unichlor™ 502-50	63449-39-8-6	Chlorinated Hydrocarbons 52.0%	100 µg/mL	Toluene	FRS-025S	1 mL
Unichlor™ 70AX	63449-39-8-7	Chlorinated Hydrocarbons 70.0%	---	NEAT	FRS-026N	10 mg
			100 µg/mL	Toluene	FRS-026S	1 mL

Organophosphate Flame Retardants (PFRs)

Organophosphate compounds (OPs) are high production volume chemicals that have a high potential of acute toxicity to insects, wildlife and humans. They are utilized as flame retardants, plasticizers, antifoaming agents and additives not only in plastics, but in paints, lubricants and hydraulic fluids as well. The chlorinated organophosphate compounds like tris(2-chloroethyl) phosphate and tris(1,3-dichloro-2-propyl) phosphate are flame retardants used in both flexible and rigid polyurethane foam (e.g. furniture foam, thermal insulation), rubber, textile coatings, and home electronics. Organophosphates have been detected in indoor air and house dust, surface, ground, and even drinking water. Toxicology studies have shown these compounds to inhibit acetylcholinesterase which is essential to nerve functions in insects and humans.

Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
Bisphenol A bis(diphenyl phosphate) (BADP, BAPP, BPADP, BDP)	5945-33-5	100 µg/mL	Toluene	PFRS-001S	1 mL
tris(2-Butoxyethyl) phosphate (TBEP)	78-51-3	100 µg/mL	Toluene	PFRS-022S	1 mL
Tetrakis(2-Chloroethyl)dichloroisopentyldiphosphate (V6)	38051-10-4	100 µg/mL	Toluene	PFRS-003S	1 mL
tris(2-Chloroethyl) phosphate (TCEP)	115-96-8	100 µg/mL	Toluene	PFRS-024S	1 mL
tris(1-Chloro-2-propyl) phosphate (TCPP, TCiPP)	13674-84-5	100 µg/mL	Toluene	PFRS-025S	1 mL
Tri(3-Chloropropyl) phosphate (TCPP)	26248-87-3	100 µg/mL	Toluene	PFRS-010S	1 mL
Cresyl diphenyl phosphate (CDP)	26444-49-5	100 µg/mL	Toluene	PFRS-004S	1 mL
tris(1,3-Dichloro-2-propyl) phosphate (TDCPP, TDCP)	13674-87-8	100 µg/mL	Toluene	PFRS-027S	1 mL
bis(2,3-Dibromopropyl)phosphate	5412-25-9	100 µg/mL	Toluene	PFRS-002S	1 mL
tris(2,3-Dibromopropyl)phosphate	126-72-7	100 µg/mL	Toluene	PFRS-026S	1 mL
Diethyl phosphate (mono & di-)	598-02-7	100 µg/mL	Toluene	PFRS-005S	1 mL
Dimethyl phosphate	813-78-5	100 µg/mL	MeOH	PFRS-006S-M	1 mL
2-Ethylhexyl diphenyl phosphate (EDP, DPEHP)	1241-94-7	100 µg/mL	Toluene	PFRS-007S	1 mL
tris(2-Ethylhexyl) phosphate	78-42-2	100 µg/mL	Toluene	PFRS-028S	1 mL
Isodecyl diphenyl phosphate	29761-21-5	100 µg/mL	Toluene	PFRS-008S	1 mL
tris(2-Isopropylphenyl) phosphate	64532-95-2	100 µg/mL	Toluene	PFRS-014S	1 mL
Resorcinol bis(diphenyl phosphate) (RDP)	57583-54-7	100 µg/mL	Toluene	PFRS-030S	1 mL
tris(Tribromoneopentyl) phosphate (TTBNP)	19186-97-1	100 µg/mL	Toluene	PFRS-029S	1 mL
Tributyl phosphate	126-73-8	100 µg/mL	Toluene	PFRS-009S	1 mL
Tricresyl phosphate (mixture of isomers) (TCP, TCrP, TToP)	1330-78-5	100 µg/mL	Toluene	PFRS-011S	1 mL
Tri-m-cresyl phosphate (m-TCP, TMTP)	563-04-2	100 µg/mL	Toluene	PFRS-015S	1 mL
Tri-o-cresyl phosphate (o-TCP, TOCP, TOTP)	78-30-8	100 µg/mL	Toluene	PFRS-017S	1 mL
Tri-p-cresyl phosphate (p-TCP, TPCP, TPTP)	78-32-0	100 µg/mL	Toluene	PFRS-018S	1 mL
Triethyl phosphate (TEP)	78-40-0		NEAT	PFRS-012N	50 mg
		100 µg/mL	Toluene	PFRS-012S	1 mL
Triisopropyl phosphate (TiPP, TiPrP)	513-02-0	100 µg/mL	Toluene	PFRS-013S	1 mL
Trimethyl phosphate (TMP)	512-56-1	100 µg/mL	Toluene	PFRS-016S	1 mL
Triphenyl phosphate (TPeP)	2528-38-3	100 µg/mL	Hexane	PFRS-019S-H	1 mL
Triphenyl phosphate (TPP, TPhP)	115-86-8	100 µg/mL	Toluene	PFRS-020S	1 mL
Tripropyl phosphate (TPrP)	513-08-6	100 µg/mL	Toluene	PFRS-021S	1 mL

Registered Trademarks

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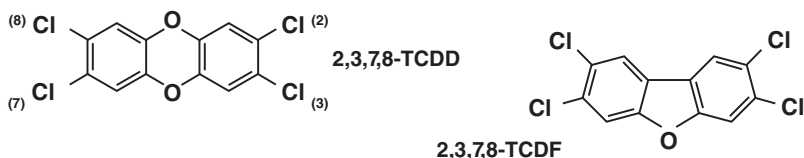
Saytex
Unichlor

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Chlorinated / Brominated Dioxins and Furans

Unlike most pollutants, dioxins are not intentionally manufactured; rather, they are the byproduct of several industrial processes. They can be formed during bleaching of paper pulp, smelting, and manufacturing of some herbicides and pesticides. They are also formed from incomplete burning both in nature, such as forest fires, or by humans from uncontrolled waste incineration. These compounds are in the Persistent Organic Pollutant (POP) category because they do not easily break down in the environment and tend to bioaccumulate in the food chain. Since they are fat soluble, they tend to be stored in the body, and can remain there for many years.

The most toxic configuration of these compounds is when the chlorines are in the 2,3,7, and 8 positions. The 2,3,7,8-tetrachlorodibenzo para dioxin (TCDD) is most commonly referred to as "dioxin" and is the one that has been most carefully studied. Dioxins are toxic, carcinogenic, have fetal developmental risks, and are endocrine disruptors. They are found all around the world and are regulated by many different agencies.



Minimum purity 98%

Dioxin and Furan Contents

Dibenzo-p-Dioxin Congeners	73
Brominated Dibenzo-p-Dioxins	73
Chlorinated Dibenzofuran Congeners	74
EPA and ASTM Methods	74
Canadian Method	see Regional section

Dibenzo-p-Dioxin Congeners

Compound	CAS No.	NEAT Cat. No.	Unit	SOLUTION Cat. No.	Conc.	Matrix	Unit
Dibenzo-p-dioxin	262-12-4	D-100N	10 mg	D-100S	50 µg/mL	Isooctane	1 mL
1-Chlorodibenzo-p-dioxin	39227-53-7	D-101N	25 mg	D-101S	50 µg/mL	Isooctane	1 mL
2-Chlorodibenzo-p-dioxin	39227-54-8	D-102N	50 mg	D-102S	50 µg/mL	Isooctane	1 mL
1,6-Dichlorodibenzo-p-dioxin	38178-38-0	D-201N	5 mg	D-201S	50 µg/mL	Isooctane	1 mL
2,3-Dichlorodibenzo-p-dioxin	29446-15-9	D-202N	5 mg	D-202S	50 µg/mL	Isooctane	1 mL
2,7-Dichlorodibenzo-p-dioxin	33857-26-0	D-203N	25 mg	D-203S	50 µg/mL	Isooctane	1 mL
2,8-Dichlorodibenzo-p-dioxin	38964-22-6	-----	-----	D-204S	50 µg/mL	Isooctane	1 mL
1,3-Dichlorodibenzo-p-dioxin	50585-39-2	D-205N	10 mg	D-205S	50 µg/mL	Isooctane	1 mL
1,4-Dichlorodibenzo-p-dioxin	54536-14-5	D-206N	10 mg	D-206S	50 µg/mL	Isooctane	1 mL
1,2-Dichlorodibenzo-p-dioxin	54536-18-4	-----	-----	D-207S	50 µg/mL	Isooctane	1 mL
1,2,3-Trichlorodibenzo-p-dioxin	54536-17-3	D-301N	5 mg	D-301S	50 µg/mL	Isooctane	1 mL
1,2,4-Trichlorodibenzo-p-dioxin	39227-58-2	D-302N	10 mg	D-302S	50 µg/mL	Isooctane	1 mL
1,7,8-Trichlorodibenzo-p-dioxin	82306-65-8	D-303N	5 mg	D-303S	50 µg/mL	Isooctane	1 mL
2,3,7-Trichlorodibenzo-p-dioxin	33857-28-2	D-304N	5 mg	D-304S	50 µg/mL	Isooctane	1 mL
1,2,3,4-Tetrachlorodibenzo-p-dioxin	30746-58-8	D-401N	50 mg	D-401S	50 µg/mL	Toluene	1 mL
1,2,7,8-Tetrachlorodibenzo-p-dioxin	34816-53-0	D-402N	5 mg	D-402S	50 µg/mL	Toluene	1 mL
1,3,7,8-Tetrachlorodibenzo-p-dioxin	50585-46-1	D-403N	5 mg	D-403S	50 µg/mL	Toluene	1 mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	D-404N	1 mg	APP-9-167	5 µg/mL	Toluene	1 mL
		-----	-----	M-613	10 µg/mL	Toluene	1 mL
		-----	-----	D-404S	50 µg/mL	Toluene	1 mL
1,3,6,8-Tetrachlorodibenzo-p-dioxin	33423-92-6	D-405N	5 mg	D-405S	50 µg/mL	Toluene	1 mL
1,2,8,9-Tetrachlorodibenzo-p-dioxin	116889-69-1	D-406N	5 mg	D-406S	50 µg/mL	Toluene	1 mL
1,3,7,9-Tetrachlorodibenzo-p-dioxin	116889-70-4	D-407N	5 mg	D-407S	50 µg/mL	Toluene	1 mL
1,2,6,8-Tetrachlorodibenzo-p-dioxin	67323-56-2	D-408N	1 mg	D-408S	50 µg/mL	Toluene	1 mL
1,2,6,7-Tetrachlorodibenzo-p-dioxin	41903-57-5	D-409N	5 mg	D-409S	50 µg/mL	Toluene	1 mL
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	D-501N	5 mg	APP-9-168	5 µg/mL	Toluene	1 mL
		-----	-----	D-501S	50 µg/mL	Toluene	1 mL
1,2,4,7,8-Pentachlorodibenzo-p-dioxin	58802-08-7	D-502N	5 mg	D-502S	50 µg/mL	Toluene	1 mL
1,2,3,4,7-Pentachlorodibenzo-p-dioxin	39227-61-7	D-503N	1 mg	D-503S	50 µg/mL	Toluene	1 mL
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	71925-18-3	D-504N	1 mg	D-504S	50 µg/mL	Toluene	1 mL
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 mL
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	D-601N	5 mg	APP-9-169	5 µg/mL	Toluene	1 mL
		-----	-----	D-601S	50 µg/mL	Toluene	1 mL
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	D-602N	1 mg	D-602S	50 µg/mL	Toluene	1 mL
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	58200-66-1	D-603N	1 mg	D-603S	50 µg/mL	Toluene	1 mL
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 mL
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	D-605N	1 mg	D-605S	50 µg/mL	Toluene	1 mL
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	D-701N	1 mg	D-701S	50 µg/mL	Toluene	1 mL
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	58200-70-7	D-702N	5 mg	D-702S	50 µg/mL	Toluene	1 mL
Octachlorodibenzo-p-dioxin	3268-87-9	D-801N	50 mg	D-801S	50 µg/mL	Toluene	1 mL

These compounds are described as environmental pollutants. Recent studies have shown that they may be formed from ortho-substituted hydroxy BDEs by environmental factors and/or biogenic processes.

Brominated Dibenzo-p-Dioxins

Compound	Solutions in Toluene	Conc.	Cat. No.	Unit	Compound	Solutions in Toluene	Conc.	Cat. No.	Unit
1,3,7-Tribromodibenzo-p-dioxin	10 µg/mL	BDD-301S	1 mL		1,2,3,8-Tetrabromodibenzo-p-dioxin	10 µg/mL	BDD-402S	1 mL	
	25 µg/mL	BDD-301S-2.5X	1 mL			25 µg/mL	BDD-402S-2.5X	1 mL	
1,3,8-Tribromodibenzo-p-dioxin	10 µg/mL	BDD-302S	1 mL		Tetrabromodibenzo-p-dioxin-Mixed Isomers	10 µg/mL	BDD-403S	1 mL	
	25 µg/mL	BDD-302S-2.5X	1 mL		1,2,4,7-Tetrabromodibenzo-p-dioxin /	25 µg/mL	BDD-403S-2.5X	1 mL	
2,3,7-Tribromodibenzo-p-dioxin	10 µg/mL	BDD-303S	1 mL		1,2,4,8-Tetrabromodibenzo-p-dioxin				
	25 µg/mL	BDD-303S-2.5X	1 mL		1,2,3,4-Tetrabromodibenzo-p-dioxin	10 µg/mL	BDD-404S	1 mL	
1,2,3,7-Tetrabromodibenzo-p-dioxin	10 µg/mL	BDD-401S	1 mL			25 µg/mL	BDD-404S-2.5X	1 mL	
	25 µg/mL	BDD-401S-2.5X	1 mL		2,3,7,8-Tetrabromodibenzo-p-dioxin	NEAT	BDD-405N	1 mg	

Dioxins and Furans

Chlorinated Dibenzofuran Congeners

Compound	CAS No.	NEAT Cat. No.	Unit	SOLUTION Cat. No.	Conc.	Matrix	Unit
Dibenzofuran	132-64-9	F-100N	50 mg	F-100S	50 µg/mL	Isooctane	1 mL
		-----	-----	APP-9-059	100 µg/mL	MeOH	1 mL
		-----	-----	APP-9-059-2X	200 µg/mL	MeOH	1 mL
		-----	-----	AS-E0261	5 mg/mL	MeOH	1 mL
2-Chlorodibenzofuran	51230-49-0	-----	-----	F-102S	50 µg/mL	Isooctane	1 mL
4-Chlorodibenzofuran	74992-96-4	-----	-----	F-104S	50 µg/mL	Isooctane	1 mL
2,8-Dichlorodibenzofuran	5409-83-6	F-201N	10 mg	F-201S	50 µg/mL	Isooctane	1 mL
2,4,8-Trichlorodibenzofuran	54589-71-8	-----	-----	F-301S	50 µg/mL	Isooctane	1 mL
1,2,3,4-Tetrachlorodibenzofuran	24478-72-6	-----	-----	F-401S	50 µg/mL	Toluene	1 mL
1,3,6,8-Tetrachlorodibenzofuran	30402-14-3	-----	-----	F-403S	50 µg/mL	Toluene	1 mL
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	F-402N	1 mg	APP-9-170	5 µg/mL	Toluene	1 mL
		-----	-----	F-402S	50 µg/mL	Toluene	1 mL
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	-----	-----	APP-9-171	5 µg/mL	Toluene	1 mL
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	-----	-----	F-502S-0.1X	5 µg/mL	Toluene	1 mL
1,2,3,4,7,8-Hexachlorodibenzofuran	55684-94-1	-----	-----	APP-9-172	5 µg/mL	Toluene	1 mL
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	-----	-----	F-602S	50 µg/mL	Toluene	1 mL
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	-----	-----	F-605S	50 µg/mL	Toluene	1 mL
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	-----	-----	F-610S	50 µg/mL	Toluene	1 mL
1,2,3,4,6,7,8-Heptachlorodibenzofuran	38998-75-3	-----	-----	F-701S-0.1X	5 µg/mL	Toluene	1 mL
		-----	-----	F-701S	50 µg/mL	Toluene	1 mL
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	-----	-----	F-702S	50 µg/mL	Toluene	1 mL
Octachlorodibenzofuran	39001-02-0	F-801N	50 mg	F-801S	50 µg/mL	Toluene	1 mL
3-Nitrodibenzofuran	5410-97-9	R-009N	5 mg	R-009S	100 µg/mL	Toluene	1 mL

Method 1613 Dioxins & Furans by HRGC/HRMS

Method 1613 Precision and Recovery Standard

M-1613-PAR

M-1613-PAR-PAK

At stated conc. (ng/mL) in Nonane

Calibration Set

M-1613-CAL-SET

(M-1613-CAL-01, M-1613-CAL-02, M-1613-CAL-03, M-1613-CAL-04, M-1613-CAL-05)

	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
Octachlorodibenzo-p-dioxin	5	20	100	400	2000
Octachlorodibenzofuran	5	20	100	400	2000

2,3,7,8 Isomers Only Mix

This solution is for 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

Technical Note

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

Method 8280A Dioxins & Furans by HRGC/LRMS

Dioxin Mix

M-8280A

M-8280A-PAK

5 µg/mL each in Toluene

1 x 1 mL

SAVE 5 x 1 mL

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 Mix

M-8280B

M-8280B-PAK

5 µg/mL each in Toluene

1 x 1 mL

SAVE 5 x 1 mL

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-CPK

5 µg/mL each in Toluene

1 x 1 mL

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
Octachlorodibenzo-p-dioxin
2,3,7,8-Tetrachlorodibenzofuran

ASTM D5837 Furanic Compounds in Electrical Insulating Liquids by HPLC

Furanic Compound Extraction Std.

D-5837-01

1000 µg/mL each in ACN

1 x 1 mL

5 comps.

2-Acetylfuran
2-Furaldehyde
Furfuryl alcohol
5-(Hydroxymethyl)-2-furaldehyde
5-Methylfurfural

Furanic Compound Calibration Std.

D-5837-02

1000 µg/mL each in Toluene

1 x 1 mL

5 comps.

2-Acetylfuran
2-Furaldehyde
Furfuryl alcohol
5-(Hydroxymethyl)-2-furaldehyde
5-Methylfurfural

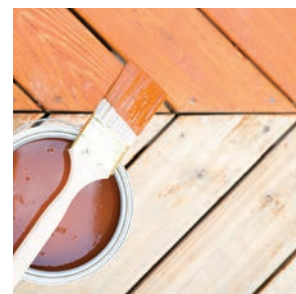
Volatile Organic Compounds

Volatile Organic Chemicals (VOCs) are generally classified as compounds that under normal ambient conditions can vaporize. This group includes aldehydes and 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 and soil, as well as waste and drinking water.

VOC Contents

VOC Compounds	75-79
VOC Methods	80
Refrigerants	81



Volatile Organic Compounds (VOCs) see USEPA method sections

502 Volatiles (PID/ELCD), Surrogates & Internal Stds.	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)	

Volatile Organic Compounds (VOCs)

Compound	Conc.	Matrix	Cat. No.	Unit	Compound	Conc.	Matrix	Cat. No.	Unit
Acetonitrile 75-05-8	100 µg/mL	MeOH	APP-9-005	1 mL	Bromodichloromethane 75-27-4	NEAT	K-008N	100 mg	
	10 mg/mL	Water	M-8015B-5031-02	1 mL		NEAT	M-502-04N	1 gram	
	1 mg/mL	Water	M-8033	1 mL		100 µg/mL	MeOH	APP-9-030	1 mL
	1 mg/mL	MeOH	APP-9-005-10X	1 mL		0.2 mg/mL	MeOH	M-502-04	1 mL
	5 mg/mL	MeOH	APP-9-005-50X	1 mL		2 mg/mL	MeOH	M-502-04-10X	1 mL
	5 mg/mL	IPA	AS-E0473	1 mL		5 mg/mL	MeOH	AS-E0046	1 mL
Acrylamide 79-06-1	1 mg/mL	MeOH	M-8032	1 mL	p-Bromofluorobenzene 460-00-4	25 µg/mL	MeOH	CLP-004	1 mL
Acrylonitrile 107-13-1	100 µg/mL	MeOH	APP-9-008	1 mL		250 µg/mL	MeOH	CLP-004-10X	1 mL
	10 mg/mL	Water	M-8015B-5031-04	1 mL		0.15 mg/mL	MeOH	AS-E0233	1 mL
	1 mg/mL	MeOH	APP-9-008-10X	1 mL		0.2 mg/mL	MeOH	M-624-SS-03	1 mL
	10 mg/mL	MeOH	AS-E0003	1 mL		2 mg/mL	MeOH	M-624-SS-03-10X	1 mL
Allyl chloride 107-05-1	100 µg/mL	MeOH	APP-9-010	1 mL		2.5 mg/mL	MeOH	CLP-004-100X	1 mL
	2 mg/mL	MeOH	APP-9-010-20X	1 mL		25 mg/mL	MeOH	CLP-004-1000X	1 mL
	1 mg/mL	MeOH	AS-E0476	1 mL		100 µg/mL	Acetone	M-551.1-IS	1 mL
n-Amylbenzene 538-68-1		NEAT	V-001	100 mg	Bromoform 75-25-2	10 mg/mL	Acetone	M-551.1-IS-100X	1 mL
Azobenzene 103-33-3						NEAT	M-502-05N	1 gram	
	2 mg/mL	CH ₂ Cl ₂	Z-014B-1	1 mL		0.2 mg/mL	MeOH	M-502-05	1 mL
						2 mg/mL	MeOH	M-502-05-10X	1 mL
Benzene 71-43-2		NEAT	M-502-01N	1 gram	Bromomethane 74-83-9	5 mg/mL	MeOH	AS-E0212	1 mL
	100 µg/mL	MeOH	APP-9-015	1 mL		100 µg/mL	MeOH	APP-9-032	1 mL
	1 mg/mL	MeOH	AS-E0004	1 mL		0.2 mg/mL	MeOH	M-502-06	1 mL
	0.2 mg/mL	MeOH	M-502-01	1 mL		2 mg/mL	MeOH	M-502-06-10X	1 mL
Benzene-d ₆ 1076-43-3	2 mg/mL	MeOH	M-502-01-10X	1 mL	1-Bromopropane 75-26-1	100 µg/mL	PT MeOH	VC-001S	1 mL
	0.2 mg/mL	MeOH	M-624-SS-01	1 mL		100 µg/mL	PT MeOH	VC-002S	1 mL
	2 mg/mL	MeOH	M-624-SS-01-10X	1 mL	Bromotrichloromethane 75-62-7	NEAT	K-009N	100 mg	
Benzyl chloride 100-44-7	0.2 mg/mL	MeOH	M-8010-01	1 mL		0.2 mg/mL	MeOH	S-406A	1 mL
	5 mg/mL	ACN	AS-E0169	1 mL		2 mg/mL	MeOH	S-406A-10X	1 mL
2-Bromo-1-chloropropane 3017-95-6	20 mg/mL	MeOH	M-001R-3	1 mL		NEAT	V-002	100 mg	
	0.2 mg/mL	MeOH	M-624-SS-04	1 mL	n-Butylbenzene 104-51-8	NEAT	M-502-07N	1 gram	
1-Bromo-2-nitrobenzene 577-19-5	1 mg/mL	Acetone	M-8081-IS-DC	1 mL		0.2 mg/mL	MeOH	M-502-07	1 mL
						2 mg/mL	MeOH	M-502-07-10X	1 mL
Bromobenzene 108-86-1		NEAT	M-502-02N	1 gram		5 mg/mL	MeOH	AS-E1105	1 mL
	0.2 mg/mL	MeOH	M-502-02	1 mL	iso-Butylbenzene 538-93-2	NEAT	V-003	100 mg	
	2 mg/mL	MeOH	M-502-02-10X	1 mL		NEAT	V-004	100 mg	
	5 mg/mL	MeOH	AS-E0406	1 mL		NEAT	M-502-08N	1 gram	
Bromochloroacetonitrile 83463-62-1	1 mg/mL	Acetone	AS-E1186	1 mL		0.2 mg/mL	MeOH	M-502-08	1 mL
	5 mg/mL	Acetone	M-551B-1	1 mL	sec-Butylbenzene 135-98-8	2 mg/mL	MeOH	M-502-08-10X	1 mL
2-Bromochlorobenzene 694-80-4	0.2 mg/mL	MeOH	M-624-SS-12	1 mL		5 mg/mL	MeOH	AS-E1104	1 mL
						NEAT	M-502-09N	1 gram	
4-Bromochlorobenzene 106-39-8	2 mg/mL	MeOH	M-8020-SS-1	1 mL		0.2 mg/mL	MeOH	M-502-09	1 mL
					tert-Butylbenzene 98-06-6	2 mg/mL	MeOH	M-502-09-10X	1 mL
Bromochloromethane 74-97-5		NEAT	K-007N	100 mg		5 mg/mL	MeOH	AS-E1106	1 mL
		NEAT	M-502-03N	1 gram		100 µg/mL	MeOH	APP-9-035	1 mL
	0.2 mg/mL	MeOH	M-502-03	1 mL		2 mg/mL	MeOH	APP-9-035-20X	1 mL
	2 mg/mL	MeOH	M-502-03-10X	1 mL		5 mg/mL	MeOH	AS-E0363	1 mL
	10 mg/mL	MeOH	AS-E0136	1 mL					

VOCs continued on next page

Volatile Organic Compounds

VOCs (continued)

Compound	Conc.	Matrix	Cat. No.	Unit	Compound	Conc.	Matrix	Cat. No.	Unit
Carbon tetrabromide 558-13-4		NEAT	K-006N	100 mg	1,2-Dibromoethane 106-93-4		NEAT	M-502-19N **	1 gram
Carbon tetrachloride 56-23-5		NEAT	K-003N	100 mg		100 µg/mL	MeOH	APP-9-214	1 mL
		NEAT	M-502-10N	1 gram		0.2 mg/mL	MeOH	M-502-19	1 mL
	100 µg/mL	MeOH	APP-9-036	1 mL		2 mg/mL	MeOH	M-502-19-10X	1 mL
	0.2 mg/mL	MeOH	M-502-10	1 mL		5 mg/mL	MeOH	AS-E0171	1 mL
	2 mg/mL	MeOH	M-502-10-10X	1 mL	Dibromofluoromethane 1868-53-7	0.2 mg/mL	MeOH	M-8260-SS-2	1 mL
	5 mg/mL	MeOH	AS-E0360	1 mL		2 mg/mL	MeOH	M-8260-SS-2-10X	1 mL
Chloral hydrate 302-17-0	1000 µg/mL	MeOH	M-E-1179-M	1 mL	Dibromomethane 74-95-3		NEAT	K-004N	100 mg
	1000 µg/mL	Acetone	AS-E1179	1 mL			NEAT	M-502-20N	1 gram
	5 mg/mL	Acetone	M-551B-2	1 mL		100 µg/mL	MeOH	APP-9-062	1 mL
Chlorobenzene 108-90-7		NEAT	A-001	100 mg		0.2 mg/mL	MeOH	M-502-20	1 mL
		NEAT	M-502-11N	1 gram		2 mg/mL	MeOH	M-502-20-10X	1 mL
	100 µg/mL	MeOH	APP-9-039	1 mL		5 mg/mL	MeOH	AS-E1097	1 mL
	0.2 mg/mL	MeOH	M-502-11	1 mL	a,a-Dibromo-m-xylene 626-15-3	1 mg/mL	Acetone	M-8081-IS-X	1 mL
	1 mg/mL	MeOH	AS-E0006	1 mL	1,2-Dibromopropane 78-75-1	5 mg/mL	MeOH	M-552-IS	1 mL
	2 mg/mL	MeOH	M-502-11-10X	1 mL		10 mg/mL	Hexane	M-556-IS	1 mL
Chlorobenzene-d₅ 3114-55-4	5 mg/mL	MeOH	CLP-PI-3-5X	1 mL	1,2-Dibromo-1,1,2,2-tetrafluoroethane 124-73-2	1000 µg/mL	MeOH	AS-E0463	1 mL
Chloroethane 75-00-3	100 µg/mL	MeOH	APP-9-042	1 mL	2,3-Dichloro-1-propene 78-88-6	4.2 mg/mL	MeOH	AS-E0170	1 mL
	0.2 mg/mL	MeOH	M-502-12	1 mL	trans-1,4-Dichloro-2-butene 110-57-6	100 µg/mL	MeOH	APP-9-068	1 mL
	1000 µg/mL	MeOH	AS-E0015	1 mL		2 mg/mL	MeOH	APP-9-068-20X	1 mL
	2 mg/mL	MeOH	M-502-12-10X	1 mL	Dichloroacetonitrile 3018-12-0	5 mg/mL	Acetone	M-551B-5	1 mL
bis(2-Chloroethoxy)methane 111-91-1	100 µg/mL	CH ₂ Cl ₂	APP-9-026	1 mL	1,2-Dichlorobenzene 95-50-1		NEAT	A-002	100 mg
	1000 µg/mL	MeOH	APP-9-026-M-10X1	1 mL			NEAT	M-502-21N	1 gram
	5 mg/mL	MeOH	AS-E0041	1 mL		100 µg/mL	MeOH	APP-9-064	1 mL
1-Chloro-2-fluorobenzene 348-51-6	2 mg/mL	MeOH	S-163	1 mL		0.2 mg/mL	MeOH	M-502-21	1 mL
1-Chloro-4-fluorobenzene 352-33-0	0.2 mg/mL	MeOH	M-624-SS-13	1 mL		2 mg/mL	MeOH	M-502-21-10X	1 mL
1-Chloro-3-nitrobenzene 121-73-3	1000 µg/mL	Acetone	M-8091-SS-100X	1 mL		5 mg/mL	MeOH	AS-E0023	1 mL
Chloroform 67-66-3		NEAT	M-502-13N	1 gram		2.0 mg/mL	Hexane	M-8120-02	1 mL
	0.2 mg/mL	MeOH	M-502-13	1 mL	1,2-Dichlorobenzene-d₄ 2199-69-1	0.2 mg/mL	MeOH	M-624-SS-11	1 mL
	2 mg/mL	MeOH	M-502-13-10X	1 mL		2 mg/mL	MeOH	M-624-SS-11-10X	1 mL
1-Chlorohexane 544-10-5	0.2 mg/mL	MeOH	M-8010R-1-04	1 mL	1,3-Dichlorobenzene 541-73-1		NEAT	A-003	100 mg
	2 mg/mL	MeOH	M-8010R-1-04-10X	1 mL			NEAT	M-502-22N	1 gram
Chloromethane 74-87-3	100 µg/mL	MeOH	APP-9-044	1 mL		100 µg/mL	MeOH	APP-9-065	1 mL
	0.2 mg/mL	MeOH	M-502-14	1 mL		0.2 mg/mL	MeOH	M-502-22	1 mL
	2 mg/mL	MeOH	M-502-14-10X	1 mL		1000 µg/mL	MeOH	AS-E0214	1 mL
bis(2-Chloro-1-methylethyl)ether 108-60-1		NEAT	FETH-02N	100 mg		2 mg/mL	MeOH	M-502-22-10X	1 mL
	100 µg/mL	CH ₂ Cl ₂	APP-9-028	1 mL		2 mg/mL	Hexane	M-8120-03	1 mL
Chloroprene 126-99-8	100 µg/mL	MeOH	APP-9-048-R1	1 mL	1,4-Dichlorobenzene 106-46-7		NEAT	A-004	100 mg
	200 µg/mL	MeOH	APP-9-048-R1-2X	1 mL			NEAT	M-502-23N	1 gram
	1000 µg/mL	MeOH	APP-9-048-R1-10X	1 mL		100 µg/mL	MeOH	APP-9-066	1 mL
	2.0 mg/mL	MeOH	APP-9-048-R1-20X	1 mL		0.2 mg/mL	MeOH	M-502-23	1 mL
3-Chloropropionitrile 542-76-7	1000 µg/mL	MeOH	AS-E0375	1 mL		2 mg/mL	MeOH	M-502-23-10X	1 mL
2-Chlorotoluene 95-49-8		NEAT	M-502-15N	1 gram		0.25 mg/mL	Acetone	M-8151-IS-2	1 mL
	0.2 mg/mL	MeOH	M-502-15	1 mL		2 mg/mL	Hexane	M-8120-04	1 mL
	2 mg/mL	MeOH	M-502-15-10X	1 mL	1,4-Dichlorobenzene-d₄ 3855-82-1	5 mg/mL	MeOH	AS-E0025	1 mL
	5 mg/mL	MeOH	AS-E0150	1 mL		2 mg/mL	MeOH	Z-014J-3-M-0.5X	1 mL
3-Chlorotoluene 108-41-8	5 mg/mL	MeOH	AS-E0151	1 mL	1,4-Dichlorobutane 110-56-5	4 mg/mL	CH ₂ Cl ₂	Z-014J-3	1 mL
4-Chlorotoluene 106-43-4		NEAT	M-502-16N	1 gram		0.2 mg/mL	MeOH	M-624-SS-05	1 mL
	0.2 mg/mL	MeOH	M-502-16	1 mL		20 mg/mL	MeOH	M-001R-2	1 mL
	2 mg/mL	MeOH	M-502-16-10X	1 mL	Dichlorodifluoromethane 17060-07-0	100 µg/mL	MeOH	APP-9-069	1 mL
Cyclohexane 110-82-7		NEAT	TK-102-08N	1 gram		0.2 mg/mL	MeOH	M-502-24	1 mL
Decylbenzene 104-72-3	2 mg/mL	MeOH	TK-102-08S-10X	1 mL		2 mg/mL	MeOH	M-502-24-10X	1 mL
Diallylate 2303-16-4		NEAT	V-005	100 mg		5000 µg/mL	MeOH	AS-E0346	1 mL
	100 µg/mL	MeOH	P-142N	10 mg	1,1-Dichloroethane 75-34-3		NEAT	M-502-25N-100MG	100 mg
	1000 µg/mL	ACN	APP-9-057	1 mL		100 µg/mL	MeOH	APP-9-070	1 mL
Dibromochloromethane 124-48-1		NEAT	AS-E0623	1 mL		0.2 mg/mL	MeOH	M-502-25	1 mL
		NEAT	K-010N	100 mg		100 µg/mL	MeOH	AS-E0012	1 mL
		NEAT	M-502-17N	1 gram		2 mg/mL	MeOH	M-502-25-10X	1 mL
	100 µg/mL	MeOH	APP-9-060	1 mL	1,2-Dichloroethane 107-06-2		NEAT	M-502-26N	1 gram
	0.2 mg/mL	MeOH	M-502-17	1 mL		100 µg/mL	MeOH	APP-9-071	1 mL
	2 mg/mL	MeOH	M-502-17-10X	1 mL		0.2 mg/mL	MeOH	M-502-26	1 mL
1,2-Dibromo-3-chloropropane 96-12-8		NEAT	M-502-18N	1 gram		1000 µg/mL	MeOH	AS-E0009	1 mL
	0.2 mg/mL	MeOH	M-502-18	1 mL		2 mg/mL	MeOH	M-502-26-10X	1 mL
	2 mg/mL	MeOH	M-502-18-10X	1 mL	1,2-Dichloroethane-d₄ 17060-07-0	0.2 mg/mL	MeOH	M-624-SS-06	1 mL
	5 mg/mL	MeOH	AS-E0993	1 mL		2.0 mg/mL	MeOH	M-624-SS-06-10X	1 mL
Dibromoacetonitrile 3252-43-5	5 mg/mL	Acetone	M-551B-4	1 mL	1,1-Dichloroethene 75-35-4		NEAT	M-502-27N	1 gram
						100 µg/mL	MeOH	APP-9-072	1 mL
						0.2 mg/mL	MeOH	M-502-27	1 mL
						2 mg/mL	MeOH	M-502-27-10X	1 mL

** This product can not ship by air

Volatile Organic Compounds

VOCs (continued)

Compound	Conc.	Matrix	Cat. No.	Unit	Compound	Conc.	Matrix	Cat. No.	Unit
cis-1,2-Dichloroethene 156-59-2		NEAT	M-502-28N	1 gram	1,2-Epoxybutane 106-88-7	5 mg/mL	ACN	AS-E0286	1 mL
	0.2 mg/mL	MeOH	M-502-28	1 mL	1,2-Epoxypropane (Propylene oxide) 75-56-9	1000 µg/mL	ACN	AS-E0308	1 mL
	2 mg/mL	MeOH	M-502-28-10X	1 mL					
	10 mg/mL	MeOH	AS-E0173	1 mL	Ethyl acetate 141-78-6	10 mg/mL	Water	M-8015B-5031-12	1 mL
trans-1,2-Dichloroethene 156-60-5		NEAT	M-502-29N	1 gram	Ethyl methacrylate 97-63-2	100 µg/mL	MeOH	APP-9-105	1 mL
	100 µg/mL	MeOH	APP-9-073	1 mL		1000 µg/mL	MeOH	AS-E0687	1 mL
	0.2 mg/mL	MeOH	M-502-29	1 mL	Ethyl methanesulfonate 62-50-0	100 µg/mL	CH ₂ Cl ₂	APP-9-106	1 mL
	1 mg/mL	MeOH	AS-E0028	1 mL		1000 µg/mL	ACN	AS-E0456	1 mL
	2 mg/mL	MeOH	M-502-29-10X	1 mL	Ethylbenzene 100-41-4		NEAT	M-502-35N	1 gram
Dichlorofluoromethane 75-43-4	0.2 mg/mL	MeOH	M-502-61	1 mL		100 µg/mL	MeOH	APP-9-104	1 mL
	2 mg/mL	MeOH	M-502-61-10X	1 mL		0.2 mg/mL	MeOH	M-502-35	1 mL
Dichloromethane 75-09-2 (Methylene chloride)		NEAT	K-001N	100 mg		2 mg/mL	MeOH	M-502-35-10X	1 mL
		NEAT	M-502-39N	1 gram		10 mg/mL	MeOH	AS-E0036	1 mL
	100 µg/mL	MeOH	APP-9-074	1 mL		0.2 mg/mL	MeOH	M-624-SS-08	1 mL
	0.2 mg/mL	MeOH	M-502-39	1 mL	Ethylbenzene-d₁₀ 25837-05-2				
	1000 µg/mL	MeOH	AS-E0042	1 mL		2 mg/mL	Water	D-4291-93	1 mL
Dichloromethane-d₂ 1665-00-5	2 mg/mL	MeOH	M-502-39-10X	1 mL	Ethylene glycol 107-21-1	10 mg/mL	Water	M-8015B-5031-13	1 mL
						0.2 mg/mL	Isocetane	S-354-2	1 mL
1,2-Dichloropropane 78-87-5		NEAT	M-502-30N	1 gram	Ethylene oxide 75-21-8	5 mg/mL	Isocetane	M-8015B-5031-14-TPR1	1 mL
	100 µg/mL	MeOH	APP-9-077	1 mL		5 mg/mL	Water	M-8015B-5031-14-R1	1 mL
	0.2 mg/mL	MeOH	M-502-30	1 mL	m-Ethyltoluene 620-14-4		NEAT	V-031	100 mg
	1000 µg/mL	MeOH	AS-E0030	1 mL					
	2 mg/mL	MeOH	M-502-30-10X	1 mL	o-Ethyltoluene 611-14-3		NEAT	V-010	100 mg
1,3-Dichloropropane 142-28-9		NEAT	M-502-31N	1 gram			NEAT	V-011	100 mg
	0.2 mg/mL	MeOH	M-502-31	1 mL	p-Ethyltoluene 622-96-8				
	2 mg/mL	MeOH	M-502-31-10X	1 mL					
	5 mg/mL	MeOH	AS-E1109	1 mL	2-Fluoroacetamide 640-19-7	5 mg/mL	ACN:	AS-E0299	1 mL
2,2-Dichloropropane 594-20-7		NEAT	M-502-32N	1 gram			MeOH (80:20)		
	0.2 mg/mL	MeOH	M-502-32	1 mL	Fluorobenzene 462-06-6	0.15 mg/mL	MeOH	AS-E0232	1 mL
	2 mg/mL	MeOH	M-502-32-10X	1 mL		0.2 mg/mL	MeOH	M-624-SS-09	1 mL
	5 mg/mL	MeOH	AS-E1167	1 mL		2 mg/mL	MeOH	M-524-IS-2	1 mL
1,3-Dichloropropene (cis/trans) 542-75-6		NEAT	M-502-34N	1 gram		20 mg/mL	MeOH	M-524-IS-2-10X	1 mL
	0.2 mg/mL	MeOH	M-502-34	1 mL	Fluorotrichloromethane 75-69-4	5 mg/mL	MeOH	AS-E0047	1 mL
	400 µg/mL	MeOH	M-502-34-R	1 mL					
	4 mg/mL	MeOH	M-502-34-R-10X	1 mL	Heptadecylbenzene 14752-75-1		NEAT	V-014	100 mg
cis & trans 1,3-Dichloropropene	5 mg/mL	MeOH	AS-E0218	1 mL			NEAT	V-012	100 mg
1,1-Dichloropropene 563-58-6	0.2 mg/mL	MeOH	M-502-33	1 mL	Hexachlorobenzene 118-74-1		NEAT	A-012	100 mg
cis-1,3-Dichloropropene 10061-01-5	2 mg/mL	MeOH	M-502-33-10X	1 mL		100 µg/mL	MeOH	APP-9-112	1 mL
trans-1,3-Dichloropropene 10061-02-6	100 µg/mL	MeOH	APP-9-078	1 mL		1000 µg/mL	Acetone	APP-9-112-A-10X	1 mL
1,1-Dichloro-1-propylene 563-58-6	5000 µg/mL	MeOH	AS-E1166	1 mL		2 mg/mL	CH ₂ Cl ₂	APP-9-112-D-20X	1 mL
2,4-Dichlorotoluene 95-73-8	5000 µg/mL	MeOH	AS-E0149	1 mL	Hexachlorobutadiene 87-68-3	2 mg/mL	Hexane	M-8120-05	1 mL
1,2,3,4-Diepoxybutane 1464-53-5	1 mg/mL	ACN	AS-E0577	1 mL			NEAT	M-502-36N	1 gram
m-Diethylbenzene 141-93-5		NEAT	V-007	100 mg		100 µg/mL	MeOH	APP-9-113	1 mL
o-Diethylbenzene 135-01-3		NEAT	V-006	100 mg		0.2 mg/mL	MeOH	M-502-36	1 mL
p-Diethylbenzene 105-05-5		NEAT	V-008	100 mg	Hexachlorocyclopentadiene 77-47-4	2 mg/mL	MeOH	M-502-36-10X	1 mL
1,4-Difluorobenzene 540-36-3	100 µg/mL	Isocetane	M-GRA-ST	1 mL		5 mg/mL	MeOH	AS-E0050	1 mL
	0.2 mg/mL	MeOH	M-624-SS-07	1 mL		2 mg/mL	Hexane	M-8120-06	1 mL
	2 mg/mL	MeOH	M-624-SS-07-10X	1 mL		100 µg/mL	MeOH	APP-9-114	1 mL
Dimethyl sulfate 77-78-1	1 mg/mL	ACN	AS-E0389	1 mL	Hexachloroethane 67-72-1	1000 µg/mL	MeOH	APP-9-114-10X	1 mL
1,3-Dimethyl-2-nitrobenzene 81-20-9						2 mg/mL	Hexane	M-8120-07	1 mL
	0.25 mg/mL	MtBE	M-507-SS	1 mL		100 µg/mL	MeOH	APP-9-115	1 mL
	1.0 mg/mL	MtBE	M-507-SS-4X	1 mL		1000 µg/mL	MeOH	AS-E0011	1 mL
	100 µg/mL	CH ₂ Cl ₂	APP-9-089	1 mL	Hexachlorophene 70-30-4	2 mg/mL	Hexane	M-8120-08	1 mL
1,3-Dinitrobenzene 99-65-0	1 mg/mL	CH ₂ Cl ₂	APP-9-089-10X	1 mL		100 µg/mL	MeOH	APP-9-116	1 mL
	5 mg/mL	MeOH	AS-E0527	1 mL		2 mg/mL	CH ₂ Cl ₂	APP-9-116-D-20X	1 mL
						5 mg/mL	MeOH	AS-E0323	1 mL
2,5-Dinitrotoluene 619-15-8	100 µg/mL	ACN	M-8095-SS-03	1 mL	Hexachloropropene 1888-71-7	100 µg/mL	MeOH	APP-9-117	1 mL
3,4-Dinitrotoluene 610-39-9						1 mg/mL	MeOH	AS-E0364	1 mL
	100 µg/mL	ACN	M-8095-SS-01	1 mL	Hexadecylbenzene 1459-09-2		NEAT	V-015	100 mg
Dodecylbenzene 123-01-3		NEAT	V-009	100 mg					
					Hexylbenzene 1077-16-3		NEAT	V-013	100 mg
Epichlorohydrin 106-89-8	100 µg/mL	ACN	AS-E0258-0.02X	1 mL					
	2000 µg/mL	ACN	M-8240E-R-13-10X	1 mL	Isopropylbenzene 98-82-8		NEAT	M-502-37N	1 gram
	5 mg/mL	ACN	AS-E0258	1 mL		0.2 mg/mL	MeOH	M-502-37	1 mL
						2 mg/mL	MeOH	M-502-37-10X	1 mL
							NEAT	M-502-38N	1 gram
					p-Isopropyltoluene (p-Cymene)	0.2 mg/mL	MeOH	M-502-38	1 mL
						2 mg/mL	MeOH	M-502-38-10X	1 mL
						5 mg/mL	MeOH	AS-E1108	1 mL

VOCs continued on next page

Volatile Organic Compounds

VOCs (continued)

Compound	Conc.	Matrix	Cat. No.	Unit	Compound	Conc.	Matrix	Cat. No.	Unit
Methacrylonitrile 126-98-7	100 µg/mL	MeOH	APP-9-125	1 mL	TCMX (Tetrachloro-m-xylene) 877-09-8	100 µg/mL	Hexane	M-8082-SS	1 mL
Methyl bromide 74-83-9	1000 µg/mL	MeOH	AS-E0686	1 mL		0.2 mg/mL	MeOH	S-279	1 mL
		ACN	AS-E0044	1 mL		1 mg/mL	MeOH	S-279-5X	1 mL
						1 mg/mL	Hexane	M-8082-SS-10X	1 mL
Methyl 2-bromopropionate 5445-17-0	1000 µg/mL	MeOH	M-552.1-SS-ME	1 mL			NEAT	A-008	100 mg
						1000 µg/mL	MeOH	AS-E0225	1 mL
Methyl chloride 74-87-3	5 mg/mL	MeOH	AS-E0043	1 mL			NEAT	A-009	100 mg
						100 µg/mL	Isooctane	P-1001S-TP	1 mL
Methyl-2,3-dibromopropionate 1729-67-5	1000 µg/mL	MeOH	M-552.2-SS-ME	1 mL			NEAT	A-010	100 mg
						100 µg/mL	MeOH	APP-9-191	1 mL
1-Methyl ethyl benzene 98-82-8	5 mg/mL	MeOH	AS-E0669	1 mL		1000 µg/mL	MeOH	APP-9-191-10X	1 mL
						2 mg/mL	Hexane	M-8120-09	1 mL
Methyl iodide 74-88-4	100 µg/mL	MeOH	APP-9-130	1 mL		2.5 mg/mL	ACN	AS-E0177	1 mL
	2 mg/mL	MeOH	APP-9-130-20X	1 mL	1,1,1,2-Tetrachloroethane 630-20-6		NEAT	M-502-43N	1 gram
Methyl isothiocyanate ²⁵ 556-61-6	µg/mL	Acetone	M-1659-RPS	1 mL		100 µg/mL	MeOH	APP-9-192	1 mL
						0.2 mg/mL	MeOH	M-502-43	1 mL
Methyl methacrylate 80-62-6	100 µg/mL	MeOH	APP-9-131	1 mL		1000 µg/mL	MeOH	AS-E0335	1 mL
	1000 µg/mL	MeOH	AS-E0439	1 mL		2 mg/mL	MeOH	M-502-43-10X	1 mL
	2 mg/mL	MeOH	APP-9-131-20X	1 mL	1,1,2,2-Tetrachloroethane 79-34-5		NEAT	M-502-44N	1 gram
Methyl methanesulfonate 66-27-3	100 µg/mL	CH ₂ Cl ₂	APP-9-132	1 mL		100 µg/mL	MeOH	APP-9-193	1 mL
	1000 µg/mL	ACN	AS-E0431	1 mL		0.2 mg/mL	MeOH	M-502-44	1 mL
Naphthalene 91-20-3		NEAT	M-502-40N	1 mL		2 mg/mL	MeOH	M-502-44-10X	1 mL
	0.2 mg/mL	MeOH	M-502-40	1 mL		5 mg/mL	MeOH	AS-E0014	1 mL
	1000 µg/mL	MeOH	AS-E0053	1 mL	Tetrachloroethene 127-18-4		NEAT	M-502-45N	1 gram
	2 mg/mL	MeOH	M-502-40-10X	1 mL		100 µg/mL	MeOH	APP-9-194	1 mL
Naphthalene-d₈ 1146-65-2 1 mL	0.2 mg/mL	CH ₂ Cl ₂	m-625-12	1 mL		0.2 mg/mL	MeOH	M-502-45	1 mL
	4 mg/mL	CH ₂ Cl ₂	Z-014J-4			2 mg/mL	MeOH	M-502-45-10X	1 mL
						5 mg/mL	MeOH	AS-E0083	1 mL
Nitrobenzene 98-95-3		NEAT	R-047N	100 mg	Tetradecylbenzene 1459-10-5		NEAT	V-023	100 mg
	100 µg/mL	MeOH	APP-9-143	1 mL					
	1000 µg/mL	MeOH	APP-9-143-10X	1 mL	Tetrahydrofuran 109-99-9	0.2 mg/mL	MeOH	S-457S	1 mL
	5 mg/mL	MeOH	AS-E0054	1 mL		2 mg/mL	MeOH	S-457S-10X	1 mL
Nitrobenzene-d₅ 4165-60-0	0.2 mg/mL	CH ₂ Cl ₂	m-625-13	1 mL		1 mg/mL	Water	M-1671A-IS	1 mL
	2 mg/mL	CH ₂ Cl ₂	m-625-13-10X	1 mL	1,2,3,4-Tetramethylbenzene 488-23-3		NEAT	V-024	100 mg
Nonadecylbenzene 29136-19-4		NEAT	V-018	100 mg	1,2,3,5-Tetramethylbenzene 527-53-7		NEAT	V-025	100 mg
Nonylbenzene 1081-77-2		NEAT	V-017	100 mg	1,2,4,5-Tetramethylbenzene 95-93-2		NEAT	V-026	100 mg
Octadecylbenzene 4445-07-2		NEAT	V-020	100 mg	Toluene 108-88-3		NEAT	M-502-46N	1 gram
Octylbenzene 2189-60-8		NEAT	V-019	100 mg		100 µg/mL	MeOH	APP-9-198	1 mL
Pentachlorobenzene 608-93-5		NEAT	A-011	100 mg		0.2 mg/mL	MeOH	M-502-46	1 mL
	100 µg/mL	MeOH	APP-9-173	1 mL		1000 µg/mL	MeOH	AS-E0084	1 mL
	2.5 mg/mL	MeOH	AS-E0260	1 mL		2 mg/mL	MeOH	M-502-46-10X	1 mL
Pentachloroethane 76-01-7	100 µg/mL	MeOH	APP-9-174	1 mL	Toluene-d₈ 2037-26-5	0.25 mg/mL	MeOH	CLP-PS-3	1 mL
	2 mg/mL	MeOH	APP-9-174-20X	1 mL		2.5 mg/mL	MeOH	CLP-PS-3-10X	1 mL
	5 mg/mL	MeOH	AS-E0300	1 mL	1,3,5-Tribromobenzene 626-39-1	50 µg/mL	Acetone	M-8121-IS	1 mL
Pentadecylbenzene 2131-18-2		NEAT	V-021	100 mg	Trichloroacetoneitrile 545-06-2	5 mg/mL	Acetone	M-551B-7	1 mL
Pentafluorobenzene 363-72-4	0.2 mg/mL	MeOH	M-624-SS-10	1 mL	1,2,3-Trichlorobenzene 87-61-6		NEAT	A-005	100 mg
1,2-Propanediol 57-55-6	1000 µg/mL	ACN	AS-E0524	1 mL			NEAT	M-502-47N	1 gram
Propionic acid 79-09-4		NEAT	AP-010N	1 gram		0.2 mg/mL	MeOH	M-502-47	1 mL
	5 mg/mL	ACN	AS-E0673	1 mL		2 mg/mL	MeOH	M-502-47-10X	1 mL
Propionitrile 107-12-0	100 µg/mL	MeOH	APP-9-184	1 mL		5 mg/mL	MeOH	AS-E0175	1 mL
	5 mg/mL	MeOH	AS-E0338	1 mL	1,2,4-Trichlorobenzene 120-82-1		NEAT	A-006	100 mg
	10 mg/mL	Water	M-8015B-5031-25	1 mL			NEAT	M-502-48N	1 gram
n-Propylbenzene (1-Phenylpropane) 103-65-1		NEAT	V-022	100 mg		100 µg/mL	MeOH	APP-9-201	1 mL
		NEAT	M-502-41N	1 gram		0.2 mg/mL	MeOH	M-502-48	1 mL
	0.2 mg/mL	MeOH	M-502-41	1 mL		1000 µg/mL	MeOH	AS-E0007	1 mL
	2 mg/mL	MeOH	M-502-41-10X	1 mL		2 mg/mL	MeOH	M-502-48-10X	1 mL
	5 mg/mL	MeOH	AS-E1112	1 mL	1,3,5-Trichlorobenzene 108-70-3		NEAT	A-007	100 mg
Styrene 100-42-5		NEAT	M-502-42N	1 gram		5 mg/mL	MeOH	AS-E0176	1 mL
	100 µg/mL	MeOH	APP-9-189	1 mL	1,1,1-Trichloroethane 71-55-6	100 µg/mL	MeOH	APP-9-202	1 mL
	0.2 mg/mL	MeOH	M-502-42	1 mL		0.2 mg/mL	MeOH	M-502-49	1 mL
	2 mg/mL	MeOH	M-502-42-10X	1 mL		1 mg/mL	MeOH	AS-E0010	1 mL
	5 mg/mL	MeOH	AS-E0257	1 mL		2 mg/mL	MeOH	M-502-49-10X	1 mL
					1,1,2-Trichloroethane 79-00-5		NEAT	M-502-50N	1 gram
						100 µg/mL	MeOH	APP-9-203	1 mL
						0.2 mg/mL	MeOH	M-502-50	1 mL
						1 mg/mL	MeOH	AS-E0013	1 mL
						2 mg/mL	MeOH	M-502-50-10X	1 mL

Volatile Organic Compounds

VOCs (continued)

Compound	Conc.	Matrix	Cat. No.	Unit	Compound	Conc.	Matrix	Cat. No.	Unit
Trichloroethene 79-01-6		NEAT	M-502-51N	1 gram	1,3,5-Trimethylbenzene 108-67-8		NEAT	V-016	100 mg
	100 µg/mL	MeOH	APP-9-204	1 mL			NEAT	M-502-55N	1 gram
	0.2 mg/mL	MeOH	M-502-51	1 mL		0.2 mg/mL	MeOH	M-502-55	1 mL
	1000 µg/mL	MeOH	AS-E0085	1 mL		2 mg/mL	MeOH	M-502-55-10X	1 mL
	2 mg/mL	MeOH	M-502-51-10X	1 mL		5 mg/mL	MeOH	AS-E1103	1 mL
Trichlorofluoromethane 75-69-4	100 µg/mL	MeOH	APP-9-205	1 mL	1,3,5-Trinitrobenzene 99-35-4	100 µg/mL	MeOH	APP-9-210	1 mL
	0.2 mg/mL	MeOH	M-502-52	1 mL		2 mg/mL	MeOH	M-8270-10	1 mL
	2 mg/mL	MeOH	M-502-52-10X	1 mL		2 mg/mL	CH ₂ Cl ₂	APP-9-210-D-20X	1 mL
1,1,2-Trichloropropane 598-77-6	200 µg/mL	MeOH	S-1321B	1 mL	Undecylbenzene 6742-54-7		NEAT	V-030	100 mg
1,2,3-Trichloropropane 96-18-4		NEAT	M-502-53N	1 gram	Vinyl acetate 108-05-4	100 µg/mL	MeOH	APP-9-211	1 mL
	100 µg/mL	MeOH	APP-9-208	1 mL		2 mg/mL	MeOH	APP-9-211-20X	1 mL
	0.2 mg/mL	MeOH	M-502-53	1 mL		1000 mg/mL	ACN	AS-E0327	1 mL
	1 mg/mL	MeOH	APP-9-208-10X	1 mL	Vinyl chloride 75-01-4	100 µg/mL	MeOH	APP-9-212	1 mL
	1 mg/mL	MtBE	M-552.1-IS	1 mL		0.2 mg/mL	MeOH	M-502-56	1 mL
	2 mg/mL	MeOH	M-502-53-10X	1 mL		1000 µg/mL	MeOH	AS-E0536	1 mL
	5 mg/mL	MeOH	AS-E0368	1 mL		2 mg/mL	MeOH	M-502-56-10X	1 mL
	0.2 mg/mL	MeOH	M-624-SS-14	1 mL		100 µg/mL	MeOH	APP-9-213	1 mL
a,a,a-Trichlorotoluene 98-07-7					Xylene (total) 1330-20-7				
Tridecylbenzene 123-02-4		NEAT	V-027	100 mg	m-Xylene 108-38-3		NEAT	M-502-58N	1 gram
1,2,3-Trimethylbenzene 526-73-8		NEAT	V-028	100 mg		0.2 mg/mL	MeOH	M-502-58	1 mL
	1000 µg/mL	CH ₂ Cl ₂	V-028S-D-10X	1 mL		1 mg/mL	MeOH	AS-E0202	1 mL
	3 % w/w	Isooctane	M-GRA-FP	1 mL		2 mg/mL	MeOH	M-502-58-10X	1 mL
1,2,4-Trimethylbenzene 95-63-6		NEAT	V-029	100 mg	o-Xylene 95-47-6		NEAT	M-502-57N	1 gram
		NEAT	M-502-54N	1 gram		0.2 mg/mL	MeOH	M-502-57	1 mL
	0.2 mg/mL	MeOH	M-502-54	1 mL		1000 µg/mL	MeOH	AS-E0201	1 mL
	2 mg/mL	MeOH	M-502-54-10X	1 mL		2 mg/mL	MeOH	M-502-57-10X	1 mL
	5 mg/mL	MeOH	AS-E1107	1 mL	p-Xylene 106-42-3		NEAT	M-502-59N	1 gram
						0.2 mg/mL	MeOH	M-502-59	1 mL
						1000 µg/mL	MeOH	AS-E0203	1 mL
						2 mg/mL	MeOH	M-502-59-10X	1 mL



Volatile Organic Compounds

F-List USP / National Formulary 467 / Method 6040D

F-List Hazardous Waste from Non-Specific Sources

F001 & F002 Solvent List Components

FL-0102	1 x 1 mL
2.0 mg/mL each in MeOH	10 comps.
Carbon tetrachloride	1,1,1-Trichloroethane
Chlorobenzene	1,1,2-Trichloroethane
1,2-Dichlorobenzene	Trichloroethene
Methylene chloride	1,1,2-Trichloro-1,2,2-trifluoroethane
Tetrachloroethene	Trichlorofluoromethane

F003 List Components (excluding MeOH as analyte)

FL-0003		1 x 1 mL
2.0 mg/mL in MeOH		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		

F004 List Component Mixes

FL-0004-CR			1 x 1 mL
2.0 mg/mL in MeOH			3 comps.
<i>m</i> -Cresol	<i>o</i> -Cresol	<i>p</i> -Cresol	

FL-0004-CA	1 x 1 mL
2.0 mg/mL in MeOH	

Cresylic acid (technical mixture of phenol, cresols & xylenes)

F005 List Components (includes Nitrobenzene)

FL-0005-NB			1 x 1 mL
2.0 mg/mL each in MeOH			9 comps.
Benzene	Isobutanol	2-Nitropropane	
Carbon disulfide	Methyl ethyl ketone	Pyridine	
2-Ethoxyethanol	Nitrobenzene	Toluene	

Additional Alcohol Solvents

Additional Alcohol Solvents		
FL-OADD	1 x 1 mL	
2.0 mg/mL each in Water		
Ethanol	Isopropanol	Methanol

USP / National Formulary 467 Residual Solvent Chapter

Residual Solvent Standard

Class 1

NF-467-CLASS1	1 x 1 mL
At stated conc. (mg/mL) in DMSO	5 comps.
Benzene	10
Carbon tetrachloride	20
1,2-Dichloroethane	25
1,1-Dichloroethene	40
1,1,1-Trichloroethane	50

Residual Solvent Standard

Class 2 Mix A

NF-467-CLASS2-A	1 x 1 mL
At stated conc. (mg/mL) in DMSO	15 comps.
Acetonitrile	2.1
Chlorobenzene	1.8
Cyclohexane	19.4
<i>cis</i> -1,2-Dichloroethene	4.7
<i>trans</i> -1,2-Dichloroethene	4.7
1,4-Dioxane	1.9
Methanol	15
Methylcyclohexane	5.9
Methylene chloride	3.0
Tetrahydrofuran	3.6
Toluene	4.5
Ethylbenzene	1.8
<i>m</i> -Xylene	6.5
<i>o</i> -Xylene	1.0
<i>p</i> -Xylene	1.5

Residual Solvent Standard

Class 2 Mix B

NF-467-CLASS2-B	1 x 1 mL
At stated conc. (mg/mL) in DMSO	8 comps.
Chloroform	60
1,2-Dimethoxyethane	100
Hexane	290
Methyl butyl ketone	50
Nitromethane	50
Pyridine	200
Tetralin	100
Trichloroethylene	80

Residual Solvent Standard

Class 2 Mix C

NF-467-CLASS2-C	1 x 1 mL
At stated conc. (mg/mL) in DMSO	8 comps.
N,N-Dimethylacetamide	5.5
N,N-Dimethylformamide	4.4
2-Ethoxyethanol	0.8
Ethylene glycol	3.1
Formamide	1.1
2-Methoxyethanol	0.25
N-Methyl-2-pyrrolidone	2.6
Sulfolane	0.8

Technical Note

These standards are ideal for analysis of Residual Solvents and Drug contaminants outlined in USP Chapter 467.

Residual Solvent Standard

Class 3 Mix A

NF-467-CLASS3-A	1 x 1 mL
5.0 mg/mL each in DMF	24 comps.
Acetone	Isobutyl acetate
Anisole	Isopropyl acetate
1-Butanol	Methyl acetate
2-Butanol	3-Methyl-1-butanol
Butyl acetate	Methyl ethyl ketone
MtBE	Methyl isobutyl ketone
Dimethyl sulfoxide	2-Methyl-1-propanol
Ethanol	Pentane
Ethyl acetate	1-Pentanol
Ethyl ether	1-Propanol
Ethyl formate	2-Propanol
Heptane	Propyl acetate

Residual Solvent Standard

Class 3 Mix B

NF-467-CLASS3-B	1 x 1 mL
5.0 mg/mL each in DMF	2 comps.
Acetic acid	Formic acid

USP 467 Cumene Standard

NF-467-CUMENE	1 x 1 mL
5.0 mg/mL in DMF	
Cumene	

Standard Method 6040D Determination of odor contaminants by GC-MS

Compound	Conc.	Each in PT MeOH	Unit	Compound	Conc.	Each in PT MeOH	Unit
(+/-) Geosminand & 2-Methylisoborneol	100 µg/mL each	ODOR-JDWOS	1 mL	b-Cyclocitral	100 µg/mL	ODOR-21S	1 mL
(+/-) Geosmin	2 µg/mL	ODOR-01S	1 mL	Dimethyl disulfide	100 µg/mL	ODOR-22S	1 mL
2-Methylisoborneol	2 µg/mL	ODOR-02S	1 mL	Hexanal	100 µg/mL	ODOR-24S	1 mL
2,4,6-Trichloroanisole	1000 µg/mL	ODOR-15S-10ML	10 mL	Dimethyl trisulfide (DMTS)	100 µg/mL	ODOR-25S	1 mL
2-Isopropyl-3-methoxypyrazine	1000 µg/mL	ODOR-16S-10ML	10 mL	Indole	100 µg/mL	ODOR-26S	1 mL
2-Isobutyl-3-methoxypyrazine	1000 µg/mL	ODOR-17S-10ML	10 mL	2,3,6-Trichloroanisole	100 µg/mL	ODOR-27S	1 mL
<i>cis</i> -3-Hexenyl acetate	100 µg/mL	ODOR-08S	1 mL	2,4,6-Tribromoanisole	100 µg/mL	ODOR-28S	1 mL
<i>cis</i> -3-Hexen-1-ol	100 µg/mL	ODOR-09S	1 mL	Methyl sulfide	100 µg/mL	ODOR-29S	1 mL
2,6-Nonadienal (2,6-ND)	100 µg/mL	ODOR-20S	1 mL	Octanal	100 µg/mL	ODOR-30S	1 mL
				b-Ionone	100 µg/mL	ODOR-31S	1 mL

Volatile Organic Compounds

Refrigerants (CFCs)

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.

Refrigerant Compounds (CFCs)

Compounds in 0.2 mg/mL in PT MeOH, except * 2.0 mg/mL

Compound	CAS No.	Cat. No.	Unit
Bromochlorodifluoromethane	353-59-3	M-REF-X-01	1 mL
Bromotrifluoromethane (Freon #13b1)	75-63-8	M-REF-01	1 mL
1-Chloro-1,1-difluoroethane (Freon #142b)	75-68-3	M-REF-02	1 mL
2-Chloro-1,1,1,2-tetrafluoroethane (Freon #124)	2837-89-0	M-REF-X-02	1 mL
Chlorodifluoromethane (Freon #22)	75-45-6	M-REF-03	1 mL
Chloroethane (Freon #160)	75-00-3	M-REF-04	1 mL
Chloromethane	74-87-3	M-REF-05	1 mL
Chloropentafluoroethane	76-15-3	M-REF-06	1 mL
Chlorotrifluoromethane (Freon #13)	75-72-9	M-REF-07	1 mL
Dichlorodifluoromethane (Freon #12)	75-71-8	M-REF-08	1 mL
Dichlorofluoromethane (Freon #21)	75-43-4	M-REF-09	1 mL
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon #114)	76-14-2	M-REF-10	1 mL
1,2-Dibromotetrafluoroethane	124-73-2	M-REF-X-03	1 mL
1,1-Dichloro-1-fluoroethane (Freon #141B)	1717-00-6	M-REF-X-04	1 mL
2,2-Dichloro-1,1,1-trifluoroethane (Freon #123)	306-83-2	M-REF-X-05	1 mL
1,1-Difluoroethane (Freon 152a)	75-37-6	M-REF-11	1 mL
Pentafluoroethane (Freon #125)	354-33-6	M-REF-X-06	1 mL
1,1,2,2-Tetrafluoroethane (Freon #134)	359-35-3	M-REF-X-07	1 mL
Tetrafluoroethane	811-97-2	M-REF-12	1 mL
Trichlorofluoromethane	75-69-4	M-REF-13	1 mL
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	M-REF-14	1 mL
		M-REF-14-10X *	1 mL
1,1,1-Trichlorotrifluoroethane (Freon 113a)	354-58-5	M-REF-X-09	1 mL
1,1,1-Trifluoroethane (Freon #143A)	420-46-2	M-REF-X-08	1 mL
Trifluoromethane (Freon #23)	75-46-7	M-REF-15	1 mL
Difluoromethane (Freon #32)	75-10-5	M-REF-20	1 mL
Fluoromethane	593-53-3	M-REF-21	1 mL
1,1,2-Trifluoroethane (Freon #143)	430-66-0	M-REF-22	1 mL
Fluoroethylene	75-02-5	M-REF-23	1 mL
Hexafluoroethane	76-16-4	M-REF-24	1 mL
Carbon tetrafluoride (Freon #14)	75-73-0	M-REF-25	1 mL
Octafluoropropane	76-19-7	M-REF-26	1 mL
1H-Heptafluoropropane	2252-84-8	M-REF-28	1 mL
Octafluorocyclobutane	115-25-3	M-REF-29	1 mL



Refrigerant Mix and Set

M-REF 1 x 1 mL
0.2 mg/mL each in MeOH 15 comps. (below components)

M-REF-SET 15 x 1 mL

Each at 0.2 mg/mL in PT MeOH

Freon #	Cat. No.	Unit	Freon #	Cat. No.	Unit
13b1	M-REF-01	1 mL	21	M-REF-09	1 mL
142b	M-REF-02	1 mL	114	M-REF-10	1 mL
22	M-REF-03	1 mL	152a	M-REF-11	1 mL
160	M-REF-04	1 mL	134a	M-REF-12	1 mL
40	M-REF-05	1 mL	11	M-REF-13	1 mL
115	M-REF-06	1 mL	113	M-REF-14	1 mL
13	M-REF-07	1 mL	23	M-REF-15	1 mL
12	M-REF-08	1 mL			

Additional Refrigerant Mix and Set

M-REF-X 1 x 1 mL
0.2 mg/mL each in PT MeOH 8 comps. (not including Freon 113a *)

M-REF-X-R1-SET 9 x 1 mL

Each at 0.2 mg/mL in PT MeOH

Freon #	Cat. No.	Unit	Freon #	Cat. No.	Unit
12B1	M-REF-X-01	1 mL	125	M-REF-X-06	1 mL
124	M-REF-X-02	1 mL	134	M-REF-X-07	1 mL
114B2	M-REF-X-03	1 mL	143a	M-REF-X-08	1 mL
141b	M-REF-X-04	1 mL	113a	M-REF-X-09 *	1 mL
123	M-REF-X-05	1 mL			

Functional Groups



USEPA Functional Method Index

Alcohols	1673, 8015
Aldehydes	554, 556, 1667A, 8315, 8315A
Ketones	554, 556, 1667A, 8315, 8315
Phenols	558, 604, 642, 8040, 8041, 8085
Amines, Anilines & Aminos	D7599
Ethers	601, 8150
Halo Ethers	8111
Haloacetic Acids	515, 522.2, 552A, 552.

Functional Group Content

Alcohols	81
Aldehydes	81-82
Ketones	82
Halobenzoquinones	82
Phenols	83
Alkyl-Phenol Metabolites	84
Amines, Anilines, Aminos	84-85
Ethers	86
Halo Ethers	86
Haloacetic Acids	86

Regional Functional Method Index

Phenols	DIN EN 12673, D7065, D7485, ISO 17070, ISO 17495, ISO 21084
Amines, Anilines & Aminos	DIN 38407-16, ISO 14362, GB 31604.52

A functional group is a group of atoms in a molecule with distinctive chemical properties, regardless of the other atoms in the molecule. The atoms in a functional group are linked to each other and to the rest of the molecule by covalent bonds. Functional groups include alcohols, alkanes, aldehydes, ketones, halobenzoquinones, phenols, amines, anilines, aminos, ethers, halo esters, and haloacetic acids. Individual standards are listed by functional group by application and with their applicable USEPA method and regional methods.

Alcohol Analytes

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

Alcohol Sets

C₁-C₅ Alcohols

PS-111C-R1-SET

NEATs at 1 mL each.

14 ampules

Methanol	2-Methyl-2-propanol
Ethanol	1-Pentanol
1-Propanol	2-Pentanol
2-Propanol	3-Pentanol
1-Butanol	2-Methyl-1-butanol
2-Butanol	3-Methyl-1-butanol
2-Methyl-1-propanol	2-Methyl-2-butanol

nC₆-C₂₂ Alcohols

PS-121C-R1-SET

NEATs at 1 mL each

Solutions are Wt.% in Ethylbenzene, 1 mL each.

14 ampules

1-Hexanol	NEAT	1-Tridecanol	10%
1-Heptanol	NEAT	1-Tetradecanol	10%
1-Octanol	NEAT	1-Pentadecanol	10%
1-Nonanol	NEAT	1-Hexadecanol	10%
1-Decanol	NEAT	1-Octadecanol	5%
1-Undecanol	NEAT	1-Eicosanol	5%
1-Dodecanol	10%	1-Docosanol	5%

C₆-C₈ Alcohols

PS-131C-R1-SET

NEATs at 1 mL each.

14 ampules

1-Hexanol	2-Ethyl-1-butanol
2-Hexanol	3,3-Dimethyl-2-butanol
3-Hexanol	1-Heptanol
2-Methyl-1-pentanol	2-Heptanol
4-Methyl-2-pentanol	2,4-Dimethyl-3-pentanol
2-Methyl-3-pentanol	1-Octanol
3-Methyl-3-pentanol	2-Octanol

Aldehydes and Derivatives

Compound	Conc.	Matrix	Cat. No.	Unit	Compound	Conc.	Matrix	Cat. No.	Unit
Allyl alcohol 107-18-6	1 mg/mL	MeOH	AS-E0475	1 mL	Benzaldehyde-DNPH 1157-84-2	0.1 mg/mL	ACN	M-8315-R-DNPH-04	1 mL
Benzyl alcohol 100-51-6	10 mg/mL	Water	M-8015B-5031-05	1 mL	Butanal 123-72-8	1000 µg/mL	MeOH	M-554-02	1 mL
	100 µg/mL	MeOH	APP-9-021	1 mL	Butanal-DNPH 1527-98-6	1000 µg/mL	MeOH:ACN	M-554-DNPH-02	1 mL
Acetaldehyde 75-07-0	5 mg/mL	MeOH	APP-9-021-50X	1 mL		0.1 mg/mL	ACN	M-8315-R-DNPH-05	1 mL
	1000 µg/mL	Water	M-8315-01	1 mL	Crotonaldehyde 123-73-9	1000 µg/mL	MeOH:ACN	AS-E0479	1 mL
Acetaldehyde-DNPH 1019-57-4	1000 µg/mL	MeOH:ACN	M-554-DNPH-01	1 mL		1000 µg/mL	MeOH	M-554-03	1 mL
	0.1 mg/mL	ACN	M-8315-R-DNPH-01	1 mL		10 mg/mL	Water	M-8015B-5031-03	1 mL
Acrolein 107-02-8	100 µg/mL	MeOH:Water	APP-9-007	1 mL	Crotonaldehyde-DNPH 1527-96-4	1000 µg/mL	MeOH:ACN	M-554-DNPH-08	1 mL
	1000 µg/mL	MeOH:Water	APP-9-007-10X	1 mL		0.1 mg/mL	ACN	M-8315-R-DNPH-06	1 mL
	100 µg/mL	Water	APP-9-007-W	1 mL	Decanal 112-31-2	1000 µg/mL	MeOH	M-554-05	1 mL
	1000 µg/mL	Water	APP-9-007-W-10X	1 mL	Decanal-DNPH 1527-95-3	1000 µg/mL	MeOH:ACN	M-554-DNPH-05	1 mL
	5 mg/mL	p-Dioxane	AS-E0002	1 mL		0.1 mg/mL	ACN	M-8315-R-DNPH-08	1 mL
	10 mg/mL	Water	M-8015B-5031-03	1 mL					
Acrolein-DNPH 888-54-0	0.1 mg/mL	ACN	M-8315-R-DNPH-03	1 mL					
	1 µg/mL	ACN	S-1275-1-03	1 mL					

Aldehydes continued on next page

Functional Groups

Aldehydes and Derivatives

Compound	Conc.	Matrix	Cat. No.	Unit	Compound	Conc.	Matrix	Cat. No.	Unit
2,5-Dimethylbenzaldehyde-DNPH 152477-96-8	0.1 mg/mL	ACN	M-8315-R-DNPH-09	1 mL	Nonanal 124-19-6	1000 µg/mL	MeOH	M-554-09	1 mL
Formaldehyde 50-00-0	1000 µg/mL	MeOH	M-554-06	1 mL	Nonanal-DNPH 2348-19-8	1000 µg/mL	MeOH:ACN	M-554-DNPH-09	1 mL
Formaldehyde-DNPH 1081-15-8	1000 µg/mL	Water	M-8315-02	1 mL	Octanal 124-13-0	0.1 mg/mL	ACN	M-8315-R-DNPH-14	1 mL
	1000 µg/mL	ACN	M-1667A-DNPH-01	1 mL		1000 µg/mL	MeOH	M-554-10	1 mL
	1000 µg/mL	MeOH:ACN	M-554-DNPH-06	1 mL	Octanal-DNPH 1726-77-8	1000 µg/mL	MeOH:ACN	M-554-DNPH-10	1 mL
Formamide 75-12-7	0.1 mg/mL	ACN	M-8315-R-DNPH-10	1 mL	Paraldehyde 123-63-7	1000 µg/mL	MeOH:ACN	M-8315-R-DNPH-15	1 mL
	5000 µg/mL	Water	M-1666A-DI-R-ADD2	1 mL	Pentanal 110-62-3	10 mg/mL	Water	M-8015B-5031-21	1 mL
2-Furaldehyde-DNPH 2074-02-4	1000 µg/mL	ACN	M-1667A-DNPH-02	1 mL	Pentanal-DNPH 2057-84-3	1000 µg/mL	MeOH	M-554-11	1 mL
Heptanal 111-71-7	1000 µg/mL	MeOH	M-554-07	1 mL		1000 µg/mL	MeOH:ACN	M-554-DNPH-11	1 mL
Heptanal-DNPH 2074-05-7	1000 µg/mL	MeOH:ACN	M-554-DNPH-07	1 mL	Propanal 123-38-6	0.1 mg/mL	ACN	M-8315-R-DNPH-16	1 mL
Hexanal 66-25-1	0.1 mg/mL	ACN	M-8315-R-DNPH-11	1 mL		1000 µg/mL	MeOH	M-554-12	1 mL
	1000 µg/mL	MeOH	M-554-08	1 mL	Propanal-DNPH 725-00-8	1000 µg/mL	MeOH:ACN	M-554-DNPH-12	1 mL
Hexanal-DNPH 1527-97-5	1000 µg/mL	MeOH:ACN	M-554-DNPH-08	1 mL		0.1 mg/mL	ACN	M-8315-R-DNPH-17	1 mL
	0.1 mg/mL	ACN	M-8315-R-DNPH-12	1 mL	m-Tolualdehyde-DNPH 2880-05-9	0.1 mg/mL	ACN	M-8315-R-DNPH-18	1 mL
Isobutyraldehyde 78-84-2	1000 µg/mL	ACN	M-1667A-03	1 mL	o-Tolualdehyde-DNPH 1773-44-0	0.1 mg/mL	ACN	M-8315-R-DNPH-19	1 mL
Isobutyraldehyde-DNPH 2057-82-1	1 mg/mL	ACN	M-1667A-DNPH-03	1 mL	p-Tolualdehyde-DNPH 2571-00-8	0.1 mg/mL	ACN	M-8315-R-DNPH-20	1 mL
Isovaleraldehyde-DNPH 2256-01-1	0.1 mg/mL	ACN	M-8315-R-DNPH-13	1 mL					

Ketones and Derivatives

Compound	Conc.	Matrix	Cat. No.	Unit	Compound	Conc.	Matrix	Cat. No.	Unit
Acetone 67-64-1	100 µg/mL	MeOH	APP-9-003	1 mL	1,1-Dichloro-2-propanone 513-88-2	5 mg/mL	Acetone	M-551B-6	1 mL
	2 mg/mL	MeOH	APP-9-003-20X	1 mL	2-Hexanone 591-78-6	100 µg/mL	MeOH	APP-9-118	1 mL
	5 mg/mL	MeOH	AS-E0284	1 mL		2 mg/mL	MeOH	APP-9-118-20X	1 mL
	10 mg/mL	Water	M-8015B-5031-01	1 mL	Isophorone 78-59-1	100 µg/mL	MeOH	APP-9-122	1 mL
Acetone-DNPH 1567-89-1	0.1 mg/mL	ACN	M-8315-R2-DNPH-02	1 mL		1000 µg/mL	MeOH	APP-9-122-10X	1 mL
Acetophenone 98-86-2	100 µg/mL	CH ₂ Cl ₂	APP-9-004	1 mL		1000 µg/mL	MeOH	AS-E0052	1 mL
	2 mg/mL	CH ₂ Cl ₂	APP-9-004-20X	1 mL	Methyl ethyl ketone 78-93-3	100 µg/mL	MeOH	APP-9-129	1 mL
	5 mg/mL	MeOH	AS-E0411	1 mL		1000 µg/mL	MeOH	APP-9-129-10X	1 mL
2-Chloroacetophenone 532-27-4	100 µg/mL	Hexane	IRT-001S	1 mL		1000 µg/mL	MeOH	APP-9-129-20X	1 mL
2'-Chloroacetophenone 2142-68-9	100 µg/mL	Hexane	IRT-002S	1 mL		5 mg/mL	MeOH	AS-E0311	1 mL
3'-Chloroacetophenone 99-02-5	100 µg/mL	Hexane	IRT-003S	1 mL		10 mg/mL	Water	M-8015B-5031-18	1 mL
4'-Chloroacetophenone 99-91-2	100 µg/mL	Hexane	IRT-004S	1 mL	4-Methyl-2-pentanone 108-10-1 (Methyl isobutyl ketone)	10 mg/mL	Water	M-8015B-5031-19	1 mL
Cyclohexanone 108-94-1	1000 µg/mL	MeOH	M-554-04	1 mL		100 µg/mL	MeOH	APP-9-135	1 mL
Cyclohexanone-DNPH 1589-62-4	500 µg/mL	ACN	AE-00046	1 mL		2 mg/mL	MeOH	APP-9-135-20X	1 mL
	1000 µg/mL	MeOH:ACN	M-554-DNPH-04	1 mL	2-Pentanone 107-87-9	5 mg/mL	MeOH	AS-E0349	1 mL
	0.1 mg/mL	ACN	M-8315-R-DNPH-07	1 mL	1,1,1-Trichloro-2-propanone 918-00-3 (1,1,1-Trichloroacetone)	10 mg/mL	Water	M-8015B-5031-22	1 mL
					2',4',5'-Trifluoroacetophenone 129322-83-4	1000 µg/mL	Acetone	AS-E1181	1 mL
						5 mg/mL	Acetone	M-551B-8	1 mL
						20 µg/mL	ACN	M-556-SS	1 mL
						2 mg/mL	ACN	M-556-SS-100X	1 mL

Halobenzoquinones (disinfectant by-products)

Halobenzoquinones (HBQs) are disinfection by-products formed by reactions between disinfectants and organic matter in water. HBQs likely exhibit carcinogenic properties due to their structural similarities with benzoquinone and related compounds.

Each at 10 µg/mL in ACN				Each at 10 µg/mL in ACN			
Compound	CAS	Cat. No.	Unit	Compound	CAS	Cat. No.	Unit
2,3-Dibromo-5,6-dimethyl-1,4-benzoquinone	38969-08-3	HBQ-001S	1 mL	2,3,5,6-Tetrabromo-1,4-benzoquinone	488-48-2	HBQ-004S	1 mL
2,6-Dichloro-1,4-benzoquinone	697-91-6	HBQ-002S	1 mL	2,6-Dibromo-3,5-dimethyl-1,4-benzoquinone	87405-27-4	HBQ-006S	1 mL
2,5-Dibromo-1,4-benzoquinone	1633-14-3	HBQ-003S	1 mL	2,6-Dibromo-3-chloro-5-methyl-1,4-benzoquinone		HBQ-007S	1 mL

Functional Groups

Phenols

Compound	Conc.	Matrix	Cat. No.	Unit	Compound	Conc.	Matrix	Cat. No.	Unit
Bisphenol A (BPA) 80-05-7	1000 µg/mL	MeOH	M-1626-01S	1 mL	2-Methyl-4,6-dinitrophenol 534-52-1	1000 µg/mL	MeOH	M-8040-12	1 mL
4-Chloro-3-cresol 59-50-7 (4-Chloro-3-methylphenol)	1000 µg/mL	MeOH	M-8040-01	1 mL	2-Nitrophenol (o-Nitrophenol) 88-75-5	NEAT		R-051N	100 mg
2-Chlorophenol 95-57-8	100 µg/mL	MeOH	APP-9-041	1 mL		100 µg/mL	Toluene	R-051S	1 mL
	100 µg/mL	NEAT	A-013	100 mg		100 µg/mL	MeOH	APP-9-144	1 mL
	100 µg/mL	MeOH	APP-9-046	1 mL		1000 µg/mL	MeOH	M-8040-13	1 mL
	1 mg/mL	MeOH	M-8040-02	1 mL		5 mg/mL	MeOH	APP-9-144-50X	1 mL
	5 mg/mL	MeOH	APP-9-046-50X	1 mL	3-Nitrophenol (m-Nitrophenol) 554-84-7	5 mg/mL	MeOH	AS-E0662	1 mL
	2 mg/mL	CH ₂ Cl ₂	APP-9-046-D-20X	1 mL	4-Nitrophenol (p-Nitrophenol) 100-02-7	NEAT		R-052N	100 mg
	5 mg/mL	MeOH	AS-E0022	1 mL		100 µg/mL	Toluene	R-052S	1 mL
2-Chlorophenol-d₄ 93951-73-6	0.2 mg/mL	CH ₂ Cl ₂	M-625-20	1 mL		100 µg/mL	MeOH	APP-9-145	1 mL
3-Chlorophenol 108-43-0	NEAT		A-014	100 mg		1 mg/mL	MeOH	M-8040-14	1 mL
	5 mg/mL	MeOH	AS-E0182	1 mL		5 mg/mL	MeOH	APP-9-145-50X	1 mL
4-Chlorophenol 106-48-9	NEAT		A-015	100 mg	Pentachlorophenol 87-86-5	NEAT		A-031	100 mg
	5 mg/mL	MeOH	AS-E0183	1 mL		25 µg/mL	CH ₂ Cl ₂	M-625C-2	1 mL
m-Cresol 108-39-4	100 µg/mL	CH ₂ Cl ₂	APP-9-050	1 mL		0.25 mg/mL	CH ₂ Cl ₂	M-625C-2-10X	1 mL
	1000 µg/mL	CH ₂ Cl ₂	APP-9-050-10X	1 mL		100 µg/mL	MeOH	APP-9-176	1 mL
	1000 µg/mL	MeOH	M-8040-03	1 mL		1000 µg/mL	MeOH	APP-9-176-10X	1 mL
	5 mg/mL	MeOH	AS-E0251	1 mL		2 mg/mL	CH ₂ Cl ₂	APP-9-176-D-20X	1 mL
o-Cresol 95-48-7	100 µg/mL	CH ₂ Cl ₂	APP-9-051	1 mL		5 mg/mL	MeOH	AS-E0062	1 mL
	1000 µg/mL	MeOH	M-8040-04	1 mL	Pentachlorophenol-¹³C₆ 85380-74-1	0.1 mg/mL	Acetone	AS-E0191	1 mL
	2 mg/mL	CH ₂ Cl ₂	APP-9-051-20X	1 mL	Pentafluorophenol 771-61-9	0.2 mg/mL	CH ₂ Cl ₂	M-625-17	1 mL
	5 mg/mL	MeOH	AS-E0250	1 mL	Phenol 108-95-2	100 µg/mL	CH ₂ Cl ₂	APP-9-179	1 mL
p-Cresol 106-44-5	100 µg/mL	CH ₂ Cl ₂	APP-9-052	1 mL		5 mg/mL	MeOH	AS-E0063	1 mL
	1000 µg/mL	MeOH	M-8040-05	1 mL	Phenol-d₅ 4165-62-2	0.1 mg/mL	Acetone	AS-E0189	1 mL
	2 mg/mL	CH ₂ Cl ₂	APP-9-052-20X	1 mL		0.2 mg/mL	CH ₂ Cl ₂	M-625-18	1 mL
	5 mg/mL	MeOH	AS-E0252	1 mL		2 mg/mL	CH ₂ Cl ₂	M-625-18-10X	1 mL
2-Cyclohexyl-4,6-dinitrophenol 131-89-5	1000 µg/mL	MeOH	M-8040-06	1 mL		NEAT		A-028	5 mg
2,4-Dibromophenol 615-58-7	1.6 µg/mL	IPA	M-8041-SS	1 mL	2,3,4,5-Tetrachlorophenol 4901-51-3				
	16 µg/mL	IPA	M-8041-SS-10X	1 mL	2,3,4,6-Tetrachlorophenol 58-90-2	NEAT		A-029-10MG	10 mg
	160 µg/mL	IPA	M-8041-SS-100X	1 mL		100 µg/mL	MeOH	APP-9-195	1 mL
	1 mg/mL	IPA	M-8041-SS-625X	1 mL		1000 µg/mL	MeOH	M-8040-17	1 mL
2,3-Dichlorophenol 576-24-9	NEAT		A-016	100 mg	2,3,5,6-Tetrachlorophenol 935-95-5	NEAT		A-030	100 mg
2,4-Dichlorophenol 120-83-2	NEAT		A-017	100 mg	2,4,6-Tribromophenol 118-79-6	20 µg/mL	MtBE	M-8085-HERB-SS	1 mL
	100 µg/mL	MeOH	APP-9-075	1 mL		0.2 mg/mL	CH ₂ Cl ₂	M-625-19	1 mL
	1000 µg/mL	MeOH	M-8040-07	1 mL		0.2 mg/mL	MeOH	M-604-SS	1 mL
	1000 µg/mL	MtBE	M-552A-R-06	1 mL		2 mg/mL	MeOH	CLP-AS-3	1 mL
	5 mg/mL	MeOH	APP-9-075-50X	1 mL		6 mg/mL	MeOH	CLP-LC-SS-2	1 mL
2,5-Dichlorophenol 583-78-8	NEAT		A-018	100 mg	2,3,4-Trichlorophenol 15950-66-0	NEAT		A-022	100 mg
2,6-Dichlorophenol 87-65-0	NEAT		A-019	100 mg	2,3,5-Trichlorophenol 933-78-8	NEAT		A-023	100 mg
	100 µg/mL	CH ₂ Cl ₂	APP-9-076	1 mL		5 mg/mL	MeOH	AS-E0222	1 mL
	1000 µg/mL	MeOH	M-8040-08	1 mL	2,3,6-Trichlorophenol 933-75-5	NEAT		A-024	100 mg
	5 mg/mL	MeOH	APP-9-076-M-50X	1 mL		1 mg/mL	MeOH	AS-E0181	1 mL
3,4-Dichlorophenol 95-77-2	NEAT		A-020	100 mg	2,4,5-Trichlorophenol 95-95-4	NEAT		A-025	100 mg
3,5-Dichlorophenol 591-35-5	NEAT		A-021	100 mg		0.1 mg/mL	Acetone	CLP-FC	1 mL
2,4-Dimethylphenol 105-67-9	100 µg/mL	MeOH	APP-9-087	1 mL		100 µg/mL	MeOH	APP-9-206	1 mL
	1000 µg/mL	MeOH	M-8040-09	1 mL		1000 µg/mL	MeOH	M-8040-18	1 mL
	5 mg/mL	MeOH	APP-9-087-50X	1 mL		5 mg/mL	MeOH	AS-E0179	1 mL
2,4-Dimethylphenol-3,5,6-d₃ 93951-75-8	0.1 mg/mL	Acetone	AS-E0190	1 mL	2,4,6-Trichlorophenol 88-06-2	NEAT		A-026	100 mg
4,6-Dinitro-o-cresol 534-52-1	NEAT		R-057N	100 mg		0.1 µg/mL	Acetone	M-1618-SE	1 mL
	100 µg/mL	Toluene	R-057S	1 mL		0.1 mg/mL	Acetone	M-1600-SPE	1 mL
	1000 µg/mL	MeOH	APP-9-090-10X	1 mL		100 µg/mL	MeOH	APP-9-207	1 mL
	5 mg/mL	MeOH	AS-E0058	1 mL		5 mg/mL	MeOH	APP-9-207-50X	1 mL
2,4-Dinitrophenol 51-28-5	100 µg/mL	MeOH	APP-9-091	1 mL		1000 µg/mL	MtBE	M-552A-7	1 mL
	1000 µg/mL	MeOH	M-8040-10	1 mL		1000 µg/mL	MeOH	M-8040-19	1 mL
	5 mg/mL	MeOH	APP-9-091-50X	1 mL	3,4,5-Trichlorophenol 609-19-8	NEAT		A-027	10 mg
2-Fluorophenol 367-12-4	0.1 mg/mL	Acetone	AS-E0193	1 mL		1 mg/mL	MeOH	M-1653-IS	1 mL
	2 mg/mL	MeOH	CLP-AS-1	1 mL		1 mg/mL	Acetone	M-1653-IS-R	1 mL
	0.2 mg/mL	CH ₂ Cl ₂	M-625-16	1 mL					
	2 mg/mL	CH ₂ Cl ₂	M-625-16-10X	1 mL					

Functional Groups

Alkyl-Phenol Metabolites

Compound	Each at 100 µg/mL in MeOH	CAS No.	Cat. No.	Unit	Compound	Each at 100 µg/mL in MeOH	CAS No.	Cat. No.	Unit
Nonylphenol		84852-15-3	PEO-002S	1 mL	4-tert-Octylphenol monoethoxylate		2315-67-5	PEO-010S	1 mL
Nonylphenol monoethoxylate (tech)		27986-36-3	PEO-005S	1 mL	4-tert-Octylphenol diethoxylate		2315-61-9	PEO-011S	1 mL
Nonylphenol diethoxylate (tech)			PEO-006S	1 mL	4-tert-Octylphenol triethoxylate		2315-62-0	PEO-013S	1 mL
Nonylphenol triethoxylate (tech)		51437-95-7	PEO-008S	1 mL	4-n-Octylphenol		1806-26-4	PEO-001S	1 mL
Nonylphenoxy acetic acid		3115-49-9	PEO-009S	1 mL	4-n-Octylphenol monoethoxylate		51437-89-9	PEO-016S	1 mL
Nonylphenoxyethoxyacetic acid		106807-78-7	PEO-012S	1 mL	4-n-Octylphenol diethoxylate		51437-90-2	PEO-017S	1 mL
4-n-Nonylphenol		104-40-5	PEO-004S	1 mL	4-n-Octylphenol triethoxylate		51437-91-3	PEO-018S	1 mL
4-n-Nonylphenol monoethoxylate		104-35-8	PEO-007S	1 mL	2-Bromo-4-tert-octylphenol diethoxylate (1000 µg/mL)			PEO-019S	1 mL
4-n-Nonylphenol diethoxylate		20427-84-3	PEO-014S	1 mL	2-Bromo-4-tert-octylphenol (ISTD)		57835-35-5	PEO-015S-IS	5 mL
4-tert-Nonylphenol diethoxylate		156609-10-8	PEO-020S	1 mL	2-Bromo-4-tert-octylphenol diethoxylate (ISTD)			PEO-IS	1 mL
4-tert-Octylphenol		140-66-9	PEO-003S	1 mL	1000 µg/mL in ACN:MeOH (90:10)				

Amines, Anilines and other Aminos

Compound	Conc.	Matrix	Cat. No.	Unit	Compound	Conc.	Matrix	Cat. No.	Unit		
2-Amino-4-nitrotoluene 99-55-8	100 µg/mL	ACN	RAC-03	1 mL	2,4-Diaminoanisole sulfate hydrate 123333-56-2	100 µg/mL	Pyridine	RAC-08	1 mL		
	1000 µg/mL	ACN	RAC-03-10X	1 mL		1000 µg/mL	Pyridine	RAC-08-10X	1 mL		
p-Aminoazobenzene 60-09-3	100 µg/mL	ACN	RAC-21	1 mL	3,3'-Diaminobenzidine † 91-95-2		NEAT	R-074N	50 mg		
	1000 µg/mL	ACN	RAC-21-10X	1 mL		100 µg/mL	Toluene	R-074S	1 mL		
o-Aminoazotoluene 97-56-3	100 µg/mL	ACN	RAC-01	1 mL	4,4'-Diaminodiphenylmethane 101-77-9 (4,4'-Methylenedianiline)		NEAT	R-077N	100 mg		
	1 mg/mL	ACN	RAC-01-10X	1 mL		100 µg/mL	Toluene	R-077S	1 mL		
2-Aminobiphenyl 90-41-5		NEAT	R-062N	10 mg		100 µg/mL	ACN	RAC-09	1 mL		
	100 µg/mL	Toluene	R-062S	1 mL		1000 µg/mL	ACN	RAC-09-10X	1 mL		
	100 µg/mL	ACN	RAC-22	1 mL			NEAT	R-078N	100 mg		
	1000 µg/mL	ACN	RAC-22-10X	1 mL		100 µg/mL	Toluene	R-078S	1 mL		
4-Aminobiphenyl 92-67-1		NEAT	R-063N	10 mg	2,4-Diaminotoluene 95-80-7	100 µg/mL	ACN	RAC-10	1 mL		
	100 µg/mL	Toluene	R-063S	1 mL		1000 µg/mL	ACN	RAC-10-10X	1 mL		
	100 µg/mL	CH ₂ Cl ₂	APP-9-011	1 mL		1000 µg/mL	MeOH	AS-E0932	1 mL		
	100 µg/mL	ACN	RAC-02	1 mL			NEAT	L-016N	100 mg		
	1000 µg/mL	ACN	RAC-02-10X	1 mL							
		1000 µg/mL	MeOH	AS-E0578	1 mL	2,6-Dibromo-4-nitroaniline 827-94-1					
		1000 µg/mL	MeOH	L-001N	100 mg		2,6-Dichloro-4-nitroaniline 99-30-9		NEAT	L-014N	100 mg
Aniline 62-53-3	100 µg/mL	MeOH	APP-9-012	1 mL	3,4-Dichloroaniline 95-76-1				NEAT	L-005N	100 mg
	1000 µg/mL	MeOH	APP-9-012-10X	1 mL					NEAT	R-075N	50 mg
	5 mg/mL	MeOH	AS-E0542	1 mL				100 µg/mL	Toluene	R-075S	1 mL
Aniline-d ₅ 4165-61-1	0.2 mg/mL	CH ₂ Cl ₂	M-625-01	1 mL		3,3'-Dichlorobenzidine † 91-94-1		100 µg/mL	MeOH	APP-9-067	1 mL
	2 mg/mL	CH ₂ Cl ₂	M-625-01-10X	1 mL			1000 µg/mL	MeOH	AS-E0026	1 mL	
o-Anisidine 90-04-0	100 µg/mL	ACN	RAC-23	1 mL	100 µg/mL		ACN	RAC-11	1 mL		
	1000 µg/mL	ACN	RAC-23-10X	1 mL	1000 µg/mL		ACN	RAC-11-10X	1 mL		
Benzidine † 92-87-5		NEAT	R-073N	100 mg	2 mg/mL		MeOH	Z-014F-2	1 mL		
	100 µg/mL	Toluene	R-073S	1 mL	3,3'-Dimethoxybenzidine † 119-90-4			NEAT	R-076N	50 mg	
	50 µg/mL	CH ₂ Cl ₂	M-625C-1	1 mL			100 µg/mL	Toluene	R-076S	1 mL	
	2 mg/mL	CH ₂ Cl ₂	M-625C-1-40X	1 mL		100 µg/mL	ACN	RAC-12	1 mL		
	100 µg/mL	ACN	RAC-04	1 mL		1000 µg/mL	ACN	RAC-12-10X	1 mL		
1000 µg/mL	ACN	RAC-04-10X	1 mL	100 µg/mL		ACN	RAC-14	1 mL			
Benzidine (as dihydrochloride) † 92-87-5	1000 µg/mL	MeOH	AS-E0005	1 mL	100 µg/mL	CH ₂ Cl ₂	APP-9-083	1 mL			
2-Bromo-4,6-dinitroaniline 1817-73-8		NEAT	L-017N	100 mg	1000 µg/mL	ACN	RAC-14-10X	1 mL			
4-Bromoaniline 106-40-1		NEAT	L-007N	100 mg	4-Dimethylaminoazobenzene 60-11-7		NEAT	R-079N	10 mg		
4-Chloro-2-nitroaniline 89-63-4		NEAT	L-013N	100 mg	100 µg/mL	Toluene	R-079S	1 mL			
2-Chloro-4,6-dinitroaniline 3531-19-9		NEAT	L-015N	100 mg	2,6-Dimethylaniline 87-62-7		NEAT	L-018N	100 mg		
2-Chloro-4-nitroaniline 121-87-9		NEAT	L-012N	100 mg	3,3'-Dimethylbenzidine † 119-93-7	100 µg/mL	ACN	L-018S-CN	1 mL		
2-Chloroaniline 95-51-2		NEAT	L-002N	100 mg		100 µg/mL	CH ₂ Cl ₂	APP-9-085	1 mL		
3-Chloroaniline 108-42-9		NEAT	L-003N	100 mg		100 µg/mL	ACN	RAC-13	1 mL		
4-Chloroaniline 106-47-8		NEAT	L-004N	100 mg	1000 µg/mL	ACN	RAC-13-10X	1 mL			
	100 µg/mL	ACN	RAC-05	1 mL	2 mg/mL	CH ₂ Cl ₂	APP-9-085-20X	1 mL			
	1000 µg/mL	ACN	RAC-05-10X	1 mL	a,a-Dimethylphenethylamine 122-09-8	100 µg/mL	CH ₂ Cl ₂	APP-9-086	1 mL		
	100 µg/mL	MeOH	APP-9-038	1 mL	2,4-Dinitroaniline 97-02-9	2 mg/mL	CH ₂ Cl ₂	APP-9-086-20X	1 mL		
	5 mg/mL	MeOH	AS-E0305	1 mL			NEAT	L-011N	100 mg		
3-Chloro-o-toluidine 87-60-5	100 µg/mL	ACN	RAC-24	1 mL	Diphenylamine 122-39-4		NEAT	L-125N	100 mg		
	1000 µg/mL	ACN	RAC-24-10X	1 mL		100 µg/mL	CH ₂ Cl ₂	APP-9-097	1 mL		
4-Chloro-o-toluidine 95-69-2	100 µg/mL	ACN	RAC-06	1 mL		1000 µg/mL	Acetone	APP-9-097-A-10X	1 mL		
	1000 µg/mL	ACN	RAC-06-10X	1 mL		1000 µg/mL	MeOH	M-620	1 mL		
p-Cresidine 120-71-8	100 µg/mL	ACN	RAC-07	1 mL		5 mg/mL	MeOH	AS-E0263	1 mL		
	1000 µg/mL	ACN	RAC-07-10X	1 mL	Ethylenediamine 107-15-3	1000 µg/mL	MeOH	AS-E0358	1 mL		
					4-Fluoroaniline 371-40-4	0.2 mg/mL	CH ₂ Cl ₂	M-625-08	1 mL		
					2-Methyl-4-nitroaniline 99-52-5	2 mg/mL	CH ₂ Cl ₂	M-625-08-10X	1 mL		
						100 µg/mL	ACN	M-8095-SS-02	1 mL		

† Subject to oxidation

Amines, Anilines, and Aminos continued on next page

Functional Groups

Amines, Anilines and other Aminos (continued)

Compound	Conc.	Matrix	Cat. No.	Unit	Compound	Conc.	Matrix	Cat. No.	Unit
Methylamine 74-89-5	2500 µg/mL	Water	M-1666A-DI-R-ADD1	1 mL	N-Nitrosodiphenylamine 86-30-6	100 µg/mL	CH ₂ Cl ₂	APP-9-150	1 mL
4,4'-Methylenebis(2-chloroaniline) 101-14-4		NEAT	R-080N	50 mg		1000 µg/mL	MeOH	APP-9-150-M-10X	1 mL
	100 µg/mL	Toluene	R-080S	1 mL		5 mg/mL	MeOH	AS-E0060	1 mL
	100 µg/mL	ACN	RAC-15	1 mL	N-Nitrosomethylethylamine 10595-95-6 (N-Nitroso-N-methyl ethylamine)	100 µg/mL	CH ₂ Cl ₂	APP-9-152	1 mL
	1000 µg/mL	ACN	RAC-15-10X	1 mL		1 mg/mL	MeOH	AS-E0974	1 mL
	5 mg/mL	MeOH	AS-E0322	1 mL	1-Nitrosopiperidine 100-75-4	5 mg/mL	MeOH	AS-E0458	1 mL
2-Naphthylamine 91-59-8	100 µg/mL	ACN	RAC-16	1 mL	4,4'-Oxydianiline 101-80-4	100 µg/mL	ACN	RAC-17	1 mL
	100 µg/mL	CH ₂ Cl ₂	APP-9-139	1 mL		1 mg/mL	ACN	RAC-17-10X	1 mL
	1000 µg/mL	ACN	RAC-16-10X	1 mL	p-Phenylenediamine 106-50-3	100 µg/mL	MeOH	APP-9-180	1 mL
	1000 µg/mL	MeOH	AS-E0565	1 mL		1000 µg/mL	ACN	AS-E0275	1 mL
2-Nitroaniline 88-74-4		NEAT	R-054N	100 mg		2 mg/mL	MeOH	APP-9-180-20X	1 mL
	100 µg/mL	Toluene	R-054S	1 mL	1-Propanamine 107-10-8	1000 µg/mL	MeOH	AS-E0657	1 mL
	100 µg/mL	CH ₂ Cl ₂	APP-9-140	1 mL	Pyridine 110-86-1	100 µg/mL	MeOH	APP-9-186-M	1 mL
	5 mg/mL	MeOH	AS-E0324	1 mL		2 mg/mL	MeOH	APP-9-186-M-20X	1 mL
3-Nitroaniline 99-09-2		NEAT	R-056N	100 mg		5 mg/mL	MeOH	AS-E0271	1 mL
	100 µg/mL	Toluene	R-055S	1 mL		10 mg/mL	Water	M-8015B-5031-26	1 mL
	100 µg/mL	CH ₂ Cl ₂	APP-9-141	1 mL	Pyridine-d₅ 7291-22-7	0.2 mg/mL	CH ₂ Cl ₂	M-625-15	1 mL
4-Nitroaniline 100-01-6		NEAT	R-056N	100 mg		2 mg/mL	CH ₂ Cl ₂	M-625-15-10X	1 mL
	100 µg/mL	Toluene	R-056S	1 mL	3,3',5,5'-Tetramethylbenzidine 54827-17-7	1000 µg/mL	ACN	RAC-IS	1 mL
	100 µg/mL	CH ₂ Cl ₂	APP-9-142	1 mL		1000 µg/mL	Ethyl acetate	RAC-IS-EA	1 mL
	5 mg/mL	MeOH	AS-E0342	1 mL	4,4'-Thiodianiline 139-65-1	100 µg/mL	ACN	RAC-18	1 mL
5-Nitro-o-toluidine 99-55-8	100 µg/mL	CH ₂ Cl ₂	APP-9-156	1 mL		1000 µg/mL	ACN	RAC-18-10X	1 mL
	5 mg/mL	MeOH	AS-E0344	1 mL	o-Toluidine 95-53-4	100 µg/mL	MeOH	APP-9-199	1 mL
N-Nitrosodiethylamine 55-18-5	100 µg/mL	CH ₂ Cl ₂	APP-9-148	1 mL		2 mg/mL	MeOH	AS-E0503	1 mL
	2 mg/mL	CH ₂ Cl ₂	APP-9-148-20X	1 mL		100 µg/mL	ACN	RAC-19	1 mL
	5 mg/mL	MeOH	AS-E0334	1 mL		1000 µg/mL	ACN	RAC-19-10X	1 mL
N-Nitrosodimethylamine 62-75-9	100 µg/mL	CH ₂ Cl ₂	APP-9-149	1 mL		10 mg/mL	Water	M-8015B-5031-27	1 mL
	1000 µg/mL	MeOH	APP-9-149-M-10X	1 mL			NEAT	L-006N	100 mg
	5 mg/mL	MeOH	AS-E0059	1 mL	2,4,5-Trichloroaniline 636-30-6				
N-Nitrosodi-n-butylamine 924-16-3	100 µg/mL	CH ₂ Cl ₂	APP-9-147	1 mL		100 µg/mL	ACN	RAC-20	1 mL
	2 mg/mL	CH ₂ Cl ₂	APP-9-147-20X	1 mL	2,4,5-Trimethylaniline 137-17-7	1000 µg/mL	ACN	RAC-20-10X	1 mL
	0.5 mg/mL	Water	M-8015B-5031-20	1 mL					
N-Nitrosodi-n-propylamine 621-64-7	100 µg/mL	CH ₂ Cl ₂	APP-9-151	1 mL					
	2.5 mg/mL	CH ₂ Cl ₂	APP-9-151-25X	1 mL					
	5 mg/mL	MeOH	AS-E0061	1 mL					

Carcinogenic Aryl Amine Mix and D7599 Ethanolamines Analysis

Carcinogenic Aryl Amine Mix

AE-00049-R1-10X-10ML

10 µg/mL each in Ethyl acetate

o-Aminoazotoluene	2,4-Diaminotoluene
4-Aminobiphenyl	3,3'-Dichlorobenzidine †
2-Amino-4-nitrotoluene	3,3'-Dimethoxybenzidine †
Benzidine †	3,3'-Dimethylbenzidine †
4-Chloroaniline	3,3'-Dimethyl-4,4'-diaminodiphenylmethane
4-Chloro-o-toluidine	4,4'-Methylenebis(2-chloroaniline)
p-Cresidine	2-Naphthylamine
4,4'-Diaminodiphenylmethane	4,4'-Oxydianiline

M-8330-ADD-58-CN

100 µg/mL each in Pyridine

2,4-Diaminoanisole

1 x 1 mL

1 x 10 mL

23 comps.

4,4'-Thiodianiline
o-Toluidine
2,4,5-Trimethylaniline
p-Aminoazobenzene
2-Aminobiphenyl
o-Anisidine
3-Chloro-o-toluidine

Ethanolamine Standard

D-7599

50 µg/mL each in MeOH

Diethanolamine
Triethanolamine
N-Methyldiethanolamine
N-Ethyldiethanolamine
Diethanolamine-d ₈

1 x 1 mL

5 comps.

Ethanolamine Surrogate Standard

D-7599-SS

200 µg/mL in MeOH

Diethanolamine-d ₈

1 x 1 mL

† Subject to oxidation

Functional Groups

Ethers

Compound	Conc.	Matrix	Cat. No.	Unit	Compound	Conc.	Matrix	Cat. No.	Unit
bis(2-Chloroethyl)ether 111-44-4	100 µg/mL	MeOH	APP-9-027	1 mL	Dinoseb methyl ether 6099-79-2		NEAT	P-230N	10 mg
	4 mg/mL	MeOH	APP-9-027-40X	1 mL		100 µg/mL	MeOH	P-230S	1 mL
	5 mg/mL	MeOH	AS-E0016	1 mL		0.2 mg/mL	Hexane	M-8150-08	1 mL
2-Chloroethylvinyl ether 110-75-8	2 mg/mL	MeOH	M-601C-10X	1 mL	p-Dioxane (1,4-Dioxane) 123-91-1	100 µg/mL	MeOH	APP-9-096	1 mL
2,4-Dichlorophenyl- 3'-methyl-4'-nitrophenyl ether 42488-57-3	1000 µg/mL	Isooctane	E-020S	1 mL		1 mg/mL	MeOH	APP-9-096-10X	1 mL
						10 mg/mL	MeOH	AS-E0480	1 mL
						10 mg/mL	Water	M-8015B-5031-10	1 mL
Diethyl ether 60-29-7	10 mg/mL	Water	M-8015B-5031-09	1 mL		MtBE	0.2 mg/mL	MeOH	S-078
					1634-04-4	2 mg/mL	MeOH	S-078-10X	1 mL
					TAME	0.2 mg/mL	MeOH	S-1019	1 mL
					994-05-8				

Haloethers

Compound	Each in 1000 µg/mL in Isooctane	Cat. No.	Unit	Compound	Each in 1000 µg/mL in Isooctane	Cat. No.	Unit
2-Chlorophenyl-4'-nitrophenyl ether 2091-61-4		E-005S	1 mL	2,4-Dichlorophenyl-4'-nitrophenyl ether 1836-75-5		E-009S	1 mL
3-Chlorophenyl-4'-nitrophenyl ether 2303-23-3		E-006S	1 mL	3,4-Dichlorophenyl-4'-nitrophenyl ether 22532-80-5		E-013S	1 mL
4-Chlorophenyl-4'-nitrophenyl ether 1836-74-4		E-007S	1 mL	4-Nitrophenyl phenyl ether 142022-58-0		E-003S	1 mL
2,4-Dichlorophenyl-3'-methyl-4'-nitrophenyl ether 42488-57-3		E-020S	1 mL	2,3,5-Trichlorophenyl-4'-nitrophenyl ether 142022-59-1		E-015S	1 mL
2,4-Dibromophenyl-4'-nitrophenyl ether 2671-93-4		E-004S	1 mL	2,3,6-Trichlorophenyl-4'-nitrophenyl ether 142022-58-0		E-016S	1 mL
2,3-Dichlorophenyl-4'-nitrophenyl ether 82239-20-1		E-008S	1 mL	2,3,4-Trichlorophenyl-4'-nitrophenyl ether 142022-61-5		E-014S	1 mL
2,5-Dichlorophenyl-4'-nitrophenyl ether 39145-48-7		E-010S	1 mL	2,4,5-Trichlorophenyl-4'-nitrophenyl ether 22532-68-9		E-017S	1 mL
2,6-Dichlorophenyl-4'-nitrophenyl ether 2093-28-9		E-011S	1 mL	2,4,6-Trichlorophenyl-4'-nitrophenyl ether 1836-77-7		E-018S	1 mL
3,5-Dichlorophenyl-4'-nitrophenyl ether 21105-77-1		E-012S	1 mL	3,4,5-Trichlorophenyl-4'-nitrophenyl ether		E-019S	1 mL

Haloacetic Acids and Esters

Compound	Conc.	Matrix	Cat. No.	Unit	Compound	Conc.	Matrix	Cat. No.	Unit
Bromoacetic acid 79-08-3 (Monobromoacetic acid)	40 µg/mL	MtBE	M-552.2A-07	1 mL	Methyl bromodichloroacetate 20428-76-6	40 µg/mL	MtBE	M-552.2-04	1 mL
	1000 µg/mL	MtBE	M-552A-1	1 mL		60 µg/mL	MtBE	M-552.2-05	1 mL
Bromochloroacetic acid 5589-96-8	40 µg/mL	MtBE	M-552.2A-01	1 mL	Methyl chloroacetate 96-34-4	300 µg/mL	MeOH	M-552.1-04	1 mL
	1000 µg/mL	MtBE	M-552A-R-02	1 mL		1000 µg/mL	MtBE	M-552-R-04	1 mL
Bromodichloroacetic acid 71133-14-7	40 µg/mL	MtBE	M-552.2A-02	1 mL	Methyl chlorodibromoacetate 20428-75-5	100 µg/mL	MtBE	M-552.2-06	1 mL
Chloroacetic acid 79-11-8 (Monochloroacetic acid)	60 µg/mL	MtBE	M-552.2A-08	1 mL	Methyl dibromoacetate 6482-26-4	20 µg/mL	MtBE	M-552.2-07	1 mL
	1000 µg/mL	MtBE	M-552A-2	1 mL		100 µg/mL	MeOH	M-552.1-05	1 mL
Chlorodibromoacetic acid 5278-95-5	100 µg/mL	MtBE	M-552.2A-03	1 mL	Methyl dichloroacetate 116-54-1	60 µg/mL	MtBE	M-552.2-08	1 mL
						300 µg/mL	MeOH	M-552.1-06	1 mL
Dibromoacetic acid 631-64-1	20 µg/mL	MtBE	M-552.2A-05	1 mL	Methyl tribromoacetate 3222-05-7	200 µg/mL	MtBE	M-552.2-09	1 mL
	1000 µg/mL	MtBE	M-552A-5	1 mL					
Dichloroacetic acid 79-43-6	60 µg/mL	MtBE	M-552.2A-06	1 mL	Methyl trichloroacetate 598-99-2	20 µg/mL	MtBE	M-552.2-10	1 mL
	1000 µg/mL	MtBE	M-552A-3	1 mL		100 µg/mL	MeOH	M-552.1-07	1 mL
2,4-Dichlorophenylacetic acid 19719-28-9	2 µg/mL	Acetone	M-1618-SA	1 mL	Tribromoacetic acid 75-96-7	200 µg/mL	MtBE	M-552.2A-09	1 mL
Methyl 2,4-dichlorophenylacetate 55954-23-9	0.1 mg/mL	MtBE	M-515-SS	1 mL	Trichloroacetic acid 76-03-9	20 µg/mL	MtBE	M-552.2A-10	1 mL
	5 mg/mL	MtBE	M-515-SS-50X	1 mL		1000 µg/mL	MtBE	M-552A-R-07	1 mL
Methyl bromoacetate 96-32-2	40 µg/mL	MtBE	M-552.2-02	1 mL					
	200 µg/mL	MeOH	M-552.1-02	1 mL					
Methyl bromochloroacetate 20428-74-4	40 µg/mL	MtBE	M-552.2-03	1 mL					
	200 µg/mL	MeOH	M-552.1-03	1 mL					
	1000 µg/mL	MtBE	M-552-R-03	1 mL					

Explosives and Metabolites



Explosive Content

Explosive Compounds	88-89	DIN 38407-21 Explosive Standard	91
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Explosive standards are traditionally used for the remediation of soil and water in locations where explosives have been stored. These standards are being used to calibrate baggage screening detectors at airports and other secure locations (embassies and other government buildings). They are used by police departments, government agencies (i.e. TSA, Homeland Security) and the military in K-9 odor recognition training for explosives. Advances in analytical instrumentation have demonstrated detection in the part per trillion range.

Explosive Compounds

Compound	TNT Metabolite	Method 8330 & 8330B	CAS No.	Conc.	Matrix	Cat. No.	Unit
2-Amino-4,6-dinitrotoluene	•	•	35572-78-2	100 µg/mL	ACN:MeOH (50:50)	M-8330-13-0.1X	1 mL
				1000 µg/mL	ACN:MeOH (50:50)	M-8330-13	1 mL
4-Amino-2,6-dinitrotoluene	•	•	19406-51-0	100 µg/mL	ACN:MeOH (50:50)	M-8330-14-0.1X	1 mL
				1000 µg/mL	ACN:MeOH (50:50)	M-8330-14	1 mL
3-Amino-1,2,4-triazol-5-one				100 µg/mL	ACN:MeOH (70:30)	M-8330-ADD-55	1 mL
Ammonium picrate			131-74-8	100 µg/mL	ACN	M-8330-ADD-27	1 mL
DEGDN			693-21-0	100 µg/mL	ACN:MeOH (50:50)	M-8330-ADD-36	1 mL
2,4-Diaminoanisole			615-05-4	100 µg/mL	ACN	M-8330-ADD-58-CN	1 mL
				300 µg/mL	ACN	M-8330-ADD-58-CN-3X	1 mL
				500 µg/mL	ACN	M-8330-ADD-58-CN-5X	1 mL
1,2-Diaminopropane			78-90-0	100 µg/mL	MeOH	M-8330-ADD-9	1 mL
2,4-Diamino-6-nitrotoluene	•		6629-29-4	100 µg/mL	ACN	M-8330-ADD-12	1 mL
2,6-Diamino-4-nitrotoluene	•		59229-75-3	100 µg/mL	ACN	M-8330-ADD-13	1 mL
Diazodinitrophenol			4682-03-5	100 µg/mL	ACN	M-8330-ADD-48	1 mL
				1000 µg/mL	ACN	M-8330-ADD-48-10X	1 mL
2,3-Dimethyl-2,3-dinitrobutane (DMNB)			3964-18-9	100 µg/mL	ACN	M-8330-ADD-21	1 mL
3,5-Dinitroaniline			618-87-1	100 µg/mL	ACN:MeOH (50:50)	M-8330-ADD-4	1 mL
1,2-Dinitrobenzene			528-29-0	1000 µg/mL	MeOH	M-8330-SS	1 mL
1,3-Dinitrobenzene	•	•	99-65-0	100 µg/mL	ACN:MeOH (50:50)	M-8330-01-0.1X	1 mL
				1000 µg/mL	ACN:MeOH (50:50)	M-8330-01	1 mL
1,2-Dinitroglycerin			621-65-8	100 µg/mL	ACN:MeOH (50:50)	M-8330-ADD-33	1 mL
1,3-Dinitroglycerin			623-87-0	100 µg/mL	ACN:MeOH (50:50)	M-8330-ADD-34	1 mL
2,4-Dinitrotoluene	•	•	121-14-2	100 µg/mL	ACN:MeOH (50:50)	M-8330-02-0.1X	1 mL
				1000 µg/mL	ACN:MeOH (50:50)	M-8330-02	1 mL
2,6-Dinitrotoluene	•	•	606-20-2	100 µg/mL	ACN:MeOH (50:50)	M-8330-03-0.1X	1 mL
				1000 µg/mL	ACN:MeOH (50:50)	M-8330-03	1 mL
3,4-Dinitrotoluene			610-39-9	1000 µg/mL	MeOH	M-8330-IS	1 mL
3,5-Dinitrotoluene	•	•	618-85-9	100 µg/mL	ACN:MeOH (50:50)	M-8330-ADD-39	1 mL
Dipentaerythritol hexanitrate			13184-80-0	100 µg/mL	MeOH	M-8330-ADD-43	1 mL
Diphenylamine			122-39-4	1000 µg/mL	EtOH	ALR-041S-ET-10X	1 mL
EGDN			628-96-6	100 µg/mL	ACN:MeOH (95:5)	M-8330-ADD-5	1 mL
Erythritol tetranitrate (ETN)			7297-25-8	100 µg/mL	ACN	M-8330-ADD-47	1 mL
				1000 µg/mL	ACN	M-8330-ADD-47-10X	1 mL
Ethylcentralite				100 µg/mL	ACN:MeOH (50:50)	M-8330-ADD-50	1 mL
Guanidine nitrate			506-93-4	100 µg/mL	MeOH	M-8330-ADD-10	1 mL
Hexahydro-1,3,5-trinitroso-1,3,5-triazine			13980-04-6	100 µg/mL	ACN	M-8330-ADD-46	1 mL
				1000 µg/mL	ACN	M-8330-ADD-46-10X	1 mL
Hexamethylenetriperoxide diamine (HMTD)			283-66-9	100 µg/mL	ACN	M-8330-ADD-25	1 mL
Hexanitrodiphenylamine			131-73-7	100 µg/mL	ACN:MeOH (50:50)	M-8330-ADD-37	1 mL
Hexanitrostilbene (HNS)			20062-22-0	100 µg/mL	ACN	M-8330-ADD-26	1 mL
HMX			2691-41-0	100 µg/mL	ACN:MeOH (50:50)	M-8330-04-0.1X	1 mL
				1000 µg/mL	ACN:MeOH (50:50)	M-8330-04	1 mL
Hydrazine			302-01-2	100 µg/mL	MeOH	M-8330-ADD-8	1 mL
2-Hydroxylamino-4,6-dinitrotoluene	•		59283-76-0	100 µg/mL	ACN	M-8330-ADD-18 ♦	1 mL
4-Hydroxylamino-2,6-dinitrotoluene	•		59283-75-0	100 µg/mL	Toluene	M-8330-ADD-20-T ♦	1 mL
2-Methoxy-5-nitroaniline			99-59-2	100 µg/mL	MeOH	M-8330-ADD-56	1 mL
4-Methoxy-3-nitroaniline			577-72-0	100 µg/mL	MeOH	M-8330-ADD-57	1 mL
2-Methoxy-5-nitrophenol			636-93-1	100 µg/mL	MeOH	M-8330-ADD-60	1 mL
4-Methoxy-3-nitrophenol			15174-02-4	100 µg/mL	MeOH	M-8330-ADD-59	1 mL
Methylcentralite			611-92-7	100 µg/mL	ACN:MeOH (50:50)	M-8330-ADD-49	1 mL
Nitrobenzene	•	•	98-95-3	100 µg/mL	ACN:MeOH (50:50)	M-8330-06-0.1X	1 mL
				1000 µg/mL	ACN:MeOH (50:50)	M-8330-06	1 mL
N-Nitrodimethylamine			4164-28-7	100 µg/mL	ACN	M-8330-ADD-40	1 mL
2-Nitrodiphenylamine			119-75-5	100 µg/mL	ACN:MeOH (50:50)	M-8330-ADD-51	1 mL
4-Nitrodiphenylamine			836-30-6	100 µg/mL	ACN:MeOH (50:50)	M-8330-ADD-52	1 mL
Nitroglycerin		•	55-63-0	100 µg/mL	EtOH	M-8330-ADD-1	1 mL
				1000 µg/mL	EtOH:MeOH (97:3)	M-8330-ADD-1-10X	1 mL
1-Nitroglycerin			624-43-1	100 µg/mL	ACN:MeOH (50:50)	M-8330-ADD-31	1 mL
2-Nitroglycerin			620-12-2	100 µg/mL	ACN:MeOH (50:50)	M-8330-ADD-32	1 mL
Nitroguanidine			556-88-7	100 µg/mL	MeOH	M-8330-ADD-6	1 mL
Nitromethane			75-52-5	100 µg/mL	MeOH	M-8330-ADD-7	1 mL
N-Nitrosodiphenylamine			86-30-6	100 µg/mL	DCM	APP-9-150	1 mL
				100 µg/mL	MeOH	APP-9-150-M-10X	1 mL

Explosive standards continued on next page

Explosives and Metabolites

To assist in all aspects of explosive detection and analysis, we synthesize an array of explosives as well as metabolites, degradation products, and raw materials. We offer special formulations for EPA method and customer-specific applications.

Explosive Compounds (continued)

Compound	TNT Metabolite	Method 8330 & 8330B	CAS No.	Conc.	Matrix	Cat. No.	Unit
2-Nitrotoluene	•	•	88-72-2	100 µg/mL	ACN:MeOH (50:50)	M-8330-07-0.1X	1 mL
				1000 µg/mL	ACN:MeOH (50:50)	M-8330-07	1 mL
3-Nitrotoluene	•	•	99-08-1	100 µg/mL	ACN:MeOH (50:50)	M-8330-08-0.1X	1 mL
				1000 µg/mL	ACN:MeOH (50:50)	M-8330-08	1 mL
4-Nitrotoluene	•	•	99-99-0	100 µg/mL	ACN:MeOH (50:50)	M-8330-09-0.1X	1 mL
				1000 µg/mL	ACN:MeOH (50:50)	M-8330-09	1 mL
3-Nitro-1,2,4-triazol-5-one (NTO)			932-64-9	100 µg/mL	ACN:MeOH (50:50)	M-8330-ADD-53	1 mL
Pentaerythritol trinitrate			1607-17-6	100 µg/mL	MeOH	M-8330-ADD-44	1 mL
PETN			78-11-5	100 µg/mL	MeOH	M-8330-ADD-2	1 mL
				1000 µg/mL	MeOH	M-8330-ADD-2-10X	1 mL
Picramic acid			96-91-3	100 µg/mL	ACN:MeOH (50:50)	M-8330-ADD-22	1 mL
Picric acid			88-89-1	100 µg/mL	ACN:MeOH (50:50)	M-8330-ADD-3	1 mL
Propyleneglycol dinitrate			6423-43-4	100 µg/mL	MeOH	M-8330-ADD-35	1 mL
PYX			38082-89-2	100 µg/mL	ACN	M-8330-ADD-11	1 mL
RDX			121-82-4	100 µg/mL	ACN:MeOH (50:50)	M-8330-05-0.1X	1 mL
				1000 µg/mL	ACN:MeOH (50:50)	M-8330-05	1 mL
TATP			17088-37-8	100 µg/mL	ACN	M-8330-ADD-24	1 mL
TEGDN			111-22-8	100 µg/mL	ACN:MeOH (50:50)	M-8330-ADD-41-R1	1 mL
3,3,6,6-Tetramethyl-1,2,4,5-tetraoxane			1073-91-2	100 µg/mL	ACN	M-8330-16-0.1X	1 mL
				1000 µg/mL	ACN	M-8330-16	1 mL
2,2',6,6'-Tetranitro-4,4'-azotoluene	•	•		100 µg/mL	ACN	M-8330-ADD-17	1 mL
4,4',6,6'-Tetranitro-2,2'-azotoluene	•	•		100 µg/mL	ACN	M-8330-ADD-19	1 mL
2,2',6,6'-Tetranitro-4,4'-azoxytoluene	•	•		100 µg/mL	ACN	M-8330-ADD-15	1 mL
Tetryl			479-45-8	100 µg/mL	ACN:MeOH (50:50)	M-8330-10-0.1X	1 mL
				1000 µg/mL	ACN:MeOH (50:50)	M-8330-10	1 mL
TNT		•	118-96-7	100 µg/mL	ACN:MeOH (50:50)	M-8330-11-0.1X	1 mL
				1000 µg/mL	ACN:MeOH (50:50)	M-8330-11	1 mL
1,3,5-Triamino-2,4,6-trinitrobenzene			3058-38-6	40 µg/mL	DMF	M-8330-ADD-14-DMF	1 mL
2,4,6-Triaminotoluene trihydrochloride (TNT free)			634-87-7		NEAT	M-8330-ADD-23N-5MG	5 mg
1,2,4-Triazol-5-one			42131-33-9	100 µg/mL	MeOH	M-8330-ADD-61	1 mL
1,2,4-Triazolin-3-one			930-33-6	100 µg/mL	MeOH	M-8330-ADD-62	1 mL
Trimethylolethane trinitrate			3032-55-1	100 µg/mL	ACN:MeOH (50:50)	M-8330-ADD-28	1 mL
1,3,5-Trinitrobenzene	•	•	99-35-4	100 µg/mL	ACN:MeOH (50:50)	M-8330-12-0.1X	1 mL
				1000 µg/mL	ACN:MeOH (50:50)	M-8330-12	1 mL
2,4,6-Trinitroresorcinol			82-71-3	1000 µg/mL	ACN:MeOH (50:50)	M-8330-ADD-29	1 mL

Method 529 Explosive & Related Compounds by GC/MS

Method 529 Calibration Curve

All in µg/mL in Ethyl acetate	M-529-01	M-529-02	M-529-03	M-529-04	M-529-05	M-529-06	M-529-07	M-529-08	M-529-09
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

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

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

Internal Standard Stock Solution

M-529-IS

2.0 mg/mL Ethyl acetate

1 x 1 mL

3,4-Dinitrotoluene

Internal Standard Fortification Solution

M-529-ISFS

200 µg/mL each in Ethyl acetate:ACN (96:4)

1 x 1 mL

14 comps.

2-Amino-4,6-dinitrotoluene

2,6-Dinitrotoluene

4-Nitrotoluene

4-Amino-2,6-dinitrotoluene

RDX

1,3,5-Trinitrobenzene

3,5-Dinitroaniline

Nitrobenzene

Tetryl

1,3-Dinitrobenzene

2-Nitrotoluene

TNT

2,4-Dinitrotoluene

3-Nitrotoluene

Surrogate Analyte Stock Solutions

M-529-SS1

M-529-SS1-PAK

1000 µg/mL each in MeOH

1 x 1 mL

SAVE 5 x 1 mL

2 comps.

1,3,5-Trimethyl-2-nitrobenzene

1,2,4-Trimethyl-5-nitrobenzene

M-529-SS2

M-529-SS2-PAK

1000 µg/mL each in CH₂Cl₂

Nitrobenzene-d₅

1 x 1 mL

SAVE 5 x 1 mL

Surrogate Analyte Fortification Solution

M-529-SAFS

100 µg/mL each in MeOH

1 x 1 mL

3 comps.

1,3,5-Trimethyl-2-nitrobenzene

Nitrobenzene-d₅

1,2,4-Trimethyl-5-nitrobenzene

Explosives Methods

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

M-8095-SSA-100X-PAK

100 µg/mL each in ACN:MeOH (50:50)

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

1 x 1 mL
SAVE 5 x 1 mL
10 comps.

Explosive Stock Solution B

M-8095-SSB-100X

M-8095-SSB-100X-PAK

At stated conc. (µg/mL) in ACN:MeOH (50:50)

Nitrobenzene	500	Nitroglycerin	500
3-Nitrotoluene	500	PETN	500
2-Nitrotoluene	500	3,5-Dinitroaniline	100
4-Nitrotoluene	500		

1 x 1 mL
SAVE 5 x 1 mL
7 comps.

Explosive Surrogate Standards

M-8095-SS-01

M-8095-SS-01-PAK

100 µg/mL in ACN

3,4-Dinitrotoluene

1 x 1 mL
SAVE 5 x 1 mL

M-8095-SS-02

M-8095-SS-02-PAK

100 µg/mL in ACN

2-Methyl-4-nitroaniline

1 x 1 mL
SAVE 5 x 1 mL

M-8095-SS-03

M-8095-SS-03-PAK

100 µg/mL in ACN

2,5-Dinitrotoluene

1 x 1 mL
SAVE 5 x 1 mL

Method 8330 Nitroaromatics and Ntramines by HPLC

Mix A

M-8330A

100 µg/mL each in ACN:MeOH (50:50)

1 x 1 mL
7 comps.

M-8330A-10X

1.0 mg/mL each in ACN:MeOH (50:50)

1 x 1 mL
7 comps.

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

M-8330A-R

100 µg/mL each in ACN:MeOH (50:50)

1 x 1 mL
8 comps.

M-8330A-R-10X

1.0 mg/mL each in ACN:MeOH (50:50)

1 x 1 mL
8 comps.

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

Composite Explosive Mixture

M-8330-R-0.1X

100 µg/mL each in ACN:MeOH (50:50)

1 x 1 mL
14 comps.

M-8330-R-0.5X

0.5 mg/mL each in ACN:MeOH (50:50)

1 x 1 mL
14 comps.

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

Internal Standard

M-8330-IS

M-8330-IS-PAK

1.0 mg/mL in MeOH

3,4-Dinitrotoluene

1 x 1 mL
SAVE 5 x 1 mL

Explosives by HPLC Set

M-8330-R-SET

Each at 100 µg/mL in ACN:MeOH (50:50)

14 x 1 mL

M-8330-R-10X-SET

Each at 1000 µg/mL in ACN:MeOH (50:50)

14 x 1 mL

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

Mix B

M-8330B

100 µg/mL each in ACN:MeOH (50:50)

1 x 1 mL
5 comps.

M-8330B-10X

1.0 mg/mL each in ACN:MeOH (50:50)

1 x 1 mL
5 comps.

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

M-8330B-R

100 µg/mL each in ACN:MeOH (50:50)

1 x 1 mL
7 comps.

M-8330B-R-10X

1.0 mg/mL each in ACN:MeOH (50:50)

1 x 1 mL
7 comps.

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

M-8330B-R2

100 µg/mL each in ACN:MeOH (50:50)

1 x 1 mL
6 comps.

M-8330B-R2-10X

1.0 mg/mL each in ACN:MeOH (50:50)

1 x 1 mL
6 comps.

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

Surrogate Standard

M-8330-SS

1.0 mg/mL in MeOH

1,2-Dinitrobenzene

1 x 1 mL

Technical Note

Mix A and B provide better resolution between possible coeluting analytes, assisting the chemist to optimize the HPLC system. We suggest using the high concentration set M-8330-R-10X-SET when first performing Method 8330 development.

Explosives

Method DIN 38407-21 Explosives by HPLC

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:ACN (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

ASTM D7598 Thiodiglycol by LC/MS

ASTM Thiodiglycol Standard

D-7598 1 x 1 mL
4.0 mg/mL in MeOH

Thiodiglycol

ASTM Thiodiglycol Surrogate Standard

D-7598-SS 1 x 1 mL
4.0 mg/mL in MeOH

3,3'-Thiodipropanol

Gun Surveillance

Inorganic ICP Standards for Gun Shot Residue

Element Starting Material Matrix	1000 µg/mL Cat. No. Unit	10,000 µg/mL Cat. No. Unit	Element Starting Material Matrix	1000 µg/mL Cat. No. Unit	10,000 µg/mL Cat. No. Unit
Antimony (Sb)	-----	---	Lead (Pb)	-----	---
Sb 2-5% Nitric acid	ICP-02N-1 100 mL	ICP-02N-10X-0.5 50 mL	Pb(NO ₃) ₂	ICP-29N-1 100 mL	ICP-29N-10X-0.5 50 mL
tr. Tartaric acid	ICP-02N-5 500 mL	ICP-02N-10X-1 100 mL	2-5% Nitric acid	ICP-29N-5 500 mL	ICP-29N-10X-1 100 mL
Barium (Ba)	-----	---			ICP-29N-10X-5 500 mL
Ba(NO ₃) ₂	ICP-04N-1 100 mL	ICP-04N-10X-0.5 50 mL			
2-5% Nitric acid	ICP-04N-5 500 mL	ICP-04N-10X-1 100 mL			
		ICP-04N-10X-5 500 mL			

Organic Compounds for Firearm Discharge Analysis

Compound	Conc.	Matrix	Cat. No.	Unit	Compound	Conc.	Matrix	Cat. No.	Unit
2,4-Dinitrotoluene	100 µg/mL	ACN:MeOH	M-8330-02-0.1X	1 mL	4-Nitrodiphenylamine	100 µg/mL	ACN:MeOH	M-8330-ADD-52	1 mL
C ₇ H ₆ N ₂ O ₄	1000 µg/mL	ACN:MeOH	M-8330-02	1 mL	C ₁₂ H ₁₀ N ₂ O ₂				
2,6-Dinitrotoluene	100 µg/mL	ACN:MeOH	M-8330-03-0.1X	1 mL	1-Nitroglycerin **	100 µg/mL	ACN:MeOH	M-8330-ADD-31	1 mL
C ₇ H ₆ N ₂ O ₄	1000 µg/mL	ACN:MeOH	M-8330-03	1 mL	C ₃ H ₅ N ₃ O ₉				
3,4-Dinitrotoluene	1000 µg/mL	ACN:MeOH	M-8330-IS	1 mL	2-Nitroglycerin **	100 µg/mL	ACN:MeOH	M-8330-ADD-32	1 mL
C ₇ H ₆ N ₂ O ₄					C ₃ H ₅ N ₃ O ₉				
Diphenylamine	100 µg/mL	DCM	APP-9-097	1 mL	N-Nitrosodiphenylamine	100 µg/mL	DCM	APP-9-150	1 mL
C ₁₂ H ₁₁ N					C ₁₂ H ₁₀ N ₂ O				
Ethylcentralite	100 µg/mL	ACN:MeOH	M-8330-ADD-50	1 mL	2-Nitrotoluene	1000 µg/mL	ACN:MeOH	M-8330-07	1 mL
C ₁₇ H ₂₀ N ₂ O					C ₇ H ₇ NO ₃				
Methylcentralite	100 µg/mL	ACN:MeOH	M-8330-ADD-49	1 mL	3-Nitrotoluene	1000 µg/mL	ACN:MeOH	M-8330-08	1 mL
C ₁₅ H ₁₆ N ₂ O					C ₇ H ₇ NO ₃				
2-Nitrodiphenylamine	100 µg/mL	ACN:MeOH	M-8330-ADD-51	1 mL	4-Nitrotoluene	1000 µg/mL	ACN:MeOH	M-8330-09	1 mL
C ₁₂ H ₁₀ N ₂ O ₂					C ₇ H ₇ NO ₃				

Gun Surveillance Standard

EXP-GSS

At stated conc. (µg/mL) in ACN

1 x 1 mL

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		

Any compound without ** could contain possible isomers

Cannabis Standards



State Methods

California	Michigan
Colorado	Nevada
Connecticut	New York
Florida	Oklahoma
Maine	Oregon
Maryland	Pennsylvania
Massachusetts	Washington

Cannabis Contents

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AccuStandard offers a comprehensive list of standards for testing the quality and safety of cannabis and hemp products for both medicinal and recreational purposes. Standards for testing include pesticides, residual solvents, terpenes (for strain and flavor profiling), heavy metals, and active cannabinoid compounds following US State specific cannabis standards and Canadian regulatory standards.

Cannabinoids

Compound	CAS	TK No.	Conc.	Matrix	Cat. No.	Unit
Cannabidiol (CBD)	13956-29-1	114-005	1000 µg/mL	PT MeOH	CP-CBD-01S	1 mL
Cannabinol (CBN)	521-35-7	114-008	1000 µg/mL	PT MeOH	CP-CBN-01S	1 mL
Delta-8-Tetrahydrocannabinol (THC-8)	5957-75-5	114-001	1000 µg/mL	PT MeOH	CP-8-THC-01S	1 mL
Delta-9-Tetrahydrocannabinol (THC-9)	1972-08-3	114-002	1000 µg/mL	PT MeOH	CP-9-THC-01S	1 mL
Delta-9-Tetrahydrocannabinolic acid A (THCA-A)	23978-85-0	114-010	1000 µg/mL	ACN	CP-THCA-A-01S	1 mL
Cannabigerol (CBG)	25654-31-3	114-009	1000 µg/mL	PT MeOH	CP-CBG-01S	1 mL
Cannabichromene (CBC)	20675-51-8	114-004	1000 µg/mL	PT MeOH	CP-CBC-01S	1 mL

Cannabinoid Mix Standard

CP-CANNA-MIX-01

1000 µg/mL each in PT Methanol

1 mL
3 comps.

Restrictions may apply, contact us for information.

Cannabidiol (CBD) Cannabinol (CBN) Delta-9-Tetrahydrocannabinol (THC)

Hemp

Different cultivars of cannabis plants are used in various ways. Plants that have been bred to have higher THC content are for medicinal and recreational uses, and those bred to have lower THC levels can be used for hemp production. Hemp is a crop that is harvested for the fibers of the plant and can be used to make clothing, paper, and other products. Currently, USDA regulations stipulate hemp crops must be below 0.3% w/w for total delta-9 tetrahydrocannabinol (considering both THC and THCA) on a dry weight basis of the sample.

Compound	CAS	TK No.	Conc.	Matrix	Cat. No.	Unit
Delta-9-Tetrahydrocannabinol (THC-9)	1972-08-3	114-002	1000 µg/mL	PT MeOH	CP-9-THC-01S	1 mL
Delta-9-Tetrahydrocannabinolic acid A (THCA-A)	23978-85-0	114-010	1000 µg/mL	ACN	CP-THCA-A-01S	1 mL

Cannabis Odor

Volatile Sulfur Compounds (VSCs) are a group of chemical compounds that have been evaluated for its possible role in enhancing cannabis products flavor and aroma. These CRMs are designed to help test for traces of VSCs in cannabis to help investigate that role and its potential therapeutic advantages.

3-Mercaptohexyl acetate

CP-ODOR-001S

1000 µg/mL in Isopropanol

3-Mercapto-1-hexanol

CP-ODOR-002S

1000 µg/mL in Isopropanol

Cannabis Terpenes

Compound (Each 100 µg/mL in MeOH)	CAS	Cat. No.	Unit	Compound (Each 100 µg/mL in MeOH)	CAS	Cat. No.	Unit
(-)-alpha-Bisabolol	23089-26-1	CP-TER-001S	1 mL	Camphor	76-22-2	CP-TER-016S	1 mL
(-)-beta-Pinene	18172-67-3	CP-TER-002S	1 mL	3-Carene	13466-78-9	CP-TER-017S	1 mL
(-)-Borneol	464-45-9	CP-TER-003S	1 mL	(R)-Limonene	5989-27-5	CP-TER-018S	1 mL
(-)-Caryophyllene oxide	1139-30-6	CP-TER-004S	1 mL	gamma-Terpinene	99-85-4	CP-TER-019S	1 mL
(-)-Guaiol	489-86-1	CP-TER-005S	1 mL	Geraniol	106-24-1	CP-TER-020S	1 mL
(-)-Isopulegol	89-79-1	CP-TER-006S	1 mL	(1R)-(-)-Fenchone	7787-20-4	CP-TER-021S	1 mL
(+)-Borneol	464-43-7	CP-TER-007S	1 mL	Linalool	78-70-6	CP-TER-022S	1 mL
(+)-Fenchone	4695-62-9	CP-TER-008S	1 mL	Nerolidol	7212-44-4	CP-TER-023S	1 mL
Eucalyptol	470-82-6	CP-TER-009S	1 mL	Ocimene	13877-91-3	CP-TER-024S	1 mL
alpha-Humulene	6753-98-6	CP-TER-010S	1 mL	p-Cymene	99-87-6	CP-TER-025S	1 mL
alpha-Pinene	80-56-8	CP-TER-011S	1 mL	Terpinolene	586-62-9	CP-TER-026S	1 mL
alpha-Terpinene	99-86-5	CP-TER-012S	1 mL	Valencene (Tech)	4630-07-3	CP-TER-027S	1 mL
beta-Caryophyllene	87-44-5	CP-TER-013S	1 mL	Terpineol	8000-41-7	CP-TER-028S	1 mL
beta-Myrcene	123-35-3	CP-TER-014S	1 mL	Farnesene (mixture of isomers)		CP-TER-029S	1 mL
Camphene	79-92-5	CP-TER-015S	1 mL				

Terpene Standards continued on next page

Cannabis Terpenes (continued)

Cannabis Terpene Mix 1

CP-TER-MIX-001

100 µg/mL each in PT Methanol 1 mL
14 comps.

(-)-alpha-Bisabolol	Camphene
(-)-Caryophyllene oxide	Camphor
(-)-Isopulegol	Linalool
(+)-Fenchone	Nerolidol
Eucalyptol	Ocimene
beta-Caryophyllene	Valencene (Tech)
beta-Myrcene	3-Carene

Cannabis Terpene Mix 2

CP-TER-MIX-002

100 µg/mL each in PT Methanol 1 mL
14 comps.

beta-Pinene	(R)-Limonene
(-)-Guaiol	gamma-Terpinene
(+)-Borneol	Geraniol
(-)-Borneol	(1R)-(-)-Fenchone
alpha-Humulene	p-Cymene
alpha-Pinene	Terpinolene
alpha-Terpinene	Terpineol

Cannabis Terpene Mix 3

CP-TER-MIX-003

2500 µg/mL each in Isopropanol 1 mL
19 comps.

Myrcene	Camphene
p-Isopropyltoluene	Geraniol
D-L-a-Pinene	R-Limonene
alpha-Humulene	Linalool
Nerolidol	Terpinolene
(-)-Isopulegol	(-)-alpha-Bisabolol
Ocimene	alpha-Terpinene
(-)-Guaiol	beta-Caryophyllene
gamma-Terpinene	delta-3-Carene
L-b-Pinene	

Cannabis Terpene Set

CP-TER-MIX-SET

2 x 1 mL

CP-TER-MIX-001, CP-TER-MIX-002

ASTM Proposed Method for Terpenoids

Terpenoids in Cannabis Standard

ASTM-P-0151-01

2500 µg/mL each in Isopropanol

(-)-alpha-Bisabolol	Geraniol
Camphene	(-)-Guaiol
delta-3-Carene	alpha-Humulene
beta-Caryophyllene	(-)-Isopulegol
(-)-Caryophyllene oxide	R-Limonene
p-Isopropyltoluene	Linalool
Eucalyptol	Myrcene

1 mL
21 comps.

Nerolidol
Ocimene
D-L-a-Pinene
L-b-Pinene
alpha-Terpinene
Terpinolene
gamma-Terpinene

Terpenoids in Cannabis - Internal Standard

ASTM-P-0151-01-IS

ASTM-P-0151-01-IS-PAK
1000 µg/mL in Isopropanol

(±)-Linalool-d₃

1 mL
5 x 1 mL

ASTM D8399 Pesticides in Cannabis

D8399 Pesticides in Cannabis Mix 1

D-8399-01

100 µg/mL each in ACN 1 mL
12 comps.

Abamectin	Malathion
Azoxystrobin	Myclobutanil
Bifenazate	Permethrin
Etoazole	Spinosad
Imazalil	Spirotetramat
Imidacloprid	Tebuconazole

D8399 Pesticides in Cannabis Mix 2

D-8399-02

100 µg/mL each in ACN 1 mL
19 comps.

Acetamiprid	Kresoxim-methyl
Boscalid	Metalaxyl
Carbaryl	Methomyl
Chlorantraniliprole	Oxamyl
Clofentazine	Propiconazole
Dimethomorph	Pyridaben
Fenpyroximate	Spinetoram
Flonicamid	Thiamethoxam
Fludioxonil	Trifloxystrobin
Hexythiazox	

D8399 Pesticides in Cannabis Mix 3

D-8399-03

100 µg/mL each in ACN 1 mL
26 comps.

Aldicarb	Thiacloprid
Carbofuran	Acephate
Chlorpyrifos	Acequinocyl
Daminozide	Azadirachtin
Dimethoate	Benzovindiflupyr
Ethoprop	Bifenthrin
Etofenprox	Diazinon
Fenoxycarb	Dodemorph acetate
Fipronil	Naled
Methiocarb	Imidan
Paclobutrazol	Piperonyl butoxide
Propoxur	Prallethrin
Spiroxamine	Pyrethrins

Spirodiclofen

P-938S-CN

100 µg/mL each in ACN 1 mL

Spiromesifen

P-960S-CN

100 µg/mL each in ACN 1 mL

D8399 Pesticides in Cannabis Mix 4

D-8399-04

100 µg/mL in ACN 1 mL
26 comps.

Allethrin	Iprodione
Buprofezin	Methoprene
Clothianidin	Mevinphos
Coumaphos	Novaluron
Cyantraniliprole	Sumithrin
Cyprodinil	Pirimicarb
Deltamethrin	Pyraclostrobin
Dichlorvos	Resmethrin
Dinotefuran	Tebufenozide
Fensulfthion	Teflubenzuron
Fenthion	Tetrachlorvinphos Z
Fenvalerate	Tetramethrin
Fluopyram	Thiophanate-methyl

ASTM D8399 Pesticides in Cannabis Set

D-8399-SET

6 x 1 mL
D-8399-01, D-8399-02, D-8399-03, D-8399-04,
P-938S-CN, P-960S-CN

Pesticides in Dried Cannabis

Pesticides in Dried Cannabis Standard

ASTM-CP-PEST

100 µg/mL each in ACN

Chlorfenapyr	Cypermethrin	Endosulfan II	Terrazole	Kinoprene	Permethrin
Chlorpyrifos (Dursban)	Diazinon	Endosulfan sulfate	Fenthion	MGK-264	Pentachloronitrobenzene
Cyfluthrin	Endosulfan I	Etofenprox	Fenvalerate	Parathion-methyl	

1 mL
17 comps.

Cannabis

US State Methods

California Cannabis Residual Pesticides

California Category I Residual Pesticide Mix 1

CP-CA-01

100 µg/mL each in ACN

1 mL

20 comps.

Daminozide	Dimethoate	Methiocarb
Aldicarb	Chlorpyrifos	Mevinphos
Propoxur	Ethoprop	Paclobutrazol
Carbofuran	Etofenprox	Parathion-methyl
Chlorfenapyr	Fenoxycarb	Spiroxamine
Coumaphos	Fipronil	Thiacloprid
Dichlorvos	Imazalil	

California Category II Residual Pesticide (Chlordane tech)

CP-CA-02

100 µg/mL in Methanol

1 mL

Chlordane (tech)

California Category III Residual Pesticide Mix 3

CP-CA-03

100 µg/mL each in ACN

1 mL

29 comps.

Acetamiprid	Fenpyroximate	Oxamyl
Azoxystrobin	Flonicamid	Pyridaben
Bifenazate	Fludioxonil	Spinetoram
Boscalid	Etoazole	Spinosad
Captan	Hexythiazox	Spirotetramat
Carbaryl	Imidacloprid	Tebuconazol
Chlorantraniliprole	Kresoxim-methyl	Thiamethoxam
Clofentezine	Metaxyl	Propiconazole
Dimethomorph	Methomyl	Trifloxystrobin
Fenhexamid	Myclobutanil	

California Category IV Residual Pesticide Mix 4

CP-CA-04

100 µg/mL each in ACN

1 mL

16 comps.

Abamectin	Diazinon	Permethrin
Acequinocyl	Imidan	Piperonyl butoxide
Acephate	Malathion	Prallethrin
Bifenthrin	Naled	Pyrethrins
Cyfluthrin	Pentachloronitrobenzene	Spiromesifen
Cypermethrin		

California Category IV Residual Pesticide Mix 5

CP-CA-05

100 µg/mL each in ACN

1 mL

13 comps.

Buprofezin	Dacthal (DCPA)	Omethoate
1,2,3,6-Tetrahydrophthalimide	Fluopyram	Pymetrozine
a-Chlordane	Methamidophos	Pyraclostrobin
g-Chlordane	(Monitor)	Pyrimethanil
Cyprodinil	Monocrotophos	

California Cannabis Residual Solvents

California Category I Residual Solvent Mix

CP-CA-RS-01

5000 µg/mL each in PT Methanol

1 mL

5 comps.

1,2-Dichloroethane	Chloroform	Trichloroethene
Benzene	Dichloromethane	

California Category II Residual Solvent

CP-CA-RS-02

5000 µg/mL in Water

1 mL

Ethylene oxide

California Category III Residual Solvent Mix

CP-CA-RS-03

5000 µg/mL each in Water

1 mL

7 comps.

Acetone	Ethyl acetate	Isopropanol
ACN	Diethyl ether	Methyl alcohol
Ethanol		

California Category IV Residual Solvent Mix

CP-CA-RS-04

5000 µg/mL each in Ethanol

1 mL

7 comps.

n-Heptane	Toluene	p-Xylene
n-Hexane	o-Xylene	m-Xylene
n-Pentane		

California Category V Residual Solvent Mix

CP-CA-RS-05

5000 µg/mL each in Ethanol

1 mL

2 comps.

n-Butane n-Propane

California Residual Solvent Mix

CP-CA-RS-06

At stated conc. (µg/mL) in DMA

1 mL

3 comps.

n-Butane	5000	n-Propane	2000
Ethylene oxide	600		

California Residual Solvent Mix

CP-CA-RS-07

1000 µg/mL each in DMA

1 mL

12 comps.

n-Pentane	Isopropanol	n-Heptane
Ethanol	ACN	Xylene (total)
Diethyl ether	n-Hexane	Toluene
Acetone	Ethyl acetate	Methanol

California Category I Residual Solvent Mix

CP-CA-RS-08

1000 µg/mL each in DMA

1 mL

5 comps.

1,2-Dichloroethane	Chloroform	Trichloroethene
Benzene	Dichloromethane	

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<https://www.accustandard.com/cannabis-standards>

Cannabis State

US State Methods

Colorado Cannabis Residual Pesticides

Colorado Residual Pesticide Set

CP-CO-SET 5 x 1 mL
CP-CO-01-R1, CP-CO-02, CP-CO-03, CP-CO-04, P-960S-CN

Colorado Cannabis Residual Pesticide Mix 1

CP-CO-01-R1 1 mL
100 µg/mL each in ACN 12 comps.

Abamectin	Imazalil	Permethrin
Azoxystrobin	Imidacloprid	Spinosad
Bifenazate	Malathion	Spirotetramat
Etoazole	Myclobutanil	Tebuconazol

Colorado Cannabis Residual Pesticide Mix 2

CP-CO-02 1 mL
100 µg/mL each in ACN 36 comps.

Allethrin	Endosulfan II	Phenothrin
Benzovindiflupyr	Endosulfan sulfate	Pirimicarb
Buprofezin	Etridiazole	Pyraclostrobin
Clothianidin	Fensulfotision	Quintozene
Coumaphos	Fenthion	Resmethrin
Cyantraniliprole	Fenvalerate	Spinetoram
Cyprodinil	Fluopyram	Spirodiclofen
Deltamethrin	Iprodione	Tebufenozide
Dimethomorph	Kinoprene	Teflubenzuron
Dinotefuran	Methoprene	Tetrachlorvinphos
Dodemorph	Mevinphos	Tetramethrin
Endosulfan I	Novaluron	Thiophanate-methyl

Colorado Cannabis Residual Pesticide Mix 3

CP-CO-03 1 mL
100 µg/mL each in ACN 26 comps.

Chlorpyrifos (Dursban)	Daminozide (Alar)	Paclobutrazol
Dimethoate	Diazinon	Parathion-methyl
Acephate	Ethoprop	Imidan
Acequinocyl	Etofenprox	Prallethrin
Aldicarb	Fenoxycarb	Propoxur (Baygon)
Carbofuran	Fipronil	Spiroxamine
Chlorfenapyr	Methiocarb	Thiacloprid
Cyfluthrin	MKG-264	Bifenthrin
Cypermethrin	Naled	

Colorado Cannabis Residual Pesticide Mix 4

CP-CO-04 1 mL
100 µg/mL each in ACN 24 comps.

Boscalid	Acetamiprid	Hexythiazox
Carbaryl	Atrazine	Kresoxim-methyl
L-Cyhalothrin	Chlorantraniliprole	Methomyl
Diuron (Karmex)	Clofentezine	Oxamyl
Metalaxyl	Fenhexamid	Pyridaben
Pyriproxyfen	Fenpyroximate	Trifloxystrobin
Thiabendazole	Fonicamid	Propiconazole
Thiamethoxam	Fludioxonil	Dichlorvos

Spiromesifen

P-960S-CN 1 mL
100 µg/mL in ACN

Colorado Cannabis Residual Solvents

Colorado Residual Solvents Mix 1

CP-CO-RS-01 1 mL
2000 µg/mL each in DMA 14 comp

Acetone	Benzene	p-Xylene
Ethanol	Toluene	m-Xylene
n-Heptane	n-Pentane	Methyl alcohol
2-Methylhexane	n-Hexane	Ethyl acetate
Isopropanol	o-Xylene	

Colorado Cannabis Residual Solvents (continued)

Colorado Residual Solvents Mix 2

CP-CO-RS-02 1 mL
2000 µg/mL each in DMA 14 comp

n-Butane	2-Methylpropane	n-Propane
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Connecticut Cannabis Pesticide Testing

Connecticut Cannabis Pesticide Testing Standard

CP-CT-PEST-01-R1 1 mL
100 µg/mL each in ACN 13 comps.

Abamectin	Etoazole	Paclobutrazol
Acequinocyl	Imazalil	Pyrethrins
Bifenazate	Imidacloprid	Spinosad
Bifenthrin	Myclobutanil	Spirotetramat
Cyfluthrin		

Florida Cannabis Pesticides

Florida Cannabis Residual Pesticide Set

CP-FL-SET 5 x 1 mL
CP-FL-01, CP-FL-02, CP-FL-03, CP-FL-04, P-1083S-CN

Florida Cannabis Pesticide Mix 1

CP-FL-01 1 mL
100 µg/mL each in ACN 29 comps.

Azoxystrobin	Fenhexamid	Myclobutanil
Bifenazate	Fenpyroximate	Oxamyl
Boscalid	Fonicamid	Propiconazole
Captan	Fludioxonil	Pyridaben
Carbaryl	Hexythiazox	Spinosad
Chlorantraniliprole	Imidacloprid	Spirotetramat
Chloromequat chloride	Kresoxim-methyl	Tebuconazol
Clofentezine	Metalaxyl	Thiamethoxam
Dimethomorph	Methomyl	Trifloxystrobin
Etoazole		

Florida Cannabis Pesticide Mix 2

CP-FL-02 1 mL
100 µg/mL each in ACN 20 comps.

Daminozide	Dichlorvos	Methiocarb
Aldicarb	Dimethoate	Mevinphos
Propoxur	Ethoprop	Paclobutrazol
Carbofuran	Etofenprox	Parathion-methyl
Chlorfenapyr	Fenoxycarb	Spiroxamine
Coumaphos	Fipronil	Thiacloprid
Chlorpyrifos	Imazalil	

Florida Cannabis Pesticide

CP-FL-03 1 mL
100 µg/mL in Methanol

Chlordane (Tech Mix)

Florida Cannabis Pesticide Mix 4

CP-FL-04 1 mL
100 µg/mL each in ACN 16 comps.

Abamectin	Diazinon	Permethrin
Acephate	Imidan	Piperonyl butoxide
Acequinocyl	Malathion	Prallethrin
Bifenthrin	Naled	Pyrethrins
Cyfluthrin	Pentachloronitrobenzene	Spiromesifen
Cypermethrin		

Spinetoram

P-1083S-CN 1 mL
100 µg/mL in ACN

Cannabis

US State Methods

Maryland Cannabis Residual Pesticides

Maryland Cannabis Residual Pesticide Set

CP-MD-SET

3 x 1 mL

CP-MD-01, CP-MD-02, CP-MD-03

Maryland Cannabis Residual Pesticide Mix 1

CP-MD-01

1 mL

100 µg/mL each in ACN

29 comps.

Acetamiprid	Clofentezine	Methomyl
Daminozide	Etoxazole	Myclobutanil
Aldicarb	(E)-Fenpyroximate	Oxamyl
Ancymidol	Flonicamid	Spinosad
Azoxystrobin	Flurprimidol	Spirotetramat
Bifenazate	Hexythiazox	Thiacloprid
Bonzi	Imidacloprid	Thiamethoxam
Boscalid	Kresoxim-methyl	Propiconazole
Carbaryl	Metalaxyl	Trifloxystrobin
Carbofuran	Methiocarb	

Maryland Cannabis Residual Pesticide Mix 2

CP-MD-02

1 mL

100 µg/mL each in ACN

7 comps.

Bifenthrin	cis-Permethrin	Piperonyl butoxide
Cyfluthrin	trans-Permethrin	Pyrethrins
Cypermethrin		

Maryland Cannabis Residual Pesticide Mix 3

CP-MD-03

1 mL

100 µg/mL each in ACN

8 comps.

Abamectin	Chlorpyrifos	Malathion
Diazinon	Ethephon	Spiromesifen
Dimethoate	Imidan	

Massachusetts Cannabis Residual Pesticides

Massachusetts Cannabis Residual Pesticide Mix

CP-MA-01-R1

1 mL

100 µg/mL each in ACN

8 comps.

Bifenazate	Ettoxazole	Myclobutanil
Bifenthrin	Imazalil	Trifloxystrobin
Cyfluthrin	Imidacloprid	

Maine Cannabis Residual Pesticides

Maine Cannabis Residual Pesticide Set

CP-ME-R1-SET

6 x 1 mL

CP-ME-01, CP-ME-02, P-1077S-CN,
P-187S-CN, P-724S-CN, P-960S-CN,

Maine Cannabis Residual Pesticide Mix 1

CP-ME-01

1 mL

100 µg/mL each in ACN

32 comps.

Abamectin	Dichlorvos	MGK-264
Acephate	Diazinon	Naled
Acequinocyl	Dimethoate	Paclobutrazol
Aldicarb	Ethoprop	Permethrin
Bifenthrin	Etofenprox	Imidan
Carbofuran	Fenoxycarb	Piperonyl butoxide
Chlorfenapyr	Fipronil	Prallethrin
Chlorpyrifos (Dursban)	Imazalil	Propoxur (Baygon)
Cyfluthrin	Malathion	Spiroxamine
Cypermethrin	Methiocarb	Thiacloprid
Daminozide (Alar)	Parathion-methyl	

Maine Cannabis Residual Pesticide Mix 2

CP-ME-02

1 mL

100 µg/mL each in ACN

23 comps.

Imidacloprid	Spinosad	Carbaryl
Kresoxim-methyl	Tebuconazol	Chlorantraniliprole
Metalaxyl	Thiamethoxam	Clofentezine
Methomyl	Trifloxystrobin	Ettoxazole
Myclobutanil	Acetamiprid	Flonicamid
Oxamyl	Azoxystrobin	Fludioxonil
Propiconazole (Tilt)	Bifenazate	Hexythiazox
Pyridaben	Boscalid	

Pesticides

Spirotetramat	100 µg/mL in ACN	P-1077S-CN	1 mL
Pyrethrins	100 µg/mL in ACN	P-187S-CN	1 mL
Fenpyroximate	100 µg/mL in ACN	P-724S-CN	1 mL
Spiromesifen	100 µg/mL in ACN	P-960S-CN	1 mL

Maine Cannabis Solvents

Maine Cannabis Residual Solvent Mix 1

CP-ME-RS-01

1 mL

2000 µg/mL each in DMA

19 comps.

Acetone	Isopropanol	Chloroform
ACN	Methyl alcohol	Dichloromethane
Ethanol	n-Pentane	Trichloroethene
Ethyl acetate	Toluene	o-Xylene
Diethyl ether	1,2-Dichloroethane	p-Xylene
n-Heptane	Benzene	m-Xylene
n-Hexane		

Maine Cannabis Residual Solvent Mix 2

CP-ME-RS-02

1 mL

At stated conc. (µg/mL) each in DMA

19 comps.

n-Butane (5000)	Ethylene oxide (600)	Propane (2000)
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Cannabis

US State Methods

Michigan Cannabis Residual Pesticides

Michigan Residual Pesticides Set

CP-MI-R1-SET

4 x 1 mL

CP-MI-01, CP-MI-02, CP-MI-03-R1, P-960S-CN

Michigan Residual Pesticides Mix 1

CP-MI-01

100 µg/mL each in ACN

1 mL

20 comps.

Abamectin	Daminozide	Methomyl
Acequinocyl	Fenoxycarb	Oxamyl
Aldicarb	(E)-Fenpyroximate	Propoxur
Carbaryl	Flonicamid	Spinosad
Carbofuran	Hexythiazox	Spirotetramat
Chlorantraniliprole	Imidacloprid	Thiamethoxam
Clofentezine	Methiocarb	

Michigan Residual Pesticides Mix 2

CP-MI-02

100 µg/mL each in ACN

1 mL

16 comps.

Acephate	Chlorpyrifos	Permethrin
Bifenthrin	Ethoprop	Phosmet
Cyfluthrin	Etofenprox	Prallethrin
Cypermethrin	Malathion	Pyrethrins
Diazinon	Methyl parathion	
Dimethoate	Naled	

Michigan Residual Pesticides Mix 3

CP-MI-03-R1

100 µg/mL each in ACN

1 mL

21 comps.

Pyridaben	Boscalid	Fludioxonil
Myclobutanil	Etoazole	Chlorfenapyr
Paclobutrazol	Bifenazate	Fipronil
Dichlorvos	Kresoxim-methyl	MGK-264
Propiconazole	Trifloxystrobin	Thiacloprid
Metaxyl	Acetamiprid	Tebuconazol
Imazalil	Azoxystrobin	Spiroxamine

Spiromesifen

P-960S-CN

100 µg/mL in ACN

1 mL

New York Cannabis Residual Pesticides

New York Residual Pesticide Set

CP-NY-R2-SET

8 x 1 mL

CP-NY-01-R1, CP-NY-02, CP-NY-03, CP-NY-04,
P-017S-CN, P-1083S-CN, P-1499S-CN, P-182S-CN

New York Residual Pesticide Mix 1

CP-NY-01-R1

100 µg/mL each in ACN

1 mL

28 comps.

Acetamiprid	Fenhexamid	Myclobutanil
Azoxystrobin	Fenpyroximate	Oxamyl
Bifenazate	Flonicamid	Propiconazole
Boscalid	Fludioxonil	Pyridaben
Carbaryl	Hexythiazox	Spinosad
Chlorantraniliprole	Imidacloprid	Spirotetramat
Chloromequat chloride	Kresoxim-methyl	Tebuconazol
Clofentezine	Metaxyl	Thiamethoxam
Dimethomorph	Methomyl	Trifloxystrobin
Etoazole		

New York Residual Pesticide Mix 2

CP-NY-02

100 µg/mL each in ACN

1 mL

20 comps.

Daminozide	Dimethoate	Methiocarb
Aldicarb	Chlorpyrifos	Mevinphos
Propoxur	Ethoprop	Paclobutrazol
Carbofuran	Etofenprox	Parathion-methyl
Chlorfenapyr	Fenoxycarb	Spiroxamine
Coumaphos	Fipronil	Thiacloprid
Dichlorvos	Imazalil	

New York Residual Pesticide Mix 3

CP-NY-03

100 µg/mL each in ACN

1 mL

16 comps.

Abamectin	Diazinon	Permethrin
Acequinocyl	Imidan	Piperonyl butoxide
Acephate	Malathion	Prallethrin
Bifenthrin	Naled	Pyrethrins
Cyfluthrin	Pentachloronitrobenzene	Spiromesifen
Cypermethrin		

New York Residual Pesticide Mix 4

CP-NY-04

100 µg/mL each in ACN

1 mL

2 comps.

MGK-264	3-Indolebutyric acid
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Pesticides

Chlordane	100 µg/mL in ACN	P-017S-CN	1 mL
Spinetoram	100 µg/mL in ACN	P-1083S-CN	1 mL
Azadirachtin	100 µg/mL in ACN	P-1499S-CN	1 mL
Captan	100 µg/mL in ACN	P-182S-CN	1 mL

Oklahoma Cannabis Residual Pesticides

Oklahoma Residual Pesticides Set

CP-OK-SET

2 x 1 mL

CP-OK-01, P-960S-CN

Oklahoma Residual Pesticides Set

CP-OK-01

100 µg/mL each in ACN

1 mL

12 comps.

Abamectin	Imazalil	Permethrin
Azoxystrobin	Imidacloprid	Spinosad
Bifenazate	Malathion	Spirotetramat
Etoazole	Myclobutanil	Tebuconazol

Spiromesifen

P-960S-CN

100 µg/mL in ACN

1 mL

Cannabis

US State Methods

Oregon Cannabis Residual Pesticides

Oregon Cannabis Residual Pesticide Set

CP-ORE-R1-SET 4 x 1 mL
CP-ORE-01, CP-ORE-02, CP-ORE-03-R1, P-960S-CN

Oregon Cannabis Residual Pesticide Mix 1

CP-ORE-01 1 mL
100 µg/mL each in ACN 20 comps.

Abamectin	Daminozide	Methomyl
Acequinocyl	(E)-Fenpyroximate	Oxamyl
Aldicarb	Fenoxycarb	Propoxur
Carbaryl	Flonicamid	Spinosad
Carbofuran	Hexythiazox	Spirotetramat
Chlorantraniliprole	Imidacloprid	Thiamethoxam
Clofentezine	Methiocarb	

Oregon Cannabis Residual Pesticide Mix 2

CP-ORE-02 1 mL
100 µg/mL each in ACN 16 comps.

Acephate	Chlorpyrifos	Naled
Bifenthrin	Ethoprop	Permethrin
Cyfluthrin	Etofenprox	Phosmet
Cypermethrin	Malathion	Prallethrin
Diazinon	Methyl parathion	Pyrethrins
Dimethoate		

Oregon Cannabis Residual Pesticide Mix 3

CP-ORE-03-R1 1 mL
100 µg/mL each in ACN 22 comps.

Acetamiprid	Fludioxonil	Piperonyl butoxide
Azoxystrobin	Imazalil	Propiconazole
Bifenazate	Kresoxim-methyl	Pyridaben
Boscalid	Metalaxyl	Spiroxamine
Chlorfenapyr	MGK-264	Tebuconazole
Dichlorvos	Myclobutanil	Thiacloprid
Etoazole	Paclobutrazol	Trifloxystrobin
Fipronil		

Spiromesifen

P-960S-CN 1 mL
100 µg/mL in ACN

Oregon Cannabis Residual Solvents

Oregon Cannabis Residual Solvent Mix 1

CP-ORE-RS-01 1 mL
1000 µg/mL each in Water 11 comps.

Acetone	2-Ethoxyethanol	Isopropyl acetate
Acetonitrile	Ethyl acetate	Methanol
sec-Butanol	Ethyl ether	Isopropanol
1,4-Dioxane	Ethylene glycol	

Oregon Cannabis Residual Solvent Mix 2

CP-ORE-RS-02 1 mL
1000 µg/mL each in Ethanol 18 comps.

Benzene	n-Heptane	n-Pentane
Cumene	Hexane	Tetrahydrofuran
Cyclohexane	Ethylbenzene	Toluene
Dichloromethane	Isopentane	o-Xylene
2,2-Dimethylbutane	2-Methylpentane	p-Xylene
2,3-Dimethylbutane	3-Methylpentane	m-Xylene

Oregon Cannabis Residual Solvent Mix 3

CP-ORE-RS-03 1 mL
1000 µg/mL each in Ethanol 4 comps.

sec-Butanol	Isobutane
n-Propane	Neopentane

Oregon Cannabis Residual Solvent

CP-ORE-RS-04 1 mL
1000 µg/mL in Water
Ethylene oxide

Pennsylvania Cannabis Pesticides

Pennsylvania Cannabis Pesticide Mix 1

CP-PA-01-R1 1 mL
100 µg/mL each in ACN 32 comps.

Abamectin	Dichlorvos	MGK-264
Acephate	Diazinon	Naled
Acequinocyl	Dimethoate	Paclobutrazol
Aldicarb	Ethoprop	Permethrin
Bifenthrin	Etofenprox	Imidan
Carbofuran	Fenoxycarb	Piperonyl butoxide
Chlorfenapyr	Fipronil	Prallethrin
Chlorpyrifos	Imazalil	Propoxur
Cyfluthrin	Malathion	Spiroxamine
Cypermethrin	Methiocarb	Thiacloprid
Daminozide	Parathion-methyl	

Pennsylvania Cannabis Pesticide Mix 2

CP-PA-02 1 mL
100 µg/mL each in ACN 29 comps.

Acetamiprid	Fenpyroximate	Oxamyl
Azoxystrobin	Flonicamid	Pyridaben
Bifenazate	Fludioxonil	Spinetoram
Boscalid	Etoazole	Spinosad
Captan	Hexythiazox	Spirotetramat
Carbaryl	Imidacloprid	Tebuconazole
Chlorantraniliprole	Kresoxim-methyl	Thiamethoxam
Clofentezine	Metalaxyl	Propiconazole
Dimethomorph	Methomyl	Trifloxystrobin
Fenhexamid	Myclobutanil	

Washington Cannabis Residual Pesticides

Washington State Residual Pesticides Set

CP-WA-SET 5 x 1 mL
CP-WA-01, CP-WA-02, P-1077S-CN, P-187S-CN, P-960S-CN)

Washington Residual Pesticide Mix 1

CP-WA-01 1 mL
100 µg/mL each in ACN 32 comps.

Abamectin	Dichlorvos	MGK-264
Acephate	Diazinon	Naled
Acequinocyl	Dimethoate	Paclobutrazol
Aldicarb	Ethoprop	Permethrin
Bifenthrin	Etofenprox	Imidan
Carbofuran	Fenoxycarb	Piperonyl butoxide
Chlorfenapyr	Fipronil	Prallethrin
Chlorpyrifos (Dursban)	Imazalil	Propoxur (Baygon)
Cyfluthrin	Malathion	Spiroxamine
Cypermethrin	Methiocarb	Thiacloprid
Daminozide (Alar)	Parathion-methyl	

Washington Residual Pesticide Mix 2

CP-WA-02 1 mL
100 µg/mL each in ACN 24 comps.

Tebuconazole	Etoazole	Methomyl
Acetamiprid	(E)-Fenpyroximate	Myclobutanil
Azoxystrobin	Flonicamid	Oxamyl
Bifenazate	Fludioxonil	Propiconazole (Tilt)
Boscalid	Hexythiazox	Pyridaben
Carbaryl	Imidacloprid	Spinosad
Chlorantraniliprole	Kresoxim-methyl	Thiamethoxam
Clofentezine	Metalaxyl	Trifloxystrobin

Pesticides

Spirotetramat	100 µg/mL in ACN	P-1077S-CN	1 mL
Pyrethrins	100 µg/mL in ACN	P-187S-CN	1 mL
Spiromesifen	100 µg/mL in ACN	P-960S-CN	1 mL

Cannabis Canada

Canada requires Licensed Producers (LPs) to submit samples of all cultivated cannabis products to independent laboratories for testing of almost 100 pesticides. The Pesticide Management Regulatory Agency (PMRA) has maintained a database that includes 22 registered pesticides for use on cannabis products. Recreational use of cannabis has been legal in Canada since October 2018. Health Canada (HC) maintains mandatory testing requirements for cannabis products to assure a healthy product for the end user. Below is the current published listing of regulated pesticides that have been approved by the Government of Canada, for both recreational and medicinal usage.

Canada Cannabis Pesticides

Canada Cannabis Pesticide Set

CP-CAN-R3-SET

6 x 1 mL

CP-CAN-01-R1, CP-CAN-02, CP-CAN-03-R1,
CP-CAN-04, P-711S-CN, P-960S-CN

Canada Cannabis Pesticide Mix 1

CP-CAN-01-R1

100 µg/mL each in ACN

1 mL

36 comps.

Allethrin	Endosulfan II	Phenothrin
Benzovindiflupyr	Endosulfan sulfate	Pirimicarb
Buprofezin	Etridiazole	Pyraclostrobin
Clothianidin	Fensulfthion	Quintozene
Coumaphos	Fenthion	Resmethrin
Cyantraniliprole	Fenvalerate	Spinetoram
Cyprodinil	Fluopyram	Spirodiclofen
Deltamethrin	Iprodione	Tebufenozide
Dinotefuran	Kinoprene	Teflubenzuron
Dimethomorph	Methoprene	Tetrachlorvinphos
Dodemorph	Mevinphos	Tetramethrin
Endosulfan I	Novaluron	Thiophanate-methyl

Canada Cannabis Pesticide Mix 2

CP-CAN-02

100 µg/mL each in ACN

1 mL

20 comps.

Abamectin	Daminozide	Methomyl
Acequinocyl	Fenoxycarb	Oxamyl
Carbaryl	(E)-Fenpyroximate	Propoxur
Carbofuran	Flonicamid	Spinosad
Chlorantraniliprole	Hexythiazox	Spirotetramat
Clofentezine	Imidacloprid	Thiamethoxam
Clofentezine	Methiocarb	

Technical Note

The original Canada Cannabis Pesticide Set has been revised to include Benzovindiflupyr which is a fungicide being monitored by Canada. This added analyte has been added to CP-CAN-01-R1 and is included in the revised Set.

Canada Cannabis Pesticide Mix 3

CP-CAN-03-R1

100 µg/mL each in ACN

1 mL

22 comps.

Acetamiprid	Fludioxonil	Piperonyl butoxide
Azoxystrobin	Imazalil	Pyridaben
Bifenazate	Kresoxim-methyl	Spiroxamine
Boscalid	Metaxyl	Tebuconazole
Chlorfenapyr	MGK-264	Thiacloprid
Dichlorvos	Myclobutanil	Propiconazole
Etioazole	Paclobutrazol	Trifloxystrobin
Fipronil		

Canada Cannabis Pesticide Mix 4

CP-CAN-04

100 µg/mL each in ACN

1 mL

16 comps.

Acephate	Chlorpyrifos	Naled
Bifenthrin	Ethoprop	Permethrin
Cyfluthrin	Etofenprox	Phosmet
Cypermethrin	Malathion	Prallethrin
Diazinon	Methyl parathion	Pyrethrins
Dimethoate		

Pesticides

Azadirachtin (Tech Mix)	100 µg/mL in ACN	P-711S-CN	1 mL
Spiromesifen	100 µg/mL in ACN	P-960S-CN	1 mL

Canada Cannabis Residual Solvents

Canada Cannabis Residual Solvent Mix 1

CP-CAN-RS-01

5000 µg/mL each in PT Methanol

1 mL

24 comps.

Acetic acid	Ethyl ether	2-Methyl-1-propanol
Anisole	Ethyl formate	MTBE
1-Butanol	Formic acid	Pentane
2-Butanol	Isobutyl acetate	1-Pentanol
Butyl acetate	Isopropyl acetate	1-Propanol
DMSO	Heptane	2-Propanol
Ethanol	Methyl acetate	Propyl acetate
Ethyl acetate	3-Methyl-1-butanol	Triethylamine

Canada Cannabis Residual Solvent Mix 2

CP-CAN-RS-02

5000 µg/mL each in PT Methanol

1 mL

2 comps.

Acetone	Methyl ethyl ketone
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Canada Cannabis Residual Solvent Mix 3 (Gases)

CP-CAN-RS-03

500 µg/mL each in PT Methanol

1 mL

3 comps.

n-Butane	Propane
Isobutane	

Cannabis Heavy Metal Analysis

Regulations for the testing of heavy metals in cannabis products differ based on state requirements and the route of administration. The standards below can be used for commonly set maximum limits or to provide flexibility to allow calibration over a wide range of concentrations.

Heavy Metal Analysis

Element	Matrix	1000 µg/mL	Unit
Starting Material		Cat. No.	
Arsenic (As) As	2-5% Nitric acid	ICP-03N-1	100 mL
		ICP-03N-5	500 mL
Cadmium (Cd) Cd	2-5% Nitric acid	ICP-08N-1	100 mL
		ICP-08N-5	500 mL
Chromium (Cr) Cr(NO ₃) ₃ •9H ₂ O	2-5% Nitric acid	ICP-13N-R-1	100 mL
		ICP-13N-R-5	500 mL
Lead (Pb) Pb(NO ₃) ₂	2-5% Nitric acid	ICP-29N-1	100 mL
		ICP-29N-5	500 mL
Mercury (Hg) Hg	10% Nitric acid	ICP-34N-1	100 mL
		ICP-34N-5	500 mL
Nickel (Ni) Ni	2-5% Nitric acid	ICP-37N-1	100 mL
		ICP-37N-5	500 mL
Thallium (Tl) TlNO ₃	2-5% Nitric acid	ICP-60N-1	100 mL
		ICP-60N-5	500 mL

Cannabis Metals 1

CP-MET-01-1 100 mL
At stated conc. (µg/mL) 4 comps
2-5% Nitric acid

Arsenic (As)	15
Cadmium (Cd)	5
Lead (Pb)	5
Mercury (Hg)	30

Cannabis Metals 2

CP-MET-02-1 100 mL
At stated conc. (µg/mL) 4 comps
2-5% Nitric acid

Arsenic (As)	20
Cadmium (Cd)	20
Lead (Pb)	50
Mercury (Hg)	10

Cannabis Metals Low & High Level Calibr. Standards

CP-MET-CAL-LOW-1 100 mL
CP-MET-CAL-HIGH-1 100 mL
At stated conc. (µg/mL) 2-5% Nitric acid 4 comps

	Low	High
Arsenic (As)	10	100
Cadmium (Cd)	10	100
Lead (Pb)	10	100
Mercury (Hg)	10	100

Cannabis Metals Initial Calibration Verification Standard

CP-MET-VER-1 100 mL
2-5% Nitric acid 26 comps.

Calcium	1000 µg/mL
Iron	1000 µg/mL
Potassium	1000 µg/mL
Magnesium	1000 µg/mL
Sodium	1000 µg/mL
Strontium	1000 µg/mL
Silver	10 µg/mL
Aluminum	10 µg/mL
Arsenic	10 µg/mL
Barium	10 µg/mL
Beryllium	10 µg/mL
Cadmium	10 µg/mL
Cobalt	10 µg/mL
Chromium	10 µg/mL
Copper	10 µg/mL
Manganese	10 µg/mL
Molybdenum	10 µg/mL
Nickel	10 µg/mL
Lead	10 µg/mL
Antimony	10 µg/mL
Selenium	10 µg/mL
Thallium	10 µg/mL
Vanadium	10 µg/mL
Zinc	10 µg/mL
Thorium	10 µg/mL
Uranium	10 µg/mL

Cannabis Metals Environmental Spike Mix

CP-MET-SPIKE-1 100 mL
2-5% Nitric acid, tr HF 24 comps.

Calcium	1000 µg/mL
Iron	1000 µg/mL
Potassium	1000 µg/mL
Magnesium	1000 µg/mL
Sodium	1000 µg/mL
Silver	100 µg/mL
Aluminum	100 µg/mL
Arsenic	100 µg/mL
Barium	100 µg/mL
Beryllium	100 µg/mL
Cadmium	100 µg/mL
Cobalt	100 µg/mL
Chromium	100 µg/mL
Manganese	100 µg/mL
Molybdenum	100 µg/mL
Lead	100 µg/mL
Antimony	100 µg/mL
Selenium	100 µg/mL
Thallium	100 µg/mL
Vanadium	100 µg/mL
Zinc	100 µg/mL
Uranium	100 µg/mL
Copper	100 µg/mL
Nickel	100 µg/mL

Cannabis Metals Environ. Calibration Standard

CP-MET-CAL-1 100 mL
10% Nitric acid 25 comps.

Calcium	1000 µg/mL
Iron	1000 µg/mL
Potassium	1000 µg/mL
Magnesium	1000 µg/mL
Sodium	1000 µg/mL
Silver	10 µg/mL
Aluminum	10 µg/mL
Arsenic	10 µg/mL
Barium	10 µg/mL
Beryllium	10 µg/mL
Cadmium	10 µg/mL
Cobalt	10 µg/mL
Chromium	10 µg/mL
Copper	10 µg/mL
Manganese	10 µg/mL
Molybdenum	10 µg/mL
Nickel	10 µg/mL
Lead	10 µg/mL
Antimony	10 µg/mL
Selenium	10 µg/mL
Thallium	10 µg/mL
Vanadium	10 µg/mL
Zinc	10 µg/mL
Thorium	10 µg/mL
Uranium	10 µg/mL

Cannabis Metals Internal Standard

CP-MET-INTSTD-1 100 mL
Each in 100 µg/mL 8 comps.
10% Nitric acid, tr HCl

Lithium-6	Indium
Scandium	Terbium
Germanium	Lutetium
Rhodium	Bismuth

Cannabis Metals Tuning Stock Solution

CP-MET-TUNSTOCK-1 100 mL
Each in 10 µg/mL 5 comps.
2-5% Nitric acid

Lithium	Thallium
Yttrium	Cobalt
Cerium	

Cannabis Metals Hg Calibration Solution

CP-MET-HG-0.01X-1 100 mL
10 µg/mL in 5% Nitric acid

Mercury

Cannabis Metals Mercury

CP-MET-HG-1 100 mL
1000 µg/mL in 10% Nitric acid

Mercury

Technical Note

Testing of heavy metals is important because metallic impurities can be absorbed from the soil when the plant grows, or can be introduced during preparation of the saleable product.

Electronic Cigarette Standards



The popularity of vaping and electronic cigarettes has brought up many questions about possible health concerns. The “juice” used in these devices along with the heating element or atomizer can introduce many different organic and inorganic chemicals into the body. One pod of the introduced oil can contain approximately the same amount of nicotine found in 20 cigarettes. The aerosol released to both the user and the second-hand vapor can contain aldehydes, PAHs, organic acids, nicotine degradation products and trace heavy metals, all of which may be a concern to human health and the environment.

Currently there are no regulations regarding the use of these chemicals in vaping products, but AccuStandard is aware of the concern. The following analytical standards for research analysis.

British America Tobacco Analysis

EC-BAT-01		1 mL
<i>At stated % w/w</i>		<i>5 comps.</i>
Nicotine	1	Propylene glycol 31.98
Water	18	4-(4-Hydroxyphenyl)-2-butanone 0.02
Glycerol	49	

Varied Solvent Ratio for Nicotine Analysis

AS-E0519		1 mL
Nicotine		1000 µg/mL in MeOH
EC-NIC-01S		1 mL
Nicotine		10 mg/mL in Propylene glycol:Glycerol (80:20)
EC-NIC-02S		1 mL
Nicotine		10 mg/mL in Propylene glycol:Glycerol (50:50)
EC-NIC-03S		1 mL
Nicotine		10 mg/mL in Propylene glycol:Glycerol (20:80)
EC-NIC-04S		1 mL
N'-Nitrosonornicotine		10 µg/g in Propylene glycol:Glycerol (50:50)

Nicotine Degradation Standard

EC-NIC-05S		1 mL
<i>500 µg/g each in Propylene glycol:Glycerol (50:50)</i>		<i>2 comps.</i>
(R,S)-Anabasine		Cotinine

Organic Functional Group Analysis

Aldehyde Standard

EC-ALD-01S		1 mL
<i>50 µg/mL each in Propylene glycol</i>		<i>2 comps.</i>
Acetaldehyde		Formaldehyde

PAH Standard

EC-PAH-01S		1 mL
<i>10 µg/g each in Propylene glycol:Glycerol (50:50)</i>		<i>2 comps.</i>
4-Aminobiphenyl		Benz[a]pyrene

Organic Acids Standard

EC-ACD-01S		1 mL
<i>1000 µg/g in Propylene glycol:Glycerol (50:50)</i>		<i>2 comps.</i>
Acetic acid		L-(+)-Lactic acid

Heavy Metals Analysis

Trace Metals Standards

EC-MET-01S-1		100 mL
<i>10 µg/mL each in 2-5% Nitric Acid</i>		<i>4 comps.</i>
Cadmium		Copper
Chromium		Nickel

EC-MET-02S-1		100 mL
<i>10 µg/mL each in 2-5% Nitric Acid</i>		<i>5 comps.</i>
Aluminum		Lead
Arsenic		Manganese
Iron		

Vitamin E Standard

VIT-012N		100 mg
Vitamin E		

Plastic Additives

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.

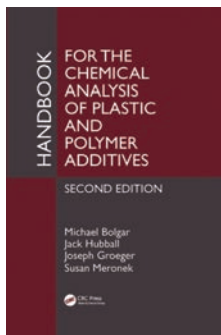
AccuStandard has collected and synthesized many of these polymer adjuncts and is pleased to present them in this unique product line for monitoring these chemicals.

The occurrence, toxicity and analytical methods used in the detection and 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" 2nd Ed. (published by CRC Press). Both manufacturers and analytical laboratories will find the CRC book to be an authoritative source of information.

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

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This reference handbook contains the compounds in this catalog, with important reference data to aid in testing and compliance. There is also information to help with real world examples, tips for analysis in challenging matrices, and more.

Cat. No: **BOOK-PLAS-002**

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

Accelerants

Trade Name	Chemical Name	CAS No.	NEAT	Unit	SOLUTION	Unit
Accelerator BBTS	N-(1,1-dimethylethyl)-2-benzo thiazolesulfenamide	95-31-8	PLAS-AC-003N	50 mg	PLAS-AC-003S ◇	1 mL
Accelerator CBTS	N-cyclohexyl-2-benzothiazole sulfenamide	95-33-0	PLAS-AC-007N	50 mg	-----	---
Accelerator EZ & EZ-SP	Zinc diethyldithiocarbamate	14324-55-1	PLAS-AC-006N	50 mg	PLAS-AC-006S ◇	1 mL
Accelerator MBT, MBT/MG	2-Mercaptobenzothiazole	149-30-4 *	PLAS-AC-001N	50 mg	PLAS-AC-001S ◇	1 mL
Activator OT Urea	Urea	57-13-6	PLAS-AC-005N	50 mg	PLAS-AC-005S-A	1 mL
Akroform ETU-22 PM	Ethylene thiourea	96-45-7 *	PLAS-AC-002N	50 mg	PLAS-AC-002S ◇	1 mL
Cure-Rite® IBT	Tetraisobutylthiuram disulfide	3064-73-1	PLAS-AC-004N	50 mg	PLAS-AC-004S	1 mL
Dipentamethylenethiuram tetrasulfide		120-54-7	PLAS-AC-009N	50 mg	-----	---
1,3-Diphenyl-2-thiourea		102-08-9	PLAS-AC-008N	50 mg	-----	---
1,3-Di-o-tolylguanidine		97-39-2	PLAS-AC-010N	50 mg	-----	---

Antidegradants

Trade Name	Chemical Name	CAS No.	NEAT	Unit	SOLUTION	Unit
Akrochem® Antiox 12	Butylated reaction product of p-cresol and dicyclopentadiene	68610-51-5	PLAS-AD-001N	50 mg	PLAS-AD-001S ◇	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	50 mg	PLAS-AX-084S	1 mL
EthanoX 703	2,6-Di-tert-butyl-N,N-dimethylamino-p-cresol	88-27-7	PLAS-AX-085N	50 mg	PLAS-AX-085S	1 mL
Santoflex® IPPD	N-phenyl-N'-propan-2-yl-benzene-1,4-diamine	101-72-4	PLAS-AD-003N	50 mg	PLAS-AD-003S ◇	1 mL
Santoflex 77PD	N,N'-bis(1,4-dimethylpentyl)-p-phenylenediamine	3081-14-9	PLAS-AD-002N	50 mg	PLAS-AD-002S	1 mL

Antifoams

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

Antioxidants

Trade Name	Chemical Name	CAS No.	NEAT	Unit	SOLUTION	Unit
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	50 mg	-----	---
Alkanox TNPP	Tris(mono-nonylphenyl) phosphite with up to 1% triisopropanol amine	26523-78-4 *	PLAS-AX-077N	50 mg	PLAS-AX-077S	1 mL
Anox® PP18	Octadecyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propanoate	2082-79-3 *	PLAS-AX-114N	50 mg	-----	---
Antioxidant 60	2H-benzimidazole-2-thione, 1,3-di-hydro-4(or 5)-methyl	53988-10-6	PLAS-AX-019N	50 mg	PLAS-AX-019S-M	1 mL
Antioxidant S	Benzenamine, N-phenyl, reaction products with 2,4,4-trimethylpentene	68411-46-1 *	PLAS-AX-057N	50 mg	PLAS-AX-057S	1 mL
2-(2H-Benzotriazol-2-yl)-4,6-bis(1-methyl-1-phenylethyl)phenol		3147-75-9	PLAS-AX-094N	50 mg	-----	---

* Indicated CAS number may refer to the active ingredients on these technical mixtures

Antioxidants continued on next page

Plastic Additives

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

Antioxidants (continued)

Trade Name	Chemical Name	CAS No.	NEAT	Unit	SOLUTION	Unit
BLS® 234	2-[2-Hydroxy-3,5-di-(1,1-dimethylbenzyl)]-2H-benzotriazole	70321-86-7 *	PLAS-AX-088N	50 mg	-----	---
BLS 292	bis(1,2,2,6,6-pentamethyl-4-piperidyl)sebacate and Methyl(1,2,2,6,6-pentamethyl-4-piperidyl)sebacate	41556-26-7 / * 8219-37-7	PLAS-AX-089N	50 mg	-----	---
BLS 1622	Dimethyl succinate polymer with 4-hydroxy-2,2,6,6-tetramethyl-1-piperidine ethanol	65447-77-0	PLAS-AX-096N	50 mg	-----	---
BLS 1944	Poly[[6-[(1,1,3,3-tetramethylbutyl)aminol]-s-triazine-2,4-diyl][(2,2,6,6-tetramethyl-4-piperidyl)imino]]hexamethylene[(2,2,6,6-tetramethyl-4-piperidyl)imino]	70624-18-9 847488-62-4	PLAS-AX-090N PLAS-AX-087N	50 mg	-----	---
BNX 1077	Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-, isotridecyl ester	6683-19-8/31570-04-4 / * 25038-32-8	PLAS-AX-091N	50 mg	-----	---
BNX 1225TPR	Blend of BNX® 1010, Benefos® 1680 and SIS Block Copolymer	3896-11-5 85-60-9	PLAS-AX-093N PLAS-AX-105N	50 mg	-----	---
2-tert-Butyl-6-(5-chloro-2H-benzotriazol-2-yl)-4-methylphenol		13103-52-1	PLAS-AX-047N	50 mg	PLAS-AX-047S	1 mL
Cyanox® 1212	Lauryl stearylthiopropionate	40601-76-1	PLAS-AX-005N	50 mg	PLAS-AX-005S ◇	1 mL
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	119-47-1 *	PLAS-AX-013N	50 mg	PLAS-AX-013S	1 mL
Cyanox 2246	2,2'-Methylene-bis-(4-methyl-6-tert-butyl-phenol)	88-24-4 *	PLAS-AX-012N	50 mg	PLAS-AX-012S	1 mL
Cyanox 425	2,2'-Methylene-bis-(4-ethyl-6-tert-butyl-phenol)	123-28-4 *	PLAS-AX-041N	50 mg	PLAS-AX-041S	1 mL
Cyanox LTDP	Dilaurylthiopropionate	693-36-7	PLAS-AX-044N	50 mg	PLAS-AX-044S	1 mL
Cyanox STDP	Distearylthiopropionate	88-27-7	PLAS-AX-115S	1 mL		
2,6-Di-tert-butyl-4-dimethylaminomethylphenol		621-07-8	PLAS-AX-092N	50 mg	-----	---
Dibenzylhydroxylamine		109-46-6	PLAS-AX-102N	50 mg	-----	---
N,N'-Dibutylthiourea		154862-43-8	PLAS-AX-111N	50 mg	-----	---
3,9-bis(2,4-Dicumylphenoxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5,5]undecane		976-56-7	PLAS-AX-110N	50 mg	-----	---
Diethyl 3,5-Di-tert-butyl-4-hydroxybenzyl phosphonate		105-55-5	PLAS-AX-103N	50 mg	-----	---
N,N'-Diethylthiourea	1,3-Diethyl-2-thiourea	3806-34-6	PLAS-AX-108N	50 mg	-----	---
3,9-bis(Octadecyloxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5,5]undecane		120-54-7	PLAS-AX-100N	50 mg	-----	---
1,3-Diphenyl-2-thiourea	1,3-Di(phenyl)thiourea	27344-41-8	PLAS-AX-099N	50 mg	-----	---
Distyryl biphenyl		97-39-2	PLAS-AX-101N	50 mg	-----	---
1,3-Di-o-tolylguanidine	1,2-bis(2-methylphenyl)guanidine	4130-42-1	PLAS-AX-107N	50 mg	-----	---
2,6-Di-tert-butyl-4-ethylphenol		128-39-2	PLAS-AX-112N	50 mg	-----	---
2,6-Di-tert-butylphenol		6683-19-8 *	PLAS-AX-086N	50 mg	PLAS-AX-086S	1 mL
Ethanox® 310	Pentaerythritol tetrakis (3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate		PLAS-AX-082N	50 mg	PLAS-AX-082S	1 mL
Ethanox 323	Nonylphenol disulfide oligomer	1709-70-2	PLAS-AX-021N	50 mg	PLAS-AX-021S	1 mL
Ethanox 330	1,3,5-Trimethyl-2,4,6-tris(3,5-di-tert-butyl-4-hydroxybenzyl) benzene	2082-79-3 *	PLAS-AX-054N	50 mg	PLAS-AX-054S	1 mL
Ethanox 376	3,5-Di-tert-butyl-4-hydroxyhydrocinnamic acid, octadecyl ester	118-82-1	PLAS-AX-025N	50 mg	PLAS-AX-025S	1 mL
Ethanox 702	4,4'-Methylenebis(2,6-di-tert-butylphenol)	88-27-7	PLAS-AX-085N	50 mg	PLAS-AX-085S	1 mL
Ethanox 703	2,6-Di-tert-butyl-N,N-dimethylamino-p-cresol	31570-04-4 *	PLAS-AX-074N	50 mg	PLAS-AX-074S	1 mL
Ethaphos 368	tris(2,4-Di-tert-butylphenyl) phosphite	35958-30-6	PLAS-AX-106N	50 mg	-----	---
2,2'-Ethylidene-bis(4,6-di-tert-butylphenol)		25973-55-1	PLAS-AX-095N	50 mg	-----	---
2-(2'-Hydroxy-3',5'-di-tert-amylphenyl) benzotriazole		36443-68-2	PLAS-AX-070N	50 mg	PLAS-AX-070S ◇	1 mL
Irganox® 245	Triethyleneglycol bis[3-(3'-tert-butyl-4'-hydroxy-5'-methylphenol)propionate]	35074-77-2	PLAS-AX-045N	50 mg	PLAS-AX-045S	1 mL
Irganox 259	Hexamethylene bis(3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate)	991-84-4	PLAS-AX-014N	50 mg	PLAS-AX-014S	1 mL
Irganox 565	2,4-bis(n-Octylthio)-6-(4-hydroxy-3,5-di-tert-butylanilino)-1,3,5-triazine	41484-35-9	PLAS-AX-069N	50 mg	PLAS-AX-069S	1 mL
Irganox 1035	Thiodiethylene bis(3,5-di-tert-butyl-4-hydroxyhydrocinnamate)	90-66-4	PLAS-AX-080N	50 mg	PLAS-AX-080S	1 mL
Irganox 1081	6,6'-Di-tert-butyl-2,2'-thiodi-p-cresol	23128-74-7	PLAS-AX-050N	50 mg	PLAS-AX-050S ◇	1 mL
Irganox 1098	N,N'-1,6-Hexanedyl bis[3,5-bis(1,1-dimethylethyl)-4-hydroxy-benzenepropanamide]	65140-91-2 / * 9002-88-4	PLAS-AX-079N	50 mg	-----	---
Irganox 1425 WL	Ethyl 3,5-di-tert-butyl-4-hydroxybenzylphosphonate, calcium salt and polyethylene-wax mixture	34137-09-2	PLAS-AX-020N	50 mg	PLAS-AX-020S ◇	1 mL
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	27676-62-6	PLAS-AX-078N	50 mg	PLAS-AX-078S	1 mL
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	10191-41-0 *	PLAS-AX-027N	50 mg	PLAS-AX-027S	1 mL
Irganox E 201	alpha-Tocopherol	32687-78-8	PLAS-AX-001N	50 mg	PLAS-AX-001S ◇	1 mL
Irganox MD 1024	1,2-bis(3,5-Di-tert-butyl-4-hydroxyhydrocinnamoyl)hydrazide	17540-75-9 *	PLAS-AX-018N	50 mg	PLAS-AX-018S	1 mL
Isonox® 132	2,6-Di-tert-butyl-4-sec-butylphenol	4306-88-1	PLAS-AX-063N	50 mg	PLAS-AX-063S	1 mL
Isonox 232	2,6-Di-tert-butyl-4-nonylphenol	79-74-3	PLAS-AX-016N	50 mg	PLAS-AX-016S ◇	1 mL
Lowinox® AH25	2,5-bis(1,1-Dimethylpropyl)-1,4-benzenediol	68610-51-5 *	PLAS-AX-059N	50 mg	PLAS-AX-059S ◇	1 mL
Lowinox CPL	Polymeric sterically hindered phenol	96-69-5 *	PLAS-AX-024N	50 mg	PLAS-AX-024S ◇	1 mL
Lowinox TBM-6	4,4'-Thiobis(2-tert-butyl-5-methylphenol)	7601-89-0	PLAS-AX-028N	50 mg	PLAS-AX-028S	1 mL
Markstat® 60	Polyethylene glycol ether (<20% NaClO ₄)					

* Indicated CAS number may refer to the active ingredients on these technical mixtures

Plastic Additives

Trade-named products are usually technical mixtures.

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

Antioxidants (continued)

Trade Name	Chemical Name	CAS No.	NEAT	Unit	SOLUTION	Unit
Naugard® 412S	beta-Laurylthiopropionate	29598-76-3	PLAS-AX-030N	50 mg	PLAS-AX-030S	1 mL
Naugard 445	4,4'-bis(alpha,alpha-Dimethylbenzyl)diphenylamine	10081-67-1	PLAS-AX-022N	50 mg	PLAS-AX-022S	1 mL
Naugard 635	4-(1-phenylethyl)-N-[4-(1-phenylethyl)phenyl]aniline	68442-68-2	PLAS-AX-113N	50 mg	-----	---
Naugard 956	Proprietary blend of primary and secondary antioxidants		PLAS-AX-060N	50 mg	PLAS-AX-060S-T	1 mL
Naugard A	Acetone diphenylamine condensation products	68412-48-6	PLAS-AX-026N	50 mg	PLAS-AX-026S ◇	1 mL
Naugard B-25	1:1 blend of Naugard® 10 and Naugard® 524	6683-19-8 / * 31570-04-4	PLAS-AX-061N	50 mg	PLAS-AX-061S	1 mL
Naugard BHT	2,6-Di-tert-butyl-4-methylphenol	128-37-0	PLAS-AX-017N	50 mg	PLAS-AX-017S	1 mL
Naugard HM-22	Blend of phenolic primary and diphenylamine secondary antioxidants (Naugards 76 and 445)	10081-67-1 / * 2082-79-3	PLAS-AX-033N	50 mg	PLAS-AX-033S	1 mL
Naugard J	N,N'-Diphenyl-p-phenylenediamine	74-31-7	PLAS-AX-048N	50 mg	PLAS-AX-048S ◇	1 mL
Naugard NBC	Nickel dibutyl dithiocarbamate	13927-77-0 *	PLAS-AX-051N	50 mg	PLAS-AX-051S	1 mL
Naugard PANA	N-Phenyl-1-naphthylamine	90-30-2 *	PLAS-AX-058N	50 mg	PLAS-AX-058S	1 mL
Naugard PHR	Tris(mono-nonylphenyl) phosphite with up to 1% triisopropanol amine	26523-78-4	PLAS-AX-076N	50 mg	PLAS-AX-076S	1 mL
Naugard PS-30	Benzenamine, N-phenyl, reaction products with 2,4,4-trimethylpentene	68411-46-1 *	PLAS-AX-038N	50 mg	PLAS-AX-038S	1 mL
Naugard PS-35	Butylated, octylated diphenylamine 2,6 di-tert-butyl-4-sec-butyl phenol	732-26-3 *	PLAS-AX-046N	50 mg	PLAS-AX-046S	1 mL
Naugard Q Extra	1,2-Dihydro-2,2,4-trimethylquinoline (polymerized)	26780-96-1 *	PLAS-AX-002N	50 mg	PLAS-AX-002S	1 mL
Naugard RM-51	Tris(mono-nonylphenyl)phosphite,2,2'-methylene bis (4-methyl-6-nonyl phenol) *		PLAS-AX-034N	50 mg	PLAS-AX-034S	1 mL
Naugard Super Q	1,2-Dihydro-2,2,4-trimethylquinoline (polymerized)	26780-96-1 *	PLAS-AX-003N	50 mg	PLAS-AX-003S	1 mL
Naugard XL-1	2,2'-Oxamidobis[ethyl-3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate]	70331-94-1	PLAS-AX-008N	50 mg	PLAS-AX-008S ◇	1 mL
Propyl gallate	propyl 3,4,5-trihydroxybenzoate	121-79-9	PLAS-AX-109N	50 mg	-----	---
bis(2,2,6,6-Tetramethyl-4-piperidyl) sebacate		52829-07-9	PLAS-AX-097N	50 mg	-----	---
2,2'-(2,5-Thiophenediyl)bis(5-tert-butylbenzoxazole)		7128-64-5	PLAS-AX-098N	50 mg	-----	---
Ultrinox® 626	bis(2,4-Di-tert-butylphenyl)pentaerythritol diphosphite	26741-53-7	PLAS-AX-031N	50 mg	PLAS-AX-031S	1 mL

Antiozonants

Trade Name	Chemical Name	CAS No.	NEAT	Unit	SOLUTION	Unit
Antiozonant NIBUD	Nickel dibutyl dithiocarbamate	13927-77-0 *	PLAS-AZ-001N	50 mg	PLAS-AZ-001S	1 mL
Akrowax™ 195	Petroleum Wax	64742-42-3	PLAS-AZ-002N	50 mg	-----	---

Blowing Agents, Plasticizers

Trade Name	Chemical Name	CAS No.	NEAT	Unit	SOLUTION	Unit
CPW-100	Chlorinated paraffin wax	63449-39-8 *	PLAS-BA-001N	50 mg	PLAS-BA-001S	1 mL
Celogen® AZ	Carbamoyliminoura	123-77-3 *	PLAS-BA-002N **	50 mg	PLAS-BA-002S-DMSO	1 mL
Celogen RA	[(4-methylphenyl)sulfonylamino]urea	10396-10-8	PLAS-BA-003N	50 mg	-----	---

** This product can not ship by air.

Coupling Agents

Trade Name	Chemical Name	CAS No.	NEAT	Unit	SOLUTION	Unit
Silquest® A-187	gamma-Glycidoxypolytrimethoxysilane	2530-83-8	PLAS-CA-004N	50 mg	PLAS-CA-004S	1 mL
Silquest A-1100	gamma-Aminopropyltriethoxysilane	919-30-2	PLAS-CA-002N	50 mg	PLAS-CA-002S	1 mL
Silquest A-1102	gamma-Aminopropyltriethoxysilane (Tech grade)	919-30-2 *	PLAS-CA-003N	50 mg	PLAS-CA-003S	1 mL
Silquest A-1289	bis-(Triethoxysilylpropyl)tetrasulfane	40372-72-3	PLAS-CA-001N	50 mg	PLAS-CA-001S	1 mL
Silquest A-137	Octyltriethoxysilane	2943-75-1	PLAS-CA-005N	50 mg	PLAS-CA-005S	1 mL
Silquest A-2171	Vinylmethyldimethoxysilane	16753-62-1	PLAS-CA-006N	50 mg	PLAS-CA-006S	1 mL

Cross-Linking Agents

Trade Name	Chemical Name	CAS No.	NEAT	Unit	SOLUTION	Unit
F-300, F-1000, F-1500, F-2000, F-3000	Stearic acid	57-11-4 *	PLAS-CL-006N	50 mg	PLAS-CL-006S	1 mL
Perkacit® DPG	N,N'-Diphenylguanidine	102-06-7	PLAS-CL-004N	50 mg	PLAS-CL-004S-R1	1 mL
Perkacit MBT	2-Mercaptobenzothiazole	149-30-4 *	PLAS-CL-002N	50 mg	PLAS-CL-002S	1 mL
Perkacit MBTS	2,2'-Dithiobis(benzothiazole)	120-78-5	PLAS-CL-001N	50 mg	PLAS-CL-001S-D	1 mL
Perkacit NDBC	Nickel dibutyl dithiocarbamate	13927-77-0 *	PLAS-CL-005N	50 mg	PLAS-CL-005S	1 mL
Perkacit ZDEC	Zinc diethyldithiocarbamate	14324-55-1 *	PLAS-CL-007N	50 mg	PLAS-CL-007S	1 mL
Resimene® 3520	Hexamethoxy methyl melamine	3089-11-0	PLAS-CL-003N	50 mg	PLAS-CL-003S	1 mL

* Indicated CAS number may refer to the active ingredients on these technical mixtures

Plastic Additives

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

Trade Name	Chemical Name	CAS No.	Matrix	Cat. No.	Unit
Aroclor® 1016 (Tech Mix)		12674-11-2	1000 µg/mL in Hexane	C-216S-H-10X	1 mL
Aroclor 1221 (Tech Mix)		11104-28-2	1000 µg/mL in Hexane	C-221S-H-10X	1 mL
Aroclor 1232 (Tech Mix)		11141-16-5	1000 µg/mL in Hexane	C-232S-H-10X	1 mL
Aroclor 1242 (Tech Mix)		53469-21-9	1000 µg/mL in Hexane	C-242S-H-10X	1 mL
Aroclor 1248 (Tech Mix)		12672-29-6	1000 µg/mL in Hexane	C-248S-H-10X	1 mL
Aroclor 1254 (Tech Mix)		11097-69-1	1000 µg/mL in Hexane	C-254S-H-10X	1 mL
Aroclor 1260 (Tech Mix)		11096-82-5	1000 µg/mL in Hexane	C-260S-H-10X	1 mL
Aroclor 1262 (Tech Mix)		37324-23-5	1000 µg/mL in Hexane	C-262S-H-10X	1 mL
Aroclor 1268 (Tech Mix)		11100-14-4	1000 µg/mL in Hexane	C-268S-H-10X	1 mL
Aroclor 5432 (Tech Mix)		63496-31-1	35 µg/mL in Toluene	T-432S	1 mL
Aroclor 5442 (Tech Mix)		12642-23-8	35 µg/mL in Toluene	T-442S	1 mL
Aroclor 5460 (Tech Mix)		11126-42-4	35 µg/mL in Toluene	T-460S	1 mL
Aroclor 6050 (Tech Mix)			35 µg/mL in Toluene	T-6050S	1 mL
Decabromodiphenyl ether		1163-19-5	50 µg/mL in Isooctane:Toluene	BDE-209S	1 mL
Firemaster BP4A (4,4'-(1-methylethylidene) bis (2,6-dibromophenol))			100 µg/mL in Toluene	FBS-006S	1 mL
Halowax® 1000		58718-66-4	NEAT	N-1000N	10 mg
Halowax 1001		58718-67-5	NEAT	N-1001N	10 mg
Halowax 1013 (56 %Cl)		1321-64-8	100 µg/mL in Methanol	N-1013S	1 mL
Halowax 1014 (62 %Cl)		1335-87-1	100 µg/mL in Methanol	N-1014S	1 mL
Halowax 1051 (70 %Cl)			100 µg/mL in Methanol	N-1051S	1 mL
Halowax 1099 (52 %Cl)		39450-05-0	NEAT	N-1099N	10 mg
			100 µg/mL in Methanol	N-1099S	1 mL
2,2',3,4,4',5',6-Heptabromodiphenyl ether		207122-16-5	50 µg/mL in Isooctane	BDE-183S	1 mL
2,2',4,4'-Tetrabromodiphenyl ether		5436-43-1	50 µg/mL in Isooctane	BDE-047S	1 mL
2,2',4,4',5-Pentabromodiphenyl ether		60348-60-9	50 µg/mL in Isooctane	BDE-099S	1 mL
2,2',4,4',5,5'-Hexabromodiphenyl ether		68631-49-2	50 µg/mL in Isooctane	BDE-153S	1 mL
2,2',4,4',5,6'-Hexabromodiphenyl ether		207122-15-4	50 µg/mL in Isooctane	BDE-154S	1 mL
2,2',4,4',6-Pentabromodiphenyl ether		189084-64-8	50 µg/mL in Isooctane	BDE-100S	1 mL
<i>m</i> -Terphenyl		92-06-8	NEAT	T-002N	100 mg
<i>o</i> -Terphenyl		84-15-1	NEAT	T-001N	100 mg
<i>p</i> -Terphenyl		92-94-4	NEAT	T-003N	100 mg
Tetradecachloro- <i>m</i> -terphenyl		42429-89-0	35 µg/mL in Toluene	T-005S	1 mL
Tetradecachloro- <i>o</i> -terphenyl		42429-88-9	35 µg/mL in Toluene	T-004S	1 mL
Tetradecachloro- <i>p</i> -terphenyl			35 µg/mL in Toluene	T-006S	1 mL

Hardening Agent

Trade Name	Chemical Name	CAS No.	Matrix	Cat. No.	Unit
Triglycidyl isocyanurate		2451-62-9	NEAT	PLAS-HA-001N	100mg

Plasticizers

Bisphenol A (2,2'-bis(4-hydroxyphenyl)propane, BPA) has been used in commercial and industrial applications since the 1970's. It has been the subject of numerous toxicological studies due to human exposure from leachate originating from polycarbonate plastics and epoxy-lined food and drink containers. Analogs of BPA have been the subject of recent health-related studies.

Bisphenol Analogs		10 µg/mL in MeOH			
Trade Name	CAS No.	NEAT	Cat. No.	Unit	
Bisphenol A (BPA)	80-05-7	BPA-A-N 50 mg	BPA-A-S	1 mL	
		1000 µg/mL in MeOH	M-1626-01S	1 mL	
Bisphenol A diglycidyl ether (BADGE)	1675-54-3	BADGE-001N 50 mg	BADGE-001S	1 mL	
Bisphenol AF	1478-61-1	BPA-AF-N 50 mg	BPA-AF-S	1 mL	
Bisphenol AP	1571-75-1	BPA-AP-N 50 mg	BPA-AP-S	1 mL	
Bisphenol B	77-40-7	BPA-B-N-10MG 10 mg	BPA-B-S	1 mL	
Bisphenol BP	1844-01-5	BPA-BP-N 50 mg	BPA-BP-S	1 mL	
Bisphenol C	79-97-0	BPA-C-N 50 mg	BPA-C-S	1 mL	
Bisphenol C-dichloride	14868-03-2	BPA-C2-N 20 mg	BPA-C2-S	1 mL	
Bisphenol E	2081-08-5	BPA-E-N 50 mg	BPA-E-S	1 mL	
Bisphenol F	620-92-8	BPA-F-N-10MG 10 mg	BPA-F-S	1 mL	
Bisphenol G	127-54-8	BPA-G-N 20 mg	BPA-G-S	1 mL	
Bisphenol M	13595-25-0	BPA-M-N 20 mg	BPA-M-S	1 mL	
Bisphenol P	2167-51-3	BPA-P-N 50 mg	BPA-P-S	1 mL	
Bisphenol PH	24038-68-4	BPA-PH-N 20 mg	BPA-PH-S	1 mL	
Bisphenol S	80-09-1	BPA-S-N 50 mg	BPA-S-S	1 mL	
Bisphenol TMC	129188-99-4	BPA-TMC-N-10MG 10 mg	BPA-TMC-S	1 mL	
Bisphenol Z	843-55-0	BPA-Z-N 50 mg	BPA-Z-S	1 mL	

Plastic Additives

Plasticizers (continued)

In response to restrictions imposed as a result of world-wide concern over environmental and health-related issues of phthalates, the plastics industry is generating a variety of alternatives. These new plasticizers include 42 phthalate replacement compounds representing 20 chemical classes to help accurately identify these compound in different consumer products.

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, -D Dichloromethane -CN Acetonitrile

Trade Name	Chemical Name	CAS No.	NEAT	Unit	SOLUTION	Unit
Benzoflex® 2-45	Diethylene glycol dibenzoate	120-55-8	PLAS-PL-015N	50 mg	PLAS-PL-015S	1 mL
n-Butyl acetyl ricinoleate	Ricinoleic Acid Derivative	140-04-5 *	-----	--	PLAS-PL-107S	1 mL
n-Butyl stearate	Stearic acid Derivative	123-95-5 *	-----	--	PLAS-PL-114S	1 mL
t-Butylphenyl diphenyl phosphate	Phosphoric Acid Derivative	56803-37-3	-----	--	PLAS-PL-103S	1 mL
Butyl ricinoleate	Ricinoleic Acid Derivative	151-13-3	-----	--	PLAS-PL-105S	1 mL
Celogen® SD-125	50% Azodicarbonamide in a phthalate plasticizer		PLAS-PL-009N	50 mg	PLAS-PL-009S	1 mL
Citroflex® 2	2-Hydroxy-1,2,3-propanetricarboxylic acid, triethyl ester	77-93-0	PLAS-PL-028N	50 mg	PLAS-PL-028S	1 mL
Citroflex 4	2-Hydroxy-1,2,3-propanetricarboxylic acid, tributyl ester	77-94-1	PLAS-PL-030N	50 mg	PLAS-PL-030S	1 mL
Citroflex A-2	2-(Acetyloxy)-1,2,3-propanetricarboxylic acid, triethyl ester	77-89-4	PLAS-PL-001N	50 mg	PLAS-PL-001S	1 mL
Citroflex A-4	2-Acetoxy-1,2,3-propanetricarboxylic acid, tributyl ester	77-90-7	PLAS-PL-002N	50 mg	PLAS-PL-002S	1 mL
Citroflex B-6	n-Butyltri-n-hexyl citrate	82469-79-2	PLAS-PL-025N	50 mg	PLAS-PL-025S	1 mL
Cresyl diphenyl phosphate	(4-Methylphenyl) diphenyl phosphate	26444-49-5	PLAS-PL-059N	50 mg	-----	---
Dibutyl fumarate	Fumaric Acid Derivative	105-75-9	-----	--	PLAS-PL-087S	1 mL
Di n-butyl maleate	Maleic Acid Derivative	105-76-0	-----	--	PLAS-PL-091S	1 mL
Dibutyl phthalate		84-74-2	PLAS-PL-013N	50 mg	PLAS-PL-013S	1 mL
Dibutyl sebacate	Dimethyl decanedioate	109-43-3	PLAS-PL-062N	50 mg	-----	---
Diethyl adipate		141-28-6	PLAS-PL-043N	50 mg	-----	---
Di(2-ethylhexyl)azelaate	Azelaic Acid Derivative	103-24-2	-----	--	PLAS-PL-081S-A	1 mL
Di(2-ethylhexyl)maleate [Diocyl maleate]	Maleic Acid Derivative	142-16-5	-----	--	PLAS-PL-090S	1 mL
Diethyl succinate	Succinic acid Derivative	123-25-1	-----	--	PLAS-PL-109S	1 mL
Di(n-heptyl, n-nonyl) adipate	Adipic Acid Derivative	68515-75-3	-----	--	PLAS-PL-080S	1 mL
Di-n-hexyl azelaate	Azelaic Acid Derivative	109-31-9	-----	--	PLAS-PL-078S-A	1 mL
Diisobutyl adipate	Adipic Acid Derivative	141-04-8	-----	--	PLAS-PL-082S	1 mL
Diisooctyl azelaate	Azelaic Acid Derivative	26544-17-2	-----	--	PLAS-PL-076S-A	1 mL
Diisodecyl azelaate	Azelaic Acid Derivative	28472-97-1	-----	--	PLAS-PL-075S-A	1 mL
Diisodecyl adipate	Adipic Acid Derivative	27178-16-1	-----	--	PLAS-PL-083S	1 mL
Diisooctyl phthalate	bis(6-Methylheptyl)benzene-1,2-dicarboxylate	27554-26-3	PLAS-PL-071N	50 mg	-----	---
Dimethyl adipate	Dimethyl hexanedioate	627-93-0	PLAS-PL-070N	50 mg	-----	---
Dimethyl azelaate	Azelaic Acid Derivative	1732-10-1	-----	--	PLAS-PL-077S-A	1 mL
Dimethyl sebacate	Dimethyl decanedioate	106-79-6	PLAS-PL-061N	50 mg	-----	---
Diocyl phthalate (DOP)		117-81-7	PLAS-PL-019N	50 mg	PLAS-PL-019S	1 mL
Di(propylene glycol) dibenzoate	Benzoic Acid Derivative	27138-31-4	-----	--	PLAS-PL-101S	1 mL
Disflamol® TKP	Tricresyl phosphate	1330-78-5 *	PLAS-PL-073N	50 mg	-----	---
Disflamol® TP	Triphenyl phosphate	115-86-6 *	PLAS-PL-069N	50 mg	-----	---
Di(tridecyl) adipate	Adipic Acid Derivative	16958-92-2	-----	--	PLAS-PL-079S-A	1 mL
Epoxidized linseed oil	Epoxy Derivative	8016-11-3	-----	--	PLAS-PL-085S-T	1 mL
Ethylene glycol monostearate	Stearic acid Derivative	111-60-4 *	-----	--	PLAS-PL-112S	1 mL
N-Ethyl o,p-toluenesulfonamide	Succinic acid Derivative	8047-99-2	-----	--	PLAS-PL-111S-T	1 mL
2-Ethylhexyl epoxy tallate	Epoxy Derivative	61789-01-3	-----	--	PLAS-PL-086S	1 mL
2-Ethylhexyl sebacate	bis(2-Ethylhexyl) decanedioate	122-62-3	PLAS-PL-064N	50 mg	-----	---
bis(2-Ethylhexyl)terephthalate	bis(2-Ethylhexyl) benzene-1,4-dicarboxylate	6422-86-2	PLAS-PL-065N	50 mg	-----	---
Glycerol monooleate	Oleic Acid Derivative	25496-72-4 *	-----	--	PLAS-PL-096S	1 mL
Glycerol monostearate	Stearic acid Derivative	31566-31-1	-----	--	PLAS-PL-115S-T	1 mL
Glycerol triacetate	Glycerol Derivative	102-76-1	-----	--	PLAS-PL-088S	1 mL
Glyceryl (triacetyl)ricinoleate	Ricinoleic Acid Derivative	101-34-8 *	-----	--	PLAS-PL-106S	1 mL
Hercoflex® 900	1,3-Isobenzofurandione, polymer with 2,2'-(1,2-ethanediybis(oxy)) bis(ethanol), benzoate	68186-30-1	PLAS-PL-038N	50 mg	PLAS-PL-038S	1 mL
Hi-Point® PD-1	Methyl ethyl ketone peroxide solution		PLAS-PL-024N	50 mg	PLAS-PL-024S	1 mL
bis(2-Hydroxyethyl)dimerate	Dimer Acid Derivative	68855-78-7 *	-----	--	PLAS-PL-084S	1 mL
Isopropyl isostearate	Stearic acid Derivative	68171-33-5 *	-----	--	PLAS-PL-113S	1 mL
Isopropyl myristate	Myristate	110-27-0	-----	--	PLAS-PL-095S	1 mL
Isopropyl palmitate	Palmitic Acid derivative	142-91-6	-----	--	PLAS-PL-100S	1 mL
Jayflex® 77	Diisooheptyl phthalate	71888-89-6 *	PLAS-PL-017N	50 mg	PLAS-PL-017S	1 mL
Jayflex DIDP	Diisodecyl phthalate	68515-49-1 *	PLAS-PL-016N	50 mg	PLAS-PL-016S	1 mL
Jayflex DINP	Diisononyl phthalate	68515-48-0 *	PLAS-PL-018N	50 mg	PLAS-PL-018S	1 mL
Jayflex DTDP	Diisotridecyl phthalate	68515-47-9	PLAS-PL-020N	50 mg	PLAS-PL-020S	1 mL
Jayflex L11P-E	Diundecyl phthalate	3648-20-2 *	PLAS-PL-021N	50 mg	PLAS-PL-021S	1 mL
Jayflex TINTM	Triisononyl trimellitate	53894-23-8	PLAS-PL-029N	50 mg	PLAS-PL-029S	1 mL

* Indicated CAS number may refer to the active ingredients on these tech mixes

Plasticizers continued on next page

Plastic Additives

Trade-named products are usually technical mixtures.

Solutions at 1000 µg/mL in Hexane, except where indicated
 ◇ Hexane:Acetone, ◇◇ Hexane:Toluene, -T Toluene, -A Acetone, - DMSO, -D Dichloromethane -CN Acetonitrile

Plasticizers (continued)

Trade Name	Chemical Name	CAS No.	NEAT	Unit	SOLUTION	Unit
Laurex®	Zinc salt of lauric and related fatty acids		PLAS-PL-032N	50 mg	PLAS-PL-032S ◇◇1 mL	
Markstat® 51	Poly(ethylene glycol) monolaurate	9004-81-3	PLAS-PL-003N	50 mg	PLAS-PL-003S ◇◇1 mL	
Methyl O-Acetylricinoleate	Methyl (Z)-12-acetyloxyoctadec-9-enoate	140-03-4	PLAS-PL-063N	50 mg	-----	---
Methyl oleate	Oleic Acid Derivative	112-62-9	-----	--	PLAS-PL-097S	1 mL
Morfex® 150	Dicyclohexyl phthalate	84-61-7 *	PLAS-PL-014N	50 mg	PLAS-PL-014S	1 mL
Morfex 190	Butylphthalyl butyl glycolate	85-70-1	PLAS-PL-008N	50 mg	PLAS-PL-008S	1 mL
Morfex 560	Tri-n-hexyl trimellitate	1528-49-0	PLAS-PL-031N	50 mg	PLAS-PL-031S	1 mL
Morfex x-1125	Di(tridecyl) phthalate	119-06-2 *	PLAS-PL-033N	50 mg	PLAS-PL-033S	1 mL
Paraplex® G-30	Proprietary dibasic acid polyester mixture		PLAS-PL-027N	50 mg	PLAS-PL-027S ◇◇1 mL	
Plasthall® DINP	Diisononyl phthalate	28553-12-0 *	PLAS-PL-072N	50 mg	PLAS-PL-072S	1 mL
Plasthall ESO	Epoxidized soybean oil	8013-07-8	PLAS-PL-035N	50 mg	-----	---
Polycizer® butyl oleate	Butyl oleate	142-77-8	PLAS-PL-007N	50 mg	PLAS-PL-007S	1 mL
Polycizer DP 500	Dipropylene glycol dibenzoate	27138-31-4 *	PLAS-PL-011N	50 mg	PLAS-PL-011S	1 mL
Polyethylene glycol 200 dibenzoate	Benzoic Acid Derivative	9004-86-8	-----	--	PLAS-PL-102S	1 mL
n-Propyl oleate	Oleic Acid Derivative	111-59-1 *	-----	--	PLAS-PL-098S	1 mL
Propylene glycol monostearate	Stearic acid Derivative	1323-39-3 *	-----	--	PLAS-PL-116S	1 mL
Propylene glycol ricinoleate	Ricinoleic Acid Derivative	26402-31-3 *	-----	--	PLAS-PL-108S-T	1 mL
Santicizer® 141	2-Ethylhexyldiphenyl phosphate	1241-94-7 *	PLAS-PL-026N	50 mg	PLAS-PL-026S	1 mL
Santicizer 148	Mixture: isodecyl/diphenyl phosphate (80-90%) / diisodecyl phenyl phosphate / triphenyl phosphate	29761-21-5	PLAS-PL-022N	50 mg	PLAS-PL-022S	1 mL
Santicizer 160	Benzyl butyl phthalate	85-68-7 *	PLAS-PL-004N	50 mg	PLAS-PL-004S	1 mL
Santicizer 261	Benzyl octyl phthalate	68515-40-2	PLAS-PL-005N	50 mg	PLAS-PL-005S	1 mL
Santicizer 278	Benzyl 3-isobutyryloxy-1-isopropyl-2,2-dimethylpropyl phthalate	16883-83-3	PLAS-PL-074N	50 mg	-----	---
Tetrahydrofurfuryl oleate	Oleic Acid Derivative	5420-17-7 *	-----	--	PLAS-PL-099S	1 mL
o,p-Toluenesulfonamide	Succinic acid Derivative	8013-74-9	-----	--	PLAS-PL-110S-A	1 mL
Tri-butoxyethyl phosphate	Phosphoric Acid Derivative	78-51-3	-----	--	PLAS-PL-104S	1 mL
Tributylphosphate	Tributyl phosphate	126-73-8	PLAS-PL-068N	50 mg	-----	---
Tricapryl trimellitate	Mellitate	27251-75-8	-----	--	PLAS-PL-092S	1 mL
Triethylphosphate		78-40-0	PLAS-PL-067N	50 mg	-----	---
Triisodecyl trimellitate	Mellitate	36631-30-8	-----	--	PLAS-PL-093S	1 mL
Tri-(n-octyl, n-decyl) trimellitate	Mellitate	67989-23-5 *	-----	--	PLAS-PL-094S	1 mL
2,2,4-Trimethyl-1,3-pentanediol-diisobutyrate	Isobutyrate Derivative	6846-50-0	-----	--	PLAS-PL-089S	1 mL
2,2,4-Trimethyl-1,3-pentanediol-isobutyrate		25265-77-4	PLAS-PL-066N	50 mg	-----	---
Trimellitate	1,2,4-Benzenetricarboxylic acid, tris(2-ethylhexyl) ester	3319-31-1	PLAS-PL-060N	50 mg	-----	---
Vinsol® powder	Gum rosin	8050-09-7 *	PLAS-PL-037N	50 mg	PLAS-PL-037S-D	1 mL
Vinsol® resin	Gum rosin	8050-09-7 *	PLAS-PL-036N	50 mg	PLAS-PL-036S-D	1 mL

Processing Aids

Trade Name	Chemical Name	CAS No.	NEAT	Unit	SOLUTION	Unit
Akrochem® Ceresin Wax		8001-75-0	PLAS-PA-002N	50 mg	-----	---
Kemamide® E ultra	Erucamide	112-84-5	PLAS-PA-001N	50 mg	PLAS-PA-001S	1 mL

Retarders

Trade Name	Chemical Name	CAS No.	NEAT	Unit	SOLUTION	Unit
Akrochem® Retarder BAX		65-85-0 *	PLAS-RT-011N	50 mg	-----	---
2-Cyano-2-propyl benzodithioate		201611-85-0	PLAS-RT-002N	50 mg	PLAS-RT-002S ◇ 1 mL	
2-Cyano-2-propyl dodecyl trithiocarbamate		870196-83-1	PLAS-RT-004N	50 mg	PLAS-RT-004S	1 mL
4-Cyano-4-[(dodecylsulfanylthiocarbonyl)sulfanyl]pentanoic acid		870196-80-8	PLAS-RT-005N	50 mg	PLAS-RT-005S	1 mL
4-Cyano-4-(phenylcarbonothioylthio)-2-methylpropionic acid		201611-92-9	PLAS-RT-003N	50 mg	PLAS-RT-003S ◇ 1 mL	
Cyanomethyl dodecyl trithiocarbonate		796045-97-1	PLAS-RT-006N	50 mg	PLAS-RT-006S	1 mL
Cyanomethyl methyl(phenyl)carbamodithioate		76926-16-4	PLAS-RT-009N	50 mg	-----	---
2-(Dodecylthiocarbonothioylthio)-2-methylpropionic acid		461642-78-4	-----	---	PLAS-RT-010S	1 mL
bis(Dodecylsulfanylthiocarbonyl)disulfide		870532-86-8	PLAS-RT-008N	50 mg	PLAS-RT-008S	1 mL
Retarder AK	Phthalic anhydride	85-44-9 *	PLAS-RT-001N	50 mg	PLAS-RT-001S ◇ 1 mL	
bis(Thiobenzoyl)disulfide		5873-93-8	PLAS-RT-007N	50 mg	PLAS-RT-007S ◇◇1 mL	

Stearates

Trade Name	Chemical Name	CAS No.	NEAT	Unit	SOLUTION	Unit
Stearic acid RG (rubber grade)	Stearic acid	57-11-4 *	PLAS-ST-001N	50 mg	PLAS-ST-001S	1 mL
Stearic acid TP	Stearic acid	57-11-4 *	PLAS-ST-002N	50 mg	PLAS-ST-002S	1 mL

* Indicated CAS number may refer to the active ingredients on these tech mixes

Plastic Additives

ASTM D6042

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, -D Dichloromethane -CN Acetonitrile

UV Stabilizers

Trade Name	Chemical Name	CAS No.	NEAT	Unit	SOLUTION	Unit
2-(2-Hydroxy-5-methylphenyl)benzotriazole		2440-22-4	PLAS-UV-006N	50 mg	PLAS-UV-006S-CN	1 mL
2-(5-tert-Butyl-2-hydroxyphenyl)benzotriazole		3147-76-0	PLAS-UV-007N	50 mg	PLAS-UV-007S-CN	1 mL
2-(2H-Benzotriazol-2-yl)-4,6-bis(1-methyl-1-phenylethyl)phenol		70321-86-7 *	PLAS-UV-008N	50 mg	PLAS-UV-008S-CN	1 mL
2-tert-Butyl-6(5-chloro-2H-benzotriazol-2-yl)-4-methylphenol		3896-11-5	PLAS-UV-009N	50 mg	PLAS-UV-009S-CN	1 mL
2-(3,5-Di-tert-butyl-2-hydroxyphenyl)2H-benzotriazole		3846-71-7	PLAS-UV-010N	50 mg	PLAS-UV-010S-CN	1 mL
2,4-Di-tert-butyl-6-(5-chloro-2H-benzotriazol-2-yl)phenol		3864-99-1	PLAS-UV-011N	50 mg	PLAS-UV-011S-CN	1 mL
2-(2H-Benzotriazol-2-yl)-4,6-di-tert-pentylphenol		25973-55-1	PLAS-UV-012N	50 mg	PLAS-UV-012S-CN	1 mL
2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole		3147-75-9	PLAS-UV-013N	50 mg	PLAS-UV-013S-CN	1 mL
2-(2H-Benzotriazol-2-yl)-4-methyl-6-(2-propenyl)phenol		2170-39-0	PLAS-UV-015N	50 mg	PLAS-UV-015S-CN	1 mL
UV Stabilizers Solution Set		Set of the above	PLAS-UV-STAB-SET			9 x 1 mL
Tinuvin® PED	2-(2-Hydroxy-5-methylphenyl)benzo triazole	2440-22-4	PLAS-UV-005N	50	PLAS-UV-005S	1 mL
Uvinul® 3000	2,4-Dihydroxybenzophenone	131-56-6 *	PLAS-UV-001N	50	PLAS-UV-001S ◇	1 mL
Uvinul 3008	2-Hydroxy-4-octyloxybenzophenone	1843-05-6	PLAS-UV-002N	50	PLAS-UV-002S	1 mL
Uvinul 3040	2-Hydroxy-4-methoxybenzophenone	131-57-7 *	PLAS-UV-003N	50	PLAS-UV-003S	1 mL
Uvinul 3049	2,2-Dihydroxy-4,4-dimethoxybenzophenone	131-54-4	PLAS-UV-004N	50	PLAS-UV-004S ◇	1 mL

Vegetable Oils

Trade Name	Chemical Name	CAS No.	NEAT	Unit	SOLUTION	Unit
Akrofax™ A	Vulcanized vegetable oil	68952-47-6	PLAS-VA-001N	50 mg	-----	---
Akrofax B	Vulcanized vegetable oil		PLAS-VA-002N	50 mg	-----	---

Deuterated Phthalates

Chemical Name	CAS No.	100 µg/mL in MeOH	SOLUTION	Unit
Dibenzyl phthalate-d ₄	1015854-62-2	-----	PHTH-D4-001S	1 mL
Di-n-butyl phthalate-d ₄	93952-11-5	-----	PHTH-D4-002S	1 mL
Di-iso-butyl phthalate-3,4,5,6-d ₄	358730-88-8	-----	PHTH-D4-003S	1 mL
Dicyclohexyl phthalate-3,4,5,6-d ₄	358731-25-6	-----	PHTH-D4-004S	1 mL
Diethyl phthalate-3,4,5,6-d ₄	93952-12-6	-----	PHTH-D4-005S	1 mL
Di-n-hexyl phthalate-3,4,5,6-d ₄	1015854-55-3	-----	PHTH-D4-006S	1 mL
Dimethyl phthalate-3,4,5,6-d ₄	93951-89-4	-----	PHTH-D4-007S	1 mL
Di-n-octyl phthalate-3,4,5,6-d ₄	93952-13-7	-----	PHTH-D4-008S	1 mL
Di-n-pentyl phthalate-3,4,5,6-d ₄	358730-89-9	-----	PHTH-D4-009S	1 mL
Di-n-propyl phthalate-3,4,5,6-d ₄	358731-29-0	-----	PHTH-D4-010S	1 mL
bis(2-Ethylhexyl)phthalate-3,4,5,6-d ₄	93951-87-2	-----	PHTH-D4-011S	1 mL

CPSC Phthalates

CPSC Revised Phthalate Standard
PLAS-CPSC-R1 1 x 1 mL
 500 µg/mL each in Cyclohexane
 8 comps.

bis(2-Ethylhexyl)phthalate
 Dibutyl phthalate
 Diisononyl phthalate
 Benzyl butyl phthalate
 Dipentyl phthalate
 Dihexyl phthalate
 Dicyclohexyl phthalateL
 Diisobutyl phthalate

Technical Note

This mix includes all 8 Phthalates prohibited from use in children's toys and outlined in section 108 of the Consumer Product Safety Act.

ASTM D6042 Phenolic Antioxidants by LC

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.

Expanded List of Additives

Each at 50 µg/mL in Isopropanol

Ultranox 626	PLAS-CAL-002-1	1 mL
Santanox R	PLAS-CAL-002-2	1 mL
Ethanox 330	PLAS-CAL-002-3	1 mL
Ethanox 323	PLAS-CAL-002-4	1 mL
Ethanox 702	PLAS-CAL-002-5	1 mL
Irganox 1035	PLAS-CAL-002-7	1 mL

Calibration Mix

PLAS-CAL-001	1 x 1 mL
PLAS-CAL-001-PAK	SAVE 5 x 1 mL
50 µg/mL each in Isopropanol	
BHT	Irganox 3114
Erucamide Slip	Irganox 1010
Vitamin E	Irganox 1076
Irgafos 168	

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	

Plastic Additives

Concern over environmental and health-related factors associated with phthalates has led to restrictions of use in a wide array of products. This has resulted in the plastics industry generating a variety of alternatives. We developed other plastic additive standards, comprised of 20 chemical classes.

Other Plastic Additives

Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
Adipic Acid Derivatives					
Diethyl adipate	141-28-6		NEAT	PLAS-PL-043N	50 mg
Dimethyl dipate	627-93-0		NEAT	PLAS-PL-070N	50 mg
Di(tridecyl) adipate	16958-92-2	1000 µg/mL	Acetone	PLAS-PL-079S-A	1 mL
Di(n-heptyl, n-nonyl) adipate	68515-75-3	1000 µg/mL	Hexane	PLAS-PL-080S	1 mL
Diisobutyl adipate	84-69-5	1000 µg/mL	Hexane	PLAS-PL-082S	1 mL
Diisodecyl adipate	27178-16-1	1000 µg/mL	Hexane	PLAS-PL-083S	1 mL
Azelaic Acid Derivatives					
Diisodecyl azelate	28472-97-1	1000 µg/mL	Acetone	PLAS-PL-075S-A	1 mL
Diisooctyl azelate	26544-17-2	1000 µg/mL	Acetone	PLAS-PL-076S-A	1 mL
Dimethyl azelate	1732-10-1	1000 µg/mL	Acetone	PLAS-PL-077S-A	1 mL
Di-n-hexyl azelate	109-31-9	1000 µg/mL	Acetone	PLAS-PL-078S-A	1 mL
Di(2-ethyl hexyl) azelate	103-24-2	1000 µg/mL	Acetone	PLAS-PL-081S-A	1 mL
Benzoic Acid Derivatives					
Benzyl benzoate	120-51-4	2000 µg/mL	Cyclohexane	PLAS-CPSC-IS	1 mL
		5000 µg/mL	Hexane	M-8061-IS	1 mL
Di(propylene glycol) dibenzoate	27138-31-4	1000 µg/mL	Hexane	PLAS-PL-101S	1 mL
Polyethylene glycol 200 dibenzoate	9004-86-8	1000 µg/mL	Hexane	PLAS-PL-102S	1 mL
Benzotriazol Derivatives					
2-tert-Butyl-6-(5-chloro-2H-benzotriazol-2-yl)-4-methylphenol	3896-11-5	----	NEAT	PLAS-AX-093N	50 mg
2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol	3147-75-9	----	NEAT	PLAS-AX-094N	50 mg
2-(2'-Hydroxy-3',5'-di-tert-amylphenyl) benzotriazole	25973-55-1	----	NEAT	PLAS-AX-095N	50 mg
2-(2-Hydroxy-5-methylphenyl)benzotriazole	2440-22-4	----	NEAT	PLAS-UV-006N	50 mg
		1000 µg/mL	ACN	PLAS-UV-006S-CN	1 mL
2-(5-tert-butyl-2-hydroxyphenyl)benzotriazole	3147-76-0	----	NEAT	PLAS-UV-007N	50 mg
		1000 µg/mL	ACN	PLAS-UV-007S-CN	1 mL
2-(2H-Benzotriazol-2-yl)-4,6-bis(1-methyl-1-phenylethyl)phenol	70321-86-7	----	NEAT	PLAS-UV-008N	50 mg
		1000 µg/mL	ACN	PLAS-UV-008S-CN	1 mL
2-tert-Butyl-6(5-chloro-2H-benzotriazol-2-yl)-4-methylphenol	3896-11-5	----	NEAT	PLAS-UV-009N	50 mg
		1000 µg/mL	ACN	PLAS-UV-009S-CN	1 mL
2-(3,5-Di-tert-butyl-2-hydroxyphenyl)2H-benzotriazole	3846-71-7	----	NEAT	PLAS-UV-010N	50 mg
		1000 µg/mL	ACN	PLAS-UV-010S-CN	1 mL
2,4-Di-tert-butyl-6-(5-chloro-2H-benzotriazol-2-yl)phenol	3864-99-1	----	NEAT	PLAS-UV-011N	50 mg
		1000 µg/mL	ACN	PLAS-UV-011S-CN	1 mL
2-(2H-Benzotriazol-2-yl)-4,6-di-tert-pentylphenol	25973-55-1	----	NEAT	PLAS-UV-012N	50 mg
		1000 µg/mL	ACN	PLAS-UV-012S-CN	1 mL
2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole	3147-75-9	----	NEAT	PLAS-UV-013N	50 mg
		1000 µg/mL	ACN	PLAS-UV-013S	1 mL
2-(2H-Benzotriazol-2-yl)-4-methyl-6-(2-propenyl)phenol	2170-39-0	----	NEAT	PLAS-UV-015N	50 mg
		1000 µg/mL	ACN	PLAS-UV-015S-CN	1 mL
Dimer Acid Derivatives					
Bis(2-hydroxyethyl) dimerate	68855-78-7	1000 µg/mL	Hexane	PLAS-PL-084S	1 mL
Epoxy Derivatives					
2-Ethylhexyl epoxy tallate	61789-01-3	1000 µg/mL	Hexane	PLAS-PL-086S	1 mL
Fumeric Acid Derivative					
Dibutyl fumarate	105-75-9	1000 µg/mL	Hexane	PLAS-PL-087S	1 mL
Glycerol Derivative					
Glycerol triacetate	102-76-1	1000 µg/mL	Hexane	PLAS-PL-088S	1 mL
Glycerol monooleate (Industrial Product ~50%)		1000 µg/mL	Hexane	PLAS-PL-096S	1 mL
Glycerol monostearate	31566-31-1	1000 µg/mL	Toluene	PLAS-PL-115S-T	1 mL
Isobutyrate Derivative					
2,2,4-Trimethyl-1,3-pentanediol-isobutyrate	25265-77-4	----	NEAT	PLAS-PL-066N	50 mg
2,2,4-Trimethyl-1,3-pentanediol-diisobutyrate	6846-50-0	1000 µg/mL	Hexane	PLAS-PL-089S	1 mL
Maleic Acid Derivatives					
di(2-Ethylhexyl)maleate [Dioctyl maleate]	142-16-5	1000 µg/mL	Hexane	PLAS-PL-090S	1 mL
Di n-butyl maleate	105-76-0	1000 µg/mL	Hexane	PLAS-PL-091S	1 mL
Mellitates					
Tricapryl trimellitate	27251-75-8	1000 µg/mL	Hexane	PLAS-PL-092S	1 mL
Trimellitate plasticizer	3319-31-1	----	NEAT	PLAS-PL-060N	50 mg
Triisodecyl trimellitate	36631-30-8	1000 µg/mL	Hexane	PLAS-PL-093S	1 mL
Tri-(n-octyl, n-decyl) trimellitate	67989-23-5	1000 µg/mL	Hexane	PLAS-PL-094S	1 mL
Myristate					
Isopropyl myristate	110-27-0	1000 µg/mL	Hexane	PLAS-PL-095S	1 mL
Nitrogen Containing Compounds					
1,3-Diphenyl-2-thiourea	102-08-9	----	NEAT	PLAS-AC-008N	50 mg
1,3-Di-o-tolylguanidine	97-39-2	----	NEAT	PLAS-AC-010N	50 mg
Dibenzylhydroxylamine	621-07-8	----	NEAT	PLAS-AX-092N	50 mg

Plastic Additives

Other Plastic Additives

Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
Nitrogen Containing Compounds (continued)					
1,3-Diphenyl-2-thiourea	102-08-9	----	NEAT	PLAS-AX-100N	50 mg
1,3-Di-o-tolylguanidine	97-39-2	----	NEAT	PLAS-AX-101N	50 mg
N,N'-Dibutylthiourea	109-46-6	----	NEAT	PLAS-AX-102N	50 mg
N,N'-Diethylthiourea	105-55-5	----	NEAT	PLAS-AX-103N	50 mg
Oleic Acid Derivatives					
Glycerol monooleate	25496-72-4	1000 µg/mL	Hexane	PLAS-PL-096S	1 mL
Methyl oleate	112-62-9	1000 µg/mL	Hexane	PLAS-PL-097S	1 mL
n-Propyl oleate	111-59-1	1000 µg/mL	Hexane	PLAS-PL-098S	1 mL
Tetrahydrofurfuryl oleate		1000 µg/mL	Hexane	PLAS-PL-099S	1 mL
Palmitic Acid Derivative					
Isopropyl palmitate	142-91-6	1000 µg/mL	Hexane	PLAS-PL-100S	1 mL
Phenol Derivatives					
4,4'-Butylidenebis(6-tert-butyl-m-cresol)	85-60-9	----	NEAT	PLAS-AX-105N	50 mg
2,2'-Ethylidene-bis(4,6-di-tert-butylphenol)	35958-30-6	----	NEAT	PLAS-AX-106N	50 mg
2,6-Di-tert-butyl-4-ethylphenol	4130-42-1	----	NEAT	PLAS-AX-107N	50 mg
Propyl gallate	121-79-9	----	NEAT	PLAS-AX-109N	50 mg
2,6-Di-tert-butylphenol	128-39-2	----	NEAT	PLAS-AX-112N	50 mg
Phosphoric Acid Derivatives					
Diethyl 3,5-Di-tert-butyl-4-hydroxybenzyl phosphonate	976-56-7	----	NEAT	PLAS-AX-110N	50 mg
Cresyl diphenyl phosphate	26444-49-5	----	NEAT	PLAS-PL-059N	50 mg
Triethylphosphate	78-40-0	----	NEAT	PLAS-PL-067N	50 mg
Tributylphosphate	126-73-8	----	NEAT	PLAS-PL-068N	50 mg
t-Butylphenyl diphenyl phosphate	56803-37-3	1000 µg/mL	Hexane	PLAS-PL-103S	1 mL
Tri-butoxyethyl phosphate	78-51-3	1000 µg/mL	Hexane	PLAS-PL-104S	1 mL
Ricinoleic Acid Derivatives					
Methyl O-acetylricinoleate	140-03-4	----	NEAT	PLAS-PL-063N	50 mg
Butyl ricinoleate	151-13-3	1000 µg/mL	Hexane	PLAS-PL-105S	1 mL
Glycerol (triacetyl)ricinoleate	101-34-8	1000 µg/mL	Hexane	PLAS-PL-106S	1 mL
n-Butyl acetyl ricinoleate	140-04-5	1000 µg/mL	Hexane	PLAS-PL-107S	1 mL
Propylene glycol ricinoleate	26402-31-3	1000 µg/mL	Toluene	PLAS-PL-108S-T	1 mL
Sebacic Acid Derivatives					
bis(2,2,6,6-Tetramethyl-4-piperidyl) sebacate	52829-07-9	----	NEAT	PLAS-AX-097N	50 mg
Dimethyl sebacate	106-79-6	----	NEAT	PLAS-PL-061N	50 mg
Dibutyl sebacate	109-43-3	----	NEAT	PLAS-PL-062N	50 mg
2-Ethylhexyl sebacate	122-62-3	----	NEAT	PLAS-PL-064N	50 mg
Sulfonic Acid Derivatives					
Dipentamethylenethiuram tetrasulfide	120-54-7	----	NEAT	PLAS-AC-009N	50 mg
2,2'-(2,5-thiophenediyl)bis(5-tert-butylbenzoxazole)	7128-64-5	----	NEAT	PLAS-AX-098N	50 mg
Distyryl biphenyl	27344-41-8	----	NEAT	PLAS-AX-099N	50 mg
Dipentamethylenethiuram tetrasulfide	120-54-7	----	NEAT	PLAS-AX-104N	50 mg
o,p-Toluenesulfonamide	8013-74-9	1000 µg/mL	Acetone	PLAS-PL-110S-A	1 mL
N-Ethyl o,p-toluenesulfonamide	8047-99-2	1000 µg/mL	Toluene	PLAS-PL-111S-T	1 mL
2-Cyano-2-propyl benzodithioate	201611-85-0	----	NEAT	PLAS-RT-002N	50 mg
		1000 µg/mL	Hexane:	PLAS-RT-002S	1 mL
			Acetone (50:50)		
4-Cyano-4-(phenylcarbonothioylthio)pentanoic acid	201611-92-9	----	NEAT	PLAS-RT-003N	50 mg
		1000 µg/mL	Hexane:	PLAS-RT-003S	1 mL
			Acetone (90:10)		
2-Cyano-2-propyl dodecyl trithiocarbonate	870196-83-1	----	NEAT	PLAS-RT-004N	50 mg
		1000 µg/mL	Hexane	PLAS-RT-004S	1 mL
4-Cyano-4-[(dodecylsulfanylthiocarbonyl)sulfanyl]pentanoic acid	870196-80-8	----	NEAT	PLAS-RT-005N	50 mg
		1000 µg/mL	Hexane	PLAS-RT-005S	1 mL
Cyanomethyl dodecyl trithiocarbonate	796045-97-1	----	NEAT	PLAS-RT-006N	50 mg
		1000 µg/mL	Hexane	PLAS-RT-006S	1 mL
bis(Thiobenzoyl) disulfide	5873-93-8	----	NEAT	PLAS-RT-007N	50 mg
		1000 µg/mL	Hexane:	PLAS-RT-007S	1 mL
			Toluene (80:20)		
bis(Dodecylsulfanylthiocarbonyl) disulfide	870532-86-8	----	NEAT	PLAS-RT-008N	50 mg
		1000 µg/mL	Hexane	PLAS-RT-008S	1 mL
Cyanomethyl methyl(phenyl)carbamodithioate	76926-16-4	----	NEAT	PLAS-RT-009N	50 mg
		1000 µg/mL	Hexane	PLAS-RT-009S	1 mL
2-(Dodecylthiocarbonothioylthio)-2-methylpropionic acid	461642-78-4	1000 µg/mL	Hexane	PLAS-RT-010S	1 mL
Succinic Acid Derivatives					
Diethyl succinate	123-25-1	1000 µg/mL	Hexane	PLAS-PL-109S	1 mL
Stearic Acid Derivatives					
Ethylene glycol monostearate	111-60-4	1000 µg/mL	Hexane	PLAS-PL-112S	1 mL
Isopropyl isostearate	68171-33-5	1000 µg/mL	Hexane	PLAS-PL-113S	1 mL
n-Butyl stearate		1000 µg/mL	Hexane	PLAS-PL-114S	1 mL
Glycerol monostearate	31566-31-1	1000 µg/mL	Toluene	PLAS-PL-115S-T	1 mL
Propylene glycol monostearate		1000 µg/mL	Hexane	PLAS-PL-116S	1 mL

Allergens



Chemical preservatives are added to cosmetics products to prevent microorganisms' growth and to help extend a product's shelf life. While some of these chemicals may cause allergic reactions, others are known to be toxic. In addition to the preservatives used, fragrances and emulsifiers can also cause allergic reactions.

Allergen standards are listed as follows: neat and solutions listed alphabetically by compound, sets by EU directive 76/768/EEC, and sets by allergen type; including sun block, parabens, phthalates, chlorofluorocarbon propellants (CFR), metals, and nitrosamines.

Allergen Contents

Allergen Compounds	111-115
EU Directive	116

Allergens

Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
2-Acetylpyridine	1122-62-9		NEAT	ALR-066N	100 mg
		100 µg/mL	MeOH	ALR-066S	1 mL
Allylthiocyanate	57-06-7	1000 µg/mL	EtOH	ALR-028S-ET-10X	1 mL
Amyl cinnamal	122-40-7		NEAT	ALR-001N	100 mg
		1000 µg/mL	ACN	ALR-001S-CN-10X	1 mL
Amyl salicylate	2050-08-0	100 µg/mL	ACN	ALR-196S-CN	1 mL
Amylcinnamyl alcohol	101-85-9	1000 µg/mL	EtOH	ALR-008S-ET-10X	1 mL
trans-Anethole	4180-23-8	100 µg/mL	ACN	ALR-197S-CN	1 mL
Anisyl alcohol	105-13-5		NEAT	ALR-014N	100 mg
		1000 µg/mL	EtOH	ALR-014S-ET-10X	1 mL
Arsenic	7440-38-2	1000 µg/mL	2-5% HNO ₃	ALR-MET-01S	100 mL
Balsam of Peru	8007-00-9		NEAT	ALR-080N	100 mg
		100 µg/mL	MeOH	ALR-080S	1 mL
Benzaldehyde	100-52-7	100 µg/mL	ACN	ALR-198S-CN	1 mL
Benzophenone-3 (Bp-3)	131-57-7		NEAT	ALR-081N	100 mg
		100 µg/mL	ACN	ALR-081S-CN	1 mL
Benzyl alcohol	100-51-6		NEAT	ALR-002N	100 mg
		1000 µg/mL	EtOH	ALR-002S-ET-10X	1 mL
Benzyl benzoate	120-51-4		NEAT	ALR-019N	100 mg
		1000 µg/mL	EtOH	ALR-019S-ET-10X	1 mL
Benzyl butyl phthalate	85-68-7		NEAT	ALR-082N	100 mg
		100 µg/mL	MeOH	ALR-082S	1 mL
Benzyl cinnamate	103-41-3		NEAT	ALR-015N	100 mg
		1000 µg/mL	EtOH	ALR-015S-ET-10X	1 mL
Benzyl cyanide	140-29-4		NEAT	ALR-029N	100 mg
		1000 µg/mL	EtOH	ALR-029S-ET-10X	1 mL
Benzyl 2-ethylhexyl phthalate	27215-22-1		NEAT	ALR-165N	100 mg
		100 µg/mL	MeOH	ALR-165S	1 mL
Benzyl paraben	94-18-8		NEAT	ALR-083N	100 mg
		100 µg/mL	MeOH	ALR-083S	1 mL
Benzyl salicylate	118-58-1		NEAT	ALR-009N	100 mg
		1000 µg/mL	ACN	ALR-009S-CN-10X	1 mL
Bithionol	97-18-7		NEAT	ALR-084N	100 mg
		100 µg/mL	MeOH	ALR-084S	1 mL
5-Bromo-5-nitro-1,3-dioxane (Bronidox L) (BND)	30007-47-7		NEAT	ALR-074N	100 mg
		100 µg/mL	MeOH	ALR-074S	1 mL
2-Bromo-2-nitropropane-1,3-diol (Bronopol)	52-51-7		NEAT	ALR-067N	100 mg
		100 µg/mL	MeOH	ALR-067S	1 mL
4-tert-Butylbenzoic acid	98-73-7	100 µg/mL	ACN	ALR-209S-CN	1 mL
2-(4-tert-Butylbenzyl)propionaldehyde (Tech)	80-54-6	1000 µg/mL	ACN	ALR-017S-CN-10X	1 mL
Butylated hydroxyanisole (BHA)	25013-16-5		NEAT	ALR-087N	100 mg
		100 µg/mL	MeOH	ALR-087S	1 mL
Butylated hydroxytoluene (BHT & 2,6-DBPC)	128-37-0		NEAT	ALR-088N	100 mg
		100 µg/mL	MeOH	ALR-088S	1 mL
Butylene glycol	107-88-0		NEAT	ALR-089N	100 mg
		100 µg/mL	MeOH	ALR-089S	1 mL
Butyl-methoxydibenzoylmethane (B-MDM) Sunblock, Parsol1789	70356-09-1	100 µg/mL	MeOH	ALR-086S	1 mL
Butyl paraben	94-26-8		NEAT	ALR-085N	100 mg
		100 µg/mL	MeOH	ALR-085S	1 mL
p-tert-Butylphenol	98-54-4		NEAT	ALR-030N	100 mg
		1000 µg/mL	EtOH	ALR-030S-ET-10X	1 mL
Cetone Alpha (Tech)	127-51-5	1000 µg/mL	ACN	ALR-024S-CN-10X	1 mL
Chloroacetamide	79-07-2		NEAT	ALR-090N	100 mg
		100 µg/mL	MeOH	ALR-090S	1 mL
Chloroform	67-66-3		NEAT	ALR-091N	100 mg
		100 µg/mL	MeOH	ALR-091S	1 mL
2-Chloropyridine	109-09-1		NEAT	ALR-068N	100 mg
		100 µg/mL	MeOH	ALR-068S	1 mL
3-Chloro-2,6-dihydroxy-4-methylbenzaldehyde (Chloroatranol)	57074-21-2	100 µg/mL	ACN	ALR-190S-CN	1 mL
Chromium	7440-47-3	1000 µg/mL	2-5% HNO ₃	ALR-MET-02S-R	100 mL
Cinnamal	104-55-2		NEAT	ALR-010N	100 mg
		1000 µg/mL	ACN	ALR-010S-CN-10X	1 mL
Cinnamyl alcohol	104-54-1		NEAT	ALR-003N	100 mg
		1000 µg/mL	EtOH	ALR-003S-ET-10X	1 mL

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Allergens (continued)

Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
Citral	5392-40-5		NEAT	ALR-004N	100 mg
		1000 µg/mL	ACN	ALR-004S-CN-10X	1 mL
β-Citronellol	106-22-9		NEAT	ALR-020N	100 mg
		1000 µg/mL	EtOH	ALR-020S-ET-10X	1 mL
Coal Tar (black)	8007-45-2		NEAT	ALR-094N	100 mg
		100 µg/mL	Toluene	ALR-094S-T	1 mL
Cobalt	7440-48-4	1000 µg/mL	2-5% HNO ₃	ALR-MET-03S	100 mL
Coumarin	91-64-5		NEAT	ALR-011N	100 mg
		1000 µg/mL	ACN	ALR-011S-CN-10X	1 mL
Cuminaldehyde	122-03-2	100 µg/mL	ACN	ALR-211S-CN	1 mL
Cyclamen alcohol	4756-19-8	100 µg/mL	ACN	ALR-184S-CN	1 mL
b-Damascenone	23696-85-7	100 µg/mL	ACN	ALR-192S-CN	1 mL
b-Damascene	23726-91-2	100 µg/mL	ACN	ALR-194S-CN	1 mL
delta-Damascene	57378-68-4	100 µg/mL	ACN	ALR-193S-CN	1 mL
2,4-Diaminoanisole	615-05-4	100 µg/mL	ACN	ALR-070S-R2	1 mL
2,4-Diaminophenol dihydrochloride	137-09-7		NEAT	ALR-063N	100 mg
		100 µg/mL	MeOH	ALR-063S	1 mL
Diamyl phthalate	131-18-0		NEAT	ALR-098N	100 mg
		100 µg/mL	MeOH	ALR-098S	1 mL
Diazolidinyl urea	78491-02-8		NEAT	ALR-106N	100 mg
		100 µg/mL	MeOH	ALR-106S	1 mL
Dibromsalon (Halogenated salicylanilides)	87-12-7		NEAT	ALR-107N-10MG	10 mg
		100 µg/mL	MeOH	ALR-107S	1 mL
Dicyclohexyl phthalate	84-61-7		NEAT	ALR-099N	100 mg
		100 µg/mL	MeOH	ALR-099S	1 mL
Diethanolamine (DEA)	111-42-2		NEAT	ALR-109N	100 mg
		100 µg/mL	MeOH	ALR-109S	1 mL
Di(2-ethylhexyl)phthalate (DEHP)	117-81-7		NEAT	ALR-097N	100 mg
		100 µg/mL	MeOH	ALR-097S	1 mL
Diethyl maleate	141-05-9		NEAT	ALR-033N	100 mg
		1000 µg/mL	EtOH	ALR-033S-ET-10X	1 mL
Diethyl phthalate	84-66-2		NEAT	ALR-110N	100 mg
		100 µg/mL	MeOH	ALR-110S	1 mL
Diethyl phthalate	84-75-3		NEAT	ALR-100N	100 mg
		100 µg/mL	MeOH	ALR-100S	1 mL
Dihydroabietyl alcohol (Tech)	26266-77-3		NEAT	ALR-047N	100 mg
		1000 µg/mL	EtOH	ALR-047S-ET-10X	1 mL
Dihydrocoumarin	119-84-6		NEAT	ALR-034N	100 mg
		1000 µg/mL	Acetone	ALR-034S-A-10X	1 mL
2,6-Dihydroxy-4-methylbenzaldehyde (Atranol)	526-37-4	100 µg/mL	ACN	ALR-189S-CN	1 mL
2,4-Dihydroxy-3-methylbenzaldehyde	6248-20-0	100 µg/mL	ACN	ALR-185S-CN	1 mL
Diisodecyl phthalate (Tech)	26761-40-0		NEAT	ALR-101N	100 mg
		100 µg/mL	MeOH	ALR-101S	1 mL
Diisononyl phthalate (Tech)	68515-48-0		NEAT	ALR-102N	100 mg
		100 µg/mL	MeOH	ALR-102S	1 mL
Diisooctyl phthalate (Tech)	27554-26-3		NEAT	ALR-103N	100 mg
		100 µg/mL	MeOH	ALR-103S	1 mL
Dimethyl citraconate	617-54-9		NEAT	ALR-038N	100 mg
		1000 µg/mL	EtOH	ALR-038S-ET-10X	1 mL
Dimethyl phthalate (DMP)	131-11-3		NEAT	ALR-111N	100 mg
		100 µg/mL	MeOH	ALR-111S	1 mL
a,a-Dimethylphenethyl acetate	151-05-3	100 µg/mL	ACN	ALR-199S-CN	1 mL
4,6-Dimethyl-8-tert-butylcoumarin	17874-34-9	100 µg/mL	ACN	ALR-186S-CN	1 mL
6,10-Dimethyl-3,5,9-undecatrien-2-one (Pseudoionone)	141-10-6		NEAT	ALR-040N	100 mg
		1000 µg/mL	Acetone	ALR-040S-A-10X	1 mL
Di-n-butyl phthalate (DBP)	84-74-2		NEAT	ALR-104N	100 mg
		100 µg/mL	MeOH	ALR-104S	1 mL
Di-n-octyl phthalate	117-84-0		NEAT	ALR-105N	100 mg
		100 µg/mL	MeOH	ALR-105S	1 mL
1,4-Dioxane	123-91-1		NEAT	ALR-062N	100 mg
		100 µg/mL	MeOH	ALR-062S	1 mL
Diphenylamine	122-39-4		NEAT	ALR-041N	100 mg
		1000 µg/mL	EtOH	ALR-041S-ET-10X	1 mL
2-Ethoxyethanol	110-80-5		NEAT	ALR-064N	100 mg
		100 µg/mL	MeOH	ALR-064S	1 mL
2-Ethoxyethanol acetate	111-15-9		NEAT	ALR-065N	100 mg
		100 µg/mL	MeOH	ALR-065S	1 mL
Ethyl acrylate	140-88-5		NEAT	ALR-042N	100 mg
		1000 µg/mL	EtOH	ALR-042S-ET-10X	1 mL
Ethyl paraben	120-47-8		NEAT	ALR-113N	100 mg
		100 µg/mL	MeOH	ALR-113S	1 mL
Ethylene diamine dihydrochloride	333-18-6		NEAT	ALR-114N	100 mg
		100 µg/mL	MeOH	ALR-114S	1 mL
2-Ethylhexyl salicylate	118-60-5	100 µg/mL	ACN	ALR-174S-CN	1 mL
Eugenol	97-53-0		NEAT	ALR-005N	100 mg
		1000 µg/mL	EtOH	ALR-005S-ET-10X	1 mL

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Allergens (continued)

Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
Farnesol (Mixed isomers)	4602-84-0		NEAT	ALR-016N	100 mg
		1000 µg/mL	EtOH	ALR-016S-ET-10X	1 mL
Formaldehyde	50-00-0	100 µg/mL	Water	ALR-115S-W	1 mL
Freon #11 Trichlorofluoromethane	75-69-4	200 µg/mL	MeOH	ALR-CFC-013S-2X	1 mL
Freon #12 Dichlorodifluoromethane	75-71-8	200 µg/mL	MeOH	ALR-CFC-008S-2X	1 mL
Freon #13 Chlorotrifluoromethane	75-72-9	200 µg/mL	MeOH	ALR-CFC-007S-2X	1 mL
Freon #13b1 Bromotrifluoromethane	75-63-8	200 µg/mL	MeOH	ALR-CFC-001S-2X	1 mL
Freon #21 Dichlorofluoromethane	75-43-4	200 µg/mL	MeOH	ALR-CFC-009S-2X	1 mL
Freon #22 Chlorodifluoromethane	75-45-6	200 µg/mL	MeOH	ALR-CFC-003S-2X	1 mL
Freon #23 Trifluoromethane	75-46-7	200 µg/mL	MeOH	ALR-CFC-015S-2X	1 mL
Freon #40 Chloromethane	74-87-3	200 µg/mL	MeOH	ALR-CFC-005S-2X	1 mL
Freon #113 1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	200 µg/mL	MeOH	ALR-CFC-014S-2X	1 mL
Freon #114 1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	200 µg/mL	MeOH	ALR-CFC-010S-2X	1 mL
Freon #115 Chloropentafluoroethane	76-15-3	200 µg/mL	MeOH	ALR-CFC-006S-2X	1 mL
Freon #134a Tetrafluoroethane	811-97-2	200 µg/mL	MeOH	ALR-CFC-012S-2X	1 mL
Freon #142b 1-Chloro-1,1-difluoroethane	75-68-3	200 µg/mL	MeOH	ALR-CFC-002S-2X	1 mL
Freon #152a 1,1-Difluoroethane	75-37-6	200 µg/mL	MeOH	ALR-CFC-011S-2X	1 mL
Freon #160 Chloroethane	75-00-3	200 µg/mL	MeOH	ALR-CFC-004S-2X	1 mL
Galaxolide (HHCB)	1222-05-5	100 µg/mL	ACN	ALR-201S-CN	1 mL
Geraniol	106-24-1		NEAT	ALR-012N	100 mg
		1000 µg/mL	EtOH	ALR-012S-ET-10X	1 mL
Geranyl acetate	105-87-3	100 µg/mL	ACN	ALR-205S-CN	1 mL
trans-2-Heptenal	18829-55-5		NEAT	ALR-044N	100 mg
		1000 µg/mL	ACN	ALR-044S-CN-10X	1 mL
Heptyl paraben	1085-12-7		NEAT	ALR-117N	100 mg
		100 µg/mL	MeOH	ALR-117S	1 mL
trans-2-Hexenal diethyl acetal	67746-30-9		NEAT	ALR-045N	100 mg
		1000 µg/mL	ACN	ALR-045S-CN-10X	1 mL
trans-2-Hexenal dimethyl acetal	18318-83-7		NEAT	ALR-046N	100 mg
		1000 µg/mL	MeOH	ALR-046S-10X	1 mL
Hexachlorophene (HCP)	70-30-4		NEAT	ALR-118N	100 mg
		100 µg/mL	MeOH	ALR-118S	1 mL
16-Hexadecanolide	109-29-5	100 µg/mL	ACN	ALR-200S-CN	1 mL
Hexahydrocoumarin	700-82-3	100 µg/mL	ACN	ALR-187S-CN	1 mL
Hexyl cinnamaldehyde	101-86-0	1000 µg/mL	EtOH	ALR-021S-ET-10X	1 mL
Homosalate (HMS)	118-56-9	100 µg/mL	ACN	ALR-119S-CN	1 mL
Hydroquinone monoethyl ether (4-Ethoxyphenol)	622-62-8		NEAT	ALR-048N	100 mg
		1000 µg/mL	EtOH	ALR-048S-ET-10X	1 mL
p-Hydroxyanisole	150-76-5		NEAT	ALR-145N	100 mg
		100 µg/mL	MeOH	ALR-145S	1 mL
4-Hydroxybenzoic acid (Paraben)	99-96-7		NEAT	ALR-069N	100 mg
		100 µg/mL	ACN	ALR-069S-CN	1 mL
Hydroxy-citronellal	107-75-5		NEAT	ALR-006N	100 mg
tris(Hydroxymethyl)nitromethane (Tris Nitro)	126-11-4		NEAT	ALR-169N	100 mg
		100 µg/mL	MeOH	ALR-169S	1 mL
Hydroxymethylpentylcyclohexenecarboxaldehyde (Mix of isomers)	31906-04-4		NEAT	ALR-013N	100 mg
		1000 µg/mL	ACN	ALR-013S-CN-10X	1 mL
Imidazolidinyl urea	39236-46-9		NEAT	ALR-120N	100 mg
		100 µg/mL	MeOH	ALR-120S	1 mL
α-Ionone	127-41-3		NEAT	ALR-171N	100 mg
		100 µg/mL	MeOH	ALR-171S	1 mL
β-Ionone	79-77-6		NEAT	ALR-172N	100 mg
		100 µg/mL	MeOH	ALR-172S	1 mL
Isobutyl paraben	4247-02-3		NEAT	ALR-121N	100 mg
		100 µg/mL	MeOH	ALR-121S	1 mL
Isoeugenol	97-54-1		NEAT	ALR-007N	100 mg
		1000 µg/mL	EtOH	ALR-007S-ET-10X	1 mL
Isoeugenyl acetate	93-29-8	100 µg/mL	ACN	ALR-206S-CN	1 mL
6-Isopropyl-2-decahydronaphthalenol	34131-99-2	100 µg/mL	ACN	ALR-188S-CN	1 mL
3-(4-Isopropylphenyl)isobutyraldehyde	103-95-7	100 µg/mL	ACN	ALR-210S-CN	1 mL
Isopropyl paraben	4191-73-5		NEAT	ALR-122N	100 mg
		100 µg/mL	MeOH	ALR-122S	1 mL
Lanolin, anhydrous	8006-54-0		NEAT	ALR-123N	100 mg
		100 µg/mL	Acetone	ALR-123S-A	1 mL
Lead	7439-92-1	1000 µg/mL	2-5% HNO ₃	ALR-MET-04S	100 mL
d-Limonene	5989-27-5		NEAT	ALR-022N	100 mg
		1000 µg/mL	EtOH	ALR-022S-ET-10X	1 mL
Linalool	78-70-6		NEAT	ALR-018N	100 mg
		1000 µg/mL	EtOH	ALR-018S-ET-10X	1 mL
Linalyl acetate	115-95-7	100 µg/mL	ACN	ALR-202S-CN	1 mL
Mercury	7439-97-6	1000 µg/mL	10% HNO ₃	ALR-MET-05S	100 mL
Metabromsalon	2577-72-2		NEAT	ALR-128N	100 mg
		100 µg/mL	MeOH	ALR-128S	1 mL
7-Methoxycoumarin	531-59-9		NEAT	ALR-050N	100 mg
		1000 µg/mL	ACN	ALR-050S-CN-10X	1 mL
4-(p-Methoxyphenyl)-3-butene-2-one	943-88-4	1000 µg/mL	ACN	ALR-051S-CN-10X	1 mL

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Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
4-Methoxy-m-phenylenediamine-sulfate hydrate	123333-56-2		NEAT	ALR-072N	100 mg
1-(p-Methoxyphenyl)-1-penten-3-one	104-27-8		NEAT	ALR-052N	100 mg
		1000 µg/mL	ACN	ALR-052S-CN-10X	1 mL
4-Methyl-benzylidene camphor (4-MBC)	36861-47-9		NEAT	ALR-073N	100 mg
		100 µg/mL	MeOH	ALR-073S	1 mL
Methylchloroisothiazolinone	26172-55-4	100 µg/mL	Water	ALR-131S-W	1 mL
6-Methylcoumarin (6-MC)	92-48-8		NEAT	ALR-075N	100 mg
		100 µg/mL	MeOH	ALR-075S	1 mL
7-Methylcoumarin	2445-83-2		NEAT	ALR-054N	100 mg
		1000 µg/mL	ACN	ALR-054S-CN-10X	1 mL
Methyl heptyne carbonate	111-12-6		NEAT	ALR-023N	100 mg
		1000 µg/mL	EtOH	ALR-023S-ET-10X	1 mL
Methyl trans-2-butenate	623-43-8		NEAT	ALR-053N	100 mg
		1000 µg/mL	MeOH	ALR-053S-10X	1 mL
5-Methyl-2,3-hexanedione (Acetyl isovaleryl)	13706-86-0		NEAT	ALR-055N	100 mg
		1000 µg/mL	ACN	ALR-055S-CN-10X	1 mL
Methyl methacrylate monomer	80-62-6		NEAT	ALR-129N	100 mg
		100 µg/mL	MeOH	ALR-129S	1 mL
Methyl paraben	99-76-3		NEAT	ALR-130N	100 mg
		100 µg/mL	MeOH	ALR-130S	1 mL
Methyl salicylate	119-36-8	100 µg/mL	ACN	ALR-195S-CN	1 mL
Methyldibromoglutaronitrile	35691-65-7		NEAT	ALR-132N	100 mg
		100 µg/mL	ACN	ALR-132S-CN	1 mL
Methylene chloride	75-09-2		NEAT	ALR-133N	100 mg
		100 µg/mL	MeOH	ALR-133S	1 mL
Methyleugenol	93-15-2		NEAT	ALR-061N	100 mg
		1000 µg/mL	EtOH	ALR-061S-ET-10X	1 mL
Monobenzyl phthalate (mBzP)	2528-16-7		NEAT	ALR-134N	100 mg
		100 µg/mL	ACN	ALR-134S-CN	1 mL
Monobutyl phthalate (mBP)	131-70-4		NEAT	ALR-135N	100 mg
		100 µg/mL	ACN	ALR-135S-CN	1 mL
Monocyclohexyl phthalate	7517-36-4		NEAT	ALR-178N	100 mg
		100 µg/mL	ACN	ALR-178S-CN	1 mL
Monoethanolamine (MEA) (2-Aminoethanol)	141-43-5		NEAT	ALR-136N	100 mg
		100 µg/mL	MeOH	ALR-136S	1 mL
Monoethyl phthalate (mEP)	2306-33-4		NEAT	ALR-137N	100 mg
		100 µg/mL	ACN	ALR-137S-CN	1 mL
Monoethylhexyl phthalate (mEHP)	4376-20-9		NEAT	ALR-138N	100 mg
		100 µg/mL	ACN	ALR-138S-CN	1 mL
Mono-2-heptyl phthalate			NEAT	ALR-143N	100 mg
		100 µg/mL	ACN	ALR-143S-CN	1 mL
Monoethyl phthalate	24539-57-9		NEAT	ALR-175N	100 mg
		100 µg/mL	ACN	ALR-175S-CN	1 mL
Monoisobutyl phthalate	30833-53-5		NEAT	ALR-176N	100 mg
		100 µg/mL	ACN	ALR-176S-CN	1 mL
Monoisononyl phthalate			NEAT	ALR-142N	100 mg
		100 µg/mL	ACN	ALR-142S-CN	1 mL
Monoisopropyl phthalate	35118-50-4		NEAT	ALR-179N	100 mg
		100 µg/mL	ACN	ALR-179S-CN	1 mL
Monomethyl phthalate	4376-18-5		NEAT	ALR-139N	100 mg
		100 µg/mL	ACN	ALR-139S-CN	1 mL
Monooctyl phthalate	5393-19-1		NEAT	ALR-141N	100 mg
		100 µg/mL	ACN	ALR-141S-CN	1 mL
Mono-n-pentyl phthalate	24539-56-8		NEAT	ALR-177N	100 mg
		100 µg/mL	ACN	ALR-177S-CN	1 mL
Musk ambrette	83-66-9	1000 µg/mL	ACN	ALR-056S-CN-10X	1 mL
Nickel	7440-02-0	1000 µg/mL	2-5% HNO ₃	ALR-MET-06S	100 mL
Nonylphenol-ethylene oxide condensate (Nonoxynol-9)	26027-38-3		NEAT	ALR-079N	100 mg
		100 µg/mL	MeOH	ALR-079S	1 mL
N-Phenyl-p-phenylenediamine	101-54-2		NEAT	ALR-140N	100 mg
		100 µg/mL	MeOH	ALR-140S	1 mL
Octyl-dimethyl-PABA (OD-PABA)(Padimate O)	21245-02-3		NEAT	ALR-146N	100 mg
		100 µg/mL	MeOH	ALR-146S	1 mL
Octyl-methoxycinnamate (OMC)	5466-77-3		NEAT	ALR-144N	100 mg
		100 µg/mL	MeOH	ALR-144S	1 mL
4-Phenyl-3-buten-2-one	122-57-6		NEAT	ALR-058N	100 mg
		1000 µg/mL	ACN	ALR-058S-CN-10X	1 mL
m-Phenylenediamine (MPD)	108-45-2		NEAT	ALR-127N	100 mg
		100 µg/mL	MeOH	ALR-127S	1 mL
p-Phenylenediamine (PPD)	106-50-3		NEAT	ALR-147N	100 mg
		100 µg/mL	MeOH	ALR-147S	1 mL
(+)-a-Pinene	7785-70-8	100 µg/mL	ACN	ALR-207S-CN	1 mL
beta-Pinene	127-91-3	100 µg/mL	ACN	ALR-208S-CN	1 mL
Polyethylene glycol (PEG), appr. Molecular weight 200	25322-68-3		NEAT	ALR-149N-MW200	100 mg

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Allergens (continued)

Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
Polyethylene glycol (PEG), appr. Molecular weight 400	25322-68-3		NEAT	ALR-149N-MW400	100 mg
Polyethylene glycol (PEG), appr. Molecular weight 600	25322-68-3		NEAT	ALR-149N-MW600	100 mg
Polyethylene glycol (PEG), appr. Molecular weight 1500	25322-68-3		NEAT	ALR-149N-MW1500	100 mg
Polyethylene glycol (PEG), appr. Molecular weight 4000	25322-68-3		NEAT	ALR-149N-MW4000	100 mg
Polyethylene glycol nonaphenyl ether (Triton N-101)	123359-41-1		NEAT	ALR-078N	100 mg
		100 µg/mL	MeOH	ALR-078S	1 mL
Polyvinylpyrrolidone PVP/PA Copolymer	9003-39-8		NEAT	ALR-150N	100 mg
Potassium dichromate	7778-50-9	1000 µg/mL	Water	ALR-MET-07S	1 mL
Potassium sorbate	24634-61-5		NEAT	ALR-152N	100 mg
		100 µg/mL	MeOH	ALR-152S	1 mL
Propyl paraben	94-13-3		NEAT	ALR-153N	100 mg
		100 µg/mL	MeOH	ALR-153S	1 mL
Propylene glycol (PG)	57-55-6	100 µg/mL	MeOH	ALR-154S	1 mL
Protocatechuic acid	99-50-3		NEAT	ALR-155N	100 mg
		100 µg/mL	ACN	ALR-155S-CN	1 mL
Pyrocatechol	120-80-9		NEAT	ALR-156N	100 mg
		100 µg/mL	MeOH	ALR-156S	1 mL
Quaternium-15	51229-78-8		NEAT	ALR-157N	100 mg
		100 µg/mL	MeOH	ALR-157S	1 mL
Resorcinol	108-46-3		NEAT	ALR-158N	100 mg
		100 µg/mL	MeOH	ALR-158S	1 mL
Salicylaldehyde	90-02-8	100 µg/mL	ACN	ALR-203S-CN	1 mL
Salicylic acid	69-72-7		NEAT	ALR-173N	100 mg
		100 µg/mL	Water	ALR-173S-W	1 mL
Sodium hydroxide	1310-73-2		NEAT	ALR-159N	100 mg
		100 µg/mL	MeOH	ALR-159S	1 mL
Sodium nitrite	7632-00-0		NEAT	ALR-160N	100 mg
		100 µg/mL	Water	ALR-160S-W	1 mL
Talc	14807-96-6		NEAT	ALR-161N	100 mg
Tetrachlorosalicylanilide	1154-59-2		NEAT	ALR-162N	100 mg
		100 µg/mL	MeOH	ALR-162S	1 mL
Thimerosal	54-64-8		NEAT	ALR-163N	100 mg
		100 µg/mL	MeOH	ALR-163S	1 mL
Thiuram (Thiram) (Tetramethylthiourea disulfide)	137-26-8		NEAT	ALR-164N	100 mg
		100 µg/mL	MeOH	ALR-164S	1 mL
Tribromsalon	87-10-5		NEAT	ALR-167N	100 mg
		100 µg/mL	MeOH	ALR-167S	1 mL
Triethanolamine (TEA)	102-71-6		NEAT	ALR-168N	100 mg
		100 µg/mL	MeOH	ALR-168S	1 mL
Vanillin	121-33-5	100 µg/mL	ACN	ALR-204S-CN	1 mL
Verbena oil (India)	8024-12-2		NEAT	ALR-060N	100 mg
		1000 µg/mL	EtOH	ALR-060S-ET-10X	1 mL
Vinyl chloride	75-01-4	100 µg/mL	MeOH	ALR-170S	1 mL
Zirconium	7440-67-7	1000 µg/mL	2-5% HNO ₃	ALR-MET-08S	100 mL

Allergens by EU Directive and Type

EU Directive 76/768/EEC

EU Directive List of 24 Regulated Contact Allergens

ALR-EU24-R1-SET

23 x 1 mL, 1 x 100 mg

Each at 1000 µg/mL in (S-CN Acetonitrile, S-ET Ethanol, N 100 mg)

Compound	CAS No.	Cat. No
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 (Tech)	80-54-6	ALR-017S-CN-10X
Cetone Alpha (Tech)	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 (Mixed isomers)	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-006N
Hydroxymethylpentylcyclohexenecarboxaldehyde (Mix of isomers)	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

EU Directive List of substances that may be banned

ALR-EU36-R3-SET

24 x 1 mL

Each at 1000 µg/mL in (S MeOH, A-Acetone, S-CN Acetonitrile, S-ET Ethanol)

Compound	CAS No.	Cat. No
Allylisothiocyanate	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
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-CN-10X
trans-2-Hexenal dimethyl acetal	18318-83-7	ALR-046S-10X
Dihydroabietyl alcohol	26266-77-3	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
Methyl trans-2-butenate	623-43-8	ALR-053S-10X
7-Methylcoumarin	2445-83-2	ALR-054S-CN-10X
5-Methyl-2,3-hexanedione (Acetyl isovaleryl)	13706-86-0	ALR-055S-CN-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 (India)	8024-12-2	ALR-060S-ET-10X
Methyleugenol	93-15-2	ALR-061S-ET-10X

Chlorofluorocarbon Propellants (CFCs)

Each at 200 µg/mL in PT MeOH

Compound	CAS No.	Cat. No
Trichlorofluoromethane (Freon #11)	75-69-4	ALR-CFC-013S-2X
Dichlorodifluoromethane (Freon #12)	75-71-8	ALR-CFC-008S-2X
Chlorotrifluoromethane (Freon #13)	75-72-9	ALR-CFC-007S-2X
Bromotrifluoromethane (Freon #13b1)	75-63-8	ALR-CFC-001S-2X
Dichlorofluoromethane (Freon #21)	75-43-4	ALR-CFC-009S-2X
Chlorodifluoromethane (Freon #22)	75-45-6	ALR-CFC-003S-2X
Trifluoromethane (Freon #23)	75-46-7	ALR-CFC-015S-2X
Chloromethane (Freon #40)	74-87-3	ALR-CFC-005S-2X
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon #113)	76-13-1	ALR-CFC-014S-2X
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon #114)	76-14-2	ALR-CFC-010S-2X
Chloropentafluoroethane (Freon #115)	76-15-3	ALR-CFC-006S-2X
Tetrafluoroethane (Freon #134a)	811-97-2	ALR-CFC-012S-2X
1-Chloro-1,1-difluoroethane (Freon #142b)	75-68-3	ALR-CFC-002S-2X
1,1-Difluoroethane (Freon #152a)	75-37-6	ALR-CFC-011S-2X
Chloroethane (Freon #160)	75-00-3	ALR-CFC-004S-2X

Phthalates

ALR-PHT-SET

17 x 1 mL

Each at 100 µg/mL (S MeOH, S-CN Acetonitrile)

Compound	CAS No.	Cat. No
Benzyl butyl phthalate (BBP)	85-68-7	ALR-082S
Diamyl phthalate (DPNP)	131-18-0	ALR-098S
Dicyclohexyl phthalate (DCHP)	84-61-7	ALR-099S
Di(2-ethylhexyl) phthalate (DEHP)	117-81-7	ALR-097S
Diethyl phthalate (DEP)	84-66-2	ALR-110S
Diethyl phthalate (DHP)	84-75-3	ALR-100S
Diisodecyl phthalate (DIDP) (Tech Mix)	26761-40-0	ALR-101S
Diisononyl phthalate (DINP) (Tech Mix)	68515-48-0	ALR-102S
Diisooctyl phthalate (DIOP) (Tech Mix)	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 (DNOP)	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

Parabens

ALR-PAR-SET

11 x 1 mL

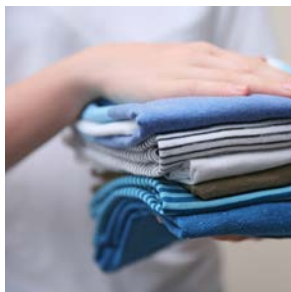
Each at 100 µg/mL (S MeOH, S-CN Acetonitrile)

Compound	CAS No.	Cat. No
Benzyl paraben	94-18-8	ALR-083S
Butyl paraben	94-26-8	ALR-085S
Ethyl paraben	120-47-8	ALR-113S
Heptyl paraben	1085-12-7	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

Personal Care Products

Compound	Matrix	Cat. No.	Unit
Triclosan	NEAT	PCC-001N	100 mg
	100 µg/mL in MeOH	PCC-001S	1 mL
	1000 µg/mL in MeOH	PCC-001S-10X	1 mL

Methods for Textiles and Leather



Chemicals such as azo dyes, chlorobenzenes, chlorotoluenes, and per- and polyfluoroalkyl substances (PFAS) are added to textiles and leather goods to enhance product durability and color properties. These CRMs are designed to help meet regional and global regulations, such as EU Directive 2018/1513, by accurately identifying toxic chemicals in textile and leather products.

Chlorobenzenes and Chlorotoluenes in Textiles

Chlorobenzenes in Textiles Standard

EN-17137-MIX-A	1 x 1 mL
100 µg/mL each in Dichloromethane	12 comps.
Chlorobenzene	1,3,5-Trichlorobenzene
1,2-Dichlorobenzene	1,2,3,4-Tetrachlorobenzene
1,3-Dichlorobenzene	1,2,3,5-Tetrachlorobenzene
1,4-Dichlorobenzene	1,2,4,5-Tetrachlorobenzene
1,2,3-Trichlorobenzene	Pentachlorobenzene
1,2,4-Trichlorobenzene	Hexachlorobenzene

ISO 14184-3 - Formaldehyde in Textiles

ISO14184-3	1 x 1 mL
1000 µg/mL in ACN	
Formaldehyde-DNPH	

ISO 21084 - Alkylphenols in Textiles

ISO21084	1 x 1 mL
1000 µg/mL each in MeOH	4 comps.
4-n-Nonylphenol	4-tert-Octylphenol
4-n-Octylphenol	Nonylphenol

PFAS in Textiles

PFAS-TXTL-MIX-001	1 x 1 mL
2 µg/mL each in ACN	6 comps.
Perfluoro-n-dodecanoic acid	Perfluoro-n-tetradecanoic acid
Perfluoro-n-decanoic acid	Perfluoro-n-undecanoic acid
Perfluoro-n-tridecanoic acid	Perfluoro-n-nonanoic acid

Chlorotoluenes in Textiles Standard

EN-17137-MIX-B	1 x 1 mL
100 µg/mL each in Dichloromethane	24 comps.
2-Chlorotoluene	2,4,5-Trichlorotoluene
3-Chlorotoluene	3,4,5-Trichlorotoluene
4-Chlorotoluene	2,3,4,5-Tetrachlorotoluene
2,3-Dichlorotoluene	2,3,4,6-Tetrachlorotoluene
2,4-Dichlorotoluene	2,3,5,6-Tetrachlorotoluene
2,5-Dichlorotoluene	2,3,4,5,6-Pentachlorotoluene
2,6-Dichlorotoluene	Benzyl chloride
3,4-Dichlorotoluene	a,a-Dichlorotoluene
3,5-Dichlorotoluene	a,a,a-Trichlorotoluene
2,3,4-Trichlorotoluene	a,a,2,6-Tetrachlorotoluene
2,3,5-Trichlorotoluene	a,a,a,2-Tetrachlorotoluene
2,3,6-Trichlorotoluene	a,a,a,4-Tetrachlorotoluene

Internal Standards

EN-17137-IS	1 x 1 mL
EN-17137-IS-PAK	5 x 1 mL
10 µg/mL in Dichloromethane	
Tetrachloro-m-xylene	

ISO 14362 - Aromatic Amines in Textiles

Aromatic Amines in Textiles Standard

ISO14362-1	1 x 1 mL
300 µg/mL each in ACN	21 comps.
4-Aminobiphenyl	3,3'-Dimethyl-4,4'-diaminodiphenylmethane
Benzidine	2-Methoxy-5-methylaniline
4-Chloro-2-methylaniline	4,4'-Methylenebis(2-chloroaniline)
2-Aminonaphthalene	4,4'-Oxydianiline
o-Aminoazotoluene	4,4'-Thiodianiline
2-Methyl-5-nitroaniline	o-Toluidine
4-Chloroaniline	2,4-Diaminotoluene
4,4'-Diaminodiphenylmethane	2,4,5-Trimethylaniline
3,3'-Dichlorobenzidine	o-Anisidine
3,3'-Dimethoxybenzidine	4-Phenylazoaniline
3,3'-Dimethylbenzidine	

M-8330-ADD-58-CN-3X	1 x 1 mL
300 µg/mL in ACN	
2,4-Diaminoanisole	

ISO14362-3	1 x 1 mL
500 µg/mL in MeOH	
4-Aminoazobenzene	

Internal Standard

ISO14362-IS	1 x 1 mL
1000 µg/mL in ACN	
2,4,5-Trichloroaniline	

ISO Methods for Leather

ISO 17070 - Chlorophenols in Leather

Chlorophenols in Leather Standard

ISO17070	1 x 1 mL
1000 µg/mL each in ACN	19 comps.
2-Chlorophenol	2,3,5-Trichlorophenol
3-Chlorophenol	2,3,6-Trichlorophenol
4-Chlorophenol	2,4,5-Trichlorophenol
2,3-Dichlorophenol	2,4,6-Trichlorophenol
2,4-Dichlorophenol	3,4,5-Trichlorophenol
2,5-Dichlorophenol	2,3,4,5-Tetrachlorophenol
2,6-Dichlorophenol	2,3,4,6-Tetrachlorophenol
3,4-Dichlorophenol	2,3,5,6-Tetrachlorophenol
3,5-Dichlorophenol	Pentachlorophenol
2,3,4-Trichlorophenol	

Internal Standards

ISO17070-IS	1 x 1 mL
ISO17070-IS-PAK	5 x 1 mL
100 µg/mL in Acetone	
Tetrachloroguaiacol	

ISO 22517 - Pesticides in Leather

Pesticides in Leather Standard

ISO22517			1 x 1 mL
100 µg/mL each in Hexane:Acetone (90:10)			21 comps.
o,p'-DDT	d-BHC	Endosulfan I	
o,p'-DDD	g-BHC	Endosulfan II	
p,p'-DDD	Malathion	Mirex	
o,p'-DDE	Methoxychlor	Heptachlor epoxide (Isomer B)	
p,p'-DDE	Aldrin	Pentachloroanisole	
a-BHC	Dieldrin	Permethrin	
b-BHC	Parathion	Chlorothalonil	

P-474S-A	1 x 1 mL
100 µg/mL in Acetone	
Dichlofluanid	

P-553S-A	1 x 1 mL
100 µg/mL in Acetone	
Tolyfluanide	

Pesticides in Leather Standard Set

ISO22517-SET	3 x 1 mL
100 µg/mL at stated solvents	ISO22517,
	P-474S-A, P-553S-A

Azo dyes may pose cancer risks and have been restricted in many countries, most notably of the European Union. Dyes that are listed as a trade name not a pure chemical (**Cat. No. DYE-XXX-R1**) are certified as 100% tech mix as the commercial name.

Dye Compounds								
Compound	Synonym	CAS No.	Cat. No.	Unit	Cat. No.	Conc.	Matrix	Unit
2-Amino-3-nitrophenol		603-85-0	DYE-107N	100 mg	DYE-107S	100 µg/mL	MeOH	1 mL
2-Amino-4-chlorophenol		95-85-2	-----		DYE-034S-CN	100 µg/mL	ACN	1 mL
2-Amino-5-(diethylamino)toluene monohydrochloride		2051-79-8	DYE-104N	100 mg	DYE-104S	100 µg/mL	MeOH	1 mL
2-Aminophenol		95-55-6	DYE-108N	100 mg	DYE-108S	100 µg/mL	MeOH	1 mL
Acid Red 26	Ponceau Xylidine	3761-53-3	-----		DYE-031S-R1	100 µg/mL	MeOH	1 mL
Acid Violet 7		4321-69-1	DYE-121N-R1	100 mg	DYE-121S-R1	100 µg/mL	MeOH	1 mL
Acid Violet 9		6252-76-2	DYE-122N-R1	100 mg	DYE-122S-R1	100 µg/mL	MeOH	1 mL
Acid Violet 19		3244-88-0	DYE-123N-R1	100 mg	DYE-123S-R1	100 µg/mL	MeOH	1 mL
Acid Violet 20			DYE-124N-R1-5MG	5 mg	DYE-124S-R1	100 µg/mL	MeOH	1 mL
Acid Violet 30			DYE-125N-R1-5MG	5 mg	DYE-125S-R1	100 µg/mL	MeOH	1 mL
Acid Violet 49		1694-09-3	DYE-120N-R1	100 mg	DYE-120S-R1	100 µg/mL	MeOH	1 mL
Basic Blue 7		2390-60-5	DYE-113N-R1	100 mg	DYE-113S-R1	100 µg/mL	MeOH	1 mL
Basic Blue 26	see Victoria Blue							
Basic Fuchsin		569-61-9	DYE-049N-R1	100 mg	DYE-049S-R1	100 µg/mL	MeOH	1 mL
Basic Red 2		477-73-6	DYE-114N-R1	100 mg	DYE-114S-R1	100 µg/mL	MeOH	1 mL
Basic Red 9		569-61-9	-----		DYE-030S-R1	100 µg/mL	MeOH	1 mL
Basic Violet 1		8004-87-3	DYE-027N-R1	100 mg	DYE-027S-R1	100 µg/mL	MeOH	1 mL
Basic Violet 3	Crystal Violet	548-62-9	DYE-028N-R1	100 mg	DYE-028S-R1	100 µg/mL	MeOH	1 mL
Basic Violet 14		632-99-5	-----		DYE-012S-R1	100 µg/mL	MeOH	1 mL
Congo Red	see Direct Red 28							
Crocein Scarlet 3b		5413-75-2	DYE-115N-R1	100 mg	DYE-115S-R1	100 µg/mL	MeOH	1 mL
Crystal Violet	see Basic Violet 3							
D & C Red 7		5281-04-9	DYE-060N-R1	100 mg	DYE-060S-R1	100 µg/mL	MeOH	1 mL
2,4-Diaminodiphenylamine		136-17-4	DYE-102N	100 mg	-----	-----	-----	-----
2,6-Diaminopyridine		141-86-6	DYE-103N	100 mg	DYE-103S	100 µg/mL	MeOH	1 mL
N,N-Dimethyl-1,4-phenylenediamine		99-89-9	DYE-106N	100 mg	DYE-106S-CN	100 µg/mL	ACN	1 mL
Direct Black 38		1937-37-7	-----		DYE-013S-R1	100 µg/mL	MeOH	1 mL
Direct Blue 6		2602-46-2	-----		DYE-014S-R1	100 µg/mL	MeOH	1 mL
Direct Red 28	Congo Red	573-58-0	-----		DYE-064S-R1	100 µg/mL	MeOH	1 mL
Disperse Blue 1		2475-45-8	-----		DYE-001S-R1	100 µg/mL	MeOH	1 mL
Disperse Blue 3		2475-46-9	-----		DYE-004S-R1	100 µg/mL	MeOH	1 mL
Disperse Blue 7		3179-90-6	-----		DYE-015S-R1	100 µg/mL	MeOH	1 mL
Disperse Blue 26		3860-63-7	-----		DYE-016S-R1	100 µg/mL	MeOH	1 mL
Disperse Blue 35		12222-75-2	-----		DYE-009S-R1	100 µg/mL	MeOH	1 mL
Disperse Blue 102		12222-97-8	-----		DYE-017S-R1	100 µg/mL	MeOH	1 mL
Disperse Blue 124		61951-51-7	-----		DYE-010S-CN-R1	100 µg/mL	ACN	1 mL
Disperse Brown 1		23355-64-8	DYE-051N-R1	100 mg	DYE-051S-R1	100 µg/mL	MeOH	1 mL
Disperse Orange 1		2581-69-3	-----		DYE-005S-R1	100 µg/mL	MeOH	1 mL
Disperse Orange 3		730-40-5	-----		DYE-006S-R1	100 µg/mL	MeOH	1 mL
Disperse Orange 11		82-28-0	-----		DYE-002S-R1	100 µg/mL	MeOH	1 mL
Disperse Orange 37		13301-61-6	-----		DYE-011S-R1	100 µg/mL	MeOH	1 mL
Disperse Red 1		2872-52-8	-----		DYE-007S-R1	100 µg/mL	MeOH	1 mL
Disperse Red 11		2872-48-2	-----		DYE-018S-R1	100 µg/mL	MeOH	1 mL
Disperse Red 17		3179-89-3	-----		DYE-019S-R1	100 µg/mL	MeOH	1 mL
Disperse Yellow 1		119-15-3	-----		DYE-053S-R1	100 µg/mL	MeOH	1 mL
Disperse Yellow 3		2832-40-8	-----		DYE-003S-R1	100 µg/mL	MeOH	1 mL
Disperse Yellow 9		6373-73-5	-----		DYE-008S-R1	100 µg/mL	MeOH	1 mL
Eosin Y		15086-94-9	DYE-127N-R1	100 mg	DYE-127S-R1	100 µg/mL	MeOH	1 mL
Eriochrome Black A		3618-58-4	DYE-109N-R1	100 mg	DYE-109S-R1	100 µg/mL	MeOH	1 mL
FD & C Blue 1		3844-45-9	DYE-062N-R1	100 mg	DYE-062S-R1	100 µg/mL	MeOH	1 mL
FD & C Blue 2		860-22-0	DYE-063N-R1	100 mg	DYE-063S-R1	100 µg/mL	MeOH	1 mL
FD & C Red 3		16423-68-0	DYE-057N-R1	100 mg	DYE-057S-R1	100 µg/mL	MeOH	1 mL
FD & C Red 40		25956-17-6	DYE-056N-R1	100 mg	-----	-----	-----	-----
FD & C Yellow 5		1934-21-0	DYE-058N-R1	100 mg	DYE-058S-R1	100 µg/mL	MeOH	1 mL
Food Yellow 3	Sunset Yellow FCF	2783-94-0	DYE-024N-R1	100 mg	DYE-024S-R1	100 µg/mL	MeOH	1 mL
Metanil Yellow		587-98-4	DYE-117N-R1	100 mg	DYE-117S-R1	100 µg/mL	MeOH	1 mL
Methyl Blue		28983-56-4	DYE-128N-R1	100 mg	DYE-128S-R1	100 µg/mL	MeOH	1 mL
2-Nitro-1,4-phenylenediamine		5307-14-2	DYE-110N	100 mg	DYE-110S	100 µg/mL	MeOH	1 mL
Orange II sodium salt		633-96-5	DYE-116N-R1	100 mg	DYE-116S-R1	100 µg/mL	MeOH	1 mL
Para Red		6410-10-2	DYE-026N-R1	100 mg	-----	-----	-----	-----
Ponceau SX		4548-53-2	-----		DYE-112S-R1	100 µg/mL	MeOH	1 mL
Ponceau Xylidine	see Acid Red 26							
Rhodamine B		81-88-9	-----		DYE-118S	100 µg/mL	MeOH	1 mL
Solvent Orange 7	Sudan II	3118-97-6	DYE-021N-R1	100 mg	DYE-021S-R1	100 µg/mL	MeOH	1 mL
Solvent Red 19	Sudan Red 7B	6368-72-5	DYE-025N-R1	100 mg	DYE-025S-R1	100 µg/mL	MeOH	1 mL
Solvent Red 23	Sudan III	85-86-9	DYE-022N-R1	100 mg	DYE-022S-A	100 µg/mL	Acetone	1 mL
Solvent Red 24	Sudan IV	85-83-6	DYE-023N-R1	100 mg	DYE-023S-R1	100 µg/mL	MeOH : DCM (95:5)	1 mL
Solvent Yellow 1		60-09-3	-----		DYE-029S-R1	100 µg/mL	MeOH	1 mL
Solvent Yellow 14	Sudan I, Solvent Orange R	842-07-9	DYE-020N-R1	100 mg	DYE-020S-R1	100 µg/mL	MeOH	1 mL
Sudan II	Solvent Orange 7	3118-97-6	DYE-045N-R1	100 mg	DYE-045S-R1	100 µg/mL	MeOH	1 mL
Timbasol Brown trans oxide			DYE-055N-R1	100 mg	DYE-055S-R1	100 µg/mL	MeOH	1 mL
Victoria Blue	Basic Blue 26	2580-56-5	DYE-111N-R1	100 mg	DYE-111S-R1	100 µg/mL	MeOH	1 mL

Food Analysis



Food chemists routinely use analytical reference standards for their food analysis. These include lipid, vitamin, preservative and antimicrobial standards. Each standard is methodically prepared, undergoes various quality control analyses and procedures, and is then packaged under the strict ISO guidelines.

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Melamine

Analysis for Melamine in pet food, formula milk, and other foodstuffs is more accurate and reliable with the Melamine Standards Set. The set includes single-component standards of melamine, ammeline, ammelide and cyanuric acid, the method-recommended internal standard, column clean-up solution, and silylating reagent.

FDA GC-MS Screen for Melamine, Ammeline, Ammelide and Cyanuric acid

FDA-PROP-001-SET

Each at 1000 µg/mL in Diethylamine:Water (20:80)

	Cat. No.	Unit
Melamine	FDA-PROP-001A	1 mL
Ammeline	FDA-PROP-001B	1 mL
Ammelide	FDA-PROP-001C	1 mL
Cyanuric acid	FDA-PROP-001D	1 mL

Column Clean-up Check

FDA-PROP-001-CHK

1 x 5 mL

At stated Vol. %

Sylon BFT	(50% v/v)
Pyridine	(50% v/v)

5 x 1 mL, 2 x 5 mL

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

At stated Vol. %

BSTFA (99% v/v)
TMCS (1% v/v)

EFSA for Isopropylthioxanthone (ITX)

The European Food Safety Authority (EFSA) is addressing a safety concern following the detection of Isopropylthioxanthone (a chemical used in photographic processes) in infant formula in Italy. This has also prompted attention in France, Spain, and Portugal. Both the 2-isomer and the tech mix - which includes the 4-isomer are available for evaluation.

2-Isopropylthioxanthone (ITX)

EFSA-ITX-01

1 x 1 mL

1000 µg/mL in Isooctane

2-Isopropylthioxanth-9-one

Isopropylthioxanthone (ITX)

Mixed Isomers

EFSA-ITX-02

1 x 1 mL

1000 µg/mL in Isooctane

2-and 4-Isopropylthioxanth-9-one

Imidazole Standards (Caramel Coloring)

Over the past several years, there has been increased scrutiny of the caramel coloring used in food products, particularly cola-type soft drinks. There is concern for 4-Methylimidazole (4-MEI) that is created during the caramel coloring synthesis process. The concern arises because 4-MEI has been reported to be carcinogenic in high doses.

NEAT				SOLUTION	
Compound	CAS	Cat. No.	Unit	Each at 100 µg/mL in Toluene	
4-Methylimidazole (4-MEI)	822-36-6	FAC-001N	100 mg	FAC-001S-T	1 mL
1-Methylimidazole	616-47-7	FAC-002N	100 mg	FAC-002S-T	1 mL
2-Ethylimidazole	1072-62-4	FAC-003N	100 mg	FAC-003S-T	1 mL
2-Methylimidazole	693-98-1	FAC-004N	100 mg	FAC-004S-T	1 mL
4(5)-(Hydroxymethyl)imidazole	822-55-9	FAC-005N-25MG	25 mg	FAC-005S-M	1 mL
				100 µg/mL in MeOH	
				FAC-IS-T	1 mL
				50 µg/mL in Toluene	
Set of the above				FAC-SET	6 x 1 mL

Food Analysis

Lipid Standards

Lipid Standards analyzed by both GLC and TLC are supplied with complete analytical documentation.

Unsaturated Methyl Esters

Compound	CAS No.	NEAT 100 mg	10 mg/mL in Heptane SOLUTION	Unit
Methyl cis-9-hexadecenoate (Palmitoleate) C16:1	1120-25-8	UFA-001N	UFA-001S	1 mL
Methyl trans-9-hexadecenoate C16:1	10030-74-7	UFA-002N	UFA-002S	1 mL
Methyl cis-6-octadecenoate (Petroselinic) C18:1	2777-58-4	UFA-003N	UFA-003S	1 mL
Methyl trans-6-octadecenoate (Petroselinic) C18:1	14620-36-1	UFA-004N	UFA-004S	1 mL
Methyl cis-9-octadecenoate (Oleic) C18:1	112-62-9	UFA-005N	UFA-005S	1 mL
Methyl trans-9-octadecenoate (Elaidic) C18:1	1937-62-8	UFA-006N	UFA-006S	1 mL
Methyl cis-11-octadecenoate (Vaccenic) C18:1	1937-63-9	UFA-007N	UFA-007S	1 mL
Methyl 12-hydroxy-cis-9-octadecenoate (Ricinoleic) C18:1	141-24-2	UFA-008N	UFA-008S	1 mL
Methyl linoleate (Linoleic) C18:2	112-63-0	UFA-010N	UFA-010S	1 mL
Methyl linolelaidate (Linoelaidic) C18:2	2566-97-4	UFA-011N	UFA-011S	1 mL
Methyl octadecadienoate (Conjugated) C18:2		UFA-012N	UFA-012S	1 mL
Methyl linolenate (Linolenic) C18:3	301-00-8	UFA-014N	UFA-014S	1 mL
Methyl g-linolenate (Gamma Linolenic) C18:3	16326-32-2	UFA-015N	UFA-015S	1 mL
Methyl trans-11-eicosenoate C20:1	69119-90-0	UFA-016N	UFA-016S	1 mL
Methyl cis-8-eicosenoate C20:1	69119-99-9	UFA-017N	UFA-017S	1 mL
Methyl cis-11-eicosenoate C20:1	2390-09-2	UFA-018N	UFA-018S	1 mL
Methyl cis-5-eicosenoate C20:1	20839-34-3	UFA-019N	UFA-019S	1 mL
Methyl cis-11,14-eicosadienoate C20:2	2463-02-7	UFA-020N	UFA-020S	1 mL
Methyl cis-8,11,14-eicosatrienoate (Homogamma linolenic) C20:3	21061-10-9	UFA-022N	UFA-022S	1 mL
Methyl cis-11,14,17-eicosatrienoate C20:3	55682-88-7	UFA-023N	UFA-023S	1 mL
Methyl arachidonate (Arachidonic) C20:4	2566-89-4	UFA-024N	UFA-024S	1 mL
Methyl 5,8,11,14,17-eicosapentaenoate C20:5	2734-47-6	UFA-025N	UFA-025S	1 mL
Methyl cis-7,10,13,16,19-docosapentaenoate (DPA) C22:5	108698-02-8	UFA-026N	UFA-026S	1 mL
Methyl cis-13-docosenoate (Erucic) C22:1	1120-34-9	UFA-027N	UFA-027S	1 mL
Methyl trans-13-docosenoate (Brassicic) C22:1	7439-44-3	UFA-028N	UFA-028S	1 mL
Methyl cis-13,16-docosadienoate C22:2	61012-47-3	UFA-029N	UFA-029S	1 mL
Methyl cis-13,16,19-docosatrienoate C22:3	108698-01-7	UFA-030N	UFA-030S	1 mL
Methyl cis-7,10,13,16-docosatetraenoate C22:4	13487-42-8	UFA-031N	UFA-031S	1 mL
Methyl cis-4,7,10,13,16,19-docosahexenoate C22:6	2566-90-7	UFA-032N	UFA-032S	1 mL
Methyl cis-15-tetracosenoate (Nervonic) C24:1	2733-88-2	UFA-033N	UFA-033S	1 mL
		UFA-N-SET 30 x 100 mg	UFA-S-SET 30 x 1 mL	

Saturated Methyl Esters

Compound	CAS No.	NEAT 100 mg	10 mg/mL in Hexane SOLUTION	Unit
Methyl octanoate (Caprylic) C8:0	111-11-5	SFA-001N	SFA-001S	1 mL
Methyl nonoate (Pelargonic) C9:0	1731-84-6	SFA-002N	SFA-002S	1 mL
Methyl decanoate (Capric) C10:0	110-42-9	SFA-003N	SFA-003S	1 mL
Methyl undecanoate C11:0	1731-86-8	SFA-004N	SFA-004S	1 mL
Methyl dodecanoate (Lauric) C12:0	111-82-0	SFA-005N	SFA-005S	1 mL
Methyl tridecanoate C13:0	1731-88-0	SFA-006N	SFA-006S	1 mL
Methyl tetradecanoate C14:0	124-10-7	SFA-007N	SFA-007S	1 mL
Methyl pentadecanoate C15:0	7132-64-1	SFA-008N	SFA-008S	1 mL
Methyl hexadecanoate (Palmitic) C16:0	112-39-0	SFA-009N	SFA-009S	1 mL
Methyl heptadecanoate (Margaric) C17:0	1731-92-6	SFA-010N	SFA-010S	1 mL
Methyl octadecanoate (Stearic) C18:0	112-61-8	SFA-011N	SFA-011S	1 mL
Methyl 12-hydroxystearic C18:0	141-23-1	SFA-012N	SFA-012S	1 mL
Methyl nonadecanoate C19:0	1731-94-8	SFA-013N	SFA-013S	1 mL
Methyl eicosanoate (Arachidic) C20:0	1120-28-1	SFA-014N	SFA-014S	1 mL
Methyl heneicosanoate C21:0	6064-90-0	SFA-015N	SFA-015S	1 mL
Methyl docosanoate (Behenic) C22:0	929-77-1	SFA-016N	SFA-016S	1 mL
Methyl tricosanoate C23:0	2433-97-8	SFA-017N	SFA-017S	1 mL
Methyl tetracosanoate (Lignoceric) C24:0	2442-49-1	SFA-018N	SFA-018S	1 mL
			SFA-S-SET 18 x 1 mL	

Saturated Glycerides

Compound	CAS No.	NEAT	Unit	Compound	CAS No.	NEAT	Unit
Triolein (Caprylin) C8:0	538-23-8	GS-001N	100 mg	Dipalmitin C16:0	26657-95-4	GS-014N	100 mg
Dicaprylin C8:0	36354-80-0	GS-002N	100 mg	Monopalmitin C16:0	542-44-9	GS-015N	100 mg
Caprylin C8:0	19670-49-6	GS-003N	100 mg	Triolein (Stearin) C18:0	555-43-1	GS-016N	100 mg
Tridecanoin (Caprin) C10:0	621-71-6	GS-004N	100 mg	Distearin C18:0	1323-83-7	GS-017N	100 mg
Dicaprin C10:0	53988-07-1	GS-005N	100 mg	Monostearin C18:0	22610-63-5	GS-018N	100 mg
Monocaprin C10:0	26402-22-2	GS-006N	100 mg	Triolein (Arachidin) C20:0	620-64-4	GS-019N	100 mg
Tridecanoin (Laurin) C12:0	538-24-9	GS-007N	100 mg	Diarachidin C20:0	60586-60-9	GS-020N	100 mg
Dilaurin C12:0	27638-00-2	GS-008N	100 mg	Arachidin C20:0		GS-021N	100 mg
Monolaurin C12:0	142-18-7	GS-009N	100 mg	Tridecanoin (Behenin) C22:0	18641-57-1	GS-022N	100 mg
Tritridecanoin (Myristin) C14:0	555-45-3	GS-010N	100 mg	Dibehenin C22:0		GS-023N	100 mg
Dimyristin C14:0	53563-63-6	GS-011N	100 mg	Behenin C22:0	6916-74-1	GS-024N	100 mg
Monomyristin C14:0	589-68-4	GS-012N	100 mg			GS-KIT 24 x 100 mg	
Trihexadecanoin (Palmitin) C16:0	555-44-2	GS-013N	100 mg				

Food Analysis

Lipids, AOCs, NHI/NIH

Unsaturated Glycerides

Compound	CAS No.	Cat. No.	Unit	Compound	CAS No.	Cat. No.	Unit
Myristolein C14:1 cis		UG-001N	10 mg	Monovaccenin 11 C18:1		UG-018N	10 mg
Dimyristolein C14:1		UG-002N	10 mg	Linolein C18:2 cis,cis	537-40-6	UG-019N	10 mg
Palmitolein C16:1 cis	20246-55-3	UG-004N	10 mg	Dilinolein C18:2	30606-27-0	UG-020N	10 mg
Dipalmitolein C16:1	113728-10-2	UG-005N	10 mg	Monolinolein C18:2	2277-28-3	UG-021N	10 mg
Monopalmitolein C16:1	37515-61-0	UG-006N	10 mg	Linolenin C18:3 cis,cis,cis	14465-68-0	UG-022N	10 mg
Petroselinin 6 C18:1 cis	3296-43-3	UG-007N	10 mg	Dilinoenin C18:3		UG-023N	10 mg
Dipetroselinin 6 C18:1		UG-008N	10 mg	Monolinolenin C18:3	26545-75-5	UG-024N	10 mg
Monopetroselinin 6 C18:1		UG-009N	10 mg	gamma-Linolenin C18:3 cis,cis,cis		UG-025N	10 mg
Olein 9 C18:1 cis	122-32-7	UG-010N	10 mg	Digamma Linolenin C18:3		UG-026N	10 mg
Diolein 9 C18:1	25637-84-7	UG-011N	10 mg	Monogamma Linolenin C18:3		UG-027N	10 mg
Monoolein 9 C18:1	111-03-5	UG-012N	10 mg	Triecosenoin C20:1 cis	80380-39-8	UG-028N	10 mg
Trielaidin 9 C18:1 trans	537-39-3	UG-013N	10 mg	Dieicosenoin C20:1	102783-82-4	UG-029N	10 mg
Dielaidin 9 C18:1 trans	98168-52-6	UG-014N	10 mg	Monoeicosenoin C20:1		UG-030N	10 mg
Monoelaidin 9 C18:1 trans	2716-53-2	UG-015N	10 mg	cis-11,14-Trieicosadienoin C20:2 cis,cis		UG-031N	10 mg
Vaccenin 11 C18:1 cis		UG-016N	10 mg	Dieicosadienoin C20:2		UG-032N	10 mg
Divaccenin 11 C18:1		UG-017N	10 mg	Monoeicosadienoin C20:2		UG-033N	10 mg

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

		Methyl Ester (% Composition by Weight)														
		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 Erucate	C24:0 Lignocerate
AOCS Reference Mix	Cat. No.															
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

		Methyl Ester (% Composition by Weight)													
		C8:0 Caprylate	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/NIH Reference Mix	Cat. No.	Unit													
NHI-A	NHI-001N	100 mg				25.0	10.0		65.0						
NHI-B	NHI-002N	100 mg				4.0	40.0		56.0						
NHI-D	NHI-004N	100 mg				11.8	23.6	6.9	13.1	44.6					

Designed to test reliability of chromatographic system when performing quantitative analysis of Fatty Acids.

Food Analysis

FAMES

Fatty Acid Methyl Esters (FAMES)

These mixes and kits are suitable for determining peak identification and establishing chromatographic retention times.

Saturated Straight Chain Kit

FAME-001-R1-KIT

10 units

Purity 99%, 100 mg each

Methyl caproate (C6:0)
Methyl caprylate (C8:0)
Methyl caprate (C10:0)
Methyl laurate (C12:0)
Methyl myristate (C14:0)
Methyl palmitate (C16:0)
Methyl stearate (C18:0)
Methyl arachidate (C20:0)
Methyl behenate (C22:0)
Methyl lignocerate (C24:0)

Odd Carbon Straight Chain Kit

FAME-005-R1-KIT

9 units

Purity 99%, 100 mg each

Methyl heptanoate (C7:0)
Methyl nonanoate (C9:0)
Methyl undecanoate (C11:0)
Methyl tridecanoate (C13:0)
Methyl pentadecanoate (C15:0)
Methyl heptadecanoate (C17:0)
Methyl nonadecanoate (C19:0)
Methyl heneicosanoate (C21:0)
Methyl tricosanoate (C23:0)

Saturated Straight Chain Kit

FAME-002-R1-KIT

19 units

Purity 99%, 100 mg each

Methyl caproate (6:0)
Methyl heptanoate (7:0)
Methyl caprylate (8:0)
Methyl nonanoate (9:0)
Methyl caprate (10:0)
Methyl undecanoate (11:0)
Methyl laurate (12:0)
Methyl tridecanoate (13:0)
Methyl myristate (14:0)
Methyl pentadecanoate (15:0)
Methyl palmitate (16:0)
Methyl heptadecanoate (17:0)
Methyl stearate (18:0)
Methyl nonadecanoate (19:0)
Methyl arachidate (20:0)
Methyl heneicosanoate (21:0)
Methyl behenate (22:0)
Methyl tricosanoate (23:0)
Methyl lignocerate (24:0)

Unsaturated Straight Chain Kit

FAME-003-R1-KIT

14 units

Purity 99%, 10 mg each

Methyl myristoleate (14:1)
Methyl palmitoleate (16:1)
Methyl petroselinic (18:1)
Methyl elaidate (18:1)
Methyl cis-vaccenate (18:1, cis)
Methyl linoleate (18:2, cis)
Methyl linolelaidate (18:2, trans)
Methyl linolenate (18:3)
Methyl cis-11-eicosenoate (20:1)
Methyl arachidonate (20:4)
Methyl erucate (22:1)
Methyl cis-4,7,10,13,16,19-docosahexaenoate (22:6)
Methyl nervonate (24:1)
Methyl oleate (18:1)

For FAE standards refer to Biofuels in the petrochemical section.

Methyl Ester Mix #1

FAMQ-001

40 mg

Approximately 10 mg of each in
a qualitative mix

4 comps.

Methyl 11-eicosenoate (20:1)
Methyl 11,14-eicosadienoate (20:2)
Methyl arachidonate (20:4)
Methyl 5,8,11,14,17-eicosapentaenoate (20:5)

Fatty Acid Methyl Ester Mix #2

FAMQ-002

50 mg

Approximately 10 mg of each in
a qualitative mix

5 comps.

Methyl 11-eicosenoate (20:1)
Methyl 11,14-eicosadienoate (20:2)
Methyl 11,14,17-eicosatrienoate (20:3)
Methyl arachidonate (20:4)
Methyl 5,8,11,14,17-eicosapentaenoate (20:5)

Volatile Acid Standard Solution

FAMQ-004

1 x 100 mL

10mM of each component in

deionized water with 2% MeOH

10 comps.

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

FAME Quantitative Standard Mix

FAMQ-005

1 x 1 mL

At stated conc. (mg/mL) in CH₂Cl₂ (total of 10 mg/mL)

37 comps.

Methyl butyrate (C4:0)	0.4	Methyl linoleate (C18:2n6c)	0.2
Methyl caproate (C6:0)	0.4	Methyl arachidate (C20:0)	0.4
Methyl caprylate (C8:0)	0.4	Methyl g-linolenate (C18:3n6)	0.2
Methyl caprate (C10:0)	0.4	Methyl cis-11-eicosenoate (C20:1)	0.2
Methyl undecanoate (C11:0)	0.2	Methyl linolenate (C18:3n3)	0.2
Methyl laurate (C12:0)	0.4	Methyl heneicosanoate (C21:0)	0.2
Methyl tridecanoate (C13:0)	0.2	Methyl cis-11,14-eicosadienoate (C20:2)	0.2
Methyl myristate (C14:0)	0.4	Methyl behenate (C22:0)	0.4
Methyl myristoleate (C14:1)	0.2	Methyl cis-8,11,14-eicosatrienoate (C20:3n6)	0.2
Methyl pentadecanoate (C15:0)	0.2	Methyl erucate (C22:1n9)	0.2
Methyl cis-10-pentadecenoate (C15:1)	0.2	Methyl cis-11,14,17-eicosatrienoate (C20:3n3)	0.2
Methyl palmitate (C16:0)	0.6	Methyl arachidonate (C20:4n6)	0.2
Methyl palmitoleate (C16:1)	0.2	Methyl tricosanoate (C23:0)	0.2
Methyl heptadecanoate (C17:0)	0.2	Methyl cis-13,16-docosadienoate (C22:2)	0.2
Methyl cis-10-heptadecenoate (C17:1)	0.2	Methyl lignocerate (C24:0)	0.4
Methyl stearate (C18:0)	0.4	Methyl cis-5,8,11,14,17-eicosapentaenoate (C20:5n3)	0.2
Methyl elaidate (C18:1n9t)	0.2	Methyl nervonate (C24:1)	0.2
Methyl oleate (C18:1n9c)	0.4	Methyl-cis-4,7,10,13,16,19-docosahexaenoate (C22:6n3)	0.2
Methyl linolelaidate (C18:2n6t)	0.2		

EU Pharmacopoeia FAME Set

EUP-FAME-SET

3 x 100 mg (EUP-24221, EUP-24222, EUP-24223)

EU Pharmacopoeia FAME Mix 1

EUP-24221

100 mg

At stated conc. by weight

6 comps.

Lauric acid methyl ester	5% w/w
Myristic acid methyl ester	5% w/w
Palmitic acid methyl ester	10% w/w
Stearic acid methyl ester	20% w/w
Arachidic acid methyl ester	40% w/w
Methyl cis-9-octadecenoate	20% w/w

EU Pharmacopoeia FAME Mix 2

EUP-24222

100 mg

At stated conc. by weight

5 comps.

Caproic acid methyl ester	10% w/w
Caprylic acid methyl ester	10% w/w
Capric acid methyl ester	20% w/w
Lauric acid methyl ester	20% w/w
Myristic acid methyl ester	40% w/w

EU Pharmacopoeia FAME Mix 3

EUP-24223

100 mg

At stated conc. by weight

8 comps.

Myristic acid methyl ester	5% w/w	Methyl cis-9-octadecenoate	20% w/w
Palmitic acid methyl ester	10% w/w	cis-11-Eicosenoic acid methyl ester	10% w/w
Stearic acid methyl ester	15% w/w	Behenic acid methyl ester	10% w/w
Arachidic acid methyl ester	20% w/w	Lignoceric acid methyl ester	10% w/w

Food Analysis

FAMES, Vitamin, Preservative & Antimicrobial Standards

Fatty Acid Ethyl Esters (FAEEs)

Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
Ethyl arachidate	18281-05-5		NEAT	FAEE-008N	100 mg
		10 mg/mL	Hexane	FAEE-008S	1 mL
Ethyl behenate	5908-87-2		NEAT	FAEE-009N	100 mg
		10 mg/mL	Hexane	FAEE-009S	1 mL
Ethyl caprate	110-38-3		NEAT	FAEE-003N	100 mg
		10 mg/mL	Hexane	FAEE-003S	1 mL
Ethyl caprylate	106-32-1		NEAT	FAEE-002N	100 mg
		10 mg/mL	Hexane	FAEE-002S	1 mL
Ethyl erucate	37910-77-3		NEAT	FAEE-011N	100 mg
		10 mg/mL	Hexane	FAEE-011S	1 mL
Ethyl heptadecanoate	14010-23-2		NEAT	FAEE-015N	100 mg
		10 mg/mL	Hexane	FAEE-015S	1 mL
Ethyl laurate	106-33-2		NEAT	FAEE-004N	100 mg
		10 mg/mL	Hexane	FAEE-004S	1 mL
Ethyl lignocerate	24634-95-5		NEAT	FAEE-010N	100 mg
		10 mg/mL	Hexane	FAEE-010S	25
Ethyl linoleate	544-35-4		NEAT	FAEE-012N	100 mg
		10 mg/mL	Hexane	FAEE-012S	1 mL
Ethyl linolenate	1191-41-9		NEAT	FAEE-016N	100 mg
		10 mg/mL	Hexane	FAEE-016S	1 mL
Ethyl linolenate gamma	31450-14-3		NEAT	FAEE-020N	100 mg
		10 mg/mL	Hexane	FAEE-020S	35
Ethyl myristate	124-06-1		NEAT	FAEE-005N	100 mg
		10 mg/mL	Hexane	FAEE-005S	1 mL
Ethyl nervonate	137888-64-3		NEAT	FAEE-013N	100 mg
		10 mg/mL	Hexane	FAEE-013S	25
Ethyl oleate	111-62-6		NEAT	FAEE-014N	100 mg
		10 mg/mL	Hexane	FAEE-014S	1 mL
Ethyl palmitate	628-97-7		NEAT	FAEE-006N	100 mg
		10 mg/mL	Hexane	FAEE-006S	1 mL
Ethyl palmitoleate	56219-10-4		NEAT	FAEE-001N	100 mg
		10 mg/mL	Hexane	FAEE-001S	1 mL
Ethyl stearate	111-61-5		NEAT	FAEE-007N	100 mg
		10 mg/mL	Hexane	FAEE-007S	1 mL

Vitamin Standards

Water Soluble				Fat Soluble					
Water Soluble		CAS No.	Cat. No.	Unit	Fat Soluble		CAS No.	Cat. No.	Unit
Thiamine • HCl	B1	67-03-8	VIT-001N	1 gram	DL-a-Tocopherol	E	10191-41-0	VIT-012N	100 mg
Riboflavin	B2	83-88-5	VIT-002N	1 gram	Cholecalciferol	D3	67-97-0	VIT-013N	100 mg
Pyridoxine • HCl	B6	58-56-0	VIT-003N	1 gram	Retinol palmitate	A, Palmitate	79-81-2	VIT-014N	100 mg
L-Ascorbic acid	C	50-81-7	VIT-004N	1 gram	DL-a-Tocopherol acetate		7695-91-2	VIT-015N	100 mg
Nicotinic acid	Niacin	59-67-6	VIT-005N	1 gram	Phylloquinone	K1	84-80-0	VIT-016N	100 mg
Nicotinamide		98-92-0	VIT-006N	1 gram	Menaquinone	K2	863-61-6	VIT-017N	100 mg
Folic Acid	M	59-30-3	VIT-007N	1 gram	Menadione	K3	58-27-5	VIT-018N	100 mg
Calcium-D-pantothenate	B5	137-08-6	VIT-008N	100 mg	β-Carotene (Substantially free of alpha Carotene)		7235-40-7	VIT-019N	10 mg
d-Biotin	H	58-85-5	VIT-009N-R1	100 mg	D-a-Tocopherol succinate	E	4345-03-3	VIT-020N	100 mg
Cyanocobalamin	B12	68-19-9	VIT-010N-R1	25 mg	Ergocalciferol	D2	50-14-6	VIT-022N	100 mg
VIT-WSK-R1-SET				10 units	VIT-FSK-R2-SET				10 units

Preservative and Antimicrobial Standards

Compound	CAS No.	Cat. No.	Unit
Benzoic acid	65-85-0	AP-001N	1 gram
Sodium benzoate	532-32-1	AP-002N	1 gram
Potassium nitrite	7758-09-0	AP-003N	1 gram
Sodium nitrite	7632-00-0	AP-004N	1 gram
Sodium nitrate	7631-99-4	AP-005N	1 gram
Potassium nitrate	7757-79-1	AP-006N	1 gram
Methyl paraben	99-76-3	AP-007N	1 gram
Ethyl paraben	120-47-8	AP-008N	1 gram
Butyl paraben	94-26-8	AP-009N	1 gram
Propionic acid	79-09-4	AP-010N	1 gram
Sodium propionate	137-40-6	AP-011N	1 gram
Calcium propionate	4075-81-4	AP-012N	1 gram
Sorbic acid	110-44-1	AP-013N	1 gram
Potassium sorbate	24634-61-5	AP-014N	1 gram

Our organic analysis methods include GC, GC/MS, LC-MS, LC-MS/MS, FTIR, and NMR, utilizing both internal calibration standards and advanced statistical analysis. Each product is accompanied by a comprehensive Certificate of Analysis (COA), prepared in accordance with ISO 17034.

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- Prepared and certified analyte concentration
- Chemical purity
- Analytical Method
- Expiration date
- Certification date
- Uncertainty and traceability information and statements
- Neat material identity (For neat products)
- CAS number (if available).

Analytical Documentation for CLP products

- Quantitative analysis by comparison to a separately prepared standard.
- Target concentration analytically determined within a 95% confidence interval.
- A chromatogram of lot analytes by elution order and instrumental parameters.
- Certificate with actual gravimetric/volumetric concentrations and purities.



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The United States 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 analysis. These CLP methods are designed for both volatile and semi-volatile compounds.

The EPA target compounds in test method OLM 04.1 and 04.2 (Organic Low-Medium) Statement Of Work (SOW).

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VOC Selected Target Compound Solutions

Volatile Target Compound List has two versions. Statement Of Work (SOW) Organic Low-Medium (OLM) 01.8 is the complete list CLP-022 and CLP-022-R2 is designed for the Toxicity Characteristic Leaching Procedure (TCLP) OLM 03.1 method and does not contain vinyl acetate.

Volatile Target Compounds List (TCL) Gases

CLP-022G-10X
CLP-022G-10X-PAK

2.0 mg/mL each in MeOH

1 x 1 mL
5 x 1 mL
4 comps.

Bromomethane
Chloroethane

Chloromethane
Vinyl chloride

Ketones

CLP-022K

0.2 mg/mL each in MeOH

CLP-022K-10X

2.0 mg/mL each in MeOH

CLP-022K-25X

5.0 mg/mL each in MeOH

Acetone
2-Butanone

2-Hexanone
4-Methyl-2-pentanone

1 x 1 mL

1 x 1 mL

1 x 1 mL
4 comps.

Volatile Target Compounds List (TCL)

CLP-022

0.2 mg/mL each in MeOH

1 x 1 mL
37 comps.

Acetone
Benzene
Bromodichloromethane
Bromoform
Bromomethane
2-Butanone
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
Dibromochloromethane
1,1-Dichloroethane
Dichloromethane
1,2-Dichloroethane
1,1-Dichloroethylene
cis-1,2-Dichloroethylene
trans-1,2-Dichloroethylene
1,2-Dichloropropane

cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Ethylbenzene
2-Hexanone
4-Methyl-2-pentanone
Styrene
1,1,2,2-Tetrachloroethane
Tetrachloroethene
Toluene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Vinyl acetate
Vinyl chloride
m-Xylene
o-Xylene
p-Xylene

Certificate will reflect
actual *cis/trans* ratio

Volatile Target Compounds List (TCL)

CLP-022-R2

0.2 mg/mL each in MeOH

1 x 1 mL
36 comps.

Acetone
Benzene
Bromodichloromethane
Bromoform
Bromomethane
2-Butanone
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
Dibromochloromethane
1,1-Dichloroethane
Dichloromethane
1,2-Dichloroethane
1,1-Dichloroethylene
cis-1,2-Dichloroethylene
trans-1,2-Dichloroethylene
1,2-Dichloropropane

cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Ethylbenzene
2-Hexanone
4-Methyl-2-pentanone
Styrene
1,1,2,2-Tetrachloroethane
Tetrachloroethene
Toluene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Vinyl chloride
m-Xylene
o-Xylene
p-Xylene

Certificate will reflect actual
cis/trans ratio

Contract Laboratory Program (CLP)

Volatiles (continued)

Auxiliary Volatiles

Volatile Calibration Check Compounds

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

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	

Purgeable Internal/Surrogate Standards

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 ₄
p-Bromofluorobenzene	1,4-Difluorobenzene
Chlorobenzene-d ₅	Toluene-d ₈

Hexadecane Extraction Volatiles

CLP-BTEX	1 x 1 mL
CLP-BTEX-PAK	SAVE 5 x 1 mL
0.2 mg/mL each in MeOH	6 comps.
CLP-BTEX-10X	1 x 1 mL
CLP-BTEX-10X-PAK	SAVE 5 x 1 mL
2.0 mg/mL each in MeOH	6 comps.
Benzene	m-Xylene
Ethylbenzene	o-Xylene
Toluene	p-Xylene

CLP-001B	1 x 1 mL
1.0 mg/mL each in MeOH	2 comps.
n-Decane	n-Nonane

Tuning Solution/Surrogate Standard Mix

CLP-004-100X	1 x 1 mL
CLP-004-100X-PAK	SAVE 5 x 1 mL
2.5 mg/mL in MeOH	
p-Bromofluorobenzene	

Purgeable Internal Standards

CLP-PI	1 x 1 mL
CLP-PI-PAK	SAVE 5 x 1 mL
1.0 mg/mL each in MeOH	
CLP-PI-2.5X	1 x 1 mL
CLP-PI-2.5X-PAK	SAVE 5 x 1 mL
2.5 mg/mL each in MeOH	3 comps.
Bromochloromethane	1,4-Difluorobenzene
Chlorobenzene-d ₅	

Purgeable Surrogate Standards

CLP-PS	1 x 1 mL
CLP-PS-PAK	SAVE 5 x 1 mL
0.25 mg/mL each in MeOH	3 comps.
CLP-PS-4X	1 x 1 mL
CLP-PS-4X-PAK	SAVE 5 x 1 mL
1.0 mg/mL each in MeOH	3 comps.
CLP-PS-10X	1 x 1 mL
CLP-PS-10X-PAK	SAVE 5 x 1 mL
2.5 mg/mL each in MeOH	3 comps.
p-Bromofluorobenzene	Toluene-d ₈
1,2-Dichloroethane-d ₄	

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	Toluene
Chlorobenzene	Trichloroethene
1,1-Dichloroethene	

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-004-80X	1 x 1 mL
CLP-004-80X-PAK	SAVE 5 x 1 mL
2000 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	
CLP-004-1000X	1 x 1 mL
25 mg/mL in MeOH	
p-Bromofluorobenzene	

Technical Note

Storage Conditions Most VOC formulations require refrigeration or freezer storage to inhibit adverse reactions among the components. It is imperative that these conditions are followed.

Contract Laboratory Program (CLP)

Volatiles (continued)

CLP

VOCs CLP OLM (Organic Low-Medium) 04.1 & 04.2

The set of volatile standards along with a complete semi-volatile series meets OLM 04.1, and can be used for OLM 04.2.

CLP OLM 04.1 and 04.2 - Volatiles Set		
CLP-VOC-SET		9 x 1 mL
CLP-022-R3	CLP-BTEX	CLP-PIPS
M-502B	CLP-PS-10X	CLP-003R-10X
CLP-022K-10X	CLP-PI-2.5X	CLP-004-10X

CLP OLM 04.1 and 04.2 - Volatile Target Cmpd. List

CLP-022-R3	1 x 1 mL
CLP-022-R3-PAK	SAVE 5 x 1 mL
200 µg/mL each in MeOH	40 comps.
Benzene	1,2-Dichloropropane
Bromodichloromethane	<i>cis</i> -1,3-Dichloropropene
Bromoform	<i>trans</i> -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
<i>cis</i> -1,2-Dichloroethene	<i>m</i> -Xylene
<i>trans</i> -1,2-Dichloroethene	<i>p</i> -Xylene
Dichloromethane	<i>o</i> -Xylene

Purgeable Surrogate Standard

CLP-PS-10X	1 x 1 mL
CLP-PS-10X-PAK	SAVE 5 x 1 mL
2.5 mg/mL each in MeOH	3 comps.

<i>p</i> -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	SAVE 5 x 1 mL
2.5 mg/mL each in MeOH	3 comps.

Bromochloromethane	1,4-Difluorobenzene
Chlorobenzene-d ₅	

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-d ₄
<i>p</i> -Bromofluorobenzene	1,4-Difluorobenzene
Chlorobenzene-d ₅	Toluene-d ₈

Gases

M-502B	1 x 1 mL
M-502B-PAK	SAVE 5 x 1 mL
0.2 mg/mL each in MeOH	6 comps.
Bromomethane	Dichlorodifluoromethane
Chloromethane	Trichlorofluoromethane
Chloroethane	Vinyl chloride

Purgeable Organic Matrix Spiking Solution

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	Toluene
Chlorobenzene	Trichloroethene
1,1-Dichloroethene	

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

Instrument Performance Check Solution

CLP-004-10X	1 x 1 mL
CLP-004-10X-PAK	SAVE 20% 5 x 1 mL
250 µg/mL in MeOH	
<i>p</i> -Bromofluorobenzene	

CLP 04.1 and 04.2 Screening Mix

CLP-BTEX	1 x 1 mL
CLP-BTEX-PAK	SAVE 5 x 1 mL
0.2 mg/mL each in MeOH	6 comps.
Benzene	<i>m</i> -Xylene
Ethylbenzene	<i>o</i> -Xylene
Toluene	<i>p</i> -Xylene

Technical Note

Aldehydes and Ketones in Alcohol Solvents
Standards containing aldehydes and ketones in methanol are given shorter expiration periods because of their tendency to form acetals and ketals. We add stabilizers to inhibit this reaction. To enhance stability, freezer storage is required.

Contract Laboratory Program (CLP)

Volatiles (continued)

Low Concentration SOW Organic Analysis of Water

Volatile Target Compounds Mix

CLP-022-LC

0.2 mg/mL each in MeOH (except indicated)

1 x 1 mL
42 comps.

Acetone (1.0 mg/mL)	1,1-Dichloroethylene
Benzene	<i>cis</i> -1,2-Dichloroethylene
Bromochloromethane	<i>trans</i> -1,2-Dichloroethylene
Bromodichloromethane	1,2-Dichloropropane
Bromoform	<i>cis</i> -1,3-Dichloropropene
Bromomethane	<i>trans</i> -1,3-Dichloropropene
2-Butanone (1.0 mg/mL)	Ethylbenzene
Carbon disulfide	2-Hexanone (1.0 mg/mL)
Carbon tetrachloride	4-Methyl-2-pentanone (1.0 mg/mL)
Chlorobenzene	Styrene
Chloroethane	1,1,2,2-Tetrachloroethane
Chloroform	Tetrachloroethene
Chloromethane	Toluene
Dibromochloromethane	1,1,1-Trichloroethane
1,2-Dibromo-3-chloropropane	1,1,2-Trichloroethane
1,2-Dibromoethane	Trichloroethene
1,2-Dichlorobenzene	Vinyl chloride
1,3-Dichlorobenzene	<i>o</i> -Xylene
1,4-Dichlorobenzene	<i>m</i> -Xylene
1,1-Dichloroethane	<i>p</i> -Xylene
Dichloromethane	
1,2-Dichloroethane	

Certificate will reflect actual
cis/trans ratio

Laboratory Control Sample Spiking Solution

CLP-LCS-V

CLP-LCS-V-PAK

0.2 mg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
12 comps.

Benzene	<i>cis</i> -1,3-Dichloropropene *
Bromoform	Tetrachloroethene
Carbon tetrachloride	1,1,2-Trichloroethane
1,2-Dibromoethane	Trichloroethene
1,4-Dichlorobenzene	Vinyl chloride
1,2-Dichloroethane	
1,2-Dichloropropane	

* may contain trace amounts of *trans* isomer

Tuning Solution / Surrogate Standard Mixes

CLP-004

CLP-004-PAK

25 µg/mL in MeOH

1 x 1 mL
SAVE 5 x 1 mL

CLP-004-10X

CLP-004-10X-PAK

0.25 mg/mL in MeOH

1 x 1 mL
SAVE 5 x 1 mL

CLP-004-100X

CLP-004-100X-PAK

2.5 mg/mL in MeOH

1 x 1 mL
SAVE 5 x 1 mL

CLP-004-1000X

2.5 mg/mL in MeOH

1 x 1 mL

p-Bromofluorobenzene

Internal Standard Mixes

CLP-LC-IS

CLP-LC-IS-PAK

25 µg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
3 comps.

CLP-LC-IS-10X

CLP-LC-IS-10X-PAK

0.25 mg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
3 comps.

CLP-LC-IS-100X

CLP-LC-IS-100X-PAK

2.5 mg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
3 comps.Chlorobenzene-*d*₅1,4-Dichlorobenzene-*d*₄

1,4-Difluorobenzene

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Information Required:

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- Analyte / Element (Name/CAS#)
- Desired solvent, Concentration, Quantity, and Application / Instrument



Meet your specific needs.

Gravimetric/Volumetric Certification:

Each compound is measured gravimetrically and QC verified instrumentally (where applicable). Custom Standards are certified following our rigorous ISO 17034 and ISO 17025 accredited quality system. Analysis methods include GC, GC/MS, LC-MS, LC-MS/MS and analysis using both internal calibration standards plus statistical analysis.



Contract Laboratory Program (CLP)

Priority Pollutant Standards

CLP

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 †

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.

Z-014J-0.5X 1 x 1 mL
Z-014J-0.5X-PAK **SAVE** 5 x 1 mL
 2.0 mg/mL each in CH₂Cl₂ 6 comps.

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

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

Technical Note

2,4-Dinitrophenol, 4-Nitrophenol, and Pentachlorophenol are susceptible to adsorption on active surfaces found in injection ports or contaminated columns.

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

PAH Mix

Z-014G 1 x 1 mL
Z-014G-PAK **SAVE** 5 x 1 mL
 2.0 mg/mL each in CH₂Cl₂: Benzene (50:50) 16 comps.

Acenaphthene
 Acenaphthylene
 Anthracene
 Benz[a]anthracene
 Benz[a]pyrene
 Benzo[b]fluoranthene
 Benzo[g,h,i]perylene
 Benzo[k]fluoranthene
 Chrysene
 Dibenzo[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 (50:50) 17 comps.

Acenaphthene
 Acenaphthylene
 Anthracene
 Benz[a]anthracene
 Benz[a]pyrene
 Benzo[b]fluoranthene
 Benzo[g,h,i]perylene
 Benzo[k]fluoranthene
 Carbazole
 Chrysene
 Dibenzo[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 CH₂Cl₂: Benzene (50:50) 18 comps.

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

Discounted Packs (5 x 1 mL)



† Subject to oxidation

Priority Pollutant Standards continued on next page

Contract Laboratory Program (CLP)

Priority Pollutant Standards

Priority Pollutants - Standards for Calibration of Capillary GC/MS - Complete Sets (continued)

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 (50:50)
 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 (Isomer B)

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 (50:50)
 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 (Isomer B)
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 (50:50)
 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 (Isomer B)
Dieldrin	Methoxychlor

Priority Pollutants Standard Sets

Z-014R-SET 9 x 1 mL

Z-014A Base/Neutrals - Mix #1
Z-014B Base/Neutrals - Mix #2
Z-014C Pesticides - Mix #1
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
Z-014J Internal Standard Mix

Z-014R-1-SET 9 x 1 mL

Z-014A Base/Neutrals - Mix #1
Z-014B Base/Neutrals - Mix #2
Z-014C-R Pesticides - 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
Z-014J Internal Standard Mix

Z-014R-2-SET 7 x 1 mL

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 PAH Mix
Z-014H Phenols Mix

Z-014R-3-SET 7 x 1 mL

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

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 CH₂Cl₂ 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 CH₂Cl₂

Perfluorokerosene

† Subject to oxidation

Method 625 GC/MS Calibration Standards

Compound	Conc.	Solvent	Cat. No.	Unit
Benzidine †	50 µg/mL	CH ₂ Cl ₂	M-625C-1	1 mL
Pentachlorophenol	25 µg/mL	CH ₂ Cl ₂	M-625C-2	1 mL
Decafluorotriphenylphosphine	25 µg/mL	CH ₂ Cl ₂	M-625C-3	1 mL
Benzidine †	50 µg/mL	CH ₂ Cl ₂	M-625C-4	1 mL
DFTPP	25 µg/mL			
Pentachlorophenol	25 µg/mL	CH ₂ Cl ₂	M-625C-5	1 mL
DFTPP	25 µg/mL			

M-625C-SET

Each at stated conc. in CH₂Cl₂

5 x 1 mL

2-Part Labels (ampules or vials)

Part One can be placed into a laboratory journal to document the standard used for the analysis. This label section includes the catalog number, description, lot number, expiration date, safety information, proper storage conditions and documents AccuStandard as the manufacturer.

Part Two duplicates required information for labeling transfer vial(s) with correct information.



Contract Laboratory Program (CLP)

Base/Neutral and Acid Composite Mixes

CLP

CLP Target List

These 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 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
CLP-HC-BN-R-PAK

2.0 mg/mL each in Benzene : CH₂Cl₂ : ACN (40:40:20)

1 x 1 mL
SAVE 5 x 1 mL
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

Z-014F
Z-014F-PAK

2.0 mg/mL each in MeOH

SAVE 5 x 1 mL

1 x 1 mL

2 comps.

Benzidine † 3,3'-Dichlorobenzidine †

† Subject to oxidation

Base/Neutral Composites Set

CLP-HC-BN-SET

2 x 1 mL

CLP-HC-BN-R, Z-014F

Acid Composite Mix

CLP-HC-A-R
CLP-HC-A-R-PAK

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL
SAVE 5 x 1 mL
19 comps.

Benzoic acid
4-Chloro-3-methylphenol
2-Chlorophenol
o-Cresol
p-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

Technical Note

Azobenzene was substituted for 1,2-Diphenylhydrazine because the 1,2-Diphenylhydrazine loses hydrogen to form 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
Benzyl alcohol
4-Chloroaniline
Dibenzofuran
2-Methylnaphthalene

2-Nitroaniline
3-Nitroaniline
4-Nitroaniline
Pyridine

Composite #3

Z-014E-R3

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

10 comps.

Aniline
Benzyl alcohol
Carbazole
4-Chloroaniline
Dibenzofuran

2-Methylnaphthalene
2-Nitroaniline
3-Nitroaniline
4-Nitroaniline
Pyridine

Semi-Volatiles by GC/MS

Method Analytes Mix

CLP-TCLSV

2.0 mg/mL each in CH₂Cl₂

Benzoic acid
Benzyl alcohol

N-Nitrosodimethylamine

1 x 1 mL
3 comps.

Calibration Check Compounds Set

CLP-011-SET

2 x 1 mL
CLP-011A, CLP-011B

Base/Neutrals

CLP-011A

2.0 mg/mL each in CH₂Cl₂

Acenaphthene
Benz[a]pyrene
1,4-Dichlorobenzene
Di-*n*-octylphthalate

Hexachlorobutadiene
Fluoranthene
N-Nitroso-diphenylamine

1 x 1 mL
7 comps.

Acids

CLP-011B

2.0 mg/mL each in CH₂Cl₂

4-Chloro-3-methylphenol
2,4-Dichlorophenol
2-Nitrophenol

Pentachlorophenol
Phenol
2,4,6-Trichlorophenol

1 x 1 mL
6 comps.

Base/Neutrals and Acids Matrix Standard Spiking Sets

CLP-007-R-SET

2 x 1 mL
CLP-007A, CLP-007-2

CLP-007-SET

2 x 1 mL
CLP-007A, CLP-007B

Base/Neutrals

CLP-007A

1.0 mg/mL each in MeOH

Acenaphthene
1,4-Dichlorobenzene
2,4-Dinitrotoluene

N-Nitroso-di-*n*-propylamine
Pyrene
1,2,4-Trichlorobenzene

1 x 1 mL
6 comps.

Acids

CLP-007-2

1.5 mg/mL each in MeOH

CLP-007B

2.0 mg/mL each in MeOH

2-Chlorophenol
4-Chloro-3-methylphenol
4-Nitrophenol

Pentachlorophenol
Phenol

1 x 1 mL
5 comps.
1 x 1 mL
5 comps.

Surrogate Standard

CLP-BNS-3-2X

2.0 mg/mL each in CH₂Cl₂

4-Terphenyl-d₁₄

1 x 1 mL

Internal Standards Mix

Z-014J

Z-014J-PAK

4.0 mg/mL each in CH₂Cl₂

Acenaphthene-d₁₀
Chrysene-d₁₂
1,4-Dichlorobenzene-d₄

Naphthalene-d₈
Perylene-d₁₂
Phenanthrene-d₁₀

1 x 1 mL
SAVE 5 x 1 mL
6 comps.

System Performance Check Cmpds (SPCC)

CLP-010

0.2 mg/mL each in CH₂Cl₂

CLP-010-10X

2.0 mg/mL each in CH₂Cl₂

2,4-Dinitrophenol
Hexachlorocyclopentadiene

4-Nitrophenol
N-nitroso-di-*n*-propylamine

1 x 1 mL

1 x 1 mL
4 comps.

Semi-Volatile Organic Extract Calibration

(Screening Mix)

CLP-009

0.1 mg/mL each in CH₂Cl₂

CLP-009-10X

1.0 mg/mL each in CH₂Cl₂

Di-*n*-octylphthalate
Phenanthrene

Phenol

1 x 1 mL

1 x 1 mL
3 comps.

Initial Calibration Target Compounds List

CLP-012

2.0 mg/mL each in CH₂Cl₂

Benzoic acid
2,4-Dinitrophenol
4,6-Dinitro-2-methylphenol
2-Nitroaniline
3-Nitroaniline

4-Nitroaniline
4-Nitrophenol
Pentachlorophenol
2,4,5-Trichlorophenol

1 x 1 mL
9 comps.

Acid Surrogate Standard

CLP-AS

CLP-AS-PAK

2.0 mg/mL each in MeOH

CLP-AS-10X

CLP-AS-10X-PAK

20 mg/mL each in MeOH

2-Fluorophenol
Phenol-d₅

2,4,6-Tribromophenol

1 x 1 mL
SAVE 5 x 1 mL
3 comps.

1 x 1 mL
SAVE 5 x 1 mL
3 comps.

Base/Neutrals Surrogate Standard

CLP-BNS

CLP-BNS-PAK

1.0 mg/mL each in CH₂Cl₂

CLP-BNS-10X

CLP-BNS-10X-PAK

10 mg/mL each in CH₂Cl₂

2-Fluorobiphenyl
Nitrobenzene-d₅

p-Terphenyl-d₁₄

1 x 1 mL
SAVE 5 x 1 mL

1 x 1 mL
SAVE 5 x 1 mL
3 comps.

Matrix Spike (SW 846 / Method 8270C/D)

CLP-007-WL-50ML

At stated conc. (µg/mL) in MeOH

4-Chloro-3-methyl phenol 200
2-Chlorophenol 200
4-Nitrophenol 200
Pentachlorophenol 200
Phenol 200
Acenaphthene 100

1,4-Dichlorobenzene 100
2,4-Dinitrotoluene 100
N-Nitrosodi-*n*-propylamine 100
Pyrene 100
1,2,4-Trichlorobenzene 100

1 x 50 mL
11 comps.

Matrix Spike (3/90 SOW / Method 8270C/D)

CLP-007R-WL-50ML

At stated conc. (µg/mL) in MeOH

4-Chloro-3-methyl phenol 150
2-Chlorophenol 150
4-Nitrophenol 150
Pentachlorophenol 150
Phenol 150
Acenaphthene 100

1,4-Dichlorobenzene 100
2,4-Dinitrotoluene 100
N-Nitrosodi-*n*-propylamine 100
Pyrene 100
1,2,4-Trichlorobenzene 100

1 x 50 mL
11 comps.

Contract Laboratory Program (CLP)

Semi-Volatiles

CLP

Semi-Volatiles by GC/MS

Acid Surrogate Standards

CLP-029

CLP-029-PAK

2.0 mg/mL each in MeOH

2-Chlorophenol-d₄
2-Fluorophenol

Phenol-d₅
2,4,6-Tribromophenol

1 x 1 mL

SAVE 5 x 1 mL

4 comps.

Base/Neutral Surrogate Standard

CLP-030

CLP-030-PAK

1.0 mg/mL each in CH₂Cl₂

1,2-Dichlorobenzene-d₄
2-Fluorobiphenyl

Nitrobenzene-d₅
p-Terphenyl-d₁₄

1 x 1 mL

SAVE 5 x 1 mL

4 comps.

Semi-Volatile Surrogate Mix

CLP-031-R2

CLP-031-R2-PAK

2000 µg/mL each in CH₂Cl₂

2-Chlorophenol-d₄
1,2-Dichlorobenzene-d₄
2-Fluorobiphenyl
2-Fluorophenol

Nitrobenzene-d₅
Phenol-d₅
p-Terphenyl-d₁₄
2,4,6-Tribromophenol

1 x 1 mL

SAVE 5 x 1 mL

8 comps.

Instrument Performance Check Solution

CLP-033

CLP-033-PAK

0.25 mg/mL in CH₂Cl₂

Decafluorotriphenylphosphine (DFTPP)

1 x 1 mL

SAVE 5 x 1 mL

GC/MS Tuning Solution

CLP-TS

CLP-TS-PAK

50 µg/mL in CH₂Cl₂

Perfluorokerosene

1 x 1 mL

SAVE 5 x 1 mL

Method 3640 Gel Permeation Cleanup

GPC Calibration Standard Solution

CLP-027

CLP-027-PAK

At stated conc. (mg/mL) in CH₂Cl₂

Corn Oil 250
bis(2-Ethylhexyl)phthalate 10
Methoxychlor 2

Perylene 0.2
Sulfur 0.8

1 x 1 mL

SAVE 5 x 1 mL

5 comps.

Method 3640 GPC Calibration Set

CLP-008-R-SET

2 x 1 mL

CLP-008A, CLP-008B-R

Solution A

CLP-008A

200 mg/mL in CH₂Cl₂

Corn Oil

1 x 1 mL

Solution B

CLP-008B-R

4.0 mg/mL each in CH₂Cl₂

bis(2-Ethylhexyl)phthalate

Pentachlorophenol

1 x 1 mL

2 comps.

GPC Calibration Standard Soln 8/94 SOW OLM03.1

CLP-027-R2

CLP-027-R2-PAK

At stated conc. (mg/mL) in CH₂Cl₂

Corn Oil 250
bis(2-Ethylhexyl)phthalate 5
Methoxychlor 1

Perylene 0.2
Sulfur 0.8

1 x 1 mL

SAVE 5 x 1 mL

5 comps.

SAVE
5 x 1 mL Pack



Contract Laboratory Program (CLP)

Organic Analysis of Water

SOW Semi-Volatiles

Base/Neutrals - Mix #1

Z-014A-LC

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

13 comps.

4-Bromophenyl phenyl ether
Butyl benzyl phthalate
bis(2-Chloroethoxy)methane
bis(2-Chloroethyl) ether
bis(2-Chloro-1-methylethyl) ether
4-Chlorophenyl phenyl 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

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

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

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

8 comps.

2,4-Dinitrophenol
2-Methyl-4,6-dinitrophenol
2-Nitroaniline
3-Nitroaniline
4-Nitroaniline
4-Nitrophenol
Pentachlorophenol
2,4,5-Trichlorophenol

Polynuclear Aromatic Hydrocarbon Mix

Z-014G
Z-014G-PAK

2.0 mg/mL each in CH₂Cl₂:Benzene (50:50)

1 x 1 mL

SAVE 5 x 1 mL

16 comps.

Acenaphthene
Acenaphthylene
Anthracene
Benz[a]anthracene
Benz[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

Phenols Mix - Low Concentration

Z-014H-LC
Z-014H-LC-PAK

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

SAVE 5 x 1 mL

9 comps.

4-Chloro-3-methylphenol
2-Chlorophenol
2,4-Dichlorophenol
2,4-Dimethylphenol
2-Methylphenol
4-Methylphenol
2-Nitrophenol
Phenol
2,4,6-Trichlorophenol

Laboratory Control Sample

Spiking Solution

CLP-LCS-SV-R1-SET

2 x 1 mL

CLP-LCS-SV-R1

1 x 1 mL

At stated conc. (µg/mL) in Acetone:MeOH (90:10)
14 comps.

Benz[a]pyrene 20
2-Chlorophenol 40
bis(2-Chloroethyl) ether 20
Diethylphthalate 20
2,4-Dinitrotoluene 20
Hexachlorobenzene 20
Hexachloroethane 20
Isophorone 20
Naphthalene 20
N-Nitroso-di-*n*-propylamine 20
N-Nitrosodiphenylamine 20
Phenol 40
1,2,4-Trichlorobenzene 20
2,4,6-Trichlorophenol 40

CLP-LCS-SV-ADD-R1

1 x 1 mL

40 µg/mL in MeOH

4-Chloroaniline

Tuning Solution

M-625C-3-2X

50 µg/mL in CH₂Cl₂

1 x 1 mL

Decafluorotriphenylphosphine (DFTPP)

Internal Standard

Z-014J-0.5X
Z-014J-0.5X-PAK

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

SAVE 5 x 1 mL

6 comps.

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

Surrogate Standards

CLP-LC-SS-1
CLP-LC-SS-1-PAK

2.0 mg/mL each in MeOH:CH₂Cl₂ (20:80)

1 x 1 mL

SAVE 5 x 1 mL

5 comps.

2-Fluorobiphenyl
2-Fluorophenol
Nitrobenzene-d₅
Phenol-d₅
p-Terphenyl-d₁₄

CLP-LC-SS-2
CLP-LC-SS-2-PAK

6.0 mg/mL in MeOH

1 x 1 mL

SAVE 5 x 1 mL

2,4,6-Tribromophenol

Contract Laboratory Program (CLP)

OLM 04.1 and 04.2

CLP

Semi-Volatiles for CLP OLM 04.1 and 04.2

The EPA target compounds in test method OLM 04.1 and 04.2 (Organic Low-Medium) Statement of Work.

Base Neutrals CLP OLM 04.1 and 04.2

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
4-Bromophenyl phenyl ether
bis(2-Chloroethoxy) methane
bis(2-Chloroethyl) ether
bis(2-Chloroisopropyl) ether
4-Chlorophenyl phenyl ether
Dibutyl phthalate

Diethyl phthalate
Dimethyl phthalate
Di-*n*-octyl phthalate
bis(2-Ethylhexyl)phthalate
N-Nitrosodiphenylamine
N-Nitrosodi-*n*-propylamine

CLP Base Neutral & PAH Mix #2

CLP-HC-SV-MIX2

1 x 1 mL

2000 µg/mL each in CH₂Cl₂ : Benzene (75:25)

31 comps.

Acenaphthene
Acenaphthylene
Acetophenone
Anthracene
Atrazine
Benzaldehyde
Benz[a]anthracene
Benzo[b]fluoranthene
Benzo[k]fluoranthene
Benzo[g,h,i]perylene
Benz[a]pyrene
Biphenyl
ε-Caprolactam
Carbazole
2-Chloronaphthalene
Chrysene

Dibenz[a,h]anthracene
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Fluoranthene
Fluorene
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Indeno[1,2,3-cd]pyrene
Isophorone
Naphthalene
Nitrobenzene
Phenanthrene
Pyrene

CLP Toxic Substance Mix #4

CLP-HC-SV-MIX4

1 x 1 mL

2000 µg/mL each in CH₂Cl₂

7 comps.

4-Chloroaniline
Dibenzofuran
3,3'-Dichlorobenzidine †
2-Methylnaphthalene

2-Nitroaniline
3-Nitroaniline
4-Nitroaniline

† Subject to oxidation

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
2,4-Dichlorophenol
2,4-Dimethylphenol
2,4-Dinitrophenol
2-Chlorophenol
2-Methyl-4,6-dinitrophenol
o-Cresol

p-Cresol
2-Nitrophenol
4-Nitrophenol
Pentachlorophenol
Phenol
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol

Base/Neutral Matrix Spike Solution

CLP-BN-MS

1 x 1 mL

1000 µg/mL each in MeOH

4 comps.

Acenaphthene
2,4-Dinitrotoluene

N-Nitrosodi-*n*-propylamine
Pyrene

Semi-Volatile Organic Extract Calibration (Screening Mix)

CLP-009-10X

1.0 mg/mL each in CH₂Cl₂

1 x 1 mL

3 comps.

Di-*n*-octylphthalate
Phenanthrene

Phenol

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
4-Chloro-3-methylphenol
4-Nitrophenol

Pentachlorophenol
Phenol

Internal Standards Mix

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

Pesticides Mix

Z-014C-R

1 x 1 mL

Z-014C-R-PAK

SAVE 5 x 1 mL

2.0 mg/mL each in Toluene:Hexane (50:50)

20 comps.

Aldrin
α-BHC
β-BHC
γ-BHC
δ-BHC
α-Chlordane
γ-Chlordane

4,4'-DDD
4,4'-DDE
4,4'-DDT
Dieldrin
Endosulfan I
Endosulfan II
Endosulfan sulfate

Endrin
Endrin aldehyde
Endrin ketone
Heptachlor
Heptachlor epoxide
(Isomer B)
Methoxychlor

Technical Note

Poor recoveries for endrin and DDT can result from injector port liner degradation. Try replacing the liner and seal. 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 a lower injection port temperature may improve this issue.

CLP Surrogate Spiking Solution

CLP-031-R-VL-50ML

1 x 50 mL

At stated conc. (µg/mL) in MeOH

8 comps.

2-Chlorophenol-d₄ 150
1,2-Dichlorobenzene-d₄ 100
2-Fluorobiphenyl 100
2-Fluorophenol 150

Nitrobenzene-d₅ 100
Phenol-d₆ 150
p-Terphenyl-d₁₄ 100
2,4,6-Tribromophenol 150

Contract Laboratory Program (CLP)

Pesticide Mixes

CLP - Pesticide Surrogates

CLP-032-R
CLP-032-R-PAK

200 µg/mL each in Acetone

 1 x 1 mL
SAVE 5 x 1 mL
 2 comps.

Decachlorobiphenyl

Tetrachloro-*m*-xylene
CLP-034
CLP-034-PAK

200 µg/mL each in Acetone

 1 x 1 mL
SAVE 5 x 1 mL
 2 comps.

Dibutylchlorendate

Tetrachloro-*m*-xylene
CLP-PES-A
CLP-PES-A-PAK

200 µg/mL in Acetone

 1 x 1 mL
SAVE 5 x 1 mL

CLP-PES-A-20X
 4000 µg/mL in Acetone

1 x 1 mL

Dibutylchlorendate

Pesticide Calibration Mixtures - Statement of Work (SOW)

Working Level Pesticide Standard

At stated conc. (ng/mL) in Isooctane

11 comps.

Compound	Level	1	2	3	4	5
α-BHC	50	200	500	1500	8000	
γ-BHC	50	200	500	1500	8000	
p,p'-DDD	100	400	1000	3,000	16,000	
p,p'-DDT	100	400	1000	3,000	16,000	
Decachlorobiphenyl	100	400	1000	3,000	16,000	
Dieldrin	100	400	1000	3,000	16,000	
Endosulfan I	50	200	500	1500	8000	
Endrin	100	400	1000	3000	16,000	
Heptachlor	50	200	500	1500	8000	
Methoxychlor	500	2000	5000	15,000	80,000	
Tetrachloro- <i>m</i> -xylene	50	200	500	1500	8000	

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

CLP-023R-WL-4X-25ML

CLP-023R-WL-4X-100ML

At stated conc. (ng/mL) in Isooctane

1 x 10 mL

1 x 25 mL

1 x 100 mL

11 comps.

α-BHC	20	Endosulfan I	20
γ-BHC	20	Endrin	40
p,p'-DDD	40	Heptachlor	20
p,p'-DDT	40	Methoxychlor	200
Decachlorobiphenyl	40	Tetrachloro- <i>m</i> -xylene	20
Dieldrin	40		

Ready-to-Inject

Working Level Pesticide Standard

At stated conc. (ng/mL) in Isooctane

13 comps.

Compound	Level	1	2	3	4	5
Aldrin	50	200	500	1500	8000	
β-BHC	50	200	500	1500	8000	
δ-BHC	50	200	500	1500	8000	
α-Chlordane	50	200	500	1500	8000	
γ-Chlordane	50	200	500	1500	8000	
p,p'-DDE	100	400	1000	3000	16,000	
Decachlorobiphenyl	100	400	1000	3000	16,000	
Endosulfan II	100	400	1000	3000	16,000	
Endosulfan sulfate	100	400	1000	3000	16,000	
Endrin aldehyde	100	400	1000	3000	16,000	
Endrin ketone	100	400	1000	3000	16,000	
Heptachlor epoxide (Isomer B)	50	200	500	1500	8000	
Tetrachloro- <i>m</i> -xylene	50	200	500	1500	8000	

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

CLP-024R-WL-4X-25ML

CLP-024R-WL-4X-100ML

At stated conc. (ng/mL) in Isooctane

1 x 10 mL

1 x 25 mL

1 x 100 mL

13 comps.

Aldrin	20	Endosulfan II	40
β-BHC	20	Endosulfan sulfate	40
δ-BHC	20	Endrin aldehyde	40
α-Chlordane	20	Endrin ketone	40
γ-Chlordane	20	Heptachlor epoxide (Isomer B)	20
p,p'-DDE	40	Tetrachloro- <i>m</i> -xylene	20
Decachlorobiphenyl	40		

Pesticide Calibration Sets

CLP-023R-024R-SET 2 x 1 mL
 CLP-023R, CLP-024R

CLP-023R-024R-4X-SET 2 x 1 mL
 CLP-023R-4X, CLP-024R-4X

CLP-023R-024R-160X-SET 2 x 1 mL
 CLP-023R-160X, CLP-024R-160X

Contract Laboratory Program (CLP)

Working Level Pesticides

CLP

CLP - Working Level Pesticides

Evaluation Standard Mix

CLP-017

At stated conc. (µg/mL) in Isooctane

1 x 1 mL
4 comps.

Aldrin	1	Dibutylchlorendate	1
4,4'-DDT	2	Endrin	2

Florasil Cartridge Check Solution

CLP-FC

CLP-FC-PAK

100 µg/mL in Acetone

1 x 1 mL
SAVE 5 x 1 mL

2,4,5-Trichlorophenol

CLP-026-R2-10X

At stated conc. (µg/mL) in Acetone

1 x 1 mL
6 comps.

Aldrin	50	Dieldrin	100
γ-BHC	50	Endrin	100
4,4'-DDT	100	Heptachlor	50

Pesticide Matrix Spiking Solution

CLP-026-R2-WL

At stated conc. (µg/mL) in Acetone

1 x 1 mL
6 comps.

Aldrin	0.5	Dieldrin	1.0
γ-BHC	0.5	Endrin	1.0
4,4'-DDT	1.0	Heptachlor	0.5

Resolution Check Solution

CLP-028-WL

At stated conc. (ng/mL) in Isooctane

1 x 1 mL
9 comps.

γ-Chlordane	10	Endosulfan sulfate	20
Endosulfan I	10	Endrin ketone	20
p,p'-DDE	20	Methoxychlor	100
Decachlorobiphenyl	20	Tetrachloro-m-xylene	20
Dieldrin	20		

High Concentration Pesticide Matrix Spiking Solutions For Water

CLP-014-1000X

CLP-014-1000X-PAK

At stated conc. (µg/mL) in MeOH

1 x 1 mL
SAVE 5 x 1 mL
6 comps.

Aldrin	200	Endrin	500
4,4'-DDT	500	Heptachlor	200
Dieldrin	500	Lindane	200

For Soil/Sediment

CLP-016-1000X

CLP-016-1000X-PAK

At stated conc. (µg/mL) in MeOH

1 x 1 mL
SAVE 5 x 1 mL
6 comps.

Aldrin	2,000	Endrin	5,000
4,4'-DDT	5,000	Heptachlor	2,000
Dieldrin	5,000	Lindane	2,000

Laboratory Control Sample Spiking Solution

CLP-LCS-P-1000X

At stated conc. (µg/mL) in Acetone

1 x 1 mL
7 comps.

γ-BHC	100	Endosulfan sulfate	200
γ-Chlordane	100	Endrin	200
Dieldrin	200	Heptachlor epoxide	100
4,4'-DDE	200		

Performance Evaluation Solution

CLP-025-WL

CLP-025-WL-10ML

At stated conc. (ng/mL) in Isooctane

1 x 1 mL
1 x 10 mL
8 comps.

α-BHC	10	Decachlorobiphenyl	20
β-BHC	10	Endrin	50
γ-BHC	10	Methoxychlor	250
4,4'-DDT	100	Tetrachloro-m-xylene	20

Aroclor and Pesticides

Aroclors, Chlordane & Toxaphene

Each at 1,000 µg/mL in Hexane

SAVE

Aroclors #	Cat. No.	Unit	Cat. No. (5 x 1 mL)	PAK
Aroclor 1016	C-216S-H-10X	1 mL	C-216S-H-10X-PAK	
Aroclor 1221	C-221S-H-10X	1 mL	C-221S-H-10X-PAK	
Aroclor 1232	C-232S-H-10X	1 mL	C-232S-H-10X-PAK	
Aroclor 1242	C-242S-H-10X	1 mL	C-242S-H-10X-PAK	
Aroclor 1248	C-248S-H-10X	1 mL	C-248S-H-10X-PAK	
Aroclor 1254	C-254S-H-10X	1 mL	C-254S-H-10X-PAK	
Aroclor 1260	C-260S-H-10X	1 mL	C-260S-H-10X-PAK	
Aroclor 1262	C-262S-H-10X	1 mL	C-262S-H-10X-PAK	
Aroclor 1268	C-268S-H-10X	1 mL	C-268S-H-10X-PAK	
Pesticides				
Chlordane	P-017S-H-10X	1 mL	P-017S-H-10X-PAK	
Toxaphene	P-093S-H-10X	1 mL	P-093S-H-10X-PAK	

Pesticide Surrogate Mix

CLP-032R-WL-0.2X-10ML

CLP-032R-WL-0.2X-50ML

0.2 µg/mL each in Acetone

1 x 10 mL
1 x 50 mL
2 comps.

Decachlorobiphenyl	Tetrachloro-m-xylene
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Technical Note

Prep Notes The addition of 1 mL of surrogate spiking mixture to each sample is sufficient to check the extraction efficiency.

Contract Laboratory Program (CLP)

Working Level Aroclors

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. (ng/mL) in Isooctane	4 comps.
Aroclor 1016	100
Aroclor 1260	100
Decachlorobiphenyl	20
Tetrachloro- <i>m</i> -xylene	20

Aroclor 1221 with Surrogates

CLP-221-WL	1 x 1 mL
CLP-221-WL-5ML	1 x 5 mL
At stated conc. (ng/mL) in Isooctane	3 comps.
Aroclor 1221	200
Decachlorobiphenyl	20
Tetrachloro- <i>m</i> -xylene	20

Aroclor 1232 with Surrogates

CLP-232-WL	1 x 1 mL
At stated conc. (ng/mL) in Isooctane	3 comps.
Aroclor 1232	100
Decachlorobiphenyl	20
Tetrachloro- <i>m</i> -xylene	20

Aroclor 1242 with Surrogates

CLP-242-WL-5ML	1 x 5 mL
At stated conc. in (ng/mL) Isooctane	3 comps.
Aroclor 1242	100
Decachlorobiphenyl	20
Tetrachloro- <i>m</i> -xylene	20

Aroclor 1248 with Surrogates

CLP-248-WL-5ML	1 x 5 mL
At stated conc. (ng/mL) in Isooctane	3 comps.
Aroclor 1248	100
Decachlorobiphenyl	20
Tetrachloro- <i>m</i> -xylene	20

Aroclor 1254 with Surrogates

CLP-254-WL	1 x 1 mL
Aroclor 1254	100
Decachlorobiphenyl	20
Tetrachloro- <i>m</i> -xylene	20

Toxaphene with Surrogates

P-093-WL-10X-5ML	1 x 5 mL
P-093-WL-10X-10ML	1 x 10 mL
At stated conc. (ng/mL) in Isooctane	3 comps.
Toxaphene	500
Decachlorobiphenyl	20
Tetrachloro- <i>m</i> -xylene	20

Ready-to-Inject

Technical Note

The profiles of some Aroclor products may not always look the same, but the percent total chlorine by weight will be identical.

Sample Clean-up Solutions at Working Levels

GPC Calibration Solution

CLP-027-WL-10ML	1 x 10 mL
At stated conc. (mg/mL) in CH ₂ Cl ₂	5 comps.
Corn Oil	25
bis(2-Ethylhexyl)phthalate	1.0
Methoxychlor	0.2
Perylene	0.02
Sulfur	0.08

GPC Calibration Solution for 8/94 SOW OLM03.1

CLP-027-R2-WL-10ML	1 x 10 mL
At stated conc. (mg/mL) in CH ₂ Cl ₂	5 comps.
Corn Oil	25
bis(2-Ethylhexyl)phthalate	0.5
Methoxychlor	0.1
Perylene	0.02
Sulfur	0.08

Technical Note

These solutions are designed to meet sample clean-up parameters.

Standard Mixtures for Drinking Water

EPA 500 Series, ASTM Methods and other Methods



Under the Safe Drinking Water 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. We offer either large mixes containing all the target analytes, or smaller sub-mixes at higher concentrations to allow for flexibility in your analysis.



**Match frequently
requested products.**

Alternate Source

**ASL products can be used as
an independent second source.**

Methods 502, 505, 508.1, 525.2

EPA 500 Series and ASTM Methods

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EPA Method 500 Series

Method 501 Trihalomethane Analysis by P&T-GC/ECD or PID

Trihalomethane Mix

M-501

M-501-PAK

0.2 mg/mL each in MeOH

M-501-10X

M-501-10X-PAK

2.0 mg/mL each in MeOH

Bromoform

Chloroform

Dibromochloromethane

Dichlorobromomethane

1 x 1 mL

SAVE 5 x 1 mL

4 comps.

1 x 1 mL

SAVE 5 x 1 mL

4 comps.

Trihalomethanes Set

M-501-SET

Each at 0.2 mg/mL in MeOH

Bromoform (05)

Chloroform (13)

Bromodichloromethane (04)

Dichlorobromomethane (17)

5 x 1 mL

Set contains

+ M-501 Mix

Method 502.2 Volatile Organic Compounds by PID/ELCD

54 Liquid Components

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)

Certificate will reflect actual
cis/trans ratio

6 Gas Components

Bromomethane (06)
Chloroethane (12)
Chloromethane (14)

Dichlorodifluoromethane (24)
Trichlorofluoromethane (52)
Vinyl chloride (56)

Liquid Components

M-502A-R

M-502A-R-PAK

0.2 mg/mL each in MeOH

M-502A-R-10X

M-502A-R-10X-PAK

2.0 mg/mL each in MeOH

1 x 1 mL

SAVE 5 x 1 mL

54 comps.

1 x 1 mL

SAVE 5 x 1 mL

54 comps.

Gas Components

M-502B

M-502B-PAK

0.2 mg/mL each in MeOH

M-502B-10X

M-502B-10X-PAK

2.0 mg/mL each in MeOH

1 x 1 mL

SAVE 5 x 1 mL

6 comps.

1 x 1 mL

SAVE 5 x 1 mL

6 comps.

54 Liquid and 6 Gas Component Sets

M-502A-R-B-SET

0.2 mg/mL each in MeOH

M-502A-R-B-10X-SET

2.0 mg/mL each in MeOH

2 x 1 mL

M-502A-R, M-502B

2 x 1 mL

M-502A-R-10X, M-502B-10X

Technical Note

Solutions containing volatile components (such as gases) should be chilled and gently inverted several times before opening to ensure gases are in the solution. To maintain high quality standards, any transferred volume should have minimal headspace and PTFE septa caps should be replaced often if pierced.

All 60 Liquid and Gas Components in One Solution

Liquids and Gases components

M-502

M-502-PAK

0.2 mg/mL each in MeOH

M-502-10X

M-502-10X-PAK

2.0 mg/mL each in MeOH

1 x 1 mL

SAVE 5 x 1 mL

60 comps.

1 x 1 mL

SAVE 5 x 1 mL

60 comps.

Liquids and Gases components plus MtBE

M-502-R1

M-502-R1-PAK

0.2 mg/mL each in MeOH

1 x 1 mL

SAVE 5 x 1 mL

61 comps.

Liquids components plus MtBE

M-502A-R3

0.2 mg/mL each in MeOH

M-502A-R3-10X

2.0 mg/mL each in MeOH

1 x 1 mL

55 comps.

1 x 1 mL

55 comps.

59 Component Set

M-502-SET

59 x 1 mL

Each at 0.2 mg/mL in MeOH

M-502-10X-SET

59 x 1 mL

Each at 2.0 mg/mL in MeOH

These solutions represent a breakdown of Method 502 components into groups containing liquid and gaseous components.

M-502-34A & M-502-34B only available as mix:

M-502-34-R

0.4 mg/mL each in MeOH

M-502-34-R-10X

4.0 mg/mL each in MeOH

1 x 1 mL

2 comps.

1 x 1 mL

2 comps.

cis-1,3-Dichloropropene

trans-1,3-Dichloropropene

Certificate will reflect actual cis/trans ratio

Individual Component Solutions Specify Identity (##) & Conc. (0.2 or 2.0 mg/mL)

M-502-##

1 mL

Each at 0.2 mg/mL in MeOH

M-502-##-10X

1 mL

Each at 2.0 mg/mL in MeOH

Individual Neat Components

Specify identity (XX)

M-502-##N 1 gram



Method 502.2 Volatile Organic Compounds by PID/ELCD (continued)

Internal & Surrogate Standard

M-502-IS-SS

M-502-IS-SS-PAK

2.0 mg/mL each in MeOH

1-Chloro-3-fluorobenzene
2-Chloropropane

Fluorobenzene
 α,α,α -Trifluorotoluene

1 x 1 mL
SAVE 5 x 1 mL
4 comps.

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

M-502-IS-ASL-PAK

2.0 mg/mL each in MeOH

2-Bromo-1-chloropropane

1-Chloro-2-fluorobenzene

Alternate Source

1 x 1 mL
SAVE 5 x 1 mL
2 comps.

o,m,p-Xylenes Mix

M-502-60

0.2 mg/mL in MeOH

M-502-60-10X

2.0 mg/mL in MeOH

o-Xylene
m-Xylene

p-Xylene

1 x 1 mL
3 comps.

1 x 1 mL
3 comps.

Match frequently requested products.

Alternate Source

ASL products can be used as an independent second source.

Hazardous Substance List (HSL) Volatiles Mix

M-HSL

2.0 mg/mL each in MeOH

Acetone
2-Butanone
Carbon disulfide
2-Hexanone

4-Methyl-2-pentanone
Styrene
Vinyl acetate
o-Xylene

1 x 1 mL
8 comps.

Method 502 Unregulated VOC Mix

M-502C-09

2.0 mg/mL each in MeOH

Bromobenzene
Bromochloromethane
Bromodichloromethane
Bromoform
Bromomethane
n-Butylbenzene
sec-Butylbenzene
tert-Butylbenzene
Chloroethane
Chloroform
Chloromethane
2-Chlorotoluene
4-Chlorotoluene
Dibromochloromethane
Dibromomethane
1,3-Dichlorobenzene
Dichlorodifluoromethane
1,1-Dichloroethane
1,2-Dichloropropane
1,3-Dichloropropane
2,2-Dichloropropane

1,1-Dichloropropene
cis-1,3-Dichloropropene *
trans-1,3-Dichloropropene *
Hexachlorobutadiene
Isopropylbenzene (*Cumene*)
p-Isopropyltoluene (*p-Cymene*)
Dichloromethane (*Methylene chloride*)
Naphthalene
n-Propylbenzene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
1,1,2-Trichloroethane
Trichlorofluoromethane
1,2,3-Trichloropropane
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene (*Mesitylene*)

* Certificate will reflect actual cis/trans ratio

1 x 1 mL
39 comps.

The following solutions represent an alternate source formulation of Method 502/524 components based on similar volatility groups.

Method 502 VOC ASL Set

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

M-502B-10X-PAK

2.0 mg/mL each in MeOH

Bromomethane
Chloroethane
Chloromethane

Dichlorodifluoromethane
Trichlorofluoromethane
Vinyl chloride

Alternate Source

1 x 1 mL
SAVE 5 x 1 mL
6 comps.

M-502C-02

M-502C-02-PAK

2.0 mg/mL each in MeOH

Bromodichloromethane
Dibromochloromethane
1,1-Dichloroethylene

cis-1,2-Dichloroethylene
trans-1,2-Dichloroethylene
Methylene chloride

Alternate Source

1 x 1 mL
SAVE 5 x 1 mL
6 comps.

Certificate will reflect actual cis/trans ratio

M-502C-03

M-502C-03-PAK

2.0 mg/mL each in MeOH

Bromochloromethane
Bromoform
Carbon tetrachloride
Chloroform
Dibromomethane

1,1-Dichloroethane
2,2-Dichloropropane
Tetrachloroethylene
1,1,1-Trichloroethane

Alternate Source

1 x 1 mL
SAVE 5 x 1 mL
9 comps.

M-502C-04

M-502C-04-PAK

2.0 mg/mL each in MeOH

1,2-Dibromo-3-chloropropane
1,2-Dibromoethane
1,2-Dichloroethane
1,2-Dichloropropane
1,3-Dichloropropane
1,1-Dichloropropylene
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene

Hexachlorobutadiene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane
Trichloroethylene
1,2,3-Trichloropropane

Alternate Source

1 x 1 mL
SAVE 5 x 1 mL
14 comps.

Certificate will reflect actual cis/trans ratio

M-502C-05

M-502C-05-PAK

2.0 mg/mL each in MeOH

Benzene
Bromobenzene
n-Butylbenzene
Ethylbenzene
p-Isopropyltoluene
Naphthalene
Styrene

Toluene
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
m-Xylene

Alternate Source

1 x 1 mL
SAVE 5 x 1 mL
13 comps.

M-502C-06

M-502C-06-PAK

2.0 mg/mL each in MeOH

sec-Butylbenzene
tert-Butylbenzene
Chlorobenzene
2-Chlorotoluene
4-Chlorotoluene
1,2-Dichlorobenzene

1,3-Dichlorobenzene
1,4-Dichlorobenzene
Isopropylbenzene
n-Propylbenzene
o-Xylene
p-Xylene

Alternate Source

1 x 1 mL
SAVE 5 x 1 mL
12 comps.



EPA Method 500 Series

Method 502.2 Volatile Organic Compounds by PID/ELCD (continued)

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 60 components on a single column.

Method 502.2 VOC Set M-502D-E-F-SET 3 x 1 mL 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	1,2-Dibromoethane
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	Certificate will reflect actual cis/trans ratio
trans-1,3-Dichloropropene	

Mix F

M-502F

0.2 mg/mL each in MeOH

1 x 1 mL
13 comps.

Bromodichloromethane	p-Isopropyltoluene
n-Butylbenzene	Naphthalene
t-Butylbenzene	n-Propylbenzene
Chloroform	1,1,2,2-Tetrachloroethane
1,2-Dibromo-3-chloropropane	1,3,5-Trimethylbenzene
1,3-Dichloropropane	p-Xylene
1,1-Dichloropropene	

Wisconsin DNR VOC Mix

S-989

2.0 mg/mL each in MeOH

1 x 1 mL
52 comps.

Benzene	1,4-Dichlorobenzene	n-Propylbenzene
Bromobenzene	Dichlorodifluoromethane	1,1,2,2-Tetrachloroethane
Bromodichloromethane	1,1-Dichloroethane	Tetrachloroethene
n-Butylbenzene	1,2-Dichloroethane	Toluene
sec-Butylbenzene	1,1-Dichloroethene	1,2,3-Trichlorobenzene
t-Butylbenzene	cis-1,2-Dichloroethene	1,2,4-Trichlorobenzene
Carbon tetrachloride	trans-1,2-Dichloroethene	1,1,1-Trichloroethane
Chlorobenzene	1,2-Dichloropropane	1,1,2-Trichloroethane
Dibromochloromethane	1,3-Dichloropropane	Trichloroethene
Chloroethane	2,2-Dichloropropane	Trichlorofluoromethane
Chloroform	Diisopropyl ether	1,2,4-Trimethylbenzene
Chloromethane	Ethylbenzene	1,3,5-Trimethylbenzene
2-Chlorotoluene	Hexachlorobutadiene	Vinyl chloride
4-Chlorotoluene	Isopropylbenzene	o-Xylene
1,2-Dibromo-3-chloropropane	p-Isopropyltoluene	m-Xylene
1,2-Dibromoethane	Methylene chloride	p-Xylene
1,2-Dichlorobenzene	MtBE	
1,3-Dichlorobenzene	Naphthalene	Certificate will reflect actual cis/trans ratio

Mixtures of Internal, Surrogate Standards and Fortification Solutions

Internal Standard

M-502-IS

M-502-IS-PAK

2.0 mg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
2 comps.

1-Chloro-2-bromopropane

Fluorobenzene

Internal Standard 2

M-502-IS-2

M-502-IS-2-PAK

2.0 mg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
3 comps.

1-Chloro-2-bromopropane

Methylene chloride-d₂

Fluorobenzene

Internal Standard 3

M-502-IS-2-3

2.0 mg/mL in MeOH

1 x 1 mL

Methylene chloride-d₂

Internal Standard

M-524-IS

M-524-IS-PAK

2.0 mg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
2 comps.

1,2-Dichlorobenzene-d₄

Fluorobenzene

Internal Standard 2

M-524-IS-2

M-524-IS-2-PAK

2.0 mg/mL in MeOH

1 x 1 mL
SAVE 5 x 1 mL

Fluorobenzene

Fortification Solution

M-524-FS

M-524-FS-PAK

2.0 mg/mL each in MeOH

1 x 1 mL
SAVE 2 x 1 mL
3 comps.

4-Bromofluorobenzene

Fluorobenzene

1,2-Dichlorobenzene-d₄

Surrogate Standard

M-524-SS

M-524-SS-PAK

2.0 mg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
2 comps.

4-Bromofluorobenzene

1,2-Dichlorobenzene-d₄

Technical Note

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 502.2 Volatile Organic Compounds by PID/ELCD (continued)

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

Alternate Source

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-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 503.1 Purgeable Aromatics & Alkenes

Purgeable Aromatics & Alkenes

M-503 1 x 1 mL
M-503-PAK **SAVE** 5 x 1 mL
 0.2 mg/mL each in MeOH 28 comps.

Benzene	4-Isopropyltoluene
Bromobenzene	Naphthalene
<i>n</i> -Butylbenzene	<i>n</i> -Propylbenzene
<i>sec</i> -Butylbenzene	Styrene
<i>t</i> -Butylbenzene	Tetrachloroethene
Chlorobenzene	Toluene
2-Chlorotoluene	1,2,3-Trichlorobenzene
4-Chlorotoluene	1,2,4-Trichlorobenzene
1,2-Dichlorobenzene	Trichloroethene
1,3-Dichlorobenzene	1,2,4-Trimethylbenzene
1,4-Dichlorobenzene	1,3,5-Trimethylbenzene
Ethylbenzene	<i>o</i> -Xylene
Hexachlorobutadiene	<i>m</i> -Xylene
Isopropylbenzene	<i>p</i> -Xylene

Internal Standard

M-602-SS 1 x 1 mL
M-602-SS-PAK **SAVE** 5 x 1 mL
 0.2 mg/mL in MeOH

α,α,α -Trifluorotoluene

Method 504 EDB & DBCP by ECD

EDB & DBCP

M-504 1 x 1 mL
M-504-PAK **SAVE** 5 x 1 mL
 0.2 mg/mL each in MeOH 2 comps.

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-Dibromoethane (EDB) 1,2-Dibromo-3-chloropropane (DBCP)

Method 504.1 EDB, DBCP & TCP by ECD

Method 504 Set

M-504.1-SET 3 x 1 mL
 M-504.1-CSS, M-504.1-LFB, M-504.1-MDL

Calibration Stock Solution

M-504.1-CSS 1 x 1 mL
M-504.1-CSS-PAK **SAVE** 5 x 1 mL
 0.2 mg/mL each in MeOH 3 comps.

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 **SAVE** 5 x 1 mL
 0.25 µg/mL each in MeOH 3 comps.

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 **SAVE** 5 x 1 mL
 0.02 µg/mL each in MeOH 3 comps.

1,2-Dibromoethane (EDB) 1,2,3-Trichloropropane
 1,2-Dibromo-3-chloropropane (DBCP)

Method 505 Organohalide Pesticides by Microextraction & GC/ECD

M-505R-2 1 x 1 mL
M-505R-2-PAK **SAVE** 5 x 1 mL
 At stated conc. (µg/mL) in MeOH 16 comps.

Alachlor	10	Heptachlor epoxide (Isomer B)	1
Aldrin	1	Hexachlorobenzene	1
Atrazine	250	Hexachlorocyclopentadiene	1
α -Chlordane	1	Lindane	1
γ -Chlordane	1	Methoxychlor	5
Dieldrin	1	<i>cis</i> -Nonachlor	1
Endrin	1	<i>trans</i> -Nonachlor	1
Heptachlor	1	Simazine	250

M-505-ASL 1 x 1 mL
M-505-ASL-PAK **SAVE** 5 x 1 mL
 At stated conc. (µg/mL) in Acetone 12 comps.

Alachlor	50	Heptachlor	20
Aldrin	20	Heptachlor epoxide (Isomer B)	20
Atrazine	500	Hexachlorobenzene	10
γ -BHC	20	Hexachlorocyclopentadiene	20
Dieldrin	20	Methoxychlor	200
Endrin	20	Simazine	100

Multi-Component Analytes

Aroclors, Chlordane and Toxaphene

Each at 1,000 µg/mL in Hexane **SAVE** PAK (5 x 1 mL)

Aroclors

	Cat. No.	Unit	Cat. No.	Unit
Aroclor 1016	C-216S-H-10X	1 mL	C-216S-H-10X-PAK	1 mL
Aroclor 1221	C-221S-H-10X	1 mL	C-221S-H-10X-PAK	1 mL
Aroclor 1232	C-232S-H-10X	1 mL	C-232S-H-10X-PAK	1 mL
Aroclor 1242	C-242S-H-10X	1 mL	C-242S-H-10X-PAK	1 mL
Aroclor 1248	C-248S-H-10X	1 mL	C-248S-H-10X-PAK	1 mL
Aroclor 1254	C-254S-H-10X	1 mL	C-254S-H-10X-PAK	1 mL
Aroclor 1260	C-260S-H-10X	1 mL	C-260S-H-10X-PAK	1 mL
Aroclor 1262	C-262S-H-10X	1 mL	C-262S-H-10X-PAK	1 mL
Aroclor 1268	C-268S-H-10X	1 mL	C-268S-H-10X-PAK	1 mL

Pesticides

Chlordane	P-017S-H-10X	1 mL	P-017S-H-10X-PAK	1 mL
Toxaphene	P-093S-H-10X	1 mL	P-093S-H-10X-PAK	1 mL

Degradation Standard

P-045S 1 x 1 mL
 100 µg/mL in MeOH
 Endrin

Method 506 Phthalate Esters by PID

Phthalate Esters

M-506 1 x 1 mL
M-506-PAK **SAVE** 5 x 1 mL
 1.0 mg/mL each in Isooctane 7 comps.

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 **SAVE** 5 x 1 mL
 At stated conc. (mg/mL) in MeOH 7 comps.

Benzyl butyl phthalate	0.25	bis(2-Ethylhexyl)adipate	1.2
Dimethyl phthalate	0.1	bis(2-Ethylhexyl)phthalate	0.25
Diethyl phthalate	0.1	Di- <i>n</i> -octyl phthalate	0.65
Di- <i>n</i> -butyl phthalate	0.1		



Method 507 Nitrogen & Phosphorus Containing Pesticides by GC/NPD

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

Mix A

M-507A

1.0 mg/mL each in MtBE

1 x 1 mL
6 comps.

Ametryn	Disulfoton	Merphos
Cycloate	Fenamiphos	Prometon

Mix B

M-507B

M-507B-PAK

1.0 mg/mL each in MtBE

1 x 1 mL
SAVE 5 x 1 mL
9 comps.

Atrazine	Ethoprop	Propazine
Diphenamid	Mevinphos	Terbutryn
EPTC	Prometryne	Triadimefon

Mix C

M-507C

M-507C-PAK

1.0 mg/mL each in MtBE

1 x 1 mL
SAVE 5 x 1 mL
9 comps.

Butachlor	Metolachlor	Norflurazon
Carboxin	Metribuzin	Terbufos
Diazinon	MGK-264	Vernolate

Mix D

M-507D

M-507D-PAK

1.0 mg/mL each in MtBE

1 x 1 mL
SAVE 5 x 1 mL
10 comps.

Alachlor	Chlorpropham	Pronamide
Atraton	Hexazinone	Stirofos
Bromacil	Molinate	Tricyclazole
Butylate		

Mix E

M-507E

M-507E-PAK

1.0 mg/mL each in MtBE

1 x 1 mL
SAVE 5 x 1 mL
8 comps.

Dichlorvos	Napropamide	Tebuthiuron
Fenarimol	Pebulate (Tillam)	Terbacil
Fluridone	Simetryn	

Mix F

M-507F-R2

M-507F-R2-PAK

1.0 mg/mL each in Acetone

1 x 1 mL
SAVE 5 x 1 mL
2 comps.

Methyl paraoxon	Simazine
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Mix G

M-507G

1.0 mg/mL each in MtBE

1 x 1 mL
8 comps.

Benefin	Oxadiazon	Profluralin
Isopropalin	Oxyfluorfen	Trifluralin
Pendimethalin	Propachlor	

Mix H

M-507H

M-507H-PAK

1.0 mg/mL each in MtBE

1 x 1 mL
SAVE 5 x 1 mL

DEF 6 (for Merphos quantitation)

Performance Check Solution

M-507-QC

M-507-QC-PAK

At stated conc. (ng/mL) in MtBE

Atrazine	150	Bromacil	5,000	TPP	2,500
DNB	2,500	Prometon	300	Vernolate	50

1 x 1 mL
SAVE 5 x 1 mL
6 comps.

Internal Standards

M-507-IS

M-507-IS-PAK

0.5 mg/mL in MtBE

1 x 1 mL
SAVE 5 x 1 mL

M-507-IS-10X

5.0 mg/mL in MtBE

1 x 1 mL

Triphenyl phosphate

Surrogate Standards

M-507-SS

M-507-SS-PAK

0.25 mg/mL in MtBE

1 x 1 mL
SAVE 5 x 1 mL

M-507-SS-4X

1.0 mg/mL in MtBE

1 x 1 mL

1,3-Dimethyl-2-nitrobenzene



EPA Method 500 Series

Method 508 Chlorinated Pesticides by GC/ECD

Chlorinated Pesticides Mix A

M-508P-A

M-508P-A-PAK

1.0 mg/mL each in MtBE

1 x 1 mL
SAVE 5 x 1 mL
17 comps.

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

Technical Note

Endrin and 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 a lower injection port temperature.

Internal Standards

M-508-IS

M-508-IS-PAK

0.1 mg/mL in MtBE

1 x 1 mL
SAVE 5 x 1 mL

M-508-IS-10X

1.0 mg/mL in MtBE

1 x 1 mL

Pentachloronitrobenzene

Surrogate Standards

M-508-SS

M-508-SS-PAK

0.5 mg/mL in MtBE

1 x 1 mL
SAVE 5 x 1 mL

4,4'-Dichlorobiphenyl

M-508-SS-2

M-508-SS-2-PAK

0.5 mg/mL in MtBE

1 x 1 mL
SAVE 5 x 1 mL

Decachlorobiphenyl

Chlorinated Pesticides Mix B

M-508P-B-R

M-508P-B-R-PAK

1.0 mg/mL each in MtBE

1 x 1 mL
SAVE 5 x 1 mL
13 comps.

α-Chlordane	Chlorpyrifos	cis-Permethrin
γ-Chlordane	DCPA	trans-Permethrin
Chlorobenzilate	Etridiazole	Propachlor
Chloroneb	Hexachlorobenzene	Trifluralin
Chlorothalonil		

Certificate will reflect actual cis/trans ratio

Chlorinated Pesticides Mix B

M-508P-B-R2

M-508P-B-R2-PAK

1.0 mg/mL each in MtBE

1 x 1 mL
SAVE 5 x 1 mL
15 comps.

α-Chlordane	Chlorpyrifos	cis-Permethrin
γ-Chlordane	DCPA	trans-Permethrin
Chlorobenzilate	Etridiazole	Propachlor
Chloroneb	Hexachlorobenzene	Trifluralin
Chlorothalonil	Cyanazine	trans-Nonachlor

Certificate will reflect actual cis/trans ratio

Decomposition Solution

M-508-DS-100X

M-508-DS-100X-PAK

At stated conc. (μg/mL) in MtBE

1 x 1 mL
SAVE 5 x 1 mL
2 comps.

p,p'-DDT	200	Endrin	100
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Performance Check Solution

M-508-QC

M-508-QC-PAK

At stated conc. (ng/mL) in MtBE

1 x 1 mL
SAVE 5 x 1 mL
4 comps.

δ-BHC	40	Chlorpyrifos	2
Chlorothalonil	50	Dacthal	50

Method 508A PCBs by Perchlorination / GC

Aroclor® Stock Solution

M-508A-1

M-508A-1-PAK

5.0 mg/mL in MeOH

1 x 1 mL
SAVE 5 x 1 mL

Aroclor 1260

DCB Stock Solution

M-508A-2

M-508A-2-PAK

1.0 mg/mL in Toluene

1 x 1 mL
SAVE 5 x 1 mL

Decachlorobiphenyl

Perchlorinated Aromatics

Compounds	Cat. No.	Unit
Decachlorobiphenyl (35 μg/mL in Isooctane)	C-209S	1 mL
Hexachlorobenzene	A-012	100 mg
Octachlorodibenzofuran	F-801N	50 mg
Octachlorodibenzo-p-dioxin	D-801N	50 mg
Each at 35 μg/mL in Toluene		
Octachlorostyrene	PC-001S	1 mL
Perchlorinated p,p'-DDE	PC-002S	1 mL
Tetradecachloro-o-terphenyl	T-004S	1 mL
Tetradecachloro-m-terphenyl	T-005S	1 mL
Tetradecachloro-p-terphenyl	T-006S	1 mL
Aroclor 5442	T-442S	1 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

19 comps.

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

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

17 comps.

Alachlor	DCPA	cis-Permethrin
Atrazine	Etridiazole	trans-Permethrin
Chlorobenzilate	Hexachlorobenzene	Propachlor
Chloroneb	Hexachlorocyclopentadiene	Simazine
Chlorothalonil	Metolachlor	Trifluralin
Cyanazine	Metribuzin	

Regulated Pesticide Mix (SDWA)

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	

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

2 comps.

4,4'-DDT	Endrin
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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. (ng/mL) in MtBE

4 comps.

δ-BHC	400	Chlorpyrifos	20
Chlorothalonil	500	DCPA	500

Method 509 Ethylene Thiourea by GC/NPD

Performance Check Solution

M-509-PC

1 x 1 mL

At stated conc. (ng/mL) in Ethyl acetate containing 0.1% w/v DTT (scavenger)

3 comps.

Ethylene thiourea	10
4-Methylimidazolidine-2-thione	100
3,4,5,6-Tetrahydro-2-pyrimidinethiol	1000

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)



EPA Method 500 Series

Method 515.1 Chlorinated Acids in Water by GC/ECD

Methyl Derivatives

M-515-R

M-515-R-PAK

1.0 mg/mL each in MtBE

1 x 1 mL
SAVE 5 x 1 mL
16 comps.

Acifluorfen methyl ester	Methyl 3,5-dichlorobenzoate
Bentazon methyl ester	Dichlorprop methyl ester
Chloramben methyl ester	Dinoseb methyl ester
2,4-D methyl ester	4-Nitroanisole
Dalapon methyl ester	Pentachloroanisole
2,4-DB methyl ester	Picloram methyl ester
DCPA methyl ester	2,4,5-T methyl ester
Dicamba methyl ester	2,4,5-TP methyl ester

Underivatized Analytes

M-515A-R2

M-515A-R2-PAK

At stated conc. (µg/mL) in MeOH

1 x 1 mL
SAVE 5 x 1 mL
16 comps.

Acifluorfen	100	3,5-Dichlorobenzoic acid	100
Bentazon	200	Dichlorprop	300
Chloramben	100	Dinoseb	200
2,4-D	200	4-Nitrophenol	100
Dalapon	1300	Pentachlorophenol	100
2,4-DB	800	Picloram	100
DCPA acid	100	2,4,5-T	100
Dicamba	100	2,4,5-TP	100

Technical Note

For a complete absence of partial esterification, we recommend M-515.4A and M-515.3A products.

Performance Check Solution

M-515-QC

M-515-QC-PAK

At stated conc. (ng/mL) in MtBE

1 x 1 mL
SAVE 5 x 1 mL
3 comps.

Methyl 3,5-dichlorobenzoate	600
Dinoseb methyl ether	4
4-Nitroanisole	1600

Performance Check Solution with ISTD & SS

M-515-QC-R

M-515-QC-R-PAK

At stated conc. (ng/mL) in MtBE

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

4,4'-Dibromooctafluorobiphenyl (Internal Standard)	250
Methyl 3,5-dichlorobenzoate	600
Methyl 2,4-dichlorophenylacetate (Surrogate Standard)	500
Dinoseb methyl ether	4
4-Nitroanisole	1600

Internal Standard

M-515-IS

M-515-IS-PAK

0.1 mg/mL in MtBE

1 x 1 mL
SAVE 5 x 1 mL

4,4'-Dibromooctafluorobiphenyl

Surrogate Standards

M-515-SS

M-515-SS-PAK

0.1 mg/mL in MtBE

1 x 1 mL
SAVE 5 x 1 mL

M-515-SS-50X

5.0 mg/mL in MtBE

1 x 1 mL

Methyl 2,4-dichlorophenylacetate

P-244S

0.1 mg/mL in MeOH

1 x 1 mL

2,4-Dichlorophenylacetic acid

Method 515.2 Chlorinated Acids in Water by GC/ECD

Methyl Derivatives

M-515.2-1

At stated conc. (µg/mL) in MeOH

1 x 1 mL
6 comps.

DCPA methyl ester	100	Dinoseb methyl ester	200
Methyl 3,5-dichlorobenzoate	500	Pentachloroanisole	100
Dichlorprop methyl ester	100	2,4,5-T methyl ester	100

M-515.2-2

At stated conc. (µg/mL) in MeOH

1 x 1 mL
7 comps.

Acifluorfen methyl ester	200	Dicamba methyl ester	300
Bentazon methyl ester	1000	Picloram methyl ester	300
2,4-D methyl ester	100	2,4,5-TP methyl ester	100
2,4-DB methyl ester	1000		

Underivatized Analytes

M-515.2A-1

M-515.2A-1-PAK

At stated conc. (µg/mL) in MeOH

1 x 1 mL
SAVE 5 x 1 mL
6 comps.

DCPA acid	100	Dinoseb	200
3,5-Dichlorobenzoic acid	500	Pentachlorophenol	100
Dichlorprop	100	2,4,5-T	100

M-515.2A-2

M-515.2A-2-PAK

At stated conc. (µg/mL) in MeOH

1 x 1 mL
SAVE 5 x 1 mL
7 comps.

Acifluorfen	200	Dicamba	300
Bentazon	1000	Picloram	300
2,4-D	100	2,4,5-TP	100
2,4-DB	1000		

Method 515.3 Chlorinated Acids in Drinking Water by ECD

Underivatized Acids

M-515.3A

M-515.3A-PAK

At stated conc. (µg/mL) in Acetone

1 x 1 mL
SAVE 5 x 1 mL
17 comps.

Acifluorfen	50	3,5-Dichlorobenzoic acid	50
Bentazon	100	Dichlorprop	100
Chloramben	50	Dinoseb	100
2,4-D	100	4-Nitrophenol	100
Dalapon	100	Pentachlorophenol	10
2,4-DB	100	Picloram	100
DCPA diacid	50	2,4,5-T	25
DCPA monoacid	50	Silvex	25
Dicamba	50		

Laboratory Performance Check

Methyl Derivatives

M-515.3-LPC

M-515.3-LPC-PAK

At stated conc. (µg/mL) in MtBE

1 x 1 mL
SAVE 5 x 1 mL
4 comps.

2,4-DB methyl ester	25	Chloramben methyl ester	12.5
Dinoseb methyl ether	25	4-Nitroanisole	25

Independent Check Standard Methyl Derivatives

M-515.3-ICS

At stated conc. (µg/mL) in MtBE

1 x 1 mL
16 comps.

Acifluorfen methyl ester	50	Methyl-3,5-Dichlorobenzoate	50
Bentazon methyl ester	100	Dichlorprop methyl ester	100
Chloramben methyl ester	50	Dinoseb methyl ether	100
2,4-D methyl ester	100	4-Nitroanisole	100
Dalapon methyl ester	100	Pentachloroanisole	10
2,4-DB methyl ester	100	Picloram methyl ester	100
Dacthal	100	2,4,5-T methyl ester	25
Dicamba methyl ester	50	Silvex methyl ester	25

Internal Standard

M-515-IS

M-515-IS-PAK

0.1 mg/mL in MtBE

1 x 1 mL
SAVE 5 x 1 mL

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

At stated conc. (µg/mL) in Acetone

17 comps.

Acifluorfen	50	3,5-Dichlorobenzoic acid	50
Bentazon	100	Dichlorprop	100
Chloramben	50	Dinoseb	100
2,4-D	100	Pentachlorophenol	10
Dalapon	100	Picloram	50
2,4-DB	100	2,4,5-T	25
DCPA diacid	50	Silvex	25
DCPA monoacid	50	Quinclorac	50
Dicamba	50		

Underivatized Surrogate

M-8150B-SS

1 x 1 mL

M-8150B-SS-PAK

SAVE 5 x 1 mL

0.1 mg/mL in Acetone

2,4-Dichlorophenylacetic acid

Quality Control Sample Methyl Derivatives

M-515.4-QCS

1 x 1 mL

At stated conc. (µg/mL) in MtBE

16 comps.

Acifluorfen methyl ester	50	Methyl-3,5-Dichlorobenzoate	50
Bentazon methyl	100	Dichlorprop methyl ester	100
Chloramben methyl ester	50	Dinoseb methyl ether	100
2,4-D methyl ester	100	Pentachloroanisole	10
Dalapon methyl ester	100	Picloram methyl ester	50
2,4-DB methyl ester	100	2,4,5-T methyl ester	25
Dacthal	100	Silvex methyl ester	25
Dicamba methyl ester	50	Quinclorac methyl ester	50

Technical Note

M-515.3A and M-515.4A are to be used as procedural standards for the calibration of the method and should be carried through the entire extraction and derivatization procedure associated with the samples.

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- <i>n</i> -butylamine
N-Nitrosomethylethylamine	N-Nitrosopyrrolidine
N-Nitrosodiethylamine	N-Nitrosopiperidine
N-Nitrosodi- <i>n</i> -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-d₁₄

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





EPA Method 500 Series

Method 524.2 Volatile Organic Compounds by GC/MS

Addition to Method 524.2 (Rev. 4.0)

M-524R-B

M-524R-B-PAK

2.0 mg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
24 comps.

Acetone	2-Hexanone
Acrylonitrile	Methacrylonitrile
Allyl chloride	Methyl acrylate
2-Butanone	Methyl iodide
Carbon disulfide	Methyl methacrylate
Chloroacetonitrile	4-Methyl-2-pentanone
1-Chlorobutane	MtBE
<i>trans</i> -1,4-Dichloro-2-butene	Nitrobenzene
1,1-Dichloropropanone	2-Nitropropane
Diethyl ether	Pentachloroethane
Ethyl methacrylate	Propionitrile
Hexachloroethane	Tetrahydrofuran

Technical Note

Standards containing aldehydes and ketones in MeOH are given short expiration periods because of their tendency to form acetals and ketals. Stabilizers are added to inhibit this reaction.

Internal, Surrogate, and Fortification Standards

Internal Standards

M-502-IS

M-502-IS-PAK

2.0 mg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
2 comps.

1-Chloro-2-bromopropane	Fluorobenzene
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M-502-IS-2

M-502-IS-2-PAK

2.0 mg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
3 comps.

1-Chloro-2-bromopropane	Methylene chloride-d ₂
Fluorobenzene	

M-524-IS

M-524-IS-PAK

2.0 mg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
2 comps.

1,2-Dichlorobenzene-d ₄	Fluorobenzene
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M-524-IS-2

M-524-IS-2-PAK

2.0 mg/mL in MeOH

1 x 1 mL
SAVE 5 x 1 mL

M-524-IS-2-10X

20 mg/mL in MeOH

1 x 1 mL

Fluorobenzene

Fortification Standard

M-524-FS

M-524-FS-PAK

2.0 mg/mL each in MeOH

1 x 1 mL
SAVE 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

1 x 1 mL
SAVE 5 x 1 mL
2 comps.

4-Bromofluorobenzene	1,2-Dichlorobenzene-d ₄
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GC/MS Tuning Solution

M-624-SS-03-10X

2.0 mg/mL each in MeOH

1 x 1 mL

<i>p</i> -Bromofluorobenzene

Method 524.3 Purgeable Organic Compounds by GC/MS

M-524R-C

M-524R-C-PAK

2.0 mg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
18 comps.

1,3-Butadiene	Methyl acetate
1-Chlorobutane	Methyl iodide
Allyl chloride	MtBE
Carbon disulfide	Pentachloroethane
Chlorodifluoromethane	<i>t</i> -Amyl ethyl ether
Diethyl ether	TAME
Diisopropyl ether	<i>t</i> -Butanol
Ethyl methacrylate	EtBE
Hexachloroethane	Tetrahydrofuran

Internal Standard

M-524R-C-IS

M-524R-C-IS-PAK

2.0 mg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
3 comps.

1,4-Difluorobenzene	1,4-Dichlorobenzene-d ₄
Chlorobenzene-d ₅	

Internal and Surrogate Standard

M-524R-C-IS-SS

M-524R-C-IS-SS-PAK

2.0 mg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
6 comps.

1,4-Difluorobenzene	<i>tert</i> -Butyl methyl ether-d ₃
Chlorobenzene-d ₅	<i>p</i> -Bromofluorobenzene
1,4-Dichlorobenzene-d ₄	1,2-Dichlorobenzene-d ₄

Surrogate Standard

M-524R-C-SS

M-524R-C-SS-PAK

2.0 mg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
3 comps.

<i>tert</i> -Butyl methyl ether-d ₃	<i>p</i> -Bromofluorobenzene
1,2-Dichlorobenzene-d ₄	

See M-502.2 VOCs by PID/ELCD
54 Liquid & 6 Gaseous Compounds



Method 525.1 Organic Compounds in Drinking Water by Liquid-Solid Extraction and Capillary GC/MS

Method 525 Organic Compounds in Drinking Water Sets

M-525-SET

7 x 1 mL

M-525-1, M-525-2, M-525-3, M-525-4, M-525-5, M-525-IS, M-525-TS

PAH Mixes

M-525-1

1 x 1 mL

M-525-1-PAK

SAVE 5 x 1 mL

0.1 mg/mL each in Acetone

13 comps.

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

13 comps.

Acenaphthylene
Anthracene
Benz[a]anthracene
Benzo[b]fluoranthene
Benzo[k]fluoranthene
Benz[a]pyrene
Benzo[g,h,i]perylene

Chrysene
Dibenz[a,h]anthracene
Fluorene
Indeno[1,2,3-cd]pyrene
Phenanthrene
Pyrene

Internal Standard

M-525-IS

1 x 1 mL

M-525-IS-PAK

SAVE 5 x 1 mL

2.0 mg/mL each in CH₂Cl₂

4 comps.

Acenaphthene-d₁₀

Perylene-d₁₂

Chrysene-d₁₂

Phenanthrene-d₁₀

Tuning Standards

CLP-TS

1 x 1 mL

CLP-TS-PAK

SAVE 5 x 1 mL

50 µg/mL in CH₂Cl₂

Perfluorokerosene

PCB Congener Mixes

M-525-2

1 x 1 mL

0.1 mg/mL each in Acetone

8 comps.

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

8 comps.

2-Chlorobiphenyl
2,3-Dichlorobiphenyl
2,2',3,3',4,4',6-Heptachlorobiphenyl
2,2',4,4',5,6'-Hexachlorobiphenyl

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

Pesticide Mixes

M-525-3

1 x 1 mL

M-525-3-PAK

SAVE 5 x 1 mL

0.1 mg/mL each in Acetone

12 comps.

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

12 comps.

Aldrin
Atrazine
α-Chlordane
γ-Chlordane
Endrin
Heptachlor
Heptachlor epoxide (Isomer B)

Lindane
Methoxychlor
Simazine
trans-Nonachlor

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-d₁₀

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

4 comps.

Acenaphthene-d₁₀

Perylene-d₁₂

Chrysene-d₁₂

Phenanthrene-d₁₀

M-525-FS-2

1 x 1 mL

M-525-FS-2-PAK

SAVE 5 x 1 mL

0.5 mg/mL in CH₂Cl₂

p-Terphenyl-d₁₄

Semi-Volatile Mixes

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)

9 comps.

Butylbenzylphthalate
Di-n-butyl phthalate
Diethylphthalate
bis(2-Ethylhexyl)adipate
Dimethyl phthalate

Hexachlorobenzene
Hexachlorocyclopentadiene
bis(2-Ethylhexyl)phthalate
Pentachlorophenol (PCP)

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



EPA Method 500 Series

Method 525.2 (Rev. 2) 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 for 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	Disulfoton	Merphos
Cycloate	Fenamiphos	Prometon

M-507B 1.0 mg/mL each in MtBE 1 x 1 mL
M-507B-PAK SAVE 5 x 1 mL
9 comps.

Atrazine	Ethoprop	Propazine
Diphenamid	Mevinphos	Terbutryn
EPTC	Prometryne	Triadimefon

M-507C 1.0 mg/mL each in MtBE 1 x 1 mL
M-507C-PAK SAVE 5 x 1 mL
9 comps.

Butachlor	Metolachlor	Norflurazon
Carboxin	Metribuzin	Terbufos
Diazinon	MGK-264	Vernolate

M-507D 1.0 mg/mL each in MtBE 1 x 1 mL
M-507D-PAK SAVE 5 x 1 mL
10 comps.

Alachlor	Chlorpropham	Pronamide
Atraton	Hexazinone	Stirofos
Bromacil	Molinate	Tricyclazole
Butylate		

M-507E 1.0 mg/mL each in MtBE 1 x 1 mL
M-507E-PAK SAVE 1 x 1 mL
8 comps.

Dichlorvos	Napropamide	Tebuthiuron
Fenarimol	Pebulate (Tillam)	Terbacil
Fluridone	Simetryn	

M-507F-R2 1.0 mg/mL each in Acetone 1 x 1 mL
M-507F-R2-PAK 5 x 1 mL
2 comps.

Methyl paraoxon	Simazine
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Complete Method 525.2 Set

M-525.2-R1-SET 18 x 1 mL

M-507A	M-507F-R2	M-525-4R-5X	M-525.2-TS-A
M-507B	M-508P-A	M-525-5	C-216S-M-28.5X
M-507C	M-508P-B-R2	M-525.2-IS	C-254S-M-28.5X
M-507D	M-525-1-5X	M-525.2-SS	C-260S-M-28.5X
M-507E	M-525-2-5X		

Auxiliary Standards

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 3 comps.

Acenaphthene-d ₁₀	Chrysene-d ₁₂	Phenanthrene-d ₁₀
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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 3 comps.

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 6 comps.

Acenaphthene-d ₁₀	Perylene-d ₁₂
Chrysene-d ₁₂	Phenanthrene-d ₁₀
1,3-Dimethyl-2-nitrobenzene	Triphenylphosphate

Tuning Standard

M-525.2-TS-A 1 x 1 mL
0.5 mg/mL each in Acetone 3 comps.

4,4'-DDT	Endrin
DFTPP	

Technical Note

Endrin and 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 a lower injection port temperature.

Multi-Component Technical Solutions

Toxaphene

M-525-5 1 x 1 mL
2.5 mg/mL in Acetone

Aroclor 1254

C-254S-M-28.5X 1 x 1 mL
1.0 mg/mL in MeOH

Aroclor® 1016

C-216S-M-28.5X 1 x 1 mL
1.0 mg/mL in MeOH

Aroclor 1260

C-260S-M-28.5X 1 x 1 mL
1.0 mg/mL in MeOH

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 17 comps.

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

Mix B

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 15 comps.

α-Chlordane	Chlorpyrifos	trans-Nonachlor
γ-Chlordane	Cyanazine	cis-Permethrin
Heptachlor	DCPA	trans-Permethrin
Chloroneb	Etridiazole	Propachlor
Chlorothalonil	Hexachlorobenzene	Trifluralin

Certificate will reflect actual cis/trans ratio



Method 525.2 (Rev. 2) Organic Compounds in Drinking Water by Liquid-Solid Extraction and Capillary GC/MS (continued)

Semi-Volatile Analytes

PAH Mix

M-525-1-5X

M-525-1-5X-PAK

0.5 mg/mL each in Acetone

Acenaphthylene
Anthracene
Benz[a]anthracene
Benzo[b]fluoranthene
Benzo[k]fluoranthene
Benz[a]pyrene
Benzo[g,h,i]perylene

Chrysene
Dibenz[a,h]anthracene
Fluorene
Indeno[1,2,3-cd]pyrene
Phenanthrene
Pyrene

1 x 1 mL
SAVE 5 x 1 mL
13 comps.

Semi-Volatile Mix

M-525-4-R-5X

0.5 mg/mL each in Acetone

Butyl benzyl phthalate
Di-*n*-butyl phthalate
Diethyl phthalate
bis(2-Ethylhexyl)adipate
Dimethyl phthalate
2,4-Dinitrotoluene

2,6-Dinitrotoluene
Hexachlorocyclopentadiene
bis(2-Ethylhexyl)phthalate
Isophorone
Pentachlorophenol (2.0 mg/mL)

1 x 1 mL
11 comps.

PCB Congener Mix

M-525-2-5X

M-525-2-5X-PAK

0.5 mg/mL each in Acetone

2-Chlorobiphenyl
2,3-Dichlorobiphenyl
2,2',3,3',4,4',6-Heptachlorobiphenyl
2,2',4,4',5,6'-Hexachlorobiphenyl

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

1 x 1 mL
SAVE 5 x 1 mL
8 comps.

Wisconsin DNR VOC Mix

S-989

2.0 mg/mL each in MeOH

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-Dichloroethane
cis-1,2-Dichloroethane
trans-1,2-Dichloroethane
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

1 x 1 mL
52 comps.

Volatile Organic Compounds - Liquids

M-502A-R

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)
Tetrachloroethane (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)

Certificate will reflect actual
cis/trans ratio

1 x 1 mL
54 comps.

Method 465 Volatiles Set

M-465D-SET

3 x 1 mL

M-502A-R, M-465B-10X, M-465D-ADD-R

Gases

M-465B-10X

M-465B-10X-PAK

0.2 mg/mL each in MeOH

Bromomethane
Chloroethane
Chloromethane
Dichlorodifluoromethane

Dichlorofluoromethane
Trichlorofluoromethane
Vinyl chloride

1 x 1 mL
SAVE 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.



EPA Method 500 Series

Method 525.2 Organic Compounds in Drinking Water by Liquid-Solid Extraction and Capillary GC/MS (continued)

These solutions are to be used individually or combined for calibration curve development. The nitrogen and 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 Mix

M-525.2-NP1-ASL

M-525.2-NP1-ASL-PAK

100 µg/mL each in Acetone

Alternate Source

1 x 1 mL
SAVE 5 x 1 mL
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	

Semi-Volatiles Mix

M-525.2-SV-ASL

M-525.2-SV-ASL-PAK

100 µg/mL each in Acetone

Alternate Source

1 x 1 mL
SAVE 5 x 1 mL
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
Benz[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	

Nitrogen / Phosphorus Pesticide Mix Revision

M-525.2-NP1-ASL-R1

100 µg/mL each in Acetone

Alternate Source

1 x 1 mL
40 comps.

Alachlor	Ethoprop	Prometryne
Ametryn	Fenarimol	Pronamide
Atraton	Fluridone	Propachlor
Atrazine	Hexazinone	Propazine
Bromacil	Methyl paraoxon	Simetryn
Butachlor	Metolachlor	Tetrachlorvinphos
Butylate	Mevinphos	Tebuthiuron
Chlorpropham	MGK-264	Terbacil
Dursban	Molinate	Prebane
Cycloate	Napropamide	Triadimefon
Cyanazine	Norflurazon	Tricyclazole
Dichlorvos	Pebulate	Trifluralin
Diphenamid	Prometon	Vernolate
EPTC		

Regulated Semi-Volatiles Mix

M-525-REG-ASL

M-525-REG-ASL-PAK

0.5 mg/mL each in Acetone

Alternate Source

1 x 1 mL
SAVE 5 x 1 mL
6 comps.

Benz[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

M-525.2-FS-ASL-PAK

500 µg/mL each in Acetone

Alternate Source

1 x 1 mL
SAVE 5 x 1 mL
7 comps.

Acenaphthene-d ₁₀	Phenanthrene-d ₁₀
Chrysene-d ₁₂	Pyrene-d ₁₀
1,3-Dimethyl-2-nitrobenzene	Triphenylphosphate
Perylene-d ₁₂	

Nitrogen / Phosphorus Pesticide Mixture

M-525.2-NP2-ASL

M-525.2-NP2-ASL-PAK

100 µg/mL each in Acetone

Alternate Source

1 x 1 mL
SAVE 5 x 1 mL
6 comps.

Carboxin	Fenamiphos
Diazinon	Merphos
Disulfoton	Terbufos

Surrogate Standard

M-525.2-SS2-ASL

M-525.2-SS2-ASL-PAK

500 µg/mL each in Acetone

Alternate Source

1 x 1 mL
SAVE 5 x 1 mL
4 comps.

1,3-Dimethyl-2-nitrobenzene	Pyrene-d ₁₀
Perylene-d ₁₂	Triphenylphosphate

Organochlorine Pesticides

M-525.2-CP-ASL

M-525.2-CP-ASL-PAK

100 µg/mL each in Acetone

Alternate Source

1 x 1 mL
SAVE 5 x 1 mL
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		Heptachlor epoxide (Isomer B)
δ-BHC	Endosulfan I	Methoxychlor
γ-BHC	Endosulfan II	cis-Permethrin
Chlorobenzilate	Endosulfan sulfate	trans-Permethrin
Chlorothalonil	Endrin	Simazine
Chloroneb	Endrin aldehyde	trans-Nonachlor

Regulated Semi-Volatiles Mixes

M-525-REG-EA

100 µg/mL each in Ethyl acetate

1 x 1 mL
25 comps.

M-525-REG-EA-5X

500 µg/mL each in Ethyl acetate

1 x 1 mL
25 comps.

Alachlor	Endrin
Aldrin	Heptachlor
Atrazine	Heptachlor epoxide (Isomer B)
Benz(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	

Match frequently requested products.

Alternate Source

ASL products can be used as an independent second source.



Method 525.3 Semi-Volatile Organic Chemicals in Drinking Water by Solid Phase Extraction and Capillary GC/MS

PCB and PAH Standard

M-525.3-01

500 µg/mL each in Acetone

1 x 1 mL
30 comps.

2-Chlorobiphenyl	Anthracene
4-Chlorobiphenyl	Benz(a)anthracene
2,4'-Dichlorobiphenyl	Benzo(b)fluoranthene
2,2',5'-Trichlorobiphenyl	Benzo(k)fluoranthene
2,4,4'-Trichlorobiphenyl	Benzo(g,h,i)perylene
2,2',3,5'-Tetrachlorobiphenyl	Benz[a]pyrene
2,2',5,5'-Tetrachlorobiphenyl	Chrysene
2,3',4',5'-Tetrachlorobiphenyl	Dibenz(a,h)anthracene
2,3,3',4',6-Pentachlorobiphenyl	Fluorene
2,3',4,4',5-Pentachlorobiphenyl	Hexachlorobenzene
2,2',3,4,4',5'-Hexachlorobiphenyl	Indeno(1,2,3-cd)pyrene
2,2',3,4',5',6'-Hexachlorobiphenyl	Isophorone
2,2',4,4',5,5'-Hexachlorobiphenyl	Pentachlorophenol
2,2',3,4,4',5,5'-Heptachlorobiphenyl	Phenanthrene
Acenaphthylene	Pyrene

Pesticide Standard

M-525.3-02

500 µg/mL each in Acetone, except Simazine in 350 µg/mL

1 x 1 mL
33 comps.

Atraton (Gesatamine)	Chloroneb
Butachlor	Dacthal (DCPA)
Butylate	p,p'-DDD
Cycloate	p,p'-DDE
Diphenamid	p,p'-DDT
EPTC	a-Chlordane
Metolachlor	g-Chlordane
Molinate	Methoxychlor
Tillam	cis-Permethrin
Propachlor	trans-Permethrin
Propazine	Simazine
Simetryn	trans-Nonachlor
Atrazine	Chlorothalonil
a-BHC	Diisopropyl methanephosphonate
b-BHC	Profenofos
d-BHC	Vinclozolin
g-BHC	

Pesticide Standard

M-525.3-03

500 µg/mL each in Acetone

1 x 1 mL
39 comps.

Ametryn	Endosulfan sulfate
Chlorpropham	Etridiazole
Chlorpyrifos	Heptachlor
Dichlorvos	Heptachlor epoxide (Isomer B)
Ethoprop	2,4-Dinitrotoluene
Fluridone	2,6-Dinitrotoluene
Hexazinone	Hexachlorocyclopentadiene
Mevinphos	Acetochlor
Norflurazon	2,6-Di-tert-butyl-p-cresol
Prometryne	Chlorfenvinphos
Pronamide	N,N-Diethyl-m-toluamide
Tebuthiuron	Ethion
Terbutryne	Parathion
Triadimefon	Parathion-methyl
Trifluralin	Nitrofen
Vernolate	Phosphamidon
Alachlor	Tebuconazol
Aldrin	Tribufos
Chlorobenzilate	Tetrachlorvinphos
Dieldrin	

Pesticide Standards

M-525.3-04

500 µg/mL each in Acetone

1 x 1 mL
14 comps.

Bromacil	Disulfoton
Cyanazine	Endosulfan I
Fenarimol	Endrin
MGK-264	Dimethipin
Napropamide	Oxyfluorfen
Prometon	Phorate
Terbacil	Endosulfan II

M-525.3-05

500 µg/mL each in Acetone

1 x 1 mL
6 comps.

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

M-525.3-06

500 µg/mL in Acetone

1 x 1 mL

Metribuzin

Internal Standard

M-525.3-IS2

500 µg/mL in Acetone

1 x 1 mL

Pentachlorophenol- ¹³ C ₆

Surrogate Standard

M-525.3-SS

500 µg/mL in Acetone

1 x 1 mL

1,3-Dimethyl-2-nitrobenzene	Triphenylphosphate
Benzo(a)pyrene-d ₁₂	



EPA Method 500 Series

Method 526 Semi-Volatiles in Drinking Water by GC/MS

Primary Dilution Standards

M-526-0.2X-EA 1 x 1 mL
200 µg/mL each in Ethyl acetate 11 comps.

M-526 1 x 1 mL
M-526-PAK **SAVE** 5 x 1 mL
1000 µg/mL each in Acetone 11 comps.

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 5 comps.

Acenaphthene-d ₁₀	Phenanthrene-d ₁₀
Chrysene-d ₁₂	Triphenylphosphate
1,3-Dimethyl-2-nitrobenzene	

M-525-TS 1 x 1 mL
M-525-TS-PAK **SAVE** 5 x 1 mL
100 µg/mL in CH₂Cl₂
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 3 comps.

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 2 comps.

1,3-Dimethyl-2-nitrobenzene	Triphenylphosphate
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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 (80:20) 5 comps.

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 11 comps.

Atrazine	Kepone
Bioallethrin, S-cyclopentyl isomer	Norflurazon
Bromacil	Oxychlorane isomer
Esfenvalerate	Prometryne
Fenvalerate	Propazine
Hexazinone	

Pesticide Mix B

M-527-PEST-B 1 x 1 mL
500 µg/mL each in MeOH 12 comps.

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 3 comps.

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 3 comps.

1,3-Dimethyl-2-nitrobenzene	Triphenylphosphate
Perylene-d ₁₂	

Method 528 Phenols in Drinking Water 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 CH₂Cl₂ 12 comps.

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. (µg/mL) in CH₂Cl₂ 2 comps.

1,2-Dimethyl-3-nitrobenzene	2000	2,3,4,5-Tetrachlorophenol	2000
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Peak Tailing Factor Standard

M-528-PTF 1 x 1 mL
10 µg/mL each in CH₂Cl₂ 4 comps.

2,4-Dimethylphenol	4-Nitrophenol
2-Methyl-4,6-dinitrophenol	Pentachlorophenol

Analyte Fortification Solution

M-528-AFS 1 x 1 mL
At stated conc. (µg/mL) in MeOH 12 comps.

4-Chloro-3-methylphenol	100	2-Methyl-4,6-Dinitrophenol	500
2-Chlorophenol	100	2-Nitrophenol	100
o-Cresol	100	4-Nitrophenol	500
2,4-Dichlorophenol	100	Pentachlorophenol	500
2,4-Dimethylphenol	100	Phenol	100
2,4-Dinitrophenol	500	2,4,6-Trichlorophenol	100

Surrogate Standards

M-528-SS 1 x 1 mL
M-528-SS-PAK **SAVE** 5 x 1 mL
At stated conc. (µg/mL) in MeOH 3 comps.

2-Chlorophenol-d ₄	1000	2,4,6-Tribromophenol	2500
2,4-Dimethylphenol-3,5,6-d ₃	1000		

M-528-SS2 1 x 1 mL
M-528-SS2-PAK **SAVE** 5 x 1 mL
At stated conc. (µg/mL) in MeOH 3 comps.

2-Chlorophenol-d ₄	1000	2,4,6-Tribromophenol	2000
2,4-Dimethylphenol-3,5,6-d ₃	1000		



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

Method 529 Calibration Curve

At stated conc. (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

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

Internal Standard Stock Solution

M-529-IS

2.0 mg/mL Ethyl acetate

1 x 1 mL

3,4-Dinitrotoluene

Internal Standard Fortification Solution

M-529-ISFS

200 µg/mL Ethyl acetate:ACN (96:4)

1 x 1 mL

14 comps.

2-Amino-4,6-dinitrotoluene
4-Amino-2,6-dinitrotoluene
3,5-Dinitroaniline
1,3-Dinitrobenzene
2,4-Dinitrotoluene
2,6-Dinitrotoluene
RDX

Nitrobenzene
2-Nitrotoluene
3-Nitrotoluene
4-Nitrotoluene
1,3,5-Trinitrobenzene
Tetryl
TNT

Surrogate Analyte Stock Solutions

M-529-SS1

M-529-SS1-PAK

1000 µg/mL each in MeOH

1 x 1 mL

SAVE 5 x 1 mL

2 comps.

1,3,5-Trimethyl-2-nitrobenzene

1,2,4-Trimethyl-5-nitrobenzene

M-529-SS2

M-529-SS2-PAK

1000 µg/mL each in CH₂Cl₂

1 x 1 mL

SAVE 5 x 1 mL

Nitrobenzene-d₅

Surrogate Analyte Fortification Solution

M-529-SAFS

100 µg/mL each in MeOH

1 x 1 mL

3 comps.

1,3,5-Trimethyl-2-nitrobenzene

Nitrobenzene-d₅

1,2,4-Trimethyl-5-nitrobenzene

Method 530 Semi-Volatile Organic Chemicals by SPE and GC/MS

M-530-01

1000 µg/mL each in MeOH

1 x 1 mL

2 comps.

o-Toluidine

Quinoline

M-530-02

1000 µg/mL each in MeOH

1 x 1 mL

2 comps.

Butylated hydroxyanisole

Dimethipin

M-530-IS

500 µg/mL each in MeOH

1 x 1 mL

2 comps.

Acenaphthene-d₁₀

Phenanthrene-d₁₀

Surrogate Standard

M-530-SS

500 µg/mL each in MeOH

1 x 1 mL

2 comps.

Quinoline-d₇

o-Toluidine-d₉

UCMR 4 - M-530 Standard

UCMR4-M-530

At stated conc. (µg/mL) in MeOH

1 x 1 mL

3 comps.

Butylated hydroxyanisole (30)

o-Toluidine (7)

Quinoline (20)

Method 531 + 531.1 N-Methyl carbamoyl oximes & N-Methyl carbamates by HPLC

Method 531 Compounds (HPLC)

Compound	Cat. No.	Unit	Compound	Cat. No.	Unit
Aldicarb sulfoxide	M-531-01	1 mL	Propoxur	M-531-07	1 mL
Aldicarb sulfone	M-531-02	1 mL	Carbofuran	M-531-08	1 mL
Oxamyl	M-531-03	1 mL	Carbaryl	M-531-09	1 mL
Methomyl	M-531-04	1 mL	1-Naphthol	M-531-10	1 mL
3-Hydroxycarbofuran	M-531-05	1 mL	Methiocarb	M-531-11	1 mL
Aldicarb	M-531-06	1 mL			

M-531-SET

Each at 0.1 mg/mL in ACN

11 x 1 mL

M-531M

M-531M-PAK

0.1 mg/mL each in ACN

1 x 1 mL

SAVE 5 x 1 mL

11 comps.

Performance Check Solution

M-531-QC-R

At stated conc. (µg/mL) in ACN

1 x 1 mL

4 comps.

Aldicarb sulfoxide 100

3-Hydroxycarbofuran 2

BDMC 10

Methiocarb 20

Internal Standard

M-531-IS

0.1 mg/mL in ACN

1 x 1 mL

4-Bromo-3,5-dimethylphenyl-N-methylcarbamate (BDMC)

Carbamate Pesticide Mix

M-531-REG-ASL

M-531-REG-ASL-PAK

100 µg/mL in MeOH

1 x 1 mL

SAVE 5 x 1 mL

2 comps.

Carbofuran

Oxamyl



EPA Method 500 Series

Method 532 Phenylureas by HPLC

Phenylurea Concentrate Standard

M-532-CONC1

M-532-CONC1-PAK

5.0 mg/mL each in MeOH

Karmex
Fluometuron

Linuron
Propanil

Siduron
Tebuthiuron

1 x 1 mL
SAVE 5 x 1 mL
6 comps.

Phenylurea Primary Dilution Standard

M-532

M-532-PAK

100 µg/mL each in MeOH, except Siduron

Diflufenzuron
Karmex
Fluometuron

Linuron
Propanil
Siduron (200 µg/mL)

Tebuthiuron
Thidiazuron

1 x 1 mL
SAVE 5 x 1 mL
8 comps.

Phenylurea Surrogate Standard

M-532-SS

M-532-SS-PAK

500 µg/mL each in MeOH

Carbazole

Monuron

1 x 1 mL
SAVE 5 x 1 mL
2 comps.

Method 533 PFAS in Drinking Water by LC-MS/MS

PFAS in Drinking Water Standard

M-533

2 µg/mL each in MeOH:Water (95:5)

11-Chloroicosafafluoro-3-oxaundecane-1-sulfonic acid
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid
4,8-Dioxa-3H-perfluorononanoic acid
Perfluoro(2-methyl-3-oxahexanoic) acid
Nonafluoro-3,6-dioxaheptanoic acid
Perfluoro-n-butanoic acid
Perfluorobutane-1-sulfonic acid
1H,1H,2H,2H-Perfluorodecanesulfonic acid
Perfluoro-n-decanoic acid

Perfluoro-n-dodecanoic acid
Perfluoro(2-ethoxyethane)sulphonic acid
Perfluoroheptanesulfonic acid
Perfluoro-n-heptanoic acid
1H,1H,2H,2H-Perfluorohexanesulfonic acid
Perfluorohexane-1-sulfonic acid
Perfluoro-n-hexanoic acid
Perfluoro-3-methoxypropanoic acid

Perfluoro(4-methoxybutanoic) acid
Perfluoro-n-nonanoic acid
1H,1H,2H,2H-Perfluorooctane sulfonic acid
Perfluorooctane-1-sulfonic acid
Perfluoro-n-octanoic acid
Perfluoro-n-pentanoic acid
Perfluoropentanesulfonic acid
Perfluoro-n-undecanoic acid

1 mL
25 comps.

Method 535 Chloroacetanilide and other Acetamide Herbicide Degradates in Drinking Water by LC-MS/MS

Ethanesulfonic acid (ESA) and oxanilic acid (OA) degradation products of acetanilide/acetamide herbicides have been found in U.S. ground waters and surface waters. One acetamide and five acetanilide herbicides are currently registered for agricultural use in the U.S. 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. To help accurately identify the contaminants, AccuStandard has synthesized 12 different metabolites for the six U.S. registered acetanilide/acetamide herbicides.

Method 535 Set

M-535-SET

At stated conc. in MeOH

Acetochlor ESA	50 µg/mL	Flufenacet ESA	20 µg/mL	Propachlor ESA	20 µg/mL	Butachlor ESA sodium salt	20 µg/mL
Acetochlor OA	50 µg/mL	Flufenacet OA	20 µg/mL	Propachlor OA	20 µg/mL	(Internal Standard)	
Alachlor ESA	50 µg/mL	Metolachlor ESA	50 µg/mL	Dimethenamid ESA	10 µg/mL	Dimethachlor ESA sodium salt	20 µg/mL
Alachlor OA	50 µg/mL	Metolachlor OA	50 µg/mL	Dimethenamid OA	10 µg/mL	(Surrogate Standard)	

14 x 1 mL

Method 537.1 Per- and Polyfluorinated Alkyl Substances by SPE & LC/MS/MS

Compound	CAS No.	Conc.	Matrix	Cat. No.	Unit
Perfluoro-n-octanoic acid	335-67-1	100 mg	NEAT	PFOA-001N	1 mL
		100 µg/mL	MeOH	PFOA-001S	1 mL
Perfluoro-n-butanoic acid	375-22-4	100 µg/mL	MeOH	PFOA-002S	1 mL
Perfluoro-n-decanoic acid	335-76-2	100 µg/mL	MeOH	PFOA-003S	1 mL
Perfluoro-n-dodecanoic acid	307-55-1	100 µg/mL	MeOH	PFOA-004S	1 mL
Perfluoro-n-heptanoic acid	375-85-9	100 µg/mL	MeOH	PFOA-005S	1 mL
Perfluoro-n-hexanoic acid	307-24-4	100 µg/mL	MeOH	PFOA-006S	1 mL
Perfluoro-n-nonanoic acid	375-95-1	100 µg/mL	MeOH	PFOA-007S	1 mL
Perfluoro-n-pentanoic acid	2706-90-3	100 µg/mL	MeOH	PFOA-008S	1 mL
Perfluoro-n-undecanoic acid	2058-94-8	100 µg/mL	MeOH	PFOA-009S	1 mL
2H,2H,3H,3H-Perfluoroundecanoic acid	34598-33-9	100 µg/mL	MeOH	PFOA-010S	1 mL
Perfluorooctane-n-sulfonic acid	1763-23-1	100 µg/mL	MeOH	PFOS-001S	1 mL
Potassium perfluorooctanesulfonate	2795-39-3	100 mg	NEAT	PFOS-002N	1 mL
		100 µg/mL	MeOH	PFOS-002S	1 mL
Scotchgard™ Pre-2002 Formulation (Tech)		100 µg/mL	MeOH	PFOS-SCG-001S	1 mL
Scotchgard™ Post-2002 Formulation (Tech)		100 µg/mL	MeOH	PFOS-SCG-002S	1 mL

M-537.1

2 µg/mL each in MeOH

1 mL
18 comps.

Perfluoro(2-methyl-3-oxahexanoic) acid
N-ethylperfluoro-1-octanesulfonamidoacetic acid (linear)
N-methylperfluoro-1-octanesulfonamidoacetic acid (linear)
Perfluorobutane-1-sulfonic acid
Perfluoro-n-decanoic acid
Perfluoro-n-dodecanoic acid
Perfluoro-n-heptanoic acid
Perfluorohexane-1-sulfonic acid (Linear and Branched)
Perfluoro-n-hexanoic acid
Perfluoro-n-tetradecanoic acid
Perfluorooctane-1-sulfonic acid (Linear and branched)
Perfluoro-n-octanoic acid
Perfluoro-n-tetradecanoic acid
Perfluoro-n-tridecanoic acid
Perfluoro-n-undecanoic acid
11-Chloroicosafafluoro-3-oxaundecane-1-sulfonic acid
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid
4,8-Dioxa-3H-perfluorononanoic acid

Registered Trademarks Scotchgard 3M



Method 538 Organic Contaminants by LC-MS/MS

M-538	1 x 1 mL
1000 µg/mL each. in ACN, expect where noted	11 comps.
Aldicarb	Methamidophos (Monitor)
Aldicarb sulfoxide	Oxydemeton-methyl
Dicrotophos	Quinoline (20,000 µg/mL)
Diisopropyl methanephosphonate	Thiofanox
Fenamiphos sulfone	Acephate
Fenamiphos sulfoxide	

Method 541 Organic Contaminants by GC/MS

M-541	1 x 1 mL
2000 µg/mL each in MeOH	4 comps.
1-Butanol	Allyl alcohol
2-Methoxyethanol	p-Dioxane

Internal Standard

M-541-IS	1 x 1 mL
1000 µg/mL each in MeOH	2 comps.
Chlorobenzene-d ₅	1,4-Dioxane-d ₈

Surrogate Standard

M-541-SS	1 x 1 mL
1000 µg/mL each in MeOH	2 comps.
1-Butanol-d ₁₀	Allyl alcohol-d ₆

Method 547 Glyphosate by HPLC

M-547	1 x 1 mL
0.1 mg/mL in Deionized water	
M-547-10X	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-d ₁₀	

Methyl Derivative

M-548.1-ME	1 x 1 mL
100 µg/mL in MeOH	
Endothall dimethyl ester	

Method 549.1/549.2 Diquat & Paraquat Liquid - Solid Extraction & HPLC

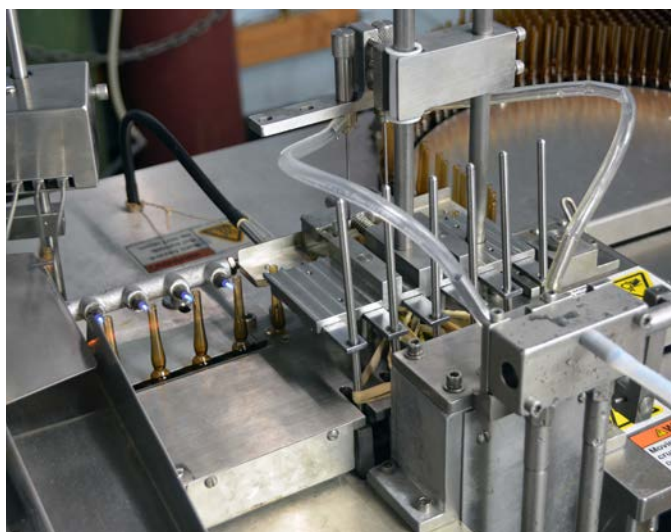
M-549.1	1 x 1 mL
1.0 mg/mL each in (mg/mL) Deionized water as non-hydrated species	2 comps.
Diquat dibromide - H ₂ O (1.97)	Paraquat dichloride - 4 H ₂ O (1.77)

Method 550 + 550.1 PAHs by HPLC & Internal Standard

M-550-QC		1 x 1 mL	
At stated conc. (µg/mL) in ACN		16 comps.	
Acenaphthene	1000	Chrysene	50
Acenaphthylene	1000	Dibenz[a,h]anthracene	10
Anthracene	50	Fluoranthene	2.5
Benz[a]anthracene	1	Fluorene	100
Benz[a]pyrene	5	Indeno[1,2,3-cd]pyrene	10
Benzo[b]fluoranthene	1	Naphthalene	1000
Benzo[g,h,i]perylene	5	Phenanthrene	50
Benzo[k]fluoranthene	1	Pyrene	50

Internal Standard

M-550-IS	1 x 1 mL
0.1 mg/mL in ACN	
4,4'-Difluorobiphenyl	





EPA Method 500 Series

Method 551 Chlorinated Organic Solvents + Trihalomethanes by GC/ECD

Disinfection By-products

M-551B

5.0 mg/mL each in Acetone

	Cat. No.	Unit
Bromochloroacetoneitrile	M-551B-1	1 mL
Chloral hydrate	M-551B-2	1 mL
Chloropicrin	M-551B-3	1 mL
Dibromoacetoneitrile	M-551B-4	1 mL
Dichloroacetoneitrile	M-551B-5	1 mL
1,1-Dichloro-2-propanone	M-551B-6	1 mL
Trichloroacetoneitrile	M-551B-7	1 mL
1,1,1-Trichloro-2-propanone	M-551B-8	1 mL

M-551B-SET

8 x 1 mL

M-551A

M-551A-PAK

5.0 mg/mL each in MeOH

Bromodichloromethane
Bromoform
Carbon tetrachloride
Chlorodibromomethane
Chloroform

1,2-Dibromoethane
1,2-Dibromo-3-chloropropane
Tetrachloroethene
1,1,1-Trichloroethane
Trichloroethene

1 x 1 mL

SAVE 5 x 1 mL

10 comps.

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

M-551.1A-PAK

At stated conc. (µg/mL) in Acetone

			1 x 1 mL
			SAVE 5 x 1 mL
			12 comps
Bromodichloromethane	1000	1,2-Dibromoethane	1000
Bromoform	1000	Tetrachloroethene	500
Carbon tetrachloride	500	1,1,1-Trichloroethane	1000
Chloroform	1000	1,1,2-Trichloroethane	10,000
Dibromochloromethane	1000	Trichloroethene	1000
1,2-Dibromo-3-chloropropane	1000	1,2,3-Trichloropropane	10,000

Pesticide/Herbicide Mix

M-551.1C

M-551.1C-PAK

At stated conc. (µg/mL) in Acetone

Alachlor	10	Endrin ketone	2	Lindane	1
Atrazine	200	Heptachlor	1	Methoxychlor	5
Bromacil	10	Heptachlor epoxide	1	Metolachlor	10
Cyanazine	30	(Isomer B)		Metribuzin	5
Endrin	2	Hexachlorobenzene	1	Simazine	200
Endrin aldehyde	2	Hexachlorocyclopentadiene	1	Trifluralin	1

1 x 1 mL

SAVE 5 x 1 mL

17 comps.

Disinfection By-products

M-551.1B

M-551.1B-PAK

1000 µg/mL each in Acetone

			1 x 1 mL
			SAVE 5 x 1 mL
			8 comps.
Bromochloroacetoneitrile		Dichloroacetoneitrile	
Chloral hydrate		1,1-Dichloro-2-propanone	
Chloropicrin		Trichloroacetoneitrile	
Dibromoacetoneitrile		1,1,1-Trichloro-2-propanone	

Technical Note

- 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.
- 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

M-551.1-LPC-P-PAK

At stated conc. (µg/mL) in Pentane

			1 x 1 mL
			SAVE 5 x 1 mL
			7 comps.
Alachlor	83	Hexachlorocyclopentadiene	20
Bromacil	83	Lindane	0.2
Bromodichloromethane	30	Trichloroethene	30
Endrin	30		

MtBE Extracts

M-551.1-LPC

M-551.1-LPC-PAK

At stated conc. (µg/mL) in MtBE

			1 x 1 mL
			SAVE 5 x 1 mL
			7 comps.
Alachlor	83	Hexachlorocyclopentadiene	20
Bromacil	83	Lindane	0.2
Bromodichloromethane	30	Trichloroethene	30
Endrin	30		

Internal Standard Solutions

M-551.1-IS

M-551.1-IS-PAK

100 µg/mL in Acetone

			1 x 1 mL
			SAVE 5 x 1 mL

M-551.1-IS-100X

M-551.1-IS-100X-PAK

10,000 µg/mL in Acetone

			1 x 1 mL
			SAVE 5 x 1 mL
p-Bromofluorobenzene			

Modified Laboratory Performance Check Solutions

Pentane Extracts

M-551.1-MLPC-P

M-551.1-MLPC-P-PAK

At stated conc. (µg/mL) in Pentane

			1 x 1 mL
			SAVE 5 x 1 mL
			4 comps.
γ-BHC	0.2	Hexachlorocyclopentadiene	20
Bromodichloromethane	30	Trichloroethene	30

MtBE Extracts

M-551.1-MLPC

M-551.1-MLPC-PAK

At stated conc. (µg/mL) in MtBE

			1 x 1 mL
			SAVE 5 x 1 mL
			4 comps.
γ-BHC	0.2	Hexachlorocyclopentadiene	20
Bromodichloromethane	30	Trichloroethene	30

Surrogate Standard Solutions

M-551.1-SS

M-551.1-SS-PAK

10 µg/mL in Acetone

			1 x 1 mL
			SAVE 5 x 1 mL

M-551.1-SS-100X

M-551.1-SS-100X-PAK

1,000 µg/mL in Acetone

			1 x 1 mL
			SAVE 5 x 1 mL
Decafluorobiphenyl			



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 8 x 1 mL
Each at 1.0 mg/mL in MtBE

	Cat. No.	Unit
2,4-Dichloroanisole	M-552-R-01	1 mL
Methyl bromoacetate	M-552-R-02	1 mL
Methyl bromochloroacetate	M-552-R-03	1 mL
Methyl chloroacetate	M-552-R-04	1 mL
Methyl dibromoacetate	M-552-R-05	1 mL
Methyl dichloroacetate	M-552-R-06	1 mL
Methyl trichloroacetate	M-552-R-07	1 mL
2,4,6-Trichloroanisole	M-552-R-08	1 mL

Underivatized Analytes

M-552A-R 1 x 1 mL
1.0 mg/mL each in MtBE 8 comps.

M-552A-R-SET 8 x 1 mL
Each at 1.0 mg/mL in MtBE

	Cat. No.	Unit
Bromoacetic acid	M-552A-R-01	1 mL
Bromochloroacetic acid	M-552A-R-02	1 mL
Chloroacetic acid	M-552A-R-03	1 mL
Dibromoacetic acid	M-552A-R-04	1 mL
Dichloroacetic acid	M-552A-R-05	1 mL
2,4-Dichlorophenol	M-552A-R-06	1 mL
Trichloroacetic acid	M-552A-R-07	1 mL
2,4,6-Trichlorophenol	M-552A-R-08	1 mL

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** 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
1.0 mg/mL in MeOH
Methyl 3,5-dichlorobenzoate

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
Methyl 2,3-dibromopropionate

Method 552.1 Haloacetic Acids by ECD

Methyl Derivatives

M-552.1 1 x 1 mL
At stated conc. (µg/mL) in MeOH 7 comps.

M-552.1-SET 7 x 1 mL
Each at stated conc. (µg/mL) in MeOH

	Conc.	Cat. No.	Unit
Dalapon methyl ester	200	M-552.1-01	1 mL
Methyl bromoacetate	200	M-552.1-02	1 mL
Methyl bromochloroacetate	200	M-552.1-03	1 mL
Methyl chloroacetate	300	M-552.1-04	1 mL
Methyl dibromoacetate	100	M-552.1-05	1 mL
Methyl dichloroacetate	300	M-552.1-06	1 mL
Methyl trichloroacetate	100	M-552.1-07	1 mL

Underivatized Analytes

M-552.1A 1 x 1 mL
At stated conc. (µg/mL) in MeOH 7 comps.

M-552.1A-SET 7 x 1 mL
Each at stated conc. (µg/mL) in MeOH

Dalapon	200	Dibromoacetic acid	100
Bromoacetic acid	200	Dichloroacetic acid	300
Bromochloroacetic acid	200	Trichloroacetic acid	100
Chloroacetic acid	300		

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-Bromopropanoic 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



EPA Method 500 Series

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 and 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. (µg/mL) in MtBE	10 comps.
M-552.3-R1	1 x 1 mL
100 µg/mL each in MtBE	10 comps.
M-552.2-SET	10 x 1 mL
Each at stated conc. (µg/mL) in MtBE	

	Conc.	Cat. No.	Unit
Dalapon methyl ester	40	M-552.2-01	1 mL
Methyl bromoacetate	40	M-552.2-02	1 mL
Methyl bromochloroacetate	40	M-552.2-03	1 mL
Methyl bromodichloroacetate	40	M-552.2-04	1 mL
Methyl chloroacetate	60	M-552.2-05	1 mL
Methyl chlorodibromoacetate	100	M-552.2-06	1 mL
Methyl dibromoacetate	20	M-552.2-07	1 mL
Methyl dichloroacetate	60	M-552.2-08	1 mL
Methyl tribromoacetate	200	M-552.2-09	1 mL
Methyl trichloroacetate	20	M-552.2-10	1 mL

Haloacetic Acid Methyl Derivatives with Surrogate (Methyl-2,3-dibromopropionate)

M-552.2			1 x 1 mL
At stated conc. (µg/mL) in MtBE			11 comps.
M-552.3			1 x 1 mL
100 µg/mL each in MtBE			11 comps.
Dalapon methyl ester	40	Methyl dibromoacetate	20
Methyl bromoacetate	40	Methyl dichloroacetate	60
Methyl bromochloroacetate	40	Methyl tribromoacetate	200
Methyl bromodichloroacetate	40	Methyl trichloroacetate	20
Methyl chloroacetate	60	Methyl 2,3-dibromopropionate	100
Methyl chlorodibromoacetate	100	(Surrogate)	

Haloacetic Acid Methyl Derivative Surrogate Standard

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				SAVE 5 x 1 mL
At stated conc. (µg/mL) in MtBE				4 comps.
Methyl bromochloroacetate	4	Methyl chlorodibromoacetate	10	
Methyl chloroacetate	6	Methyl 2,3-dibromopropionate	10	

Working Level

M-552.2-LPC-WL-25ML			1 x 25 mL
M-552.2-LPC-WL-50ML			1 x 50 mL
<i>At stated conc. (ng/mL) in MtBE</i>			<i>4 comps.</i>
Methyl bromochloroacetate	4	Methyl chlorodibromoacetate	10
Methyl chloroacetate	6	Methyl 2,3-dibromopropionate	10

Haloacetic Acids

Haloacetic Acid without Surrogate

M-552.2A-R1	1 x 1 mL
At stated conc. (µg/mL) in MtBE	10 comps.
M-552.3A-R1	1 x 1 mL
100 µg/mL each in MtBE	10 comps.
M-552.2A-SET	10 x 1 mL
Each at stated conc. (µg/mL) in MtBE	

	Conc.	Cat. No.	Unit
Dalapon acid	40	M-552.2A-04	1 mL
Monobromoacetic acid	40	M-552.2A-07	1 mL
Bromochloroacetic acid	40	M-552.2A-01	1 mL
Bromodichloroacetic acid	40	M-552.2A-02	1 mL
Monochloroacetic acid	60	M-552.2A-08	1 mL
Chlorodibromoacetic acid	100	M-552.2A-03	1 mL
Dibromoacetic acid	20	M-552.2A-05	1 mL
Dichloroacetic acid	60	M-552.2A-06	1 mL
Tribromoacetic acid	200	M-552.2A-09	1 mL
Trichloroacetic acid	20	M-552.2A-10	1 mL

Haloacetic Acid Mix with Surrogate (2,3-Dibromopropionic acid)

(2,3-Dibromopropionic acid)			
M-552.2A			1 x 1 mL
<i>At stated conc. (µg/mL) in MtBE</i>			11 comps.
Dalapon acid	40	Dibromoacetic acid	20
Bromoacetic acid	40	Dichloroacetic acid	60
Bromochloroacetic acid	40	Tribromoacetic acid	200
Bromodichloroacetic acid	40	Trichloroacetic acid	20
Chloroacetic acid	60	2,3-Dibromopropionic acid	100
Chlorodibromoacetic acid	100	(Surrogate)	

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	



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
At stated conc. (µg/mL) in ACN:MeOH (50:50)				13 comps.
Benzidine †	250	3,3'-Dimethylbenzidine †	350	
Benzoylprop ethyl	350	Diuron	450	
Caffeine	300	Linuron	1,300	
Carbaryl	1,000	Monuron	400	
o-Chlorophenyl thiourea	750	Rotenone	3,200	
3,3'-Dichlorobenzidine †	250	Siduron	450	
3,3'-Dimethoxybenzidine †	750			

Performance Check Solution

M-553-PC		1 x 1 mL
0.1 mg/mL in ACN		
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 ACN				12 comps.
Cat. No. (1 mL)		Cat. No. (1 mL)		
Acetaldehyde	M-554-01	Heptanal	M-554-07	
Butanal	M-554-02	Hexanal	M-554-08	
Crotonaldehyde	M-554-03	Nonanal	M-554-09	
Cyclohexanone	M-554-04	Octanal	M-554-10	
Decanal	M-554-05	Pentanal	M-554-11	
Formaldehyde	M-554-06	Propanal	M-554-12	

DNPH Derivatives

M-554-DNPH		1 x 1 mL
1.0 mg/mL each in MeOH:ACN (95:5)		12 comps.

M-554-DNPH-R1		1 x 1 mL
1.0 mg/mL each in ACN		12 comps.

M-554-DNPH-SET		2 x 1 mL
Each at 1.0 mg/mL in MeOH:ACN (95:5)		

Cat. No. (1 mL)		Cat. No. (1 mL)	
Acetaldehyde-DNPH	M-554-DNPH-01	Heptanal-DNPH	M-554-DNPH-07
Butanal-DNPH	M-554-DNPH-02	Hexanal-DNPH	M-554-DNPH-08
Crotonaldehyde-DNPH	M-554-DNPH-03	Nonanal-DNPH	M-554-DNPH-09
Cyclohexanone-DNPH	M-554-DNPH-04	Octanal-DNPH	M-554-DNPH-10
Decanal-DNPH	M-554-DNPH-05	Pentanal-DNPH	M-554-DNPH-11
Formaldehyde-DNPH	M-554-DNPH-06	Propanal-DNPH	M-554-DNPH-12

† Subject to oxidation

Method 555 Chlorinated Acids by HPLC

Mix A

M-555A			1 x 1 mL
1.0 mg/mL each in ACN			8 comps.

Acifluorfen	2,4-D	Picloram
Bentazon	Dicamba	2,4,5-TP
Chloramben	Dichlorprop	

Mix B

M-555B			1 x 1 mL
1.0 mg/mL each in ACN			8 comps.

2,4-DB	MCPA	Pentachlorophenol
3,5-Dichlorobenzoic acid	MCPP	2,4,5-T
Dinoseb	4-Nitrophenol	

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 ACN			13 comps.

Acetaldehyde	Decanal	Nonanal
Benzaldehyde	Formaldehyde	Octanal
Butanal	Heptanal	Pentanal
Crotonaldehyde	Hexanal	Propanal
Cyclohexanone		

Mix B

M-556-MIXB		1 x 1 mL
1.0 mg/mL each in ACN		2 comps.

Glyoxal	Methyl glyoxal
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Technical Note

M-556 was designed to meet both versions of the carbonyl method. The difference between method 556 and 556.1 is that crotonaldehyde has been removed from the 556.1 method. 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. We have the capability to manufacture the actual oxime derivatives.

Internal Standard

M-556-IS		1 x 1 mL
M-556-IS-PAK		SAVE 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		SAVE 5 x 1 mL
20 µg/mL in ACN		
M-556-SS-100X		1 x 1 mL
M-556-SS-100X-PAK		SAVE 5 x 1 mL
2.0 mg/mL in ACN		
2',4',5'-Trifluoroacetophenone		

PFBHA Reagent

M-556-DER-10ML		1 x 10 mL
M-556-DER-10ML-PAK		SAVE 5 x 10 mL
15 mg/mL in Water		

O-(2,3,4,5,6-Pentafluorobenzyl)hydroxylamine hydrochloride



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 (VOCs)

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	1,1,1,2-Tetrachloroethane
Bromomethane	1,2,3-Trichloropropane
cis-1,3-Dichloropropene *	
trans-1,3-Dichloropropene **	
Hexachlorobutadiene	

* cis (1.06 x conc.)
** trans (0.94 x conc.)

Combined Phase I, Phase II, Phase V VOCs

M-502-REG

M-502-REG-PAK

0.2 mg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
27 comps.

Benzene	Chloroform	1,1-Dichloroethylene
Bromodichloromethane	Dibromochloromethane	cis-1,2-Dichloroethylene
Bromoform	1,2-Dichlorobenzene	trans-1,2-Dichloroethylene
Carbon tetrachloride	1,4-Dichlorobenzene	Dichloromethane
Chlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane

M-502-REG-10X

M-502-REG-10X-PAK

2.0 mg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
27 comps.

Ethylbenzene	1,1,1-Trichloroethane	m-Xylene
Styrene	1,1,2-Trichloroethane	o-Xylene
Tetrachloroethylene	Trichloroethylene	p-Xylene
Toluene	Vinyl chloride	
1,2,4-Trichlorobenzene		

Method 504 EDB & DBCP by GC

M-504

M-504-PAK

0.2 mg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
2 comps.

1,2-Dibromoethane (EDB)	1,2-Dibromo-3-chloropropane (DBCP)
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Minnesota Method 465-D

Method 465-D Volatiles Set

M-465D-SET

3 x 1 mL
M-502A-R, M-465B-10X, M-465D-ADD-R

Gases

M-465B-10X

M-465B-10X-PAK

0.2 mg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
7 comps.

Bromomethane	Dichlorofluoromethane
Chloroethane	Trichlorofluoromethane
Chloromethane	Vinyl chloride
Dichlorodifluoromethane	

M-465D-ADD-R

0.2 mg/mL each in MeOH

1 x 1 mL
8 comps.

Acetone	Methyl isobutyl ketone
Allyl chloride	Methyl-t-butyl ether
Ethyl ether	Tetrahydrofuran
Methyl ethyl ketone	Trichlorotrifluoroethane

Method Specific Individual Standards

Compound	Method	Concentration	Cat. No.	Unit
Diquat	549.1	100 µg/mL in MeOH	P-231S	1 mL
Endothall	548.1	100 µg/mL in MeOH	P-183S	1 mL
Ethylene thiourea *	509	0.1 mg/mL in 0.1 w/v DTT in Ethyl acetate	M-509	1 mL
Glyphosate	547	100 µg/mL in Water	M-547	1 mL
2,3,7,8-TCDD	525	50 µg/mL in Toluene	D-404S	1 mL
Toxaphene	525	2.5 mg/mL in Acetone	M-525-5	1 mL
Water Treatment Chemicals				
Acrylamide	8032	1.0 mg/mL in MeOH	M-8032	1 mL
Epichlorohydrin	8260B	2000 µg/mL in MeOH	M-8240E-R-13-10X	1 mL

► Proposed Phase VIB Additions, 0.1% w/v DDT as a scavenger

National Primary Drinking Water Standards



EPA Safe Drinking Water Act (SDWA) Amendment National Primary Drinking Water Standards (continued)

Regulated Herbicide Mix (Non-derivatized)

M-515-REG

At stated conc. (µg/mL) in Acetone

1 x 1 mL
8 comps.

Acifluorfen ◇◇	100	Dinoseb	200
2,4-D	300	Pentachlorophenol	100
Dalapon	1000	Picloram	100
Dicamba ◇◇	100	2,4,5-TP	100

Regulated Herbicide Mixes (Methyl Derivatives)

M-515-REG-ME

At stated conc. (ng/mL) in MtBE

1 x 1 mL
8 comps.

Acifluorfen methyl ester ◇◇	250	Dinoseb methyl ether	500
2,4-D methyl ester	500	Pentachloroanisole	100
Dalapon methyl ester	2000	Picloram methyl ester	250
Dicamba methyl ester ◇◇	500	2,4,5-TP methyl ester	500

M-515-REG-ME-1000X

At stated conc. (µg/mL) in MtBE

1 x 1 mL
8 comps.

Acifluorfen methyl ester ◇◇	250	Dinoseb methyl ether	500
2,4-D methyl ester	500	Pentachloroanisole	100
Dalapon methyl ester	2000	Picloram methyl ester	250
Dicamba methyl ester ◇◇	500	2,4,5-TP methyl ester	500

Regulated Semi-Volatiles Mix

M-525-REG-EA

0.1 mg/mL each in Ethyl Acetate

1 x 1 mL
25 comps.

M-525-REG-EA-5X

0.5 mg/mL each in Ethyl Acetate

1 x 1 mL
25 comps.

Alachlor	Endrin
Aldrin ◇	Heptachlor
Atrazine	Heptachlor epoxide (Isomer B)
Benz[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 Mix

M-531-REG

0.1 mg/mL each in Acetonitrile

1 x 1 mL
8 comps.

Aldicarb	Carbofuran
Aldicarb sulfone	3-Hydrocarbofuran ◇
Aldicarb sulfoxide	Methomyl ◇◇
Carbaryl ◇	Oxamyl

Regulated Pesticide Mix

M-508.1-ASL

M-508.1-ASL-PAK

100 µg/mL each in MtBE

Alternate Source

1 x 1 mL
SAVE 5 x 1 mL
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 Mix

M-525-REG-ASL

M-525-REG-ASL-PAK

0.5 mg/mL each in Acetone

Alternate Source

1 x 1 mL
SAVE 5 x 1 mL
6 comps.

Benz[a]pyrene	Hexachlorobenzene
bis(2-Ethylhexyl)adipate	Hexachlorocyclopentadiene
bis(2-Ethylhexyl)phthalate	Pentachlorophenol (2.0 mg/mL)

Carbamate Pesticide Mix

M-531-REG-ASL

M-531-REG-ASL-PAK

100 µg/mL each in MeOH

Alternate Source

1 x 1 mL
SAVE 5 x 1 mL
2 comps.

Carbofuran	Oxamyl
------------	--------

Match frequently requested products.

Alternate Source

ASL products can be used as an independent second source.



EPA Consent Decree

Water Protocol

EPA Consent Decree Water Protocol

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

Certificate will reflect
actual *cis/trans* ratio

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. (mg/mL) in MeOH
M-001D-D 1 x 1 mL
At stated conc. (mg/mL) in CH₂Cl₂ 12 comps.

Acenaphthylene 0.2
Benzo[b]fluoranthene 0.1
4-Bromophenyl phenyl ether 0.2
bis(2-Chloroethyl) ether 0.2
bis(2-Chloro-1-methylethyl) ether 0.2
1,4-Dichlorobenzene 0.2
3,3-Dichlorobenzidine † 0.2
Dimethyl phthalate 0.2
Di-n-butyl phthalate 0.2
2,6-Dinitrotoluene 0.2
bis(2-Ethylhexyl)phthalate 0.2
Nitrobenzene 0.2

† Subject to oxidation

Base/Neutral 2

M-001E 1 x 1 mL
At stated conc. (mg/mL) in MeOH
M-001E-D 1 x 1 mL
At stated conc. (mg/mL) in CH₂Cl₂ 15 comps.

Acenaphthene 0.2
Anthracene 0.2
Benz[a]anthracene 0.1
Chrysene 0.1
Dibenz[a,h]anthracene 0.1
1,2-Dichlorobenzene 0.2
1,3-Dichlorobenzene 0.2
Diethyl phthalate 0.2
2,4-Dinitrotoluene 0.2
Fluorene 0.2
Hexachlorobenzene 0.2
Hexachlorobutadiene 0.2
Naphthalene 0.2
bis(2-Chloroethoxy)methane 0.2
Pyrene 0.1

Base/Neutral 3

M-001F-D 1 x 1 mL
At stated conc. (mg/mL) in CH₂Cl₂ 22 comps.

Butyl benzyl phthalate	0.2	Butyl benzyl phthalate	0.2
2-Chloronaphthalene	0.2	2-Chloronaphthalene	0.2
1,2-Diphenylhydrazine	0.2	1,2-Diphenylhydrazine	0.2
Fluoranthene	0.1	Fluoranthene	0.1
Hexachlorocyclopentadiene	0.2	Hexachlorocyclopentadiene	0.2
Hexachloroethane	0.2	Hexachloroethane	0.2
Isophorone	0.2	Isophorone	0.2
N-Nitroso-di-n-propylamine	0.2	N-Nitroso-di-n-propylamine	0.2
N-Nitrosodiphenylamine	0.2	N-Nitrosodiphenylamine	0.2
Phenanthrene	0.2	Phenanthrene	0.2
1,2,3-Trichlorobenzene	0.2	1,2,3-Trichlorobenzene	0.2

Pesticide Mixture

M-001H 1 x 1 mL
At stated conc. (mg/mL) in MeOH 16 comps.

Aldrin 0.1
α-BHC 0.1
β-BHC 0.1
γ-BHC 0.1
δ-BHC 0.1
p,p'-DDT 0.6
p,p'-DDE 0.2
p,p'-DDD 0.6
Dieldrin 0.2
Endosulfan I 0.2
Endosulfan II 0.2
Endosulfan sulfate 0.6
Endrin 0.2
Endrin aldehyde 0.6
Heptachlor 0.1
Heptachlor epoxide (Isomer B) 0.1

Phenol Mixture

M-001P 1 x 1 mL
At stated conc. (mg/mL) in MeOH
M-001P-D 1 x 1 mL
1.0 mg/mL each in CH₂Cl₂ 11 comps.

4-Chloro-3-methylphenol 2.5
2-Chlorophenol 0.5
2,4-Dichlorophenol 0.5
2,4-Dimethylphenol 0.5
2,4-Dinitrophenol 1.5
2-Nitrophenol 0.5
4-Nitrophenol 2.5
2-Methyl-4,6-dinitrophenol 2.5
Pentachlorophenol 2.5
Phenol 0.5
2,4,6-Trichlorophenol 1.5

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. (mg/mL) in MeOH 2 comps.

Chlordane	0.02
Toxaphene	0.20

Internal Standard

M-001N 1 x 1 mL
2.0 mg/mL in CH₂Cl₂

Anthracene-d₁₀

Internal Standard

M-001R 1 x 1 mL
20 mg/mL each in MeOH 3 comps.

Bromochloromethane
1,4-Dichlorobutane
2-Bromo-1-chloropropane

Technical Note

Recommended for use as internal standards for purgeables.

Standard Mixtures for Drinking Water

ASTM Methods



ASTM has developed several LC/tandem mass spectrometry drinking water methods in partnership with the EPA. Each method is described below with the appropriate AccuStandard product listing.

- D7598 Analysis for Thiodiglycol (LC/MS/MS)
- D7599 Analysis for Ethanolamines (LC/MS/MS)
- D7600 and D7645 Analysis for Carbamates (LC/MS/MS)
- D8456 Nitrosamines in Water (LC/MS/MS)

D7598 Analysis for Thiodiglycol in Drinking Water (LC-MS/MS)

Method D7598 applies to Thiodiglycol, a compound used in the manufacture of chemical weapons, insecticides, inks, lubricants and pharmaceutical products. The Method has been designed for drinking and surface water analysis, and includes the target compound and surrogate standard.

ASTM Thiodiglycol Standard

D-7598
4.0 mg/mL in MeOH
Thiodiglycol

1 x 1 mL

ASTM Thiodiglycol Surrogate Standard

D-7598-SS
4.0 mg/mL in MeOH
3,3'-Thiodipropanol

1 x 1 mL

D7599 Analysis for Ethanolamines in Drinking Water (LC-MS/MS)

ASTM Method D7599 describes the qualitative and quantitative analysis of ethanolamine compounds - Diethanolamine, Triethanolamine, N-Methyldiethanolamine and N-Ethyldiethanolamine in drinking and surface waters. These compounds are listed as Schedule 3 chemicals under the Chemical Weapons Convention due to their toxicity and other properties that could potentially render them components of chemical weapons. In industry, these chemicals have a broad range of applications including the production of adhesives, detergents, inks, pesticides and pharmaceuticals.

ASTM Ethanolamine Standard

D-7599
50 µg/mL each in MeOH
Diethanolamine
Triethanolamine
N-Methyldiethanolamine

1 x 1 mL
5 comps.

N-Ethyldiethanolamine
Diethanolamine-d₈

ASTM Ethanolamine Surrogate Standard

D-7599-SS
200 µg/mL in MeOH
Diethanolamine-d₈

1 x 1 mL

D7600 Analysis for Carbamates in Drinking Water (LC-MS/MS)

ASTM Methods D7600 and D7645 apply to the analysis of carbamate pesticides in drinking and surface waters. The biological effect and residual risk of these compounds is on the nervous system through enzyme inhibition. However, residual levels of these compounds in drinking water are unlikely to cause a cumulative effect in most aquifers.

ASTM Carbamate Standard

D-7600
At stated conc. (µg/mL) in MeOH
Ardicarb 200
Carbofuran 200
Oxamyl 200
Methomyl 200
BDMC 400

1 x 1 mL
5 comps.

ASTM Carbamate Surrogate Standard

D-7600-SS
400 µg/mL in MeOH
BDMC (4-Bromo-3,5-dimethylphenyl-N-methyl carbamate)

1 x 1 mL

Carbamate standard solutions in concentrations designed for rapid sample analysis.

D7645 Analysis for Carbamates in Drinking Water (LC-MS/MS)

ASTM Carbamate Standard

D-7645
100 µg/mL each in MeOH
Ardicarb
Aldicarb sulfone
Aldicarb sulfoxide
Carbofuran
Oxamyl
Methomyl
Thiofanox
Carbofuran-d₃

1 x 1 mL
8 comps.

ASTM Carbamate Surrogate Standard

D-7645-SS
D-7645-SS-PAK
100 µg/mL in MeOH
Carbofuran-d₃

1 x 1 mL
5 x 1 mL

Carbamates in Water Surrogate Standard

D-7645-SS-R1
100 µg/mL each in MeOH
Methomyl-d₃
Carbofuran-d₃

1 x 1 mL
2 comps.

ASTM Carbamate Matrix Spike Standard

D-7645-MS
50 µg/mL each in MeOH
Ardicarb
Aldicarb sulfone
Aldicarb sulfoxide
Carbofuran
Oxamyl
Methomyl
Thiofanox

1 x 1 mL
7 comps.

D8456 Nitrosamines in Water (LC-MS/MS)

Nitrosamines in Water

D-8456
2 µg/mL each in Water:MeOH (98:2)

N-Nitrosodimethylamine
N-Nitrosomorpholine
N-Nitroso-N-methyl-4-aminobutyric acid
N-Nitrosopyrrolidine
N-Nitrosoethylmethylamine

N-Nitrosodiethylamine
N-Nitrosopiperidine
N-Nitroso-N-ethyl-2-propanamine
N-Nitrosodiisopropylamine

N-Nitrosodi-n-propylamine
N-Nitrosodi-n-butylamine
N-Nitroso-N-methylaniline
N-Nitrosodiphenylamine

1 x 1 mL
13 comps.

Internal Standard

D-8456-IS
2 µg/mL each in Water:MeOH (98:2)

N-Nitrosodimethylamine-d₆
N-Nitrosodiethylamine-d₁₀

1 x 1 mL
2 comps.



Standard Mixtures for EPA 600 Series Wastewater



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).

Instrumentation

Analytical techniques used in the identification and quantification of the above compounds include gas chromatography with selective detectors (ECD and FID), gas chromatography/mass spectrometry (GC/MS) and ultra high performance liquid chromatography (UHPLC). 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.

EPA 600 Series Wastewater

601	Purgeable Halocarbons by Purge & Trap (ELCD)	169
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Match frequently requested products.

Alternate Source

ASL products can be used as an independent second source.

Methods 601, 608, 615



World class reference standards at your fingertips - AccuStandard.com



Method 601 Purgeable Halocarbons by Purge and Trap - GC/MS

Two 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.

Purgeable Halocarbon Sets

M-601-SET 0.2 mg/mL each in MeOH	4 x 1 mL M-601A, M-502B, M-601C, M-501
M-601-10X-SET 2.0 mg/mL each in MeOH	4 x 1 mL M-601A-10X, M-502B-10X M-601C-10X, M-501-10X

Liquids

M-601A	1 x 1 mL
M-601A-PAK 0.2 mg/mL each in MeOH	SAVE 5 x 1 mL 18 comps.
M-601A-10X	1 x 1 mL
M-601A-10X-PAK 20 mg/mL each in MeOH	SAVE 5 x 1 mL 18 comps.
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	
	Certificate will reflect actual <i>cis/trans</i> ratio

Gases

M-502B	1 x 1 mL
M-502B-PAK 0.2 mg/mL each in MeOH	SAVE 5 x 1 mL 6 comps.
M-502B-10X	1 x 1 mL
M-502B-10X-PAK 2.0 mg/mL each in MeOH	SAVE 5 x 1 mL 6 comps.
Bromomethane	Dichlorodifluoromethane
Chloromethane	Trichlorofluoromethane
Chloroethane	Vinyl chloride

Liquid Components

M-601C	1 x 1 mL
M-601C-PAK 0.2 mg/mL each in MeOH	SAVE 5 x 1 mL
M-601C-10X	1 x 1 mL
M-601C-10X-PAK 2.0 mg/mL each in MeOH	SAVE 5 x 1 mL
2-Chloroethylvinyl ether	

Trihalomethanes

M-501	1 x 1 mL
M-501-PAK 0.2 mg/mL each in MeOH	SAVE 5 x 1 mL 4 comps.
M-501-10X	1 x 1 mL
2.0 mg/mL each in MeOH	4 comps.
Bromoform	Dichlorobromomethane
Chloroform	Dibromochloromethane

Purgeable Internal Standard

M-001R	1 x 1 mL
M-001R-PAK 20 mg/ml each in MeOH	SAVE 5 x 1 mL 3 comps.
Bromochloromethane	2-Bromo-1-chloropropane
1,4-Dichlorobutane	

Purgeable Halocarbon Mix

M-601-ASL	1 x 1 mL
M-601-ASL-PAK 100 µg/mL each in MeOH	SAVE 5 x 1 mL 28 comps.
Bromodichloromethane	1,1-Dichloroethene
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	Dichloromethane
Chloroform	1,1,2,2-Tetrachloroethane
Chloromethane	Tetrachloroethene
Dibromochloromethane	1,1,1-Trichloroethane
1,2-Dichlorobenzene	1,1,2-Trichloroethane
1,3-Dichlorobenzene	Trichloroethene
1,4-Dichlorobenzene	Trichlorofluoromethane
Dichlorodifluoromethane	Vinyl chloride
1,1-Dichloroethane	
1,2-Dichloroethane	
	Certificate will reflect actual <i>cis/trans</i> ratio

Performance Check Solution

S-532-ASL 0.2 mg/mL each in MeOH	1 x 1 mL 8 comps.
Benzene	1,1-Dichloroethene
Carbon tetrachloride	1,1,1-Trichloroethane
1,4-Dichlorobenzene	Trichloroethene
1,2-Dichloroethane	Vinyl chloride

Technical Note

Bromoform, Chloroform and other light volatiles may exhibit reduced response from a contaminated trap, un-optimized purge and trap conditions, i.e. purge flow too high / low, or contamination / cold spot in the transfer line.



EPA Method 600 Series

Method 601/602 Purgeable Halocarbons by GC/MS

Purgeable Halocarbons & Aromatics

M-601-602

M-601-602-PAK

0.2 mg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
25 comps.

Benzene
Bromoform
Carbon tetrachloride
Chlorobenzene
Chloroform
Dibromochloromethane
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
Dichlorobromomethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethylene
trans-1,2-Dichloroethylene

1,2-Dichloropropane
cis-1,3-Dichloropropylene
trans-1,3-Dichloropropylene
Ethylbenzene
Methylene chloride
1,1,2,2-Tetrachloroethane
Tetrachloroethylene
Toluene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethylene

Certificate will reflect actual
cis/trans ratio

Gases

M-601B

M-601B-PAK

0.2 mg/mL each in MeOH

1 x 1 mL
SAVE x 1 mL
6 comps.

Bromomethane
Chloromethane
Chloroethane

Dichlorodifluoromethane
Trichlorofluoromethane
Vinyl chloride

Liquids

M-601C

M-601C-PAK

0.2 mg/mL in MeOH

1 x 1 mL
SAVE 5 x 1 mL

M-601C-10X

M-601C-10X-PAK

2.0 mg/mL in MeOH

1 x 1 mL
SAVE 5 x 1 mL

2-Chloroethylvinyl ether

Purgeable Aromatics

M-602

M-602-PAK

0.2 mg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
7 comps.

Benzene
Chlorobenzene
1,2-Dichlorobenzene
1,3-Dichlorobenzene

1,4-Dichlorobenzene
Ethylbenzene
Toluene

Purgeable Aromatics - Gasoline ID

M-602-GAS

M-602-GAS-PAK

0.2 mg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
11 comps.

M-602-GAS-10X

M-602-GAS-10X-PAK

2.0 mg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
11 comps.

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

Toluene
o-Xylene
p-Xylene
m-Xylene
MtBE

Surrogate Standard

M-602-SS

M-602-SS-PAK

0.2 mg/mL in MeOH

1 x 1 mL
SAVE 5 x 1 mL

M-602-SS-100X

20 mg/mL in MeOH

1 x 1 mL

α,α,α -Trifluorotoluene

Two sets of formulations for those laboratories analyzing Method 601/602 analytes by PID/HALL in series allowing for simultaneous screening for gasoline contamination:

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.

M-601-602-BTEX 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.

Combined 601/602 Purgeable Halocarbon & Aromatic Gasoline ID Mixture with MtBE

M-601-CHG

M-601-CHG-PAK

100 μ g/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
35 comps.

Benzene
Bromodichloromethane
Bromoform
Bromomethane
Carbon tetrachloride
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
Dibromochloromethane
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
Dichlorodifluoromethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
trans-1,2-Dichloroethene
1,2-Dichloropropane

cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Dichloromethane
Ethylbenzene
MtBE
1,1,2,2-Tetrachloroethane
Tetrachloroethene
Toluene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Trichlorofluoromethane
m-Xylene
o-Xylene
p-Xylene
Vinyl chloride

Certificate will reflect actual
cis/trans ratio

Target Analytes

M-601-602-BTEX

0.2 mg/mL each in MeOH

1 x 1 mL
26 comps.

M-601-602-BTEX-10X

2.0 mg/mL each in MeOH

1 x 1 mL
26 comps.

Benzene
Carbon tetrachloride
Chlorobenzene
Ethylbenzene
MtBE
Methylene chloride
Tetrachloroethene
Toluene
Trichloroethene
cis-1,3-Dichloropropene
cis-1,2-Dichloroethene
trans-1,2-Dichloroethene
trans-1,3-Dichloropropene

1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane
1,1-Dichloroethane
1,1-Dichloroethene
1,2-Dichlorobenzene
1,2-Dichloroethane
1,2-Dichloropropane
o-Xylene
m-Xylene
p-Xylene
1,3-Dichlorobenzene
1,4-Dichlorobenzene

Technical Note

Tetrachloroethane and 1,1-Dichloroethane can degrade on contaminated purge & trap transfer lines or old traps.

Gasoline Oxygenate - MtBE

S-078

200 μ g/mL in MeOH

1 x 1 mL

S-078-10X

2.0 mg/mL in MeOH

1 x 1 mL

Methyl *t*-butyl ether (MtBE)



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-603-10X	1 x 1 mL
10 mg/mL each in Water	2 comps.
M-603-M-0.1X	1 x 1 mL
0.1 mg/mL each in MeOH:Water (90:10)	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
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-PFB	2-Nitrophenol-PFB
2-Chlorophenol-PFB	4-Nitrophenol-PFB
2,4-Dichlorophenol-PFB	Pentachlorophenol-PFB
2,4-Dimethylphenol-PFB	Phenol-PFB
2,4-Dinitrophenol-PFB	2,4,6-Trichlorophenol-PFB
2-Methyl-4,6-dinitrophenol-PFB	

Surrogate Standard

M-604-SS-PFB	1 x 1 mL
0.2 mg/mL each in MeOH	
2,4,6-Tribromophenol-PFB	

Method 604.1 Hexachlorophene & Dichlorophene by HPLC

M-604.1	1 x 1 mL
1.0 mg/mL each in ACN	2 comps.
Hexachlorophene	Dichlorophene

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- <i>n</i> -butyl phthalate
Dimethyl phthalate	Di- <i>n</i> -octyl phthalate
Diethyl phthalate	bis(2-Ethylhexyl)phthalate

† Subject to oxidation

Method 607 Nitrosamines by GC/NPD

M-607			1 x 1 mL
M-607-PAK			SAVE 5 x 1 mL
At stated conc. (mg/mL) in MeOH			3 comps.
N-Nitrosodimethylamine	0.2	N-Nitrosodi- <i>n</i> -propylamine	0.2
N-Nitrosodiphenylamine	0.4		

Method 608 Pesticides and PCBs by GC/ECD

Pesticide and Aroclor 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. (mg/mL) in MeOH				16 comps.	
Aldrin	0.1	4,4'-DDE	0.2	Endrin	0.2
α-BHC	0.1	4,4'-DDT	0.6	Endrin aldehyde	0.6
β-BHC	0.1	Dieldrin	0.2	Heptachlor	0.1
δ-BHC	0.1	Endosulfan I	0.2	Heptachlor epoxide	0.1
γ-BHC	0.1	Endosulfan II	0.2	(Isomer B)	
4,4'-DDD	0.6	Endosulfan sulfate	0.6		

M-001J				1 x 1 mL
<i>At stated conc. (mg/mL) in MeOH</i>				2 comps.
Chlordane (tech)	0.02	Toxaphene	0.20	

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. (mg/mL) in MeOH					17 comps.
Aldrin	0.02	4,4'-DDE	0.02	Endrin	0.10
α-BHC	0.02	4,4'-DDT	0.10	Endrin aldehyde	0.02
β-BHC	0.02	Dieldrin	0.02	Heptachlor	0.02
δ-BHC	0.02	Endosulfan I	0.02	Heptachlor epoxide	0.02
γ-BHC	0.02	Endosulfan II	0.10	(Isomer B)	
4,4'-DDD	0.10	Endosulfan sulfate	0.10	Methoxychlor	0.02

Pesticides

M-608-ASL	Alternate Source		1 x 1 mL
M-608-ASL-PAK			SAVE 5 x 1 mL
20 µg/mL each in MeOH			
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)

Alternate Source

EPA Method 608.3 Additional Compounds Set

Technical Mix - Aroclors (Polychlorinated Biphenyls)
Each at 1,000 µg/mL in Hexane **SAVE**

Aroclors #	Cat. No.	Unit	Cat. No.	PAK (5 x 1 mL)
Aroclor 1016	C-216S-H-10X	1 mL	C-216S-H-10X-PAK	
Aroclor 1221	C-221S-H-10X	1 mL	C-221S-H-10X-PAK	
Aroclor 1232	C-232S-H-10X	1 mL	C-232S-H-10X-PAK	
Aroclor 1242	C-242S-H-10X	1 mL	C-242S-H-10X-PAK	
Aroclor 1248	C-248S-H-10X	1 mL	C-248S-H-10X-PAK	
Aroclor 1254	C-254S-H-10X	1 mL	C-254S-H-10X-PAK	
Aroclor 1260	C-260S-H-10X	1 mL	C-260S-H-10X-PAK	
Aroclor 1262	C-262S-H-10X	1 mL	C-262S-H-10X-PAK	
Aroclor 1268	C-268S-H-10X	1 mL	C-268S-H-10X-PAK	



EPA Method 600 Series

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	Pentachloronitrobenzene
Chloropropylate	Propachlor
1,2-Dibromo-3-chloropropane	

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	cis-Permethrin
DCPA	trans-Permethrin
Dichloran	
Methoxychlor	

Certificate will reflect actual cis/trans ratio

Method 609 Nitroaromatics & Isophorone by GC/ECD/FID

Method 609 Nitroaromatic & Isophorone Set

M-609-R-SET 2 x 1 mL
 M-609A-R, M-609B-R

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. (µg/mL) in Acetone 4 comps.

Isophorone	100	2,4-Dinitrotoluene	20
Nitrobenzene	100	2,6-Dinitrotoluene	20

Method 610 PAHs by GC/FID or HPLC

M-610 1 x 1 mL
 At stated conc. (mg/mL) in MeOH:CH₂Cl₂ (50:50) 16 comps.
M-610A 1 x 1 mL
 At stated conc. (mg/mL) in MeOH:CH₂Cl₂ (50:50) 16 comps.
M-610-QC 1 x 1 mL
 At stated conc. (mg/mL) in ACN 16 comps.

Compound	M-610	M-610A	M-610-QC
Acenaphthene	0.1	1.0	0.1
Acenaphthylene	0.1	2.0	0.1
Anthracene	0.1	0.1	0.1
Benz[a]anthracene	0.1	0.1	0.01
Benz[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

Matrix Spiking Solution

M-610-MS 1 x 1 mL
M-610-MS-PAK SAVE 5 x 1 mL
 At stated conc. (mg/mL) in ACN 6 comps.

Benz[a]pyrene	0.5	2-Methylnaphthalene	5.0
Chrysene	0.5	Phenanthrene	0.5
1-Methylnaphthalene	5.0	Pyrene	0.5

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-Chloroisopropyl)ether	

Method 612 Chlorinated Hydrocarbons by GC/ECD

M-612 1 x 1 mL
 At stated conc. (µg/mL) in Isooctane 9 comps.

2-Chloronaphthalene	1	Hexachlorobutadiene	1
1,2-Dichlorobenzene	400	Hexachloroethane	1
1,3-Dichlorobenzene	200	Hexachlorocyclopentadiene	200
1,4-Dichlorobenzene	1	1,2,4-Trichlorobenzene	400
Hexachlorobenzene	40		

Method 613 2,3,7,8-TCDD by GC/MS

M-613 1 x 1 mL
M-613-PAK SAVE 5 x 1 mL
 10 µg/mL in Toluene

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 (50:50) 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 (50:50) 4 comps.

Dioxathion	Ethion
EPN	Terbufos

M-614.1-ASL 1 x 1 mL
 At stated conc. (µg/mL) in Hexane 4 comps.

Dioxathion	10	Ethion	100
EPN	200	Terbufos	4

Alternate Source

For additional formulations
 see Method 8310



Method 615 Chlorinated Herbicides in Wastewater by GC

Chlorinated Herbicides

Compound	Herbicide Acids 0.2 mg/mL in MeOH	Methyl Derivatives 0.2 mg/mL in Hexane	Unit
	Cat. No.	Cat. No.	
2,4-D	M-8150S-A-01	M-8150-01	1 mL
2,4-DB	M-8150S-A-02	M-8150-02	1 mL
2,4,5-T	M-8150S-A-03	M-8150-03	1 mL
2,4,5-TP	M-8150S-A-04	M-8150-04	1 mL
Dalapon	M-8150S-A-05	M-8150-05	1 mL
Dicamba	M-8150S-A-06	M-8150-06	1 mL
Dichlorprop	M-8150S-A-07	M-8150-07	1 mL
Dinoseb	M-8150S-A-08	M-8150-08	1 mL
MCPA (2.0 mg/mL)	M-8150S-A-09	M-8150-09	1 mL
MCPP (2.0 mg/mL)	M-8150S-A-10	M-8150-10	1 mL
Sets	M-8150A-SET	M-8150-SET	10 x 1 mL

Underivatized

M-8150A 1 x 1 mL
0.1 mg/mL in MeOH, except MCPA and MCPP 10 comps.

2,4-D	Dichlorprop	MCPP (10 mg/mL)
Dalapon	Dinoseb	2,4,5-TP
2,4-DB	MCPA (10 mg/mL)	2,4,5-T
Dicamba		

Methyl Derivatives

M-8150 1 x 1 mL
0.1 mg/mL in MeOH, except MCPA and MCPP 10 comps.

2,4-D methyl ester	Dinoseb methyl ester
Dalapon methyl ester	MCPA methyl ester (10 mg/mL)
2,4-DB methyl ester	MCPP methyl ester (10 mg/mL)
Dicamba methyl ester	2,4,5-TP methyl ester
Dichlorprop methyl ester	2,4,5-T methyl ester

Method 615 Underivatized Chlorinated Herbicides

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

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

Method 615 Methyl Derivatives of Chlorinated Herbicides

M-615-ASL 1 x 1 mL
M-615-ASL-PAK SAVE 5 x 1 mL
At stated conc. (µg/mL) in MeOH 10 comps.

2,4-D methyl ester	100	Dicamba methyl ester	10
2,4-DB methyl ester	100	Dichlorprop methyl ester	100
2,4,5-T methyl ester	10	Dinoseb methyl ester	50
2,4,5-TP methyl ester	10	MCPA methyl ester	10,000
Dalapon methyl ester	250	MCPP methyl ester	10,000

Method 617 Chlorinated Pesticides & PCBs by GC/ECD

Mix #1 - Analytes

Z-014C-R2 1 x 1 mL
Z-014C-R2-PAK SAVE 5 x 1 mL
2.0 mg/mL each in Hexane:Toluene (50:50) 18 comps.

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

Mix #2 - Analytes

M-617-2 1 x 1 mL
2.0 mg/mL each in Hexane:Toluene (50:50) 9 comps.

Captan	Dicofol	Pentachloronitrobenzene
Carbophenothion	Isodrin	Perthane
Dichloran	Mirex	Trifluralin

Chlordane (tech)

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



EPA Method 600 Series

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

Internal Standard

M-618-IS 1 x 1 mL

20 mg/mL in Isooctane

Bromoform

Method 619 Triazine Herbicides by GC/NPD

Triazine Herbicides

M-619-SET 11 x 1 mL
Each at 0.1 mg/mL in MeOH

M-619M 1 x 1 mL
0.1 mg/mL each in MeOH 11 comps.

Compound	Cat. No.	Unit	Compound	Cat. No.	Unit
Ametryn	M-619-01	1 mL	Secbumeton	M-619-07	1 mL
Atraton	M-619-02	1 mL	Simetryn	M-619-08	1 mL
Atrazine	M-619-03	1 mL	Simazine	M-619-09	1 mL
Prometon	M-619-04	1 mL	Terbutylazine	M-619-10	1 mL
Prometryne	M-619-05	1 mL	Terbutryn	M-619-11	1 mL
Propazine	M-619-06	1 mL			

Method 620 Diphenylamine by GC/NPD

Diphenylamine

M-620 1 x 1 mL

1.0 mg/mL each in MeOH

Diphenylamine

Method 622 Organophosphorus Pesticides by GC/NPD

Organophosphorus Pesticides

M-622-SET 27 x 1 mL

Each at 1000 µg/mL in Hexane, * Hexane:Acetone (95:5)

Azinphos methyl	EPN	Parathion ethyl
Bolstar (Sulprofos)	Ethoprop	Parathion methyl
Chlorpyrifos	Fensulfothion *	Phorate
Coumaphos	Fenthion	Ronnel
Demeton, O & S	Malathion	Stirophos
Diazinon	Merphos	Sulfotep
Dichlorvos	Mevinphos	TEPP
Dimethoate	Monocrotophos	Tokuthion
Disulfoton	Naled	Trichloronate

Method 624 Purgeables by GC/MS

Purgeables

M-624 1 x 1 mL
0.2 mg/mL each in MeOH 31 comps.

Benzene	trans-1,2-Dichloroethene
Bromodichloromethane	1,2-Dichloropropane
Bromoform	cis-1,3-Dichloropropene
Bromomethane	trans-1,3-Dichloropropene
Carbon tetrachloride	Ethylbenzene
Chlorobenzene	Methylene chloride
Chloroethane	1,1,2,2-Tetrachloroethane
2-Chloroethyl vinyl 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	
1,1-Dichloroethene	

Certificate will reflect actual
cis/trans ratio

Technical Note

Tetrachloroethane and 1,1-Dichloroethane can degrade on contaminated purge & trap transfer lines or old traps.

Surrogates

Each at 0.2 mg/mL in MeOH

Component	Cat. No.	Unit
Benzene-d ₆	M-624-SS-01	1 mL
Bromochloromethane	M-624-SS-02	1 mL
4-Bromofluorobenzene	M-624-SS-03	1 mL
2-Bromo-1-chloropropane	M-624-SS-04	1 mL
1,4-Dichlorobutane	M-624-SS-05	1 mL
1,2-Dichloroethane-d ₄	M-624-SS-06	1 mL
1,4-Difluorobenzene	M-624-SS-07	1 mL
Ethylbenzene-d ₁₀	M-624-SS-08	1 mL
Fluorobenzene	M-624-SS-09	1 mL
Pentafluorobenzene	M-624-SS-10	1 mL
1,2-Dichlorobenzene-d ₄	M-624-SS-11	1 mL
2-Bromochlorobenzene	M-624-SS-12	1 mL
4-Chlorofluorobenzene	M-624-SS-13	1 mL
a,a,a-Trichlorotoluene	M-624-SS-14	1 mL

Surrogate Standard

M-624-SS-M 1 x 1 mL
M-624-SS-M-PAK SAVE 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 SAVE 5 x 1 mL
20 mg/mL each in MeOH 3 comps.

Bromochloromethane	2-Bromo-1-chloropropane
1,4-Dichlorobutane	



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

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
Benz[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-Chloroisopropyl) 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-Nitroso-di- <i>n</i> -propylamine
1,2-Dichlorobenzene	Phenanthrene
1,3-Dichlorobenzene	Pyrene
1,4-Dichlorobenzene	1,2,4-Trichlorobenzene

Benzidine Analytes

Benzidine †	3,3'-Dichlorobenzidine †
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M-625-BN	1 x 1 mL
M-625-BN-PAK	SAVE 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	SAVE 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	SAVE 5 x 1 mL
2.0 mg/mL each in Benzene : CH ₂ Cl ₂ : ACN (40:40:20)	44 Base-Neutrals and 2 Benzidines

Base-Neutral Composite Set	
CLP-HC-BN-SET	2 x 1 mL
CLP-HC-BN-R, Z-014F	

Base-Neutral Mix

CLP-HC-BN-R	1 x 1 mL
CLP-HC-BN-R-PAK	SAVE 5 x 1 mL
2.0 mg/mL each in Benzene : CH ₂ Cl ₂ : ACN (40:40:20)	44 comps.

Benzidine Analytes

Z-014F	1 x 1 mL
2.0 mg/mL each in MeOH	2 comps.

Method 625 Modification Standard

M-625-MOD	1 x 1 mL
M-625-MOD-PAK	SAVE 5 x 1 mL
2.0 mg/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	α-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-Chloroisopropyl)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	

Technical Note

N-Nitrosodiphenylamine will decompose to form diphenylamine in a heated injection port.

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-Chlorophenyl phenyl ether
Benz[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

The above 4 standards can be combined for use in daily QA/QC, as a second source lot, or as spike and spike duplicate.

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	

† Subject to oxidation

Method 625 Semi-Volatiles continued on next page



EPA Method 600 Series

Method 625 Semi-Volatiles Analysis by GC/MS (continued)

Acid Extractables Mix

M-625A

M-625A-PAK

20 µg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
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
4,6-Dinitro-2-methylphenol	

Single Component Surrogates & Internal Standards

Base/Neutrals

Each at 0.2 mg/mL in CH₂Cl₂

Component	Cat. No.	Unit
Aniline-d ₅	M-625-01	1 mL
Anthracene-d ₁₀	M-625-02	1 mL
Benz[a]anthracene-d ₁₂	M-625-03	1 mL
Decafluorobiphenyl	M-625-04	1 mL
4,4'-Dibromobiphenyl	M-625-05	1 mL
4,4'-Dibromooctafluorobiphenyl	M-625-06	1 mL
2,2'-Difluorobiphenyl	M-625-07	1 mL
4-Fluoroaniline	M-625-08	1 mL
2-Fluorobiphenyl	M-625-09	1 mL
1-Fluoronaphthalene	M-625-10	1 mL
2-Fluoronaphthalene	M-625-11	1 mL
Naphthalene-d ₈	M-625-12	1 mL
Nitrobenzene-d ₅	M-625-13	1 mL
Phenanthrene-d ₁₀	M-625-14	1 mL
Pyridine-d ₅	M-625-15	1 mL

Acids

Each at 0.2 mg/mL in CH₂Cl₂

Component	Cat. No.	Unit
2-Fluorophenol	M-625-16	1 mL
Pentafluorophenol	M-625-17	1 mL
Phenol-d ₅	M-625-18	1 mL
2,4,6-Tribromophenol	M-625-19	1 mL
2-Chlorophenol-d ₄	M-625-20	1 mL

Pesticide Extractables Mix

M-625P

20 µg/mL each in MeOH

1 x 1 mL
11 comps.

Aldrin	Dieldrin
β-BHC	Endosulfan sulfate
δ-BHC	Endrin aldehyde
4,4'-DDD	Heptachlor
4,4'-DDE	Heptachlor epoxide (Isomer B)
4,4'-DDT	

GC/MS Calibration Standards

M-625C-SET

At stated conc. (µg/mL) in CH₂Cl₂

5 x 1 mL

Component	Cat. No.	Unit
Benzidine † (50)	M-625C-1	1 mL
Pentachlorophenol (25)	M-625C-2	1 mL
Decafluorotriphenylphosphine (DFTPP) (25)	M-625C-3	1 mL
Benzidine † (50) + DFTPP (25)	M-625C-4	1 mL
Pentachlorophenol (25) + DFTPP (25)	M-625C-5	1 mL

† Subject to oxidation

GC/MS Tuning Standards

M-625-TS

M-625-TS-PAK

50 µg/mL each in CH₂Cl₂

1 x 1 mL
SAVE 5 x 1 mL
4 comps.

M-625-TS-20X

M-625-TS-20X-PAK

1.0 mg/mL each in CH₂Cl₂

1 x 1 mL
SAVE 5 x 1 mL
4 comps.

Benzidine †	DFTPP
p,p'-DDT	Pentachlorophenol

CLP-TS

CLP-TS-PAK

50 µg/mL in CH₂Cl₂

1 x 1 mL
SAVE 5 x 1 mL

Perfluorokerosene

Multi-Component Analytes (Polychlorinated Biphenyls, Chlordane & Toxaphene)

Each at 1.0 mg/mL in Hexane

SAVE

Aroclors #	Cat. No.	Unit	Pack	5 x 1 mL
Aroclor 1016	C-216S-H-10X	1 mL	C-216S-H-10X-PAK	
Aroclor 1221	C-221S-H-10X	1 mL	C-221S-H-10X-PAK	
Aroclor 1232	C-232S-H-10X	1 mL	C-232S-H-10X-PAK	
Aroclor 1242	C-242S-H-10X	1 mL	C-242S-H-10X-PAK	
Aroclor 1248	C-248S-H-10X	1 mL	C-248S-H-10X-PAK	
Aroclor 1254	C-254S-H-10X	1 mL	C-254S-H-10X-PAK	
Aroclor 1260	C-260S-H-10X	1 mL	C-260S-H-10X-PAK	
Aroclor 1262	C-262S-H-10X	1 mL	C-262S-H-10X-PAK	
Aroclor 1268	C-268S-H-10X	1 mL	C-268S-H-10X-PAK	

Pesticides

Chlordane	P-017S-H-10X	1 mL	P-017S-H-10X-PAK
Toxaphene	P-093S-H-10X	1 mL	P-093S-H-10X-PAK

Chlordane and Toxaphene

M-001J

At stated conc. (mg/mL) in MeOH

1 x 1 mL
2 comps.

Chlordane	0.02	Toxaphene	0.20
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Polychlorinated Biphenyls

Aroclor Mix #1

M-001K

0.2 mg/mL each in MeOH

1 x 1 mL
4 comps.

Aroclor 1016	Aroclor 1248
Aroclor 1232	Aroclor 1260

Aroclor Mix #2

M-001L

0.2 mg/mL each in MeOH

1 x 1 mL
3 comps.

Aroclor 1221	Aroclor 1254
Aroclor 1242	

Internal Standard Mix

Z-014J

Z-014J-PAK

4.0 mg/mL each in CH₂Cl₂

1 x 1 mL
SAVE 5 x 1 mL
6 comps.

Acenaphthene-d ₁₀	Naphthalene-d ₈
Chrysene-d ₁₂	Perylene-d ₁₂
1,4-Dichlorobenzene-d ₄	Phenanthrene-d ₁₀



Method 625 Semi-Volatiles Analysis by GC/MS (continued)

The EPA procedures call for fused silica capillary column analysis of priority pollutants. The following mixtures are 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-Bromophenyl phenyl 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-Chloroisopropyl) ether	N-Nitrosodimethylamine
4-Chlorophenyl phenyl ether	N-Nitrosodi- <i>n</i> -propylamine
Diethyl phthalate	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	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 SAVE 5 x 1 mL
 2.0 mg/mL each in CH₂Cl₂ 4 comps.

Benzoic acid	4-Methylphenol
2-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	2-Methylnaphthalene
Benzyl alcohol	2-Nitroaniline
4-Chloroaniline	3-Nitroaniline
Dibenzofuran	4-Nitroaniline

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 †
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PAH Mix

Z-014G 1 x 1 mL
Z-014G-PAK SAVE 25 x 1 mL
 2.0 mg/mL each in CH₂Cl₂:Benzene (50:50) 16 comps.

Acenaphthene	Chrysene
Acenaphthylene	Dibenz[a,h]anthracene
Anthracene	Fluoranthene
Benz[a]anthracene	Fluorene
Benz[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 SAVE 5 x 1 mL
 2.0 mg/mL each in CH₂Cl₂:Benzene (50:50) 17 comps.

Acenaphthene	Chrysene
Acenaphthylene	Dibenz[a,h]anthracene
Anthracene	Fluoranthene
Benz[a]anthracene	Fluorene
Benz[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 SAVE 5 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	

Internal Standard Mix

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

Acenaphthene-d ₁₀	Naphthalene-d ₈
Chrysene-d ₁₂	Perylene-d ₁₂
1,4-Dichlorobenzene-d ₄	Phenanthrene-d ₁₀

Method 625 Priority Pollutant Set

Z-014R-SET	9 x 1 mL	Z-014R-1-SET	9 x 1 mL	Z-014R-2-SET	7 x 1 mL	Z-014R-3-SET	7 x 1 mL
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				

† Subject to oxidation



EPA Method 600 Series

Method 625 Semi-Volatiles Analysis by GC/MS (continued)

Pesticides - Mix #1

Z-014C

Z-014C-PAK

2.0 mg/mL each in Toluene:Hexane (50:50)

1 x 1 mL
SAVE 5 x 1 mL
16 comps.

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

Pesticides - Mix #2

Z-014C-R

Z-014C-R-PAK

2.0 mg/mL each in Toluene:Hexane (50:50)

1 x 1 mL
SAVE 5 x 1 mL
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	(Isomer B)
γ-Chlordane	Endosulfan sulfate	Methoxychlor

Pesticides - Mix #3

Z-014C-R2

Z-014C-R2-PAK

2.0 mg/mL each in Toluene:Hexane (50:50)

1 x 1 mL
SAVE 5 x 1 mL
18 comps.

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

Tuning Standards

M-625-TS

M-625-TS-PAK

50 µg/mL each in CH₂Cl₂

1 x 1 mL
SAVE 5 x 1 mL
4 comps.

Benzidine †	DFTPP
p,p'-DDT	Pentachlorophenol

CLP-TS

CLP-TS-PAK

50 µg/mL in CH₂Cl₂

Perfluorokerosene

1 x 1 mL
SAVE 5 x 1 mL

EPA Method 625 GC/MS Calibration Standards

M-625C-SET

At stated conc. (µg/mL) in CH₂Cl₂

5 x 1 mL

Component	Cat. No.	Unit
Benzidine † (50)	M-625C-1	1 mL
Pentachlorophenol (25)	M-625C-2	1 mL
Decafluorotriphenylphosphine (DFTPP) (25)	M-625C-3	1 mL
Benzidine † (50) + DFTPP (25)	M-625C-4	1 mL
Pentachlorophenol (25) + DFTPP (25)	M-625C-5	1 mL

† Subject to oxidation

Method 627 Dinitroaniline Pesticides by GC/ECD

Dinitroaniline Pesticide Mixes

M-627

1.0 mg/mL each in MeOH

1 x 1 mL
4 comps.

Ethalfuralin	Tolban (Profluralin)
Isopropalin	Trifluralin

M-627-R

1.0 mg/mL each in MeOH

1 x 1 mL
5 comps.

Benfluralin	Tolban (Profluralin)
Ethalfuralin	Trifluralin
Isopropalin	

Method 630 Dithiocarbamate Pesticide in Waste Water by GC

M-630-1-0.1X

0.1 mg/mL in ACN

1 x 1 mL

Ziram

Method 632 Carbamates & Urea Pesticides in Waste Water by HPLC

Carbamates and Urea Pesticides in Waste Water

M-632-SET

Each at 0.1 mg/mL in ACN

21 x 1 mL

M-632M

0.1 mg/mL each in ACN

1 x 1 mL
21 comps.

M-632M-10X

1.0 mg/mL each in ACN

1 x 1 mL
21 comps.

	Cat. No.	Unit		Cat. No.	Unit
Aminocarb	M-632-01	1 mL	Methomyl	M-632-12	1 mL
Barban	M-632-02	1 mL	Mexacarbate	M-632-13	1 mL
Carbaryl	M-632-03	1 mL	Monuron	M-632-14	1 mL
Carbofuran	M-632-04	1 mL	Monuron TCA	M-632-15	1 mL
Chlorpropham	M-632-05	1 mL	Neburon	M-632-16	1 mL
Diuron	M-632-06	1 mL	Oxamyl	M-632-17	1 mL
Fenuron	M-632-07	1 mL	Propham	M-632-18	1 mL
Fenuron TCA	M-632-08	1 mL	Propoxur	M-632-19	1 mL
Fluometuron	M-632-09	1 mL	Siduron	M-632-20	1 mL
Linuron	M-632-10	1 mL	Swep	M-632-21	1 mL
Methiocarb	M-632-11	1 mL			

Method 632.1 Carbamates & Amides in Waste Water by HPLC

Carbamates & Amides in Waste Water

M-632.1-SET

Each at 0.1 mg/mL in ACN

4 x 1 mL

	Cat. No.	Unit		Cat. No.	Unit
Vacor	M-632.1-1	1 mL	Napropamide	M-632.1-3	1 mL
Propanil	M-632.1-2	1 mL	Carbaryl	M-632.1-4	1 mL

Method 633 Organonitrogen Pesticides by GC/NPD

Organonitrogen Pesticides Mix

M-633

0.1 mg/mL each in MeOH

1 x 1 mL
6 comps.

Bromacil	Hexazinone	Terbacil
Deet	Metribuzin	Triadimefon



HPLC 600's Additional Methods for Pesticides in Waste Water by HPLC

Method	Each at 0.1 mg/mL in ACN	Cat. No.	Unit	Method	Each at 0.1 mg/mL in ACN	Cat. No.	Unit
604.1	Hexachlorophene & Dichlorophene	M-604.1	1 mL	639	Bendiocarb	M-639	1 mL
629	Cyanazine	M-629	1 mL	640	Mercaptobenzothiazole	M-640	1 mL
631	Carbendazim (0.1 mg/mL in MeOH)	M-631-R1	1 mL	641	Thiabendazole	M-641	1 mL
635	Rotenone	M-635	1 mL	642	Biphenyl & o-Phenylphenol	M-642	1 mL
636	Bensulide	M-636	1 mL	643	Bentazon (Basagran)	M-643	1 mL
638	Oryzalin	M-638	1 mL	644	Picloram	M-644	1 mL

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	Molinate	Vernolate

Internal Standard

M-634-IS 1 x 1 mL
1.0 mg/mL in MeOH
Carbazole

Method 645 Amino Pesticides & Lethane by GC/NPD

Amino Pesticides Mix

M-645 1 x 1 mL
1.0 mg/mL each in Hexane:Acetone (80:20)
6 comps.

Alachlor	Diphenamid	Lethane
Butachlor	Fluridone	Norflurazon

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. (µg/mL) in Hexane
9 comps.

2-Chlorobiphenyl	50	2,2',4,4',5,6'-Hexachlorobiphenyl	100
2,3-Dichlorobiphenyl	50	2,2',3,4',5,6,6'-Heptachlorobiphenyl	150
2,4,5-Trichlorobiphenyl	50	2,2',3,3',4,5',6,6'-Octachlorobiphenyl	150
2,2',4,6-Tetrachlorobiphenyl	100	Decachlorobiphenyl	250
2,2',3,4,5'-Pentachlorobiphenyl	100		

Internal Standard

M-680B 1 x 1 mL
250 µg/mL in Toluene
Chrysene-d₁₂

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 PCBs 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.

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	deca	209	0.144	0.150

Pesticide Mix

M-680P 1 x 1 mL
M-680P-PAK SAVE 5 x 1 mL
At stated conc. (µg/mL) in Toluene:Hexane (50:50)
22 comps.

Aldrin	1000	Endosulfan I	2000
α-BHC	1000	Endosulfan II	2000
β-BHC	1000	Endosulfan sulfate	1000
γ-BHC	1000	Endrin	1000
δ-BHC	1000	Endrin aldehyde	1000
α-Chlordane	1000	Endrin ketone	1000
γ-Chlordane	1000	Heptachlor	1000
4,4'-DDD	1000	Heptachlor epoxide (Isomer B)	1000
4,4'-DDE	1000	Methoxychlor	1000
4,4'-DDT	1000	cis-Nonachlor	1000
Dieldrin	1000	trans-Nonachlor	1000

Pesticide Mid-Level Check

M-680P-MLC 1 x 1 mL
M-680P-MLC-PAK SAVE 5 x 1 mL
At stated conc. (µg/mL) Toluene:Hexane (50:50)
21 comps.

Aldrin	1000	Endosulfan I	2000
α-BHC	1000	Endosulfan II	2000
β-BHC	1000	Endosulfan sulfate	1000
γ-BHC	1000	Endrin	1000
δ-BHC	1000	Endrin ketone	1000
α-Chlordane	1000	Heptachlor	1000
γ-Chlordane	1000	Heptachlor epoxide (Isomer B)	1000
4,4'-DDD	1000	Methoxychlor	1000
4,4'-DDE	1000	cis-Nonachlor	1000
4,4'-DDT	1000	trans-Nonachlor	1000
Dieldrin	1000		

Technical Note

The EPA has designated congener #77, 104, and 208 for use in quantifying PCBs by GC/MS. All response factors are calculated using Chrysene-d₁₂, which is also included in the set.

Internal Standards

M-680-IS 1 x 1 mL
M-680-IS-PAK SAVE 5 x 1 mL
75 µg/mL each in Toluene:Hexane (50:50)
M-680-IS-10X 1 x 1 mL
M-680-IS-10X-PAK SAVE 5 x 1 mL
750 µg/mL each in Hexane:CH₂Cl₂ (50:50)
Chrysene-d₁₂ Phenanthrene-d₁₀

Tuning Standard

M-680-TS 1 x 1 mL
M-680-TS-PAK SAVE 5 x 1 mL
10 µg/mL in CH₂Cl₂
Decafluorotriphenylphosphine (DFTPP)

Retention Time Calibration Standard

M-680-RT 1 x 1 mL
M-680-RT-PAK SAVE 5 x 1 mL
At stated conc. (µg/mL) in Hexane
3,3',4,4'-Tetrachlorobiphenyl 100 2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl 200
2,2',4,6,6'-Pentachlorobiphenyl 100

The Toxicity Characteristic Leaching Procedure (TCLP) is designed to determine the mobility of both organic and inorganic analytes present in liquid, solid, and multiphasic wastes. TCLP simulates what happens to a waste product during leaching.

Method 1311 Toxicity Characteristic Leaching Procedure (TCLP)

Volatile Spiking Mix

TCLP-VOC

5.0 mg/mL each in MeOH, except 2-Butanone

1 x 1 mL
11 comps.

Benzene	Chloroform	Tetrachloroethene
2-Butanone (10 mg/mL)	1,4-Dichlorobenzene	Trichloroethene
Carbon tetrachloride	1,2-Dichloroethane	Vinyl chloride
Chlorobenzene	1,1-Dichloroethene	

TCLP-BNA

TCLP-BNA-PAK

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL
SAVE 5 x 1 mL
13 comps.

<i>o</i> -Cresol	Hexachlorobenzene	Pentachlorophenol
<i>m</i> -Cresol	Hexachlorobutadiene	Pyridine
<i>p</i> -Cresol	Hexachloroethane	2,4,5-Trichlorophenol
1,4-Dichlorobenzene	Nitrobenzene	2,4,6-Trichlorophenol
2,4-Dinitrotoluene		

Semi-Volatile Spiking Set

TCLP-BNA-SET

2 x 1 mL
TCLP-A, TCLP-BN

TCLP-A

TCLP-A-PAK

2.0 mg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
6 comps.

<i>o</i> -Cresol	<i>p</i> -Cresol	2,4,5-Trichlorophenol
<i>m</i> -Cresol	Pentachlorophenol	2,4,6-Trichlorophenol

TCLP-BN

TCLP-BN-PAK

2.0 mg/mL each in Acetone

1 x 1 mL
SAVE 5 x 1 mL
7 comps.

1,4-Dichlorobenzene	Hexachlorobutadiene	Nitrobenzene
2,4-Dinitrotoluene	Hexachloroethane	Pyridine
Hexachlorobenzene		

TCLP-PES

TCLP-PES-PAK

2.0 mg/mL each in MeOH, except Toxaphene

1 x 1 mL
SAVE 5 x 1 mL
7 comps.

Chlordane (tech)	Heptachlor epoxide (Isomer B)	Methoxychlor
Endrin	Lindane	Toxaphene (4.0 mg/mL)
Heptachlor		

Pesticide Spiking Set

TCLP-PES-1-2-SET

2 x 1 mL
CLP-PES-1, TCLP-PES-2

Pesticide Spiking Mixes

TCLP-PES-1

2.0 mg/mL each in MeOH

1 x 1 mL
5 comps.

Endrin	Heptachlor epoxide (Isomer B)	Methoxychlor
Heptachlor	Lindane	

TCLP-PES-2

TCLP-PES-2-PAK

At stated conc. (mg/mL) in MeOH

1 x 1 mL
SAVE 5 x 1 mL
2 comps.

Chlordane 2.0	Toxaphene 4.0
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Herbicide, PFB Derivatives

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
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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 Mixes

TCLP-HERB

TCLP-HERB-PAK

2.0 mg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
2 comps.

2,4-D	2,4,5-TP
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TCLP-HERB-ME

TCLP-HERB-ME-PAK

2.0 mg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
2 comps.

2,4-D methyl ester	2,4,5-TP methyl ester
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Method 1311 TCLP Regulatory Level Mixtures

Volatiles

TCLP-QC

At stated conc. (µg/mL) in MeOH

1 x 1 mL
10 comps.

Benzene	5	1,2-Dichloroethane	5
2-Butanone	2000	1,1-Dichloroethene	7
Carbon tetrachloride	5	Tetrachloroethene	7
Chlorobenzene	1000	Trichloroethene	5
Chloroform	60	Vinyl chloride	2

Semi-Volatiles

TCLP-BNA-QC

At stated conc. (µg/mL) in CH₂Cl₂

1 x 1 mL
13 comps.

<i>o</i> -Cresol	2000	Hexachloroethane	30
<i>m</i> -Cresol	2000	Nitrobenzene	20
<i>p</i> -Cresol	2000	Pentachlorophenol	1000
1,4-Dichlorobenzene	75	Pyridine	50
2,4-Dinitrotoluene	1.3	2,4,5-Trichlorophenol	4000
Hexachlorobenzene	1.3	2,4,6-Trichlorophenol	20
Hexachlorobutadiene	5		

Pesticide Set

TCLP-PES-1-2-QC-SET

2 x 1 mL
TCLP-PEST-1-QC, TCLP-PEST-2-QC

TCLP-PES-1-QC

At stated conc. (µg/mL) in MeOH

1 x 1 mL
5 comps.

Endrin	0.2	Lindane	4.0
Heptachlor	0.4	Methoxychlor	100
Heptachlor epoxide (Isomer B)	0.04		

TCLP-PES-2-QC

At stated conc. (µg/mL) in MeOH

1 x 1 mL
2 comps.

Chlordane 0.3	Toxaphene 5.0
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Herbicides

TCLP-HERB-ME-QC

TCLP-HERB-ME-QC-PAK

At stated conc. (µg/mL) in MeOH

1 x 1 mL
SAVE 5 x 1 mL
2 comps.

2,4-D methyl ester	106.3	2,4,5-TP methyl ester	10.5
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EPA 1600 Series Contents

1613	Dioxins & Furans (HRGC/HRMS)	1657	Organo Phosphorus Pesticides	1668	209 PCB Congeners (GC/MS)
1614	Polybrominated diphenyl ethers	1658	Phenoxy - acid Herbicides	1668A /	Combined Congeners
1618	Organochloride & Phosphorus Pesticides	1659	Dazomet	1668	
1621	Adsorbable Organic Fluorine (AOF) (CIC)	1664	Oil and Grease	1668A	Level of Chlorination Calibration
1628	Polychlorinated Biphenyl (PCB)	1665	PMI Semi-Volatiles (GC/MS)	1671	PMI Semi-Volatiles (GC/FID)
1633	Organo Halide Pesticides	1666A	PMI Volatiles (GC/MS)	1673	PEG-600 (HPLC)
1634	6PPD-Quinone (SPE & LC-MS/MS)	1667A	PMI Pollutants (HPLC)		

Method 1613 Dioxins & Furans by HRGC/HRMS

Method 1613 Precision and Recovery Standard

M-1613-PAR Bold (-04)

M-1613-PAR-PAK

At stated conc. (ng/mL) in Nonane

1 x 1 mL
SAVE 5 x 1 mL
17 comps.

Calibration Set

M-1613-CAL-SET

5 x 1 mL (M-1613-CAL-01, -02, -03, -04, -05)

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

Solution for determining the conc. of the two most toxic isomers.

2,3,7,8 Isomers Only Mix

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

Method 1614 Bromodiphenyl in Water, Soil, Sediment and Tissue by HRGC/HRMS

PBDEs Standard Solution for Accuracy and Precision

At stated conc. in Isooctane
39 comps.

BDE-AAP-A

1 mL
(ng/mL)

BDE-AAP-A-15X

1 mL
(µg/mL)

1	2-Bromodiphenyl ether	100	1.5
2	3-Bromodiphenyl ether	100	1.5
3	4-Bromodiphenyl ether	100	1.5
7	2,4-Dibromodiphenyl ether	100	1.5
8	2,4'-Dibromodiphenyl ether	100	1.5
10	2,6-Dibromodiphenyl ether	100	1.5
11	3,3'-Dibromodiphenyl ether	100	1.5
12	3,4-Dibromodiphenyl ether	100	1.5
13	3,4'-Dibromodiphenyl ether	100	1.5
15	4,4'-Dibromodiphenyl ether	100	1.5
17	2,2',4,-Tribromodiphenyl ether	100	1.5
25	2,3',4-Tribromodiphenyl ether	100	1.5
28	2,4,4'-Tribromodiphenyl ether	100	1.5
30	2,4,6-Tribromodiphenyl ether	100	1.5
32	2,4',6-Tribromodiphenyl ether	100	1.5
33	2',3,4-Tribromodiphenyl ether	100	1.5
35	3,3',4-Tribromodiphenyl ether	100	1.5
37	3,4,4'-Tribromodiphenyl ether	100	1.5
47	2,2',4,4'-Tetrabromodiphenyl ether	100	1.5
49	2,2',4,5'-Tetrabromodiphenyl ether	100	1.5
66	2,3',4,4'-Tetrabromodiphenyl ether	100	1.5
71	2,3',4',6-Tetrabromodiphenyl ether	100	1.5
75	2,4,4',6-Tetrabromodiphenyl ether	100	1.5
77	3,3',4,4'-Tetrabromodiphenyl ether	100	1.5
85	2,2',3,4,4'-Pentabromodiphenyl ether	150	2.25
99	2,2',4,4',5-Pentabromodiphenyl ether	150	2.25
100	2,2',4,4',6-Pentabromodiphenyl ether	150	2.25
116	2,3,4,5,6-Pentabromodiphenyl ether	150	2.25
118	2,3',4,4',5-Pentabromodiphenyl ether	150	2.25
119	2,3',4,4',6-Pentabromodiphenyl ether	150	2.25
126	3,3',4,4',5-Pentabromodiphenyl ether	150	2.25
138	2,2',3,4,4',5'-Hexabromodiphenyl ether	200	3.0
153	2,2',4,4',5,5'-Hexabromodiphenyl ether	200	3.0
154	2,2',4,4',5,6'-Hexabromodiphenyl ether	200	3.0
155	2,2',4,4',6,6'-Hexabromodiphenyl ether	200	3.0
166	2,3,4,4',5,6-Hexabromodiphenyl ether	200	3.0
181	2,2',3,4,4',5,6-Heptabromodiphenyl ether	250	3.75
183	2,2',3,4,4',5',6-Heptabromodiphenyl ether	250	3.75
190	2,3,3',4,4',5,6-Heptabromodiphenyl ether	250	3.75

Commonly Occurring PBDE Congeners for Precision and Recovery

BDE-COC

At stated conc. (µg/mL) in Isooctane:Toluene (97.5:2.5)

1 x 1 mL
14 comps.

17	2,2',4,-Tribromodiphenyl ether	5
28	2,4,4'-Tribromodiphenyl ether	5
47	2,2',4,4'-Tetrabromodiphenyl ether	5
66	2,3',4,4'-Tetrabromodiphenyl ether	5
71	2,3',4',6-Tetrabromodiphenyl ether	5
85	2,2',3,4,4'-Pentabromodiphenyl ether	5
99	2,2',4,4',5-Pentabromodiphenyl ether	5
100	2,2',4,4',6-Pentabromodiphenyl ether	5
138	2,2',3,4,4',5'-Hexabromodiphenyl ether	5
153	2,2',4,4',5,5'-Hexabromodiphenyl ether	5
154	2,2',4,4',5,6'-Hexabromodiphenyl ether	5
183	2,2',3,4,4',5',6-Heptabromodiphenyl ether	5
190	2,3,3',4,4',5,6-Heptabromodiphenyl ether	5
209	Decabromodiphenyl ether	25

PBDE Congeners of Primary Interest

BDE-CSM

At stated conc. (µg/mL) in Isooctane:Toluene (80:20)

1 x 1 mL
8 comps.

28	2,4,4'-Tribromodiphenyl ether	20
47	2,2',4,4'-Tetrabromodiphenyl ether	20
99	2,2',4,4',5-Pentabromodiphenyl ether	20
100	2,2',4,4',6-Pentabromodiphenyl ether	20
153	2,2',4,4',5,5'-Hexabromodiphenyl ether	20
154	2,2',4,4',5,6'-Hexabromodiphenyl ether	20
183	2,2',3,4,4',5',6-Heptabromodiphenyl ether	20
209	Decabromodiphenyl ether	200

Technical Note

Responding to the need for an analytical method for 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.

Method 1614 Bromodiphenyl in Water, Soil, Sediment and Tissue by HRGC/HRMS (continued)

PBDE Congeners of Primary Interest

Calibration Mix

BDE-CM

At stated conc. (µg/mL) in Isooctane

1 x 1 mL

8 comps.

28	2,4,4'-Tribromodiphenyl ether	2.5
47	2,2',4,4'-Tetrabromodiphenyl ether	2.5
99	2,2',4,4',5-Pentabromodiphenyl ether	2.5
100	2,2',4,4',6-Pentabromodiphenyl ether	2.5
153	2,2',4,4',5,5'-Hexabromodiphenyl ether	2.5
154	2,2',4,4',5,6'-Hexabromodiphenyl ether	2.5
183	2,2',3,4,4',5,6-Heptabromodiphenyl ether	2.5
209	Decabromodiphenyl ether	25

Matrix Spiking Solution

BDE-MS

At stated conc. (ng/mL) in Isooctane

1 x 1 mL

8 comps.

28	2,4,4'-Tribromodiphenyl ether	1
47	2,2',4,4'-Tetrabromodiphenyl ether	1
99	2,2',4,4',5-Pentabromodiphenyl ether	1
100	2,2',4,4',6-Pentabromodiphenyl ether	1
153	2,2',4,4',5,5'-Hexabromodiphenyl ether	1
154	2,2',4,4',5,6'-Hexabromodiphenyl ether	1
183	2,2',3,4,4',5,6-Heptabromodiphenyl ether	1
209	Decabromodiphenyl ether	10

PBDEs in Method 1614

BDE-EPA-SET

Each 50 µg/mL in Isooctane

8 x 1 mL

8 comps.

28	2,4,4'-Tribromodiphenyl ether	1
47	2,2',4,4'-Tetrabromodiphenyl ether	1
99	2,2',4,4',5-Pentabromodiphenyl ether	1
100	2,2',4,4',6-Pentabromodiphenyl ether	1
153	2,2',4,4',5,5'-Hexabromodiphenyl ether	1
154	2,2',4,4',5,6'-Hexabromodiphenyl ether	1
183	2,2',3,4,4',5,6-Heptabromodiphenyl ether	1
209	Decabromodiphenyl ether	10

Method 1618 Organo-halide, Organo-phosphorus Pesticides and Phenoxyacid Herbicides by GC

Method 1618 was developed 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. With wide bore GC columns to analyze for organo-halide and organo-phosphorus pesticides, phenoxy-acid herbicides and herbicide esters, PCBs and other compounds amenable to extraction and analysis

Organochlorine Pesticides

M-1618-1

M-1618-1-PAK

At stated conc. (ng/mL) in Isooctane

1 x 1 mL

SAVE 5 x 1 mL

14 comps.

Aldrin	100	Endosulfan II	200
Captan	200	Endrin aldehyde	100
Chlorobenzilate	500	Heptachlor	100
Diallate	250	Heptachlor epoxide (Isomer B)	100
p,p'-DDE	200	Lindane	100
p,p'-DDT	20	Methoxychlor	200
Endosulfan I	200	Isodrin	100

M-1618-2

At stated conc. (ng/mL) in Isooctane

1 x 1 mL

16 comps.

α-BHC	100	Dichlone	100
β-BHC	100	Dieldrin	100
δ-BHC	100	Endrin	100
α-Chlordane	100	Endosulfan sulfate	100
γ-Chlordane	100	Endrin ketone	100
Carbophenothion	1000	Mirex	100
Captafol	200	PCNB	100
p,p'-DDD	100	Trifluralin	200

Organophosphate Pesticides

M-1618-3

At stated conc. (ng/mL) in Isooctane

1 x 1 mL

19 comps.

Azinphos methyl	100	Merphos	200
Coumaphos	5	Methyl parathion	100
Diazinon	100	Malathion	100
Dichlorvos	50	Phorate	100
Dimethoate	100	Ronnel	100
EPN	100	Sulprofos	50
Ethyl parathion	100	Terbufos	100
Ethoprop	100	Tetrachlorvinphos	100
Ethyl azinphos	100	Trichlorofon	100
Fensulfthion	200		

M-1618-4

At stated conc. (ng/mL) in Isooctane

1 x 1 mL

16 comps.

Chlorfenvinphos	50	Ethion	100
Chlorpyrifos	50	Famphur	200
Chlorpyrifos methyl	100	Fenthion	100
Crotoxyphos	200	Leptophos	100
Dichlorofenthion	100	Mevinphos	100
Demeton (mixed isomers)	400	Naled	100
Dioxathion	600	Phosmet	200
Disulfoton	100	Sulfotep	50

Phenoxyacid Herbicides

M-8150M

M-8150M-PAK

20 µg/mL each in Hexane

1 x 1 mL

SAVE 5 x 1 mL

8 comps.

2,4-D methyl ester	Dalapon methyl ester
2,4-DB methyl ester	Dicamba methyl ester
2,4,5-T methyl ester	Dichlorprop methyl ester
2,4,5-TP methyl ester	Dinoseb methyl ester

M-8150M-2

M-8150M-2-PAK

2.0 mg/mL in Hexane

1 x 1 mL

SAVE 5 x 1 mL

2 comps.

MCPA methyl ester	MCPP methyl ester
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Surrogate Standards

Organochlorine Pesticide

M-1618-SS

2 µg/mL in Acetone

1 x 1 mL

Dibutylchlorendate

Organophosphate Pesticide

M-1618-SP

2 µg/mL each in Acetone

1 x 1 mL

2 comps.

Tributyl phosphate	Triphenyl phosphate
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Phenoxyacid Herbicide

M-1618-SA

2 µg/mL in Acetone

1 x 1 mL

2,4-Dichlorophenylacetic acid

Decomposition Solution

M-1618D

M-1618D-PAK

At stated conc. (µg/mL) in Acetone

1 x 1 mL

SAVE 5 x 1 mL

2 comps.

p,p'-DDT	2.0	Endrin	1.0
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GPC Calibration Solution

M-1618-GP-5ML

At stated conc. (mg/mL) in Acetone

1 x 5 mL

5 comps.

Corn oil	300.0	Perylene	0.1
bis(2-Ethylhexyl)phthalate	15.0	Sulfur	0.5
Pentachlorophenol	1.4		

SPE Cartridge Calibration Solution

M-1618-SE

0.1 µg/mL in Acetone

1 x 1 mL

2,4,6-Trichlorophenol

Method 1621 Adsorbable Organic Fluorine (AOF) by CIC**Method 1621 Fluorine Working Standard****M-1621-WS-1**

100 µg/mL in Water

Fluoride

1 x 1 mL

Adsorbable Organic Fluorine Standard (AOF)**AOF-001S**

100 µg/mL in MeOH

4-Fluorobenzoic acid

1 x 1 mL

Method 1634 6PPD-Quinone by LC-MS/MS**Internal Standard****M-1634**

100 µg/mL each in ACN

6PPD-quinone

1 x 1 mL

Internal Standard**M-1634-IS**

100 µg/mL each in ACN

6PPD-quinone-d₅

1 x 1 mL

Method 1653 Chlorinated Phenolics in Pulp and Paper Effluents by GC/MS

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

4 x 1 mL

M-1653A, M-1653B, M-1653C, M-1653D-AC

M-1653A-D-R2-SET

4 x 1 mL

M-1653A-R, M-1653B-R, M-1653C-R, M-1653D-R

M-1653A**M-1653A-PAK**

0.1 mg/mL each in MeOH

1 x 1 mL

SAVE 5 x 1 mL

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

0.1 mg/mL each in MeOH

1 x 1 mL

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

0.1 mg/mL each in MeOH

1 x 1 mL

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

0.1 mg/mL each in Acetone

1 x 1 mL

6 comps.

5-Chlorovanillin	2-Chlorosyringaldehyde
6-Chlorovanillin	2,6-Dichlorosyringaldehyde
5,6-Dichlorovanillin	Trichlorosyringol

Internal Standard**M-1653-IS**

1.0 mg/mL in MeOH

1 x 1 mL

M-1653-IS-R

1.0 mg/mL in Acetone

1 x 1 mL

3,4,5-Trichlorophenol

M-1653A-R

At stated conc. (µg/mL) in Acetone

1 x 1 mL

7 comps.

4-Chlorophenol	25	2,4,6-Trichlorophenol	50
2,4-Dichlorophenol	50	2,3,4,6-Tetrachlorophenol	50
2,6-Dichlorophenol	50	Pentachlorophenol	100
2,4,5-Trichlorophenol	50		

M-1653B-R

At stated conc. (µg/mL) in Acetone

1 x 1 mL

8 comps.

4-Chloroguaiacol	25	3,4,5-Trichloroguaiacol	50
3,4-Dichloroguaiacol	50	3,4,6-Trichloroguaiacol	50
4,5-Dichloroguaiacol	50	4,5,6-Trichloroguaiacol	50
4,6-Dichloroguaiacol	50	Tetrachloroguaiacol	100

M-1653C-R

At stated conc. (µg/mL) in Acetone

1 x 1 mL

7 comps.

4-Chlorocatechol	25	3,4,5-Trichlorocatechol	100
3,4-Dichlorocatechol	50	3,4,6-Trichlorocatechol	100
3,6-Dichlorocatechol	50	Tetrachlorocatechol	100
4,5-Dichlorocatechol	50		

M-1653D-R

At stated conc. (µg/mL) in Acetone

1 x 1 mL

6 comps.

5-Chlorovanillin	50	2-Chlorosyringaldehyde	50
6-Chlorovanillin	50	2,6-Dichlorosyringaldehyde	100
5,6-Dichlorovanillin	100	Trichlorosyringol	50

US EPA Pulp, Paper & Paperboard Cluster Rule**M-PAPCLUS****M-PAPCLUS-PAK**

10 mg/mL each in Water

1 x 1 mL

SAVE 5 x 1 mL

4 comps.

Methanol	Propionaldehyde
Acetaldehyde	Methyl ethyl ketone

Instrument Performance Check Solution**M-1653-TS**

50 µg/mL in Acetone

1 x 1 mL

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, as well as other compounds amenable to extraction and analysis by wide-bore capillary column GC with a HSD.

GPC Calibration Solution

M-1600-GPC-5ML

At stated conc. (mg/mL) in CH_2Cl_2 1 x 5 mL
5 comps.

Corn oil	300	Perylene	0.1
bis(2-Ethylhexyl)phthalate	15	Sulfur	0.5
Pentachlorophenol	1.4		

Decomposition Test Solution

M-1656-DS

At stated conc. (µg/mL) in Isooctane

1 x 1 mL
2 comps.

4,4'-DDT	2	Endrin	1
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Surrogate Spiking Solutions

CLP-PES-A

0.2 mg/mL in Acetone

1 x 1 mL

Dibutylchlorendate

CLP-032-R

0.2 mg/mL each in Acetone

1 x 1 mL
2 comps.

Decachlorobiphenyl

Tetrachloro-*m*-xylene

CLP-034

0.2 mg/mL each in Acetone

1 x 1 mL
2 comps.

Dibutylchlorendate

Tetrachloro-*m*-xylene

Calibration Solutions & Suggested Calibration Groups

Calibration Group 1

M-1656-01-CAL-SET

At stated conc. (ng/mL) in Isooctane

3 x 1 mL
14 comps.

Components	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
Captan	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 (<i>cis</i> & <i>trans</i>) *200	1,000	4,000	
Tetrachloro- <i>m</i> -xylene	5	25	100

Certificate will reflect actual *cis/trans* ratio

Calibration Group 2

M-1656-02-CAL-SET

At stated conc. (ng/mL) in Isooctane

3 x 1 mL
11 comps.

Components	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
Dichloro	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

At stated conc. (ng/mL) in Isooctane

3 x 1 mL
10 comps.

Components	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 (Isomer B)	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

At stated conc. (ng/mL) in Isooctane

3 x 1 mL
10 comps.

Components	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
Terbutylazine	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

At stated conc. (ng/mL) in Isooctane

3 x 1 mL
8 comps.

Components	Low (1X)	Medium (5X)	High (20X)
α-Chlordane	10	50	200
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

At stated conc. (ng/mL) in Isooctane

3 x 1 mL
9 comps.

Components	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

At stated conc. (ng/mL) in Isooctane

3 x 1 mL
13 comps.

Components	Low (1X)	Medium (5X)	High (20X)
Carbophenothion	80	400	1,600
Chloroneb	300	1,500	6,000
Chloropropylate	200	1,000	4,000
1,2-Dibromo-3- chloropropane	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

Calibration Solution Set

M-1656-CAL-SET 7 x (3 x 1 mL)

M-1656-01-CAL-SET, M-1656-02-CAL-SET
M-1656-03-CAL-SET, M-1656-04-CAL-SET
M-1656-05-CAL-SET, M-1656-06-CAL-SET
M-1656-07-CAL-SET

Ready-to-Inject

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, Conservation and Recovery Act, and the Comprehensive Environmental Response, Compensation, and Liability Act, as well as other compounds amenable to extraction and analysis by wide-bore capillary column GC with a flame photometric detector (FPD).

GPC Calibration Solution

M-1600-GPC-5ML		1 x 5 mL
At stated conc. (mg/mL) in CH ₂ Cl ₂		5 comps.
Corn oil	300	
bis(2-Ethylhexyl)phthalate	15	
Pentachlorophenol	1.4	
Perylene	0.1	
Sulfur	0.5	

Surrogate Spiking Solution

M-1657-SS		1 x 1 mL
0.2 mg/mL each in Acetone		2 comps.
Tributyl phosphate		
Triphenyl phosphate		

Calibration Solutions & Suggested Calibration Groups

Calibration Group 1

M-1657-01-R1-CAL-SET		3 x 1 mL
At stated conc. (ng/mL) in Isooctane		9 comps.

Components	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	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

Low	M-1657-01-R1-1X	1 mL
Medium	M-1657-01-R1-5X	1 mL
High	M-1657-01-R1-20X	1 mL

Calibration Group 2

M-1657-02-CAL-SET		3 x 1 mL
At stated conc. (ng/mL) in Isooctane		12 comps.

Components	Low (1X)	Medium (5X)	High (20X)
Chlorfevinphos	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

Low	M-1657-02-1X	1 mL
Medium	M-1657-02-5X	1 mL
High	M-1657-02-20X	1 mL

Calibration Group 3

M-1657-03-CAL-SET		3 x 1 mL
At stated conc. (ng/mL) in Isooctane		14 comps.

Components	Low (1X)	Medium (5X)	High (20X)
Azinphos ethyl	200	1,000	4,000
Crotoxyphos	500	2,500	10,000
DEF 6	200	1,000	4,000
Fensulfothion	500	2,500	10,000
Chlorpyrifos-methyl	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	100	500	2,000
Sulfotep	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

Low	M-1657-03-1X	1 mL
Medium	M-1657-03-5X	1 mL
High	M-1657-03-20X	1 mL

Calibration Group 4

M-1657-04-CAL-SET		3 x 1 mL
At stated conc. (ng/mL) in Isooctane		11 comps.

Components	Low (1X)	Medium (5X)	High (20X)	Components	Low (1X)	Medium (5X)	High (20X)
Coumaphos	500	2,500	10,000	Tetrachlorvinphos	200	1,000	4,000
Diazinon	200	1,000	4,000	Tributyl phosphate	200	1,000	4,000
EPN	200	1,000	4,000	Trichloronate	200	1,000	4,000
Ethion	200	1,000	4,000	Triphenyl phosphate	200	1,000	4,000
Ethoprop	200	1,000	4,000	Low	M-1657-04-1X	1 mL	
Malathion	200	1,000	4,000	Medium	M-1657-04-5X	1 mL	
Phorate	200	1,000	4,000	High	M-1657-04-20X	1 mL	

Calibration Solution Set

M-1657-CAL-SET		4 x (3 x 1 mL)
M-1657-01-R1-CAL-SET, M-1657-02-CAL-SET		
M-1657-03-CAL-SET, M-1657-04-CAL-SET		

Method 1658 Phenoxy-Acid Herbicides in Municipal and Industrial Wastewater

Method 1658 consolidates several EPA wastewater methods used to determine Phenoxy-Acid Herbicides and Herbicide esters associated with the CWA, RCRA and CERCLA, as well as other compounds amenable to extraction and analysis by wide-bore capillary column GC/ECD.

M-1658-CAL-SET

At stated conc. (ng/mL) in Isooctane

Components	Low (1X)	Medium (10X)	High (100X)	Components	Low (1X)	Medium (10X)	High (100X)	Components	Low (1X)	Medium (10X)	High (100X)
2,4-D	100	1,000	10,000	Dicamba	20	200	2,000	MCPP	5,000	50,000	500,000
Dalapon	50	500	5,000	Dichlorprop	100	1,000	10,000	Picloram	50	500	5,000
2,4-DB	200	2,000	20,000	Dinoseb	50	500	5,000	2,4,5-T	20	200	2,000
2,4-Dichlorphenylacetic acid (Surrogate)	10	100	1,000	MCPA	5,000	50,000	500,000	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		1 x 1 mL
25 µg/mL in Acetone		
Methyl isothiocyanate (MITC)		

Matrix Spiking Solution

M-1659-MS		1 x 1 mL
25 µg/mL in Acetone		
Dazomet		

Calibration Solutions

M-1659-CAL-SET		3 x 1 mL
M-1659-CAL-1X		0.2 mg/mL in Acetone
M-1659-CAL-5X		1.0 mg/mL in Acetone
M-1659-CAL-25X		5.0 mg/mL in Acetone
Methyl isothiocyanate (MITC)		

Method 1664 Oil, Grease and Total Petroleum Hydrocarbon

Precision and Recovery (PAR) Spiking Solution

M-1664-5ML

1 x 5 mL

M-1664-5ML-PAK

SAVE 5 x 5 mL

4.0 mg/mL each in Acetone

M-1664-20ML

1 x 20 mL

M-1664-20ML-PAK

SAVE 5 x 20 mL

4.0 mg/mL each in Acetone

2 comps.

n-Hexadecane

Stearic acid

Silica Gel Hexane Extraction Material

SGT-HEM

1 x 1 mL

20 µg/mL each in Acetone

2 comps.

Stearic acid

n-Hexadecane

Technical Note

Precision and Recovery (PAR) Spiking Solution was developed for Method 1664. This performance based method was developed to replace previous gravimetric procedures which incorporated Freon-113 as the extraction solvent for the determination of Oil and Grease and Total Petroleum Hydrocarbons. Each standard is packaged in a flame sealed ampule conveniently sized for quality control of the analytical batch.

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.

GPC Calibration Solution

M-1618-GP-5ML

1 x 5 mL

At stated conc. (mg/mL) in Acetone

5 comps.

Corn oil 300.0
bis(2-Ethylhexyl)phthalate 15.0
Pentachlorophenol 1.4

Perylene 0.1
Sulfur 0.5

PMI Stock Standard

M-1665

1 x 1 mL

2000 µg/mL each in CH₂Cl₂

6 comps.

Aniline
N,N-Dimethylacetamide

N,N-Dimethylaniline
Dimethylformamide

2-Picoline
Pyridine

Instrument Performance Check Solution

M-1653-TS

1 x 1 mL

50 µg/mL in Acetone

DFTPP

PMI Labeled Stock Standard (Not for individual sale)

M-1665-LAB

1 x 1 mL

500 µg/mL each in CH₂Cl₂

5 comps.

Aniline-d₇
N,N-Dimethylaniline-d₁₁
Dimethylformamide-d₇

2-Picoline-d₇
Pyridine-d₅

PMI Internal Standard

M-625-07-10X

1 x 1 mL

2.0 mg/mL in CH₂Cl₂

2,2'-Difluorobiphenyl

Method 1666A Volatile Organic Compounds Specific to the PMI by Isotope Dilution GC/MS

PMI Calibration Set

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

PMI Stock Standard

M-1666A-SSA-ADD

1 x 1 mL

1000 µg/mL in MeOH

Isopropyl ether

PMI Stock Standard C

M-1666A-SSC

1 x 1 mL

1000 µg/mL each in MeOH

4 comps.

Butyl acetate
Ethyl acetate

Isopropyl acetate
Pentyl acetate

PMI Stock Standard A

M-1666A-SSA-R2

1 x 1 mL

At stated conc. (µg/mL) in Water

7 comps.

n-Butanol	2500	Isopropanol	1000
t-Butanol	2500	4-Methyl-2-pentanone	1000
2-Furaldehyde	2500	n-Pentanol	2500
Isobutyraldehyde	2500		

PMI Labeled Stock Standard

M-1666A-LAB

1 x 1 mL

At stated conc. (µg/mL) in MeOH

8 comps.

t-Butanol-d ₁₀	500	n-Hexane-d ₁₄	50
Cyclohexane-d ₁₂	50	Tetrahydrofuran-d ₈	50
Ethyl Acetate-2- ¹³ C	50	o-Xylene-d ₁₀	50
n-Heptane-d ₁₆	50	m-Xylene-d ₁₀	50

PMI Stock Standard B

M-1666A-SSB

1 x 1 mL

At stated conc. (µg/mL) in MeOH

9 comps.

Cyclohexane	1000	Trifluoromethane	1000
n-Heptane	1000	m-Xylene	1000
n-Hexane	1000	o-Xylene	1000
Methyl formate	2500	p-Xylene	1000
Tetrahydrofuran	1000		

Method 1666A VOC Specific to PMI
continued on next page

Method 1666A Volatile Organic Compounds Specific to the PMI by Isotope Dilution GC/MS (continued)

PMI Direct Injection Set

M-1666A-DI-R1-SET

4 x 1 mL

M-1666A-DI-R1, M-1666A-DI-R-ADD1,
M-1666A-DI-R-ADD2, M-1666A-DI-LAB

PMI Standard Direct Injection

M-1666A-DI-R1

At stated conc. (µg/mL) in Water

1 x 1 mL

10 comps.

Acetonitrile	1000	Ethylene glycol	2500
Diethylamine	2500	Methanol	1000
Dimethylamine	1000	2-Methoxyethanol	1000
Dimethyl sulfoxide	1000	n-Propanol	1000
Ethanol	1000	Triethylamine	2500

M-1666A-DI-R-ADD1

2500 µg/mL in Water

Methylamine

1 x 1 mL

M-1666A-DI-R-ADD2

5000 µg/mL in Water

Formamide

1 x 1 mL

PMI Labeled Standard Direct Injection

M-1666A-DI-LAB

1000 µg/mL each in Water

1 x 1 mL

6 comps.

Acetonitrile-d ₃	Methanol-d ₃
Dimethyl sulfoxide-d ₆	n-Propanol-1-d ₁
Ethanol-d ₆	Tetrahydrofuran-d ₈

PMI Instrument Performance

Purgeable Internal Standard

CLP-PI

CLP-PI-PAK

1.0 mg/mL each in MeOH

1 x 1 mL

SAVE 5 x 1 mL

3 comps.

Bromochloromethane
Chlorobenzene-d₅

1,4-Difluorobenzene

PMI Resolution Standard

M-1666A-RES

100 µg/mL each in MeOH

o-Xylene

o-Xylene-d₁₀

1 x 1 mL

2 comps.

Instrument Performance Check Solution

CLP-004-10X

CLP-004-10X-PAK

250 µg/mL in MeOH

p-Bromofluorobenzene

1 x 1 mL

SAVE x 1 mL

Method 1667A Formaldehyde, Isobutylaldehyde & Furfural by Derivatization followed by HPLC for PMI pollutants

PMI Carbonyl Set

M-1667A-SET

3 x 1 mL

Each at 1.0 mg/mL in ACN

Formaldehyde	M-1667A-01	1 mL
2-Furaldehyde	M-1667A-02	1 mL
Isobutylaldehyde	M-1667A-03	1 mL

PMI Carbonyl DNPH Set

M-1667A-DNPH-SET

3 x 1 mL

Each at 1.0 mg/mL in ACN

Formaldehyde-DNPH	M-1667A-DNPH-01	1 mL
2-Furaldehyde-DNPH	M-1667A-DNPH-02	1 mL
Isobutylaldehyde-DNPH	M-1667A-DNPH-03	1 mL

PMI Derivatization Reagent

M-1667A-DERV-10ML

10 mL

M-1667A-DERV-10ML-PAK

5 x 10 mL

1.0 mg/mL in ACN

2,4-Dinitrophenylhydrazine (DNPH)

PMI QA/QC Carbonyl Mix

M-1667A-M

1 x 1 mL

M-1667A-M-PAK

SAVE 5 x 1 mL

250 µg/mL each in ACN

3 comps.

Formaldehyde	Isobutylaldehyde
2-Furaldehyde	

PMI QA/QC Carbonyl Derivative DNPH Mix

M-1667A-DNPH

1 x 1 mL

250 µg/mL each in ACN

3 comps.

Formaldehyde-DNPH	Isobutylaldehyde-DNPH
2-Furaldehyde-DNPH	



Method 1668 209 Chlorinated Biphenyl Congeners in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS

Method 1668 Congener Congeners Set

M-1668A-0.01X-SET

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

5 x 1 mL

PCB Congener Mix #1

M-1668A-1-0.01X

At stated conc. (µg/mL) in Isooctane

2	3-Chlorobiphenyl	2.5
10	2,6-Dichlorobiphenyl	2.5
9	2,5-Dichlorobiphenyl	2.5
6	2,3'-Dichlorobiphenyl	2.5
8	2,4'-Dichlorobiphenyl	2.5
14	3,5-Dichlorobiphenyl	2.5
11	3,3'-Dichlorobiphenyl	2.5
30	2,4,6-Trichlorobiphenyl	2.5
27	2,3',6-Trichlorobiphenyl	2.5
32	2,4',6-Trichlorobiphenyl	2.5
34	2,3',5-Trichlorobiphenyl	2.5
26	2,3',5-Trichlorobiphenyl	2.5
31	2,4',5-Trichlorobiphenyl	2.5
33	2,3',4-Trichlorobiphenyl	2.5
36	3,3',5-Trichlorobiphenyl	2.5
38	3,4,5-Trichlorobiphenyl	2.5
35	3,3',4-Trichlorobiphenyl	2.5
50	2,2',4,6-Tetrachlorobiphenyl	5.0
45	2,2',3,6-Tetrachlorobiphenyl	5.0
52	2,2',5,5'-Tetrachlorobiphenyl	5.0
49	2,2',4,5'-Tetrachlorobiphenyl	5.0
75	2,4,4',6-Tetrachlorobiphenyl	5.0
41	2,2',3,4-Tetrachlorobiphenyl	5.0
72	2,3',5,5'-Tetrachlorobiphenyl	5.0
57	2,3,3',5-Tetrachlorobiphenyl	5.0
63	2,3,4',5-Tetrachlorobiphenyl	5.0
66	2,3',4,4'-Tetrachlorobiphenyl	5.0
79	3,3',4,5'-Tetrachlorobiphenyl	5.0
78	3,3',4,5-Tetrachlorobiphenyl	5.0
81	3,4,4',5-Tetrachlorobiphenyl	5.0
96	2,2',3,6,6'-Pentachlorobiphenyl	5.0
103	2,2',4,5',6-Pentachlorobiphenyl	5.0
95	2,2',3,5',6-Pentachlorobiphenyl	5.0
88	2,2',3,4,6-Pentachlorobiphenyl	5.0
89	2,2',3,4,6'-Pentachlorobiphenyl	5.0
92	2,2',3,5,5'-Pentachlorobiphenyl	5.0
113	2,3,3',5,6-Pentachlorobiphenyl	5.0
83	2,2',3,3',5-Pentachlorobiphenyl	5.0
119	2,3',4,4',6-Pentachlorobiphenyl	5.0
87	2,2',3,4,5'-Pentachlorobiphenyl	5.0
85	2,2',3,4,4'-Pentachlorobiphenyl	5.0
82	2,2',3,3',4-Pentachlorobiphenyl	5.0

PCB Congener Mix #2

M-1668A-2-0.01X

At stated conc. (µg/mL) in Isooctane

7	2,4-Dichlorobiphenyl	2.5
5	2,3-Dichlorobiphenyl	2.5
12	3,4-Dichlorobiphenyl	2.5
18	2,2',5-Trichlorobiphenyl	2.5
24	2,3,6-Trichlorobiphenyl	2.5
23	2,3,5-Trichlorobiphenyl	2.5
28	2,4,4'-Trichlorobiphenyl	2.5
22	2,3,4'-Trichlorobiphenyl	2.5
39	3,4',5-Trichlorobiphenyl	2.5
53	2,2',5,6'-Tetrachlorobiphenyl	5.0
51	2,2',4,6'-Tetrachlorobiphenyl	5.0
73	2,3',5',6-Tetrachlorobiphenyl	5.0
48	2,2',4,5-Tetrachlorobiphenyl	5.0
62	2,3,4,6-Tetrachlorobiphenyl	5.0
71	2,3',4',6-Tetrachlorobiphenyl	5.0
68	2,3',4,5'-Tetrachlorobiphenyl	5.0
58	2,3,3',5'-Tetrachlorobiphenyl	5.0
61	2,3,4,5-Tetrachlorobiphenyl	5.0
55	2,3,3',4-Tetrachlorobiphenyl	5.0
60	2,3,4,4'-Tetrachlorobiphenyl	5.0
94	2,2',3,5,6'-Pentachlorobiphenyl	5.0
100	2,2',4,4',6-Pentachlorobiphenyl	5.0
91	2,2',3,4',6-Pentachlorobiphenyl	5.0
121	2,3',4,5',6-Pentachlorobiphenyl	5.0
90	2,2',3,4',5-Pentachlorobiphenyl	5.0
99	2,2',4,4',5-Pentachlorobiphenyl	5.0
109	2,3,3',4,6-Pentachlorobiphenyl	5.0

120	2,3',4,5,5'-Pentachlorobiphenyl	5.0
124	2',3,4,5,5'-Pentachlorobiphenyl	5.0
106	2,3,3',4,5-Pentachlorobiphenyl	5.0
122	2',3,3',4,5-Pentachlorobiphenyl	5.0
105	2,3,3',4,4'-Pentachlorobiphenyl	5.0
127	3,3',4,5,5'-Pentachlorobiphenyl	5.0
152	2,2',3,5,6,6'-Hexachlorobiphenyl	5.0
136	2,2',3,3',6,6'-Hexachlorobiphenyl	5.0
148	2,2',3,4',5,6'-Hexachlorobiphenyl	5.0
151	2,2',3,5,5',6'-Hexachlorobiphenyl	5.0
144	2,2',3,4,5',6'-Hexachlorobiphenyl	5.0
143	2,2',3,4,5,6'-Hexachlorobiphenyl	5.0
142	2,2',3,4,5,6'-Hexachlorobiphenyl	5.0
133	2,2',3,3',5,5'-Hexachlorobiphenyl	5.0
161	2,3,3',4,5',6'-Hexachlorobiphenyl	5.0
153	2,2',4,4',5,5'-Hexachlorobiphenyl	5.0
130	2,2',3,3',4,5'-Hexachlorobiphenyl	5.0
129	2,2',3,3',4,5'-Hexachlorobiphenyl	5.0
166	2,3,4,4',5,6'-Hexachlorobiphenyl	5.0
159	2,3,3',4,5,5'-Hexachlorobiphenyl	5.0
167	2,3',4,4',5,5'-Hexachlorobiphenyl	5.0
156	2,3,3',4,4',5'-Hexachlorobiphenyl	5.0
179	2,2',3,3',5,6,6'-Heptachlorobiphenyl	5.0
176	2,2',3,3',4,6,6'-Heptachlorobiphenyl	5.0
178	2,2',3,3',5,5',6-Heptachlorobiphenyl	5.0
175	2,2',3,3',4,5',6-Heptachlorobiphenyl	5.0
183	2,2',3,4,4',5',6-Heptachlorobiphenyl	5.0
177	2,2',3,3',4,5',6-Heptachlorobiphenyl	5.0
171	2,2',3,3',4,4',6-Heptachlorobiphenyl	5.0
172	2,2',3,3',4,5,5'-Heptachlorobiphenyl	5.0
191	2,3,3',4,4',5',6-Heptachlorobiphenyl	5.0
170	2,2',3,3',4,4',5-Heptachlorobiphenyl	5.0
190	2,3,3',4,4',5,6-Heptachlorobiphenyl	5.0
201	2,2',3,3',4,5',6,6'-Octachlorobiphenyl	7.5
204	2,2',3,4,4',5,6,6'-Octachlorobiphenyl	7.5
200	2,2',3,3',4,5,6,6'-Octachlorobiphenyl	7.5
198	2,2',3,3',4,5,5',6-Octachlorobiphenyl	7.5
196	2,2',3,3',4,4',5',6-Octachlorobiphenyl	7.5
195	2,2',3,3',4,4',5,6-Octachlorobiphenyl	7.5
194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl	7.5
207	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	7.5

1 x 1 mL
54 comps.

PCB Congener Mix #3

M-1668A-3-0.01X

At stated conc. (µg/mL) in Isooctane

1 x 1 mL

29 comps.

13	3,4'-Dichlorobiphenyl	2.5
17	2,2',4-Trichlorobiphenyl	2.5
29	2,4,5-Trichlorobiphenyl	2.5
20	2,3,3'-Trichlorobiphenyl	2.5
46	2,2',3,6'-Tetrachlorobiphenyl	5.0
65	2,3,5,6-Tetrachlorobiphenyl	5.0
59	2,3,3',6-Tetrachlorobiphenyl	5.0
40	2,2',3,3'-Tetrachlorobiphenyl	5.0
67	2,3',4,5-Tetrachlorobiphenyl	5.0
76	2',3,4,5-Tetrachlorobiphenyl	5.0
80	3,3',5,5'-Tetrachlorobiphenyl	5.0
93	2,2',3,5,6-Pentachlorobiphenyl	5.0
84	2,2',3,3',6-Pentachlorobiphenyl	5.0
101	2,2',4,5,5'-Pentachlorobiphenyl	5.0
112	2,3,3',5,6-Pentachlorobiphenyl	5.0
86	2,2',3,4,5-Pentachlorobiphenyl	5.0
116	2,3,4,5,6-Pentachlorobiphenyl	5.0
107	2,3,3',4',5-Pentachlorobiphenyl	5.0
154	2,2',4,4',5,6'-Hexachlorobiphenyl	5.0
147	2,2',3,4',5,6'-Hexachlorobiphenyl	5.0
140	2,2',3,4,4',6'-Hexachlorobiphenyl	5.0
146	2,2',3,4',5,5'-Hexachlorobiphenyl	5.0
141	2,2',3,4,5,5'-Hexachlorobiphenyl	5.0
164	2,3,3',4',5',6-Hexachlorobiphenyl	5.0
158	2,3,3',4,4',6-Hexachlorobiphenyl	5.0
182	2,2',3,4,4',5,6'-Heptachlorobiphenyl	5.0
174	2,2',3,3',4,5,6'-Heptachlorobiphenyl	5.0
173	2,2',3,3',4,5,6-Heptachlorobiphenyl	5.0
193	2,3,3',4',5,5',6-Heptachlorobiphenyl	5.0

PCB Congener Mix #4

M-1668A-4-0.01X

At stated conc. (µg/mL) in Isooctane

1 x 1 mL

15 comps.

25	2,3',4-Trichlorobiphenyl	2.5
21	2,3,4-Trichlorobiphenyl	2.5
69	2,3',4,6-Tetrachlorobiphenyl	5.0
47	2,2',4,4'-Tetrachlorobiphenyl	5.0
42	2,2',3,4'-Tetrachlorobiphenyl	5.0
64	2,3,4',6-Tetrachlorobiphenyl	5.0
70	2,3',4',5-Tetrachlorobiphenyl	5.0
102	2,2',4,5,6'-Pentachlorobiphenyl	5.0
97	2,2',3',4,5-Pentachlorobiphenyl	5.0
115	2,3,4,4',6-Pentachlorobiphenyl	5.0
123	2',3,4,4',5-Pentachlorobiphenyl	5.0
134	2,2',3,3',5,6-Hexachlorobiphenyl	5.0
131	2,2',3,3',4,5,6-Heptachlorobiphenyl	5.0
163	2,3,3',4',5,6-Hexachlorobiphenyl	5.0
180	2,2',3,4,4',5,5'-Heptachlorobiphenyl	5.0

PCB Congener Mix #5

M-1668A-5-0.01X

At stated conc. (µg/mL) in Isooctane

1 x 1 mL

28 comps.

1	2-Chlorobiphenyl	2.5
3	4-Chlorobiphenyl	2.5
4	2,2'-Dichlorobiphenyl	2.5
15	4,4'-Dichlorobiphenyl	2.5
19	2,2',6-Trichlorobiphenyl	2.5
16	2,2',3-Trichlorobiphenyl	2.5
37	3,4,4'-Trichlorobiphenyl	2.5
54	2,2',6,6'-Tetrachlorobiphenyl	5.0
43	2,2',3,5-Tetrachlorobiphenyl	5.0
44	2,2',3,5'-Tetrachlorobiphenyl	5.0
74	2,4,4',5-Tetrachlorobiphenyl	5.0
56	2,3,3',4'-Tetrachlorobiphenyl	5.0
77	3,3',4,4'-Tetrachlorobiphenyl	5.0
104	2,2',4,6,6'-Pentachlorobiphenyl	5.0
98	2,2',3',4,6-Pentachlorobiphenyl	5.0
125	2',3,4,5,6'-Pentachlorobiphenyl	5.0
110	2,3,3',4',6-Pentachlorobiphenyl	5.0
126	3,3',4,4',5-Pentachlorobiphenyl	5.0
155	2,2',4,4',6,6'-Hexachlorobiphenyl	5.0
138	2,2',3,4,4',5'-Hexachlorobiphenyl	5.0
169	3,3',4,4',5,5'-Hexachlorobiphenyl	5.0
188	2,2',3,4',5,6,6'-Heptachlorobiphenyl	5.0
189	2,3,3',4,4',5,5'-Hexachlorobiphenyl	5.0
202	2,2',3,3',5,5',6,6'-Octachlorobiphenyl	7.5
205	2,3,3',4,4',5,5',6-Octachlorobiphenyl	7.5
208	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	7.5
206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	7.5
209	Decachlorobiphenyl	7.5

Method 1668, Rev. A PCBs in Water, Soil, Sediment, Biosolids and Tissue by HRGC/HRMS

M-1668A-C-NT-LOC-WD

M-1668A-C-NT-LOC-WD-PAK

20 µg/mL each in Isooctane

1 x 1 mL

SAVE 5 x 1 mL

33 comps.

1	2-Chlorobiphenyl	155	2,2',4,4',6,6'-Hexachlorobiphenyl
3	4-Chlorobiphenyl	156	2,3,3',4,4',5-Hexachlorobiphenyl
4	2,2'-Dichlorobiphenyl	157	2,3,3',4,4',5'-Hexachlorobiphenyl
15	4,4'-Dichlorobiphenyl	167	2,3',4,4',5,5'-Hexachlorobiphenyl
19	2,2',6-Trichlorobiphenyl	169	3,3',4,4',5,5'-Hexachlorobiphenyl
23	2,3,5-Trichlorobiphenyl	170	2,2',3,3',4,4',5-Heptachlorobiphenyl
34	2',3,5-Trichlorobiphenyl	180	2,2',3,4,4',5,5'-Heptachlorobiphenyl
37	3,4,4'-Trichlorobiphenyl	182	2,2',3,4,4',5,6'-Heptachlorobiphenyl
54	2,2',6,6'-Tetrachlorobiphenyl	187	2,2',3,4',5,5',6-Heptachlorobiphenyl
77	3,3',4,4'-Tetrachlorobiphenyl	188	2,2',3,4',5,6,6'-Heptachlorobiphenyl
81	3,4,4',5-Tetrachlorobiphenyl	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl
104	2,2',4,6,6'-Pentachlorobiphenyl	202	2,2',3,3',5,5',6,6'-Octachlorobiphenyl
105	2,3,3',4,4'-Pentachlorobiphenyl	205	2,3,3',4,4',5,5',6-Octachlorobiphenyl
114	2,3,4,4',5-Pentachlorobiphenyl	206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl
118	2,3',4,4',5-Pentachlorobiphenyl	208	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl
123	2',3,4,4',5-Pentachlorobiphenyl	209	Decachlorobiphenyl
126	3,3',4,4',5-Pentachlorobiphenyl		

GPC Calibration Solution

CLP-027-R2-WL-10ML

At stated conc. (mg/mL) in CH₂Cl₂

1 x 10 mL

5 comps.

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

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. (µg/mL) in Isooctane

1 x 1 mL

19 comps.

3	4-Chlorobiphenyl	5.0
15	4,4'-Dichlorobiphenyl	5.0
28	2,4,4'-Trichlorobiphenyl	5.0
77	3,3',4,4'-Tetrachlorobiphenyl	1.0
105	2,3,3',4,4'-Pentachlorobiphenyl	5.0
114	2,3,4,4',5-Pentachlorobiphenyl	5.0
118	2,3',4,4',5-Pentachlorobiphenyl	5.0
123	2',3,4,4',5-Pentachlorobiphenyl	5.0
126	3,3',4,4',5-Pentachlorobiphenyl	5.0
156	2,3,3',4,4',5-Hexachlorobiphenyl	10
157	2,3,3',4,4',5'-Hexachlorobiphenyl	10
167	2,3',4,4',5,5'-Hexachlorobiphenyl	10
169	3,3',4,4',5,5'-Hexachlorobiphenyl	10
170	2,2',3,3',4,4',5-Heptachlorobiphenyl	10
180	2,2',3,4,4',5,5'-Heptachlorobiphenyl	10
189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	10
194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl	10
206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	10
209	Decachlorobiphenyl	20

PAR PCB Spike Mix

M-1668A-PAR

At stated conc. (µg/mL) in Isooctane

1 x 1 mL

19 comps.

3	4-Chlorobiphenyl	10
15	4,4'-Dichlorobiphenyl	10
28	2,4,4'-Trichlorobiphenyl	10
77	3,3',4,4'-Tetrachlorobiphenyl	0.2
105	2,3,3',4,4'-Pentachlorobiphenyl	10
114	2,3,4,4',5-Pentachlorobiphenyl	10
118	2,3',4,4',5-Pentachlorobiphenyl	10
123	2',3,4,4',5-Pentachlorobiphenyl	10
126	3,3',4,4',5-Pentachlorobiphenyl	1.0
156	2,3,3',4,4',5-Hexachlorobiphenyl	10
157	2,3,3',4,4',5'-Hexachlorobiphenyl	10
167	2,3',4,4',5,5'-Hexachlorobiphenyl	10
169	3,3',4,4',5,5'-Hexachlorobiphenyl	2.0
170	2,2',3,3',4,4',5-Heptachlorobiphenyl	2.0
180	2,2',3,4,4',5,5'-Heptachlorobiphenyl	10
189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	2.0
194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl	10
206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	10
209	Decachlorobiphenyl	20

Method 1671 Rev. A VOCs Specific to PMI by GC/FID

PMI Internal Standard

M-1671A-IS

M-1671A-IS-PAK

1.0 mg/mL in Water

1 x 1 mL

SAVE 5 x 1 mL

Tetrahydrofuran

Method 1673 Polyethylene glycol-600 by Derivative & HPLC

Poly(ethylene glycol)-600

M-1673

M-1673-PAK

2.5 mg/mL in Tetrahydrofuran

1 x 1 mL

SAVE 5 x 1 mL

Polyethylene glycol-600

Surrogate Standard

M-1673-SS

1.0 mg/mL in Tetrahydrofuran

1 x 1 mL

Diethylene glycol monohexyl ether

Derivatization Reagent

M-1673-DERV-5ML

10 mg/mL in Tetrahydrofuran

1 x 5 mL

3,5-Dinitrobenzyl chloride



Standard Mixtures for EPA Method 8000 Series

Solid Waste



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 quantification 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.

Instrumentation

Analytical techniques used in identification and quantification include gas chromatography with selective detectors (AED, ELCD, ECD, FID, FTIR, 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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Match frequently
requested products.

Alternate Source

ASL products can be used as
an independent second source.

Methods 8015A, 8020A, 8040A, 8080A, 8270

EPA Method 8000 Series

Appendix IX Compounds



This list of compounds will help an analyst in identifying all of the contaminants the EPA has regulated for groundwater monitoring. This list of 214 compounds is commonly called the Appendix IX list (Federal Register Vol. 52, No 131).

SOLUTIONS at 100 µg/mL

Appendix IX Compounds									
Compound	CAS No.	Solv.	Cat. No.	Unit	Compound	CAS No.	Solv.	Cat. No.	Unit
Acenaphthene	83-32-9	MeOH	APP-9-001	1 mL	1,2-Dichloroethane	107-06-2	MeOH	APP-9-071	1 mL
Acenaphthylene	208-96-8	MeOH	APP-9-002	1 mL	1,1-Dichloroethylene	75-35-4	MeOH	APP-9-072	1 mL
Acetone	67-64-1	MeOH	APP-9-003	1 mL	<i>trans</i> -1,2-Dichloroethylene	156-60-5	MeOH	APP-9-073	1 mL
Acetonitrile	75-05-8	MeOH	APP-9-005	1 mL	Dichloromethane	75-09-2	MeOH	APP-9-074	1 mL
Acetophenone	98-86-2	CH ₂ Cl ₂	APP-9-004	1 mL	2,4-Dichlorophenol	120-83-2	MeOH	APP-9-075	1 mL
2-Acetylaminofluorene	53-96-3	CH ₂ Cl ₂	APP-9-006	1 mL	2,6-Dichlorophenol	87-65-0	CH ₂ Cl ₂	APP-9-076	1 mL
Acrolein	107-02-8	M:W	APP-9-007	1 mL	1,2-Dichloropropane	78-87-5	MeOH	APP-9-077	1 mL
Acrylonitrile	107-13-1	MeOH	APP-9-008	1 mL	<i>cis</i> -1,3-Dichloropropene	10061-01-5	MeOH	APP-9-078	1 mL
Aldrin	309-00-2	MeOH	APP-9-009	1 mL	<i>trans</i> -1,3-Dichloropropene	10061-02-6	MeOH	APP-9-079	1 mL
Allyl chloride	107-05-1	MeOH	APP-9-010	1 mL	Dieldrin	60-57-1	MeOH	APP-9-080	1 mL
4-Aminobiphenyl	92-67-1	CH ₂ Cl ₂	APP-9-011	1 mL	Diethyl phthalate	84-66-2	MeOH	APP-9-081	1 mL
Aniline	62-53-3	MeOH	APP-9-012	1 mL	Dimethoate	60-51-5	MeOH	APP-9-082	1 mL
Anthracene	120-12-7	MeOH	APP-9-013	1 mL	<i>p</i> -Dimethylaminoazobenzene	60-11-7	CH ₂ Cl ₂	APP-9-083	1 mL
Aramite	140-57-8	MeOH	APP-9-014	1 mL	7,12-Dimethylbenz[a]anthracene	57-97-6	CH ₂ Cl ₂	APP-9-084	1 mL
Benz[a]anthracene	56-55-3	MeOH	APP-9-016	1 mL	3,3'-Dimethylbenzidine †	119-93-7	CH ₂ Cl ₂	APP-9-085	1 mL
Benzene	71-43-2	MeOH	APP-9-015	1 mL	<i>a,a</i> -Dimethylphenethylamine	122-09-8	CH ₂ Cl ₂	APP-9-086	1 mL
Benzo[b]fluoranthene	205-99-2	MeOH	APP-9-017	1 mL	2,4-Dimethylphenol	105-67-9	MeOH	APP-9-087	1 mL
Benzo[k]fluoranthene	207-08-9	MeOH	APP-9-018	1 mL	Dimethyl phthalate	131-11-3	MeOH	APP-9-088	1 mL
Benzo[g,h,i]perylene	191-24-2	CH ₂ Cl ₂	APP-9-019	1 mL	<i>m</i> -Dinitrobenzene	99-65-0	CH ₂ Cl ₂	APP-9-089	1 mL
Benzo[a]pyrene	50-32-8	MeOH	APP-9-020	1 mL	4,6-Dinitro- <i>o</i> -cresol	534-52-1	MeOH	APP-9-090	1 mL
Benzyl alcohol	100-51-6	MeOH	APP-9-021	1 mL	2,4-Dinitrophenol	51-28-5	MeOH	APP-9-091	1 mL
α-BHC	319-84-6	MeOH	APP-9-022	1 mL	2,4-Dinitrotoluene	121-14-2	MeOH	APP-9-092	1 mL
β-BHC	319-85-7	MeOH	APP-9-023	1 mL	2,6-Dinitrotoluene	606-20-2	MeOH	APP-9-093	1 mL
δ-BHC	319-86-8	MeOH	APP-9-024	1 mL	Dinoseb	88-85-7	MeOH	APP-9-094	1 mL
γ-BHC (Lindane)	58-89-9	MeOH	APP-9-025	1 mL	Di- <i>n</i> -octyl phthalate	117-84-0	MeOH	APP-9-095	1 mL
Bromodichloromethane	75-27-4	MeOH	APP-9-030	1 mL	1,4-Dioxane	123-91-1	MeOH	APP-9-096	1 mL
Bromoform	75-25-2	MeOH	APP-9-031	1 mL	Diphenylamine	122-39-4	CH ₂ Cl ₂	APP-9-097	1 mL
Bromomethane	74-83-9	MeOH	APP-9-032	1 mL	Disulfoton	298-04-4	MeOH	APP-9-098	1 mL
4-Bromophenyl phenyl ether	101-55-3	MeOH	APP-9-033	1 mL	Endosulfan I	959-98-8	MeOH	APP-9-099	1 mL
Butyl benzyl phthalate	85-68-7	MeOH	APP-9-034	1 mL	Endosulfan II	33213-65-9	MeOH	APP-9-100	1 mL
Carbon disulfide	75-15-0	MeOH	APP-9-035	1 mL	Endosulfan sulfate	1031-07-8	MeOH	APP-9-101	1 mL
Carbon tetrachloride	56-23-5	MeOH	APP-9-036	1 mL	Endrin	72-20-8	MeOH	APP-9-102	1 mL
Chlordane	12789-03-6	MeOH	APP-9-037	1 mL	Endrin aldehyde	7421-93-4	MeOH	APP-9-103	1 mL
<i>p</i> -Chloroaniline	106-47-8	MeOH	APP-9-038	1 mL	Ethylbenzene	100-41-4	MeOH	APP-9-104	1 mL
Chlorobenzene	108-90-7	MeOH	APP-9-039	1 mL	bis(2-Ethylhexyl)phthalate	117-81-7	MeOH	APP-9-029	1 mL
Chlorobenzilate	510-15-6	CH ₂ Cl ₂	APP-9-040	1 mL	Ethyl methacrylate	97-63-2	MeOH	APP-9-105	1 mL
<i>p</i> -Chloro- <i>m</i> -cresol	59-50-7	MeOH	APP-9-041	1 mL	Ethyl methanesulfonate	62-50-0	CH ₂ Cl ₂	APP-9-106	1 mL
Chloroethane	75-00-3	MeOH	APP-9-042	1 mL	Famphur	52-85-7	MeOH	APP-9-107	1 mL
bis(2-Chloroethoxy)methane	111-91-1	CH ₂ Cl ₂	APP-9-026	1 mL	Fluoranthene	206-44-0	MeOH	APP-9-108	1 mL
bis(2-Chloroethyl) ether	111-44-4	MeOH	APP-9-027	1 mL	Fluorene	86-73-7	MeOH	APP-9-109	1 mL
Chloroform	67-66-3	MeOH	APP-9-043	1 mL	Heptachlor	76-44-8	MeOH	APP-9-110	1 mL
bis(2-Chloroisopropyl) ether	108-60-1	CH ₂ Cl ₂	APP-9-028	1 mL	Heptachlor epoxide (Isomer B)	1024-57-3	MeOH	APP-9-111	1 mL
Chloromethane	74-87-3	MeOH	APP-9-044	1 mL	Hexachlorobenzene	118-74-1	MeOH	APP-9-112	1 mL
2-Chloronaphthalene	91-58-7	MeOH	APP-9-045	1 mL	Hexachlorobutadiene	87-68-3	MeOH	APP-9-113	1 mL
2-Chlorophenol	95-57-8	MeOH	APP-9-046	1 mL	Hexachlorocyclopentadiene	77-47-4	MeOH	APP-9-114	1 mL
4-Chlorophenyl phenyl ether	7005-72-3	MeOH	APP-9-047	1 mL	Hexachloroethane	67-72-1	MeOH	APP-9-115	1 mL
Chloroprene (Xylene-Free)	126-99-8	MeOH	APP-9-048-R1	1 mL	Hexachlorophene	70-30-4	MeOH	APP-9-116	1 mL
Chrysene	218-01-9	MeOH	APP-9-049	1 mL	Hexachloropropene	1888-71-7	MeOH	APP-9-117	1 mL
<i>m</i> -Cresol	108-39-4	CH ₂ Cl ₂	APP-9-050	1 mL	2-Hexanone	591-78-6	MeOH	APP-9-118	1 mL
<i>o</i> -Cresol	95-48-7	CH ₂ Cl ₂	APP-9-051	1 mL	Indeno[1,2,3- <i>cd</i>]pyrene	193-39-5	MeOH	APP-9-119	1 mL
<i>p</i> -Cresol	106-44-5	CH ₂ Cl ₂	APP-9-052	1 mL	Isobutanol	78-83-1	MeOH	APP-9-120	1 mL
2,4-D	94-75-7	MeOH	APP-9-053	1 mL	Isodrin	465-73-6	MeOH	APP-9-121	1 mL
4,4'-DDD	72-54-8	MeOH	APP-9-054	1 mL	Isophorone	78-59-1	MeOH	APP-9-122	1 mL
4,4'-DDE	72-55-9	MeOH	APP-9-055	1 mL	Isosafrole	120-58-1	CH ₂ Cl ₂	APP-9-123	1 mL
4,4'-DDT	50-29-3	MeOH	APP-9-056	1 mL	Kepone	143-50-0	MeOH	APP-9-124	1 mL
Diallate	2303-16-4	MeOH	APP-9-057	1 mL	Methacrylonitrile	126-98-7	MeOH	APP-9-125	1 mL
Dibenz[a,h]anthracene	53-70-3	MeOH	APP-9-058	1 mL	Methapyrilene	91-80-5	CH ₂ Cl ₂	APP-9-126	1 mL
Dibenzofuran	132-64-9	MeOH	APP-9-059	1 mL	Methoxychlor	72-43-5	MeOH	APP-9-127	1 mL
Dibromochloromethane	124-48-1	MeOH	APP-9-060	1 mL	3-Methylcholanthrene	56-49-5	CH ₂ Cl ₂	APP-9-128	1 mL
1,2-Dibromo-3-chloropropane	96-12-8	MeOH	APP-9-061	1 mL	Methyl ethyl ketone (MEK)	78-93-3	MeOH	APP-9-129	1 mL
Dibromomethane	74-95-3	MeOH	APP-9-062	1 mL	Methyl iodide (Iodomethane)	74-88-4	MeOH	APP-9-130	1 mL
1,2-Dibromoethane (EDB)	106-93-4	MeOH	APP-9-214	1 mL	Methyl methacrylate	80-62-6	MeOH	APP-9-131	1 mL
Di- <i>n</i> -butyl phthalate	84-74-2	MeOH	APP-9-063	1 mL	Methyl methanesulfonate	66-27-3	CH ₂ Cl ₂	APP-9-132	1 mL
<i>o</i> -Dichlorobenzene	95-50-1	MeOH	APP-9-064	1 mL	2-Methylnaphthalene	91-57-6	CH ₂ Cl ₂	APP-9-133	1 mL
<i>m</i> -Dichlorobenzene	541-73-1	MeOH	APP-9-065	1 mL	Methyl parathion	298-00-0	MeOH	APP-9-134	1 mL
<i>p</i> -Dichlorobenzene	106-46-7	MeOH	APP-9-066	1 mL	4-Methyl-2-pentanone (MIBK)	108-10-1	MeOH	APP-9-135	1 mL
3,3'-Dichlorobenzidine †	91-94-1	MeOH	APP-9-067	1 mL	Naphthalene	91-20-3	CH ₂ Cl ₂	APP-9-136	1 mL
<i>trans</i> -1,4-Dichloro-2-butene	110-57-6	MeOH	APP-9-068	1 mL	1,4-Naphthoquinone	130-15-4	CH ₂ Cl ₂	APP-9-137	1 mL
Dichlorodifluoromethane	75-71-8	MeOH	APP-9-069	1 mL	1-Naphthylamine	134-32-7	CH ₂ Cl ₂	APP-9-138	1 mL
1,1-Dichloroethane	75-34-3	MeOH	APP-9-070	1 mL	2-Naphthylamine	91-59-8	CH ₂ Cl ₂	APP-9-139	1 mL

† Subject to oxidation

Appendix IX compounds continued on next page



EPA Method 8000 Series

Appendix IX Compounds

SOLUTIONS at 100 µg/mL

Appendix IX Compounds (continued)

Compound	CAS No.	Solv.	Cat. No.	Unit	Compound	CAS No.	Solv.	Cat. No.	Unit
<i>o</i> -Nitroaniline	88-74-4	CH ₂ Cl ₂	APP-9-140	1 mL	Pentachlorobenzene	608-93-5	MeOH	APP-9-173	1 mL
<i>m</i> -Nitroaniline	99-09-2	CH ₂ Cl ₂	APP-9-141	1 mL	Pentachloroethane	76-01-7	MeOH	APP-9-174	1 mL
<i>p</i> -Nitroaniline	100-01-6	CH ₂ Cl ₂	APP-9-142	1 mL	Pentachloronitrobenzene	82-68-8	MeOH	APP-9-175	1 mL
Nitrobenzene	98-95-3	MeOH	APP-9-143	1 mL	Pentachlorophenol	87-86-5	MeOH	APP-9-176	1 mL
<i>o</i> -Nitrophenol	88-75-5	MeOH	APP-9-144	1 mL	Phenacetin	62-44-2	CH ₂ Cl ₂	APP-9-177	1 mL
<i>p</i> -Nitrophenol	100-02-7	MeOH	APP-9-145	1 mL	Phenanthrene	85-01-8	MeOH	APP-9-178	1 mL
4-Nitroquinoline-1-oxide	56-57-5	CH ₂ Cl ₂	APP-9-146	1 mL	Phenol	108-95-2	CH ₂ Cl ₂	APP-9-179	1 mL
N-Nitrosodi- <i>n</i> -butylamine	924-16-3	CH ₂ Cl ₂	APP-9-147	1 mL	<i>p</i> -Phenylenediamine	106-50-3	MeOH	APP-9-180	1 mL
N-Nitrosodiethylamine	55-18-5	CH ₂ Cl ₂	APP-9-148	1 mL	Phorate	298-02-2	MeOH	APP-9-181	1 mL
N-Nitrosodimethylamine	62-75-9	CH ₂ Cl ₂	APP-9-149	1 mL	2-Picoline	109-06-8	MeOH	APP-9-182	1 mL
N-Nitrosodiphenylamine	86-30-6	CH ₂ Cl ₂	APP-9-150	1 mL	Pronamide	23950-58-5	MeOH	APP-9-183	1 mL
N-Nitrosodipropylamine	621-64-7	CH ₂ Cl ₂	APP-9-151	1 mL	Propionitrile	107-12-0	MeOH	APP-9-184	1 mL
N-Nitrosomethylethylamine	10595-95-6	CH ₂ Cl ₂	APP-9-152	1 mL	Pyrene	129-00-0	MeOH	APP-9-185	1 mL
N-Nitrosomorpholine	59-89-2	CH ₂ Cl ₂	APP-9-153	1 mL	Pyridine	110-86-1	MeOH	APP-9-186-M	1 mL
N-Nitrosopiperidine	100-75-4	CH ₂ Cl ₂	APP-9-154	1 mL	Safrole	94-59-7	MeOH	APP-9-187	1 mL
N-Nitrosopyrrolidine	930-55-2	CH ₂ Cl ₂	APP-9-155	1 mL	Silvex (2,4,5-TP)	93-72-1	MeOH	APP-9-188	1 mL
5-Nitro- <i>o</i> -toluidine	99-55-8	CH ₂ Cl ₂	APP-9-156	1 mL	Styrene	100-42-5	MeOH	APP-9-189	1 mL
Parathion	56-38-2	MeOH	APP-9-157	1 mL	2,4,5-T	93-76-5	MeOH	APP-9-190	1 mL
Polychlorinated biphenyls:					1,2,4,5-Tetrachlorobenzene	95-94-3	MeOH	APP-9-191	1 mL
Aroclor® 1016	12674-11-2	MeOH	APP-9-158	1 mL	1,1,1,2-Tetrachloroethane	630-20-6	MeOH	APP-9-192	1 mL
Aroclor 1221	11104-28-2	MeOH	APP-9-159	1 mL	1,1,2,2-Tetrachloroethane	79-34-5	MeOH	APP-9-193	1 mL
Aroclor 1232	11141-16-5	MeOH	APP-9-160	1 mL	Tetrachloroethylene	127-18-4	MeOH	APP-9-194	1 mL
Aroclor 1242	53469-21-9	MeOH	APP-9-161	1 mL	2,3,4,6-Tetrachlorophenol	58-90-2	MeOH	APP-9-195	1 mL
Aroclor 1248	12672-29-6	MeOH	APP-9-162	1 mL	Thionazin	297-97-2	MeOH	APP-9-197	1 mL
Aroclor 1254	11097-69-1	MeOH	APP-9-163	1 mL	Toluene	108-88-3	MeOH	APP-9-198	1 mL
Aroclor 1260	11096-82-5	MeOH	APP-9-164	1 mL	<i>o</i> -Toluidine	95-53-4	MeOH	APP-9-199	1 mL
Aroclor 1262	37324-23-5	MeOH	APP-9-165	1 mL	Toxaphene	8001-35-2	MeOH	APP-9-200	1 mL
Aroclor 1268	11100-14-4	MeOH	APP-9-166	1 mL	1,2,4-Trichlorobenzene	120-82-1	MeOH	APP-9-201	1 mL
Dioxins:					1,1,1-Trichloroethane	71-55-6	MeOH	APP-9-202	1 mL
1,2,3,4,7,8-HCDD (5 µg/mL)	39227-28-6	Toluene	APP-9-169	1 mL	1,1,2-Trichloroethane	79-00-5	MeOH	APP-9-203	1 mL
1,2,3,7,8-PCCD (5 µg/mL)	40321-76-4	Toluene	APP-9-168	1 mL	Trichloroethylene	79-01-6	MeOH	APP-9-204	1 mL
2,3,7,8-TCDD (5 µg/mL)	1746-01-6	Toluene	APP-9-167	1 mL	Trichlorofluoromethane (Freon #11)	75-69-4	MeOH	APP-9-205	1 mL
Polychlorinated dibenzofurans:					2,4,5-Trichlorophenol	95-95-4	MeOH	APP-9-206	1 mL
1,2,3,4,7,8-HCDF (5 µg/mL)	55684-94-1	Toluene	APP-9-172	1 mL	2,4,6-Trichlorophenol	88-06-2	MeOH	APP-9-207	1 mL
1,2,3,7,8-PCDF (5 µg/mL)	57117-41-6	Toluene	APP-9-171	1 mL	1,2,3-Trichloropropane	96-18-4	MeOH	APP-9-208	1 mL
2,3,7,8-TCDF (5 µg/mL)	51207-31-9	Toluene	APP-9-170	1 mL	O,O,O-Triethylphosphorothioate	126-68-1	MeOH	APP-9-209	1 mL
					1,3,5-Trinitrobenzene	99-35-4	MeOH	APP-9-210	1 mL
					Vinyl acetate	108-05-4	MeOH	APP-9-211	1 mL
					Vinyl chloride	75-01-4	MeOH	APP-9-212	1 mL
					Xylene (total)	1330-20-7	MeOH	APP-9-213	1 mL

EPA Method 8000 Series

Appendix IX Special Mixes



Volatile Appendix IX Mixes

M-8240A

0.2 mg/mL each in MeOH

1 x 1 mL
41 comps.

Acetone	Chlorobenzene	1,2-Dichloroethane	Iodomethane	Trichloroethene
Acrolein	Chloroform	1,1-Dichloroethene	4-Methyl-2-pentanone	Vinyl acetate
Acrylonitrile	Dibromochloromethane	<i>trans</i> -1,2-Dichloroethene	Methylene chloride	<i>o</i> -Xylene
Benzene	<i>cis</i> -1,4-Dichloro-2-butene (0.1 mg/mL)	1,2-Dichloropropane	Styrene	<i>m</i> -Xylene
Bromodichloromethane	<i>trans</i> -1,4-Dichloro-2-butene (0.1 mg/mL)	<i>cis</i> -1,3-Dichloropropene	1,1,2,2-Tetrachloroethane	<i>p</i> -Xylene
Bromoform	1,2-Dichlorobenzene	<i>trans</i> -1,3-Dichloropropene	Tetrachloroethene	
Methyl ethyl ketone	1,3-Dichlorobenzene	Ethanol	Toluene	Certificate will reflect actual cis/trans ratio
Carbon disulfide	1,4-Dichlorobenzene	Ethylbenzene	1,1,1-Trichloroethane	
Carbon tetrachloride	1,1-Dichloroethane	2-Hexanone	1,1,2-Trichloroethane	

M-502B

M-502B-PAK

0.2 mg/mL each in MeOH

1 x 1 mL

SAVE 5 x 1 mL

6 comps.

Bromomethane	Dichlorodifluoromethane
Chloromethane	Trichlorofluoromethane
Chloroethane	Vinyl chloride

M-8240C

0.2 mg/mL each in MeOH

1 x 1 mL

17 comps.

Acetonitrile	Ethyl methacrylate	Propionitrile
Allyl chloride	Isobutanol	Pyridine
1,2-Dibromo-3-chloropropane	Methacrylonitrile	1,1,1,2-Tetrachloroethane
Dibromomethane	Methyl methacrylate	1,2,4-Trichlorobenzene
1,2-Dibromoethane	Nitrobenzene	1,2,3-Trichloropropane
1,4-Dioxane	Pentachloroethane	

Special Mixtures for Laboratories Testing Appendix IX Analytes

Volatile Mixes

S-168A

0.5 mg/mL each in MeOH

1 x 1 mL

14 comps.

S-181M

0.1 mg/mL each in MeOH

1 x 1 mL

6 comps.

Acetonitrile	1,2-Dibromo-3-chloropropane	Isobutanol	bis(2-Chloroisopropyl)ether	Methyl methacrylate
Acrolein	Dibromomethane	Methacrylonitrile	Dichlorodifluoromethane	Pentachloroethane
Acrylonitrile	1,4-Dioxane	1,1,1,2-Tetrachloroethane	Ethyl methacrylate	Pyridine
Allyl chloride	Propionitrile	1,2,3-Trichloropropane		
1,2-Dibromoethane	Iodomethane			

Semi-Volatile Mixes

Semi-Volatile Set

S-168-R1-SET

2 x 1 mL

S-168-MIXA-R1, S-168-MIXB

Mix 1

S-168-MIXA-R1

500 µg/mL each in CH₂Cl₂

1 x 1 mL

4 comps.

3,3'-Dimethylbenzidine †	4-Nitroquinoline-1-oxide
1,4-Naphthoquinone	<i>p</i> -Phenylenediamine

† Subject to oxidation

Mix 2

S-168-MIXB

500 µg/mL each in CH₂Cl₂

1 x 1 mL

38 comps.

Acetophenone	Hexachloropropene	5-Nitro- <i>o</i> -toluidine
2-Acetylaminofluorene	Isosafrole	Pentachlorobenzene
4-Aminobiphenyl	Methapyrilene	Pentachloroethane
Aramite	3-Methylcholanthrene	Pentachloronitrobenzene
2-sec-Butyl-4,6-dinitrophenol	Methyl methacrylate	Phenacetin
<i>m</i> -Cresol	Methyl methanesulfonate	2-Picoline
2,6-Dichlorophenol	1-Naphthylamine	Pronamide
<i>p</i> -Dimethylamino azobenzene	2-Naphthylamine	Pyridine
7,12-Dimethylbenz[a]anthracene	N-Nitrosodi- <i>n</i> -butylamine	Safrole
<i>m</i> -Dinitrobenzene	N-Nitrosodiethylamine	1,2,4,5-Tetrachlorobenzene
Ethyl methacrylate	N-Nitrosomethylethylamine	2,3,4,6-Tetrachlorophenol
Ethyl methanesulfonate	N-Nitrosomorpholine	<i>o</i> -Toluidine
Hexachlorophene	N-Nitrosopyrrolidine	



EPA Method 8000 Series

Volatile Internal Standards (ISTD) / Surrogate Standards (SS)

With more proposed and promulgated methods available, analytical chemists are trying to combine analyte lists and shorten run times while still demonstrating method equivalence. We have formulated a core evaluation deuterated solution and a second conventional internal/surrogate evaluation solution. These formulations allow the analyst to quickly evaluate 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 Mixes

Conventional ISTD/SS Evaluation Mix

M-CONV-IS-SS 1 x 1 mL
200 μ g/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 Mix

M-DEUT-IS-SS 1 x 1 mL
200 μ g/mL each in MeOH 8 comps.

Benzene-d₆
Chlorobenzene-d₅
1,2-Dichlorobenzene-d₄
1,4-Dichlorobenzene-d₄
1,2-Dichlorobenzene-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-8240-60-SS 1 x 1 mL
0.2 mg/mL each in MeOH 4 comps.

p-Bromofluorobenzene
Dibromofluoromethane
1,2-Dichloroethane-d₄
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-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 μ g/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
p-Bromofluorobenzene
Chlorobenzene-d₅
Dibromofluoromethane
1,4-Dichlorobenzene-d₄
1,2-Dichloroethane-d₄
1,4-Difluorobenzene
Pentafluorobenzene
Toluene-d₈

M-8260A-B-IS-SS 1 x 1 mL
200 μ g/mL each in MeOH 7 comps.

p-Bromofluorobenzene
Chlorobenzene-d₅
Dibromofluoromethane
1,4-Dichlorobenzene-d₄
1,2-Dichloroethane-d₄
Fluorobenzene
Toluene-d₈



Method 8010 Halogenated VOCs by GC/ELCD (Hall)

Method 8010 Purgeable Halocarbon Sets

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	SAVE 5 x 1 mL
0.2 mg/mL each in MeOH	
M-601A-10X	1 x 1 mL
2.0 mg/mL each in MeOH	18 comps.
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	* Certificate will reflect actual <i>cis/trans</i> ratio
1,2-Dichloropropane	

Gases

M-502B	1 x 1 mL
M-502B-PAK	SAVE 5 x 1 mL
0.2 mg/mL each in MeOH	
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	SAVE 5 x 1 mL
0.2 mg/mL in MeOH	
M-601C-10X	1 x 1 mL
2.0 mg/mL in MeOH	
Chloromethyl methyl ether	

Trihalomethanes

M-501	1 x 1 mL
M-501-PAK	SAVE 5 x 1 mL
0.2 mg/mL each in MeOH	
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	SAVE 5 x 1 mL
20 mg/mL each in MeOH	3 comps.
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.
Benzyl chloride	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	



EPA Method 8000 Series

Method 8010A Acetonitrile Version

Method 8010A (Acetonitrile Version)

M-8010A

0.2 mg/mL each in ACN

Benzyl chloride	Chloromethane	1,2-Dichloroethane	Tetrachloroethylene
Bromobenzene	Dibromochloromethane	1,1-Dichloroethylene	1,1,1-Trichloroethane
Bromoform	Dibromomethane	<i>trans</i> -1,2-Dichloroethylene	1,1,2-Trichloroethane
Bromomethane	1,2-Dichlorobenzene	1,2-Dichloropropane	Trichloroethylene
Carbon tetrachloride	1,3-Dichlorobenzene	<i>cis</i> -1,3-Dichloropropylene	Trichlorofluoromethane
Chlorobenzene	1,4-Dichlorobenzene	<i>trans</i> -1,3-Dichloropropylene	1,2,3-Trichloropropane
Chloroethane	Dichlorobromomethane	Methylene chloride	Vinyl chloride
2-Chloroethyl vinyl ether	Dichlorodifluoromethane	1,1,1,2-Tetrachloroethane	
Chloroform	1,1-Dichloroethane	1,1,2,2-Tetrachloroethane	

Certificate will reflect actual
cis/trans ratio

Internal & Surrogate Standard

M-8010-IS-SS

150 µg/mL each in MeOH
3 comps.

4-Bromochlorobenzene
4-Bromofluorobenzene
Bromochloromethane

Method 8010B Halogenated VOCs by GC/ELCD (Hall)

Halogenated Volatiles (Methanol Versions)

Mix #1

M-8010B

0.2 mg/mL each in MeOH

1 x 1 mL
40 comps.

Allyl chloride	1,1-Dichloroethane
Bromobenzene	1,2-Dichloroethane
Bromoform	1,1-Dichloroethene
Bromomethane	<i>trans</i> -1,2-Dichloroethene
Carbon tetrachloride	1,2-Dichloropropane
Chlorobenzene	1,3-Dichloro-2-propanol
Chloroethane	<i>cis</i> -1,3-Dichloropropene
2-Chloroethanol	<i>trans</i> -1,3-Dichloropropene
Chloroform	1,2-Dibromoethane
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	

Certificate will reflect actual
cis/trans ratio

Internal and Surrogate Standard

M-8010-IS-SS

150 µg/mL each in MeOH

1 x 1 mL
3 comps.

4-Bromochlorobenzene
Bromochloromethane

4-Bromofluorobenzene

Surrogate Standard

M-001R

M-001R-PAK

20 mg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
3 comps

Bromochloromethane
1,4-Dichlorobutane

2-Bromo-1-chloropropane

Halogenated Volatiles

M-8021B-X2

0.2 mg/mL each in Pentane

1 x 1 mL
2 comps.

Bromoacetone

Chloromethyl methyl ether

APP-9-030

100 µg/mL in MeOH

1 x 1 mL

Bromodichloromethane

APP-9-130

100 µg/mL in MeOH

1 x 1 mL

Methyl iodide

Mix #2

M-8021B-X1

0.2 mg/mL each in MeOH

1 x 1 mL
8 comps.

Allyl chloride	bis(2-Chloroisopropyl) ether
Benzyl chloride	Chloroprene (Xylene-free)
2-Chloroethanol	1,3-Dichloro-2-propanol
2-Chloroethyl vinyl ether	Epichlorohydrin

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.

Chloroprene (Xylene-Free)

APP-9-048-R1

100 µg/mL in MeOH

1 x 1 mL

APP-9-048-R1-2X

200 µg/mL in MeOH

1 x 1 mL

APP-9-048-R1-10X

1000 µg/mL in MeOH

1 x 1 mL

APP-9-048-R1-20X

2000 µg/mL in MeOH

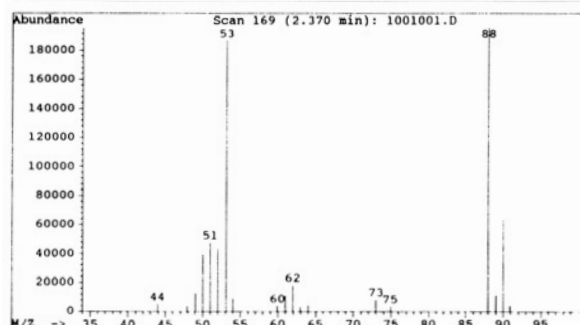
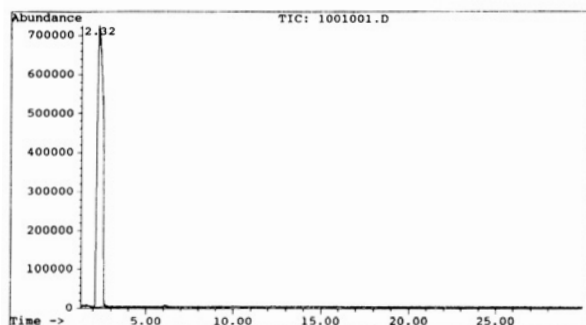
1 x 1 mL

APP-9-048-R1-50X

5000 µg/mL in MeOH

1 x 1 mL

Chloroprene





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)

Method 8015A Non-Halogenated Volatile Organics by GC/FID

Non-Halogenated Volatile Organics

M-8015A 1 x 1 mL
 0.2 mg/mL each in MeOH 4 comps.

M-8015A-10X 1 x 1 mL
 2.0 mg/mL each in MeOH 4 comps.

Diethyl ether Methyl ethyl ketone
 Ethanol 4-Methyl-2-pentanone

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

Acetonitrile Ethyl methacrylate
 Acrylamide Isobutanol
 Methyl ethyl ketone Methacrylonitrile
 Diethyl ether Methyl methacrylate
 1,4-Dioxane 4-Methyl-2-pentanone
 Ethanol Propionitrile

Internal Standard

M-8015B-IS-10X 1 x 1 mL
 2.0 mg/mL each in Water 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 27 x 1 mL
 Each at 10 mg/mL in Water

Compound	Cat. No.	Unit
Acetone	M-8015B-5031-01	1 mL
Acetonitrile	M-8015B-5031-02	1 mL
Acrolein	M-8015B-5031-03	1 mL
Acrylonitrile	M-8015B-5031-04	1 mL
Allyl alcohol	M-8015B-5031-05	1 mL
<i>n</i> -Butanol	M-8015B-5031-06	1 mL
<i>t</i> -Butanol	M-8015B-5031-07	1 mL
Crotonaldehyde	M-8015B-5031-08	1 mL
Diethyl ether	M-8015B-5031-09	1 mL
<i>p</i> -Dioxane	M-8015B-5031-10	1 mL
Ethanol	M-8015B-5031-11	1 mL
Ethyl acetate	M-8015B-5031-12	1 mL
Ethylene glycol	M-8015B-5031-13	1 mL
Ethylene oxide (5.0 mg/mL)	M-8015B-5031-14-R1	1 mL
Isobutanol	M-8015B-5031-15	1 mL
Isopropanol	M-8015B-5031-16	1 mL
Methanol	M-8015B-5031-17	1 mL
Methyl ethyl ketone	M-8015B-5031-18	1 mL
4-Methyl-2-pentanone	M-8015B-5031-19	1 mL
<i>N</i> -Nitrosodi- <i>n</i> -butylamine (0.5 mg/mL)	M-8015B-5031-20	1 mL
Paraldehyde	M-8015B-5031-21	1 mL
2-Pentanone	M-8015B-5031-22	1 mL
2-Picoline	M-8015B-5031-23	1 mL
<i>n</i> -Propanol	M-8015B-5031-24	1 mL
Propionitrile	M-8015B-5031-25	1 mL
Pyridine	M-8015B-5031-26	1 mL
<i>o</i> -Toluidine	M-8015B-5031-27	1 mL

Method 8020 Aromatic Volatiles by PID

Aromatic Volatile Analytes

M-8020 1 x 1 mL
 0.2 mg/mL each in MeOH 10 comps.

M-8020-10X 1 x 1 mL
M-8020-10X-PAK **SAVE** 5 x 1 mL
 2.0 mg/mL each in MeOH 10 comps.

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 **SAVE** 5 x 1 mL
 2.0 mg/mL each in MeOH 13 comps.

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 **SAVE** 5 x 1 mL
 2.0 mg/mL in MeOH

MtBE

Internal Standards

M-8020-IS 1 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 **SAVE** 5 x 1 mL
 2.0 mg/mL each in MeOH 2 comps.

4-Bromofluorobenzene α,α,α -Trifluorotoluene

Surrogate Standards

M-8020-SS 1 x 1 mL
M-8020-SS-PAK **SAVE** 5 x 1 mL
 2.0 mg/mL each in MeOH 3 comps.

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 **Alternate Source** 1 x 1 mL
 1.5 mg/mL each in MeOH 5 comps.

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



EPA Method 8000 Series

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 (Cumene) (37)
<i>sec</i> -Butylbenzene (08)	<i>p</i> -Isopropyltoluene (<i>p</i> -Cymene) (38)
<i>t</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)	

Certificate will reflect actual *cis/trans* ratio

6 Gas Components

Bromomethane (06)	Dichlorodifluoromethane (24)
Chloroethane (12)	Trichlorofluoromethane (52)
Chloromethane (14)	Vinyl chloride (56)

All 60 liquid and gas components in One Solution

M-502	1 x 1 mL
M-502-PAK	SAVE 5 x 1 mL
0.2 mg/mL each in MeOH	60 comps.
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

Complete set 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

Specify Identity (##) & Conc. (0.2 or 2.0 mg/mL)

M-502-##	1 mL	M-502-##-10X	1 mL
Each at 0.2 mg/mL in MeOH		Each at 2.0 mg/mL in MeOH	

Individual Neat Compounds

Specify identity (XX)	
M-502-##N	1 gram

see Method 502.2 in the 500 Series Section for additional VOC solutions

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	35 comps.
Bromochloromethane	1,2-Dichloropropane
Bromodichloromethane	1,3-Dichloropropane
Bromoform	2,2-Dichloropropane
Bromomethane	1,1-Dichloropropene
Carbon tetrachloride	<i>cis</i> -1,3-Dichloropropene
Chloroethane	<i>trans</i> -1,3-Dichloropropene
Chloroform	Hexachlorobutadiene
Chlorodibromomethane	Tetrachloroethene
Chloromethane	1,1,1,2-Tetrachloroethane
1,2-Dibromo-3-chloropropane	1,1,2,2-Tetrachloroethane
1,2-Dibromoethane	Trichloroethene
Dibromomethane	1,1,1-Trichloroethane
Dichlorodifluoromethane	1,1,2-Trichloroethane
1,1-Dichloroethane	Trichlorofluoromethane
1,2-Dichloroethane	1,2,3-Trichloropropane
1,1-Dichloroethene	Vinyl chloride
<i>cis</i> -1,2-Dichloroethene	
<i>trans</i> -1,2-Dichloroethene	
Dichloromethane	

Certificate will reflect actual *cis/trans* ratio

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	25 comps.
Benzene	<i>p</i> -Isopropyltoluene
Bromobenzene	Naphthalene
<i>n</i> -Butylbenzene	<i>n</i> -Propylbenzene
<i>sec</i> -Butylbenzene	Styrene
<i>t</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	8 comps.
Allyl chloride	bis(2-Chloroisopropyl) ether
Benzyl chloride	Chloroprene (Xylene-free)
2-Chloroethanol	1,3-Dichloro-2-propanol
2-Chloroethyl vinyl ether	Epichlorohydrin

Halogenated Volatiles Solution #4

M-8021B-X2	1 x 1 mL
0.2 mg/mL each in Pentane	2 comps.
Bromoacetone	Chloromethyl methyl ether

Purgeable Internal 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	

Chloroprene Solution

APP-9-048-R1-2X	1 x 1 mL
0.2 mg/mL in MeOH	
Chloroprene (Xylene-free)	



Method 8030A Acrolein & Acrylonitrile by GC/FID

M-603-10X 1 x 1 mL
10 mg/mL each in Water 2 comps.
Acrolein Acrylonitrile

Method 8031 Acrylonitrile by GC/NPD

APP-9-008-10X 1 x 1 mL
APP-9-008-10X-PAK **SAVE** 5 x 1 mL
1.0 mg/mL in MeOH
Acrylonitrile

Method 8032/8032A Acrylamide by GC/ECD

Acrylamide
M-8032 1 x 1 mL
M-8032-PAK **SAVE** 5 x 1 mL
1.0 mg/mL in MeOH
Acrylamide

Brominated Analyte

M-8032B 1 x 1 mL
M-8032B-PAK **SAVE** 5 x 1 mL
0.1 mg/mL in Ethyl acetate
2,3-Dibromopropionamide

Internal Standard

M-8032-IS 1 x 1 mL
M-8032-IS-PAK **SAVE** 5 x 1 mL
0.1 mg/mL in Ethyl acetate
Dimethyl phthalate

Method 8033 Acrylonitrile by GC/NPD

Acrylonitrile
M-8033 1 x 1 mL
M-8033-PAK **SAVE** 5 x 1 mL
1.0 mg/mL in Water
Acrylonitrile

Method 8040 Phenols, PFB Derivatives by GC/ECD

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-PFB o-Nitrophenol-PFB
o-Cresol-PFB p-Nitrophenol-PFB
2-Cyclohexyl-4,6-dinitrophenol-PFB (Dinex) 2,4,6-Trichlorophenol-PFB
2,4-Dichlorophenol-PFB Pentachlorophenol-PFB
2-Methyl-4,6-dinitrophenol-PFB Phenol-PFB

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-PFB 2,4-Dinitrophenol-PFB
m-Cresol-PFB Dinoseb-PFB
p-Cresol-PFB 2,3,4,6-Tetrachlorophenol-PFB
2,6-Dichlorophenol-PFB 2,4,5-Trichlorophenol-PFB
2,4-Dimethylphenol-PFB

Method 8040 Phenols, PFB Derivatives by GC/ECD (con't)

Surrogate Standard

M-8040-SS 1 x 1 mL
M-8040-SS-PAK **SAVE** 5 x 1 mL
2.0 mg/mL each in Isopropanol 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-PFB 2,4,6-Tribromophenol-PFB

Method 8040A Phenols by GC/FID

Phenol Set
M-8040-SET 19 x 1 mL
Each at 1.0 mg/mL in MeOH

4-Chloro-3-cresol	M-8040-01	Dinoseb	M-8040-11
o-Chlorophenol	M-8040-02	2-Methyl-4,6-dinitrophenol	M-8040-12
m-Cresol	M-8040-03	o-Nitrophenol	M-8040-13
o-Cresol	M-8040-04	p-Nitrophenol	M-8040-14
p-Cresol	M-8040-05	Pentachlorophenol	M-8040-15
2-Cyclohexyl-4,6-dinitrophenol	M-8040-06	Phenol	M-8040-16
2,4-Dichlorophenol	M-8040-07	2,3,4,6-Tetrachlorophenol	M-8040-17
2,6-Dichlorophenol	M-8040-08	2,4,5-Trichlorophenol	M-8040-18
2,4-Dimethylphenol	M-8040-09	2,4,6-Trichlorophenol	M-8040-19
2,4-Dinitrophenol	M-8040-10		

Phenols, Mix A

M-8040A-R 1 x 1 mL
M-8040A-R-PAK **SAVE** 5 x 1 mL
2.0 mg/mL each in Isopropanol 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, Mix B

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

Alternate Source

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 (Dinex)	2,3,4,6-Tetrachlorophenol
2,4-Dichlorophenol	2,4,5-Trichlorophenol
2,6-Dichlorophenol	2,4,6-Trichlorophenol
2,4-Dimethylphenol	

Technical Note

2,4-Dinitrophenol, 4-Nitrophenol, and Pentachlorophenol are susceptible to adsorption on active surfaces found in injection ports or contaminated columns.



EPA Method 8000 Series

Method 8040/8040A Bromophenols and Anisoles

Bromophenols

Each at 100 µg/mL in Toluene

Compound	CAS No.	Cat. No.	Unit
2-Bromophenol	95-56-7	BP-002S	1 mL
3-Bromophenol	591-20-8	BP-003S	1 mL
4-Bromophenol	106-41-2	BP-004S	1 mL
2,3-Dibromophenol	57383-80-9	BP-023S	1 mL
2,4-Dibromophenol	615-58-7	BP-024S	1 mL
2,5-Dibromophenol	28165-52-8	BP-025S	1 mL
2,6-Dibromophenol	608-33-3	BP-026S	1 mL
3,4-Dibromophenol	615-56-5	BP-034S	1 mL
3,5-Dibromophenol	626-41-5	BP-035S	1 mL
2,3,4-Tribromophenol	138507-65-0	BP-234S	1 mL
2,3,5-Tribromophenol	57383-81-0	BP-235S	1 mL
2,3,6-Tribromophenol		BP-236S	1 mL
2,4,5-Tribromophenol	14401-61-7	BP-245S	1 mL
2,4,6-Tribromophenol	118-79-6	BP-246S	1 mL
3,4,5-Tribromophenol	116434-90-3	BP-345S	1 mL
2,3,4,5-Tetrabromophenol	36313-15-2	BP-2345S	1 mL
2,3,4,6-Tetrabromophenol	14400-94-3	BP-2346S	1 mL
2,3,5,6-Tetrabromophenol		BP-2356S	1 mL
Pentabromophenol	608-71-9	BP-23456S	1 mL

Bromoanisoles (Methyl Esters)

Each at 50 µg/mL in Methanol

Compound	CAS No.	Cat. No.	Unit
2-Bromoanisole	578-57-4	BAN-01S	1 mL
3-Bromoanisole	2398-37-0	BAN-02S	1 mL
4-Bromoanisole	104-92-7	BAN-03S	1 mL
2,3-Dibromoanisole	95970-22-2	BAN-04S	1 mL
2,4-Dibromoanisole	21702-84-1	BAN-05S	1 mL
2,5-Dibromoanisole	95970-08-4	BAN-06S	1 mL
2,6-Dibromoanisole	38603-09-7	BAN-07S	1 mL
3,4-Dibromoanisole	62415-74-1	BAN-12S	1 mL
3,5-Dibromoanisole	74137-36-3	BAN-08S	1 mL
2,4,5-Tribromoanisole	95970-10-8	BAN-09S	1 mL
2,4,6-Tribromoanisole	607-99-8	BAN-10S	1 mL
2,3,5-Tribromoanisole	73931-44-9	BAN-11S	1 mL
2,3,4-Tribromoanisole	95970-13-1	BAN-13S	1 mL
2,3,6-Tribromoanisole	95970-19-7	BAN-14S	1 mL
3,4,5-Tribromoanisole	73557-60-5	BAN-15S	1 mL
2,3,4,5-Tetrabromoanisole		BAN-16S	1 mL
2,3,4,6-Tetrabromoanisole		BAN-17S	1 mL
2,3,5,6-Tetrabromoanisole	95970-18-6	BAN-18S	1 mL
2,3,4,5,6-Pentabromoanisole	1825-26-9	BAN-19S	1 mL

Method 8041 Phenols by GC-FID or ECD as the Derivatives

RCRA Target Phenols Solution

M-8041

M-8041-PAK

1.0 mg/mL each in Isopropanol

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

1 x 1 mL
SAVE 5 x 1 mL
21 comps.

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

M-8041-X1-PAK

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

1 x 1 mL
SAVE 5 x 1 mL
18 comps.

Internal Standards

M-8041-IS

M-8041-IS-PAK

50 µg/mL each in Isopropanol

M-8041-IS-10X

M-8041-IS-10X-PAK

0.5 mg/mL each in Isopropanol

M-8041-IS-20X

M-8041-IS-20X-PAK

1.0 mg/mL each in Isopropanol

2,5-Dibromotoluene	2,2',5',5'-Tetrabromobiphenyl
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1 x 1 mL
SAVE 5 x 1 mL

1 x 1 mL
SAVE 5 x 1 mL

1 x 1 mL
SAVE 5 x 1 mL
2 comps.

Surrogate Standards

M-8041-SS

M-8041-SS-PAK

1.6 µg/mL in Isopropanol

M-8041-SS-10X

16 µg/mL in Isopropanol

M-8041-SS-100X

160 µg/mL in Isopropanol

M-8041-SS-625X

M-8041-SS-625X-PAK

1.0 mg/mL in Isopropanol

2,4-Dibromophenol

1 x 1 mL
SAVE 5 x 1 mL

1 x 1 mL

1 x 1 mL

1 x 1 mL
SAVE 5 x 1 mL



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 6 comps.

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. (mg/mL) in MeOH 6 comps.

Benzyl butyl phthalate	0.1	Di- <i>n</i> -butyl phthalate	0.25
Diethyl phthalate	0.25	Di- <i>n</i> -octyl phthalate	0.5
Dimethyl phthalate	0.25	bis(2-Ethylhexyl)phthalate	0.5

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 15 comps.

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
Diethyl phthalate	bis(4-Methyl- <i>n</i> -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 6 comps.

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 2 comps.

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 3 comps.

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-Nitrosodi- <i>n</i> -propylamine
N-Nitrosodiphenylamine	

Nitrosamines Mix

M-8270-03-ASL 1 x 1 mL
 2.0 mg/mL each in CH₂Cl₂ 9 comps.

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	

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EPA Method 8000 Series

Method 8080A Organochlorine Pesticides and PCBs by GC/ECD

Organochlorine Pesticides

M-8080

M-8080-PAK

2.0 mg/mL each in Acetone

1 x 1 mL
SAVE 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 (Isomer B)
4,4'-DDT	Methoxychlor
Dieldrin	

Organochlorine Pesticide QC Standard

M-8080-QC-R

M-8080-QC-R-PAK

At stated conc. (mg/mL) in Acetone

1 x 1 mL
SAVE 5 x 1 mL
17 comps.

Aldrin	0.02	Endosulfan I	0.02
α-BHC	0.02	Endosulfan II	0.1
β-BHC	0.02	Endosulfan sulfate	0.1
δ-BHC	0.02	Endrin	0.1
γ-BHC	0.02	Endrin aldehyde	0.02
4,4'-DDD	0.1	Heptachlor	0.02
4,4'-DDE	0.02	Heptachlor epoxide (Isomer B)	0.02
4,4'-DDT	0.1	Methoxychlor	0.02
Dieldrin	0.02		

Internal Standard

M-508-IS

M-508-IS-PAK

0.1 mg/mL in MtBE

1 x 1 mL
SAVE 5 x 1 mL

Pentachloronitrobenzene

Surrogate Standard

CLP-032-R

CLP-032-R-PAK

0.2 mg/mL each in Acetone

1 x 1 mL
SAVE 5 x 1 mL
2 comps.

Decachlorobiphenyl Tetrachloro-*m*-xylene

Multi-Component Analytes

Polychlorinated Biphenyls, Chlordane & Toxaphene

Each at 1000 µg/mL in Hexane

PACK SAVE

Aroclors®#	Cat. No.	Unit	Cat. No. (5 x 1 mL)
Aroclor 1016	C-216S-H-10X	1 mL	C-216S-H-10X-PAK
Aroclor 1221	C-221S-H-10X	1 mL	C-221S-H-10X-PAK
Aroclor 1232	C-232S-H-10X	1 mL	C-232S-H-10X-PAK
Aroclor 1242	C-242S-H-10X	1 mL	C-242S-H-10X-PAK
Aroclor 1248	C-248S-H-10X	1 mL	C-248S-H-10X-PAK
Aroclor 1254	C-254S-H-10X	1 mL	C-254S-H-10X-PAK
Aroclor 1260	C-260S-H-10X	1 mL	C-260S-H-10X-PAK
Aroclor 1262	C-262S-H-10X	1 mL	C-262S-H-10X-PAK
Aroclor 1268	C-268S-H-10X	1 mL	C-268S-H-10X-PAK
Pesticides			
Chlordane	P-017S-H-10X	1 mL	P-017S-H-10X-PAK
Toxaphene	P-093S-H-10X	1 mL	P-093S-H-10X-PAK

Decomposition Solution

M-1618D

M-1618D-PAK

At stated conc. in Acetone

1 x 1 mL
SAVE 5 x 1 mL
2 comps.

p,p'-DDT 2 µg/mL Endrin 1 µg/mL

o,p'-DDT and Metabolites

M-8080-OP

M-8080-OP-PAK

0.25 mg/mL each in Hexane:Toluene (50:50)

1 x 1 mL
SAVE 5 x 1 mL
3 comps.

o,p'-DDD o,p'-DDE o,p'-DDT

Organochlorine Pesticide Mix

M-8080A-ASL

M-8080A-ASL-PAK

250 µg/mL each in Hexane:Toluene (50:50)

Alternate Source

1 x 1 mL
SAVE 5 x 1 mL
17 comps.

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

2-Part Labels (ampules or vials)

Part One can be placed into a laboratory journal to document the standard used for the analysis. This label section includes the catalog number, description, lot number, expiration date, safety information, proper storage conditions and documents AccuStandard as the manufacturer.

Part Two duplicates required information for labeling transfer vial(s) with correct information.



EPA Method 8000 Series

Ready-to-Inject Working Level Pesticide and Aroclor Standards



Ready-to-Inject

Method 8080/8081 Organochlorine Pesticides and PCBs by GC

Matrix Spiking Solutions

For Water Samples

CLP-014-5ML

CLP-014-25ML

At stated conc. (ng/mL) in MeOH

1 x 5 mL

1 x 25 mL

6 comps.

Aldrin	200	Endrin	500
4,4'-DDT	500	Heptachlor	200
Dieldrin	500	Lindane	200

For Waste Samples

CLP-014-5X-5ML

CLP-014-5X-25ML

At stated conc. (ng/mL) in MeOH

1 x 5 mL

1 x 25 mL

6 comps.

Aldrin	1000	Endrin	2500
4,4'-DDT	2500	Heptachlor	1000
Dieldrin	2500	Lindane	1000

Surrogate Solution

For Waste Samples

CLP-032R-WL-5X-10ML

CLP-032R-WL-5X-50ML

CLP-032R-WL-5X-100ML

5 µg/mL each in Acetone

1 x 10 mL

1 x 50 mL

1 x 100 mL

2 comps.

Decachlorobiphenyl
Tetrachloro-*m*-xylene

M-8080-CAL-SET

At stated conc. (ng/mL) in Isooctane

7 x 1 mL

21 comps.

Components	Level 1	2	3	4	5	6	7
	(2.5X)	(5X)	(10X)	(25X)	(50X)	(100X)	(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 (Isomer B)	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

M-8080-R2-CAL-SET

At stated conc. (ng/mL) in Isooctane

7 x 1 mL

23 comps.

Components	Level 1	2	3	4	5	6	7
	(2.5X)	(5X)	(10X)	(25X)	(50X)	(100X)	(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 (Isomer B)	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

Aroclor 1016/1260 Calibration Curve

C-216-260-CAL-SET

At stated conc. (ng/mL) in Isooctane

6 x 1 mL

4 comps.

Components	Level 1	2	3	4	5	6
	(2X)	(5X)	(10X)	(15X)	(20X)	(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

Low level curves

C-216-260-WL-5X-5ML

C-216-260-WL-5X-10ML

At stated conc. (ng/mL) in Isooctane

1 x 5 mL

1 x 10 mL

4 comps.

Level 4 Daily Working Level

Higher level curves

C-216-260-WL-10X-5ML

C-216-260-WL-10X-10ML

At stated conc. (ng/mL) in Isooctane

1 x 5 mL

1 x 10 mL

4 comps.

Aroclor 1221 Calibration Curve

C-221-CAL-SET

At stated conc. (ng/mL) in Isooctane

6 x 1 mL

3 comps.

Components	Level 1	2	3	4	5	6
	(2X)	(5X)	(10X)	(15X)	(20X)	(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

Low level curves

C-221-WL-5X-5ML

C-221-WL-5X-10ML

At stated conc. (ng/mL) in Isooctane

1 x 5 mL

1 x 10 mL

3 comps.

Level 4 Daily Working Level

Higher level curves

C-221-WL-10X-5ML

C-221-WL-10X-10ML

At stated conc. (ng/mL) in Isooctane

1 x 5 mL

1 x 10 mL

3 comps.

Aroclor 1232 Calibration Curve

C-232-CAL-SET

At stated conc. (ng/mL) in Isooctane

6 x 1 mL

3 comps.

Components	Level 1	2	3	4	5	6
	(2X)	(5X)	(10X)	(15X)	(20X)	(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

Low level curves

C-232-WL-5X-5ML

C-232-WL-5X-10ML

At stated conc. (ng/mL) in Isooctane

1 x 5 mL

1 x 10 mL

3 comps.

Level 4 Daily Working Level

Higher level curves

C-232-WL-10X-5ML

C-232-WL-10X-10ML

At stated conc. (ng/mL) in Isooctane

1 x 5 mL

1 x 10 mL

3 comps.



EPA Method 8000 Series

Ready-to-Inject Working Level Standards for Aroclors and GPC Standards

Ready-to-Inject

Organochlorine Pesticides and PCBs by GC (continued)

Aroclor 1242 Calibration Curve

C-242-CAL-SET

At stated conc. (ng/mL) in Isooctane

Components	Level						6 x 1 mL 3 comps.
	1	2	3	4	5	6	
	(2X)	(5X)	(10X)	(15X)	(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

Low level curves

C-242-WL-5X-5ML

At stated conc. (ng/mL) in Isooctane

1 x 5 mL

1 x 10 mL

3 comps.

Level 4 Daily Working Level

Higher level curves

C-242-WL-10X-5ML

At stated conc. (ng/mL) in Isooctane

1 x 5 mL

1 x 10 mL

3 comps.

Aroclor 1248 Calibration Curve

C-248-CAL-SET

At stated conc. (ng/mL) in Isooctane

Components	Level						6 x 1 mL 3 comps.
	1	2	3	4	5	6	
	(2X)	(5X)	(10X)	(15X)	(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

Low level curves

C-248-WL-5X-5ML

At stated conc. (ng/mL) in Isooctane

1 x 5 mL

1 x 10 mL

3 comps.

Level 4 Daily Working Level

Higher level curves

C-248-WL-10X-5ML

At stated conc. (ng/mL) in Isooctane

1 x 5 mL

1 x 10 mL

3 comps.

Aroclor 1254 Calibration Curve

C-254-CAL-SET

At stated conc. (ng/mL) in Isooctane

Components	Level						6 x 1 mL 3 comps.
	1	2	3	4	5	6	
	(2X)	(5X)	(10X)	(15X)	(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

Low level curves

C-254-WL-5X-5ML

At stated conc. (ng/mL) in Isooctane

1 x 5 mL

1 x 10 mL

3 comps.

Level 4 Daily Working Level

Higher level curves

C-254-WL-10X-5ML

At stated conc. (ng/mL) in Isooctane

1 x 5 mL

1 x 10 mL

3 comps.

Toxaphene Calibration Curve

P-093-CAL-SET

At stated conc. (ng/mL) in Isooctane

Components	Level						6 x 1 mL 3 comps.
	1	2	3	4	5	6	
	(2X)	(5X)	(10X)	(15X)	(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

Low level curves

P-093-WL-5X-5ML

At stated conc. (ng/mL) in Isooctane

1 x 5 mL

1 x 10 mL

3 comps.

Level 4 Daily Working Level

Higher level curves

P-093-WL-10X-5ML

At stated conc. (ng/mL) in Isooctane

1 x 5 mL

1 x 10 mL

3 comps.

Chlordane Calibration Curve

P-017-CAL-SET

At stated conc. (ng/mL) in Isooctane

Components	Level						6 x 1 mL 3 comps.
	1	2	3	4	5	6	
	(2X)	(5X)	(10X)	(15X)	(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

Low level curves

P-017R-WL-5X-5ML

At stated conc. (ng/mL) in Isooctane

1 x 5 mL

1 x 10 mL

3 comps.

Level 4 Daily Working Level

Higher level curves

P-017R-WL-10X-5ML

At stated conc. (ng/mL) in Isooctane

1 x 5 mL

1 x 10 mL

3 comps.

GPC Standards Sample Clean-up Solutions at Working Level

GPC Calibration Solution

CLP-027-WL-10ML

At stated conc. (mg/mL) in CH₂Cl₂

CLP-027-WL-10ML				1 x 10 mL
At stated conc. (mg/mL) in CH ₂ Cl ₂				5 comps.
Corn Oil	25	Perylene	0.02	
bis(2-Ethylhexyl)phthalate	1.0	Sulfur	0.08	
Methoxychlor	0.2			

Florisol Cartridge Check Solution

CLP-FC-WL-10ML

0.1 µg/mL in Acetone

CLP-FC-WL-10ML	1 x 10 mL
0.1 µg/mL in Acetone	
2,4,5-Trichlorophenol	

GPC Calibration Solution for SOW OLM03.1

CLP-027-R2-WL-10ML

At stated conc. (mg/mL) in CH₂Cl₂

CLP-D27-R2-WL-10ML				1 x 10 mL
At stated conc. (mg/mL) in CH ₂ Cl ₂				5 comps.
Corn Oil	25	Perylene	0.02	
bis(2-Ethylhexyl)phthalate	0.5	Sulfur	0.08	
Methoxychlor	0.1			

GPC Calibration Check Solutions

GPC-CC-A-WL-10ML

At stated conc. (µg/mL) in CH₂Cl₂

GPC-CC-A-WL-10ML						1 x 10 mL
At stated conc. (µg/mL) in CH ₂ Cl ₂						6 comps.
Aldrin	0.1	4,4'-DDT	0.2	Endrin	0.2	
γ-BHC (Lindane)	0.1	Dieldrin	0.2	Heptachlor	0.1	

GPC-CC-B-WL-10ML

0.2 µg/mL each in CH₂Cl₂

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	



Method 8080/8081A/8081B Organochlorine Pesticides by Capillary Column GC/ECD

Single/Dual Column Organochlorine Pesticides

Single 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 Hexane:Toluene (50:50) 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 (Isomer B)
α-Chlordane	Endosulfan II	Methoxychlor
γ-Chlordane	Endosulfan sulfate	

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.

Organochlorine Pesticide Mixes

M-8081A-SC 1 x 1 mL
M-8081A-SC-PAK **SAVE** 5 x 1 mL
 1.0 mg/mL each in Hexane:Toluene (50:50) 7 comps.

Chlorobenzilate	Hexachlorocyclopentadiene
1,2-Dibromo-3-chloropropane	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 (50:50) 6 comps.

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 (50:50) 22 comps.

Alachlor	Etridiazole
Captafol	Hexachlorobenzene
Captan	Hexachlorocyclopentadiene
Chlorobenzilate	Isodrin
Chloroneb	Mirex
Chloropropylate	trans-Nonachlor
Chlorothalonil	Pentachloronitrobenzene
1,2-Dibromo-3-chloropropane	Perthane
DCPA	Propachlor
Diallate	Permethrin * (cis & trans)
Dicofol	Trifluralin

* Certificate will reflect actual cis/trans ratio

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 2 comps.

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 2 comps.

Dibutylchloroendate	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 2 comps.

4,4'-DDT	Endrin
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EPA Method 8000 Series

Method 8082 Aroclors and PCBs by GC

Aroclor 1016/1260 Calibration Curve Set

C-216-260-CAL-SET

At stated conc. (ng/mL) in Isooctane

6 x 1 mL

4 comps.

Components	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

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. (ng/mL) in Isooctane

Level 4

Daily Working Level

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. (ng/mL) 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	Unit
2-Chlorobiphenyl	C-001S	C-001S-TP	1 mL
2,3-Dichlorobiphenyl	C-005S	C-005S-TP	1 mL
2,2',5-Trichlorobiphenyl	C-018S	C-018S-TP	1 mL
2,4',5-Trichlorobiphenyl	C-031S	C-031S-TP	1 mL
2,2',3,5'-Tetrachlorobiphenyl	C-044S	C-044S-TP	1 mL
2,2',5,5'-Tetrachlorobiphenyl	C-052S	C-052S-TP	1 mL
2,3',4,4'-Tetrachlorobiphenyl	C-066S	C-066S-TP	1 mL
2,2',3,4,5'-Pentachlorobiphenyl	C-087S	C-087S-TP	1 mL
2,2',4,5,5'-Pentachlorobiphenyl	C-101S	C-101S-TP	1 mL
2,3,3',4',6-Pentachlorobiphenyl	C-110S	C-110S-TP	1 mL
2,2',3,4,4',5-Hexachlorobiphenyl	C-137S	C-137S-TP	1 mL
2,2',3,4,4',5'-Hexachlorobiphenyl	C-138S	C-138S-TP	1 mL
2,2',3,4,5,5'-Hexachlorobiphenyl	C-141S	C-141S-TP	1 mL
2,2',3,5,5',6-Hexachlorobiphenyl	C-151S	C-151S-TP	1 mL
2,2',4,4',5,5'-Hexachlorobiphenyl	C-153S	C-153S-TP	1 mL
2,2',3,3',4,4',5-Heptachlorobiphenyl	C-170S	C-170S-TP	1 mL
2,2',3,4,4',5,5'-Heptachlorobiphenyl	C-180S	C-180S-TP	1 mL
2,2',3,4,4',5',6-Heptachlorobiphenyl	C-183S	C-183S-TP	1 mL
2,2',3,4',5,5',6-Heptachlorobiphenyl	C-187S	C-187S-TP	1 mL
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	C-206S	C-206S-TP	1 mL

Internal Standards

C-209S-H

100 µg/mL in Hexane

1 x 1 mL

C-209S-H-10X

1.0 mg/mL in Hexane

1 x 1 mL

Decachlorobiphenyl

Internal and Surrogate Standard

CLP-032-H-5X

1.0 mg/mL each in Hexane

1 x 1 mL

2 comps.

Decachlorobiphenyl

Tetrachloro-*m*-xylene (TCMS)

Surrogate Standard

M-8082-SS

100 µg/mL in Hexane

1 x 1 mL

M-8082-SS-10X

1.0 mg/mL in Hexane

1 x 1 mL

Tetrachloro-*m*-xylene (TCMS)

Method 8082/8082A PCBs by GC/ ECD or ELCD

PCB Congeners Mix

M-8082

M-8082-PAK

100 µg/mL each in Hexane

1 x 1 mL

SAVE 5 x 1 mL

19 comps.

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

Reformulated PCB Congeners Mix

M-8082A

M-8082A-PAK

100 µg/mL each in Hexane

1 x 1 mL

SAVE 5 x 1 mL

19 comps.

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

Technical Note

These standards have been formulated 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 and Surrogate Standard

CLP-032-H-5X

1.0 mg/mL each in Hexane

1 x 1 mL

2 comps.

Decachlorobiphenyl

Tetrachloro-*m*-xylene (TCMS)

Surrogate Standards

M-8082-SSA-WL-10ML

M-8082-SSA-WL-10ML-PAK

5 µg/mL in Acetone

1 x 10 mL

SAVE 5 x 10 mL

Decachlorobiphenyl

M-8082-SS

100 µg/mL in Hexane

1 x 1 mL

M-8082-SS-10X

1.0 mg/mL in Hexane

1 x 1 mL

Tetrachloro-*m*-xylene (TCMS)

Internal Standards

M-8082-ISC-WL-10ML

M-8082-ISC-WL-10ML-PAK

5 µg/mL in Hexane

1 x 10 mL

SAVE 5 x 10 mL

Decachlorobiphenyl

M-8082-SSC-WL-10ML

M-8082-SSC-WL-10ML-PAK

5 µg/mL in Acetone

1 x 10 mL

SAVE 5 x 10 mL

Tetrachloro-*m*-xylene (TCMS)



Method 8085 Pesticides by GC/AED

Nitrogen Containing Pesticides

Mix #1

M-8085-N1

At stated conc. (µg/mL) in MtBE

1 x 5 mL
19 comps.

Alachlor	18	Metribuzin	5	Pronamide	20
Atrazine	5	Napropamide	15	Propachlor	12
Bromacil	20	Norflurazon	10	Simazine	5
Dichlobenil	10	Oxyfluorfen	20	Tebuthiuron	7.5
Diphenamid	15	Pendimethalin	7.5	Terbacil	15
Ethalfuralin	7.5	Prometryne	5	Trifluralin	7.5
Metolachlor	20				

Mix #2

M-8085-N2

At stated conc. (µg/mL) in MtBE

1 x 5 mL
18 comps.

Ametryn	5	Cycloate	10	Prometon	5
Benfluralin	7.5	EPTC	10	Propargite	10
Butylate	10	Hexazinone	7.5	Propazine	5
Chlorpropham	20	Molinate	10	Tillam	10
Chlorothalonil	12	Prebane	5	Triallate	13
Cyanazine	7.5	Profluralin	12	Vernolate	10

Mix #3

M-8085-N3

At stated conc. (µg/mL) in MtBE

1 x 5 mL
15 comps.

Butachlor	30	Gesatamine	7.5	cis-Permethrin	10
Carboxin	30	Hexazinone	7.5	Resmethrin	10
Diallate	35	Karmex	30	Sumithrin	10
Fenarimol	15	Metalaxyl	30	Triadimefon	13
Fenvalerate	20	MGK-264	40	Triallate	15

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

2.5 µg/mL each in Hexane

1 x 5 mL
23 comps.

Aldrin	p,p'-DDE	Endrin ketone
α-BHC	p,p'-DDT	Heptachlor
β-BHC	Dieldrin	Heptachlor epoxide (Isomer B)
γ-BHC	Endosulfan I	Methoxychlor
δ-BHC	Endosulfan II	cis-nonachlor
γ-Chlordane	Endosulfan sulfate	Oxychlordane
α-Chlordane	Endrin	Pentachloroanisole
p,p'-DDD	Endrin aldehyde	

Mix #2

M-8085-C2

At stated conc. (µg/mL) in Hexane

1 x 5 mL
9 comps.

Captan	6.75	o,p'-DDD	2.5	Kelthane	10
Captafol	12.5	o,p'-DDT	2.5	Mirex	2.5
o,p'-DDE	2.5	Hexachlorobenzene	2.5	trans-Nonachlor	2.5

Organo Phosphorous Pesticides

Mix #1

M-8085-P1

At stated conc. (µg/mL) in MtBE

1 x 5 mL
14 comps.

Azinphos ethyl	8	EPN	5
Carbophenothion	5	Ethion	3.5
Chlorpyrifos methyl ester	4	Fenamiphos	5
Demeton (mixed isomers)	7	Fenitrothion	3.5
Disulfoton	3	Malathion	4
Dursban	4	Merphos	6
Dyfonate	3	Sulfotep	3

Mix #2

M-8085-P2

At stated conc. (µg/mL) in MtBE

1 x 5 mL
12 comps.

Azinphos methyl	8	Ethoprop	4	Methyl parathion	3.5
Bolstar	3.5	Fensulfothion	5	Parathion	4
Diazinon	4	Fenthion	3.5	Phorate	3.5
Dimethoate	4	Imidan	5.5	Ronnel	3.5

Herbicides as Methyl Derivatives

Mix #1

M-8085-H1-M

At stated conc. (µg/mL) in MtBE

1 x 5 mL
12 comps.

Bentazon methyl ester	7.5	4-Nitroanisole	10
Bromoxynil methyl ether	5	Pentachloroanisole	2.5
Chloramben methyl ester	5	2,3,4,5-Tetrachloroanisole	2.75
Dinoseb methyl ether	7.5	2,3,4,6-Tetrachloroanisole	2.75
MCPA methyl ester	10	2,4,5-Trichloroanisole	3
MCPP methyl ester	10	2,4,6-Trichloroanisole	3

Mix #2

M-8085-H2-M

At stated conc. (µg/mL) in MtBE

1 x 5 mL
13 comps.

Dalapon methyl ester	4	loxynil methyl ether	5
2,4-D methyl ester	5	Methyl 3,5-Dichlorobenzoate	5
2,4-DB methyl ester	6	Picloram methyl ester	5
DCPA methyl ester	4	Silvex methyl ester	4
Dicamba methyl ester	5	2,4,5-T methyl ester	4
Dichloroprop methyl ester	5.5	Triclopyr methyl ester	4
Diclofop methyl	7.5		

Surrogates

M-8085-PEST-SS

At stated conc. (µg/mL) in MtBE

1 x 5 mL
4 comps.

Decachlorobiphenyl	10	1,3-Dimethyl-2-nitrobenzene	20
4,4'-Dibromooctafluorobiphenyl	20	Triphenylphosphate	20

Technical Note

Organophosphorus and Nitrogen/Phosphorus pesticides are light sensitive, store in deactivated amber vials.

Alternate Surrogates

M-8085-PEST-SS2

20 µg/mL each in MtBE

1 x 5 mL
2 comps.

Dibutylchlorendate	Tetrachloro-m-xylene
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Herbicide Surrogate

M-8085-HERB-SS

20 µg/mL in MtBE

1 x 5 mL

2,4,6-Tribromophenol



EPA Method 8000 Series

Method 8090 Nitroaromatics & Isophorone by GC/TCD or FID

Analyte Calibration Set (609)

M-609-10X-SET

2 x 1 mL

M-609A-10X, M-609B-10X

M-609A-10X

2.0 mg/mL each in MeOH

1 x 1 mL

2 comps.

Isophorone

Nitrobenzene

M-609B-10X

2.0 mg/mL each in MeOH

1 x 1 mL

2 comps.

2,4-Dinitrotoluene

2,6-Dinitrotoluene

Analyte Calibration Set (8090)

M-8090-10X-SET

2 x 1 mL

M-8090-10X, M-609-QC

M-8090-10X

2.0 mg/mL each in MeOH

1 x 1 mL

4 comps.

1,3-Dinitrobenzene
Isophorone

1,4-Naphthoquinone
Nitrobenzene

M-609-QC

At stated conc. (µg/mL) in Acetone

1 x 1 mL

4 comps.

Isophorone

100

2,6-Dinitrotoluene

20

2,4-Dinitrotoluene

20

Nitrobenzene

100

M-8090-QC

At stated conc. (µg/mL) in Acetone

1 x 1 mL

6 comps.

1,3-Dinitrobenzene

40

Isophorone

100

2,4-Dinitrotoluene

20

1,4-Naphthoquinone

40

2,6-Dinitrotoluene

20

Nitrobenzene

100

Method 8091 Nitroaromatics & Cyclic Ketones by GC/ECD or NPD

Resource Conservation and Recovery Act (RCRA) Analytes

M-8091

1.0 mg/mL each in Isooctane:Toluene (50:50)

1 x 1 mL

6 comps.

1,4-Dinitrobenzene

1,4-Naphthoquinone

2,4-Dinitrotoluene

Nitrobenzene

2,6-Dinitrotoluene

Pentachloronitrobenzene

Chloronitroaromatics: non-RCRA Analytes

M-8091-X1

1.0 mg/mL each in Isooctane:Toluene (50:50)

1 x 1 mL

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

SAVE 5 x 1 mL

1.0 mg/mL in Acetone

Hexachlorobenzene

Surrogate Standard

M-8091-SS-100X

1 x 1 mL

M-8091-SS-100X-PAK

SAVE 5 x 1 mL

1.0 mg/mL in Acetone

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

SAVE 5 x 1 mL

100 µg/mL each in ACN:MeOH (50:50)

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

SAVE 5 x 1 mL

At stated conc. (µg/mL) in ACN:MeOH (50:50)

7 comps.

Nitrobenzene

500

Nitroglycerin

500

3-Nitrotoluene

500

PETN

500

2-Nitrotoluene

500

3,5-Dinitroaniline

100

4-Nitrotoluene

500

Explosive Surrogate Standards

M-8095-SS-01

1 x 1 mL

M-8095-SS-01-PAK

SAVE 5 x 1 mL

100 µg/mL in ACN

3,4-Dinitrotoluene

M-8095-SS-02

1 x 1 mL

M-8095-SS-02-PAK

SAVE 5 x 1 mL

100 µg/mL in ACN

2-Methyl-4-nitroaniline

M-8095-SS-03

1 x 1 mL

M-8095-SS-03-PAK

SAVE 5 x 1 mL

100 µg/mL in ACN

2,5-Dinitrotoluene



Method 8100 PAHs by GC/FID

Polynuclear Aromatic Hydrocarbon 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 (50:50)

17 comps.

Acenaphthene	Chrysene
Acenaphthylene	Dibenz[a,h]anthracene
Anthracene	Fluoranthene
Benz[a]anthracene	Fluorene
Benz[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	Dibenz[a,e]pyrene
Dibenz[a,h]acridine	Dibenz[a,h]pyrene
Dibenz[a,i]acridine	Dibenz[a,i]pyrene
7H-Dibenzo[c,g]carbazole	3-Methylcholanthrene

PAH QC Mix

M-8100-QC

1 x 1 mL

M-8100-QC-PAK

SAVE 5 x 1 mL

At stated conc. (µg/mL) in ACN

24 comps.

Acenaphthene	100	Dibenz[a,h]anthracene	10
Acenaphthylene	100	7H-Dibenzo[c,g]carbazole	10
Anthracene	100	Dibenz[a,e]pyrene	10
Benz[a]anthracene	10	Dibenz[a,h]pyrene	10
Benzo[b]fluoranthene	10	Dibenz[a,i]pyrene	10
Benzo[j]fluoranthene	10	Fluoranthene	10
Benzo[k]fluoranthene	5	Fluorene	100
Benzo[g,h,i]perylene	10	Indeno[1,2,3-cd]pyrene	10
Benz[a]pyrene	10	3-Methylcholanthrene	10
Chrysene	10	Naphthalene	100
Dibenz[a,h]acridine	10	Phenanthrene	100
Dibenz[a,i]acridine	10	Pyrene	10

Surrogate Standard

M-8100-SS

1 x 1 mL

M-8100-SS-PAK

SAVE 5 x 1 mL

2.0 mg/mL each in CH₂Cl₂

2 comps.

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-Chloroisopropyl)ether
bis(2-Chloroethoxy)methane	4-Chlorophenyl phenyl ether
bis(2-Chloroethyl) ether	

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.

4-Bromophenyl phenyl ether
2-Chlorophenyl-4'-nitrophenyl ether
3-Chlorophenyl-4'-nitrophenyl ether
4-Chlorophenyl-4'-nitrophenyl ether
2,4-Dibromophenyl-4'-nitrophenyl ether
2,4-Dichlorophenyl-3'-methyl-4'-nitrophenyl ether
2,6-Dichlorophenyl-4'-nitrophenyl ether
3,5-Dichlorophenyl-4'-nitrophenyl ether
2,5-Dichlorophenyl-4'-nitrophenyl ether
2,4-Dichlorophenyl-4'-nitrophenyl ether
2,3-Dichlorophenyl-4'-nitrophenyl ether
3,4-Dichlorophenyl-4'-nitrophenyl ether
4-Nitrophenyl phenyl ether
2,4,6-Trichlorophenyl-4'-nitrophenyl ether
2,3,6-Trichlorophenyl-4'-nitrophenyl ether
2,3,5-Trichlorophenyl-4'-nitrophenyl ether
2,4,5-Trichlorophenyl-4'-nitrophenyl ether
3,4,5-Trichlorophenyl-4'-nitrophenyl ether
2,3,4-Trichlorophenyl-4'-nitrophenyl ether

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-Chloroisopropyl)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
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EPA Method 8000 Series

Method 8120/8120A Chlorinated Hydrocarbons by GC/ECD

Chlorinated Hydrocarbons

M-8120

2.0 mg/mL each in Hexane

1 x 1 mL
10 comps.

Each in 2.0 mg/mL in Hexane 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

Method 8121 Chlorinated Hydrocarbons by GC/ECD

Chlorinated Hydrocarbons

M-8121

1.0 mg/mL each in Hexane

1 x 1 mL
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

M-8121-IS-PAK

50 μ g/mL in Acetone

1 x 1 mL
SAVE 5 x 1 mL

1,3,5-Tribromobenzene

M-8121-IS-M

M-8121-IS-M-PAK

50 μ g/mL each in Acetone

1 x 1 mL
SAVE 5 x 1 mL
3 comps.

2,5-Dibromotoluene 1,3,5-Tribromobenzene
 α,α' -Dibromo-*m*-xylene

Surrogate Standard

M-8121-SS

M-8121-SS-PAK

At stated conc. (μ g/mL) in Acetone

1 x 1 mL
SAVE 5 x 1 mL
3 comps.

1,4-Dichloronaphthalene 1 $\alpha,\alpha,\alpha,\alpha'$ -Tetrachlorobenzene 10
2,3,4,5,6-Pentachlorotoluene 1

Varied Concentration QC Mix

M-8121-QC

At stated conc. (μ g/mL) in Hexane

1 x 1 mL
22 comps.

Benzal chloride	100	Hexachlorobenzene	10
Benzotrichloride	100	Hexachlorobutadiene	10
Benzyl chloride	100	Hexachlorocyclopentadiene	10
α -BHC	100	Hexachloroethane	10
β -BHC	100	Pentachlorobenzene	10
γ -BHC	100	1,2,3,4-Tetrachlorobenzene	100
δ -BHC	100	1,2,3,5-Tetrachlorobenzene	100
2-Chloronaphthalene	2,000	1,2,4,5-Tetrachlorobenzene	100
1,2-Dichlorobenzene	1,000	1,2,3-Trichlorobenzene	100
1,3-Dichlorobenzene	1,000	1,2,4-Trichlorobenzene	100
1,4-Dichlorobenzene	1,000	1,3,5-Trichlorobenzene	100

Method 8131 Aniline & Selected Derivatives by GC/NPD, GC/AFD, GC/TS

Aniline & Selected Derivatives

M-8131

1.0 mg/mL each in Toluene

1 x 1 mL
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	

Save by ordering
5 x 1 mL pack





Method 8140 Organophosphorous Pesticides by GC/NPD/ELCD/FPD

Organophosphorous Pesticides

M-8140M	1 x 1 mL	M-8140M-5X	1 x 1 mL
M-8140M-PAK	SAVE 5 x 1 mL	M-8140M-5X-PAK	SAVE 5 x 1 mL
0.04 mg/mL each in Hexane	20 comps.	0.2 mg/mL each in Hexane:Acetone (95:5)	20 comps.

Organophosphorous Pesticide Set

M-8140-SET	20 x 1 mL
M-8140-##	1 mL
Each at 1.0 mg/mL in Hexane, * Hexane:Acetone (95:5)	

Azinphosmethyl (M-8140-01)	Demeton (M-8140-05)	Ethoprop (M-8140-09)	Methyl parathion (M-8140-13)	Ronnel (M-8140-17)
Bolstar (M-8140-02)	Diazinon (M-8140-06)	Fensulfothion (M-8140-10 *)	Mevinphos (M-8140-14)	Stirophos (M-8140-18)
Chlorpyrifos (M-8140-03)	Dichlorovos (M-8140-07)	Fenthion (M-8140-11)	Naled (M-8140-15)	Tokuthion (M-8140-19)
Coumaphos (M-8140-04)	Disulfoton (M-8140-08)	Merphos (M-8140-12)	Phorate (M-8140-16)	Trichloronate (M-8140-20)

Method 8141A Additions to Method 8140 Organophosphorous Pesticides by GC/NPD

Organophosphorous Pesticides

Mix #1

M-8141M	1 x 1 mL
M-8141M-PAK	SAVE 5 x 1 mL
0.2 mg/mL each in Hexane	7 comps.

M-8141-SET	7 x 1 mL
M-8141-##	1 mL
Each at 1.0 mg/mL in Hexane, * Hexane:Acetone (90:10), ** (95:5)	

Dimethoate (M-8141-01 *)	Ethyl parathion (M-8141-05)
EPN (M-8141-02)	Sulfotep (M-8141-06)
Malathion (M-8141-03)	TEPP (M-8141-07)
Monocrotophos (M-8141-04 **)	

Technical Note

Tetraethyl pyrophosphate (TEPP) is unstable, decomposes in water, and is thermally labile at inlet temperatures above 170°C.

Mix #2

M-8141A-1M	1 x 1 mL
0.2 mg/mL each in Hexane	10 comps.

M-8141A-1-SET	10 x 1 mL
M-8141A-1-##	1 mL

Each at 1.0 mg/mL in Hexane

Azinphos ethyl (M-8141A-1-01)	Famphur (M-8141A-1-06)
Carbophenothion (M-8141A-1-02)	Leptophos (M-8141A-1-07)
Chlorfenvinphos (M-8141A-1-03)	Phosmet (M-8141A-1-08)
Dioxathion (M-8141A-1-04)	Phosphamidon (M-8141A-1-09)
Ethion (M-8141A-1-05)	Terbufos (M-8141A-1-10)

Mix #3

M-8141A-2M	1 x 1 mL
0.2 mg/mL each in Hexane	9 comps.

M-8141A-2-SET	9 x 1 mL
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Each at 1.0 mg/mL in Hexane

Aspon	Dichlofenthion	Fonophos
Chlorpyrifos methyl ester	Dicrotophos	Thionazin
Crotoxyphos	Fenitrothion	Trichlorfon

Industrial Chemicals & Triazine Herbicides

M-8141A-IC	1 x 1 mL
0.2 mg/mL each in Hexane	2 comps.
Hexamethylphosphoramide (HMPA)	Tri-o-cresylphosphate (TOCP)

M-8141A-TH	1 x 1 mL
M-8141A-TH-PAK	SAVE 5 x 1 mL
0.2 mg/mL each in Acetone	2 comps.

Atrazine	Simazine
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Halogen Specific Detector Standard

M-8141B-HSD	1 x 1 mL
0.2 mg/mL each in Hexane	9 comps.

Chlorpyrifos	EPN	Stirophos
Coumaphos	Naled	Trichloronate
Dichlorvos	Ronnel	Tokuthion

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

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
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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

Technical Note

Organophosphorus and Nitrogen/Phosphorus pesticides are light sensitive, store in deactivated amber vials.



EPA Method 8000 Series

Ready-to-Inject

Method 8150/8151 Derivatized Chlorinated Herbicides by GC/MS

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.

Phenoxy-Herbicide Calibration Curve

Components	Level 3 (-4X)	Level 4 (-10X)	Level 5 (-25X)
M-8150-51-WL	80	200	500
2,4-D	80	200	500
2,4-DB	80	200	500
2,4,5-TP	20	50	125
2,4,5-T	20	50	125
Dalapon	40	100	250
Dicamba	40	100	250
Dichloroprop	80	200	500
Dinoseb	20	50	125
MCPA	8000	20,000	50,000
MCPP	8000	20,000	50,000
2,4-Dichlorophenylacetic acid	80	200	500

Daily QC Working Levels

Level 3 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. (ng/mL) in Isooctane	11 comps.

Level 4 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. (ng/mL) in Isooctane	11 comps.

Daily QC Working Level

Level 5 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. (ng/mL) in Isooctane	11 comps.

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	SAVE 5 x 1 mL
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	SAVE 5 x 1 mL
250 µg/mL in Acetone	
1,4-Dichlorobenzene	

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
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
At stated conc. (µg/mL) in MeOH	5 comps.
2,4-D	2
2,4-DB	2
2,4,5-TP (Silvex)	0.8
Dalapon	1
Dicamba	1



Method 8150A/8150B Chlorinated Herbicides by GC/ECD

Chlorinated Herbicides in Ground Water and their Methyl Derivatives

Compound	mg/mL	Acids in MeOH Cat. No.	Methyl Derivatives in Hexane Cat. No.	Unit
2,4-D	0.2	M-8150S-A-01	M-8150-01	1 mL
2,4-DB	0.2	M-8150S-A-02	M-8150-02	1 mL
2,4,5-T	0.2	M-8150S-A-03	M-8150-03	1 mL
2,4,5-TP	0.2	M-8150S-A-04	M-8150-04	1 mL
Dalapon	0.2	M-8150S-A-05	M-8150-05	1 mL
Dicamba	0.2	M-8150S-A-06	M-8150-06	1 mL
Dichlorprop	0.2	M-8150S-A-07	M-8150-07	1 mL
Dinoseb	0.2	M-8150S-A-08	M-8150-08	1 mL
MCPA	2.0	M-8150S-A-09	M-8150-09	1 mL
MCPP	2.0	M-8150S-A-10	M-8150-10	1 mL
		M-8150A-SET	M-8150-SET	
		10 x 1 mL	10 x 1 mL	

Underivatized Solution (Varied Concentration)

M-8150A		1 x 1 mL
M-8150A-PAK		SAVE 5 x 1 mL
0.1 mg/mL in MeOH, except MCPA and MCPP		10 comps.
2,4-D	Dichlorprop	MCPA (10 mg/mL)
Dalapon	Dinoseb	2,4,5-TP
2,4-DB	MCPA (10 mg/mL)	2,4,5-T
Dicamba		

Underivatized Solution (Equal Concentration)

M-8150M-A		1 x 1 mL
M-8150M-A-PAK		SAVE 5 x 1 mL
0.2 mg/mL each in MeOH		10 comps.
2,4-D	Dichlorprop	MCPA
Dalapon	Dinoseb	2,4,5-TP
2,4-DB	MCPA	2,4,5-T
Dicamba		

Underivatized Surrogate Standards

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	

Internal Standard

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	

Methyl Ester Derivatives Solutions (Varied Conc.)

M-8150	1 x 1 mL
0.1 mg/mL each in MeOH, except MCPA and MCPP	10 comps.
2,4-D methyl ester	Dinoseb methyl ester
Dalapon methyl ester	MCPA methyl ester (10 mg/mL)
2,4-DB methyl ester	MCPA methyl ester (10 mg/mL)
Dicamba methyl ester	2,4,5-TP methyl ester
Dichlorprop methyl ester	2,4,5-T methyl ester

Methyl Ester 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	SAVE 5 x 1 mL
20 µg/mL each in Hexane	8 comps.

2,4-D methyl ester	Dichlorprop methyl ester
Dalapon methyl ester	Dinoseb methyl ester
2,4-DB methyl ester	2,4,5-TP methyl ester
Dicamba methyl ester	2,4,5-T methyl ester

M-8150M-2	1 x 1 mL
M-8150M-2-PAK	SAVE 5 x 1 mL
2,000 µg/mL each in Hexane	2 comps.

MCPA methyl ester	MCPA methyl ester
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Methyl Derivative Surrogate Standard

M-515-SS	1 x 1 mL
M-515-SS-PAK	SAVE 5 x 1 mL
0.1 mg/mL in MtBE	
Methyl 2,4-dichlorophenylacetate	

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	

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	18 comps.
Acifluorfen methyl ester	Dichlorprop methyl ester
Bentazon methyl ester	Dinoseb methyl ester
Chloramben methyl ester	MCPA methyl ester (10 mg/mL)
2,4-D methyl ester	MCPA methyl ester (10 mg/mL)
Dalapon methyl ester	4-Nitroanisole
2,4-DB methyl ester	Pentachloroanisole
DCPA methyl ester	Picloram methyl ester
Dicamba methyl ester	2,4,5-TP methyl ester
Methyl-3,5-dichlorobenzoate	2,4,5-T methyl ester

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	

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		18 comps.
Acifluorfen	DCPA diacid	MCPP (10 mg/mL)
Bentazon	Dicamba	4-Nitrophenol
Chloramben	3,5-Dichlorobenzoic acid	Pentachlorophenol
2,4-D	Dichlorprop	Picloram
Dalapon	Dinoseb	2,4,5-TP
2,4-DB	MCPA (10 mg/mL)	2,4,5-T

Surrogate Standards

M-515-SS	1 x 1 mL
M-515-SS-PAK	SAVE 5 x 1 mL
0.1 mg/mL in MtBE	
Methyl-2,4-dichlorophenylacetate	
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	



EPA Method 8000 Series

Method 8240 Volatile Organics by GC/MS

M-8240A

0.2 mg/mL each in MeOH

1 x 1 mL
41 comps.

Acetone
Acrolein
Acrylonitrile
Benzene
Bromodichloromethane
Bromoform
Methyl ethyl ketone
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroform
Dibromochloromethane
cis-1,4-Dichloro-2-butene
trans-1,4-Dichloro-2-butene
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
trans-1,2-Dichloroethene
1,2-Dichloropropane

cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Ethanol
Ethylbenzene
2-Hexanone
Iodomethane
4-Methyl-2-pentanone
Methylene chloride
Styrene
1,1,2,2-Tetrachloroethane
Tetrachloroethene
Toluene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Vinyl acetate
o-Xylene
m-Xylene
p-Xylene

Certificate will reflect actual
cis/trans ratio

Technical Note

Acrolein quickly polymerizes and degrades in methanol solutions;
therefore these standards have a short shelf life.

Method 8240A Volatiles by GC/MS

APP-9-048-R1-2X

0.2 mg/mL in MeOH

1 x 1 mL

Chloroprene (Xylene-free)

S-354-2

0.2 mg/mL in Isooctane

1 x 1 mL

Ethylene oxide

Auxiliary Standards for all 8240 Methods (VOC analysis)

Surrogate Standard	CLP-PS-10X
Internal Standard	CLP-PI-2.5X
Gases	M-601B
Matrix Spiking Solution	CLP-003-R
Tuning Standard	CLP-004
System Performance	CLP-021
Calibration Check Compounds	CLP-020

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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.

Liquid Components

Benzene	<i>cis</i> -1,3-Dichloropropene
Bromobenzene	<i>trans</i> -1,3-Dichloropropene
Bromodichloromethane	Ethylbenzene
Bromoform	Hexachlorobutadiene
<i>n</i> -Butylbenzene	Isopropylbenzene (Cumene)
<i>sec</i> -Butylbenzene	<i>p</i> -Isopropyltoluene (<i>p</i> -Cymene)
<i>t</i> -Butylbenzene	Methylene chloride
Carbon tetrachloride	Naphthalene
Chlorobenzene	<i>n</i> -Propylbenzene
Chloroform	Styrene
2-Chlorotoluene	1,1,1,2-Tetrachloroethane
4-Chlorotoluene	1,1,2,2-Tetrachloroethane
Dibromochloromethane	Tetrachloroethene
1,2-Dibromo-3-chloropropane	Toluene
1,2-Dibromoethane	1,2,3-Trichlorobenzene
Dibromomethane	1,2,4-Trichlorobenzene
1,2-Dichlorobenzene	1,1,1-Trichloroethane
1,3-Dichlorobenzene	1,1,2-Trichloroethane
1,4-Dichlorobenzene	Trichloroethene
1,1-Dichloroethane	1,2,3-Trichloropropane
1,2-Dichloroethane	1,2,4-Trimethylbenzene
1,1-Dichloroethene	1,3,5-Trimethylbenzene
<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
1,3-Dichloropropane	
2,2-Dichloropropane	
1,1-Dichloropropene	

Certificate will reflect actual
cis/trans ratio

Gas Components

Bromomethane	Dichlorodifluoromethane
Chloroethane	Trichlorofluoromethane
Chloromethane	Vinyl chloride

Liquids

M-502A-R2	1 x 1 mL
M-502A-R2-PAK	SAVE 5 x 1 mL
0.2 mg/mL each in MeOH	53 comps.
M-502A-R2-10X	1 x 1 mL
M-502A-R2-10X-PAK	SAVE 5 x 1 mL
2.0 mg/mL each in MeOH	53 comps.

Gases

M-502B	1 x 1 mL
M-502B-PAK	SAVE 5 x 1 mL
0.2 mg/mL each in MeOH	6 comps.
M-502B-10X	1 x 1 mL
M-502B-10X-PAK	SAVE 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

M-502	1 x 1 mL
M-502-PAK	SAVE 5 x 1 mL
0.2 mg/mL each in MeOH	60 comps.
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.

Appendix IX Volatiles

M-8240C 1 x 1 mL
0.2 mg/mL each in MeOH 17 comps.

Acetonitrile	Methyl methacrylate
Allyl chloride	Nitrobenzene
1,2-Dibromo-3-chloropropane	Pentachloroethane
Dibromomethane	Propionitrile
1,2-Dibromoethane	Pyridine
1,4-Dioxane	1,1,1,2-Tetrachloroethane
Ethyl methacrylate	1,2,4-Trichlorobenzene
Isobutanol	1,2,3-Trichloropropane
Methacrylonitrile	

M-8240C-R3 1 x 1 mL
At stated conc. (mg/mL) in MeOH 12 comps.

M-8240C-R3-10X 1 x 1 mL
At 10X stated conc. (mg/mL) in MeOH 12 comps.

Acetonitrile	2.0	Ethyl methacrylate	0.2
Allyl chloride	0.2	Isobutanol	4.0
<i>cis</i> -1,4-Dichloro-2-butene	0.2	Methacrylonitrile	2.0
<i>trans</i> -1,4-Dichloro-2-butene	0.2	Methyl methacrylate	0.2
1,4-Dioxane	4.0	Pentachloroethane	0.2
Ethanol	4.0	Propionitrile	2.0

Certificate will reflect actual cis/trans ratio

Same as M-8240C-R3-10X without Pentachloroethane

M-8240C-R6 1 x 1 mL
At stated conc. (mg/mL) in MeOH 11 comps.

Acetonitrile	20	Isobutanol	40
Allyl chloride	2.0	Methacrylonitrile	20
<i>cis</i> -1,4-Dichloro-2-butene	2.0	Methyl methacrylate	2.0
<i>trans</i> -1,4-Dichloro-2-butene	2.0	Propionitrile	20
1,4-Dioxane	40		
Ethanol	40		
Ethyl methacrylate	2.0		

Certificate will reflect actual
cis/trans ratio

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 **SAVE** 5 x 1 mL
2.0 mg/mL each in MeOH 8 comps.

Acetone	2-Hexanone
Methyl ethyl ketone	Iodomethane
Carbon disulfide	4-Methyl-2-pentanone
2-Chloroethyl vinyl ether	Vinyl acetate

M-603 1 x 1 mL
M-603-PAK **SAVE** 5 x 1 mL
1.0 mg/mL each in Water 2 comps.

M-603-10X 1 x 1 mL
10.0 mg/mL each in Water 2 comps.

M-603-M-0.1X 1 x 1 mL
100 µg/mL each in MeOH:Water (90:10) 2 comps.

M-603-M-5X 1 x 1 mL
5 mg/mL each in MeOH:Water (90:10) 2 comps.

Acrolein	Acrylonitrile
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EPA Method 8000 Series

Method 8260B Volatile Organic Compounds by GC/MS

The following 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.

VOC Set

M-502A-R-B-SET 2 x 1 mL (M-502A-R, M-502B)

Liquids

M-502A-R

0.2 mg/mL each in MeOH

1 x 1 mL
54 comps.

Benzene	1,1-Dichloropropene
Bromobenzene	cis-1,3-Dichloropropene
Bromochloromethane	trans-1,3-Dichloropropene
Bromodichloromethane	Ethylbenzene
Bromoform	Hexachlorobutadiene
n-Butylbenzene	Isopropylbenzene (Cumene)
sec-Butylbenzene	p-Isopropyltoluene (p-Cymene)
t-Butylbenzene	Methylene chloride
Carbon tetrachloride	Naphthalene
Chlorobenzene	n-Propylbenzene
Chloroform	Styrene
2-Chlorotoluene	1,1,1,2-Tetrachloroethane
4-Chlorotoluene	1,1,2,2-Tetrachloroethane
Dibromochloromethane	Tetrachloroethene
1,2-Dibromo-3-chloropropane	Toluene
1,2-Dibromoethane	1,2,3-Trichlorobenzene
Dibromomethane	1,2,4-Trichlorobenzene
1,2-Dichlorobenzene	1,1,1-Trichloroethane
1,3-Dichlorobenzene	1,1,2-Trichloroethane
1,4-Dichlorobenzene	Trichloroethene
1,1-Dichloroethane	1,2,3-Trichloropropane
1,2-Dichloroethane	1,2,4-Trimethylbenzene
1,1-Dichloroethene	1,3,5-Trimethylbenzene
cis-1,2-Dichloroethene	o-Xylene
trans-1,2-Dichloroethene	m-Xylene
1,2-Dichloropropane	p-Xylene
1,3-Dichloropropane	
2,2-Dichloropropane	

Certificate will reflect actual
cis/trans ratio

Additional VOCs by Method 8260B

M-8260B-01

M-8260B-01-PAK

2000 µg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
11 comps.

Benzyl chloride	2-Nitropropane
1-Chlorobutane	Dibromofluoromethane
1-Chlorohexane	Methyl acrylate
1,2,3,4-Diepoxybutane	MtBE
Diethyl ether	Pentafluorobenzene
Nitrobenzene	

M-8260B-02

M-8260B-02-PAK

2000 µg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
10 comps.

Allyl alcohol	Ethyl acetate
n-Butanol	Hexachloroethane
Chloroacetonitrile	2-Hydroxypropionitrile
3-Chloropropionitrile	Malonitrile
Epichlorohydrin	Pyridine

M-8260B-03

M-8260B-03-PAK

2000 µg/mL each in MeOH:Water (90:10)

1 x 1 mL
SAVE 5 x 1 mL
4 comps.

N-Nitrosodi-n-butylamine	Propylamine
2-Picoline	o-Toluidine

M-8260B-04

M-8260B-04-PAK

2000 µg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
6 comps.

t-Butanol	n-Propanol
2-Chloroethanol	Isopropanol
1,3-Dichloro-2-propanol	Propargyl alcohol

Gases

M-502B

0.2 mg/mL each in MeOH

1 x 1 mL
6 comps.

Bromomethane	Dichlorodifluoromethane
Chloroethane	Trichlorofluoromethane
Chloromethane	Vinyl chloride

M-603-M-5X

5.0 mg/mL each in MeOH:Water (90:10)

1 x 1 mL
2 comps.

Acrolein	Acrylonitrile
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Technical Note

Acrolein quickly polymerizes and degrades in methanol solutions; therefore these standards have a short shelf life.

M-8240C-R3-10X

At stated conc. (mg/mL) in MeOH

1 x 1 mL
12 comps.

Acetonitrile	20	Ethyl methacrylate	2.0
Allyl chloride	2.0	Isobutanol	40
cis-1,4-Dichloro-2-butene	2.0	Methacrylonitrile	20
trans-1,4-Dichloro-2-butene	2.0	Methyl methacrylate	2.0
1,4-Dioxane	40	Pentachloroethane	2.0
Ethanol	40	Propionitrile	20

Certificate will reflect actual cis/trans ratio

Chloroprene (Xylene-Free)

APP-9-048-R1-10X

1.0 mg/mL in MeOH

1 x 1 mL

APP-9-048-R1-20X

2.0 mg/mL in MeOH

1 x 1 mL

Ethylene oxide

M-8015B-5031-14-R1

5 mg/mL in Water

1 x 1 mL

Chloral hydrate

M-E-1179-M

1.0 mg/mL in MeOH

1 x 1 mL

M-8260B continued on the next page

Technical Note

Bromoform, Chloroform and other light volatiles may exhibit reduced response from a contaminated trap, un-optimized purge & trap conditions, i.e. purge flow too high / low, or contamination / cold spot in the transfer line.



Method 8260B Volatile Organic Compounds by GC/MS (continued)

Internal Standards

M-8260-IS 1 x 1 mL
M-8260-IS-PAK **SAVE** 5 x 1 mL
 0.2 mg/mL each in MeOH 4 comps.

M-8260-IS-10X 1 x 1 mL
M-8260-IS-10X-PAK **SAVE** 5 x 1 mL
 2.0 mg/mL each in MeOH 4 comps.

Chlorobenzene-d₅ 1,4-Dichlorobenzene-d₄
 1,4-Difluorobenzene Pentafluorobenzene

M-8260-IS-R 1 x 1 mL
M-8260-IS-R-PAK **SAVE** 5 x 1 mL
 0.2 mg/mL each in MeOH 4 comps.

M-8260-IS-R-10X 1 x 1 mL
M-8260-IS-R-10X-PAK **SAVE** 5 x 1 mL
 2.0 mg/mL each in MeOH 4 comps.

2-Bromo-1-chloropropane 1,4-Dichlorobenzene-d₄
 1,4-Difluorobenzene Pentafluorobenzene

M-8260A-B-IS 1 x 1 mL
M-8260A-B-IS-PAK **SAVE** 5 x 1 mL
 0.2 mg/mL each in MeOH 3 comps.

M-8260A-B-IS-10X 1 x 1 mL
M-8260A-B-IS-10X-PAK **SAVE** 5 x 1 mL
 2.0 mg/mL each in MeOH 3 comps.

Chlorobenzene-d₅ Fluorobenzene
 1,4-Dichlorobenzene-d₄

Surrogate Standards

M-8260-SS 1 x 1 mL
M-8260-SS-PAK **SAVE** 5 x 1 mL
 0.2 mg/mL each in MeOH 3 comps.

M-8260-SS-10X 1 x 1 mL
M-8260-SS-10X-PAK **SAVE** 5 x 1 mL
 2.0 mg/mL each in MeOH 3 comps.

4-Bromofluorobenzene Toluene-d₈
 Dibromofluoromethane

M-8260-SS-2 1 x 1 mL
 0.2 mg/mL in MeOH
M-8260-SS-2-10X 1 x 1 mL
 2.0 mg/mL in MeOH

Dibromofluoromethane

M-8260A-B-SS 1 x 1 mL
M-8260A-B-SS-PAK **SAVE** 5 x 1 mL
 0.2 mg/mL each in MeOH 4 comps.

M-8260A-B-SS-10X 1 x 1 mL
M-8260A-B-SS-10X-PAK **SAVE** 5 x 1 mL
 2.0 mg/mL each in MeOH 4 comps.

p-Bromofluorobenzene 1,2-Dichloroethane-d₄
 Dibromofluoromethane Toluene-d₈

Combined Internal/Surrogate Standard VOA Mixes

M-8260A-B-IS-SS 1 x 1 mL
M-8260A-B-IS-SS-PAK **SAVE** 5 x 1 mL
 200 µg/mL each in MeOH 7 comps.

M-8260A-B-IS-SS-10X 1 x 1 mL
M-8260A-B-IS-SS-10X-PAK **SAVE** 5 x 1 mL
 2.0 mg/mL each in MeOH 7 comps.

p-Bromofluorobenzene 1,2-Dichloroethane-d₄
 Chlorobenzene-d₅ Fluorobenzene
 Dibromofluoromethane Toluene-d₈
 1,4-Dichlorobenzene-d₄





EPA Method 8000 Series

Method 8240 & 8260 Volatile Organic Compounds by GC/MS

Internal Standard VOAs

M-8240-60-IS

0.2 mg/mL each in MeOH

1 x 1 mL

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
Chlorobenzene-d₅
1,4-Dichlorobenzene-d₄

1,4-Difluorobenzene
Pentafluorobenzene

Surrogate Standard VOAs

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
Dibromofluoromethane

1,2-Dichloroethane-d₄
Toluene-d₈

Internal / Surrogate Standard VOAs

M-8240-60-IS-SS

1 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-10X-PAK

SAVE 5 x 1 mL

2.0 mg/mL each in MeOH

9 comps.

Bromochloromethane
p-Bromofluorobenzene
Chlorobenzene-d₅
Dibromofluoromethane
1,4-Dichlorobenzene-d₄

1,2-Dichloroethane-d₄
1,4-Difluorobenzene
Pentafluorobenzene
Toluene-d₈

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
1,1-Dichloroethene
1,2-Dichloropropane

Ethylbenzene
Toluene
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
Chlorobenzene
Chloromethane

1,1-Dichloroethane
1,1,2,2-Tetrachloroethane

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



Method 8270C/D Semi-Volatiles by Capillary Column GC/MS

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 a **second source** requirements since they are independently prepared from product M-8270 (7 x 1 mL).

Base-Neutral Mixture

Acenaphthene	4-Chlorophenyl phenyl ether
Acenaphthylene	Chrysene
Anthracene	Dibenz[a,h]anthracene
Azobenzene	Di- <i>n</i> -butyl phthalate
Benz[a]anthracene	1,2-Dichlorobenzene
Benzo[b]fluoranthene	1,3-Dichlorobenzene
Benzo[k]fluoranthene	1,4-Dichlorobenzene
Benzo[g,h,i]perylene	Diethyl phthalate
Benz[a]pyrene	Dimethyl phthalate
4-Bromophenyl phenyl ether	2,4-Dinitrotoluene
Butyl benzyl phthalate	2,6-Dinitrotoluene
bis(2-Chloroethoxy)methane	Di- <i>n</i> -octyl phthalate
bis(2-Chloroethyl) ether	bis(2-Ethylhexyl)phthalate
bis(2-Chloroisopropyl)ether	Fluoranthene
2-Chloronaphthalene	Fluorene

Benzidine Mix

Benzidine †	3,3'-Dichlorobenzidine †
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Technical Note

Azobenzene was substituted for 1,2-diphenylhydrazine since it pyrolyses to azobenzene under GC operating conditions.

Base-Neutrals

CLP-HC-BN-R

CLP-HC-BN-R-PAK

2.0 mg/mL each in Benzene:CH₂Cl₂:ACN (40:40:20)
44 comps.

1 x 1 mL

SAVE 5 x 1 mL

Benzidines

Z-014F

Z-014F-PAK

2.0 mg/mL each in MeOH
2 comps.

1 x 1 mL

5 x 1 mL

Base-Neutral and Benzidine Set

CLP-HC-BN-SET

2 x 1 mL

CLP-HC-BN-R, Z-014F

Additional Analyte Solutions

Acid Composite Mixture

CLP-HC-A-R

CLP-HC-A-R-PAK

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

SAVE 5 x 1 mL

19 comps.

Benzoic acid
4-Chloro-3-methylphenol
2-Chlorophenol
o-Cresol
p-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

Z-014E-PAK

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

SAVE 5 x 1 mL

8 comps.

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

Composite #2

Z-014E-R

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

9 comps.

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

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
p-Dimethylaminoazobenzene
7,12-Dimethylbenz[a]anthracene
α,α-Dimethylphenethylamine
Diphenylamine
3-Methylcholanthrene
1-Naphthylamine
2-Naphthylamine
N-Nitrosodi-*n*-butylamine
N-Nitrosopiperidine
Pentachlorobenzene
Pentachloronitrobenzene
Phenacetin
2-Picoline
Pronamide
1,2,4,5-Tetrachlorobenzene

M-8270-07-SET

M-8270-07-R1, APP-9-014-D-10X

2 x 1 mL

M-8270-07-R1

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

14 comps.

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'-Dimethylbenzidine †
4-Nitroquinoline-1-oxide
N-Nitrosodiethylamine
N-Nitrosomethylethylamine
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
m-Dinitrobenzene
Hexachlorophene
Hexachloropropene
Isodrin
Isosafrole
Methapyrilene
1,4-Naphthoquinone
Safrole
0,0,0-Triethyl phosphorothioate

APP-9-014-D-10X

2.0 mg/mL in CH₂Cl₂

1 x 1 mL

Aramite

† Subject to oxidation



EPA Method 8000 Series

Method 8270C/D Semi-Volatiles by Capillary Column GC/MS (continued)

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.

Complete 8270 Method Mixture Set

M-8270-SET

M-8270-01, M-8270-02, M-8270-03, M-8270-04A, M-8270-04B, M-8270-05, M-8270-06

SAVE 7 x 1 mL

M-8270-R-SET

M-8270-01, M-8270-02, M-8270-03, M-8270-04A, M-8270-04B-R1, M-8270-05, M-8270-06

SAVE 7 x 1 mL

M-8270-01

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

17 comps.

Aniline
Benzyl alcohol
bis(2-Chloroethyl) ether
bis(2-Chloroisopropyl) ether
2-Chlorophenol
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
Ethylmethanesulfonate
Hexachloroethane
Methylmethanesulfonate
o-Cresol
p-Cresol
N-Nitrosodimethylamine
N-Nitrosodi-n-propylamine
Phenol
2-Picoline

M-8270-02

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

18 comps.

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

M-8270-03

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

24 comps.

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

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-8270-05

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

8 comps.

Benzidine †
Benzo[a]anthracene
bis(2-Ethylhexyl)phthalate
Butyl benzyl phthalate
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
Benz[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

† Subject to oxidation

Technical Note

Under USEPA 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 of 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 US EPA recommended injection port temperature range used.

Method 8270C/D continued on next page



Method 8270C/D Semi-Volatiles by Capillary Column GC/MS (continued)

Internal Standard

Z-014J

Z-014J-PAK

4.0 mg/mL each in CH₂Cl₂

Acenaphthene-d₁₀
Chrysene-d₁₂
1,4-Dichlorobenzene-d₄

Naphthalene-d₈
Perylene-d₁₂
Phenanthrene-d₁₀

1 x 1 mL
SAVE 5 x 1 mL
6 comps.

Surrogate Standards

M-8270-SS

M-8270-SS-PAK

4.0 mg/mL each in CH₂Cl₂

2-Fluorobiphenyl
2-Fluorophenol
Nitrobenzene-d₅

Phenol-d₅
p-Terphenyl-d₁₄
2,4,6-Tribromophenol

1 x 1 mL
SAVE 5 x 1 mL
6 comps.

M-8270-SS-R

M-8270-SS-R-PAK

At stated conc. (mg/mL) each in CH₂Cl₂:MeOH (80:20)

2-Fluorobiphenyl 1.0
2-Fluorophenol 2.0
Nitrobenzene-d₅ 1.0

Phenol-d₅ 2.0
Terphenyl-d₁₄ 1.0
2,4,6-Tribromophenol 2.0

1 x 1 mL
SAVE 5 x 1 mL
6 comps.

Base/Neutrals & Acids
Matrix Standard Spiking Solutions
CLP-007-SET 2 x 1 mL
CLP-007A, CLP-007B

Base/Neutrals

CLP-007A

1.0 mg/mL each in MeOH

Acenaphthene
1,4-Dichlorobenzene
2,4-Dinitrotoluene

N-Nitrosodi-n-propylamine
Pyrene
1,2,4-Trichlorobenzene

1 x 1 mL
6 comps.

Acids

CLP-007B

2.0 mg/mL each in MeOH

2-Chlorophenol
4-Chloro-3-methylphenol
4-Nitrophenol

Pentachlorophenol
Phenol

1 x 1 mL
5 comps.

2-Part Labels (ampules or vials)

Part One can be placed into a laboratory journal to document the standard used for the analysis. This label section includes the catalog number, description, lot number, expiration date, safety information, proper storage conditions and documents AccuStandard as the manufacturer.

Part Two duplicates required information for labeling transfer vial(s) with correct information.



GC/MS Tuning Standard

M-625-TS-20X

1.0 mg/mL each in CH₂Cl₂

Benzidine †
p,p'-DDT

DFTPP
Pentachlorophenol

1 x 1 mL
4 comps.

Calibration Check Compounds

CLP-011-SET

2 x 1 mL
CLP-011A, CLP-011B

Base/Neutrals

CLP-011A

2.0 mg/mL each in CH₂Cl₂

Acenaphthene
Benz[a]pyrene
1,4-Dichlorobenzene
Di-n-octyl phthalate

Hexachlorobutadiene
Fluoranthene
N-Nitroso-diphenylamine

1 x 1 mL
7 comps.

Acids

CLP-011B

2.0 mg/mL each in CH₂Cl₂

4-Chloro-3-methylphenol
2,4-Dichlorophenol
2-Nitrophenol

Pentachlorophenol
Phenol
2,4,6-Trichlorophenol

1 x 1 mL
6 comps.

System Performance Check Compounds (SPCC)

CLP-010

0.2 mg/mL each in CH₂Cl₂

CLP-010-10X

2.0 mg/mL each in CH₂Cl₂

2,4-Dinitrophenol
Hexachlorocyclopentadiene

4-Nitrophenol
N-Nitroso-di-n-propylamine

1 x 1 mL
4 comps.

1 x 1 mL
4 comps.

Multi-Component Analytes

Polychlorinated Biphenyls, Chlordane & Toxaphene

Each at 1,000 µg/mL in Hexane

PAK SAVE

Aroclors® #	Cat. No.	Unit	Cat. No. (5 x 1 mL)
Aroclor 1016	C-216S-H-10X	1 mL	C-216S-H-10X-PAK
Aroclor 1221	C-221S-H-10X	1 mL	C-221S-H-10X-PAK
Aroclor 1232	C-232S-H-10X	1 mL	C-232S-H-10X-PAK
Aroclor 1242	C-242S-H-10X	1 mL	C-242S-H-10X-PAK
Aroclor 1248	C-248S-H-10X	1 mL	C-248S-H-10X-PAK
Aroclor 1254	C-254S-H-10X	1 mL	C-254S-H-10X-PAK
Aroclor 1260	C-260S-H-10X	1 mL	C-260S-H-10X-PAK
Aroclor 1262	C-262S-H-10X	1 mL	C-262S-H-10X-PAK
Aroclor 1268	C-268S-H-10X	1 mL	C-268S-H-10X-PAK
Pesticides			
Chlordane	P-017S-H-10X	1 mL	P-017S-H-10X-PAK
Toxaphene	P-093S-H-10X	1 mL	P-093S-H-10X-PAK



EPA Method 8000 Series

Method 8270C/D Semi-Volatiles by Capillary Column GC/MS (continued)

M-8270-10

2.0 mg/mL in MeOH

1 x 1 mL

1,3,5-Trinitrobenzene

M-8270-10-R

2.0 mg/mL each in MeOH

1 x 1 mL

2 comps.

Pyridine

1,3,5-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

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

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

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-8270-14-SET

3 x 1 mL

M-8270-14A, M-8270-14B, M-8270-14C

M-8270-14A

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

6 comps.

m-Cresol

Thiophenol

o-Cresol

tris(2,3-Dibromopropyl)phosphate

Resorcinol

Tri-*p*-tolyl phosphate

M-8270-14B

2.0 mg/mL each in THF

1 x 1 mL

5 comps.

p-Benzoquinone

Phthalic anhydride

Hydroquinone

Trimethyl phosphate

Maleic anhydride

M-8270-14C

2.0 mg/mL each in CH₂Cl₂:MeOH (75:25)

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 (90:10)

1 x 1 mL

13 comps.

Dibenz[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

1000 µg/mL each in CH₂Cl₂:Acetone (75:25)

1 x 1 mL

10 comps.

Anilazine

Dioxathion

Azinphos methyl

Mirex

Barbamate

Sulfoxide

Demeton (mixed isomers)

Sulfallate

Dichlone

Trifluralin

M-8270-17

1000 µg/mL each in CH₂Cl₂

1 x 1 mL

7 comps.

Brominal

Dinocap

Captafol

Fluchloralin

Captan

Nitrofen

Dinex

Pesticides

M-8270-19

1000 µg/mL each in CH₂Cl₂

1 x 1 mL

12 comps.

Carbophenothion

Leptophos

Coumaphos

Malathion

EPN

Phosalone

Ethion

Imidan (Phosmet)

Fensulfthion

Terbufos

Fenthion

Tetrachlorvinphos

M-8270-20

1000 µg/mL each in CH₂Cl₂

1 x 1 mL

9 comps.

Chlorfenvinphos

Monocrotophos

Ciodrin (Crotoxyphos)

Naled

Dichlorvos

Phosphamidon

Dicrotophos

TEPP (Tetraethylpyrophosphate)

Mevinphos

Azo Dye

RAC-12-10X

1.0 mg/mL in CH₂Cl₂

1 x 1 mL

3,3'-Dimethoxybenzidine †

Pesticide Mix

Z-014C-R

Z-014C-R-PAK

2.0 mg/mL each in Toluene:Hexane (50:50)

1 x 1 mL

SAVE 5 x 1 mL

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 (Isomer B)

4,4'-DDT

Methoxychlor

† Subject to oxidation

Method 8270C/D continued on next page

EPA Method 8000 Series

Ready-to-Inject Working Level Semi-Volatile Standards



Method 8270 AccuGrand Semi-Volatile Standard by GC/MS

AccuGrand 8270 Semi-Volatile Standard

M-8270-AG03-ASL

0.2 mg/mL each in MeOH

1 x 1 mL
76 comps.

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

Method 8270C/D Semi-Volatiles by Capillary Column GC/MS (continued)

Five point semi-volatile calibration curve in 2 formats, one calibration curve already incorporates the internal standards in each level of the curve. This calibration curve is ready for immediate use. Chemist can simply crack the ampule open and transfer 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. We offer both types of curves to meet your laboratory's.

Target Analytes (Semi-Volatiles)

Acenaphthene	Carbazole	Di-n-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-Chloroisopropyl)ether	3,3'-Dichlorobenzidine †	Hexachlorobutadiene	N-Nitrosodiphenylamine
Benz[a]anthracene	4-Chloro-3-methylphenol	2,4-Dichlorophenol	Hexachlorocyclopentadiene	N-Nitrosodi-n-propylamine
Benztidine †	2-Chloronaphthalene	Diethyl phthalate	Hexachloroethane	Pentachlorophenol
Benzo(b)fluoranthene	2-Chlorophenol	2,4-Dimethylphenol	Indeno[1,2,3-cd]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	o-Cresol	2,4-Dinitrophenol	Naphthalene	Pyridine
Benzo[a]pyrene	p-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-n-octyl phthalate	4-Nitroaniline	2,4,6-Trichlorophenol
Butyl benzyl phthalate				

Internal Standard Analytes

Acenaphthene-d ₁₀	Naphthalene-d ₈
Chrysene-d ₁₂	Perylene-d ₁₂
1,4-Dichlorobenzene-d ₄	Phenanthrene-d ₁₀

Surrogates Analytes

2-Fluorobiphenyl	Phenol-d ₅
2-Fluorophenol	p-Terphenyl-d ₁₄
Nitrobenzene-d ₅	2,4,6-Tribromophenol

Working Level Semi-Volatiles Curve

With Internal Standards

M-8270-CAL-IS-SET

At stated conc. (µg/mL) in CH₂Cl₂

5 x 1 mL
83 comps.

Components	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

Working Level Semi-Volatiles Curve

Without Internal Standards

M-8270-CAL-SET

At stated conc. (µg/mL) in CH₂Cl₂

5 x 1 mL
77 comps.

Components	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

Internal Standard

M-8270-IS-WL-2.5X-5ML

M-8270-IS-WL-2.5X-10ML

At stated conc. (µg/mL) in CH₂Cl₂

1 x 5 mL
1 x 10 mL



Level 2 Daily QC Working Level

without Internal Standard

M-8270-WL-2.5X-5ML

M-8270-WL-2.5X-10ML

At stated conc. (µg/mL) in CH₂Cl₂

1 x 5 mL
1 x 10 mL



EPA Method 8000 Series

Ready-to-Inject Working Level Semi-Volatile Standards

Method 8270C/D Semi-Volatiles by Capillary Column GC/MS (continued)

Matrix Spike (SW 846)

CLP-007-WL-50ML

At stated conc. ($\mu\text{g/mL}$) in MeOH

1 x 50 mL

11 comps.

4-Chloro-3-methyl phenol	200	1,4-Dichlorobenzene	100
2-Chlorophenol	200	2,4-Dinitrotoluene	100
4-Nitrophenol	200	N-Nitrosodi- <i>n</i> -propylamine	100
Pentachlorophenol	200	Pyrene	100
Phenol	200	1,2,4-Trichlorobenzene	100
Acenaphthene	100		

Prep Note

To help maximize instrument performance, add 10 μL of internal standard to a 1 mL sample extract.

Benzidine Solution

M-625C-1-40X

2.0 mg/mL in CH_2Cl_2

1 x 1 mL

Benzidine †

GC/MS Tuning Solution

M-625-TS

M-625-TS-PAK

50 $\mu\text{g/mL}$ each in CH_2Cl_2

1 x 1 mL

SAVE 5 x 1 mL

4 comps.

Benzidine †
p,p'-DDT

DFTPP
Pentachlorophenol

DFTPP GC/MS Tuning Solution

M-625C-3

M-625C-3-PAK

25 $\mu\text{g/mL}$ in CH_2Cl_2

1 x 1 mL

SAVE 5 x 1 mL

Decafluorotriphenylphosphine (DFTPP)

Technical Note

Benzidine and 3,3'-Dichlorobenzidine are easily oxidized and are light sensitive.

† Subject to oxidation

Matrix Spike (3/90 SOW)

CLP-007R-WL-50ML

At stated conc. ($\mu\text{g/mL}$) in MeOH

1 x 50 mL

11 comps.

4-Chloro-3-methyl phenol	150	1,4-Dichlorobenzene	100
2-Chlorophenol	150	2,4-Dinitrotoluene	100
4-Nitrophenol	150	N-Nitrosodi- <i>n</i> -propylamine	100
Pentachlorophenol	150	Pyrene	100
Phenol	150	1,2,4-Trichlorobenzene	100
Acenaphthene	100		

Method 8270 Surrogate Spiking Solutions

M-8270-SS-R-WL-PAK

M-8270-SS-R-WL-10ML-VAP

At stated conc. ($\mu\text{g/mL}$) in CH_2Cl_2 :MeOH (80:20)

5 x 10 mL

10 x 10 mL

6 comps.

2-Fluorobiphenyl	100	Phenol-d ₅	200
2-Fluorophenol	200	Terphenyl-d ₁₄	100
Nitrobenzene-d ₅	100	2,4,6-Tribromophenol	200

M-8270-SS-R

M-8270-SS-R-PAK

At stated conc. ($\mu\text{g/mL}$) in CH_2Cl_2 :MeOH (80:20)

1 x 1 mL

SAVE 5 x 1 mL

6 comps.

2-Fluorobiphenyl	1000	Phenol-d ₅	2000
2-Fluorophenol	2000	p-Terphenyl-d ₁₄	1000
Nitrobenzene-d ₅	1000	2,4,6-Tribromophenol	2000

Prep Note

To ensure extraction efficiency, add 1 mL of Surrogate to the sample.

CLP Surrogate Spiking Solution

CLP-031-R-WL-50ML

At stated conc. ($\mu\text{g/mL}$) in MeOH

1 x 50 mL

8 comps.

2-Chlorophenol-d ₄	150	Nitrobenzene-d ₅	100
1,2-Dichlorobenzene-d ₄	100	Phenol-d ₆	150
2-Fluorobiphenyl	100	p-Terphenyl-d ₁₄	100
2-Fluorophenol	150	2,4,6-Tribromophenol	150

Technical Note

We have found that benzidine degrades in multi-component semi-volatile solutions. Therefore 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 8270C/D continued on next page

EPA Method 8000 Series

Alternate Source Line (ASL)



AccuStandard formulated the M-8270-ASL-SET and M-8270-ASL-R1-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

Alternate Source

M-8270-ASL-SET

17 x 1 mL

M-8270-01-ASL, -02-ASL, -03-ASL, -04-ASL, -05-ASL,
-06-ASL, -07-ASL, -08-ASL, -09-ASL, -10-ASL, -12-ASL,
CLP-AS, CLP-BNS, M-8080, Z-014E, Z-014G, Z-014J

M-8270-ASL-R1-SET

17 x 1 mL

M-8270-01-ASL, -02-ASL, -03-ASL, -04-R1-ASL, -05-ASL,
-06-ASL, -07-ASL, -08-ASL, -09-ASL, -10-ASL, -11-ASL,
-12-ASL, -13-ASL, -14-ASL, CLP-AS, CLP-BNS, Z-014J

M-8270-01-ASL	Ethers & Phthalates	M-8270-08-ASL	Phenols	Z-014J	Internal Standards
M-8270-02-ASL	Chlorinated Hydrocarbons	M-8270-09-ASL	Organochlorine Pesticide	CLP-BNS	Base/Neutrals Surrogate Standard
M-8270-03-ASL	Nitrosamines	M-8270-10-ASL	Pesticide	CLP-AS	Acid Surrogate Standard
M-8270-04-ASL	Base/Neutrals	M-8270-11-ASL	Toxic Substances	M-8080	Organochlorine Pesticides
M-8270-04-AS-R1L	Base/Neutrals	M-8270-12-ASL	Phenols		
M-8270-05-ASL	Base/Neutrals	M-8270-13-ASL	PAH		
M-8270-06-ASL	PAH Mix	M-8270-14-ASL	Organochlorine Pesticide		
M-8270-07-ASL	Pyridines				

ASL Method 8270C/D Set
continued on the next page

ASL Method 8270C/D Alternate Method 8270 Formulations

Ethers & Phthalates Mix

M-8270-01-ASL

1 x 1 mL

2.0 mg/mL each in CH₂Cl₂

11 comps.

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

Chlorinated Hydrocarbons Mix

M-8270-02-ASL

1 x 1 mL

2.0 mg/mL each in CH₂Cl₂

13 comps.

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	

Nitrosamines Mix

M-8270-03-ASL

1 x 1 mL

2.0 mg/mL each in CH₂Cl₂

9 comps.

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	

Base/Neutrals Mixs

M-8270-04-ASL

1 x 1 mL

2.0 mg/mL each in CH₂Cl₂

13 comps.

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	

M-8270-04-ASL-R1

1 x 1 mL

2.0 mg/mL each in CH₂Cl₂

12 comps.

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
Diphenylamine	<i>o</i> -Toluidine

† Subject to oxidation

Base/Neutrals Mix

M-8270-05-ASL

1 x 1 mL

2.0 mg/mL each in CH₂Cl₂

13 comps.

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	

PAH Mix

M-8270-06-ASL

1 x 1 mL

2.0 mg/mL each CH₂Cl₂:Benzene (50:50)

2 comps.

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

M-8270-07-ASL

1 x 1 mL

2.0 mg/mL each in Acetone

4 comps.

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

Phenol Mix

M-8270-08-ASL

1 x 1 mL

2.0 mg/mL each in CH₂Cl₂

8 comps.

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

Organophosphorous Pesticide Mix

M-8270-09-ASL

1 x 1 mL

2.0 mg/mL each in CH₂Cl₂

9 comps.

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

Pesticide Mix

M-8270-10-ASL

1 x 1 mL

2.0 mg/mL each in CH₂Cl₂

6 comps.

Aramite	Diallate	Kepone
Chlorobenzilate	Isodrin	Pronamide

Toxic Substance Mix

M-8270-11-ASL

1 x 1 mL

2.0 mg/mL each in CH₂Cl₂

8 comps.

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



EPA Method 8000 Series

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

Phenol Mix

M-8270-12-ASL

2.0 mg/mL each in CH₂Cl₂

Alternate Source

1 x 1 mL

11 comps.

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

Polynuclear Aromatic Hydrocarbon Mixture

M-8270-13-ASL

2.0 mg/mL each in CH₂Cl₂:Benzene (50:50)

Alternate Source

1 x 1 mL

16 comps.

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

Organochlorine Pesticide Mix

M-8270-14-ASL

2.0 mg/mL each in Acetone

Alternate Source

1 x 1 mL

17 comps.

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

Organochlorine Pesticides

M-8080

M-8080-PAK

2.0 mg/mL each in Acetone

1 x 1 mL

SAVE 5 x 1 mL

17 comps.

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

Pesticides

M-8270-16

1000 µg/mL each in Acetone:CH₂Cl₂ (25:75)

1 x 1 mL

10 comps.

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

M-8270-17

1000 µg/mL each in CH₂Cl₂

1 x 1 mL

7 comps.

Brominal	Dinex	Fluchloralin
Captafol	Dinocap	Nitrofen
Captan		

M-8270-19

1000 µg/mL each in CH₂Cl₂

1 x 1 mL

12 comps.

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

M-8270-20

1000 µg/mL each in CH₂Cl₂

1 x 1 mL

9 comps.

Chlorfenvinphos	Dicrotophos	Naled
Ciodrin (Crotoxyphos)	Mecvinphos	Phosphamidon
Dichlorvos	Monocrotophos	TEPP

M-8270-21

2.0 mg/mL each in Acetone

1 x 1 mL

3 comps.

α-Chlordane	Endrin ketone	γ-Chlordane
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Semi-Volatile additions

M-8270-22

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

2 comps.

Benzidine †	3,3'-Dimethoxybenzidine †
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APP-9-126-10X

1.0 mg/mL in CH₂Cl₂

1 x 1 mL

Methapyrilene

P-427S-10X

1.0 mg/mL in MeOH

1 x 1 mL

Dinex

Acid Surrogate Standard

CLP-AS

CLP-AS-PAK

2.0 mg/mL each in MeOH

1 x 1 mL

SAVE 5 x 1 mL

3 comps.

2-Fluorophenol	2,4,6-Tribromophenol
Phenol-d ₅	

Base/Neutrals Surrogate Standard

CLP-BNS

CLP-BNS-PAK

1.0 mg/mL each in CH₂Cl₂

1 x 1 mL

SAVE 5 x 1 mL

3 comps.

2-Fluorobiphenyl	p-Terphenyl-d ₁₄
Nitrobenzene-d ₅	

Toxic Substances - Mix #2

Z-014E

Z-014E-PAK

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

SAVE 5 x 1 mL

8 comps.

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

PAH Mix

Z-014G

Z-014G-PAK

2.0 mg/mL each in CH₂Cl₂ : Benzene (50:50)

1 x 1 mL

SAVE 5 x 1 mL

16 comps.

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

Internal Standard Mix

Z-014J

Z-014J-PAK

4.0 mg/mL each in CH₂Cl₂

1 x 1 mL

SAVE 5 x 1 mL

6 comps.

Acenaphthene-d ₁₀	1,4-Dichlorobenzene-d ₄	Perylene-d ₁₂
Chrysene-d ₁₂	Naphthalene-d ₈	Phenanthrene-d ₁₀

† Subject to oxidation



Method 8270C/D Semi-Volatiles by GC/MS Alternate Method 8270 Formulations (continued)

Alternate Source

M-8270-13A-R2

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL
10 comps.

4-Aminoazobenzene
3-Amino-9-ethylcarbazole
o-Anisidine
5-Chloro-2-methylaniline
p-Cresidine

2,4-Diaminotoluene
4,4'-Methylenebis(N,N-dimethylaniline)
4,4'-Methylenebis(2-chloroaniline)
4,4'-Oxydianiline
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-1,2-phenylenediamine

4-Chloro-1,3-phenylenediamine

M-8270-14A-R1

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL
7 comps.

Benzoic acid
1-Chloronaphthalene
Dibenz[a,j]acridine
Resorcinol

Thiophenol
tris-(2,3-Dibromopropyl)phosphate
Tri-p-tolyl phosphate

M-8270-14B

2.0 mg/mL each in THF

1 x 1 mL
5 comps.

p-Benzoquinone
Hydroquinone
Maleic anhydride

Phthalic anhydride
Trimethyl phosphate

M-8270-14C

2.0 mg/mL each in CH₂Cl₂:MeOH (75:25)

1 x 1 mL
5 comps.

1-Acetyl-2-thiourea
Diethyl sulfate
Hexamethylphosphoramide

3-Picolyl chloride HCl
Toluene diisocyanate

M-8270-15

1.0 mg/mL each in CH₂Cl₂:MeOH (90:10)

1 x 1 mL
13 comps.

Dibenz[a,e]pyrene
1,2-Dibromo-3-chloropropane
Diethyl stilbestrol
1,2-Dinitrobenzene
1,4-Dinitrobenzene
5,5-Diphenylhydantoin
Mestranol

Nicotine
5-Nitroacenaphthene
5-Nitro-o-anisidine
4-Nitrobiphenyl
Propylthiouracil
Strychnine

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 (75:25)

Alternate Source

1 x 1 mL
64 comps.

Acenaphthene
Acenaphthylene
Anthracene
Azobenzene
Benz[a]anthracene
Benz[a]pyrene
Benzo[b]fluoranthene
Benzo[g,h,i]perylene
Benzo[k]fluoranthene
Benzyl butyl phthalate
bis(2-Chloroethoxy)methane
bis(2-Chloroethyl)ether
bis(2-Chloroisopropyl)ether
bis(2-Ethylhexyl)phthalate
4-Bromophenyl phenyl ether
Carbazole
4-Chloroaniline
2-Chloronaphthalene
4-Chloro-3-methylphenol
2-Chlorophenol
4-Chlorophenyl phenyl ether
Chrysene
Dibenz[a,h]anthracene
Dibenzofuran
Dibutyl phthalate
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
2,4-Dichlorophenol
Diethyl phthalate
2,4-Dimethylphenol
4,6-Dinitro-2-methylphenol

2,4-Dinitrophenol
Dimethyl phthalate
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Di-n-octyl phthalate
Fluoranthene
Fluorene
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Indeno[1,2,3-cd]pyrene
Isophorone
2-Methylnaphthalene
o-Cresol
p-Cresol
Naphthalene
2-Nitroaniline
3-Nitroaniline
4-Nitroaniline
Nitrobenzene
2-Nitrophenol
4-Nitrophenol
N-Nitrosodimethylamine
N-Nitrosodi-n-propylamine
Pentachlorophenol
Phenanthrene
Phenol
Pyrene
1,2,4-Trichlorobenzene
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol

M-8270-AG02-ASL

1000 µg/mL each in CH₂Cl₂

Alternate Source

1 x 1 mL
39 comps.

Aniline
Acetophenone
2-Acetamidofluorene
4-Aminobiphenyl
Benzyl alcohol
2,6-Dichlorophenol
4-Dimethylaminoazobenzene
7,12-Dimethylbenz[a]anthracene
1,3-Dinitrobenzene
Dinoseb
Diphenylamine
Ethyl methanesulfonate
Hexachloropropene
Isosafrole
Methapyrilene
3-Methylcholanthrene
Methyl methanesulfonate
m-Cresol
1-Naphthylamine
2-Naphthylamine

4-Nitroquinoline-N-oxide
N-Nitrosodi-n-butylamine
N-Nitrosodiethylamine
N-Nitrosomethylethylamine
N-Nitrosomorpholine
N-Nitrosopiperidine
N-Nitrosopyrrolidine
5-Nitro-o-toluidine
Pentachlorobenzene
Pentachloronitrobenzene
Pentachloroethane
Phenacetin
2-Picoline
Pyridine
Safrole
1,2,4,5-Tetrachlorobenzene
2,3,4,6-Tetrachlorophenol
1,3,5-Trinitrobenzene
o-Toluidine

Method 8270C/D continued on next page



EPA Method 8000 Series

Alternate Source Line (ASL)

Method 8270C/D Semi-Volatiles by GC/MS Alternate Method 8270 Formulations (continued)

Appendix IX Semi-Volatiles

M-8270-07-SET 2 x 1 mL
M-8270-07-R1, APP-9-014-D-10X

M-8270-07-R1 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 14 comps.

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

APP-9-014-D-10X 1 x 1 mL
2.0 mg/mL in CH₂Cl₂

Aramite

Additions to Method 8270

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-8270-14A-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 (75:25) 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 (90:10) 13 comps.

Dibenz[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 Acetone:CH₂Cl₂ (25:75) 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		

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

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 SAVE 5 x 1 mL
2.0 mg/mL each in Toluene:Hexane (50:50) 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	(Isomer B)
γ-Chlordane	Endosulfan sulfate	Methoxychlor

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

Technical Note

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.

† Subject to oxidation



Method 8272 PAHs by GC-MS

M-8272		1 x 1 mL	
At stated conc. (mg/mL) in CH ₂ Cl ₂		12 comps.	
Naphthalene	42	Anthracene	0.6
1-Methylnaphthalene	24	Phenanthrene	5.5
2-Methylnaphthalene	20	Fluoranthene	2.1
Acenaphthylene	9	Pyrene	1.8
Acenaphthene	11	Benz(a)anthracene	0.08
Fluorene	7.6	Chrysene	0.03

Internal Standard - Deuterated Analogs

M-8272-IS		1 x 1 mL	
At stated conc. (mg/mL) in Acetone		8 comps.	
Naphthalene-d ₈	5	Phenanthrene-d ₁₀	0.96
1-Methylnaphthalene-d ₁₀	6	Fluoranthene-d ₁₀	0.93
Acenaphthene-d ₁₀	1.2	Perylene-d ₁₂	0.84
Fluorene-d ₁₀	1.2	Chrysene-d ₁₂	0.033

Method 8275A Semi-Volatiles by TE/GC/MS)

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		
Benz[a]pyrene	Fluorene		
Carbazole	Hexachlorobenzene		
4-Chloro-3-methylphenol	p-Cresol		
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		

Method 8280A Dioxins & Furans by HRGC/LRMS

Dioxin Mix

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 Mix

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
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	
Octachlorodibenzo-p-dioxin	
2,3,7,8-Tetrachlorodibenzofuran	

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 ACN		16 comps.
Acenaphthene	Benzo[g,h,i]perylene	Fluorene
Acenaphthylene	Benzo[k]fluoranthene	Indeno[1,2,3-cd]pyrene
Anthracene	Chrysene	Naphthalene
Benz[a]anthracene	Dibenz[a,h]anthracene	Phenanthrene
Benz[a]pyrene	Fluoranthene	Pyrene
Benzo[b]fluoranthene		

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 mg/mL in ACN:THF (50:50)	
Biphenyl	

Polynuclear Aromatic Hydrocarbons (HPLC)

M-8310-QC-ATI		1 x 1 mL	
M-8310-QC-ATI-PAK		SAVE 5 x 1 mL	
<i>At stated conc. (µg/mL) in ACN</i>		18 comps.	
Acenaphthene	1000	Dibenz[a,h]anthracene	200
Acenaphthylene	2000	Fluoranthene	200
Anthracene	100	Fluorene	200
Benz[a]anthracene	100	Indeno[1,2,3-cd]pyrene	100
Benz[a]pyrene	100	1-Methylnaphthalene	1000
Benzo[b]fluoranthene	200	2-Methylnaphthalene	1000
Benzo[g,h,i]perylene	200	Naphthalene	1000
Benzo[k]fluoranthene	100	Phenanthrene	100
Chrysene	100	Pyrene	100



EPA Method 8000 Series

Method 8315/8315A Ketones/Aldehydes by HPLC

Aldehyde Mixture

M-8315 1 x 1 mL
M-8315-PAK **SAVE** 5 x 1 mL
1.0 mg/mL each in Water 2 comps.

Acetaldehyde	Formaldehyde
--------------	--------------

Aldehyde Individuals

Acetaldehyde (1.0 mg/mL in Water)	M-8315-01	1 x 1 mL
Formaldehyde (1.0 mg/mL in Water)	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.

Acetaldehyde-DNPH	Formaldehyde-DNPH
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Option 1

(For Water, Air, Soil, Waste or Stacks samples collected by Method 0011)

Carbonyl Mix

M-8315-R1 1 x 1 mL
1.0 mg/mL each in ACN 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 ACN 12 comps.

Acetaldehyde-DNPH	Heptanal-DNPH
Butanal-DNPH (Butyraldehyde)	Hexanal-DNPH (Hexaldehyde)
Crotonaldehyde-DNPH	Nonanal-DNPH
Cyclohexanone-DNPH	Octanal-DNPH
Decanal-DNPH	Pentanal-DNPH (Valeraldehyde)
Formaldehyde-DNPH	Propanal-DNPH (Propionaldehyde)

Option 2

(For Indoor Air samples collected by Method 0100)

Carbonyl Mixture

M-8315-R2 1 x 1 mL
1.0 mg/mL each in ACN 15 comps.

Acetaldehyde	Hexanal (Hexaldehyde)
Acetone	Isovaleraldehyde
Acrolein	Pentanal (Valeraldehyde)
Benzaldehyde	Propanal (Propionaldehyde)
Butanal (Butyraldehyde)	<i>m</i> -Tolualdehyde
Crotonaldehyde	<i>o</i> -Tolualdehyde
2,5-Dimethylbenzaldehyde	<i>p</i> -Tolualdehyde
Formaldehyde	

Carbonyl DNPH Derivative Mix

M-8315-R2-DNPH 1 x 1 mL
0.1 mg/mL each in ACN 15 comps.

Acetaldehyde-DNPH	Hexanalv (Hexaldehyde)
Acetone-DNPH	Isovaleraldehyde-DNPH
Acrolein-DNPH	Pentanal-DNPH (Valeraldehyde)
Benzaldehyde-DNPH	Propanal-DNPH (Propionaldehyde)
Butanal-DNPH (Butyraldehyde)	<i>m</i> -Tolualdehyde-DNPH
Crotonaldehyde-DNPH	<i>o</i> -Tolualdehyde-DNPH
2,5-Dimethylbenzaldehyde-DNPH	<i>p</i> -Tolualdehyde-DNPH
Formaldehyde-DNPH	

Carbonyl Compound Set

M-8315-R3-10X-SET 20 x 1 mL
Each at 1.0 mg/mL in ACN

Acetaldehyde	Heptanal
Acetone	Hexanal (Hexaldehyde)
Acrolein	Isovaleraldehyde
Benzaldehyde	Nonanal
Butanal (Butyraldehyde)	Octanal
Crotonaldehyde	Pentanal (Valeraldehyde)
Cyclohexanone	Propanal (Propionaldehyde)
Decanal	<i>m</i> -Tolualdehyde
2,5-Dimethylbenzaldehyde	<i>o</i> -Tolualdehyde
Formaldehyde	<i>p</i> -Tolualdehyde

Carbonyl DNPH Derivative Set

M-8315-R-DNPH-SET 20 x 1 mL
Each at 0.1 mg/mL in ACN

Acetaldehyde-DNPH	M-8315-R-DNPH-01	1 mL
Acetone-DNPH	M-8315-R-DNPH-02	1 mL
Acrolein-DNPH	M-8315-R-DNPH-03	1 mL
Benzaldehyde-DNPH	M-8315-R-DNPH-04	1 mL
Butanal-DNPH (Butyraldehyde)	M-8315-R-DNPH-05	1 mL
Crotonaldehyde-DNPH	M-8315-R-DNPH-06	1 mL
Cyclohexanone-DNPH	M-8315-R-DNPH-07	1 mL
Decanal-DNPH	M-8315-R-DNPH-08	1 mL
2,5-Dimethylbenzaldehyde-DNPH	M-8315-R-DNPH-09	1 mL
Formaldehyde-DNPH	M-8315-R-DNPH-10	1 mL
Heptanal-DNPH	M-8315-R-DNPH-11	1 mL
Hexanal-DNPH (Hexaldehyde)	M-8315-R-DNPH-12	1 mL
Isovaleraldehyde-DNPH	M-8315-R-DNPH-13	1 mL
Nonanal-DNPH	M-8315-R-DNPH-14	1 mL
Octanal-DNPH	M-8315-R-DNPH-15	1 mL
Pentanal-DNPH (Valeraldehyde)	M-8315-R-DNPH-16	1 mL
Propanal-DNPH (Propionaldehyde)	M-8315-R-DNPH-17	1 mL
<i>m</i> -Tolualdehyde-DNPH	M-8315-R-DNPH-18	1 mL
<i>o</i> -Tolualdehyde-DNPH	M-8315-R-DNPH-19	1 mL
<i>p</i> -Tolualdehyde-DNPH	M-8315-R-DNPH-20	1 mL

Technical Note

We offer 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-8318M 1 x 1 mL
0.1 mg/mL each in MeOH 10 comps.

Aldicarb	3-Hydroxycarbofuran
Aldicarb sulfone	Methiocarb
Carbaryl	Methomyl
Carbofuran	Promecarb
Dioxacarb	Propoxur



Method 8321 Non-Volatile Compounds by HPLC/TSP/MS or UV Solvent Extractable

Chlorinated Phenoxyacid Herbicide Mix

M-8321-HERB

0.1 mg/mL each in ACN

1 x 1 mL
14 comps.

Dalapon	Dinoseb
Dicamba	MCPA
2,4-D	MCPP
2,4-D butoxyethyl 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 butoxyethyl ester

Organophosphorus Pesticide Mix

M-8321-OP

0.1 mg/mL each in ACN

1 x 1 mL
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

At stated conc. (µg/mL) in ACN:MeOH (50:50)

1 x 1 mL
13 comps.

Benzidine †	250	3,3'-Dimethylbenzidine †	350
Benzoylprop ethyl	350	Diuron	450
Caffeine	300	Linuron	1,300
Carbaryl	1,000	Monuron	400
o-Chlorophenyl thiourea	750	Rotenone	3,200
3,3'-Dichlorobenzidine †	250	Siduron	450
3,3'-Dimethoxybenzidine †	750		

Performance Check Solution

M-553-PC

0.1 mg/mL in ACN

1 x 1 mL

DFTPPO (Decafluorotriphenylphosphine oxide)

† Subject to oxidation

Method 8323 Organometallic Tin Analysis by Electrospray Ion Trap Mass Spectrometry

These standards are designed to help testing for Organo-tin compounds following USEPA test method 8323. The environmental interest in these compounds stems from their addition to the list of endocrine disruptors. 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

OMT-001-PAK

2000 µg/mL each in CH₂Cl₂

1 x 1 mL

SAVE 5 x 1 mL

4 comps.

Butyltin trichloride	Tetrabutyltin
Dibutyltin dichloride	Tributyltin chloride

Tri-n-propyltin Surrogate Standard

OMT-003

OMT-003-PAK

2000 µg/mL in CH₂Cl₂

1 x 1 mL

SAVE 5 x 1 mL

Tri-n-propyltin chloride

Tetra-n-propyltin Internal Standard

OMT-005

OMT-005-PAK

2000 µg/mL in CH₂Cl₂

1 x 1 mL

SAVE 5 x 1 mL

Tetra-n-propyltin

Organometallic Phenyltin Chloride Standard

OMT-002

OMT-002-PAK

2000 µg/mL each in CH₂Cl₂

1 x 1 mL

SAVE 5 x 1 mL

4 comps.

Diphenyltin dichloride	Tetraphenyltin
Phenyltin trichloride	Triphenyltin chloride

Triphenyltin Chloride Surrogate Standard

OMT-004-0.1X

200 µg/mL in CH₂Cl₂

1 x 1 mL

Triphenyltin chloride (Tech Mix)

Tetraphenyltin Internal Standard

OMT-006

OMT-006-PAK

2000 µg/mL in CH₂Cl₂

1 x 1 mL

SAVE 5 x 1 mL

Tetraphenyltin

Method 8327 Native PFAS Reference Standard for Ground, Surface, and Wastewater

This Certified Reference Material (CRM) contains the 24 PFAS based on EPA Method 8327 which is suitable for testing PFAS in surface water, groundwater and wastewater matrices. Our two CRMs M-8327-10X and M-8327 are offered at a high and a low concentration to meet the specific needs of your testing.

Native PFAS Reference Standard

M-8327

2 µg/mL each in MeOH

1 mL

24 comps.

M-8327-10X

20 µg/mL each in MeOH

1 mL

24 comps.

Perfluorobutane-1-sulfonic acid
Perfluoropentanesulfonic acid
Perfluorohexane-1-sulfonic acid
Perfluoroheptanesulfonic acid
Perfluorooctane-1-sulfonic acid
Perfluorononanesulfonic acid
Perfluorodecane-1-sulfonic acid
1H,1H,2H,2H-Perfluorohexanesulfonic acid

1H,1H,2H,2H-Perfluorooctane sulfonic acid
1H,1H,2H,2H-Perfluorodecanesulfonic acid
Perfluoro-n-butanoic acid
Perfluoro-n-pentanoic acid
Perfluoro-n-hexanoic acid
Perfluoro-n-heptanoic acid
Perfluoro-n-octanoic acid
Perfluoro-n-nonoic acid

Perfluoro-n-decanoic acid
Perfluoro-n-undecanoic acid
Perfluoro-n-dodecanoic acid
Perfluoro-n-tridecanoic acid
Perfluoro-n-tetradecanoic acid
N-ethylperfluoro-1-octanesulfonamidoacetic acid
N-methylperfluoro-1-octanesulfonamidoacetic acid
Perfluorooctane sulfonamide



EPA Method 8000 Series

Explosives

Methods 8330 & 8330B Explosives by HPLC

Compound	TNT Metabolite	CAS No.	Conc.	Matrix	Cat. No.	Unit
2-Amino-4,6-dinitrotoluene	•	35572-78-2	100 µg/mL	ACN:MeOH (50:50)	M-8330-13-0.1X	1 mL
4-Amino-2,6-dinitrotoluene	•	19406-51-0	100 µg/mL	ACN:MeOH (50:50)	M-8330-14-0.1X	1 mL
1,3-Dinitrobenzene	•	99-65-0	100 µg/mL	ACN:MeOH (50:50)	M-8330-01-0.1X	1 mL
	•		1000 µg/mL	ACN:MeOH (50:50)	M-8330-01	1 mL
2,4-Dinitrotoluene	•	121-14-2	100 µg/mL	ACN:MeOH (50:50)	M-8330-02-0.1X	1 mL
2,6-Dinitrotoluene	•	606-20-2	100 µg/mL	ACN:MeOH (50:50)	M-8330-03-0.1X	1 mL
			1000 µg/mL	ACN:MeOH (50:50)	M-8330-03	1 mL
3,5-Dinitrotoluene	•	618-85-9	100 µg/mL	ACN:MeOH (50:50)	M-8330-ADD-39	1 mL
Nitrobenzene	•	98-95-3	100 µg/mL	ACN:MeOH (50:50)	M-8330-06-0.1X	1 mL
Nitroglycerin		55-63-0	100 µg/mL	EtOH	M-8330-ADD-1	1 mL
			1000 µg/mL	EtOH:MeOH (97:3)	M-8330-ADD-1-10X	1 mL
2-Nitrotoluene	•	88-72-2	100 µg/mL	ACN:MeOH (50:50)	M-8330-07-0.1X	1 mL
3-Nitrotoluene	•	99-08-1	100 µg/mL	ACN:MeOH (50:50)	M-8330-08-0.1X	1 mL
4-Nitrotoluene	•	99-99-0	100 µg/mL	ACN:MeOH (50:50)	M-8330-09-0.1X	1 mL
PETN		78-11-5	100 µg/mL	MeOH	M-8330-ADD-2	1 mL
			1000 µg/mL	MeOH	M-8330-ADD-2-10X	1 mL
2,2',6,6'-Tetranitro-4,4'-azoxytoluene	•	51857-25-1	100 µg/mL	ACN	M-8330-ADD-15	1 mL
2,2',6,6'-Tetranitro-4,4'-azotoluene	•		100 µg/mL	ACN	M-8330-ADD-17	1 mL
4,4',6,6'-Tetranitro-2,2'-azotoluene	•		100 µg/mL	ACN	M-8330-ADD-19	1 mL
TNT		118-96-7	100 µg/mL	ACN:MeOH (50:50)	M-8330-11-0.1X	1 mL
1,3,5-Trinitrobenzene	•	99-35-4	100 µg/mL	ACN:MeOH (50:50)	M-8330-12-0.1X	1 mL

Explosives Set by HPLC

M-8330-R-SET

Each at 100 µg/mL in ACN:MeOH (50:50)

14 x 1 mL

M-8330-R-10X-SET

Each at 1000 µg/mL in ACN:MeOH (50:50)

14 x 1 mL

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

Mix A

M-8330A

100 µg/mL each in ACN:MeOH (50:50)

1 x 1 mL

7 comps.

M-8330A-10X

1.0 mg/mL each in ACN:MeOH (50:50)

1 x 1 mL

7 comps.

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

M-8330A-R

100 µg/mL each in ACN:MeOH (50:50)

1 x 1 mL

8 comps.

M-8330A-R-10X

1.0 mg/mL each in ACN:MeOH (50:50)

1 x 1 mL

8 comps.

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

Composite Explosive Mixture

M-8330-R-0.1X

100 µg/mL each in ACN:MeOH (50:50)

1 x 1 mL

14 comps.

M-8330-R-0.5X

0.5 mg/mL each in ACN:MeOH (50:50)

1 x 1 mL

14 comps.

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

Internal Standard

M-8330-IS

M-8330-IS-PAK

1.0 mg/mL in MeOH

1 x 1 mL

SAVE 5 x 1 mL

3,4-Dinitrotoluene

Mix B

M-8330B

100 µg/mL each in ACN:MeOH (50:50)

1 x 1 mL

5 comps.

M-8330B-10X

1.0 mg/mL each in ACN:MeOH (50:50)

1 x 1 mL

5 comps.

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

M-8330B-R

100 µg/mL each in ACN:MeOH (50:50)

1 x 1 mL

7 comps.

M-8330B-R-10X

1.0 mg/mL each in ACN:MeOH (50:50)

1 x 1 mL

7 comps.

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

M-8330B-R2

100 µg/mL each in ACN:MeOH (50:50)

1 x 1 mL

6 comps.

M-8330B-R2-10X

1.0 mg/mL each in ACN:MeOH (50:50)

1 x 1 mL

6 comps.

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

Surrogate Standard

M-8330-SS

1.0 mg/mL in MeOH

1 x 1 mL

1,2-Dinitrobenzene

Technical Note

Mix A and B provide better resolution between possible coeluting analytes, assisting the chemist to optimize the HPLC system. We suggest using the high concentration set M-8330-R-10X-SET when first performing Method 8330 development..



Method 8410 Semi-Volatiles by GC/FTIR

Internal Standard

M-8410-IS

M-8410-IS-PAK

2.0 mg/mL each in CH₂Cl₂

1-Fluoronaphthalene

p-Terphenyl-d₁₄

1 x 1 mL

SAVE 5 x 1 mL

2 comps.

Method 8430 bis(2-Chloroethyl)ether & Hydrolysis Products by GC/FTIR

M-8430

1.0 mg/mL each in Water

bis(2-Chloroethyl) ether

2-Chloroethanol

2-(2-Chloroethoxy)-ethanol

Diethylene glycol

Ethylene glycol

1 x 1 mL

5 comps.

Method 8440 Total Petroleum Hydrocarbon by IR

Total Recoverable Petroleum Hydrocarbon Mix

M-8440

M-8440-PAK

At stated Wt.% in Tetrachloroethene

Chlorobenzene

0.10

Isooctane

0.15

n-Hexadecane

0.15

1 x 1 mL

SAVE 5 x 1 mL

3 comps.

Total Petroleum Hydrocarbon Concentrate Mix

M-8440-CON

M-8440-CON-PAK

At stated Vol. %

Chlorobenzene

25.0

Isooctane

37.5

n-Hexadecane

37.5

1 x 1 mL

SAVE 5 x 1 mL

3 comps.

Silica Gel Cleanup Calibration Solution

M-8440-SGC

M-8440-SGC-PAK

10.0 mg/mL in Tetrachloroethene

Corn Oil

1 x 1 mL

SAVE 5 x 1 mL



Regional Methods

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Standards for International Testing Protocols

AccuStandard has developed standard solutions that meet the requirements of various governmental bodies around the world. If you cannot locate a product that meets your requirements, contact our Technical Department

Regional Regulatory Agencies

International

ASTM ASTM International
ISO International Organization for Standardization
AOAC Association of Official Analytical Chemists

European

EN European Standard
BPD Biological Products Directive
BPR European Biocidal Product Regulation
EFSA European Food Safety Authority

Germany

DIN German institute for standardization
DFG Direct From Growers

Canada

NRC-IBS Institute for Biological Sciences
MELCC Ministry of the Environment and the Fight against Climate Change or Quebec Ministry of Environment (QME)
IADN Intergrated Atmospheric Deposition Network
Brownfield Regulation
MISA Municipal Information Systems Association

China

GB Chinese National Standards (GuoBiao Standards) GB/T for recommended
HJ Environmental Protection Industry Standard HJ/T for recommended

Japan

JIS Enviromental Agency, Japanese Industrial Standards

Korea Water Regulations

U.S. States

EPA Environmental Protection Agency MDA Minnesota Dept. of Agriculture
CARB California Air Rescources Board DNR Wisconsin Dept. of Natural
FAC Florida Administrative Code Resources

International

ASTM
ISO
AOAC

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Regional Methods

ASTM Methods

ASTM D5836 Determination of Diisocyanates (1,2-PP Method)

Underivatized Diisocyanates

Compound	Cat. No.	Unit
2,4-Toluene diisocyanate	D-5836-01N	100 mg
2,6-Toluene diisocyanate	D-5836-02N	100 mg
Hexamethylene diisocyanate	D-5836-03N	100 mg
4,4'-Methylenebis(phenyl isocyanate)	D-5836-04N	100 mg

Diisocyanate Storage - Refrig 0-5° C

Diisocyanate Set

D-5836-SET		9 x 1 units
D-5836-01N	D-5836-01-DER	D-5836-DER-5ML
D-5836-02N	D-5836-02-DER	
D-5836-03N	D-5836-03-DER	
D-5836-04N	D-5836-04-DER	

Derivatized Diisocyanates (Weight Compensated to 1000 µg/mL of each Diisocyanate)

Compound	CAS		Cat. No.	Unit
N,N'-(4-Methyl-1,3-phenylene)bis[4-(2-pyridinyl)-1-piperazinecarboxamide]	72375-21-4 (2,4-TDI)	2840 µg/mL in DMSO	D-5836-01-DER	1 mL
N,N'-(2-Methyl-1,3-phenylene)bis[4-(2-pyridinyl)-1-piperazinecarboxamide]	(2,6-TDIP)	2840 µg/mL in DMSO	D-5836-02-DER	1 mL
N,N'-1,6-Hexanediylbis[4-(2-pyridinyl)-1-piperazinecarboxamide]	72375-27-0 (1,6-HDIP)	2900 µg/mL in DMSO	D-5836-03-DER	1 mL
N,N'-(Methylenediphenylene)bis[4-(2-pyridinyl)-1-piperazinecarboxamide]	72375-24-7 (4,4'-MDIP)	2280 µg/mL in DMSO	D-5836-04-DER	1 mL

Derivatizing Agents

1-(2-Pyridyl)piperazine	34803-66-2	2 mg/mL in CH ₂ Cl ₂	D-5836-DER-5ML-VAP	4 x 5 mL
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Individual Derivatized Diisocyanates

N,N'-(4-Methyl-1,3-phenylene)bis[4-(2-pyridinyl)-1-piperazinecarboxamide]	72375-21-4 (2,4-TDI)	1000 µg/mL in DMSO	D-5836-01A-DER	1 mL
N,N'-(2-Methyl-1,3-phenylene)bis[4-(2-pyridinyl)-1-piperazinecarboxamide]	(2,6-TDIP)	1000 µg/mL in DMSO	D-5836-02A-DER	1 mL
N,N'-1,6-Hexanediylbis[4-(2-pyridinyl)-1-piperazinecarboxamide]	72375-27-0 (1,6-HDIP)	1000 µg/mL in DMSO	D-5836-03A-DER	1 mL
N,N'-(Methylenediphenylene)bis[4-(2-pyridinyl)-1-piperazinecarboxamide]	72375-24-7 (4,4'-MDIP)	1000 µg/mL in DMSO	D-5836-04A-DER	1 mL

ASTM D5837 Furanic Compound Extraction in Electrical Insulation Liquids by HPLC

Furanic Compound Extraction Standard

D-5837-01
1000 µg/mL each in ACN

1 x 1 mL
5 comps.

2-Acetylfuran
2-Furaldehyde
Furfuryl alcohol

5-(Hydroxymethyl)-2-furaldehyde
5-Methylfurfural

Furanic Compound Calibration Standard

D-5837-02
1000 µg/mL each in Toluene

1 x 1 mL
5 comps.

2-Acetylfuran
2-Furaldehyde
Furfuryl alcohol

5-(Hydroxymethyl)-2-furaldehyde
5-Methylfurfural

ASTM D6042 Phenolic Antioxidants by LC

This method is used by both pharmaceutical 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.

Expanded List of Additives

Each at 50 µg/mL in Isopropanol

Ultrinox 626	PLAS-CAL-002-1	1 mL
Santanox R	PLAS-CAL-002-2	1 mL
Ethanox 330	PLAS-CAL-002-3	1 mL
Ethanox 323	PLAS-CAL-002-4	1 mL
Ethanox 702	PLAS-CAL-002-5	1 mL
Irganox 1035	PLAS-CAL-002-7	1 mL

Calibration Mix

PLAS-CAL-001
PLAS-CAL-001-PAK
50 µg/mL each in Isopropanol

BHT
Erucamide Slip
Vitamin E
Irgafos 168

1 x 1 mL
SAVE 5 x 1 mL
7 comps.

Irganox 3114
Irganox 1010
Irganox 1076

Internal Standard Mix

PLAS-IS-001
PLAS-IS-001-PAK
51.8 µg/mL in Isopropanol

Tinuvin P

1 x 1 mL
SAVE 5 x 1 mL

ASTM D6160 Polychlorinated Biphenyls (PCBs) in Waste Materials by GC

Aroclor Standards

Aroclor #	35 µg/mL in Isooctane	Unit	35 µg/mL in MeOH	Unit	1000 µg/mL in Hexane	Unit
Aroclor 1016	C-216S	1 mL	C-216S-M	1 mL	C-216S-H-10X	1 mL
Aroclor 1221	C-221S	1 mL	C-221S-M	1 mL	C-221S-H-10X	1 mL
Aroclor 1232	C-232S	1 mL	C-232S-M	1 mL	C-232S-H-10X	1 mL
Aroclor 1242	C-242S	1 mL	C-242S-M	1 mL	C-242S-H-10X	1 mL
Aroclor 1248	C-248S	1 mL	C-248S-M	1 mL	C-248S-H-10X	1 mL
Aroclor 1254	C-254S	1 mL	C-254S-M	1 mL	C-254S-H-10X	1 mL
Aroclor 1260	C-260S	1 mL	C-260S-M	1 mL	C-260S-H-10X	1 mL
Aroclor 1262	C-262S	1 mL	C-262S-M	1 mL	C-262S-H-10X	1 mL
Aroclor 1268	C-268S	1 mL	C-268S-M	1 mL	C-268S-H-10X	1 mL



ASTM D7485 Nonylphenols by LC-MS/MS

Nonylphenols in Environmental Water Set

D-7485-SET

5 x 1 mL

2500 µg/mL each in ACN:MeOH (90:10), * except (50:50)

Nonylphenol	D-7485-01 *	1 mL	Octylphenol	D-7485-04	1 mL
Nonylphenol monoethoxylate	D-7485-02	1 mL	2-Bromo-4-(1,1,3,3-tetramethylbutyl)phenol	D-7485-SS	1 mL
Nonylphenol diethoxylate	D-7485-03	1 mL			

ASTM D7600 N-methyl carbamate (NMC) Pesticides by LC-MS/MS

ASTM Carbamate Standard

D-7600

1 x 1 mL

At stated conc. (µg/mL) in MeOH

5 comps.

Ardicarb	200	Methomyl	200
Carbofuran	200	BDMC	400
Oxamyl	200		

ASTM Carbamate Surrogate Std.

D-7600-SS

1 x 1 mL

400 µg/mL in MeOH

BDMC

ASTM D7645 N-methyl carbamate (NMC) Pesticides by LC-MS/MS

ASTM Carbamate Standard

D-7645

1 x 1 mL

100 µg/mL each in MeOH

8 comps.

Ardicarb	Oxamyl
Aldicarb sulfone	Methomyl
Aldicarb sulfoxide	Thiofanox
Carbofuran	Carbofuran-d ₃

ASTM Carbamate Surrogate Std.

D-7645-SS

1 x 1 mL

100 µg/mL in MeOH

Carbofuran-d₃

D-7645-SS-R1

100 µg/mL each in MeOH

1 x 1 mL

2 comps.

Methomyl-d₃ Carbofuran-d₃

ASTM Carbamate Matrix

Spike Standard

D-7645-MS

1 x 1 mL

50 µg/mL each in MeOH

7 comps.

Ardicarb	Oxamyl
Aldicarb sulfone	Methomyl
Aldicarb sulfoxide	Thiofanox
Carbofuran	

ASTM D7065 4-tert-Octylphenol, 4-Nonylphenol and their Tech Equivalents, Mono and Multi-Ethoxylates

Nonylphenol Calibration Standard Solution

M-1626

1 x 1 mL

At stated conc. (µg/mL) in CH₂Cl₂

7 comps.

Nonylphenol	160	Bisphenol A (BPA)	32
Nonylphenol monoethoxylate	320	4-Nonylphenol	32
Nonylphenol diethoxylate	640	4-Nonylphenol monoethoxylate	32
4-tert-Octylphenol	32		

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 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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Nonylphenol Target Component Spike Standard

M-1626-S

1 x 1 mL

At stated conc. (µg/mL) in MeOH:Ethyl acetate (98:2)

5 comps.

Nonylphenol	160	4-tert-Octylphenol	32
Nonylphenol monoethoxylate	320	Bisphenol A	32
Nonylphenol diethoxylate	640		

Bisphenol A (BPA)

M-1626-01S

1 x 1 mL

1000 µg/mL in MeOH

ASTM E1387 & E1618 Resolution Check for Fire Debris Analysis

ASTM E1387 Resolution Check Mix

ASTM-E1387

1 x 1 mL

ASTM-E1387-PAK

SAVE 5 x 1 mL

2.0 mg/mL each in CH₂Cl₂

13 comps.

Decane	Hexadecane	Tetradecane
Dodecane	Hexane	Toluene
Eicosane	Octadecane	1,2,4-Trimethylbenzene
2-Ethyltoluene	Octane	p-Xylene
3-Ethyltoluene		

ASTM E1618 Test Mix for Fire Debris Analysis

ASTM-E1618

1 x 1 mL

ASTM-E1618-PAK

SAVE 5 x 1 mL

0.05 Vol.% each in CH₂Cl₂

13 comps.

n-Decane	n-Hexadecane	n-Tetradecane
n-Dodecane	n-Hexane	Toluene
n-Eicosane	n-Octadecane	1,2,4-Trimethylbenzene
o-Ethyltoluene	n-Octane	p-Xylene
m-Ethyltoluene		



Regional Methods

Europe

EU REACH Statement

In an effort to ensure that all chemicals are tested and used in safe ways, the European Union has adopted the REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) directive. 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.

For other guidance on REACH, please go to the ECHA-website (www.echa.europa.eu).

ISO Methods

ISO 6468 PCB Standard

ISO6468-PCB

10 µg/mL each in Hexane

1 x 1 mL

7 comps.

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
194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl

ISO 14389 Phthalates in Textiles

Phthalates Reference Standard

ISO14389

1000 µg/mL each in Hexane

1 x 1 mL

15 comps.

Dicyclohexyl phthalate
Diisononyl phthalate
bis(2-Ethylhexyl)phthalate
Di-n-octyl phthalate
Diisodecyl phthalate
Benzyl butyl phthalate
Dibutyl phthalate
Diisobutyl phthalate
Dipentyl phthalate
Diisooheptyl phthalate
bis(2-Methoxyethyl)phthalate
Diisopentyl phthalate
Dihexyl phthalate
n-Pentyl-isopentyl phthalate
bis(4-Methylpentyl)phthalate

ISO/DIS 22032 Calibration Curve Set

ISO-DIS-22032-SET

At stated conc. (ng/mL) in Isooctane

8 comps. each (ISO-DIS-22032-01, -02, -03, -04, -05, -06, -07)

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

Brominated Flame Retardants Standard Set

ISO17881-1-SET

4 x 1 mL
ISO17881-1, BDE-710S-T-GL, FRS-085S, ISO17881-1-IS

ISO17881-1 Brominated Flame Retardants

ISO17881-1

100 µg/mL each in Toluene

1 mL

15 comps.

2-Bromobiphenyl
2,2',3,3',4,4',5,5'-Octabromobiphenyl
2,2',3,3',4,4',5,5',6-Nonabromobiphenyl
2,2',3,3',4,4',5,5',6,6'-Decabromodiphenyl ether
2,2',3,4,4',5,5',6-Octabromodiphenyl ether
2,2',3,4,4',5,6'-Heptabromodiphenyl ether
2,2',4,4'-Tetrabromodiphenyl ether
2,2',4,4',5,6'-Hexabromodiphenyl ether
2,2',4,5'-Tetrabromobiphenyl
2,2',4,5',6-Pentabromobiphenyl
2,2',5-Tribromobiphenyl
2,3,3',4,4',5,5'-Heptabromobiphenyl
2,5-Dibromobiphenyl
3,3',4,4',5,5'-Hexabromobiphenyl
Decabromobiphenyl

Pentabromodiphenylether (Tech)

BDE-710S-T-GL

100 µg/mL in Toluene

1 x 1 mL

Hexabromocyclododecane

(Mixture of Stereoisomers)

FRS-085S

100 µg/mL in Toluene

1 x 1 mL

Internal Standard

ISO17881-1-IS

100 µg/mL in Toluene

1 x 1 mL

Decachlorobiphenyl

ISO17881-2 Phosphorus Flame Retardants

ISO17881-2

100 µg/mL each in ACN

1 x 1 mL

3 comps.

tris(1-Aziridinyl)phosphine oxide
Tris(2-chloroethyl)phosphate
tris(2,3-Dibromopropyl)phosphate

Internal Standards

BDE 47, 99 and 100

ISO22032-IS-1-5ML

ISO22032-IS-1-10ML

100 ng/mL each in Isooctane

1 x 5 mL

1 x 10 mL

3,3',4,4'-Tetrabromodiphenyl ether

BDE 153, 154 and 183

ISO22032-IS-2-5ML

ISO22032-IS-2-10ML

100 ng/mL each in Isooctane

1 x 5 mL

1 x 10 mL

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



ISO Methods (continued)

Water quality determination of organochlorine insecticides, polychlorine biphenyls and chlorobenzenes by LLE-GC.

ISO 6468 Pesticide Standard

ISO6468-PEST

10 µg/mL each in *n*-Hexane

1 x 1 mL
19 comps.

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

ISO 10382 Pesticides and PCBs in Soil Standard

ISO10382

100 µg/mL each in Isooctane: Acetone (90:10)

1 x 1 mL
24 comps.

a-BHC	Endosulfan I
Hexachlorobenzene	p,p'-DDE
b-BHC	Dieldrin
g-BHC	o,p'-DDD
2,4,4'-Trichlorobiphenyl	Endrin
Heptachlor	2,3',4,4',5-Pentachlorobiphenyl
2,2',5,5'-Tetrachlorobiphenyl	p,p'-DDD
Aldrin	o,p'-DDT
Heptachlor epoxide (Isomer B)	2,2',4,4',5,5'-Hexachlorobiphenyl
Heptachlor epoxide (Isomer A)	p,p'-DDT
o,p'-DDE	2,2',3,4,4',5'-Hexachlorobiphenyl
2,2',4,5,5'-Pentachlorobiphenyl	2,2',3,4,4',5,5'-Heptachlorobiphenyl

Determination of highly volatile halogenated hydrocarbons by GC.

ISO 10301 VOCs - Mix 1

ISO10301-1

100 µg/mL in PT Methanol

1 x 1 mL
17 comps.

Dichloromethane	1,2-Dichloropropane
Trichloromethane	1,3-Dichloropropane
Tetrachloromethane	1,3-Dichloropropene
1,1-Dichloroethane	Dibromomethane
1,2-Dichloroethane	Tribromoethene
1,1,1-Trichloroethane	Bromochloromethane
1,1,2-Trichloroethane	Bromodichloromethane
Trichloroethene	Dibromochloromethane
Tetrachloroethene	

ISO 10301 VOCs - Mix 2

ISO10301-2

100 µg/mL in PT Methanol

1 x 1 mL
22 comps.

1,1-Dichloroethene	1,2-Dichloropropane
Dichloromethane	Dibromomethane
trans-1,2-Dichloroethene	Bromodichloromethane
1,1-Dichloroethane	cis-1,3-Dichloropropene
cis-1,2-Dichloroethene	trans-1,3-Dichloropropene
Bromochloromethane	1,1,2-Trichloroethane
Chloroform	1,3-Dichloropropane
1,1,1-Trichloroethane	Tetrachloroethene
Carbon tetrachloride	Dibromochloromethane
1,2-Dichloroethane	1,2-Dibromoethane
Trichloroethene	Bromoform

ISO 14182 Pesticides in Animal feeding stuffs

Organophosphorus Pesticides

ISO14182

100 µg/mL each in Ethyl acetate

1 mL
16 comps.

Azinphos-ethyl	Diazinon	Methidathion
Azinphos-methyl	Dimethoate	Parathion
Bromophos	Ethion	Parathion-methyl
Carbophenothion	Fonofos	Pirimiphos-ethyl
Chlorpyrifos	Malathion	Pirimiphos-methyl
Chlorpyrifos-methyl		

Internal Standard

ISO14182-IS

100 µg/mL in Ethyl acetate

1 mL

Tributylphosphate

ISO 16703 C10 to C40 Hydrocarbons Mix

ISO16703

500 µg/mL each in *n*-Heptane

1 x 1 mL
16 comps.

n-Decane	n-Docosane	n-Dotriacontane
n-Dodecane	n-Tetracosane	n-Tetracontane
n-Tetradecane	n-Hexacosane	n-Hexatriacontane
n-Hexadecane	n-Octacosane	n-Octatriacontane
n-Octadecane	n-Triacontane	n-Tetracontane
n-Eicosane		

ISO 16703 Retention Time Window Standard (RTW)

ISO16703-RTW

500 µg/mL each in *n*-Heptane

1 x 1 mL
2 comps.

n-Decane	n-Tetracontane
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ISO 17234 Aromatic Amines in Leather Standard

ISO17234-1

500 µg/mL each in ACN

1 x 1 mL
23 comps.

4-Aminobiphenyl	2-Methoxy-5-methylaniline
Benzidine	4,4'-Methylenebis(2-chloroaniline)
4-Chloro-2-methylaniline	4,4'-Oxydianiline
2-Aminonaphthalene	4,4'-Thiodianiline
o-Aminoazotoluene	o-Toluidine
2-Methyl-5-nitroaniline	2,4-Diaminotoluene
4-Chloroaniline	2,4,5-Trimethylaniline
4,4'-Diaminodiphenylmethane	o-Anisidine
3,3'-Dichlorobenzidine	4-Phenylazoaniline
3,3'-Dimethoxybenzidine	2,4-Dimethylaniline
3,3'-Dimethylbenzidine	2,6-Dimethylaniline
3,3'-Dimethyl-4,4'-diaminodiphenylmethane	



Regional Methods

Europe

EN and ISO Methods

3-Iodo-2-propynyl N-butylcarbamate (IPBC)

EN16343

1000 µg/mL in MeOH

1 mL

3-Iodo-2-propynyl N-butylcarbamate (IPBC)

EN15662 Residual Pesticide Mix 1

EN15662-1

300 µg/mL each in ACN

1 mL

16 comps.

Acephate	Dimethoate	Phosalone
Azinphos methyl	Fenthion	Pirimiphos-methyl
Chlorpyrifos (Dursban)	Malathion	Propargite
Coumaphos	Methamidophos(Monitor)	Pymetrozine
Diazinon	Mevinphos	
Dichlorvos	Omethoate	

EN15662 Residual Pesticide Mix 2

EN15662-2

300 µg/mL each in ACN

1 mL

7 comps.

g-BHC	Dicofol (Kelthane)	Endrin
Chlorothalonil	Endosulfan sulfate	o-Phenylphenol
p,p'-DDT		

EN15662 Residual Pesticide Mix 3

EN15662-3

300 µg/mL each in ACN

1 mL

17 comps.

Bifenthrin	Fenpropathrin (Danitol)	Myclobutanil
Captan	Folpet	cis-Permethrin
Carbaryl	Imazalil	trans-Permethrin
Cyprodinil	Iprodione	Thiabendazole
Deltamethrin	Metalaxyl	Vinclozolin
Fenhexamid	Methiocarb	

EN 16694 PBDE in Water Reference Standard

EN16694

5 µg/mL each in Toluene

1 mL

6 comps.

2,4,4'-Tribromodiphenyl ether	2,2',4,4',5-Pentabromodiphenyl ether
2,2',4,4'-Tetrabromodiphenyl ether	2,2',4,4',5,6'-Hexabromodiphenyl ether
2,2',4,4',6-Pentabromodiphenyl ether	2,2',4,4',5,5'-Hexabromodiphenyl ether

Diesel #2/Mineral Oil Standard

ENISO9377-2-1

1 x 1 mL

5000 µg/mL each hydrocarbon in Hexane

2 comps.

#2 Diesel Fuel	Mineral Oil
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Quality Control Standard Mix

ISO-DIS9377-4-1

1 x 1 mL

500 µg/mL each hydrocarbon in Acetone

2 comps.

#2 Diesel Fuel	Mineral Oil
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Extraction Solvent Stock Solution

ENISO9377-2-3

1 x 5 mL

At stated conc. (µg/mL) in Hexane

2 comps.

n-Decane	14.5	n-Tetracontane	20
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System Performance Standard of n-alkanes

ENISO9377-2-2

50 µg/mL each in Hexane

1 x 1 mL

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

2000 µg/mL in Cyclohexane

1 x 10 mL

Stearyl stearate

EN 16695 MOSH/MOAH in Foodstuff Reference Std.

EN16995

At stated conc. (µg/mL) in Toluene

1 mL

9 comps.

n-Undecane	300	n-Amylbenzene	300
n-Tridecane	150	Perylene	600
5a-Cholestane	600	Bicyclohexyl	300
1-Methylnaphthalene	300	1,3,5-Tri-tert-butylbenzene	300
2-Methylnaphthalene	300		

EN 17132 PAHs in Textiles

EN-17132

1000 µg/mL each in Toluene

1 mL

18 comps.

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

EN 17132 PAHs in Textiles Internal Standard

EN-17132-IS

EN-17132-IS-PAK

1000 µg/mL each in Toluene

1 mL

SAVE 5 x 1 mL

7 comps.

Naphthalene-d ₈	Anthracene-d ₁₀	1,3,5-Triphenylbenzene
Pyrene-d ₁₀	Phenanthrene-d ₁₀	Benzo(a)pyrene-d ₁₂
Perylene-d ₁₂		

ISO 8124-6 Phthalates Stock Solution

ISO8124-6

1000 µg/mL each in Toluene

1 mL

6 comps.

Dibutyl phthalate	bis(2-Ethylhexyl)phthalate	Diisononyl phthalate
Benzyl butyl phthalate	Di-n-octyl phthalate	Diisodecyl phthalate

ISO 8124-6 Internal Standard

ISO8124-6-IS

250 µg/mL in Methylene chloride

1 mL

Dipentyl phthalate

ISO/DIS 9377-4 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
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Floril Cartridge QC Mix

ENISO9377-2-4

1 x 10 mL

1000 µg/mL each hydrocarbon in Hexane

2 comps.

#2 Diesel Fuel	Mineral Oil
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EFSA, IRSA AOAC and other EU Methods

Chlorinated Organic Volatile

Appendix 2, Drinking Water Regulation

Calibration Standards

Each at 100 µg/mL in MeOH

Compound	Cat. No.	Unit
1,1,1-Trichloroethane	APP-9-202	1 mL
Trichloroethene	APP-9-204	1 mL
Tetrachloroethene	APP-9-194	1 mL
Dichloromethane	APP-9-074	1 mL
Carbon tetrachloride	APP-9-036	1 mL

DM 471 Pesticides Standard (Italian Method)

DM-471-MIX-001	1 x 1 mL
100 µg/mL each in Acetone	16 comps.
Aldrin	p,p'-DDD
a-BHC	p,p'-DDE
b-BHC	p,p'-DDT
g-BHC	Dieldrin
a-Chlordane	Endrin
g-Chlordane	
Alachlor	
Atrazine	
o,p'-DDD	
o,p'-DDE	
o,p'-DDT	

IRSA Method 5090 Pesticide Mix

IRSA-5090-01S	1 x 1 mL
100 µg/mL each in Acetone	25 comps.
Pentachlorobenzene	g-Chlordane
a-BHC	o,p'-DDE
Hexachlorobenzene	a-Chlordane
Atrazine	Endosulfan I
b-BHC	p,p'-DDE
g-BHC	o,p'-DDD
d-BHC	Dieldrin
Alachlor	Endrin
Heptachlor	Endosulfan II
Aldrin	p,p'-DDD
Isodrin	o,p'-DDT
Heptachlor epoxide	p,p'-DDT
(Isomer B)	Methoxychlor

EN ISO 11369 Pesticide Mix 20

AE-00031	1 x 1 mL
10 µg/mL each in Ethyl acetate	17 comps.
Atrazine	Methabenzthiazuron
Chlortoluron	Metobromuron
Cyanazine	Metolachlor
Desethyl atrazine	Metoxuron
Hexazinone	Monolinuron
Isoproturon	Sebutylazin
Karmex (Diuron)	Simazine
Linuron	Terbutylazine
Metazachlor	

European Food Safety Authority (EFSA) - Isopropylthioxanthone (ITX)

In response to the danger of a photographic chemical found in baby milk in Italy, France, Spain, and Portugal, we have formulated two Isopropylthioxanth-9-one standards.

2-Isopropylthioxanthone (ITX)

EFSA-ITX-01	1 x 1 mL
1.0 mg/mL in Isooctane	
2-Isopropylthioxanth-9-one	

Isopropylthioxanthone (ITX)

Mixed Isomers	1 x 1 mL
EFSA-ITX-02	
1.0 mg/mL in Isooctane	
2-and 4-Isopropylthioxanth-9-one	

This method is published by the Central Office for Safety and Technology in Germany (ZLS) for the analysis of 18 PAH in Consumer Products.

ZEK-01.4-08 PAHs

ZEK-01.4-08S	1 mL
1000 µg/mL each in Methylene chloride	18 comps.
Acenaphthene	Benzo(g,h,i)perylene
Acenaphthylene	Benzo(k)fluoranthene
Anthracene	Chrysene
Benz(a)anthracene	Dibenz(a,h)anthracene
Benz[a]pyrene	Fluoranthene
Benzo(b)fluoranthene	Fluorene
	Indeno(1,2,3-cd)pyrene
	Naphthalene
	Phenanthrene
	Pyrene
	Benzo(j)fluoranthene
	Benzo[e]pyrene

Volatile Standard

AE-00048	1 x 1 mL
100 µg/mL each in MeOH	5 comps.
1,1,1-Trichloroethane	Dichloromethane
Trichloroethene	Tetrachloromethane
Tetrachloroethene	

Volatiles Mix 2 - Calibration Set

AE-00040-CAL-SET	5 x 1 mL
Each in 1,5,10,50, & 100 µg/mL in MeOH	6 comps.
Chloroform	Tetrachloromethane
Dichloromethane	1,1,1-Trichloroethane
Tetrachloroethene	Trichloroethene

Single Component Calibration Sets

1,1,1-Trichloroethane

AE-00034-CAL-SET	5 x 1 mL
Each in 1, 5, 10, 50, & 100 µg/mL in MeOH	
Tetrachloroethene	
AE-00036-CAL-SET	5 x 1 mL
Each in 1, 5, 10, 50, & 100 µg/mL in MeOH	

Dichloromethane

AE-00037-CAL-SET	5 x 1 mL
Each in 1, 5, 10, 50, & 100 µg/mL in MeOH	
Carbon tetrachloride	
AE-00038-CAL-SET	5 x 1 mL
Each in 1, 5, 10, 50, & 100 µg/mL in MeOH	

AOAC International Phthalates

Phthalates in Water-Based

Adhesive	1 mL
AOAC-PHTH-01	
1000 µg/mL each in n-Hexane	9 comps.
bis(2-Methoxyethyl)phthalate	
Dipentyl phthalate	
Benzyl butyl phthalate	
Diphenyl phthalate	
Dicyclohexyl phthalate	
Diethyl phthalate	
bis(2-n-butoxyethyl)phthalate	
Di-n-octyl phthalate	
bis(2-Ethylhexyl)phthalate	

Phthalates in Water-Based

Adhesive Internal Standard	1 mL
AOAC-PHTH-01-IS	
100 µg/mL each in n-Hexane	10 comps.
bis(2-methoxyethyl) Phthalate-3,4,5,6-d ₄	
di-n-pentyl phthalate-d ₄	
bis(2-ethoxyethyl) Phthalate-3,4,5,6-d ₄	
Benzyl butyl phthalate-d ₄	
Diphenyl Phthalate-3,4,5,6-d ₄	
Dicyclohexyl Phthalate-3,4,5,6-d ₄	
Di-n-hexyl Phthalate-3,4,5,6-d ₄	
bis(2-butoxyethyl) Phthalate-3,4,5,6-d ₄	
Di-n-octyl Phthalate-3,4,5,6-d ₄	
bis(2-ethylhexyl)phthalate-d ₄	

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 ACN, except where indicated	13 comps.
Acetaldehyde-DNPH	Formaldehyde-DNPH (40 µg/mL)
Acetone-DNPH	Hexanal-DNPH
Acrolein-DNPH	Methacrolein-DNPH
Benzaldehyde-DNPH	Propionaldehyde-DNPH
Butanal-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 ACN, except where indicated	14 comps.
Acetaldehyde-DNPH	Cyclohexanone-DNPH (5 µg/mL)
Acetone-DNPH	Formaldehyde-DNPH (4 µg/mL)
Acrolein-DNPH	Hexanal-DNPH
Benzaldehyde-DNPH	Methacrolein-DNPH
Butanal-DNPH	Propionaldehyde-DNPH
n-Butyraldehyde-DNPH	p-Tolualdehyde-DNPH
Crotonaldehyde-DNPH	Valeraldehyde-DNPH

Cyclohexanone

AE-00046	1 x 1 mL
500 µg/mL in ACN	
Cyclohexanone-DNPH	



Regional Methods

Europe

DIN 38407

Determination of PAH in water, wastewater and sludge by HPLC.

DIN 38407-8 PAH Mix (WHO 6 List)

DIN38407-8-PAH

2 µg/mL each in ACN

1 x 1 mL

6 comps.

Fluoranthene	Benz[a]pyrene
Benzo[b]fluoranthene	Benzo[k]fluoranthene
Benzo[g,h,i]perylene	Indeno[1,2,3-cd]pyrene

Examination of water, wastewater and sludge for the determination of PAHs by HPLC with fluorescence detection.

DIN 38407-18 PAHs

DIN38407-18

10 µg/mL each in ACN

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	

Regulations for drinking water analysis, in sediment and sludge.

E-DIN 38407-F-18, E-DIN 38414-F-21

PAH Mix #1

AE-00025

AE-00025-10ML

At stated conc. (µg/mL) in ACN

1 x 1 mL

1 x 10 mL

16 comps.

Acenaphthene	25	Chrysene	20
Acenaphthylene	25	Dibenz[a,h]anthracene	40
Anthracene	25	Fluoranthene	40
Benzo[a]anthracene	10	Fluorene	40
Benzo[b]fluoranthene	25	Indeno[1,2,3-cd]pyrene	25
Benzo[k]fluoranthene	10	Naphthalene	50
Benzo[g,h,i]perylene	25	Phenanthrene	30
Benzo[a]pyrene	20	Pyrene	40

German method for drinking water analysis.

PAH Mix #3

AE-00032

AE-00032-10ML

10 µg/mL each in ACN

1 x 1 mL

1 x 10 mL

7 comps.

Benzo[b]fluoranthene	Fluoranthene
Benzo[k]fluoranthene	Indeno[1,2,3-cd]pyrene
Benzo[g,h,i]perylene	Perylene
Benzo[a]pyrene	

For European methods according to customer requests.

PAH Mix #4

AE-00033

AE-00033-10ML

At stated conc. (µg/mL) in ACN

1 x 1 mL

1 x 10 mL

7 comps.

Benzo[b]fluoranthene	20	Fluoranthene	50
Benzo[k]fluoranthene	20	Indeno[1,2,3-cd]pyrene	40
Benzo[g,h,i]perylene	20	Perylene	20
Benzo[a]pyrene	20		

Determination of nitroaromatic compounds in water, wastewater and sludge by GLC

DIN 38407-17 Nitroaromatic Compounds

DIN38407-17

500 µg/mL each in MeOH

1 x 1 mL

12 comps.

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

DIN 38407-25 Selected Halo Acetic Acids

DIN38407-25

10 µg/mL each in MtBE

1 x 1 mL

7 comps.

Bromochloroacetic acid	Bromoacetic acid
Dalapon	Chloroacetic acid
Dibromoacetic acid	Trichloroacetic acid
Dichloroacetic acid	

DIN 38407-3 PCB PWDM Mix

C-WDM-H-R1

C-WDM-H-R1-10ML

2.5 µg/mL each in n-Hexane

1 x 1 mL

1 x 10 mL

21 comps.

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

Determination of water, waste water, sludge for low volatile halogenated hydrocarbons by GC.

DIN 38407-2 Pesticide Standard

DIN38407-2-PEST

10 µg/mL each in n-Hexane

1 x 1 mL

17 comps.

Aldrin	Dieldrin	Heptachlor epoxide (Isomer A)
p,p'-DDD	Endosulfan I	Heptachlor epoxide (Isomer B)
o,p'-DDE	Endosulfan II	α-BHC
p,p'-DDE	Endrin	β-BHC
o,p'-DDT	Heptachlor	γ-BHC
p,p'-DDT		Methoxychlor

Determination of plant protection agents in water, wastewater and sludge.

DIN V 38407-11 Pesticide Mix

DINV38407-11-PST

DINV38407-11-PST-PAK

5 µg/mL each in ACN

1 x 1 mL

SAVE 5 x 1 mL

21 comps.

Alachlor	Metazachlor	Propazine
Atrazine	Metobromuron	Sebuthylazin
Chlorfenvinphos	Metolachlor	Simazine
Chlortoluron	Metoxuron	2,4,5-T
Cyanazine	Monuron	Terbutylazine
2,4-D	Parathion	Trifluralin
MCPA acid	Pendimethalin	Vinclozolin



DIN 38407 (continued)

Examination of water, wastewater and sludge for phenoxyalkyl carbonic acids by GC and MS detection after solid-liquid extraction and derivatization.

DIN 38407-14 Free Acid Mix

DIN38407-14-ACID

500 µg/mL each in *n*-Hexane

1 x 1 mL
8 comps.

Mecoprop acid	Fenoprop acid
MCPA acid	MCPB acid
Dichlorprop acid	2,4,5-T acid
2,4-D acid	2,4-DB acid

DIN 38407-14 Methyl Esters Mix

DIN38407-14-ME

500 µg/mL each in *n*-Hexane

1 x 1 mL
8 comps.

Mecoprop methyl ester	Fenoprop methyl ester
MCPA methyl ester	MCPB methyl ester
Dichlorprop methyl ester	2,4,5-T methyl ester
2,4-D methyl ester	2,4-DB methyl ester

Examination of water, wastewater, & sludge to determine selected explosives and related compounds by HPLC with UV detection.

DIN 38407-21 Explosives

DIN38407-21-A

10 µg/mL each in MeOH

1 x 1 mL
12 comps.

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

DIN 38407-21 Related Compounds

DIN38407-21-B

10 µg/mL each in MeOH:ACN (98:2)

1 x 1 mL
8 comps.

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

Examination of water, wastewater, and sludge for Glyphosate and Aminomethyl phosphonic acid (AMPA).

DIN 38407-22 Glyphosate & AMPA

DIN38407-22

100 µg/mL each in Water

1 x 1 mL
2 comps.

Glyphosate	Aminomethylphosphonic acid
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DIN EN 12673, 17495, and 38414

Determination of selected chlorophenols in water by GC.

DIN EN 12673 Chlorophenols

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		

Determination of selected nitrophenols by solid-phase extraction and gas chromatography with mass spectrometric detection.

DIN EN ISO 17495 Nitrophenols

DINENISO-17495

500 µg/mL each in Acetone

1 x 1 mL
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

Determination of PAHs in water, waste water and sludge by HPLC and Fluorescence detection.

DIN 38414-23 PAHs

DIN38414-23

10 µg/mL each in ACN

1 x 1 mL
15 comps.

Naphthalene	Benzo[k]fluoranthene
Acenaphthene	Benz[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	



Regional Methods

Europe

DFG Collected Methods - Pesticides

The following Standards are formulated to help reliably test for pesticide in accordance with German Regulations (for residue thresholds), Swiss Regulations (for components and contaminants in food), and Direct From Grower (DFG) collected methods for determining pesticide residues in food and for research projects..

Pesticide Mix #1

AE-00010 1 x 1 mL
AE-00010-10ML 1 x 10 mL
 At stated conc. (µg/mL) in Toluene 31 comps.

Aldrin	10
α-BHC	10
β-BHC	10
γ-BHC	10
δ-BHC	10
α-Chlordane	10
γ-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
Dieldrin	10
Endosulfan I	10
Endosulfan II	10
Endrin	10
Heptachlor	10
Heptachlor epoxide (Isomer A)	10
Heptachlor epoxide (Isomer B)	10
2,2',3,4,4',5,5'-Heptachlorobiphenyl	1
Hexachlorobenzene	10
2,2',3,4,4',5'-Hexachlorobiphenyl	1
2,2',4,4',5,5'-Hexachlorobiphenyl	1
Isodrin	10
Methoxychlor	10
Mirex	10
Oxychlordane	10
2,2',4,5,5'-Pentachlorobiphenyl	1
2,2',5,5'-Tetrachlorobiphenyl	1
2,4,4'-Trichlorobiphenyl	1

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	Tridiameton
Dichlofluanid	Tridiamenol
Dicofol	Trifluarin
Endosulfan sulfate	Pentachloroaniline
Fenson	Procymidon
Folpet	Propyzamid
Imazalil	Quintozen
Iprodion	Vinclozolin

Pesticide Mix #3

AE-00012 1 x 1 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
 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 ACN
 Tetrachlorvinphos

Pesticide Mix #6

AE-00015 1 x 1 mL
 At stated conc. (µg/mL) in Toluene 8 comps.

Chlorpyrifos-methyl	100
Diazinon	100
Ethion	100
Etrifos	50
Iodofenphos	200
Malathion	100
Phosphamidon	200
Tetrachlorvinphos	10

Pesticide Mix #7

AE-00016 1 x 1 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 (90:5:5) 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
 At stated conc. (µg/mL) in Toluene 9 comps.

Azinphos 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
 At stated conc. (µg/mL) in Toluene 7 comps.

Benalaxyl	500
Carbaryl	500
Oxadixyl	500
Terbutylazine	250
Tetrachlorvinphos	10
Triadimefon	500
Triadimenol	500

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-BHC
Chloridazon	γ-BHC
o,p'-DDD	δ-BHC
p,p'-DDD	Heptachlor
o,p'-DDE	Heptachlor epoxide (Isomer B)
p,p'-DDE	Heptachlor epoxide (Isomer A)
o,p'-DDT	Hexachlorobenzene
p,p'-DDT	Tecnazene
Endrin	Tetrachlorvinphos
α-BHC	

Pesticide Mix #12

AE-00021-R1 1 x 1 mL
 At stated conc. (µg/mL) in Toluene:Acetone (90:10) 9 comps.

Carbophenithion	100
Disulfoton	150
Fenthion	100
Methamidophos	100
Phorate	150
Phorate sulfone	150
Phorate sulfoxide	100
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



Pesticides (continued)

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, 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
Desethyl atrazine	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	Linane
Atrazine	MCPA *
Bentazone *	Mechlorprop *
Chlortofuron	Metazachlor
Cyanazine	Metobromuron
2,4-D *	Metoxuron
Dichlorprop *	Sebutylazin
1,3-Dichloropropene	Simazine
Endosulfan I	Terbutylazine
Endosulfan II	* Underivatized
Isoproturon	

Pesticide Mix #17

AE-00027 1 x 1 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	Quintozone

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
Dichlorvos	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	Quintozone
Endosulfan sulfate	Tecnazene
Ethion	

Pesticide Mix #21

AE-00051 1 x 1 mL
AE-00051-10ML 1 x 10 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 ACN 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 ACN 6 comps.

2,4-D	MCPA
2,4-DB	MCPB
Dichlorprop	MCP acid

Pesticide Mix #24

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
 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
 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	



Regional Methods

Europe

EU Directive 67/548/EEC Dyes

Criterion #22 Regulated Dyes (Carcinogenic)

Compound	Cat. No.	Unit
Disperse Blue 1	DYE-001S-R1	1 mL
Disperse Orange 11	DYE-002S-R1	1 mL
Disperse Yellow 3	DYE-003S-R1	1 mL
Basic Violet 14	DYE-012S-R1	1 mL
Direct Black 38	DYE-013S-R1	1 mL
Direct Blue 6	DYE-014S-R1	1 mL

Criterion #23 Regulated Dyes (Disperse dyes, Sensitizing)

Each at 100 µg/mL in MeOH, -CN in ACN			Each at 100 µg/mL in MeOH		
Compound	Cat. No.	Unit	Compound	Cat. No.	Unit
Disperse Blue 3	DYE-004S-R1	1 mL	Disperse Orange 37	DYE-011S-R1	1 mL
Disperse Orange 1	DYE-005S-R1	1 mL	Disperse Blue 7	DYE-015S-R1	1 mL
Disperse Orange 3	DYE-006S-R1	1 mL	Disperse Blue 26	DYE-016S-R1	1 mL
Disperse Red 1	DYE-007S-R1	1 mL	Disperse Blue 102	DYE-017S-R1	1 mL
Disperse Yellow 9	DYE-008S-R1	1 mL	Disperse Red 11	DYE-018S-R1	1 mL
Disperse Blue 35	DYE-009S-R1	1 mL	Disperse Red 17	DYE-019S-R1	1 mL
Disperse Blue 124	DYE-010S-CN-R1	1 mL			

EU Directive 2002/61/EC Determination of Aryl Amine Breakdown Products in Azo Dyes

Azo-Colorant Colorant Carcinogens

Compound	100 µg/mL in ACN, 1 mL	1000 µg/mL in ACN, 1 mL	10 µg/mL in Ethyl acetate, 10 mL
o-Aminoazotoluene	RAC-01	RAC-01-10X	RAC-01-EA-0.1X-10ML
4-Aminobiphenyl	RAC-02	RAC-02-10X	RAC-02-EA-0.1X-10ML
2-Amino-4-nitrotoluene	RAC-03	RAC-03-10X	RAC-03-EA-0.1X-10ML
Benzidine †	RAC-04	RAC-04-10X	RAC-04-EA-0.1X-10ML
4-Chloroaniline	RAC-05	RAC-05-10X	RAC-05-EA-0.1X-10ML
4-Chloro-o-toluidine	RAC-06	RAC-06-10X	RAC-06-EA-0.1X-10ML
p-Cresidine	RAC-07	RAC-07-10X	RAC-07-EA-0.1X-10ML
2,4-Diaminoanisole	M-8330-ADD-58-CN	-----	RAC-08-EA-0.1X-10ML
4,4'-Diaminodiphenylmethane	RAC-09	RAC-09-10X	RAC-09-EA-0.1X-10ML
2,4-Diaminotoluene	RAC-10	RAC-10-10X	RAC-10-EA-0.1X-10ML
3,3'-Dichlorobenzidine †	RAC-11	RAC-11-10X	RAC-11-EA-0.1X-10ML
3,3'-Dimethoxybenzidine †	RAC-12	RAC-12-10X	RAC-12-EA-0.1X-10ML
3,3'-Dimethylbenzidine †	RAC-13	RAC-13-10X	RAC-13-EA-0.1X-10ML
3,3'-Dimethyl-4,4'-diaminodiphenylmethane	RAC-14	RAC-14-10X	RAC-14-EA-0.1X-10ML
4,4'-Methylenebis(2-chloroaniline)	RAC-15	RAC-15-10X	RAC-15-EA-0.1X-10ML
2-Naphthylamine	RAC-16	RAC-16-10X	RAC-16-EA-0.1X-10ML
4,4'-Oxydianiline	RAC-17	RAC-17-10X	RAC-17-EA-0.1X-10ML
4,4'-Thiodianiline	RAC-18	RAC-18-10X	RAC-18-EA-0.1X-10ML
o-Toluidine	RAC-19	RAC-19-10X	RAC-19-EA-0.1X-10ML
2,4,5-Trimethylaniline	RAC-20	RAC-20-10X	RAC-20-EA-0.1X-10ML
p-Aminoazobenzene	RAC-21	RAC-21-10X	RAC-21-EA-0.1X-10ML
2-Aminobiphenyl	RAC-22	RAC-22-10X	RAC-22-EA-0.1X-10ML
o-Anisidine	RAC-23	RAC-23-10X	RAC-23-EA-0.1X-10ML
3-Chloro-o-toluidine	RAC-24	RAC-24-10X	RAC-24-EA-0.1X-10ML

RAC-10X-R3-SET
23 x 1 mL

Internal Standards

RAC-IS 1 mL
1000 µg/mL in ACN

RAC-IS-EA 1 mL
1000 µg/mL in Ethyl acetate

3,3',5,5'-Tetramethylbenzidine †

Carcinogenic Aryl Amine Mix

AE-00049-R1-10X

100 µg/mL each in Ethyl acetate

AE-00049-R1-10X-10ML

100 µg/mL each in Ethyl acetate

o-Aminoazotoluene	4-Chloro-o-toluidine	3,3'-Dimethoxybenzidine †	4,4'-Oxydianiline	2-Aminobiphenyl
4-Aminobiphenyl	p-Cresidine	3,3'-Dimethylbenzidine †	4,4'-Thiodianiline	o-Anisidine
2-Amino-4-nitrotoluene	4,4'-Diaminodiphenylmethane	3,3'-Dimethyl-4,4'-diaminodiphenylmethane	o-Toluidine	3-Chloro-o-toluidine
Benzidine †	2,4-Diaminotoluene	4,4'-Methylenebis(2-chloroaniline)	2,4,5-Trimethylaniline	
4-Chloroaniline	3,3'-Dichlorobenzidine †	2-Naphthylamine	p-Aminoazobenzene	

Aliphatic, Aromatic Amines and Derivatives

Aryl Amine Multi-Component Solutions

AE-00049-R1-10X

AE-00049-R1-10X-10ML

100 µg/mL each in Ethyl acetate

o-Aminoazotoluene	4,4'-Diaminodiphenylmethane	4,4'-Oxydianiline
4-Aminobiphenyl	2,4-Diaminotoluene	4,4'-Thiodianiline
2-Amino-4-nitrotoluene	3,3'-Dichlorobenzidine †	o-Toluidine
Benzidine †	3,3'-Dimethoxybenzidine †	2,4,5-Trimethylaniline
4-Chloroaniline	3,3'-Dimethylbenzidine †	p-Aminoazobenzene
4-Chloro-o-toluidine	3,3'-Dimethyl-4,4'-diaminodiphenylmethane	2-Aminobiphenyl
p-Cresidine	4,4'-Methylenebis(2-chloroaniline)	o-Anisidine
3-Chloro-o-toluidine	2-Naphthylamine	

1 x 1 mL

M-8330-ADD-58-CN

100 µg/mL in ACN

2,4-Diaminoanisole

† Subject to oxidation



EU Directive 76/768/EEC Substances contained in Cosmetic Products see Allergen section

EU Directive 76/768/EEC Substances contained in Hair Dyes Ban

Compound	CAS No.	NEAT Cat. No.	Unit	SOLUTION 100 µg/mL in MeOH, -CN in ACN Cat. No.	Unit
2-Amino-3-nitrophenol	603-85-0	DYE-107N	100 mg	DYE-107S	1 mL
2-Amino-5-(diethylamino)toluene monohydrochloride	2051-79-8	DYE-104N	100 mg	DYE-104S	1 mL
2-Aminophenol	95-55-6	DYE-108N	100 mg	DYE-108S	1 mL
Basic Blue 7	2390-60-5	DYE-113N-R1	100 mg	DYE-113S-R1	1 mL
Basic Red 2	477-73-6	DYE-114N-R1	100 mg	DYE-114S-R1	1 mL
Crocein Scarlet 3b	5413-75-2	DYE-115N-R1	100 mg	DYE-115S-R1	1 mL
2,4-Diaminodiphenylamine	136-17-4	DYE-102N	100 mg	-----	
2,6-Diaminopyridine	141-86-6	DYE-103N	100 mg	DYE-103S	1 mL
N,N-Dimethyl-1,4-phenylenediamine	99-89-9	DYE-106N	100 mg	DYE-106S-CN	1 mL
Eriochrome Black A	3618-58-4	DYE-109N-R1	100 mg	DYE-109S-R1	1 mL
2-Nitro-1,4-phenylenediamine	5307-14-2	DYE-110N	100 mg	DYE-110S	1 mL
Ponceau SX	4548-53-2	-----		DYE-112S-R1	1 mL
Victoria Blue	2580-56-5	DYE-111N-R1	100 mg	DYE-111S-R1	1 mL

EU Directive 76/768/EEC Allergens

EU Directive List of 24 Regulated Contact Allergens

ALR-EU24-R1-SET

23 x 1 mL, 1 x 100 mg

Each at 1000 µg/mL in (S-CN Acetonitrile, S-ET Ethanol, N 100 mg)

Compound	CAS No.	Cat. No
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 (Tech)	80-54-6	ALR-017S-CN-10X
Cetone Alpha (Tech)	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 (Mixed isomers)	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-006N
Hydroxymethylpentylcyclohexenecarboxaldehyde (Mix of isomers)	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

EU Directive List of substances that may be banned

ALR-EU36-R3-SET

24 x 1 mL

Each at 1000 µg/mL in (S MeOH, S-A Acetone, S-CN Acetonitrile, S-ET Ethanol)

Compound	CAS No.	Cat. No
Allylisothiocyanate	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
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-CN-10X
trans-2-Hexenal dimethyl acetal	18318-83-7	ALR-046S-10X
Dihydroabietyl alcohol	26266-77-3	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
Methyl trans-2-butenate	623-43-8	ALR-053S-10X
7-Methylcoumarin	2445-83-2	ALR-054S-CN-10X
5-Methyl-2,3-hexanedione (Acetyl isovaleryl)	13706-86-0	ALR-055S-CN-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 (India)	8024-12-2	ALR-060S-ET-10X
Methyleugenol	93-15-2	ALR-061S-ET-10X



Regional Methods

EU Directive 98/8/EC Biocides Regulation 528/2012

Biocides are used in many different industries to control viruses, bacteria, fungi, insects and animals. The intended use and chemical potency of biocides require that their use, storage and disposal be controlled to prevent adverse effects to the public and/or environment. To ensure the safety of biocides, government regulations are in place to assess the active substances within commercial products.

One such regulation is the Biological Products Directive 98/8/EC (BPD), which has been revised and designated as EU Biocides Regulation 528/2012 (EU BPR). Under this legislation active compounds are submitted for approval on the list of Approved Active Substances. This regulation classifies biocides into 22 biocide product types, grouped into four main areas.

MAIN GROUP I: Disinfectants and general biocidal products

- 1: Human hygiene biocidal products
- 2: Private and public health areas disinfectants and other biocidal products
- 3: Veterinary hygiene biocidal products
- 4: Food and feed areas disinfectants
- 5: Drinking water disinfectants

MAIN GROUP II: Preservatives

- 6: In-can preservatives
- 7: Film preservatives
- 8: Wood preservatives
- 9: Fiber, leather, rubber & polymerized materials preservatives
- 10: Masonry preservatives
- 11: Preservatives for liquid-cooling and processing systems
- 12: Slimicides
- 13: Metalworking-fluid preservatives

MAIN GROUP III: Pest control

- 14: Rodenticides
- 15: Avicides
- 16: Molluscicides
- 17: Piscicides
- 18: Insecticides, acaricides and products to control other arthropods
- 19: Repellents and attractants

MAIN GROUP IV: Other biocidal products

- 20: Preservatives for food or feedstocks
- 21: Anti-fouling products
- 22: Embalming and taxidermist fluids
- 23: Control of other vertebrates

Biocide Standards

Compound	CAS No.	Group / Uses	Cat. No.	Unit
Abamectin	71751-41-2	III / 18	BIOC-236N-10MG	10 mg
Acetic acid	64-19-7	IV / 20	BIOC-251N-1G	1 g
Acetamidrid	135410-20-7	III / 18	BIOC-237N-10MG	10 mg
Allethrin	584-79-2	III / 18	BIOC-239N-10MG	10 mg
Ammonium bromide	1212-97-9	I, II / 2, 4, 6, 7, 9, 11, 12	BIOC-095N-10MG	10 mg
Ammonium sulfate	7783-20-2	II / 11, 12	BIOC-168N	100 mg
Azamethiphos	35575-96-3	III / 18	BIOC-215N-10MG	10 mg
Bendiocarb	22781-23-3	III / 18	BIOC-211N-10MG	10 mg
Benzalkonium chloride (Tech)	63449-41-2	I, II, III, IV / 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 17, 22	BIOC-052N	100 mg
Benzethonium chloride	121-54-0	I / 1	BIOC-018N-25MG	25 mg
Nipacide Bit 20		I, II, IV / 2, 6, 7, 9, 10, 11, 12, 13, 22	BIOC-082N	1 mL
			19.3 Wt.% in Water	
Benzoic acid	65-85-0	I, II, IV / 1, 2, 3, 4, 6, 11, 20	BIOC-006N-25MG	25 mg
Benzyl benzoate	120-51-4	I, III / 2, 18	BIOC-067N	100 mg
Benzyl dimethyldodecylammonium chloride	139-07-1	I, II / 2, 4, 6, 7, 9, 11, 12	BIOC-197N	10 mg
2-Benzyl-4-chlorophenol	120-32-1	I, II / 1, 2, 3, 4, 6	BIOC-017N	100 mg
Bifenthrin	82657-04-3	II, III / 8, 18	BIOC-161N-10MG	10 mg
S-Bioallethrin	28434-00-6	III / 18	BIOC-246N-10MG	10 mg
2-Biphenylol sodium salt tetrahydrate	132-27-4	I, II / 1, 2, 3, 4, 6, 7, 9, 10, 13	BIOC-022N	100 mg
Boric acid	10043-35-3	I, II, III, IV / 1, 2, 3, 6, 7, 8, 9, 10, 11, 12, 13, 18, 22	BIOC-044N-1G	1 gram
Brodifacoum	56073-10-0	III / 14	BIOC-180N-10MG	10 mg
Bromadiolone	28772-56-7	III / 14	BIOC-178N-10MG	10 mg
Bromoacetic acid	79-08-3	I / 4	BIOC-114N	100 mg
2-Bromo-2-(bromomethyl)pentanedinitrile	35691-65-7	II / 6, 7, 9, 10, 11, 13	BIOC-136N	100 mg
2-Bromo-2-nitropropane-1,3-diol	52-51-7	I, II, IV / 1, 2, 3, 4, 6, 7, 9, 10, 11, 12, 13, 22	BIOC-002N-25MG	25 mg
N-Bromosuccinimide	128-08-5	I / 1, 2, 3, 4, 5	BIOC-240N	100 mg
Busan	21564-17-0	I, II / 2, 4, 6, 7, 9, 10, 11, 12, 13	BIOC-097N-10MG	10 mg
			BIOC-097S-CN	1 mL
			100 µg/mL in ACN	
Calcium hydroxide	1305-62-0	I / 2, 3	BIOC-078N	100 mg
Calcium hypochlorite	7778-54-3	I, II / 1, 2, 3, 4, 5, 11	BIOC-041N	100 mg
Calcium oxide	1305-78-8	I / 2, 3	BIOC-079N	100 mg
Calcium sorbate	7492-55-9	I, II, IV / 1, 3, 6, 7, 9, 20	BIOC-032N	100 mg
Captan	133-06-2	II / 6, 7, 9, 10	BIOC-122N-10MG	10 mg
Carbendazim	10605-21-7	II / 6, 7, 9, 10, 11, 12, 13	BIOC-133N-10MG	10 mg
Cetylpyridinium chloride	123-03-5	I, II, IV / 1, 2, 3, 4, 5, 6, 7, 9, 20	BIOC-020N	100 mg
Chloralose	15879-93-3	III, IV / 14, 15, 23	BIOC-177N-10MG	10 mg
Chloramine T trihydrate	7080-50-4	I, II / 1, 2, 3, 4, 5, 6, 9, 10, 11	BIOC-021N	100 mg
Chlorfenapyr	122453-73-0	II, III / 6, 7, 8, 9, 10, 12, 13, 18	BIOC-143N-10MG	10 mg
Chloroacetamide	79-07-2	I, II / 3, 6, 7, 9, 10, 11, 13	BIOC-109N	100 mg
4-Chloro-3,5-dimethylphenol	88-04-0	I, II / 1, 2, 3, 4, 5, 6	BIOC-012N-25MG	25 mg
4-Chloro-3-methylphenol	59-50-7	I, II / 1, 2, 3, 4, 6, 9, 10, 13	BIOC-003N-25MG	25 mg
Chlorophacinone	3691-35-8	III / 14	BIOC-175N-10MG	10 mg
Chlorothalonil	1897-45-6	II / 6, 7, 9, 10	BIOC-126N-10MG	10 mg
Chlorotoluron	15545-48-9	II / 6, 7, 9, 10, 11, 12, 13	BIOC-134N-10MG	10 mg
Cholecalciferol	67-97-0	III / 14	BIOC-244N	100 mg
Cinnamal	104-55-2	I / 2	BIOC-062N	100 mg
Citric acid	77-92-9	I / 1, 2, 3	BIOC-010N-25MG	25 mg
Clothianidin	210880-92-5	I, II, III / 3, 8, 18	BIOC-112N-10MG	10 mg
Copper	7440-50-8	I, II, IV / 2, 4, 5, 11, 21	BIOC-089S	100 mL
			1000 µg/mL in 2-5% Nitric acid	
Copper (II) carbonate	12069-69-1	II / 8	BIOC-154N	100 mg



Biocide Standards (continued)

Compound	CAS No.	Group / Uses	Cat. No.	Unit
Copper dihydroxide	20427-59-2	II / 8	BIOC-155N	100 mg
Copper (I) oxide	1317-39-1	IV / 21	BIOC-151N	100 mg
Copper (II) oxide	1317-38-0	II / 8	BIOC-203N	100 mg
Copper (II) sulfate	7758-98-7	I / 1, 2, 4	BIOC-039N-1G	1 gram
Copper thiocyanate	1111-67-7	III, IV / 19, 21	BIOC-202N	100 mg
Coumatetralyl	5836-29-3	III / 14	BIOC-176N-10MG	10 mg
Creosote from beechwood tar	8021-39-4	II / 8	BIOC-153N	100 mg
m-Cresol	108-39-4	I / 2, 3	BIOC-064N	100 mg
Cyanamide	420-04-2	I, III / 3, 18	BIOC-110N	100 mg
N-Cyclopropyl-1,3,5-triazine-2,4,6-triamine	66215-27-8	III / 18	BIOC-221N-10MG	10 mg
Cyfluthrin - Mix of Isomers	68359-37-5	III / 18	BIOC-222N-10MG	10 mg
L-Cyhalothrin	91465-08-6	III / 18	BIOC-227N-10MG	10 mg
a-Cypermethrin	67375-30-8	II, III / 6, 9, 18	BIOC-142N-10MG	10 mg
Cypermethrin	52315-07-8	II, III / 8, 9, 18	BIOC-156N-10MG	10 mg
Cyphenothrin	39515-40-7	III / 18	BIOC-216N-10MG	10 mg
Cyproconazole	94361-06-5	II / 8	BIOC-162N-10MG	10 mg
			BIOC-162S	1 mL
			100 µg/mL in Methanol	
a-D-Lactose monohydrate	5989-81-1	III / 19	BIOC-252N	100 mg
Dazomet	533-74-4	I, II / 6, 7, 8, 9, 10, 11, 12	BIOC-125N-10MG	10 mg
Decanoic acid	334-48-5	I, III / 4, 18, 19	BIOC-116N	100 mg
Deltamethrin	52918-63-5	III / 18	BIOC-218N-10MG	10 mg
Diazinon	333-41-5	III / 18	BIOC-201N-10MG	10 mg
Diazolidinyl urea	78491-02-8	II / 6, 7	BIOC-140N	100 mg
Diboron trioxide	1303-86-2	II / 8	BIOC-150N	100 mg
2,2-Dibromo-2-cyanoacetamide	10222-01-2	I, II / 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13	BIOC-046N	100 mg
1,3-Dibromo-5,5-dimethylhydantoin	77-48-5	I, II / 2, 11, 12	BIOC-057N	100 mg
Dichlofluanid	1085-98-9	II, IV / 7, 8, 10, 21	BIOC-146N-10MG	10 mg
1,4-Dichlorobenzene	106-46-7	III / 18	BIOC-250N	100 mg
2,4-Dichlorobenzyl alcohol	1777-82-8	I, II / 2, 6, 7, 9, 10, 12, 13	BIOC-081N	100 mg
1,3-Dichloro-5,5-dimethylhydantoin	118-52-5	I, II / 2, 11, 12	BIOC-066N-1G	1 gram
Dichlorophen	97-23-4	I, II / 2, 3, 4, 6, 7, 9, 10, 11, 12, 13	BIOC-061N-10MG	10 mg
Dichlorvos	62-73-7	III / 18	BIOC-185N-10MG	10 mg
Didecyl dimethylammonium chloride	7173-51-5	I, II / 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13	BIOC-030N-10MG	10 mg
			BIOC-030S	1 mL
			100 µg/mL in Methanol	
1,3-Didecyl-2-methyl-1H-imidazolium chloride	70862-65-6	I, II / 2, 3, 4, 6, 7, 10, 11, 12, 13	BIOC-103N	100 mg
N,N-Diethyl-m-toluamide (DEET, OFF)	134-62-3	III, IV / 19, 22	BIOC-196N-10MG	10 mg
Difenacoum	56073-07-5	III / 14	BIOC-179S-D	1 mL
			100 µg/mL in Dichloromethane	
Diflubenzuron	35367-38-5	III / 18	BIOC-214N-10MG	10 mg
Diphenoxarsin-10-yl oxide	58-36-6	II / 9	BIOC-163N	100 mg
Dipotassium disulfite	16731-55-8	I, II, IV / 1, 2, 4, 5, 6, 9, 11, 12, 13, 20, 22	BIOC-047N-1G	1 gram
Diuron (Karmex)	330-54-1	II / 6, 7, 10	BIOC-124N-10MG	10 mg
Disilver oxide	20667-12-3	II / 11	BIOC-169N	100 mg
2,2'-Dithiobis(pyridine-N-oxide)	3696-28-4	II / 9	BIOC-165N-10MG	10 mg
Empenthrin	54406-48-3	III / 18	BIOC-219N-10MG	10 mg
Esfenvalerate	66230-04-4	III / 18	BIOC-235N-10MG	10 mg
Ethanol	64-17-5	I / 1, 2, 3, 4	BIOC-004N-25MG	25 mg
5-Ethyl-1-aza-3,7-dioxabicyclo[3,3,0]octane	7747-35-5	II / 6, 11, 12, 13	BIOC-132N	100 mg
Ethyl butylacetylaminopropionate	52304-36-6	III / 18	BIOC-217S	1 mL
			100 µg/mL in Methanol	
Ethylene oxide	75-21-8	I, IV / 2, 20	BIOC-056S-TP	1 mL
			5 mg/mL in Isooctane	
Etofenprox	80844-07-1	I, II, III / 2, 3, 8, 18	BIOC-106N-10MG	10 mg
Fenitrothion	122-14-5	III / 18	BIOC-191S	1 mL
			100 µg/mL in Methanol	
Fenoxycarb	72490-01-8	II / 8	BIOC-157N-10MG	10 mg
Fenpropimorph	67564-91-4	II / 6, 7, 8, 9, 10, 12, 13	BIOC-139N-10MG	10 mg
Fipronil	120068-37-3	III / 18	BIOC-229N-10MG	10 mg
Flocoumafen	90035-08-8	III / 14	BIOC-181S	1 mL
			100 µg/mL in Methanol	
Flufenoxuron	101463-69-8	II, III / 8, 18	BIOC-158N-10MG	10 mg
Fluometuron	2164-17-2	II / 6, 7, 9, 10, 11, 12, 13	BIOC-127N-10MG	10 mg
Folpet	133-07-3	II / 6, 7, 9, 10	BIOC-123N-10MG	10 mg
Formic acid	64-18-6	I, II / 1, 2, 3, 4, 5, 6, 9, 11, 12, 13	BIOC-005N-25MG	25 mg
Geraniol	106-24-1	III / 18, 19	BIOC-188N	100 mg
Glutaraldehyde	111-30-8	I, II, IV / 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 22	BIOC-016N	1 mL
			(~50% Water)	
Glycolic acid	79-14-1	I, II / 2, 3, 4, 12	BIOC-058N	100 mg
Guazatine acetate (Tech)	115044-19-4	I / 2	BIOC-108N-10MG	10 mg
Hexaflumuron	86479-06-3	III / 18	BIOC-224N-10MG	10 mg
Hexahydro-1,3,5-tris(hydroxyethyl)triazine	4719-04-4	I, II / 2, 3, 4, 6, 9, 11, 12, 13	BIOC-086N	100 mg
Hydramethylnon	67485-29-4	III / 18	BIOC-226S	1 mL
			100 µg/mL in Methanol	
2-Hydroxy-4-isopropyl-2,4,6-cycloheptatrien-1-one	499-44-5	II / 10	BIOC-167N	100 mg

Biocide Standards continued on next page



Regional Methods

Europe

Biocide Standards (continued)

Compound	CAS No.	Group / Uses	Cat. No.	Unit
tris(Hydroxymethyl)nitromethane	126-11-4	I, II / 2, 3, 6, 11, 12, 13	BIOC-068N	100 mg
N,N'-bis(Hydroxymethyl)urea (MFG)	140-95-4	I, II / 2, 6, 9, 11, 12, 13	BIOC-074N	100 mg
Icaridin	119515-38-7	III / 19	BIOC-228S-CN 100 µg/mL in ACN	1 mL
Imazalil	35554-44-0	I, II, IV / 2, 3, 4, 13, 20	BIOC-099N-10MG	10 mg
Imidacloprid	138261-41-3	III / 18	BIOC-230N-10MG	10 mg
Imiprothrin	72963-72-5	III / 18	BIOC-231N-10MG BIOC-231S-CN 100 µg/mL in ACN	10 mg 1 mL
Iodine	7553-56-2	I, II, IV / 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 22	BIOC-033N	100 mg
3-Iodo-2-propynyl butylcarbamate	55406-53-6	II / 6, 7, 8, 9, 10, 11, 13	BIOC-138N	100 mg
Irgarol	28159-98-0	II / 7, 9, 10	BIOC-148N-10MG	10 mg
Isopropanol	67-63-0	I, II / 1, 2, 3, 4, 5, 6, 9, 10, 11, 12	BIOC-007N-25MG	25 mg
Isoproturon	34123-59-6	II / 6, 7, 9, 10, 11, 12, 13	BIOC-135N-10MG	10 mg
L-(+)-Lactic acid	79-33-4	I, II, IV / 2, 3, 4, 6, 20	BIOC-059N-50MG	50 mg
Lauroic acid	143-07-7	III / 19	BIOC-199N	100 mg
Lauryl dimethylamine oxide	70592-80-2	I / 1, 2	BIOC-053N	100 mg
Lignin (Alkaline)	9005-53-2	I, II / 1, 2, 3, 4, 6, 7, 9, 10, 11, 12, 13	BIOC-043N-1G	1 gram
Linalool	78-70-6	III / 19	BIOC-186N	100 mg
Lindane	58-89-9	I / 3	BIOC-249N-10MG	10 mg
Magnesium bis(monoperoxyphthalate) hexahydrate	84665-66-7	I / 2, 3, 4	BIOC-104N	100 mg
Margosa extract	84696-25-3	III / 18, 19	BIOC-223N	100 mg
(R)-p-Mentha-1,8-diene	5989-27-5	II / 12	BIOC-170N	100 mg
(+)-cis-p-Menthane-3,8-diol	42822-86-6	I, III / 1, 2, 19	BIOC-050S-CN 100 µg/mL in ACN	1 mL
2-Mercaptobenzothiazole	149-30-4	I, II / 2, 7, 9, 11, 12, 13	BIOC-077N-10MG	10 mg
Metam-sodium dihydrate	6734-80-1	I, II, IV / 2, 4, 6, 9, 11, 12, 13, 20	BIOC-073N-10MG	10 mg
S-Methoprene	65733-16-6	III / 18	BIOC-234S 100 µg/mL in Methanol	1 mL
Methyl anthranilate	134-20-3	III / 19	BIOC-195N	100 mg
N,N'-Methylenebismorpholine	5625-90-1	II / 6, 9, 11, 13	BIOC-129S 100 µg/mL in Methanol	1 mL
Methylene dithiocyanate	6317-18-6	II, IV / 6, 7, 9, 10, 11, 12, 13, 22	BIOC-130N	100 mg
2-Methyl-2H-isothiazol-3-one	2682-20-4	I, II, IV / 2, 4, 6, 7, 9, 10, 11, 12, 13, 22	BIOC-083N-10MG	10 mg
Monolinuron	1746-81-2	I / 2	BIOC-080N-10MG	10 mg
Myristyltrimethylammonium bromide	1119-97-7	I / 1	BIOC-024N	100 mg
Naled	300-76-5	III / 18	BIOC-200N-10MG	10 mg
Naphthalene	91-20-3	III / 19	BIOC-187N	100 mg
Nonanoic acid	112-05-0	I, II, III / 2, 10, 19	BIOC-065N	100 mg
Octanoic acid	124-07-2	I, III / 4, 18	BIOC-115N	100 mg
Oct-1-ene-3-ol	3391-86-4	III / 19	BIOC-205N	100 mg
2-Octyl-2H-isothiazol-3-one	26530-20-1	I, II / 4, 6, 7, 9, 10, 11, 12, 13	BIOC-119N-10MG	10 mg
Orthophosphoric acid	7664-38-2	I / 4	BIOC-117N-1G	1 gram
Oxazolidine	121776-33-8	I, II / 2, 6, 10, 11, 12, 13	BIOC-102S 100 µg/mL in Methanol	1 mL
Permethrin	52645-53-1	I, II, III, IV / 2, 3, 5, 8, 9, 18, 22	BIOC-100N-10MG	10 mg
2-Phenoxyethanol	122-99-6	I, II / 1, 2, 3, 4, 6, 7, 10, 11, 13	BIOC-019N-25MG	25 mg
o-Phenylphenol	90-43-7	I, II / 1, 2, 3, 4, 6, 7, 9, 10, 13	BIOC-013N-25MG	25 mg
Piperonyl butoxide	51-03-6	III / 18, 19	BIOC-184N-10MG	10 mg
Poly(vinylpyrrolidone) Iodine complex	25655-41-8	I, II, III, IV / 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 22	BIOC-055N	100 mg
Potassium monopersulfate triple salt	70693-62-8	I, II / 1, 2, 3, 4, 5, 11, 12	BIOC-054N-500MG	500 mg
Potassium permanganate	7722-64-7	I / 5	BIOC-121N	100 mg
Potassium sorbate	24634-61-5	I, II / 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	BIOC-049N	100 mg
Potassium sulfite	10117-38-1	I, II, IV / 1, 2, 4, 5, 6, 9, 11, 12, 13, 20, 22	BIOC-045N	100 mg
Prallethrin	23031-36-9	III / 18	BIOC-212S 100 µg/mL in Methanol	1 mL
Prometryne	7287-19-6	II / 6, 7, 9, 10, 11, 12, 13	BIOC-131N-10MG	10 mg
1-Propanol	71-23-8	I / 1, 2, 3, 4	BIOC-009N-25MG	25 mg
Propiconazole	60207-90-1	I, II, IV / 1, 2, 4, 7, 8, 9, 10, 12, 13, 20	BIOC-051N-10MG	10 mg
Propionic acid	79-09-4	I / 4	BIOC-253N	100 mg
Propoxur	114-26-1	III / 18	BIOC-190N-10MG	10 mg
Pyrethrins (Tech Mix)	8003-34-7	III / 18, 19	BIOC-209N-10MG	10 mg
Pyridine-2-thiol-1-oxide, sodium salt	3811-73-2	I, II / 2, 3, 4, 6, 7, 9, 10, 11, 12, 13	BIOC-085N-10MG	10 mg
Pyriproxyfen	95737-68-1	III / 18	BIOC-232N-10MG	10 mg
Quaternium-15	51229-78-8	II / 6, 9, 12, 13	BIOC-141N	100 mg
Rotenone	83-79-4	III / 17	BIOC-183N-10MG	10 mg
Salicylic acid	69-72-7	I, II / 1, 2, 3, 4, 6	BIOC-008N-25MG	25 mg
Silicium dioxide	61790-53-2	III / 18	BIOC-233N	100 mg
Silicon dioxide	7631-86-9	I, III, IV / 3, 18, 20	BIOC-111N	100 mg
Silver	7440-22-4	I, II / 2, 4, 5, 9, 11	BIOC-088S 1000 µg/mL in 2-5% Nitric acid	100 mL
Silver chloride	7783-90-6	I, II / 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 13	BIOC-042N	100 mg
Silver nitrate	7761-88-8	I / 1	BIOC-040N	100 mg
Sodium benzoate	532-32-1	I, II, IV / 1, 2, 6, 11, 20	BIOC-023N	100 mg
Sodium bisulfite	7631-90-5	I, II, IV / 1, 2, 4, 5, 6, 9, 11, 12, 13, 20, 22	BIOC-034N-1G	1 gram



Regional Methods

Europe (Biocides), Fracking and Halobenzoquinones (Disinfectant by-products)

Biocide Standards (continued)

Compound	CAS No.	Group / Uses	Cat. No.	Unit
Sodium bromide	7647-15-6	I, II / 2, 4, 6, 7, 9, 11, 12, 13	BIOC-091N	100 mg
Sodium chlorate	7775-09-9	I, II / 2, 5, 11, 12	BIOC-093N	100 mg
Sodium chloride	7647-14-5	I / 5	BIOC-120N	100 mg
Sodium chlorite	7758-19-2	I, II, IV / 2, 3, 4, 5, 11, 12, 20	BIOC-092N	100 mg
Sodium dichloroisocyanurate dihydrate	51580-86-0	I, II / 1, 2, 3, 4, 5, 6, 9, 11, 12	BIOC-028N	100 mg
Sodium dimethylarsinate	124-65-2	III / 18	BIOC-194N-10MG	10 mg
Sodium dimethyldithiocarbamate hydrate	207233-95-2	I, II / 2, 3, 4, 5, 6, 9, 10, 11, 12, 13	BIOC-070N	100 mg
Sodium lignosulfonate (Tech)	8061-51-6	II / 12	BIOC-171N	100 mg
Sodium metabisulfite	7681-57-4	I, II, IV / 1, 2, 4, 5, 6, 9, 11, 12, 13, 20, 22	BIOC-036N-1G	1 gram
Sodium persulfate	7775-27-1	I / 4	BIOC-118N	100 mg
Sodium sulphite	7757-83-7	I, II, IV / 1, 2, 4, 5, 6, 9, 11, 12, 13, 20, 22	BIOC-038N-1G	1 gram
Sodium tetraborate	1330-43-4	I, II / 1, 2, 7, 8, 9, 10, 11, 13	BIOC-025N	100 mg
Sorbic acid	110-44-1	I, II / 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	BIOC-015N	100 mg
Spinosad (Tech)	168316-95-8	I, III / 3, 18	BIOC-113N-10MG	10 mg
Sumithrin	26002-80-2	III / 18	BIOC-238N-10MG	10 mg
Symclosene	87-90-1	I, II / 2, 3, 4, 5, 6, 7, 9, 11, 12	BIOC-060N	100 mg
L-Tartaric acid	87-69-4	II / 6	BIOC-242N	100 mg
Tebuconazole	107534-96-3	II / 7, 8, 9, 10	BIOC-149N-10MG	10 mg
Terbutylazine	5915-41-3	I, II / 2, 11, 12	BIOC-087N-10MG	10 mg
Terbutryn	886-50-0	II / 7, 9, 10	BIOC-145N-10MG	10 mg
Tetramethrin	7696-12-0	III / 18	BIOC-207N-10MG	10 mg
Thiabendazole	148-79-8	I, II, IV / 2, 6, 7, 8, 9, 10, 11, 12, 13, 20	BIOC-076N-10MG	10 mg
Thiacloprid	111988-49-9	II, III / 8, 9, 18	BIOC-247N-10MG	10 mg
Thiamethoxam	153719-23-4	II, III / 8, 9, 18	BIOC-159N-10MG	10 mg
Thiram	137-26-8	I, II / 2, 6, 7, 9, 10, 11, 12	BIOC-071N	100 mg
THPS (Tech Grade)	55566-30-8	I, II / 2, 6, 9, 11, 12	BIOC-101N	100 mg
Tolnaftate	2398-96-1	II / 9	BIOC-164N-25MG	25 mg
Tolylfluanide	731-27-1	II, IV / 7, 8, 10, 21	BIOC-144N-10MG	10 mg
Transfluthrin	118712-89-3	III / 18	BIOC-225N-10MG	10 mg
Tributyltetradecylphosphonium chloride	81741-28-8	I, II / 2, 4, 9, 11, 12	BIOC-105N	100 mg
bis(Trichloromethyl)sulphone	3064-70-8	II, IV / 6, 9, 10, 11, 12, 22	BIOC-128N-10MG	10 mg
2,4,6-Trichlorophenol sodium salt	3784-03-0	I, II / 2, 3, 6, 9	BIOC-084N	100 mg
Triclocarban	101-20-2	I / 1, 2, 4	BIOC-014N-25MG	25 mg
Triclosan	3380-34-5	I, II / 1, 2, 3, 7, 9	BIOC-029N	100 mg
cis-Tricos-9-ene	27519-02-4	III / 18, 19	BIOC-213N	100 mg
Triflumuron	64628-44-0	III / 18	BIOC-220N-10MG	10 mg
Undecan-2-one (Methyl-nonyl-ketone)	112-12-9	III / 19	BIOC-189S-CN	1 mL
Warfarin	81-81-2	III / 14	BIOC-172N-10MG	10 mg
Warfarin sodium	129-06-6	III / 14	BIOC-174N	100 mg
Zinc borate (Tech)	12767-90-7	II / 9	BIOC-166N	100 mg
Zinc pyrethione	13463-41-7	I, II, IV / 2, 6, 7, 9, 10, 13, 21	BIOC-096N	100 mg
Zinc sulfide	1314-98-3	II / 7, 9, 10	BIOC-147N	100 mg
Zineb	12122-67-7	IV / 21	BIOC-210N-10MG	10 mg
Ziram	137-30-4	I, II / 2, 6, 7, 9, 10, 11, 12	BIOC-072N-10MG	10 mg

EU Biocides Reg 528/2012 in Fracking

Biocides are important fracking fluid additives used to kill microbes that might produce corrosive acids or form well-clogging biofilms. Since biocides are inherently toxic, there is a growing concern over the environmental fate and impact on groundwater contamination. These biocides are part of our 217 biocide product line that was developed for the EU Biocides Regulation 528/2012. These biocides are part of our 217 biocide product line that was developed for the EU Biocides Regulation 528/2012. This legislation classifies biocides into 22 product types grouped into four main areas.

Compound	CAS	Cat. No.	Unit
Glutaraldehyde Solution (~50% Water)	111-30-8	FRACK-001N	1 mL
2,2-Dibromo-2-cyanoacetamide	10222-01-2	FRACK-002N	100 mg
Tetrakis(hydroxymethyl)phosphonium sulfate	55566-30-8	FRACK-003N	100 mg
Didecyltrimethylammonium chloride	7173-51-5	FRACK-004N-10MG	10 mg
Tributyltetradecylphosphonium chloride	81741-28-8	FRACK-005N	100 mg
Methylisothiazolinone	2682-20-4	FRACK-006N-10MG	10 mg
Dazomet	533-74-4	FRACK-007N-10MG	10 mg
2-Bromo-2-nitropropane-1,3-diol	52-51-7	FRACK-009N-25MG	25 mg
N-Bromosuccinimide	128-08-5	FRACK-011N	100 mg

Halobenzoquinones (disinfectant by-products)

Halobenzoquinones (HBQs) are disinfection by-products formed by reactions between disinfectants and organic matter in water. HBQs likely exhibit carcinogenic properties due to their structural similarities with benzoquinone and related compounds.

Each at 10 µg/mL in ACN

Compound	CAS	Cat. No.	Unit
2,3-Dibromo-5,6-dimethyl-1,4-benzoquinone	38969-08-3	HBQ-001S	1 mL
2,6-Dichloro-1,4-benzoquinone	697-91-6	HBQ-002S	1 mL
2,5-Dibromo-1,4-benzoquinone	1633-14-3	HBQ-003S	1 mL
2,3,5,6-Tetrabromo-1,4-benzoquinone	488-48-2	HBQ-004S	1 mL
2,6-Dibromo-3,5-dimethyl-1,4-benzoquinone	87405-27-4	HBQ-006S	1 mL
2,6-Dibromo-3-chloro-5-methyl-1,4-benzoquinone		HBQ-007S	1 mL



U.S. Methods

State Methods

Florida Administrative Code PAHs by HPLC

Z-014G-FL 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂:Benzene (50:50) 18 comps.

Acenaphthene	Dibenz[a,h]anthracene
Acenaphthylene	Fluoranthene
Anthracene	Fluorene
Benz[a]anthracene	Indeno[1,2,3-cd]pyrene
Benz[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. (mg/mL) in ACN 18 comps.

Acenaphthene	0.1	Dibenz[a,h]anthracene	0.01
Acenaphthylene	0.1	Fluoranthene	0.01
Anthracene	0.1	Fluorene	0.1
Benz[a]anthracene	0.01	Indeno[1,2,3-cd]pyrene	0.01
Benz[a]pyrene	0.01	1-Methyl naphthalene	0.1
Benzo[b]fluoranthene	0.01	2-Methyl naphthalene	0.1
Benzo[g,h,i]perylene	0.01	Naphthalene	0.1
Benzo[k]fluoranthene	0.005	Phenanthrene	0.1
Chrysene	0.01	Pyrene	0.01

Matrix Spiking Solution

M-610-MS 1 x 1 mL
M-610-MS-PAK SAVE 5 x 1 mL
At stated conc. (mg/mL) in ACN 6 comps.

Benz[a]pyrene	0.5	2-Methylnaphthalene	5.0
Chrysene	0.5	Phenanthrene	0.5
1-Methylnaphthalene	5.0	Pyrene	0.5

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
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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 ACN 18 comps.

M-8310-FL-SET 18 x 1 mL

Acenaphthene	M-8310-FL-01	Dibenz[a,h]anthracene	M-8310-FL-10
Acenaphthylene	M-8310-FL-02	Fluoranthene	M-8310-FL-11
Anthracene	M-8310-FL-03	Fluorene	M-8310-FL-12
Benz[a]anthracene	M-8310-FL-04	Indeno[1,2,3-cd]pyrene	M-8310-FL-13
Benz[a]pyrene	M-8310-FL-05	1-Methylnaphthalene	M-8310-FL-14
Benzo[b]fluoranthene	M-8310-FL-06	2-Methylnaphthalene	M-8310-FL-15
Benzo[g,h,i]perylene	M-8310-FL-07	Naphthalene	M-8310-FL-16
Benzo[k]fluoranthene	M-8310-FL-08	Phenanthrene	M-8310-FL-17
Chrysene	M-8310-FL-09	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. (µg/mL) in ACN 18 comps.

Acenaphthene	1000	Dibenz[a,h]anthracene	200
Acenaphthylene	2000	Fluoranthene	200
Anthracene	100	Fluorene	200
Benz[a]anthracene	100	Indeno[1,2,3-cd]pyrene	100
Benz[a]pyrene	100	1-Methylnaphthalene	1000
Benzo[b]fluoranthene	200	2-Methylnaphthalene	1000
Benzo[g,h,i]perylene	200	Naphthalene	1000
Benzo[k]fluoranthene	100	Phenanthrene	100
Chrysene	100	Pyrene	100

California Method (CARB) Method 1004

California Air Resources Board - Method 1004 for sampling and analyzing automotive engine exhaust for aldehyde and ketone compounds (carbonyls)

Carbonyl Compounds as DNPH Derivatives

M-1004 1 x 1 mL

At stated conc. (µg/mL) in ACN 13 comps.

M-1004-10X 1 x 1 mL

At 10 times the stated conc. (µg/mL) in ACN 13 comps.

Acetaldehyde-DNPH	15.3	Formaldehyde-DNPH	21.0
Acetone-DNPH	12.3	Hexanal-DNPH	8.4
Acrolein-DNPH	12.7	Methacrolein-DNPH	10.7
Benzaldehyde-DNPH	8.1	Propionaldehyde-DNPH	12.3
2-Butanone-DNPH	10.5	m-Tolualdehyde-DNPH	7.5
n-Butyraldehyde-DNPH	10.5	Valeraldehyde-DNPH	9.3
Crotonaldehyde-DNPH	10.7		

Carbonyl Compounds as DNPH Derivatives (HPLC)

CAR-DNPH 1 x 1 mL
At stated conc. (µg/mL) in ACN 7 comps.

Acetaldehyde-DNPH	1000	Butyraldehyde-DNPH	500
Acetone-DNPH	500	Formaldehyde-DNPH	1500
Acrolein-DNPH	500	Propionaldehyde-DNPH	500
Benzaldehyde-DNPH	500		

Wisconsin DNR VOC Mix

DNR VOC Mix

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
n-Butylbenzene	Ethylbenzene
sec-Butylbenzene	Hexachlorobutadiene
tert-Butylbenzene	Isopropylbenzene
Carbon tetrachloride	p-Isopropyltoluene
Chlorobenzene	Methylene chloride
Chlorodibromomethane	Methyl tert-butyl ether
Chloroethane	Naphthalene
Chloroform	n-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
cis-1,2-Dichloroethene	o-Xylene
trans-1,2-Dichloroethene	m-Xylene
1,2-Dichloropropane	p-Xylene

US State Methods continued on next page



Minnesota Method 465-D

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.

List of Volatiles

Liquids

M-502A-R

M-502A-R-PAK

0.2 mg/mL each in MeOH

Benzene	1,3-Dichlorobenzene
Bromobenzene	1,4-Dichlorobenzene
Bromochloromethane	1,1-Dichloroethane
Bromodichloromethane	1,2-Dichloroethane
Bromoform	1,1-Dichloroethene
<i>n</i> -Butylbenzene	<i>cis</i> -1,2-Dichloroethene
<i>sec</i> -Butylbenzene	<i>trans</i> -1,2-Dichloroethene
<i>t</i> -Butylbenzene	1,2-Dichloropropane
Carbon tetrachloride	1,3-Dichloropropane
Chlorobenzene	2,2-Dichloropropane
Chloroform	1,1-Dichloropropene
2-Chlorotoluene	<i>cis</i> -1,3-Dichloropropene
4-Chlorotoluene	<i>trans</i> -1,3-Dichloropropene
Dibromochloromethane	Ethylbenzene
1,2-Dibromo-3-chloropropane	Hexachlorobutadiene
1,2-Dibromoethane	Isopropylbenzene (Cumene)
Dibromomethane	<i>p</i> -Isopropyltoluene (<i>p</i> -Cymene)
1,2-Dichlorobenzene	Methylene chloride

Naphthalene
<i>n</i> -Propylbenzene
Styrene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethene
Toluene
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
1,2,3-Trichloropropane
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
<i>o</i> -Xylene
<i>m</i> -Xylene
<i>p</i> -Xylene

1 x 1 mL
SAVE 5 x 1 mL
54 comps.

Certificate will reflect
actual *cis/trans* ratio

Gases

M-465B-10X

M-465B-10X-PAK

0.2 mg/mL each in MeOH

1 x 1 mL

SAVE 5 x 1 mL

7 comps.

Bromomethane
Chloroethane
Chloromethane
Dichlorodifluoromethane
Dichlorofluoromethane
Trichlorofluoromethane
Vinyl chloride

M-465D-ADD-R

0.2 mg/mL each in MeOH

1 x 1 mL

8 comps.

Acetone
Allyl chloride
Ethyl ether
Methyl ethyl ketone
Methyl isobutyl ketone
Methyl- <i>t</i> -butyl ether
Tetrahydrofuran
Trichlorotrifluoroethane

Method 465-D Volatiles Set

M-465D-SET

3 x 1 mL

M-502A-R, M-465B-10X, M-465D-ADD-R

Pesticides and Herbicides

List 1 - Pesticide Standard

MDA-PEST-01-R1

MDA-PEST-01-R1-PAK

500 µg/mL each in CH₂Cl₂

Acetochlor	Dyfonate	Propachlor
Alachlor	EPTC	Prometon
Atrazine	Ethalfuralin	Propazine
Atrazine-desisopropyl	Metolachlor	Simazine
Cyanazine	Metribuzin	Terbufos
Desethyl atrazine	Pendimethalin	Triallate
Dimethenamid	Phorate	Trifluralin
Dursban		

List 2 - Herbicide Acids Standard

MDA-HERB-01

At stated conc. (mg/mL) in Acetone

1 x 1 mL

9 comps.

2,4-D	0.1	Dicamba	0.1
2,4-DB	0.1	MCPA	10
2,4,5-T	0.1	Picloram	0.1
Silvex	0.1	Triclopyr	0.1
Bentazon	0.1		

Butylate

P-088S-10X

1000 µg/mL in MeOH

1 x 1 mL



Regional Methods Canada

Canada Cannabis Regulatory Standards for Pesticides and Residual Solvents see Cannabis Section

Canadian PFAS in Drinking Water

Canadian Drinking Water PFAS Standard

CDW-PFAS

2 µg/mL each in MeOH

Perfluoro-n-octanoic acid	Perfluorobutane-1-sulfonic acid	Perfluoro-n-pentanoic acid	Perfluoro-n-heptanoic acid
Perfluorooctane-1-sulfonic acid	Perfluorohexane-1-sulfonic acid	Perfluoro-n-hexanoic acid	Perfluoro-n-nonanoic acid
Perfluoro-n-butanoic acid			

1 mL
9 comps.

Institute for Biological Sciences of Canada (NRC-IBS) PCB Congeners

Toxicity and Abundance based PCB congener formulations 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 Congeners Mix #1

C-CAN-01

At stated conc. (µg/mL) in Isooctane 1 x 1 mL
14 comps.

18	2,2',5'-Trichlorobiphenyl	11.8
31	2,4',5'-Trichlorobiphenyl	6.6
40	2,2',3,3'-Tetrachlorobiphenyl	4.9
44	2,2',3,5'-Tetrachlorobiphenyl	5.9
49	2,2',4,5'-Tetrachlorobiphenyl	7.6
54	2,2',6,6'-Tetrachlorobiphenyl	16.6
77	3,3',4,4'-Tetrachlorobiphenyl	5.5
86	2,2',3,4,5-Pentachlorobiphenyl	2.9
87	2,2',3,4,5'-Pentachlorobiphenyl	4.2
121	2,3',4,5',6-Pentachlorobiphenyl	3.1
153	2,2',4,4',5,5'-Hexachlorobiphenyl	2.1
156	2,3,3',4,4',5-Hexachlorobiphenyl	1.5
159	2,3,3',4,5,5'-Hexachlorobiphenyl	1.2
209	Decachlorobiphenyl	1.7

PCB Congeners Mix #2

C-CAN-02

At stated conc. (µg/mL) in Isooctane 1 x 1 mL
15 comps.

15	4,4'-Dichlorobiphenyl	91.9
52	2,2',5,5'-Tetrachlorobiphenyl	15.2
60	2,3,4,4'-Tetrachlorobiphenyl	3.9
103	2,2',4,5',6-Pentachlorobiphenyl	10.8
105	2,3,3',4,4'-Pentachlorobiphenyl	4.0
128	2,2',3,3',4,4'-Hexachlorobiphenyl	4.9
143	2,2',3,4,5,6'-Hexachlorobiphenyl	5.7
154	2,2',4,4',5,6'-Hexachlorobiphenyl	6.2
173	2,2',3,3',4,5,6-Heptachlorobiphenyl	2.3
182	2,2',3,4,4',5,6'-Heptachlorobiphenyl	3.8
202	2,2',3,3',5,5',6,6'-Octachlorobiphenyl	3.6
205	2,3,3',4,4',5,6'-Octachlorobiphenyl	3.2
207	2,2',3,3',4,4',5,6'-Nonachlorobiphenyl	3.8
208	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	2.4
209	Decachlorobiphenyl	2.8

PCB Congeners Mix #3

C-CAN-03

At stated conc. (µg/mL) in Isooctane 1 x 1 mL
15 comps.

15	4,4'-Dichlorobiphenyl	138.1
114	2,3,4,4',5-Pentachlorobiphenyl	6.3
129	2,2',3,3',4,5-Hexachlorobiphenyl	8.3
137	2,2',3,4,4',5-Hexachlorobiphenyl	7.4
153	2,2',4,4',5,5'-Hexachlorobiphenyl	7.3
171	2,2',3,3',4,4',6-Heptachlorobiphenyl	5.2
183	2,2',3,4,4',5,6-Heptachlorobiphenyl	6.6
185	2,2',3,4,5,5',6-Heptachlorobiphenyl	3.5
189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	4.7
191	2,3,3',4,4',5,6-Heptachlorobiphenyl	5.0
201	2,2',3,3',4,5,6'-Octachlorobiphenyl	4.8
199	2,2',3,3',4,5,5',6'-Octachlorobiphenyl	7.0
203	2,2',3,4,4',5,5',6-Octachlorobiphenyl	5.1
206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	6.7
209	Decachlorobiphenyl	6.5

PCB Congeners Mix #4

C-CAN-04

At stated conc. (µg/mL) in Isooctane

1 x 1 mL
15 comps.

14	4,4'-Dichlorobiphenyl	76.7
101	2,2',4,5,5'-Pentachlorobiphenyl	8.9
118	2,3',4,4',5-Pentachlorobiphenyl	3.9
138	2,2',3,3',4,4',5'-Hexachlorobiphenyl	4.2
141	2,2',3,4,4',5'-Hexachlorobiphenyl	2.8
151	2,2',3,5,5',6-Hexachlorobiphenyl	5.0
153	2,2',4,4',5,5'-Hexachlorobiphenyl	3.3
170	2,2',3,3',4,4',5-Heptachlorobiphenyl	3.0

180	2,2',3,4,4',5,5'-Heptachlorobiphenyl	2.8
187	2,2',3,4',5,5',6-Heptachlorobiphenyl	3.2
194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl	2.4
195	2,2',3,3',4,4',5,6-Octachlorobiphenyl	2.6
196	2,2',3,3',4,4',5,6'-Octachlorobiphenyl	3.3
199	2,2',3,3',4,5,5',6'-Octachlorobiphenyl	3.6
209	Decachlorobiphenyl	2.7

PCB Congener Set (Canadian RM)

C-CAN-SET

4 x 1 mL

C-CAN-01, C-CAN-02,
C-CAN-03, C-CAN-04

MELCC Quebec Ministry of Environment (QME) PCB Congeners

Quebec Ministry of Environment PCB Congener Mix

C-QME-01

At stated conc. (ng/mL) in Isooctane

1 x 1 mL
41 comps.

17	2,2',4'-Trichlorobiphenyl	500	101	2,2',4,5,5'-Pentachlorobiphenyl	2000	171	2,2',3,3',4,4',6-Heptachlorobiphenyl	2000
18	2,2',5'-Trichlorobiphenyl	2000	105	2,3,3',4,4'-Pentachlorobiphenyl	500	177	2,2',3,3',4,4',5,6-Heptachlorobiphenyl	2000
28	2,4,4'-Trichlorobiphenyl	2000	110	2,3,3',4',6-Pentachlorobiphenyl	2000	180	2,2',3,4,4',5,5'-Heptachlorobiphenyl	2000
31	2,4',5'-Trichlorobiphenyl	1500	118	2,3',4,4',5-Pentachlorobiphenyl	2000	183	2,2',3,4,4',5',6-Heptachlorobiphenyl	2000
33	2',3,4-Trichlorobiphenyl	2000	128	2,2',3,3',4,4'-Hexachlorobiphenyl	2000	187	2,2',3,4',5,5',6-Heptachlorobiphenyl	2000
44	2,2',3,5'-Tetrachlorobiphenyl	2000	132	2,2',3,3',4,6'-Hexachlorobiphenyl	1000	191	2,3,3',4,4',5',6-Heptachlorobiphenyl	2000
49	2,2',4,5'-Tetrachlorobiphenyl	2000	138	2,2',3,4,4',5'-Hexachlorobiphenyl	2000	194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl	2000
52	2,2',5,5'-Tetrachlorobiphenyl	2000	149	2,2',3,4',5',6-Hexachlorobiphenyl	2000	195	2,2',3,3',4,4',5,6-Octachlorobiphenyl	2000
70	2,3,4',5-Tetrachlorobiphenyl	2000	151	2,2',3,5,5',6-Hexachlorobiphenyl	2000	199	2,2',3,3',4,5,5',6'-Octachlorobiphenyl	1500
74	2,4,4',5-Tetrachlorobiphenyl	2000	153	2,2',4,4',5,5'-Hexachlorobiphenyl	2000	205	2,3,3',4,4',5,5',6-Octachlorobiphenyl	2000
82	2,2',3,3',4-Pentachlorobiphenyl	500	156	2,3,3',4,4',5-Hexachlorobiphenyl	2000	206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	2000
87	2,2',3,4,5-Pentachlorobiphenyl	2000	158	2,3,3',4,4',6-Hexachlorobiphenyl	500	208	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	2000
95	2,2',3,5',6-Pentachlorobiphenyl	1000	169	3,3',4,4',5,5'-Hexachlorobiphenyl	2000	209	Decachlorobiphenyl	2000
99	2,2',4,4',5-Pentachlorobiphenyl	2000	170	2,2',3,3',4,4',5-Heptachlorobiphenyl	2000			

QME Congener Internal Standard

C-QME-IS

1 x 1 mL

C-QME-IS-PAK

SAVE 5 x 1 mL

100 µg/mL each in Isooctane

4 comps.

29	2,4,5-Trichlorobiphenyl
100	2,2',4,4',6-Pentachlorobiphenyl
119	2,3',4,4',6-Pentachlorobiphenyl
189	2,3,3',4,4',5,5'-Heptachlorobiphenyl

QME Congener Surrogate Standard

C-QME-SS

1 x 1 mL

100 µg/mL each in Isooctane

3 comps.

34	2',3,5-Trichlorobiphenyl
109	2,3,3',4,6-Pentachlorobiphenyl
207	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl



MELCC Quebec Ministry of Environment (QME) Phenol and PAHs

Quebec Ministry of Environmental Phenol Mix

PHENOL-QME

2,000 µg/mL each in MeOH

1 x 1 mL
27 comps.

2-Chlorophenol	2,3-Dichlorophenol	3,5-Dichlorophenol	4-Nitrophenol	2,4,6-Trichlorophenol	2,3,5,6-Tetrachlorophenol
3-Chlorophenol	2,4-Dichlorophenol	o-Cresol	2,3,4-Trichlorophenol	3,4,5-Trichlorophenol	2-Methyl-4,6-dinitrophenol
4-Chlorophenol	2,5-Dichlorophenol	m-Cresol	2,3,5-Trichlorophenol	2,3,4,5-Tetrachlorophenol	Pentachlorophenol
2,4-Dinitrophenol	2,6-Dichlorophenol	p-Cresol	2,3,6-Trichlorophenol	2,3,4,6-Tetrachlorophenol	
2,4-Dimethylphenol	3,4-Dichlorophenol	2-Nitrophenol	2,4,5-Trichlorophenol		

PAH Mix

H-QME-01

500 µg/mL each in CH₂Cl₂ : Benzene (50:50)

1 x 1 mL
24 comps

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

IADN Integrated Atmospheric Deposition Network

The Integrated Atmospheric Deposition Network is composed of five agencies: the US EPA, Environment Canada's (EC: Metrological Service, National Water Research Institute (NWRI), 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. This set of IADN PCB congener standards is designed 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

30 µg/mL each in Isooctane

1 x 1 mL
28 comps.

4	2,2'-Dichlorobiphenyl
7	2,4-Dichlorobiphenyl
10	2,6-Dichlorobiphenyl
15	4,4'-Dichlorobiphenyl
18	2,2',5-Trichlorobiphenyl
28	2,4,4'-Trichlorobiphenyl
32	2,4',6-Trichlorobiphenyl
41	2,2',3,4-Tetrachlorobiphenyl
45	2,2',3,6-Tetrachlorobiphenyl
52	2,2',5,5'-Tetrachlorobiphenyl
56	2,3,3',4'-Tetrachlorobiphenyl
66	2,3',4,4'-Tetrachlorobiphenyl
74	2,4,4',5-Tetrachlorobiphenyl
81	3,4,4',5-Tetrachlorobiphenyl
85	2,2',3,4,4'-Pentachlorobiphenyl
91	2,2',3,4',6-Pentachlorobiphenyl
97	2,2',3',4,5-Pentachlorobiphenyl
101	2,2',4,5,5'-Pentachlorobiphenyl
114	2,3,4,4',5-Pentachlorobiphenyl
123	2',3,4,4',5-Pentachlorobiphenyl
131	2,2',3,3',4,6-Hexachlorobiphenyl
138	2,2',3,4,4',5'-Hexachlorobiphenyl
153	2,2',4,4',5,5'-Hexachlorobiphenyl
167	2,3',4,4',5,5'-Hexachlorobiphenyl
171	2,2',3,3',4,4',6-Heptachlorobiphenyl
180	2,2',3,4,4',5,5'-Heptachlorobiphenyl
200	2,2',3,3',4,5,6,6'-Octachlorobiphenyl
205	2,3,3',4,4',5,5',6-Octachlorobiphenyl

IADN Congener Standard #2

C-IADN-02

30 µg/mL each in Isooctane

1 x 1 mL
28 comps.

5	2,3-Dichlorobiphenyl
8	2,4'-Dichlorobiphenyl
12	3,4-Dichlorobiphenyl
16	2,2',3-Trichlorobiphenyl
19	2,2',6-Trichlorobiphenyl
26	2,3',5-Trichlorobiphenyl
33	2',3,4-Trichlorobiphenyl
42	2,2',3,4'-Tetrachlorobiphenyl
47	2,2',4,4'-Tetrachlorobiphenyl
49	2,2',4,5'-Tetrachlorobiphenyl
60	2,3,4,4'-Tetrachlorobiphenyl
70	2,3',4,5-Tetrachlorobiphenyl
76	2',3,4,5-Tetrachlorobiphenyl
83	2,2',3,3',5-Pentachlorobiphenyl
87	2,2',3,4,5'-Pentachlorobiphenyl
92	2,2',3,5,5'-Pentachlorobiphenyl
99	2,2',4,4',5-Pentachlorobiphenyl
105	2,3,3',4,4'-Pentachlorobiphenyl
118	2,3',4,4',5-Pentachlorobiphenyl
126	3,3',4,4',5-Pentachlorobiphenyl
132	2,2',3,3',4,6'-Hexachlorobiphenyl
144	2,2',3,4,5',6-Hexachlorobiphenyl
156	2,3,3',4,4',5-Hexachlorobiphenyl
169	3,3',4,4',5,5'-Hexachlorobiphenyl
172	2,2',3,3',4,5,5'-Heptachlorobiphenyl
190	2,3,3',4,4',5,6-Heptachlorobiphenyl
198	2,2',3,3',4,5,5',6'-Octachlorobiphenyl
206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl

IADN Congener Standard #3

C-IADN-03

30 µg/mL each in Isooctane

1 x 1 mL
28 comps.

6	2,3'-Dichlorobiphenyl
9	2,5-Dichlorobiphenyl
13	3,4'-Dichlorobiphenyl
17	2,2',4-Trichlorobiphenyl
22	2,3,4'-Trichlorobiphenyl
31	2,4',5-Trichlorobiphenyl
37	3,4,4'-Trichlorobiphenyl
44	2,2',3,5'-Tetrachlorobiphenyl
48	2,2',4,5-Tetrachlorobiphenyl
53	2,2',5,6'-Tetrachlorobiphenyl
64	2,3,4',6-Tetrachlorobiphenyl
71	2,3',4,6-Tetrachlorobiphenyl
77	3,3',4,4'-Tetrachlorobiphenyl
84	2,2',3,3',6-Pentachlorobiphenyl
89	2,2',3,4,6'-Pentachlorobiphenyl
95	2,2',3,5',6-Pentachlorobiphenyl
100	2,2',4,4',6-Pentachlorobiphenyl
110	2,3,3',4',6-Pentachlorobiphenyl
119	2,3',4,4',6-Pentachlorobiphenyl
128	2,2',3,3',4,4'-Hexachlorobiphenyl
135	2,2',3,3',5,6'-Hexachlorobiphenyl
149	2,2',3,4',5',6-Hexachlorobiphenyl
163	2,3,3',4',5,6-Hexachlorobiphenyl
170	2,2',3,3',4,4',5-Heptachlorobiphenyl
174	2,2',3,3',4,5,6'-Heptachlorobiphenyl
194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl
202	2,2',3,3',5,5',6,6'-Octachlorobiphenyl
207	2,2',3,3',4,4',5,5',6'-Nonachlorobiphenyl

Canadian Environmental Method Dioxin Window Defining and Calibration Mixes

Dioxin Window Defining Mix

D-WD

20 ng/mL in Toluene

1 x 1 mL
7 comps.

D-WD-2.5X

50 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

Dioxin Calibration Mix

D-CAL

20 ng/mL in Toluene

1 x 1 mL
6 comps.

D-CAL-2.5X

50 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



Regional Methods

Canada

Brownfield Regulation Drinking Water and Petroleum

Drinking Water

Phenoxyacid Herbicides Mix

CCME-CDW-PHERB

1 x 1 mL

1000 µg/mL each in Acetone

11 comps.

Bromoxynil	Pentachlorophenol
2,4-D	Picloram
Dicamba	2,4,5-T
2,4-Dichlorophenol	2,3,4,6-Tetrachlorophenol
Diclofop methyl	2,4,6-Trichlorophenol
Dinoseb	

Carbamates Mix

CCME-CDW-CARB

1 x 1 mL

100 µg/mL each in ACN

5 comps.

Aldicarb	Carbofuran
Bendiocarb	Triallate
Carbaryl	

Chlorinated Pesticide Mix

CCME-CDW-CPEST

1 x 1 mL

200 µg/mL each in Hexane:Toluene (50:50)

14 comps.

Aldrin	4,4'-DDE	Heptachlor epoxide (Isomer B)
γ-BHC	2,4'-DDT	Methoxychlor
α-Chlordane	4,4'-DDT	Oxychlordane Isomer
γ-Chlordane	Dieldrin	Trifluralin
2,4'-DDE	Heptachlor	

Petroleum

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
<i>n</i> -Decane	12.5	25	50	125	250
<i>n</i> -Hexane	12.5	25	50	125	250
Toluene	12.5	25	50	125	250
Benzene	12.5	25	50	125	250
<i>o</i> -Xylene	12.5	25	50	125	250
<i>m</i> -Xylene	6.25	12.5	25	62.5	125
<i>p</i> -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
<i>n</i> -Decane	40	200	400
<i>n</i> -Hexadecane	40	200	400
<i>n</i> -Tetatriacontane	40	200	400

Performance Check Standard

CCME-QC

1 x 1 mL

CCME-QC-PAK

SAVE 5 x 1 mL

40 µg/mL each in *n*-Hexane:Cyclohexane (50:50)

2 comps.

<i>n</i> -Pentacontanen	Tetracontane
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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 Atlantic RBCA EPH Mix

CCME-EPH

1 x 1 mL

1000 µg/mL each in Hexane : CH₂Cl₂ (85:15)

11 comps.

Acenaphthene	<i>n</i> -Dotriacontane
Anthracene	<i>n</i> -Heneicosane
Benz[a]pyrene	<i>n</i> -Hexadecane
Chrysene	<i>n</i> -Octacosane
<i>n</i> -Decane	Naphthalene
<i>n</i> -Dodecane	

Surrogate Standard

CCME-EPH-SS

1 x 1 mL

1000 µg/mL each in CH₂Cl₂

2 comps.

<i>n</i> -Dotriacontane	Isobutylbenzene
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Canadian Atlantic RBCA VPH Mix

CCME-VPH

1 x 1 mL

1000 µg/mL each in MeOH

12 comps.

Benzene	<i>n</i> -Octane
<i>n</i> -Decane	Toluene
Ethylbenzene	1,2,4-Trimethylbenzene
<i>n</i> -Heptane	1,3,5-Trimethylbenzene
<i>n</i> -Hexane	<i>o</i> -Xylene
1-Methyl-3-ethylbenzene	<i>p</i> -Xylene

Surrogate Standard

CCME-VPH-SS

1 x 1 mL

1000 µg/mL in MeOH

Isobutylbenzene





MISA (Municipal Information Systems Association) Analytical Test Groups

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.

Benzene	o-Xylene
Ethylbenzene	m-Xylene
Styrene	p-Xylene
Toluene	

Group 18: Volatiles, Water Soluble

MISA-VWS

2.0 mg/mL each in Water

1 x 1 mL
2 comps.

Acrolein	Acrylonitrile
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Group 19: Extractables, Base-Neutral

Z-014G
Z-014G-PAK

2.0 mg/mL each in CH₂Cl₂: Benzene (50:50)

1 x 1 mL
SAVE 5 x 1 mL
16 comps.

Acenaphthene	Chrysene
Acenaphthylene	Dibenz[a,h]anthracene
Anthracene	Fluoranthene
Benz[a]anthracene	Fluorene
Benz[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 CH₂Cl₂

1 x 1 mL
8 comps.

Biphenyl	1-Methylnaphthalene
Camphene	2-Methylnaphthalene
1-Chloronaphthalene	5-Nitroacenaphthene
2-Chloronaphthalene	Perylene

MISA-BN-2

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL
8 comps.

Benzyl butyl phthalate	4-Chlorophenyl phenyl ether
4-Bromophenyl phenyl ether	Di-n-butyl phthalate
bis(2-Chloroethyl)ether	Di-n-octyl phthalate
bis(2-Chloroisopropyl)ether	bis(2-Ethylhexyl)phthalate

MISA-BN-3

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL
8 comps.

bis(2-Chloroethoxy)methane	Diphenylether
2,4-Dinitrotoluene	Indole
2,6-Dinitrotoluene	N-Nitroso-diphenylamine
Diphenylamine	N-Nitroso-di-n-propyl amine

Group 20: Extractables, Acid (Phenolics)

MISA-A
MISA-A-PAK

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL
SAVE 5 x 1 mL
20 comps.

4-Chloro-3-methylphenol	4-Nitrophenol
2-Chlorophenol	Pentachlorophenol
o-Cresol	Phenol
m-Cresol	2,3,4,5-Tetrachlorophenol
p-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

1 x 1 mL
SAVE 5 x 1 mL
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 (Isomer B)
Dieldrin	Methoxychlor

Group 23: Extractables, Chlorinated Neutrals

MISA-NC

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL
12 comps.

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 µg/mL	Isooctane	MeOH	Unit
Aroclor 1016	C-216S	C-216S-M	1 mL
Aroclor 1221	C-221S	C-221S-M	1 mL
Aroclor 1232	C-232S	C-232S-M	1 mL
Aroclor 1242	C-242S	C-242S-M	1 mL
Aroclor 1248	C-248S	C-248S-M	1 mL
Aroclor 1254	C-254S	C-254S-M	1 mL
Aroclor 1260	C-260S	C-260S-M	1 mL
Aroclor 1262	C-262S	C-262S-M	1 mL
Aroclor 1268	C-268S	C-268S-M	1 mL
	Z-008S-SET	Z-008S-M-SET	
	9 x 1 mL	9 x 1 mL	



Regional Methods

Asia

China GB, GB/T, and HJ Test Methods

Our selection of high-quality GB Certified Reference Materials (CRMs) are designed for different GB, GB/T and HJ test methods to make testing for contaminants such as pesticides, nitrosamines and phthalates accurate and efficient.

China GB standards are the Chinese National Standards (also known as GuoBiao Standards). GB standards are established by the Standardization Administration of the People's Republic of China (SAC) to regulate chemical contaminants in the environment and reduce their impact on human health and safety. China GB standards are classified with either the prefix "GB" for required or "GB/T" for recommended.

The Industry sector for HJ Standards is Environmental Protection, governed by the Ministry of Ecology and Environment of PRC. Similarly, China HJ prefixes are classified with "HJ" for required or "HJ/T" for recommended."

GB 3838 Nitrobenzene Standard

GBS-009S	1 mL
At stated conc. in Hexane	10 comps.
Nitrobenzene	1000 µg/mL
p-Dinitrobenzene	100 µg/mL
m-Dinitrobenzene	100 µg/mL
o-Dinitrobenzene	100 µg/mL
2,4-Dinitrotoluene	100 µg/mL
TNT	100 µg/mL
p-Chloronitrobenzene	100 µg/mL
m-Chloronitrobenzene	100 µg/mL
o-Chloronitrobenzene	100 µg/mL
1-Chloro-2,4-dinitrobenzene	100 µg/mL

GB/T 5750.9 Pesticide Standard

GBS-001S	1 mL
50 µg/mL each in ACN	6 comps.
Fenprothrin (Danitol)	Cypermethrin
L-Cyhalothrin	Fenvalerate
Permethrin	Deltamethrin

GB 5009.31 Paraben Standard

GBS-011S	1 mL
100 µg/mL each in MeOH	4 comps.
Methyl paraben	
Ethyl paraben	
Propyl-p-hydroxybenzoate	
Butyl paraben	

GB 5009.190 PCBs Standard

GBS-010S	1 mL
10 µg/mL each in Isooctane	12 comps.
2,2',3,3',4,4'-Hexachlorobiphenyl	
2,2',3,3',4,4',5-Heptachlorobiphenyl	
2,2',3,3',4,4',5,5'-Octachlorobiphenyl	
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	
2,2',3,3',4,4',5,6-Octachlorobiphenyl	
2,2',3,3',4,4',5,5',6'-Octachlorobiphenyl	
2,2',3,4,4',5,5',6-Heptachlorobiphenyl	
2,2',3,5'-Tetrachlorobiphenyl	
2,2',5-Trichlorobiphenyl	
2,3,3',4,4'-Pentachlorobiphenyl	
2,3,4,5-Tetrachlorobiphenyl	
2,3,4-Trichlorobiphenyl	

GB 5009.271 Phthalates Standard

GBS-005S	1 mL
1000 µg/mL each in Hexane	18 comps.
Diallyl phthalate	
Diisononyl phthalate	
Benzyl butyl phthalate	
bis(2-Ethoxyethyl)phthalate	
bis(2-Ethylhexyl)phthalate	
bis(2-Methoxyethyl)phthalate	
bis(2-n-butoxyethyl)phthalate	
bis(4-Methyl-2-pentyl)phthalate	
Di-n-octyl phthalate	
Dipentyl phthalate	
Dicyclohexyl phthalate	
Diethyl phthalate	
Dihexyl phthalate	
Diisobutyl phthalate	
Dimethyl phthalate	
Dinonyl phthalate	
Dibutyl phthalate	
Diphenyl phthalate	

GB/T 14848 Pesticides Standard

GBS-006S	1 mL
100 µg/mL each in Hexane:Toluene (90:10)	8 comps.
a-BHC	d-BHC
b-BHC	o,p'-DDT
g-BHC	p,p'-DDT
	p,p'-DDE

GB/T 24153 Nitrosamines Std.

GBS-003S	1 mL
100 µg/mL each in MeOH	12 comps.
N-Nitrosodimethylamine	
N-Nitrosodiethylamine	
N-Nitrosodi-n-propylamine	
N-Nitrosodi-n-butylamine	
N-Nitrosopiperidine	
N-Nitrosopyrrolidine	
N-Nitrosomorpholine	
N-Nitroso-n-methylaniline	
N-Nitroso-n-ethylaniline	
N-Nitrosodibenzylamine	
N-Nitrosoethylmethylamine	
N-Nitrosodiphenylamine	

GB 31604.52 Primary Arylamines Standard

GBS-002S	1 mL
500 µg/mL each in ACN	29 comps.

Aniline
o-Toluidine
2,6-Dimethylaniline
2,4-Dimethylaniline
o-Anisidine
4-Chloroaniline
p-Phenylenediamine
2-Methoxy-5-methylaniline
2,4,5-Trimethylaniline
1,3-Phenylenediamine
4-Chloro-2-methylaniline
2,4-Diaminotoluene
2,4-Diaminoanisole
2-Aminonaphthalene
2-Methyl-5-nitroaniline
4-Aminobiphenyl
2,2'-Methylenedianiline
2,4'-Methylenedianiline
4-Phenylazoaniline
4,4'-Oxydianiline
Benzidine
4,4'-Diaminodiphenylmethane
o-Aminoazotoluene
3,3'-Dimethyl-4,4'-diaminodiphenylmethane
3,3'-Dimethylbenzidine
4,4'-Thiodianiline
3,3'-Dimethoxybenzidine
3,3'-Dichlorobenzidine
4,4'-Methylenebis(2-chloroaniline)

GB/T 39665 Residual Pesticides in Cosmetics Standard

GBS-015S	1 mL
100 µg/mL each in MeOH	19 comps.
Carbendazim	Molinate
Monocrotophos	Epoxiconazole
Simazine	Iprodione
Carbaryl	Kresoxim-methyl
Diuron (Karmex)	Dinoterb
Fenpropimorph	Diallate
Ioxynil	Fluazifop-p-butyl
Propazine	Isoxaflutole
Linuron	Propargite
Flumioxazin	

GB 50325 VOCs Reference Std.

GBS-012S	1 mL
2000 µg/mL each in PT MeOH	16 comps.
n-Hexane	m-Xylene
Benzene	o-Xylene
Trichloroethene	Styrene
Toluene	n-Nonane
1-Octene	2-Ethyl-1-hexanol
Butyl acetate	n-Undecane
Ethylbenzene	n-Tetradecane
p-Xylene	n-Hexadecane

HJ 809 Nitrosamines Standard

GBS-004S	1 mL
2000 µg/mL each in MeOH	9 comps.
N-Nitrosoethylmethylamine	N-Nitrosodiphenylamine
N-Nitrosodi-n-butylamine	N-Nitrosomorpholine
N-Nitrosodi-n-propylamine	N-Nitrosopiperidine
N-Nitrosodiethylamine	N-Nitrosopyrrolidine
N-Nitrosodimethylamine	

HJ 894 Alkanes Standard

GBS-014S	1 mL
1000 µg/mL each in n-Hexane	34 comps.
n-Heptane	n-Tetracosane
n-Octane	n-Pentacosane
n-Nonane	n-Hexacosane
n-Decane	n-Heptacosane
n-Undecane	n-Octacosane
n-Dodecane	n-Nonacosane
n-Tridecane	n-Triacontane
n-Tetradecane	n-Hentriacontane
n-Pentadecane	n-Dotriacontane
n-Hexadecane	n-Tritriacontane
n-Heptadecane	n-Tettratriacontane
n-Octadecane	n-Pentatriacontane
n-Nonadecane	n-Hexatriacontane
n-Eicosane	n-Heptatriacontane
n-Heneicosane	n-Octatriacontane
n-Docosane	n-Nonatriacontane
n-Tricosane	n-Tetracontane

HJ 1057 Refrigerants Standard

GBS-007S	1 mL
1000 µg/mL each in PT Methanol	4 comps.
Trichlorofluoromethane	
1,1-Dichloro-1-fluoroethane	
Chlorodifluoromethane	
Dichlorodifluoromethane	

China Test Method Standards
continued on next page



China GB, GB/T, and HJ Test Method (continued)

HJ 1153 Derivatized Carbonyl Standard

GBS-008S

At stated conc. (µg/mL) in ACN

1 mL
12 comps.

Formaldehyde-DNPH	700	2-Butanone-DNPH	350
Acetaldehyde-DNPH	510	Butyraldehyde-DNPH	350
Acrolein-DNPH	420	Benzaldehyde-DNPH	270
Acetone-DNPH	410	Valeraldehyde-DNPH	310
Propionaldehyde-DNPH	410	Hexanal-DNPH	280
Crotonaldehyde-DNPH	355	Isovaleraldehyde-DNPH	310

HJ 827 Pesticides Reference Standard

GBS-013S

At stated conc. (µg/mL) in MeOH

1 mL
15 comps.

Methomyl-oxime	1000	Isoproc carb	50
Pirimicarb	50	2,3,5-Trimethacarb	200
3-Hydroxycarbofuran	200	Carbanolate	100
Metolcarb	100	Fenobucarb (Baycarb)	100
Propoxur (Baygon)	200	Methiocarb	50
Carbofuran	50	Promecarb	100
Bendiocarb	200	Methomyl	200
Carbaryl	200		

HJ 909 PBDE Reference Standard

GBS-016S

200 µg/mL each in MeOH

1 mL
8 comps.

2,4,4'-Tribromodiphenyl ether	2,2',4,4',5,6'-Hexabromodiphenyl ether
2,2',4,4'-Tetrabromodiphenyl ether	2,2',4,4',5,5'-Hexabromodiphenyl ether
2,2',4,4',6-Pentabromodiphenyl ether	2,2',3,4,4',5',6'-Heptabromodiphenyl ether
2,2',4,4',5-Pentabromodiphenyl ether	2,2',3,3',4,4',5,5',6,6'-Decabromodiphenyl ether

Japan Ministry of Health & Welfare Standards and Japan Environmental Agency Methods

Volatile Organic Solution

JMHW-001

JMHW-001-PAK

1000 µg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
23 comps.

Benzene	1,2-Dichloropropane
Bromodichloromethane	cis-1,3-Dichloropropene
Bromoform	trans-1,3-Dichloropropene
Carbon tetrachloride	Tetrachloroethene
Chloroform	Toluene
Dibromochloromethane	1,1,1-Trichloroethane
1,4-Dichlorobenzene	1,1,2-Trichloroethane
1,2-Dichloroethane	Trichloroethene
1,1-Dichloroethene	m-Xylene
cis-1,2-Dichloroethene	o-Xylene
trans-1,2-Dichloroethene	p-Xylene
Dichloromethane	

Volatile Organic Solution

JEAM-001

1000 µg/mL each in MeOH

1 x 1 mL
12 comps.

Benzene	cis-1,3-Dichloropropene
Carbon Tetrachloride	trans-1,3-Dichloropropene
1,1-Dichloroethene	Tetrachloroethene
cis-1,2-Dichloroethene	1,1,1-Trichloroethane
Dichloromethane	1,1,2-Trichloroethane
1,2-Dichloroethane	Trichloroethene

Method Aldehydes as DNPH Derivatives

JEAM-002

100 µg/mL each in Ethyl acetate

1 x 1 mL
6 comps.

Acetaldehyde-DNPH	Isovaleraldehyde-DNPH
Butyraldehyde-DNPH	Propionaldehyde-DNPH
Isobutyraldehyde-DNPH	Pentanal-DNPH

The determination of odor in drinking water, waste water, and solids also include Japanese quantitative standards to meet the standard methods odor testing parameters.

Drinking Water Odor Standard

ODOR-JDWOS

100 µg/mL each in MeOH

1 x 1 mL
2 comps.

(+/-) Geosmin	2-Methylisoborneol
---------------	--------------------

Individual Odor Standards

Compound	Conc.	Each in PT MeOH	Unit
(+/-) Geosmin	2 µg/mL	ODOR-01S	1 mL
2-Isobutyl-3-methoxypyrazine	1000 µg/mL	ODOR-17S-10ML	10 mL
2-Isopropyl-3-methoxypyrazine	1000 µg/mL	ODOR-16S-10ML	10 mL
2-Methylisoborneol	2 µg/mL	ODOR-02S	1 mL
2,4,6-Trichloroanisole	1000 µg/mL	ODOR-15S-10ML	10 mL

Volatile Organic Solution

JMHW-002

JMHW-002-PAK

2000 µg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
16 comps.

Benzene	cis-1,2-Dichloroethene
Bromodichloromethane	Dichloromethane
Bromoform	cis-1,3-Dichloropropene
Carbon tetrachloride	trans-1,3-Dichloropropene
Chloroform	Tetrachloroethene
Dibromochloromethane	1,1,1-Trichloroethane
1,2-Dichloroethane	1,1,2-Trichloroethane
1,1-Dichloroethene	Trichloroethene

Volatile Organic Solution B

JMHW-003

2000 µg/mL each in MeOH

1 x 1 mL
7 comps.

1,4-Dichlorobenzene	Toluene	o-Xylene
trans-1,2-Dichloroethene	m-Xylene	p-Xylene
1,2-Dichloropropane		

Korean Drinking Water Regulations Standards

VOC Mix A

KDWR-001

KDWR-001-PAK

100 µg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
15 comps.

Benzene	Ethylbenzene	1,1,1-Trichloroethane
Bromodichloromethane	Dichloromethane	Trichloroethene
Bromoform	Phenol	m-Xylene
Chloroform	Tetrachloroethene	p-Xylene
Dibromochloromethane	Toluene	o-Xylene

VOC Mix B

KDWR-002

KDWR-002-PAK

100 µg/mL each in MeOH

1 x 1 mL
SAVE 5 x 1 mL
8 comps.

Bromodichloromethane	Dibromochloromethane	1,1,1-Trichloroethane
Bromoform	Dichloromethane	Trichloroethene
Chloroform	Tetrachloroethene	

Pesticide Mix

KDWR-003-R1

KDWR-003-R1-PAK

1000 µg/mL each in MeOH

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

Carbaryl	Fenitrothion	Parathion
Diazinon	Malathion	

Technical Information

Solvent Miscibility Table, Density and Boiling Point

Acetic acid (1.049 g/mL) (117-118°C)															
Acetone (0.791 g/mL) (56°C)															
Acetonitrile (AcCN) (0.786 g/mL) (81-82°C)															
Benzene (0.874 g/mL) (80°C)															
2-Butanol (0.808 g/mL) (98°C)															
Butyl alcohol (0.81 g/mL) (116-118°C)															
tert-Butylmethyl ether (MtBE) (0.74 g/mL) (55-56°C)															
Carbon tetrachloride (1.594 g/mL) (76-77°C)															
Chloroform (1.492 g/mL) (60.5-61.5°C)															
Cyclohexane (0.779 g/mL) (80.7°C)															
Cyclopentane (0.751 g/mL) (50°C)															
Dichloroethane (1.256 g/mL) (83°C)															
N,N-Dimethylformamide (DMF) (0.944 g/mL) (153°C)															
1,4-Dioxane (1.034 g/mL) (100-102°C)															
Dipropyl ether (0.736 g/mL) (88-90°C)															
Ethyl acetate (EtOAc) (0.902 g/mL) (76.5-77.5°C)															
Ethyl alcohol (EtOH) (0.789 g/mL) (78°C)															
Ethyl ether (0.706 g/mL) (34.6°C)															
n-Heptane (0.684 g/mL) (98°C)															
n-Hexane (0.659 g/mL) (69°C)															
Isooctane (0.692 g/mL) (98-99°C)															
Isopropyl alcohol (0.785 g/mL) (82°C)															
Methanol (MeOH) (0.791 g/mL) (64.7°C)															
Methylene chloride (CH ₂ Cl ₂) (1.325 g/mL) (39.8-40°C)															
Methyl sulfoxide (DMSO) (1.10 g/mL) (189°C)															
n-Pentane (0.626 g/mL) (35-36°C)															
1,1,2,2-Tetrachloroethane (1.586 g/mL) (147°C)															
Tetrahydrofuran (THF) (0.889 g/mL) (65-67°C)															
Toluene (0.865 g/mL) (110-111°C)															
Trichloroethane (1.336 g/mL) (74-76°C)															
Water (1 g/mL) (100°C)															
Xylene (0.868 g/mL) (138-139°C)															

☐ Miscible

■ Immiscible

Read down column
and across for
solvent miscibility

Density @ 25°C

Boiling Point

Instrumentation Abbreviations

AA	Atomic Absorption
FTIR	Fourier Transform Infrared
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectroscopy
GC/FID	Gas Chromatography/Flame Ionization Detector
GC/PID	Gas Chromatography/Photoionization Detector
GC/ECD	Gas Chromatography/Electron Capture Detector
GC/ELCD	Gas Chromatography/Electrolytic Conductivity Detector
GC/NPD	Gas Chromatography/Nitrogen phosphorus Detector
GLC	Gas Liquid Chromatography
HPLC	High Performance Liquid Chromatography
HRGC/LRMS	High Resolution Gas Chromatography/Low Resolution Mass Spectrometry
ICP	Inductively Coupled Plasma
ICP-MS	Inductively Coupled Plasma Mass Spectrometry
IR	Infrared
KF	Karl Fischer
NPD/TEA	Nitrogen-Phosphorus Detector/Thermal Energy Analyzer with the reductive Hall detector
NPD/AFD/TSD	Nitrogen-Phosphorus Detector/Alkali-Flame Detector/Thermionic Specific Detector
NPA/ELCD/FPD	Nitrogen-Phosphorus Detector/Electrolytic Conductivity Detector/Flame Photometric Detector
TCD/FID	Thermal Conductivity Detector/Flame Ionization Detector

Abbreviations

ACS	American Chemical Society
ANSI	American National Standards Institute
AOAC	Association of Official Analytical Chemists
APHA	American Public Health Association
ASTM	American Society for Testing Materials
BSI	British Standards Institute
CAS	Chemical Abstracts Service
CI	Color Index
EN	European Norm
EPA	U.S. Environmental Protection Agency
FDA	U.S. Food and Drug Administration
GR	Guaranteed Reagent
meq	Milliequivalent
NF	National Formulary
NIST	National Institute of Standards and Technology
OLM	Organic Low-Medium
OSHA	Occupational Safety and Health Administration
RFA	Renewable Fuel Association
SPE	Solid Phase Extraction
SOW	Statement of Work
TLC	Thin Layer Chromatography
TSCA	Toxic Substances Control Act
USDA	U.S. Department of Agriculture
USP	U.S. Pharmacopoeia

Usage, Handling, Storage and Shipping

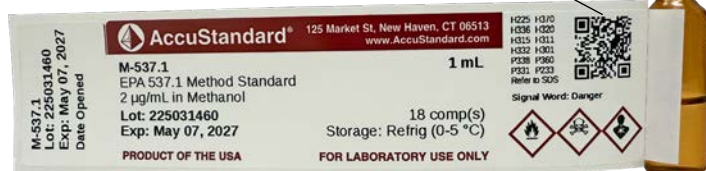
Solutions (Usage, Handling)

Check label for proper storage and if it needs to be sonicated prior to use. Always tap ampule before opening to ensure no product is in the head. Transfer the required amount using a pipet or clean gastight syringe. Excess solution can be stored in a tightly capped vial. Amber ampules are used to ensure the integrity of the contents.

Neats (Usage, Handling)

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, carefully transfer the contents to a volumetric flask using a suitable solvent. Rinse the cap and vial several times to assure a complete transfer.

Quick access to product information
such as SDS and COAs



Storage

All products come with storage conditions listed on the label of the ampule. It is imperative that these conditions are followed to preserve the integrity of the material.

Note: 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, we may recommend or require that these products ship in a Cold Pack (a styrofoam container that has an ice pack). The purpose is to delay the exposure of the product to higher temperatures, NOT to keep the product frozen. It simply delays exposure to higher temperatures. The product will not immediately go out of specification when the Cold Pack melts or when the product reaches room temperature.

2-Part Labels (ampules or vials)

Part One can be placed into a laboratory journal to document the standard used for the analysis. This label section includes the catalog number, description, lot number, expiration date, safety information, proper storage conditions and documents AccuStandard as the manufacturer.

Part Two duplicates required information for labeling transfer vial(s) with correct information.

Safety Information

All products include Safety Data Sheets (SDSs) available on our website. Products are designed to be used by trained laboratory personnel.

SDSs contains information about a chemical's properties, hazards, and how to handle it safely:

1. Chemical properties: Physical data like melting point, boiling point, and flash point
2. Hazards: Physical, health, and environmental hazards, including toxicity, reactivity, and flammability
3. Safety precautions: How to handle, store, and transport the chemical, including protective equipment and spill procedures
4. First aid: Potential symptoms and first aid measures for exposure to the chemical
5. Exposure limits: The maximum airborne concentration of a hazardous substance that is considered safe
6. Disposal: How to dispose of the chemical, including following applicable laws and regulations
7. Ecological information: Whether the product contains heavy metals or other substances that could harm the environment

GHS Symbols:



GHS-07

- Irritant
- Skin Sensitizer
- Acute toxicity (harmful)
- Narcotic Effects
- Respiratory Tract Irritant



GHS-02

- Flammables
- Self Reactives
- Pyrophorics
- Self-Heating
- Emits Flammable Gas
- Organic Peroxides



GHS-03

- Oxidizers



GHS-05

- Corrosives
- Skin corrosion/burns
- Eye Damage
- Corrosive to Metals



GHS-06

- Acute Toxicity (fatal or toxic)



GHS-08

- Carcinogen
- Respiratory Sensitizer
- Reproductive Toxicity
- Mutagenicity
- Aspiration Toxicity



GHS-09

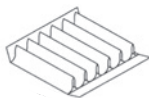
- Aquatic Toxicity

Packaging and Shipping Organic Products

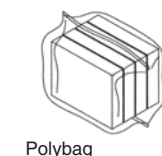
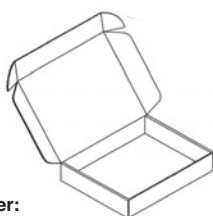
Shipping methods: Multiple shipping options available for fast delivery. Packaging maximizes space and keeps dimensions and weight down to minimize shipping charges. Designed and tested to meet DOT and IATA shipping regulations.



Fluted Tray:
Natural Chipboard

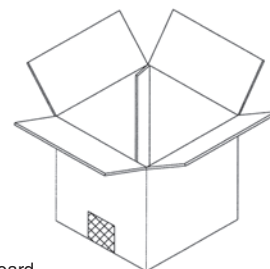
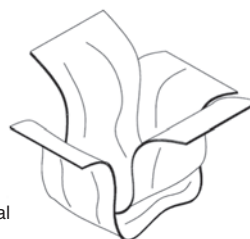


Inside Container:
Corrugated Fiberboard

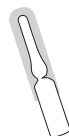


Polybag

Cushioning/Absorbent:
Natural Kraft Fiber Material



Shipping Containers:
Natural Kraft Corrugated Fiberboard



For your protection an ampule
opener is included with
every 5 x 1 mL order



Packaging material made
with recyclable and
biodegradable materials.

Custom Formulations

Custom Quote Request

Quick Turnaround • Decades of Experience • Cost/Time Saving Alternative

<https://www.accustandard.com/custom-quote-request> or contact our quotation specialist.

Organic techservice@accustandard.com
(minimum purchase 5 mL)

Inorganic inotech@accustandard.com
(minimum purchase 500 mL)

Information Required:

- Contact Information
- Analyte / Element (Name/CAS#)
- Desired solvent, Concentration, Quantity, and Application / Instrument



Gravimetric/Volumetric Certification:

Each compound is measured gravimetrically and QC verified instrumentally (where applicable). Custom Standards are certified following our rigorous ISO 17034 and ISO 17025 accredited quality system. Analysis methods include GC, GC/MS, LC-MS, LC-MS/MS and analysis using both internal calibration standards plus statistical analysis.

Meet your specific needs.



Custom Synthesis

We specialize in synthesizing chemicals of high purity to be used as reference standards. Our Synthesis Department has PhD Organic Chemists with many years of pertinent academic and industrial experience. Our experienced staff has developed hundreds of pure chemical compounds for companies, research facilities, academic institutions and government agencies around the world.

AccuStandard is renowned for its quick response to customer requests and its partnership in developing new test methods for the analysis of different classes of contaminants such as PFAS, Pesticides and PCBs. The offering of a wide variety of nonyl- and octylphenol ethoxylate derivatives, for example, led to the development of ASTM methods D7065-06 and D7485. Featured in AccuStandard's history of firsts are all of the 209 congeners of polychlorinated biphenyls (PCBs) and all of the 209 congeners of polybrominated diphenyl ethers (PBDEs).

For instance, our collection of brominated flame retardants, along with their metabolites, is continually expanding. This includes a range of metabolites of the flame retardant tetrabromodiphenyl ether (TDBDPB), such as hydroxylated and methoxylated polybrominated diphenyl ethers. In response to requests from the research community, we now offer over 80 hydroxy- and methoxy-PBDEs, including mixed bromo/chloro hydroxy- and methoxy-PBDEs.

The synthesis of many organic pollutants and their metabolites is an integral part of the department's efforts to provide the community with previously unavailable standards. This is especially true when it comes to the growing demand for reference standards for Persistent Organic Pollutants (POPs) and other chemicals of concern.



Synthesis Products

- Per- and Polyfluoroalkyl Substances (PFASs)
- PCBs (all 209 congeners), hydroxy, methoxy, and methylsulfonyl metabolites
- Chloro- and bromodibenzodioxins and furans
- PBDEs (all 209 congeners), hydroxy, methoxy, & chloro metabolites
- Fluorinated PBDEs
- Polybrominated diphenyl ether, hydroxy, methoxy (BDPB/HBDPB/MOBDPB) metabolites
- α -, β - and γ - Hexabromocyclododecane (HBCD)
- Other brominated flame retardants
- PBBs
- PAHs, nitro-PAHs and methyl-PAHs
- Pesticides and metabolites
- Explosives and metabolites
- Nonyl- and octylphenol ethoxylates
- Mono- and di-phthalates
- Organophosphates

Contact us for your custom compound needs

Contact / Order Information

AccuStandard ships products to over 130 countries and territories worldwide. Choose your country to find a distributor in your area. If you cannot find a distributor in your country, please contact us directly for pricing and shipping information.



Website

Find Products by:

- Chemical name
- Catalog number
- CAS number
- Method
- Category
- New products



Filter search results by

- Concentration
- Component count
- Unit size

Product Documentation

- COAs
- SDSs

Resources

- FAQs
- News and updates
- Literature
- Methods
- Publications and Presentations
- Video library

Shipping

- Order status

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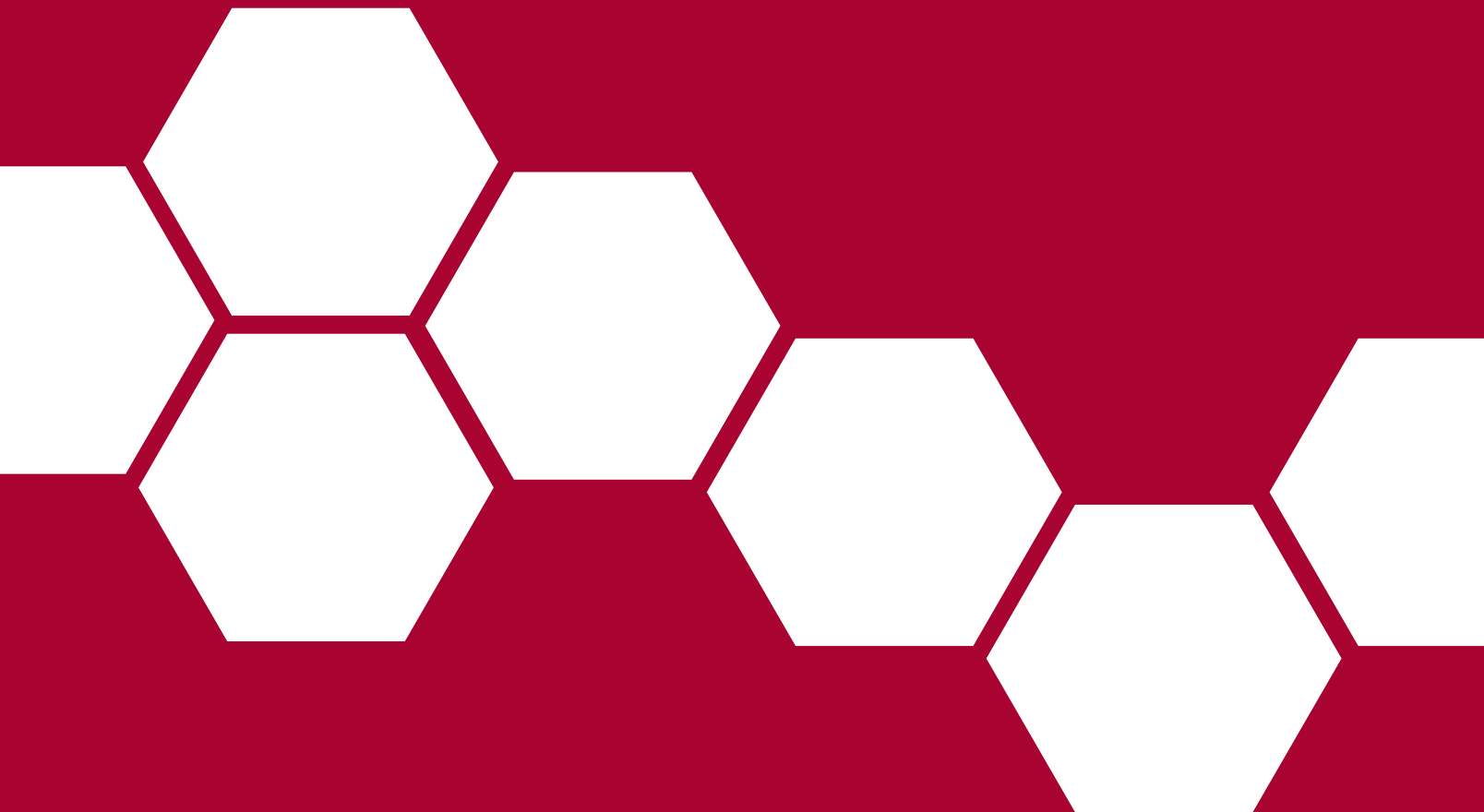
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