



AccuStandard®

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Custom Synthesis

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you need?
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Custom Formulations

Organic and
Inorganic
see back of catalog

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In Memory of our Founder Michael Bolgar

Starting a new company at the age of 55 exemplifies the perseverance, passion and love of chemistry Michael had. He was one of the pioneers in the Reference Standard industry, taking great pride in AccuStandard's significant accomplishment of being the first to make all 209 PCB congeners. Through his guidance and inspiration, AccuStandard continued on with many other firsts in the industry.

He wanted his company to be a place where he would be happy to work. By taking care of his employees, he created a positive work environment for all. He was very proud of all of the employees at AccuStandard for their commitment and dedication for excellence. AccuStandard truly is a family company that works as a team.

Michael had a love for all art, inspired by Dr. Alfred Bader, founder of Aldrich. Michael had a special attachment to alchemical art, this is reflected through the covers of our catalogs, starting in 1996.

He was a founder, leader and true inspiration to many people. Michael was highly respected and relied upon for his expansive knowledge by all of us at AccuStandard and in the Chemical Reference Standard industry. We are grateful for his guidance, he was an example to us all.



He will always be with us, forever alive in our hearts and minds. He is truly missed.



About AccuStandard

AccuStandard, Inc., founded in 1986, is a leading manufacturer of Certified Reference Materials (CRMs) and Reference Materials (RMs). The company was pioneered by Michael Bolgar and his wife, Alice Bolgar. In 1998 AccuStandard outgrew its original facility at Science Park in New Haven, Connecticut, USA and moved across town to its current facility of over 37,000 square feet, which houses our offices, warehouse, and several laboratories.

AccuStandard offers a comprehensive selection of Organic, Inorganic and Petroleum Reference Standards for chemical analysis and serves the global market. With distributors in more than 85 countries, AccuStandard is able to provide products to scientists around the world.

The company is renowned for its recognition of environmental concerns and rapid introduction of standards to the market place. Among the more recent introductions are a comprehensive cannabis product line, hydroxy and methoxy PBDE congeners, as well as bromo/chloro hydroxy and methoxy diphenyl ethers, organophosphate flame retardants, biofuels, plastic additives, and rare explosives.

AccuStandard's synthesis department is able to provide unique and emerging products and product lines. The department has successfully synthesized all 209 PCB and PBDE congeners, created a line of fluorinated PBDE congeners (used as internal standards), and produced many halogenated dioxins, dibenzofurans, PAHs and pesticides. They have also synthesized tetradecabromodiphenoxy benzene (TDBDPB) and many of its metabolites, which are of concern as break-down products.

AccuStandard is accredited as a Reference Material Producer and maintains a robust quality system. For current accreditations and certificates please refer to our website www.accustandard.com

The company prides itself and owes its success to the excellence, loyalty and dedication of its staff. We thank our loyal customers and look forward to serving the environmental community for many years to come.

Officers



Amy Harvey
President



Susan Meronek
General Manager



Matt Bolgar
Vice President



Jack Hubball
Technical Director

Technical Service

Eric
*New Product
Development*

Sue
*Tech. Service /
Quality Manager*



Sheila
*Organic Tech.
Service*



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*Inorganic
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Manager*



Bob
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Tech. Service*



Dolly
*Organic
Tech. Service*



Phil
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Tech. Service*



Lee
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Tech Service*



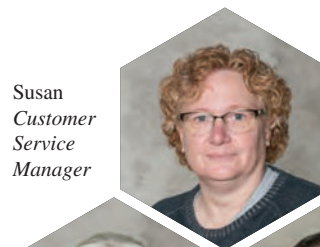
Danielle
*Inorganic
Tech. Service*



Brandon
*Inorganic
Tech. Service*



Mary
Document Control



Susan
*Customer
Service
Manager*



Lakshmi
International Coordinator

Customer Service



Patty
Customer Service Rep.



Mike
Customer Service Rep.



Rosemary
Customer Service Rep.



Lisa
Customer Service Rep.



Linda
Customer Service Rep.

AccuStandard, At Your Service



Synthesis



*Organic and Inorganic
Quality Control*



*Organic and Inorganic
Production*



Assembly / Shipping

Certificate of Analysis

Sample: Multi-component Organic COA

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New Haven, CT 06513
USA



AccuStandard® Inc.

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

CERTIFICATE OF ANALYSIS

Catalog No: PCB-DUTCH7

Description: Dutch Seven PCBs Standard

Lot: 216071187

Solvent: Isooctane

Hazards: **HIGHLY FLAMMABLE** - Refer to SDS for safety info

Date Certified: Jul 19, 2016

Expiration: Jul 19, 2026

Sample Size: 1 mL

Components: 7

Storage Condition: Ambient (>5 °C)

GHS safety information



Danger 2

Component	CAS #	Purity % (GC/MS)	Prepared Concentration¹ (µg/mL)	Certified Analyte Concentration² (µg/mL)
2,4,4'-Trichlorobiphenyl	7012-37-5	100.0	10.01	10.01
2,2',5,5'-Tetrachlorobiphenyl	35693-99-3	99.4	10.06	10.00
2,2',4,5,5'-Pentachlorobiphenyl	37680-73-2	100.0	10.09	10.09
2,3',4,4',5'-Pentachlorobiphenyl	31508-00-6	100.0	10.07	10.07
2,2',3,4,4',5'-Hexachlorobiphenyl	35065-28-2	100.0	10.02	10.02
2,2',4,4',5,5'-Hexachlorobiphenyl	35065-27-1	99.9	10.01	10.00
2,2',3,4,4',5,5'-Heptachlorobiphenyl	35065-29-3	99.0	10.00	9.90

CAS Number to
easily identify
compound

We use only high purity
starting materials.

Concentration calculated by using
the purity of the starting material

Compounds assembled into a standard based on
method requirements and customer formulation
request - all reviewed for solubility and coelution
potential prior to manufacture.

NIST Traceability

QC management approval

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.

¹ All weights are traceable through NIST, Test No. 822-275872-11

² Certified Analyte Concentration = Purity x Prepared Concentration. The Uncertainty associated with the gravimetric values reported on this certificate is $\pm 0.24\%$. The CRM Uncertainty calculated for this product is $\pm 5\%$. These values are the expanded uncertainty and represent 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.

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.

See reverse side for additional information

Uncertainty reported for statistical confidence.

Certified By:

Larry Decker, Organic QC Manager

Page 1 of 1



laboratory analysis.

OR-ORG/INO-001
Rev. 7/11

Custom Formulations

- ✓ Fast Turnaround
- ✓ 30-Plus Years Custom Formulation Experience
- ✓ Custom Standards are a cost and time saving alternative

Custom QC options

1. Gravimetric/Volumetric Certification:

Each compound is measured gravimetrically and QC verified instrumentally (where applicable). Every component in the Standard will be within +/- 0.5% of the requested value unless otherwise stated on the Certificate of Analysis. The solutions are diluted to volume using Class A glassware. A Certificate of Analysis accompanies each Standard and documents the gravimetric values used.

2. Full Quantitative Certification:

This QA/QC method includes extended GC, GC/MS or LC analysis using both internal calibration standards plus statistical analysis.



Custom Quotation Requests

Custom formulations can be requested by contacting Technical Service: techservice@accustandard.com or using our website AccuStandard.com.

See back of the catalog for detailed information

For additional information, contact our Technical Department

203-786-5290 or visit AccuStandard.com

Organic Single Analytes and Select Mixtures

Persistent Organic Pollutants (POPs)

POPs are chemical substances that persist in the environment, bioaccumulate through the food web, posing a risk of causing adverse effects to human health and the environment. A specific list of POPs was defined in 1995 by the United Nations and was the center of the Stockholm Convention in 2001. The list originally included "the dirty dozen" and was expanded to include other pesticides, PBDEs, and some chemicals used in industrial processes.

Individual analytes used in EPA
Methods are listed on page 117-127

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Reference Information

Indices	375-414
CAS Number	375-380
Organic Analyte	381-394
Catalog Number	395-414
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Contact / Ordering Info	back cover



History of PCBs

Legacy

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. In 1968, Japan reported the first of over 1200 patients, many of them children, who developed acne-type skin eruptions (chloracne) and other clinical symptoms. The contamination of rice oil (Yusho) with industrial PCBs (Kannechlor 400) was the source of this malady, later termed Yusho Disease. The average amount of actual PCBs consumed by the victims was estimated at two grams. By 1973, 22 of the 1200 victims had died, 41% from malignant tumors, suggesting a possible link to PCB ingestion.

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

By 1979 the production of PCBs was banned in the United States. In 2001, PCBs were added to the list of Persistent Organic Pollutants by the Stockholm Convention of Persistent Organic Pollutants.

The high persistency and ubiquitous distribution through prior use, disposal and leakages have caused global contamination of soils, air, rivers and other waterways that will affect our food and water supplies for years to come. Although PCB concentrations in the environment are slowly decreasing, a constant, low-level human PCB exposure via dietary intake and inhalation of contaminated indoor air is still of concern. Numerous studies have linked PCBs, even at low levels, to toxic effects such as endocrine disruption, neurotoxicity, immunotoxicity and carcinogenesis.

Toxicity and molecular structure

There are 209 PCB congeners containing one to ten chlorine atoms. Technical mixtures like Aroclors contain about 130 of these congeners.

The toxicity and environmental impact of the congeners correlate to their substitution pattern and fall into two general categories: coplanar (or non-ortho-substituted) and noncoplanar (or ortho-substituted).

Congeners that contain no chlorine substitutions in the ortho positions are structurally more rigid because the two phenyl rings remain in the same plane (coplanar). This makes them dioxin-like not only structurally but also regarding their toxicity. They are more toxic than those having chlorine atoms in the ortho positions (noncoplanar). The most toxic PCBs are the tetra, penta and hexachlorobiphenyl congeners that are unsubstituted in the ortho position.

PCB Metabolites

PCBs are metabolized in vivo to hydroxyl and sulfur compounds. They can be formed in different organisms, including humans and birds of prey. Many studies suggest that these metabolites can be more toxic than the parent compounds.

AccuStandard offers a variety of hydroxyl-/methoxy-PCBs as well as methylsulfonyl-PCB congeners.

Analytical Methods and Reference Materials

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

There are some columns that are closest to achieving the status of separating all the PCB congeners. They are Agilent DB-XLB and SGE's HT 8 which resolve all but four pairs of significant congeners and five pairs of minor congeners.

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

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

In the course of the investigations, it was determined that some of the 209 congeners that constitute the industrial PCB product behave differently than others. Therefore it is very helpful, even essential, to the scientific and regulatory communities, that individual congeners be available. For this reason, the EPA permits the synthesis and distribution of small quantities for research purposes.

To facilitate the availability and distribution of PCBs, the EPA granted manufacturing and export exemptions to a few select standards manufacturers.

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



In 1993, AccuStandard completed the syntheses of all 209 congeners (with 99+% purity).



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Technical Literature

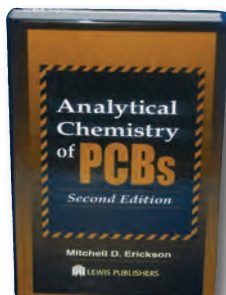


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PCB related papers

Physical, Spectral and Chromatographic Properties of All 209 Individual PCB Congeners
Chemosphere, Vol. 31. 2, pp. 2687-2705, 1995. Michael Bolgar, James Cunningham, Russell Cooper, Richard Kozloski and Jack Hubball

GC Elution Order Data, Design & Employment of 9 PCB Congener Mixtures for Conducting Comprehensive, Quantitative Congener-Specific (QCS) PCB Analyses
Close Elutions of PCB Congeners in 9 Mixes on 12 Phases, Capillary GC System Characteristics, Researchers and Aroclor PCB Coelutions and System Resolving Power, GC Column Injection, Column Pressure and Temp. Parameters, Distribution of PCB Congeners into 9 Mixes for Calibration on 12 GC Columns, Elution Order Tables. By Dr. George Frame



Analytical Chemistry of PCBs

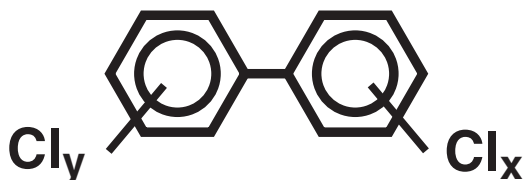
The Second Edition of this book is a comprehensive review of the analytical chemistry of PCBs. The book is an invaluable resource for both chemists with no experience in PCB analysis and seasoned PCB researchers.

PCB Book

Analytical Chemistry of PCBs
BOOK-PCB-001



Chlorobiphenyl Congeners (PCBs)



209 Solutions in a Set **EXCLUSIVE**

C-35-SET
C-100-SET

35 µg/mL in Isooctane
100 µg/mL in Isooctane

209 x 1 mL
209 x 1 mL

Purity 99+%

Other solvents, concentrations and quantities are available upon request.

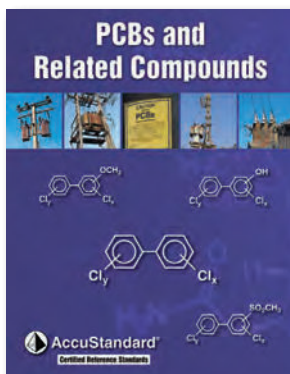
PCBs

Chlorobiphenyl Congeners (PCBs)

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

Technical Note

For specific applications (e.g. toxicological studies) that require absolute dioxin and furan free PCBs contact Technical Service.



**PCB and Related
Compounds Brochure**
Visit our website to download

Chlorobiphenyl Congeners (PCBs)



Purity 99+%

NEATS as stated, SOLUTIONS in Isooctane

Chlorobiphenyl Congeners (PCBs)

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

Chlorobiphenyl Congeners (PCBs)
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Chlorobiphenyl Congeners (PCBs)

PCBs

Chlorobiphenyl Congeners (PCBs)

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

Significant discounts are available on larger quantities of selected congeners.

Chlorobiphenyl Congeners (PCBs)

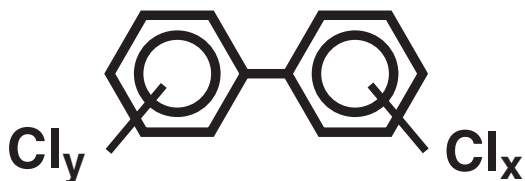


Purity 99+%

NEATS as stated, SOLUTIONS in Isooctane

Chlorobiphenyl Congeners (PCBs)

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



PCB Questions?

AccuStandard chemists have been involved in the synthesis of PCBs and related compounds for over 30 years.

Technical Note

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



Mixtures for Congener Specific PCB Analysis

Method 1668 Congener Set of 209 Chlorinated Biphenyl Congeners by GC/MS

Set of all 209 PCB congeners for specific determination and calibration on a SPB-Octyl capillary column

M-1668A-0.01X-SET

5 x 1 mL

M-1668A-1-0.01X, M-1668A-2-0.01X, M-1668A-3-0.01X
M-1668A-4-0.01X, M-1668A-5-0.01X

PCBs 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
24	2',3,5-Trichlorobiphenyl	2.5
36	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	2,2',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 #3

M-1668A-3-0.01X

At stated conc. (µg/mL) in Isooctane

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

1 x 1 mL
83 comps.

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
29 comps.

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 #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
117	2,3,4',5,6-Pentachlorobiphenyl	5.0
111	2,3,3',5,5'-Pentachlorobiphenyl	5.0
108	2,3,3',4,5'-Pentachlorobiphenyl	5.0
118	2,3',4,4',5-Pentachlorobiphenyl	5.0
114	2,3,4,4',5-Pentachlorobiphenyl	5.0
150	2,2',3,4',6,6'-Hexachlorobiphenyl	5.0
145	2,2',3,4,6,6'-Hexachlorobiphenyl	5.0
135	2,2',3,3',5,6'-Hexachlorobiphenyl	5.0
149	2,2',3,4',5',6-Hexachlorobiphenyl	5.0
139	2,2',3,4,4',6-Hexachlorobiphenyl	5.0
132	2,2',3,3',4,6'-Hexachlorobiphenyl	5.0
165	2,3,3',5,5',6-Hexachlorobiphenyl	5.0
168	2,3',4,4',5',6-Hexachlorobiphenyl	5.0
137	2,2',3,4,4',5-Hexachlorobiphenyl	5.0
160	2,3,3',4,5,6-Hexachlorobiphenyl	5.0
128	2,2',3,3',4,4'-Hexachlorobiphenyl	5.0
162	2,3,3',4',5,5'-Hexachlorobiphenyl	5.0
157	2,3,3',4,4',5'-Hexachlorobiphenyl	5.0
184	2,2',3,4,4',6,6'-Heptachlorobiphenyl	5.0
186	2,2',3,4,5,6,6'-Heptachlorobiphenyl	5.0
187	2,2',3,4',5,5',6-Heptachlorobiphenyl	5.0
185	2,2',3,4,5,5',6-Heptachlorobiphenyl	5.0
181	2,2',3,4,4',5,6-Heptachlorobiphenyl	5.0
192	2,3,3',4,5,5',6-Heptachlorobiphenyl	5.0
197	2,2',3,3',4,4',6,6'-Octachlorobiphenyl	7.5
199	2,2',3,3',4,5,5',6-Octachlorobiphenyl	7.5
203	2,2',3,4,4',5,5',6-Octachlorobiphenyl	7.5

PCB Congener Set
continued on next page

Mixtures for Congener Specific PCB Analysis



PCBS

Method 1668 Congener Set of 209 Chlorinated Biphenyl Congeners by GC/MS (continued)

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

Method 1668A/1668 Combined Congener Standards

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

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

20 µg/mL each in Isooctane

SAVE

1 x 1 mL

5 x 1 mL

33 comps.

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',4,4',5,5',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
bis(2-Ethylhexyl)phthalate	0.5
Methoxychlor	0.1
Perylene	0.02
Sulfur	0.08

Level of Chlorination Calibration/Spike Set

Calibration/Spike Set

M-1668A-LOC-SET

2 x 1 mL

M-1668A-NAT, M-1668A-PAR

Technical Note

Determination of Chlorobiphenyl content at each level of chlorination

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

Canadian Methods

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

PCB Congener (Canadian RM) Set C-CAN-SET 4 x 1 mL C-CAN-01, C-CAN-02, C-CAN-03, C-CAN-04

PCB Congeners Mix #1

C-CAN-01	1 x 1 mL
At stated conc. (µg/mL) in Isooctane	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	1 x 1 mL
At stated conc. (µg/mL) in Isooctane	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',5,5',6-Octachlorobiphenyl	3.2
207 2,2',3,3',4,4',5,6,6'-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	1 x 1 mL
At stated conc. (µg/mL) in Isooctane	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',6,6'-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	1 x 1 mL
At stated conc. (µg/mL) in Isooctane	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',3,4,4',5'-Hexachlorobiphenyl	4.2
141 2,2',3,4,5,5'-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',3,4,4',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

Quebec Ministry of Environment Congener Mix

C-QME-01	1 x 1 mL
At stated conc. (ng/mL) in Isooctane	41 comps.
17 2,2',4'-Trichlorobiphenyl	500
18 2,2',5'-Trichlorobiphenyl	2000
28 2,4,4'-Trichlorobiphenyl	2000
31 2,4',5'-Trichlorobiphenyl	1500
33 2',3,4-Trichlorobiphenyl	2000
44 2,2',3,5'-Tetrachlorobiphenyl	2000
49 2,2',4,5'-Tetrachlorobiphenyl	2000
52 2,2',5,5'-Tetrachlorobiphenyl	2000
70 2,3',4,5-Tetrachlorobiphenyl	2000
74 2,4,4',5-Tetrachlorobiphenyl	2000
82 2,2',3,3',4-Pentachlorobiphenyl	500
87 2,2',3,4,5'-Pentachlorobiphenyl	2000
95 2,2',3,5',6-Pentachlorobiphenyl	1000
99 2,2',4,4',5-Pentachlorobiphenyl	2000
101 2,2',4,5,5'-Pentachlorobiphenyl	2000
105 2,3,3',4,4'-Pentachlorobiphenyl	500
110 2,3,3',4',6-Pentachlorobiphenyl	2000
118 2,3',4,4',5-Pentachlorobiphenyl	2000
128 2,2',3,3',4,4'-Hexachlorobiphenyl	2000
132 2,2',3,3',4,6'-Hexachlorobiphenyl	1000
138 2,2',3,4,4',5'-Hexachlorobiphenyl	2000
149 2,2',3,4',5',6-Hexachlorobiphenyl	2000
151 2,2',3,5,5',6-Hexachlorobiphenyl	2000
153 2,2',4,4',5,5'-Hexachlorobiphenyl	2000
156 2,3,3',4,4',5-Hexachlorobiphenyl	2000
158 2,3,3',4,4',6-Hexachlorobiphenyl	500
169 3,3',4,4',5,5'-Hexachlorobiphenyl	2000
170 2,2',3,3',4,4',5-Heptachlorobiphenyl	2000
171 2,2',3,3',4,4',6-Heptachlorobiphenyl	2000
177 2,2',3,3',4,5,6-Heptachlorobiphenyl	2000
180 2,2',3,4,4',5,5'-Heptachlorobiphenyl	2000
183 2,2',3,4,4',5',6-Heptachlorobiphenyl	2000
187 2,2',3,4',5,5',6-Heptachlorobiphenyl	2000
191 2,3,3',4,4',5,6-Heptachlorobiphenyl	2000
194 2,2',3,3',4,4',5,5'-Octachlorobiphenyl	2000
195 2,2',3,3',4,4',5,6-Octachlorobiphenyl	2000
199 2,2',3,3',4,5,5',6'-Octachlorobiphenyl	1500
205 2,3,3',4,4',5,5',6-Octachlorobiphenyl	2000
206 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	2000
208 2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	2000
209 Decachlorobiphenyl	2000

Integrated Atmospheric Deposition Network (IADN)

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

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

IADN Congener Set

C-IADN-SET 3 x 1 mL
C-IADN-01, C-IADN-02, C-IADN-03

IADN Congener Standard #1

C-IADN-01 1 x 1 mL
30 µg/mL each in Isooctane 28 comps.

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'-Octachlorobiphenyl
205	2,3,3',4,4',5,5',6-Octachlorobiphenyl

IADN Congener Standard #2

C-IADN-02 1 x 1 mL
30 µg/mL each in Isooctane 28 comps.

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 1 x 1 mL
30 µg/mL each in Isooctane 28 comps.

6	2,3'-Dichlorobiphenyl	89	2,2',3,4,6'-Pentachlorobiphenyl
9	2,5-Dichlorobiphenyl	95	2,2',3,5',6-Pentachlorobiphenyl
13	3,4'-Dichlorobiphenyl	100	2,2',4,4',6-Pentachlorobiphenyl
17	2,2',4-Trichlorobiphenyl	110	2,3,3',4',6-Pentachlorobiphenyl
22	2,3,4'-Trichlorobiphenyl	119	2,3',4,4',6-Pentachlorobiphenyl
31	2,4',5-Trichlorobiphenyl	128	2,2',3,3',4,4'-Hexachlorobiphenyl
37	3,4,4'-Trichlorobiphenyl	135	2,2',3,3',5,6'-Hexachlorobiphenyl
44	2,2',3,5'-Tetrachlorobiphenyl	149	2,2',3,4',5',6-Hexachlorobiphenyl
48	2,2',4,5-Tetrachlorobiphenyl	163	2,3,3',4',5,6-Hexachlorobiphenyl
53	2,2',5,6'-Tetrachlorobiphenyl	170	2,2',3,3',4,4',5-Heptachlorobiphenyl
64	2,3,4',6-Tetrachlorobiphenyl	174	2,2',3,3',4,5,6'-Heptachlorobiphenyl
71	2,3',4',6-Tetrachlorobiphenyl	194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl
77	3,3',4,4'-Tetrachlorobiphenyl	202	2,2',3,3',5,5',6'-Octachlorobiphenyl
84	2,2',3,3',6-Pentachlorobiphenyl	207	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl

PCB Congener Content Evaluation

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

Mix #1

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

28	2,4,4'-Trichlorobiphenyl
52	2,2',5,5'-Tetrachlorobiphenyl
101	2,2',4,5,5'-Pentachlorobiphenyl
138	2,2',3,4,4',5'-Hexachlorobiphenyl
153	2,2',4,4',5,5'-Hexachlorobiphenyl
180	2,2',3,4,4',5,5'-Heptachlorobiphenyl

Mix #2

AE-00060 1 x 1 mL
AE-00060-10ML 1 x 10 mL
10 µg/mL each in Isooctane 3 comps.

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 content evaluation mixtures have proven useful for European laboratories estimating the PCB content of a sample when following EU guideline 96/59/EU for cleanup of PCBs.



Congener Specific PCB Analysis

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"

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 2,3,3',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-DIOXLIK 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. in Isooctane 2 comps.
30 2,4,6-Trichlorobiphenyl 209 Decachlorobiphenyl

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 3',4,4',5-Pentachlorobiphenyl

Literature Reference

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

Congener Specific PCB Analysis



PCBs

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

SAVE

1 x 1 mL

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 2,3,3',4,4',5'-Hexachlorobiphenyl	189 2,3,3',4,4',5,5'-Heptachlorobiphenyl

DCMA-PCB Isomer Mixture

M-002

M-002-PAK

At stated conc. (µg/mL) in Hexane

SAVE

1 x 1 mL

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

SAVE

1 x 1 mL

15 comps.

5 x 1 mL

PCB-W22-SET

Each at 100 µg/mL in Isooctane

15 x 1 mL

18 2,2',5'-Trichlorobiphenyl	118 2,3',4,4',5'-Pentachlorobiphenyl
20 2,3,3'-Trichlorobiphenyl	138 2,2',3,4,4',5'-Hexachlorobiphenyl
28 2,4,4'-Trichlorobiphenyl	149 2,2',3,4',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
101 2,2',4,5,5'-Pentachlorobiphenyl	194 2,2',3,3',4,4',5,5'-Octachlorobiphenyl
105 2,3,3',4,4'-Pentachlorobiphenyl	

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) Level 1	(-02) Level 2	(-03) Level 3	(-04) Level 4	(-05) Level 5	(-06) Level 6	(-07) Level 7	(-08) Level 8	(-09) Level 9	(-10) Level 10	(-11) Level 11	(-12) 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'-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

Individual Levels 4, 6, 8, 10, 12

C-DIOXLIK-02	C-DIOXLIK-08
C-DIOXLIK-04	C-DIOXLIK-10
C-DIOXLIK-06	

C-DIOXLIK-03	C-DIOXLIK-09
C-DIOXLIK-05	C-DIOXLIK-11
C-DIOXLIK-07	

C-DIOXLIK-04	C-DIOXLIK-10
C-DIOXLIK-06	C-DIOXLIK-12
C-DIOXLIK-08	

C-DIOXLIK3-04	1 mL
C-DIOXLIK3-06	1 mL
C-DIOXLIK3-08	1 mL
C-DIOXLIK3-10	1 mL
C-DIOXLIK3-12	1 mL



PCB Congener Calibration Mixtures

**9 Mixtures provide All 209 Congeners
Present in Aroclors**

PCB Congener Mix #1

C-CS-01 1 x 1 mL
10 µg/mL each in Isooctane 39 comps.

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 1 x 1 mL
10 µg/mL each in Isooctane 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'-Heptachlorobiphenyl
200	2,2',3,3',4,5,6'-Octachlorobiphenyl
201	2,2',3,3',4,5',6'-Octachlorobiphenyl
202	2,2',3,3',5,5',6'-Octachlorobiphenyl

PCB Congener Mix #2

C-CS-02 1 x 1 mL
10 µg/mL each in Isooctane 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',3,4,4',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 1 x 1 mL
10 µg/mL each in Isooctane 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 1 x 1 mL
10 µg/mL each in Isooctane 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'-Pentachlorobiphenyl
118	2,3',4,4',5-Pentachlorobiphenyl
119	2,3',4,4',6-Pentachlorobiphenyl
128	2,2',3,3',4,4'-Hexachlorobiphenyl
134	2,2',3,3',5,6-Hexachlorobiphenyl
136	2,2',3,3',6,6'-Hexachlorobiphenyl
144	2,2',3,4,5',6-Hexachlorobiphenyl
151	2,2',3,5,5',6-Hexachlorobiphenyl
157	2,3,3',4,4',5'-Hexachlorobiphenyl
158	2,3,3',4,4',6-Hexachlorobiphenyl
190	2,3,3',4,4',5,6-Heptachlorobiphenyl
191	2,3,3',4,4',5,6-Heptachlorobiphenyl
207	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl
208	2,2',3,3',4,4',5,6,6'-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 marginally above
0.05 Wt.%, except #43 @ 0.24 Wt.% in Aroclor 1242.

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

PCB Congener Calibration Mixtures



PCBS

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'-Hexachlorobiphenyl | ✗ |
| 139 | 2,2',3,4,4',6-Hexachlorobiphenyl | ✗ |
| 145 | 2,2',3,4,6,6'-Hexachlorobiphenyl | ✗ |
| 161 | 2,3,3',4,5',6-Hexachlorobiphenyl | ✗ |
| 169 | 3,3',4,4',5,5'-Hexachlorobiphenyl | ✗ |
| 181 | 2,2',3,4,4',5,6-Heptachlorobiphenyl | |

PCB Congener Mix #8

C-CS-08

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 | ✗ |

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 | ✗ |

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

Congeners found in

Aroclor® 1242, 1254 and 1260

C-CSA-SET

5 x 1 mL

C-CS-01

C-CS-03

C-CS-05

C-CS-02

C-CS-04

Non-Aroclor congeners

C-CSN-SET

4 x 1 mL

C-CS-06

C-CS-08

C-CS-09

C-CS-07

Reference Key

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

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

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

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

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





PCB Congener Calibration Mixtures

Method 680 PCB Analytes

Internal Standards

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

PCB Locator Mixture

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

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

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

PCB Isomer Calibration Set

M-680-SET	2 x 1 mL
M-680A, M-680B	

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 CH ₂ Cl ₂		
Decafluorotriphenylphosphine (DFTPP)		

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-d ₁₂	

See EPA Methods 680 and 8082 for complete analytes and PCB congener mixes.

Instrument Test Solutions

PCB Window Defining Mixture

C-WDM		1 x 1 mL
C-WDM-PAK	SAVE	5 x 1 mL
2.5 µg/mL each in Isooctane 20 comps.		
0	Biphenyl	
1	2-Chlorobiphenyl	
3	4-Chlorobiphenyl	
10	2,6-Dichlorobiphenyl	
15	4,4'-Dichlorobiphenyl	
19	2,2',6-Trichlorobiphenyl	
37	3,4,4'-Trichlorobiphenyl	
54	2,2',6,6'-Tetrachlorobiphenyl	
77	3,3',4,4'-Tetrachlorobiphenyl	
104	2,2',4,6,6'-Pentachlorobiphenyl	
126	3,3',4,4',5-Pentachlorobiphenyl	
155	2,2',4,4',6,6'-Hexachlorobiphenyl	
169	3,3',4,4',5,5'-Hexachlorobiphenyl	
188	2,2',3,4',5,6,6'-Heptachlorobiphenyl	
189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	
202	2,2',3,3',5,5',6,6'-Octachlorobiphenyl	
205	2,3,3',4,4',5,5',6-Octachlorobiphenyl	
208	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	
206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	
209	Decachlorobiphenyl	

PCB Calibration Check Solution

C-CCSEC		1 x 1 mL
C-CCSEC-PAK	SAVE	5 x 1 mL
100 µg/mL each in Acetone 20 comps.		
C-CCSEC-R		1 x 1 mL
C-CCSEC-R-PAK	SAVE	5 x 1 mL
C-CCSEC plus 2,2',3,3',4,5',6,6'-Octachlorobiphenyl 21 comps.		
Special Blend		
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

Technical Note

For use with 5% phenyl methyl silicone type columns



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

PCB Congeners Mixture

M-8082				1 x 1 mL
M-8082-PAK	SAVE			5 x 1 mL
100 µg/mL each in Hexane				19 comps.
1	2-Chlorobiphenyl	137	2,2',3,4,4',5-Hexachlorobiphenyl	
5	2,3-Dichlorobiphenyl	141	2,2',3,4,5,5'-Hexachlorobiphenyl	
18	2,2',5-Trichlorobiphenyl	151	2,2',3,5,5',6-Hexachlorobiphenyl	
31	2,4',5-Trichlorobiphenyl	153	2,2',4,4',5,5'-Hexachlorobiphenyl	
44	2,2',3,5'-Tetrachlorobiphenyl	170	2,2',3,3',4,4',5-Heptachlorobiphenyl	
52	2,2',5,5'-Tetrachlorobiphenyl	180	2,2',3,4,4',5,5'-Heptachlorobiphenyl	
66	2,3',4,4'-Tetrachlorobiphenyl	183	2,2',3,4,4',5',6-Heptachlorobiphenyl	
87	2,2',3,4,5'-Pentachlorobiphenyl	187	2,2',3,4',5,5',6-Heptachlorobiphenyl	
101	2,2',4,5,5'-Pentachlorobiphenyl	206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	
110	2,3,3',4',6-Pentachlorobiphenyl			

Reformulated PCB Congeners Mixture

M-8082A				1 x 1 mL
M-8082A-PAK	SAVE			5 x 1 mL
100 µg/mL each in Hexane				19 comps.
1	2-Chlorobiphenyl	138	2,2',3,4,4',5'-Hexachlorobiphenyl	
5	2,3-Dichlorobiphenyl	141	2,2',3,4,5,5'-Hexachlorobiphenyl	
18	2,2',5-Trichlorobiphenyl	151	2,2',3,5,5',6-Hexachlorobiphenyl	
31	2,4',5-Trichlorobiphenyl	153	2,2',4,4',5,5'-Hexachlorobiphenyl	
44	2,2',3,5'-Tetrachlorobiphenyl	170	2,2',3,3',4,4',5-Heptachlorobiphenyl	
52	2,2',5,5'-Tetrachlorobiphenyl	180	2,2',3,4,4',5,5'-Heptachlorobiphenyl	
66	2,3',4,4'-Tetrachlorobiphenyl	183	2,2',3,4,4',5',6-Heptachlorobiphenyl	
87	2,2',3,4,5'-Pentachlorobiphenyl	187	2,2',3,4',5,5',6-Heptachlorobiphenyl	
101	2,2',4,5,5'-Pentachlorobiphenyl	206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	
110	2,3,3',4',6-Pentachlorobiphenyl			

Technical Note

AccuStandard has formulated these standards for use in determining the concentrations of Aroclors (Industrial PCBs), specific PCB congeners, or "total PCBs". Additional Aroclor stock solutions are available at higher concentrations and in other solvents.

Internal and Surrogate Standard

CLP-032-H-5X		1 x 1 mL
1.0 mg/mL each in Hexane		2 comps.
Decachlorobiphenyl	Tetrachloro- <i>m</i> -xylene	

Surrogate Standards

M-8082-SSA-WL-10ML		1 x 10 mL
M-8082-SSA-WL-10ML-PAK	SAVE	5 x 10 mL
5 µg/mL in Acetone		
Decachlorobiphenyl		

M-8082-SS	1 x 1 mL
100 µg/mL in Hexane	
M-8082-SS-10X	1 x 1 mL
1.0 mg/mL in Hexane	
Tetrachloro- <i>m</i> -xylene	

Internal Standards

M-8082-ISC-WL-10ML		1 x 10 mL
M-8082-ISC-WL-10ML-PAK	SAVE	5 x 10 mL
5 µg/mL in Hexane		
Decachlorobiphenyl		

M-8082-SSC-WL-10ML		1 x 10 mL
M-8082-SSC-WL-10ML-PAK	SAVE	5 x 10 mL
5 µg/mL in Acetone		
Tetrachloro- <i>m</i> -xylene		

Method 8082 Aroclor 1016/1260 Calibration Curve

Aroclor 1016/1260 Calibration Curve

C-216/260-CAL-SET						6 x 1 mL
At stated conc. (ng/mL) in Isooctane						4 comps.
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Components		(2X)	(5X)	(10X)	(15X)	(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	1 mL
2-Chlorobiphenyl	C-001S	C-001S-TP	
2,3-Dichlorobiphenyl	C-005S	C-005S-TP	
2,2',5-Trichlorobiphenyl	C-018S	C-018S-TP	
2,4',5-Trichlorobiphenyl	C-031S	C-031S-TP	
2,2',3,5'-Tetrachlorobiphenyl	C-044S	C-044S-TP	
2,2',5,5'-Tetrachlorobiphenyl	C-052S	C-052S-TP	
2,3',4,4'-Tetrachlorobiphenyl	C-066S	C-066S-TP	
2,2',3,4,5'-Pentachlorobiphenyl	C-087S	C-087S-TP	
2,2',4,5,5'-Pentachlorobiphenyl	C-101S	C-101S-TP	
2,3,3',4',6-Pentachlorobiphenyl	C-110S	C-110S-TP	
2,2',3,4,4',5-Hexachlorobiphenyl	C-137S	C-137S-TP	
2,2',3,4,4',5'-Hexachlorobiphenyl	C-138S	C-138S-TP	
2,2',3,4,5,5'-Hexachlorobiphenyl	C-141S	C-141S-TP	
2,2',3,5,5',6-Hexachlorobiphenyl	C-151S	C-151S-TP	
2,2',4,4',5,5'-Hexachlorobiphenyl	C-153S	C-153S-TP	
2,2',3,3',4,4',5-Heptachlorobiphenyl	C-170S	C-170S-TP	
2,2',3,4,4',5,5'-Heptachlorobiphenyl	C-180S	C-180S-TP	
2,2',3,4,4',5',6-Heptachlorobiphenyl	C-183S	C-183S-TP	
2,2',3,4',5,5',6-Heptachlorobiphenyl	C-187S	C-187S-TP	
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	C-206S	C-206S-TP	

Internal Standards

C-209S-H	1 x 1 mL
100 µg/mL in Hexane	
C-209S-H-10X	1 x 1 mL
1.0 mg/mL in Hexane	
Decachlorobiphenyl	

Internal and Surrogate Standard

CLP-032-H-5X	1 x 1 mL
1.0 mg/mL each in Hexane	
Decachlorobiphenyl	Tetrachloro- <i>m</i> -xylene

Surrogate Standard

M-8082-SS	1 x 1 mL
100 µg/mL in Hexane	
M-8082-SS-10X	1 x 1 mL
1.0 mg/mL in Hexane	
Tetrachloro- <i>m</i> -xylene	



Aroclors

(Industrial PCBs)

Aroclors

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

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

Aroclor Solutions in Hexane, 2 Concentrations (Individuals, PAKs, Sets)

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

Aroclor Neats (Individuals)

Aroclor #	Neat	Unit
Aroclor 1016	C-216N	100 mg
Aroclor 1221	C-221N-50MG	50 mg
Aroclor 1232	-----	-----
Aroclor 1242	C-242N-50MG	50 mg
Aroclor 1248	C-248N-50MG	50 mg
Aroclor 1254	C-254N-50MG	50 mg
Aroclor 1260	C-260N-50MG	50 mg
Aroclor 1262	C-262N-50MG	50 mg
Aroclor 1268	-----	-----

Aroclor-free Transformer Oil

T-W130 1 x 1 mL

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

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

Aroclors 1221 & 1254 Similar but Different

Reference Standards of Aroclor Mixtures (for 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, AccuStandard offers (as an exclusive) all four variations.

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

Solutions in these sets are 35 µg/mL in Isooctane

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

Technical Note

Major Isomer Components of Aroclor 1254

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

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

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

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

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

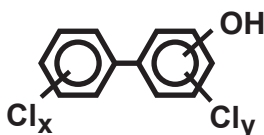
(1) Analysis of coplanar PCB congeners in Aroclors using alumina column cleanup. Jerry W. Anderson, ManTech Environmental Technology, Inc., R.S. Kerr Environmental Research Laboratory, U.S. Environmental Protection Agency, P.O. Box 1198, Ada, OK 74820 - Pittsburgh Conference, March 1992, New Orleans

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



Hydroxy PCBs

Compound	CAS No.	NEAT Cat. No.	Unit	100 µg/mL in Isooctane Cat. No.	1 mL
2-Hydroxy-5-chlorobiphenyl	607-12-5	HPCB-1001N	5 mg	HPCB-1001S	
4-Hydroxy-2-chlorobiphenyl	23719-22-4	HPCB-1002N	5 mg	HPCB-1002S	
4-Hydroxy-3-chlorobiphenyl	92-04-6	HPCB-1003N	5 mg	HPCB-1003S	
4-Hydroxy-4'-chlorobiphenyl	28034-99-3	HPCB-1004N	10 mg	HPCB-1004S	
2-Hydroxy-2',5'-dichlorobiphenyl	53905-30-9	HPCB-2001N	10 mg	HPCB-2001S	
3-Hydroxy-2',5'-dichlorobiphenyl	53905-29-6	HPCB-2002N	10 mg	HPCB-2002S	
4-Hydroxy-2',5'-dichlorobiphenyl	53905-28-5	HPCB-2003N	10 mg	HPCB-2003S	
4-Hydroxy-3,5-dichlorobiphenyl	1137-59-3	HPCB-2004N	10 mg	HPCB-2004S	
2-Hydroxy-2',3'-dichlorobiphenyl		HPCB-2005N	10 mg	HPCB-2005S	
2-Hydroxy-3',4'-dichlorobiphenyl		HPCB-2006N	10 mg	HPCB-2006S	
2-Hydroxy-2',4',6'-trichlorobiphenyl		HPCB-3001N	10 mg	HPCB-3001S	
2-Hydroxy-2',5,5'-trichlorobiphenyl		HPCB-3002N	10 mg	HPCB-3002S	
3-Hydroxy-2',4',6'-trichlorobiphenyl		HPCB-3003N	10 mg	HPCB-3003S	
4-Hydroxy-2,2',5'-trichlorobiphenyl	53905-33-2	HPCB-3004N	5 mg	HPCB-3004S	
4-Hydroxy-2',3,5'-trichlorobiphenyl		HPCB-3005N	5 mg	HPCB-3005S	
4-Hydroxy-2',4',6'-trichlorobiphenyl	14962-28-8	HPCB-3006N	10 mg	HPCB-3006S	
2-Hydroxy-2',3',4',5'-tetrachlorobiphenyl		HPCB-4001N	10 mg	HPCB-4001S	
2-Hydroxy-2',3',5',6'-tetrachlorobiphenyl		HPCB-4002N	10 mg	HPCB-4002S	
2-Hydroxy-2',4',5,6'-tetrachlorobiphenyl		HPCB-4003N	10 mg	HPCB-4003S	
3-Hydroxy-2',3',4',5'-tetrachlorobiphenyl	67651-37-0	HPCB-4004N	10 mg	HPCB-4004S	
3-Hydroxy-2',3',5',6'-tetrachlorobiphenyl		HPCB-4005N	10 mg	HPCB-4005S	
4-Hydroxy-2,2',4',6'-tetrachlorobiphenyl	150304-08-8	HPCB-4006N	5 mg	HPCB-4006S	
4-Hydroxy-2',3',4',5'-tetrachlorobiphenyl	67651-34-7	HPCB-4007N	10 mg	HPCB-4007S	
4-Hydroxy-2',3,4',6'-tetrachlorobiphenyl		HPCB-4008N	5 mg	HPCB-4008S	
4-Hydroxy-2',3,5',5'-tetrachlorobiphenyl		HPCB-4009N	10 mg	HPCB-4009S	
4-Hydroxy-2',3',5',6'-tetrachlorobiphenyl	14962-32-4	HPCB-4010N	10 mg	HPCB-4010S	
4'-Hydroxy-3,3',4,5'-tetrachlorobiphenyl	111810-41-4	-----	-----	HPCB-4011S	
3-Hydroxy-2,2',6,6'-tetrachlorobiphenyl		-----	-----	HPCB-4012S	
2-Hydroxy-2',3,5,6'-tetrachlorobiphenyl		-----	-----	HPCB-4013S	
5-Hydroxy-2,2',4,6'-tetrachlorobiphenyl		-----	-----	HPCB-4014S	
4,4'-Dihydroxy-2,2',6,6'-tetrachlorobiphenyl		-----	-----	HPCB-4015S	
4,6'-Dihydroxy-2,2',4',6'-tetrachlorobiphenyl		-----	-----	HPCB-4016S	
2-Hydroxy-2',3',4',5,5'-pentachlorobiphenyl	67651-36-9	HPCB-5001N	10 mg	HPCB-5001S	
2-Hydroxy-2',3',5,5',6'-pentachlorobiphenyl		HPCB-5002N	10 mg	HPCB-5002S	
4-Hydroxy-2,2',3',4',5'-pentachlorobiphenyl		HPCB-5003N	5 mg	HPCB-5003S	
4-Hydroxy-2,2',3',5',6'-pentachlorobiphenyl		HPCB-5004N	5 mg	HPCB-5004S	
4-Hydroxy-2',3,3',4',5'-pentachlorobiphenyl	67651-35-8	HPCB-5005N	5 mg	HPCB-5005S	
4-Hydroxy-2',3,3',5',6'-pentachlorobiphenyl		HPCB-5006N	5 mg	HPCB-5006S	
4-Hydroxy-2',3,4',5,6'-pentachlorobiphenyl		HPCB-5007N	10 mg	HPCB-5007S	
3-Hydroxy-2,2',4',5,5'-pentachlorobiphenyl	69278-58-6	-----	-----	HPCB-5008S	
4-Hydroxy-2,2',4',5,5'-pentachlorobiphenyl		-----	-----	HPCB-5009S	
2-Hydroxy-2',3,4',5,6'-pentachlorobiphenyl		-----	-----	HPCB-5010S	
4-Hydroxy-2',3,3',4',5,5'-hexachlorobiphenyl	158076-63-2	HPCB-6001N	10 mg	HPCB-6001S	
4-Hydroxy-2',3,3',5,5',6'-hexachlorobiphenyl		HPCB-6002N	10 mg	HPCB-6002S	
5-Hydroxy-2,2',3,4,4',5'-hexachlorobiphenyl		-----	-----	HPCB-6003S	
4'-Hydroxy-2,2',3,3',4,5,5'-heptachlorobiphenyl		-----	-----	HPCB-7001S	
3'-Hydroxy-2,2',3,4,4',5,6'-heptachlorobiphenyl		-----	-----	HPCB-7002S	
3'-Hydroxy-2,2',3,4,4',5,5'-heptachlorobiphenyl		-----	-----	HPCB-7003S	
5-Hydroxy-2,2',3,4,4',5,6'-heptachlorobiphenyl		-----	-----	HPCB-7004S	



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.

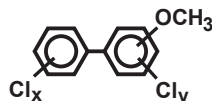
The problem with these newly found pollutants is that they are not commercial chemicals. This means that they are not readily available as reference materials. Not having a reference material makes the identification and quantification of these materials extremely difficult. In order to support the research 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

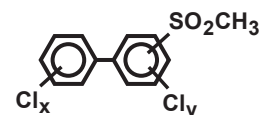
Methoxy PCBs

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



Methylsulfonyl PCB Congeners

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



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.

Hydroxybiphenyls

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



Halogenated Aromatics (other than PCBs)



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. AccuStandard now offers 20 PCT congeners to aid in the monitoring and environmental impact of these pollutants.

Polychlorinated Terphenyls (PCTs)

Compound	CAS No.	NEAT Cat. No.	Unit	In Toluene Conc.	Cat. No.	1 mL
<i>o</i> -Terphenyl	84-15-1	T-001N	100 mg	-----	----	--
<i>m</i> -Terphenyl	92-06-8	T-002N	100 mg	-----	----	--
<i>p</i> -Terphenyl	92-94-4	T-003N	100 mg	-----	----	--
Tetradecachloro- <i>o</i> -terphenyl		-----	-----	35 µg/mL	T-004S	
Tetradecachloro- <i>m</i> -terphenyl	42429-88-9	-----	-----	35 µg/mL	T-005S	
Tetradecachloro- <i>p</i> -terphenyl		-----	-----	35 µg/mL	T-006S	
4-Chloro- <i>o</i> -terphenyl		-----	-----	50 µg/mL	T-007S	
4-Chloro- <i>p</i> -terphenyl	1762-83-0	-----	-----	50 µg/mL	T-008S	
2,4-Dichloro- <i>p</i> -terphenyl	61576-83-8	-----	-----	50 µg/mL	T-009S	
2,5-Dichloro- <i>o</i> -terphenyl	61577-02-4	-----	-----	50 µg/mL	T-010S	
2,5-Dichloro- <i>m</i> -terphenyl		-----	-----	50 µg/mL	T-011S	
2,5-Dichloro- <i>p</i> -terphenyl	61576-86-1	-----	-----	50 µg/mL	T-012S	
2,4,6-Trichloro- <i>p</i> -terphenyl	57346-61-9	-----	-----	50 µg/mL	T-013S	
2,3,5,6-Tetrachloro- <i>p</i> -terphenyl	61576-99-6	-----	-----	50 µg/mL	T-014S	
2,4,4',6-Tetrachloro- <i>p</i> -terphenyl	61576-97-4	-----	-----	50 µg/mL	T-015S	
2,3,4,5,6-Pentachloro- <i>p</i> -terphenyl	61577-01-3	-----	-----	50 µg/mL	T-016S	
Aroclor 5432	63496-31-1	-----	-----	35 µg/mL	T-432S	
Aroclor 5442	12642-23-8	-----	-----	35 µg/mL	T-442S	
Aroclor 5460	11126-42-4	-----	-----	35 µg/mL	T-460S	
Aroclor 6050		-----	-----	35 µg/mL	T-6050S	

Perchlorinated Aromatics

Compound	CAS No.	NEAT Cat. No.	Unit	In Toluene Conc.	Cat. No.	1 mL
Decachlorobiphenyl	2051-24-3	C-209N	10 mg	-----	----	--
Hexachlorobenzene	118-74-1	A-012	100 mg	-----	----	--
Octachlorodibenzofuran	39001-02-0	F-801N	50 mg	50 µg/mL	F-801S	
Octachlorodibenzo- <i>p</i> -dioxin	3268-87-9	D-801N	50 mg	50 µg/mL	D-801S	
Octachloronaphthalene	2234-13-1	-----	-----	100 µg/mL	N-003S	
Octachlorostyrene	29082-74-4	-----	-----	35 µg/mL	PC-001S	
Perchlorinated <i>p,p'</i> -DDE		-----	-----	35 µg/mL	PC-002S	
Tetradecachloro- <i>o</i> -terphenyl		-----	-----	35 µg/mL	T-004S	
Tetradecachloro- <i>m</i> -terphenyl	42429-88-9	-----	-----	35 µg/mL	T-005S	
Tetradecachloro- <i>p</i> -terphenyl		-----	-----	35 µg/mL	T-006S	

Halogenated Aromatics (other than PCBs)

Compound	CAS No.	Conc	Matrix	Cat. No.	1 mL
Decafluorobiphenyl	434-90-2	10 µg/mL	Acetone	M-551.1-SS	
		0.1 mg/mL	AcCN	M-8310-SS	
		0.2 mg/mL	CH ₂ Cl ₂	M-625-04	
		1 mg/mL	Acetone	M-551.1-SS-100X	
		2 mg/mL	CH ₂ Cl ₂	M-625-04-10X	
4,4'-Dibromobiphenyl	92-86-4	0.1 mg/mL	Ethyl acetate	M-508.1-SS	
		0.2 mg/mL	CH ₂ Cl ₂	M-625-05	
		1 mg/mL	Acetone	M-8111-IS-20X	
		2 mg/mL	CH ₂ Cl ₂	M-625-05-10X	
4,4'-Dibromooctafluorobiphenyl	10386-84-2	0.2 mg/mL	CH ₂ Cl ₂	M-625-06	
		2 mg/mL	CH ₂ Cl ₂	M-625-06-10X	
2,2'-Difluorobiphenyl	388-82-9	0.2 mg/mL	CH ₂ Cl ₂	M-625-07	
		1 mg/mL	MeOH	M-1653-IIS	
		2 mg/mL	CH ₂ Cl ₂	M-625-07-10X	
		5 mg/mL	Acetone	M-1653-IIS-R	
2-Fluorobiphenyl	321-60-8	0.2 mg/mL	CH ₂ Cl ₂	M-625-09	
		2 mg/mL	CH ₂ Cl ₂	M-625-09-10X	
Halowax 1013	1321-64-8	0.1 mg/mL	MeOH	N-1013S	
Halowax 1014	1335-87-1	0.1 mg/mL	MeOH	N-1014S	
Halowax 1051		0.1 mg/mL	MeOH	N-1051S	
Halowax 1099	39450-05-0	0.1 mg/mL	MeOH	N-1099S	
		5 mg/mL	MeOH	AS-E0470	
Octachloronaphthalene	2234-13-1	100 µg/mL	MeOH	N-003S	



Halogenated Aromatics (other than PCBs)

PCNs were produced in high volume around 1910 in both Europe and the United States. In the United States, PCNs were called Halowax by New York based Union Carbide, which was subsequently taken over by Koppers of Pittsburgh, PA.

Polychlorinated Naphthalenes

Halowaxes (Koppers PCNs)

Compound	CAS No.	NEAT Cat. No.	Unit	100 µg/mL in MeOH Cat. No.	1 mL
Halowax 1013 (56 %Cl)	1321-64-8	-----	-----	N-1013S	
Halowax 1014 (62 %Cl)	1335-87-1	-----	-----	N-1014S	
Halowax 1051 (70 %Cl)		-----	-----	N-1051S	
Halowax 1099 (52 %Cl)	39450-05-0	-----	-----	N-1099S	

Polychlorinated Naphthalene Congeners

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

Chlorinated Diphenyl Ethers

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



Dibenzo-p-dioxin Congeners



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

Minimum purity 98%

Dibenzo-p-dioxin Congeners

Compound	CAS No.	NEAT Cat. No.	Unit	SOLUTION Cat. No.	Conc.	Solvent	1 mL
1-Chlorodibenzo- <i>p</i> -dioxin	39227-53-7	D-101N	25 mg	D-101S	50 µg/mL	Isooctane	
2-Chlorodibenzo- <i>p</i> -dioxin	39227-54-8	D-102N	50 mg	D-102S	50 µg/mL	Isooctane	
Dibenzo- <i>p</i> -dioxin	262-12-4	D-100N	10 mg	D-100S	50 µg/mL	Isooctane	
1,2-Dichlorodibenzo- <i>p</i> -dioxin		-----	-----	D-207S	50 µg/mL	Isooctane	
1,3-Dichlorodibenzo- <i>p</i> -dioxin		D-205N	10 mg	D-205S	50 µg/mL	Isooctane	
1,4-Dichlorodibenzo- <i>p</i> -dioxin		D-206N	10 mg	D-206S	50 µg/mL	Isooctane	
1,6-Dichlorodibenzo- <i>p</i> -dioxin	38178-38-0	D-201N	5 mg	D-201S	50 µg/mL	Isooctane	
2,3-Dichlorodibenzo- <i>p</i> -dioxin	29446-15-9	D-202N	5 mg	D-202S	50 µg/mL	Isooctane	
2,7-Dichlorodibenzo- <i>p</i> -dioxin	33857-26-0	D-203N	25 mg	D-203S	50 µg/mL	Isooctane	
2,8-Dichlorodibenzo- <i>p</i> -dioxin	38964-22-6	-----	-----	D-204S	50 µg/mL	Isooctane	
1,2,3-Trichlorodibenzo- <i>p</i> -dioxin	54536-17-3	D-301N	5 mg	D-301S	50 µg/mL	Isooctane	
1,2,4-Trichlorodibenzo- <i>p</i> -dioxin	39227-58-2	D-302N	10 mg	D-302S	50 µg/mL	Isooctane	
1,7,8-Trichlorodibenzo- <i>p</i> -dioxin	82306-65-8	D-303N	5 mg	D-303S	50 µg/mL	Isooctane	
2,3,7-Trichlorodibenzo- <i>p</i> -dioxin	33857-28-2	D-304N	5 mg	D-304S	50 µg/mL	Isooctane	
1,2,3,4-Tetrachlorodibenzo- <i>p</i> -dioxin	30746-58-8	D-401N	50 mg	D-401S	50 µg/mL	Toluene	
1,2,7,8-Tetrachlorodibenzo- <i>p</i> -dioxin	34816-53-0	D-402N	5 mg	D-402S	50 µg/mL	Toluene	
1,3,7,8-Tetrachlorodibenzo- <i>p</i> -dioxin	50585-46-1	D-403N	5 mg	D-403S	50 µg/mL	Toluene	
2,3,7,8-Tetrachlorodibenzo- <i>p</i> -dioxin	1746-01-6	D-404N	1 mg	APP-9-167	5 µg/mL	Toluene	
		-----	-----	M-613	10 µg/mL	Toluene	
		-----	-----	D-404S	50 µg/mL	Toluene	
1,3,6,8-Tetrachlorodibenzo- <i>p</i> -dioxin	33423-92-6	D-405N	5 mg	D-405S	50 µg/mL	Toluene	
1,2,8,9-Tetrachlorodibenzo- <i>p</i> -dioxin	116889-69-1	D-406N	5 mg	D-406S	50 µg/mL	Toluene	
1,3,7,9-Tetrachlorodibenzo- <i>p</i> -dioxin	116889-70-4	D-407N	5 mg	D-407S	50 µg/mL	Toluene	
1,2,6,8-Tetrachlorodibenzo- <i>p</i> -dioxin	67323-56-2	D-408N	1 mg	D-408S	50 µg/mL	Toluene	
1,2,6,7-Tetrachlorodibenzo- <i>p</i> -dioxin	41903-57-5	D-409N	5 mg	D-409S	50 µg/mL	Toluene	
1,2,3,4,7-Pentachlorodibenzo- <i>p</i> -dioxin	39227-61-7	D-503N	1 mg	D-503S	50 µg/mL	Toluene	
1,2,3,7,8-Pentachlorodibenzo- <i>p</i> -dioxin	40321-76-4	D-501N	5 mg	APP-9-168	5 µg/mL	Toluene	
		-----	-----	D-501S	50 µg/mL	Toluene	
1,2,3,8,9-Pentachlorodibenzo- <i>p</i> -dioxin	71925-18-3	D-504N	1 mg	D-504S	50 µg/mL	Toluene	
1,2,4,7,8-Pentachlorodibenzo- <i>p</i> -dioxin	58802-08-7	D-502N	5 mg	D-502S	50 µg/mL	Toluene	
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo- <i>p</i> -dioxin	71998-76-0/ 82291-37-0	D-505N	1 mg	D-505S	50 µg/mL	Toluene	
1,2,3,4,6,7-Hexachlorodibenzo- <i>p</i> -dioxin	58200-66-1	D-603N	1 mg	D-603S	50 µg/mL	Toluene	
1,2,3,4,7,8-Hexachlorodibenzo- <i>p</i> -dioxin	39227-28-6	D-601N	5 mg	APP-9-169	5 µg/mL	Toluene	
		-----	-----	D-601S	50 µg/mL	Toluene	
1,2,3,6,7,8-Hexachlorodibenzo- <i>p</i> -dioxin	57653-85-7	D-602N	1 mg	D-602S	50 µg/mL	Toluene	
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo- <i>p</i> -dioxin	39227-62-8/ 58802-09-8	D-604N	1 mg	D-604S	50 µg/mL	Toluene	
1,2,3,7,8,9-Hexachlorodibenzo- <i>p</i> -dioxin	19408-74-3	D-605N	1 mg	D-605S	50 µg/mL	Toluene	
1,2,3,4,6,7,8-Heptachlorodibenzo- <i>p</i> -dioxin	35822-46-9	D-701N	1 mg	D-701S	50 µg/mL	Toluene	
1,2,3,4,6,7,9-Heptachlorodibenzo- <i>p</i> -dioxin	58200-70-7	D-702N	5 mg	D-702S	50 µg/mL	Toluene	
Octachlorodibenzo- <i>p</i> -dioxin	3268-87-9	D-801N	50 mg	D-801S	50 µg/mL	Toluene	

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	Cat. No.	Conc.	Matrix	1 mL
1,3,7-Tribromodibenzo- <i>p</i> -dioxin	BDD-301S	10 µg/mL	Toluene	
	BDD-301S-2.5X	25 µg/mL	Toluene	
1,3,8-Tribromodibenzo- <i>p</i> -dioxin	BDD-302S	10 µg/mL	Toluene	
	BDD-302S-2.5X	25 µg/mL	Toluene	
2,3,7-Tribromodibenzo- <i>p</i> -dioxin	BDD-303S	10 µg/mL	Toluene	
	BDD-303S-2.5X	25 µg/mL	Toluene	
1,2,3,7-Tetrabromodibenzo- <i>p</i> -dioxin	BDD-401S	10 µg/mL	Toluene	
	BDD-401S-2.5X	25 µg/mL	Toluene	
1,2,3,8-Tetrabromodibenzo- <i>p</i> -dioxin	BDD-402S	10 µg/mL	Toluene	
	BDD-402S-2.5X	25 µg/mL	Toluene	
Tetrabromodibenzo- <i>p</i> -dioxin-Mixed Isomers	BDD-403S	10 µg/mL	Toluene	
1,2,4,7-Tetrabromodibenzo- <i>p</i> -dioxin / 1,2,4,8-Tetrabromodibenzo- <i>p</i> -dioxin	BDD-403S-2.5X	25 µg/mL	Toluene	
1,2,3,4-Tetrabromodibenzo- <i>p</i> -dioxin	BDD-404S	10 µg/mL	Toluene	
	BDD-404S-2.5X	25 µg/mL	Toluene	
2,3,7,8-Tetrabromodibenzo- <i>p</i> -dioxin	X-001	1 mg	NEAT	



Chlorodibenzo-p-dioxin Congeners

Canadian Method, Method 1613, 8280

Canadian Dioxin Mixtures

Custom Window Defining Mixture

D-WD 1 x 1 mL
20 ng/mL in Toluene 7 comps.

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

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

High Conc.
Low Cost

Custom Calibration Mixture

D-CAL 1 x 1 mL
20 ng/mL in Toluene 6 comps.

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

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

Standards of Interest

For more Canadian Methods see International Regional Section

Method 8280A Dioxins & Furans by HRGC/LRMS

Dioxin Mixture

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

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

Furan Mixture

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

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

Column Performance Check

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

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 1613 Dioxins & Furans by HRGC/HRMS

Method 1613 Precision and Recovery Standard

M-1613-PAR Bold (-04) 1 x 1 mL
M-1613-PAR-PAK 5 x 1 mL
At stated conc. (ng/mL) in Nonane 17 comps. **SAVE**

Calibration Set

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

2,3,7,8 Isomers Only Mix

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

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

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

Technical Note

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

Chlorinated Dibenzofuran Congeners



Minimum purity 98%

Chlorinated Dibenzofuran Congeners

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

Furans

ASTM D5837 Furanic Compounds in Electrical Insulating Liquids by High-Performance Liquid Chromatography (HPLC)

Furanic Compound Extraction Standard

D-5837-01

1000 µg/mL each in Acetonitrile

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

Custom Synthesized Rare Chemicals

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

See next page for
Custom Synthesis Services



Custom Synthesis

AccuStandard specializes in synthesizing chemicals of high purity to be used as reference standards. Custom synthesis capabilities range from milligram to kilogram scale. AccuStandard's Synthesis Department employs several PhD Organic Chemists with many years of pertinent academic and industrial experience. The experienced staff has developed hundreds of pure chemical compounds for companies, research, academic institutions and governmental agencies around the world.

AccuStandard is renowned for its quick response to customer requests for new compounds and its partnership in developing new methods. 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).

A comprehensive collection of brominated flame retardants together with some of their metabolites is constantly being extended. Among the more recent introduction of unique products is a variety of metabolites of the flame retardant tetradecabromodiphenoxybenzene (TDBDPB): hydroxylated and methoxylated polybrominated diphenoxybenzenes.

Over 80 hydroxy- and methoxy PBDEs as well as mixed bromo/chloro hydroxy- and methoxy-PBDEs have been added to the catalog due to requests by the research community.

The syntheses of many organic pollutants and their metabolites are 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 explosives and pesticides.

Synthesized Products:

- PCBs (all 209 congeners), hydroxy, methoxy, and methylsulfonyl metabolites
- Chloro- and bromodibenzodioxins and furans
- PBDEs (all 209 congeners), hydroxy, methoxy, and chloro metabolites
- Fluorinated PBDEs
- Polybrominated diphenoxybenzene, hydroxy, methoxy (BDPB/HBDPB/MOBDPB) metabolites
- Alpha-, beta- and gamma-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
- Other rare chemicals



Analytical Capabilities

- GC-MS, GC-FID, GC-ECD
- HPLC/UV, LC-MS
- NMR
- ICP, ICP-MS
- Access to additional analytical instrumentation if necessary

Synthesis and Purification

- Milligram to Kilogram Glassware
- Inert Conditions Equipment
- Microwave Synthesis System
- High Performance Flash Chromatography
- Distillation Equipment – High Vacuum Distillation, Molecular Distillation (Kugelrohr)
- Parr Pressure and Hydrogenation Reactor



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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 the past 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. AccuStandard has synthesized all of the 209 possible congeners and over 80 of their hydroxy and methoxy metabolites. We offer a wide variety of PBDE mixtures and calibration sets which are designed for US EPA and International PBDE monitoring.

The industrial production of the technical penta-BDE mixtures is to be eliminated under the Stockholm Convention of 2001 because of their toxicity and persistence. Technical octa-BDE mixtures have been banned by the EU since 2004. In the USA the ban of this group of BDEs has been implemented since 2007.

There are many other brominated compounds in use as alternatives to the PBDE flame retardants. Selected substances of these industrial BFRs are monitored by the international community for their environmental impact. We offer a number of these compounds to assist these monitoring efforts. Degradation products and metabolites of these "emerging" BFRs are of increasing interest. AccuStandard has been synthesizing these compounds upon request and continues to add them to the product line. Examples are 2,3,4,5-tetrabromobenzoic acid, a degradation product of di(2-ethylhexyl)tetrabromophthalate, and dimethyl- and diglycidyl ethers of both tetrabromobisphenol A and tetrabromobisphenol S. We have some flame retardants like Hexabromocyclododecane (HBBD) and Dechlorane Plus as technical mixtures and their major isomers in pure form.

As with the BFRs, the widespread use of organophosphate flame retardants (OP-FRs) has raised concerns about their impact on the environment, human and animal health. Analysis of indoor air and dust has shown that the concentration of OP-FRs appear to be higher than that of PBDEs. To aid in the on-going toxicological and environmental studies of these compounds we provide a number of the most widely used OP-FRs for use as reference standards.

Custom standards are an economical and efficient way to have a standard prepared for your individual needs. Upon special request, compounds can be offered in various concentrations and mixes or as neat materials.



Polybrominated Diphenyl Ether (PBDE) Congeners

Polybrominated Diphenyl Ethers (PBDEs) Congeners

Compound	CAS No.	Conc.	Solvent	Cat. No.	1 mL
2-Bromodiphenyl ether	7025-06-1	50 µg/mL	Isooctane	BDE-001S	
3-Bromodiphenyl ether	6876-00-2	50 µg/mL	Isooctane	BDE-002S	
4-Bromodiphenyl ether	101-55-3	50 µg/mL	Isooctane	BDE-003S	
2,2'-Dibromodiphenyl ether	51452-87-0	50 µg/mL	Isooctane	BDE-004S	
2,3'-Dibromodiphenyl ether	446254-14-4	50 µg/mL	Isooctane	BDE-005S	
2,3'-Dibromodiphenyl ether	147217-72-9	50 µg/mL	Isooctane	BDE-006S	
2,4'-Dibromodiphenyl ether	171977-44-9	50 µg/mL	Isooctane	BDE-007S	
2,4'-Dibromodiphenyl ether	147217-71-8	50 µg/mL	Isooctane	BDE-008S	
2,5'-Dibromodiphenyl ether	337513-66-3	50 µg/mL	Isooctane	BDE-009S	
2,6'-Dibromodiphenyl ether	51930-04-2	50 µg/mL	Isooctane	BDE-010S	
3,3'-Dibromodiphenyl ether	6903-63-5	50 µg/mL	Isooctane	BDE-011S	
3,4'-Dibromodiphenyl ether	189084-59-1	50 µg/mL	Isooctane	BDE-012S	
3,4'-Dibromodiphenyl ether	83694-71-7	50 µg/mL	Isooctane	BDE-013S	
3,5'-Dibromodiphenyl ether	46438-88-4	50 µg/mL	Isooctane	BDE-014S	
4,4'-Dibromodiphenyl ether	2050-47-7	50 µg/mL	Isooctane	BDE-015S	
2,2',3'-Tribromodiphenyl ether	147217-74-1	50 µg/mL	Isooctane	BDE-016S	
2,2',4'-Tribromodiphenyl ether	147217-75-2	50 µg/mL	Isooctane	BDE-017S	
2,2',5'-Tribromodiphenyl ether	407606-55-7	50 µg/mL	Isooctane	BDE-018S	
2,2',6'-Tribromodiphenyl ether	147217-73-0	50 µg/mL	Isooctane	BDE-019S	
2,3,3'-Tribromodiphenyl ether	147217-76-3	50 µg/mL	Isooctane	BDE-020S	
2,3,4'-Tribromodiphenyl ether	337513-67-4	50 µg/mL	Isooctane	BDE-021S	
2,3,4'-Tribromodiphenyl ether	446254-15-5	50 µg/mL	Isooctane	BDE-022S	
2,3,5'-Tribromodiphenyl ether	446254-16-6	50 µg/mL	Isooctane	BDE-023S	
2,3,6'-Tribromodiphenyl ether		50 µg/mL	Isooctane	BDE-024S	
2,3',4'-Tribromodiphenyl ether	147217-77-4	50 µg/mL	Isooctane	BDE-025S	
2,3',5'-Tribromodiphenyl ether	337513-75-4	50 µg/mL	Isooctane	BDE-026S	
2,3',6'-Tribromodiphenyl ether	337513-53-8	50 µg/mL	Isooctane	BDE-027S	
2,4,4'-Tribromodiphenyl ether	41318-75-6	50 µg/mL	Isooctane	BDE-028S	
2,4,5'-Tribromodiphenyl ether	337513-56-1	50 µg/mL	Isooctane	BDE-029S	
2,4,6'-Tribromodiphenyl ether	155999-95-4	50 µg/mL	Isooctane	BDE-030S	
2,4',5'-Tribromodiphenyl ether	65075-08-3	50 µg/mL	Isooctane	BDE-031S	
2,4',6'-Tribromodiphenyl ether	189084-60-4	50 µg/mL	Isooctane	BDE-032S	
2',3,4'-Tribromodiphenyl ether	147217-78-5	50 µg/mL	Isooctane	BDE-033S	
2',3,5'-Tribromodiphenyl ether	446254-17-7	50 µg/mL	Isooctane	BDE-034S	
3,3',4'-Tribromodiphenyl ether	147217-80-9	50 µg/mL	Isooctane	BDE-035S	
3,3',5'-Tribromodiphenyl ether	147217-79-6	50 µg/mL	Isooctane	BDE-036S	
3,4,4'-Tribromodiphenyl ether	147217-81-0	50 µg/mL	Isooctane	BDE-037S	
3,4,5'-Tribromodiphenyl ether	337513-54-9	50 µg/mL	Isooctane	BDE-038S	
3,4',5'-Tribromodiphenyl ether		50 µg/mL	Isooctane	BDE-039S	
2,2',3,3'-Tetrabromodiphenyl ether		50 µg/mL	Isooctane	BDE-040S	
2,2',3,4'-Tetrabromodiphenyl ether	337513-68-5	50 µg/mL	Isooctane	BDE-041S	
2,2',3,4'-Tetrabromodiphenyl ether	446254-18-8	50 µg/mL	Isooctane	BDE-042S	
2,2',3,5'-Tetrabromodiphenyl ether	446254-19-9	50 µg/mL	Isooctane	BDE-043S	
2,2',3,5'-Tetrabromodiphenyl ether	446254-20-2	50 µg/mL	Isooctane	BDE-044S	
2,2',3,6'-Tetrabromodiphenyl ether		50 µg/mL	Isooctane	BDE-045S	
2,2',3,6'-Tetrabromodiphenyl ether	446254-22-4	50 µg/mL	Isooctane	BDE-046S	
2,2',4,4'-Tetrabromodiphenyl ether	5436-43-1	50 µg/mL	Isooctane	BDE-047S	
2,2',4,5'-Tetrabromodiphenyl ether	337513-55-0	50 µg/mL	Isooctane	BDE-048S	
2,2',4,5'-Tetrabromodiphenyl ether	243982-82-3	50 µg/mL	Isooctane	BDE-049S	
2,2',4,6'-Tetrabromodiphenyl ether	446254-23-5	50 µg/mL	Isooctane	BDE-050S	
2,2',4,6'-Tetrabromodiphenyl ether	189084-57-9	50 µg/mL	Isooctane	BDE-051S	
2,2',5,5'-Tetrabromodiphenyl ether	446254-24-6	50 µg/mL	Isooctane	BDE-052S	
2,2',5,6'-Tetrabromodiphenyl ether	446254-25-7	50 µg/mL	Isooctane	BDE-053S	
2,2',6,6'-Tetrabromodiphenyl ether		50 µg/mL	Isooctane	BDE-054S	
2,3,3',4'-Tetrabromodiphenyl ether	40088-47-9	50 µg/mL	Isooctane	BDE-055S	
2,3,3',4'-Tetrabromodiphenyl ether		50 µg/mL	Isooctane	BDE-056S	
2,3,3',5'-Tetrabromodiphenyl ether		50 µg/mL	Isooctane	BDE-057S	
2,3,3',5'-Tetrabromodiphenyl ether		50 µg/mL	Isooctane	BDE-058S	
2,3,3',6'-Tetrabromodiphenyl ether		50 µg/mL	Isooctane	BDE-059S	
2,3,4,4'-Tetrabromodiphenyl ether	446254-31-5	50 µg/mL	Isooctane	BDE-060S	
2,3,4,5'-Tetrabromodiphenyl ether	446254-32-6	50 µg/mL	Isooctane	BDE-061S	
2,3,4,6'-Tetrabromodiphenyl ether	446254-33-7	50 µg/mL	Isooctane	BDE-062S	
2,3,4',5'-Tetrabromodiphenyl ether	446254-34-8	50 µg/mL	Isooctane	BDE-063S	
2,3,4',6'-Tetrabromodiphenyl ether		50 µg/mL	Isooctane	BDE-064S	
2,3,5,6'-Tetrabromodiphenyl ether		50 µg/mL	Isooctane	BDE-065S	
2,3',4,4'-Tetrabromodiphenyl ether	189084-61-5	50 µg/mL	Isooctane	BDE-066S	
2,3',4,5'-Tetrabromodiphenyl ether	446254-37-1	50 µg/mL	Isooctane	BDE-067S	
2,3',4,5'-Tetrabromodiphenyl ether	446254-38-2	50 µg/mL	Isooctane	BDE-068S	
2,3',4,6'-Tetrabromodiphenyl ether	327185-09-1	50 µg/mL	Isooctane	BDE-069S	
2,3',4',5'-Tetrabromodiphenyl ether	446254-39-3	50 µg/mL	Isooctane	BDE-070S	
2,3',4',6'-Tetrabromodiphenyl ether	189084-62-6	50 µg/mL	Isooctane	BDE-071S	
2,3',5,5'-Tetrabromodiphenyl ether	446254-40-6	50 µg/mL	Isooctane	BDE-072S	
2,3',5,6'-Tetrabromodiphenyl ether	446254-41-7	50 µg/mL	Isooctane	BDE-073S	
2,4,4',5'-Tetrabromodiphenyl ether	446254-42-8	50 µg/mL	Isooctane	BDE-074S	
2,4,4',6'-Tetrabromodiphenyl ether	189084-63-7	50 µg/mL	Isooctane	BDE-075S	



Technical Note

For specific applications (e.g. toxicological studies) that require absolute dioxin and furan free PBDEs, contact Technical Service.

Polybrominated Diphenyl Ether (PBDE) Congeners



Polybrominated Diphenyl Ethers (PBDEs) Congeners

Compound	CAS No.	Conc.	Solvent	Cat. No.	1 mL
2,3,4,5-Tetrabromodiphenyl ether	446254-43-9	50 µg/mL	Isooctane	BDE-076S	
3,3',4,4'-Tetrabromodiphenyl ether	93703-48-1	50 µg/mL	Isooctane	BDE-077S	
3,3',4,5-Tetrabromodiphenyl ether	446254-45-1	50 µg/mL	Isooctane	BDE-078S	
3,3',4,5'-Tetrabromodiphenyl ether	446254-48-4	50 µg/mL	Isooctane	BDE-079S	
3,3',5,5'-Tetrabromodiphenyl ether	103173-66-6	50 µg/mL	Isooctane	BDE-080S	
3,4,4',5-Tetrabromodiphenyl ether	446254-50-8	50 µg/mL	Isooctane	BDE-081S	
2,2',3,3',4-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-082S	
2,2',3,3',5-Pentabromodiphenyl ether	446254-51-9	50 µg/mL	Isooctane	BDE-083S	
2,2',3,3',6-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-084S	
2,2',3,4,4'-Pentabromodiphenyl ether	182346-21-0	50 µg/mL	Isooctane	BDE-085S	
2,2',3,4,5-Pentabromodiphenyl ether	446254-53-1	50 µg/mL	Isooctane	BDE-086S	
2,2',3,4,5'-Pentabromodiphenyl ether	446254-54-2	50 µg/mL	Isooctane	BDE-087S	
2,2',3,4,6-Pentabromodiphenyl ether	446254-55-3	50 µg/mL	Isooctane	BDE-088S	
2,2',3,4,6'-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-089S	
2,2',3,4',5-Pentabromodiphenyl ether	446254-57-5	50 µg/mL	Isooctane	BDE-090S	
2,2',3,4',6-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-091S	
2,2',3,5,5'-Pentabromodiphenyl ether	446254-59-7	50 µg/mL	Isooctane	BDE-092S	
2,2',3,5,6-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-093S	
2,2',3,5,6'-Pentabromodiphenyl ether	446254-61-1	50 µg/mL	Isooctane	BDE-094S	
2,2',3,5',6-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-095S	
2,2',3,6,6'-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-096S	
2,2',3',4,5-Pentabromodiphenyl ether	446254-64-4	50 µg/mL	Isooctane	BDE-097S	
2,2',3',4,6-Pentabromodiphenyl ether	38463-82-0	50 µg/mL	Isooctane	BDE-098S	
2,2',4,4',5-Pentabromodiphenyl ether	60348-60-9	50 µg/mL	Isooctane	BDE-099S	
2,2',4,4',6-Pentabromodiphenyl ether	189084-64-8	50 µg/mL	Isooctane	BDE-100S	
2,2',4,5,5'-Pentabromodiphenyl ether	446254-65-5	50 µg/mL	Isooctane	BDE-101S	
2,2',4,5,6'-Pentabromodiphenyl ether	446254-66-6	50 µg/mL	Isooctane	BDE-102S	
2,2',4,5',6-Pentabromodiphenyl ether	446254-67-7	50 µg/mL	Isooctane	BDE-103S	
2,2',4,6,6'-Pentabromodiphenyl ether	446254-68-8	50 µg/mL	Isooctane	BDE-104S	
2,3,3',4,4'-Pentabromodiphenyl ether	373594-78-6	50 µg/mL	Isooctane	BDE-105S	
2,3,3',4,5-Pentabromodiphenyl ether	446254-69-9	50 µg/mL	Isooctane	BDE-106S	
2,3,3',4',5-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-107S	
2,3,3',4,5'-Pentabromodiphenyl ether	446254-71-3	50 µg/mL	Isooctane	BDE-108S	
2,3,3',4,6-Pentabromodiphenyl ether	446254-72-4	50 µg/mL	Isooctane	BDE-109S	
2,3,3',4',6-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-110S	
2,3,3',5,5'-Pentabromodiphenyl ether	446254-74-6	50 µg/mL	Isooctane	BDE-111S	
2,3,3',5,6-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-112S	
2,3,3',5',6-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-113S	
2,3,4,4',5-Pentabromodiphenyl ether	446254-77-9	50 µg/mL	Isooctane	BDE-114S	
2,3,4,4',6-Pentabromodiphenyl ether	446254-78-0	50 µg/mL	Isooctane	BDE-115S	
2,3,4,5,6-Pentabromodiphenyl ether	189084-65-9	50 µg/mL	Isooctane	BDE-116S	
2,3,4',5,6-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-117S	
2,3',4,4',5-Pentabromodiphenyl ether	446254-80-4	50 µg/mL	Isooctane	BDE-118S	
2,3',4,4',6-Pentabromodiphenyl ether	189084-66-0	50 µg/mL	Isooctane	BDE-119S	
2,3',4,5,5'-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-120S	
2,3',4,5',6-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-121S	
2',3,3',4,5-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-122S	
2',3,4,4',5-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-123S	
2',3,4,5,5'-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-124S	
2',3,4,5,6'-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-125S	
3,3',4,4',5-Pentabromodiphenyl ether	366791-32-4	50 µg/mL	Isooctane	BDE-126S	
3,3',4,5,5'-Pentabromodiphenyl ether	446254-86-0	50 µg/mL	Isooctane	BDE-127S	
2,2',3,3',4,4'-Hexabromodiphenyl ether	182677-28-7	50 µg/mL	Isooctane	BDE-128S	
2,2',3,3',4,5-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-129S	
2,2',3,3',4,5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-130S	
2,2',3,3',4,6-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-131S	
2,2',3,3',4,6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-132S	
2,2',3,3',5,5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-133S	
2,2',3,3',5,6-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-134S	
2,2',3,3',5,6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-135S	
2,2',3,3',6,6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-136S	
2,2',3,4,4',5-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-137S	
2,2',3,4,4',5'-Hexabromodiphenyl ether	182677-30-1	50 µg/mL	Isooctane	BDE-138S	
2,2',3,4,4',6-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-139S	
2,2',3,4,4',6'-Hexabromodiphenyl ether	243982-83-4	50 µg/mL	Isooctane	BDE-140S	
2,2',3,4,5,5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-141S	
2,2',3,4,5,6-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-142S	
2,2',3,4,5,6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-143S	
2,2',3,4,5',6-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-144S	
2,2',3,4,6,6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-145S	
2,2',3,4',5,5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-146S	
2,2',3,4',5,6-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-147S	
2,2',3,4',5,6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-148S	
2,2',3,4',5',6-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-149S	
2,2',3,4',6,6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-150S	

PBDE Congeners continued on next page

Flame Retardant Standards Guide



This guide includes chemical structures, formulas, and molecular weights.

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Polybrominated Diphenyl Ether (PBDE) Congeners

Polybrominated Diphenyl Ethers (PBDEs) Congeners

Compound	CAS No.	Conc.	Solvent	Cat. No.	1 mL
2,2',3,5,5',6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-151S	
2,2',3,5,6,6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-152S	
2,2',4,4',5,5'-Hexabromodiphenyl ether	68631-49-2	50 µg/mL	Isooctane	BDE-153S	
2,2',4,4',5,6'-Hexabromodiphenyl ether	207122-15-4	50 µg/mL	Isooctane	BDE-154S	
2,2',4,4',6,6'-Hexabromodiphenyl ether	35854-94-5	50 µg/mL	Isooctane	BDE-155S	
2,3,3',4,4',5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-156S	
2,3,3',4,4',5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-157S	
2,3,3',4,4',6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-158S	
2,3,3',4,5,5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-159S	
2,3,3',4,5,6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-160S	
2,3,3',4,5',6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-161S	
2,3,3',4',5,5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-162S	
2,3,3',4',5,6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-163S	
2,3,3',4',5',6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-164S	
2,3,3',5,5',6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-165S	
2,3,4,4',5,6'-Hexabromodiphenyl ether	189084-58-0	50 µg/mL	Isooctane	BDE-166S	
2,3',4,4',5,5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-167S	
2,3',4,4',5',6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-168S	
3,3',4,4',5,5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-169S	
2,2',3,3',4,4',5'-Heptabromodiphenyl ether	327185-13-7	50 µg/mL	Isooctane	BDE-170S	
2,2',3,3',4,4',6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-171S	
2,2',3,3',4,5,5'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-172S	
2,2',3,3',4,5,6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-173S	
2,2',3,3',4,5,6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-174S	
2,2',3,3',4,5',6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-175S	
2,2',3,3',4,6,6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-176S	
2,2',3,3',4',5,6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-177S	
2,2',3,3',5,5',6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-178S	
2,2',3,3',5,6,6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-179S	
2,2',3,4,4',5,5'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-180S	
2,2',3,4,4',5,6'-Heptabromodiphenyl ether	189084-67-1	50 µg/mL	Isooctane	BDE-181S	
2,2',3,4,4',5',6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-182S	
2,2',3,4,4',5',6'-Heptabromodiphenyl ether	207122-16-5	50 µg/mL	Isooctane	BDE-183S	
2,2',3,4,4',6,6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-184S	
2,2',3,4,5,5',6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-185S	
2,2',3,4,5,6,6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-186S	
2,2',3,4',5,5',6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-187S	
2,2',3,4',5,6,6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-188S	
2,3,3',4,4',5,5'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-189S	
2,3,3',4,4',5,6'-Heptabromodiphenyl ether	189084-68-2	50 µg/mL	Isooctane	BDE-190S	
2,3,3',4,4',5',6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-191S	
2,3,3',4,5,5',6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-192S	
2,3,3',4',5,5',6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-193S	
2,2',3,3',4,4',5,5'-Octabromodiphenyl ether		50 µg/mL	Isooctane	BDE-194S	
2,2',3,3',4,4',5,6'-Octabromodiphenyl ether		50 µg/mL	Isooctane	BDE-195S	
2,2',3,3',4,4',5,6'-Octabromodiphenyl ether		50 µg/mL	Isooctane	BDE-196S	
2,2',3,3',4,4',6,6'-Octabromodiphenyl ether		50 µg/mL	Isooctane	BDE-197S	
2,2',3,3',4,5,5',6'-Octabromodiphenyl ether		50 µg/mL	Isooctane	BDE-198S	
2,2',3,3',4,5,5',6'-Octabromodiphenyl ether		25 µg/mL	Isooctane	BDE-199S-0.5X	
2,2',3,3',4,5,6,6'-Octabromodiphenyl ether		25 µg/mL	Isooctane	BDE-200S-0.5X	
2,2',3,3',4,5',6,6'-Octabromodiphenyl ether		50 µg/mL	Isooctane	BDE-201S	
2,2',3,3',5,5',6,6'-Octabromodiphenyl ether		50 µg/mL	Isooctane	BDE-202S	
2,2',3,4,4',5,5',6'-Octabromodiphenyl ether	337513-72-1	50 µg/mL	Isooctane	BDE-203S	
2,2',3,4,4',5,6,6'-Octabromodiphenyl ether		50 µg/mL	Isooctane	BDE-204S	
2,3,3',4,4',5,5',6'-Octabromodiphenyl ether	446255-56-7	50 µg/mL	Isooctane	BDE-205S	
2,2',3,3',4,4',5,5',6'-Nonabromodiphenyl ether	63387-28-0	50 µg/mL	Isooctane	BDE-206S	
2,2',3,3',4,4',5,6,6'-Nonabromodiphenyl ether	437701-79-6	50 µg/mL	Isooctane	BDE-207S-R1	
2,2',3,3',4,5,5',6,6'-Nonabromodiphenyl ether		50 µg/mL	Isooctane	BDE-208S	
Decabromodiphenyl ether	1163-19-5	50 µg/mL	Isooctane: Toluene (90:10)	BDE-209S	
Internal Standard Short Form (4'-CI-BDE-208)					
4'-Chloro-2,2',3,3',4,5,5',6,6'-Nonabromodiphenyl ether		10 µg/mL	Isooctane	CBDE-001S-0.2X	
		50 µg/mL	Isooctane	CBDE-001S	



Polybrominated Diphenyl Ether (PBDE)

Tech Grade PBDEs, Specific Mixes & Calibration Curve



Technical Grade PBDEs

PBDE Technical Grade

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

Bromkal™ is a registered Trade Mark 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)	

Specific Mixtures

PBDEs Common in the 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	

Method 527 - PBDE Standard

M-527-BDE	1 x 1 mL
50 µg/mL each in Isooctane:Ethyl Acetate (80:20)	5 comps.
47 2,2',4,4'-Tetrabromodiphenyl ether	
100 2,2',4,4',6-Pentabromodiphenyl ether	
99 2,2',4,4',5-Pentabromodiphenyl ether	
153 2,2',4,4',5,5'-Hexabromodiphenyl ether	
2,2',4,4',5,5'-Hexabromobiphenyl	

Calibration Curve

ISO/DIS 22032 Calibration Curve Set

ISO/DIS-22032-SET

At stated conc. (ng/mL) in Isooctane

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

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

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

3,3',4,4'-Tetrabromodiphenyl ether

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

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

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



EPA Method 1614

Method 1614 Brominated Diphenyl Ethers 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	1 x 1 mL
At stated conc. (µg/mL) in Isooctane	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	1 x 1 mL
At stated conc. (µg/mL) in Isooctane	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.

Calibration Mix

BDE-CM	1 x 1 mL
At stated conc. (µg/mL) in Isooctane	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	1 x 1 mL
At stated conc. (ng/mL) in Isooctane	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	8 x 1 mL
50 µg/mL each in Isooctane	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



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.

AccuStandard recognizes the significance of this on-going research and is supporting it by providing the necessary reference standards. Please check the website for the latest update of synthesized OH- and MeO-PBDEs, or request specific congeners to be synthesized.

Short Form	Compound	Conc.	Solvent	Cat. No.	1 mL
Hydroxy					
2'-OH-BDE-003	2'-Hydroxy-4-monobromodiphenyl ether	50 µg/mL	AcCN	HBDE-1001S-CN	
3'-OH-BDE-007	3'-Hydroxy-2,4-dibromodiphenyl ether	50 µg/mL	AcCN	HBDE-2001S-CN	
2'-OH-BDE-007	2'-Hydroxy-2,4-dibromodiphenyl ether	10 µg/mL	AcCN	HBDE-2002S-CN-0.2X	
2'-OH-BDE-009	2'-Hydroxy-2,5-dibromodiphenyl ether	50 µg/mL	AcCN	HBDE-2003S-CN	
4'-OH-BDE-007	4'-Hydroxy-2,4-dibromodiphenyl ether	10 µg/mL	AcCN	HBDE-2004S-CN-0.2X	
		50 µg/mL	AcCN	HBDE-2004S-CN	
4'-OH-BDE-017	4'-Hydroxy-2,2',4-tribromodiphenyl ether	50 µg/mL	AcCN	HBDE-3001S-CN	
3'-OH-BDE-028	3'-Hydroxy-2,4,4'-tribromodiphenyl ether	50 µg/mL	AcCN	HBDE-3002S-CN	
2'-OH-BDE-028	2'-Hydroxy-2,4,4'-tribromodiphenyl ether	50 µg/mL	AcCN	HBDE-3003S-CN	
5'-OH-BDE-025	5'-Hydroxy-2,3',4-tribromodiphenyl ether	50 µg/mL	AcCN	HBDE-3004S-CN	
3'-OH-BDE-029	3'-Hydroxy-2,4,5-tribromodiphenyl ether	50 µg/mL	AcCN	HBDE-3005S-CN	
3'-OH-BDE-030	3'-Hydroxy-2,4,6-tribromodiphenyl ether	50 µg/mL	AcCN	HBDE-3006S-CN	
4'-OH-BDE-030	4'-Hydroxy-2,4,6-tribromodiphenyl ether	50 µg/mL	AcCN	HBDE-3007S-CN	
4'-OH-BDE-042	4'-Hydroxy-2,2',3,4'-tetrabromodiphenyl ether	10 µg/mL	AcCN	HBDE-4001S-CN-0.2X	
4'-OH-BDE-049	4'-Hydroxy-2,2',4,5'-tetrabromodiphenyl ether	10 µg/mL	AcCN	HBDE-4002S-CN-0.2X	
3'-OH-BDE-047	3'-Hydroxy-2,2',4,4'-tetrabromodiphenyl ether	50 µg/mL	AcCN	HBDE-4003S-CN	
5'-OH-BDE-047	5'-Hydroxy-2,2',4,4'-tetrabromodiphenyl ether	50 µg/mL	AcCN	HBDE-4004S-CN	
6'-OH-BDE-047	6'-Hydroxy-2,2',4,4'-tetrabromodiphenyl ether	10 µg/mL	AcCN	HBDE-4005S-CN-0.2X	
		10 µg/mL	Toluene	HBDE-4005S-T-0.2X	
2'-OH-BDE-068	2'-Hydroxy-2,3',4,5'-tetrabromodiphenyl ether	10 µg/mL	AcCN	HBDE-4006S-CN-0.2X	
		10 µg/mL	Toluene	HBDE-4006S-T-0.2X	
		50 µg/mL	AcCN	HBDE-4006S-CN	
		50 µg/mL	Toluene	HBDE-4006S-T	
6'-OH-BDE-066	6'-Hydroxy-2,3',4,4'-tetrabromodiphenyl ether	50 µg/mL	AcCN	HBDE-4008S-CN	
4'-OH-BDE-069	4'-Hydroxy-2,3',4,6'-tetrabromodiphenyl ether	50 µg/mL	AcCN	HBDE-4010S-CN	
4'-OH-BDE-048	4'-Hydroxy-2,2',4,5'-tetrabromodiphenyl ether	50 µg/mL	AcCN	HBDE-4011S-CN	
6'-OH-BDE-061	6'-Hydroxy-2,3,4,5'-tetrabromodiphenyl ether	50 µg/mL	AcCN	HBDE-4012S-CN	
4'-OH-BDE-090	4'-Hydroxy-2,2',3,4',5'-pentabromodiphenyl ether	10 µg/mL	AcCN	HBDE-5001S-CN-0.2X	
6'-OH-BDE-085	6'-Hydroxy-2,2',3,4,4'-pentabromodiphenyl ether	10 µg/mL	AcCN	HBDE-5002S-CN-0.2X	
6'-OH-BDE-087	6'-Hydroxy-2,2',3,4,5'-pentabromodiphenyl ether	10 µg/mL	AcCN	HBDE-5003S-CN-0.2X	
5'-OH-BDE-100	5'-Hydroxy-2,2',4,4',6'-pentabromodiphenyl ether	10 µg/mL	AcCN	HBDE-5004S-CN-0.2X	
6'-OH-BDE-082	6'-Hydroxy-2,2',3,3',4'-pentabromodiphenyl ether	10 µg/mL	AcCN	HBDE-5005S-CN-0.2X	
6'-OH-BDE-099	6'-Hydroxy-2,2',4,4',5'-pentabromodiphenyl ether	10 µg/mL	AcCN	HBDE-5006S-CN-0.2X	
5'-OH-BDE-099	5'-Hydroxy-2,2',4,4',5'-pentabromodiphenyl ether	10 µg/mL	AcCN	HBDE-5007S-CN-0.2X	
3'-OH-BDE-100	3'-Hydroxy-2,2',4,4',6'-pentabromodiphenyl ether	50 µg/mL	AcCN	HBDE-5008S-CN	
4'-OH-BDE-101	4'-Hydroxy-2,2',4,5,5'-pentabromodiphenyl ether	50 µg/mL	AcCN	HBDE-5009S-CN	
4'-OH-BDE-121	4'-Hydroxy-2,3',4,5',6'-pentabromodiphenyl ether	50 µg/mL	AcCN	HBDE-5010S-CN	
6'-OH-BDE-123	6'-Hydroxy-2',3,4,4',5'-pentabromodiphenyl ether	50 µg/mL	AcCN	HBDE-5011S-CN	
6'-OH-BDE-157	6'-Hydroxy-2,3,3',4,4',5'-hexabromodiphenyl ether	10 µg/mL	AcCN	HBDE-6001S-CN-0.2X	
6'-OH-BDE-140	6'-Hydroxy-2,2',3,4,4',6'-hexabromodiphenyl ether	10 µg/mL	AcCN	HBDE-6002S-CN-0.2X	
3'-OH-BDE-154	3'-Hydroxy-2,2',4,4',5,6'-hexabromodiphenyl ether	10 µg/mL	AcCN	HBDE-6003S-CN-0.2X	
6'-OH-BDE-137	6'-Hydroxy-2,2',3,4,4',5'-hexabromodiphenyl ether	10 µg/mL	AcCN	HBDE-6004S-CN-0.2X	
3'-OH-BDE-155	3'-Hydroxy-2,2',4,4',6,6'-hexabromodiphenyl ether	10 µg/mL	AcCN	HBDE-6005S-CN-0.2X	
		50 µg/mL	AcCN	HBDE-6005S-CN	
4'-OH-BDE-146	4'-Hydroxy-2,2',3,4',5,5'-hexabromodiphenyl ether	10 µg/mL	AcCN	HBDE-6006S-CN-0.2X	
		50 µg/mL	AcCN	HBDE-6006S-CN	190
		50 µg/mL	Isooctane	HBDE-6006S	
4'-OH-BDE-187	4'-Hydroxy-2,2',3,4',5,5',6'-heptabromodiphenyl ether	50 µg/mL	AcCN	HBDE-7001S-CN	
6'-OH-BDE-180	6'-Hydroxy-2,2',3,4,4',5,5'-heptabromodiphenyl ether	50 µg/mL	AcCN	HBDE-7002S-CN	
4'-OH-BDE-188	4'-Hydroxy-2,2',3,4',5,6,6'-heptabromodiphenyl ether	50 µg/mL	AcCN	HBDE-7003S-CN	
6'-OH-BDE-182	6'-Hydroxy-2,2',3,4,4',5,6'-heptabromodiphenyl ether	50 µg/mL	AcCN	HBDE-7004S-CN-0.2X	
6'-OH-BDE-170	6'-Hydroxy-2,2',3,3',4,4',5'-heptabromodiphenyl ether	50 µg/mL	AcCN	HBDE-7005S-CN	
4'-OH-BDE-201	4'-Hydroxy-2,2',3,3',4,5',6,6'-octabromodiphenyl ether	50 µg/mL	AcCN	HBDE-8001S-CN	
Methoxy					
2'-MeO-BDE-003	2'-Methoxy-4-monobromodiphenyl ether	50 µg/mL	MeOH	MOBDE-1001S	
3'-MeO-BDE-007	3'-Methoxy-2,4-dibromodiphenyl ether	50 µg/mL	MeOH	MOBDE-2001S	
2'-MeO-BDE-007	2'-Methoxy-2,4-dibromodiphenyl ether	10 µg/mL	MeOH	MOBDE-2002S-0.2X	
2'-MeO-BDE-009	2'-Methoxy-2,5-dibromodiphenyl ether	50 µg/mL	MeOH	MOBDE-2003S	
4'-MeO-BDE-007	4'-Methoxy-2,4-dibromodiphenyl ether	10 µg/mL	MeOH	MOBDE-2004S-0.2X	
		50 µg/mL	MeOH	MOBDE-2004S	
4'-MeO-BDE-017	4'-Methoxy-2,2',4-tribromodiphenyl ether	50 µg/mL	MeOH	MOBDE-3001S	
3'-MeO-BDE-028	3'-Methoxy-2,4,4'-tribromodiphenyl ether	50 µg/mL	MeOH	MOBDE-3002S	
2'-MeO-BDE-028	2'-Methoxy-2,4,4'-tribromodiphenyl ether	50 µg/mL	MeOH	MOBDE-3003S	
5'-MeO-BDE-025	5'-Methoxy-2,3',4-tribromodiphenyl ether	50 µg/mL	MeOH	MOBDE-3004S	
3'-MeO-BDE-029	3'-Methoxy-2,4,5-tribromodiphenyl ether	50 µg/mL	MeOH	MOBDE-3005S	
3'-MeO-BDE-030	3'-Methoxy-2,4,6-tribromodiphenyl ether	50 µg/mL	MeOH	MOBDE-3006S	
4'-MeO-BDE-030	4'-Methoxy-2,4,6-tribromodiphenyl ether	50 µg/mL	MeOH	MOBDE-3007S	

Methoxy PBDE Congeners continued on next page



PBDE Metabolites

Methoxy Polybromodiphenyl Ether Congeners (Continued)

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

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-PBDEs are being produced naturally; in freshwater systems, atmospheric and wastewater treatment oxidation seems to be the major source of these compounds. Furthermore, disinfection of wastewater with chlorine may lead to the chlorination of OH-PBDEs. These mixed bromo/chloro hydroxy diphenyl ethers (OH-PBCDEs) can then undergo photochemical cyclization in the presence of sunlight to form the potentially even more harmful brominated/chlorinated dibenzo-p-dioxins (Br/Cl-DDs). There is growing concern that both naturally and anthropogenically produced PBDDs and Br/Cl-DDs are an emerging environmental problem.

At AccuStandard, following the lead of environmental chemists, we recognize the emerging problem of the presence of OH-PBCDEs. 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.	1 mL
Hydroxy				
3-Chloro-6-hydroxy-2,2',4,4'-tetrabromodiphenyl ether (3-Cl-6-OH-BDE-047)	25 µg/mL	AcCN	HCBDE-4001S-0.5X	
	50 µg/mL	AcCN	HCBDE-4001S	
3,5-Dichloro-6-hydroxy-2,2',4,4'-tetrabromodiphenyl ether (3,5-Cl2-6-OH-BDE-047)	25 µg/mL	AcCN	HCBDE-4002S-0.5X	
	50 µg/mL	AcCN	HCBDE-4002S	
5-Chloro-6-hydroxy-2,2',4,4'-tetrabromodiphenyl ether (5-Cl-6-OH-BDE-047)	25 µg/mL	AcCN	HCBDE-4003S-0.5X	
	50 µg/mL	AcCN	HCBDE-4003S	
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	
	50 µg/mL	MeOH	MOCBDE-4001S	
3,5-Dichloro-6-methoxy-2,2',4,4'-tetrabromodiphenyl ether (3,5-Cl2-6-MeO-BDE-047)	25 µg/mL	MeOH	MOCBDE-4002S-0.5X	
	50 µg/mL	MeOH	MOCBDE-4002S	
5-Chloro-6-methoxy-2,2',4,4'-tetrabromodiphenyl ether (5-Cl-6-MeO-BDE-047)	25 µg/mL	MeOH	MOCBDE-4003S-0.5X	
	50 µg/mL	MeOH	MOCBDE-4003S	

Tetradecabromodiphenoxy Benzene (TDBDPB) and Metabolites



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 tetradecabromodiphenoxybenzene (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.

Now studies have shown that TDBDPB does undergo 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 has 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.

See Guanyong Su et al., Environ. Sci. Technol., 2016, 50 (15), pp 8335–8343

Katie L. Hill et al., Environ. Sci. Technol., Just Accepted Manuscript, Publication Date (Web): December 28, 2017.

Tetradecabromodiphenoxybenzene (TDBDPB) Metabolites

Compound	Matrix	Cat. No.	Unit
4"-Hydroxy-2,2',2",4-tetrabromodiphenoxybenzene	50 µg/mL in AcCN	HBDBP-401S	1 mL
4"-Hydroxy-2,2',3',4-tetrabromodiphenoxybenzene	50 µg/mL in AcCN	HBDBP-402S	1 mL
4"-Hydroxy-2,2',4,6-tetrabromodiphenoxybenzene	50 µg/mL in AcCN	HBDBP-403S	1 mL
6"-Hydroxy-2,2',4,5"-tetrabromodiphenoxybenzene	50 µg/mL in AcCN	HBDBP-404S	1 mL
4"-Hydroxy-2,2',4,5-tetrabromodiphenoxybenzene	50 µg/mL in AcCN	HBDBP-405S	1 mL
6"-Hydroxy-2,2',3',4-tetrabromodiphenoxybenzene	50 µg/mL in AcCN	HBDBP-406S	1 mL
6"-Hydroxy-2,3',3",4-tetrabromodiphenoxybenzene	50 µg/mL in AcCN	HBDBP-407S	1 mL
4"-Hydroxy-2,3',3",4-tetrabromodiphenoxybenzene	50 µg/mL in AcCN	HBDBP-408S	1 mL
4"-Hydroxy-2,2',3",4-tetrabromodiphenoxybenzene	50 µg/mL in AcCN	HBDBP-409S	1 mL
6"-Hydroxy-2,2',2",4-tetrabromodiphenoxy benzene	50 µg/mL in AcCN	HBDBP-410S	1 mL
4"-Hydroxy-2,2',2",4,5-pentabromodiphenoxybenzene	50 µg/mL in AcCN	HBDBP-501S	1 mL
6"-Hydroxy-2,2',3',4,5"-pentabromodiphenoxybenzene	50 µg/mL in AcCN	HBDBP-502S	1 mL
6"-Hydroxy-2,2',4,5",6-pentabromodiphenoxybenzene	50 µg/mL in AcCN	HBDBP-503S	1 mL
4"-Hydroxy-2,2',4,6,6'-pentabromodiphenoxybenzene	50 µg/mL in AcCN	HBDBP-504S	1 mL
6"-Hydroxy-2,2',2",4,5"-pentabromodiphenoxybenzene	50 µg/mL in AcCN	HBDBP-505S	1 mL
4"-Methoxy-2,2',2",4-tetrabromodiphenoxybenzene	50 µg/mL in AcCN	MOBDPB-401S	1 mL
4"-Methoxy-2,2',3',4-tetrabromodiphenoxybenzene	50 µg/mL in AcCN	MOBDPB-402S	1 mL
4"-Methoxy-2,2',4,6-tetrabromodiphenoxybenzene	50 µg/mL in AcCN	MOBDPB-403S	1 mL
6"-Methoxy-2,2',4,5"-tetrabromodiphenoxybenzene	50 µg/mL in AcCN	MOBDPB-404S	1 mL
4"-Methoxy-2,2',4,5-tetrabromodiphenoxybenzene	50 µg/mL in AcCN	MOBDPB-405S	1 mL
6"-Methoxy-2,2',3',4-tetrabromodiphenoxybenzene	50 µg/mL in AcCN	MOBDPB-406S	1 mL
6"-Methoxy-2,3',3",4-tetrabromodiphenoxybenzene	50 µg/mL in AcCN	MOBDPB-407S	1 mL
4"-Methoxy-2,3',3",4-tetrabromodiphenoxybenzene	50 µg/mL in AcCN	MOBDPB-408S	1 mL
4"-Methoxy-2,2',3",4-tetrabromodiphenoxybenzene	50 µg/mL in AcCN	MOBDPB-409S	1 mL
6"-Methoxy-2,2',2",4-tetrabromodiphenoxy benzene	50 µg/mL in AcCN	MOBDPB-410S	1 mL
4"-Methoxy-2,2',2",4,5-pentabromodiphenoxybenzene	50 µg/mL in AcCN	MOBDPB-501S	1 mL
6"-Methoxy-2,2',3',4,5"-pentabromodiphenoxybenzene	50 µg/mL in AcCN	MOBDPB-502S	1 mL
6"-Methoxy-2,2',4,5",6-pentabromodiphenoxybenzene	50 µg/mL in AcCN	MOBDPB-503S	1 mL
4"-Methoxy-2,2',4,6,6'-pentabromodiphenoxybenzene	50 µg/mL in AcCN	MOBDPB-504S	1 mL
6"-Methoxy-2,2',2",4,5"-pentabromodiphenoxy benzene	50 µg/mL in AcCN	MOBDPB-505S	1 mL
2,2',4,4"-Tetrabromodiphenoxybenzene	50 µg/mL in AcCN	BDPB-401S	1 mL
2,2',2",4-Tetrabromodiphenoxybenzene	50 µg/mL in AcCN	BDPB-402S	1 mL
2,2',2",4,4"-Pentabromodiphenoxybenzene	50 µg/mL in AcCN	BDPB-501S	1 mL





Fluorinated PBDE Congeners

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.

Short Form	Compound	Conc.	Solvent	Cat. No.	1 mL
F-BDE-003	4'-Fluoro-4-bromodiphenyl ether	25 µg/mL	Isooctane	FBDE-1001S-0.5X	
		50 µg/mL	Isooctane	FBDE-1001S	
F-BDE-007	3'-Fluoro-2,4-dibromodiphenyl ether	25 µg/mL	Isooctane	FBDE-2001S-0.5X	
		50 µg/mL	Isooctane	FBDE-2001S	
F-BDE-012	3'-Fluoro-3,4-dibromodiphenyl ether	25 µg/mL	Isooctane	FBDE-2002S-0.5X	
		50 µg/mL	Isooctane	FBDE-2002S	
F-BDE-015	2-Fluoro-4,4'-dibromodiphenyl ether	25 µg/mL	Isooctane	FBDE-2003S-0.5X	
		50 µg/mL	Isooctane	FBDE-2003S	
F-BDE-025	4'-Fluoro-2,3',4-tribromodiphenyl ether	25 µg/mL	Isooctane	FBDE-3001S-0.5X	
		50 µg/mL	Isooctane	FBDE-3001S	
F-BDE-027	4'-Fluoro-2,3',6-tribromodiphenyl ether	25 µg/mL	Isooctane	FBDE-3002S-0.5X	
		50 µg/mL	Isooctane	FBDE-3002S	
F-BDE-028	2'-Fluoro-2,4,4'-tribromodiphenyl ether	25 µg/mL	Isooctane	FBDE-3003S-0.5X	
		50 µg/mL	Isooctane	FBDE-3003S	
F-BDE-028	3'-Fluoro-2,4,4'-tribromodiphenyl ether	25 µg/mL	Isooctane	FBDE-3004S-0.5X	
		50 µg/mL	Isooctane	FBDE-3004S	
F-BDE-069	4'-Fluoro-2,3',4,6-tetrabromodiphenyl ether	25 µg/mL	Isooctane	FBDE-4001S-0.5X	
		50 µg/mL	Isooctane	FBDE-4001S	
F-BDE-067	4'-Fluoro-2,3',4,5-tetrabromodiphenyl ether	25 µg/mL	Isooctane	FBDE-4002S-0.5X	
		50 µg/mL	Isooctane	FBDE-4002S	
F-BDE-047	6-Fluoro-2,2',4,4'-tetrabromodiphenyl ether	25 µg/mL	Isooctane	FBDE-4003S-0.5X	
		50 µg/mL	Isooctane	FBDE-4003S	
F-BDE-066	6-Fluoro-2,3',4,4'-tetrabromodiphenyl ether	25 µg/mL	Isooctane	FBDE-4004S-0.5X	
		50 µg/mL	Isooctane	FBDE-4004S	
2F-BDE-047	5,5'-Difluoro-2,2',4,4'-tetrabromodiphenyl ether	25 µg/mL	Isooctane	FBDE-4005S-0.5X	
		50 µg/mL	Isooctane	FBDE-4005S	
F-BDE-070	3-Fluoro-2,3',4',5-tetrabromodiphenyl ether	25 µg/mL	Isooctane	FBDE-4006S-0.5X	
		50 µg/mL	Isooctane	FBDE-4006S	
F-BDE-077	5-Fluoro-3,3',4,4'-tetrabromodiphenyl ether	25 µg/mL	Isooctane	FBDE-4007S-0.5X	
		50 µg/mL	Isooctane	FBDE-4007S	
F-BDE-099	6'-Fluoro-2,2',4,4',5-pentabromodiphenyl ether	25 µg/mL	Isooctane	FBDE-5001S-0.5X	
		50 µg/mL	Isooctane	FBDE-5001S	
F-BDE-100	3-Fluoro-2,2',4,4',6-pentabromodiphenyl ether	25 µg/mL	Isooctane	FBDE-5002S-0.5X	
		50 µg/mL	Isooctane	FBDE-5002S	
2F-BDE-099	3,6-Difluoro-2,2',4,4',5-pentabromodiphenyl ether	25 µg/mL	Isooctane	FBDE-5003S-0.5X	
		50 µg/mL	Isooctane	FBDE-5003S	
2F-BDE-085	5,6-Difluoro-2,2',3,4,4'-pentabromodiphenyl ether	25 µg/mL	Isooctane	FBDE-5004S-0.5X	
		50 µg/mL	Isooctane	FBDE-5004S	
2F-BDE-119	3,5-Difluoro-2,3',4,4',6-pentabromodiphenyl ether	25 µg/mL	Isooctane	FBDE-5005S-0.5X	
		50 µg/mL	Isooctane	FBDE-5005S	
F-BDE-124	3'-Fluoro-2',3,4,5,5'-pentabromodiphenyl ether	25 µg/mL	Isooctane	FBDE-5006S-0.5X	
		50 µg/mL	Isooctane	FBDE-5006S	
F-BDE-118	5'-Fluoro-2,3',4,4',5-pentabromodiphenyl ether	25 µg/mL	Isooctane	FBDE-5007S-0.5X	
		50 µg/mL	Isooctane	FBDE-5007S	
F-BDE-126	5'-Fluoro-3,3',4,4',5-pentabromodiphenyl ether	25 µg/mL	Isooctane	FBDE-5008S-0.5X	
		50 µg/mL	Isooctane	FBDE-5008S	
F-BDE-160	4'-Fluoro-2,3,3',4,5,6-hexabromodiphenyl ether	25 µg/mL	Isooctane	FBDE-6001S-0.5X	
		50 µg/mL	Isooctane	FBDE-6001S	
F-BDE-139	5-Fluoro-2,2',3,4,4',6-hexabromodiphenyl ether	25 µg/mL	Isooctane	FBDE-6002S-0.5X	
		50 µg/mL	Isooctane	FBDE-6002S	
F-BDE-153	3-Fluoro-2,2',4,4',5,5'-hexabromodiphenyl ether	25 µg/mL	Isooctane	FBDE-6003S-0.5X	
		50 µg/mL	Isooctane	FBDE-6003S	
F-BDE-168	3-Fluoro-2,3',4,4',5',6-hexabromodiphenyl ether	25 µg/mL	Isooctane	FBDE-6004S-0.5X	
		50 µg/mL	Isooctane	FBDE-6004S	
F-BDE-183	5-Fluoro-2,2',3,4,4',5',6-heptabromodiphenyl ether	25 µg/mL	Isooctane	FBDE-7001S-0.5X	
		50 µg/mL	Isooctane	FBDE-7001S	
2F-BDE-199	4',6-Difluoro-2,2',3,3',4,5,5',6'-octabromodiphenyl ether	25 µg/mL	Isooctane	FBDE-8001S-0.5X	
		50 µg/mL	Isooctane	FBDE-8001S	
F-BDE-208	4'-Fluoro-2,2',3,3',4,5,5',6,6'-nonabromodiphenyl ether	25 µg/mL	Isooctane	FBDE-9001S-0.5X	
		50 µg/mL	Isooctane	FBDE-9001S	



Hexabromocyclododecane Isomers

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

Dechlorane Plus Isomers

Compound	CAS No.	Conc.	Matrix	Cat. No.	1 mL
Dechlorane Plus "Anti"	135821-74-8	50 μ g/mL	Toluene	FRS-061S-0.5X	
Dechlorane Plus "Syn"	135821-03-3	50 μ g/mL	Toluene	FRS-062S-0.5X	
Dechlorane Plus (Mixed isomers)	13560-89-9	10 mg	NEAT	FRS-033N	
		100 μ g/mL	Toluene	FRS-033S	

Bromobiphenyl Congeners

Compound	CAS No.	Conc.	Matrix	Cat. No.	1 mL
2-Bromobiphenyl	2052-07-5	50 mg	NEAT	B-001N	
		35 μ g/mL	Isooctane	B-001S	
		1 mg/mL	Acetone	M-8081-SS-X	
3-Bromobiphenyl	2113-57-7	50 mg	NEAT	B-002N	
		35 μ g/mL	Isooctane	B-002S	
4-Bromobiphenyl	92-66-0	50 mg	NEAT	B-003N	
		35 μ g/mL	Isooctane	B-003S	
2,2'-Dibromobiphenyl	13029-09-9	10 mg	NEAT	B-004N	
		35 μ g/mL	Isooctane	B-004S	
2,4-Dibromobiphenyl	53592-10-2	10 mg	NEAT	B-007N-10MG	
		35 μ g/mL	Isooctane	B-007S	
2,5-Dibromobiphenyl	57422-77-2	25 mg	NEAT	B-009N	
		35 μ g/mL	Isooctane	B-009S	
2,6-Dibromobiphenyl	59080-32-9	5 mg	NEAT	B-010N-5MG	
		35 μ g/mL	Isooctane	B-010S	
4,4'-Dibromobiphenyl	92-86-4	10 mg	NEAT	B-015N	
		35 μ g/mL	Isooctane	B-015S	
2,2',5-Tribromobiphenyl	59080-34-1	10 mg	NEAT	B-018N	
		35 μ g/mL	Isooctane	B-018S	
2,3',5-Tribromobiphenyl	59080-35-2	10 mg	NEAT	B-026N	
		35 μ g/mL	Isooctane	B-026S	
2,4,5-Tribromobiphenyl	115245-07-3	35 μ g/mL	Isooctane	B-029S	
2,4,6-Tribromobiphenyl	59080-33-0	25 mg	NEAT	B-030N	
		35 μ g/mL	Isooctane	B-030S	
2,4',5-Tribromobiphenyl	59080-36-3	10 mg	NEAT	B-031N	
		35 μ g/mL	Isooctane	B-031S	
2,2',4,5'-Tetrabromobiphenyl	60044-24-8	5 mg	NEAT	B-049N-5MG	
		35 μ g/mL	Isooctane	B-049S	
2,2',5,5'-Tetrabromobiphenyl	59080-37-4	10 mg	NEAT	B-052N	
		35 μ g/mL	Isooctane	B-052S	
2,2',5,6'-Tetrabromobiphenyl	60044-25-9	5 mg	NEAT	B-053N-5MG	
		35 μ g/mL	Isooctane	B-053S	
3,3',4,4'-Tetrabromobiphenyl	77102-82-0	35 μ g/mL	Isooctane	B-077S	
3,3',5,5'-Tetrabromobiphenyl	16400-50-3	35 μ g/mL	Isooctane	B-080S	
2,3,4,4',5-Pentabromobiphenyl	96551-70-1	35 μ g/mL	Isooctane	B-114S	
2,2',4,5,5'-Pentabromobiphenyl	67888-96-4	5 mg	NEAT	B-101N	
		35 μ g/mL	Isooctane	B-101S	
2,2',4,5',6-Pentabromobiphenyl	59080-39-6	5 mg	NEAT	B-103N	
		35 μ g/mL	Isooctane	B-103S	
2,2',3,4,4',5-Hexabromobiphenyl	81381-52-4	35 μ g/mL	Isooctane	B-137S	
2,2',3,4,5,5'-Hexabromobiphenyl	120991-47-1	35 μ g/mL	Isooctane	B-141S	
2,2',4,4',5,5'-Hexabromobiphenyl	59080-40-9	5 mg	NEAT	B-153N-5MG	
		35 μ g/mL	Isooctane	B-153S	
2,2',4,4',6,6'-Hexabromobiphenyl	59261-08-4	5 mg	NEAT	B-155N	
		35 μ g/mL	Isooctane	B-155S	
2,3,3',4,4',5-Hexabromobiphenyl	77607-09-1	35 μ g/mL	Isooctane	B-156S	
2,3,3',4,5,5'-Hexabromobiphenyl	120991-48-2	35 μ g/mL	Isooctane	B-159S	
3,3',4,4',5,5'-Hexabromobiphenyl	60044-26-0	35 μ g/mL	Isooctane	B-169S	
2,2',3,4,4',5,5'-Heptabromobiphenyl	67733-52-2	35 μ g/mL	Isooctane	B-180S	
2,3,3',4,4',5,5'-Heptabromobiphenyl	88700-06-5	35 μ g/mL	Isooctane	B-189S	
2,2',3,3',4,4',5,5'-Octabromobiphenyl	67889-00-3	35 μ g/mL	Isooctane	B-194S	
2,2',3,3',4,5',6,6'-Octabromobiphenyl	119264-60-7	35 μ g/mL	Isooctane	B-200S	
		25 mg	NEAT	B-209N	
Decabromobiphenyl	13654-09-6	35 μ g/mL	Isooctane : Acetone (98:2)	B-209S	



Bromophenols, Bromoanisoles, Chlorinated Diphenyl Ethers

Bromophenols

Compound	CAS No.	Cat. No.	Each at 100 µg/mL in Toluene 1 mL
2-Bromophenol	95-56-7	BP-002S	
3-Bromophenol	591-20-8	BP-003S	
4-Bromophenol	106-41-2	BP-004S	
2,3-Dibromophenol	57383-80-9	BP-023S	
2,4-Dibromophenol	615-58-7	BP-024S	
2,5-Dibromophenol	28165-52-8	BP-025S	
2,6-Dibromophenol	608-33-3	BP-026S	
3,4-Dibromophenol	615-56-5	BP-034S	
3,5-Dibromophenol	626-41-5	BP-035S	
2,3,4-Tribromophenol	138507-65-0	BP-234S	
2,3,5-Tribromophenol		BP-235S	
2,3,6-Tribromophenol		BP-236S	
2,4,5-Tribromophenol	14401-61-7	BP-245S	
2,4,6-Tribromophenol	118-79-6	BP-246S	
3,4,5-Tribromophenol		BP-345S	
2,3,4,5-Tetrabromophenol		BP-2345S	
2,3,4,6-Tetrabromophenol	14400-94-3	BP-2346S	
2,3,5,6-Tetrabromophenol		BP-2356S	
Pentabromophenol	608-71-9	BP-23456S	

Bromoanisoles

Compound	CAS No.	Cat. No.	Each at 50 µg/mL in MeOH 1 mL
2-Bromoanisole	578-57-4	BAN-01	
3-Bromoanisole	2398-37-0	BAN-02	
4-Bromoanisole	104-92-7	BAN-03	
2,3-Dibromoanisole	95970-22-2	BAN-04	
2,4-Dibromoanisole	21702-84-1	BAN-05	
2,5-Dibromoanisole	95970-08-4	BAN-06	
2,6-Dibromoanisole	38603-09-7	BAN-07	
3,5-Dibromoanisole	74137-36-3	BAN-08	
2,4,5-Tribromoanisole		BAN-09	
2,4,6-Tribromoanisole	607-99-8	BAN-10	

Chlorinated Diphenyl Ethers

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



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 compound chars, 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

Industrial Flame Retardants

Bromine Containing (BFRs)



Bromine Containing Industrial Flame Retardants (BFRs) PURE

Compound	CAS No.	Conc.	Matrix	Cat. No.	1 mL
1,2-Dibromo-4-(1,2-dibromoethyl)cyclohexane (TBECH)	3322-93-8	10 mg	NEAT	FRS-038N	
		100 mg/mL	MeOH	FRS-038S	
tris(2,3-Dibromopropyl) isocyanurate	52434-90-9	10 mg	NEAT	FRS-042N	
		100 µg/mL	Toluene	FRS-042S	
bis(2,3-Dibromopropyl) phthalate	7415-86-3	10 mg	NEAT	FRS-067N	
		100 µg/mL	Toluene	FRS-067S	
tris(2,3-Dibromopropyl)phosphate	126-72-7	10 mg	NEAT	FRS-057N	
		100 µg/mL	Toluene	FRS-057S	
(2,3-Dibromopropyl)(2,4,6-tribromophenyl) ether (DPTE)	35109-60-5	10 mg	NEAT	FRS-044N	
		100 µg/mL	Toluene	FRS-044S	
Di(2-ethylhexyl)tetrabromophthalate	26040-51-7	10 mg	NEAT	FRS-040N	
		100 µg/mL	Toluene	FRS-040S	
2-Ethylhexyl 2,3,4,5-tetrabromobenzoate	183658-27-7	10 mg	NEAT	FRS-041N	
		100 µg/mL	Toluene	FRS-041S	
Hexachlorocyclopentadienyl-dibromocyclooctane (HCDBCO)	51936-55-1	10 mg	NEAT	FRS-039N	
		100 µg/mL	Toluene	FRS-039S	
Pentabromobenzene	608-90-2	10 mg	NEAT	FRS-064N	
		50 µg/mL	Toluene	FRS-064S-0.5X	
Pentabromobenzylacrylate	59447-55-1	10 mg	NEAT	FRS-035N	
		100 µg/mL	Toluene	FRS-035S	
Pentabromobenzylbromide	38521-51-6	10 mg	NEAT	FRS-030N	
		100 µg/mL	Toluene	FRS-030S	
Pentabromoethylbenzene	85-22-3	100 µg/mL	Toluene	FRS-048S	
		100 µg/mL	Toluene	FRS-052N	
1,4-bis(Pentabromophenoxy)tetrabromobenzene	58965-66-5	10 mg	NEAT	FRS-052N	
		100 µg/mL	Toluene	FRS-052S	
Tetrabromobisphenol A	79-94-7	100 mg	NEAT	FRS-074N	
		100 µg/mL	Toluene	FRS-074S	
Tetrabromobisphenol A bis(2,3-dibromopropyl) ether	21850-44-2	50 mg	NEAT	FRS-034N	
		100 µg/mL	Toluene	FRS-034S	
Tetrabromobisphenol A bis(hydroxyethyl) ether	4162-45-2	50 mg	NEAT	FRS-032N	
		100 µg/mL	Toluene	FRS-032S	
Tetrabromobisphenol A bismethyl ether	37853-61-5	10 mg	NEAT	FRS-069N	
		100 µg/mL	Toluene	FRS-069S	
Tetrabromobisphenol A diallyl ether	25327-89-3	10 mg	NEAT	FRS-045N	
		100 µg/mL	Toluene	FRS-045S	
Tetrabromobisphenol S	39635-79-5	10 mg	NEAT	FRS-070N	
		100 µg/mL	AcCN	FRS-070S-CN	
Tetrabromobisphenol S bis(2,3-dibromopropyl) ether	42757-55-1	10 mg	NEAT	FRS-075N	
		100 µg/mL	Toluene	FRS-075S	
1,2,5,6-Tetrabromocyclooctane	3194-57-8	10 mg	NEAT	FRS-068N	
		100 µg/mL	Toluene	FRS-068S	
Tetrabromophthalic acid	13810-83-8	10 mg	NEAT	FRS-065N	
		100 µg/mL	Toluene	FRS-065S	
Tribromoneopentyl alcohol	1522-92-5	10 mg	NEAT	FRS-046N	
		100 µg/mL	Toluene	FRS-046S	
tris(Tribromoneopentyl) phosphate	19186-97-1	10 mg	NEAT	FRS-047N	
		100 µg/mL	Toluene	FRS-047S	
1,2-bis(2,4,6-Tribromophenoxy)ethane	37853-59-1	50 mg	NEAT	FRS-037N	
		100 µg/mL	Toluene	FRS-037S	
2,4,6-tris(2,4,6-Tribromophenoxy)-1,3,5-triazine	25713-60-4	100 µg/mL	Toluene	FRS-049S	
2,4,6-Tribromophenyl allyl ether	3278-89-5	10 mg	NEAT	FRS-043N	
		100 µg/mL	Toluene	FRS-043S	

Compounds are available in different solvents.
Please contact our Technical Service Department.



Industrial Flame Retardants

Bromine Containing (BFRs)

Bromine Containing Industrial Flame Retardants (BFRs) Commercial Grade

Compound	CAS No.	Active Ingredient	Conc.	Matrix	Cat. No.	1 mL
Bromkal™ DE-70-5		Penta BDEs	50 µg/mL	Isooctane	BDE-705	
Bromkal™ DE-71		Penta BDEs	50 µg/mL	Isooctane	BDE-710	
Bromkal™ DE-73-6		Hexa BDEs	50 µg/mL	Isooctane	BDE-736	
Bromkal™ DE-79-8		Octa BDEs	50 µg/mL	Isooctane	BDE-798	
Dow FR-250	27858-07-7	Mix of Octa and Nonabromobiphenyl	35 µg/mL	Isooctane	B-250S-0.35X	
			100 µg/mL	Isooctane	B-250S	
Firemaster™ BP4A	79-94-7	Tetrabromobisphenol A	100 µg/mL	Toluene	FRS-006S	
Firemaster™ BP-6	59536-65-1	Hexabromobiphenyl	35 µg/mL	Isooctane	B-600S-0.35X	
			100 µg/mL	Isooctane	B-600S	
Firemaster™ PHT4	632-79-1	Tetrabromophthalic anhydride	10 mg	NEAT	FRS-007N	
			100 µg/mL	Toluene	FRS-007S	
Firemaster™ T23P (Michigan Chemical)	126-72-7	tris(2,3-Dibromopropyl)phosphate	10 mg	NEAT	FRS-008N	
			100 µg/mL	Toluene	FRS-008S	
Firemaster™ 680 (Great Lakes)	37853-59-1	1,2-bis(2,4,6-Tribromophenoxy)ethane	50 mg	NEAT	FRS-037N	
			100 µg/mL	Toluene	FRS-037S	
Firemaster™ 2100 (Great Lakes)	84852-53-9	Decabromodiphenylethane	50 mg	NEAT	FRS-036N	
			100 µg/mL	Toluene	FRS-036S	
FR-300BA	1163-19-5	Decabromodiphenyl ether 85.5%	100 µg/mL	Toluene	FRS-009S	
FR-651A (Dow)	87-84-3	Pentabromochlorocyclohexane	10 mg	NEAT	FRS-010N	
			100 µg/mL	Toluene	FRS-010S	
FR-1138 (Dow)	3296-90-0	Dibromoneopentyl glycol 85.0%	10 mg	NEAT	FRS-011N	
			100 µg/mL	Toluene	FRS-011S	
HBCD SP-75C (Great Lakes)	3194-55-6	Hexabromocyclododecane	10 mg	NEAT	FRS-028N	
			100 µg/mL	Toluene	FRS-028S	
Hexabromobenzene (Michigan Chemical)	87-82-1	Hexabromobenzene	10 mg	NEAT	FRS-012N	
			100 µg/mL	Toluene	FRS-012S	
Hexabromobenzene (White Chemical)	87-82-1	Hexabromobenzene	10 mg	NEAT	FRS-013N	
			100 µg/mL	Toluene	FRS-013S	
Hexabromobenzene (Hummel)	87-82-1	Hexabromobenzene	10 mg	NEAT	FRS-014N	
Pentabromotoluene (White Chemical)	87-83-2	Pentabromotoluene	10 mg	NEAT	FRS-018N	
			100 µg/mL	Toluene	FRS-018S	
Saytex BT-93	32588-76-4	Ethylene bis(tetrabromophthalimide)	50 µg/mL	Toluene	FRS-053S-0.5X	
Saytex RB-79	77058-07-8	1,2-Benzenedicarboxylic acid, 3,4,5,6-tetrabromo-2-(2-hydroxyethoxy)ethyl 2-hydroxypropyl ester	10 mg	NEAT	FRS-054N	
			100 µg/mL	Toluene	FRS-054S	
Tetrabromo-o-chlorotoluene (White Chemical)	39569-21-6	Tetrabromo-o-chlorotoluene (98%)	10 mg	NEAT	FRS-021N	
			100 µg/mL	Toluene	FRS-021S	
TP-69 (Great Lakes)	126-72-7	tris-(2,3-Dibromopropyl)phosphate	10 mg	NEAT	FRS-023N	
			100 µg/mL	Toluene	FRS-023S	

Other BFR Related Chemicals

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

Registered Trademarks

Chlorafin Hercules Powder Company Corp.
Chlorowax Dover Chemical Corp.

Firemaster Great Lakes Chemical Corp.
Paroil Dover Chemical Corp.

Phosgard Solutia Inc.
Unichlor Neville Chemical Co.

Industrial Flame Retardants

Chlorine Containing Flame Retardants (CFRs) and Phosphate Flame Retardants (PFRs)



Chlorine Containing Industrial Flame Retardants (CFRs)

Compound	CAS No.	Active Ingredient	Conc.	Matrix	Cat. No.	1 mL
Chlorafin™ 40		Chlorinated Paraffin	10 mg 100 µg/mL	NEAT Toluene	FRS-002N FRS-002S	
Chlorendic anhydride	115-27-5	Chlorendic anhydride	10 mg 100 µg/mL	NEAT Toluene	FRS-001N FRS-001S	
bis(2-Chloroethyl)ether	111-44-4	bis(2-Chloroethyl)ether	100 µg/mL 5 mg/mL	MeOH MeOH	APP-9-027 AS-E0016	
4-Chlorophenyl phenyl ether	7005-72-3	4-Chlorophenyl phenyl ether	100 µg/mL 5 mg/mL	MeOH MeOH	APP-9-047 AS-E0038	
Chlorowax™ 500C		Chlorinated Hydrocarbons 59.0%	10 mg 100 µg/mL	NEAT Toluene	FRS-004N FRS-004S	
Dechlorane 602	31107-44-5		50 µg/mL	Toluene	FRS-076S-0.5X	
Dechlorane 603	13560-92-4		50 µg/mL	Toluene	FRS-077S-0.5X	
Dechlorane Plus (Mixed isomers)	13560-89-9	Dechlorane Plus	10 mg 100 µg/mL	NEAT Toluene	FRS-033N FRS-033S	
Diablo 700X		Chlorinated Hydrocarbons 70.0%	10 mg 100 µg/mL	NEAT Toluene	FRS-005N FRS-005S	
Hexachlorobutadiene	87-68-3	Hexachlorobutadiene	100 µg/mL	Toluene	FRS-017S	
Paroil™ 179-HV	634493-98-4	Chlorinated Paraffin	10 mg 100 µg/mL	NEAT Toluene	FRS-015N FRS-015S	
Paroil™ 170-8		Chlorinated Paraffin	100 µg/mL	Toluene	FRS-016S	
Phosgard™ C 22-R	4351-70-6	Halogenated organic phosphate ester	10 mg 100 µg/mL	NEAT Toluene	FRS-019N FRS-019S	
Phosgard™ 2XC-20, V6	38051-10-4	Halogenated organic phosphate ester	100 µg/mL	Toluene	FRS-020S	
Tetrachlorobisphenol A	79-95-8	Tetrachlorobisphenol A	10 mg 100 µg/mL	NEAT Toluene	FRS-022N FRS-022S	
Unichlor™ 40-90		Chlorinated Hydrocarbons 38.5%	10 mg 100 µg/mL	NEAT Toluene	FRS-024N FRS-024S	
Unichlor™ 502-50		Chlorinated Hydrocarbons 52.0%	10 mg 100 µg/mL	NEAT Toluene	FRS-025N FRS-025S	
Unichlor™ 70AX		Chlorinated Hydrocarbons 70.0%	10 mg 100 µg/mL	NEAT Toluene	FRS-026N FRS-026S	

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.	1 mL
Trimethyl phosphate (TMP)	512-56-1	100 µg/mL	Toluene	PFRS-016S	
Dimethyl phosphate	813-78-5	100 µg/mL	Toluene	PFRS-006S	
Triethyl phosphate (TEP)	78-40-0	100 µg/mL	Toluene	PFRS-012S PFRS-012N	
Diethyl phosphate (mono & di-)	598-02-7	100 µg/mL	Toluene	PFRS-005S	
Tripropyl phosphate (TPPrP)	513-08-6	100 µg/mL	Toluene	PFRS-021S	
Triisopropyl phosphate (TiPP, TiPrP)	513-02-0	100 µg/mL	Toluene	PFRS-013S	
Tributyl phosphate	126-73-8	100 µg/mL	Toluene	PFRS-009S	
Triphenyl phosphate (TPeP)	2528-38-3	100 µg/mL	Hexane	PFRS-019S-H	
tris(2-Ethylhexyl) phosphate	78-42-2	100 µg/mL	Toluene	PFRS-028S	
Triphenyl phosphate (TPP, TPhP)	115-86-8	100 µg/mL	Toluene	PFRS-020S	
2-Ethylhexyl diphenyl phosphate (EDP, DPEHP)	1241-94-7	100 µg/mL	Toluene	PFRS-007S	
tris(2-Isopropylphenyl) phosphate	64532-95-2	100 µg/mL	Toluene	PFRS-014S	
Isodecyl diphenyl phosphate	29761-21-5	100 µg/mL	Toluene	PFRS-008S	
Cresyl diphenyl phosphate (CDP)	26444-49-5	100 µg/mL	Toluene	PFRS-004S	
Tri-o-cresyl phosphate (o-TCP, TOCP, TOTP)	78-30-8	100 µg/mL	Toluene	PFRS-017S	
Tri-p-cresyl phosphate (p-TCP, TPCP, TPTP)	78-32-0	100 µg/mL	Toluene	PFRS-018S	
Tricresyl phosphate (mixture of isomers) (TCP, TCrP, TToP)	1330-78-5	100 µg/mL	Toluene	PFRS-011S	
Tri-m-cresyl phosphate (m-TCP, TMTP)	563-04-2	100 µg/mL	Toluene	PFRS-015S	
tris(2-Butoxyethyl) phosphate (TBEP)	78-51-3	100 µg/mL	Toluene	PFRS-022S	
tris(2-Chloroethyl) phosphate (TCEP)	115-96-8	100 µg/mL	Toluene	PFRS-024S	
tris(1-Chloro-2-propyl) phosphate (TCPP, TCiPP)	13674-84-5	100 µg/mL	Toluene	PFRS-025S	
tris(2-Chloropropyl) phosphate	6145-73-9	100 µg/mL	Toluene	PFRS-023S	
Tri(3-chloropropyl) phosphate (TCPP)	26248-87-3	100 µg/mL	Toluene	PFRS-010S	
tris(1,3-Dichloro-2-propyl) phosphate (TDCPP, TDCP)	13674-87-8	100 µg/mL	Toluene	PFRS-027S	
tris(2,3-Dibromopropyl)phosphate	126-72-7	100 µg/mL	Toluene	PFRS-026S	
bis(2,3-Dibromopropyl)phosphate	5412-25-9	100 µg/mL	Toluene	PFRS-002S	
tris(Tribromoneopentyl) phosphate (TTBNP)	19186-97-1	100 µg/mL	Toluene	PFRS-029S	
Tetrakis(2-chloroethyl)dichloroisopentylidiphosphate (V6)	38051-10-4	100 µg/mL	Toluene	PFRS-003S	
Resorcinol bis(diphenyl phosphate) (RDP)	57583-54-7	100 µg/mL	Toluene	PFRS-030S	
Bisphenol A bis(diphenyl phosphate) (BADP, BAPP, BPADP, BDP)	5945-33-5	100 µg/mL	Toluene	PFRS-001S	



Polynuclear Aromatic Hydrocarbons

Polyaromatic Hydrocarbons (PAHs) are hydrocarbon compounds with multiple benzene rings. PAHs are typical components of asphalts, fuels, oils, and greases. They are also called Polycyclic Aromatic Hydrocarbons and have been linked to cancer and hormone disruption.



PAHs available in Bulk Quantities, Please inquire.

NEATS as stated, SOLUTIONS at 50 µg/mL in Toluene, except where noted.

Polynuclear Aromatic Hydrocarbons (PAHs)

Compound	Synonym	CAS No.	NEAT Cat. No.	Unit	SOLUTION Cat. No.	1 mL
Acenaphthene		83-32-9	H-108N	100 mg	H-108S	
Acenaphthylene		208-96-8	H-125N	100 mg	H-125S	
Acridine		260-94-6	H-187N	100 mg	H-187S	
Anthanthrene		191-26-4	H-109N	10 mg	H-109S	
Anthracene		120-12-7	H-110N	100 mg	H-110S	
Azulene		275-51-4	H-127N	10 mg	H-127S	
Benz[a]anthracene	1,2-Benzanthracene	56-55-3	H-100N	10 mg	H-100S	
Benz[a]anthracene-7,12-dione	1,2-Benzoanthraquinone	2498-66-0	H-111N	10 mg	H-111S	
Benz[a]fluorene	1,2-Benzofluorene	238-84-6	-----	-----	H-130S	
Benz[a]pyrene (Ames grade)	3,4-Benzopyrene	50-32-8	H-169N	10 mg	H-169S	
Benz[e]pyrene		192-97-2	H-112N	10 mg	H-112S	
Benzo[b]anthracene	2,3-Benzanthracene	92-24-0	H-159N	10 mg	H-159S	
Benzo[b]chrysene		214-17-5	H-183N	5 mg	H-183S	
Benzo[b]fluoranthene	Benzo[e]acephenanthrylene	205-99-2	H-128N	10 mg	H-128S	
Benzo[j]fluoranthene		205-82-3	H-171N	10 mg	H-171S	
Benzo[k]fluoranthene		207-08-9	H-129N	10 mg	H-129S	
Benzo[b]fluorene	2,3-Benzofluorene	243-17-4	H-180N	10 mg	H-180S	
Benzo[g,h,i]perylene	1,12-Benzoperylene	191-24-2	H-103N	10 mg	H-103S	
Benzo[c]phenanthrene		195-19-7	H-244N	10 mg	H-244S	
2,3-Benzofuran		271-89-6	H-237N	10 mg	H-237S	
5,6-Benzoquinoline	Benzo[f]quinoline	85-02-9	H-113N-10MG	10 mg	H-113S	
7,8-Benzoquinoline		230-27-3	H-245N	100 mg	H-245S	
2,2'-Binaphthyl		612-78-2	H-239N	50 mg	H-239S	
Biphenyl		92-52-4	H-133N	500 mg	H-133S	
Carbazole		86-74-8	H-114N	100 mg	H-114S	
Chrysene	Benzo[a]phenanthrene	218-01-9	H-115N	100 mg	H-115S	
Coronene		191-07-1	H-116N	5 mg	H-116S	
Cyclopenta[c,d]pyrene		27208-37-3	-----	-----	H-242S	
Dibenz[a,h]acridine		226-36-8	H-172N	10 mg	H-172S	
Dibenz[a,j]acridine		224-42-0	H-173N	10 mg	H-173S	
Dibenz[a,c]anthracene	1,2:3,4-Dibenzanthracene	215-58-7	H-134N	10 mg	H-134S	
Dibenz[a,h]anthracene	1,2:5,6-Dibenzanthracene	53-70-3	H-135N	10 mg	H-135S	
Dibenz[a,e]fluoranthene		5385-75-1	-----	-----	H-247S	
Dibenz[a,e]pyrene	1,2,4,5-Dibenzopyrene	192-65-4	-----	-----	H-138S	
Dibenz[a,h]pyrene		189-64-0	H-177N	10 mg	H-177S	
Dibenz[a,i]pyrene		189-55-9	H-178N	5 mg	H-178S	
Dibenz[a,l]pyrene		191-30-0	-----	-----	H-179S	
7H-Dibenzo[c,g]carbazole		194-59-2	-----	-----	H-176S	
Dibenzo-p-dioxin		262-12-4	D-100N	10 mg	D-100S *	
Dibenzofuran		132-64-9	F-100N	50 mg	F-100S	
Dibenzothiophene	Diphenylene sulfide	132-65-0	H-117N	100 mg	H-117S	
Dibenz[a,l]pentacene	1,2:8,9-Dibenzpentacene	227-09-8	-----	-----	H-139S	
9,10-Dihydroanthracene		613-31-0	H-140N	100 mg	H-140S	
12,12A-Dihydro-3,9-dimethylbenz[a]anthracene			-----	-----	H-188S	
Diindeno[1,2,3-cd-1',2',3'-lm]perylene	Periflanthene	188-94-3	-----	-----	H-141S	
2,3-Dimethylantracene		613-06-9	H-189N	10 mg	H-189S	
9,10-Dimethylantracene		781-43-1	H-190N	10 mg	H-190S	
3,9-Dimethylbenz[a]anthracene		316-51-8	-----	-----	H-191S	
6,8-Dimethylbenz[a]anthracene		317-64-6	-----	-----	H-192S	
7,12-Dimethylbenz[a]anthracene		57-97-6	H-174N	10 mg	H-174S	
7,10-Dimethylbenz[a]pyrene		63104-33-6	-----	-----	H-195S	
1,12-Dimethylbenzo[c]phenanthrene		4076-43-1	-----	-----	H-193S	
5,8-Dimethylbenzo[c]phenanthrene		54886-63-9	-----	-----	H-194S	

* in Isooctane



NEATS as stated, SOLUTIONS at 50 µg/mL in Toluene

Polynuclear Aromatic Hydrocarbons (PAHs) (Continued)

Compound	Synonym	CAS No.	NEAT Cat. No.	Unit	SOLUTION Cat. No.	1 mL
1,2-Dimethylnaphthalene		573-98-8	H-197N	10 mg	H-197S	
1,3-Dimethylnaphthalene (96%)		575-41-7	H-198N	10 mg	H-198S	
1,4-Dimethylnaphthalene (95%)		571-53-4	H-199N	10 mg	H-199S	
1,5-Dimethylnaphthalene		571-61-9	H-200N	10 mg	H-200S	
1,6-Dimethylnaphthalene		575-43-9	H-201N	10 mg	H-201S	
1,8-Dimethylnaphthalene (95%)		569-41-5	H-202N	10 mg	H-202S	
2,6-Dimethylnaphthalene		581-42-0	H-161N	10 mg	H-161S	
2,7-Dimethylnaphthalene		582-16-1	H-203N	10 mg	H-203S	
3,6-Dimethylphenanthrene		1576-67-6	H-142N-5MG	5 mg	H-142S	
9,10-Diphenylanthracene		1499-10-1	H-185N	100 mg	H-185S	
Dodecahydrotriphenylene		1610-39-5	H-144N	100 mg	H-144S	
6-Ethylchrysene		2732-58-3	H-264N	10 mg		
Fluoranthene		206-44-0	H-118N	100 mg	H-118S	
Fluorene		86-73-7	H-146N	100 mg	H-146S	
Indan		496-11-7	H-231N	100 mg	H-231S	
Indene		95-13-6	H-230N	100 mg	H-230S	
Indeno[1,2,3-cd]pyrene	o-Phenylene pyrene	193-39-5	H-157N	10 mg	H-157S	
Indole		120-72-9	H-236N	100 mg	H-236S	
Isoquinoline		119-65-3	H-232N	100 mg	H-232S	
1-Methylantracene		610-48-0	H-222N	10 mg	H-222S	
2-Methylantracene		613-12-7	H-148N	10 mg	H-148S	
9-Methylantracene		779-02-2	H-149N	10 mg	H-149S	
1-Methylbenz[a]anthracene		2498-77-3	-----	-----	H-213S	
2-Methylbenz[a]anthracene		2498-76-2	-----	-----	H-214S	
3-Methylbenz[a]anthracene		2498-75-1	-----	-----	H-215S	
4-Methylbenz[a]anthracene		316-49-4	-----	-----	H-216S	
5-Methylbenz[a]anthracene		2319-96-2	-----	-----	H-217S	
6-Methylbenz[a]anthracene		316-14-3	-----	-----	H-218S	
7-Methylbenz[a]anthracene		2541-69-7	-----	-----	H-219S	
9-Methylbenz[a]anthracene		2381-16-0	-----	-----	H-220S	
10-Methylbenz[a]anthracene		2381-15-9	-----	-----	H-221S	
7-Methylbenz[a]pyrene		63041-77-0	H-223N	10 mg	H-223S	
8-Methylbenz[a]pyrene		63041-76-9	-----	-----	H-205S	
9-Methylbenz[a]pyrene		70644-19-8	-----	-----	H-206S	
10-Methylbenz[a]pyrene		63104-32-5	-----	-----	H-207S	
1-Methylbenzo[c]phenanthrene		4076-39-5	-----	-----	H-208S	
2-Methylbenzo[c]phenanthrene		2606-85-1	-----	-----	H-209S	
3-Methylbenzo[c]phenanthrene		2381-19-3	-----	-----	H-210S	
4-Methylbenzo[c]phenanthrene		4076-40-8	-----	-----	H-211S	
5-Methylbenzo[c]phenanthrene		652-04-0	-----	-----	H-212S	
3-Methylcholanthrene		56-49-5	H-170N	10 mg	H-170S	
4-Methylchrysene		3351-30-2	-----	-----	H-228S	
5-Methylchrysene		3697-24-3	-----	-----	H-243S	
6-Methylchrysene		1705-85-7	H-175N	10 mg	H-175S	
2-Methylfluoranthene		33543-31-6	H-182N-5MG	5 mg	H-182S	
1-Methylnaphthalene		90-12-0	H-001N	100 mg	H-001S	
2-Methylnaphthalene		91-57-6	H-002N	100 mg	H-002S	
9-Methyl-9-phenylfluorene		56849-83-3	H-204N	10 mg	H-204S	
1-Methylphenanthrene		832-69-9	-----	-----	H-162S	
2-Methylphenanthrene		2531-84-2	-----	-----	H-003S	
3-Methylphenanthro[3,4-c]phenanthrene		83844-21-7	-----	-----	H-224S	
1-Methylpyrene		2381-71-7	-----	-----	H-233S	
4,5-Methylenepheneanthrene		203-64-5	-----	-----	H-119S	
Naphthalene		91-20-3	H-152N	100 mg	H-152S	
Perylene		198-55-0	H-121N	10 mg	H-121S	
Phenanthrene		85-01-8	H-122N	100 mg	H-122S	
9-Phenylantracene		602-55-1	H-156N	100 mg	H-156S	
1-Phenylnaphthalene		605-02-7	H-246N	100 mg	H-246S	
2-Phenylnaphthalene		612-94-2	H-158N	5 mg	H-158S	
Picene		213-46-7	-----	-----	H-184S	
Pyrene		129-00-0	H-123N	100 mg	H-123S	
Pyrrrole		109-97-7	H-229N	100 mg	H-229S	
Quinoline		91-22-5	H-186N	100 mg	H-186S	
2,3,6,7-Tetraethylbiphenylene			H-225N	10 mg	H-225S	
1,2,3,4-Tetrahydrofluoranthene		20279-21-4	H-165N	10 mg	H-165S	
Thianaphthene		95-15-8	H-238N	100 mg	H-238S	
Thianthrene		92-85-3	H-241N	100 mg	-----	--
4,6,8-Trimethylazulene		941-81-1	H-226N	10 mg	H-226S	
8,9,11-Trimethylbenz[a]anthracene		74845-58-2	-----	-----	H-227S	
1,6,7-Trimethylnaphthalene		2245-38-7	H-268N-5MG	5 mg	H-268S	
Triphenylene		217-59-4	H-235N	10 mg	H-235S	
Truxene (95%)		548-35-6	H-124N	100 mg	H-124S	

PAHS



Polynuclear Aromatic Hydrocarbons

PAH Sets and Solutions

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

PAH Neat Sets

Z-001-SET

20 x 5 mg

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

Z-013N-SET

16 x 10 mg

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 Solutions

Z-013-SET

Each at 0.2 mg/mL at stated solvent

17 x 1 mL
plus Z-013-17

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

Z-013-17

0.2 mg/mL each in MeOH:CH₂Cl₂ (50:50)

1 x 1 mL
16 comps.

PAH Mix (Quebec Ministry of Environmental)

H-QME-01

500 µg/mL each in CH₂Cl₂:Benzene (50:50)

1 x 1 mL
24 comps.

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



Nitro-Polynuclear Aromatic Hydrocarbons



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

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

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

Nitro-PAHs

Nitro-PAHs

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

Di- and Tri- Nitro-PAHs

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

Nitro-Aromatics

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

PAHs Derivatives continued on next page

References:

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



Polynuclear Aromatic Hydrocarbons Derivatives

Amino-PAHs

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

Hydroxy-PAHs

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

Amino-Aromatics

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

† Subject to oxidation

DIN-38407-17 Nitroaromatic Compounds

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

DIN38407-17

500 µg/mL each in MeOH

1 x 1 mL

12 comps.

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





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





Pesticide Product Information

Custom pesticide formulations can be prepared for residue screening and other applications.
See back of catalog for details.

Can't find a Pesticide?
Search in CAS No. Index in back of the catalog.

Pesticide Catalog Numbers have 5 parts:

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

Example:

P-017S is Chlordane at 100 µg/mL in Methanol

P-017N is Chlordane neat (10 mg)

P-017S-H-10X is Chlordane at 1000 µg/mL in Hexane

in Acetone (-A)

in Acetonitrile (-CN)

in Ethyl acetate (-EA)

in Hexane (-H)

in Isooctane (-TP)

in Methyl cellosolve (-MC)

in Toluene (-T)

in Water (-W)

Catalog Numbers Solvents Key

Neat Pesticide Standards

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. Calculate the difference to determine the amount of material transferred.





Pesticides, their by-products, metabolites and degradates

Pesticides are usually viewed as something bad for the environment and human health. Research on the presence and toxicity of pesticides is an important factor in understanding the risk/benefit balance of their use.

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

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

Over 1000 Individual Pesticide Standards



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Honeybee Colony Collapse Disorder (CCD)	

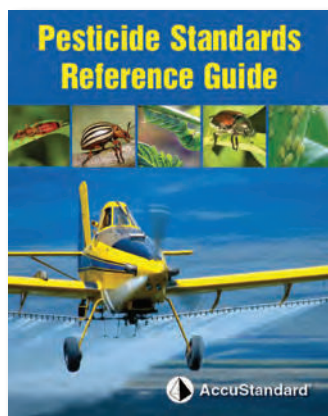
Same Low Price in Neat (10 mg) or Solution (100 µg/mL) form

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

EXACT WEIGHT for Neat Pesticides

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

Pesticide Standards Reference Guide



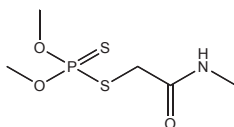
Includes formulations for over 50 EPA and international pesticide methods.

Lists over 1000 pesticides and contains technical information such as chemical name, structure, CAS number, molecular formula, molecular weight and physical state. Most also include solubility, specific gravity, melting or boiling point, flash point and common synonyms.

Sample:

Dimethoate

2-Dimethoxyphosphinothioylthio-N-methylacetamide



CAS 60-51-5 MF C₅H₁₂NO₃PS₂ MW 229.26 PS S
SG 1.31 g/cm³ MP 50 °C BP 117 °C FP 107 °C

Matrix	Cat. No.	Unit
Neat	P-039N	10 mg
100 µg/mL in MeOH	P-039S	1 mL

Property Key

CAS	Chemical Abstract Service Number
MF	Molecular Formula
MW	Molecular Weight
PS	Physical State (Solid, Liquid)
SOL	Solubility
SG	Specific Gravity (g/cm ³)
MP	Melting Point (°C)
BP	Boiling Point (°C)
FP	Flash Point (°C)

Solubility Key (SOL)

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

Download Pesticide Standards Reference Guide at AccuStandard.com



Pesticides

Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
<i>AAtrex</i>	see Atrazine			Amicarbazone	129909-90-6	AcCN	P-1152S-CN
Abamectin	71751-41-2	NEAT	P-615N	Amidosulfuron	120923-37-7	NEAT	P-821N
		MeOH	P-615S			AcCN	P-821S-CN
<i>Abaphos</i>	see Abate			<i>Amigol</i>	see Amitrole		
<i>Abar</i>	see Leptophos			Aminocarb	2032-59-9	NEAT	P-062N
Abate	3383-96-8	NEAT	P-101N			MeOH	P-062S
		MeOH	P-101S	Aminomethylphosphonic acid	1066-51-9	NEAT	P-625N
<i>Abathion</i>	see Abate					Water	P-625S-W
<i>Acalarate</i>	see Chloropropylate			Aminopyralid	150114-71-9	NEAT	P-1048N
<i>Acarben</i>	see Chlorobenzilate					MeOH	P-1048S
<i>Acclaim</i>	see Fenoxaprop-p-ethyl			4-Aminopyridine	504-24-5	NEAT	P-407N
Acephate	30560-19-1	NEAT	P-200N			MeOH	P-407S
		Acetone	P-200S-A	<i>Aminotriazole</i>	see Amitrole		
Acequinocyl	57960-19-7	NEAT	P-1037N	<i>Aminozone</i>	see Alar		
		AcCN	P-1037S-CN	<i>Amiral</i>	see Triadimefon		
Acetamiprid	135410-20-7	NEAT	P-820N	Amisulbrom	348635-87-0	MeOH	P-998S
		AcCN	P-820S-CN	Amitraz	33089-61-1	NEAT	P-409N
Acetochlor	34256-82-1	NEAT	P-465N			AcCN	P-409S-CN
		MeOH	P-465S	Amitrole (ATA)	61-82-5	NEAT	P-103N
Acibenzolar-S-methyl	135158-54-2	NEAT	P-895N			MeOH	P-103S
		MeOH	P-895S	<i>Amizine</i>	see Simazine		
Acifluorfen ♦	50594-66-6	NEAT	P-245N	<i>Amizol</i>	see Amitrole		
		MeOH	P-245S	Ammonium sulfamate	7773-06-0	NEAT	P-530N
		AcCN	P-245S-CN			MeOH	P-530S
Acifluorfen methyl ester	50594-67-7	NEAT	P-246N	<i>AMS</i>	see Ammonium sulfamate		
		MeOH	P-246S	Ancymidol	12771-68-5	NEAT	P-410N
Acionifen	74070-46-5	AcCN	P-890S-CN			MeOH	P-410S
Acrinathrin	101007-06-1	AcCN	P-842S-CN	Anilazine	101-05-3	NEAT	P-287N
						Hexane	P-287S-H
<i>Actellic</i>	see Pirimphos methyl ester			Anilofos	64249-01-0	AcCN	P-973S-CN
<i>Acti-Aid</i>	see Cycloheximide			<i>Antiphen</i>	see Dichlorophen		
<i>Actosin C</i>	see Chlorophacinone			<i>Apl-Luster</i>	see Thiabendazole		
<i>Admire</i>	see Imidacloprid			<i>Aprocarb</i>	see Baygon		
<i>Afalon</i>	see Linuron			<i>Aracide</i>	see Aramite		
<i>Affirm</i>	see Abamectin			<i>Aracnol F</i>	see Cyhexatin		
<i>Afugan</i>	see Pyrazophos			Aramite	140-57-8	MeOH	P-132S
<i>Agritox</i>	see Trichloronate			<i>A-Rest</i>	see Ancymidol		
<i>Agroxone</i>	see MCPA acid			<i>Arisan</i>	see Buturon		
<i>Aimsan</i>	see Phenthoate			<i>Arresin</i>	see Monolinuron		
<i>Akar</i>	see Chlorobenzilate			Aspon	3244-90-4	MeOH	P-309S
Alachlor	15972-60-8	NEAT	P-102N				
		MeOH	P-102S	<i>Assure</i>	see Quizalofop ethyl		
Alanap	132-66-1	NEAT	P-274N	Asulam	3337-71-1	NEAT	P-276N
		MeOH	P-274S			MeOH	P-276S
Alar	1596-84-5	NEAT	P-174N	<i>ATA</i>	see Amitrole		
		MeOH	P-174S	<i>Athrombine-K</i>	see Warfarin		
Albendazole	54965-21-8	NEAT	P-498N	<i>Atritol</i>	see Atrazine		
		MeOH	P-498S	<i>Atraton</i>	see Gesatamin		
Aldicarb	116-06-3	NEAT	P-001N	Atrazine	1912-24-9	NEAT	P-005N
		MeOH	P-001S			MeOH	P-005S
						Acetone	P-005S-A-10X
Aldicarb sulfone	1646-88-4	NEAT	P-130N	Atrazine desethyl	6190-65-4	NEAT	P-343N
		MeOH	P-130S			MeOH	P-343S
Aldicarb sulfoxide	1646-87-3	NEAT	P-131N ♦	Atrazine-desethyl-desisopropyl	3397-62-4	NEAT	P-428N
		MeOH	P-131S			MeOH	P-428S
<i>Aldoxycarb</i>	see Aldicarb sulfone			Atrazine-desethyl-2-hydroxy	19988-24-0	MeOH	P-544S
Aldrin	309-00-2	NEAT	P-002N ♦	Atrazine-desisopropyl	1007-28-9	NEAT	P-345N
		MeOH	P-002S			MeOH	P-345S
<i>Alfa-tox</i>	see Diazinon			Atrazine-desisopropyl-2-hydroxy	7313-54-4	NEAT	P-344N
Allethrin	584-79-2	NEAT	P-267N			MeOH	P-344S
		MeOH	P-267S	<i>Avadex</i>	see Diallylate		
Allidochlor	93-71-0	NEAT	P-670N	<i>Avid</i>	see Abamectin		
		MeOH	P-670S	<i>Axial</i>	see Pinoxaden		
<i>Allisan</i>	see Botran			Azaconazole	60207-31-0	NEAT	P-971N
<i>Altosid</i>	see Methoprene					AcCN	P-971S-CN
Alloxydim-sodium	55635-13-7	NEAT	P-510N	Azaditracin	11141-17-6	MeOH	P-711S
		MeOH	P-510S	Azamethiphos	35575-96-3	NEAT	P-352N
<i>Amaze</i>	see Isofenphos					MeOH	P-352S
<i>Ambush</i>	see Permethrine			Azimsulfuron	120162-55-2	50 µg/mL	P-1036S-CN-0.5X
<i>Amdro</i>	see Hydranethylnon					AcCN	
Ametoctradin	865318-97-4	MeOH	P-1039S	Azinphos-ethyl	2642-71-9	NEAT	P-201N
Ametryn	834-12-8	NEAT	P-003N			MeOH	P-201S
		MeOH	P-003S				

♦ Pesticides containing a carboxyl group may autoesterify in Methanol. These standards are intended for use as a post-esterification standard for GC analysis.

For other types of analysis (ex. HPLC) we suggest a non-hydroxylic solvent such as Acetonitrile.

♦ ColdPAK required to maintain integrity of product.

♦ V-Rated packaging surcharge applies for international shipments.



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

Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
Azinphos-methyl	86-50-0	NEAT	P-007N	Bethrodine	see Benfluralin		
		MeOH	P-007S	BHC Tech	608-73-1	NEAT	P-081N
Azocyclotin	41083-11-8	NEAT	P-353N			MeOH	P-081S
		MeOH	P-353S	α-BHC	319-84-6	NEAT	P-010N
Azoxystrobin	131860-33-8	NEAT	P-719N			MeOH	P-010S
		MeOH	P-719S	β-BHC	319-85-7	NEAT	P-011N
Barvel	see Dicamba					MeOH	P-011S
Barbamate	101-27-9	NEAT	P-202N	δ-BHC	319-86-8	NEAT	P-012N
		MeOH	P-202S			MeOH	P-012S
Barban	see Barbamate			γ-BHC	see Lindane		
Barben	see Azinphos-methyl			Bidrin	see Dicrotophos		
Barnon	52756-22-6	NEAT	P-646N	Bifenazate	149877-41-8	5 mg	P-772N-5MG
		MeOH	P-646S			MeOH	P-772S
Basagran	see Bentazon			Bifenox	42576-02-3	NEAT	P-257N
Basalin	see Fluchloralin					MeOH	P-257S
Basudin	see Diazinon			Bifenthrin	82657-04-3	NEAT	P-445N
Baythroid	see Cyfluthrin					MeOH	P-445S
Baycarb	3766-81-2	NEAT	P-347N	Biflex	see Bifenthrin		
		MeOH	P-347S	Binapacryl	485-31-4	NEAT	P-499N
Baycor	See Bitertanol					MeOH	P-499S
Bayfidan	see Triadimenol			Bioallethrin	28057-48-9	NEAT	P-665N
Baygon	114-26-1	NEAT	P-009N			MeOH	P-665S
		MeOH	P-009S	S-Bioallethrin	28424-00-6	NEAT	P-664N
Bayleton	see Triadimefon					MeOH	P-664S
Bayluscid	see Niclosamide			Bioresmethrin	28434-01-7	NEAT	P-594N
Baytan	see Triadimenol					MeOH	P-594S
Baytex	see Fenthion			Bitertanol	55179-31-2	NEAT	P-351N
Baythion	see Phoxim					MeOH	P-351S
Beam	see Tricyclazole			Bitrex	3734-33-6	NEAT	P-679N
Beflubutamid	113614-08-7	NEAT	P-1041N			MeOH	P-679S
		MeOH	P-1041S	Bladafum	see Sulfotep		
Benalaxyl	71626-11-4	NEAT	P-559N	Bladan	see Parathion		
		MeOH	P-559S	Blattanex	see Baygon		
Benazolin	3813-05-6	NEAT	P-397N	Bloc	60168-88-9	NEAT	P-086N
		MeOH	P-397S			MeOH	P-086S
Bendiocarb	22781-23-3	NEAT	P-203N	B-Nine	see Alar		
		MeOH	P-203S	Bolero	see Thiobencarb		
Benefin	see Benfluralin			Bolstar	35400-43-2	NEAT	P-108N
Benelux	see Thiofanox					MeOH	P-108S
Benfluralin	1861-40-1	NEAT	P-237N	Bonzi	76738-62-0	NEAT	P-669N
		MeOH	P-237S			MeOH	P-669S
Benfuracarb	82560-54-1	NEAT	P-454N	Boscalid	188425-85-6	NEAT	P-811N
		MeOH	P-454S			MeOH	P-811S *
Benfuresate	68505-69-1	NEAT	P-1080N	Botran	99-30-9	NEAT	P-013N
		MeOH	P-1080S			MeOH	P-013S
Benlate	see Benomyl			BPMC	see Baycarb		
Benodanil	15310-01-7	NEAT	P-671N	Bravo	see Chlorothalonil		
		MeOH	P-671S	Brigade	see Bifenthrin		
Benomyl	17804-35-2	NEAT	P-104N	Brodifacoum	56073-10-0	NEAT	P-677N
		AcCN	P-104S-CN *			MeOH	P-677S
Benoxacor	98730-04-2	NEAT	P-490N	Bromacil	314-40-9	NEAT	P-181N
		MeOH	P-490S			MeOH	P-181S
Bensulfuron-methyl	83055-99-6	NEAT	P-597N	Bromadiolone	28772-56-7	NEAT	P-316N
		MeOH	P-597S			MeOH	P-316S *
Bensulide	741-58-2	NEAT	P-204N	Bromex	see Naled		
		MeOH	P-204S	Brominal	1689-84-5	NEAT	P-256N
Bensultap	17606-31-4	NEAT	P-678N			MeOH	P-256S
		MeOH	P-678S	Bromobutide	74712-19-9	MeOH	P-1059S
Bentazon ♦	25057-89-0	NEAT	P-177N	Bromofenoxim	13181-17-4	NEAT	P-511N
		Acetone	P-177S-A			MeOH	P-511S
		AcCN	P-177S-CN	Bromophos-ethyl	4824-78-6	NEAT	P-372N
Bentazon methyl	61592-45-8	NEAT	P-241N			MeOH	P-372S
		MeOH	P-241S	Bromophos-methyl	2104-96-3	NEAT	P-484N
Benthiavalicarb-isopropyl	177406-68-7	10 µg/mL	P-1049S-A-0.1X			MeOH	P-484S
		Acetone		Bromopropylate	18181-80-1	NEAT	P-457N
Benthiocarb	see Thiobencarb					MeOH	P-457S
Benzofuroline	see Resmethrin			Bromoxynil	see Brominal		
Benzoximate	29104-30-1	AcCN	P-801S-CN	Bromoxynil-heptanoate	56634-95-8	MeOH	P-1012S
Benzoylprop ethyl	22212-55-1	NEAT	P-340N			NEAT	P-573N
		MeOH	P-340S	Bromoxynil methyl ether	3336-39-8	MeOH	P-573S
Betasan	see Bensulide						

♦ Pesticides containing a carboxyl group may autoesterify in Methanol. These standards are intended for use as a post-esterification standard for GC analysis. For other types of analysis (ex. HPLC) we suggest a non-hydroxylic solvent such as Acetonitrile.

* ColdPAK required to maintain integrity of product.



Pesticides

Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
Bromoxynil octanoate	1689-99-2	NEAT	P-550N	Chloramben methyl ester	7286-84-2	NEAT	P-272N
		MeOH	P-550S			MeOH	P-272S
Bromuconazol	116255-48-2	NEAT	P-843N	Chlorantraniliprole	500008-45-7	NEAT	P-952N
		AcCN	P-843S-CN			MeOH	P-952S
Bueno	2163-80-6	NEAT	P-279N	Chlorbenside	103-17-3	NEAT	P-107N
		MeOH	P-279S			MeOH	P-107S
Bupirimate	41483-43-6	NEAT	P-672N	Chlorbromuron	13360-45-7	NEAT	P-520N
		MeOH	P-672S			MeOH	P-520S
Buprofezin	69327-76-0	NEAT	P-595N	Chlorbufam	1967-16-4	NEAT	P-558N
		MeOH	P-595S			MeOH	P-558S
Busan ♦	21564-17-0	AcCN	P-072S-CN	Chlordane (Tech)	12789-03-6	NEAT	P-017N
Butachlor	23184-66-9	NEAT	P-191N			MeOH	P-017S
		MeOH	P-191S	α-Chlordane	5103-71-9	NEAT	P-134N
Butafenacil	134605-64-4	NEAT	P-940N			MeOH	P-134S
		MeOH	P-940S			Hexane	P-134S-H
Butisan S	see Metazachlor			γ-Chlordane	5103-74-2	NEAT	P-135N
Butocarboxim	34681-10-2	NEAT	P-518N			MeOH	P-135S
		MeOH	P-518S	cis-Chlordane	see α-Chlordane		
Butocarboxim sulfoxide	34681-24-8	NEAT	P-701N	trans-Chlordane	see γ-Chlordane		
		MeOH	P-701S	Chlordecone	see Kepone		
Butoflin	see Deltamethrin			Chlordene	3734-48-3	NEAT	P-136N
Butox	see Deltamethrin					MeOH	P-136S
Butoxycarboxim	34681-23-7	NEAT	P-822N	Chlordimeform	6164-98-3	NEAT	P-333N
		AcCN	P-822S-CN			MeOH	P-333S
Butralin	33629-47-9	NEAT	P-574N	Chlorethoxyfos	54593-83-8	NEAT	P-1017N
		MeOH	P-574S			AcCN	P-1017S-CN
Buturon	3766-60-7	NEAT	P-301N	Chlorfenac	see Fenatrol		
		MeOH	P-301S	Chlorfenson	see Ovox		
Butylate	2008-41-5	NEAT	P-088N	Chlorfenapyr	122453-73-0	NEAT	P-807N
		MeOH	P-088S			MeOH	P-807S
Cadusafos	95465-99-9	NEAT	P-794N ♦	Chlorfenvinphos	470-90-6	NEAT	P-139N ♦
		MeOH	P-794S			MeOH	P-139S
Calcium arsenate	7778-44-1	NEAT	P-1076N	Chlorfluazuron	71422-67-8	AcCN	P-771S-CN *
Calixin	see Tridemorph			Chlorfluorecol-methyl ester	2536-31-4	NEAT	P-401N
Campechlor	see Toxaphene					MeOH	P-401S
Caparol	see Prometryne			Chlorfluorecol	see Chlorfluorecol-methyl ester		
Captafol	2425-06-1	NEAT	P-254N	Chloridazon	see Pyrazon		
		MeOH	P-254S	Chlorimuron-ethyl	90982-32-4	AcCN	P-284S-CN
Captan	133-06-2	NEAT	P-182N	Chlormephos	24934-91-6	NEAT	P-329N
		MeOH	P-182S *			MeOH	P-329S
Capture	see Bifenthrin			Chlormequat chloride	999-81-5	NEAT	P-338N
Carbamult	see Promecarb					MeOH	P-338S
Carbaryl	63-25-2	NEAT	P-083N	Chlornitrofen	1836-77-7	5 mg	P-816N-5MG
		MeOH	P-083S			AcCN	P-816S-CN
Carbendazim	10605-21-7	NEAT	P-278N	Chlorobenzilate ♦	510-15-6	NEAT	P-133N
		MeOH	P-278S			AcCN	P-133S-CN
Carbetamide	16118-49-3	NEAT	P-562N	Chloroea	see Monuron		
		MeOH	P-562S	2-Chloro-2',6'-diethylacetanilide	6967-29-9	NEAT	P-620N
Carbexsin	see Oxycarboxin					MeOH	P-620S
Carbiron	see Dicrotophos			2-Chloro-4-ethylamino-6-methylethylamino-s-triazine		NEAT	P-539N
Carbofuran	1563-66-2	NEAT	P-106N			MC	P-539S-MC
		MeOH	P-106S	2-Chloro-4-ethylamino-6-propylamino-s-triazine		NEAT	P-537N
Carbofuran phenol-3-ketone	17781-16-7	MeOH	P-630S		90952-64-0	MC	P-537S-MC
Carbophenothion	786-19-6	NEAT	P-095N	2-Chloro-4-methylamino-6-diethylamino-s-triazine		NEAT	P-541N
		MeOH	P-095S			MC	P-541S-MC
Carbophenothion methyl-o-analog		10 µg/mL in EtOAc	P-637S-EA-0.1X	2-Chloro-4-methylamino-6-sec-butylamino-s-triazine		NEAT	P-540N
						MC	P-540S-MC
Carbosulfan	55285-14-8	NEAT	P-446N	Chloroneb	2675-77-6	NEAT	P-212N
		MeOH	P-446S			MeOH	P-212S
Carboxin	5234-68-4	NEAT	P-216N	Chlorophacinone	3691-35-8	NEAT	P-314N
		MeOH	P-216S			MeOH	P-314S
Carbyne	see Barbamate			[3(2-Chlorophenyl)]-1,1-dimethylurea			
Carfentrazone-ethyl	128639-02-1	AcCN	P-957S-CN *		see 2-Monuron		
Carpropamid	104030-54-8	AcCN	P-1162S-CN	4-Chlorophenoxyacetic acid	see 4-CPA		
Cartap	15263-53-3	MeOH	P-577S	Chloropicrin	76-06-2	NEAT	P-398N ♦♦
Cartap hydrochloride	22042-59-7	NEAT	P-949N			MeOH	P-398S
CDEC	see Sulfallate			4-Chloro-2-methylphenol	1570-64-5	NEAT	P-1026N
Cekumethion	see Methyl parathion					MeOH	P-1026S
Chemathion	see Malathion			3-Chloro-1,2-propanediol	96-24-2	NEAT	P-408N
Chinomethionate	2439-01-2	NEAT	P-399N			MeOH	P-408S
		Acetone	P-399S-A	2-Chloroethanol	107-07-3	NEAT	P-1079N
Chloramben	133-90-4	NEAT	P-243N			MeOH	P-1079S
		MeOH	P-243S				

♦ V-Rated packaging surcharge applies for international shipments.

♦♦ This product can not ship by air.

Pesticides at same low price in Neat (10 mg) or Solution (100 µg/mL) form
Most Pesticides are available in 1000 µg/mL (add -10X). Call or visit website for pricing.



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

Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
1,1-bis(4-Chlorophenyl)ethylene		NEAT	P-1054N	<i>Crotoxypfos</i>	see Ciodrin		
	2642-81-1	MeOH	P-1054S	Cruformate	299-86-5	NEAT	P-292N
Chloropropylate	5836-10-2	NEAT	P-213N			MeOH	P-292S
		MeOH	P-213S	Cryolite	15096-52-3	NEAT	P-1071N
Chlorothalonil	1897-45-6	NEAT	P-222N	Cumyluron	99485-76-4	AcCN	P-1135S-CN *
		MeOH	P-222S	<i>Curacron</i>	see Profenofos		
Chlorotoluron	22175-22-0	AcCN	P-1368S-CN	Cyanazine	21725-46-2	NEAT	P-175N
Chloroxuron	1982-47-4	NEAT	P-402N			MeOH	P-175S
		MeOH	P-402S	Cyanofenphos	13067-93-1	NEAT	P-584N
Chlorpropham	101-21-3	NEAT	P-221N			MeOH	P-584S
		MeOH	P-221S	Cyanophos	2636-26-2	NEAT	P-531N
<i>Chlorpyrifos</i>	see Dursban					MeOH	P-531S
Chlorpyrifos-methyl	5598-13-0	NEAT	P-223N	Cyazofamid	120116-88-3	NEAT	P-969N
		MeOH	P-223S			MeOH	P-969S
Chlorpyrifos-oxon	5598-15-2	NEAT	P-700N	Cyclanilide	113136-77-9	AcCN	P-982S-CN
		MeOH	P-700S	Cycloate	1134-23-2	NEAT	P-248N
Chlorsulfuron	64902-72-3	NEAT	P-262N			MeOH	P-248S
		AcCN	P-262S-CN	Cycloheximide	66-81-9	MeOH	P-411N
<i>Chlorthal</i>	see DCPA diacid					MeOH	P-411S
Chlorthiamid	1918-13-4	NEAT	P-673N	<i>2-Cyclohexyl-4,6-dinitrophenol</i>	see Dinex		
		MeOH	P-673S	Cycloprate	54460-46-7	NEAT	P-1069N
Chlorthion	500-28-7	MeOH	P-674S			MeOH	P-1069S
Chlorthiophos	60238-56-4	NEAT	P-545N	Cyclosulfamuron	136849-15-5	MeOH	P-1086S
		MeOH	P-545S	Cycloxydime	101205-02-1	NEAT	P-735N
Chlortoluron	15545-48-9	NEAT	P-434N			MeOH	P-735S *
		MeOH	P-434S	Cycluron	2163-69-1	AcCN	P-791S-CN *
Chlorzolinate	84332-86-5	AcCN	P-683S-CN	Cyflufenamide	180409-60-3	AcCN	P-975S-CN *
Cinosulfuron	94593-91-6	NEAT	P-823N	Cyfluthrin - Mix of Isomers	68359-37-5	NEAT	P-354N
		AcCN	P-823S-CN			MeOH	P-354S *
Ciodrin	7700-17-6	MeOH	P-218S	<i>Cygon</i>	see Dimethoate		
<i>CIPC</i>	see Chlorpropham			Cyhalofop-butyl	122008-85-9	5 mg	P-944N-5MG
Clarity	104040-79-1	H ₂ O	P-495S-W			MeOH	P-944S
<i>Classic</i>	see Chlorimuron-ethyl			λ-Cyhalothrin	91465-08-6	NEAT	P-473N
Clethodim	99129-21-2	NEAT	P-602N			MeOH	P-473S *
		AcCN	P-602S-CN *	Cyhexatin	13121-70-5	NEAT	P-375N
Clodinafop	114420-56-3	NEAT	P-1009N			MeOH	P-375S
		MeOH	P-1009S	<i>Cyolane</i>	see Phosfolan		
Clodinafop-propargyl	105512-06-9	NEAT	P-755N	Cymoxanil	57966-95-7	NEAT	P-493N
		AcCN	P-755S-CN			MeOH	P-493S *
Clofentezine	74115-24-5	NEAT	P-472N	Cypermethrin	52315-07-8	NEAT	P-225N
		MeOH	P-472S			MeOH	P-225S *
Clomazon	81777-89-1	MeOH	P-286S	α-Cypermethrin	67375-30-8	NEAT	P-548N
Clomeprop	84496-56-0	5 mg	P-1065N-5MG			AcCN	P-548S-CN
		Acetone	P-1065S-A	<i>cis-Cypermethrin</i>	see a-Cypermethrin		
<i>Clopyralid</i>	see Lontrel			Cyphenothrin	39515-40-7	NEAT	P-709N
Clopyralid methyl ester	1532-24-7	MeOH	P-488S			MeOH	P-709S
Cloquintocet-mexyl	99607-70-2	NEAT	P-929N	<i>Cypona</i>	see Dichlorvos		
		MeOH	P-929S	Cyprazine	22936-86-3	NEAT	P-420N
Cloransulam methyl	147150-35-4	AcCN	P-981S-CN			MeOH	P-420S
Clothianidin	210880-92-5	NEAT	P-947N			Hexane	P-420S-H
		MeOH	P-947S	Cyproconazole	94361-06-5	MeOH	P-555S
<i>CMU</i>	see Monuron			Cyprodinil	121552-61-2	NEAT	P-720N
<i>Comite</i>	see Propargite					MeOH	P-720S
<i>Command</i>	see Clomazone			Cyromazine	66215-27-8	NEAT	P-296N
<i>Confidor</i>	see Imidacloprid					MeOH	P-296S
<i>Contrac</i>	see Bromadiolone			<i>Cythion</i>	see Malathion		
Copper(II)carbonate	12069-69-1	NEAT	P-1074N	2,3-D acid ♦	2976-74-1	NEAT	P-470N
		MeOH	P-1074S			MeOH	P-470S
Copper oxychloride	1332-40-7	NEAT	P-458N			AcCN	P-470S-CN
<i>Cornox</i>	see MCPA acid			2,4-D acid ♦	94-75-7	NEAT	P-020N
<i>Cotoran</i>	see Fluometuron					MeOH	P-020S
Coumachlor	81-82-3	MeOH	P-684S			AcCN	P-020S-CN
<i>Coumaphene</i>	see Warfarin			2,6-D acid ♦	575-90-6	NEAT	P-690N
Coumaphos	56-72-4	NEAT	P-019N			MeOH	P-690S
		MeOH	P-019S			AcCN	P-690S-CN
Coumatetralyl	5836-29-3	NEAT	P-313N	2,4-D butoxyethyl ester	1929-73-3	NEAT	P-438N
		MeOH	P-313S	2,4-D butyl ester	94-80-4	NEAT	P-712N
<i>Counter</i>	see Terbufos					MeOH	P-712S *
4-CPA	122-88-3	NEAT	P-373N	2,4-D ethyl ester	533-23-3	NEAT	P-636N
		MeOH	P-373S			MeOH	P-636S
Crimidine	535-89-7	NEAT	P-561N	2,4-D ethylhexyl ester	1928-43-4	NEAT	P-439N
		MeOH	P-561S			Hexane	P-439S-H

♦ Pesticides containing a carboxyl group may autoesterify in Methanol. These standards are intended for use as a post-esterification standard for GC analysis. For other types of analysis (ex. HPLC) we suggest a non-hydroxylic solvent such as Acetonitrile.

* ColdPAK required to maintain integrity of product.



Pesticides

Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
2,4-D isobutyl ester	1713-15-1	NEAT	P-1027N	Demeton-S-methyl	919-86-8	NEAT	P-482N
		AcCN	P-1027S-CN			MeOH	P-482S
2,4-D methyl ester	1928-38-7	NEAT	P-021N	Demeton-S-methylsulfone	17040-19-6	NEAT	P-554N
		MeOH	P-021S			MeOH	P-554S
2,6-D methyl ester		NEAT	P-691N	<i>Demosan</i>	see Chloroneb		
<i>Dacamax</i>	see Thiofanox			<i>Desethylterbutylazine</i>	see Terbutylazin desethyl		
<i>Daconil</i>	see Chlorothalonil			Desmedipham	13684-56-5	NEAT	P-376N
<i>Dacthal diacid</i>	see DCPA diacid					MeOH	P-376S
<i>Dacthal monoacid</i>	see Monomethyl tetrachloroterephthalate			<i>Desmel</i>	see Tilt		
Dacthal	1861-32-1	NEAT	P-196N	Desmetryn	1014-69-3	NEAT	P-566N
		MeOH	P-196S			MeOH	P-566S
Daimuron	42609-52-9	AcCN	P-1087S-CN *	<i>Devrinol</i>	see Napropamide		
Dalapon acid †	75-99-0	NEAT	P-140N	<i>Dexon</i>	see Fenaminosulf		
		MeOH	P-140S	Diafenthion	80060-09-9	NEAT	P-1064N
		AcCN	P-140S-CN			Acetone	P-1064S-A
Dalapon methyl ester	17640-02-7	NEAT	P-226N	<i>Dialifor</i>	see Dialifos		
		MeOH	P-226S	Dialifos	10311-84-9	NEAT	P-426N
<i>Daminozide</i>	see Alar					MeOH	P-426S
<i>Danicut</i>	see Amitraz			Diallate	2303-16-4	NEAT	P-142N
Danitol	39515-41-8	NEAT	P-263N			MeOH	P-142S
		MeOH	P-263S	Diazinon	333-41-5	NEAT	P-033N
Dasanit	115-90-2	NEAT	P-235N			MeOH	P-033S
		MeOH	P-235S	Diazinon-o-analog	962-58-3	NEAT	P-640N
Dazomet	533-74-4	NEAT	P-469N			Acetone	P-640S-A
		MeOH	P-469S	Dibam	128-04-1	NEAT	P-487N
2,4-DB acid †	94-82-6	NEAT	P-141N			MeOH	P-487S
		MeOH	P-141S	<i>Dibrom</i>	see Naled		
		AcCN	P-141S-CN	Dibutylchloredate	1770-80-5	NEAT	P-109N
2,4-DB methyl ester	18625-12-2	NEAT	P-228N			MeOH	P-109S
		MeOH	P-228S	Dicamba †	1918-00-9	NEAT	P-008N
<i>DBCP</i>	see Fumazone					MeOH	P-008S
<i>DCMU</i>	see Karmex					AcCN	P-008S-CN
<i>DCNA</i>	see Botran			<i>Dicamba diglycolamine (tech)</i>	see Clarity		
<i>DCPA</i>	see Dacthal			Dicamba methyl ester	6597-78-0	NEAT	P-071N
DCPA diacid †	2136-79-0	NEAT	P-320N			MeOH	P-071S
		MeOH	P-320S	<i>Dicaptan</i>	see Dicapthon		
		AcCN	P-320S-CN	Dicapthon	2463-84-5	NEAT	P-035N
o,p'-DDD	53-19-0	NEAT	P-024N			MeOH	P-035S
		MeOH	P-024S	Dichlobenil	1194-65-6	NEAT	P-275N
o,p'-DDE	3424-82-6	NEAT	P-026N			MeOH	P-275S
		MeOH	P-026S	Dichlofenthion	97-17-6	NEAT	P-211N
o,p'-DDT	789-02-6	NEAT	P-028N			MeOH	P-211S
		MeOH	P-028S	Dichlofluanid	1085-98-9	NEAT	P-474N
p,p'-DDA	83-05-6	NEAT	P-444N			MeOH	P-474S
		MeOH	P-444S	Dichlone	117-80-6	NEAT	P-253N
p,p'-DDD	72-54-8	NEAT	P-025N			MeOH	P-253S
		MeOH	P-025S	<i>Dichloran</i>	see Botran		
p,p'-DDE	72-55-9	NEAT	P-027N	Dichlormid	37764-25-3	NEAT	P-675N
		MeOH	P-027S			MeOH	P-675S
p,p'-DDT	50-29-3	NEAT	P-029N	3,5-Dichloroaniline	626-43-7	NEAT	P-1008N
		MeOH	P-029S			MeOH	P-1008S
DDT (Tech)	8017-34-3	NEAT	P-346N	<i>3,6-Dichloroanisic acid</i>	see Clarity		
		MeOH	P-346S	2,6-Dichlorobenzamide	2008-58-4	NEAT	P-1035N
		AcCN	P-346S-CN			MeOH	P-1035S
4,4'-DDMU	1022-22-6	NEAT	P-424N	3,5-Dichlorobenzoic acid †	51-36-5	NEAT	P-242N
		MeOH	P-424S			MeOH	P-242S
<i>DDVP</i>	see Dichlorvos					AcCN	P-242S-CN
<i>Dechlorane</i>	see Mirex			4,4'-Dichlorobenzophenone	90-98-2	NEAT	P-295N
<i>Decis</i>	see Deltamethrin					MeOH	P-295S
<i>Dedevap</i>	see Dichlorvos			2,4-Dichloro-6-ethylamino-s-triazine	3440-19-5	NEAT	P-538N
Deet	134-62-3	NEAT	P-255N			MC	P-538S-MC
		MeOH	P-255S	2,3-Dichloronitrobenzene	3209-22-1	NEAT	P-1005N
DEF 6	78-48-8	NEAT	P-150N			MeOH	P-1005S-T
		MeOH	P-150S	2,4-Dichlorophenylacetic acid †	19719-28-9	NEAT	P-244N
<i>Delnav</i>	see Dioxathion					MeOH	P-244S
Deltamethrin	52918-63-5	NEAT	P-355N			AcCN	P-244S-CN
		MeOH	P-355S	<i>3-(2,3-Dichlorophenyl)-1,1-dimethylurea</i>	see 2,3-Diuron		
Demeton (mixed isomers)	8065-48-3	NEAT	P-031N	Dichlorophen	97-23-4	NEAT	P-232N
		MeOH	P-031S			MeOH	P-232S
Demeton-S	126-75-0	NEAT	P-271N	1-(3,4-Dichlorophenyl)-3-methylurea	3567-62-2	NEAT	P-1038N
		MeOH	P-271S			MeOH	P-1038S

† Pesticides containing a carboxyl group may autoesterify in Methanol. These standards are intended for use as a post-esterification standard for GC analysis. For other types of analysis (ex. HPLC) we suggest a non-hydroxylic solvent such as Acetonitrile.

* ColdPAK required to maintain integrity of product.



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

Pesticide Standards							
Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
2,4-Dichlorophenylacetic acid Me see Methyl-2,4-dichlorophenylacetate				Dimethyl phosphate	813-78-5	NEAT MeOH	P-442N P-442S
Dichlorprop ⚡	120-36-5	NEAT MeOH AcCN	P-143N P-143S P-143S-CN	Dimethylvinphos (Z type)	67628-93-7	Acetone	P-1057S-A
Dichlorprop methyl ester	57153-17-0	NEAT MeOH	P-229N P-229S	Dimetilan	644-64-4	AcCN	P-905S-CN
Dichlorvos	62-73-7	NEAT MeOH	P-036N P-036S	Dimoxystrobin	149961-52-4	AcCN	P-844S-CN
Diclobutrazol	75736-33-3	NEAT AcCN	P-641N P-641S-CN	Dinex	131-89-5	NEAT MeOH	P-427N P-427S
Diclofop	40843-25-2	NEAT MeOH	P-514N P-514S	Diniconazol	83657-24-3	NEAT AcCN	P-845N P-845S-CN
Diclofop methyl	51338-27-3	NEAT MeOH	P-303N P-303S	Dinitramine	29091-05-2	NEAT MeOH	P-575N P-575S
Diclosulam	145701-21-9	NEAT MeOH	P-904N P-904S	4,6-Dinitro-o-cresol	534-52-1	NEAT MeOH	P-384N P-384S
o,p'-Dicofol	10606-46-9	NEAT MeOH	P-606N P-606S	Dinocap	39300-45-3	NEAT MeOH	P-288N P-288S
Dicofol	see Kelthane			Dinoseb ⚡	88-85-7	NEAT MeOH	P-144N P-144S
Dicrotophos	141-66-2	NEAT MeOH	P-178N P-178S	Dinoseb acetate	2813-95-8	NEAT MeOH	P-779N P-779S
Dieldrin	60-57-1	NEAT MeOH	P-037N ⚡ P-037S	Dinoseb methyl ether	6099-79-2	NEAT MeOH	P-230N P-230S
Deltamid	see Deet			Dinoterb	1420-07-1	MeOH	P-524S
Diethatyl ethyl	38727-55-8	NEAT MeOH	P-599N P-599S	Dioxacarb	6988-21-2	NEAT MeOH	P-264N P-264S
Diethofencarb	87130-20-9	NEAT MeOH	P-744N P-744S	Dioxathion	78-34-2	NEAT MeOH	P-219N P-219S
Diethyl phosphate	598-02-7	NEAT MeOH	P-534N P-534S	Diphacinone	82-66-6	NEAT MeOH	P-315N P-315S *
Diethyl phosphate (mono- & di-)		NEAT MeOH	P-443N P-443S	Diphenamid	957-51-7	NEAT MeOH	P-173N P-173S
Difenacoum	56073-07-5	AcCN	P-1151S-CN	Dipropetryn	4147-51-7	NEAT MeOH	P-580N P-580S
Difenoconazole	119446-68-3	NEAT MeOH	P-447N P-447S	Diquat dibromide monohydrate	6385-62-2	NEAT MeOH	P-231N P-231S
Difenoxyuron	14214-32-5	NEAT MeOH	P-604N P-604S	Disul-sodium salt	136-78-7	NEAT MeOH	P-513N P-513S
Difenzoquat methyl sulfate	43222-48-6	MeOH	P-1330S	Disulfoton	298-04-4	NEAT MeOH	P-042N ⚡ P-042S
Diflubenzuron	35367-38-5	NEAT MeOH	P-377N P-377S	Disulfoton sulfone	2497-06-5	NEAT MeOH	P-582N P-582S
Diflufenican	83164-33-4	NEAT MeOH	P-722N P-722S	Disulfoton sulfoxide	2497-07-6	NEAT MeOH	P-593N P-593S
2,3-Dihydro-2,2-dimethylbenzofuran-7-ol	1563-38-8	NEAT MeOH	P-628N P-628S	Disyston	see Disulfoton		
Dimecron	see Phosphamidon			Ditalimfos	5131-24-8	NEAT MeOH	P-546N P-546S
Dimefox	115-26-4	NEAT MeOH	P-299N P-299S	Dithane D-14	see Nabam		
Dimefuron	34205-21-5	NEAT MeOH	P-565N P-565S	Dithianon	3347-22-6	NEAT Acetone	P-725N P-725S-A
Dimepax	22936-75-0	NEAT MeOH	P-643N P-643S	Dithiopyr	97886-45-8	NEAT MeOH	P-741N P-741S
Dimepiperate	61432-55-1	50 µg/mL Acetone	P-1020S-A-0.5X	Diuron	see Karmex		
Dimetate	see Dimethoate			2,3-Diuron	10290-37-6	NEAT MeOH	P-632N P-632S
Dimethachlor	50563-36-5	NEAT MeOH	P-642N P-642S	DMST	66840-71-9	MeOH	P-572S
Dimethenamid	87674-68-8	NEAT MeOH	P-747N P-747S	DNBP	see Dinoseb		
Dimethenamide-P	163515-14-8	NEAT MeOH	P-934S P-934S	DNOC	see 4,6-Dinitro-o-cresol		
Dimethipin	55290-64-7	NEAT MeOH	P-483N P-483S	DNTP	see Parathion		
Dimethoate	60-51-5	NEAT MeOH	P-039N P-039S	Dodemorph acetate	31717-87-0	NEAT MeOH	P-385N P-385S
Dimethomorph	110488-70-5	NEAT MeOH	P-713N P-713S	Dodine	2439-10-3	NEAT MeOH	P-386N P-386S
Dimethylarsinic acid	75-60-5	NEAT MeOH	P-1075N P-1075S	Doguardine	see Dodine		
N-(2,4-Dimethylphenyl)formamide	60397-77-5	AcCN	P-1100S-CN *	Doramectin	117704-25-3	NEAT AcCN	P-935N P-935S-CN
				Dowpon	see Dalapon acid		
				Dozer	see Fenuron-TCA		
				2,4-DP ethyl hexyl	79270-78-3	NEAT MeOH	P-429N P-429S
				DPA Sodium	127-20-8	NEAT MeOH	P-1348N P-1348S
				Drinox	see Heptachlor		

Pesticides at same low price in Neat (10 mg) or Solution (100 µg/mL) form
Most Pesticides are available in 1000 µg/mL (add -10X). Call or visit website for pricing.



Pesticides

Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
<i>Dropp</i>	see Thidiazuron			Ethiolat	2941-55-1	NEAT	P-785N
DSMA	144-21-8	NEAT	P-598N			AcCN	P-785S-CN
		MeOH	P-598S	Ethion	563-12-2	NEAT	P-048N
<i>DTMC</i>	see Kelthane					MeOH	P-048S
<i>Dual</i>	see Metolachlor			Ethiprole	181587-01-9	NEAT	P-964N
Dursban	2921-88-2	NEAT	P-094N			AcCN	P-964S-CN
		MeOH	P-094S	Ethiozin	64529-56-2	NEAT	P-660N
<i>Dybar</i>	see Fenuron					MeOH	P-660S
Dyfonate	944-22-9	NEAT	P-087N	Ethirimol	23947-60-6	NEAT	P-645N
		MeOH	P-087S			MeOH	P-645S
		Hexane	P-087S-H	Ethofumesate	26225-79-6	NEAT	P-387N
<i>Dylox</i>	see Trichlorfon					MeOH	P-387S
<i>Dymid</i>	see Diphenamid			Ethoprop	13194-48-4	NEAT	P-129N
<i>Dyrene</i>	see Anilazine					MeOH	P-129S
<i>EDDP</i>	see Edifenphos			Ethoxyquin	91-53-2	NEAT	P-388N
Edifenphos	17109-49-8	NEAT	P-368N			AcCN	P-388S-CN
		MeOH	P-368S	Ethoxysulfuron	126801-58-9	NEAT	P-847N
<i>Ektafos</i>	see Dicrotophos					AcCN	P-847S-CN
<i>Elgetol</i>	see 4,6-Dinitro-o-cresol			Ethyl carbamate	51-79-6	NEAT	P-419N
<i>Eloncron</i>	see Dioxacarb					MeOH	P-419S
Emamectin-benzoate	155569-91-8	5 mg	P-996N-5MG	<i>Ethylene bisdithiocarbamate, disodium</i>	see Nabam		
		MeOH	P-996S	Ethylene thiourea	96-45-7	NEAT	P-588N
Empenthrin	54406-48-3	NEAT	P-708N			MeOH	P-588S
Endosulfan I	959-98-8	NEAT	P-091N	Ethyl hexanediol (mixed isomers)	94-96-2	NEAT	P-389N
		MeOH	P-091S			MeOH	P-389S
Endosulfan II	33213-65-9	NEAT	P-092N	bis(2-Ethylhexyl)adipate	103-23-1	NEAT	P-233N
		MeOH	P-092S			MeOH	P-233S
<i>α-Endosulfan</i>	see Endosulfan I			<i>Ethyl parathion</i>	see Parathion		
<i>β-Endosulfan</i>	see Endosulfan II			2-Ethylthiomethyl phenol		MeOH	P-423S
Endosulfan, mixed isomers	115-29-7	NEAT	P-435N			AcCN	P-1136S-CN *
		MeOH	P-435S	Etobenzanid	79540-50-4	NEAT	P-848N
Endosulfan sulfate	1031-07-8	NEAT	P-145N			AcCN	P-848S-CN
		MeOH	P-145S	Etofenprox	80844-07-1	MeOH	P-991S
Endothall ♦	145-73-3	NEAT	P-183N	Etoazole	153233-91-1		
		MeOH	P-183S	<i>Etridiazole</i>	see Terrazole		
Endothall dimethyl ester		NEAT	P-603N	Etrifos	38260-54-7	NEAT	P-480N
		MeOH	P-603S			MeOH	P-480S
Endrin	72-20-8	NEAT	P-045N	<i>Etolene</i>	see Ronnel		
		MeOH	P-045S	<i>ETU</i>	see Ethylene thiourea		
Endrin aldehyde	7421-93-4	MeOH	P-046S	<i>Expand</i>	see Sethoxydim		
Endrin ketone	53494-70-5	NEAT	P-146N	<i>Famophos</i>	see Famphur		
		MeOH	P-146S	Famoxadon	131807-57-3	AcCN	P-849S-CN
<i>Enide</i>	see Diphenamid			Famphur	52-85-7	NEAT	P-147N
EPN	2104-64-5	NEAT	P-220N ♦			MeOH	P-147S
		Acetone	P-220S-A	<i>Fargo</i>	see Triallate		
EPN Oxon	2012-00-2	Acetone	P-1345S-A	<i>Fenac</i>	see Fenatrol		
Epoxiconazole	133855-98-8	NEAT	P-784N	Fenamidone	161326-34-7	NEAT	P-850N
		MeOH	P-784S			AcCN	P-850S-CN
Eprinomectin	123997-26-2	AcCN	P-959S-CN	Fenaminosulf	140-56-7	NEAT	P-058N
<i>Eptam</i>	see EPTC					MeOH	P-058S
<i>Eptapur</i>	see Buturon			Fenamiphos	22224-92-6	NEAT	P-114N
EPTC	759-94-4	NEAT	P-238N			MeOH	P-114S
		MeOH	P-238S	Fenamiphos sulfone	31972-44-8	NEAT	P-623N
Esfenvalerate	66230-04-4	NEAT	P-525N			MeOH	P-623S
		MeOH	P-525S *	Fenamiphos sulfoxide	31972-43-7	NEAT	P-622N
Esprocarb	85785-20-2	MeOH	P-617S			MeOH	P-622S
Etaconazole	60207-93-4	NEAT	P-644N	<i>Fenarimol</i>	see Bloc		
		MeOH	P-644S	Fenatrol	85-34-7	NEAT	P-319N
<i>Etazine</i>	see Secbumeton					MeOH	P-319S
Ethaboxam	162650-77-3	AcCN	P-1115S-CN	Fenazaquin	120928-09-8	Hexane	P-787S-H
Ethalfuralin	55283-68-6	NEAT	P-269N	Fenbuconazole	114369-43-6	NEAT	P-662N
		MeOH	P-269S			MeOH	P-662S
Ethanedial dioxime	557-30-2	NEAT	P-1070N	Fenbutatin oxide	13356-08-6	NEAT	P-481N
		MeOH	P-1070S			Acetone	P-481S-A
Ethephon	16672-87-0	NEAT	P-239N	<i>Fenchlorphos</i>	see Ronnel		
		MeOH	P-239S	Fenfuram	24691-80-3	NEAT	P-896N
Ethidimuron	30043-49-3	NEAT	P-364N			MeOH	P-896S
		MeOH	P-364S	Fenhexamid	126833-17-8	NEAT	P-783N
Ethiofencarb	29973-13-5	NEAT	P-448N			MeOH	P-783S
		MeOH	P-448S	Fenitrothion	122-14-5	NEAT	P-259N
Ethiofencarb sulfone	53380-23-7	AcCN	P-824S-CN			MeOH	P-259S
Ethiofencarb sulfoxide	53380-22-6	AcCN	P-825S-CN	<i>Fenoprop</i>	see Silvex		
<i>Ethiofencarb metabolite</i>				Fenothiocarb	62850-32-2	MeOH	P-1021S
	see 2-Ethylthiomethyl phenol					50 µg/mL	P-1021S-0.5X

♦ Pesticides containing a carboxyl group may autoesterify in Methanol. These standards are intended for use as a post-esterification standard for GC analysis. For other types of analysis (ex. HPLC) we suggest a non-hydroxylic solvent such as Acetonitrile.

* ColdPAK required to maintain integrity of product.

♦ V-Rated packaging surcharge applies for international shipments.



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

Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
Fenoxanil	115852-48-7	NEAT	P-997N	Flumetralin	62924-70-3	NEAT	P-491N
		MeOH	P-997S			MeOH	P-491S
Fenoxaprop	95617-09-7	NEAT	P-884N	Flumetsulam	98967-40-9	NEAT	P-659N
		MeOH	P-884S			MeOH	P-659S
Fenoxaprop-ethyl	66441-23-4	NEAT	P-365N	Flumiclorac-pentyl	87546-18-7	NEAT	P-993N
		MeOH	P-365S			MeOH	P-993S
Fenoxaprop-p-ethyl	71283-80-2	NEAT	P-694N	Flumioxazin	103361-09-7	CH ₂ Cl ₂	P-992S-D
		MeOH	P-694S	Fluometuron	2164-17-2	NEAT	P-014N
Fenoxycarb	72490-01-8	NEAT	P-686N			MeOH	P-014S
		MeOH	P-686S	Fluopicolide	239110-15-7	NEAT	P-1024N
<i>Fenpropathrin</i>	see Danitol					Acetone	P-1024S-A
Fenpropidin	67306-00-7	NEAT	P-802N	Fluopyram	658066-35-4	MeOH	P-1094S
		MeOH	P-802S	Fluoxastobin	361377-29-9	AcCN	P-963S-CN *
Fenpropimorph	67564-91-4	NEAT	P-705N	Fluquinconazole	136426-54-5	NEAT	P-878N
		MeOH	P-705S			AcCN	P-878S-CN
Fenpyroximate	111812-58-9	NEAT	P-724N	Flurenol methyl ester	1216-44-0	NEAT	P-412N
		MeOH	P-724S			MeOH	P-412S
Fenson	80-38-6	NEAT	P-551N	Fluridone	59756-60-4	NEAT	P-193N
		MeOH	P-551S			MeOH	P-193S
<i>Fensulfothion</i>	see Dasanit			Flurochloridon	61213-25-0	NEAT	P-647N
Fenthion	55-38-9	NEAT	P-148N			MeOH	P-647S
		MeOH	P-148S	Fluorodifen	15457-05-3	NEAT	P-676N
Fenthion-sulfone	3761-42-0	AcCN	P-953S-CN			MeOH	P-676S
Fenthion sulfoxide	3761-41-9	NEAT	P-1052N	Fluoroxypyr	69377-81-7	NEAT	P-521N
		CH ₂ Cl ₂	P-1052S-D			MeOH	P-521S
Fentin acetate	900-95-8	NEAT	P-680N	Fluoroxypyr-1-methylheptyl ester	81406-37-3	NEAT	P-927N
		MeOH	P-680S			MeOH	P-927S
<i>Fentin chloride</i>	see Triphenyltin chloride			Flurprimidol	56425-91-3	NEAT	P-1155N
Fentin hydroxide	76-87-9	NEAT	P-1042N	Flusilazole	85509-19-9	NEAT	P-578N
		AcCN	P-1042S-CN			MeOH	P-578S
Fenuron	101-42-8	NEAT	P-004N	Fluthiacet-methyl	117337-19-6	AcCN	P-1095S-CN *
		MeOH	P-004S	Flutolanil	66332-96-5	NEAT	P-587N
Fenuron-TCA	4482-55-7	NEAT	P-006N			MeOH	P-587S
		MeOH	P-006S	Flutriafol	76674-21-0	NEAT	P-699N
Fenvalerate	51630-58-1	NEAT	P-194N			MeOH	P-699S
		MeOH	P-194S *	Tau-Fluvalinate	102851-06-9	NEAT	P-356N
Ferbam	14484-64-1	NEAT	P-110N			MeOH	P-356S
		MeOH:A	P-110S			AcCN	P-356S-CN
<i>Ferber K</i>	see Ferbam			Fluxapyroxad	907204-31-3	AcCN	P-1150S-CN
<i>Ficam</i>	see Bendiocarb			<i>Folbex</i>	see Chlorobenzilate		
Fipronil	120068-37-3	NEAT	P-738N	<i>Folex</i>	see Merphos		
	See Technical Data, page 68	MeOH	P-738S *	<i>Folosan</i>	see Pentachloronitrobenzene		
		Acetone	P-738S-A	Folpet	133-07-3	NEAT	P-258N
Fipronil desulfinyl	205650-65-3	Acetone	P-782S-A			MeOH	P-258S *
Fipronil sulfide	120067-83-6	Acetone	P-781S-A	Fomesafen	72178-02-0	NEAT	P-907N
		5 mg	P-781N-5MG			MeOH	P-907S
Fipronil sulfone	120068-36-2	Acetone	P-780S-A	<i>Fonofos</i>	see Dyfonate		
Flamprop-methyl	52756-25-9	NEAT	P-366N	Foramsulfuron	173159-57-4	NEAT	P-852N
		MeOH	P-366S			AcCN	P-852S-CN
Flonicamid	158062-67-0	NEAT	P-926N	Forchlorfenuron	68157-60-8	NEAT	P-753N
		MeOH	P-926S			MeOH	P-753S
Florasulam	145701-23-1	AcCN	P-827S-CN-0.1X	Formetanate HCl	23422-53-9	NEAT	P-431N
Fluacrypyrim	229977-93-9	MeOH	P-1056S			MeOH	P-431S
Fluazifop-butyl	69806-50-4	NEAT	P-310N	Formothion	2540-82-1	NEAT	P-149N
		MeOH	P-310S			AcCN	P-149S-CN *
Fluazifop-p-butyl	79241-46-6	NEAT	P-601N	Fosetyl aluminum	39148-24-8	NEAT	P-532N
		MeOH	P-601S			MeOH	P-532S
Fluazinam	79622-59-6	NEAT	P-586N	Fosthiazate	98886-44-3	AcCN	P-828S-CN
		MeOH	P-586S	<i>Frescon</i>	see Trifenmorph		
Flubendiamide	272451-65-7	NEAT	P-1025N	<i>Frumidor</i>	see Thiophanate-methyl		
		AcCN	P-1025S-CN	Fuberidazole	3878-19-1	AcCN	P-789S-CN *
Flucarbazone-sodium	181274-17-9	NEAT	P-1124N	Fumazone	96-12-8	NEAT	P-341N
		AcCN	P-1124S-CN			MeOH	P-341S
Fluchloralin	33245-39-5	NEAT	P-270N	<i>Furadan</i>	see Carbofuran		
		MeOH	P-270S	Furalaxyl	57646-30-7	NEAT	P-605N
Flucythrinate	70124-77-5	MeOH	P-378S *			MeOH	P-605S
Fludioxonil	131341-86-1	NEAT	P-698N	Furathiocarb	65907-30-4	NEAT	P-569N
		MeOH	P-698S			MeOH	P-569S
Flufenacet	142459-58-3	AcCN	P-902S-CN	Furilazole	121776-33-8	AcCN	P-810S-CN
Flufenoxuron	101463-69-8	NEAT	P-687N	Furmecyclox	60568-05-0	MeOH	P-607S
		MeOH	P-687S	<i>Furore</i>	see Fenoxaprop-ethyl		
				<i>Fusilade</i>	see Fluazifop-butyl		

Pesticides at same low price in Neat (10 mg) or Solution (100 µg/mL) form
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Pesticides

Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
<i>Galtak</i>	see Benazolin			3-Hydroxycarbofuran	16655-82-6	MeOH	P-186S
<i>Gardona</i>	see Tetrachlorvinphos			Hymexazol	10004-44-1	MeOH	P-571S
<i>Gardoprim</i>	see Terbutylazine			<i>Hyvar</i>	see Bromacil		
<i>Garlon</i>	see Triclopyr			<i>Illoxan</i>	see Dichlofop methyl		
<i>Garraethion</i>	see Carbophenothion			Imazalil	35554-44-0	NEAT	P-332N
<i>Gesafam</i>	see Prometon					MeOH	P-332S
<i>Gesagard</i>	see Prometryne			Imazamethabenz methyl	81405-85-8	NEAT	P-414N
<i>Gesamil</i>	see Propazine					MeOH	P-414S
<i>Gesapax</i>	see Ametryn			Imazamox	114311-32-9	NEAT	P-806N
<i>Gesaprim</i>	see Atrazine					AcCN	P-806S-CN
Gesatamine	1610-17-9	NEAT	P-189N	Imazapic	104098-48-8	NEAT	P-1063N
		MeOH	P-189S			MeOH	P-1063S
<i>Gesatop</i>	see Simazine			Imazapyr ♦	81334-34-1	NEAT	P-589N
<i>Gexane</i>	see Lindane					MeOH	P-589S
Glufosinate, ammonium salt	77182-82-2	NEAT	P-475N			AcCN	P-589S-CN
		MeOH	P-475S	Imazaquin	81335-37-7	NEAT	P-283N
Glyodin	556-22-9	NEAT	P-528N			MeOH	P-283S *
		MeOH	P-528S	Imazethapyr	81335-77-5	MeOH	P-285S
Glyphosate	1071-83-6	NEAT	P-015N			AcCN	
		Water	P-015S-W	Imazosulfuron	122548-33-8	AcCN	P-853S-CN-0.1X
<i>Goal</i>	see Oxyfluorfen					10 µg/mL	
<i>Goltix</i>	see Metamitron			Imibenconazole	86598-92-7	AcCN	P-1019S-CN-0.5X
<i>Grasidin</i>	see Sethoxydim					50 µg/mL	
<i>Grasp</i>	see Tralkoxydim			Imidacloprid	138261-41-3	NEAT	P-596N
Guazatine acetate	115044-19-4	MeOH	P-612S			MeOH	P-596S
<i>Gusathion M</i>	see Azinphos-methyl						
<i>Guthion</i>	see Azinphos-methyl						
<i>Gy-bon</i>	see Simetryn			Imidan	732-11-6	NEAT	P-055N
Halfenprox	111872-58-3	10 µg/mL	P-1050S-0.1X			MeOH	P-055S
		MeOH		2-Imidazolidone	120-93-4	NEAT	P-1224N
Halofenozide	112226-61-6	AcCN	P-804S-CN *			MeOH	P-1224S
Halosulfuron methyl	100784-20-1	AcCN	P-1089S-CN *	Imiprothrin	72963-72-5	AcCN	P-983S-CN *
Haloxypop ♦	69806-34-4	NEAT	P-496N	Indalone	532-34-3	NEAT	P-648N
		MeOH	P-496S			MeOH	P-648S
		AcCN	P-496S-CN	Indanofan	133220-30-1	NEAT	P-988N
Haloxypop-methyl	69806-40-2	NEAT	P-497N			MeOH	P-988S
		MeOH	P-497S	Indaziflam	950782-86-2	AcCN	P-1168S-CN
<i>Hanane</i>	see Dimefox			Indoxacarb	144171-61-9	NEAT	P-829N
<i>Hedonal</i>	see MCPP acid					AcCN	P-829S-CN
<i>Helothion</i>	see Bolstar			<i>Ingran 80W</i>	see Prebane		
<i>HEOD</i>	see Dieldrin			<i>INPC</i>	see Propham		
Heptachlor	76-44-8	NEAT	P-053N	Iodofenphos	18181-70-9	NEAT	P-379N
		MeOH	P-053S			MeOH	P-379S
Heptachlor epoxide (Isomer A)	28044-83-9	MeOH	P-294S	Iodosulfuron-methyl-sodium	144550-36-7	NEAT	P-830N
Heptachlor epoxide (Isomer B)	1024-57-3	NEAT	P-054N			AcCN	P-830S-CN
		MeOH	P-054S	Ioxynil	1689-83-4	NEAT	P-522N
<i>2-Hepta-decyl-2-imidazoline</i>	see Glyodin					MeOH	P-522S
<i>Heptamul</i>	see Heptachlor			Ioxynil octanoate	3861-47-0	AcCN	P-1329S-CN
Heptenophos	23560-59-0	NEAT	P-547N	<i>IPB</i>	see Iprobenfos		
		MeOH	P-547S	<i>IPC</i>	see Propham		
<i>Heptox</i>	see Heptachlor			Iproconazole	125225-28-7	AcCN	P-958S-CN *
<i>Herald</i>	see Danitol			Iprobenfos	26087-47-8	NEAT	P-609N
<i>Herb-All</i>	see MSMA					MeOH	P-609S
<i>Herkol</i>	see Dichlorvos			Iprodione	36734-19-7	NEAT	P-016N
Hexaconazole	79983-71-4	NEAT	P-500N			Acetone	P-016S-A
		MeOH	P-500S	Iprovalicarb	140923-17-7	AcCN	P-016S-CN
Hexaflumuron	86479-06-3	NEAT	P-697N			NEAT	P-831N
		MeOH	P-697S *	Irgarol	28159-98-0	AcCN	P-831S-CN
Hexamethylphosphoramide	680-31-9	NEAT	P-205N			NEAT	P-746N
		MeOH	P-205S	Isazophos	42509-80-8	MeOH	P-746S
Hexazinone	51235-04-2	NEAT	P-123N			NEAT	P-449N
		MeOH	P-123S	Isobenzan	297-78-9	MeOH	P-449S
<i>Hexylthiocarbam</i>	see Cycloate			1-Isobenzofuranone	87-41-2	MeOH	P-323S
Hexythiazox	78587-05-0	NEAT	P-658N			NEAT	P-1022N
		MeOH	P-658S	Isocarbamid	30979-48-7	MeOH	P-1022S
<i>Hoe 2810</i>	see Linuron			Isocarbophos	24353-61-5	AcCN	P-880S-CN
<i>Hoelon</i>	see Dichlofop methyl					NEAT	P-893N
<i>Horbadox</i>	see Pendimethalin			Isodrin	465-73-6	AcCN	P-893S-CN
<i>Hostathion</i>	see Triazophos					NEAT	P-471N
<i>Hoxan</i>	see Dichlofop methyl					MeOH	P-471S
Hydramethylnon	67485-29-4	NEAT	P-403N	Isofenphos	25311-71-1	NEAT	P-018N
		MeOH	P-403S			MeOH	P-018S
2-Hydroxyatrazine	2163-68-0	MeOH	P-326S	Isofenphos-methyl	99675-03-3	MeOH	P-984S
				Isoprocab	2631-40-5	NEAT	P-317N
						MeOH	P-317S

♦ Pesticides containing a carboxyl group may autoesterify in Methanol. These standards are intended for use as a post-esterification standard for GC analysis.
For other types of analysis (ex. HPLC) we suggest a non-hydroxylic solvent.

* ColdPAK required to maintain integrity of product.



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

Pesticide Standards							
Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
Isopropalin	33820-53-0	NEAT	P-100N	Maneb	12427-38-2	NEAT	P-282N
2-Isopropylamino-4,6-dichloro-s-triazine	3703-10-4	MeOH	P-100S	Manzeb	see Mancozeb		
		NEAT	P-635N	Marathon	see Imidacloprid		
2-Isopropyl-6-methyl-4-pyrimidinol	2814-20-2	MeOH	P-635S	Marlate	see Methoxychlor		
		NEAT	P-631N	Matacil	see Aminocarb		
1-(4-Isopropylphenyl)-3-methylurea	34123-57-4	MeOH	P-631S	Mataven	see Flamprop-methyl		
		MeOH	P-1040S	Mavrik	see Fluvalinate		
Isoprothiolane	50512-35-1	NEAT	P-661N	Maxforce	see Hydramethylnon		
Isoproturon	34123-59-6	MeOH	P-661S	MCPA acid ♦	94-74-6	NEAT	P-153N
		NEAT	P-302N			MeOH	P-153S
		MeOH	P-302S			AcCN	P-153S-CN
Isopyrazam	881685-58-1	AcCN	P-1159S-CN	MCPA 2-ethylhexyl ester	29450-45-1	NEAT	P-1082N
Isoxaben	82558-50-7	NEAT	P-533N			MeOH	P-1082S
Isoxaflutole	141112-29-0	MeOH	P-533S	MCPA methyl ester	2436-73-9	NEAT	P-038N
		NEAT	P-832N			MeOH	P-038S
Isoxathion	18854-01-8	AcCN	P-832S-CN	MCPB acid	94-81-5	NEAT	P-370N
		NEAT	P-1096N			MeOH	P-370S
		AcCN	P-1096S-CN	MCPB-ethyl	10443-70-6	AcCN	P-1347S-CN
Jodfenphos	see Iodofenphos			MCPB methyl ester	57153-18-1	NEAT	P-371N
Kadethrine	58769-20-3	NEAT	P-367N			MeOH	P-371S
Karbutilate	4849-32-5	MeOH	P-367S	MCPP acid ♦	7085-19-0	NEAT	P-154N
		NEAT	P-337N			MeOH	P-154S
		MeOH	P-337S			AcCN	P-154S-CN
Karmex	330-54-1	NEAT	P-227N	MCPP methyl ester	23844-56-6	NEAT	P-040N
		MeOH	P-227S			MeOH	P-040S
Kelthane	115-32-2	NEAT	P-057N	Mecarbam	2595-54-2	NEAT	P-318N
		MeOH	P-057S			MeOH	P-318S
Kepone	143-50-0	NEAT	P-152N	Mecoprop	see MCPP acid		
		MeOH	P-152S	Mecoprop, 2-ethylhexyl ester	71526-69-7	NEAT	P-502N
Kerb	see Pronamide					MeOH	P-502S
3-Ketocarbocfuran	16709-30-1	Acetone	P-298S-A	Mecoprop-1-octyl ester	161922-37-8	AcCN	P-1028S-CN
Kilprop	see MCPP acid			Mecoprop-2-octyl ester	28473-03-2	NEAT	P-1029N
Kothar	see Oxyfluorfen					AcCN	P-1029S-CN
Kresoxim-methyl	143390-89-0	NEAT	P-740N	Mecoprop-p	16484-77-8	NEAT	P-1053N
		MeOH	P-740S			Acetone	P-1053S-A
Lactofen	77501-63-4	NEAT	P-979N	Mediben	see Dicamba		
		AcCN	P-979S-CN	Mefenacet	73250-68-7	NEAT	P-745N
Lannate	see Methomyl					MeOH	P-745S
Larvadex	see Cyromazine			Mefenpyr-diethyl	135590-91-9	NEAT	P-1010N
Lasso	see Alachlor					MeOH	P-1010S
Lazo	see Alachlor			Meltatox	see Dodemorph acetate		
Lenacil	2164-08-1	NEAT	P-649N	Menaphace	see MCPA acid		
		MeOH	P-649S	MEP Oxon	2255-17-6	MeOH	P-1344S
Lentagran	see Pyridate			Mepanipyrim	110235-47-7	NEAT	P-855N
Lepton	see Leptophos					AcCN	P-855S-CN
Leptophos	21609-90-5	NEAT	P-206N	Mephosfolan	950-10-7	NEAT	P-718N
		MeOH	P-206S			MeOH	P-718S
Lesan	see Fenaminosulf			Mepiquat chloride	24307-26-4	NEAT	P-1062N
Lethane 384	112-56-1	NEAT	P-506N			MeOH	P-1062S
		MeOH	P-506S	Mepro	see MCPP acid		
Lindane (γ-BHC)	58-89-9	NEAT	P-059N	Meptyldinocap	131-72-6	MeOH	P-1043S
		MeOH	P-059S	2-Mercaptobenzothiazole monoethanolamine salt	see Vanicide-20S		
		NEAT	P-022N				
Linuron	330-55-2	MeOH	P-022S	Mercaptodimethur	see Methiocarb		
				Mercaptophos	see Fenthion		
Liphadione	see Chlorophacinone			Mercuram	see Thiram		
Lonacal	see Zineb			Merge 823	see MSMA		
Lontrel	1702-17-6	NEAT	P-224N	Merphos	150-50-5	NEAT	P-124N
		MeOH	P-224S			MeOH	P-124S
Lorox	see Linuron			Mesosulfuron-methyl	208465-21-8	NEAT	P-1044N
Lufenuron	103055-07-8	NEAT	P-704N			MeOH	P-1044S
		MeOH	P-704S	Mesotrione	104206-82-8	AcCN	P-962S-CN *
Machete	see Butachlor			Metacide	see Methyl parathion		
Malaoxon	1634-78-2	NEAT	P-529N	Metaflumizone	139968-49-3	AcCN	P-1090S-CN *
		MeOH	P-529S	Metalaxyl	57837-19-1	NEAT	P-120N
Malaspray	see Malathion					MeOH	P-120S
Malathion	121-75-5	NEAT	P-060N	Metalaxyl-M	70630-17-0	NEAT	P-874N
		MeOH	P-060S			MeOH	P-874S
		NEAT	P-380N	Metaldehyde ♦	9002-91-9	NEAT	P-600N
Maleic hydrazide	123-33-1	MeOH	P-380S			MeOH	P-600S
				Metamitron	41394-05-2	AcCN	P-600S-CN
Mancozan	see Zineb					NEAT	P-252N
Mancozeb	8018-01-7	NEAT	P-322N			MeOH	P-252S
Mandipropamid	374726-62-2	NEAT	P-1023N				
		AcCN	P-1023S-CN				

Pesticides at same low price in Neat (10 mg) or Solution (100 µg/mL) form
Most Pesticides are available in 1000 µg/mL (add -10X). Call or visit website for pricing.



Pesticides

Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
<i>Metam-sodium</i> see Metam-sodium dihydrate				Metrafenone	220899-03-6	NEAT	P-1032N
Metam-sodium dihydrate	6734-80-1	NEAT	P-381N			AcCN	P-1032S-CN
		MeOH	P-381S	Metribuzin	21087-64-9	NEAT	P-089N
<i>Metasystox R</i> see Oxydemeton methyl						MeOH	P-089S
Metazachlor	67129-08-2	NEAT	P-249N	<i>Metron</i> see Methyl parathion			
		MeOH	P-249S	Metsulfuron methyl	74223-64-6	NEAT	P-463N
Metconazole	125116-23-6	NEAT	P-856N			MeOH	P-463S *
		AcCN	P-856S-CN	Mevinphos	7786-34-7	NEAT	P-074N ♦
Methabenzthiazuron	18691-97-9	NEAT	P-563N			MeOH	P-074S
		MeOH	P-563S	Mexacarbate	315-18-4	NEAT	P-030N
Methacrifos	62610-77-9	NEAT	P-556N			MeOH	P-030S
		MeOH	P-556S	MGK-264	113-48-4	NEAT	P-082N
<i>Methamidophos</i> see Monitor						MeOH	P-082S
Methfuroxam	28730-17-8	AcCN	P-881S-CN *	MGK-326	136-45-8	NEAT	P-342N
Methidathion	950-37-8	NEAT	P-195N ♦			MeOH	P-342S
		MeOH	P-195S	<i>Milogard</i> see Propazine			
Methiocarb	2032-65-7	NEAT	P-156N	<i>MIPC</i> see Isoproc carb			
		MeOH	P-156S	Mirex	2385-85-5	NEAT	P-066N
Methiocarb sulfone	2179-25-1	NEAT	P-570N			MeOH	P-066S
		AcCN	P-570S-CN	<i>Mitac</i> see Amitraz			
Methiocarb sulfoxide	2635-10-1	NEAT	P-650N	<i>Mocap</i> see Ethoprop			
		MeOH	P-650S	Molinate	2212-67-1	NEAT	P-176N
Methomyl	16752-77-5	NEAT	P-032N			MeOH	P-176S
	1000 µg/mL	MeOH	P-032S	Monalide	7287-36-7	NEAT	P-737N
		MeOH	P-032S-10X			MeOH	P-737S
Methoprene	40596-69-8	NEAT	P-157N	<i>Monceren</i> see Pencycuron			
		MeOH	P-157S	Monitor	10265-92-6	NEAT	P-155N
Methoprotryne	841-06-5	NEAT	P-564N			MeOH	P-155S
		MeOH	P-564S	Monocrotophos	6923-22-4	NEAT	P-112N
Methoxychlor	72-43-5	NEAT	P-064N			MeOH	P-112S
		MeOH	P-064S	Monolinuron	1746-81-2	NEAT	P-382N
o,p'-Methoxychlor	30667-99-3	MeOH	P-535S			MeOH	P-382S
		Isocotane	P-535S-TP	Monomethyltetrachloroterephthalate	887-54-7	NEAT	P-707N
p,p'-Methoxychlor-olefin	2132-70-9	MeOH	P-466S			Acetone	P-707S-A
<i>Methoxy-DDT</i> see Methoxychlor				Monuron	150-68-5	NEAT	P-023N
Methoxyfenozide	161050-58-4	NEAT	P-857N			MeOH	P-023S
		AcCN	P-857S-CN	Monuron TCA	140-41-0	NEAT	P-034N
Methylamine hydrochloride	593-51-1	NEAT	P-624N			MeOH	P-034S
		MeOH	P-624S	2-Monuron		NEAT	P-633N
Methyl-3,5-dichlorobenzoate	2905-67-1	NEAT	P-247N			MeOH	P-633S
		MeOH	P-247S	<i>Morestan</i> see Chinomethionate			
Methyl-2,4-dichlorophenylacetate	55954-23-9	NEAT	P-214N	Moxidectin	113507-06-5	AcCN	P-961S-CN *
		MeOH	P-214S	<i>MSMA</i> see Bueno			
2-Methyl-4,6-dinitroanisole	29027-13-2	NEAT	P-611N	Myclobutanil	88671-89-0	NEAT	P-330N
		MeOH	P-611S			MeOH	P-330S
<i>2-Methyl-4,6-dinitrophenol methyl ether</i> see 2-Methyl-4,6-dinitroanisole				Nabam	142-59-6	NEAT	P-383N
<i>Methyl dursban</i> see Chlorpyrifos-methyl ester						MeOH	P-383S
3-Methyl-4-nitrophenol	2581-34-2	NEAT	P-509N	Naled	300-76-5	NEAT	P-159N
		MeOH	P-509S			MeOH	P-159S
Methyl nonyl ketone ♦	112-12-9	NEAT	P-415N	1-Naphthalene acetamide	86-86-2	NEAT	P-512N
		MeOH	P-415S			MeOH	P-512S
		AcCN	P-415S-CN	1-Naphthol	90-15-3	NEAT	P-1007N
Methyl paraoxon	950-35-6	NEAT	P-311N			MeOH	P-1007S
		MeOH	P-311S	<i>Naptalam</i> see Alanap			
Methyl parathion	298-00-0	NEAT	P-065N ♦	1-Naphthylacetic acid	86-87-3	NEAT	P-461N
		MeOH	P-065S			MeOH	P-461S
Methylpentachlorophenyl sulfide	1825-19-0	NEAT	P-567N	Naproanilide	52570-16-8	Acetone	P-1343S-A
		MeOH	P-567S	Napropamide	15299-99-7	NEAT	P-179N
<i>Methyl tiofanato</i> see Thiophanate-methyl						MeOH	P-179S
Methyl trithion	953-17-3	MeOH	P-652S	<i>Navadel</i> see Dioxathion			
Metiram	9006-42-2	NEAT	P-416N	Neburon	555-37-3	NEAT	P-041N
Metobromuron	3060-89-7	NEAT	P-436N			MeOH	P-041S
		MeOH	P-436S	<i>Neguvon</i> see Trichlorfon			
Metolachlor	51218-45-2	NEAT	P-158N	<i>Nemacur R</i> see Fenamiphos			
		MeOH	P-158S	<i>Neocidol</i> see Diazinon			
S-Metolachlor	87392-12-9	NEAT	P-1013N	<i>Netrazine</i> see Cyromazine			
		MeOH	P-1013S	<i>Niagamite</i> see Aramite			
Metolcarb	1129-41-5	NEAT	P-494N	<i>Nialate</i> see Ethion			
		MeOH	P-494S	Niclosamide	50-65-7	NEAT	P-160N
Metosulam	139528-85-1	AcCN	P-900S-CN			MeOH	P-160S
Metoxuron	19937-59-8	NEAT	P-437N	Nicosulfuron	111991-09-4	NEAT	P-591N
		MeOH	P-437S			AcCN	P-591S-CN
				<i>Nifos</i> see TEPP			

♦ Pesticides containing a carboxyl group may autoesterify in Methanol. These standards are intended for use as a post-esterification standard for GC analysis.

For other types of analysis (ex. HPLC) we suggest a non-hydroxylic solvent such as Acetonitrile.

* ColdPAK required to maintain integrity of product.

♦ V-Rated packaging surcharge applies for international shipments.



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

Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
Nitenpyram	150824-47-8	NEAT	P-858N	Oxycarboxin	5259-88-1	NEAT	P-391N
		AcCN	P-858S-CN			MeOH	P-391S
Nitralin	4726-14-1	NEAT	P-583N	Oxychlordane Isomer	27304-13-8	MeOH	P-331S
		MeOH	P-583S		10 µg/mL in	MeOH	P-331S-0.1X
Nitrapyrin	1929-82-4	NEAT	P-489N			Hexane	P-331S-H
		MeOH	P-489S	Oxydemeton-methyl	301-12-2	MeOH	P-290S
4-Nitroanisole	100-17-4	NEAT	P-273N	Oxyfluorfen	42874-03-3	NEAT	P-277N
		MeOH	P-273S			MeOH	P-277S
Nitrofen	1836-75-5	NEAT	P-363N	Oxythioquinox	see Chinomethionate		
		MeOH	P-363S	Paarlan	see Isopropalin		
Nitrothal-isopropyl	10552-74-6	NEAT	P-695N	Paraoxon	311-45-5	NEAT	P-453N
		MeOH	P-695S			MeOH	P-453S
Nix-Scald	see Ethoxyquin			Paraquat dichloride tetrahydrate	1910-42-5	NEAT	P-051N ✦
Nomersan	see TEPP					MeOH	P-051S
cis-Nonachlor	5103-73-1	NEAT	P-297N	Parathion	56-38-2	NEAT	P-070N
		MeOH	P-297S			MeOH	P-070S
trans-Nonachlor	39765-80-5	NEAT	P-184N	Paridol	see Methyl parathion		
		MeOH	P-184S	PCA	see Pyrazon		
Norflurazon	27314-13-2	NEAT	P-217N	PCNB	see Pentachloronitrobenzene		
		MeOH	P-217S	PCP methyl ether	see Pentachloroanisole		
Norflurazon-desmethyl	23576-24-1	AcCN	P-1129S-CN ✦	PDU	see Fenuron		
Novaluron	116714-46-6	5 mg	P-966N-5MG	PEBC	see Tillam		
		MeOH	P-966S	Pebulate	see Tillam		
Noviflumuron	121451-02-3	AcCN	P-967S-CN ✦	Penconazole	66246-88-6	NEAT	P-450N
Nuarimol	see Trimidal					MeOH	P-450S
Nucidol	see Diazinon			Pencycuron	66063-05-6	NEAT	P-358N
Nuvacron	see Monocrotophos					MeOH	P-358S
Nuvanol	see Iodofenphos			Pendimethalin	40487-42-1	NEAT	P-097N
Octachlor	see Chlordane					MeOH	P-097S
Octacide 264	see MGK 264			Penoxalin	see Pendimethalin		
Octalox	see Dieldrin			Penoxsulam	219714-96-2	MeOH	P-1046S
Octamethylpyrophosphoramidate	see Schradan			Pentachloroaniline	527-20-8	NEAT	P-875N
Octhilinone	26530-20-1	NEAT	P-788N			AcCN	P-875S-CN
OFF	see Deet			Pentachloroanisole	1825-21-4	NEAT	P-199N
Oftanol	see Isofenphos					MeOH	P-199S
Oturance	58810-48-3	10 µg/mL	P-653S-TP-0.1X	Pentachloronitrobenzene	82-68-8	NEAT	P-113N
		Isooctane				MeOH	P-113S
Omethoate	1113-02-6	NEAT	P-121N	Pentanochlor	2307-68-8	NEAT	P-1067N
		MeOH	P-121S			MeOH	P-1067S
Omite	see Propargite			Penthiopyrad	183675-82-3	AcCN	P-1131S-CN ✦
OMPA	see Schradan			Pentoxazone	110956-75-7	MeOH	P-1051S-0.1X
Omtan	see Isobenzan			Permethrin (cis/trans)	52645-53-1	NEAT	P-128N
Option	see Fenoxaprop-ethyl					MeOH	P-128S
Orbencarb	34622-58-7	NEAT	P-433N	Perthane	72-56-0	NEAT	P-162N
		MeOH	P-433S			MeOH	P-162S
Orbit	see Tilt			Peropal	see Azocyclotin		
Ordram	see Molinate			Pestox III	see Schradan		
Ornamec	see Fluazifop-p-butyl			Pethoxamid	106700-29-2	NEAT	P-1047N
Orthene	see Acephate					MeOH	P-1047S
Orthocide	see Captan			Phenacide	see Toxaphene		
Orthosulfamuron	213464-77-8	Acetone	P-1045S-A	Phenamiphos	see Fenamiphos		
		NEAT	P-043N	Phenmedipham	13684-63-4	NEAT	P-392N
Oryzalin	19044-88-3	MeOH	P-043S			MeOH	P-392S
				Phenothiazine	92-84-2	NEAT	P-579N
Outfox	see Cyprazine					MeOH	P-579S
Ovex	80-33-1	NEAT	P-425N	Phenothrin	see Sumithrin		
		MeOH	P-425S	Phenthoate	2597-03-7	NEAT	P-476N
Ovochlor	see Ovex					MeOH	P-476S
Oxabetrinil	74782-23-3	NEAT	P-995N	Phenyl mercury acetate	62-38-4	NEAT	P-393N
		MeOH	P-995S			MeOH	P-393S
Oxadiargyl	39807-15-3	NEAT	P-1031N	o-Phenylphenol	90-43-7	NEAT	P-460N
		AcCN	P-1031S-CN			MeOH	P-460S
Oxadiazon	19666-30-9	NEAT	P-236N	Phenyl valerate	20115-23-5	NEAT	P-734N
		MeOH	P-236S			MeOH	P-734S
Oxadixyl	77732-09-3	NEAT	P-560N	Phorate	298-02-2	NEAT	P-170N ✦
		MeOH	P-560S			MeOH	P-170S
Oxamyl	23135-22-0	NEAT	P-161N	Phorate-oxon	2600-69-3	AcCN	P-1018S-CN
		MeOH	P-161S			10 µg/mL	P-1018S-T-0.1X
Oxamyl oxime	30558-43-1	AcCN	P-1138S-CN			Toluene	
Oxasulfuron	144651-06-9	NEAT	P-859N	Phorate-oxon sulfone	2588-06-9	AcCN	P-1161S-CN
		AcCN	P-859S-CN	Phorate-oxon sulfoxide	2588-05-8	AcCN	P-1153S-CN
Oxaziclomefone	153197-14-9	MeOH	P-1066S	Phorate sulfone	2588-04-7	Hexane	P-655S-H

Pesticides at same low price in Neat (10 mg) or Solution (100 µg/mL) form
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Pesticides

Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
Phorate sulfoxide	2588-03-6	NEAT	P-732N	Prodiamine	29091-21-2	NEAT	P-739N
		MeOH	P-732S			MeOH	P-739S
Phosalone	2310-17-0	NEAT	P-163N	Profenofos	41198-08-7	NEAT	P-260N
		MeOH	P-163S			MeOH	P-260S
Phosdrin	see Mevinphos			Profluoralin	26399-36-0	NEAT	P-099N
Phosethoprop	see Ethoprop					MeOH	P-099S
Phosfolan	947-02-4	NEAT	P-234N	Prohexadione-calcium	127277-53-6	NEAT	P-1068N
		MeOH	P-234S	Prohydrojasmon (Tech)	158474-72-7	MeOH	P-1342S
Phosmet	see Imidan			Prolate	see Imidan		
Phosphamidon	13171-21-6	NEAT	P-075N	Promecarb	2631-37-0	NEAT	P-265N
		MeOH	P-075S			MeOH	P-265S
Phosphothion	see Malathion			Prometon	1610-18-0	NEAT	P-077N
Phosvel	see Leptophos					MeOH	P-077S
Phoxim	14816-18-3	NEAT	P-357N	Prometryne	7287-19-6	NEAT	P-078N
		MeOH	P-357S			MeOH	P-078S
Phthalide	see 1-Isobenzofuranone			Pronamide	23950-58-5	NEAT	P-164N
Phthalthrin	see Tetramethrin					MeOH	P-164S
Picloram	1918-02-1	NEAT	P-047N	Propachlor	1918-16-7	NEAT	P-215N
		MeOH	P-047S			MeOH	P-215S
Picloram methyl ester	14143-55-6	NEAT	P-198N	Propamocarb	24579-73-5	NEAT	P-312N
		MeOH	P-198S			MeOH	P-312S
Picolinafen	137641-05-5	NEAT	P-1061N	Propamocarb hydrochloride	25606-41-1	AcCN	P-1137S-CN *
		MeOH	P-1061S	Propanil	709-98-8	NEAT	P-049N
4-Picoline	see 4-Aminopyridine					MeOH	P-049S
Picoxystrobin	117428-22-5	NEAT	P-860N	Propaquizafop	111479-05-1	NEAT	P-908N
		AcCN	P-860S-CN			MeOH	P-908S
Pindone	83-26-1	NEAT	P-394N	Propargite	2312-35-8	NEAT	P-251N
		MeOH	P-394S			MeOH	P-251S
Pinoxaden	243973-20-8	NEAT	P-1154N	Propazine	139-40-2	NEAT	P-079N
		AcCN	P-1154S-CN			MeOH	P-079S
Piperalin	3478-94-2	NEAT	P-663N	Propetamphos	31218-83-4	NEAT	P-417N
		AcCN	P-663S-CN			MeOH	P-417S
Piperonyl butoxide	51-03-6	NEAT	P-348N	Propham	122-42-9	NEAT	P-052N
		MeOH	P-348S			MeOH	P-052S
Piperophos	24151-93-7	NEAT	P-656N	Prophos	see Ethoprop		
Pirimicarb	23103-98-2	NEAT	P-304N	Propiconazole	see Tilt		
		MeOH	P-304S	Propineb	12071-83-9	NEAT	P-608N
Pirimicarb-desmethyl	30614-22-3	AcCN	P-1139S-CN	Propoxur	see Baygon		
Pirimiphos-ethyl	23505-41-1	NEAT	P-328N	Propoxycarbazono-sodium	181274-15-7	NEAT	P-1014N
		MeOH	P-328S		50 µg/mL in	Water	P-1014S-W-0.5X
Pirimiphos-methyl	29232-93-7	NEAT	P-305N	Propylenethiourea (PTU)	2122-19-2	NEAT	P-861N
		MeOH	P-305S			AcCN	P-861S-CN
Pirimiphos-methyl-N-desethyl	67018-59-1	AcCN	P-1331S-CN	Propyzamide	see Pronamide		
Pirimor	see Pirimicarb			Proquinazid	189278-12-4	AcCN	P-1156S-CN
Pival	see Pindone			Prosulfocarb	52888-80-9	NEAT	P-742N
PMA	see Phenyl mercury acetate					MeOH	P-742S
Polytrin	see Cypermethrin			Prosulfuron	94125-34-5	NEAT	P-834N
Potassium dimethyl dithiocarbamate	128-03-0	AcCN	P-714S-CN *			AcCN	P-834S-CN
Potassium n-hydroxymethyl-n-methyl dithiocarbamate	51026-28-9	AcCN	P-715S-CN *	Protector 3L	see Busan		
Prallethrin	23031-36-9	MeOH	P-667S	Protex	see Rotenone		
Pramitol	see Prometon			Prothioconazole	178928-70-6	AcCN	P-965S-CN
Prebane	886-50-0	NEAT	P-119N	Prothiophos	see Tokuthion		
		MeOH	P-119S	Prowl	see Pendimethalin		
Preeglone	see Paraquat CL			Proximpham	2828-42-4	NEAT	P-1081N
Prefar	see Bensulide					MeOH	P-1081S
Premerg	see Trichlorfon			Pursuit	see Imazethapyr		
Pretilachlor	51218-49-6	NEAT	P-485N	Pymetrozin	123312-89-0	NEAT	P-835N
		MeOH	P-485S			AcCN	P-835S-CN
Primatol P	see Propazine			Pynamin	see Allethrin		
Primatol Q	see Prometryne			Pyracarbolid	24691-76-7	AcCN	P-792S-CN *
Primatol S	see Simazine			Pyraclofos	77458-01-6	MeOH	P-716S
Primaze	see Prometryne			Pyraclostrobin	175013-18-0	NEAT	P-863N
Primicid	see Pirimiphos-ethyl					AcCN	P-863S-CN
Primisulfuron-methyl	86209-51-0	NEAT	P-833N	Pyraflufen-ethyl	129630-19-9	NEAT	P-1015N
		AcCN	P-833S-CN			Acetone	P-1015S-A
Princep	see Simazine			Pyrasulfotole	365400-11-9	AcCN	P-1144S-CN
Probenazole	27605-76-1	NEAT	P-710N	Pyrazon	1698-60-8	NEAT	P-395N
		Acetone	P-710S-A			MeOH	P-395S
Prochloraz	67747-09-5	NEAT	P-549N	Pyrazophos	13457-18-6	NEAT	P-359N
		MeOH	P-549S			MeOH	P-359S
Procymidone	32809-16-8	NEAT	P-430N	Pyrazosulfuron-ethyl	93697-74-6	MeOH	P-1332S
		MeOH	P-430S	Pyrazoxyfen	71561-11-0	NEAT	P-618N
						MeOH	P-618S

♦ Pesticides containing a carboxyl group may autoesterify in Methanol. These standards are intended for use as a post-esterification standard for GC analysis. For other types of analysis (ex. HPLC) we suggest a non-hydroxylic solvent such as Acetonitrile.

* ColdPAK required to maintain integrity of product.



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

Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
Pyrethrins	8003-34-7	NEAT MeOH	P-187N P-187S	<i>Sanmarton</i>	see Fenvalerate		
<i>Pyrethrum</i>	see Pyrethrins			<i>Scepter</i>	see Imazaquin		
Pyributicarb	88678-67-5	MeOH	P-987S	Schradan	152-16-9	NEAT MeOH	P-418N P-418S
Pyridaben	96489-71-3	NEAT MeOH	P-693N P-693S	Sebuthylazin	7286-69-3	NEAT MeOH	P-432N P-432S
Pyridalyl	179101-81-6	NEAT MeOH	P-990N P-990S	Secbumeton	26259-45-0	NEAT MeOH	P-165N P-165S
Pyridaphenthion	119-12-0	MeOH	P-610S	<i>Select</i>	see Clethodim		
Pyridate	55512-33-9	NEAT AcCN	P-404N P-404S-CN	<i>Sencor</i>	see Metribuzin		
Pyrifluquinazon	337458-27-2	AcCN	P-1093S-CN	Sethoxydim	74051-80-2	NEAT AcCN	P-306N P-306S-CN *
Pyrimethanil	53112-28-0	NEAT MeOH	P-723N P-723S	<i>Sevin</i>	see Carbaryl		
Pyrimidifen	105779-78-0	MeOH	P-989S	Siduron	1982-49-6	NEAT MeOH	P-063N P-063S
<i>Pyriminil</i>	see Vacor			Silafluofen	105024-66-6	NEAT MeOH	P-717N P-717S
(E)-Pyriminobac-methyl	147411-69-6	MeOH 50 µg/mL	P-1030S-0.5X	<i>Silmurix</i>	see Schradan		
Pyrimisulfan	221205-90-9	AcCN	P-1203S-CN	Silvex ♦	93-72-1	NEAT MeOH AcCN	P-084N P-084S P-084S-CN
Pyriphenox	88283-41-4	MeOH	P-668S	Silvex 2-ethylhexyl ester	53404-76-5	NEAT MeOH	P-728N P-728S
Pyriproxyfen	95737-68-1	NEAT AcCN	P-795N P-795S-CN	Silvex methyl ester	4841-20-7	NEAT MeOH	P-115N P-115S
<i>Pyron</i>	see Pyridate			Simazine	122-34-9	NEAT MeOH	P-085N P-085S
Pyroquilon	57369-32-1	NEAT MeOH	P-696N P-696S	Simazine-2-hydroxy	2599-11-3	MeOH	P-1191S
Pyroxsulam	422556-08-9	NEAT MeOH	P-1060N P-1060S	Simeton	673-04-1	NEAT MeOH	P-501N P-501S
<i>Queletox</i>	see Fenthion			Simetryn	1014-70-6	NEAT MeOH	P-166N P-166S
Quinalphos	13593-03-8	NEAT MeOH	P-462N P-462S	<i>Sinbar</i>	see Terbacil		
Quinclorac ♦	84087-01-4	NEAT MeOH AcCN	P-692N P-692S P-692S-CN	<i>Siperin</i>	see Cypermethrin		
Quinmerac	90717-03-6	NEAT AcCN	P-836N P-836S-CN	<i>Sipscasan</i>	see Thiophanate-methyl		
Quinoclamine	2797-51-5	NEAT MeOH	P-985N P-985S	Sodium diethyldithiocarbamate trihydrate	20624-25-3	NEAT Water	P-505N P-505S-W
Quinoxifen	124495-18-7	5 mg MeOH	P-882N-5MG P-882S	<i>Solfac</i>	see Cyfluthrin		
<i>Quintozene</i>	see Pentachloronitrobenzene			<i>Sonalan</i>	see Ethalfuralin		
Quizalofop ethyl	76578-14-8	NEAT AcCN	P-293N P-293S-CN	<i>Sonar</i>	see Fluridone		
<i>Racumin</i>	see Coumatetralyl			<i>Spike</i>	see Tebuthiuron		
<i>Radapon</i>	see Dalapon acid			Spinetoram	187166-40-1 / mix of isomers J & L 187166-15-0	AcCN	P-1083S-CN
<i>Ramrod</i>	see Propachlor			Spinosad	168316-95-8	NEAT AcCN	P-864N P-864S-CN
<i>Reglone</i>	see Diquat dibromide			Spirodiclofen	148477-71-8	NEAT MeOH	P-938N P-938S
Resmethrin	10453-86-8	NEAT MeOH	P-325N P-325S	Spiromesifen	283594-90-1	AcCN	P-960S-CN
<i>Rezifilm</i>	see Thiram			Spirotetramat	203313-25-1	NEAT AcCN	P-1077N P-1077S-CN
Rimsulfuron	122931-48-0	NEAT AcCN	P-837N P-837S-CN *	Spiroxamine	118134-30-8	NEAT AcCN	P-869N P-869S-CN
<i>Rogor</i>	see Dimethoate			<i>Stam F-34</i>	see Propanil		
<i>Rogue</i>	see Propanil			<i>Strofes</i>	see Tetrachlorvinphos		
<i>Ronilan</i>	see Vinclozolin			<i>Stomp</i>	see Pendimethalin		
Ronnel	299-84-3	NEAT MeOH	P-080N P-080S	Strobane	8001-50-1	NEAT MeOH	P-339N P-339S
<i>Ronstar</i>	see Oxadiazon			<i>Suffix</i>	see Benzoylprop ethyl		
<i>Rospin</i>	see Chloropropylate			Sulcontrione	99105-77-8	NEAT MeOH	P-951N P-951S
Rotenone	83-79-4	NEAT MeOH	P-056N P-056S *	Sulfallate	95-06-7	NEAT MeOH	P-327N P-327S
<i>Roundup</i>	see Glyphosate			Sulfaquinoxaline	59-40-5	MeOH	P-681S
<i>Rovral</i>	see Iprodione			Sulfentrazone	122836-35-5	NEAT AcCN	P-798N P-798S-CN
<i>Roxion</i>	see Dimethoate			Sulfometuron methyl ester	74222-97-2	NEAT	P-336N
<i>Rubigan</i>	see Bloc			Sulfosulfuron	141776-32-1	10 µg/mL AcCN	P-865S-CN-0.1X
<i>Ruelene</i>	see Crufomate			Sulfotep	3689-24-5	NEAT MeOH	P-167N P-167S
S421	127-90-2	NEAT MeOH	P-749N P-749S	<i>Sulfox-cide</i>	see Sulfoxide		
<i>SADH</i>	see Alar						
Saflufenacil	372137-35-4	NEAT MeOH	P-1078N P-1078S				
<i>Safrothin</i>	see Propetamphos						
<i>Sancap</i>	see Dipropetryn						

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Pesticides

Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
Sulfoxide	120-62-7	NEAT MeOH	P-396N P-396S	Terbacil	5902-51-2	NEAT MeOH	P-096N P-096S
<i>Sulfoxyl</i>	see Sulfoxide			Terbufos	13071-79-9	NEAT MeOH	P-208N P-208S
<i>Sulprofos</i>	see Bolstar			Terbufos sulfone	56070-16-7	MeOH	P-729S
<i>Sumicidin</i>	see Fenvalerate			Terbufos sulfoxide	10548-10-4	NEAT MeOH	P-730N P-730S
<i>Sumifly</i>	see Fenvalerate			Terbumeton	33693-04-8	NEAT MeOH	P-504N P-504S
Sumithrin	26002-80-2	NEAT MeOH	P-050N P-050S	Terbutylazine	5915-41-3	NEAT MeOH	P-169N P-169S
<i>Sumitol</i>	see Secbumeton			Terbutylazine desethyl	30125-63-4	NEAT MeOH	P-613N P-613S
<i>Summit</i>	see Triadimenol			Terbutol	1918-11-2	NEAT MeOH	P-464N P-464S
<i>Super X</i>	see Terrazole			<i>Terbutryn</i>	see Prebane		
<i>Supracide</i>	see Methidathion			<i>Terpene polychlorinates</i>	see Strobane		
<i>Surcopur</i>	see Propanil			<i>Terraclor</i>	see Pentachloronitrobenzene		
<i>Surflan</i>	see Oryzalin			<i>Terracur P</i>	see Dasanit		
<i>Sutan</i>	see Butylate			Terrazole	2593-15-9	NEAT MeOH	P-190N P-190S
<i>Swebate</i>	see Abate			<i>Terre-Sytam</i>	see Dimefox		
Swep	1918-18-9	NEAT MeOH	P-061N P-061S	<i>Tersan</i>	see Thiram		
<i>Systhane</i>	see Myclobutanil			<i>Tersan SP</i>	see Chloroneb		
<i>Systox</i>	see Demeton			1,2,3,4-Tetrachlorobenzene	634-66-2	NEAT MeOH	P-999N P-999S
2,4,5-T acid ♦	93-76-5	NEAT MeOH AcCN	P-168N P-168S P-168S-CN	1,2,3,5-Tetrachlorobenzene	634-90-2	NEAT MeOH	P-1001N P-1001S-TP
2,4,5-T butoxyethyl ester	2545-59-7	NEAT AcCN	P-441N P-441S-CN	1,2,4,5-Tetrachlorobenzene	95-94-3	NEAT MeOH	P-1003N P-1003S
2,4,5-T n-butyl ester	93-79-8	NEAT AcCN	P-440N P-440S-CN	1,2,3,4-Tetrachloro-5-nitrobenzene	879-39-0	NEAT MeOH	P-1000N P-1000S
2,4,5-T methyl ester	1928-37-6	NEAT MeOH	P-067N P-067S	2,3,5,6-Tetrachloronitrobenzene	117-18-0	NEAT MeOH	P-467N P-467S
2,4,6-T ♦	575-89-3	NEAT MeOH AcCN	P-523N P-523S P-523S-CN	Tetrachlorvinphos	22248-79-9	NEAT MeOH	P-125N P-125S
<i>Talstar</i>	see Bifenthrin			Tetraconazole	112281-77-3	NEAT MeOH	P-721N P-721S
<i>Tame</i>	see Danitol			Tetradifon	116-29-0	NEAT MeOH	P-261N P-261S
<i>Tamaron</i>	see Monitor			<i>cis-1,2,3,6-Tetrahydrophthalimide</i>	1469-48-3	MeOH	P-116S
<i>Tamogan</i>	see Bromadiolone			1,2,3,6-Tetrahydrophthalimide	85-40-5	NEAT MeOH	P-621N P-621S
<i>Target</i>	see MSMA			Tetramethrin	7696-12-0	NEAT MeOH	P-406N P-406S
<i>TCA</i>	see Trichloroacetic acid			Tetrasul	2227-13-6	NEAT MeOH	P-552N P-552S
<i>TCMTB</i>	see Busan			<i>Tetron</i>	see TEPP		
<i>TCNB</i>	see Tecnazene			Thiabendazole	148-79-8	NEAT MeOH	P-068N P-068S
Tebuconazol	107534-96-3	NEAT MeOH	P-451N P-451S	Thiacloprid	111988-49-9	NEAT AcCN	P-838N P-838S-CN
Tebufenozide	112410-23-8	NEAT MeOH	P-726N P-726S	Thiacloprid-amide	676228-91-4	NEAT MeOH	P-1223N P-1223S
Tebufenpyrad	119168-77-3	NEAT MeOH	P-877N P-877S	Thiamethoxam	153719-23-4	NEAT AcCN	P-866N P-866S-CN
Tebupirimfos	96182-53-5	NEAT MeOH	P-727N P-727S	Thiazopyr	117718-60-2	NEAT MeOH	P-808N P-808S
Tebutam	35256-85-0	MeOH	P-879S	Thidiazuron	51707-55-2	NEAT MeOH	P-369N P-369S
Tebuthiuron	34014-18-1	NEAT MeOH	P-188N P-188S	Thifensulfuron methyl	79277-27-3	NEAT MeOH	P-468N P-468S
<i>Tecto</i>	see Thiabendazole			Thifluzamide	130000-40-7	NEAT MeOH	P-1055N P-1055S
<i>Tecnazene</i>	see 2,3,5,6-Tetrachloronitrobenzene			<i>Thimet</i>	see Phorate		
<i>Tedion</i>	see Tetradifon			Thiobencarb	28249-77-6	NEAT MeOH	P-180N P-180S
Teflubenzuron	83121-18-0	NEAT MeOH	P-452N P-452S				
Tefluthrin	79538-32-2	MeOH	P-568S *				
<i>Telodrin</i>	see Isobenzan						
Tembotrione	335104-84-2	NEAT AcCN	P-1109N P-1109S-CN				
<i>Temephos</i>	see Abate						
<i>Temik</i>	see Aldicarb						
<i>Temus</i>	see Bromadiolone						
<i>Tenoran</i>	see Chloroxuron						
TEPP	107-49-3	NEAT	P-207N				

♦ Pesticides containing a carboxyl group may autoesterify in Methanol. These standards are intended for use as a post-esterification standard for GC analysis. For other types of analysis (ex. HPLC) we suggest a non-hydroxylic solvent such as Acetonitrile.

* ColdPAK required to maintain integrity of product.

For Pesticide Kits and Mixtures
see page 67



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

Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
Thiocyclam hydrogen oxalate	31895-22-4	MeOH	P-688S	Trichloroacetic acid	76-03-9	100 mg MeOH	P-459N P-459S
Thiodan I	see Endosulfan I					AcCN	P-459S-CN
Thiodan II	see Endosulfan II			1,2,3-Trichlorobenzene	87-61-6	NEAT	P-1002N
Thiodicarb	59669-26-0	NEAT	P-477N			Isocetane	P-1002S-TP
		MeOH	P-477S	1,2,4-Trichlorobenzene	120-82-1	NEAT	P-1004N
4,4'-Thiodiphenol	2664-63-3	NEAT	P-117N			MeOH	P-1004S
		MeOH	P-117S	2,3,5-Trichlorobenzoic acid	50-73-7	NEAT	P-508N
Thiofanox	39196-18-4	NEAT	P-266N			MeOH	P-508S
		MeOH	P-266S	Trichloronate	327-98-0	NEAT	P-127N
Thiofanox sulfone	39184-59-3	AcCN	P-839S-CN-0.1X			MeOH	P-127S
Thiofanox sulfoxide	39184-27-5	NEAT	P-702N	2,4,6-Trichlorophenol	88-06-2	NEAT	P-1006N
		MeOH	P-702S			MeOH	P-1006S
Thiometon	640-15-3	NEAT	P-486N	2,4,6-Trichlorophenyl-4'-nitrophenyl ether	see Chlornitrofen		
		MeOH	P-486S				
Thionazin	297-97-2	MeOH	P-171S	3,5,6-Trichloro-2-pyridinol	6515-38-4	NEAT	P-626N
Thiophanate ♦	23564-06-9	NEAT	P-321N			MeOH	P-626S
		MeOH	P-321S	Trichloropyrphos	see Dursban		
		AcCN	P-321S-CN	Triclopyr ♦	55335-06-3	NEAT	P-289N
Thiophanate-methyl	23564-05-8	NEAT	P-349N			MeOH	P-289S
		MeOH	P-349S			AcCN	P-289S-CN
Thiophos	see Parathion			Triclopyr-2-butoxy ethyl ester	64700-56-7	NEAT	P-703N
Thiram	137-26-8	NEAT	P-118N			AcCN	P-703S-CN
		MeOH	P-118S	Triclopyr methyl ester	60825-26-5	MeOH	P-291S
Tiguvon	see Fenthion			Tricresyl phosphate	1330-78-5	NEAT	P-209N
Tillam	1114-71-2	NEAT	P-105N			MeOH	P-209S
		MeOH	P-105S	Tricyclazole	41814-78-2	NEAT	P-090N
Tilt	60207-90-1	NEAT	P-280N			MeOH	P-090S
		MeOH	P-280S	Tridemorph	24602-86-6	NEAT	P-307N
Tomadorane	see 4-CPA					MeOH	P-307S
Tobaz	see Thiabendazole			Trietazine	1912-26-1	NEAT	P-492N
Tokuthion	34643-46-4	NEAT	P-126N			MeOH	P-492S
		MeOH	P-126S	Triethylphosphate	78-40-0	NEAT	P-335N
Tolban	see Profluralin					MeOH	P-335S
Tolclofos-methyl	57018-04-9	NEAT	P-557N	O,O,O-Triethylphosphorothioate	126-68-1	NEAT	P-172N
		MeOH	P-557S			MeOH	P-172S
Tolyfluanide	731-27-1	NEAT	P-553N	Trifene	see Fenatrol		
		MeOH	P-553S *	Trifenmorph	1420-06-0	NEAT	P-300N
Torak	see Dialifos					MeOH	P-300S
Tordon	see Picloram			Trifloxystrobin	141517-21-7	NEAT	P-867N
Toxaphene (Tech)	8001-35-2	NEAT	P-093N			AcCN	P-867S-CN
		MeOH	P-093S	Triflumizole	68694-11-1	AcCN	P-479S-CN
2,4,5-TP	see Silvex			Triflururon	64628-44-0	NEAT	P-689N
2,4,5-TP methyl ester	see Silvex methyl ester					MeOH	P-689S
Tralkoxydim	87820-88-0	NEAT	P-405N	Trifluralin	1582-09-8	NEAT	P-197N
		MeOH	P-405S			MeOH	P-197S
Tralomethrin	66841-25-6	NEAT	P-478N	Triflusulfuron-methyl	126535-15-7	NEAT	P-840N
		MeOH	P-478S			AcCN	P-840S-CN
Transfluthrin	118712-89-3	NEAT	P-743N	Triforine	26644-46-2	NEAT	P-308N
		MeOH	P-743S			MeOH	P-308S
Treflan	see Trifluralin			2,3,5-Triiodobenzoic acid ♦	88-82-4	NEAT	P-507N
Triadimefon	43121-43-3	NEAT	P-069N			MeOH	P-507S
		MeOH	P-069S			AcCN	P-507S-CN
Triadimenol	55219-65-3	NEAT	P-361N	2,3,5-Trimethacarb	2655-15-4	NEAT	P-515N
		MeOH	P-361S			MeOH	P-515S
Triallate	2303-17-5	NEAT	P-268N	3,4,5-Trimethacarb	2686-99-9	NEAT	P-516N
		MeOH	P-268S			MeOH	P-516S
Triasulfuron	82097-50-5	NEAT	P-592N	Trimethyl phosphate	512-56-1	NEAT	P-210N
		AcCN	P-592S-CN			MeOH	P-210S
Triaziflam	131475-57-5	MeOH	P-1346S	Trimethylsulfonium iodide	2181-42-2	NEAT	P-1016N
1,2,4-Triazole	288-88-0	NEAT	P-627N			MeOH	P-1016S
		MeOH	P-627S	Trimidal	63284-71-9	NEAT	P-422N
Triazophos	24017-47-8	NEAT	P-334N			MeOH	P-422S
		MeOH	P-334S	Trinexapac-ethyl	95266-40-3	NEAT	P-1034N
Tribenuron-methyl	101200-48-0	NEAT	P-666N			MeOH	P-1034S
		AcCN	P-666S-CN	Triphenylphosphate	115-86-6	NEAT	P-192N
Tribufos	see DEF					MeOH	P-192S
Tributylphosphorotrithioite	see Merphos			Triphenyltin chloride	639-58-7	NEAT	P-526N
bis(Tributyltin)oxide	56-35-9	NEAT	P-455N			MeOH	P-526S
		MeOH	P-455S	Trithion	see Carbophenothion		
Trichlorfon	52-68-6	NEAT	P-044N	Triticonazole	131983-72-7	10 µg/mL Isocetane	P-868S-TP-0.1X
		MeOH	P-044S				

Pesticides at same low price in Neat (10 mg) or Solution (100 µg/mL) form
Most Pesticides are available in 1000 µg/mL (add -10X). Call or visit website for pricing.



Pesticides

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

Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Compound	Synonym / CAS No.	Matrix	Cat. No.
<i>Trucidor</i>	see Vamidothion			Vernolate	1929-77-7	NEAT	P-111N
<i>Tugon</i>	see Trichlorfon					MeOH	P-111S
<i>Tupersan</i>	see Siduron			Vinclozolin	50471-44-8	NEAT	P-122N
<i>Uden</i>	see Baygon					MeOH	P-122S
Uniconazole	83657-22-1	AcCN	P-1092S-CN *	<i>Warbex</i>	see Famphur		
<i>Urab</i>	see Fenuron-TCA			Warfarin	81-81-2	NEAT	P-076N
<i>Urox</i>	see Monuron TCA					MeOH	P-076S
<i>Ustilan</i>	see Ethidimuron			<i>Waylay</i>	see Napropamide		
Vacor	53558-25-1	NEAT	P-240N	<i>Weedol</i>	see Paraquat CL		
		MeOH	P-240S	<i>Weedone</i>	see 2,4,5-T acid		
Vamidothion	2275-23-2	NEAT	P-350N	XMC	2655-14-3	NEAT	P-1085N
		MeOH	P-350S *			MeOH	P-1085S
<i>Vamidoate</i>	see Vamidothion			<i>Zectran</i>	see Mexacarbate		
<i>Vancide 89</i>	see Captan			<i>Zerlate</i>	see Ziram		
<i>Vandyke 264</i>	see MGK 264			Zineb	12122-67-7	NEAT	P-098N
Vanicide-20S		NEAT	P-073N	<i>Zinophos</i>	see Thionazin		
		MeOH	P-073S	Ziram	137-30-4	NEAT	P-324N
<i>Vapona</i>	see Dichlorvos					MeOH	P-324S
<i>Vapotone</i>	see TEPP			<i>Zolone</i>	see Phosalone		
<i>Vegadex</i>	see Sulfallate			Zoxamide	156052-68-5	AcCN	P-970S-CN *
<i>Velpar</i>	see Hexazinone						
<i>Vernam</i>	see Vernolate						

* ColdPAK required to maintain integrity of product.

EXACT WEIGHT for Neat Pesticides

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



Pesticides and Herbicides

Kits and Mixtures



Pesticide Kits and Mixtures

Neat Pesticide Kit

Z-004-SET ♦

20 x 10 mg

Aldrin	Dieldrin
α-BHC	Heptachlor
β-BHC	Heptachlor epoxide (Isomer B)
δ-BHC	Lindane (γ-BHC)
o,p'-DDD	Malathion
p,p'-DDD	Methoxychlor
o,p'-DDE	Mirex
p,p'-DDE	Parathion
o,p'-DDT	Carbaryl
p,p'-DDT	Toxaphene

Pesticide (Solid Waste) Kit

Z-017-SET

6 x 10 mg

2,4-D	Methoxychlor
Endrin	Silvex
Lindane	Toxaphene

Pesticide Mixture for Evaluating GC Columns

M-100

1 x 1 mL

At stated conc. (µg/mL) in Isooctane

13 comps.

Aldrin	0.050	p,p'-DDT	0.260
α-BHC	0.025	Dieldrin	0.120
β-BHC	0.100	Endrin	0.200
o,p'-DDD	0.200	Heptachlor	0.025
p,p'-DDD	0.190	Heptachlor epoxide (Isomer B)	0.080
p,p'-DDE	0.100	Lindane (γ-BHC)	0.025
o,p'-DDT	0.225		

Technical Note

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

Pesticides in Solutions (Individual and Kits)

SOLUTIONS in Isooctane

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

Z-023-SET

21 x 1 mL

Technical Note

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

♦ V-Rated packaging surcharge applies for international shipments.

Herbicide Kit and Mixtures

Herbicide Kit

Z-031-SET

15 x 1 mL

0.1 mg/mL each in MeOH

Atrazine	Prometryne
Dicamba	Prometon
Benfluralin	Propanil
Bentazon +	Propazine
Dacthal	Simazine
Dichlobenil	Tebuthiuron
	Trifluralin
Metolachlor	

+ in Acetone

Herbicide Mix #1

M-HERB-1

0.1 mg/mL each in EtOAc

Atrazine
Bromacil
Cycloate
Eptam
Isopropalin
Hexazinone
Molinate

1 x 1 mL

13 comps.

Oxyfluorfen
Sencor
Sutan
Terbacil
Tillam
Trifluralin

Herbicide Mix #2

M-HERB-2

0.1 mg/mL each in EtOAc

Benfluralin
Metolachlor
Oxadiazon
Propachlor
Propazine

1 x 1 mL

9 comps.

Prowl
Simazine
Tolban
Vernam





Pesticides

Triazines & Metabolites, Phenylureas, Neonicotinoids and Fipronils

NEATS in 10 mg. SOLUTIONS at 100 µg/mL in MeOH, except -MC (in Methyl cellosolve)

Triazines and Metabolites

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

Phenylurea Pesticide Mixtures

Phenylurea Pesticide Mixture

PES-PU-001

PES-PU-001-PAK

200 µg/mL each in AcCN:Acetone

SAVE

1 x 1 mL

5 x 1 mL

8 comps.

Diffubenzuron
Diuron

Fluometuron
Linuron

Propanil
Siduron

Tebuthiuron
Thidiazuron

Phenylurea Surrogate Mixture

PES-PU-SS

PES-PU-SS-PAK

500 µg/mL each in MeOH:AcCN

SAVE

1 x 1 mL

5 x 1 mL

2 comps.

Carbazole

Monuron

Neonicotinoids and Fipronil - Honeybee Colony Collapse Disorder (CCD)

Research into honeybee colony collapse disorder (CCD) has revealed that this group of pesticides may be solely responsible for or a contributing 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



Neonicotinoids

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

Fipronil and Metabolites

Fipronil	120068-37-3	P-738N	10 mg	P-738S *	MeOH	1 mL
				P-738S-A *	Acetone	1 mL
Fipronil desulfinyl	205650-65-3	----	-----	P-782S-A *	Acetone	1 mL
Fipronil sulfide	120067-83-6	P-781N-5MG	5 mg	P-781S-A *	Acetone	1 mL
Fipronil sulfone	120068-36-2	----	-----	P-780S-A *	Acetone	1 mL
				P-FIP-MET-KIT *		4 x 1 mL
				P-738S-A, P-782S-A, P-781S-A, P-780S-A		

* ColdPAK required to maintain integrity of product.

Technical Note

Fipronil is in the phenyl pyrazole class of pesticides. It is a broad-spectrum insecticide used in many different applications. It is used in many commercial topical flea and tick treatments for cats and dogs. Fipronil is used in these types of applications because it is not readily absorbed through the skin, and has a comparatively low toxicity if ingested.

Fipronil produces three notable metabolites: Fipronil Sulfide, Fipronil Sulfone and Fipronil Desulfinyl. These metabolites form under different conditions, and are of particular interest, because unlike the parent compound, they can be more toxic and environmentally persistent.

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.

EPA Volatile Methods:

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

NEATS are as stated, SOLUTIONS are in 1 mL

VOCs

Compound	Conc.	Matrix	Cat. No.	Compound	Conc.	Matrix	Cat. No.
Acetonitrile 75-05-8	100 µg/mL	MeOH	APP-9-005	Bromoform 75-25-2	1 gram	NEAT	M-502-05N
	10 mg/mL	Water	M-8015B/5031-02		0.2 mg/mL	MeOH	M-502-05
	1 mg/mL	Water	M-8033		2 mg/mL	MeOH	M-502-05-10X
	1 mg/mL	MeOH	APP-9-005-10X		5 mg/mL	MeOH	AS-E0212
	5 mg/mL	MeOH	APP-9-005-50X	Bromomethane 74-83-9	100 µg/mL	MeOH	APP-9-032
	5 mg/mL	IPA	AS-E0473		0.2 mg/mL	MeOH	M-502-06
Acrylamide 79-06-1	1 mg/mL	MeOH	M-8032		2 mg/mL	MeOH	M-502-06-10X
Acrylonitrile 107-13-1	100 µg/mL	MeOH	APP-9-008	Bromotrichloromethane 75-62-7	100 mg	NEAT	K-009N
	10 mg/mL	Water	M-8015B/5031-04	1,3-Butadiene 106-99-0	0.2 mg/mL	MeOH	S-406A
	1 mg/mL	MeOH	APP-9-008-10X		2 mg/mL	MeOH	S-406A-10X
	10 mg/mL	MeOH	AS-E0003	n-Butylbenzene 104-51-8	100 mg	NEAT	V-002
Allyl chloride 107-05-1	100 µg/mL	MeOH	APP-9-010		1 gram	NEAT	M-502-07N
	2 mg/mL	MeOH	APP-9-010-20X		5 mg/mL	MeOH	AS-E1105
	1 mg/mL	MeOH	AS-E0476		0.2 mg/mL	MeOH	M-502-07
n-Amylbenzene 538-68-1	100 mg	NEAT	V-001		2 mg/mL	MeOH	M-502-07-10X
Azobenzene 103-33-3	2 mg/mL	CH ₂ Cl ₂	Z-014B-1	Isobutylbenzene 538-93-2	100 mg	NEAT	V-003
Benzene 71-43-2	1 gram	NEAT	M-502-01N	sec-Butylbenzene 135-98-8	100 mg	NEAT	V-004
	100 µg/mL	MeOH	APP-9-015		1 gram	NEAT	M-502-08N
	1 mg/mL	MeOH	AS-E0004		5 mg/mL	MeOH	AS-E1104
	0.2 mg/mL	MeOH	M-502-01		0.2 mg/mL	MeOH	M-502-08
	2 mg/mL	MeOH	M-502-01-10X		2 mg/mL	MeOH	M-502-08-10X
Benzene-d₆ 1076-43-3	0.2 mg/mL	MeOH	M-624-SS-01	tert-Butylbenzene 98-06-6	1 gram	NEAT	M-502-09N
	2 mg/mL	MeOH	M-624-SS-01-10X		5 mg/mL	MeOH	AS-E1106
Benzyl chloride 100-44-7	0.2 mg/mL	MeOH	M-8010-01		0.2 mg/mL	MeOH	M-502-09
	5 mg/mL	AcCN	AS-E0169		2 mg/mL	MeOH	M-502-09-10X
2-Bromo-1-chloropropane 3017-95-6	20 mg/mL	MeOH	M-001R-3	Carbon disulfide 75-15-0	100 µg/mL	MeOH	APP-9-035
	0.2 mg/mL	MeOH	M-624-SS-04		2 mg/mL	MeOH	APP-9-035-20X
1-Bromo-2-nitrobenzene 577-19-5	1 mg/mL	Acetone	M-8081-IS-DC		5 mg/mL	MeOH	AS-E0363
Bromobenzene 108-86-1	1 gram	NEAT	M-502-02N	Carbon tetrabromide 558-13-4	100 mg	NEAT	K-006N
	5 mg/mL	MeOH	AS-E0406	Carbon tetrachloride 56-23-5	100 mg	NEAT	K-003N
	0.2 mg/mL	MeOH	M-502-02		1 gram	NEAT	M-502-10N
	2 mg/mL	MeOH	M-502-02-10X		100 µg/mL	MeOH	APP-9-036
Bromochloroacetonitrile 83463-62-1	1 mg/mL	Acetone	AS-E1186		5 mg/mL	MeOH	AS-E0360
	5 mg/mL	Acetone	M-551B-1		0.2 mg/mL	MeOH	M-502-10
2-Bromochlorobenzene 694-80-4	0.2 mg/mL	MeOH	M-624-SS-12		2 mg/mL	MeOH	M-502-10-10X
4-Bromochlorobenzene 106-39-8	2 mg/mL	MeOH	M-8020-SS-1	Chloral hydrate 302-17-0	1 mg/mL	MeOH	M-E-1179-M *
Bromochloromethane 74-97-5	100 mg	NEAT	K-007N		1 mg/mL	Acetone	AS-E1179
	1 gram	NEAT	M-502-03N		5 mg/mL	Acetone	M-551B-2
	10 mg/mL	MeOH	AS-E0136	Chlorobenzene 108-90-7	100 mg	NEAT	A-001
	0.2 mg/mL	MeOH	M-502-03		1 gram	NEAT	M-502-11N
	2 mg/mL	MeOH	M-502-03-10X		100 µg/mL	MeOH	APP-9-039
Bromodichloromethane 75-27-4	100 mg	NEAT	K-008N		1 mg/mL	MeOH	AS-E0006
	1 g	NEAT	M-502-04N		0.2 mg/mL	MeOH	M-502-11
					2 mg/mL	MeOH	M-502-11-10X
	0.2 mg/mL	MeOH	M-502-04	Chlorobenzene-d₅ 3114-55-4	5 mg/mL	MeOH	CLP-PI-3-5X
	2 mg/mL	MeOH	M-502-04-10X	Chloroethane 75-00-3	100 µg/mL	MeOH	APP-9-042
	5 mg/mL	MeOH	AS-E0046		1 mg/mL	MeOH	AS-E0015
p-Bromofluorobenzene 460-00-4	25 µg/mL	MeOH	CLP-004		0.2 mg/mL	MeOH	M-502-12
	250 µg/mL	MeOH	CLP-004-10X		2 mg/mL	MeOH	M-502-12-10X
	0.15 mg/mL	MeOH	AS-E0233	bis(2-Chloroethoxy)methane 111-91-1	100 µg/mL	CH ₂ Cl ₂	APP-9-026
	25 mg/mL	MeOH	CLP-004-1000X		1 mg/mL	MeOH	APP-9-026-M-10X
	2.5 mg/mL	MeOH	CLP-004-100X		5 mg/mL	MeOH	AS-E0041
	2 mg/mL	MeOH	CLP-004-80X	1-Chloro-2-fluorobenzene 348-51-6	2 mg/mL	MeOH	S-163
	0.2 mg/mL	MeOH	M-624-SS-03	1-Chloro-4-fluorobenzene 352-33-0	0.2 mg/mL	MeOH	M-624-SS-13
	2 mg/mL	MeOH	M-624-SS-03-10X	1-Chloro-3-nitrobenzene 121-73-3	1 mg/mL	Acetone	M-8091-SS-100X
	100 µg/mL	Acetone	M-551.1-IS				
	10 mg/mL	Acetone	M-551.1-IS-100X				

* ColdPAK required to maintain integrity of product.

VOCs

Compound	Conc.	Matrix	Cat. No.	Compound	Conc.	Matrix	Cat. No.
Chloroform 67-66-3	1 gram	NEAT	M-502-13N	1,3-Dichlorobenzene 541-73-1	100 mg	NEAT	A-003
	0.2 mg/mL	MeOH	M-502-13		1 gram	NEAT	M-502-22N
	2 mg/mL	MeOH	M-502-13-10X		100 µg/mL	MeOH	APP-9-065
1-Chlorohexane 544-10-5	0.2 mg/mL	MeOH	M-8010R-1-04		0.2 mg/mL	MeOH	M-502-22
	2 mg/mL	MeOH	M-8010R-1-04-10X		1 mg/mL	MeOH	AS-E0214
Chloromethane 74-87-3	100 µg/mL	MeOH	APP-9-044	1,4-Dichlorobenzene 106-46-7	2 mg/mL	MeOH	M-502-22-10X
	0.2 mg/mL	MeOH	M-502-14		2.0 mg/mL	Hexane	M-8120-03
	2 mg/mL	MeOH	M-502-14-10X		100 mg	NEAT	A-004
bis(2-Chloro-1-methylethyl)ether 108-60-1	100 mg	NEAT	FETH-02N		1 gram	NEAT	M-502-23N
					100 µg/mL	MeOH	APP-9-066
Chloroprene 126-99-8	100 µg/mL	MeOH	APP-9-048-R1		0.2 mg/mL	MeOH	M-502-23
	200 µg/mL	MeOH	APP-9-048-R1-2X		2 mg/mL	MeOH	M-502-23-10X
	1 mg/mL	MeOH	APP-9-048-R1-10X		5 mg/mL	MeOH	AS-E0025
	2.0 mg/mL	MeOH	APP-9-048-R1-20X		0.2 mg/mL	Acetone	M-8151-IS-2
3-Chloropropionitrile 542-76-7	1 mg/mL	MeOH	AS-E0375		2.0 mg/mL	Hexane	M-8120-04
2-Chlorotoluene 95-49-8	1 gram	NEAT	M-502-15N	1,4-Dichlorobenzene-d₄ 3855-82-1	2 mg/mL	MeOH	Z-014J-3-M-0.5X
	0.2 mg/mL	MeOH	M-502-15		4 mg/mL	CH ₂ Cl ₂	Z-014J-3
	2 mg/mL	MeOH	M-502-15-10X	1,4-Dichlorobutane 110-56-5	0.2 mg/mL	MeOH	M-624-SS-05
	5 mg/mL	MeOH	AS-E0150	1,4-Dichlorobutane-d₈ 83547-96-0	20 mg/mL	MeOH	M-001R-2
3-Chlorotoluene 108-41-8	5 mg/mL	MeOH	AS-E0151		0.15 mg/mL	MeOH	AS-E0196
4-Chlorotoluene 106-43-4	1 gram	NEAT	M-502-16N	Dichlorodifluoromethane 75-71-8	100 µg/mL	MeOH	APP-9-069
	0.2 mg/mL	MeOH	M-502-16		5000 µg/mL	MeOH	AS-E0346
	2 mg/mL	MeOH	M-502-16-10X		0.2 mg/mL	MeOH	M-502-24
Cyclohexane 110-82-7	1 gram	NEAT	TK-102-08N	1,1-Dichloroethane 75-34-3	2 mg/mL	MeOH	M-502-24-10X
	2 mg/mL	MeOH	TK-102-08S-10X		1 gram	NEAT	M-502-25N
Decylbenzene 104-72-3	100 mg	NEAT	V-005		100 µg/mL	MeOH	APP-9-070
Diallate 2303-16-4	1 mg/mL	AcCN	AS-E0623		0.2 mg/mL	MeOH	M-502-25
	1000 µg/mL	MeOH	APP-9-057		1 mg/mL	MeOH	AS-E0012
Dibromochloromethane 124-48-1	100 mg	NEAT	K-010N	1,2-Dichloroethane 107-06-2	2 mg/mL	MeOH	M-502-25-10X
	1 gram	NEAT	M-502-17N		1 gram	NEAT	M-502-26N
	100 µg/mL	MeOH	APP-9-060		100 µg/mL	MeOH	APP-9-071
	0.2 mg/mL	MeOH	M-502-17		1 mg/mL	MeOH	AS-E0009
	2 mg/mL	MeOH	M-502-17-10X		0.2 mg/mL	MeOH	M-502-26
1,2-Dibromo-3-chloropropane 96-12-8	1 gram	NEAT	M-502-18N	1,2-Dichloroethane-d₄ 17060-07-0	2 mg/mL	MeOH	M-502-26-10X
	0.2 mg/mL	MeOH	M-502-18		0.2 mg/mL	MeOH	M-624-SS-06
	2 mg/mL	MeOH	M-502-18-10X		2.0 mg/mL	MeOH	M-624-SS-06-10X
	5 mg/mL	MeOH	AS-E0993		1 gram	NEAT	M-502-27N
	5 mg/mL	Acetone	M-551B-4		100 µg/mL	MeOH	APP-9-072
Dibromoacetone 3252-43-5				1,1-Dichloroethene 75-35-4	0.2 mg/mL	MeOH	M-502-27
					2 mg/mL	MeOH	M-502-27-10X
1,2-Dibromoethane 106-93-4	1 gram	NEAT	M-502-19N **		1 gram	NEAT	M-502-28N
	100 µg/mL	MeOH	APP-9-214		0.2 mg/mL	MeOH	M-502-28
	0.2 mg/mL	MeOH	M-502-19		2 mg/mL	MeOH	M-502-28-10X
	2 mg/mL	MeOH	M-502-19-10X	trans-1,2-Dichloroethene 156-60-5	10 mg/mL	MeOH	AS-E0173
Dibromofluoromethane 1868-53-7	5 mg/mL	MeOH	AS-E0171		1 gram	NEAT	M-502-29N
	0.2 mg/mL	MeOH	M-8260-SS-2		100 µg/mL	MeOH	APP-9-073
Dibromomethane 74-95-3	2 mg/mL	MeOH	M-8260-SS-2-10X		0.2 mg/mL	MeOH	M-502-29
	100 mg	NEAT	K-004N		1 mg/mL	MeOH	AS-E0028
	1 gram	NEAT	M-502-20N	Dichlorofluoromethane 75-43-4	2 mg/mL	MeOH	M-502-29-10X
	100 µg/mL	MeOH	APP-9-062		0.2 mg/mL	MeOH	M-502-61
	0.2 mg/mL	MeOH	M-502-20		2 mg/mL	MeOH	M-502-61-10X
a,a-Dibromo-m-xylene 626-15-3	2 mg/mL	MeOH	M-502-20-10X	Dichloromethane 75-09-2 (Methylene chloride)	100 mg	NEAT	K-001N
	5 mg/mL	MeOH	AS-E1097		1 gram	NEAT	M-502-39N
	1 mg/mL	Acetone	M-8081-IS-X		100 µg/mL	MeOH	APP-9-074
1,2-Dibromopropane 78-75-1	5 mg/mL	MeOH	M-552-IS		0.2 mg/mL	MeOH	M-502-39
	10 mg/mL	Hexane	M-556-IS		1 mg/mL	MeOH	AS-E0042
1,2-Dibromo-1,1,2,2-tetrafluoroethane 124-73-2	1000 µg/mL	MeOH	AS-E0463	Dichloromethane-d₂ 1665-00-5	2 mg/mL	MeOH	M-502-39-10X
2,3-Dichloro-1-propene 78-88-6	4.2 mg/mL	MeOH	AS-E0170		2 mg/mL	MeOH	M-502-IS-2-3
trans-1,4-Dichloro-2-butene 110-57-6	100 µg/mL	MeOH	APP-9-068	1,2-Dichloropropane 78-87-5	1 gram	NEAT	M-502-30N
	2 mg/mL	MeOH	APP-9-068-20X		100 µg/mL	MeOH	APP-9-077
Dichloroacetone 3018-12-0	5 mg/mL	Acetone	M-551B-5		0.2 mg/mL	MeOH	M-502-30
					1 mg/mL	MeOH	AS-E0030
1,2-Dichlorobenzene 95-50-1	100 mg	NEAT	A-002		2 mg/mL	MeOH	M-502-30-10X
	1 gram	NEAT	M-502-21N	1,3-Dichloropropane 142-28-9	1 gram	NEAT	M-502-31N
	100 µg/mL	MeOH	APP-9-064		0.2 mg/mL	MeOH	M-502-31
	0.2 mg/mL	MeOH	M-502-21		2 mg/mL	MeOH	M-502-31-10X
	2 mg/mL	MeOH	M-502-21-10X	2,2-Dichloropropane 594-20-7	5 mg/mL	MeOH	AS-E1109
	5 mg/mL	MeOH	AS-E0023		1 gram	NEAT	M-502-32N
1,2-Dichlorobenzene-d₄ 2199-69-1	2.0 mg/mL	Hexane	M-8120-02		0.2 mg/mL	MeOH	M-502-32
	0.15 mg/mL	MeOH	AS-E0776		2 mg/mL	MeOH	M-502-32-10X
	0.2 mg/mL	MeOH	M-624-SS-11		5 mg/mL	MeOH	AS-E1167
	2 mg/mL	MeOH	M-624-SS-11-10X	1,3-Dichloropropene (cis/trans) 542-75-6	1 gram	NEAT	M-502-34N
					0.2 mg/mL	MeOH	M-502-34
					0.4 mg/mL	MeOH	M-502-34-R
					4 mg/mL	MeOH	M-502-34-R-10X
					5 mg/mL	MeOH	AS-E0218
				1,1-Dichloropropene 563-58-6	0.2 mg/mL	MeOH	M-502-33
					2 mg/mL	MeOH	M-502-33-10X
					100 µg/mL	MeOH	APP-9-078
				cis-1,3-Dichloropropene 10061-01-5			

* ColdPAK required to maintain integrity of product.

** This product can not ship by air.

NEATS are as stated, SOLUTIONS are in 1 mL

VOCs

Compound	Conc.	Matrix	Cat. No.	Compound	Conc.	Matrix	Cat. No.
trans-1,3-Dichloropropene 10061-02-6	100 µg/mL	MeOH	APP-9-079	Hexachlorobutadiene 87-68-3	1 gram	NEAT	M-502-36N
1,1-Dichloro-1-propylene 563-58-6	5 mg/mL	MeOH	AS-E1166		100 µg/mL	MeOH	APP-9-113
2,4-Dichlorotoluene 95-73-8	5 mg/mL	MeOH	AS-E0149		0.2 mg/mL	MeOH	M-502-36
1,2,3,4-Diepoxybutane 1464-53-5	1 mg/mL	AcCN	AS-E0577		2 mg/mL	MeOH	M-502-36-10X
m-Diethylbenzene 141-93-5	100 mg	NEAT	V-007	Hexachlorocyclopentadiene 77-47-4	5 mg/mL	MeOH	AS-E0050
o-Diethylbenzene 135-01-3	100 mg	NEAT	V-006		2.0 mg/mL	Hexane	M-8120-06
p-Diethylbenzene 105-05-5	100 mg	NEAT	V-008		100 µg/mL	MeOH	APP-9-114
	100 µg/mL	Isocotane	M-GRA-ST	Hexachloroethane 67-72-1	1 mg/mL	MeOH	APP-9-114-10X
1,4-Difluorobenzene 540-36-3	0.2 mg/mL	MeOH	M-624-SS-07		2.0 mg/mL	Hexane	M-8120-07
	2 mg/mL	MeOH	M-624-SS-07-10X	Hexachlorophene 70-30-4	100 µg/mL	MeOH	APP-9-115
Dimethyl sulfate 77-78-1	1 mg/mL	AcCN	AS-E0389		1 mg/mL	MeOH	AS-E0011
1,3-Dimethyl-2-nitrobenzene 81-20-9	0.25 mg/mL	MtBE	M-507-SS		2.0 mg/mL	Hexane	M-8120-08
	1.0 mg/mL	MtBE	M-507-SS-4X	Hexachloropropene 1888-71-7	100 µg/mL	MeOH	APP-9-116
1,3-Dinitrobenzene 99-65-0	100 µg/mL	CH ₂ Cl ₂	APP-9-089	Hexadecylbenzene 1459-09-2	2 mg/mL	CH ₂ Cl ₂	APP-9-116-D-20X
	1 mg/mL	CH ₂ Cl ₂	APP-9-089-10X		5 mg/mL	MeOH	AS-E0323
	5 mg/mL	MeOH	AS-E0527		100 µg/mL	MeOH	APP-9-117
2,5-Dinitrotoluene 619-15-8	100 µg/mL	AcCN	M-8095-SS-03		1 mg/mL	MeOH	AS-E0364
3,4-Dinitrotoluene 610-39-9	100 µg/mL	AcCN	M-8095-SS-01		100 mg	NEAT	V-015
Dodecylbenzene 123-01-3	100 mg	NEAT	V-009	Hexylbenzene 1077-16-3	100 mg	NEAT	V-013
Epichlorohydrin 106-89-8	5 mg/mL	AcCN	AS-E0258		1 gram	NEAT	M-502-37N
1,2-Epoxybutane 106-88-7	5 mg/mL	AcCN	AS-E0286		0.2 mg/mL	MeOH	M-502-37
1,2-Epoxypropane(Propylene oxide) 75-56-9	1 mg/mL	AcCN	AS-E0308		2 mg/mL	MeOH	M-502-37-10X
Ethyl acetate 141-78-6	10 mg/mL	Water	M-8015B/5031-12	p-Isopropyltoluene (p-Cymene) 99-87-6	1 gram	NEAT	M-502-38N
Ethyl methacrylate 97-63-2	100 µg/mL	MeOH	APP-9-105		5 mg/mL	MeOH	AS-E1108
	1 mg/mL	MeOH	AS-E0687	Methacrylonitrile 126-98-7	0.2 mg/mL	MeOH	M-502-38
Ethyl methanesulfonate 62-50-0	100 µg/mL	CH ₂ Cl ₂	APP-9-106	Methyl bromide 74-83-9	2 mg/mL	MeOH	M-502-38-10X
	1 mg/mL	AcCN	AS-E0456	Methyl 2-bromopropionate 5445-17-0	100 µg/mL	MeOH	APP-9-125
Ethylbenzene 100-41-4	1 gram	NEAT	M-502-35N	Methyl chloride 74-87-3	1 mg/mL	AcCN	AS-E0686
	100 µg/mL	MeOH	APP-9-104		1 mg/mL	AcCN	AS-E0044
	0.2 mg/mL	MeOH	M-502-35	Methyl 2,3-dibromopropionate 1729-67-5			
	2 mg/mL	MeOH	M-502-35-10X		1 mg/mL	MtBE	M-552.1-SS-ME
	10 mg/mL	MeOH	AS-E0036	Methyl iodide 74-88-4	5 mg/mL	MeOH	AS-E0043
	0.2 mg/mL	MeOH	M-624-SS-08		1 mg/mL	MtBE	M-552.2-SS-ME
Ethylbenzene-d₁₀ 25837-05-2	2 mg/mL	Water	D-4291-93	1-Methyl ethyl benzene 98-82-8	5 mg/mL	MeOH	AS-E0669
Ethylene glycol 107-21-1	10 mg/mL	Water	M-8015B/5031-13	Methyl isothiocyanate 556-61-6	100 µg/mL	MeOH	APP-9-130
Ethylene oxide 75-21-8	0.2 mg/mL	Isocotane	S-354-2		2.0 mg/mL	MeOH	APP-9-130-20X
	5 mg/mL	Water	M-8015B/5031-14-R1 *	Methyl methacrylate 80-62-6	25 µg/mL	Acetone	M-1659-RPS
m-Ethyltoluene 620-14-4	100 mg	NEAT	V-031		100 µg/mL	MeOH	APP-9-131
o-Ethyltoluene 611-14-3	100 mg	NEAT	V-010		1 mg/mL	MeOH	AS-E0439
p-Ethyltoluene 622-96-8	100 mg	NEAT	V-011		2 mg/mL	MeOH	APP-9-131-20X
2-Fluoroacetamide 640-19-7	5 mg/mL	AcCN	AS-E0299	Methyl methanesulfonate 66-27-3	100 µg/mL	CH ₂ Cl ₂	APP-9-132
Fluorobenzene 462-06-6	0.15 mg/mL	MeOH	AS-E0232		1 mg/mL	AcCN	AS-E0431
	0.2 mg/mL	MeOH	M-624-SS-09	Naphthalene 91-20-3	1 gram	NEAT	M-502-40N
	2 mg/mL	MeOH	M-524-IS-2		1 mg/mL	MeOH	AS-E0053
	20 mg/mL	MeOH	M-524-IS-2-10X		2 mg/mL	MeOH	M-502-40-10X
Fluorotrichloromethane 75-69-4	5 mg/mL	MeOH	AS-E0047	Naphthalene-d₈ 1146-65-2	0.2 mg/mL	CH ₂ Cl ₂	M-625-12
Heptadecylbenzene 14752-75-1	100 mg	NEAT	V-014		4 mg/mL	CH ₂ Cl ₂	Z-014J-4
Heptylbenzene 1078-71-3	100 mg	NEAT	V-012	Nitrobenzene 98-95-3	100 µg/mL	MeOH	APP-9-143
Hexachlorobenzene 118-74-1	100 mg	NEAT	A-012		1 mg/mL	MeOH	APP-9-143-10X
	100 µg/mL	MeOH	APP-9-112	Nitrobenzene-d₅ 4165-60-0	5 mg/mL	MeOH	AS-E0054
	1 mg/mL	Acetone	M-8091-IS-20X		0.2 mg/mL	CH ₂ Cl ₂	M-625-13
	2 mg/mL	CH ₂ Cl ₂	APP-9-112-D-20X	Nonadecylbenzene 29136-19-4	2 mg/mL	CH ₂ Cl ₂	M-625-13-10X
	2.0 mg/mL	Hexane	M-8120-05		100 mg	NEAT	V-018
				Nonylbenzene 1081-77-2	100 mg	NEAT	V-017
				Octadecylbenzene 4445-07-2	100 mg	NEAT	V-020
				Octylbenzene 2189-60-8	100 mg	NEAT	V-019
				Pentachlorobenzene 608-93-5	100 mg	NEAT	A-011
					100 µg/mL	MeOH	APP-9-173
				Pentachloroethane 76-01-7	2.5 mg/mL	MeOH	AS-E0260
					100 µg/mL	MeOH	APP-9-174
				Pentadecylbenzene 2131-18-2	2 mg/mL	MeOH	APP-9-174-20X
					5 mg/mL	MeOH	AS-E0300
				Pentafluorobenzene 363-72-4	100 mg	NEAT	V-021
					0.2 mg/mL	MeOH	M-624-SS-10
				1,2-Propanediol 57-55-6	1 mg/mL	AcCN	AS-E0524

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VOCs

Compound	Conc.	Matrix	Cat. No.	Compound	Conc.	Matrix	Cat. No.
Propionic acid 79-09-4	1 g	NEAT	AP-010N	1,3,5-Trichlorobenzene 108-70-3	100 mg	NEAT	A-007
Propionitrile 107-12-0	5 mg/mL	AcCN	AS-E0673	1,1,1-Trichloroethane 71-55-6	5 mg/mL	MeOH	AS-E0176
n-Propylbenzene (1-Phenylpropane) 103-65-1	100 µg/mL	MeOH	APP-9-184	1,1,2-Trichloroethane 79-00-5	100 µg/mL	MeOH	APP-9-202
	5 mg/mL	MeOH	AS-E0338		0.2 mg/mL	MeOH	M-502-49
	10 mg/mL	Water	M-8015B/5031-25		1 mg/mL	MeOH	AS-E0010
	100 mg	NEAT	V-022		2 mg/mL	MeOH	M-502-49-10X
	1 gram	NEAT	M-502-41N		1 gram	NEAT	M-502-50N
	0.2 mg/mL	MeOH	M-502-41		100 µg/mL	MeOH	APP-9-203
	2 mg/mL	MeOH	M-502-41-10X		0.2 mg/mL	MeOH	M-502-50
	5 mg/mL	MeOH	AS-E1112		1 mg/mL	MeOH	AS-E0013
Styrene 100-42-5	1 gram	NEAT	M-502-42N	Trichloroethene 79-01-6	2 mg/mL	MeOH	M-502-50-10X
	100 µg/mL	MeOH	APP-9-189		1 gram	NEAT	M-502-51N
	0.2 mg/mL	MeOH	M-502-42		100 µg/mL	MeOH	APP-9-204
	2 mg/mL	MeOH	M-502-42-10X		0.2 mg/mL	MeOH	M-502-51
	5 mg/mL	MeOH	AS-E0257		1 mg/mL	MeOH	AS-E0085
TCMX (Tetrachloro-m-xylene) 877-09-8	100 µg/mL	Hexane	M-8082-SS	Trichlorofluoromethane 75-69-4	2 mg/mL	MeOH	M-502-51-10X
	0.2 mg/mL	MeOH	S-279		100 µg/mL	MeOH	APP-9-205
	1 mg/mL	Hexane	M-8082-SS-10X		0.2 mg/mL	MeOH	M-502-52
1,2,3,4-Tetrachlorobenzene 634-66-2	100 mg	NEAT	A-008	1,1,2-Trichloropropane 598-77-6	2 mg/mL	MeOH	M-502-52-10X
1,2,3,5-Tetrachlorobenzene 634-90-2	1 mg/mL	MeOH	AS-E0225	1,2,3-Trichloropropane 96-18-4	200 µg/mL	MeOH	S-1321B
1,2,4,5-Tetrachlorobenzene 95-94-3	100 mg	NEAT	A-009		1 gram	NEAT	M-502-53N
	100 µg/mL	MeOH	APP-9-191		100 µg/mL	MeOH	APP-9-208
	1.0 mg/mL	MeOH	APP-9-191-10X		0.2 mg/mL	MeOH	M-502-53
	2.0 mg/mL	Hexane	M-8120-09		1 mg/mL	MeOH	APP-9-208-10X
	2.5 mg/mL	AcCN	AS-E0177		1 mg/mL	MtBE	M-552.1-IS
1,1,1,2-Tetrachloroethane 630-20-6	1 gram	NEAT	M-502-43N	a,a,a-Trichlorotoluene 98-07-7	2 mg/mL	MeOH	M-502-53-10X
	100 µg/mL	MeOH	APP-9-192	Tridecylbenzene 123-02-4	5 mg/mL	MeOH	AS-E0368
	0.2 mg/mL	MeOH	M-502-43		0.2 mg/mL	MeOH	M-624-SS-14
	1 mg/mL	MeOH	AS-E0335	1,2,3-Trimethylbenzene 526-73-8	100 mg	NEAT	V-027
	2 mg/mL	MeOH	M-502-43-10X		100 mg	NEAT	V-028
1,1,2,2-Tetrachloroethane 79-34-5	1 gram	NEAT	M-502-44N		1 mg/mL	CH ₂ Cl ₂	V-028S-D-10X
	100 µg/mL	MeOH	APP-9-193	1,2,4-Trimethylbenzene 95-63-6	3 % w/w	Isocetane	M-GRA-FP
	0.2 mg/mL	MeOH	M-502-44		100 mg	NEAT	V-029
	2 mg/mL	MeOH	M-502-44-10X		1 gram	NEAT	M-502-54N
	5 mg/mL	MeOH	AS-E0014		0.2 mg/mL	MeOH	M-502-54
Tetrachloroethene 127-18-4	1 gram	NEAT	M-502-45N	1,3,5-Trimethylbenzene 108-67-8	2 mg/mL	MeOH	M-502-54-10X
	100 µg/mL	MeOH	APP-9-194		5 mg/mL	MeOH	AS-E1107
	0.2 mg/mL	MeOH	M-502-45		100 mg	NEAT	V-016
	2 mg/mL	MeOH	M-502-45-10X		1 gram	NEAT	M-502-55N
	5 mg/mL	MeOH	AS-E0083		0.2 mg/mL	MeOH	M-502-55
Tetradecylbenzene 1459-10-5	100 mg	NEAT	V-023		2 mg/mL	MeOH	M-502-55-10X
Tetrahydrofuran 109-99-9	0.2 mg/mL	MeOH	S-457S	1,3,5-Trinitrobenzene 99-35-4	5 mg/mL	MeOH	AS-E1103
	2 mg/mL	MeOH	S-457S-10X		100 µg/mL	MeOH	APP-9-210
	1 mg/mL	Water	M-1671A-IS	Undecylbenzene 6742-54-7	2 mg/mL	MeOH	M-8270-10
1,2,3,4-Tetramethylbenzene 488-23-3	100 mg	NEAT	V-024	Vinyl acetate 108-05-4	2.0 mg/mL	CH ₂ Cl ₂	APP-9-210-D-20X
1,2,3,5-Tetramethylbenzene 527-53-7	100 mg	NEAT	V-025		100 mg	NEAT	V-030
1,2,4,5-Tetramethylbenzene 95-93-2	100 mg	NEAT	V-026	Vinyl chloride 75-01-4	100 µg/mL	MeOH	APP-9-211 *
Toluene 108-88-3	1 gram	NEAT	M-502-46N		2 mg/mL	MeOH	APP-9-211-20X *
	100 µg/mL	MeOH	APP-9-198		1 mg/mL	AcCN	AS-E0327
	0.2 mg/mL	MeOH	M-502-46	Vinyl chloride 75-01-4	100 µg/mL	MeOH	APP-9-212
	1 mg/mL	MeOH	AS-E0084		0.2 mg/mL	MeOH	M-502-56
	2 mg/mL	MeOH	M-502-46-10X	Xylene (total) 1330-20-7	1 mg/mL	MeOH	AS-E0536
Toluene-d₈ 2037-26-5	0.25 mg/mL	MeOH	CLP-PS-3	m-Xylene 108-38-3	2 mg/mL	MeOH	M-502-56-10X
1,3,5-Tribromobenzene 626-39-1	2.5 mg/mL	MeOH	CLP-PS-3-10X		100 µg/mL	MeOH	APP-9-213
Trichloroacetonitrile 545-06-2	50 µg/mL	Acetone	M-8121-IS	o-Xylene 95-47-6	1 gram	NEAT	M-502-58N
1,2,3-Trichlorobenzene 87-61-6	5 mg/mL	Acetone	M-551B-7		0.2 mg/mL	MeOH	M-502-58
	100 mg	NEAT	A-005		1 mg/mL	MeOH	AS-E0202
	1 gram	NEAT	M-502-47N	p-Xylene 106-42-3	2 mg/mL	MeOH	M-502-58-10X
	0.2 mg/mL	MeOH	M-502-47		1 gram	NEAT	M-502-57N
	2 mg/mL	MeOH	M-502-47-10X		0.2 mg/mL	MeOH	M-502-57
	5 mg/mL	MeOH	AS-E0175		1 mg/mL	MeOH	AS-E0201
1,2,4-Trichlorobenzene 120-82-1	100 mg	NEAT	A-006		2 mg/mL	MeOH	M-502-57-10X
	1 gram	NEAT	M-502-48N		1 gram	NEAT	M-502-59N
	100 µg/mL	MeOH	APP-9-201		0.2 mg/mL	MeOH	M-502-59
	0.2 mg/mL	MeOH	M-502-48		1 mg/mL	MeOH	AS-E0203
	1 mg/mL	MeOH	AS-E0007		2 mg/mL	MeOH	M-502-59-10X
	2 mg/mL	MeOH	M-502-48-10X				

* ColdPAK required to maintain integrity of product.

Analytes by Functional Group

Alcohols and Aldehydes



Individual standards are listed by **functional group**, by application and with their applicable USEPA methods.



Search by

✓ **Functional Group**

Application

EPA Method

For material of these functional groups, see Qualitative Analysis Kits section, pages 112-114

NEATS are as stated, SOLUTIONS are in 1 mL

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Alcohols

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

Alcohols

EPA Methods include:
1673, 8015

Aldehydes and Derivatives

Compound	CAS No.	Conc.	Matrix	Cat. No.
Acetaldehyde	75-07-0	1 mg/mL	MeOH	M-554-01 *
		1 mg/mL	Water	M-8315-01
Acetaldehyde-DNPH	1019-57-4	1 mg/mL	MeOH:AcCN	M-554-DNPH-01
		0.1 mg/mL	AcCN	M-8315-R-DNPH-01
Acrolein	107-02-8	100 µg/mL	MeOH:Water	APP-9-007 *
		1 mg/mL	MeOH:Water	APP-9-007-10X *
		100 µg/mL	Water	APP-9-007-W
		1.0 mg/mL	Water	APP-9-007-W-10X
		5 mg/mL	p-Dioxane	AS-E0002
		10 mg/mL	Water	M-8015B/5031-03
Acrolein-DNPH	888-54-0	0.1 mg/mL	AcCN	M-8315-R-DNPH-03
		1 µg/mL	AcCN	S-1275-1-03
Benzaldehyde-DNPH	1157-84-2	0.1 mg/mL	AcCN	M-8315-R-DNPH-04
Butanal	123-72-8	1 mg/mL	MeOH	M-554-02 *
Butanal-DNPH	1527-98-6	1 mg/mL	MeOH:AcCN	M-554-DNPH-02
		0.1 mg/mL	AcCN	M-8315-R-DNPH-05
Crotonaldehyde	123-73-9	1 mg/mL	AcCN	AS-E0479
		1 mg/mL	MeOH	M-554-03 *
		10 mg/mL	Water	M-8015B/5031-08
Crotonaldehyde-DNPH	1527-96-4	1 mg/mL	MeOH:AcCN	M-554-DNPH-03
		0.1 mg/mL	AcCN	M-8315-R-DNPH-06
Decanal	112-31-2	1 mg/mL	MeOH	M-554-05
Decanal-DNPH	1527-95-3	1 mg/mL	MeOH:AcCN	M-554-DNPH-05
		0.1 mg/mL	AcCN	M-8315-R-DNPH-08
2,5-Dimethylbenzaldehyde-DNPH	152477-96-8	0.1 mg/mL	AcCN	M-8315-R-DNPH-09

Aldehydes

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

* ColdPAK required to maintain integrity of product.

Aldehydes continued on
next page



Analytes by Functional Group

Aldehydes and Ketones

NEATS are as stated, SOLUTIONS are in 1 mL

Aldehydes and Derivatives (continued)

Compound	CAS No.	Conc.	Matrix	Cat. No.
Formaldehyde	50-00-0	1 mg/mL	MeOH	M-554-06 *
		1 mg/mL	Water	M-8315-02
Formaldehyde-DNPH	1081-15-8	1.0 mg/mL	AcCN	M-1667A-DNPH-01
		1 mg/mL	MeOH:AcCN	M-554-DNPH-06
		0.1 mg/mL	AcCN	M-8315-R-DNPH-10
Formamide	75-12-7	5000 µg/mL	Water	M-1666A-DI-R-ADD2
2-Furaldehyde-DNPH	2074-02-4	1.0 mg/mL	AcCN	M-1667A-DNPH-02
Heptanal	111-71-7	1 mg/mL	MeOH	M-554-07
Heptanal-DNPH	2074-05-7	1 mg/mL	MeOH:AcCN	M-554-DNPH-07
		0.1 mg/mL	AcCN	M-8315-R-DNPH-11
Hexanal	66-25-1	1 mg/mL	MeOH	M-554-08
Hexanal-DNPH	1527-97-5	1 mg/mL	MeOH:AcCN	M-554-DNPH-08
		0.1 mg/mL	AcCN	M-8315-R-DNPH-12
Isobutyraldehyde	78-84-2	1.0 mg/mL	AcCN	M-1667A-03
Isobutyraldehyde-DNPH	2057-82-1	1.0 mg/mL	AcCN	M-1667A-DNPH-03
Isovaleraldehyde-DNPH	2256-01-1	0.1 mg/mL	AcCN	M-8315-R-DNPH-13
Nonanal	124-19-6	1 mg/mL	MeOH	M-554-09
Nonanal-DNPH	2348-19-8	1 mg/mL	MeOH:AcCN	M-554-DNPH-09
		0.1 mg/mL	AcCN	M-8315-R-DNPH-14
Octanal	124-13-0	1 mg/mL	MeOH	M-554-10
Octanal-DNPH	1726-77-8	1 mg/mL	MeOH:AcCN	M-554-DNPH-10
		0.1 mg/mL	AcCN	M-8315-R-DNPH-15
Paraldehyde	123-63-7	10 mg/mL	Water	M-8015B/5031-21
Pentanal	110-62-3	1 mg/mL	MeOH	M-554-11
Pentanal-DNPH	2057-84-3	1 mg/mL	MeOH:AcCN	M-554-DNPH-11
		0.1 mg/mL	AcCN	M-8315-R-DNPH-16
Propanal	123-38-6	1 mg/mL	MeOH	M-554-12 *
Propanal-DNPH	725-00-8	1 mg/mL	MeOH:AcCN	M-554-DNPH-12
		0.1 mg/mL	AcCN	M-8315-R-DNPH-17
m-Tolualdehyde-DNPH	2880-05-9	0.1 mg/mL	AcCN	M-8315-R-DNPH-18
o-Tolualdehyde-DNPH	1773-44-0	0.1 mg/mL	AcCN	M-8315-R-DNPH-19
p-Tolualdehyde-DNPH	2571-00-8	0.1 mg/mL	AcCN	M-8315-R-DNPH-20

Aldehydes

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

Ketones and Derivatives

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

Ketones

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

* ColdPAK required to maintain integrity of product.

Analytes by Functional Group

Phenols



NEATS are as stated, SOLUTIONS are in 1 mL

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

Phenols

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

Technical Note

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

For Nonylphenols and Octylphenols see page 263

Phenols continued on next page



Analytes by Functional Group

Phenols, Amines, Anilines and Amino Compounds

NEATS are as stated, SOLUTIONS are in 1 mL

Phenols (continued)

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

Phenols

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

Amines, Anilines and other Amino Compounds

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

Amines, Anilines and Amino compounds

EPA Methods include:
605, 607, 620, 625,
1666, 8015, 8095, 8131,
8325

Analytes by Functional Group

Amines, Anilines and other Amino Compounds



NEATS are as stated, SOLUTIONS are in 1 mL

Amines, Anilines and other Amino Compounds (continued)

Compound	CAS No.	Conc.	Matrix	Cat. No.
Benzidine †	92-87-5	50 µg/mL	CH ₂ Cl ₂	M-625C-1
		2 mg/mL	CH ₂ Cl ₂	M-625C-1-40X
		100 µg/mL	AcCN	RAC-04
		1 mg/mL	AcCN	RAC-04-10X
Benzidine (as dihydrochloride) †	531-85-1	1 mg/mL	MeOH	AS-E0005
2-Bromo-4,6-dinitroaniline	1817-73-8	100 mg	NEAT	L-017N
4-Bromoaniline	106-40-1	100 mg	NEAT	L-007N
4-Chloro-2-nitroaniline	89-63-4	100 mg	NEAT	L-013N
2-Chloro-4,6-dinitroaniline	3531-19-9	100 mg	NEAT	L-015N
2-Chloro-4-nitroaniline	121-87-9	100 mg	NEAT	L-012N
2-Chloroaniline	95-51-2	100 mg	NEAT	L-002N
3-Chloroaniline	108-42-9	100 mg	NEAT	L-003N
4-Chloroaniline	106-47-8	100 mg	NEAT	L-004N
		100 µg/mL	AcCN	RAC-05
		1 mg/mL	AcCN	RAC-05-10X
		100 µg/mL	MeOH	APP-9-038
3-Chloro-o-toluidine	87-60-5	5 mg/mL	MeOH	AS-E0305
		100 µg/mL	AcCN	RAC-24
		1000 µg/mL	AcCN	RAC-24-10X
4-Chloro-o-toluidine	95-69-2	100 µg/mL	AcCN	RAC-06
		1 mg/mL	AcCN	RAC-06-10X
p-Cresidine	120-71-8	100 µg/mL	AcCN	RAC-07
		1.0 mg/mL	AcCN	RAC-07-10X
2,4-Diaminoaniline sulfate hydrate	123333-56-2	100 µg/mL	Pyridine	RAC-08
		1 mg/mL	Pyridine	RAC-08-10X
3,3'-Diaminobenzidine †	91-95-2	50 mg	NEAT	R-074N
		100 µg/mL	Toluene	R-074S
4,4'-Diaminodiphenylmethane (4,4'-Methylenedianiline)	101-77-9	100 mg	NEAT	R-077N
		100 µg/mL	Toluene	R-077S
		100 µg/mL	AcCN	RAC-09
		1 mg/mL	AcCN	RAC-09-10X
2,4-Diaminotoluene	95-80-7	100 mg	NEAT	R-078N
		100 µg/mL	Toluene	R-078S
		100 µg/mL	AcCN	RAC-10
		1 mg/mL	AcCN	RAC-10-10X
		1 mg/mL	MeOH	AS-E0932
2,6-Dibromo-4-nitroaniline	827-94-1	100 mg	NEAT	L-016N
2,6-Dichloro-4-nitroaniline	99-30-9	100 mg	NEAT	L-014N
3,4-Dichloroaniline	95-76-1	100 mg	NEAT	L-005N
3,3'-Dichlorobenzidine †	91-94-1	50 mg	NEAT	R-075N
		100 µg/mL	MeOH	APP-9-067
		1 mg/mL	MeOH	AS-E0026
		100 µg/mL	Toluene	R-075S
		100 µg/mL	AcCN	RAC-11
		1 mg/mL	AcCN	RAC-11-10X
		2 mg/mL	MeOH	Z-014F-2
		50 mg	NEAT	R-076N
3,3'-Dimethoxybenzidine †	119-90-4	100 µg/mL	Toluene	R-076S
		100 µg/mL	AcCN	RAC-12
		1 mg/mL	AcCN	RAC-12-10X
		100 µg/mL	AcCN	RAC-14
3,3'-Dimethyl-4,4'-diaminodiphenylmethane	838-88-0	100 µg/mL	CH ₂ Cl ₂	APP-9-083
		1 mg/mL	AcCN	RAC-14-10X
		100 µg/mL	AcCN	RAC-13
4-Dimethylaminoazobenzene	60-11-7	10 mg	NEAT	R-079N
		100 µg/mL	Toluene	R-079S
2,6-Dimethylaniline	87-62-7	100 mg	NEAT	L-018N
		100 µg/mL	AcCN	L-018S-CN
3,3'-Dimethylbenzidine †	119-93-7	100 µg/mL	CH ₂ Cl ₂	APP-9-085
		2.0 mg/mL	CH ₂ Cl ₂	APP-9-085-20X
		100 µg/mL	AcCN	RAC-13
		1 mg/mL	AcCN	RAC-13-10X
a,a-Dimethylphenethylamine	122-09-8	100 µg/mL	CH ₂ Cl ₂	APP-9-086
		2.0 mg/mL	CH ₂ Cl ₂	APP-9-086-20X
2,4-Dinitroaniline	97-02-9	100 mg	NEAT	L-011N
Diphenylamine	122-39-4	100 µg/mL	CH ₂ Cl ₂	APP-9-097
		1 mg/mL	MeOH	M-620
		5 mg/mL	MeOH	AS-E0263
Ethylenediamine	107-15-3	1 mg/mL	MeOH	AS-E0358
4-Fluoroaniline	371-40-4	0.2 mg/mL	CH ₂ Cl ₂	M-625-08
		2 mg/mL	CH ₂ Cl ₂	M-625-08-10X
2-Methyl-4-nitroaniline	99-52-5	100 µg/mL	AcCN	M-8095-SS-02
Methylamine	74-89-5	2500 µg/mL	Water	M-1666A-DI-R-ADD1

† Subject to oxidation

continued on next page

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



Analytes by Functional Group

Amines, Anilines and other Amino Compounds

NEATS are as stated, SOLUTIONS are in 1 mL

Amines, Anilines and other Amino Compounds (continued)

Compound	CAS No.	Conc.	Matrix	Cat. No.
4,4'-Methylenedibis(2-chloroaniline)	101-14-4	50 mg	NEAT	R-080N
		100 µg/mL	Toluene	R-080S
		100 µg/mL	AcCN	RAC-15
		1 mg/mL	AcCN	RAC-15-10X
		5 mg/mL	MeOH	AS-E0322
2-Naphthylamine	91-59-8	100 µg/mL	AcCN	RAC-16
		100 µg/mL	CH ₂ Cl ₂	APP-9-139
		1 mg/mL	AcCN	RAC-16-10X
		1 mg/mL	MeOH	AS-E0565
2-Nitroaniline	88-74-4	100 mg	NEAT	R-054N
		100 µg/mL	Toluene	R-054S
		100 µg/mL	CH ₂ Cl ₂	APP-9-140
		5 mg/mL	MeOH	AS-E0324
3-Nitroaniline	99-09-2	100 mg	NEAT	R-056N
		100 µg/mL	Toluene	R-055S
		100 µg/mL	CH ₂ Cl ₂	APP-9-141
4-Nitroaniline	100-01-6	100 mg	NEAT	R-056N
		100 µg/mL	Toluene	R-056S
		100 µg/mL	CH ₂ Cl ₂	APP-9-142
		5 mg/mL	MeOH	AS-E0342
		5 mg/mL	AcCN	AS-E0392
5-Nitro-o-toluidine	99-55-8	100 µg/mL	CH ₂ Cl ₂	APP-9-156
		5 mg/mL	MeOH	AS-E0344
N-Nitrosodiethylamine	55-18-5	100 µg/mL	CH ₂ Cl ₂	APP-9-148
		2 mg/mL	CH ₂ Cl ₂	APP-9-148-20X
		5 mg/mL	MeOH	AS-E0334
N-Nitrosodimethylamine	62-75-9	100 µg/mL	CH ₂ Cl ₂	APP-9-149
		1 mg/mL	MeOH	APP-9-149-M-10X
		5 mg/mL	MeOH	AS-E0059
N-Nitrosodi-n-butylamine	924-16-3	100 µg/mL	CH ₂ Cl ₂	APP-9-147
		2 mg/mL	CH ₂ Cl ₂	APP-9-147-20X
		0.5 mg/mL	Water	M-8015B/5031-20
N-Nitrosodi-n-propylamine	621-64-7	100 µg/mL	CH ₂ Cl ₂	APP-9-151
		2.5 mg/mL	CH ₂ Cl ₂	APP-9-151-25X
		5 mg/mL	MeOH	AS-E0061
N-Nitrosodiphenylamine	86-30-6	100 µg/mL	CH ₂ Cl ₂	APP-9-150
		1.0 mg/mL	MeOH	APP-9-150-M-10X
		5 mg/mL	MeOH	AS-E0060
N-Nitrosomethylethylamine (N-Nitroso-N-methyl ethylamine)	10595-95-6	100 µg/mL	CH ₂ Cl ₂	APP-9-152
		1 mg/mL	MeOH	AS-E0974
1-Nitrosopiperidine	100-75-4	5 mg/mL	MeOH	AS-E0458
4,4'-Oxydianiline	101-80-4	100 µg/mL	AcCN	RAC-17
		1 mg/mL	AcCN	RAC-17-10X
p-Phenylenediamine	106-50-3	100 µg/mL	MeOH	APP-9-180
		1 mg/mL	AcCN	AS-E0275
		2 mg/mL	MeOH	APP-9-180-20X
1-Propanamine	107-10-8	1 mg/mL	MeOH	AS-E0657
Pyridine	110-86-1	100 µg/mL	CH ₂ Cl ₂	APP-9-186-M
		2 mg/mL	CH ₂ Cl ₂	APP-9-186-M-20X
		5 mg/mL	MeOH	AS-E0271
		10 mg/mL	Water	M-8015B/5031-26
Pyridine-d ₅	7291-22-7	0.2 mg/mL	CH ₂ Cl ₂	M-625-15
		2.0 mg/mL	CH ₂ Cl ₂	M-625-15-10X
3,3',5,5'-Tetramethylbenzidine	54827-17-7	1 mg/mL	AcCN	RAC-IS
		1 mg/mL	Ethyl acetate	RAC-IS-EA
4,4'-Thiodianiline	139-65-1	100 µg/mL	AcCN	RAC-18
		1 mg/mL	AcCN	RAC-18-10X
o-Toluidine	95-53-4	100 µg/mL	MeOH	APP-9-199
		2 mg/mL	MeOH	AS-E0503
		100 µg/mL	AcCN	RAC-19
		1 mg/mL	AcCN	RAC-19-10X
		10 mg/mL	Water	M-8015B/5031-27
2,4,5-Trichloroaniline	636-30-6	100 mg	NEAT	L-006N
2,4,5-Trimethylaniline	137-17-7	100 µg/mL	AcCN	RAC-20
		1 mg/mL	AcCN	RAC-20-10X

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



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Analytes by Functional Group

Ethers, Haloethers and Haloacetic Acids



NEATS are as stated, SOLUTIONS are in 1 mL

Ethers

Compound	CAS No.	Conc.	Matrix	Cat. No.
bis(2-Chloroethyl)ether	111-44-4	100 µg/mL	MeOH	APP-9-027
		4.0 mg/mL	MeOH	APP-9-027-40X
		5.0 mg/mL	MeOH	AS-E0016
2-Chloroethylvinyl ether	110-75-8	2 mg/mL	MeOH	M-601C-10X
2,4-Dichlorophenyl-3'-methyl-4'-nitrophenyl ether	42488-57-3	1.0 mg/mL	Isooctane	E-020S
Diethyl ether	60-29-7	10 mg/mL	Water	M-8015B/5031-09
Dinoseb methyl ether	6099-79-2	0.2 mg/mL	Hexane	M-8150-08
p-Dioxane (1,4-Dioxane)	123-91-1	100 µg/mL	MeOH	APP-9-096
		1 mg/mL	MeOH	APP-9-096-10X
		10 mg/mL	MeOH	AS-E0480
		10 mg/mL	Water	M-8015B/5031-10
MtBE	1634-04-4	0.2 mg/mL	MeOH	S-078
		2 mg/mL	MeOH	S-078-10X
TAME	994-05-8	0.2 mg/mL	MeOH	S-1019

Ethers

EPA Methods:
601, 8150

Haloethers

Compound	CAS No.	Conc.	Matrix	Cat. No.
2-Chlorophenyl-4'-nitrophenyl ether	2091-61-4	1 mg/mL	Isooctane	E-005S
3-Chlorophenyl-4'-nitrophenyl ether	2303-23-3	1 mg/mL	Isooctane	E-006S
4-Chlorophenyl-4'-nitrophenyl ether	1836-74-4	1 mg/mL	Isooctane	E-007S
2,4-Dichlorophenyl-3'-methyl-4'-nitrophenyl ether	42488-57-3	1 mg/mL	Isooctane	E-020S
2,4-Dibromophenyl-4'-nitrophenyl ether	2671-93-4	1 mg/mL	Isooctane	E-004S
2,3-Dichlorophenyl-4'-nitrophenyl ether	82239-20-1	1 mg/mL	Isooctane	E-008S
2,5-Dichlorophenyl-4'-nitrophenyl ether	39145-48-7	1 mg/mL	Isooctane	E-010S
2,6-Dichlorophenyl-4'-nitrophenyl ether	2093-28-9	1 mg/mL	Isooctane	E-011S
3,5-Dichlorophenyl-4'-nitrophenyl ether	21105-77-1	1 mg/mL	Isooctane	E-012S
2,4-Dichlorophenyl-4'-nitrophenyl ether	1836-75-5	1 mg/mL	Isooctane	E-009S
3,4-Dichlorophenyl-4'-nitrophenyl ether	22532-80-5	1 mg/mL	Isooctane	E-013S
4-Nitrophenyl phenyl ether	620-88-2	1 mg/mL	Isooctane	E-003S
2,3,5-Trichlorophenyl-4'-nitrophenyl ether	142022-59-1	1 mg/mL	Isooctane	E-015S
2,3,6-Trichlorophenyl-4'-nitrophenyl ether	142022-58-0	1 mg/mL	Isooctane	E-016S
2,3,4-Trichlorophenyl-4'-nitrophenyl ether	142022-61-5	1 mg/mL	Isooctane	E-014S
2,4,5-Trichlorophenyl-4'-nitrophenyl ether	22532-68-9	1 mg/mL	Isooctane	E-017S
2,4,6-Trichlorophenyl-4'-nitrophenyl ether	1836-77-7	1 mg/mL	Isooctane	E-018S
3,4,5-Trichlorophenyl-4'-nitrophenyl ether		1 mg/mL	Isooctane	E-019S

Haloethers

EPA Method 8111

Haloacetic Acids and Esters

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

Haloacetic Acids

EPA Methods:
552A, 552.1, 522.2, 515

* ColdPAK required to maintain integrity of product.



Analytes by Functional Group

Phthalates

The Consumer Products Safety Commission (CPSC) has proposed banning the use of several phthalates in materials for children's toys. In 2008 a congressional edict banned dibutyl, n-butyl benzyl and di-2-ethylhexyl (DEHP) phthalates as potential health risks.

Listed in 4 groups, Phthalates, Monophthalates, Deuterated Phthalates, Technical Mixtures and Phthalate Replacements

NEATS are as stated, SOLUTIONS are in 1 mL

Phthalates

Compound	CAS No.	Conc.	Matrix	Cat. No.
Benzyl butyl phthalate	85-68-7	100 mg	NEAT	ALR-082N
		100 µg/mL	MeOH	ALR-082S
		5 mg/mL	MeOH	AS-E0065
bis(2-n-Butoxyethyl)phthalate	117-83-9	100 mg	NEAT	J-112
bis(2-Ethoxyethyl)phthalate	605-54-9	100 mg	NEAT	J-111
bis(2-Ethylhexyl)phthalate	117-81-7	100 mg	NEAT	ALR-097N
		100 µg/mL	MeOH	ALR-097S
		1 mg/mL	MeOH	APP-9-029-10X
bis(2-Methoxyethyl)phthalate	117-82-8	100 mg	NEAT	J-106
bis(4-Methylpentyl)phthalate	71850-09-4	10 mg	NEAT	PHTH-022N
		100 mg	NEAT	PHTH-022S
bis(4-Methyl-2-pentyl)phthalate	146-50-9	10 mg	NEAT	J-109-10MG
		100 mg	NEAT	J-109
2-Butoxy-2-oxoethyl butyl phthalate	85-70-1	100 mg	NEAT	J-115
Diallyl phthalate	131-17-9	100 mg	NEAT	J-002
Diamyl phthalate	131-18-0	100 mg	NEAT	ALR-098N
		0.1 mg/mL	EtOAc	ALR-098S
Dibenzyl phthalate	523-31-9	100 mg	NEAT	J-104
Dibutyl phthalate	84-74-2	100 mg	NEAT	J-003
		100 µg/mL	MeOH	APP-9-063
		1 mg/mL	MeOH	APP-9-063-10X
		5 mg/mL	MeOH	AS-E0066
Dicyclohexyl phthalate	84-61-7	100 mg	NEAT	J-004
		100 µg/mL	MeOH	ALR-099S
		1 mg/mL	AcCN	AS-E0318
Didodecyl phthalate	2432-90-8	100 mg	NEAT	PHTH-018N
		100 µg/mL	MeOH	PHTH-018S
Diethyl phthalate	84-66-2	100 mg	NEAT	J-005
		100 µg/mL	MeOH	APP-9-081
		1 mg/mL	MeOH	APP-9-081-10X
		5 mg/mL	MeOH	AS-E0068
Diheptyl phthalate	84-75-3	100 mg	NEAT	ALR-100N
		100 µg/mL	MeOH	ALR-100S
Diisobutyl phthalate	84-69-5	100 mg	NEAT	J-113
Diisopentyl phthalate (Diisoamyl phthalate)	605-50-5	100 mg	NEAT	J-127
Diisopropyl phthalate	605-45-8	100 mg	NEAT	PHTH-019N
		100 µg/mL	MeOH	PHTH-019S
Dimethyl phthalate	131-11-3	100 mg	NEAT	J-010
		100 µg/mL	MeOH	APP-9-088
		1 mg/mL	MeOH	APP-9-088-10X
		5 mg/mL	MeOH	AS-E0069
		0.1 mg/mL	EtOAc	M-8032-IS
		100 mg	NEAT	PHTH-020N
Di-n-heptyl phthalate	3648-21-3	100 µg/mL	MeOH	PHTH-020S
		100 mg	NEAT	J-011
Di-n-octyl phthalate	117-84-0	100 µg/mL	MeOH	APP-9-095
		5 mg/mL	MeOH	AS-E0067
		100 mg	NEAT	J-013
Diundecyl phthalate	3648-20-2	100 mg	NEAT	PHTH-021N
		100 µg/mL	MeOH	PHTH-021S
Isophthalates				
Dimethyl isophthalate	1459-93-4	100 mg	NEAT	J-009
Diphenyl isophthalate	744-45-6	100 mg	NEAT	J-012
Terephthalates				
bis(2-Ethylhexyl) terephthalate	6422-86-2	100 mg	NEAT	J-121
Diethyl terephthalate	636-09-9	100 mg	NEAT	J-123
Dimethyl terephthalate	120-61-6	100 mg	NEAT	J-101
Monophthalates				
Monobenzyl phthalate (mBzP)	2528-16-7	100 mg	NEAT	ALR-134N
		100 µg/mL	AcCN	ALR-134S-CN
Monobutyl phthalate (mBP)	131-70-4	100 mg	NEAT	ALR-135N
		100 µg/mL	AcCN	ALR-135S-CN
Monocyclohexyl phthalate	7517-36-4	100 mg	NEAT	ALR-178N
		100 µg/mL	AcCN	ALR-178S-CN
Monoethyl phthalate (mEP)	2306-33-4	100 mg	NEAT	ALR-137N
		100 µg/mL	AcCN	ALR-137S-CN

Phthalates

EPA Methods:

506, 606, 8060, 8061

Phthalate Standards Reference Guide



includes technical and physical info

Download or view Reference Guide at AccuStandard.com

Analytes by Functional Group

Phthalates



NEATS are as stated, SOLUTIONS are in 1 mL

Phthalates (continued)

Phthalates

EPA Methods:
506, 606, 8060, 8061



Phthalates

Monophthalates (continued)				
Compound	CAS No.	Conc.	Matrix	Cat. No.
Monoethylhexyl phthalate (mEHP)	4376-20-9	100 mg	NEAT	ALR-138N
		100 µg/mL	AcCN	ALR-138S-CN
Mono-2-heptyl phthalate		100 mg	NEAT	ALR-143N
		100 µg/mL	AcCN	ALR-143S-CN
Monoethyl phthalate	24539-57-9	100 mg	NEAT	ALR-175N
		100 µg/mL	AcCN	ALR-175S-CN
Monoisobutyl phthalate	30833-53-5	100 mg	NEAT	ALR-176N
		100 µg/mL	AcCN	ALR-176S-CN
Monoisononyl phthalate		100 mg	NEAT	ALR-142N
Mixture of C9 Isomers		100 µg/mL	AcCN	ALR-142S-CN
Monoisopropyl phthalate	35118-50-4	100 mg	NEAT	ALR-179N
		100 µg/mL	AcCN	ALR-179S-CN
Monomethyl phthalate	4376-18-5	100 mg	NEAT	ALR-139N
		100 µg/mL	AcCN	ALR-139S-CN
Monooctyl phthalate	5393-19-1	100 mg	NEAT	ALR-141N
		100 µg/mL	AcCN	ALR-141S-CN
Mono-n-pentyl phthalate	24539-56-8	100 mg	NEAT	ALR-177N
		100 µg/mL	AcCN	ALR-177S-CN
Deuterated Phthalates				
Dibenzylphthalate-d ₄	1015854-62-2	5 mg	NEAT	PHTH-D4-001N
		100 µg/mL	MeOH	PHTH-D4-001S
Dicyclohexyl phthalate-3,4,5,6-d ₄	358731-25-6	5 mg	NEAT	PHTH-D4-004N
		100 µg/mL	MeOH	PHTH-D4-004S
Diethyl phthalate-3,4,5,6-d ₄	93952-12-6	5 mg	NEAT	PHTH-D4-005N
		100 µg/mL	MeOH	PHTH-D4-005S
Di-iso-butyl phthalate-3,4,5,6-d ₄	358730-88-8	5 mg	NEAT	PHTH-D4-003N
		100 µg/mL	MeOH	PHTH-D4-003S
Dimethyl phthalate-3,4,5,6-d ₄	93951-89-4	5 mg	NEAT	PHTH-D4-007N
		100 µg/mL	MeOH	PHTH-D4-007S
Di-n-butyl phthalate-d ₄	93952-11-5	5 mg	NEAT	PHTH-D4-002N
		100 µg/mL	MeOH	PHTH-D4-002S
Di-n-hexyl phthalate-3,4,5,6-d ₄	1015854-55-3	5 mg	NEAT	PHTH-D4-006N
		100 µg/mL	MeOH	PHTH-D4-006S
Di-n-octyl phthalate-3,4,5,6-d ₄	93952-13-7	5 mg	NEAT	PHTH-D4-008N
		100 µg/mL	MeOH	PHTH-D4-008S
Di-n-pentyl phthalate-3,4,5,6-d ₄	358730-89-9	5 mg	NEAT	PHTH-D4-009N
		100 µg/mL	MeOH	PHTH-D4-009S
Di-n-propyl phthalate-3,4,5,6-d ₄	358731-29-0	5 mg	NEAT	PHTH-D4-010N
		100 µg/mL	MeOH	PHTH-D4-010S
bis(2-Ethylhexyl)phthalate-3,4,5,6-d ₄	93951-87-2	5 mg	NEAT	PHTH-D4-011N
		100 µg/mL	MeOH	PHTH-D4-011S
Set includes above 11 Deuterated Phthalates				
	NEAT Set		PHTH-D4N-SET	11 x 5 mg
	SOLUTION Set		PHTH-D4S-SET	11 x 1 mL
Phthalates - Technical Mixtures				
Benzyl 2-ethylhexyl phthalate	27215-22-1	100 mg	NEAT	ALR-165N
		100 µg/mL	MeOH	ALR-165S
n-Butyl benzyl phthalate	85-68-7	10 mg	NEAT	PHTH-014N
		100 µg/mL	MeOH	PHTH-014S
Butyl cyclohexyl phthalate	84-64-0	100 mg	NEAT	J-122
n-Butyl iso-butyl phthalate		10 mg	NEAT	PHTH-013N
		100 µg/mL	MeOH	PHTH-013S
Butyl octyl phthalate	84-78-5	100 mg	NEAT	J-001
Decyl octyl phthalate		10 mg	NEAT	PHTH-012N
		100 µg/mL	MeOH	PHTH-012S
Didecyl phthalate	84-77-5	100 mg	NEAT	J-120
Diisodecyl phthalate	26761-40-0	100 mg	NEAT	ALR-101N
		100 µg/mL	MeOH	ALR-101S
Diisoheptyl phthalate	71888-89-6	50 mg	NEAT	PHTH-017N
		100 µg/mL	MeOH	PHTH-017S
Diisohexyl phthalate (Tech Mix)	68515-50-4	100 mg	NEAT	J-007
Diisononyl phthalate (C8 to C10 Isomers)	68515-48-0	100 mg	NEAT	ALR-102N
		100 µg/mL	MeOH	ALR-102S
Diisoctyl phthalate (C8 Isomers)	27554-26-3	100 mg	NEAT	ALR-103N
		100 µg/mL	MeOH	ALR-103S
Dinonyl phthalate	84-76-4	100 mg	NEAT	J-105
Hexyl 2-ethylhexyl phthalate	75673-16-4	100 mg	NEAT	J-016
Isobutyl benzyl phthalate		10 mg	NEAT	PHTH-015N
		100 µg/mL	MeOH	PHTH-015S
Isobutylcyclohexyl phthalate	5334-09-8	100 mg	NEAT	J-014
Pentyl isopentyl phthalate	84777-06-0	10 mg	NEAT	PHTH-016N
		100 µg/mL	MeOH	PHTH-016S
n-Octyl n-decyl phthalate	119-07-3	100 mg	NEAT	J-015



Phthalate Replacements
continued on next page



Analytes by Functional Group

Phthalates

World-wide 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.

In response, AccuStandard has developed a phthalate replacement product line comprised of 42 compounds representing 18 chemical classes.

Replacement Phthalates

	CAS No.	Conc.	Matrix	Cat. No.
Azelaic Acid Derivatives				
Diisodecyl azelate	28472-97-1	1000 µg/mL	Acetone	PLAS-PL-075S-A
Diisooctyl azelate	26544-17-2	1000 µg/mL	Acetone	PLAS-PL-076S-A
Dimethyl azelate	1732-10-1	1000 µg/mL	Acetone	PLAS-PL-077S-A
Di-n-hexyl azelate	109-31-9	1000 µg/mL	Acetone	PLAS-PL-078S-A
Di(2-ethylhexyl) azelate	103-24-2	1000 µg/mL	Acetone	PLAS-PL-081S-A
Adipic Acid Derivatives				
Di(tridecyl) adipate	16958-92-2	1000 µg/mL	Acetone	PLAS-PL-079S-A
Di(n-heptyl, n-nonyl) adipate	68515-75-3	1000 µg/mL	Hexane	PLAS-PL-080S
Diisobutyl adipate	141-04-8	1000 µg/mL	Hexane	PLAS-PL-082S
Diisodecyl adipate	27178-16-1	1000 µg/mL	Hexane	PLAS-PL-083S
Dimer Acid Derivatives				
bis(2-Hydroxyethyl) dimerate	68855-78-7	1000 µg/mL	Hexane	PLAS-PL-084S
Epoxy Derivatives				
Epoxidized linseed oil	8016-11-3	1000 µg/mL	Toluene	PLAS-PL-085S-T
2-Ethylhexyl epoxy tallate	61789-01-3	1000 µg/mL	Hexane	PLAS-PL-086S
Fumaric Acid Derivative				
Dibutyl fumarate	105-75-9	1000 µg/mL	Hexane	PLAS-PL-087S
Glycerol Derivative				
Glycerol triacetate	102-76-1	1000 µg/mL	Hexane	PLAS-PL-088S
Isobutyrate Derivative				
2,2,4-Trimethyl-1,3-pentanediol-diisobutyrate	6846-50-0	1000 µg/mL	Hexane	PLAS-PL-089S
Maleic Acid Derivatives				
Di(2-ethylhexyl)maleate [Dioctyl maleate]	142-16-5	1000 µg/mL	Hexane	PLAS-PL-090S
Di n-butyl maleate	105-76-0	1000 µg/mL	Hexane	PLAS-PL-091S
Mellitates				
Tricapryl trimellitate	27251-75-8	1000 µg/mL	Hexane	PLAS-PL-092S
Triisodecyl trimellitate	36631-30-8	1000 µg/mL	Hexane	PLAS-PL-093S
Tri-(n-octyl, n-decyl) trimellitate	67989-23-5	1000 µg/mL	Hexane	PLAS-PL-094S
Myristate				
Isopropyl myristate	110-27-0	1000 µg/mL	Hexane	PLAS-PL-095S
Oleic Acid Derivatives				
Glycerol monooleate	25496-72-4	1000 µg/mL	Hexane	PLAS-PL-096S
Methyl oleate	112-62-9	1000 µg/mL	Hexane	PLAS-PL-097S
n-Propyl oleate	111-59-1	1000 µg/mL	Hexane	PLAS-PL-098S
Tetrahydrofurfuryl oleate	5420-17-7	1000 µg/mL	Hexane	PLAS-PL-099S
Palmitic Acid derivative				
Isopropyl palmitate	142-91-6	1000 µg/mL	Hexane	PLAS-PL-100S
Benzoic Acid Derivatives				
Di(propylene glycol) dibenzoate	27138-31-4	1000 µg/mL	Hexane	PLAS-PL-101S
Polyethylene glycol 200 dibenzoate	9004-86-8	1000 µg/mL	Hexane	PLAS-PL-102S
Phosphoric Acid Derivatives				
t-Butylphenyl diphenyl phosphate	56803-37-3	1000 µg/mL	Hexane	PLAS-PL-103S
Tri-butoxyethyl phosphate	78-51-3	1000 µg/mL	Hexane	PLAS-PL-104S
Ricinoleic Acid Derivatives				
Butyl ricinoleate	151-13-3	1000 µg/mL	Hexane	PLAS-PL-105S
Glyceryl (triacetyl)ricinoleate	101-34-8	1000 µg/mL	Hexane	PLAS-PL-106S
n-Butyl acetyl ricinoleate	140-04-5	1000 µg/mL	Hexane	PLAS-PL-107S
Propylene glycol ricinoleate	26402-31-3	1000 µg/mL	Hexane	PLAS-PL-108S
Succinic acid Derivatives				
Diethyl succinate	123-25-1	1000 µg/mL	Hexane	PLAS-PL-109S
Sulfonic acid Derivatives				
o,p-Toluenesulfonamide	8013-74-9	1000 µg/mL	Hexane	PLAS-PL-110S
N-Ethyl o,p-toluenesulfonamide	8047-99-2	1000 µg/mL	Hexane	PLAS-PL-111S
Stearic acid Derivatives				
Ethylene glycol monostearate	111-60-4	1000 µg/mL	Hexane	PLAS-PL-112S
Isopropyl isostearate	68171-33-5	1000 µg/mL	Hexane	PLAS-PL-113S
n-Butyl stearate	123-95-5	1000 µg/mL	Hexane	PLAS-PL-114S
Glycerol monostearate	31566-31-1	1000 µg/mL	Toluene	PLAS-PL-115S-T
Propylene glycol monostearate	1323-39-3	1000 µg/mL	Hexane	PLAS-PL-116S





Search by
Functional Group
✓ **Application**
EPA Method

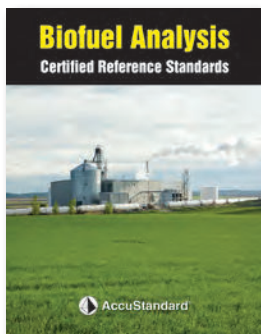
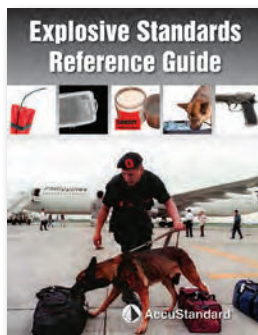
Methods by Application:

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

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Download Literature





Explosives

Explosive standards are traditionally used for the remediation of soil and water in locations where explosives have been stored. These same standards are now being used to calibrate baggage screening detectors at airports and other secure locations (embassies and other government buildings). They also are used by police departments and the military in K-9 odor recognition training for explosives.

AccuStandard has working relationships with both government and private sector K-9 training facilities and laboratories which provide valuable information and insight into the latest developments in explosives.

To assist in all aspects of explosive detection and analysis, AccuStandard synthesizes an array of explosives as well as metabolites, degradation products and raw materials. AccuStandard is the only U.S. commercial source for TATP, HMTD, HMDD and HNS.

In addition to catalog items, we offer special formulations for EPA method and customer-specific applications.

□ TNT Metabolites

Matrix Key

AcCN Acetonitrile **DMF** Dimethyl formamide
MeOH Methanol **EtOH** Ethanol

Explosives

Compound	CAS No.	Conc.	Matrix	Cat. No.	1 mL
2-Amino-4,6-dinitrotoluene □	35572-78-2	1 mg/mL	AcCN:MeOH (50:50)	M-8330-13	
		0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-13-0.1X	
4-Amino-2,6-dinitrotoluene □	19406-51-0	1 mg/mL	AcCN:MeOH (50:50)	M-8330-14	
		0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-14-0.1X	
3-Amino-1,2,4-triazol-5-one		100 µg/mL	AcCN	M-8330-ADD-55	
Ammonium picrate	131-74-8	0.1 mg/mL	AcCN	M-8330-ADD-27	
DEGDN	693-21-0	100 µg/mL	AcCN:MeOH (50:50)	M-8330-ADD-36	
1,2-Diaminopropane	78-90-0	0.1 mg/mL	MeOH	M-8330-ADD-9	
2,4-Diamino-6-nitrotoluene □	6629-29-4	0.1 mg/mL	AcCN	M-8330-ADD-12	
2,6-Diamino-4-nitrotoluene □	59229-75-3	0.1 mg/mL	AcCN	M-8330-ADD-13	
Diazodinitrophenol	4682-03-5	0.1 mg/mL	AcCN	M-8330-ADD-48	
		1 mg/mL	AcCN	M-8330-ADD-48-10X	
2,3-Dimethyl-2,3-dinitrobutane (DMNB)	3964-18-9	100 µg/mL	AcCN	M-8330-ADD-21	
3,5-Dinitroaniline	618-87-1	0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-ADD-4	
1,2-Dinitrobenzene	528-29-0	1 mg/mL	MeOH	M-8330-SS	
1,3-Dinitrobenzene	99-65-0	1 mg/mL	AcCN:MeOH (50:50)	M-8330-01	
		0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-01-0.1X	
1,2-Dinitroglycerin	621-65-8	100 µg/mL	AcCN:MeOH (50:50)	M-8330-ADD-33	
1,3-Dinitroglycerin	623-87-0	100 µg/mL	AcCN:MeOH (50:50)	M-8330-ADD-34	
2,4-Dinitrotoluene □	121-14-2	1 mg/mL	AcCN:MeOH (50:50)	M-8330-02	
		0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-02-0.1X	
2,6-Dinitrotoluene □	606-20-2	1 mg/mL	AcCN:MeOH (50:50)	M-8330-03	
		0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-03-0.1X	
3,4-Dinitrotoluene	610-39-9	1 mg/mL	MeOH	M-8330-IS	
3,5-Dinitrotoluene □	618-85-9	100 µg/mL	AcCN:MeOH (50:50)	M-8330-ADD-39	
Dipentaerythritol hexanitrate	13184-80-0	100 µg/mL	MeOH	M-8330-ADD-43	
EGDN	628-96-6	0.1 mg/mL	AcCN	M-8330-ADD-5	
Ethylcentralite		100 µg/mL	AcCN:MeOH (50:50)	M-8330-ADD-50	
Erythritol tetranitrate (ETN)	7297-25-8	0.1 mg/mL	AcCN	M-8330-ADD-47	
		1 mg/mL	AcCN	M-8330-ADD-47-10X	
Guanidine nitrate	506-93-4	0.1 mg/mL	MeOH	M-8330-ADD-10	
Hexahydro-1,3,5-trinitroso-1,3,5-triazine	13980-04-6	0.1 mg/mL	AcCN	M-8330-ADD-46	
		1 mg/mL	AcCN	M-8330-ADD-46-10X	
Hexanitrodiphenylamine	131-73-7	100 µg/mL	AcCN:MeOH (50:50)	M-8330-ADD-37	
Hexanitrostilbene (HNS) □	20062-22-0	0.1 mg/mL	AcCN	M-8330-ADD-26 *	
Hexamethylenetriperoxide diamine (HMTD)	283-66-9	0.1 mg/mL	AcCN	M-8330-ADD-25	
HMX	2691-41-0	1 mg/mL	AcCN:MeOH (50:50)	M-8330-04	
		0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-04-0.1X	
Hydrazine	302-01-2	0.1 mg/mL	MeOH	M-8330-ADD-8	
2-Hydroxylamino-4,6-dinitrotoluene □ ★	59283-76-0	0.1 mg/mL	AcCN	M-8330-ADD-18 *	
4-Hydroxylamino-2,6-dinitrotoluene □ ★	59283-75-0	0.1 mg/mL	AcCN	M-8330-ADD-20 *	
Methylcentralite		100 µg/mL	AcCN:MeOH (50:50)	M-8330-ADD-49	
Nitrobenzene □	98-95-3	1 mg/mL	AcCN:MeOH (50:50)	M-8330-06	
		0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-06-0.1X	
N-Nitrodimethylamine	4164-28-7	100 µg/mL	AcCN	M-8330-ADD-40	
2-Nitrodiphenylamine	119-75-5	100 µg/mL	AcCN:MeOH (50:50)	M-8330-ADD-51	
4-Nitrodiphenylamine	836-30-6	100 µg/mL	AcCN:MeOH (50:50)	M-8330-ADD-52	
Nitroglycerin	55-63-0	0.1 mg/mL	EtOH	M-8330-ADD-1	
		1.0 mg/mL	EtOH:MeOH (97:3)	M-8330-ADD-1-10X	
1-Nitroglycerin	624-43-1	100 µg/mL	AcCN:MeOH (50:50)	M-8330-ADD-31	
2-Nitroglycerin	620-12-2	100 µg/mL	AcCN:MeOH (50:50)	M-8330-ADD-32	
Nitroguanidine	556-88-7	0.1 mg/mL	MeOH	M-8330-ADD-6	
Nitromethane	75-52-5	0.1 mg/mL	MeOH	M-8330-ADD-7	
2-Nitrotoluene □	88-72-2	1 mg/mL	AcCN:MeOH (50:50)	M-8330-07	
		0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-07-0.1X	
3-Nitrotoluene □	99-08-1	1 mg/mL	AcCN:MeOH (50:50)	M-8330-08	
		0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-08-0.1X	
4-Nitrotoluene □	99-99-0	1 mg/mL	AcCN:MeOH (50:50)	M-8330-09	
		0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-09-0.1X	
3-Nitro-1,2,4-triazol-5-one (NTO)	932-64-9	100 µg/mL	AcCN:MeOH (50:50)	M-8330-ADD-53	
Pentaerythritol trinitrate	1607-17-6	100 µg/mL	MeOH	M-8330-ADD-44	
PETN	78-11-5	0.1 mg/mL	MeOH	M-8330-ADD-2	
		1 mg/mL	MeOH	M-8330-ADD-2-10X	

★ 3 month stability

* ColdPAK required to maintain integrity of product.

Explosives continued on next page



Explosives (continued)

Compound	CAS No.	Conc.	Matrix	Cat. No.	1 mL
Picramic acid	96-91-3	100 µg/mL	AcCN:MeOH (50:50)	M-8330-ADD-22	
Picric acid	88-89-1	0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-ADD-3	
Propyleneglycol dinitrate	6423-43-4	100 µg/mL	MeOH	M-8330-ADD-35	
PYX	38082-89-2	0.1 mg/mL	AcCN	M-8330-ADD-11	
RDX	121-82-4	1 mg/mL	AcCN:MeOH (50:50)	M-8330-05	
		0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-05-0.1X	
TATP	17088-37-8	0.1 mg/mL	AcCN	M-8330-ADD-24 *	
TEGDN	111-22-8	0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-ADD-41-R1	
2,2',6,6'-Tetranitro-4,4'-azotoluene □		0.1 mg/mL	AcCN	M-8330-ADD-17	
4,4',6,6'-Tetranitro-2,2'-azotoluene □		0.1 mg/mL	AcCN	M-8330-ADD-19	
2,2',6,6'-Tetranitro-4,4'-azoxytoluene □		0.1 mg/mL	AcCN	M-8330-ADD-15	
Tetryl	479-45-8	1 mg/mL	AcCN:MeOH (50:50)	M-8330-10	
		0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-10-0.1X	
TNT	118-96-7	1 mg/mL	AcCN:MeOH (50:50)	M-8330-11	
		0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-11-0.1X	
		40 µg/mL	DMF	M-8330-ADD-14-DMF	
1,3,5-Triamino-2,4,6-trinitrobenzene	3058-38-6	5 mg	NEAT	M-8330-ADD-23N-5MG	
2,4,6-Triaminotoluene trihydrochloride (TNT free)	634-87-7	100 µg/mL	AcCN:MeOH (50:50)	M-8330-ADD-28	
Trimethylolethane trinitrate	3032-55-1	1 mg/mL	AcCN:MeOH (50:50)	M-8330-12	
1,3,5-Trinitrobenzene □	99-35-4	0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-12-0.1X	
2,4,6-Trinitroresorcinol	82-71-3	1 mg/mL	AcCN:MeOH (50:50)	M-8330-ADD-29	

Method 8330 Multi-Component Formulations for Explosive Analysis

Mix A

M-8330A * 1 x 1 mL
0.1 mg/mL each in AcCN:MeOH (50:50)
7 comps.

M-8330A-10X * 1 x 1 mL
1.0 mg/mL each in AcCN:MeOH (50:50)
7 comps.

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

M-8330A-R * 1 x 1 mL
0.1 mg/mL each in AcCN:MeOH (50:50)
8 comps.

M-8330A-R-10X * 1 x 1 mL
1.0 mg/mL each in AcCN:MeOH (50:50)
8 comps.

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

Composite Explosive Mixture

M-8330-R-0.1X 1 x 1 mL
0.1 mg/mL each in AcCN:MeOH (50:50)

M-8330-R-0.5X 1 x 1 mL
0.5 mg/mL each in AcCN:MeOH (50:50)

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

Internal Standard

M-8330-IS 1 x 1 mL
M-8330-IS-PAK 5 x 1 mL
1.0 mg/mL in MeOH
3,4-Dinitrotoluene

SAVE

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..

Mix B

M-8330B * 1 x 1 mL
0.1 mg/mL each in AcCN:MeOH (50:50)
5 comps.

M-8330B-10X * 1 x 1 mL
1.0 mg/mL each in AcCN:MeOH (50:50)
5 comps.

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

M-8330B-R * 1 x 1 mL
0.1 mg/mL each in AcCN:MeOH (50:50)
7 comps.

M-8330B-R-10X * 1 x 1 mL
1.0 mg/mL each in AcCN:MeOH (50:50)
7 comps.

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

M-8330B-R2 * 1 x 1 mL
0.1 mg/mL each in AcCN:MeOH (50:50)
6 comps.

M-8330B-R2-10X * 1 x 1 mL
1.0 mg/mL each in AcCN:MeOH (50:50)
6 comps.

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

Surrogate Standard

M-8330-SS 1 x 1 mL
1.0 mg/mL in MeOH
1,2-Dinitrobenzene

Explosives by HPLC Set

M-8330-R-SET * 14 x 1 mL
Each at 100 µg/mL in AcCN:MeOH (50:50)

M-8330-R-10X-SET * 14 x 1 mL
Each at 1000 µg/mL in AcCN:MeOH (50:50)

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

* ColdPAK required to maintain integrity of product.



Explosives

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

Method 529 Calibration Curve

All in µg/mL in Ethyl acetate

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

Internal Standard Stock Solution

M-529-IS

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:AcCN (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

SAVE

1 x 1 mL

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

SAVE

1 x 1 mL

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 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 AcCN:MeOH (50:50)

SAVE

1 x 1 mL

5 x 1 mL

10 comps.

2-Amino-4,6-dinitrotoluene
4-Amino-2,6-dinitrotoluene
1,3-Dinitrobenzene
2,6-Dinitrotoluene
2,4-Dinitrotoluene

1,3,5-Trinitrobenzene
TNT
RDX
Tetryl
HMX

Explosive Surrogate Standards

M-8095-SS-01

M-8095-SS-01-PAK

100 µg/mL in AcCN

SAVE

1 x 1 mL

5 x 1 mL

3,4-Dinitrotoluene

M-8095-SS-02

M-8095-SS-02-PAK

100 µg/mL in AcCN

SAVE

1 x 1 mL

5 x 1 mL

2-Methyl-4-nitroaniline

M-8095-SS-03

M-8095-SS-03-PAK

100 µg/mL in AcCN

SAVE

1 x 1 mL

5 x 1 mL

2,5-Dinitrotoluene

Explosive Stock Solution B

M-8095-SSB-100X

M-8095-SSB-100X-PAK

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

SAVE

1 x 1 mL

5 x 1 mL

7 comps.

Nitrobenzene
3-Nitrotoluene
2-Nitrotoluene
4-Nitrotoluene

500
500
500
500

Nitroglycerin
PETN
3,5-Dinitroaniline

500
500
100

Explosive Standards Reference Guide



Download or view
Reference Guide at
AccuStandard.com



DIN Explosive Standards

DIN 38407-21 Explosives

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

DIN38407-21-A	1 x 1 mL
10 µg/mL each in MeOH	12 comps.
Picric acid	Nitroglycerin
HMX	TNT
RDX	2-Nitrotoluene
Tetryl	PETN
EGDN	4-Nitrotoluene
DEGDN	3-Nitrotoluene

DIN 38407-21 Related Compounds

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

DIN38407-21-B	1 x 1 mL
10 µg/mL each in MeOH:AcCN (98:2)	8 comps.
1,3,5-Trinitrobenzene	
1,3-Dinitrobenzene	
4-Amino-2,6-dinitrotoluene	
2,2',4,4',6,6'-Hexanitrodiphenylamine	
2-Amino-4,6-dinitrotoluene	
2,6-Dinitrotoluene	
2,4-Dinitrotoluene	
Diphenylamine	

Gun Surveillance Standards

Inorganic ICP Standards for Gun Shot Residue

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

Gun Surveillance Standard

EXP-GSS

At stated conc. (µg/mL) in AcCN

1 x 1 mL
9 comps.

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

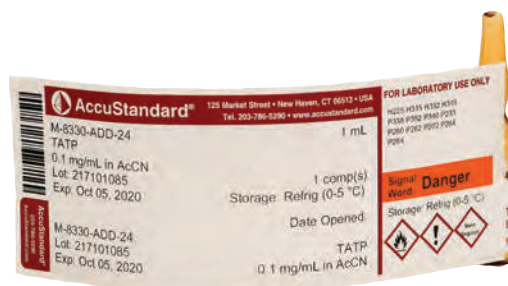
Organic Compounds for Firearm Discharge Analysis

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

Any compound without ✱ could contain possible isomers

Technical Note

We offer gunshot residue standards through our "AccuTrace" inorganic products. Custom solutions of Antimony, Barium and Lead are available for use with ICP instrumentation. Organic compounds identified in the discharge of a firearm are also available.





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 or synthesized many of these polymer adjuncts and is pleased to present them in this newest unique product line as certified reference materials for monitoring these chemicals.

The occurrence, toxicity and analytical methods used in the detection, monitoring (for both presence and levels) of these chemical classes and individual compounds within these classes are more thoroughly described in the book the "Handbook for the Chemical Analysis of Plastic and Polymer Additives" 2nd Ed. (published in 2015 by CRC Press). Both manufacturers and analytical laboratories will find the CRC book to be an authoritative source of information that compliments this catalog.

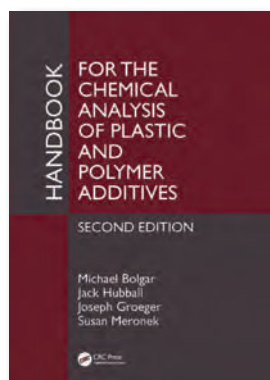
Calibrating with Certified Standards adds an additional layer of confidence in the analysis that can aid in meeting regulations, assisting in challenges from governmental regulations, and providing protection from legal issues that could be raised by consumers.

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

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

The perfect companion for your analysis!

The Handbook for Chemical Analysis of Plastic and Polymer Additives, 2nd Edition



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 much more!

Cat. No: PLAS-CRC-BOOK2

Each Compound has:

Chemical Information

- Structure
- CAS Number (where applicable)
- RTECS Number (where available)
- Chemical Formula
- Molecular Weight
- IUPAC Name, other common names and some popular brand names (where available)

Physical Properties

- Appearance
- Melting and Boiling Points
- Stability
- Solubilities in several common solvents

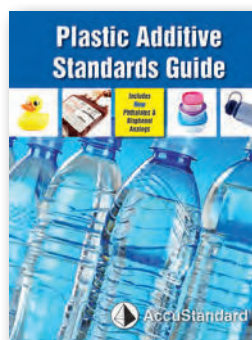
Other Important Information

- Application
- Regulatory
- Environmental Impact
- Point of Release
- Toxicological Data

Analytical Data

- Mass Spectrum with key Ions tabulated
- Chromatogram with conditions

Plastic Additive Standards Guide



Both the Handbook and Guide are organized into classes by additive type. Manufacturers can easily find Standards that match their particular application and product formulation for the following product categories:

- Medical Devices
- Food Packaging
- Pharmaceutical Packaging
- Toys
- Wire and Cable

This guide includes chemical structures, formulas, molecular weight, etc. Additional sections include Phthalates and Bisphenol Analog standards.

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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

Accelerants

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

Antidegradants

Trade Name	Chemical Name	CAS No.	NEAT (50 mg)	SOLN (1 mL)
Akrochem® Antiox 12	Butylated reaction product of p-cresol and dicyclopentadiene	68610-51-5	PLAS-AD-001N	PLAS-AD-001S ☆
Ethanox® 314	1,3,5-Tris(3,5-di-tert-butyl-4-hydroxybenzyl)-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione	27676-62-6	PLAS-AX-084N	PLAS-AX-084S
Ethanox® 703	2,6-Di-tert-butyl-N,N-dimethylamino-p-cresol	88-27-7	PLAS-AX-085N	PLAS-AX-085S
Santoflex® IPPD	N-phenyl-N'-propan-2-yl-benzene-1,4-diamine	101-72-4	PLAS-AD-003N	PLAS-AD-003S ☆
Santoflex® 77PD	N,N'-bis(1,4-dimethylpentyl)-p-phenylenediamine	3081-14-9	PLAS-AD-002N	PLAS-AD-002S

Antifoams

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

Antioxidants

Trade Name	Chemical Name	CAS No.	NEAT (50 mg)	SOLN (1 mL)
Alkanox® P27	bis(2,4-Di-tert-butylphenyl)pentaerythritol diphosphate and magnesium aluminum hydroxy carbonate hydrate	26741-53-7 / 11097-59-9	PLAS-AX-032N	-----
Alkanox® TNPP	Tris(mono-nonylphenyl) phosphite with up to 1% triisopropanol amine	26523-78-4	PLAS-AX-077N	PLAS-AX-077S
Anox® PP18	Octadecyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propanoate	2082-79-3	PLAS-AX-114N	-----
Antioxidant 60	2H-benzimidazole-2-thione, 1,3-di-hydro-4(or 5)-methyl	53988-10-6	PLAS-AX-019N	PLAS-AX-019S-M
Antioxidant S	Benzenamine, N-phenyl, reaction products with 2,4,4-trimethylpentene	68411-46-1	PLAS-AX-057N	PLAS-AX-057S
2-(2H-Benzotriazol-2-yl)-4,6-bis(1-methyl-1-phenylethyl)phenol		3147-75-9	PLAS-AX-094N	-----
BLS® 234	2-[2-Hydroxy-3,5-di-(1,1-dimethylbenzyl)]-2H-benzotriazole	70321-86-7	PLAS-AX-088N	-----
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	-----
BLS® 1622	Dimethyl succinate polymer with 4-hydroxy-2,2,6,6-tetramethyl-1-piperidine ethanol	65447-77-0	PLAS-AX-096N	-----
BLS® 1944	Poly[[6-[(1,1,3,3-tetramethylbutyl)amino]-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	PLAS-AX-090N	-----
BNX 1077	Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-, isotridecyl ester	847488-62-4	PLAS-AX-087N	-----
BNX 1225TPR	Blend of BNX® 1010, Benefos® 1680 and SIS Block Copolymer	6683-19-8/31570-04-4/ 25038-32-8	PLAS-AX-091N	-----
2-tert-Butyl-6-(5-chloro-2H-benzotriazol-2-yl)-4-methylphenol		3896-11-5	PLAS-AX-093N	-----
4,4'-Butylidenebis(6-tert-butyl-m-cresol)		85-60-9	PLAS-AX-105N	-----
Cyanox® 1212	Lauryl stearylthiopropionate	13103-52-1	PLAS-AX-047N	PLAS-AX-047S
Cyanox® 1790	1,3,5-Tris(4-tert-butyl-3-hydroxy-2,6-dimethylbenzyl)-1,3,5-triazine-2,4,6-(1h, 3h,5h)-trione	40601-76-1	PLAS-AX-005N	PLAS-AX-005S
Cyanox® 2246	2,2'-Methylene-bis-(4-methyl-6-tert-butyl-phenol)	119-47-1	PLAS-AX-013N	PLAS-AX-013S
Cyanox® 425	2,2'-Methylene-bis-(4-ethyl-6-tert-butyl-phenol)	88-24-4	PLAS-AX-012N	PLAS-AX-012S
Cyanox® LTDP	Dilaurylthiopropionate	123-28-4	PLAS-AX-041N	PLAS-AX-041S
Cyanox® STDP	Distearylthiopropionate	693-36-7	PLAS-AX-044N	PLAS-AX-044S
Dibenzylhydroxylamine		621-07-8	PLAS-AX-092N	-----
3,9-bis(2,4-Dicumylphenoxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5,5]undecane		154862-43-8	PLAS-AX-111N	-----
Diethyl 3,5-Di-tert-butyl-4-hydroxybenzyl phosphonate		976-56-7	PLAS-AX-110N	-----
N,N'-Diethylthiourea	1,3-Diethyl-2-thiourea	105-55-5	PLAS-AX-103N	-----
3,9-bis(Octadecyloxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5,5]undecane		3806-34-6	PLAS-AX-108N	-----
Distyryl biphenyl		27344-41-8	PLAS-AX-099N	-----
2,6-Di-tert-butyl-4-ethylphenol		4130-42-1	PLAS-AX-107N	-----
2,6-Di-tert-butylphenol		128-39-2	PLAS-AX-112N	-----
Ethanox® 310	Pentaerythritol tetrakis (3-(3,5-di-t-butyl-4-hydroxyphenyl)propionate	6683-19-8	PLAS-AX-086N	PLAS-AX-086S
Ethanox® 323	Nonylphenol disulfide oligomer		PLAS-AX-082N	PLAS-AX-082S
Ethanox® 330	1,3,5-Trimethyl-2,4,6-tris(3,5-di-tert-butyl-4-hydroxybenzyl) benzene	1709-70-2	PLAS-AX-021N	PLAS-AX-021S

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, - DMSO

Antioxidants (Continued)

Trade Name	Chemical Name	CAS No.	NEAT (50 mg)	SOLN (1 mL)
Ethanox® 376	3,5-Di-tert-butyl-4-hydroxyhydrocinnamic acid, octadecyl ester	2082-79-3	PLAS-AX-054N	PLAS-AX-054S
Ethanox® 702	4,4'-Methylenebis(2,6-di-tert-butylphenol)	118-82-1	PLAS-AX-025N	PLAS-AX-025S
Ethanox® 703	2,6-Di-tert-butyl-N,N-dimethylamino-p-cresol	88-27-7	PLAS-AX-085N	PLAS-AX-085S
Ethaphos® 368	tris(2,4-Di-tert-butylphenyl) phosphite	31570-04-4	PLAS-AX-074N	PLAS-AX-074S
2,2'-Ethylidene-bis(4,6-di-tert-butylphenol)		35958-30-6	PLAS-AX-106N	-----
2-(2'-Hydroxy-3',5'-di-tert-amylphenyl) benzotriazole		25973-55-1	PLAS-AX-095N	-----
Irganox® 245	Triethyleneglycol bis[3-(3'-tert-butyl-4'-hydroxy-5'-methylphenol)propionate]	36443-68-2	PLAS-AX-070N	PLAS-AX-070S
Irganox 259	Hexamethylene bis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate]	35074-77-2	PLAS-AX-045N	PLAS-AX-045S
Irganox 565	2,4-bis(n-Octylthio)-6-(4-hydroxy-3,5-di-tert-butylanilino)-1,3,5-triazine	991-84-4	PLAS-AX-014N	PLAS-AX-014S
Irganox 1035	Thiodiethylene bis(3,5-di-tert-butyl-4-hydroxyhydrocinnamate)	41484-35-9	PLAS-AX-069N	PLAS-AX-069S
Irganox 1081	6,6'-Di-tert-butyl-2,2'-thiodi-p-cresol	90-66-4	PLAS-AX-080N	PLAS-AX-080S
Irganox 1098	N,N'-1,6-Hexanediyl bis[3,5-bis(1,1-dimethylethyl)-4-hydroxy-benzenepropanamide]	23128-74-7	PLAS-AX-050N	PLAS-AX-050S ☆
Irganox 1425 WL	Ethyl 3,5-di-tert-butyl-4-hydroxybenzylphosphonate, calcium salt and polyethylene-wax mixture	65140-91-2 / 9002-88-4	PLAS-AX-079N	-----
Irganox 3125	3,5-Di-tert-butyl-4-hydroxyhydrocinnamic ester with 1,3,5-tris[2-hydroxyethyl]-s-triazine-2,4,6[1H,3H,5H]-trione	34137-09-2	PLAS-AX-020N	PLAS-AX-020S ☆
Irganox 3114 FF	1,3,5-Tris(3,5-di-tert-butyl-4-hydroxybenzyl)-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione	27676-62-6	PLAS-AX-078N	PLAS-AX-078S
Irganox E 201	alpha-Tocopherol	10191-41-0	PLAS-AX-027N	PLAS-AX-027S
Irganox MD 1024	1,2-bis(3,5-Di-tert-butyl-4-hydroxyhydrocinnamoyl)hydrazide	32687-78-8	PLAS-AX-001N	PLAS-AX-001S ☆
Isonox® 132	2,6-Di-tert-butyl-4-sec-butylphenol	17540-75-9	PLAS-AX-018N	PLAS-AX-018S
Isonox 232	2,6-Di-tert-butyl-4-nonylphenol	4306-88-1	PLAS-AX-063N	PLAS-AX-063S
Lowinox® AH25	2,5-bis(1,1-Dimethylpropyl)-1,4-benzenediol	79-74-3	PLAS-AX-016N	PLAS-AX-016S
Lowinox CPL	Polymeric sterically hindered phenol	68610-51-5	PLAS-AX-059N	PLAS-AX-059S
Lowinox TBM-6	4,4'-Thiobis(2-tert-butyl-5-methylphenol)	96-69-5	PLAS-AX-024N	PLAS-AX-024S
Markstat® 60	Polyethylene glycol ether (<20% NaClO ₄)	7601-89-0	PLAS-AX-028N	PLAS-AX-028S
Naugard® 412S	beta-Laurylthiopropionate	29598-76-3	PLAS-AX-030N	PLAS-AX-030S
Naugard 445	4,4'-bis(alpha,alpha-Dimethylbenzyl)diphenylamine	10081-67-1	PLAS-AX-022N	PLAS-AX-022S
Naugard 635	4-(1-phenylethyl)-N-[4-(1-phenylethyl)phenyl]aniline	68442-68-2	PLAS-AX-113N	-----
Naugard 956	Proprietary blend of primary and secondary antioxidants		PLAS-AX-060N	PLAS-AX-060S-T
Naugard A	Acetone diphenylamine condensation products	68412-48-6	PLAS-AX-026N	PLAS-AX-026S
Naugard B-25	1:1 blend of Naugard® 10 and Naugard® 524	6683-19-8 / 31570-04-4	PLAS-AX-061N	PLAS-AX-061S
Naugard BHT	2,6-Di-tert-butyl-4-methylphenol	128-37-0	PLAS-AX-017N	PLAS-AX-017S
Naugard HM-22	Blend of phenolic primary and diphenylamine secondary antioxidants (Naugards 76 and 445)	10081-67-1 / 2082-79-3	PLAS-AX-033N	PLAS-AX-033S
Naugard J	N,N'-Diphenyl-p-phenylenediamine	74-31-7	PLAS-AX-048N	PLAS-AX-048S ☆
Naugard NBC	Nickel dibutyl dithiocarbamate	13927-77-0	PLAS-AX-051N	PLAS-AX-051S
Naugard PANA	N-Phenyl-1-naphthylamine	90-30-2	PLAS-AX-058N	PLAS-AX-058S
Naugard PHR	Tris(mono-nonylphenyl) phosphite with up to 1% triisopropanol amine	26523-78-4	PLAS-AX-076N	PLAS-AX-076S
Naugard PS-30	Benzenamine, N-phenyl, reaction products with 2,4,4-trimethylpentene	68411-46-1	PLAS-AX-038N	PLAS-AX-038S
Naugard PS-35	Butylated, octylated diphenylamine 2,6 di-tert-butyl-4-sec-butyl phenol	732-26-3	PLAS-AX-046N	PLAS-AX-046S
Naugard Q Extra	1,2-Dihydro-2,2,4-trimethylquinoline (polymerized)	26780-96-1	PLAS-AX-002N	PLAS-AX-002S
Naugard RM-51	Tris(mono-nonylphenyl)phosphite,2,2'-methylene bis (4-methyl-6-nonyl phenol)		PLAS-AX-034N	PLAS-AX-034S
Naugard Super Q	1,2-Dihydro-2,2,4-trimethylquinoline (polymerized)	26780-96-1	PLAS-AX-003N	PLAS-AX-003S
Naugard XL-1	2,2'-Oxamidobis[ethyl-3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate]	70331-94-1	PLAS-AX-008N	PLAS-AX-008S ☆
Propyl gallate	propyl 3,4,5-trihydroxybenzoate	121-79-9	PLAS-AX-109N	-----
bis(2,2,6,6-Tetramethyl-4-piperidyl) sebacate		52829-07-9	PLAS-AX-097N	-----
2,2'-(2,5-Thiophenediyl)bis(5-tert-butylbenzoxazole)		7128-64-5	PLAS-AX-098N	-----
Ultrinox® 626	bis(2,4-Di-tert-butylphenyl)pentaerythritol diphosphite	26741-53-7	PLAS-AX-031N	PLAS-AX-031S

Antiozonants

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

Blowing Agents, Plasticizers

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

** This product can not ship by air.



Coupling Agents

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

Cross-Linking Agents

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

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

Chemical Name	CAS No.	Matrix	SOLN (1 mL)
Aroclor® 1016 (Tech Mix)	12674-11-2	1000 µg/mL in Hexane 100 mg	C-216S-H-10X C-216N
Aroclor 1221 (Tech Mix)	11104-28-2	1000 µg/mL in Hexane 50 mg	C-221S-H-10X C-221N-50MG
Aroclor 1232 (Tech Mix)	11141-16-5	1000 µg/mL in Hexane	C-232S-H-10X
Aroclor 1242 (Tech Mix)	53469-21-9	1000 µg/mL in Hexane 50 mg	C-242S-H-10X C-242N-50MG
Aroclor 1248 (Tech Mix)	12672-29-6	1000 µg/mL in Hexane 50 mg	C-248S-H-10X C-248N-50MG
Aroclor 1254 (Tech Mix)	11097-69-1	1000 µg/mL in Hexane 50 mg	C-254S-H-10X C-254N-50MG
Aroclor 1260 (Tech Mix)	11096-82-5	1000 µg/mL in Hexane 50 mg	C-260S-H-10X C-260N-50MG
Aroclor 1262 (Tech Mix)	37324-23-5	1000 µg/mL in Hexane 50 mg	C-262S-H-10X C-262N-50MG
Aroclor 1268 (Tech Mix)	11100-14-4	1000 µg/mL in Hexane	C-268S-H-10X
Aroclor 5432 (Tech Mix)	63496-31-1	35 µg/mL in Toluene	T-432S
Aroclor 5442 (Tech Mix)	12642-23-8	35 µg/mL in Toluene	T-442S
Aroclor 5460 (Tech Mix)	11126-42-4	35 µg/mL in Toluene	T-460S
Aroclor 6050 (Tech Mix)	12767-79-2	35 µg/mL in Toluene	T-6050S
Decabromodiphenyl ether	1163-19-5	50 µg/mL in Isooctane:Toluene	BDE-209S
Firemaster BP4A (4,4'-(1-methylethylidene) bis (2,6-dibromophenol))	79-94-7	100 µg/mL in Toluene	FRS-006S
Halowax 1013 (56 %Cl)	1321-64-8	100 µg/mL in Methanol	N-1013S
Halowax 1014 (62 %Cl)	1335-87-1	100 µg/mL in Methanol	N-1014S
Halowax 1051 (70 %Cl)	2234-13-1	100 µg/mL in Methanol	N-1051S
Halowax 1099 (52 %Cl)	39450-05-0	100 µg/mL in Methanol	N-1099S
2,2',3,4,4',5',6-Heptabromodiphenyl ether	207122-16-5	50 µg/mL in Isooctane	BDE-183S
2,2',4,4'-Tetrabromodiphenyl ether	5436-43-1	50 µg/mL in Isooctane	BDE-047S
2,2',4,4',5-Pentabromodiphenyl ether	60348-60-9	50 µg/mL in Isooctane	BDE-099S
2,2',4,4',5,5'-Hexabromodiphenyl ether	68631-49-2	50 µg/mL in Isooctane	BDE-153S
2,2',4,4',5,6'-Hexabromodiphenyl ether	207122-15-4	50 µg/mL in Isooctane	BDE-154S
2,2',4,4',6-Pentabromodiphenyl ether	189084-64-8	50 µg/mL in Isooctane	BDE-100S
m-Terphenyl	92-06-8	100 mg	T-002N
o-Terphenyl	84-15-1	100 mg	T-001N
p-Terphenyl	92-94-4	100 mg	T-003N
Tetradecachloro-m-terphenyl	42429-89-0	35 µg/mL in Toluene	T-005S
Tetradecachloro-o-terphenyl		35 µg/mL in Toluene	T-004S
Tetradecachloro-p-terphenyl		35 µg/mL in Toluene	T-006S



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Plastic Additives

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

Bisphenol A (BPA)	4,4'-Isopropylidene-diphenol	80-05-7	* 1 mg/mL in MeOH 50 mg	10 µg/mL in MeOH M-1626-01S *
Bisphenol A diglycidyl ether (BADGE)		1675-54-3	BPA-A-N	BPA-A-S
Bisphenol AF		1478-61-1	BPA-AF-N	BPA-AF-S
Bisphenol AP		1571-75-1	BPA-AP-N	BPA-AP-S
Bisphenol B		77-40-7	BPA-B-N-10MG	BPA-B-S
Bisphenol BP		1844-01-5	BPA-BP-N	BPA-BP-S
Bisphenol C		79-97-0	BPA-C-N	BPA-C-S
Bisphenol C-dichloride		14868-03-2	BPA-C2-N	BPA-C2-S
Bisphenol E		2081-08-5	BPA-E-N	BPA-E-S
Bisphenol F		620-92-8	BPA-F-N-10MG	BPA-F-S
Bisphenol G		127-54-8	BPA-G-N	BPA-G-S
Bisphenol M		13595-25-0	BPA-M-N	BPA-M-S
Bisphenol P		2167-51-3	BPA-P-N	BPA-P-S
Bisphenol PH		24038-68-4	BPA-PH-N	BPA-PH-S
Bisphenol S		80-09-1	BPA-S-N	BPA-S-S
Bisphenol TMC		129188-99-4	BPA-TMC-N-10MG	BPA-TMC-S
Bisphenol Z		843-55-0	BPA-Z-N	BPA-Z-S

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 18 chemical classes.

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



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

Plasticizers (Continued)

Trade Name	Chemical Name	CAS No.	NEAT (50 mg)	SOLN (1 mL)
bis(2-Hydroxyethyl)dimerate	Dimer Acid Derivative	68855-78-7	-----	PLAS-PL-084S
Isopropyl isostearate	Stearic acid Derivative	68171-33-5	-----	PLAS-PL-113S
Isopropyl myristate	Myristate	110-27-0	-----	PLAS-PL-095S
Isopropyl palmitate	Palmitic Acid derivative	142-91-6	-----	PLAS-PL-100S
Jayflex® 77	Diisooheptyl phthalate	71888-89-6	PLAS-PL-017N	PLAS-PL-017S
Jayflex DIDP	Diisodecyl phthalate	68515-49-1	PLAS-PL-016N	PLAS-PL-016S
Jayflex DINP	Diisononyl phthalate	68515-48-0	PLAS-PL-018N	PLAS-PL-018S
Jayflex DTD	Diisotridecyl phthalate	68515-47-9	PLAS-PL-020N	PLAS-PL-020S
Jayflex L11P-E	Diundecyl phthalate	3648-20-2	PLAS-PL-021N	PLAS-PL-021S
Jayflex TINTM	Triisononyl trimellitate	53894-23-8	PLAS-PL-029N	PLAS-PL-029S
Laurex®	Zinc salt of lauric and related fatty acids		PLAS-PL-032N	PLAS-PL-032S
Markstat® 51	Poly(ethylene glycol) monolaurate	9004-81-3	PLAS-PL-003N	PLAS-PL-003S
Methyl O-Acetylricinoleate	Methyl (Z)-12-acetyloxyoctadec-9-enoate	140-03-4	PLAS-PL-063N	-----
Methyl oleate	Oleic Acid Derivative	112-62-9	-----	PLAS-PL-097S
Morfex® 150	Dicyclohexyl phthalate	84-61-7	PLAS-PL-014N	PLAS-PL-014S
Morfex 190	Butylphthalyl butyl glycolate	85-70-1	PLAS-PL-008N	PLAS-PL-008S
Morfex 560	Tri-n-hexyl trimellitate	1528-49-0	PLAS-PL-031N	PLAS-PL-031S
Morfex x-1125	Di(tridecyl) phthalate	119-06-2	PLAS-PL-033N	PLAS-PL-033S
Paraplex® G-30	Proprietary dibasic acid polyester mixture		PLAS-PL-027N	PLAS-PL-027S
Plasthall® DINP	Diisononyl phthalate	28553-12-0	PLAS-PL-072N	PLAS-PL-072S
Plasthall ESO	Epoxidized soybean oil	8013-07-8	PLAS-PL-035N	-----
Polycizer® butyl oleate	Butyl oleate	142-77-8	PLAS-PL-007N	PLAS-PL-007S
Polycizer DP 500	Dipropylene glycol dibenzoate	27138-31-4	PLAS-PL-011N	PLAS-PL-011S
Polyethylene glycol 200 dibenzoate	Benzoic Acid Derivative	9004-86-8	-----	PLAS-PL-102S
n-Propyl oleate	Oleic Acid Derivative	111-59-1	-----	PLAS-PL-098S
Propylene glycol monostearate	Stearic acid Derivative	1323-39-3	-----	PLAS-PL-116S
Propylene glycol ricinoleate	Ricinoleic Acid Derivative	26402-31-3	-----	PLAS-PL-108S
Santicizer® 141	2-Ethylhexyldiphenyl phosphate	1241-94-7	PLAS-PL-026N	PLAS-PL-026S
Santicizer 148	Mixture: isodecylphenyl phosphate (80-90%) / diisodecyl phenyl phosphate / triphenyl phosphate	29761-21-5	PLAS-PL-022N	PLAS-PL-022S
Santicizer 160	Benzyl butyl phthalate	85-68-7	PLAS-PL-004N	PLAS-PL-004S
Santicizer 261	Benzyl octyl phthalate	68515-40-2	PLAS-PL-005N	PLAS-PL-005S
Santicizer 278	Benzyl 3-isobutyryloxy-1-isopropyl-2,2-dimethylpropyl phthalate	16883-83-3	PLAS-PL-074N	-----
Tetrahydrofurfuryl oleate	Oleic Acid Derivative	5420-17-7	-----	PLAS-PL-099S
o,p-Toluenesulfonamide	Succinic acid Derivative	8013-74-9	-----	PLAS-PL-110S
Tri-butoxyethyl phosphate	Phosphoric Acid Derivative	78-51-3	-----	PLAS-PL-104S
Tributylphosphate	Tributyl phosphate	126-73-8	PLAS-PL-068N	-----
Tricapryl trimellitate	Mellitate	27251-75-8	-----	PLAS-PL-092S
Triethylphosphate		78-40-0	PLAS-PL-067N	-----
Triisodecyl trimellitate	Mellitate	36631-30-8	-----	PLAS-PL-093S
Tri-(n-octyl, n-decyl) trimellitate	Mellitate	67989-23-5	-----	PLAS-PL-094S
2,2,4-Trimethyl-1,3-pentanediol-diisobutyrate	Isobutyrate Derivative	6846-50-0	-----	PLAS-PL-089S
2,2,4-Trimethyl-1,3-pentanediol-isobutyrate		25265-77-4	PLAS-PL-066N	-----
Trimellitate	1,2,4-Benzenetricarboxylic acid, tris(2-ethylhexyl) ester	3319-31-1	PLAS-PL-060N	-----
Vinsol® powder	Gum rosin	8050-09-7	PLAS-PL-037N	PLAS-PL-037S-D
Vinsol® resin	Gum rosin	8050-09-7	PLAS-PL-036N	PLAS-PL-036S-D

Processing Aids

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

Retarders

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



Plastic Additives, ASTM D6042-92

Stearates

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

UV Stabilizers

Trade Name	Chemical Name	CAS No.	NEAT (50 mg)	SOLN (1 mL)
2-(2-Hydroxy-5-methylphenyl)benzotriazole		2440-22-4	PLAS-UV-006N	PLAS-UV-006S-CN
2-(5-tert-Butyl-2-hydroxyphenyl)benzotriazole		3147-76-0	PLAS-UV-007N	PLAS-UV-007S-CN
2-(2H-Benzotriazol-2-yl)-4,6-bis(1-methyl-1-phenylethyl)phenol		70321-86-7	PLAS-UV-008N	PLAS-UV-008S-CN
2-tert-Butyl-6(5-chloro-2H-benzotriazol-2-yl)-4-methylphenol		3896-11-5	PLAS-UV-009N	PLAS-UV-009S-CN
2-(3,5-Di-tert-butyl-2-hydroxyphenyl)2H-benzotriazole		3846-71-7	PLAS-UV-010N	PLAS-UV-010S-CN
2,4-Di-tert-butyl-6-(5-chloro-2H-benzotriazol-2-yl)phenol		3864-99-1	PLAS-UV-011N	PLAS-UV-011S-CN
2-(2H-Benzotriazol-2-yl)-4,6-di-tert-pentylphenol		25973-55-1	PLAS-UV-012N	PLAS-UV-012S-CN
2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole		3147-75-9	PLAS-UV-013N	PLAS-UV-013S-CN
2-(3-sec-Butyl-5-tert-butyl-2-hydroxyphenyl)benzotriazole		36437-37-3	-----	PLAS-UV-014S-CN
2-(2H-Benzotriazol-2-yl)-4-methyl-6-(2-propenyl)phenol		2170-39-0	PLAS-UV-015N	PLAS-UV-015S-CN
UV Stabilizers Solution Set		Set of the above	PLAS-UV-STAB-SET	10 x 1 mL
Tinuvin® PED	2-(2-Hydroxy-5-methylphenyl)benzo triazole	2440-22-4	PLAS-UV-005N	PLAS-UV-005S
Uvinul® 3000	2,4-Dihydroxybenzophenone	131-56-6	PLAS-UV-001N	PLAS-UV-001S
Uvinul 3008	2-Hydroxy-4-octyloxybenzophenone	1843-05-6	PLAS-UV-002N	PLAS-UV-002S
Uvinul 3040	2-Hydroxy-4-methoxybenzophenone	131-57-7	PLAS-UV-003N	PLAS-UV-003S
Uvinul 3049	2,2-Dihydroxy-4,4-dimethoxybenzophenone	131-54-4	PLAS-UV-004N	PLAS-UV-004S

Vegetable Oils

Trade Name	Chemical Name	CAS No.	NEAT (50 mg)	SOLN (1 mL)
Akrofax™ A	Vulcanized vegetable oil	68952-47-6	PLAS-VA-001N	----- ---
Akrofax B	Vulcanized vegetable oil		PLAS-VA-002N	----- ---

Deuterated Phthalates

Trade Name	Chemical Name	CAS No.	NEAT	5 mg	SOLN (1 mL)
Dibenzyl phthalate-d ₄		1015854-62-2	PHTH-D4-001N		PHTH-D4-001S
Di-n-butyl phthalate-d ₄		93952-11-5	PHTH-D4-002N		PHTH-D4-002S
Di-iso-butyl phthalate-3,4,5,6-d ₄		358730-88-8	PHTH-D4-003N		PHTH-D4-003S
Dicyclohexyl phthalate-3,4,5,6-d ₄		358731-25-6	PHTH-D4-004N		PHTH-D4-004S
Diethyl phthalate-3,4,5,6-d ₄		93952-12-6	PHTH-D4-005N		PHTH-D4-005S
Di-n-hexyl phthalate-3,4,5,6-d ₄		1015854-55-3	PHTH-D4-006N		PHTH-D4-006S
Dimethyl phthalate-3,4,5,6-d ₄		93951-89-4	PHTH-D4-007N		PHTH-D4-007S
Di-n-octyl phthalate-3,4,5,6-d ₄		93952-13-7	PHTH-D4-008N		PHTH-D4-008S
Di-n-pentyl phthalate-3,4,5,6-d ₄		358730-89-9	PHTH-D4-009N		PHTH-D4-009S
Di-n-propyl phthalate-3,4,5,6-d ₄		358731-29-0	PHTH-D4-010N		PHTH-D4-010S
bis(2-Ethylhexyl)phthalate-3,4,5,6-d ₄		93951-87-2	PHTH-D4-011N		PHTH-D4-011S
Sets of Deuterated Phthalates			PHTH-D4N-SET	11 x 5 mg	PHTH-D4S-SET
					In MeOH 11 x 1 mL

CPSC Phthalate

CPSC Revised Phthalate Standard

PLAS-CPSC-R1 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

ASTM Method D6042-92 Plastic Packaging Testing Standards

This method is used by both pharmaceutical companies and plastics manufacturers. The test ensures the quality of the plastic product during the manufacturing process, and as delivered to the pharmaceutical customer. Compounds are often added to the method's analyte list by pharmaceutical companies.

Calibration Mix

PLAS-CAL-001 1 x 1 mL
PLAS-CAL-001-PAK **SAVE** 5 x 1 mL
50 µg/mL each in Isopropanol 7 comps.
BHT Irganox 3114
Erucamide Slip Irganox 1010
Vitamin E Irganox 1076
Irgafos 168

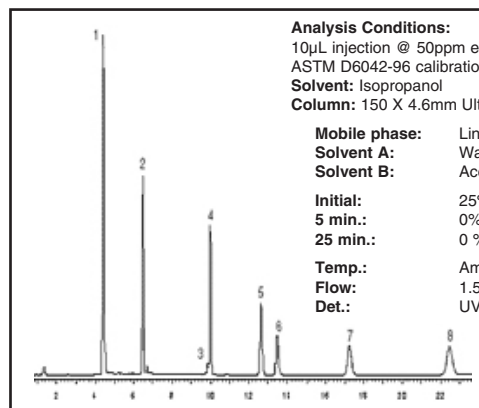
Internal Standard Mix

PLAS-IS-001 1 x 1 mL
PLAS-IS-001-PAK **SAVE** 5 x 1 mL
51.8 µg/mL in Isopropanol
Tinuvin P

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
Ethanox 703	PLAS-CAL-002-6	1 mL
Irganox 1035	PLAS-CAL-002-7	1 mL



Analysis Conditions:

10µL injection @ 50ppm each component,
ASTM D6042-96 calibration mix and IS mix
Solvent: Isopropanol
Column: 150 X 4.6mm Ultra C8, 5µm, 100Å

Mobile phase: Linear gradient
Solvent A: Water
Solvent B: Acetonitrile

Initial: 25% A 75% B
5 min.: 0% A 100% B
25 min.: 0 % A 100% B

Temp.: Ambient
Flow: 1.5mL/min.
Det.: UV @ 200nm

The figure shows the separation of the compounds on the method's analyte list, as analyzed by our HPLC specialists. The primary calibration standard mixture contains the common antioxidants and slips listed in ASTM D6042-96.

Component list: 1. Tinuvin® P 4. Irganox® 3114 7. Irganox 1076
2. BHT 5. Irganox 1010 8. Irgafos® 168
3. Erucamide 6. Vitamin E



Food chemists routinely use AccuStandard's 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 can now be more accurate and reliable with the Melamine Reference Standards Set: Melamine, Ammeline, Ammelide, Cyanuric acid, the method recommended Internal Standard, a column clean-up solution, and a Silylating Reagent.

FDA-PROP-001-SET

5 x 1 mL, 2 x 5 mL

		Cat. No.	1 mL
Melamine	1000 µg/mL in Diethylamine:Water (20:80)	FDA-PROP-001A	
Ammeline	1000 µg/mL in Diethylamine:Water (20:80)	FDA-PROP-001B	
Ammelide	1000 µg/mL in Diethylamine:Water (20:80)	FDA-PROP-001C	
Cyanuric acid	1000 µg/mL in Diethylamine:Water (20:80)	FDA-PROP-001D	

Internal Standard

FDA-PROP-001-IS

1 x 1 mL

1000 µg/mL in Pyridine

2,6-Diamino-4-chloropyrimidine

Silylating Reagent

FDA-PROP-001-DER

1 x 5 mL

At stated Vol. %

BSTFA [bis(trimethylsilyl)trifluoroacetamide] 99
TMCS 1

Column Clean-up Check

FDA-PROP-001-CHK

1 x 5 mL

At stated Vol. %

Sylon BFT 50
Pyridine 50

EFSA for Isopropylthioxanthone (ITX)

Responding to the hazard found in Italy, France, Spain, and Portugal, we have formulated Isopropylthioxanth-9-one (a photographic chemical) found in baby milk in Italy. The 2-isomer as well as the technical mixture also contains the 4-isomer.

2-Isopropylthioxanthone (ITX)

EFSA-ITX-01

1 x 1 mL

1.0 mg/mL in Isooctane

2-Isopropylthioxanth-9-one

Isopropylthioxanthone (ITX) mixed isomers

EFSA-ITX-02

1 x 1 mL

1.0 mg/mL in Isooctane

2-and 4-Isopropylthioxanth-9-one



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-methyl imidazole (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.

Compound	CAS	NEAT		SOLUTION	
		Cat. No.	Unit	Cat. No.	Unit
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	
				Quinoline (Internal Standard)	
				FAC-IS-T	1 mL
				50 µg/mL in Toluene	
				FAC-SET	6 x 1 mL





Food Analysis

Lipid Standards

Unsaturated Methyl Esters

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

99% Purity

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

Neats and Solutions are sealed under Nitrogen Blanket

* ColdPAK required to maintain integrity of product.

Saturated Methyl Esters

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

Saturated Glycerides

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

24 x 100 mg

Food Analysis

Lipids, AOCS, NHI/NIH



Unsaturated Glycerides

Compound	CAS No.	NEAT 10 mg	Compound	CAS No.	NEAT 10 mg
Myristolein C14:1 cis		UG-001N	Linolein C18:2 cis,cis	537-40-6	UG-019N *
Dimyristolein C14:1		UG-002N	Dilinolein C18:2	30606-27-0	UG-020N *
Monomyristolein C14:1	56399-71-4	UG-003N	Monolinolein C18:2	2277-28-3	UG-021N *
Palmitolein C16:1 cis	20246-55-3	UG-004N	Linolenin C18:3 cis,cis,cis	14465-68-0	UG-022N *
Dipalmitolein C16:1	113728-10-2	UG-005N	Dilinenin C18:3		UG-023N *
Monopalmitolein C16:1	37515-61-0	UG-006N	Monolinolenin C18:3	26545-75-5	UG-024N *
Petroselinin 6 C18:1 cis	3296-43-3	UG-007N	gamma-Linolenin C18:3 cis,cis,cis		UG-025N *
Dipetroselinin 6 C18:1		UG-008N	Digamma Linolenin C18:3		UG-026N *
Monopetroselinin 6 C18:1		UG-009N	Monogamma Linolenin C18:3		UG-027N *
Olein 9 C18:1 cis	122-32-7	UG-010N	Triecosenoin C20:1 cis	80380-39-8	UG-028N
Diolein 9 C18:1	25637-84-7	UG-011N	Dieicosenoin C20:1	102783-82-4	UG-029N
Monoolein 9 C18:1	111-03-5	UG-012N	Monoeicosenoin C20:1		UG-030N
Trielaidin 9 C18:1 trans	537-39-3	UG-013N	cis-11,14-Trieicosadienoin C20:2 cis,cis		UG-031N *
Dielsaidin 9 C18:1 trans	98168-52-6	UG-014N	Dieicosadienoin C20:2		UG-032N *
Monoeleaidin 9 C18:1 trans	2716-53-2	UG-015N	Monoeicosadienoin C20:2		UG-033N *
Vaccenin 11 C18:1 cis		UG-016N			UG-N-SET *
Divaccenin 11 C18:1		UG-017N			33 x 10 mg
Monovaccenin 11 C18:1		UG-018N			

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, perilla & rubberseed oils	AOCS-002N *	100 mg
Mix 3: Suitable standard for mustard seed, peanut and rapeseed oil	AOCS-003N *	100 mg
Mix 4: Suitable standard for NEATsfoot, olive and teaseed oils	AOCS-004N *	100 mg
Mix 5: Suitable standard for babassu, coconut, ouri-curi & palm kernel oils	AOCS-005N *	100 mg
Mix 6: Suitable standard for lard, beef tallow, mutton tallow and palm oil	AOCS-006N *	100 mg
AOCS Rapeseed Mix, Suitable standard for modern low erucic acid oils	AOCS-007N *	100 mg
	AOCS-SET *	7 x 100 mg

Methyl Ester (% Composition by Weight)

AOCS Reference Mix	Cat. No.	C8:0 Caprylate	C10:0 Caprate	C12:0 Laurate	C14:0 Myristate	C16:0 Palmitate	C16:1 Palmitoleate	C18:0 Stearate	C18:1 Oleate	C18:2 Linoleate	C18:3 Linolenate	C20:0 Arachidate	C20:1 Eicosenoate	C22:0 Behenate	C22:1 Erucate	C24:0 Lignocerate
RM-1 *	AOCS-001N					6.0		3.0	35.0	50.0	3.0	3.0				
RM-2 *	AOCS-002N					7.0		5.0	18.0	36.0	34.0					
RM-3 *	AOCS-003N				1.0	4.0		3.0	45.0	15.0	3.0	3.0		3.0	20.0	3.0
RM-4 *	AOCS-004N					11.0		3.0	80.0	6.0						
RM-5 *	AOCS-005N	7.0	5.0	48.0	15.0	7.0		3.0	12.0	3.0						
RM-6 *	AOCS-006N				2.0	30.0	3.0	14.0	41.0	7.0	3.0					
Rapeseed *	AOCS-007N				1.0	4.0		3.0	60.0	12.0	5.0	3.0	1.0	3.0	5.0	3.0

NHI/NIH Fatty Acid Methyl Ester Profiling Mixes

Methyl Ester (% Composition by Weight)

NHI/NIH Reference Mix	Cat. No.	C8:0 Caprylate	C10:0 Caprate	C12:0 Laurate	C14:0 Myristate	C16:0 Palmitate	C16:1 Palmitoleate	C18:0 Stearate	C18:1 Oleate	C20:0 Arachidate	C22:0 Behenate	C24:0 Lignocerate
NHI-A	NHI-001N					25.0	10.0		65.0			
NHI-B	NHI-002N					4.0	40.0		56.0			
NHI-C *	NHI-003N		1.5	3.0	6.0	12	19.4		24.9		33.2	
NHI-D	NHI-004N					11.8	23.6	6.9	13.1	44.6		
NHI-E	NHI-005N		6.3	9.1	12.0	23.3	49.2					
NHI-F *	NHI-006N					2.5	4.2		7.3		13.6	25.4
												47.0

NHI-SET * 6 x 100 mg

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

* ColdPAK required to maintain integrity of product.



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)

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)

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)

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)

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

Standards of Interest

For FAME standards refer to Biofuels in the Petrochemical section.

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

* ColdPAK required to maintain integrity of product.

Food Analysis

FAMES, Vitamin, Preservative & Antimicrobial Standards



NEATS as stated, SOLUTIONS in 1 mL

Fatty Acid Ethyl Esters

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

Vitamin Standards

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

Technical Note

Always store Standards properly, away from light sources. Each Standard is provided with an actual lot analysis and additional transfer vial and label.

Preservative and Antimicrobial Standards

Compound	Purity	CAS No.	Unit	Cat. No.
Benzoic acid	99 %	65-85-0	1 gram	AP-001N
Sodium benzoate	99 %	532-32-1	1 gram	AP-002N
Potassium nitrite	97 %	7758-09-0	1 gram	AP-003N
Sodium nitrite	99 %	7632-00-0	1 gram	AP-004N
Sodium nitrate	99 %	7631-99-4	1 gram	AP-005N
Potassium nitrate	99 %	7757-79-1	1 gram	AP-006N
Methyl paraben	99 %	99-76-3	1 gram	AP-007N
Ethyl paraben	99 %	120-47-8	1 gram	AP-008N
Butyl paraben	99 %	94-13-3	1 gram	AP-009N
Propionic acid	99 %	79-09-4	1 gram	AP-010N
Sodium propionate	97 %	137-40-6	1 gram	AP-011N
Calcium propionate	97 %	4075-81-4	1 gram	AP-012N
Sorbic acid	99 %	110-44-1	1 gram	AP-013N
Potassium sorbate	99 %	24634-61-5	1 gram	AP-014N

AP-KIT

14 x 1 gram



Cannabis Standards

AccuStandard offers standards for testing cannabinoids, terpenes, pesticide contaminants and residual solvents. Since the requirements differ by state, we have developed standards specific to state requirements. For additional information, contact our Technical Service Department.

Cannabis Terpenes

Cannabis Terpenes

SOLUTIONS at 100 µg/mL in PT Methanol, 1 mL

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

Cannabis Terpene Mix Set

CP-TER-MIX-SET

2 x 1 mL

CP-TER-MIX-01, CP-TER-MIX-02

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	L-(-)-Fenchone
alpha-Humulene	p-Cymene
alpha-Pinene	Terpinolene
alpha-Terpinene	Terpineol

Cannabinoid Standards

Each at 1000 µg/mL in PT Methanol

1 mL

Compound	CAS	Cat. No.
Cannabidiol (CBD)	13956-29-1	CP-CBD-01S
Delta-8-Tetrahydrocannabinol (THC-8)	5957-75-5	CP-8-THC-01S
Delta-9-Tetrahydrocannabinol (THC-9)	1972-08-3	CP-9-THC-01S
Delta-9-Tetrahydrocannabinolic acid A (THCA-A)	23978-85-0	CP-THCA-A-01S
Cannabigerol (CBG)	25654-31-3	CP-CBG-01S
Cannabichromene (CBC)	20675-51-8	CP-CBC-01S

Cannabinoid Mix Standard

CP-CANNA-MIX-01

1000 µg/mL each in PT Methanol

1 mL

3 comps.

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

Restrictions may apply contact us for details.





Oregon Cannabis Pesticides

The Oregon Health Association (OHA) has classified and submitted three prioritized groupings of residue cannabis pesticides:

• **Fungicides** • **Pyrethroids** • **Organophosphates**

In June of 2015, a white paper titled "Pesticide Use on Cannabis" published by the Cannabis Safety Institute originally contained 188 active compounds.

From the targeted 188 active compounds, a working group with the OHA had numerous analytical laboratories study the toxicological effects and the historical natural application of each of the compounds for crop and human ingestion. The results reduced the original number of targeted compounds to 59 pesticides. These pesticides remain on the State of Oregon list. AccuStandard, Inc. offers three individual mixes of these 59 compounds.

Oregon Cannabis Pesticide Set

CP-ORE-SET 3 x 1 mL
CP-ORE-01, CP-ORE-02, CP-ORE-03

Oregon Cannabis Pesticide Mix 1

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

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

Oregon Cannabis Pesticide Mix 2

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

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

Oregon Cannabis Pesticide Mix 3

CP-ORE-03 1 mL
100 µg/mL each in Acetonitrile 23 comps.

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

Independently prepared lots available

* ColdPAK required to maintain integrity of product.

Oregon Cannabis Residual Solvents

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	

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

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

sec-Butanol	Isobutane	Neopentane
n-Propane		

CP-ORE-RS-04 * 1 mL
1000 µg/mL in Ethanol

Ethylene oxide

Nevada Pesticide Standard

Nevada Pesticide Mix

CP-NV-PEST 1 mL
100 µg/mL each in Acetonitrile 25 comps.

Abamectin	Etoazole	Pyrethrins
Acequinocyl	Fenhexamid	Quintozene
Alar	Flonicamid	Spinetoram
Bifenazate	Fludioxonil	Spinosad
Bifenthrin	Imazalil	Spirotetramat
Captan	Imidacloprid	Thiamethoxam
Cyfluthrin	Myclobutanil	Thiophanate-methyl
Cypermethrin	Piperonyl butoxide	Trifloxystrobin
Dimethomorph		

Elemental analysis for heavy metals are available in the Inorganic section of the catalog.





Allergens

In the cosmetic industry, almost any product that contains water also contains some preservatives. The most commonly used preservatives have been linked to skin allergies and sensitivities. In addition to the preservatives used, fragrances and emulsifiers also cause allergic reactions.

Allergens

Compound	CAS No.	Conc.	Matrix	Cat. No.	1 mL
2-Acetylpyridine	1122-62-9	100 mg 100 µg/mL	NEAT MeOH	ALR-066N ALR-066S	
Alkylphenol ethoxylates:					
Nonylphenol-ethylene oxide condensate (Nonoxynol-9)	26027-38-3	100 mg 100 µg/mL	NEAT MeOH	ALR-079N ALR-079S	
Polyethylene glycol nonaphenyl ether (Triton N-101)	123359-41-1	100 mg 100 µg/mL	NEAT MeOH	ALR-078N ALR-078S	
Allylisothiocyanate	57-06-7	100 mg 1000 µg/mL	NEAT EtOH	ALR-028N ALR-028S-ET-10X	
Amyl cinnamal	122-40-7	100 mg 1000 µg/mL	NEAT AcCN	ALR-001N ALR-001S-CN-10X	
Amylcinnamyl alcohol	101-85-9	1000 µg/mL	EtOH	ALR-008S-ET-10X	
Anisyl alcohol	105-13-5	100 mg 1000 µg/mL	NEAT EtOH	ALR-014N ALR-014S-ET-10X	
Arsenic	7440-38-2	1000 µg/mL	2-5% HNO ₃	ALR-MET-01S	
Balsam of Peru	8007-00-9	100 mg 100 µg/mL	NEAT MeOH	ALR-080N ALR-080S	
Benzophenone-3 (Bp-3)	131-57-7	100 mg 100 µg/mL	NEAT AcCN	ALR-081N ALR-081S-CN	
Benzyl alcohol	100-51-6	100 mg 1000 µg/mL	NEAT EtOH	ALR-002N ALR-002S-ET-10X	
Benzyl benzoate	120-51-4	100 mg 1000 µg/mL	NEAT EtOH	ALR-019N ALR-019S-ET-10X	
Benzyl butyl phthalate	85-68-7	100 mg 100 µg/mL	NEAT MeOH	ALR-082N ALR-082S	
Benzyl cinnamate	103-41-3	100 mg 1000 µg/mL	NEAT EtOH	ALR-015N ALR-015S-ET-10X	
Benzyl cyanide	140-29-4	100 mg 1000 µg/mL	NEAT EtOH	ALR-029N ALR-029S-ET-10X	
Benzyl 2-ethylhexyl phthalate	27215-22-1	100 mg 100 µg/mL	NEAT MeOH	ALR-165N ALR-165S	
Benzyl paraben	94-18-8	100 mg 100 µg/mL	NEAT MeOH	ALR-083N ALR-083S	
Benzyl salicylate	118-58-1	100 mg 1000 µg/mL	NEAT AcCN	ALR-009N ALR-009S-CN-10X	
Bithionol	97-18-7	100 mg 100 µg/mL	NEAT MeOH	ALR-084N ALR-084S	
5-Bromo-5-nitro-1,3-dioxane (Bronidox L) (BND)	30007-47-7	100 mg 100 µg/mL	NEAT MeOH	ALR-074N ALR-074S	
2-Bromo-2-nitropropane-1,3-diol (Bronopol)	52-51-7	100 mg 100 µg/mL	NEAT MeOH	ALR-067N ALR-067S	
2-(4-tert-Butylbenzyl)propionaldehyde (Tech)	80-54-6	1000 µg/mL	AcCN	ALR-017S-CN-10X	
Butylated hydroxyanisole (BHA)	25013-16-5	100 mg 100 µg/mL	NEAT MeOH	ALR-087N ALR-087S	
Butylated hydroxytoluene (BHT & 2,6-DBPC)	128-37-0	100 mg 100 µg/mL	NEAT MeOH	ALR-088N ALR-088S	
Butylene glycol	107-88-0	100 mg 100 µg/mL	NEAT MeOH	ALR-089N ALR-089S	
Butyl-methoxydibenzoylmethane (B-MDM) Sunblock, Parsol1789	70356-09-1	100 µg/mL	MeOH	ALR-086S	
Butyl paraben	94-26-8	100 mg 100 µg/mL	NEAT MeOH	ALR-085N ALR-085S	
p-tert-Butylphenol	98-54-4	100 mg 1000 µg/mL	NEAT EtOH	ALR-030N ALR-030S-ET-10X	





Compound	CAS No.	Conc.	Matrix	Cat. No.	1 mL
Cetone Alpha (Tech)	127-51-5	1000 µg/mL	AcCN	ALR-024S-CN-10X	
Chloroacetamide	79-07-2	100 mg	NEAT	ALR-090N	
		100 µg/mL	MeOH	ALR-090S	
Chloroform	67-66-3	100 mg	NEAT	ALR-091N	
		100 µg/mL	MeOH	ALR-091S	
2-Chloropyridine	109-09-1	100 mg	NEAT	ALR-068N	
		100 µg/mL	MeOH	ALR-068S	
Chromium	7440-47-3	1000 µg/mL	2-5% HNO ₃	ALR-MET-02S	
Cinnamal	104-55-2	100 mg	NEAT	ALR-010N	
		1000 µg/mL	AcCN	ALR-010S-CN-10X	
Cinnamyl alcohol	104-54-1	100 mg	NEAT	ALR-003N	
		1000 µg/mL	EtOH	ALR-003S-ET-10X	
Citral	5392-40-5	100 mg	NEAT	ALR-004N	
		1000 µg/mL	AcCN	ALR-004S-CN-10X	
β-Citronellol	106-22-9	100 mg	NEAT	ALR-020N	
		1000 µg/mL	EtOH	ALR-020S-ET-10X	
Coal Tar (black)	8007-45-2	100 mg	NEAT	ALR-094N	
		100 µg/mL	Toluene	ALR-094S-T	
Cobalt	7440-48-4	1000 µg/mL	2-5% HNO ₃	ALR-MET-03S	
Coumarin	91-64-5	100 mg	NEAT	ALR-011N	
		1000 µg/mL	AcCN	ALR-011S-CN-10X	
2,4-Diaminoanisole	615-05-4	100 µg/mL	Pyridine	ALR-070S-R1	
2,4-Diaminophenol dihydrochloride	137-09-7	100 mg	NEAT	ALR-063N	
		100 µg/mL	MeOH	ALR-063S	
Diamyl phthalate	131-18-0	100 mg	NEAT	ALR-098N	
		100 µg/mL	MeOH	ALR-098S	
Diazolidinyl urea	78491-02-8	100 mg	NEAT	ALR-106N	
		100 µg/mL	MeOH	ALR-106S	
Dibromsalon (Halogenated salicylanilides)	87-12-7	10 mg	NEAT	ALR-107N-10MG	
		100 µg/mL	MeOH	ALR-107S	
Dicyclohexyl phthalate	84-61-7	100 mg	NEAT	ALR-099N	
		100 µg/mL	MeOH	ALR-099S	
Diethanolamine (DEA)	111-42-2	100 mg	NEAT	ALR-109N	
		100 µg/mL	MeOH	ALR-109S	
Di(2-ethylhexyl)phthalate (DEHP)	117-81-7	100 mg	NEAT	ALR-097N	
		100 µg/mL	MeOH	ALR-097S	
Diethyl maleate	141-05-9	100 mg	NEAT	ALR-033N	
		1000 µg/mL	EtOH	ALR-033S-ET-10X	
Diethyl phthalate	84-66-2	100 mg	NEAT	ALR-110N	
		100 µg/mL	MeOH	ALR-110S	
Dihexyl phthalate	84-75-3	100 mg	NEAT	ALR-100N	
		100 µg/mL	MeOH	ALR-100S	
Dihydroabietyl alcohol	26266-77-3	100 mg	NEAT	ALR-047N	
		1000 µg/mL	EtOH	ALR-047S-ET-10X	
Dihydrocoumarin	119-84-6	100 mg	NEAT	ALR-034N	
		1000 µg/mL	Acetone	ALR-034S-A-10X	
Diisodecyl phthalate (Tech)	26761-40-0	100 mg	NEAT	ALR-101N	
		100 µg/mL	MeOH	ALR-101S	
Diisononyl phthalate (Tech)	68515-48-0	100 mg	NEAT	ALR-102N	
		100 µg/mL	MeOH	ALR-102S	
Diisooctyl phthalate (Tech)	27554-26-3	100 mg	NEAT	ALR-103N	
		100 µg/mL	MeOH	ALR-103S	
Dimethyl citraconate	617-54-9	100 mg	NEAT	ALR-038N	
		1000 µg/mL	EtOH	ALR-038S-ET-10X	
Dimethyl phthalate (DMP)	131-11-3	100 mg	NEAT	ALR-111N	
		100 µg/mL	MeOH	ALR-111S	
6,10-Dimethyl-3,5,9-undecatrien-2-one (Pseudoionone)	141-10-6	100 mg	NEAT	ALR-040N	
		1000 µg/mL	Acetone	ALR-040S-A-10X	
Di-n-butyl phthalate (DBP)	84-74-2	100 mg	NEAT	ALR-104N	
		100 µg/mL	MeOH	ALR-104S	
Di-n-octyl phthalate	117-84-0	100 mg	NEAT	ALR-105N	
		100 µg/mL	MeOH	ALR-105S	
1,4-Dioxane	123-91-1	100 mg	NEAT	ALR-062N	
		100 µg/mL	MeOH	ALR-062S	
Diphenylamine	122-39-4	100 mg	NEAT	ALR-041N	
		1000 µg/mL	EtOH	ALR-041S-ET-10X	
2-Ethoxyethanol	110-80-5	100 mg	NEAT	ALR-064N	
		100 µg/mL	MeOH	ALR-064S	
2-Ethoxyethanol acetate	111-15-9	100 mg	NEAT	ALR-065N	
		100 µg/mL	MeOH	ALR-065S	
Ethyl acrylate	140-88-5	100 mg	NEAT	ALR-042N	
		1000 µg/mL	EtOH	ALR-042S-ET-10X	
Ethyl paraben	120-47-8	100 mg	NEAT	ALR-113N	
		100 µg/mL	MeOH	ALR-113S	
Ethylene diamine dihydrochloride	333-18-6	100 mg	NEAT	ALR-114N	
		100 µg/mL	MeOH	ALR-114S	
2-Ethylhexyl salicylate	118-60-5	100 µg/mL	AcCN	ALR-174S-CN	
Eugenol	97-53-0	100 mg	NEAT	ALR-005N	
		1000 µg/mL	EtOH	ALR-005S-ET-10X	

Allergens continued on next page



Allergens

Allergens

Compound	CAS No.	Conc.	Matrix	Cat. No.	1 mL
Farnesol (Mixed isomers)	4602-84-0	100 mg	NEAT	ALR-016N	
		1000 µg/mL	EtOH	ALR-016S-ET-10X	
Formaldehyde	50-00-0	100 µg/mL	Water	ALR-115S-W	
Freon #11 Trichlorofluoromethane	75-69-4	200 µg/mL	MeOH	ALR-CFC-013S-2X	
Freon #12 Dichlorodifluoromethane	75-71-8	200 µg/mL	MeOH	ALR-CFC-008S-2X	
Freon #13 Chlorotrifluoromethane	75-72-9	200 µg/mL	MeOH	ALR-CFC-007S-2X	
Freon #13b1 Bromotrifluoromethane	75-63-8	200 µg/mL	MeOH	ALR-CFC-001S-2X	
Freon #21 Dichlorofluoromethane	75-43-4	200 µg/mL	MeOH	ALR-CFC-009S-2X	
Freon #22 Chlorodifluoromethane	75-45-6	200 µg/mL	MeOH	ALR-CFC-003S-2X	
Freon #23 Trifluoromethane	75-46-7	200 µg/mL	MeOH	ALR-CFC-015S-2X	
Freon #40 Chloromethane	74-87-3	200 µg/mL	MeOH	ALR-CFC-005S-2X	
Freon #113 1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	200 µg/mL	MeOH	ALR-CFC-014S-2X	
Freon #114 1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	200 µg/mL	MeOH	ALR-CFC-010S-2X	
Freon #115 Chloropentafluoroethane	76-15-3	200 µg/mL	MeOH	ALR-CFC-006S-2X	
Freon #134a Tetrafluoroethane	811-97-2	200 µg/mL	MeOH	ALR-CFC-012S-2X	
Freon #142b 1-Chloro-1,1-difluoroethane	75-68-3	200 µg/mL	MeOH	ALR-CFC-002S-2X	
Freon #152a 1,1-Difluoroethane	75-37-6	200 µg/mL	MeOH	ALR-CFC-011S-2X	
Freon #160 Chloroethane	75-00-3	200 µg/mL	MeOH	ALR-CFC-004S-2X	
Geraniol	106-24-1	100 mg	NEAT	ALR-012N	
		1000 µg/mL	EtOH	ALR-012S-ET-10X	
trans-2-Heptenal	18829-55-5	100 mg	NEAT	ALR-044N	
		1000 µg/mL	AcCN	ALR-044S-CN-10X	
Heptyl paraben	1085-12-7	100 mg	NEAT	ALR-117N	
		100 µg/mL	MeOH	ALR-117S	
trans-2-Hexenal diethyl acetal	67746-30-9	100 mg	NEAT	ALR-045N	
		1000 µg/mL	EtOH	ALR-045S-ET-10X	
trans-2-Hexenal dimethyl acetal	18318-83-7	100 mg	NEAT	ALR-046N	
		1000 µg/mL	MeOH	ALR-046S-10X	
Hexachlorophene (HCP)	70-30-4	100 mg	NEAT	ALR-118N	
		100 µg/mL	MeOH	ALR-118S	
Hexyl cinnamaldehyde	101-86-0	1000 µg/mL	EtOH	ALR-021S-ET-10X	
Homosalate (HMS)	118-56-9	100 µg/mL	AcCN	ALR-119S-CN	
Hydroquinone monoethyl ether (4-Ethoxyphenol)	622-62-8	100 mg	NEAT	ALR-048N	
		1000 µg/mL	EtOH	ALR-048S-ET-10X	
p-Hydroxyanisole	150-76-5	100 mg	NEAT	ALR-145N	
		100 µg/mL	MeOH	ALR-145S	
4-Hydroxybenzoic acid (Paraben)	99-96-7	100 mg	NEAT	ALR-069N	
		100 µg/mL	AcCN	ALR-069S-CN	
Hydroxy-citronellal	107-75-5	100 mg	NEAT	ALR-006N	
		1000 µg/mL	AcCN	ALR-006S-CN-10X	
tris(Hydroxymethyl)nitromethane (Tris Nitro)	126-11-4	100 mg	NEAT	ALR-169N	
		100 µg/mL	MeOH	ALR-169S	
Hydroxymethylpentylcyclohexenecarboxaldehyde	31906-04-4	100 mg	NEAT	ALR-013N	
		1000 µg/mL	AcCN	ALR-013S-CN-10X	
Imidazolidinyl urea	39236-46-9	100 mg	NEAT	ALR-120N	
		100 µg/mL	MeOH	ALR-120S	
α-Ionone	127-41-3	100 mg	NEAT	ALR-171N	
		100 µg/mL	MeOH	ALR-171S	
β-Ionone	79-77-6	100 mg	NEAT	ALR-172N	
		100 µg/mL	MeOH	ALR-172S	
Isobutyl paraben	4247-02-3	100 mg	NEAT	ALR-121N	
		100 µg/mL	MeOH	ALR-121S	
Isoeugenol	97-54-1	100 mg	NEAT	ALR-007N	
		1000 µg/mL	EtOH	ALR-007S-ET-10X	
Isopropyl paraben	4191-73-5	100 mg	NEAT	ALR-122N	
		100 µg/mL	MeOH	ALR-122S	
Lanolin, anhydrous	8006-54-0	100 mg	NEAT	ALR-123N	
		100 µg/mL	Acetone	ALR-123S-A	
Lead	7439-92-1	1000 µg/mL	2-5% HNO ₃	ALR-MET-04S	
		100 mg	NEAT	ALR-022N	
d-Limonene	5989-27-5	1000 µg/mL	EtOH	ALR-022S-ET-10X	
		100 mg	NEAT	ALR-018N	
Linalool	78-70-6	1000 µg/mL	EtOH	ALR-018S-ET-10X	
		1000 µg/mL	10% HNO ₃	ALR-MET-05S	
Mercury	7439-97-6	100 mg	NEAT	ALR-128N	
Metabromsalon	2577-72-2	100 µg/mL	MeOH	ALR-128S	
		100 mg	NEAT	ALR-050N	
7-Methoxycoumarin	531-59-9	1000 µg/mL	AcCN	ALR-050S-CN-10X	
		1000 µg/mL	AcCN	ALR-051S-CN-10X	
4-(p-Methoxyphenyl)-3-butene-2-one	943-88-4	100 mg	NEAT	ALR-072N	
4-Methoxy-m-phenylenediamine-sulfate hydrate	123333-56-2	100 mg	NEAT	ALR-052N	
1-(p-Methoxyphenyl)-1-penten-3-one	104-27-8	1000 µg/mL	AcCN	ALR-052S-CN-10X	
		100 mg	NEAT	ALR-073N	
4-Methyl-benzylidene camphor (4-MBC)	36861-47-9	100 µg/mL	MeOH	ALR-073S	
		100 mg	NEAT	ALR-075N	
6-Methylcoumarin (6-MC)	92-48-8	100 µg/mL	MeOH	ALR-075S	
		100 mg	NEAT	ALR-054N	
7-Methylcoumarin	2445-83-2	1000 µg/mL	AcCN	ALR-054S-CN-10X	
		100 mg	NEAT	ALR-023N	
Methyl heptyne carbonate	111-12-6	1000 µg/mL	EtOH	ALR-023S-ET-10X	



Allergens					
Compound	CAS No.	Conc.	Matrix	Cat. No.	1 mL
5-Methyl-2,3-hexanedione (Acetyl isovaleryl)	13706-86-0	100 mg	NEAT	ALR-055N	
		1000 µg/mL	AcCN	ALR-055S-CN-10X	
Methyl methacrylate monomer	80-62-6	100 mg	NEAT	ALR-129N	
		100 µg/mL	MeOH	ALR-129S	
Methyl paraben	99-76-3	100 mg	NEAT	ALR-130N	
		100 µg/mL	MeOH	ALR-130S	
Methyl trans-2-butenate	623-43-8	100 mg	NEAT	ALR-053N	
		1000 µg/mL	MeOH	ALR-053S-10X	
Methyldibromoglutaronitrile	35691-65-7	100 mg	NEAT	ALR-132N	
		100 µg/mL	MeOH	ALR-132S	
Methylene chloride	75-09-2	100 mg	NEAT	ALR-133N	
		100 µg/mL	MeOH	ALR-133S	
Methyleugenol	93-15-2	100 mg	NEAT	ALR-061N	
		1000 µg/mL	EtOH	ALR-061S-ET-10X	
Monobenzyl phthalate (mBzP)	2528-16-7	100 mg	NEAT	ALR-134N	
		100 µg/mL	AcCN	ALR-134S-CN	
Monobutyl phthalate (mBP)	131-70-4	100 mg	NEAT	ALR-135N	
		100 µg/mL	AcCN	ALR-135S-CN	
Monocyclohexyl phthalate	7517-36-4	100 mg	NEAT	ALR-178N	
		100 µg/mL	AcCN	ALR-178S-CN	
Monoethanolamine (MEA) (2-Aminoethanol)	141-43-5	100 mg	NEAT	ALR-136N	
		100 µg/mL	MeOH	ALR-136S	
Monoethyl phthalate (mEP)	2306-33-4	100 mg	NEAT	ALR-137N	
		100 µg/mL	AcCN	ALR-137S-CN	
Monoethylhexyl phthalate (mEHP)	4376-20-9	100 mg	NEAT	ALR-138N	
		100 µg/mL	AcCN	ALR-138S-CN	
Mono-2-heptyl phthalate		100 mg	NEAT	ALR-143N	
		100 µg/mL	AcCN	ALR-143S-CN	
Monoethyl phthalate	24539-57-9	100 mg	NEAT	ALR-175N	
		100 µg/mL	AcCN	ALR-175S-CN	
Monoisobutyl phthalate	30833-53-5	100 mg	NEAT	ALR-176N	
		100 µg/mL	AcCN	ALR-176S-CN	
Monoisononyl phthalate		100 mg	NEAT	ALR-142N	
		100 µg/mL	AcCN	ALR-142S-CN	
Monoisopropyl phthalate	35118-50-4	100 mg	NEAT	ALR-179N	
		100 µg/mL	AcCN	ALR-179S-CN	
Monomethyl phthalate	4376-18-5	100 mg	NEAT	ALR-139N	
		100 µg/mL	AcCN	ALR-139S-CN	
Monooctyl phthalate	5393-19-1	100 mg	NEAT	ALR-141N	
		100 µg/mL	AcCN	ALR-141S-CN	
Mono-n-pentyl phthalate	24539-56-8	100 mg	NEAT	ALR-177N	
		100 µg/mL	AcCN	ALR-177S-CN	
Musk ambrette	83-66-9	1000 µg/mL	AcCN	ALR-056S-CN-10X	
Nickel	7440-02-0	1000 µg/mL	2-5% HNO ₃	ALR-MET-06S	
N-Phenyl-p-phenylenediamine	101-54-2	100 mg	NEAT	ALR-140N	
		100 µg/mL	MeOH	ALR-140S	
Octyl-dimethyl-PABA (OD-PABA)(Padimate O)	21245-02-3	100 mg	NEAT	ALR-146N	
		100 µg/mL	MeOH	ALR-146S	
Octyl-methoxycinnamate (OMC)	5466-77-3	100 mg	NEAT	ALR-144N	
		100 µg/mL	MeOH	ALR-144S	
4-Phenyl-3-buten-2-one	122-57-6	100 mg	NEAT	ALR-058N	
		1000 µg/mL	AcCN	ALR-058S-CN-10X	
m-Phenylenediamine (MPD)	108-45-2	100 mg	NEAT	ALR-127N	
		100 µg/mL	MeOH	ALR-127S	
p-Phenylenediamine (PPD)	106-50-3	100 mg	NEAT	ALR-147N	
		100 µg/mL	MeOH	ALR-147S	
Polyethylene glycol (PEG), appr. Molecular weight 200	25322-68-3	100 mg	NEAT	ALR-149N-MW200	
		100 µg/mL	MeOH	ALR-149S-MW200	
Polyethylene glycol (PEG), appr. Molecular weight 400	25322-68-3	100 mg	NEAT	ALR-149N-MW400	
		100 µg/mL	MeOH	ALR-149S-MW400	
Polyethylene glycol (PEG), appr. Molecular weight 600	25322-68-3	100 mg	NEAT	ALR-149N-MW600	
		100 µg/mL	MeOH	ALR-149S-MW600	
Polyethylene glycol (PEG), appr. Molecular weight 1500	25322-68-3	100 mg	NEAT	ALR-149N-MW1500	
		100 µg/mL	MeOH	ALR-149S-MW1500	
Polyethylene glycol (PEG), appr. Molecular weight 4000	25322-68-3	100 mg	NEAT	ALR-149N-MW4000	
		100 µg/mL	MeOH	ALR-149S-MW4000	
Polyvinylpyrrolidone PVP/PA Copolymer	9003-39-8	100 µg/mL	MeOH	ALR-150S	
Potassium dichromate	7778-50-9	1000 µg/mL	Water	ALR-MET-07S	
Potassium sorbate	24634-61-5	100 mg	NEAT	ALR-152N	
		100 µg/mL	MeOH	ALR-152S	
Propyl paraben	94-13-3	100 mg	NEAT	ALR-153N	
		100 µg/mL	MeOH	ALR-153S	
Propylene glycol (PG)	57-55-6	100 µg/mL	MeOH	ALR-154S	
Protocatechuic acid	99-50-3	100 mg	NEAT	ALR-155N	
		100 µg/mL	AcCN	ALR-155S-CN	
Pyrocatechol	120-80-9	100 mg	NEAT	ALR-156N	
		100 µg/mL	MeOH	ALR-156S	
Quaternium-15	51229-78-8	100 mg	NEAT	ALR-157N	
		100 µg/mL	MeOH	ALR-157S	

Allergens continued on next page



Allergens & EU Directive List

Allergens

Compound	CAS No.	Conc.	Matrix	Cat. No.	1 mL
Resorcinol	108-46-3	100 mg	NEAT	ALR-158N	
		100 µg/mL	MeOH	ALR-158S	
Salicylic acid	69-72-7	100 mg	NEAT	ALR-173N	
		100 µg/mL	Water	ALR-173S-W	
Sodium hydroxide	1310-73-2	100 mg	NEAT	ALR-159N	
		100 µg/mL	MeOH	ALR-159S	
Sodium nitrite	7632-00-0	100 mg	NEAT	ALR-160N	
		100 µg/mL	Water	ALR-160S-W	
Talc	14807-96-6	100 mg	NEAT	ALR-161N	
Tetrachlorosalicylanilide	1154-59-2	100 mg	NEAT	ALR-162N	
		100 µg/mL	MeOH	ALR-162S	
Thimerosal	54-64-8	100 mg	NEAT	ALR-163N	
		100 µg/mL	MeOH	ALR-163S	
Thiuram (Thiram) (Tetramethylthiourea disulfide)	137-26-8	100 mg	NEAT	ALR-164N	
		100 µg/mL	MeOH	ALR-164S	
Tribomosalan	87-10-5	100 mg	NEAT	ALR-167N	
		100 µg/mL	MeOH	ALR-167S	
Triethanolamine (TEA)	102-71-6	100 mg	NEAT	ALR-168N	
		100 µg/mL	MeOH	ALR-168S	
Verbena oil (Lippia citriodora Kunth)	8024-12-2	100 mg	NEAT	ALR-060N	
		1000 µg/mL	EtOH	ALR-060S-ET-10X	
Vinyl chloride	75-01-4	100 µg/mL	MeOH	ALR-170S	
Zirconium	7440-67-7	1000 µg/mL	2-5% HNO ₃	ALR-MET-08S	

EU Directive 76/768/EEC

EU Directive List of 24 Regulated Contact Allergens:

ALR-EU24-SET

24 x 1 mL

Each at 1000 µg/mL

Compound	CAS No.	Cat. No.	1 mL
Amyl cinnamal	122-40-7	ALR-001S-CN-10X	
Amylcinnamyl alcohol	101-85-9	ALR-008S-ET-10X	
Anisyl alcohol	105-13-5	ALR-014S-ET-10X	
Benzyl alcohol	100-51-6	ALR-002S-ET-10X	
Benzyl benzoate	120-51-4	ALR-019S-ET-10X	
Benzyl cinnamate	103-41-3	ALR-015S-ET-10X	
Benzyl salicylate	118-58-1	ALR-009S-CN-10X	
2-(4-tert-Butylbenzyl)propionaldehyde (technical grade)	80-54-6	ALR-017S-CN-10X	
Cetone Alpha (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-006S-CN-10X	
Hydroxymethylpentylcyclohexenecarboxaldehyde	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-R2-SET

24 x 1 mL

Each at 1000 µg/mL

Compound	CAS No.	Cat. No.	1 mL
Allylthiocyanate	57-06-7	ALR-028S-ET-10X	
Benzyl cyanide	140-29-4	ALR-029S-ET-10X	
p-tert-Butylphenol	98-54-4	ALR-030S-ET-10X	
Diethyl maleate	141-05-9	ALR-033S-ET-10X	
Dihydroabietyl alcohol	26266-77-3	ALR-047S-ET-10X	
Dihydrocoumarin	119-84-6	ALR-034S-A-10X	
Dimethyl citraconate	617-54-9	ALR-038S-ET-10X	
6,10-Dimethyl-3,5,9-undecatrien-2-one (Pseudoionone)	141-10-6	ALR-040S-A-10X	
Diphenylamine	122-39-4	ALR-041S-ET-10X	
Ethyl acrylate	140-88-5	ALR-042S-ET-10X	
trans-2-Heptenal	18829-55-5	ALR-044S-CN-10X	
trans-2-Hexenal diethyl acetal	67746-30-9	ALR-045S-ET-10X	
trans-2-Hexenal dimethyl acetal	18318-83-7	ALR-046S-10X	
Hydroquinone monoethyl ether (4-Ethoxyphenol)	622-62-8	ALR-048S-ET-10X	
7-Methoxycoumarin	531-59-9	ALR-050S-CN-10X	
4-(p-Methoxyphenyl)-3-butene-2-one	943-88-4	ALR-051S-CN-10X	
1-(p-Methoxyphenyl)-1-penten-3-one	104-27-8	ALR-052S-CN-10X	
7-Methylcoumarin	2445-83-2	ALR-054S-CN-10X	
5-Methyl-2,3-hexanedione (Acetyl isovaleryl)	13706-86-0	ALR-055S-CN-10X	
Methyl trans-2-butenate	623-43-8	ALR-053S-10X	
Methyleugenol	93-15-2	ALR-061S-ET-10X	
Musk ambrette (solution only)	83-66-9	ALR-056S-CN-10X	
4-Phenyl-3-buten-2-one	122-57-6	ALR-058S-CN-10X	
Verbena oil (Lippia citriodora Kunth)	8024-12-2	ALR-060S-ET-10X	

Technical Mixtures

When a compound has a purity identified as "Technical" or "Tech Mixture" it means that the standard is not comprised of just one main compound. These are mixtures of multiple chemicals that make up a particular product and every chemical in the mix are components that define the product. The analysis considers all compounds in the product. Aroclors, flame retardants, PBDE technical grade, halowaxes, and some allergens, plastic additives, and dyes are classified as "Technical Mixtures".

Key to Catalog Numbers

N	NEAT, 100 mg
S	Solution in Methanol
S-A	Solution in Acetone
S-CN	Solution in Acetonitrile
S-ET	Solution in Ethanol
S-T	Solution in Toluene
S-W	Solution in Water

Allergens by Type



Sun Block

ALR-SUN-SET

Each at 100 µg/mL

6 x 1 mL

Compound	CAS No.	Cat. No.	1 mL
Benzophenone-3 (Bp-3)	131-57-7	ALR-081S-CN	
Butyl-methoxydibenzoylmethane(B-MDM)	70356-09-1	ALR-086S	
Sunblock, Parsol 1789			
Homosalate (HMS)	118-56-9	ALR-119S-CN	
4-Methyl-benzylidene camphor (4-MBC)	36861-47-9	ALR-073S	
Octyl-dimethyl-PABA (OD-PABA) (Padimate O)	21245-02-3	ALR-146S	
Octyl-methoxycinnamate (OMC)	5466-77-3	ALR-144S	

Parabens

ALR-PAR-SET

Each at 100 µg/mL

11 x 1 mL

Compound	CAS No.	Cat. No.	1 mL
Benzyl paraben	94-18-8	ALR-083S	
Butyl paraben	94-26-8	ALR-085S	
Ethyl paraben	120-47-8	ALR-113S	
Heptyl paraben	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	

Phthalates

ALR-PHT-SET

Each at 100 µg/mL

17 x 1 mL

Compound	CAS No.	Cat. No.	1 mL
Benzyl butyl phthalate	85-68-7	ALR-082S	
Diamyl phthalate	131-18-0	ALR-098S	
Dicyclohexyl phthalate	84-61-7	ALR-099S	
Di(2-ethylhexyl) phthalate (DEHP)	117-81-7	ALR-097S	
Diethyl phthalate	84-66-2	ALR-110S	
Diethyl phthalate	84-75-3	ALR-100S	
Diisodecyl phthalate	26761-40-0	ALR-101S	
Diisononyl phthalate	68515-48-0	ALR-102S	
Diisooctyl phthalate	27554-26-3	ALR-103S	
Dimethyl phthalate (DMP)	131-11-3	ALR-111S	
Di-n-butyl phthalate (DBP)	84-74-2	ALR-104S	
Di-n-octyl phthalate	117-84-0	ALR-105S	
Monobenzyl phthalate (mBzP)	2528-16-7	ALR-134S-CN	
Monobutyl phthalate (mBP)	131-70-4	ALR-135S-CN	
Monoethyl phthalate (mEP)	2306-33-4	ALR-137S-CN	
Monoethylhexyl phthalate (mEHP)	4376-20-9	ALR-138S-CN	
Monomethyl phthalate	4376-18-5	ALR-139S-CN	

Chlorofluorocarbon Propellants (CFCs)

ALR-CFC-SET

Each at 200 µg/mL

15 x 1 mL

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

Metals

ALR-MET-SET

Each at 1000 µg/mL 2-5% HNO₃, except † in Water

8 x 100 mL

Compound	CAS No.	Cat. No.	100 mL
Arsenic	7440-38-2	ALR-MET-01S	
Chromium	7440-47-3	ALR-MET-02S	
Cobalt	7440-48-4	ALR-MET-03S	
Lead	7439-92-1	ALR-MET-04S	
Mercury	7439-97-6	ALR-MET-05S *	
Nickel	7440-02-0	ALR-MET-06S	
Potassium dichromate	7778-50-9	ALR-MET-07S †	
Zirconium	7440-67-7	ALR-MET-08S	

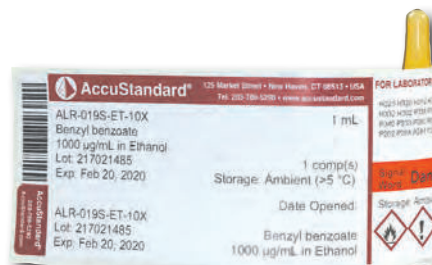
† in Water, * 10% HNO₃

Personal Care Products

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

Key to Catalog Numbers

N	NEAT, 100 mg
S	Solution in Methanol
S-A	Solution in Acetone
S-CN	Solution in Acetonitrile
S-ET	Solution in Ethanol
S-T	Solution in Toluene
S-W	Solution in Water
MET	2-5% Nitric acid



Azo dyes may pose cancer risks and have been restricted in many countries, most notably of the European Union.

Neats at 100 mg. Solutions at 100 µg/mL in MeOH, except as noted.

Individual Dyes

Compound	Synonym	CAS No.	NEAT Cat. No.	100 mg	Solution Cat. No.	1 mL
2-Amino-3-nitrophenol		603-85-0	DYE-107N		DYE-107S	
2-Amino-4-chlorophenol		95-85-2	-----		DYE-034S *	
2-Amino-5-(diethylamino)toluene monohydrochloride		2051-79-8	DYE-104N		DYE-104S	
2-Aminophenol		95-55-6	DYE-108N		DYE-108S	
Acid Red 26	<i>Ponceau Xylidine</i>	3761-53-3	-----		DYE-031S	
Acid Violet 7		4321-69-1	DYE-121N		DYE-121S	
Acid Violet 9		6252-76-2	DYE-122N		DYE-122S	
Acid Violet 19		3244-88-0	DYE-123N		DYE-123S	
Acid Violet 20			DYE-124N		DYE-124S	
Acid Violet 30			DYE-125N-5MG		DYE-125S	
Acid Violet 49		1694-09-3	DYE-120N		DYE-120S	
Basic Blue 7		2390-60-5	DYE-113N		DYE-113S	
<i>Basic Blue 26</i>	see Victoria Blue					
Basic Fuchsin		569-61-9	DYE-049N		DYE-049S	
Basic Red 2		477-73-6	DYE-114N		DYE-114S	
Basic Red 9		569-61-9	-----		DYE-030S	
Basic Violet 1		8004-87-3	DYE-027N		DYE-027S	
Basic Violet 3	Crystal Violet	548-62-9	DYE-028N		DYE-028S	
Basic Violet 14		632-99-5	-----		DYE-012S	
<i>Congo Red</i>	see Direct Red 28					
Crocein Scarlet 3b		5413-75-2	DYE-115N		DYE-115S	
<i>Crystal Violet</i>	see Basic Violet 3					
D & C Red 7		5281-04-9	DYE-060N		DYE-060S	
2,4-Diaminodiphenylamine		136-17-4	DYE-102N		-----	
2,6-Diaminopyridine		141-86-6	DYE-103N		DYE-103S	
N,N-Dimethyl-1,4-phenylenediamine		99-89-9	DYE-106N		DYE-106S	
Direct Black 38		1937-37-7	-----		DYE-013S	
Direct Blue 6		2602-46-2	-----		DYE-014S	
Direct Red 28	<i>Congo Red</i>	573-58-0			DYE-064S	
Disperse Blue 1		2475-45-8	-----		DYE-001S	
Disperse Blue 3		2475-46-9	-----		DYE-004S	
Disperse Blue 7		3179-90-6	-----		DYE-015S	
Disperse Blue 26		3860-63-7	-----		DYE-016S	
Disperse Blue 35			-----		DYE-009S	
Disperse Blue 102		12222-97-8	-----		DYE-017S	
Disperse Blue 124		61951-51-7	-----		DYE-010S	
Disperse Brown 1		23355-64-8	DYE-051N		DYE-051S	
Disperse Orange 1		2581-69-3	-----		DYE-005S	
Disperse Orange 3		730-40-5	-----		DYE-006S	
Disperse Orange 11		82-28-0	-----		DYE-002S	
Disperse Orange 37		13301-61-6	-----		DYE-011S	
Disperse Red 1		2872-52-8	-----		DYE-007S	
Disperse Red 11		2872-48-2	-----		DYE-018S	
Disperse Red 17		3179-89-3	-----		DYE-019S	
Disperse Yellow 1		119-15-3	-----		DYE-053S	
Disperse Yellow 3		2832-40-8	DYE-003N		DYE-003S	
Disperse Yellow 9		6373-73-5	-----		DYE-008S	
Eosin Y		15086-94-9	DYE-127N		DYE-127S	
Eriochrome Black A		3618-58-4	DYE-109N		DYE-109S	
FD & C Blue 1		3844-45-9	DYE-062N		DYE-062S	
FD & C Blue 2		860-22-0	DYE-063N		DYE-063S	
FD & C Red 3		16423-68-0	DYE-057N		DYE-057S	
FD & C Red 40		25956-17-6	DYE-056N		-----	
FD & C Yellow 5		1934-21-0	DYE-058N		DYE-058S	
Food Yellow 3	<i>Sunset Yellow FCF</i>	2783-94-0	DYE-024N		DYE-024S	
Metanil Yellow		587-98-4	DYE-117N		DYE-117S	
Methyl Blue		28983-56-4	DYE-128N		DYE-128S	
2,3-Naphthalenediol		92-44-4	-----		DYE-033S *	
2-Nitro-1,4-phenylenediamine		5307-14-2	DYE-110N		DYE-110S	
Orange II sodium salt		633-96-5	DYE-116N		DYE-116S	
Para Red		6410-10-2	DYE-026N		DYE-026S **	
Ponceau SX		4548-53-2	-----		DYE-112S	
<i>Ponceau Xylidine</i>	see Acid Red 26					
Rhodamine B		81-88-9	-----		DYE-118S	
Solvent Orange 7	Sudan II	3118-97-6	DYE-021N		DYE-021S	
Solvent Red 19	<i>Sudan Red 7B</i>	6368-72-5	DYE-025N		DYE-025S	
Solvent Red 23	<i>Sudan III</i>	85-86-9	DYE-022N		DYE-022S	
Solvent Red 24	<i>Sudan IV</i>	85-83-6	DYE-023N		DYE-023S	
Solvent Yellow 1		60-09-3	-----		DYE-029S	
Solvent Yellow 14	<i>Sudan I, Solvent Orange R</i>	842-07-9	DYE-020N		DYE-020S	
Sudan II	Solvent Orange 7	3118-97-6	DYE-045N		DYE-045S	
Timbasol Brown trans oxide			DYE-055N		DYE-055S	
Victoria Blue	<i>Basic Blue 26</i>	2580-56-5	DYE-111N		DYE-111S	

* in AcCN
** in THF

EU Directive 2002/61/EC Determination of Aryl Amine Breakdown Products in Azo Dyes

Individual Aryl Amine Standards

Compound	100 µg/mL in AcCN 1 mL	1000 µg/mL in AcCN 1 mL	10 µg/mL in Ethyl acetate for 10 mL 10 mL
<i>o</i> -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- <i>o</i> -toluidine	RAC-06	RAC-06-10X	RAC-06-EA-0.1X-10ML
<i>p</i> -Cresidine	RAC-07	RAC-07-10X	RAC-07-EA-0.1X-10ML
2,4-Diaminoanisole *	RAC-08	RAC-08-10X	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
<i>o</i> -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
<i>p</i> -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
<i>o</i> -Anisidine	RAC-23	RAC-23-10X	RAC-23-EA-0.1X-10ML
3-Chloro- <i>o</i> -toluidine	RAC-24	RAC-24-10X	RAC-24-EA-0.1X-10ML

RAC-R1-SET 24 x 1 mL
100 µg/mL * In the form of the Sulfate hydrate 171 µg/mL in Pyridine (100 µg/mL as the base)

RAC-R1-10X-SET 24 x 1 mL
1000 µg/mL * In the form of the Sulfate hydrate 1,710 µg/mL in Pyridine (1000 µg/mL as the base)

† Subject to oxidation

Carcinogenic Aryl Amine Mix

AE-00049-R1 1 x 1 mL
10 µg/mL in Ethyl acetate 23 comps.

AE-00049-R1-10ML 1 x 10 mL
10 µg/mL in Ethyl acetate 23 comps.

o-Aminoazotoluene
4-Aminobiphenyl
2-Amino-4-nitrotoluene
Benzidine †
4-Chloroaniline
4-Chloro-*o*-toluidine
p-Cresidine
4,4'-Diaminodiphenylmethane
2,4-Diaminotoluene
3,3'-Dichlorobenzidine †
3,3'-Dimethoxybenzidine †
3,3'-Dimethylbenzidine †
3,3'-Dimethyl-4,4'-diaminodiphenylmethane
4,4'-Methylenebis(2-chloroaniline)
2-Naphthylamine
4,4'-Oxydianiline
4,4'-Thiodianiline
o-Toluidine
2,4,5-Trimethylaniline
p-Aminoazobenzene
2-Aminobiphenyl
o-Anisidine
3-Chloro-*o*-toluidine

Internal Standards

RAC-IS 1 x 1 mL
1000 µg/mL in AcCN

RAC-IS-EA 1 x 1 mL
1000 µg/mL in Ethyl acetate

3,3',5,5'-Tetramethylbenzidine †

AE-00049-SET 2 x 1 mL
AE-00049-R1, RAC-08



EU Directive 67/548/EEC Dyes

Criterion #22 Regulated Dyes Carcinogenic

Compound	100 µg/ml in MeOH Cat. No. 1 mL
Disperse Blue 1	DYE-001S
Disperse Orange 11	DYE-002S
Disperse Yellow 3	DYE-003S
Basic Violet 14	DYE-012S
Direct Black 38	DYE-013S
Direct Blue 6	DYE-014S

Criterion #23 Regulated Dye Disperse dyes, Sensitizing

Compound	100 µg/ml in MeOH Cat. No. 1 mL
Disperse Blue 3	DYE-004S
Disperse Orange 1	DYE-005S
Disperse Orange 3	DYE-006S
Disperse Red 1	DYE-007S
Disperse Yellow 9	DYE-008S
Disperse Blue 35	DYE-009S
Disperse Blue 124	DYE-010S
Disperse Orange 37	DYE-011S
Disperse Blue 7	DYE-015S
Disperse Blue 26	DYE-016S
Disperse Blue 102	DYE-017S
Disperse Red 11	DYE-018S
Disperse Red 17	DYE-019S

EU Directive 76/768/EEC Substances contained in Hair Dyes Ban

Compound	CAS No.	NEAT 100 mg Cat. No.	100 µg/ml in MeOH 1 mL Cat. No.
2-Amino-3-nitrophenol	603-85-0	DYE-107N	DYE-107S
2-Amino-5-(diethylamino)toluene monohydrochloride	2051-79-8	DYE-104N	DYE-104S
2-Aminophenol	95-55-6	DYE-108N	DYE-108S
Basic Blue 7	2390-60-5	DYE-113N	DYE-113S
Basic Red 2	477-73-6	DYE-114N	DYE-114S
Crocein Scarlet 3b	5413-75-2	DYE-115N	DYE-115S
2,4-Diaminodiphenylamine	136-17-4	DYE-102N	-----
2,6-Diaminopyridine	141-86-6	DYE-103N	DYE-103S
N,N-Dimethyl-1,4-phenylenediamine	99-89-9	DYE-106N	DYE-106S
Eriochrome Black A	3618-58-4	DYE-109N	DYE-109S
2-Nitro-1,4-phenylenediamine	5307-14-2	DYE-110N	DYE-110S
Ponceau SX	4548-53-2	-----	DYE-112S
Victoria Blue	2580-56-5	DYE-111N	DYE-111S

PFCs, Odor and Irritant Standards

Perfluorinated Compounds (PFCs)

Per- and polyfluoroalkyl substances (PFAS) are man-made compounds and comprise a large group of fluorinated chemicals that have been produced since the 1950s. They have been used in the manufacture of stain, oil and water-resistant industrial and consumer products, and are found in products such as firefighting foams, cleaners, cosmetics, paints, adhesives and insecticides. PFAS have high thermal and chemical stability which makes them practically non-biodegradable, bio-accumulative and persistent in the environment. They are highly resistant to degradation in aquatic environments and became a high concern for the contamination of drinking water.

The two best known groups of this family of chemicals are the perfluorocarboxylic acids (PFCAs), which include perfluorooctanoic acid (PFOA), and the perfluorosulfonates (PFASs), which include perfluorooctane sulfonate (PFOS).

AccuStandard offers EPA method 537 (Determination of Selected Perfluorinated Alkyl Acids in Drinking Water). The method contains 14 PFASs, but an extended version of 24 compounds will be available soon. Please check the website for updates.



Compound	CAS No.	Conc.	Matrix	Cat. No.	1 mL
Perfluorooctanoic acid	335-67-1	100 mg	NEAT	PFOA-001N	
		100 µg/mL	MeOH	PFOA-001S	
Perfluorobutanoic acid	375-22-4	100 µg/mL	MeOH	PFOA-002S	
Perfluorodecanoic acid	335-76-2	100 µg/mL	MeOH	PFOA-003S	
Perfluorododecanoic acid	307-55-1	100 µg/mL	MeOH	PFOA-004S	
Perfluoroheptanoic acid	375-85-9	100 µg/mL	MeOH	PFOA-005S	
Perfluorohexanoic acid	307-24-4	100 µg/mL	MeOH	PFOA-006S	
Perfluorononanoic acid	375-95-1	100 µg/mL	MeOH	PFOA-007S	
Perfluoropentanoic acid	2706-90-3	100 µg/mL	MeOH	PFOA-008S	
Perfluoroundecanoic acid	2058-94-8	100 µg/mL	MeOH	PFOA-009S	
2H,2H,3H,3H-Perfluoroundecanoic acid	34598-33-9	100 µg/mL	MeOH	PFOA-010S	
Perfluorooctane sulfonic acid	1763-23-1	100 µg/mL	MeOH	PFOS-001S	
Potassium perfluorooctanesulfonate	2795-39-3	100 mg	NEAT	PFOS-002N	
		100 µg/mL	MeOH	PFOS-002S	
Scotchgard™ Pre-2002 Formulation (Tech mix)		100 µg/mL	MeOH	PFOS-SCG-001S	
Scotchgard™ Post-2002 Formulation (Tech mix)		100 µg/mL	MeOH	PFOS-SCG-002S	

Registered Trademarks
Scotchgard 3M

Odor Standards

The determination of odor in drinking water, waste water, and solids also include Japanese quantitative standards to meet the standard methods odor testing parameters. Odor Chemical Reference Materials, include both quantitative and qualitative standards.

Individual Odor Standards

Solutions are in 1 mL, except * in 10 mL

Compound	CAS No.	Conc.	Matrix	Cat. No.
Cumene	98-82-8	10 mg	NEAT	ODOR-06N
(+/-) Geosmin	16423-19-1	2 µg/mL	MeOH	ODOR-01S
Indan	496-11-7	10 mg	NEAT	ODOR-12N
Indene	95-13-6	10 mg	NEAT	ODOR-11N
2-Isobutyl-3-methoxypyrazine *	24683-00-9	1000 µg/mL	MeOH	ODOR-17S-10ML
2-Isopropyl-3-methoxypyrazine *	25773-40-4	1000 µg/mL	MeOH	ODOR-16S-10ML
cis-3-Hexenyl acetate	3681-71-8	10 mg	NEAT	ODOR-08N
cis-3-Hexen-1-ol	928-96-1	10 mg	NEAT	ODOR-09N
2-Methylbenzofuran	4265-25-2	10 mg	NEAT	ODOR-14N
2-Methylisoborneol	2371-42-8	2 µg/mL	MeOH	ODOR-02S
Methyl isobutyl ketone	108-10-1	10 mg	NEAT	ODOR-10N
Naphthalene	91-20-3	10 mg	NEAT	ODOR-13N
trans-2, cis-6-Nonadienal	557-48-2	10 mg	NEAT	ODOR-03N
Styrene	100-42-5	10 mg	NEAT	ODOR-04N
Toluene	108-88-3	10 mg	NEAT	ODOR-05N
2,4,6-Trichloroanisole *	87-40-1	1000 µg/mL	MeOH	ODOR-15S-10ML
m-Xylene	108-38-3	10 mg	NEAT	ODOR-07N

Odor Set

ODOR-STM-SET 12 x 10 mg

trans-2, cis-6-Nonadienal
Styrene
Toluene
Cumene
m-Xylene
cis-3-Hexenyl acetate
cis-3-Hexen-1-ol
Methyl isobutyl ketone
Indene
Indan
Naphthalene
2-Methylbenzofuran

Japan Drinking Water Odor Standard

ODOR-JDWOS 1 x 1 mL
100 µg/mL each in MeOH 2 comps.

(+/-) Geosmin
2-methylisoborneol

Irritant Standards

Irritants are chemicals that can cause a reversible inflammation of nasal passages, tear ducts, or skin. Chemicals that are classified as irritants would usually be classified as corrosives in a more concentrated form such as tear gas and mace.

Compound	CAS No.	Conc.	Matrix	Cat. No.
2-Chloroacetophenone	532-27-4	100 µg/mL	Hexane	IRT-001S
2'-Chloroacetophenone	2142-68-9	100 µg/mL	Hexane	IRT-002S
3'-Chloroacetophenone	99-02-5	100 µg/mL	Hexane	IRT-003S
4'-Chloroacetophenone	99-91-2	100 µg/mL	Hexane	IRT-004S
2-Methylacetophenone	577-16-2	100 µg/mL	Hexane	IRT-005S

CFCs and Refrigerants

Refrigerants - Chlorofluorohydrocarbons (CFCs)

Chlorofluorohydrocarbons (CFCs) are ozone-depleting substances that were used primarily in air-conditioning and refrigeration systems. Under the Clean Air Act, CFCs were to be phased out of production in the U.S. by January 1, 1996. In order to monitor various refrigerants that may be present in the environment, the following single and multi-component mixes are offered to help labs screen for these compounds.

Compound	CAS No.	Conc.	Solvent	Cat. No.	1 mL
Bromochlorodifluoromethane	353-59-3	0.2 mg/mL	MeOH	M-REF-X-01	
Bromotrifluoromethane (Freon #13b1)	75-63-8	0.2 mg/mL	MeOH	M-REF-01	
1-Chloro-1,1-difluoroethane (Freon #142b)	75-68-3	0.2 mg/mL	MeOH	M-REF-02	
2-Chloro-1,1,1,2-tetrafluoroethane (Freon #124)	2837-89-0	0.2 mg/mL	MeOH	M-REF-X-02	
Chlorodifluoromethane (Freon #22)	75-45-6	0.2 mg/mL	MeOH	M-REF-03	
Chloroethane (Freon #160)	75-00-3	0.2 mg/mL	MeOH	M-REF-04	
Chloromethane	74-87-3	0.2 mg/mL	MeOH	M-REF-05	
Chloropentafluoroethane	76-15-3	0.2 mg/mL	MeOH	M-REF-06	
Chlorotrifluoromethane (Freon #13)	75-72-9	0.2 mg/mL	MeOH	M-REF-07	
1,2-Dibromotetrafluoroethane	124-73-2	0.2 mg/mL	MeOH	M-REF-X-03	
1,1-Dichloro-1-fluoroethane (Freon #141B)	1717-00-6	0.2 mg/mL	MeOH	M-REF-X-04	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon #114)	76-14-2	0.2 mg/mL	MeOH	M-REF-10	
2,2-Dichloro-1,1,1-trifluoroethane (Freon #123)	306-83-2	0.2 mg/mL	MeOH	M-REF-X-05	
Dichlorodifluoromethane (Freon #12)	75-71-8	0.2 mg/mL	MeOH	M-REF-08	
Dichlorofluoromethane (Freon #21)	75-43-4	0.2 mg/mL	MeOH	M-REF-09	
1,1-Difluoroethane (Freon 152a)	75-37-6	0.2 mg/mL	MeOH	M-REF-11	
Pentafluoroethane (Freon #125)	354-33-6	0.2 mg/mL	MeOH	M-REF-X-06	
1,1,2,2-Tetrafluoroethane (Freon #134)	359-35-3	0.2 mg/mL	MeOH	M-REF-X-07	
Tetrafluoroethane	811-97-2	0.2 mg/mL	MeOH	M-REF-12	
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.2 mg/mL	MeOH	M-REF-14	
		2.0 mg/mL	MeOH	M-REF-14-10X	
Trichlorofluoromethane	75-69-4	0.2 mg/mL	MeOH	M-REF-13	
1,1,1-Trifluoroethane (Freon #143A)	420-46-2	0.2 mg/mL	MeOH	M-REF-X-08	
Trifluoromethane (Freon #23)	75-46-7	0.2 mg/mL	MeOH	M-REF-15	



CFCs & Refrigerants

Refrigerant Solutions (CFCs)

M-REF 1 x 1 mL
0.2 mg/mL each in MeOH 15 comps.

Each at 0.2 mg/mL in MeOH 1 mL

Freon #	Compound	Cat. No.
13b1	Bromotrifluoromethane	M-REF-01
142b	1-Chloro-1,1-difluoroethane	M-REF-02
22	Chlorodifluoromethane	M-REF-03
160	Chloroethane	M-REF-04
40	Chloromethane	M-REF-05
115	Chloropentafluoroethane	M-REF-06
13	Chlorotrifluoromethane	M-REF-07
12	Dichlorodifluoromethane	M-REF-08
21	Dichlorofluoromethane	M-REF-09
114	1,2-Dichloro-1,1,2,2-tetrafluoroethane	M-REF-10
152a	1,1-Difluoroethane	M-REF-11
134a	Tetrafluoroethane	M-REF-12
11	Trichlorofluoromethane	M-REF-13
113	1,1,2-Trichloro-1,2,2-trifluoroethane	M-REF-14
23	Trifluoromethane	M-REF-15

M-REF-SET 15 x 1 mL
Each at 0.2 mg/mL in MeOH

Additional Individual Refrigerant Solutions (CFCs)

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

Each at 0.2 mg/mL in MeOH 1 mL

Freon #	Compound	Cat. No.
12B1	Bromochlorodifluoromethane	M-REF-X-01
124	2-Chloro-1,1,1,2-tetrafluoroethane	M-REF-X-02
114B2	1,2-Dibromotetrafluoroethane	M-REF-X-03
141b	1,1-Dichloro-1-fluoroethane	M-REF-X-04
123	2,2-Dichloro-1,1,1-trifluoroethane	M-REF-X-05
125	Pentafluoroethane	M-REF-X-06
134	1,1,2,2-Tetrafluoroethane	M-REF-X-07
143a	1,1,1-Trifluoroethane	M-REF-X-08
113a	1,1,1-Trichlorotrifluoroethane (Freon 113a)	M-REF-X-09

M-REF-X-R1-SET 9 x 1 mL
Each at 0.2 mg/mL in MeOH



Qualitative Analysis Kits

Alcohols

C₁-C₅ Alcohols

PS-111C-R1-SET

14 ampules

NEATs at 1 mL each.

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

nC₆-C₂₂ Alcohols

PS-121C-R1-SET

14 ampules

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

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

C₆-C₈ Alcohols

PS-131C-R1-SET

14 ampules

NEATs at 1 mL each.

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

Food Additives

Antioxidants

PS-920CX-R1-SET

15 vials

NEATs at 10 mg each.

BHA (2 and 3-*tert*-Butyl-4-methoxy phenol)
BHT (2,6-*di-tert*-Butyl-4-methyl phenol)
4-Hydroxymethyl-2,6-*di-tert*-butyl phenol
THBP (2,4,5-Trihydroxybutyrophenone)
Ethoxyquin (1,2-Dihydro-6-ethoxy-
2,2,4-trimethyl quinoline)
tert-Butyl hydroquinone
DLTDP (Dilaurylthiodipropionate)
Thiodipropionic acid
Propyl gallate
Ascorbyl palmitate
Ascorbic acid
Erythorbic acid (*iso*-Ascorbic acid)
Tocopherols (mixed)
Glycine
Lecithin

Capillary Column Probe Solutions (also Grob Mixes)

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

Non-Polar Columns

Test Mix

PS-CP-01-1ML

1 mL

At the stated conc. (mg/mL) in
CH₂Cl₂

12 comps.

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

Contains interactive and
labile components.

Refrigerate when not in use.

Alkane C₈-C₁₂ Mixture

PS-CP-02-1ML

1 mL

0.5 mg/mL each in *n*-Hexane

5 comps.

<i>n</i> -Octane	<i>n</i> -Undecane
<i>n</i> -Nonane	<i>n</i> -Dodecane
<i>n</i> -Decane	

Alkane C₁₃-C₂₀ Mixture

PS-CP-03-1ML

1 mL

0.5 mg/mL each in *n*-Hexane

8 comps.

n-Tridecane
n-Tetradecane
n-Pentadecane
n-Hexadecane
n-Heptadecane
n-Octadecane
n-Nonadecane
n-Eicosane

Alkane C₂₂-C₃₂

Even Number Mixture

PS-CP-04-1ML

1 mL

0.5 mg/mL each in *n*-Hexane

6 comps.

<i>n</i> -Docosane	<i>n</i> -Octacosane
<i>n</i> -Tetracosane	<i>n</i> -Tricosane
<i>n</i> -Hexacosane	<i>n</i> -Dotriacontane

Alkane C₃₄-C₄₄

Even Number Mixture

PS-CP-05A-1ML

1 mL

0.5 mg/mL each in *n*-Hexane

4 comps.

n-Tetratriacontane
n-Hexatriacontane
n-Octatriacontane
n-Tetracontane

Alkane C₈-C₄₀ Mixture

PS-CP-06A-1ML

1 mL

0.5 mg/mL each in *n*-Hexane

23 comps.

<i>n</i> -Octane	<i>n</i> -Eicosane
<i>n</i> -Nonane	<i>n</i> -Docosane
<i>n</i> -Decane	<i>n</i> -Tetracosane
<i>n</i> -Undecane	<i>n</i> -Hexacosane
<i>n</i> -Dodecane	<i>n</i> -Octacosane
<i>n</i> -Tridecane	<i>n</i> -Triacontane
<i>n</i> -Tetradecane	<i>n</i> -Dotriacontane
<i>n</i> -Pentadecane	<i>n</i> -Tetratriacontane
<i>n</i> -Hexadecane	<i>n</i> -Hexatriacontane
<i>n</i> -Heptadecane	<i>n</i> -Octatriacontane
<i>n</i> -Octadecane	<i>n</i> -Tetracontane
<i>n</i> -Nonadecane	



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New Products and Technical Information including:
Certificate of Analysis (COAs) and Safety Data Sheets (SDS)



Hydrocarbons

Alkanes nC_6 - nC_{19}

PS-211C-R1-SET

14 ampules

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

<i>n</i> -Hexane	NEAT
<i>n</i> -Heptane	NEAT
<i>n</i> -Octane	NEAT
<i>n</i> -Nonane	NEAT
<i>n</i> -Decane	NEAT
<i>n</i> -Undecane	NEAT
<i>n</i> -Dodecane	NEAT
<i>n</i> -Tridecane	NEAT
<i>n</i> -Tetradecane	NEAT
<i>n</i> -Pentadecane	NEAT
<i>n</i> -Hexadecane	10%
<i>n</i> -Heptadecane	10%
<i>n</i> -Octadecane	10%
<i>n</i> -Nonadecane	10%

Alkanes nC_{19} - nC_{40}

PS-261C-R1-SET

14 ampules

At the stated Wt.% in Ethylbenzene, 1 mL each.

<i>n</i> -Nonadecane	10%
<i>n</i> -Eicosane	10%
<i>n</i> -Heneicosane	10%
<i>n</i> -Docosane	10%
<i>n</i> -Tricosane	10%
<i>n</i> -Tetracosane	10%
<i>n</i> -Pentacosane	10%
<i>n</i> -Hexacosane	10%
<i>n</i> -Octacosane	10%
<i>n</i> -Triacontane	1%
<i>n</i> -Dotriacontane	1%
<i>n</i> -Hexatriacontane	1%
<i>n</i> -Octatriacontane	1%
<i>n</i> -Tetracontane	1%

Fatty Acids

Fatty Acids C_3 - C_{18}

PS-651C-R1-SET

14 vials

NEAT at the stated quantities

Propionic acid	1 mL
Butyric acid	1 mL
Valeric acid	1 mL
Caproic acid	1 mL
Heptanoic acid	1 mL
Caprylic acid	1 mL
Pelargonic acid	1 mL
Capric acid	1 mL
<i>n</i> -Hendecanoic acid	1 mL
10-Hendecenoic acid	10 mg
Lauric acid	10 mg
Myristic acid	10 mg
Palmitic acid	10 mg
Stearic acid	10 mg

PCBs and Pesticides

PS-590D-R1-SET

15 ampules

At 100 µg/mL in MeOH, 1 mL each.

Aroclor 1016
Aroclor 1221
Aroclor 1232
Aroclor 1242
Aroclor 1248
Aroclor 1254
Aroclor 1260
p,p-DDT
p,p'-DDE
p,p'-TDE
Heptachlor
Heptachlor epoxide (Isomer B)
Aldrin
Dieldrin
Lindane

Capillary Column Probe Solutions (also Grob Mixes)

The PS-CP-01 mixture provides a more complete capillary column test because a wider variety of organic compounds is included. Test mixture PS-CP-01 contains interactive and labile components. Refrigerate when not in use.

Non-Polar Columns Test Mix

PS-CP-01-1ML

1 mL

At the stated conc. (mg/mL) in CH_2Cl_2
12 comps.

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

Sulfur Compounds

Calibration Mixture

PS-71C

1 mL vial

NEAT at the stated Wt.% listed
Mercaptan Mixture PS-71C

Ethyl mercaptan	13.4
<i>n</i> -Propyl mercaptan	22.4
isobutyl mercaptan	28.6
<i>n</i> -Butyl mercaptan	35.6



Environmental Protection Agency (EPA) Methods

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Custom Formulations

- ✓ Fast Turnaround
- ✓ 30-Plus Years Custom Formulation Experience
- ✓ Custom Standards are a cost and time saving alternative

Custom QC options

1. Gravimetric/Volumetric Certification:

Each compound is measured gravimetrically and QC verified instrumentally (where applicable). Every component in the Standard will be within +/- 0.5% of the requested value unless otherwise stated on the Certificate of Analysis. The solutions are diluted to volume using Class A glassware. A Certificate of Analysis accompanies each Standard and documents the gravimetric values used.

2. Full Quantitative Certification:

This QA/QC method includes extended GC, GC/MS or LC analysis using both internal calibration standards plus statistical analysis.



Custom Quotation Requests

Custom formulations can be requested by contacting
Technical Service: techservice@accustandard.com or
using our website AccuStandard.com.

See back of the catalog for detailed information

Analytes in EPA Methods



Alphabetical List of Individual Standards for EPA Methods

AccuStandard has compiled an easy to use alphabetical list of all the popular single component solutions available for EPA methods, alphabetized by Chemical Name. Additionally, the CAS number index in the back of the catalog can easily be used to find a component with multiple synonyms.

For a complete listing by product types see

- PCB Congeners (pages 2-7)
- PBDE Congeners (pages 28-30)

- Pesticides (pages 50-66)
- Appendix IX (pages 198-199)

If you would like a different solvent or concentration than is listed, contact Technical Service.

Solvent Key for Individual Solutions

M Methanol D Methylene chloride H Hexane W Water
A Acetone CN Acetonitrile MT *tert*-Butyl methyl ether



Analytes in EPA Methods

Analytes in EPA Methods

Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL
Acenaphthene	100	M	APP-9-001		4-Aminobiphenyl	100	D	APP-9-011	
83-32-9	1,000	M	APP-9-001-10X		Aminocarb	100	CN	M-632-01	
Acenaphthene-d ₁₀	500	M	M-548.1-IS		2032-59-9	100	M	P-062S	
15067-26-2					2-Amino-4,6-dinitrotoluene	100	M:CN	M-8330-13-0.1X	
Acenaphthylene	100	M	APP-9-002		35572-78-2	1,000	M:CN	M-8330-13	
208-96-8	1,000	M	APP-9-002-10X		4-Amino-2,6-dinitrotoluene	100	M:CN	M-8330-14-0.1X	
Acephate	100	A	P-200S-A		19406-51-0	1,000	M:CN	M-8330-14	
30560-19-1	1,000	A	P-200S-A-10X		4-Aminopyridine	100	M	P-407S	
Acetaldehyde	1,000	W	M-8315-01		504-24-5				
75-07-0	1,000	M	M-554-01 *		Anilazine	100	H:A	P-287S-H	
Acetaldehyde-DNPH	100	CN	M-8315-R-DNPH-01		101-05-3	80:20			
1019-57-4	1,000	M:CN	M-554-DNPH-01		Aniline	100	M	APP-9-012	
Acetochlor	100	M	P-465S		62-53-3	1,000	M	APP-9-012-10X	
34256-82-1					Aniline-d ₅	200	D	M-625-01	
Acetone	100	M	APP-9-003 *		4165-61-1	2,000	D	M-625-01-10X	
67-64	10,000	W	M-8015B/5031-01		Anthracene	100	M	APP-9-013	
Acetone-DNPH	100	CN	M-8315-R2-DNPH-02		120-12-7	1,000	M	APP-9-013-10X	
1567-89-1					Anthracene-d ₁₀	200	D	M-625-02	
Acetonitrile	100	M	APP-9-005		1719-06-8				
75-05-8	1,000	M	APP-9-005-10X		Aramite	100	M	P-132S	
Acetophenone	100	D	APP-9-004		140-57-8				
98-86-2	2000	D	APP-9-004-20X		Asulam	100	M	P-276S	
2-Acetylaminofluorene	100	D	APP-9-006		3337-71-1				
53-96-3					Atrazine	100	M	P-005S	
Acifluorfen	100	M	P-245S		1912-24-9	1,000	M	P-005S-10X	
50594-66-6	1,000	M	P-245S-10X		Atrazine desethyl	100	M	P-343S	
Acifluorfen methyl ester	100	M	P-246S		6190-65-4				
50594-67-7	1,000	M	P-246S-10X		Atrazine-desisopropyl	100	M	P-345S	
Acrolein	100	M:W	APP-9-007 *		1007-28-9				
107-02-8	1,000	M:W	APP-9-007-10X *		Azamethiphos	100	M	P-352S	
Acrolein-DNPH	100	CN	M-8315-R-DNPH-03		35575-96-3				
888-54-0	1,000	CN	M-8315-R-DNPH-03-10X		Azinphos-ethyl	100	M	P-201S	
Acrylamide	1,000	M	M-8032		2642-71-9	1,000	H	M-8141A-1-01	
79-06-1					Azinphos-methyl	100	M	P-007S	
Acrylonitrile	100	M	APP-9-008		86-50-0	1,000	H	M-8140-01	
107-13-1	1,000	M	APP-9-008-10X		Azobenzene	2,000	D	Z-014B-1	
Alachlor	100	M	P-102S		103-33-3				
15972-60-8	1,000	M	P-102S-10X		Barbamate (Barban)	100	M	P-202S	
Alanap	100	M	P-274S		101-27-9	100	CN	M-632-02	
132-66-1					Baycarb	100	M	P-347S	
Aldicarb	100	M	P-001S		3766-81-2				
116-06-3	100	CN	M-531-06		Baygon	100	M	P-009S	
Aldicarb sulfone	100	CN	M-531-02		114-26-1	100	CN	M-531-07	
1646-88-4	100	M	M-8318-02		Benazolin	100	M	P-397S	
Aldicarb sulfoxide	100	M	P-131S		3813-05-6				
1646-87-3	100	CN	M-531-01		Bendiocarb	100	M	P-203S	
Aldrin	100	M	P-002S		22781-23-3	100	CN	M-639	
309-00-2	1,000	M	P-002S-10X		Benfluralin	100	M	P-237S	
Allethrin	100	M	P-267S		1861-40-1				
584-79-2					Benfuracarb	100	M	P-454S	
Allyl alcohol	10,000	W	M-8015B/5031-05		82560-54-1	1000	M	P-454S-10X	
107-18-6					Benomyl	100	CN	P-104S-CN *	
Allyl chloride	100	M	APP-9-010		17804-35-2				
107-05-1	2000	M	APP-9-010-20X		Bensulfuron-methyl	100	M	P-597S	
Ametryn	100	M	P-003S		83055-99-6				
834-12-8	1,000	M	P-003S-10X						

Analytes in EPA Methods continued on next page



Analytes in EPA Methods

Analytes in EPA Methods

Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL
Bensulide 741-58-2	100 100	CN M	M-636 P-204S		4-Bromochlorobenzene 106-39-8	2,000	M	M-8020-SS-1	
Bentazon 25057-89-0	100 1000	A A	P-177S-A P-177S-A-10X		Bromochlorodifluoromethane 353-59-3	200	M	M-REF-X-01	
Bentazon methyl 61592-45-8	100	M	P-241S		Bromochloromethane 74-97-5	200 2,000	M M	M-502-03 M-502-03-10X	
Benz[a]anthracene 56-55-3	100 1,000	M M	APP-9-016 APP-9-016-10X		2-Bromo-1-chloropropane 3017-95-6	200 20,000	M M	M-624-SS-04 M-001R-3	
Benz[a]anthracene-d₁₂ 1718-53-2	200 2,000	D D	M-625-03 M-625-03-10X		Bromodichloroacetic acid 71133-14-7	40	MT	M-552.2A-02	
Benzaldehyde-DNPH 1157-84-2	100	CN	M-8315-R-DNPH-04		Bromodichloromethane 75-27-4	200 2,000	M M	M-502-04 M-502-04-10X	
Benzene 71-43-2	200 2,000	M M	M-502-01 M-502-01-10X		4-Bromo-3,5-dimethylphenyl-N-methylcarbamate 672-99-1	100	CN	M-531-IS	
Benzene-d₆ 1076-43-3	200 2,000	M M	M-624-SS-01 M-624-SS-01-10X		p-Bromofluorobenzene 460-00-4	100 200	A M	M-551.1-IS M-624-SS-03	
Benzidine † 92-87-5	50 2000	D D	M-625C-1 M-625C-1-40X		Bromoforn 75-25-2	200 2,000	M M	M-502-05 M-502-05-10X	
Benz[a]pyrene 50-32-8	100 500	M CN	APP-9-020 M-8310-FL-05		Bromomethane 74-83-9	200 2,000	M M	M-502-06 M-502-06-10X	
Benzo[b]fluoranthene 205-99-2	100 1,000	M M	APP-9-017 APP-9-017-10X		1-Bromo-2-nitrobenzene 577-19-5	1,000	A	M-8081-IS-DC	
Benzo[g,h,i]perylene 191-24-2	100 1,000	D D	APP-9-019 APP-9-019-10X		4-Bromophenyl phenyl ether 101-55-3	100	M	APP-9-033	
Benzo[k]fluoranthene 207-08-9	100 500	M CN	APP-9-018 M-8310-FL-08		Bromophos-ethyl 4824-78-6	100 1,000	M M	P-372S P-372S-10X	
Benzoic acid 65-85-0	2,000	D	Z-014D-1		2-Bromopropanoic acid 598-72-1	1,000	MT	M-552.1-SS	
Benzyl alcohol 100-51-6	100 5000	M M	APP-9-021 APP-9-021-50X		Bromotrifluoromethane 75-63-8 (Freon #13b1)	200	M	M-REF-01	
Benzyl benzoate 120-51-4	5,000	H	M-8061-IS		Bueno 2163-80-6	100	M	P-279S	
Benzyl butyl phthalate 85-68-7	100	M	APP-9-034		Butachlor 23184-66-9	100 1,000	M M	P-191S P-191S-10X	
Benzyl chloride 100-44-7	200	M	M-8010-01		1,3-Butadiene 106-99-0	200 2,000	M M	S-406A S-406A-10X	
α-BHC 319-84-6	100 1,000	M M	P-010S P-010S-10X		Butanal 123-72-8	1,000	M	M-554-02 *	
β-BHC 319-85-7	100 1,000	M M	P-011S P-011S-10X		Butanal-DNPH 1527-98-6	100 1,000	CN M:CN	M-8315-R-DNPH-05 M-554-DNPH-02	
δ-BHC 319-86-8	100 1,000	M M	P-012S P-012S-10X		1-Butanol 71-36-3	10,000	W	M-8015B/5031-06	
BHC Tech 608-73-1	100	M	P-081S		t-Butanol 75-65-0	2,000 10,000	M W	S-410 M-8015B/5031-07	
Bifenox 42576-02-3	100	M	P-257S		Butylate 2008-41-5	100 1,000	M M	P-088S P-088S-10X	
Bifenthrin 82657-04-3	100 1000	M M	P-445S P-445S-10X		n-Butylbenzene 104-51-8	200 2,000	M M	M-502-07 M-502-07-10X	
Bitertanol 55179-31-2	100	M	P-351S		sec-Butylbenzene 135-98-8	200 2,000	M M	M-502-08 M-502-08-10X	
Bloc 60168-88-9	100	M	P-086S		tert-Butylbenzene 98-06-6	200 2,000	M M	M-502-09 M-502-09-10X	
Bolstar 35400-43-2	100 1,000	M H	P-108S M-8140-02		Captafol 2425-06-1	100	M	P-254S	
Botran 99-30-9	100	M	P-013S		Captan 133-06-2	100	M	P-182S *	
Bromacil 314-40-9	100	M	P-181S		Carbaryl 63-25-2	100 1,000	M M	P-083S P-083S-10X	
Brominal 1689-84-5	100	M	P-256S		Carbazole 86-74-8	1,000	M	M-634-IS	
Bromoacetic acid 79-08-3	40 1,000	MT MT	M-552.2A-07 M-552A-1		Carbendazim 10605-21-7	100 100	CN M	M-631 P-278S	
4-Bromoanisole 55179-31-2	50	M	BAN-03		Carbofuran 1563-66-2	100 100	CN M	M-531-08 P-106S	
Bromobenzene 108-86-1	200 2,000	M M	M-502-02 M-502-02-10X		Carbon disulfide 75-15-0	100 2000	M M	APP-9-035 APP-9-035-20X	
2-Bromobiphenyl 2052-07-5	1,000	A	M-8081-SS-X		Carbon tetrachloride 56-23-5	200 2,000	M M	M-502-10 M-502-10-10X	
Bromochloroacetic acid 5589-96-8	40 1,000	MT MT	M-552.2A-01 M-552A-R-02		Carbophenothion 786-19-6	100 1,000	M H	P-095S M-8141A-1-02	
Bromochloroacetonitrile 83463-62-1	5,000	A	M-551B-1		Carbosulfan 55285-14-8	100	M	P-446S	
2-Bromochlorobenzene 694-80-4	200	M	M-624-SS-12		Carboxin 5234-68-4	100	M	P-216S	

† Subject to oxidation

* ColdPAK required to maintain integrity of product.

Analytes in EPA Methods



Solvent Key for Individual Solutions

M Methanol D Methylene chloride H Hexane W Water
A Acetone CN Acetonitrile MT *tert*-Butyl methyl ether

Analytes in EPA Methods

Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL
Chloral hydrate 302-17-0	5,000 1,000	A M	M-551B-2 M-E-1179-M *		4-Chlorophenyl phenyl ether 7005-72-3	100	M	APP-9-047	
Chloramben 133-90-4	100	M	P-243S		Chloropicrin 76-06-2	5,000 100	A M	M-551B-3 P-398S	
Chloramben methyl ester 7286-84-2	100	M	P-272S		Chloroprene 126-99-8	100 1,000	M M	APP-9-048-R1 APP-9-048-R1-10X	
Chlorbenside 103-17-3	100 1,000	M M	P-107S P-107S-10X		3-Chloro-1,2-propanediol 96-24-2	100	M	P-408S	
α-Chlordane 5103-71-9	100	M	P-134S		Chloropropylate 5836-10-2	100	M	P-213S	
Chlordane 12789-03-6	100 1,000	M M	P-134S-H P-017S		2-Chloro-1,1,1,2-tetrafluoroethane 2837-89-0 (Freon #124)	200	M	M-REF-X-02	
γ-Chlordane 5103-74-2	100 1,000	M M	P-135S P-135S-10X		Chlorothalonil 1897-45-6	100 1,000	M M	P-222S P-222S-10X	
Chlordene 3734-48-3	100	M	P-136S		2-Chlorotoluene 95-49-8	200 2,000	M M	M-502-15 M-502-15-10X	
Chlorfenvinphos 470-90-6	100 1,000	M H	P-139S M-8141A-1-03		4-Chlorotoluene 106-43-4	200 2,000	M M	M-502-16 M-502-16-10X	
Chlorflurecol-methyl ester 2536-31-4	100 1000	M M	P-401S P-401S-10X		Chlorotrifluoromethane 75-72-9 (Freon #13)	200	M	M-REF-07	
Chlorimuron-ethyl 90982-32-4	100	CN	P-284S-CN		Chlorpropham 101-21-3	100 100	CN M	M-632-05 P-221S	
bis(2-Chloro-1-methylethyl)ether 108-60-1	100	D	APP-9-028		Chlorpyrifos 2921-88-2	1,000	H	M-8140-03	
Chloroacetic acid 79-11-8	60 1,000	MT MT	M-552.2A-08 M-552A-2		Chlorpyrifos-methyl 5598-13-0	100	M	P-223S	
p-Chloroaniline 106-47-8	100	M	APP-9-038		Chlorsulfuron 64902-72-3	100	CN	P-262S-CN	
Chlorobenzene 108-90-7	200 2,000	M M	M-502-11 M-502-11-10X		Chrysene 218-01-9	100 500	M CN	APP-9-049 M-8310-FL-09	
Chlorobenzilate 510-15-6	100 1,000	CN CN	P-133S-CN P-133S-CN-10X		Chrysene-d ₁₂ 1719-03-5	2,500 4,000	T D	M-680B Z-014J-2	
Chlorodibromoacetic acid 5278-95-5	100	MT	M-552.2A-03		Clethodim 99129-21-2	100 1,000	CN CN	P-602S-CN * P-602S-CN-10X *	
1-Chloro-1,1-difluoroethane 75-68-3 (Freon #142b)	200	M	M-REF-02		Clopyralid methyl ester 1532-24-7	100	M	P-488S	
Chlorodifluoromethane 75-45-6 (Freon #22)	200	M	M-REF-03		Coumaphos 56-72-4	100 1,000	M H	P-019S M-8140-04	
Chloroethane 75-00-3 (Freon #160)	200 2,000	M M	M-502-12 M-502-12-10X		4-CPA 122-88-3	100	M	P-373S	
bis(2-Chloroethoxy)methane 111-91-1	100 1,000	D M	APP-9-026 APP-9-026-M-10X		m-Cresol 108-39-4	100 1,000	D D	APP-9-050 APP-9-050-10X	
bis(2-Chloroethyl)ether 111-44-4	100 4000	M M	APP-9-027 APP-9-027-40X		o-Cresol 95-48-7	100 2,000	D D	APP-9-051 APP-9-051-20X	
2-Chloroethylvinyl ether 110-75-8	200 2,000	M M	M-601C * M-601C-10X *		p-Cresol 106-44-5	100 2000	D D	APP-9-052 APP-9-052-20X	
1-Chloro-2-fluorobenzene 348-51-6	2,000	M	S-163		Crotonaldehyde 123-73-9	1,000	M	M-554-03 *	
1-Chloro-4-fluorobenzene 352-33-0	200	M	M-624-SS-13		Crotonaldehyde-DNPH 1527-96-4	100 1,000	CN M:CN	M-8315-R-DNPH-06 M-554-DNPH-03	
Chloroform 67-66-3	200 2,000	M M	M-502-13 M-502-13-10X		Cruformate 299-86-5	100	M	P-292S	
1-Chlorohexane 544-10-5	200 2,000	M M	M-8010R-1-04 M-8010R-1-04-10X		Cyanazine 21725-46-2	100 100	CN M	M-629 P-175S	
Chloromethane 74-87-3	200 2,000	M M	M-502-14 M-502-14-10X		Cycloate 1134-23-2	100	M	P-248S	
bis(Chloromethyl)ether 542-88-1	100 2,000	H H	S-006 S-006-20X		Cyclohexanone 108-94-1	1,000	M	M-554-04 *	
4-Chloro-3-methylphenol 59-50-7	100	M	APP-9-041		Cyclohexanone-DNPH 1589-62-4	100 1000	CN M:CN	M-8315-R-DNPH-07 M-554-DNPH-04	
2-Chloronaphthalene 91-58-7	100 2000	M H	APP-9-045 M-8120-01		Cypermethrin 52315-07-8	100 1,000	M M	P-225S * P-225S-10X *	
4-Chloro-3-nitrobenzotrifluoride 121-17-5	1,000	A	M-8081-SS-DC		Cyprazine 22936-86-3	100 100	M H	P-420S P-420S-H	
Chloropentafluoroethane 76-15-3	200	M	M-REF-06		Cyromazine 66215-27-8	100	M	P-296S	
2-Chlorophenol 95-57-8	100 2000	M D	APP-9-046 APP-9-046-D-20X		2,4-D 94-75-7	100 200	M M	P-020S M-8150S-A-01	
2-Chlorophenol-d ₄ 93951-73-6	200	D	M-625-20		2,6-D acid 575-90-6	100 100	M CN	P-690S P-690S-CN	

Analytes in EPA Methods continued on next page



Analytes in EPA Methods

Analytes in EPA Methods

Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL
2,4-D butoxyethyl ester 1929-73-3	10	mg	P-438N		2,4-Diamino-6-nitrotoluene 6629-29-4	100	CN	M-8330-ADD-12	
2,4-D ethyl ester 533-23-3	100	M	P-636S		Diazinon 333-41-5	100	M	P-033S	
2,4-D ethylhexyl ester 1928-43-4	100	H	P-439S-H		Dibenz[a,h]anthracene 53-70-3	1,000	H	M-622-06	
2,4-D methyl ester 1928-38-7	100	M	P-021S		Dibenzofuran 132-64-9	100	M	APP-9-058	
Dacthal 1861-32-1	200	H	M-8150-01		Dibromoacetic acid 631-64-1	500	CN	M-8310-FL-10	
Dalapon acid 75-99-0	100	M	P-196S		Dibromofuran 132-64-9	100	M	APP-9-059	
Dalapon methyl ester 17640-02-7	20	MT	M-552.2A-04		Dibromomethane 74-95-3	20	MT	M-552.2A-05	
Danitrol 39515-41-8	200	M	M-8150S-A-05 *		Dibromomethane 74-95-3	1,000	MT	M-552A-5	
Dasanit 115-90-2	200	M	M-552.1-01		Dibromomethane 74-95-3	5,000	A	M-551B-4	
Dazomet 533-74-4	200	M	M-8150-05		Dibromomethane 74-95-3	200	D	M-625-05	
2,4-D-PFB 100	200	H	M-8150-05		Dibromomethane 74-95-3	2,000	D	M-625-05-10X	
2,4-DB acid 94-82-6	100	M	P-263S		Dibromomethane 74-95-3	200	M	M-502-17	
2,4-DB methyl ester 18625-12-2	1,000	M	P-263S-10X		Dibromomethane 74-95-3	2,000	M	M-502-17-10X	
DCPA diacid 2136-79-0	100	M	P-235S		Dibromomethane 74-95-3	200	M	M-502-18	
p,p'-DDA 83-05-6	100	H:A	P-235S-H-10X		Dibromomethane 74-95-3	2,000	M	M-502-18-10X	
o,p'-DDD 53-19-0	25	A	M-1659-MS		Dibromomethane 74-95-3	200	M	M-502-19	
p,p'-DDD 72-54-8	100	M	P-465S		Dibromomethane 74-95-3	2,000	M	M-502-19-10X	
o,p'-DDE 3424-82-6	100	MT	M-8150-02-PFB		Dibromomethane 74-95-3	200	M	M-8260-SS-2	
p,p'-DDE 72-55-9	200	M	P-141S		Dibromomethane 74-95-3	2,000	M	M-8260-SS-2-10X	
4,4'-DDMU 1022-22-6	200	M	M-8150S-A-02		Dibromomethane 74-95-3	200	M	M-502-20	
o,p'-DDT 789-02-6	200	M	P-228S		Dibromomethane 74-95-3	2,000	M	M-502-20-10X	
p,p'-DDT 50-29-3	200	H	M-8150-02		Dibromomethane 74-95-3	1,000	A	M-8081-IS-X	
DDT, Tech 8017-34-3	100	M	P-320S		Dibromomethane 74-95-3	200	D	M-625-06	
Decachlorobiphenyl 2051-24-3	100	M	P-320S-CN		Dibromomethane 74-95-3	2,000	D	M-625-06-10X	
Decafluorobiphenyl 434-90-2	100	M	P-444S		Dibromomethane 74-95-3	5,000	M	M-552-IS	
Decafluorotriphenylphosphine 5074-71-5	1,000	M	P-444S-10X		Dibromomethane 74-95-3	10,000	H	M-556-IS	
Decanal 112-31-2	100	M	P-024S		Dibromomethane 74-95-3	1,000	MT	M-552.2-SS	
Decanal-DNPH 1527-95-3	100	M	P-025S		Dibromomethane 74-95-3	20,000	MT	M-552-SS	
Deet (Off®) 134-62-3	100	M	P-025S-10X		Dibromomethane 74-95-3	200	M	M-REF-X-03	
DEF 6 78-48-8	100	M	P-026S		Dibromomethane 74-95-3	2	A	M-1618-SS	
Deltamethrin 52918-63-5	100	M	P-027S		Dibromomethane 74-95-3	100	M	P-109S	
Demeton-S 126-75-0	100	M	P-027S-10X		Dibromomethane 74-95-3	100	M	P-008S	
Demeton-S-methyl 919-86-8	100	M	P-424S		Dibromomethane 74-95-3	200	M	M-8150S-A-06	
DFTPP 5074-71-5	100	M	P-028S		Dibromomethane 74-95-3	100	M	P-071S	
DFTPPO 5074-71-5	100	M	P-029S		Dibromomethane 74-95-3	200	H	M-8150-06	
Diallate 2303-16-4	100	M	P-028S		Dibromomethane 74-95-3	100	M	P-035S	
2,6-Diamino-4-nitrotoluene 59229-75-3	100	M	P-029S		Dibromomethane 74-95-3	1,000	M	P-035S-10X	
					Dibromomethane 74-95-3	100	M	P-275S	
					Dibromomethane 74-95-3	100	M	P-211S	
					Dibromomethane 74-95-3	100	M	P-253S	
					Dibromomethane 74-95-3	100	M	P-675S	
					Dibromomethane 74-95-3	60	MT	M-552.2A-06	
					Dibromomethane 74-95-3	1,000	MT	M-552A-3 *	
					Dibromomethane 74-95-3	5,000	A	M-551B-5	
					Dibromomethane 74-95-3	200	M	M-502-21	
					Dibromomethane 74-95-3	2,000	M	M-502-21-10X	
					Dibromomethane 74-95-3	200	M	M-624-SS-11	
					Dibromomethane 74-95-3	2,000	M	M-624-SS-11-10X	
					Dibromomethane 74-95-3	200	M	M-502-22	
					Dibromomethane 74-95-3	2,000	M	M-502-22-10X	
					Dibromomethane 74-95-3	200	M	M-502-23	
					Dibromomethane 74-95-3	2,000	M	M-502-23-10X	
					Dibromomethane 74-95-3	2,000	M	Z-014J-3-M-0.5X	
					Dibromomethane 74-95-3	4,000	D	Z-014J-3	
					Dibromomethane 74-95-3	100	M	APP-9-067	
					Dibromomethane 74-95-3	2,000	M	Z-014F-2	
					Dibromomethane 74-95-3	100	M	P-242S	
					Dibromomethane 74-95-3	1,000	M	P-242S-10X	
					Dibromomethane 74-95-3	100	M	P-295S	
					Dibromomethane 74-95-3	1,000	M	P-295S-10X	
					Dibromomethane 74-95-3	500	MT	M-508-SS	
					Dibromomethane 74-95-3	200	M	M-624-SS-05	

† Subject to oxidation

* ColdPAK required to maintain integrity of product.

Analytes in EPA Methods



Solvent Key for Individual Solutions

M Methanol D Methylene chloride H Hexane W Water
A Acetone CN Acetonitrile MT *tert*-Butyl methyl ether

Analytes in EPA Methods

Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL
trans-1,4-Dichloro-2-butene 110-57-6	100	M	APP-9-068		Diethyl phthalate 84-66-2	100	M	APP-9-081	
Dichlorodifluoromethane 75-71-8 (Freon #12)	200	M	M-502-24		1,4-Difluorobenzene 540-36-3	1,000	M	APP-9-081-10X	
1,1-Dichloroethane 75-34-3	2,000	M	M-502-24-10X		2,2'-Difluorobiphenyl 388-82-9	200	M	M-624-SS-07	
1,2-Dichloroethane 107-06-2	200	M	M-502-25		4,4'-Difluorobiphenyl 398-23-2	2,000	M	M-624-SS-07-10X	
1,2-Dichloroethane-d₄ 17060-07-0	2,000	M	M-502-26		1,1-Difluoroethane 75-37-6 (Freon 152a)	200	D	M-625-07	
cis-1,2-Dichloroethene 156-59-2	200	M	M-502-26-10X		Dimefox 115-26-4	100	CN	M-625-07-10X	
1,1-Dichloroethene 75-35-4	200	M	M-502-28		Dimethoate 60-51-5	200	M	M-550-IS	
trans-1,2-Dichloroethene 156-60-5	2,000	M	M-502-27		Dimethyl phosphate 813-78-5	1,000	H:A	M-REF-11	
1,1-Dichloro-1-fluoroethane 1717-00-6 (Freon #141B)	2,000	M	M-502-27-10X		Dimethyl phthalate 131-11-3	100	M	P-299S	
Dichlorofluoromethane 75-43-4 (Freon #21)	200	M	M-502-29		Dimethyl phthalate 131-11-3	1,000	M	M-8141-01	
Dichloromethane 75-09-2	2,000	M	M-REF-X-04		2,3-Dimethyl-2,3-dinitrobutane 3964-18-9	1,000	M	P-039S-10X	
Dichloromethane-d₂ 1665-00-5	200	M	M-502-61		1,3-Dimethyl-2-nitrobenzene 81-20-9	100	M	P-442S	
Dichlorophen 97-23-4	2,000	M	M-502-39		4-Dimethylaminoazobenzene 60-11-7	250	MT	M-507-SS	
2,4-Dichlorophenol 120-83-2	100	MT	M-502-39-10X		7,12-Dimethylbenz[a]anthracene 57-97-6	1,000	MT	M-507-SS-4X	
2,6-Dichlorophenol 87-65-0	100	M	P-232S		2,5-Dimethylbenzaldehyde-DNPH 152477-96-8	100	D	APP-9-083	
2,3-Dichlorophenoxyacetic acid 2976-74-1	1,000	M	APP-9-076		3,3'-Dimethylbenzidine † 119-93-7	100	D	APP-9-084	
2,4-Dichlorophenylacetic acid 19719-28-9	1,000	M	M-8040-08		a,a-Dimethylphenethylamine 122-09-8	100	CN	M-8315-R-DNPH-09	
1,2-Dichloropropane 78-87-5	100	A	M-8040-08		2,4-Dimethylphenol 105-67-9	100	D	APP-9-085	
1,3-Dichloropropane 142-28-9	1,000	A	M-8150B-SS		Di-n-butyl phthalate 84-74-2	2000	D	APP-9-086	
2,2-Dichloropropane 594-20-7	200	M	M-8150B-SS-10X		Dinex 131-89-5	100	M	APP-9-086-20X	
1,1-Dichloro-2-propanone 513-88-2	2,000	M	M-502-30		3,5-Dinitroaniline 618-87-1	100	M	APP-9-087	
1,1-Dichloropropene 563-58-6	5,000	M	M-502-31		1,2-Dinitrobenzene 528-29-0	1,000	M	M-8040-09	
trans-1,3-Dichloropropene 10061-02-6	200	M	M-502-32		1,3-Dinitrobenzene 99-65-0	100	M	APP-9-063	
1,3-Dichloropropene (cis/trans) 542-75-6	400	M	M-502-33		4,6-Dinitro-o-cresol 534-52-1	1,000	M	APP-9-063-10X	
cis-1,3-Dichloropropene 10061-01-5	4,000	M	M-502-33-10X		2,4-Dinitrophenol 51-28-5	100	M	APP-9-091	
1,2-Dichloro-1,1,2,2-tetrafluoroethane 76-14-2 (Freon #114)	100	M	APP-9-078		2,4-Dinitrophenylhydrazine 119-26-6	1,000	M	M-8040-10	
2,2-Dichloro-1,1,1-trifluoroethane 306-83-2 (Freon #123)	200	M	M-REF-10		2,4-Dinitrotoluene 121-14-2	1,000	CN	M-1667A-DERIV-10ML in 10 mL	
Dichlorprop 120-36-5	100	M	M-REF-X-05		2,5-Dinitrotoluene 619-15-8	100	M	M-8330-SS	
Dichlorprop methyl ester 57153-17-0	200	M	P-143S		2,6-Dinitrotoluene 606-20-2	100	M:CN	M-8330-01-0.1X	
Dichlorvos 62-73-7	200	M	M-8150S-A-07		3,4-Dinitrotoluene 610-39-9	1,000	M:CN	M-8330-01	
Diclofop methyl 51338-27-3	100	M	P-229S		Dinocap 39300-45-3	100	M	P-384S	
Dicrotophos 141-66-2	1,000	H	M-8150-07		Di-n-octyl phthalate 117-84-0	1,000	M	P-384S-10X	
Dieldrin 60-57-1	100	M	P-036S		Dinoseb 88-85-7	100	M	APP-9-095	
Diethyl ether 60-29-7	1,000	M	M-8140-07		Dinoseb methyl ether 6099-79-2	100	M	P-144S	
Diethyl phosphate (mono- & di-)	100	M	P-303S		Dioxacarb 6988-21-2	1,000	M	M-8040-11	
					p-Dioxane 123-91-1	100	H	P-230S	
								M-8150-08	
								M-8318-05	
								APP-9-096	
								APP-9-096-10X	

Analytes in EPA Methods continued on next page



Analytes in EPA Methods

Analytes in EPA Methods

Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL
Dioxathion	100	M	P-219S		Fenamiphos	100	M	P-114S	
78-34-2	1,000	H	M-8141A-1-04		22224-92-6				
Diphenamid	100	M	P-173S		Fenitrothion	100	M	P-259S	
957-51-7					122-14-5				
Diphenylamine	100	D	APP-9-097		Fenoxaprop-ethyl	100	M	P-365S	
122-39-4	1,000	M	M-620		66441-23-4				
Diquat dibromide monohydrate (as Diquat)	100	M	P-231S		Fenoxycarb	100	M	P-686S	
(as Diquat)	1,000	M	P-231S-10X		72490-01-8				
Disulfoton	100	M	P-042S		Fensulfothion	1,000	H:A	M-8140-10	
298-04-4	1,000	H	M-8140-08		115-90-2				
Disulfoton sulfone	100	M	P-582S		Fenthion	100	M	P-148S	
2497-06-5					55-38-9	1,000	H	M-8140-11	
2,4-DP ethyl hexyl	100	M	P-429S		Fenuron	100	M	P-004S	
79270-78-3					101-42-8	100	CN	M-632-07	
Dursban	100	M	P-094S		Fenuron-TCA	100	M	P-006S	
2921-88-2	1,000	M	P-094S-10X		4482-55-7	100	CN	M-632-08	
Dyfonate	100	M	P-087S		Fenvalerate	100	M	P-194S *	
944-22-9	100	H	P-087S-H		51630-58-1				
EGDN	100	CN:M	M-8330-ADD-5		Ferbam	100	M	P-110S	
628-96-6					14484-64-1				
Endosulfan I	100	M	P-091S		Fipronil	100	A	P-738S-A	
959-98-8	10	MT	M-548-IS		120068-37-3	100	M	P-738S	
Endosulfan II	100	M	P-092S		Fipronil sulfide	100	A	P-781S-A	
33213-65-9	1,000	M	P-092S-10X		120067-83-6				
Endosulfan sulfate	100	M	P-145S		Fipronil sulfone	100	A	P-780S-A	
1031-07-8	1,000	M	P-145S-10X		120068-36-2				
Endothall	100	M	P-183S		Flamprop-methyl	100	M	P-366S	
145-73-3	1,000	M	P-183S-10X		52756-25-9				
Endothall dimethyl ester	100	M	M-548.1-ME		Fluazifop-butyl	100	M	P-310S	
					69806-50-4				
Endothall pentafluorophenyl hydrazine derivative	100	MT	M-548-CAL		Fluazifop-p-butyl	100	M	P-601S	
Endrin	100	M	P-045S		79241-46-6				
72-20-8	1,000	M	P-045S-10X		Fluchloralin	100	M	P-270S	
Endrin aldehyde	100	M	P-046S		33245-39-5				
7421-93-4	1,000	M	P-046S-10X		Fluometuron	100	M	P-014S	
Endrin ketone	100	M	P-146S		2164-17-2	100	CN	M-632-09	
53494-70-5					Fluoranthene	100	M	APP-9-108	
EPN	100	A	P-220S-A		206-44-0	500	CN	M-8310-FL-11	
2104-64-5	1,000	H	M-8141-02		Fluorene	100	M	APP-9-109	
Ethalfuralin	100	M	P-269S		86-73-7	500	M	M-8310-FL-12	
55283-68-6					4-Fluoroaniline	200	D	M-625-08	
Ethanol	10,000	W	M-8015B/5031-11		371-40-4	2,000	D	M-625-08-10X	
64-17-5					Fluorobenzene	20	M	M-524-IS-2-10X	
Ethephon	100	M	P-239S		462-06-6	2,000	M	M-524-IS-2	
16672-87-0					2-Fluorobiphenyl	200	D	M-625-09	
Ethion	100	M	P-048S		321-60-8	2,000	D	M-625-09-10X	
563-12-2	1,000	H	M-8141A-1-05		1-Fluoronaphthalene	200	D	M-625-10	
Ethoprop	100	M	P-129S		321-38-0	2,000	D	M-625-10-10X	
13194-48-4	1,000	H	M-8140-09		2-Fluoronaphthalene	200	D	M-625-11	
Ethyl acetate	10,000	W	M-8015B/5031-12		323-09-1				
141-78-6					2-Fluorophenol	200	D	M-625-16	
Ethyl carbamate	100	M	P-419S		367-12-4	2,000	D	M-625-16-10X	
51-79-6					Flurenol methyl ester	100	M	P-412S	
Ethyl methacrylate	100	M	APP-9-105		1216-44-0				
97-63-2					Fluridone	100	M	P-193S	
Ethyl methanesulfonate	100	D	APP-9-106		59756-60-4				
62-50-0					Tau-Fluvalinate	100	CN	P-356S-CN	
Ethylbenzene	200	M	M-502-35		102851-06-9	100	M	P-356S	
100-41-4	2,000	M	M-502-35-10X		Folpet	100	M	P-258S *	
Ethylbenzene-d ₁₀	200	M	M-624-SS-08		133-07-3				
25837-05-2					Formaldehyde	1,000	W	M-8315-02	
Ethylene glycol	10,000	W	M-8015B/5031-13		50-00-0	1,000	M	M-554-06 *	
107-21-1					Formaldehyde-DNPH	100	CN	M-8315-R-DNPH-10	
Ethylene oxide	5,000	W	M-8015B/5031-14-R1 *		1081-15-8	1,000	M:CN	M-554-DNPH-06	
75-21-8					Formothion	100	CN	P-149S-CN *	
bis(2-Ethylhexyl)adipate	100	M	P-233S		2540-82-1				
103-23-1	1,000	M	P-233S-10X		Glyphosate	100	W	M-547	
bis(2-Ethylhexyl)phthalate	100	M	APP-9-029		1071-83-6	1,000	W	P-015S-W-10X	
117-81-7	1,000	M	APP-9-029-10X		Guanidine nitrate	100	M	M-8330-ADD-10	
Famphur	100	M	P-147S		506-93-4				
52-85-7	1,000	H	M-8141A-1-06		Haloxypop	100	M	P-496S	
Fenaminosulf	100	M	P-058S		69806-34-4	100	CN	P-496S-CN	
140-56-7	1,000	M	P-058S-10X		Haloxypop-methyl	100	M	P-497S	
					69806-40-2				

* ColdPAK required to maintain integrity of product.

Analytes in EPA Methods



Solvent Key for Individual Solutions

M Methanol D Methylene chloride H Hexane W Water
A Acetone CN Acetonitrile MT *tert*-Butyl methyl ether

Analytes in EPA Methods

Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL
Heptachlor 76-44-8	100	M	P-053S		Kepone 143-50-0	100	M	P-152S	
Heptachlor epoxide (Isomer A) 28044-83-9	1,000	M	P-053S-10X		3-Ketocarbocofuran 16709-30-1	1,000	M	P-152S-10X	
Heptachlor epoxide (Isomer B) 1024-57-3	100	M	P-294S			100	A	P-298S-A	
Heptanal 111-71-7	100	M	P-054S		Leptophos 21609-90-5	100	M	P-206S	
Heptanal-DNPH 2074-05-7	1,000	M	P-054S-10X			1,000	H	M-8141A-1-07	
Hexachlorobenzene 118-74-1	1,000	M	M-554-07		Lindane (γ-BHC) 58-89-9	100	M	P-059S	
Hexachlorobutadiene 87-68-3	1,000	M	M-8315-R-DNPH-11		1,000	M	P-059S-10X		
Hexachlorocyclopentadiene 77-47-4	100	CN	M-554-DNPH-07		Linuron 330-55-2	100	M	P-022S	
Hexachloroethane 67-72-1	1,000	M:CN	M-554-DNPH-07			100	CN	M-632-10	
Hexachlorophene 70-30-4	1,000	A	M-8091-IS-20X		Lontrel 1702-17-6	100	M	P-224S	
Hexachloropropene 1888-71-7	2,000	H	M-8120-05		Malathion 121-75-5	100	M	P-224S	
Hexanal 66-25-1	200	M	M-502-36		MCPA acid 94-74-6	1,000	H	M-8141-03	
Hexanal-DNPH 1527-97-5	2,000	M	M-502-36-10X		MCPA methyl ester 2436-73-9	100	M	P-060S	
2-Hexanone 591-78-6	100	M	APP-9-114		2,000	M	P-153S		
Hexazinone 51235-04-2	2,000	H	M-8120-07		MCPA methyl ester 2436-73-9	2,000	M	M-8150S-A-09	
HMX 2691-41-0	100	M	APP-9-115		MCPB acid 94-81-5	100	M	P-038S	
Hydrazine 302-01-2	2,000	H	M-8120-08		MCPB acid 94-81-5	2,000	H	M-8150-09	
2-Hydroxyatrazine 2163-68-0	100	M	APP-9-116		MCPB acid 94-81-5	100	M	P-370S	
3-Hydroxycarbofuran 16655-82-6	2,000	D	APP-9-116-D-20X		MCPB methyl ester 57153-18-1	100	M	P-371S	
Imidan 732-11-6	100	M	APP-9-117		MCPP acid 7085-19-0	100	M	P-371S	
Indeno[1,2,3-cd]pyrene 193-39-5	1,000	M	M-554-08 *		MCPP acid 7085-19-0	100	CN	P-154S-CN	
Iodofenphos 18181-70-9	100	M	M-8315-R-DNPH-12		MCPP methyl ester 23844-56-6	2,000	M	M-8150S-A-10	
Ioxynil 1689-83-4	1,000	M:CN	M-8330-04-0.1X		2,000	H	M-8150-10		
Iprodione 36734-19-7	100	M	M-8330-04		Mecoprop, 2-Ethylhexyl ester 71526-69-7	100	M	P-502S	
Isobutanol 78-83-1	100	M	APP-9-118 *		Mercaptobenzothiazole 149-30-4	100	M	P-502S	
Isodrin 465-73-6	100	M	P-123S		Merphos 150-50-5	100	CN	M-640	
Isofenphos 25311-71-1	1,000	M	P-123S-10X		Metalaxyl 57837-19-1	1,000	H	M-8140-12	
Isophorone 78-59-1	100	M:CN	M-8330-04-0.1X		Metaldehyde 9002-91-9	100	M	P-120S	
Isopropalin 33820-53-0	1,000	M:CN	M-8330-04		Metamitron 41394-05-2	100	M	P-120S	
Isopropanol 67-63-0	100	M	M-8330-ADD-8		Metazachlor 67129-08-2	100	M	P-600S	
Isopropylbenzene 98-82-8	100	M:A	P-326S		Methacrylonitrile 126-98-7	100	CN	P-600S-CN	
p-Isopropyltoluene (p-Cymene) 99-87-6	100	CN	M-531-05		Methanol 67-56-1	100	M	P-252S	
Isosafrole 120-58-1	100	M	M-8318-06		Methapyrilene 91-80-5	100	M	P-249S	
Isovaleraldehyde-DNPH 2256-01-1	100	M	P-055S		Methidathion 950-37-8	100	M	P-249S	
Karmex 330-54-1	1,000	H	M-8141A-1-08		Methiocarb 2032-65-7	100	M	APP-9-125	
Kelthane 115-32-2	1,000	M	M-8141A-1-08		Methomyl 16752-77-5	100	M	APP-9-125	
	100	M	APP-9-119		Methoprene 40596-69-8	100	M	APP-9-125	
	500	CN	M-8310-FL-13		Methoxychlor 72-43-5	10,000	W	M-8015B/5031-17	
	100	M	M-8330-ADD-8		o,p'-Methoxychlor 30667-99-3	100	D	APP-9-126	
	100	M	M-8330-ADD-8		p,p'-Methoxychlor-olefin 2132-70-9	1,000	D	APP-9-126-10X	
	100	M	M-8330-ADD-8		Methyl-2,3-dibromopropionate 1729-67-5	100	M	P-195S	
	100	M	M-8330-ADD-8		Methyl bromoacetate 96-32-2	100	M	P-195S	
	100	M	M-8330-ADD-8		Methyl bromochloroacetate 20428-74-4	100	M	P-195S	
	100	M	M-8330-ADD-8		Methyl bromodichloroacetate 20428-76-6	100	M	P-195S	
	100	M	M-8330-ADD-8		Methyl 2-bromopropionate 5445-17-0	100	M	P-195S	
	100	M	M-8330-ADD-8			100	M	P-195S	
	100	M	M-8330-ADD-8			100	M	P-195S	
	100	M	M-8330-ADD-8			100	M	P-195S	
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	100	M	M-8330-ADD-8			100	M	P-195S	
	100	M	M-8330-ADD-8			100	M	P-195S	
	100	M	M-8330-ADD-8			100	M	P-195S	
	100	M	M-8330-ADD-8			100	M	P-195S	
	100	M	M-8330-ADD-8			100	M	P-195S	
	100	M	M-8330-ADD-8			100	M	P-195S	
	100	M	M-8330-ADD-8			100	M	P-195S	
	100	M	M-8330-ADD-8			100	M	P-195S	
	100	M	M-8330-ADD-8			100	M	P-195S	
	100	M	M-8330-ADD-8			100	M	P-195S	
	100	M	M-8330-ADD-8			100	M	P-195S	
	100	M	M-8330-ADD-8			100	M	P-195S	
	100	M	M-8330-ADD-8			100	M	P-195S	
	100	M	M-8330-ADD-8			100	M	P-195S	
	100	M	M-8330-ADD-8			100	M	P-195S	
	100	M	M-8						

Analytes in EPA Methods continued on next page



Analytes in EPA Methods

Analytes in EPA Methods

Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL
Methyl chlorodibromoacetate 20428-75-5	100	MT	M-552.2-06		Nabam 142-59-6	100	M	P-383S	
3-Methylcholanthrene 56-49-5	100	D	APP-9-128		Naled 300-76-5	100	M	P-159S	
Methyl dibromoacetate 6482-26-4	20	MT	M-552.2-07		Naphthalene 91-20-3	1,000	H	M-8140-15	
Methyl dichloroacetate 116-54-1	100	M	M-552.1-05		Naphthalene 1146-65-2	200	M	M-502-40	
Methyl 3,5-dichlorobenzoate 2905-67-1	60	MT	M-552.2-08		Naphthalene-d ₈ 86-86-2	500	M	M-8310-FL-16	
Methyl 2,4-Dichlorophenylacetate 55954-23-9	300	M	M-552.1-06		1-Naphthalene acetamide 90-15-3	200	D	M-625-12	
Methyl ethyl ketone 78-93-3	100	M	P-247S		1-Naphthol 130-15-4	4,000	D	Z-014J-4	
Methyl iodide 74-88-4	1,000	M	P-247S-10X		1-Naphthylamine 134-32-7	100	M	P-512S	
Methyl isobutyl ketone 108-10-1	100	M	P-214S		2-Naphthylamine 91-59-8	100	CN	M-531-10	
Methyl isothiocyanate 556-61-6	10,000	W	APP-9-129-10X *		1,4-Naphthoquinone 555-37-3	100	M	P-1007S	
Methyl methacrylate 80-62-6	100	M	M-8015B/5031-18		Niclosamide 50-65-7	100	D	APP-9-137	
Methyl methanesulfonate 66-27-3	100	M	APP-9-130		m-Nitroaniline 99-09-2	100	D	APP-9-138	
1-Methylnaphthalene 90-12-0	2000	M	APP-9-130-20X		o-Nitroaniline 88-74-4	100	D	APP-9-139	
2-Methylnaphthalene 91-57-6	10,000	W	M-8015B/5031-19		p-Nitroaniline 100-01-6	100	D	APP-9-139	
2-Methyl-4-nitroaniline 99-52-5	25	A	M-1659-RPS		4-Nitroanisole 100-17-4	100	M	P-179S	
3-Methyl-4-nitrophenol 2581-34-2	15299	99-7			Nitrobenzene 98-95-3	100	M	P-632.1-3	
Methyl nonyl ketone 112-12-9	100	M	P-415S		Nitrobenzene-d ₅ 4165-60-0	100	CN	M-632.1-3	
Methyl paraoxon 950-35-6	100	CN	P-415S-CN		Nitroguanidine 556-88-7	1,000	M:CN	M-8330-06-0.1X	
Methyl parathion 298-00-0	200	M	P-311S		Nitromethane 75-52-5	200	M:CN	M-8330-06	
4-Methyl-2-pentanone 108-10-1	2000	D	APP-9-132		5-Nitro-o-toluidine 99-55-8	2000	D	M-625-13	
Methyl tribromoacetate 3222-05-7	100	M	P-065S		o-Nitrophenol 88-75-5	100	M	M-625-13-10X	
Methyl trichloroacetate 598-99-2	1,000	H	M-8140-13		p-Nitrophenol 100-02-7	100	M	M-8330-ADD-6	
Metolachlor 51218-45-2	100	M	P-158S		4-Nitroquinoline-1-oxide 56-57-5	100	M	M-8330-ADD-7	
Metribuzin 21087-64-9	1,000	M	P-158S-10X		N-Nitrosodiethylamine 55-18-5	100	D	APP-9-144	
Metsulfuron methyl 74223-64-6	100	M	P-089S		N-Nitrosodimethylamine 62-75-9	100	M	APP-9-145	
Mevinphos 7786-34-7	1,000	M	P-089S-10X		N-Nitrosodi-n-butylamine 924-16-3	100	D	APP-9-146	
Mexacarbate 315-18-4	100	M	P-074S		N-Nitrosodi-n-propylamine 621-64-7	100	D	APP-9-148	
MGK-264 113-48-4	1,000	H	M-8140-14		N-Nitrosodiphenylamine 86-30-6	2000	D	APP-9-148-20X	
MGK-326 136-45-8	100	M	P-030S		N-Nitrosomethylethylamine 10595-95-6	100	D	APP-9-149	
Mirex 2385-85-5	100	CN	M-632-13		N-Nitrosomorpholine 59-89-2	1,000	M	APP-9-149-M-10X	
Molinate 2212-67-1	100	M	P-082S		N-Nitrosopiperidine 100-75-4	100	D	APP-9-147	
Monitor 10265-92-6	100	M	P-342S		N-Nitrosopyrrolidine 930-55-2	500	W	M-8015B/5031-20	
Monocrotophos 6923-22-4	100	M	P-112S		2-Nitrotoluene 88-72-2	100	D	APP-9-151	
Monuron 150-68-5	1,000	H	M-8141-04		3-Nitrotoluene 99-08-1	100	D	APP-9-150	
Monuron TCA 140-41-0	100	CN	M-632-14		4-Nitrotoluene 99-99-0	1,000	M:CN	APP-9-150-M-10X	
MtBE 1634-04-4	100	M	P-034S		cis-Nonachlor 5103-73-1	1,000	M:CN	APP-9-152	
Myclobutanil 88671-89-0	2,000	M	M-8020-QC			100	M	APP-9-153	
	100	M	P-330S			100	M	APP-9-154	
	1,000	M	P-330S-10X			1,000	M	APP-9-155	

* ColdPAK required to maintain integrity of product.

Analytes in EPA Methods



Solvent Key for Individual Solutions

M Methanol D Methylene chloride H Hexane W Water
A Acetone CN Acetonitrile MT *tert*-Butyl methyl ether

Analytes in EPA Methods

Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL
trans-Nonachlor 39765-80-5	100	M	P-184S		Phenol-d ₅ 4165-62-2	200 2,000	D D	M-625-18 M-625-18-10X	
Nonanal 124-19-6	1,000	M	M-554-09		Phenthoate 2597-03-7	100	M	P-476S	
Nonanal-DNPH 2348-19-8	100 1,000	CN M:CN	M-8315-R-DNPH-14 M-554-DNPH-09		p-Phenylenediamine 106-50-3	100	M	APP-9-180	
Octanal 124-13-0	1,000	M	M-554-10		o-Phenylphenol 90-43-7	100	M	P-460S	
Octanal-DNPH 1726-77-8	100 1,000	CN M:CN	M-8315-R-DNPH-15 M-554-DNPH-10		Phorate 298-02-2	100 1,000	M H	P-170S M-8140-16	
Omethoate 1113-02-6	100 1,000	M M	P-121S P-121S-10X		Phorate sulfone 2588-04-7	100	H	P-655S-H	
Oryzalin 19044-88-3	100 100	CN M	M-638 P-043S		Phosalone 2310-17-0	100	M	P-163S	
Oxadiazon 19666-30-9	100 1,000	M M	P-236S P-236S-10X		Phosfolan 947-02-4	100 1,000	M M	P-234S P-234S-10X	
Oxamyl 23135-22-0	100 100	M CN	P-161S M-531-03		Phosphamidon 13171-21-6	100 1,000	M H	P-075S M-8141A-1-09	
Oxycarboxin 5259-88-1	100	M	P-391S		Picloram 1918-02-1	100 100	M CN	P-047S M-644	
Oxychlorodane Isomer 27304-13-8	100 100	M H	P-331S P-331S-H		Picloram methyl ester 14143-55-6	100	M	P-198S	
Oxydemeton-methyl 301-12-2	100	M	P-290S		2-Picoline 109-06-8	100 10,000	M W	APP-9-182 M-8015B/5031-23	
Oxyfluorfen 42874-03-3	100	M	P-277S		Picramic acid 96-91-3	100	CN:M	M-8330-ADD-22	
Paraldehyde 123-63-7	10,000	W	M-8015B/5031-21		Picric acid 88-89-1	100	CN:M	M-8330-ADD-3	
Paraoxon 311-45-5	100 1,000	M M	P-453S P-453S-10X		Pirimicarb 23103-98-2	100	M	P-304S	
Paraquat CL tetrahydrate 1910-42-5 (as Paraquat)	100	M	P-051S		Pirimiphos-methyl 29232-93-7	100	M	P-305S	
Parathion 56-38-2	100 1,000	M H	P-070S M-622-19		Prebane 886-50-0	100	M	P-119S	
Pendimethalin 40487-42-1	100 1,000	M M	P-097S P-097S-10X		Profenofos 41198-08-7	100	M	P-260S	
Pentachloroanisole 1825-21-4	100	M	P-199S		Profluralin 26399-36-0	100 1,000	M M	P-099S P-099S-10X	
Pentachlorobenzene 608-93-5	100	M	APP-9-173		Promecarb 2631-37-0	100	M	M-8318-09	
Pentachloroethane 76-01-7	100	M	APP-9-174		Prometon 1610-18-0	100	M	M-619-04	
Pentachloronitrobenzene 82-68-8	100 1,000	MT MT	M-508-IS M-508-IS-10X		Prometryne 7287-19-6	100	M	M-619-05	
Pentachlorophenol 87-86-5	25 1,000	D M	M-625C-2 M-8040-15		Pronamide 23950-58-5	100	M	P-164S	
Pentafluorobenzene 363-72-4	200	M	M-624-SS-10		Propachlor 1918-16-7	100 1,000	M M	P-215S P-215S-10X	
Pentafluoroethane 354-33-6 (Freon #125)	200	M	M-REF-X-06		Propanal 123-38-6	1,000	M	M-554-12 *	
Pentafluorophenol 771-61-9	200	D	M-625-17		Propanal-DNPH 725-00-8	100 1,000	CN M:CN	M-8315-R-DNPH-17 M-554-DNPH-12	
Pentanal 110-62-3	1,000	M	M-554-11		Propanil 709-98-8	100	CN	M-632.1-2	
Pentanal-DNPH 2057-84-3	100 1,000	CN M:CN	M-8315-R-DNPH-16 M-554-DNPH-11		1-Propanol 71-23-8	10,000	W	M-8015B/5031-24	
2-Pentanone 107-87-9	10,000	W	M-8015B/5031-22		Propargite 2312-35-8	100	M	P-251S	
Permethrin 52645-53-1	100	M	P-128S		Propazine 139-40-2	100	M	M-619-06	
Perthane 72-56-0	100	M	P-162S		Propham 122-42-9	100 100	CN M	M-632-18 P-052S	
PETN 78-11-5	100	M	M-8330-ADD-2		Propionitrile 107-12-0	100 10,000	M W	APP-9-184 M-8015B/5031-25	
Phenacetin 62-44-2	100 1,000	D D	APP-9-177 APP-9-177-10X		n-Propylbenzene 103-65-1	200 2,000	M M	M-502-41 M-502-41-10X	
Phenanthrene 85-01-8	100 200	M D	APP-9-178 Z-013-15		Propyleneglycol dinitrate 6423-43-4	100	M	M-8330-ADD-35	
Phenanthrene-d ₁₀ 1517-22-2	200	D	M-625-14		Pyrazon 1698-60-8	100 1,000	M M	P-395S P-395S-10X	
Phenol 108-95-2	100 1,000	D M	APP-9-179 M-8040-16						

Analytes in EPA Methods continued on next page



Analytes in EPA Methods

Analytes in EPA Methods

Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL
Pyrazoxyfen 71561-11-0	100	M	P-618S		Terrazole 2593-15-9	100	M	P-190S	
Pyrene 129-00-0	100	M	APP-9-185		1,2,4,5-Tetrachlorobenzene 95-94-3	100	M	APP-9-191	
	500	CN	M-8310-FL-18			2,000	H	M-8120-09	
Pyrene-d₁₀ 1718-52-1	50	A	M-525-SS		1,1,1,2-Tetrachloroethane 630-20-6	200	M	M-502-43	
Pyridine 110-86-1	100	M	APP-9-186-M			2,000	M	M-502-43-10X	
	10,000	W	M-8015B/5031-26		1,1,2,2-Tetrachloroethane 79-34-5	200	M	M-502-44	
Pyridine-d₅ 7291-22-7	200	D	M-625-15			2,000	M	M-502-44-10X	
	2000	D	M-625-15-10X		Tetrachloroethene 127-18-4	200	M	M-502-45	
PYX 38082-89-2	100	CN	M-8330-ADD-11			2,000	M	M-502-45-10X	
Quizalofop ethyl 76578-14-8	100	CN	P-293S-CN		2,3,5,6-Tetrachloronitrobenzene 117-18-0	100	M	P-467S	
RDX 121-82-4	100	M:CN	M-8330-05-0.1X		2,3,4,6-Tetrachlorophenol 58-90-2	100	M	APP-9-195	
	1,000	M:CN	M-8330-05			1,000	M	M-8040-17	
Ronnel 299-84-3	100	M	P-080S		Tetrachlorvinphos 22248-79-9	100	M	P-125S	
	1,000	H	M-8140-17			1,000	H	M-8140-18	
Rotenone 83-79-4	100	M	P-056S *		Tetradifon 116-29-0	100	M	P-261S	
	100	CN	M-635		Tetrafluoroethane 811-97-2	200	M	M-REF-12	
Safrole 94-59-7	100	M	APP-9-187		1,1,2,2-Tetrafluoroethane 359-35-3 (Freon #134)	200	M	M-REF-X-07	
Secbumeton 26259-45-0	100	M	M-619-07		Tetrahydrofuran 109-99-9	1,000	W	M-1671A-IS	
Siduron 1982-49-6	100	M	P-063S		Tetryl 479-45-8	100	M:CN	M-8330-10-0.1X	
	100	CN	M-632-20			1,000	M:CN	M-8330-10	
Silvex 93-72-1	100	M	P-084S		Thiabendazole 148-79-8	100	M	P-068S	
	1,000	M	P-084S-10X			100	CN	M-641	
Silvex methyl ester 4841-20-7	100	M	P-115S		Thiobencarb 28249-77-6	100	M	P-180S	
	100	M	P-085S			1,000	M	P-180S-10X	
Simazine 122-34-9	1,000	M	M-507F		4,4'-Thiodiphenol 2664-63-3	100	M	P-117S	
	100	M	M-619-08			1,000	M	P-117S-10X	
Simetryn 1014-70-6	100	M	M-619-08		Thiofanox 39196-18-4	100	M	P-266S	
Styrene 100-42-5	200	M	M-502-42		Thionazin 297-97-2	100	M	P-171S	
	2,000	M	M-502-42-10X		Thiophanate 23564-06-9	100	M	P-321S	
Sulfotep 3689-24-5	100	M	P-167S			100	CN	P-321S-CN	
	1,000	H	M-8141-06		Thiram 137-26-8	100	M	P-118S	
Sulfoxide 120-62-7	100	M	P-396S			1,000	M	P-118S-10X	
Sumithrin 26002-80-2	100	M	P-050S		Tillam 1114-71-2	100	M	P-105S	
	100	M	P-061S			1,000	M	P-105S-10X	
Sweep 1918-18-9	100	CN	M-632-21		Tilt 60207-90-1	100	M	P-280S	
2,4,6-T 575-89-3	100	M	P-523S		TNT 118-96-7	100	M:CN	M-8330-11-0.1X	
	100	CN	P-523S-CN			1,000	M:CN	M-8330-11	
2,4,5-T acid 93-76-5	100	M	P-168S		Tokuthion 34643-46-4	100	M	P-126S	
	1,000	M	P-168S-10X			1,000	H	M-8140-19	
2,4,5-T butoxyethyl ester 2545-59-7	100	CN	P-441S-CN		m-Tolualdehyde-DNPH 2880-05-9	100	CN	M-8315-R-DNPH-18	
2,4,5-T methyl ester 1928-37-6	100	M	P-067S		o-Tolualdehyde-DNPH 1773-44-0	100	CN	M-8315-R-DNPH-19	
	200	H	M-8150-03		p-Tolualdehyde-DNPH 2571-00-8	100	CN	M-8315-R-DNPH-20	
2,4,5-T n-butyl ester 93-79-8	100	CN	P-440S-CN		Toluene 108-88-3	200	M	M-502-46	
TAME 994-05-8	200	M	S-1019			2,000	M	M-502-46-10X	
TCMX 877-09-8	100	H	M-8082-SS		o-Toluidine 95-53-4	100	M	APP-9-199	
	1,000	H	M-8082-SS-10X			10,000	W	M-8015B/5031-27	
Tebuconazol 107534-96-3	100	M	P-451S		Toxaphene 8001-35-2	1,000	M	P-093S-10X	
	1000	M	P-451S-10X			2,500	A	M-525-5	
Tebuthiuron 34014-18-1	100	M	P-188S		2,4,5-TP 93-72-1	200	M	M-8150S-A-04	
Tefluthrin 79538-32-2	100	M	P-568S *		2,4,5-TP methyl ester 4841-20-7	200	H	M-8150-04	
TEPP 107-49-3	1,000	H	M-8141-07		2,4,5-TP-PFB	100	MT	M-8150-04-PFB	
Terbacil 5902-51-2	100	M	P-096S		Triadimefon 43121-43-3	100	M	P-069S	
Terbufos 13071-79-9	100	M	P-208S		Triallate 2303-17-5	100	M	P-268S	
	1,000	H	M-8141A-1-10		1,2,4-Triazole 288-88-0	100	M	P-627S	
Terbutylazine 5915-41-3	100	M	M-619-10		Triazophos 24017-47-8	100	M	P-334S	
p-Terphenyl-d₁₄ 1718-51-0	500	D	M-525-FS-2						

* ColdPAK required to maintain integrity of product.

Analytes in EPA Methods



Solvent Key for Individual Solutions

M Methanol D Methylene chloride H Hexane W Water
A Acetone CN Acetonitrile MT *tert*-Butyl methyl ether

Analytes in EPA Methods

Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL
Tribromoacetic acid 75-96-7	200	MT	M-552.2A-09		Tricyclazole 41814-78-2	100	M	P-090S	
1,3,5-Tribromobenzene 626-39-1	50	A	M-8121-IS		Triethylphosphate 78-40-0	100	M	P-335S	
2,4,6-Tribromophenol 118-79-6	200	D	M-625-19		O,O,O-Triethylphosphorothioate 126-68-1	100	M	P-172S	
2,4,6-Tribromophenol-PFB	200	M	M-604-SS			1,000	H	P-172S-H-10X	
	200	M	M-604-SS-PFB		2',4',5'-Trifluoroacetophenone 129322-83-4	20	CN	M-556-SS	
Tributylphosphate 126-73-8	1,000	A	M-8141A-SS-01		1,1,1-Trifluoroethane 420-46-2 (Freon #143A)	200	M	M-REF-X-08	
Trichlorfon 52-68-6	100	M	P-044S		Trifluoromethane 75-46-7 (Freon #23)	200	M	M-REF-15	
1,1,2-Trichloro-1,2,2-trifluoroethane 76-13-1	200	M	M-REF-14		a,a,a-Trifluorotoluene	200	M	M-602-SS	
	2,000	M	M-REF-14-10X			2,000	M	M-602-SS-10X	
1,1,1-Trichloro-2-propanone 918-00-3	5,000	A	M-551B-8		Trifluralin 1582-09-8	100	M	P-197S	
Trichloroacetic acid 76-03-9	20	MT	M-552.2A-10			1,000	M	P-197S-10X	
	1,000	MT	M-552A-4 *		2,3,5-Triiodobenzoic acid 88-82-4	100	M	P-507S	
Trichloroacetonitrile 545-06-2	5,000	A	M-551B-7			100	CN	P-507S-CN	
1,2,3-Trichlorobenzene 87-61-6	200	M	M-502-47		2,3,5-Trimethacarb 2655-15-4	100	M	P-515S	
	2,000	M	M-502-47-10X		3,4,5-Trimethacarb 2686-99-9	100	M	P-516S	
1,2,4-Trichlorobenzene 120-82-1	200	M	M-502-48		Trimethyl phosphate 512-56-1	100	M	P-210S	
	2,000	M	M-502-48-10X		1,2,4-Trimethylbenzene 95-63-6	200	M	M-502-54	
2,3,5-Trichlorobenzoic acid 50-73-7	100	M	P-508S			2,000	M	M-502-54-10X	
	100	CN	P-508S-CN		1,3,5-Trimethylbenzene 108-67-8	200	M	M-502-55	
1,1,1-Trichloroethane 71-55-6	200	M	M-502-49			2,000	M	M-502-55-10X	
	2,000	M	M-502-49-10X		1,3,5-Trinitrobenzene 99-35-4	100	M:CN	M-8330-12-0.1X	
1,1,2-Trichloroethane 79-00-5	200	M	M-502-50			1,000	M:CN	M-8330-12	
	2,000	M	M-502-50-10X		Triphenylphosphate 115-86-6	500	MT	M-507-IS	
Trichloroethene 79-01-6	200	M	M-502-51			5,000	MT	M-507-IS-10X	
	2,000	M	M-502-51-10X		Vacor 53558-25-1	100	M	P-240S	
Trichlorofluoromethane (Freon #11) 75-69-4	200	M	M-502-52			100	CN	M-632.1-1	
	2,000	M	M-502-52-10X		Vernolate 1929-77-7	100	M	P-111S	
Trichloronate 327-98-0	100	M	P-127S		Vinclozolin 50471-44-8	100	M	P-122S	
	1,000	H	M-8140-20			1,000	M	P-122S-10X	
2,4,5-Trichlorophenol 95-95-4	100	A	CLP-FC		Vinyl acetate 108-05-4	100	M	APP-9-211 *	
	1,000	M	M-8040-18			2000	M	APP-9-211-20X *	
2,4,6-Trichlorophenol 88-06-2	1,000	MT	M-552A-R-08 *		Vinyl chloride 75-01-4	200	M	M-502-56	
	1,000	M	M-8040-19			2,000	M	M-502-56-10X	
3,4,5-Trichlorophenol 609-19-8	1,000	M	M-1653-IS		o-Xylene 95-47-6	200	M	M-502-57	
	1,000	A	M-1653-IS-R			2,000	M	M-502-57-10X	
1,1,2-Trichloropropane 598-77-6	200	M	S-1321B		m-Xylene 108-38-3	200	M	M-502-58	
	200	M	M-502-53			2,000	M	M-502-58-10X	
1,2,3-Trichloropropane 96-18-4	2,000	M	M-502-53-10X		p-Xylene 106-42-3	200	M	M-502-59	
a,a,a-Trichlorotoluene 98-07-7	200	M	M-624-SS-14			2,000	M	M-502-59-10X	
Triclopyr 55335-06-3	100	M	P-289S		Xylene (total) 1330-20-7	100	M	APP-9-213	
	100	CN	P-289S-CN		Ziram 137-30-4	100	CN	M-630-1-0.1X	
Triclopyr methyl ester 60825-26-5	100	M	P-291S			100	M	P-324S	
Tricresyl phosphate 1330-78-5	100	M	P-209S						

* ColdPAK required to maintain integrity of product.



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In 1980, the US Congress addressed the problem of cleaning up abandoned and inactive dump sites by enacting the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA). These acts mandated the clean-up of the worst abandoned or inactive waste sites in the nation as well as leaking underground storage tanks.

These standards are routinely used for other testing protocols. An outgrowth of this legislation was the Contract Laboratory Program (CLP) which was established to perform Superfund analyses.

CLP methods are designed for both volatile and semi-volatile compounds. EPA Target Compounds are listed in the OLM 04.1 and OLM 04.2 Statement of Work.

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VOC Selected Target Compound Solutions

Volatile Target Compounds List (TCL)

CLP-022-SET * 2 x 1 mL
CLP-022-PART-A, CLP-022-PART-B

Part A

CLP-022-PART-A 1 x 1 mL
0.5 mg/mL each in MeOH 29 comps.

Benzene	1,2-Dichloropropane
Bromodichloromethane	<i>cis</i> -1,3-Dichloropropene
Bromoform	<i>trans</i> -1,3-Dichloropropene
Bromomethane	Ethylbenzene
Carbon tetrachloride	1,1,2,2-Tetrachloroethane
Chlorobenzene	Tetrachloroethene
Chloroethane	Toluene
Chloroform	1,1,1-Trichloroethane
Chloromethane	1,1,2-Trichloroethane
Dibromochloromethane	Trichloroethene
1,1-Dichloroethane	Vinyl chloride
Dichloromethane	<i>m</i> -Xylene
1,2-Dichloroethane	<i>p</i> -Xylene
1,1-Dichloroethylene	
<i>cis</i> -1,2-Dichloroethylene	
<i>trans</i> -1,2-Dichloroethylene	

Certificate will reflect actual
cis/trans ratio

Part B

CLP-022-PART-B * 1 x 1 mL
0.5 mg/mL each in MeOH 8 comps.

Acetone	2-Hexanone	Vinyl acetate
2-Butanone	4-Methyl-2-pentanone	<i>o</i> -Xylene
Carbon disulfide	Styrene	

Technical Note

Volatile Target Compound List (TCL) has two versions. SOW OLM 01.8 is the complete list CLP-022 and CLP-022-R2 is designed for the TCLP OLM 03.1 method and does not contain Vinyl Acetate. CLP-022-SET is a combination and can be used as an alternate source of reference material.

Volatile Target Compounds List (TCL)

CLP-022 * 1 x 1 mL
0.2 mg/mL each in MeOH 37 comps.

Acetone	<i>cis</i> -1,3-Dichloropropene
Benzene	<i>trans</i> -1,3-Dichloropropene
Bromodichloromethane	Ethylbenzene
Bromoform	2-Hexanone
Bromomethane	4-Methyl-2-pentanone
2-Butanone	Styrene
Carbon disulfide	1,1,2,2-Tetrachloroethane
Carbon tetrachloride	Tetrachloroethene
Chlorobenzene	Toluene
Chloroethane	1,1,1-Trichloroethane
Chloroform	1,1,2-Trichloroethane
Chloromethane	Trichloroethene
Dibromochloromethane	Vinyl acetate
1,1-Dichloroethane	Vinyl chloride
Dichloromethane	<i>m</i> -Xylene
1,2-Dichloroethane	<i>o</i> -Xylene
1,1-Dichloroethylene	<i>p</i> -Xylene
<i>cis</i> -1,2-Dichloroethylene	
<i>trans</i> -1,2-Dichloroethylene	
1,2-Dichloropropane	

Certificate will reflect
actual cis/trans ratio

Volatile Target Compounds List (TCL)

Gases

CLP-022G 1 x 1 mL
CLP-022G-PAK 5 x 1 mL
0.2 mg/mL each in MeOH 29 comps.
CLP-022G-10X 1 x 1 mL
CLP-022G-10X-PAK 5 x 1 mL
2.0 mg/mL each in MeOH 4 comps.

Bromomethane	Chloromethane	Vinyl chloride
Chloroethane		

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
CLP-022K-25X * 1 x 1 mL
5.0 mg/mL each in MeOH 4 comps.

Acetone	2-Hexanone	4-Methyl-2-pentanone
2-Butanone		

CLP-022-R2 * 1 x 1 mL
0.2 mg/mL each in MeOH 36 comps.

Acetone	1,2-Dichloropropane
Benzene	<i>cis</i> -1,3-Dichloropropene
Bromodichloromethane	<i>trans</i> -1,3-Dichloropropene
Bromoform	Ethylbenzene
Bromomethane	2-Hexanone
2-Butanone	4-Methyl-2-pentanone
Carbon disulfide	Styrene
Carbon tetrachloride	1,1,2,2-Tetrachloroethane
Chlorobenzene	Tetrachloroethene
Chloroethane	Toluene
Chloroform	1,1,1-Trichloroethane
Chloromethane	1,1,2-Trichloroethane
Dibromochloromethane	Trichloroethene
1,1-Dichloroethane	Vinyl chloride
Dichloromethane	<i>m</i> -Xylene
1,2-Dichloroethane	<i>o</i> -Xylene
1,1-Dichloroethylene	<i>p</i> -Xylene
<i>cis</i> -1,2-Dichloroethylene	
<i>trans</i> -1,2-Dichloroethylene	

Certificate will reflect actual
cis/trans ratio

* ColdPAK required to maintain integrity of product.

Contract Laboratory Program (CLP)

Auxiliary Volatiles

CLP

Every CLP product is furnished with analytical documentation

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

Volatiles

Volatile Calibration Check Compounds (CCC)

CLP-020	1 x 1 mL
CLP-020-PAK SAVE	5 x 1 mL
0.2 mg/mL each in MeOH	6 comps.
CLP-020-10X	1 x 1 mL
CLP-020-10X-PAK SAVE	5 x 1 mL
2.0 mg/mL each in MeOH	6 comps.
Chloroform	Ethylbenzene
1,1-Dichloroethene	Toluene
1,2-Dichloropropane	Vinyl chloride

Volatile System Performance Check Compounds (SPCC)

CLP-021	1 x 1 mL
CLP-021-PAK SAVE	5 x 1 mL
0.2 mg/mL each in MeOH	5 comps.
CLP-021-10X	1 x 1 mL
CLP-021-10X-PAK SAVE	5 x 1 mL
2.0 mg/mL each in MeOH	5 comps.
Bromoform	1,1-Dichloroethane
Chlorobenzene	1,1,2,2-Tetrachloroethane
Chloromethane	

Purgeable Surrogate Standard

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 Internal Standard

CLP-PI-0.25X	1 x 1 mL
CLP-PI-0.25X-PAK SAVE	5 x 1 mL
0.25 mg/mL each in MeOH	3 comps.
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 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
p-Bromofluorobenzene	1,4-Difluorobenzene
Chlorobenzene-d ₅	Toluene-d ₈

Purgeable Organic Matrix Spiking Solution

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	

Higher Concentrations are the Same Price

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

Instrument Performance Check Solution

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	

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. AccuStandard adds stabilizers to inhibit this reaction. To enhance stability, freezer storage is required.

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Volatiles continued on next page

Contract Laboratory Program (CLP)

Volatiles (continued)

CLP OLM 04.1 & 04.2 - Volatiles

The set of volatile standards along with a complete semi-volatile series meets OLM 04.1, and also can be used for OLM 04.2.

CLP OLM 04.1 & 04.2 - Volatile Target Cmpd. List

CLP-022-R3		1 x 1 mL
CLP-022-R3-PAK	SAVE	5 x 1 mL
200 µg/mL 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	

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	

Ketones

CLP-022K *		1 x 1 mL
0.2 mg/mL each in MeOH		
CLP-022K-10X *		1 x 1 mL
2.0 mg/mL each in MeOH		4 comps.
Acetone	2-Hexanone	
2-Butanone	4-Methyl-2-pentanone	

CLP 04.1 & 04.2 Screening Mix

CLP-BTEX		1 x 1 mL
CLP-BTEX-PAK	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	

CLP OLM 04.1 & 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

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	

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		

Instrument Performance Check Solution

CLP-004-10X		1 x 1 mL
CLP-004-10X-PAK	SAVE	5 x 1 mL
250 µg/mL in MeOH		
<i>p</i> -Bromofluorobenzene		

* ColdPAK required to maintain integrity of product.

Contract Laboratory Program (CLP)

Volatiles (continued)

CLP

Low Concentration SOW (10/92) 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	cis-1,2-Dichloroethylene
Bromochloromethane	trans-1,2-Dichloroethylene
Bromodichloromethane	1,2-Dichloropropane
Bromoform	cis-1,3-Dichloropropene
Bromomethane	trans-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	o-Xylene
1,4-Dichlorobenzene	m-Xylene
1,1-Dichloroethane	p-Xylene
Dichloromethane	
1,2-Dichloroethane	

Certificate will reflect actual
cis/trans ratio

Internal Standard Mix

CLP-LC-IS

CLP-LC-IS-PAK **SAVE**
25 µg/mL each in MeOH

1 x 1 mL
5 x 1 mL
3 comps.

CLP-LC-IS-10X

CLP-LC-IS-10X-PAK **SAVE**
0.25 mg/mL each in MeOH

1 x 1 mL
5 x 1 mL
3 comps.

CLP-LC-IS-100X

CLP-LC-IS-100X-PAK **SAVE**
2.5 mg/mL each in MeOH

1 x 1 mL
5 x 1 mL
3 comps.

Chlorobenzene-d ₅	1,4-Difluorobenzene
1,4-Dichlorobenzene-d ₄	

Laboratory Control Sample Spiking Solution

CLP-LCS-V

CLP-LCS-V-PAK

0.2 mg/mL each in MeOH

SAVE

1 x 1 mL
5 x 1 mL
12 comps.

Benzene
Bromoform
Carbon tetrachloride
1,2-Dibromoethane
1,4-Dichlorobenzene
1,2-Dichloroethane
1,2-Dichloropropane

cis-1,3-Dichloropropene *
Tetrachloroethene
1,1,2-Trichloroethane
Trichloroethene
Vinyl chloride

* may contain trace amounts of
trans isomer

Tuning Solution / Surrogate

Standard Mix

CLP-004

CLP-004-PAK **SAVE**
25 µg/mL in MeOH

1 x 1 mL
5 x 1 mL

CLP-004-10X

CLP-004-10X-PAK **SAVE**
0.25 mg/mL in MeOH

1 x 1 mL
5 x 1 mL

CLP-004-100X

CLP-004-100X-PAK **SAVE**
2.5 mg/mL in MeOH

1 x 1 mL
5 x 1 mL

CLP-004-1000X

2.5 mg/mL in MeOH

1 x 1 mL

p-Bromofluorobenzene

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.



Organic 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.

Priority Pollutants - Standards for Calibration of Capillary GC/MS

The EPA procedures call for fused silica capillary column analysis of priority pollutants. AccuStandard has assembled the following mixtures to be used in calibrating this analytical system. These mixtures are highly concentrated to aid in the establishment of response factors.

Base/Neutrals - Mix #1

Z-014A 1 x 1 mL
Z-014A-PAK **SAVE** 5 x 1 mL
 2.0 mg/mL each in CH₂Cl₂ 14 comps.

4-Bromophenylphenyl ether
 Butyl benzyl phthalate
 bis(2-Chloroethoxy)methane
 bis(2-Chloroethyl) ether
 bis(2-Chloro-1-methylethyl) ether
 4-Chlorophenylphenyl ether
 Diethyl phthalate
 Dimethyl phthalate
 Di-*n*-butyl phthalate
 Di-*n*-octyl phthalate
 bis(2-Ethylhexyl)phthalate
 N-Nitrosodimethylamine
 N-Nitrosodi-*n*-propylamine
 N-Nitrosodiphenylamine

Base/Neutrals - Mix #2

Z-014B 1 x 1 mL
Z-014B-PAK **SAVE** 5 x 1 mL
 2.0 mg/mL each in CH₂Cl₂ 14 comps.

Azobenzene
 2-Chloronaphthalene
 1,2-Dichlorobenzene
 1,3-Dichlorobenzene
 1,4-Dichlorobenzene
 2,4-Dinitrotoluene
 2,6-Dinitrotoluene
 Hexachlorobenzene
 Hexachlorobutadiene
 Hexachlorocyclopentadiene
 Hexachloroethane
 Isophorone
 Nitrobenzene
 1,2,4-Trichlorobenzene

Benzidine Mix

Z-014F 1 x 1 mL
Z-014F-PAK **SAVE** 5 x 1 mL
 2.0 mg/mL each in MeOH 2 comps.

Benzidine †
 3,3'-Dichlorobenzidine †

Phenols Mix

Z-014H 1 x 1 mL
Z-014H-PAK **SAVE** 5 x 1 mL
 2.0 mg/mL each in CH₂Cl₂ 11 comps.

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

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

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

† Subject to oxidation

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
 Dibenz[a,h]anthracene
 Fluoranthene
 Fluorene
 Indeno[1,2,3-cd]pyrene
 Naphthalene
 Phenanthrene
 Pyrene

PAH Mix

Z-014G-R 1 x 1 mL
Z-014G-R-PAK **SAVE** 5 x 1 mL
 2.0 mg/mL each in CH₂Cl₂: Benzene (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
 Dibenz[a,h]anthracene
 Fluoranthene
 Fluorene
 Indeno[1,2,3-cd]pyrene
 Naphthalene
 Phenanthrene
 Pyrene

Expanded PAH Mix

Z-014G-FL 1 x 1 mL
 2.0 mg/mL each in 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
 Dibenz[a,h]anthracene
 Fluoranthene
 Fluorene
 Indeno[1,2,3-cd]pyrene
 Naphthalene
 Phenanthrene
 Pyrene
 1-Methylnaphthalene
 2-Methylnaphthalene

Priority Pollutants - Standards for Calibration of Capillary GC/MS - Complete Sets (Continued)

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-014R-2-SET	7 x 1 mL
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-014C	Pesticides - 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-014F	Benzidine Mix
Z-014F	Benzidine Mix	Z-014G	PAH Mix
Z-014G-R	PAH Mix	Z-014H	Phenols Mix
Z-014H	Phenols Mix		
Z-014J	Internal Standard Mix		

Z-014R-1-SET	9 x 1 mL	Z-014R-3-SET	7 x 1 mL
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-014C-R	Pesticides - Mix #2	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-014F	Benzidine Mix
Z-014F	Benzidine Mix	Z-014G-R	PAH Mix
Z-014G-R	PAH Mix	Z-014H	Phenols Mix
Z-014H	Phenols Mix		
Z-014J	Internal Standard Mix		

Order a complete Set and Save

Tuning Standards for EPA Methods

M-625-TS	1 x 1 mL	CLP-TS	1 x 1 mL
M-625-TS-PAK SAVE	5 x 1 mL	CLP-TS-PAK SAVE	5 x 1 mL
50 µg/mL each in CH ₂ Cl ₂	4 comps.	50 µg/mL in CH ₂ Cl ₂	
Benzidine †	DFTPP	Perfluorokerosene	
p,p'-DDT	Pentachlorophenol		

† Subject to oxidation

EPA Method 625 GC/MS Calibration Standards

Benzidine †	50	M-625C-1	1 mL
Pentachlorophenol	25	M-625C-2	1 mL
Decafluorotriphenylphosphine	25	M-625C-3	1 mL
Benzidine †	50	M-625C-4	1 mL
+ DFTPP	25		
Pentachlorophenol	25	M-625C-5	1 mL
+ DFTPP	25		

M-625C-SET 5 x 1 mL
At stated conc. (µg/mL) in CH₂Cl₂

Buy AccuPAKs
Save 20-40% 5 x 1 mL



Base/Neutral & Acid Composite Mixtures

For CLP Semi-Volatiles Analysis

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 : AcCN (40:40:20)

SAVE

1 x 1 mL
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
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-cd]pyrene
bis(2-Chloro-1-methylethyl) ether	Isophorone
2-Chloronaphthalene	Naphthalene
4-Chlorophenyl phenyl ether	Nitrobenzene
Chrysene	N-Nitrosodimethylamine
Dibenz[a,h]anthracene	N-Nitrosodiphenylamine
Di- <i>n</i> -butyl phthalate	N-Nitrosodi- <i>n</i> -propylamine
1,2-Dichlorobenzene	Phenanthrene
1,3-Dichlorobenzene	Pyrene
1,4-Dichlorobenzene	1,2,4-Trichlorobenzene

Benzidine

Z-014F
Z-014F-PAK

2.0 mg/mL each in MeOH

1 x 1 mL
5 x 1 mL
2 comps.

Benzidine † 3,3'-Dichlorobenzidine †

CLP Target List Set

CLP-HC-BN-SET 2 x 1 mL
CLP-HC-BN-SET-PAK 5 x (2 x 1 mL)
Z-014F, CLP-HC-BN-R

Acid Composite Mix

CLP-HC-A-R
CLP-HC-A-R-PAK

2.0 mg/mL each in CH₂Cl₂

SAVE

1 x 1 mL
5 x 1 mL
19 comps.

Benzoic acid	Ethyl methanesulfonate
4-Chloro-3-methylphenol	Methyl methanesulfonate
2-Chlorophenol	2-Nitrophenol
<i>o</i> -Cresol	4-Nitrophenol
<i>p</i> -Cresol	Pentachlorophenol
2,4-Dichlorophenol	Phenol
2,6-Dichlorophenol	2,3,4,6-Tetrachlorophenol
2,4-Dimethylphenol	2,4,5-Trichlorophenol
4,6-Dinitro-2-methylphenol	2,4,6-Trichlorophenol
2,4-Dinitrophenol	

† Subject to oxidation

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

Composite #3

Z-014E-R3

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL
10 comps.

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



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Contract Laboratory Program (CLP)

Semi-Volatiles

CLP

GC/MS Analysis of Semi-Volatiles

Method Analytes Mixture

CLP-TCLSV2.0 mg/mL each in CH₂Cl₂Benzoic acid
Benzyl alcohol

N-Nitrosodimethylamine

1 x 1 mL
3 comps.

Calibration Check Compounds (CCC) Set

CLP-011-SET

2 x 1 mL

CLP-011A, CLP-011B

Base/Neutrals

CLP-011A2.0 mg/mL each in CH₂Cl₂Acenaphthene
Benz[a]pyrene
1,4-Dichlorobenzene
Di-*n*-octylphthalateHexachlorobutadiene
Fluoranthene
N-Nitroso-diphenylamine1 x 1 mL
7 comps.

Acids

CLP-011B2.0 mg/mL each in CH₂Cl₂4-Chloro-3-methylphenol
2,4-Dichlorophenol
2-NitrophenolPentachlorophenol
Phenol
2,4,6-Trichlorophenol1 x 1 mL
6 comps.

Base/Neutrals & Acids

Matrix Standard Spiking Sets

CLP-007-R-SET

2 x 1 mL

CLP-007-R-SET-PAK

5 x (2 x 1 mL)

CLP-007A, CLP-007-2

CLP-007-SET

2 x 1 mL

CLP-007A, CLP-007B

Base/Neutrals

CLP-007A

1.0 mg/mL each in MeOH

Acenaphthene
1,4-Dichlorobenzene
2,4-DinitrotolueneN-Nitroso-di-*n*-propylamine
Pyrene
1,2,4-Trichlorobenzene1 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-NitrophenolPentachlorophenol
Phenol1 x 1 mL
5 comps.1 x 1 mL
5 comps.

Surrogate Standard

CLP-BNS-3-2X2.0 mg/mL each in CH₂Cl₂4-Terphenyl-d₁₄

1 x 1 mL

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 1001,4-Dichlorobenzene 100
2,4-Dinitrotoluene 100
N-Nitrosodi-*n*-propylamine 100
Pyrene 100
1,2,4-Trichlorobenzene 1001 x 50 mL
11 comps.

Internal Standards Mixture

Z-014J**Z-014J-PAK**4.0 mg/mL each in CH₂Cl₂Acenaphthene-d₁₀
Chrysene-d₁₂
1,4-Dichlorobenzene-d₄Naphthalene-d₈
Perylene-d₁₂
Phenanthrene-d₁₀**SAVE**1 x 1 mL
5 x 1 mL
6 comps.

System Performance Check Compounds (SPCC)

CLP-0100.2 mg/mL each in CH₂Cl₂**CLP-010-10X**2.0 mg/mL each in CH₂Cl₂2,4-Dinitrophenol
Hexachlorocyclopentadiene4-Nitrophenol
N-nitroso-di-*n*-propylamine1 x 1 mL
4 comps.

Semi-Volatile Organic Extract Calibration

(Screening Mix)

CLP-0090.1 mg/mL each in CH₂Cl₂

1 x 1 mL

CLP-009-10X1.0 mg/mL each in CH₂Cl₂Di-*n*-octylphthalate
Phenanthrene

Phenol

1 x 1 mL
3 comps.

Initial Calibration Target Compounds List

CLP-0122.0 mg/mL each in CH₂Cl₂Benzoic acid
2,4-Dinitrophenol
4,6-Dinitro-2-methylphenol
2-Nitroaniline
3-Nitroaniline4-Nitroaniline
4-Nitrophenol
Pentachlorophenol
2,4,5-Trichlorophenol1 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

SAVE**SAVE**1 x 1 mL
5 x 1 mL
3 comps.1 x 1 mL
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**2.0 mg/mL each in CH₂Cl₂2-Fluorobiphenyl
Nitrobenzene-d₅*p*-Terphenyl-d₁₄**SAVE****SAVE**1 x 1 mL
5 x 1 mL1 x 1 mL
5 x 1 mL
3 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 1001,4-Dichlorobenzene 100
2,4-Dinitrotoluene 100
N-Nitrosodi-*n*-propylamine 100
Pyrene 100
1,2,4-Trichlorobenzene 1001 x 50 mL
11 comps.

Base/Neutral & Acid Composite Mixtures

For CLP Semi-Volatiles Analysis

August 1994 Statement of Work

Acid Surrogate Standards

CLP-029 1 x 1 mL
CLP-029-PAK 5 x 1 mL
2.0 mg/mL each in MeOH 4 comps.

SAVE

CLP-029-0.75X 1 x 1 mL
CLP-029-0.75X-PAK 5 x 1 mL
1.5 mg/mL each in MeOH 4 comps.

SAVE

2-Chlorophenol-d₄ Phenol-d₅
2-Fluorophenol 2,4,6-Tribromophenol

Semi-Volatile Surrogate Mixes

CLP-031-R 1 x 1 mL
CLP-031-R-PAK 5 x 1 mL
At stated conc. (mg/mL) in MeOH:CH₂Cl₂ (50:50) 8 comps.

SAVE

2-Chlorophenol-d ₄	1.5	Nitrobenzene-d ₅	1.0
1,2-Dichlorobenzene-d ₄	1.0	Phenol-d ₅	1.5
2-Fluorobiphenyl	1.0	p-Terphenyl-d ₁₄	1.0
2-Fluorophenol	1.5	2,4,6-Tribromophenol	1.5

CLP-031-R2 1 x 1 mL
CLP-031-R2-PAK 5 x 1 mL
2000 µg/mL each in CH₂Cl₂ 8 comps.

SAVE

2-Chlorophenol-d ₄	Nitrobenzene-d ₅
1,2-Dichlorobenzene-d ₄	Phenol-d ₅
2-Fluorobiphenyl	p-Terphenyl-d ₁₄
2-Fluorophenol	2,4,6-Tribromophenol

Base/Neutral Surrogate Standard

CLP-030 1 x 1 mL
CLP-030-PAK 5 x 1 mL
1.0 mg/mL each in CH₂Cl₂ 4 comps.

SAVE

1,2-Dichlorobenzene-d₄ Nitrobenzene-d₅
2-Fluorobiphenyl p-Terphenyl-d₁₄

Instrument Performance Check Solution

CLP-033 1 x 1 mL
CLP-033-PAK 5 x 1 mL
0.25 mg/mL in CH₂Cl₂

SAVE

Decafluorotriphenylphosphine (DFTPP)

GC/MS Tuning Solution

CLP-TS 1 x 1 mL
CLP-TS-PAK 5 x 1 mL
50 µg/mL in CH₂Cl₂

SAVE

Perfluorokerosene

GPC Solutions for Sample Clean-up

Semi-Volatiles (Gel Permeation)

GPC Calibration Standard Solution

CLP-027 1 x 1 mL
CLP-027-PAK 5 x 1 mL
At stated conc. (mg/mL) in CH₂Cl₂ 5 comps.

SAVE

Corn Oil	250	Perylene	0.2
bis(2-Ethylhexyl)phthalate	10	Sulfur	0.8
Methoxychlor	2		

8/94 SOW OLM03.1

CLP-027-R2 1 x 1 mL
CLP-027-R2-PAK 5 x 1 mL
At stated conc. (mg/mL) in CH₂Cl₂ 5 comps.

SAVE

Corn Oil	250	Perylene	0.2
bis(2-Ethylhexyl)phthalate	5	Sulfur	0.8
Methoxychlor	1		

Method 3640 - GPC Calibration Solutions and Set

Method 3640
GPC Calibration Set
CLP-008-R-SET 2 x 1 mL
CLP-008A, CLP-008B-R

Solution A

CLP-008A 1 x 1 mL
200 mg/mL in CH₂Cl₂
Corn Oil

Solution B

CLP-008B-R 1 x 1 mL
4.0 mg/mL each in CH₂Cl₂ 2 comps.
bis(2-Ethylhexyl)phthalate Pentachlorophenol



Contract Laboratory Program (CLP)

Low Concentration SOW (10/92) for Organic Analysis of Water

CLP

Low Concentration SOW Semi-Volatiles

Base/Neutrals - Mix #1

Z-014A-LC 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 13 comps.

4-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 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 14 comps.

4-Chloroaniline
2-Chloronaphthalene
Dibenzofuran
3,3'-Dichlorobenzidine †
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Isophorone
2-Methylnaphthalene
Nitrobenzene
1,2,4-Trichlorobenzene

Base/Neutrals - Mix #3

Z-014K-LC 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 8 comps.

2,4-Dinitrophenol
2-Methyl-4,6-dinitrophenol
2-Nitroaniline
3-Nitroaniline
4-Nitroaniline
4-Nitrophenol
Pentachlorophenol
2,4,5-Trichlorophenol

† Subject to oxidation

Polynuclear Aromatic Hydrocarbon Mix

Z-014G 1 x 1 mL
Z-014G-PAK 5 x 1 mL
2.0 mg/mL each in CH₂Cl₂:Benzene (50:50) **SAVE** 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 Mixture

Z-014H-LC 1 x 1 mL
Z-014H-LC-PAK 5 x 1 mL
2.0 mg/mL each in CH₂Cl₂ **SAVE** 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-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-Nitrosos-di-*n*-propylamine 20
N-Nitrosodiphenylamine 20
Phenol 40
1,2,4-Trichlorobenzene 20
2,4,6-Trichlorophenol 40

CLP-LCS-SV-ADD 1 x 1 mL
40 µg/mL in Acetone:MeOH (90:10)

4-Chloroaniline

Tuning Solution

M-625C-3-2X 1 x 1 mL
50 µg/mL in CH₂Cl₂
Decafluorotriphenylphosphine (DFTPP)

Internal Standard

Z-014J-0.5X 1 x 1 mL
Z-014J-0.5X-PAK 5 x 1 mL
2.0 mg/mL each in CH₂Cl₂ **SAVE** 6 comps.
Acenaphthene-d₁₀
Chrysene-d₁₂
1,4-Dichlorobenzene-d₄
Naphthalene-d₈
Perylene-d₁₂
Phenanthrene-d₁₀

Surrogate Standards

CLP-LC-SS-1 1 x 1 mL
CLP-LC-SS-1-PAK 5 x 1 mL
2.0 mg/mL each in MeOH:CH₂Cl₂ (20:80) **SAVE** 5 comps.

2-Fluorobiphenyl
2-Fluorophenol
Nitrobenzene-d₅
Phenol-d₅
p-Terphenyl-d₁₄

CLP-LC-SS-2 1 x 1 mL
CLP-LC-SS-2-PAK 5 x 1 mL
6.0 mg/mL in MeOH **SAVE**

2,4,6-Tribromophenol



CLP OLM 04.1 and 04.2 - Semi-Volatiles

CLP OLM 04.1 and 04.2 Base Neutrals

CLP-HC-SVR-SET 3 x 1 mL
CLP-HC-SV-MIX1, CLP-HC-SV-MIX2, CLP-HC-SV-MIX4

Base Neutrals Mix #1

CLP-HC-SV-MIX1 1 x 1 mL
2000 µg/mL each in CH₂Cl₂ 13 comps.

Benzyl butyl phthalate	Diethyl phthalate
4-Bromophenyl phenyl ether	Dimethyl phthalate
bis(2-Chloroethoxy) methane	Di- <i>n</i> -octyl phthalate
bis(2-Chloroethyl) ether	bis(2-Ethylhexyl)phthalate
bis(2-Chloroisopropyl) ether	N-Nitrosodiphenylamine
4-Chlorophenyl phenyl ether	N-Nitrosodi- <i>n</i> -propylamine
Dibutyl phthalate	

CLP Base Neutral & PAH Mix #2

CLP-HC-SV-MIX2 1 x 1 mL
2000 µg/mL each in CH₂Cl₂ : Benzene (75:25) 31 comps.

Acenaphthene	Dibenz[a,h]anthracene
Acenaphthylene	2,4-Dinitrotoluene
Acetophenone	2,6-Dinitrotoluene
Anthracene	Fluoranthene
Atrazine	Fluorene
Benzaldehyde	Hexachlorobenzene
Benz[a]anthracene	Hexachlorobutadiene
Benzo[b]fluoranthene	Hexachlorocyclopentadiene
Benzo[k]fluoranthene	Hexachloroethane
Benzo[g,h,i]perylene	Indeno[1,2,3-cd]pyrene
Benz[a]pyrene	Isophorone
Biphenyl	Naphthalene
ε-Caprolactam	Nitrobenzene
Carbazole	Phenanthrene
2-Chloronaphthalene	Pyrene
Chrysene	

CLP Toxic Substance Mix #4

CLP-HC-SV-MIX4 1 x 1 mL
2000 µg/mL each in CH₂Cl₂ 7 comps.

4-Chloroaniline	2-Nitroaniline
Dibenzofuran	3-Nitroaniline
3,3'-Dichlorobenzidine †	4-Nitroaniline
2-Methylnaphthalene	

† Subject to oxidation

Phenols

CLP-HC-A-R5 1 x 1 mL
CLP-HC-A-R5-PAK 5 x 1 mL
2000 µg/mL each in CH₂Cl₂ 14 comps. **SAVE**

4-Chloro-3-methylphenol	<i>p</i> -Cresol
2,4-Dichlorophenol	2-Nitrophenol
2,4-Dimethylphenol	4-Nitrophenol
2,4-Dinitrophenol	Pentachlorophenol
2-Chlorophenol	Phenol
2-Methyl-4,6-dinitrophenol	2,4,5-Trichlorophenol
<i>o</i> -Cresol	2,4,6-Trichlorophenol

Base/Neutral Matrix Spike Solution

CLP-BN-MS 1 x 1 mL
CLP-BN-MS-PAK 5 x 1 mL
1000 µg/mL each in MeOH 4 comps. **SAVE**

Acenaphthene	N-Nitrosodi- <i>n</i> -propylamine
2,4-Dinitrotoluene	Pyrene

Semi-Volatile Organic Extract Calibration (Screening Mix)

CLP-009-10X 1 x 1 mL
1.0 mg/mL each in CH₂Cl₂ 3 comps.

Di- <i>n</i> -octylphthalate	Phenol
Phenanthrene	

Instrument Performance Check Solution

CLP-033 1 x 1 mL
CLP-033-PAK 5 x 1 mL
0.25 mg/mL in CH₂Cl₂ **SAVE**

Decafluorotriphenylphosphine (DFTPP)

Acids

CLP-007-2 1 x 1 mL
1.5 mg/mL each in MeOH 5 comps.

2-Chlorophenol	Pentachlorophenol
4-Chloro-3-methylphenol	Phenol
4-Nitrophenol	

Internal Standards Mixture

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

Acenaphthene-d ₁₀	Naphthalene-d ₈
Chrysene-d ₁₂	Perylene-d ₁₂
1,4-Dichlorobenzene-d ₄	Phenanthrene-d ₁₀

Semi-Volatile Surrogate Mixture

CLP-031-R 1 x 1 mL
CLP-031-R-PAK 5 x 1 mL
At stated conc. (mg/mL) in MeOH:CH₂Cl₂ (50:50) 8 comps. **SAVE**

2-Chlorophenol-d ₄	1.5	Nitrobenzene-d ₅	1.0
1,2-Dichlorobenzene-d ₄	1.0	Phenol-d ₅	1.5
2-Fluorobiphenyl	1.0	<i>p</i> -Terphenyl-d ₁₄	1.0
2-Fluorophenol	1.5	2,4,6-Tribromophenol	1.5

Pesticides Mixture

Z-014C-R 1 x 1 mL
Z-014C-R-PAK 5 x 1 mL
2.0 mg/mL each in Toluene:Hexane (50:50) 20 comps. **SAVE**

Aldrin	4,4'-DDD	Endrin
α-BHC	4,4'-DDE	Endrin aldehyde
β-BHC	4,4'-DDT	Endrin ketone
γ-BHC	Dieldrin	Heptachlor
δ-BHC	Endosulfan I	Heptachlor epoxide
α-Chlordane	Endosulfan II	(Isomer B)
γ-Chlordane	Endosulfan sulfate	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-WL-25ML 1 x 25 mL
CLP-031-R-WL-50ML 1 x 50 mL
At stated conc. (µg/mL) in MeOH 8 comps.

2-Chlorophenol-d ₄	150	Nitrobenzene-d ₅	100
1,2-Dichlorobenzene-d ₄	100	Phenol-d ₆	150
2-Fluorobiphenyl	100	<i>p</i> -Terphenyl-d ₁₄	100
2-Fluorophenol	150	2,4,6-Tribromophenol	150

Contract Laboratory Program (CLP)

Pesticide Mixtures

CLP

CLP - Pesticide Mixtures

Pesticide Set

CLP-018/019-10X-SET 2 x 1 mL
CLP-018-10X, CLP-019-10X

CLP-018-10X 1 x 1 mL
CLP-018-10X-PAK 5 x 1 mL
At stated conc. (µg/mL) in Isooctane 11 comps.

Aldrin	1.0	Endosulfan II	2.0
γ-BHC	0.5	Endrin aldehyde	2.5
p,p'-DDT	2.0	Heptachlor	1.0
Dibutylchloredate	5.0	Heptachlor epoxide (Isomer B)	1.0
Dieldrin	1.0	Methoxychlor	10
Endosulfan I	1.0		

CLP-019-10X 1 x 1 mL
CLP-019-10X-PAK 5 x 1 mL
At stated conc. (µg/mL) in Isooctane 12 comps.

Aldrin	1.0	p,p'-DDD	2.0
α-BHC	0.5	p,p'-DDE	1.0
β-BHC	1.0	Dibutylchloredate	5.0
δ-BHC	1.0	Endosulfan sulfate	2.0
α-Chlordane	1.0	Endrin	1.0
γ-Chlordane	1.0	Endrin ketone	2.0

CLP - Pesticide Surrogates

CLP-032-R 1 x 1 mL
CLP-032-R-PAK 5 x 1 mL
200 µg/mL each in Acetone 2 comps.
Decachlorobiphenyl Tetrachloro-*m*-xylene

CLP-034 1 x 1 mL
CLP-034-PAK 5 x 1 mL
200 µg/mL each in Acetone 2 comps.
Dibutylchloredate Tetrachloro-*m*-xylene

CLP-PES-A 1 x 1 mL
CLP-PES-A-PAK 5 x 1 mL
200 µg/mL in Acetone
CLP-PES-A-20X 1 x 1 mL
4000 µg/mL in Acetone
Dibutylchloredate

Pesticide Calibration Mixtures - Statement of Work 2/88 to 8/94

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	1,500	8,000	
γ-BHC	50	200	500	1,500	8,000	
p,p'-DDD	100	400	1,000	3,000	16,000	
p,p'-DDT	100	400	1,000	3,000	16,000	
Decachlorobiphenyl	100	400	1,000	3,000	16,000	
Dieldrin	100	400	1,000	3,000	16,000	
Endosulfan I	50	200	500	1,500	8,000	
Endrin	100	400	1,000	3,000	16,000	
Heptachlor	50	200	500	1,500	8,000	
Methoxychlor	500	2,000	5,000	15,000	80,000	
Tetrachloro- <i>m</i> -xylene	50	200	500	1,500	8,000	

Level 1	CLP-023R	1 mL
Level 2	CLP-023R-4X	1 mL
Level 3	CLP-023R-10X	1 mL
Level 4	CLP-023R-30X	1 mL
Level 5	CLP-023R-160X	1 mL

Level 2 Daily QC (for mid level curves)

CLP-023R-WL-4X-10ML 1 x 10 mL
CLP-023R-WL-4X-25ML 1 x 25 mL
CLP-023R-WL-4X-100ML 1 x 100 mL
At stated conc. (ng/mL) in Isooctane 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		

Working Level Pesticide Standard

At stated conc. (ng/mL) in Isooctane 13 comps.

Compound	Level	1	2	3	4	5
Aldrin	50	200	500	1,500	8,000	
β-BHC	50	200	500	1,500	8,000	
δ-BHC	50	200	500	1,500	8,000	
α-Chlordane	50	200	500	1,500	8,000	
γ-Chlordane	50	200	500	1,500	8,000	
p,p'-DDE	100	400	1,000	3,000	16,000	
Decachlorobiphenyl	100	400	1,000	3,000	16,000	
Endosulfan II	100	400	1,000	3,000	16,000	
Endosulfan sulfate	100	400	1,000	3,000	16,000	
Endrin aldehyde	100	400	1,000	3,000	16,000	
Endrin ketone	100	400	1,000	3,000	16,000	
Heptachlor epoxide (Isomer B)	50	200	500	1,500	8,000	
Tetrachloro- <i>m</i> -xylene	50	200	500	1,500	8,000	

Level 1	CLP-024R	1 mL
Level 2	CLP-024R-4X	1 mL
Level 3	CLP-024R-10X	1 mL
Level 4	CLP-024R-30X	1 mL
Level 5	CLP-024R-160X	1 mL

Level 2 Daily QC (for mid level curves)

CLP-024R-WL-4X-10ML 1 x 10 mL
CLP-024R-WL-4X-25ML 1 x 25 mL
CLP-024R-WL-4X-100ML 1 x 100 mL
At stated conc. (ng/mL) in Isooctane 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		

Ready-to-Inject

Pesticide Calibration Sets

CLP-023R/024R-SET 2 x 1 mL
CLP-023R, CLP-024R

CLP-023R/024R-40X-SET 2 x 1 mL
CLP-023R-40X, CLP-024R-40X

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

CLP - Pesticides

Evaluation Standard Mixture

CLP-017				1 x 1 mL
CLP-017-PAK		SAVE		5 x 1 mL
<i>At stated conc. (µg/mL) in Isooctane</i>				
Aldrin	1	Dibutylchlorodate	1	4 comps.
4,4'-DDT	2	Endrin	2	

Florisil Cartridge Check Solution

CLP-FC				1 x 1 mL
CLP-FC-PAK		SAVE		5 x 1 mL
<i>100 µg/mL in Acetone</i>				
2,4,5-Trichlorophenol				

Pesticide Matrix Spiking Solutions

CLP-026-R2				1 x 1 mL
CLP-026-R2-PAK		SAVE		5 x 1 mL
<i>At stated conc. (µg/mL) in Acetone</i>				
Aldrin	5	Dieldrin	10	6 comps.
γ-BHC	5	Endrin	10	
4,4'-DDT	10	Heptachlor	5	

CLP-026-R2-10X				1 x 1 mL
CLP-026-R2-10X-PAK		SAVE		5 x 1 mL
<i>At stated conc. (µg/mL) in Acetone</i>				
Aldrin	50	Dieldrin	100	
γ-BHC	50	Endrin	100	
4,4'-DDT	100	Heptachlor	50	

Pesticide Matrix Spiking Solution

CLP-026-R2-WL				1 x 1 mL
CLP-026-R2-WL-25ML				1 x 25 mL
CLP-026-R2-WL-50ML				1 x 50 mL
<i>At stated conc. (µg/mL) in Acetone</i>				
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				1 x 1 mL
CLP-028-WL-10ML				1 x 10 mL
<i>At stated conc. (ng/mL) in Isooctane</i>				
γ-Chlordane	10	Endosulfan sulfate	20	9 comps.
Endosulfan I	10	Endrin ketone	20	
p,p'-DDE	20	Methoxychlor	100	
Decachlorobiphenyl	20	Tetrachloro- <i>m</i> -xylene	20	
Dieldrin	20			

Performance Evaluation Solution

CLP-025				1 x 1 mL
CLP-025-PAK		SAVE		5 x 1 mL
<i>At stated conc. (ng/mL) in Isooctane</i>				
α-BHC	100	Decachlorobiphenyl	200	
β-BHC	100	Endrin	500	
γ-BHC	100	Methoxychlor	2500	
4,4'-DDT	1000	Tetrachloro- <i>m</i> -xylene	200	

Resolution Mixture

CLP-028				1 x 1 mL
CLP-028-PAK		SAVE		5 x 1 mL
<i>At stated conc. (ng/mL) in Isooctane</i>				
γ-Chlordane	100	Endosulfan sulfate	200	
Endosulfan I	100	Endrin ketone	200	
p,p'-DDE	200	Methoxychlor	1000	
Decachlorobiphenyl	200	Tetrachloro- <i>m</i> -xylene	200	
Dieldrin	200			

High Conc. Pesticide Matrix Spiking Solutions

For Water				
CLP-014-1000X				1 x 1 mL
CLP-014-1000X-PAK		SAVE		5 x 1 mL
<i>At stated conc. (µg/mL) in MeOH</i>				
Aldrin	200	Endrin	500	6 comps.
4,4'-DDT	500	Heptachlor	200	
Dieldrin	500	Lindane	200	

For Soil/Sediment

CLP-016-1000X				1 x 1 mL
CLP-016-1000X-PAK		SAVE		5 x 1 mL
<i>At stated conc. (µg/mL) in MeOH</i>				
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				1 x 1 mL
CLP-LCS-P-1000X-PAK		SAVE		5 x 1 mL
<i>At stated conc. (µg/mL) in Acetone</i>				
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				1 x 1 mL
CLP-025-WL-10ML				1 x 10 mL
<i>At stated conc. (ng/mL) in Isooctane</i>				
α-BHC	10	Decachlorobiphenyl	20	8 comps.
β-BHC	10	Endrin	50	
γ-BHC	10	Methoxychlor	250	
4,4'-DDT	100	Tetrachloro- <i>m</i> -xylene	20	

PREP NOTES

The addition of 1 mL of surrogate spiking mixture to each sample is sufficient to check the extraction efficiency.

Pesticide Surrogate Mixtures

CLP-032R-WL-0.2X-10ML				1 x 10 mL
CLP-032R-WL-0.2X-50ML				1 x 50 mL
CLP-032R-WL-0.2X-100ML				1 x 100 mL
<i>0.2 µg/mL each in Acetone</i>				
Decachlorobiphenyl		Tetrachloro- <i>m</i> -xylene		2 comps.

Pesticide and PCBs

Performance Evaluation Solution

CLP-025				1 x 1 mL
CLP-025-PAK		SAVE		5 x 1 mL
<i>At stated conc. (ng/mL) in Isooctane</i>				
α-BHC	100	Decachlorobiphenyl	200	
β-BHC	100	Endrin	500	
γ-BHC	100	Methoxychlor	2500	
4,4'-DDT	1000	Tetrachloro- <i>m</i> -xylene	200	

Resolution Mixture

CLP-028				1 x 1 mL
CLP-028-PAK		SAVE		5 x 1 mL
<i>At stated conc. (ng/mL) in Isooctane</i>				
γ-Chlordane	100	Endosulfan sulfate	200	
Endosulfan I	100	Endrin ketone	200	
p,p'-DDE	200	Methoxychlor	1000	
Decachlorobiphenyl	200	Tetrachloro- <i>m</i> -xylene	200	
Dieldrin	200			

Polychlorinated Biphenyls, Chlordane & Toxaphene

<i>Each at 1,000 µg/mL in Hexane</i>				
Aroclors#	Cat. No.	1 mL	Cat. No. (5 x 1 mL)	PAK
Aroclor 1016	C-216S-H-10X		C-216S-H-10X-PAK	
Aroclor 1221	C-221S-H-10X		C-221S-H-10X-PAK	
Aroclor 1232	C-232S-H-10X		C-232S-H-10X-PAK	
Aroclor 1242	C-242S-H-10X		C-242S-H-10X-PAK	
Aroclor 1248	C-248S-H-10X		C-248S-H-10X-PAK	
Aroclor 1254	C-254S-H-10X		C-254S-H-10X-PAK	
Aroclor 1260	C-260S-H-10X		C-260S-H-10X-PAK	
Aroclor 1262	C-262S-H-10X		C-262S-H-10X-PAK	
Aroclor 1268	C-268S-H-10X		C-268S-H-10X-PAK	
Pesticides				
Chlordane	P-017S-H-10X		P-017S-H-10X-PAK	
Toxaphene	P-093S-H-10X		P-093S-H-10X-PAK	

Aroclors at Working Levels

Aroclors 1016/1260 with Surrogates

CLP-216/260-WL	1 x 1 mL
CLP-216/260-WL-5ML	1 x 5 mL
CLP-216/260-WL-10ML	1 x 10 mL
At stated conc. (ng/mL) in Isooctane	4 comps.

Aroclor 1016	100	Decachlorobiphenyl	20
Aroclor 1260	100	Tetrachloro- <i>m</i> -xylene	20

Aroclor 1248 with Surrogates

CLP-248-WL	1 x 1 mL
CLP-248-WL-5ML	1 x 5 mL
CLP-248-WL-10ML	1 x 10 mL
At stated conc. (ng/mL) in Isooctane	3 comps.

Aroclor 1248	100	Tetrachloro- <i>m</i> -xylene	20
Decachlorobiphenyl	20		

Aroclor 1221 with Surrogates

CLP-221-WL	1 x 1 mL
CLP-221-WL-5ML	1 x 5 mL
CLP-221-WL-10ML	1 x 10 mL
At stated conc. (ng/mL) in Isooctane	3 comps.

Aroclor 1221	200	Tetrachloro- <i>m</i> -xylene	20
Decachlorobiphenyl	20		

Aroclor 1254 with Surrogates

CLP-254-WL	1 x 1 mL
CLP-254-WL-5ML	1 x 5 mL
CLP-254-WL-10ML	1 x 10 mL
At stated conc. (ng/mL) in Isooctane	3 comps.

Aroclor 1254	100	Tetrachloro- <i>m</i> -xylene	20
Decachlorobiphenyl	20		

Aroclor 1232 with Surrogates

CLP-232-WL	1 x 1 mL
CLP-232-WL-5ML	1 x 5 mL
CLP-232-WL-10ML	1 x 10 mL
At stated conc. (ng/mL) in Isooctane	3 comps.

Aroclor 1232	100	Tetrachloro- <i>m</i> -xylene	20
Decachlorobiphenyl	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	Tetrachloro- <i>m</i> -xylene	20
Decachlorobiphenyl	20		

Aroclor 1242 with Surrogates

CLP-242-WL	1 x 1 mL
CLP-242-WL-5ML	1 x 5 mL
CLP-242-WL-10ML	1 x 10 mL
At stated conc. in (ng/mL) Isooctane	3 comps.

Aroclor 1242	100	Tetrachloro- <i>m</i> -xylene	20
Decachlorobiphenyl	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	Perylene	0.02
bis(2-Ethylhexyl)phthalate	1.0	Sulfur	0.08
Methoxychlor	0.2		

Florisil Cartridge Check Solution

CLP-FC-WL-10ML	1 x 10 mL
0.1 µg/mL in Acetone	

2,4,5-Trichlorophenol

GPC Calibration Check Solutions

GPC-CC-A-WL-10ML	1 x 10 mL
At stated conc. (µg/mL) in CH ₂ Cl ₂	6 comps.

Aldrin	0.1	Dieldrin	0.2
γ-BHC (Lindane)	0.1	Endrin	0.2
4,4'-DDT	0.2	Heptachlor	0.1

GPC-CC-B-WL-10ML	1 x 10 mL
0.2 µg/mL each in CH ₂ Cl ₂	2 comps.

Aroclor 1016	Aroclor 1260
--------------	--------------

AccuStandard provides the solutions to meet sample clean-up parameters!

Custom Formulations

- ✓ Fast Turnaround
- ✓ 30-Plus Years Custom Formulation Experience
- ✓ Custom Standards are a cost and time saving alternative

Custom QC options

1. Gravimetric/Volumetric Certification:

Each compound is measured gravimetrically and QC verified instrumentally (where applicable). Every component in the Standard will be within $\pm 0.5\%$ of the requested value unless otherwise stated on the Certificate of Analysis. The solutions are diluted to volume using Class A glassware. A Certificate of Analysis accompanies each Standard and documents the gravimetric values used.

2. Full Quantitative Certification:

This QA/QC method includes extended GC, GC/MS or LC analysis using both internal calibration standards plus statistical analysis.



Custom Quotation Requests

Custom formulations can be requested by contacting Technical Service: techservice@accustandard.com or using our website AccuStandard.com.

See back of the catalog for detailed information

For additional information, contact our Technical Department
203-786-5290 or visit AccuStandard.com

Standard Mixtures for Drinking Water

EPA 500 Series, ASTM Methods and Miscellaneous Methods



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Thousands of Standards,
just a click away



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Match frequently
requested products.

Alternate Source

ASL products can be used as
an independent second source.

Methods 502, 505, 508.1, 525.2

Background Information

In 1974 the Safe Drinking Water Act was passed by the US Congress. Under the Act the US EPA established national standards for drinking water from both surface and ground water sources. The EPA 500 Series Methods have evolved from the passage of the Clean Water Act, and from several amendments to the original Act.

The 500 Series product line contains standards used in proposed and promulgated methods for the identification and quantification of organic compounds in drinking water. The organic compounds listed in the various methods include volatile organic compounds (VOCs), pesticides, synthetic organic compounds (SOCs), and trihalomethane disinfection by-products.

Analytical techniques used in the identification and quantification include gas chromatography with selective detectors (PID, ELCD, ECD, FID, NPD, FPD), gas chromatography/mass spectrometry (GC/MS) and high performance liquid chromatography (HPLC).

Complete analysis of the target compounds with these 500 Series Methods can be accomplished by using the series of standards formulated by AccuStandard for each method along with the required internal and surrogate standards.

For your convenience we offer either large mixes containing all the target analytes, or smaller sub-mixes at higher concentrations to allow for flexibility in your analysis.



EPA Method 500 Series

Method 501 Trihalomethane Analysis by P&T-GC/ECD or PID

Trihalomethanes

M-501		1 x 1 mL
M-501-PAK	SAVE	5 x 1 mL
0.2 mg/mL each in MeOH		4 comps.
M-501-10X		1 x 1 mL
M-501-10X-PAK	SAVE	5 x 1 mL
2.0 mg/mL each in MeOH		4 comps.
Bromoform	Dibromochloromethane	
Chloroform	Dichlorobromomethane	

Trihalomethanes Set

M-501-SET	5 x 1 mL
Each at 0.2 mg/mL in MeOH	Set contains
Bromoform	+ M-501 Mix (4 comps.)
Chloroform	
Dibromochloromethane	
Dichlorobromomethane	

Method 502.2 Volatile Organic Compounds by PID/ELCD

54 Liquid Components

Benzene (01)	1,2-Dibromo-3-chloropropane (18)	1,1-Dichloropropene (33)	Toluene (46)
Bromobenzene (02)	1,2-Dibromoethane (19)	<i>cis</i> -1,3-Dichloropropene (34A)	1,2,3-Trichlorobenzene (47)
Bromochloromethane (03)	Dibromomethane (20)	<i>trans</i> -1,3-Dichloropropene (34B)	1,2,4-Trichlorobenzene (48)
Bromodichloromethane (04)	1,2-Dichlorobenzene (21)	Ethylbenzene (35)	1,1,1-Trichloroethane (49)
Bromoform (05)	1,3-Dichlorobenzene (22)	Hexachlorobutadiene (36)	1,1,2-Trichloroethane (50)
<i>n</i> -Butylbenzene (07)	1,4-Dichlorobenzene (23)	Isopropylbenzene (<i>Cumene</i>) (37)	Trichloroethene (51)
<i>sec</i> -Butylbenzene (08)	1,1-Dichloroethane (25)	<i>p</i> -Isopropyltoluene (<i>p</i> - <i>Cymene</i>) (38)	1,2,3-Trichloropropane (53)
<i>tert</i> -Butylbenzene (09)	1,2-Dichloroethane (26)	Methylene chloride (39)	1,2,4-Trimethylbenzene (54)
Carbon tetrachloride (10)	1,1-Dichloroethene (27)	Naphthalene (40)	1,3,5-Trimethylbenzene (55)
Chlorobenzene (11)	<i>cis</i> -1,2-Dichloroethene (28)	<i>n</i> -Propylbenzene (41)	<i>o</i> -Xylene (57)
Chloroform (13)	<i>trans</i> -1,2-Dichloroethene (29)	Styrene (42)	<i>m</i> -Xylene (58)
2-Chlorotoluene (15)	1,2-Dichloropropane (30)	1,1,1,2-Tetrachloroethane (43)	<i>p</i> -Xylene (59)
4-Chlorotoluene (16)	1,3-Dichloropropane (31)	1,1,2,2-Tetrachloroethane (44)	
Dibromochloromethane (17)	2,2-Dichloropropane (32)	Tetrachloroethene (45)	Certificate will reflect actual <i>cis/trans</i> ratio

6 Gas Components

Bromomethane (06)	Dichlorodifluoromethane (24)
Chloroethane (12)	Trichlorofluoromethane (52)
Chloromethane (14)	Vinyl chloride (56)

Liquid Components

M-502A-R		1 x 1 mL
M-502A-R-PAK	SAVE	5 x 1 mL
0.2 mg/mL each in MeOH		54 comps.
M-502A-R-10X		1 x 1 mL
M-502A-R-10X-PAK	SAVE	5 x 1 mL
2.0 mg/mL each in MeOH		54 comps.

Gas Components

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.

54 Liquid and 6 Gas Component Sets

M-502A-R/B-SET	2 x 1 mL
0.2 mg/mL each in MeOH	M-502A-R, M-502B
M-502A-R/B-10X-SET	2 x 1 mL
2.0 mg/mL each in MeOH	M-502A-R-10X, M-502B-10X

Individual Component Neats

To order, specify identity		Except		
		M-502-##N	1 x 1 gram	
M-502-##N	1 x 1 gram	M-502-04N	M-502-28N	M-502-34N
		M-502-08N	M-502-29N	M-502-43N
		M-502-17N	M-502-31N	M-502-44N
		M-502-18N	M-502-32N	

Technical Note

Solutions containing volatile components (such as gases) should be chilled before opening to ensure gases are in the solution. In order to maintain high quality standards, any transferred volume should have minimal headspace and PTFE septa caps should be replaced often if pierced.

These solutions represent a breakdown of Method 502 comps. into groups containing liquid and gaseous components.

All 60 liquid and gas components in One Solution

Liquids and Gases components

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.

Liquids and Gases components plus MtBE

M-502-R1		1 x 1 mL
M-502-R1-PAK	SAVE	5 x 1 mL
0.2 mg/mL each in MeOH		61 comps.

Liquids components plus MtBE

M-502A-R3		1 x 1 mL
0.2 mg/mL each in MeOH		55 comps.
M-502A-R3-10X		1 x 1 mL
2.0 mg/mL each in MeOH		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	

Individual Component Solutions

To order, specify identity (#) and conc. (0.2 or 2.0 mg/mL)

M-502-#	Each at 0.2 mg/mL in MeOH	1 x 1 mL
M-502-#-10X	Each at 2.0 mg/mL in MeOH	1 x 1 mL

M-502-34A & M-502-34B only available as mix: M-502-34R

M-502-34-R	1 x 1 mL
0.4 mg/mL each in MeOH	2 comps.

M-502-34-R-10X	1 x 1 mL
4.0 mg/mL each in MeOH	2 comps.

cis-1,3-Dichloropropene *trans*-1,3-Dichloropropene

Certificate will reflect actual *cis/trans* ratio



Method 502.2 VOCs by PID/ELCD (continued)

Internal & Surrogate Standard

M-502-IS/SS 1 x 1 mL
M-502-IS/SS-PAK 5 x 1 mL
 2.0 mg/mL each in MeOH 4 comps.

SAVE

1-Chloro-3-fluorobenzene Fluorobenzene
 2-Chloropropane α,α,α -Trifluorotoluene

Technical Note

M-502-IS/SS is useful for DB-624/VRX analysis by GC/ELCD/PID.
 2-Chloropropane has been included in the standard to be used as an early eluting Internal Standard. The use of this Internal Standard aids in quantitating the gaseous components in purgeable volatiles.

Internal/Surrogate Standard

M-502-IS-ASL 1 x 1 mL
M-502-IS-ASL-PAK 5 x 1 mL
 2.0 mg/mL each in MeOH 2 comps.

Alternate Source

SAVE

2-Bromo-1-chloropropane 1-Chloro-2-fluorobenzene

o,m,p-Xylenes Mix

M-502-60 1 x 1 mL
 0.2 mg/mL in MeOH 3 comps.

M-502-60-10X 1 x 1 mL
 2.0 mg/mL in MeOH 3 comps.

o-Xylene p-Xylene
 m-Xylene

Match frequently requested products.

Alternate Source

ASL products can be used as an independent second source.

Hazardous Substance List (HSL) Volatiles Mix

M-HSL * 1 x 1 mL
 2.0 mg/mL each in MeOH 8 comps.

Acetone 4-Methyl-2-pentanone
 2-Butanone Styrene
 Carbon disulfide Vinyl acetate
 2-Hexanone o-Xylene

* ColdPAK required to maintain integrity of product.

Method 502 Unregulated VOC Mix

M-502C-09 1 x 1 mL
 2.0 mg/mL each in MeOH 39 comps.

Bromobenzene 1,1-Dichloropropene
 Bromochloromethane cis-1,3-Dichloropropene
 Bromodichloromethane trans-1,3-Dichloropropene
 Bromoform Hexachlorobutadiene
 Bromomethane Isopropylbenzene (*Cumene*)
n-Butylbenzene *p*-Isopropyltoluene (*p*-*Cymene*)
sec-Butylbenzene Dichloromethane (*Methylene chloride*)
tert-Butylbenzene Naphthalene
 Chloroethane *n*-Propylbenzene
 Chloroform 1,1,1,2-Tetrachloroethane
 Chloromethane 1,1,2,2-Tetrachloroethane
 2-Chlorotoluene 1,2,3-Trichlorobenzene
 4-Chlorotoluene 1,2,4-Trichlorobenzene
 Dibromochloromethane 1,1,2-Trichloroethane
 Dibromomethane Trichlorofluoromethane
 1,3-Dichlorobenzene 1,2,3-Trichloropropene
 Dichlorodifluoromethane 1,2,4-Trimethylbenzene
 1,1-Dichloroethane 1,3,5-Trimethylbenzene (*Mesitylene*)
 1,2-Dichloropropane
 1,3-Dichloropropane
 2,2-Dichloropropane

Certificate will reflect actual cis/trans ratio

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 1 x 1 mL
M-502B-10X-PAK 5 x 1 mL
 2.0 mg/mL each in MeOH 6 comps.

Alternate Source

SAVE

Bromomethane Dichlorodifluoromethane
 Chloroethane Trichlorofluoromethane
 Chloromethane Vinyl chloride

M-502C-02 1 x 1 mL
M-502C-02-PAK 5 x 1 mL
 2.0 mg/mL each in MeOH 6 comps.

Alternate Source

SAVE

Bromodichloromethane cis-1,2-Dichloroethylene
 Dibromochloromethane trans-1,2-Dichloroethylene
 1,1,-Dichloroethylene Methylene chloride

Certificate will reflect actual cis/trans ratio

M-502C-03 1 x 1 mL
M-502C-03-PAK 5 x 1 mL
 2.0 mg/mL each in MeOH 9 comps.

Alternate Source

SAVE

Bromochloromethane 1,1-Dichloroethane
 Bromoform 2,2-Dichloropropane
 Carbon tetrachloride Tetrachloroethylene
 Chloroform 1,1,1-Trichloroethane
 Dibromomethane

M-502C-04 1 x 1 mL
M-502C-04-PAK 5 x 1 mL
 2.0 mg/mL each in MeOH 14 comps.

Alternate Source

SAVE

1,2-Dibromo-3-chloropropane Hexachlorobutadiene
 1,2-Dibromoethane 1,1,1,2-Tetrachloroethane
 1,2-Dichloroethane 1,1,2,2-Tetrachloroethane
 1,2-Dichloropropane 1,1,2-Trichloroethane
 1,3-Dichloropropane Trichloroethylene
 1,1-Dichloropropylene 1,2,3-Trichloropropane
 cis-1,3-Dichloropropene
 trans-1,3-Dichloropropene

Certificate will reflect actual cis/trans ratio

M-502C-05 1 x 1 mL
M-502C-05-PAK 5 x 1 mL
 2.0 mg/mL each in MeOH 13 comps.

Alternate Source

SAVE

Benzene Toluene
 Bromobenzene 1,2,3-Trichlorobenzene
n-Butylbenzene 1,2,4-Trichlorobenzene
 Ethylbenzene 1,2,4-Trimethylbenzene
p-Isopropyltoluene 1,3,5-Trimethylbenzene
 Naphthalene *m*-Xylene
 Styrene

M-502C-06 1 x 1 mL
M-502C-06-PAK 5 x 1 mL
 2.0 mg/mL each in MeOH 12 comps.

Alternate Source

SAVE

sec-Butylbenzene 1,3-Dichlorobenzene
tert-Butylbenzene 1,4-Dichlorobenzene
 Chlorobenzene Isopropylbenzene
 2-Chlorotoluene *n*-Propylbenzene
 4-Chlorotoluene *o*-Xylene
 1,2-Dichlorobenzene *p*-Xylene



EPA Method 500 Series

Method 502.2 (continued) Volatile Organic Compounds

The solutions below have been designed in cooperation with laboratories in the Contract Laboratory Program and have proven useful in this particular configuration for the separation and quantitation of all of the 60 components on a single column.

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	
trans-1,3-Dichloropropene	

Certificate will reflect actual
cis/trans ratio

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-Trimethyl benzene
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

SAVE

1 x 1 mL

5 x 1 mL

2 comps.

1-Chloro-2-bromopropane	Fluorobenzene
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Internal Standard 2

M-502-IS-2

M-502-IS-2-PAK

2.0 mg/mL each in MeOH

SAVE

1 x 1 mL

5 x 1 mL

3 comps.

1-Chloro-2-bromopropane	Methylene chloride-d ₂
Fluorobenzene	

Internal Standard 3

M-502-IS-2-3

2.0 mg/mL in MeOH

1 x 1 mL

Methylene chloride-d ₂

Internal Standard

M-524-IS

M-524-IS-PAK

2.0 mg/mL each in MeOH

SAVE

1 x 1 mL

5 x 1 mL

2 comps.

1,2-Dichlorobenzene-d ₄	Fluorobenzene
------------------------------------	---------------

Internal Standard 2

M-524-IS-2

M-524-IS-2-PAK

2.0 mg/mL in MeOH

SAVE

1 x 1 mL

5 x 1 mL

Fluorobenzene

Fortification Solution

M-524-FS

M-524-FS-PAK

2.0 mg/mL each in MeOH

SAVE

1 x 1 mL

5 x 1 mL

3 comps.

4-Bromofluorobenzene	Fluorobenzene
1,2-Dichlorobenzene-d ₄	

Surrogate Standard

M-524-SS

M-524-SS-PAK

2.0 mg/mL each in MeOH

SAVE

1 x 1 mL

5 x 1 mL

2 comps.

4-Bromofluorobenzene	1,2-Dichlorobenzene-d ₄
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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 Internal and Surrogate Standards

With more proposed and promulgated methods available, analytical chemists are trying to combine analyte lists and shorten run-time while still demonstrating method equivalence. AccuStandard has formulated a core evaluation deuterated solution, and a second conventional internal/surrogate evaluation solution. Use of these formulations allows the analyst to quickly evaluate new ISTD/SS combinations for PID, Hall, FID or GC/MS applications.

Popular Internal Standards

M-502-IS 1 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

1-Chloro-2-bromopropane
Fluorobenzene

M-524-IS-2 1 x 1 mL
2.0 mg/mL in MeOH

Fluorobenzene

M-524-IS 1 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

1,2-Dichlorobenzene-d₄
Fluorobenzene

M-502-IS-2 1 x 1 mL
2.0 mg/mL each in MeOH 3 comps.

1-Chloro-2-bromopropane
Fluorobenzene
Methylene chloride-d₂

M-001R 1 x 1 mL
20 mg/mL each in MeOH 3 comps.

Bromochloromethane
1,4-Dichlorobutane
2-Bromo-1-chloropropane

M-8020-IS 1 x 1 mL
0.2 mg/mL each in MeOH 2 comps.

4-Bromofluorobenzene
α,α,α-Trifluorotoluene

M-8240/60-IS 1 x 1 mL
0.2 mg/mL each in MeOH 5 comps.

Bromochloromethane
Chlorobenzene-d₅
1,4-Dichlorobenzene-d₄
1,4-Difluorobenzene
Pentafluorobenzene

M-8260-IS-R 1 x 1 mL
0.2 mg/mL each in MeOH 4 comps.

2-Bromo-1-chloropropane
1,4-Difluorobenzene
1,4-Dichlorobenzene-d₄
Pentafluorobenzene

M-8260-IS 1 x 1 mL
0.2 mg/mL each in MeOH 4 comps.

Chlorobenzene-d₅
1,4-Difluorobenzene
1,4-Dichlorobenzene-d₄
Pentafluorobenzene

M-8260A/B-IS 1 x 1 mL
0.2 mg/mL each in MeOH 3 comps.

Chlorobenzene-d₅
1,4-Dichlorobenzene-d₄
Fluorobenzene

ISTD/SS Evaluation Mixtures

Conventional ISTD/SS Evaluation Mixture

M-CONV-IS/SS 1 x 1 mL
200 µg/mL each in MeOH 15 comps.

2-Bromochlorobenzene 2-Chloropropane
4-Bromochlorobenzene Dibromofluoromethane
Bromochloromethane 1,4-Dichlorobutane
p-Bromofluorobenzene 1,4-Difluorobenzene
2-Bromo-1-chloropropane Fluorobenzene
1-Chloro-2-fluorobenzene Pentafluorobenzene
1-Chloro-3-fluorobenzene α,α,α-Trifluorotoluene
1-Chloro-4-fluorobenzene

Deuterated ISTD/SS Evaluation Mixture

M-DEUT-IS/SS 1 x 1 mL
200 µg/mL each in MeOH 8 comps.

Benzene-d₆
Chlorobenzene-d₅
1,2-Dichlorobenzene-d₄
1,4-Dichlorobenzene-d₄
1,2-Dichloroethane-d₄
Ethylbenzene-d₁₀
Methylene chloride-d₂
Toluene-d₈

Popular Surrogate Standards

M-502-IS-ASL 1 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

2-Bromo-1-chloropropane
1-Chloro-2-fluorobenzene

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-8021A-SS 1 x 1 mL
20 mg/mL each in MeOH 4 comps.

4-Bromochlorobenzene 1,4-Dichlorobutane
Bromochloromethane 2-Bromo-1-chloropropane

M-8240/60-SS 1 x 1 mL
0.2 mg/mL each in MeOH 4 comps.

p-Bromofluorobenzene 1,2-Dichloroethane-d₄
Dibromofluoromethane Toluene-d₈

Popular ISTD/SS Standards

M-502-IS/SS 1 x 1 mL
2.0 mg/mL each in MeOH 4 comps.

1-Chloro-3-fluorobenzene
2-Chloropropane
Fluorobenzene
α,α,α-Trifluorotoluene

M-502-IS-QC 1 x 1 mL
1.0 mg/mL each in MeOH 3 comps.

1-Chloro-2-bromopropane
1-Chloro-2-fluorobenzene
Fluorobenzene

M-524-FS 1 x 1 mL
2.0 mg/mL each in MeOH 3 comps.

4-Bromofluorobenzene
1,2-Dichlorobenzene-d₄
Fluorobenzene

M-8010-IS/SS 1 x 1 mL
150 µg/mL each in MeOH 3 comps.

4-Bromochlorobenzene
Bromochloromethane
4-Bromofluorobenzene

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

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

M-8240/60-IS/SS 1 x 1 mL
0.2 mg/mL each in MeOH 9 comps.

Bromochloromethane 1,2-Dichloroethane-d₄
p-Bromofluorobenzene 1,4-Difluorobenzene
Chlorobenzene-d₅ Pentafluorobenzene
Dibromofluoromethane Toluene-d₈
1,4-Dichlorobenzene-d₄

M-8260A/B-IS/SS 1 x 1 mL
200 µg/mL each in MeOH 7 comps.

p-Bromofluorobenzene 1,2-Dichloroethane-d₄
Chlorobenzene-d₅ Fluorobenzene
Dibromofluoromethane Toluene-d₈
1,4-Dichlorobenzene-d₄



EPA Method 500 Series

Method 503.1 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		
Benzene	4-Isopropyltoluene	
Bromobenzene	Naphthalene	
n-Butylbenzene	n-Propylbenzene	
sec-Butylbenzene	Styrene	
t-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	o-Xylene	
Hexachlorobutadiene	m-Xylene	
Isopropylbenzene	p-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		
M-504-10X		1 x 1 mL
M-504-10X-PAK	SAVE	5 x 1 mL
2.0 mg/mL each in MeOH		
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		
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		
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		
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			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	cis-Nonachlor	1
Endrin	1	trans-Nonachlor	1
Heptachlor	1	Simazine	250

M-505-ASL	Alternate Source	SAVE	1 x 1 mL
M-505-ASL-PAK			5 x 1 mL
At stated conc. (µg/mL) in Acetone			
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

Polychlorinated Biphenyls, Chlordane and Toxaphene

Each at 1,000 µg/mL in Hexane

SAVE -PAK (5 x 1 mL)

Aroclors

Aroclors	Cat. No.	1 mL	Cat. No.	PAK
Aroclor 1016	C-216S-H-10X		C-216S-H-10X-PAK	
Aroclor 1221	C-221S-H-10X		C-221S-H-10X-PAK	
Aroclor 1232	C-232S-H-10X		C-232S-H-10X-PAK	
Aroclor 1242	C-242S-H-10X		C-242S-H-10X-PAK	
Aroclor 1248	C-248S-H-10X		C-248S-H-10X-PAK	
Aroclor 1254	C-254S-H-10X		C-254S-H-10X-PAK	
Aroclor 1260	C-260S-H-10X		C-260S-H-10X-PAK	
Aroclor 1262	C-262S-H-10X		C-262S-H-10X-PAK	
Aroclor 1268	C-268S-H-10X		C-268S-H-10X-PAK	

Pesticides

Chlordane	P-017S-H-10X	P-017S-H-10X-PAK
Toxaphene	P-093S-H-10X	P-093S-H-10X-PAK

Degradation Standard

P-045S	1 x 1 mL
100 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		
Benzyl butyl phthalate	bis(2-Ethylhexyl)adipate	
Dimethyl phthalate	bis(2-Ethylhexyl)phthalate	
Diethyl phthalate	Di-n-octyl phthalate	
Di-n-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			
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

M-507A-PAK

1.0 mg/mL each in MtBE

SAVE

1 x 1 mL

5 x 1 mL

6 comps.

Ametryn
Cycloate

Disulfoton
Fenamiphos

Merphos
Prometon

Mix E

M-507E

M-507E-PAK

1.0 mg/mL each in MtBE

SAVE

1 x 1 mL

5 x 1 mL

8 comps.

Dichlorvos
Fenarimol
Fluridone

Napropamide
Pebulate (Tillam)
Simetryn

Tebuthiuron
Terbacil

Mix B

M-507B

M-507B-PAK

1.0 mg/mL each in MtBE

SAVE

1 x 1 mL

5 x 1 mL

9 comps.

Atrazine
Diphenamid
EPTC

Ethoprop
Mevinphos
Prometryne

Propazine
Terbutryn
Triadimefon

Mix F

M-507F-R2

M-507F-R2-PAK

1.0 mg/mL each in Acetone

SAVE

1 x 1 mL

5 x 1 mL

2 comps.

Methyl paraoxon

Simazine

Mix C

M-507C

M-507C-PAK

1.0 mg/mL each in MtBE

SAVE

1 x 1 mL

5 x 1 mL

9 comps.

Butachlor
Carboxin
Diazinon

Metolachlor
Metribuzin
MGK-264

Norflurazon
Terbufos
Vernolate

Mix G

M-507G

M-507G-PAK

1.0 mg/mL each in MtBE

SAVE

1 x 1 mL

5 x 1 mL

8 comps.

Benefin
Isopropalin
Pendimethalin

Oxadiazon
Oxyfluorfen
Propachlor

Profluralin
Trifluralin

Mix D

M-507D

M-507D-PAK

1.0 mg/mL each in MtBE

SAVE

1 x 1 mL

5 x 1 mL

10 comps.

Alachlor
Atraton
Bromacil
Butylate

Chlorpropham
Hexazinone
Molinate

Pronamide
Stirofos
Tricyclazole

Mix H

M-507H

M-507H-PAK

1.0 mg/mL each in MtBE

SAVE

1 x 1 mL

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

SAVE

1 x 1 mL

5 x 1 mL

6 comps.

Atrazine 150 Bromacil 5,000
DNB 2,500 Prometon 300

TPP 2,500
Vernolate 50

Surrogate Standard

M-507-SS

M-507-SS-PAK

0.25 mg/mL in MtBE

SAVE

1 x 1 mL

5 x 1 mL

M-507-SS-4X

1.0 mg/mL in MtBE

1 x 1 mL

1,3-Dimethyl-2-nitrobenzene

Internal Standard

M-507-IS

M-507-IS-PAK

0.5 mg/mL in MtBE

SAVE

1 x 1 mL

5 x 1 mL

M-507-IS-10X

5.0 mg/mL in MtBE

1 x 1 mL

Triphenyl phosphate



EPA Method 500 Series

Method 508 Chlorinated Pesticides by GC/ECD

Chlorinated Pesticides Mix A

M-508P-A 1 x 1 mL
M-508P-A-PAK 5 x 1 mL
1.0 mg/mL each in MtBE 17 comps.

SAVE

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 & 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 Standard

M-508-IS 1 x 1 mL
M-508-IS-PAK 5 x 1 mL
0.1 mg/mL in MtBE
M-508-IS-10X 1 x 1 mL
1.0 mg/mL in MtBE

SAVE

Pentachloronitrobenzene

Surrogate Standards

M-508-SS 1 x 1 mL
M-508-SS-PAK 5 x 1 mL
0.5 mg/mL in MtBE

SAVE

4,4'-Dichlorobiphenyl

M-508-SS-2 1 x 1 mL
M-508-SS-2-PAK 5 x 1 mL
0.5 mg/mL in MtBE

SAVE

Decachlorobiphenyl

Decomposition Solution

M-508-DS-100X 1 x 1 mL
M-508-DS-100X-PAK 5 x 1 mL
At stated conc. (μg/mL) in MtBE 2 comps.

SAVE

p,p'-DDT 200 Endrin 100

Performance Check Solution

M-508-QC 1 x 1 mL
M-508-QC-PAK 5 x 1 mL
At stated conc. (ng/mL) in MtBE 4 comps.

SAVE

δ-BHC	40	Chlorpyrifos	2
Chlorothalonil	50	Dacthal	50

Chlorinated Pesticides Mix B

M-508P-B-R 1 x 1 mL
M-508P-B-R-PAK 5 x 1 mL
1.0 mg/mL each in MtBE 13 comps.

SAVE

α-Chlordane	Chlorpyrifos	cis-Permethrin
γ-Chlordane	DCPA	trans-Permethrin
Chlorobenzilate	Etridiazole	Propachlor
Chloroneb	Hexachlorobenzene	Trifluralin
Chlorothalonil		

Certificate will reflect actual cis/trans ratio

M-508P-B-R2 1 x 1 mL
M-508P-B-R2-PAK 5 x 1 mL
1.0 mg/mL each in MtBE 15 comps.

SAVE

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

Method 508A PCBs by Perchlorination / GC

Aroclor® Stock Solution

M-508A-1 1 x 1 mL
M-508A-1-PAK 5 x 1 mL
5.0 mg/mL in MeOH

SAVE

Aroclor 1260

DCB Stock Solution

M-508A-2 1 x 1 mL
M-508A-2-PAK 5 x 1 mL
1.0 mg/mL in Toluene

SAVE

Decachlorobiphenyl

Perchlorinated Aromatics

Neats	Cat. No.	Unit
Decachlorobiphenyl	C-209N	10 mg
Hexachlorobenzene	A-012	100 mg
Octachlorodibenzofuran	F-801N	50 mg
Octachlorodibenzo-p-dioxin	D-801N	50 mg

Solutions	35 μg/mL in Toluene	1 mL
Octachlorostyrene	PC-001S	
Perchlorinated p,p'-DDE	PC-002S	
Tetradecachloro-o-terphenyl	T-004S	
Tetradecachloro-m-terphenyl	T-005S	
Tetradecachloro-p-terphenyl	T-006S	
Aroclor 5442	T-442S	



Thousands of Standards, just a click away

AccuStandard.com



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 5 x 1 mL
 500 µg/mL each in Ethyl acetate 19 comps.

SAVE

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

Chlorinated Pesticide Mix #2

M-508.1-X2 1 x 1 mL
M-508.1-X2-PAK 5 x 1 mL
 500 µg/mL each in Ethyl acetate 17 comps.

SAVE

Alachlor	Hexachlorocyclopentadiene
Atrazine	Metolachlor
Chlorobenzilate	Metribuzin
Chloroneb	cis-Permethrin
Chlorothalonil	trans-Permethrin
Cyanazine	Propachlor
DCPA	Simazine
Etridiazole	Trifluralin
Hexachlorobenzene	

Certificate will reflect actual cis/trans ratio

Regulated Pesticide Mix (SDWA)

M-508.1-ASL 1 x 1 mL
M-508.1-ASL-PAK 5 x 1 mL
 100 µg/mL each in MtBE 17 comps.

SAVE

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 5 x 1 mL
 100 µg/mL each in Ethyl acetate 2 comps.

SAVE

4,4'-DDT	Endrin
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Internal Standard Solution

M-508.1-IS 1 x 1 mL
M-508.1-IS-PAK 5 x 1 mL
 100 µg/mL each in Ethyl acetate

SAVE

Pentachloronitrobenzene

Surrogate Standard Solution

M-508.1-SS 1 x 1 mL
M-508.1-SS-PAK 5 x 1 mL
 100 µg/mL each in Ethyl acetate

SAVE

4,4'-Dibromobiphenyl

Performance Check Solution

M-508.1-QC 1 x 1 mL
M-508.1-QC-PAK 5 x 1 mL
 At stated conc. (ng/mL) in MtBE 4 comps.

SAVE

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)

Buy AccuPAKs
 Save 20-40% 5 x 1 mL





EPA Method 500 Series

Method 515.1 Chlorinated Acids in Water by GC/ECD

Methyl Derivatives

M-515-R		1 x 1 mL
M-515-R-PAK	SAVE	5 x 1 mL
1.0 mg/mL each in MtBE as methyl derivatives		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 Di methyl ester	2,4,5-T methyl ester
Dicamba methyl ester	2,4,5-TP methyl ester

Underivatized Analytes

M-515A-R2		1 x 1 mL
M-515A-R2-PAK	SAVE	5 x 1 mL
At stated conc. (µg/mL) in MeOH		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

If you require the complete absence of partial esterification, we recommend M-515.4A and M-515.3A products.

Performance Check Solution

M-515-QC		1 x 1 mL
M-515-QC-PAK	SAVE	5 x 1 mL
At stated conc. (ng/mL) in MtBE		3 comps.

Methyl 3,5-dichlorobenzoate	600
Dinoseb methyl ether	4
4-Nitroanisole	1600

Performance Check Solution with ISTD & SS

M-515-QC-R		1 x 1 mL
M-515-QC-R-PAK	SAVE	5 x 1 mL
At stated conc. (ng/mL) in MtBE		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		1 x 1 mL
M-515-IS-PAK	SAVE	1 x 1 mL
0.1 mg/mL in MtBE		

4,4'-Dibromooctafluorobiphenyl

Surrogate Standards

M-515-SS		1 x 1 mL
M-515-SS-PAK	SAVE	5 x 1 mL
0.1 mg/mL in MtBE		

M-515-SS-50X	5 x 1 mL
5.0 mg/mL in MtBE	

Methyl 2,4-dichlorophenylacetate

P-244S	1 x 1 mL
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0.1 mg/mL in MeOH

2,4-Dichlorophenylacetic acid

Method 515.2 Chlorinated Acids in Water by GC/ECD

Methyl Derivatives

M-515.2-1		1 x 1 mL
M-515.2-1-PAK	SAVE	5 x 1 mL
At stated conc. (µg/mL) in MeOH		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		1 x 1 mL
M-515.2-2-PAK	SAVE	5 x 1 mL
At stated conc. (µg/mL) in MeOH		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		1 x 1 mL
M-515.2A-1-PAK	SAVE	5 x 1 mL
At stated conc. (µg/mL) in MeOH		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		1 x 1 mL
M-515.2A-2-PAK	SAVE	5 x 1 mL
At stated conc. (µg/mL) in MeOH		7 comps.

Acifluorfen	200	Dicamba	300
Bentazon	1000	Picloram	300
2,4-D	100	2,4,5-TP	100
2,4-DB	1000		

Method 515.1 & 515.2 Chlorinated Acids in Water by GC/ECD

Laboratory Performance Check Solution

M-8150/51-LPC-5ML		1 x 5 mL
At stated conc. (ng/mL) in Isooctane		5 comps.

3,5-Dichlorobenzoic acid	618	DCAA	500
Dinoseb	4	DBOB	250
4-Nitrophenol	1600		





Method 515.3 Chlorinated Acids in Drinking Water by ECD

Underivatized Acids

M-515.3A 1 x 1 mL
M-515.3A-PAK 5 x 1 mL
At stated conc. (µg/mL) in Acetone 17 comps.

SAVE

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 1 x 1 mL
M-515.3-LPC-PAK 5 x 1 mL
At stated conc. (µg/mL) in MtBE 4 comps.

SAVE

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 1 x 1 mL
M-515.3-ICS-PAK 5 x 1 mL
At stated conc. (µg/mL) in MtBE 16 comps.

SAVE

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 1 x 1 mL
M-515-IS-PAK 5 x 1 mL
0.1 mg/mL in MtBE

SAVE

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 5 x 1 mL
At stated conc. (µg/mL) in Acetone 17 comps.

SAVE

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 5 x 1 mL
0.1 mg/mL in Acetone
 2,4-Dichlorophenylacetic acid

SAVE

Quality Control Sample Methyl Derivatives

M-515.4-QCS 1 x 1 mL
M-515.4-QCS-PAK 5 x 1 mL
At stated conc. (µg/mL) in MtBE 16 comps.

SAVE

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. These standards should be carried through the entire extraction and derivatization procedure associated with the samples.





EPA Method 500 Series

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 5 x 1 mL
1.0 mg/mL in CH₂Cl₂ **SAVE**

N-Nitrosodi-*n*-propylamine-d₁₄

Surrogate Standard Stock Solution

M-521-SS 1 x 1 mL
M-521-SS-PAK 5 x 1 mL
1.0 mg/mL in CH₂Cl₂ **SAVE**

N-Nitrosodimethylamine-d₆

Method 524.2 Volatile Organic Compounds by GC/MS

See M-502.2 VOCs by PID/ELCD
54 Liquid & 6 Gaseous Compounds

Addition to Method 524.2 (Revision 4.0 August 1992)

M-524R-B * 1 x 1 mL
M-524R-B-PAK * 5 x 1 mL
2.0 mg/mL each in MeOH **SAVE** 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 methanol are given short expiration periods because of their tendency to form acetals and ketals. Stabilizers are added to inhibit this reaction.

Mixtures of Internal, Surrogate Standards & Fortification Solutions

Internal Standards

M-502-IS 1 x 1 mL
M-502-IS-PAK 5 x 1 mL
2.0 mg/mL each in MeOH **SAVE** 2 comps.

1-Chloro-2-bromopropane Fluorobenzene

M-502-IS-2 1 x 1 mL
M-502-IS-2-PAK 5 x 1 mL
2.0 mg/mL each in MeOH **SAVE** 3 comps.

1-Chloro-2-bromopropane Methylene chloride-d₂
Fluorobenzene

M-524-IS 1 x 1 mL
M-524-IS-PAK 5 x 1 mL
2.0 mg/mL each in MeOH **SAVE** 2 comps.

1,2-Dichlorobenzene-d₄ Fluorobenzene

Method 524.2 VOCs by GC/MS (Continued)

M-524-IS-2 1 x 1 mL
M-524-IS-2-PAK 5 x 1 mL
2.0 mg/mL in MeOH **SAVE**
M-524-IS-2-10X 5 x 1 mL
20 mg/mL in MeOH

Fluorobenzene

Fortification Standard

M-524-FS 1 x 1 mL
M-524-FS-PAK 5 x 1 mL
2.0 mg/mL each in MeOH **SAVE** 3 comps.

4-Bromofluorobenzene Fluorobenzene
1,2-Dichlorobenzene-d₄

Surrogate Standard

M-524-SS 1 x 1 mL
M-524-SS-PAK 5 x 1 mL
2.0 mg/mL each in MeOH **SAVE** 2 comps.

4-Bromofluorobenzene 1,2-Dichlorobenzene-d₄

GC/MS Tuning Solution

M-624-SS-03-10X 1 x 1 mL
2.0 mg/mL each in MeOH

p-Bromofluorobenzene

Method 524.3 Purgeable Organic Compounds by GC/MS

See M-502.2 VOCs by PID/ELCD
54 Liquid & 6 Gaseous Compounds

M-524R-C 1 x 1 mL
M-524R-C-PAK 5 x 1 mL
2.0 mg/mL each in MeOH **SAVE** 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 1 x 1 mL
M-524R-C-IS-PAK 5 x 1 mL
2.0 mg/mL each in MeOH **SAVE** 3 comps.

1,4-Difluorobenzene 1,4-Dichlorobenzene-d₄
Chlorobenzene-d₅

Internal and Surrogate Standard

M-524R-C-IS/SS 1 x 1 mL
M-524R-C-IS/SS-PAK 5 x 1 mL
2.0 mg/mL each in MeOH **SAVE** 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 1 x 1 mL
M-524R-C-SS-PAK 5 x 1 mL
2.0 mg/mL each in MeOH **SAVE** 3 comps.

tert-Butyl methyl ether-d₃ *p*-Bromofluorobenzene
1,2-Dichlorobenzene-d₄

* ColdPAK required to maintain integrity of product.



Method 525.1 Organic Compounds in Drinking Water by Liquid-Solid Extraction and Capillary GC/MS

PAH Mixtures

M-525-1 1 x 1 mL
M-525-1-PAK 5 x 1 mL
0.1 mg/mL each in Acetone **SAVE** 13 comps.

M-525-1-5X 1 x 1 mL
M-525-1-5X-PAK 5 x 1 mL
0.5 mg/mL each in Acetone **SAVE** 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

Pesticide Mixtures

M-525-3 1 x 1 mL
M-525-3-PAK 5 x 1 mL
0.1 mg/mL each in Acetone **SAVE** 12 comps.

M-525-3-5X 1 x 1 mL
M-525-3-5X-PAK 5 x 1 mL
0.5 mg/mL each in Acetone **SAVE** 12 comps.

Alachlor
Aldrin
Atrazine
 α -Chlordane
 γ -Chlordane
Endrin

Heptachlor
Heptachlor epoxide (Isomer B)
Lindane
Methoxychlor
Simazine
trans-Nonachlor

PCB Congener Mixtures

M-525-2 1 x 1 mL
M-525-2-PAK 5 x 1 mL
0.1 mg/mL each in Acetone **SAVE** 8 comps.

M-525-2-5X 1 x 1 mL
M-525-2-5X-PAK 5 x 1 mL
0.5 mg/mL each in Acetone **SAVE** 8 comps.

1 2-Chlorobiphenyl
5 2,3-Dichlorobiphenyl
171 2,2',3,3',4,4',6-Heptachlorobiphenyl
154 2,2',4,4',5,6'-Hexachlorobiphenyl
200 2,2',3,3',4,5',6,6'-Octachlorobiphenyl
98 2,2',3',4,6-Pentachlorobiphenyl
47 2,2',4,4'-Tetrachlorobiphenyl
29 2,4,5-Trichlorobiphenyl

Semi-Volatile Mixtures

M-525-4 1 x 1 mL
M-525-4-PAK 5 x 1 mL
0.1 mg/mL in Acetone (PCP 0.4 mg/mL) **SAVE**

M-525-4-5X 1 x 1 mL
M-525-4-5X-PAK 5 x 1 mL
0.5 mg/mL in Acetone (PCP 2.0 mg/mL) **SAVE** 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 5 x 1 mL
2.5 mg/mL in Acetone **SAVE**

Toxaphene

Internal Standard

M-525-IS 1 x 1 mL
M-525-IS-PAK 5 x 1 mL
2.0 mg/mL each in CH₂Cl₂ **SAVE** 4 comps.

Acenaphthene-d₁₀
Chrysene-d₁₂

Perylene-d₁₂
Phenanthrene-d₁₀

Tuning Standards

CLP-TS 1 x 1 mL
CLP-TS-PAK 5 x 1 mL
50 μ g/mL in CH₂Cl₂ **SAVE**

Perfluorokerosene

M-525-TS 1 x 1 mL
M-525-TS-PAK 5 x 1 mL
0.1 mg/mL in CH₂Cl₂ **SAVE**

DFTPP

Fortification Standards

M-525-FS-1 1 x 1 mL
M-525-FS-1-PAK 5 x 1 mL
0.5 mg/mL each in Acetone **SAVE** 4 comps.

Acenaphthene-d₁₀
Chrysene-d₁₂

Perylene-d₁₂
Phenanthrene-d₁₀

Surrogate Standard

M-525-SS 1 x 1 mL
M-525-SS-PAK 5 x 1 mL
0.5 mg/mL in Acetone **SAVE**

Pyrene-d₁₀

M-525-FS-2 1 x 1 mL
M-525-FS-2-PAK 5 x 1 mL
0.5 mg/mL in CH₂Cl₂ **SAVE**

p-Terphenyl-d₁₄

Buy the Complete Set and Save

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



EPA Method 500 Series

Method 525.2 (Revision 1.0) Organic Compounds in Drinking Water by Liquid-Solid Extraction and Capillary GC/MS

All 112 analytes (excluding Disulfoton sulfoxide and Disulfoton sulfone which can be found in the Pesticide section) listed in this revision can be found in the mixes below. We realize that many labs will not be analyzing for all of these analytes at one time since it is not practical or necessary in many instances. If all the analytes must be determined, the following multiple calibration mixes are offered to accomplish this task. Several of these mixes are from our current product line and are grouped as nitrogen/phosphorus pesticides, organochlorine pesticides, semi-volatiles, polyaromatics, PCB congeners, and individual multi-component solutions for the Aroclors and Toxaphene. These solutions can be purchased individually or as a complete set for your laboratory's particular needs. Additionally, the required surrogate, internal, and tuning standards are offered below.

Nitrogen/Phosphorus Pesticides

M-507A
M-507A-PAK **SAVE** **1 x 1 mL**
1.0 mg/mL each in MtBE **5 x 1 mL**
6 comps.

Ametryn	Disulfoton	Mephos
Cycloate	Fenamiphos	Prometon

M-507B
M-507B-PAK **SAVE** **1 x 1 mL**
1.0 mg/mL each in MtBE **5 x 1 mL**
9 comps.

Atrazine	Ethoprop	Propazine
Diphenamid	Mevinphos	Terbutryn
EPTC	Prometryne	Triadimefon

M-507C
M-507C-PAK **SAVE** **1 x 1 mL**
1.0 mg/mL each in MtBE **5 x 1 mL**
9 comps.

Butachlor	Metolachlor	Norflurazon
Carboxin	Metribuzin	Terbufos
Diazinon	MGK-264	Vernolate

M-507D
M-507D-PAK **SAVE** **1 x 1 mL**
1.0 mg/mL each in MtBE **5 x 1 mL**
10 comps.

Alachlor	Chlorpropham	Pronamide
Atraton	Hexazinone	Stirofos
Bromacil	Molinate	Tricyclazole
Butylate		

M-507E
M-507E-PAK **SAVE** **1 x 1 mL**
1.0 mg/mL each in MtBE **1 x 1 mL**
8 comps.

Dichlorvos	Napropamide	Tebuthiuron
Fenarimol	Pebulate (Tillam)	Terbacil
Fluridone	Simetryn	

M-507F-R2
M-507F-R2-PAK **1 x 1 mL**
1.0 mg/mL each in Acetone **5 x 1 mL**
2 comps.

Methyl paraoxon	Simazine
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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 **1 x 1 mL**
0.5 mg/mL each in CH₂Cl₂ **3 comps.**

4,4'-DDT	DFTPP	Endrin
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Technical Note

Endrin & DDT can break down in the injection port at elevated temperatures. Breakdown can be monitored by running the Pesticide Degradation Standard (M-8081-DS). The problem can be alleviated by replacing the dirty injection port liner, or by using 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

Complete Method 525.2 Set

M-525.2-SET *

M-507A	M-507D	M-508P-A	M-525-2-5X	M-525.2-IS	C-216S-M-28.5X
M-507B	M-507E	M-508P-B-R2	M-525-4R-5X	M-525.2-SS	C-254S-M-28.5X
M-507C	M-507F-R2	M-525-1-5X	M-525-5	M-525.2-TS	C-260S-M-28.5X

* ColdPAK required to maintain integrity of product.



Method 525.2 (Continued) Organic Compounds in Drinking Water by Liquid-Solid Extraction and Capillary GC/MS

Chlorinated Pesticides

Mix A

M-508P-A

M-508P-A-PAK

1.0 mg/mL each in MtBE

SAVE

1 x 1 mL

5 x 1 mL

17 comps.

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

Mix B

M-508P-B-R2

M-508P-B-R2-PAK

1.0 mg/mL each in MtBE

SAVE

1 x 1 mL

5 x 1 mL

15 comps.

α-Chlordane	Etridiazole
γ-Chlordane	Hexachlorobenzene
Chlorobenzilate	trans-Nonachlor
Chloroneb	cis-Permethrin
Chlorothalonil	trans-Permethrin
Chlorpyrifos	Propachlor
Cyanazine	Trifluralin
DCPA	

Certificate will reflect actual cis/trans permethrin ratio

Semi-Volatile Analytes

PAH Mixtures

M-525-1-5X

M-525-1-5X-PAK

0.5 mg/mL each in Acetone

SAVE

1 x 1 mL

5 x 1 mL

13 comps.

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

PCB Congener Mixtures

M-525-2-5X

M-525-2-5X-PAK

0.5 mg/mL each in Acetone

SAVE

1 x 1 mL

5 x 1 mL

8 comps.

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

Semi-Volatile Mixtures

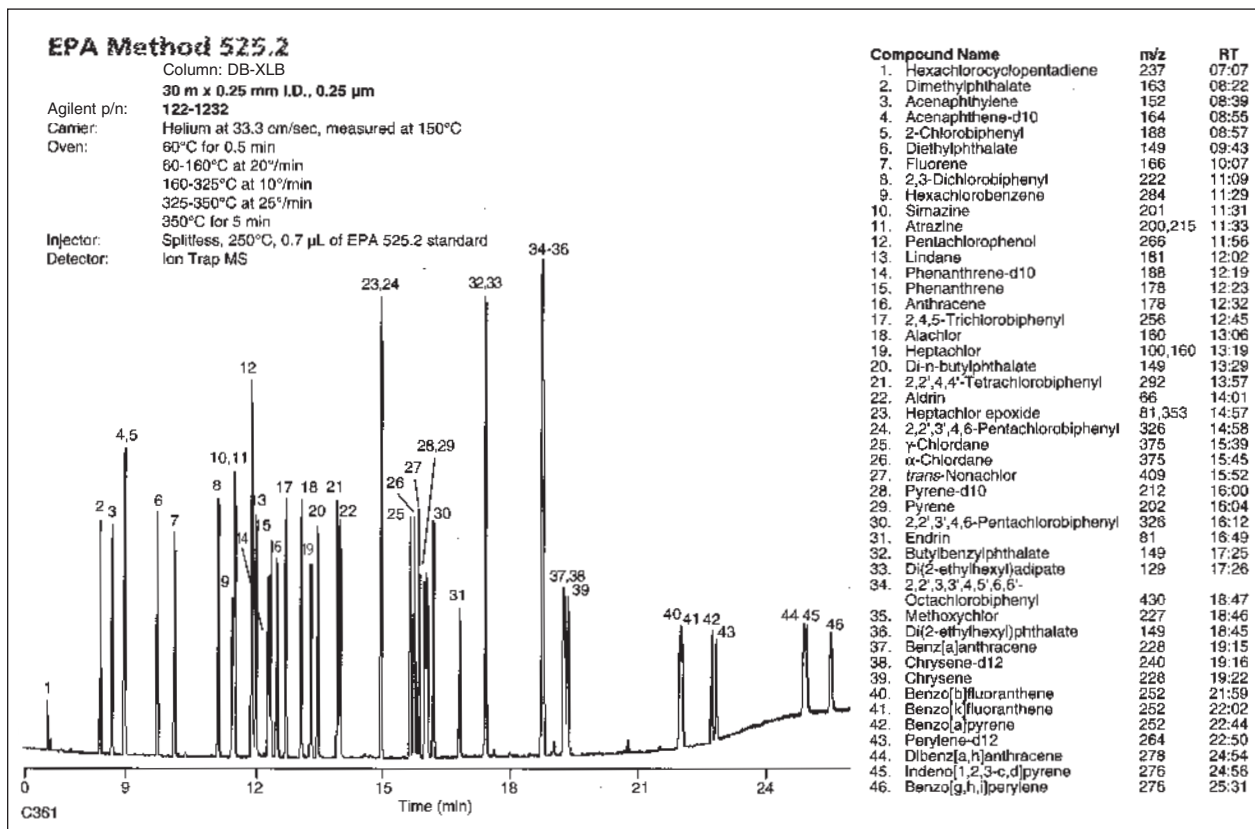
M-525-4-R-5X

0.5 mg/mL each in Acetone

1 x 1 mL

11 comps.

Butyl benzyl phthalate	2,6-Dinitrotoluene
Di-n-butyl phthalate	Hexachlorocyclopentadiene
Diethyl phthalate	bis(2-Ethylhexyl)phthalate
bis(2-Ethylhexyl)adipate	Isophorone
Dimethyl phthalate	Pentachlorophenol (2.0 mg/mL)
2,4-Dinitrotoluene	





EPA Method 500 Series

Method 525.2 (Continued) Organic Compounds in Drinking Water by Liquid-Solid Extraction and Capillary GC/MS

These solutions are to be used individually or combined for calibration curve development. The Nitrogen Phosphorous Pesticides typically analyzed by NPD were combined into convenient solutions for possible use in other EPA methods such as 507. The Chlorinated Pesticides typically analyzed by ECD were combined into a convenient solution for use in this method or additional methods such as 505 or 508.1.

Nitrogen / Phosphorus Pesticide Mixture

M-525.2-NP1-ASL 1 x 1 mL
M-525.2-NP1-ASL-PAK 5 x 1 mL
 100 µg/mL each in Acetone 41 comps.

Alachlor	Ethoprop	Prometryne
Ametryn	Fenarimol	Pronamide
Atraton	Fluridone	Propachlor
Atrazine	Hexazinone	Propazine
Bromacil	Methyl paraoxon	Simetryn
Butachlor	Metolachlor	Tetrachlorvinphos
Butylate	Metribuzin	Tebuthiuron
Chlorpropham	Mevinphos	Terbacil
Dursban	MGK-264	Prebane
Cycloate	Molinate	Triadimefon
Cyanazine	Napropamide	Tricyclazole
Dichlorvos	Norflurazon	Trifluralin
Diphenamid	Pebulate	Vernolate
EPTC	Prometon	

Semi-Volatiles Mixture

M-525.2-SV-ASL 1 x 1 mL
M-525.2-SV-ASL-PAK 5 x 1 mL
 100 µg/mL each in Acetone 33 comps.

Acenaphthylene	2,4-Dinitrotoluene
Anthracene	2,6-Dinitrotoluene
Benz[a]anthracene	Fluorene
Benzo[b]fluoranthene	Hexachlorobenzene
Benzo[k]fluoranthene	2,2',4,4',5,6'-Hexachlorobiphenyl
Benzo[g,h,i]perylene	2,2',3,3',4,4',6-Heptachlorobiphenyl
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 1 x 1 mL
 100 µg/mL each in Acetone 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 Mixture

M-525-REG-ASL 1 x 1 mL
M-525-REG-ASL-PAK 5 x 1 mL
 0.5 mg/mL each in Acetone 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 1 x 1 mL
M-525.2-FS-ASL-PAK 5 x 1 mL
 500 µg/mL each in Acetone 7 comps.

Acenaphthene-d ₁₀	Phenanthrene-d ₁₀
Chrysene-d ₁₂	Pyrene-d ₁₀
1,3-Dimethyl-2-nitrobenzene	Triphenylphosphate
Perylene-d ₁₂	

Nitrogen / Phosphorus Pesticide Mixture

M-525.2-NP2-ASL 1 x 1 mL
M-525.2-NP2-ASL-PAK 5 x 1 mL
 100 µg/mL each in Acetone 6 comps.

Carboxin	Fenamiphos
Diazinon	Merphos
Disulfoton	Terbufos

Organochlorine Pesticides

M-525.2-CP-ASL 1 x 1 mL
M-525.2-CP-ASL-PAK 5 x 1 mL
 100 µg/mL each in Acetone 30 comps.

Alachlor	Dacthal	Etridiazole
Aldrin	p,p'-DDD	α-Chlordane
Atrazine	p,p'-DDE	γ-Chlordane
α-BHC	p,p'-DDT	Heptachlor
β-BHC	Dieldrin	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

Match frequently requested products.

Alternate Source

ASL products can be used as an independent second source.

Surrogate Standard

M-525.2-SS2-ASL 1 x 1 mL
M-525.2-SS2-ASL-PAK 5 x 1 mL
 500 µg/mL each in Acetone 4 comps.

1,3-Dimethyl-2-nitrobenzene	Pyrene-d ₁₀
Perylene-d ₁₂	Triphenylphosphate

Regulated Semi-Volatiles Mixture

M-525-REG-EA 1 x 1 mL
 100 µg/mL each in Ethyl acetate 25 comps.

M-525-REG-EA-5X 1 x 1 mL
 500 µg/mL each in Ethyl acetate 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	



Method 526 Semi-Volatiles by GC/MS

Primary Dilution Standard

M-526-0.2X-EA 1 x 1 mL
M-526-0.2X-EA-PAK 5 x 1 mL
200 µg/mL each in Ethyl acetate 11 comps.

M-526 1 x 1 mL
M-526-PAK 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 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 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 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 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',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

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 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 5 x 1 mL
0.5 mg/mL each in Acetone 3 comps.

1,3-Dimethyl-2-nitrobenzene	Triphenylphosphate
Perylene-d ₁₂	





EPA Method 500 Series

Method 528 Phenols by GC/MS

Stock Calibration Standard

M-528-CONC		1 x 1 mL
M-528-CONC-PAK	SAVE	5 x 1 mL
2000 µg/mL each in CH ₂ Cl ₂		
4-Chloro-3-methylphenol	2-Methyl-4,6-Dinitrophenol	
2-Chlorophenol	2-Nitrophenol	
o-Cresol	4-Nitrophenol	
2,4-Dichlorophenol	Pentachlorophenol	
2,4-Dimethylphenol	Phenol	
2,4-Dinitrophenol	2,4,6-Trichlorophenol	

Internal Standard

M-528-IS		1 x 1 mL
M-528-IS-PAK	SAVE	5 x 1 mL
At stated conc. (µg/mL) in CH ₂ Cl ₂		
1,2-Dimethyl-3-nitrobenzene	1000	
2,3,4,5-Tetrachlorophenol	2000	

Peak Tailing Factor Standard

M-528-PTF		1 x 1 mL
M-528-PTF-PAK	SAVE	5 x 1 mL
10 µg/mL each in CH ₂ Cl ₂		
2,4-Dimethylphenol	4-Nitrophenol	
2-Methyl-4,6-dinitrophenol	Pentachlorophenol	

Analyte Fortification Solution

M-528-AFS		1 x 1 mL
M-528-AFS-PAK	SAVE	5 x 1 mL
At stated conc. (µg/mL) in MeOH		
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		
2-Chlorophenol-d ₄	1000	
2,4-Dimethylphenol-3,5,6-d ₃	1000	
2,4,6-Tribromophenol	2500	

M-528-SS2		1 x 1 mL
M-528-SS2-PAK	SAVE	5 x 1 mL
At stated conc. (µg/mL) in MeOH		
2-Chlorophenol-d ₄	1000	
2,4-Dimethylphenol-3,5,6-d ₃	1000	
2,4,6-Tribromophenol	2000	

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	1 x 1 mL
2.0 mg/mL Ethyl acetate	
3,4-Dinitrotoluene	

Internal Standard Fortification Solution

M-529-ISFS	1 x 1 mL
200 µg/mL Ethyl acetate:AcCN (96:4)	
2-Amino-4,6-dinitrotoluene	Nitrobenzene
4-Amino-2,6-dinitrotoluene	2-Nitrotoluene
3,5-Dinitroaniline	3-Nitrotoluene
1,3-Dinitrobenzene	4-Nitrotoluene
2,4-Dinitrotoluene	1,3,5-Trinitrobenzene
2,6-Dinitrotoluene	Tetryl
RDX	TNT

Surrogate Analyte Stock Solutions

M-529-SS1	1 x 1 mL
M-529-SS1-PAK	5 x 1 mL
1000 µg/mL each in MeOH	
1,3,5-Trimethyl-2-nitrobenzene	1,2,4-Trimethyl-5-nitrobenzene

M-529-SS2	1 x 1 mL
M-529-SS2-PAK	5 x 1 mL
1000 µg/mL each in CH ₂ Cl ₂	
Nitrobenzene-d ₅	

Surrogate Analyte Fortification Solution

M-529-SAFS	1 x 1 mL
100 µg/mL each in MeOH	
1,3,5-Trimethyl-2-nitrobenzene	Nitrobenzene-d ₅
1,2,4-Trimethyl-5-nitrobenzene	



Method 531 + 531.1 N-Methyl carbamoyl oximes & N-Methyl carbamates by HPLC

Method 531 Compounds (HPLC)

		1 mL	
Compound	Cat. No.	Compound	Cat. No.
Aldicarb sulfoxide	M-531-01	Propoxur	M-531-07
Aldicarb sulfone	M-531-02	Carbofuran	M-531-08
Oxamyl	M-531-03	Carbaryl	M-531-09
Methomyl	M-531-04	1-Naphthol	M-531-10
3-Hydroxycarbofuran	M-531-05	Methiocarb	M-531-11
Aldicarb	M-531-06		

M-531-SET 11 x 1 mL
Each at 0.1 mg/mL in AcCN

M-531M 1 x 1 mL
M-531M-PAK **SAVE** 5 x 1 mL
0.1 mg/mL each in AcCN 11 comps. listed above

Performance Check Solution

Performance Check Solution				1 x 1 mL
M-531-QC-R				4 comps.
At stated conc. (µg/mL) in AcCN				
Aldicarb sulfoxide	100	3-Hydroxycarbofuran	2	
BDMC	10	Methiocarb	20	

Internal Standard

M-531-IS 1 x 1 mL
0.1 mg/mL in AcCN
4-Bromo-3,5-dimethylphenyl-N-methylcarbamate (BDMC)

Carbamate Pesticide Mix

M-531-REG-ASL 1 x 1 mL
M-531-REG-ASL-PAK **SAVE** 5 x 1 mL
100 µg/mL in MeOH 2 comps.
Carbofuran Oxamyl

Method 532 Phenylureas by HPLC

Phenylurea Concentrate Standard

M-532-CONC1 1 x 1 mL
M-532-CONC1-PAK **SAVE** 5 x 1 mL
5.0 mg/mL each in MeOH 6 comps.

Karmex	Linuron	Siduron
Fluometuron	Propanil	Tebuthiuron

Phenylurea Concentrate Standard

M-532-CONC2 1 x 1 mL
M-532-CONC2-PAK **SAVE** 5 x 1 mL
5.0 mg/mL each in Acetone 2 comps.

Diflubenzuron	Thidiazuron
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Phenylurea Primary Dilution Standard

M-532 1 x 1 mL
M-532-PAK **SAVE** 5 x 1 mL
100 µg/mL each in MeOH, except Siduron 8 comps.

Diflubenzuron	Linuron	Tebuthiuron
Karmex	Propanil	Thidiazuron
Fluometuron	Siduron (200 µg/mL)	

Phenylurea Surrogate Standard

M-532-SS 1 x 1 mL
M-532-SS-PAK **SAVE** 5 x 1 mL
500 µg/mL each in MeOH 2 comps.
Carbazole Monuron

Method 535 Acetanilide/Acetamide Herbicide Degradates

Ethanesulfonic acid (ESA) and oxanilic acid (OA) degradation products of acetanilide/acetamide herbicides have been found in U.S. ground waters and surface waters. The substitution of the sulfonic acid or the carbonic acid for the chlorine atom greatly increases the water solubility of degradates relative to the parent compound and contributes to the increased potential for leaching into groundwater. As a result, alachlor ESA and other acetanilide degradation products were listed on the 1998 Safe Drinking Water Act Contaminant Candidate List (CCL). One acetamide and five acetanilide herbicides are currently registered for agricultural use in the U.S. The next step in the CCL-process is to collect data on the concentrations and occurrence of these compounds in the nation's drinking water supplies. However, the existing analytical methods for measuring chloroacetanilide degradates do not address issues specific to analyzing these compounds in drinking water. Because many of the methods were developed for ground water, dechlorination was not addressed nor was the method tested in all types of drinking water matrices. In addition, existing methods do not address all twelve ESA and OA degradates of the six U.S. registered acetanilide/acetamide herbicides. The focus of this research was to develop a sensitive and specific analytical method for the analysis of alachlor ESA and other chloroacetanilide degradates in drinking water.

Method 535 Set

M-535-SET 14 x 1 mL
At stated conc. (µg/mL) in MeOH

Acetochlor ESA	50	Propachlor ESA	20
Acetochlor OA	50	Propachlor OA	20
Alachlor ESA	50	Dimethenamid ESA	10
Alachlor OA	50	Dimethenamid OA	10
Flufenacet ESA	20	Butachlor ESA sodium salt	20
Flufenacet OA	20	(internal standard)	
Metolachlor ESA	50	Dimethachlor ESA sodium salt	20
Metolachlor OA	50	(surrogate standard)	



EPA Method 500 Series

Method 537 Perfluorinated Compounds (PFCs)

Compound	CAS No.	Conc.	Matrix	Cat. No.	1 mL
Perfluorooctanoic acid	335-67-1	100 mg	NEAT	PFOA-001N	
		100 µg/mL	MeOH	PFOA-001S	
Perfluorobutanoic acid	375-22-4	100 µg/mL	MeOH	PFOA-002S	
Perfluorodecanoic acid	335-76-2	100 µg/mL	MeOH	PFOA-003S	
Perfluorododecanoic acid	307-55-1	100 µg/mL	MeOH	PFOA-004S	
Perfluoroheptanoic acid	375-85-9	100 µg/mL	MeOH	PFOA-005S	
Perfluorohexanoic acid	307-24-4	100 µg/mL	MeOH	PFOA-006S	
Perfluorononanoic acid	375-95-1	100 µg/mL	MeOH	PFOA-007S	
Perfluoropentanoic acid	2706-90-3	100 µg/mL	MeOH	PFOA-008S	
Perfluoroundecanoic acid	2058-94-8	100 µg/mL	MeOH	PFOA-009S	
2H,2H,3H,3H-Perfluoroundecanoic acid	34598-33-9	100 µg/mL	MeOH	PFOA-010S	
Perfluorooctane sulfonic acid	1763-23-1	100 µg/mL	MeOH	PFOS-001S	
Potassium perfluorooctanesulfonate	2795-39-3	100 mg	NEAT	PFOS-002N	
		100 µg/mL	MeOH	PFOS-002S	
Scotchgard™ Pre-2002 Formulation (Tech mix)		100 µg/mL	MeOH	PFOS-SCG-001S	
Scotchgard™ Post-2002 Formulation (Tech mix)		100 µg/mL	MeOH	PFOS-SCG-002S	

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Scotchgard 3M

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 Deionized water as non-hydrated species	2 comps.
Diquat dibromide - H ₂ O (1.97 mg/mL)	
Paraquat dichloride - 4 H ₂ O (1.77 mg/mL)	

Method 550 + 550.1 PAHs by HPLC & Internal Standard

M-550-QC	1 x 1 mL
At stated conc. (µg/mL) in AcCN	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 AcCN	
4,4'-Difluorobiphenyl	

Method 551 Chlorinated Organic Solvents + Trihalomethanes by GC/ECD

M-551A	1 x 1 mL
M-551A-PAK	5 x 1 mL
5.0 mg/mL each in MeOH	10 comps.
Bromodichloromethane	1,2-Dibromoethane
Bromoform	1,2-Dibromo-3-chloropropane
Carbon tetrachloride	Tetrachloroethene
Chlorodibromomethane	1,1,1-Trichloroethane
Chloroform	Trichloroethene

Disinfection By-products

M-551B	1 x 1 mL
5.0 mg/mL each in Acetone	8 comps.
M-551B-SET	8 x 1 mL
Each at 5.0 mg/mL in Acetone	

	Cat. No.	1 mL
Bromochloroacetonitrile	M-551B-1	
Chloral hydrate	M-551B-2	
Chloropicrin	M-551B-3	
Dibromoacetonitrile	M-551B-4	
Dichloroacetonitrile	M-551B-5	
1,1-Dichloro-2-propanone	M-551B-6	
Trichloroacetonitrile	M-551B-7	
1,1,1-Trichloro-2-propanone	M-551B-8	



Method 551.1A Chlorinated Solvents, Trihalomethanes Disinfection By-products & Halogenated Pesticides/Herbicides in Drinking Water by GC/ECD

Chlorinated Organic Solvents + Trihalomethanes

M-551.1A		1 x 1 mL
M-551.1A-PAK	SAVE	5 x 1 mL
At stated conc. (µg/mL) in Acetone		12 comps.
Bromodichloromethane	1000	
Bromoform	1000	
Carbon tetrachloride	500	
Chloroform	1000	
Dibromochloromethane	1000	
1,2-Dibromo-3-chloropropane	1000	
1,2-Dibromoethane	1000	
Tetrachloroethene	500	
1,1,1-Trichloroethane	1000	
1,1,2-Trichloroethane	10,000	
Trichloroethene	1000	
1,2,3-Trichloropropane	10,000	

Disinfection By-products

M-551.1B		1 x 1 mL
M-551.1B-PAK	SAVE	5 x 1 mL
1000 µg/mL each in Acetone		8 comps.
Bromochloroacetonitrile	Dichloroacetonitrile	
Chloral hydrate	1,1-Dichloro-2-propanone	
Chloropicrin	Trichloroacetonitrile	
Dibromoacetonitrile	1,1,1-Trichloro-2-propanone	

Pesticide/Herbicide Mixture

M-551.1C		1 x 1 mL
M-551.1C-PAK	SAVE	5 x 1 mL
At stated conc. (µg/mL) in Acetone		17 comps.
Alachlor	10	Hexachlorobenzene 1
Atrazine	200	Hexachlorocyclopentadiene 1
Bromacil	10	Lindane 1
Cyanazine	30	Methoxychlor 5
Endrin	2	Metolachlor 10
Endrin aldehyde	2	Metribuzin 5
Endrin ketone	2	Simazine 200
Heptachlor	1	Trifluralin 1
Heptachlor epoxide (Isomer B)	1	

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		1 x 1 mL
M-551.1-LPC-P-PAK	SAVE	5 x 1 mL
At stated conc. (µg/mL) in Pentane		7 comps.
Alachlor	83	Hexachlorocyclopentadiene 20
Bromacil	83	Lindane 0.2
Bromodichloromethane	30	Trichloroethene 30
Endrin	30	

MtBE Extracts

M-551.1-LPC		1 x 1 mL
M-551.1-LPC-PAK	SAVE	5 x 1 mL
At stated conc. (µg/mL) in MtBE		7 comps.
Alachlor	83	Hexachlorocyclopentadiene 20
Bromacil	83	Lindane 0.2
Bromodichloromethane	30	Trichloroethene 30
Endrin	30	

Internal Standard Solutions

M-551.1-IS		1 x 1 mL
M-551.1-IS-PAK	SAVE	5 x 1 mL
100 µg/mL in Acetone		
M-551.1-IS-100X		1 x 1 mL
M-551.1-IS-100X-PAK	SAVE	5 x 1 mL
10,000 µg/mL in Acetone		
<i>p</i> -Bromofluorobenzene		

Modified Laboratory Performance Check Solutions

Pentane Extracts

M-551.1-MLPC-P		1 x 1 mL
M-551.1-MLPC-P-PAK	SAVE	5 x 1 mL
At stated conc. (µg/mL) in Pentane		4 comps.
γ-BHC	0.2	Hexachlorocyclopentadiene 20
Bromodichloromethane	30	Trichloroethene 30

MtBE Extracts

M-551.1-MLPC		1 x 1 mL
M-551.1-MLPC-PAK	SAVE	5 x 1 mL
At stated conc. (µg/mL) in MtBE		4 comps.
γ-BHC	0.2	Hexachlorocyclopentadiene 20
Bromodichloromethane	30	Trichloroethene 30

Surrogate Standard Solutions

M-551.1-SS		1 x 1 mL
M-551.1-SS-PAK	SAVE	5 x 1 mL
10 µg/mL in Acetone		
M-551.1-SS-100X		1 x 1 mL
M-551.1-SS-100X-PAK	SAVE	5 x 1 mL
1,000 µg/mL in Acetone		
Decafluorobiphenyl		



EPA Method 500 Series

Method 552 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.	1 mL
2,4-Dichloroanisole	M-552-R-01	
Methyl bromoacetate	M-552-R-02	
Methyl bromochloroacetate	M-552-R-03	
Methyl chloroacetate	M-552-R-04	
Methyl dibromoacetate	M-552-R-05	
Methyl dichloroacetate	M-552-R-06	
Methyl trichloroacetate	M-552-R-07	
2,4,6-Trichloroanisole	M-552-R-08	

Underivatized Analytes

M-552A-R 1 x 1 mL
1.0 mg/mL each in MtBE 8 comps.

M-552A-R-SET 8 x 1 mL
Each at 1.0 mg/mL in MtBE

	Cat. No.	1 mL
Bromoacetic acid	M-552A-R-01	
Bromochloroacetic acid	M-552A-R-02	
Chloroacetic acid	M-552A-R-03	
Dibromoacetic acid	M-552A-R-04	
Dichloroacetic acid	M-552A-R-05	
2,4-Dichlorophenol	M-552A-R-06	
Trichloroacetic acid	M-552A-R-07	
2,4,6-Trichlorophenol	M-552A-R-08	

Internal Standards

APP-9-208-10X 1 x 1 mL
APP-9-208-10X-PAK **SAVE** 5 x 1 mL
1.0 mg/mL in MeOH

1,2,3-Trichloropropane

M-552-IS 1 x 1 mL
M-552-IS-PAK **SAVE** 5 x 1 mL
5.0 mg/mL in MeOH

1,2-Dibromopropane

Surrogate Standards as Acids & Methyl esters

P-242S-10X 1 x 1 mL
P-242S-10X-PAK **SAVE** 5 x 1 mL
1.0 mg/mL in MeOH

3,5-Dichlorobenzoic acid

P-247S-10X 1 x 1 mL
P-247S-10X-PAK **SAVE** 5 x 1 mL
1.0 mg/mL in MeOH

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.	1 mL
Dalapon methyl ester	200	M-552.1-01	
Methyl bromoacetate	200	M-552.1-02	
Methyl bromochloroacetate	200	M-552.1-03	
Methyl chloroacetate	300	M-552.1-04	
Methyl dibromoacetate	100	M-552.1-05	
Methyl dichloroacetate	300	M-552.1-06	
Methyl trichloroacetate	100	M-552.1-07	

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-Bromopropionic acid

M-552.1-SS-ME 1 x 1 mL
M-552.1-SS-ME-PAK **SAVE** 5 x 1 mL
1.0 mg/mL in MtBE

Methyl 2-bromopropionate

Buy AccuPAKs
Save 20-40% 5 x 1 mL





Method 552.2 Haloacetic Acids & Dalapon in Drinking Water by L-L extraction, Derivatization & GC by ECD

These convenient sets of 10 individual ampules for Method 552.2, each containing a single analyte or its methyl derivative, were formulated with both the acids 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.	1 mL
Dalapon methyl ester	40	M-552.2-01	
Methyl bromoacetate	40	M-552.2-02	
Methyl bromochloroacetate	40	M-552.2-03	
Methyl bromodichloroacetate	40	M-552.2-04	
Methyl chloroacetate	60	M-552.2-05	
Methyl chlorodibromoacetate	100	M-552.2-06	
Methyl dibromoacetate	20	M-552.2-07	
Methyl dichloroacetate	60	M-552.2-08	
Methyl tribromoacetate	200	M-552.2-09 *	
Methyl trichloroacetate	20	M-552.2-10	

Haloacetic Acid Methyl Derivatives with Surrogate (Methyl-2,3-dibromopropionate)

M-552.2		1 x 1 mL	
<i>At stated conc. (µg/mL) in MtBE</i>		11 comps.	
M-552.3		1 x 1 mL	
<i>100 µg/mL each in MtBE</i>		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)	

Surrogate Standard - Haloacetic Acid Methyl Derivative

M-552.2-SS-ME	1 x 1 mL
1000 µg/mL in MtBE	
Methyl 2,3-dibromopropionate	

Laboratory Performance Check Solution

M-552.2-LPC	1 x 1 mL
M-552.2-LPC-PAK	5 x 1 mL
At stated conc. (µg/mL) in MtBE	4 comps.
Methyl bromochloroacetate	4
Methyl chloroacetate	6
Methyl chlorodibromoacetate	10
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
At stated conc. (ng/mL) in MtBE	4 comps.

Methyl bromochloroacetate	4
Methyl chloroacetate	6
Methyl chlorodibromoacetate	10
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.	1 mL
Dalapon acid	40	M-552.2A-04	
Monobromoacetic acid	40	M-552.2A-07	
Bromochloroacetic acid	40	M-552.2A-01	
Bromodichloroacetic acid	40	M-552.2A-02	
Monochloroacetic acid	60	M-552.2A-08	
Chlorodibromoacetic acid	100	M-552.2A-03	
Dibromoacetic acid	20	M-552.2A-05	
Dichloroacetic acid	60	M-552.2A-06	
Tribromoacetic acid	200	M-552.2A-09	
Trichloroacetic acid	20	M-552.2A-10	

Haloacetic Acid Mix with Surrogate (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	

* ColdPAK required to maintain integrity of product.



EPA Method 500 Series

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 AcCN: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 AcCN	
DFTPPO (Decafluorotriphenylphosphine oxide)	

Method 554 Carbonyl Compounds as DNPH Derivatives by HPLC

Carbonyl Compounds

M-554-R1	1 x 1 mL
1.0 mg/mL each in AcCN	12 comps.

M-554-DNPH-SET	12 x 1 mL
Each at 1.0 mg/mL in MeOH:AcCN (95:5)	

	Cat. No.	1 mL
Acetaldehyde	M-554-01 *	
Butanal	M-554-02 *	
Crotonaldehyde	M-554-03 *	
Cyclohexanone	M-554-04 *	
Decanal	M-554-05	
Formaldehyde	M-554-06 *	
Heptanal	M-554-07	
Hexanal	M-554-08	
Nonanal	M-554-09	
Octanal	M-554-10	
Pentanal	M-554-11	
Propanal	M-554-12 *	

DNPH Derivatives

M-554-DNPH	1 x 1 mL
1.0 mg/mL each in MeOH:AcCN (95:5)	12 comps.

M-554-DNPH-R1	1 x 1 mL
1.0 mg/mL each in AcCN	12 comps.

M-554-DNPH-SET	12 x 1 mL
Each at 1.0 mg/mL in MeOH:AcCN (95:5)	

	Cat. No.	1 mL
Acetaldehyde-DNPH	M-554-DNPH-01 *	
Butanal-DNPH	M-554-DNPH-02	
Crotonaldehyde-DNPH	M-554-DNPH-03	
Cyclohexanone-DNPH	M-554-DNPH-04	
Decanal-DNPH	M-554-DNPH-05	
Formaldehyde-DNPH	M-554-DNPH-06	
Heptanal-DNPH	M-554-DNPH-07	
Hexanal-DNPH	M-554-DNPH-08	
Nonanal-DNPH	M-554-DNPH-09	
Octanal-DNPH	M-554-DNPH-10	
Pentanal-DNPH	M-554-DNPH-11	
Propanal-DNPH	M-554-DNPH-12	

† Subject to oxidation

* ColdPAK required to maintain integrity of product.

Method 555 Chlorinated Acids by HPLC

Mix A

M-555A	1 x 1 mL
1.0 mg/mL each in AcCN	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 AcCN	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 AcCN	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 AcCN	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, contact us for details.

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 AcCN		
M-556-SS-100X		1 x 1 mL
M-556-SS-100X-PAK	SAVE	5 x 1 mL
2.0 mg/mL in AcCN		
2',4',5'-Trifluoroacetophenone		

PFBHA Reagent

M-556-DER-10ML		1 x 10 mL
M-556-DER-10ML-PAK	SAVE	5 x 10 mL
15 mg/mL in Water		
O-(2,3,4,5,6-Pentafluorobenzyl)hydroxylamine hydrochloride		

Working Level (Internal Standard)

M-556-IS-WL-5ML-VAP		10 x 5 mL
400 µg/L in Hexane		
1,2-Dibromopropane		

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)

ASTM D7598, D7599, D7600, D7645

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

1 x 1 mL

Thiodiglycol

ASTM Thiodiglycol Surrogate Standard

D-7598-SS
4.0 mg/mL in MeOH

1 x 1 mL

3,3'-Thiodipropyl

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

1 x 1 mL
5 comps.

Diethanolamine
Triethanolamine
N-Methyldiethanolamine
N-Ethyldiethanolamine
Diethanolamine-d₈

ASTM Ethanolamine Surrogate Standard

D-7599-SS
200 µg/mL in MeOH

1 x 1 mL

Diethanolamine-d₈

ASTM Methods D7600 and D7645 apply to the analysis of carbamate pesticides in drinking and surface waters. The biological affect 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.

D7600 Analysis for Carbamates in Drinking Water (LC/MS/MS)

ASTM Carbamate Standard

D-7600
At stated conc. (µg/mL) in MeOH 5 comps.

1 x 1 mL

Ardicarb 200
Carbofuran 200
Oxamyl 200
Methomyl 200
BDMC 400

ASTM Carbamate Surrogate Standard

D-7600-SS
400 µg/mL in MeOH

1 x 1 mL

BDMC (4-Bromo-3,5-dimethylphenyl-N-methyl carbamate)

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

1 x 1 mL
8 comps.

Ardicarb
Aldicarb sulfone
Aldicarb sulfoxide
Carbofuran
Oxamyl
Methomyl
Thiofanox
Carbofuran-d₃

ASTM Carbamate Matrix Spike Standard

D-7645-MS
50 µg/mL each in MeOH

1 x 1 mL
7 comps.

Ardicarb
Aldicarb sulfone
Aldicarb sulfoxide
Carbofuran
Oxamyl
Methomyl
Thiofanox

ASTM Carbamate Surrogate Standard

D-7645-SS
D-7645-SS-PAK **SAVE**
100 µg/mL in MeOH

1 x 1 mL
5 x 1 mL

Carbofuran-d₃



National Primary Drinking Water Standards

EPA Safe Drinking Water Act (SDWA) Amendment National Primary Drinking Water Standards

The Safe Drinking Water Act (SDWA) amendment of 1996 established a new charter for the Nation's public water systems. The Environmental Protection Agency sets standards for protecting the safety of drinking water. The regulatory section of this act eliminates the requirement for the EPA to regulate 25 additional contaminants every three years. Instead, every 5 years from enactment of the amendment the EPA will determine whether or not to regulate at least 5 new contaminants from a list being published within 18 months of the enactment of the amendment. The following two pages of National Primary Drinking Water Standards are formulated to provide convenience and flexibility when analyzing regulated contaminants from the Drinking Water Priority list.

Volatiles

Phase I

VOCs

M-502C-07

2.0 mg/mL each in MeOH

1 x 1 mL
12 comps.

Benzene	1,4-Dichlorobenzene
Bromodichloromethane	1,2-Dichloroethane
Bromoform	1,1-Dichloroethylene
Carbon tetrachloride	1,1,1-Trichloroethane
Chloroform	Trichloroethylene
Dibromochloromethane	Vinyl chloride

Phase 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
<i>cis</i> -1,3-Dichloropropene *	* <i>cis</i> (1.06 x conc.)
<i>trans</i> -1,3-Dichloropropene **	** <i>trans</i> (0.94 x conc.)
Hexachlorobutadiene	

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
<i>cis</i> -1,2-Dichloroethylene	Toluene
<i>trans</i> -1,2-Dichloroethylene	<i>o</i> -Xylene
1,2-Dichloropropane	<i>m</i> -Xylene
Ethylbenzene	<i>p</i> -Xylene

Combined Phase I, Phase II, Phase V VOCs

M-502-REG

M-502-REG-PAK

0.2 mg/mL each in MeOH

SAVE

1 x 1 mL
5 x 1 mL
27 comps.

M-502-REG-10X

M-502-REG-10X-PAK

2.0 mg/mL each in MeOH

SAVE

5 x 1 mL
5 x 1 mL
27 comps.

Benzene	Dibromochloromethane	<i>trans</i> -1,2-Dichloroethylene	Tetrachloroethylene	Trichloroethylene
Bromodichloromethane	1,2-Dichlorobenzene	Dichloromethane	Toluene	Vinyl chloride
Bromoform	1,4-Dichlorobenzene	1,2-Dichloropropane	1,2,4-Trichlorobenzene	<i>m</i> -Xylene
Carbon tetrachloride	1,2-Dichloroethane	Ethylbenzene	1,1,1-Trichloroethane	<i>o</i> -Xylene
Chlorobenzene	1,1-Dichloroethylene	Styrene	1,1,2-Trichloroethane	<i>p</i> -Xylene
Chloroform	<i>cis</i> -1,2-Dichloroethylene			

Method 504 EDB & DBCP

M-504

M-504-PAK

0.2 mg/mL each in MeOH

SAVE

1 x 1 mL
5 x 1 mL
2 comps.

1,2-Dibromoethane (EDB)	1,2-Dibromo-3-chloropropane (DBCP)
-------------------------	------------------------------------

Method Specific Individual Standards

Compound	Method	Concentration	Cat. No.
Diquat	549.1	100 µg/mL in MeOH	P-231S
Endothall	548.1	100 µg/mL in MeOH	P-183S
Ethylene thiourea *	509	0.1 mg/mL in 0.1 w/v DTT in Ethyl acetate	M-509
Glyphosate	547	100 µg/mL in Water	M-547
2,3,7,8-TCDD	525	50 µg/mL in Toluene	D-404S
Toxaphene	525	2.5 mg/mL in Acetone	M-525-5
Water Treatment Chemicals			
Acrylamide	8032	1.0 mg/mL in MeOH	M-8032
Epichlorohydrin	8260B	2000 µg/mL in MeOH	M-8240E-R-13-10X

► 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 Mixture (Non-derivatized)

M-515-REG			1 x 1 mL
At stated conc. (µg/mL) in Acetone			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 Mixtures (Methyl Derivatives)

M-515-REG-ME			1 x 1 mL
At stated conc. (ng/mL) in MtBE			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			1 x 1 mL
At stated conc. (µg/mL) in MtBE			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 Mixture

M-525-REG-EA		1 x 1 mL
0.1 mg/mL each in Ethyl Acetate		25 comps.
M-525-REG-EA-5X		1 x 1 mL
0.5 mg/mL each in Ethyl Acetate		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 Mixture

M-531-REG	1 x 1 mL
<i>0.1 mg/mL each in Acetonitrile</i>	8 comps.
Aldicarb	Carbofuran
Aldicarb sulfone	3-Hydrocarbofuran ◇
Aldicarb sulfoxide	Methomyl ◇◇
Carbaryl ◇	Oxamyl

Proposed Phase VIA Additions

Disinfectant By-products

Bromoform ◇◇	}	see Method 501 Total Trihalomethanes
Chloroform ◇◇		
Dibromochloromethane ◇◇		
Dichlorobromomethane ◇◇		
		Method 551, Chlorinated Solvents + Disinfectant By-products

Bromoacetic acid ◇◇	}	Haloacetic acids see Method 552.2
Chloroacetic acid ◇◇		
Dibromoacetic acid ◇◇		
Dichloroacetic acid ◇◇		
Trichloroacetic acid ◇◇		

Regulated Pesticide Mixture

M-508.1-ASL		1 x 1 mL
M-508.1-ASL-PAK	Alternate Source	SAVE
100 µg/mL each in MtBE		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 Mixture

M-525-REG-ASL		1 x 1 mL
M-525-REG-ASL-PAK	Alternate Source	SAVE
0.5 mg/mL each in Acetone		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 Mixture

M-531-REG-ASL		1 x 1 mL
M-531-REG-ASL-PAK	Alternate Source	SAVE
100 µg/mL each in MeOH		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

Water Protocol EPA Consent Decree

Purgeable A

M-001A 1 x 1 mL
0.2 mg/mL each in MeOH 11 comps.

Carbon tetrachloride
Chlorobenzene
Chloroform
Dibromochloromethane
1,1-Dichloroethane
1,1-Dichloroethylene
1,2-Dichloropropane
Methylene chloride
Tetrachloroethylene
1,1,2-Trichloroethane
Trichloroethylene

Purgeable B

M-001B-R 1 x 1 mL
0.2 mg/mL each in MeOH 13 comps.

Benzene
Bromodichloromethane
Bromoform
2-Chloroethyl vinyl ether
1,2-Dichloroethane
trans-1,2-Dichloroethylene
cis-1,3-Dichloropropene *
trans-1,3-Dichloropropene **
Ethylbenzene
1,1,2,2-Tetrachloroethane
Toluene
1,1,1-Trichloroethane
Trichlorofluoromethane

* *cis* (1.06 x conc.)
** *trans* (0.94 x conc.)

Purgeable C (Gases)

M-001C 1 x 1 mL
0.2 mg/mL each in MeOH 5 comps.

Bromomethane
Chloroethane
Chloromethane
Dichlorodifluoromethane
Vinyl chloride

Base/Neutral 1

M-001D 1 x 1 mL
At stated conc. (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

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 11 comps.

Butyl benzyl phthalate 0.2
2-Chloronaphthalene 0.2
1,2-Diphenylhydrazine 0.2
Fluoranthene 0.1
Hexachlorocyclopentadiene 0.2
Hexachloroethane 0.2
Isophorone 0.2
N-Nitroso-*di-n*-propylamine 0.2
N-Nitrosodiphenylamine 0.2
Phenanthrene 0.2
1,2,4-Trichlorobenzene 0.2

Base/Neutral 4

M-001G 1 x 1 mL
At stated conc. (mg/mL) in MeOH:CH₂Cl₂ (50:50)
M-001G-D 1 x 1 mL
At stated conc. (mg/mL) in CH₂Cl₂ 9 comps.

Benidine † 0.2
Benzo[k]fluoranthene 0.1
Benzo[g,h,i]perylene 0.1
Benz[a]pyrene 0.1
2-Chloroethyl vinyl ether 0.2
4-Chlorophenyl phenyl ether 0.2
Di-*n*-octyl phthalate 0.2
Indeno[1,2,3-*cd*]pyrene 0.1
N-Nitrosodimethylamine 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

Acrolein & Acrylonitrile

M-603 * 1 x 1 mL
1.0 mg/mL each in Water 2 comps.

* ColdPAK required to maintain integrity of product.

† Subject to oxidation

Internal Standard - Anthracene-d₁₀

M-001N 1 x 1 mL
2.0 mg/mL in CH₂Cl₂

Used as a GC/MS internal standard in the analysis of the base/neutral extractables.

M-001R 1 x 1 mL
20 mg/mL each in MeOH 3 comps.

Bromochloromethane
1,4-Dichlorobutane
2-Bromo-1-chloropropane

Recommended for use as internal standards for purgeables.

Complete Water Standard Kit

Z-009-R-SET

15 x 1 mL
M-001A, M-001B-R, M-001C, M-001D, M-001E, M-001F-D, M-001G, M-001H, M-001P, M-001K, M-001L, M-001J, M-603A, M-001N, M-001R

Purgeable A
Purgeable B
Purgeable C (Gases)

Base/Neutral 1
Base/Neutral 2
Base/Neutral 3
Base/Neutral 4

Pesticide Mixture
Phenol Mixture
Chlordane & Toxaphene
Aroclor Mix 1
Aroclor Mix 2

Acrolein-Acrylonitrile
Anthracene-d₁₀
Internal Standard

Standard Mixtures for EPA 600 Series

For Waste Water



Background Information

The EPA Methods for evaluating municipal and industrial wastewater pollutants are designated in the EPA 600 Series. This series of methods evolved from the 1976 agreement by the EPA to study and, if necessary, to regulate 65 "priority pollutants." Several laboratories within the EPA collaborated on research projects that led to the 600 Series Methods.

Methods 601-612 were first published in 1979, along with a GC/MS method for the measurement of TCDD. AccuStandard followed the expansion of the 600 series methods by formulating analytical standards for additional 600 series methods listed in the EPA book "Methods for the Determination of Nonconventional Pesticides in Municipal and Industrial Wastewater."

The 600 Series product line contains standards used in the proposed and promulgated methods for the identification and quantification of organic compounds in municipal and industrial waste water. The organic compounds listed in the various methods include volatile organic compounds (VOCs), pesticides and synthetic organic compounds (SOCs).

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.

**Match frequently
requested products.**

Alternate Source

**ASL products can be used as
an independent second source.**

Methods 601, 608, 615

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Thousands of Standards, just a click away

AccuStandard.com



EPA Method 600 Series

Method 601 Purgeable Halocarbons by Purge & Trap - GC/MS

Purgeable Halocarbon Sets

M-601-SET * 4 x 1 mL
0.2 mg/mL each in MeOH M-601A, M-502B, M-601C, M-501

M-601-10X-SET * 4 x 1 mL
2.0 mg/mL each 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 18 comps.

M-601A-10X 1 x 1 mL
M-601A-10X-PAK **SAVE** 5 x 1 mL
20 mg/mL each in MeOH 18 comps.

Carbon tetrachloride
Chlorobenzene
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethylene
trans-1,2-Dichloroethylene
1,2-Dichloropropane

cis-1,3-Dichloropropylene
trans-1,3-Dichloropropylene
Methylene chloride
1,1,2,2-Tetrachloroethane
Tetrachloroethylene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethylene

Certificate will reflect actual
cis/trans ratio

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.

Bromomethane
Chloromethane
Chloroethane

Dichlorodifluoromethane
Trichlorofluoromethane
Vinyl chloride

Liquid Component

M-601C * 1 x 1 mL
M-601C-PAK * **SAVE** 5 x 1 mL
0.2 mg/mL each in MeOH

M-601C-10X * 1 x 1 mL
M-601C-10X-PAK * **SAVE** 5 x 1 mL
2.0 mg/mL each in MeOH

2-Chloroethylvinyl ether

Trihalomethanes

M-501 1 x 1 mL
M-501-PAK **SAVE** 5 x 1 mL
0.2 mg/mL each in MeOH 4 comps.

M-501-10X 1 x 1 mL
2.0 mg/mL each in MeOH 4 comps.

Bromoform
Chloroform

Dichlorobromomethane
Dibromochloromethane

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.

* ColdPAK required to maintain integrity of product.

Purgeable Internal Standards

M-001R 1 x 1 mL
M-001R-PAK **SAVE** 5 x 1 mL
20 mg/mL each in MeOH 3 comps.

Bromochloromethane
1,4-Dichlorobutane

2-Bromo-1-chloropropane

Purgeable Halocarbon Mix

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

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
1,1,2,2-Tetrachloroethane
Tetrachloroethene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Trichlorofluoromethane
Vinyl chloride

* *cis* (1.06 x conc.)
** *trans* (0.94 x conc.)

Performance Check Solution

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

Benzene
Carbon tetrachloride
1,4-Dichlorobenzene
1,2-Dichloroethane

1,1-Dichloroethene
1,1,1-Trichloroethane
Trichloroethene
Vinyl chloride

Technical Note

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.





Method 601/602 Purgeable Halocarbons by GC/MS

Purgeable Halocarbons & Aromatics

M-601/602		1 x 1 mL
M-601/602-PAK	SAVE	5 x 1 mL
0.2 mg/mL each in MeOH		25 comps.
Benzene	1,2-Dichloropropane	
Bromoform	cis-1,3-Dichloropropylene	
Carbon tetrachloride	trans-1,3-Dichloropropylene	
Chlorobenzene	Ethylbenzene	
Chloroform	Methylene chloride	
Dibromochloromethane	1,1,2,2-Tetrachloroethane	
1,2-Dichlorobenzene	Tetrachloroethylene	
1,3-Dichlorobenzene	Toluene	
1,4-Dichlorobenzene	1,1,1-Trichloroethane	
Dichlorobromomethane	1,1,2-Trichloroethane	
1,1-Dichloroethane	Trichloroethylene	
1,2-Dichloroethane		
1,1-Dichloroethylene		
trans-1,2-Dichloroethylene		

Certificate will reflect actual
cis/trans ratio

Gases

M-601B		1 x 1 mL
M-601B-PAK	SAVE	5 x 1 mL
0.2 mg/mL each in MeOH		6 comps.
Bromomethane	Dichlorodifluoromethane	
Chloromethane	Trichlorofluoromethane	
Chloroethane	Vinyl chloride	

Liquids

M-601C *		1 x 1 mL
M-601C-PAK *	SAVE	5 x 1 mL
0.2 mg/mL in MeOH		
M-601C-10X *		1 x 1 mL
M-601C-10X-PAK *	SAVE	5 x 1 mL
2.0 mg/mL in MeOH		
2-Chloroethylvinyl ether		

Purgeable Aromatics

M-602		1 x 1 mL
M-602-PAK	SAVE	5 x 1 mL
0.2 mg/mL each in MeOH		7 comps.
Benzene	1,4-Dichlorobenzene	
Chlorobenzene	Ethylbenzene	
1,2-Dichlorobenzene	Toluene	
1,3-Dichlorobenzene		

Purgeable Aromatics - Gasoline ID

M-602-GAS		1 x 1 mL
M-602-GAS-PAK	SAVE	5 x 1 mL
0.2 mg/mL each in MeOH		11 comps.
M-602-GAS-10X		1 x 1 mL
M-602-GAS-10X-PAK	SAVE	5 x 1 mL
2.0 mg/mL each in MeOH		11 comps.
Benzene	Toluene	
Chlorobenzene	o-Xylene	
1,2-Dichlorobenzene	p-Xylene	
1,3-Dichlorobenzene	m-Xylene	
1,4-Dichlorobenzene	MtBE	
Ethylbenzene		

Surrogate Standard

M-602-SS		1 x 1 mL
M-602-SS-PAK	SAVE	5 x 1 mL
0.2 mg/mL in MeOH		
M-602-SS-100X		1 x 1 mL
20 mg/mL in MeOH		
α,α,α-Trifluorotoluene		

Combined 601/602 Purgeable Halocarbon & Aromatic Gasoline ID Mixture with MtBE

M-601-CHG		1 x 1 mL
M-601-CHG-PAK	SAVE	5 x 1 mL
100 µg/mL each in MeOH		35 comps.
Benzene	cis-1,3-Dichloropropene *	
Bromodichloromethane	trans-1,3-Dichloropropene **	
Bromoform	Dichloromethane	
Bromomethane	Ethylbenzene	
Carbon tetrachloride	MtBE	
Chlorobenzene	1,1,2,2-Tetrachloroethane	
Chloroethane	Tetrachloroethene	
Chloroform	Toluene	
Chloromethane	1,1,1-Trichloroethane	
Dibromochloromethane	1,1,2-Trichloroethane	
1,2-Dichlorobenzene	Trichloroethene	
1,3-Dichlorobenzene	Trichlorofluoromethane	
1,4-Dichlorobenzene	m-Xylene	
Dichlorodifluoromethane	o-Xylene	
1,1-Dichloroethane	p-Xylene	
1,2-Dichloroethane	Vinyl chloride	
1,1-Dichloroethene		
trans-1,2-Dichloroethene		
1,2-Dichloropropane		

* cis (1.06 x conc.)
** trans (0.94 x conc.)

Technical Note

AccuStandard designed two sets of formulations for those laboratories analyzing Method 601/602 analytes by PID/HALL in series allowing for simultaneous screening for gasoline contamination:

M-601/602 The first set of formulations provide the analytical chemist with the method analytes in a core mix of liquids and a separate mix of the more volatile gases. By providing the six gases in a separate solution the chemist can replace the volatile gases on a more frequent basis.

M-601-CHG The second formulation has the Method 601/602 analytes plus the oxygenate MtBE in one convenient solution. Since the oxygenate MtBE is added to gasoline, its presence on a chromatogram can provide early detection of gasoline contamination at the monitoring well.

Target Analytes

M-601/602/BTEX		1 x 1 mL
0.2 mg/mL each in MeOH		26 comps.
M-601/602/BTEX-10X		1 x 1 mL
2.0 mg/mL each in MeOH		26 comps.
Benzene	1,1,1-Trichloroethane	
Carbon tetrachloride	1,1,2,2-Tetrachloroethane	
Chlorobenzene	1,1,2-Trichloroethane	
Ethylbenzene	1,1-Dichloroethane	
MtBE	1,1-Dichloroethene	
Methylene chloride	1,2-Dichlorobenzene	
Tetrachloroethene	1,2-Dichloroethane	
Toluene	1,2-Dichloropropane	
Trichloroethene	o-Xylene	
cis-1,3-Dichloropropene	m-Xylene	
cis-1,2-Dichloroethene	p-Xylene	
trans-1,2-Dichloroethene	1,3-Dichlorobenzene	
trans-1,3-Dichloropropene	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		1 x 1 mL
200 µg/mL in MeOH		
S-078-10X		1 x 1 mL
2.0 mg/mL in MeOH		
Methyl t-butyl ether (MtBE)		

* ColdPAK required to maintain integrity of product.



EPA Method 600 Series

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
M-604-SS-PFB-PAK	SAVE	5 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 AcCN		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-n-butyl phthalate	
Dimethyl phthalate	Di-n-octyl phthalate	
Diethyl phthalate	bis(2-Ethylhexyl)phthalate	

* ColdPAK required to maintain integrity of product.

† 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-n-propylamine 0.2
N-Nitrosodiphenylamine	0.4	

Method 608 Pesticides and PCBs by GC/ECD

Pesticides and PCBs Set

M-608-SET	4 x 1 mL
M-001H, M-001J, M-001K, M-001L	

M-001H		1 x 1 mL
At stated conc. (mg/mL) in MeOH		16 comps.
Aldrin	0.1	4,4'-DDE 0.2
α-BHC	0.1	4,4'-DDT 0.6
β-BHC	0.1	Dieldrin 0.2
δ-BHC	0.1	Endosulfan I 0.2
γ-BHC	0.1	Endosulfan II 0.2
4,4'-DDD	0.6	Endosulfan sulfate 0.6
Endrin	0.2	
Endrin aldehyde	0.6	
Heptachlor	0.1	
Heptachlor epoxide	0.1	
(Isomer B)		

M-001J		1 x 1 mL
At stated conc. (mg/mL) in MeOH		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
α-BHC	0.02	4,4'-DDT 0.10
β-BHC	0.02	Dieldrin 0.02
δ-BHC	0.02	Endosulfan I 0.02
γ-BHC	0.02	Endosulfan II 0.10
4,4'-DDD	0.10	Endosulfan sulfate 0.10
Endrin	0.10	
Endrin aldehyde	0.02	
Heptachlor	0.02	
Heptachlor epoxide	0.02	
(Isomer B)		
Methoxychlor	0.02	

Pesticides

M-608-ASL		1 x 1 mL
M-608-ASL-PAK	SAVE	5 x 1 mL
20 µg/mL each in MeOH		16 comps.
Aldrin	γ-BHC	Dieldrin
α-BHC	p,p'-DDD	Endosulfan I
β-BHC	p,p'-DDE	Endosulfan II
δ-BHC	p,p'-DDT	Endosulfan sulfate
Endrin		Endrin aldehyde
Heptachlor		Heptachlor epoxide (Isomer B)

Technical Mix - Aroclors (Polychlorinated Biphenyls)

AccuPAK (5 x 1 mL)

SAVE

Each at 1,000 µg/mL in Hexane

Aroclors #	Cat. No.	1 mL	Cat. No.	PAK
Aroclor 1016	C-216S-H-10X		C-216S-H-10X-PAK	
Aroclor 1221	C-221S-H-10X		C-221S-H-10X-PAK	
Aroclor 1232	C-232S-H-10X		C-232S-H-10X-PAK	
Aroclor 1242	C-242S-H-10X		C-242S-H-10X-PAK	
Aroclor 1248	C-248S-H-10X		C-248S-H-10X-PAK	
Aroclor 1254	C-254S-H-10X		C-254S-H-10X-PAK	
Aroclor 1260	C-260S-H-10X		C-260S-H-10X-PAK	
Aroclor 1262	C-262S-H-10X		C-262S-H-10X-PAK	
Aroclor 1268	C-268S-H-10X		C-268S-H-10X-PAK	



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	Methoxychlor	
DCPA	cis-Permethrin *	
Dichloran	trans-Permethrin *	

* Actual concentrations stated on Certificate of Product Data

Method 609 Nitroaromatics & Isophorone by GC/ECD/FID

Method 609 Nitroaromatic and 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

M-609B-R	1 x 1 mL
1.0 mg/mL each in Hexane	2 comps.
2,4-Dinitrotoluene	2,6-Dinitrotoluene

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:CH ₂ Cl ₂ (50:50)	16 comps.
M-610A	1 x 1 mL
At stated conc. (mg/mL) in MeOH:CH ₂ Cl ₂ (50:50)	16 comps.
M-610-QC	1 x 1 mL
At stated conc. (mg/mL) in AcCN	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

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	5 x 1 mL
10 µg/mL in Toluene	SAVE
2,3,7,8-Tetrachlorodibenzo-p-dioxin	

Method 614 & 614.1 Organophosphorus Pesticides by GC/NPD

M-614	1 x 1 mL
1,000 µg/mL each in Acetone:Hexane (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	Alternate Source	1 x 1 mL
At stated conc. (µg/mL) in Hexane		4 comps.
Dioxathion 10	Ethion 100	
EPN 200	Terbufos 4	

Matrix Spiking Solution

M-610-MS				1 x 1 mL
M-610-MS-PAK				5 x 1 mL
<i>At stated conc. (mg/mL) in AcCN</i>		SAVE		6 comps.
Benz[a]pyrene	0.5	2-Methylnaphthalene	5.0	
Chrysene	0.5	Phenanthrene	0.5	
1-Methylnaphthalene	5.0	Pyrene	0.5	

For additional formulations
see Method 8310



EPA Method 600 Series

Method 615 Chlorinated Herbicides

Chlorinated Herbicides

Compound	Herbicide Acids	Methyl Derivatives	1 mL
	In MeOH Cat. No.	In Hexane Cat. No.	
2,4-D	M-8150S-A-01	M-8150-01	
2,4-DB	M-8150S-A-02	M-8150-02	
2,4,5-T	M-8150S-A-03	M-8150-03	
2,4,5-TP	M-8150S-A-04	M-8150-04	
Dalapon	M-8150S-A-05	M-8150-05	
Dicamba	M-8150S-A-06	M-8150-06	
Dichlorprop	M-8150S-A-07	M-8150-07	
Dinoseb	M-8150S-A-08	M-8150-08	
MCPA (2.0 mg/mL)	M-8150S-A-09	M-8150-09	
MCPP (2.0 mg/mL)	M-8150S-A-10	M-8150-10	
10 x 1 mL	M-8150A-SET	M-8150-SET	

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

Method 617 Chlorinated Pesticides & PCBs (Cont.)

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

Method 618 Volatile Pesticides by GC/ECD

Volatile Pesticides

M-618 1 x 1 mL
20 mg/mL each in Isooctane 2 comps.

Chloropicrin	Ethylene dibromide
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Internal Standard

M-618-IS 1 x 1 mL
20 mg/mL in Isooctane

Bromoform

Method 619 Triazine Herbicides by GC/NPD

Triazine Herbicides

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.	1 mL	Compound	Cat. No.	1 mL
Ametryn	M-619-01		Sebumenton	M-619-07	
Atraton	M-619-02		Simetryn	M-619-08	
Atrazine	M-619-03		Simazine	M-619-09	
Prometon	M-619-04		Terbutylazine	M-619-10	
Prometryne	M-619-05		Terbutryn	M-619-11	
Propazine	M-619-06				

Method 620 Diphenylamine by GC/NPD

Diphenylamine

M-620 * 1 x 1 mL
1.0 mg/mL each in MeOH

Diphenylamine

* ColdPAK required to maintain integrity of product.



Method 622 Organophosphorus Pesticides by GC/NPD

Organophosphorus Pesticides

M-622-SET

Each at 1000 µg/mL in Hexane

27 x 1 mL

Azinphos methyl	Merphos
Bolstar (Sulprofos)	Mevinphos
Chlorpyrifos	Monocrotophos
Coumaphos	Naled
Demeton, O & S	Parathion ethyl
Diazinon	Parathion methyl
Dichlorvos	Phorate
Dimethoate	Ronnel
Disulfoton	Stirophos
EPN	Sulfotep
Ethoprop	TEPP
Fensulfthion *	Tokuthion
Fenthion	Trichloronate
Malathion	

* Hexane:Acetone (95:5)

Method 622.1 Thiophosphate Pesticides by GC/NPD

Thiophosphate Pesticides

M-622.1

1.0 mg/mL each in MtBE

1 x 1 mL

7 comps.

Aspon	Fonophos
Dichlofenthion	Phosmet
Famphur	Thionazin
Fenitrothion	

**Tens of thousands of Standards
Ready-to-Ship**



Method 624 Purgeables by GC/MS

Purgeables

M-624

0.2 mg/mL each in MeOH

1 x 1 mL

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.	1 mL
Benzene-d ₆	M-624-SS-01	
Bromochloromethane	M-624-SS-02	
4-Bromofluorobenzene	M-624-SS-03	
2-Bromo-1-chloropropane	M-624-SS-04	
1,4-Dichlorobutane	M-624-SS-05	
1,2-Dichloroethane-d ₄	M-624-SS-06	
1,4-Difluorobenzene	M-624-SS-07	
Ethylbenzene-d ₁₀	M-624-SS-08	
Fluorobenzene	M-624-SS-09	
Pentafluorobenzene	M-624-SS-10	
1,2-Dichlorobenzene-d ₄	M-624-SS-11	
2-Bromochlorobenzene	M-624-SS-12	
4-Chlorofluorobenzene	M-624-SS-13	
a,a,a-Trichlorotoluene	M-624-SS-14	

Surrogate Standards

M-624-SS-M

M-624-SS-M-PAK

20 mg/mL each in MeOH

1 x 1 mL

SAVE

5 x 1 mL

3 comps.

4-Bromofluorobenzene	Pentafluorobenzene
Fluorobenzene	

Internal Standard

M-001R

M-001R-PAK

20 mg/mL each in MeOH

1 x 1 mL

SAVE

5 x 1 mL

3 comps.

Bromochloromethane	2-Bromo-1-chloropropane
1,4-Dichlorobutane	



EPA Method 600 Series

Method 625 Semi-Volatiles Analysis by GC/MS

The following composite mixtures were formulated to allow the flexibility of preparing a complete semi-volatile mix to meet your laboratory's specific needs. These Base/Neutral analytes are also available in a two-ampule set to extend the useful life of your stock calibration standards.

Base-Neutral Analytes

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 †
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 : AcCN (40:40:20)	44 Base-Neutrals and 2 Benzidines
CLP-HC-BN-SET	2 x 1 mL
CLP-HC-BN-SET-PAK	SAVE 5 x (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 : AcCN (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 Analysis by GC/MS (Continued)

Acid Extractables Mixture

M-625A		1 x 1 mL
M-625A-PAK	SAVE	5 x 1 mL
20 µg/mL each in MeOH		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.	1 mL
Aniline-d ₅	M-625-01	
Anthracene-d ₁₀	M-625-02	
Benz[a]anthracene-d ₁₂	M-625-03	
Decafluorobiphenyl	M-625-04	
4,4'-Dibromobiphenyl	M-625-05	
4,4'-Dibromooctafluorobiphenyl	M-625-06	
2,2'-Difluorobiphenyl	M-625-07	
4-Fluoroaniline	M-625-08	
2-Fluorobiphenyl	M-625-09	
1-Fluoronaphthalene	M-625-10	
2-Fluoronaphthalene	M-625-11	
Naphthalene-d ₈	M-625-12	
Nitrobenzene-d ₅	M-625-13	
Phenanthrene-d ₁₀	M-625-14	
Pyridine-d ₅	M-625-15	

Acids

Each at 0.2 mg/mL in CH₂Cl₂

Component	Cat. No.	1 mL
2-Fluorophenol	M-625-16	
Pentafluorophenol	M-625-17	
Phenol-d ₅	M-625-18	
2,4,6-Tribromophenol	M-625-19	
2-Chlorophenol-d ₄	M-625-20	

Pesticide Extractables Mixture

M-625P		1 x 1 mL
M-625P-PAK	SAVE	5 x 1 mL
20 µg/mL each in MeOH		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		5 x 1 mL
At stated conc. (µg/mL) in CH ₂ Cl ₂		
Component	Cat. No.	1 mL
Benzidine † (50)	M-625C-1	
Pentachlorophenol (25)	M-625C-2	
Decafluorotriphenylphosphine (DFTPP) (25)	M-625C-3	
Benzidine † (50) + DFTPP (25)	M-625C-4	
Pentachlorophenol (25) + DFTPP (25)	M-625C-5	

GC/MS Tuning Standards

M-625-TS		1 x 1 mL
M-625-TS-PAK	SAVE	5 x 1 mL
50 µg/mL each in CH ₂ Cl ₂		4 comps.
M-625-TS-20X		1 x 1 mL
M-625-TS-20X-PAK	SAVE	5 x 1 mL
1.0 mg/mL each in CH ₂ Cl ₂		4 comps.
Benzidine †	DFTPP	
p,p'-DDT	Pentachlorophenol	

CLP-TS		1 x 1 mL
CLP-TS-PAK	SAVE	5 x 1 mL
50 µg/mL in CH ₂ Cl ₂		
Perfluorokerosene		

Multi-Component Analytes (Polychlorinated Biphenyls, Chlordane & Toxaphene)

Each at 1.0 mg/mL in Hexane **AccuPAK (5 x 1 mL)**
SAVE

Aroclors #	Cat. No.	1 mL	Cat. No.	PAK
Aroclor 1016	C-216S-H-10X		C-216S-H-10X-PAK	
Aroclor 1221	C-221S-H-10X		C-221S-H-10X-PAK	
Aroclor 1232	C-232S-H-10X		C-232S-H-10X-PAK	
Aroclor 1242	C-242S-H-10X		C-242S-H-10X-PAK	
Aroclor 1248	C-248S-H-10X		C-248S-H-10X-PAK	
Aroclor 1254	C-254S-H-10X		C-254S-H-10X-PAK	
Aroclor 1260	C-260S-H-10X		C-260S-H-10X-PAK	
Aroclor 1262	C-262S-H-10X		C-262S-H-10X-PAK	
Aroclor 1268	C-268S-H-10X		C-268S-H-10X-PAK	
Pesticides				
Chlordane	P-017S-H-10X		P-017S-H-10X-PAK	
Toxaphene	P-093S-H-10X		P-093S-H-10X-PAK	

Chlordane and Toxaphene

M-001J		1 x 1 mL
M-001J-PAK	SAVE	5 x 1 mL
At stated conc. (mg/mL) in MeOH		2 comps.
Chlordane	0.02	Toxaphene 0.20

Polychlorinated Biphenyls

Aroclor Mix #1

M-001K		1 x 1 mL
0.2 mg/mL each in MeOH		4 comps.
Aroclor 1016	Aroclor 1248	
Aroclor 1232	Aroclor 1260	

Aroclor Mix #2

M-001L		1 x 1 mL
0.2 mg/mL each in MeOH		3 comps.
Aroclor 1221	Aroclor 1254	
Aroclor 1242		

Internal Standard Mix

Z-014J		1 x 1 mL
Z-014J-PAK	SAVE	5 x 1 mL
4.0 mg/mL each in CH ₂ Cl ₂		6 comps.
Acenaphthene-d ₁₀	Naphthalene-d ₈	
Chrysene-d ₁₂	Perylene-d ₁₂	
1,4-Dichlorobenzene-d ₄	Phenanthrene-d ₁₀	



EPA Method 600 Series

Method 625 Priority Pollutant Standards

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 5 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 14 comps.

SAVE

4-Bromophenyl phenyl ether
Butyl benzyl phthalate
bis(2-Chloroethoxy)methane
bis(2-Chloroethyl) ether
bis(2-Chloroisopropyl) ether
4-Chlorophenyl phenyl 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 5 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 14 comps.

SAVE

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

Toxic Substances - Mix #1

Z-014D 1 x 1 mL
Z-014D-PAK 5 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 4 comps.

SAVE

Benzoic acid
2-Methylphenol

4-Methylphenol
2,4,5-Trichlorophenol

Toxic Substances - Mix #2

Z-014E 1 x 1 mL
Z-014E-PAK 5 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 8 comps.

SAVE

Aniline
Benzyl alcohol
4-Chloroaniline
Dibenzofuran

2-Methylnaphthalene
2-Nitroaniline
3-Nitroaniline
4-Nitroaniline

Benzidine Mix

Z-014F 1 x 1 mL
Z-014F-PAK 5 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

SAVE

Benzidine †

3,3'-Dichlorobenzidine †

PAH Mix

Z-014G 1 x 1 mL
Z-014G-PAK 5 x 1 mL
2.0 mg/mL each in CH₂Cl₂:Benzene (50:50) 16 comps.

SAVE

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

PAH Mix

Z-014G-R 1 x 1 mL
Z-014G-R-PAK 5 x 1 mL
2.0 mg/mL each in CH₂Cl₂:Benzene (50:50) 17 comps.

SAVE

Acenaphthene
Acenaphthylene
Anthracene
Benz[a]anthracene
Benz[a]pyrene
Benzo[b]fluoranthene
Benzo[g,h,i]perylene
Benzo[k]fluoranthene
Carbazole

Chrysene
Dibenz[a,h]anthracene
Fluoranthene
Fluorene
Indeno[1,2,3-cd]pyrene
Naphthalene
Phenanthrene
Pyrene

Phenols Mix

Z-014H 1 x 1 mL
Z-014H-PAK 5 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 11 comps.

SAVE

4-Chloro-3-methylphenol
2-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

Internal Standard Mix

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

SAVE

Acenaphthene-d₁₀
Chrysene-d₁₂
1,4-Dichlorobenzene-d₄

Naphthalene-d₈
Perylene-d₁₂
Phenanthrene-d₁₀

Method 625 Priority Pollutant Set

Order a complete Set SAVE 25%

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



Method 625 (continued) Priority Pollutant Standards

Pesticides - Mix #1

Z-014C 1 x 1 mL
Z-014C-PAK 5 x 1 mL
 2.0 mg/mL each in Toluene:Hexane (50:50) 16 comps.

SAVE

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 1 x 1 mL
Z-014C-R-PAK 5 x 1 mL
 2.0 mg/mL each in Toluene:Hexane (50:50) 20 comps.

SAVE

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

Pesticides - Mix #3

Z-014C-R2 1 x 1 mL
Z-014C-R2-PAK 5 x 1 mL
 2.0 mg/mL each in Toluene:Hexane (50:50) 18 comps.

SAVE

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 1 x 1 mL
M-625-TS-PAK 5 x 1 mL
 50 µg/mL each in CH₂Cl₂ 4 comps.

SAVE

Benzidine †	DFTPP
p,p'-DDT	Pentachlorophenol

CLP-TS 1 x 1 mL
CLP-TS-PAK 5 x 1 mL
 50 µg/mL in CH₂Cl₂

SAVE

Perfluorokerosene

EPA Method 625 GC/MS Calibration Standards

M-625C-SET 5 x 1 mL
 At stated conc. (µg/mL) in CH₂Cl₂

Compound	Cat. No.
Benzidine † (50)	M-625C-1
Pentachlorophenol (25)	M-625C-2
Decafluorotriphenylphosphine (DFTPP) (25)	M-625C-3
Benzidine † (50 µg/mL) + DFTPP (25)	M-625C-4
Pentachlorophenol (25) + DFTPP (25)	M-625C-5

Method 627 Dinitroaniline Pesticides by GC/ECD

Dinitroaniline Pesticide Mixes

M-627 1 x 1 mL
 1.0 mg/mL each in MeOH 4 comps.

Ethalfuralin	Tolban (Profluralin)
Isopropalin	Trifluralin

M-627-R 1 x 1 mL
 1.0 mg/mL each in MeOH 5 comps.

Benfluralin	Tolban (Profluralin)
Ethalfuralin	Trifluralin
Isopropalin	

Method 632 Carbamates & Urea Pesticides in Waste Water by HPLC

Carbamates & Urea Pesticides in Waste Water

M-632-SET 21 x 1 mL
 Each at 0.1 mg/mL in AcCN

M-632M 1 x 1 mL
 0.1 mg/mL each in AcCN 21 comps.

M-632M-10X 1 x 1 mL
 1.0 mg/mL each in AcCN 21 comps.

	Cat. No.		Cat. No.
Aminocarb	M-632-01	Methomyl	M-632-12
Barban	M-632-02	Mexacarbate	M-632-13
Carbaryl	M-632-03	Monuron	M-632-14
Carbofuran	M-632-04	Monuron TCA	M-632-15
Chlorpropham	M-632-05	Neburon	M-632-16
Diuron	M-632-06	Oxamyl	M-632-17
Fenuron	M-632-07	Propham	M-632-18
Fenuron TCA	M-632-08	Propoxur	M-632-19
Fluometuron	M-632-09	Siduron	M-632-20
Linuron	M-632-10	Swep	M-632-21
Methiocarb	M-632-11		

Method 632.1 Carbamates & Amides in Waste Water by HPLC

Carbamates & Amides in Waste Water

M-632.1-SET 4 x 1 mL
 Each at 0.1 mg/mL in AcCN

	Cat. No.		Cat. No.
Vacor	M-632.1-1	Napropamide	M-632.1-3
Propanil	M-632.1-2	Carbaryl	M-632.1-4

Method 633 Organonitrogen Pesticides by GC/NPD

Organonitrogen Pesticides Mix

M-633 1 x 1 mL
 0.1 mg/mL each in MeOH 6 comps.

Bromacil	Hexazinone	Terbacil
Deet	Metribuzin	Triadimefon

Method 634 Thiocarbamate Pesticides by GC/NPD

Thiocarbamate Pesticides Mix

M-634 1 x 1 mL
 1.0 mg/mL each in MeOH 6 comps.

Butylate	EPTC	Pebulate
Cycloate	Molinate	Vernolate

Internal Standard

M-634-IS 1 x 1 mL
 1.0 mg/mL in MeOH

Carbazole



EPA Method 600 Series

Method 645 Amino Pesticides & Lethane by GC/NPD

Amino Pesticides Mix

M-645

1.0 mg/mL each in Hexane:Acetone (80:20)

1 x 1 mL

6 comps.

Alachlor
Butachlor

Diphenamid
Fluridone

Lethane
Norflurazon

HPLC 600's Additional Methods for Pesticides in Waste Water by HPLC

Method	Each at 0.1 mg/mL in AcCN	Cat. No.
604.1	Hexachlorophene & Dichlorophene	M-604.1
629	Cyanazine	M-629
631	Carbendazim	M-631
635	Rotenone	M-635
636	Bensulide	M-636
638	Oryzalin	M-638

Method	Each at 0.1 mg/mL in AcCN	Cat. No.
639	Bendiocarb	M-639
640	Mercaptobenzothiazole	M-640
641	Thiabendazole	M-641
642	Biphenyl & o-Phenylphenol	M-642
643	Bentazon (<i>Basagran</i>)	M-643
644	Picloram	M-644

Method 680 Determination of Pesticides & PCBs in Water & Soil/Sediment by GC/MS

PCB Isomer Calibration Mix

M-680A

At stated conc. (µg/mL) in Hexane

1 x 1 mL

9 comps.

2-Chlorobiphenyl	50
2,3-Dichlorobiphenyl	50
2,4,5-Trichlorobiphenyl	50
2,2',4,6-Tetrachlorobiphenyl	100
2,2',3,4,5'-Pentachlorobiphenyl	100
2,2',4,4',5,6'-Hexachlorobiphenyl	100
2,2',3,4',5,6,6'-Heptachlorobiphenyl	150
2,2',3,3',4,5',6,6'-Octachlorobiphenyl	150
Decachlorobiphenyl	250

Technical Note

The EPA has designated 3,3',4,4'-tetrachlorobiphenyl (#77), 2,2',4,6,6'-pentachlorobiphenyl (#104), & 2,2',3,3',4,5,5',6,6'-nonachlorobiphenyl (# 208) for use in quantifying PCBs by GC/MS. All response factors are calculated using Chrysene-d₁₂, which is also included in the set.

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

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

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

Pesticide Mix

M-680P

M-680P-PAK

SAVE

At stated conc. (µg/mL) in Toluene:Hexane (50:50)

1 x 1 mL

5 x 1 mL

22 comps.

Aldrin	1,000	Endosulfan I	2,000
α-BHC	1,000	Endosulfan II	2,000
β-BHC	1,000	Endosulfan sulfate	1,000
γ-BHC	1,000	Endrin	1,000
δ-BHC	1,000	Endrin aldehyde	1,000
α-Chlordane	1,000	Endrin ketone	1,000
γ-Chlordane	1,000	Heptachlor	1,000
4,4'-DDD	1,000	Heptachlor epoxide (Isomer B)	1,000
4,4'-DDE	1,000	Methoxychlor	1,000
4,4'-DDT	1,000	cis-Nonachlor	1,000
Dieldrin	1,000	trans-Nonachlor	1,000

Internal Standard

M-680-IS

M-680-IS-PAK

SAVE

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

1 x 1 mL

5 x 1 mL

2 comps.

M-680-IS-10X

M-680-IS-10X-PAK

SAVE

750 µg/mL each in Hexane:CH₂Cl₂ (50:50)

1 x 1 mL

5 x 1 mL

2 comps.

Chrysene-d₁₂

Phenanthrene-d₁₀

Tuning Standard

M-680-TS

M-680-TS-PAK

SAVE

10 µg/mL in CH₂Cl₂

1 x 1 mL

5 x 1 mL

Decafluorotriphenylphosphine (DFTPP)

Pesticide Mid-Level Check

M-680P-MLC

M-680P-MLC-PAK

SAVE

At stated conc. (µg/mL) Toluene:Hexane (50:50)

1 x 1 mL

5 x 1 mL

21 comps.

Aldrin	1,000	Endosulfan I	2,000
α-BHC	1,000	Endosulfan II	2,000
β-BHC	1,000	Endosulfan sulfate	1,000
γ-BHC	1,000	Endrin	1,000
δ-BHC	1,000	Endrin ketone	1,000
α-Chlordane	1,000	Heptachlor	1,000
γ-Chlordane	1,000	Heptachlor epoxide (Isomer B)	1,000
4,4'-DDD	1,000	Methoxychlor	1,000
4,4'-DDE	1,000	cis-Nonachlor	1,000
4,4'-DDT	1,000	trans-Nonachlor	1,000
Dieldrin	1,000		

Retention Time Calibration Standard

M-680-RT

M-680-RT-PAK

SAVE

At stated conc. (µg/mL) in Hexane

1 x 1 mL

5 x 1 mL

3 comps.

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

Method 1311 Toxicity Characteristic Leaching Procedure (TCLP)

Volatile Spiking Mixture

TCLP-VOC	1 x 1 mL
5.0 mg/mL each in MeOH, except 2-Butanone	11 comps.
Benzene	1,2-Dichloroethane
2-Butanone (10 mg/mL)	1,1-Dichloroethene
Carbon tetrachloride	Tetrachloroethene
Chlorobenzene	Trichloroethene
Chloroform	Vinyl chloride
1,4-Dichlorobenzene	

Semi-Volatile Spiking Mix

TCLP-BNA	1 x 1 mL
TCLP-BNA-PAK	5 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂	13 comps.
<i>o</i> -Cresol	Hexachloroethane
<i>m</i> -Cresol	Nitrobenzene
<i>p</i> -Cresol	Pentachlorophenol
1,4-Dichlorobenzene	Pyridine
2,4-Dinitrotoluene	2,4,5-Trichlorophenol
Hexachlorobenzene	2,4,6-Trichlorophenol
Hexachlorobutadiene	

Semi-Volatile Spiking Set

TCLP-BNA-SET 2 x 1 mL
TCLP-A, TCLP-BN

TCLP-A	1 x 1 mL
TCLP-A-PAK	5 x 1 mL
2.0 mg/mL each in MeOH	6 comps.
<i>o</i> -Cresol	Pentachlorophenol
<i>m</i> -Cresol	2,4,5-Trichlorophenol
<i>p</i> -Cresol	2,4,6-Trichlorophenol

TCLP-BN	1 x 1 mL
TCLP-BN-PAK	5 x 1 mL
2.0 mg/mL each in Acetone	7 comps.
1,4-Dichlorobenzene	Hexachloroethane
2,4-Dinitrotoluene	Nitrobenzene
Hexachlorobenzene	Pyridine
Hexachlorobutadiene	



Organic 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.

Pesticide Spiking Mix

TCLP-PES	1 x 1 mL
TCLP-PES-PAK	5 x 1 mL
2.0 mg/mL each in MeOH, except Toxaphene	7 comps.
Chlordane (tech)	Lindane
Endrin	Methoxychlor
Heptachlor	Toxaphene (4.0 mg/mL)
Heptachlor epoxide (Isomer B)	

Pesticide Spiking Set

TCLP-PES-1/2-SET 2 x 1 mL
CLP-PES-1, TCLP-PES-2

TCLP-PES-1	1 x 1 mL
TCLP-PES-1-PAK	5 x 1 mL
2.0 mg/mL each in MeOH	5 comps.
Endrin	Lindane
Heptachlor	Methoxychlor
Heptachlor epoxide (Isomer B)	

TCLP-PES-2	1 x 1 mL
TCLP-PES-2-PAK	5 x 1 mL
At stated conc. (mg/mL) in MeOH	2 comps.
Chlordane 2.0	Toxaphene 4.0

Herbicide, PFB Derivative Mix

TCLP-HERB-PFB	1 x 1 mL
0.1 mg/mL each in MtBE	2 comps.
2,4-D-PFB	2,4,5-TP-PFB

Herbicide, PFB Derivatives

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	

Herbicide Spiking Mixes

TCLP-HERB	1 x 1 mL
TCLP-HERB-PAK	5 x 1 mL
2.0 mg/mL each in MeOH	2 comps.
2,4-D	2,4,5-TP

TCLP-HERB-ME	1 x 1 mL
TCLP-HERB-ME-PAK	5 x 1 mL
2.0 mg/mL each in MeOH	2 comps.
2,4-D methyl ester	2,4,5-TP methyl ester

Method 1311 TCLP continued
on next page

Method 1311 TCLP Regulatory Level Mixtures

Volatiles

TCLP-QC *

TCLP-QC-PAK *

At stated conc. ($\mu\text{g/mL}$) in MeOH

SAVE

1 x 1 mL
5 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

Pesticide Set

TCLP-PES-1/2-QC-SET

2 x 1 mL

TCLP-PEST-1-QC, TCLP-PEST-2-QC

Pesticides

TCLP-PES-1-QC

TCLP-PES-1-QC-PAK

At stated conc. ($\mu\text{g/mL}$) in MeOH

SAVE

1 x 1 mL
5 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

TCLP-PES-2-QC-PAK

At stated conc. ($\mu\text{g/mL}$) in MeOH

SAVE

1 x 1 mL
5 x 1 mL
2 comps.

Chlordane	0.3	Toxaphene	5.0
-----------	-----	-----------	-----

Semi-Volatiles

TCLP-BNA-QC

At stated conc. ($\mu\text{g/mL}$) in CH_2Cl_2 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		

Herbicides

TCLP-HERB-ME-QC

TCLP-HERB-ME-QC-PAK

At stated conc. ($\mu\text{g/mL}$) in MeOH

SAVE

1 x 1 mL
5 x 1 mL
2 comps.

2,4-D methyl ester	106.3
2,4,5-TP methyl ester	10.5

* ColdPAK required to maintain integrity of product.

Method 1312 Synthetic Leaching Procedure

Semi-Volatiles

TCLP-BNA-1312

TCLP-BNA-1312-PAK

2.0 mg/mL each in CH_2Cl_2

SAVE

1 x 1 mL
5 x 1 mL
14 comps.

Acenaphthene	2,4-Dinitrophenol
β -BHC	2,4-Dinitrotoluene
γ -BHC	<i>o</i> -Cresol
bis(2-Chloroethyl)ether	2,4-Dimethylphenol
2-Chlorophenol	Hexachlorobenzene
1,2-Dichlorobenzene	Hexachlorobutadiene
1,4-Dichlorobenzene	Nitrobenzene



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Method 1613 Dioxins & Furans by HRGC/HRMS

Precision and Recovery Standard

M-1613-PAR Bold (-04)

M-1613-PAR-PAK

At stated conc. (ng/mL) in Nonane

1 x 1 mL
5 x 1 mL
17 comps.

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

Calibration Set

M-1613-CAL-SET

5 x 1 mL

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

Technical Note

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

2,3,7,8 Isomers Only Mix

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

M-1613-DF

40 ng/mL each in Nonane

1 x 1 mL
2 comps.

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



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EPA Method 1600 Series

Bromodiphenyl Ethers

Method 1614 Bromodiphenyl Ether Mixtures

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	1 x 1 mL
At stated conc. (µg/mL) in Isooctane	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	1 x 1 mL
At stated conc. (µg/mL) in Isooctane	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.

Calibration Mix

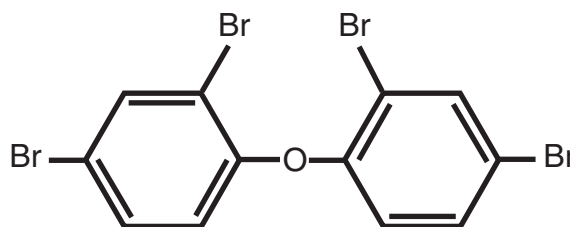
BDE-CM	1 x 1 mL
At stated conc. (µg/mL) in Isooctane	8 comps.
28 2,4,4'-Tribromodiphenyl ether	2.5
47 2,2',4,4'-Tetrabromodiphenyl ether	2.5
99 2,2',4,4',5-Pentabromodiphenyl ether	2.5
100 2,2',4,4',6-Pentabromodiphenyl ether	2.5
153 2,2',4,4',5,5'-Hexabromodiphenyl ether	2.5
154 2,2',4,4',5,6'-Hexabromodiphenyl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

Matrix Spiking Solution

BDE-MS	1 x 1 mL
At stated conc. (ng/mL) in Isooctane	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	8 x 1 mL
50 µg/mL each in Isooctane	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 Wide Bore Capillary Column GC

Method 1618 was developed by the Industrial Technology Division (ITD) within the United States Environmental Protection Agency's (US EPA) Office of Water Regulations and Standards (OWRS) to provide improved precision and accuracy of analysis of pollutants in aqueous and solid matrices in order to determine the level of these pollutants in industrial discharges. Method 1618 is used with wide bore GC columns to analyze for organo-halide and organo-phosphorus pesticides, phenoxy-acid herbicides and herbicide esters, polychlorinated biphenyls (PCBs) and other compounds amenable to extraction and analysis by wide bore capillary column gas chromatography with halogen-specific and organo-phosphorus detectors.

The chemical compounds in the AccuStandard mixtures that follow may be determined in waters, soils, sediments and sludges by this method. The method is a consolidation of EPA Methods 608, 608.1, 614, 615, 617, 622 and 701.

Organochlorine Pesticides

M-1618-1 1 x 1 mL
M-1618-1-PAK 5 x 1 mL
At stated conc. (ng/mL) in Isooctane 14 comps.

SAVE

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 1 x 1 mL
At stated conc. (ng/mL) in Isooctane 16 comps.

α-BHC	100	Dichloro	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 1 x 1 mL
At stated conc. (ng/mL) in Isooctane 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
Fensulfothion	200		

M-1618-4 1 x 1 mL
At stated conc. (ng/mL) in Isooctane 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 1 x 1 mL
M-8150M-PAK 5 x 1 mL
20 µg/mL each in Hexane 8 comps.

SAVE

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 1 x 1 mL
M-8150M-2-PAK 5 x 1 mL
2.0 mg/mL in Hexane 2 comps.

SAVE

MCPA methyl ester	MCPP methyl ester
-------------------	-------------------

Surrogate Standards

Organochlorine Pesticide

M-1618-SS 1 x 1 mL
M-1618-SS-PAK 5 x 1 mL
2 µg/mL in Acetone

SAVE

2,4-Dichlorophenylacetic acid

Organophosphate Pesticide

M-1618-SP 1 x 1 mL
2 µg/mL each in Acetone 2 comps.

Tributyl phosphate	Triphenyl phosphate
--------------------	---------------------

Phenoxyacid Herbicide

M-1618-SA 1 x 1 mL
2 µg/mL in Acetone

2,4-Dichlorophenylacetic acid

Decomposition Solution

M-1618D * 1 x 1 mL
M-1618D-PAK * 5 x 1 mL
At stated conc. (µg/mL) in Acetone 2 comps.

SAVE

p,p'-DDT	2.0	Endrin	1.0
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GPC Calibration Solution

M-1618-GP-5ML 1 x 5 mL
At stated conc. (mg/mL) in Acetone 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 1 x 1 mL
M-1618-SE-PAK 5 x 1 mL
0.1 µg/mL in Acetone

SAVE

2,4,6-Trichlorophenol

* ColdPAK required to maintain integrity of product.

EPA Method 1600 Series

Chlorinated Phenolics and Pesticides

Method 1653 Chlorinated Phenolics in Pulp and Paper Effluents

Method 1653 is designed to determine Chlorinated Phenolics (chlorinated phenols, guaiacols, catechols, vanillins, syringaldehydes), and other compounds in wastewater amenable to in-situ acetylation and analysis by GC/MS.

M-1653A-D-R-SET 4 x 1 mL M-1653A, M-1653B, M-1653C, M-1653D-AC

M-1653A		1 x 1 mL
M-1653A-PAK	SAVE	5 x 1 mL
0.1 mg/mL each in MeOH		7 comps.
4-Chlorophenol	2,4,6-Trichlorophenol	
2,4-Dichlorophenol	2,3,4,6-Tetrachlorophenol	
2,6-Dichlorophenol	Pentachlorophenol	
2,4,5-Trichlorophenol		

M-1653B		1 x 1 mL
0.1 mg/mL each in MeOH		8 comps.
4-Chloroguaiacol	3,4,5-Trichloroguaiacol	
3,4-Dichloroguaiacol	3,4,6-Trichloroguaiacol	
4,5-Dichloroguaiacol	4,5,6-Trichloroguaiacol	
4,6-Dichloroguaiacol	Tetrachloroguaiacol	

M-1653C		1 x 1 mL
0.1 mg/mL each in MeOH		7 comps.
4-Chlorocatechol	3,4,5-Trichlorocatechol	
3,4-Dichlorocatechol	3,4,6-Trichlorocatechol	
3,6-Dichlorocatechol	Tetrachlorocatechol	
4,5-Dichlorocatechol		

M-1653D-AC		1 x 1 mL
0.1 mg/mL each in Acetone		6 comps.
5-Chlorovanillin	2-Chlorosyringaldehyde	
6-Chlorovanillin	2,6-Dichlorosyringaldehyde	
5,6-Dichlorovanillin	Trichlorosyringol	

Internal Standard

M-1653-IS	1 x 1 mL
1.0 mg/mL in MeOH	
M-1653-IS-R	1 x 1 mL
1.0 mg/mL in Acetone	
3,4,5-Trichlorophenol	

Instrument Internal Standard

M-1653-IIS	1 x 1 mL
1.0 mg/mL in MeOH	
M-1653-IIS-R	1 x 1 mL
5.0 mg/mL in Acetone	
2,2'-Difluorobiphenyl	

M-1653A-D-R2-SET 4 x 1 mL M-1653A-R, M-1653B-R, M-1653C-R, M-1653D-R

M-1653A-R		1 x 1 mL
At stated conc. (µg/mL) in Acetone		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		1 x 1 mL
At stated conc. (µg/mL) in Acetone		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		1 x 1 mL
At stated conc. (µg/mL) in Acetone		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		1 x 1 mL
At stated conc. (µg/mL) in Acetone		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		1 x 1 mL
M-PAPCLUS-PAK	SAVE	5 x 1 mL
0.1 mg/mL each in Water		4 comps.
Methanol	Propionaldehyde	
Acetaldehyde	Methyl ethyl ketone	

Instrument Performance Check Solution

M-1653-TS	1 x 1 mL
50 µg/mL in Acetone	
DTTPP	

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		1 x 5 mL
At stated conc. (mg/mL) in CH ₂ Cl ₂		5 comps.
Corn oil	300	Perylene 0.1
bis(2-Ethylhexyl)phthalate	15	Sulfur 0.5
Pentachlorophenol	1.4	

Solid-phase Extraction Cartridge Calibration Solution

M-1600-SPE	1 x 1 mL
0.1 mg/mL in Acetone	
2,4,6-Trichlorophenol	

Decomposition Test Solution

M-1656-DS		1 x 1 mL
At stated conc. (µg/mL) in Isooctane		2 comps.
4,4'-DDT	2	Endrin 1

Surrogate Spiking Solutions

CLP-PES-A		1 x 1 mL
0.2 mg/mL in Acetone		
Dibutylchlorendate		
CLP-032-R		1 x 1 mL
0.2 mg/mL each in Acetone		2 comps.
Decachlorobiphenyl	Tetrachloro- <i>m</i> -xylene	
CLP-034		1 x 1 mL
0.2 mg/mL each in Acetone		2 comps.
Dibutylchlorendate	Tetrachloro- <i>m</i> -xylene	

EPA Method 1600 Series

Pesticides and Herbicides

1600

Method 1656 (continued) Calibration Solutions & Suggested Calibration Groups

M-1656-CAL-SET

7 x (3 x 1 mL)

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

Calibration Group 1

M-1656-01-CAL-SET

3 x 1 mL

At stated conc. (ng/mL) in Isooctane 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 (cis & trans) *200	1,000	5,000	20,000
Tetrachloro- <i>m</i> -xylene	5	25	100

* Actual isomer concentration is stated
on certificate of product data

Calibration Group 2

M-1656-02-CAL-SET

3 x 1 mL

At stated conc. (ng/mL) in Isooctane 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
Ethionfluralin	10	50	200
Fenarimol	20	100	400
Methoxychlor	20	100	400
Metribuzin	10	50	200
Tetrachloro- <i>m</i> -xylene	5	25	100

Calibration Group 3

M-1656-03-CAL-SET

3 x 1 mL

At stated conc. (ng/mL) in Isooctane 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

3 x 1 mL

At stated conc. (ng/mL) in Isooctane 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

3 x 1 mL

At stated conc. (ng/mL) in Isooctane 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

3 x 1 mL

At stated conc. (ng/mL) in Isooctane 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

3 x 1 mL

At stated conc. (ng/mL) in Isooctane 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

Method 1657 Organo-Phosphorus Pesticides in Municipal & Industrial Wastewater by FPD

Method 1657 is a consolidation of several EPA wastewater methods used to determine the organo-phosphorus pesticides associated with the Clean Water Act, the Resource and Conservation and Recovery Act, and the Comprehensive Environmental Response, Compensation and Liability Act, as well as other compounds amenable to extraction and analysis by wide-bore capillary column gas chromatography with a flame photometric detector (FPD).

GPC Calibration Solution

M-1600-GPC-5ML	1 x 5 mL
At stated conc. (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

Solid-phase Extraction Cartridge Calibration Solution

M-1600-SPE	1 x 1 mL
At stated conc. (mg/mL) in Acetone	
2,4,6-Trichlorophenol	

Surrogate Spiking Solution

M-1657-SS	1 x 1 mL
0.2 mg/mL each in Acetone	2 comps.
Tributyl phosphate	
Triphenyl phosphate	

Method 1657 Calibration Solutions & Suggested Calibration Groups

M-1657-CAL-SET	4 x (3 x 1 mL)
M-1657-01-R1-CAL-SET, M-1657-02-CAL-SET	
M-1657-03-CAL-SET, M-1657-04-CAL-SET	

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	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)
Coumaphos	500	2,500	10,000
Diazinon	200	1,000	4,000
EPN	200	1,000	4,000
Ethion	200	1,000	4,000
Ethoprop	200	1,000	4,000
Malathion	200	1,000	4,000
Phorate	200	1,000	4,000
Tetrachlorvinphos	200	1,000	4,000
Tributyl phosphate	200	1,000	4,000
Trichloronate	200	1,000	4,000
Triphenyl phosphate	200	1,000	4,000

Low	M-1657-04-1X	1 mL
Medium	M-1657-04-5X	1 mL
High	M-1657-04-20X	1 mL



Method 1658 Phenoxy-Acid Herbicides

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

3 x 1 mL

12 comps.

Components	Low (1X)	Medium (10X)	High (100X)
2,4-D	100	1,000	10,000
Dalapon	50	500	5,000
2,4-DB	200	2,000	20,000
2,4-Dichlorophenylacetic acid (Surrogate)	10	100	1,000
Dicamba	20	200	2,000
Dichlorprop	100	1,000	10,000
Dinoseb	50	500	5,000
MCPA	5,000	50,000	500,000
MCPD	5,000	50,000	500,000
Picloram	50	500	5,000
2,4,5-T	20	200	2,000
2,4,5-TP	20	200	2,000

Method 1659 Dazomet in Municipal & Industrial Wastewater by NPD

Method 1659 is used to determine Dazomet by base hydrolysis to Methyl Isothiocyanate (MITC) and subsequent determination of MITC by wide-bore fused-silica capillary column gas chromatography with a Nitrogen Phosphorus Detector (NPD).

Recovery & Precision Solution

M-1659-RPS

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

1 mL

M-1659-CAL-5X

1.0 mg/mL in Acetone

1 mL

M-1659-CAL-25X

5.0 mg/mL in Acetone

1 mL

Methyl isothiocyanate (MITC)

Method 1664 See Petrochemical (page 327) or Inorganic (page 344) Sections

Method 1665 Semi-Volatile Organic Compounds Specific to the PMI by Isotope Dilution GC/MS

The following method series is designed to meet PMI (Pharmaceutical Manufacturing Industry) methods promulgated in 40 CFR part 136. It is used to monitor the discharge of pollutants into surface waters. It can also be used to identify and measure purgeable and non-purgeable volatiles, semi-volatiles, and certain organic pollutants specific to PMI discharge in water, soils, and municipal sludges.

PMI Semi-Volatile Set

M-1665-SET

5 x 1 mL

M-1618-GP-5ML, M-1653-TS, M-625-07-10X
M-1665, M-1665-LAB

GPC Calibration Solution

M-1618-GP-5ML

At stated conc. (mg/mL) in Acetone

1 x 5 mL

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

2000 µg/mL each in CH₂Cl₂

1 x 1 mL

6 comps.

Aniline
N,N-Dimethylacetamide
N,N-Dimethylaniline

Dimethylformamide
2-Picoline
Pyridine

Instrument Performance Check Solution

M-1653-TS

50 µg/mL in Acetone

1 x 1 mL

DFTPP

PMI Labeled Stock Standard (Not for individual sale)

M-1665-LAB

500 µg/mL each in CH₂Cl₂

1 x 1 mL

5 comps.

Aniline-d ₇
N,N-Dimethylaniline-d ₁₁
Dimethylformamide-d ₇

2-Picoline-d ₇
Pyridine-d ₅

PMI Internal Standard

M-625-07-10X

2.0 mg/mL in CH₂Cl₂

1 x 1 mL

2,2'-Difluorobiphenyl

EPA Method 1600 Series

Pharmaceutical Waste Discharge Standards

Method 1666A (Rev. July 1998) Volatile Organic Compounds Specific to the PMI by Isotope Dilution GC/MS

PMI Purgeable Analytes

M-1666A-R2-SET 5 x 1 mL
M-1666A-SSA-ADD, M-1666A-SSA-R2, M-1666A-SSB
M-1666A-SSC, M-1666A-LAB

M-1666A-SSA-ADD 1 x 1 mL
1000 µg/mL in MeOH
Isopropyl ether

PMI Stock Standard A

M-1666A-SSA-R2 1 x 1 mL
At stated conc. (µg/mL) in Water 7 comps.

<i>n</i> -Butanol	2500	Isopropanol	1000
<i>t</i> -Butanol	2500	4-Methyl-2-pentanone	1000
2-Furaldehyde	2500	<i>n</i> -Pentanol	2500
Isobutyraldehyde	2500		

PMI Stock Standard B

M-1666A-SSB 1 x 1 mL
At stated conc. (µg/mL) in MeOH 9 comps.

Cyclohexane	1000	Trifluoromethane	1000
<i>n</i> -Heptane	1000	<i>m</i> -Xylene	1000
<i>n</i> -Hexane	1000	<i>o</i> -Xylene	1000
Methyl formate	2500	<i>p</i> -Xylene	1000
Tetrahydrofuran	1000		

PMI Stock Standard C

M-1666A-SSC 1 x 1 mL
1000 µg/mL each in MeOH 4 comps.

Butyl acetate	Isopropyl acetate
Ethyl acetate	Pentyl acetate

PMI Labeled Stock Standard

M-1666A-LAB 1 x 1 mL
At stated conc. (µg/mL) in MeOH 8 comps.

<i>t</i> -Butanol- <i>d</i> ₁₀	500	<i>n</i> -Hexane- <i>d</i> ₁₄	50
Cyclohexane- <i>d</i> ₁₂	50	Tetrahydrofuran- <i>d</i> ₈	50
Ethyl Acetate-2- ¹³ C	50	<i>o</i> -Xylene- <i>d</i> ₁₀	50
<i>n</i> -Heptane- <i>d</i> ₁₆	50	<i>m</i> -Xylene- <i>d</i> ₁₀	50

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 1 x 1 mL
At stated conc. (µg/mL) in Water 10 comps.

Acetonitrile	1000	Ethylene glycol	2500
Diethylamine	2500	Methanol	1000
Dimethylamine	1000	2-Methoxyethanol	1000
Dimethyl sulfoxide	1000	<i>n</i> -Propanol	1000
Ethanol	1000	Triethylamine	2500

M-1666A-DI-R-ADD1 1 x 1 mL
2500 µg/mL in Water

Methylamine

M-1666A-DI-R-ADD2 1 x 1 mL
5000 µg/mL in Water

Formamide

PMI Labeled Standard Direct Injection

M-1666A-DI-LAB 1 x 1 mL
1000 µg/mL each in Water 6 comps.

Acetonitrile- <i>d</i> ₃	Methanol- <i>d</i> ₃
Dimethyl sulfoxide- <i>d</i> ₆	<i>n</i> -Propanol-1- <i>d</i> ₁
Ethanol- <i>d</i> ₆	Tetrahydrofuran- <i>d</i> ₈

PMI Instrument Performance

Purgeable Internal Standard

CLP-PI 1 x 1 mL
CLP-PI-PAK 5 x 1 mL
1.0 mg/mL each in MeOH 3 comps.

Bromochloromethane	1,4-Difluorobenzene
Chlorobenzene- <i>d</i> ₅	

PMI Resolution Standard

M-1666A-RES 1 x 1 mL
M-1666A-RES-PAK 5 x 1 mL
100 µg/mL each in MeOH 2 comps.

<i>o</i> -Xylene	<i>o</i> -Xylene- <i>d</i> ₁₀
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Instrument Performance Check Solution

CLP-004-10X 1 x 1 mL
CLP-004-10X-PAK 5 x 1 mL
250 µg/mL in MeOH

p-Bromofluorobenzene

Buy AccuPAKS
Save 20-40% 5 x 1 mL



EPA Method 1600 Series

Pharmaceutical Waste Discharge Standards

1600

Method 1667A Formaldehyde, Isobutylaldehyde & Furfural by Derivatization followed by HPLC for PMI pollutants

PMI Carbonyl Set

M-1667A-SET

Each at 1.0 mg/mL in AcCN

3 x 1 mL

	Cat. No.	1 mL
Formaldehyde	M-1667A-01	
2-Furaldehyde	M-1667A-02	
Isobutylaldehyde	M-1667A-03	

PMI Carbonyl DNPH Set

M-1667A-DNPH-SET

Each at 1.0 mg/mL in AcCN

3 x 1 mL

	Cat. No.	1 mL
Formaldehyde-DNPH	M-1667A-DNPH-01	
2-Furaldehyde-DNPH	M-1667A-DNPH-02	
Isobutylaldehyde-DNPH	M-1667A-DNPH-03	

PMI QA/QC Carbonyl Mixture

M-1667A-M

M-1667A-M-PAK

250 µg/mL each in AcCN

SAVE

1 x 1 mL

5 x 1 mL

3 comps.

Formaldehyde
2-Furaldehyde

Isobutylaldehyde

PMI QA/QC Carbonyl Derivative DNPH Mixture

M-1667A-DNPH

M-1667A-DNPH-PAK

250 µg/mL each in AcCN

SAVE

1 x 1 mL

5 x 1 mL

3 comps.

Formaldehyde-DNPH
2-Furaldehyde-DNPH

Isobutylaldehyde-DNPH

PMI Derivatization Reagent

M-1667A-DERV-10ML

M-1667A-DERV-10ML-PAK

1.0 mg/mL in AcCN

SAVE

10 mL

5 x 10 mL

2,4-Dinitrophenylhydrazine (DNPH)



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Method 1668 Congener Set - 209 Chlorinated Biphenyl Congeners by HRGC/HRMS

Congener specific determination of all 209 PCB congeners for calibration on a SPB-Octyl capillary column.

M-1668A-0.01X-SET

5 x 1 mL

M-1668A-1-0.01X, M-1668A-2-0.01X, M-1668A-3-0.01X
M-1668A-4-0.01X, M-1668A-5-0.01X

PCB Congener Mix #1

M-1668A-1-0.01X

At stated conc. ($\mu\text{g/mL}$) in Isooctane

1 x 1 mL

83 comps.

3-Chlorobiphenyl	2.5	2,3',4,5,5'-Pentachlorobiphenyl	5.0
2,6-Dichlorobiphenyl	2.5	2',3,4,5,5'-Pentachlorobiphenyl	5.0
2,5-Dichlorobiphenyl	2.5	2,3,3',4,5-Pentachlorobiphenyl	5.0
2,3'-Dichlorobiphenyl	2.5	2',3,3',4,5-Pentachlorobiphenyl	5.0
2,4'-Dichlorobiphenyl	2.5	2,3,3',4,4'-Pentachlorobiphenyl	5.0
3,5-Dichlorobiphenyl	2.5	3,3',4,5,5'-Pentachlorobiphenyl	5.0
3,3'-Dichlorobiphenyl	2.5	2,2',3,5,6,6'-Hexachlorobiphenyl	5.0
2,4,6-Trichlorobiphenyl	2.5	2,2',3,3',6,6'-Hexachlorobiphenyl	5.0
2,3',6-Trichlorobiphenyl	2.5	2,2',3,4',5,6'-Hexachlorobiphenyl	5.0
2,4',6-Trichlorobiphenyl	2.5	2,2',3,5,5',6'-Hexachlorobiphenyl	5.0
2',3,5-Trichlorobiphenyl	2.5	2,2',3,4,5',6'-Hexachlorobiphenyl	5.0
2,3',5-Trichlorobiphenyl	2.5	2,2',3,4,5,6'-Hexachlorobiphenyl	5.0
2,4',5-Trichlorobiphenyl	2.5	2,2',3,4,5,6'-Hexachlorobiphenyl	5.0
2',3,4-Trichlorobiphenyl	2.5	2,2',3,3',5,5'-Hexachlorobiphenyl	5.0
3,3',5-Trichlorobiphenyl	2.5	2,3,3',4,5',6'-Hexachlorobiphenyl	5.0
3,4,5-Trichlorobiphenyl	2.5	2,2',4,4',5,5'-Hexachlorobiphenyl	5.0
3,3',4-Trichlorobiphenyl	2.5	2,2',3,3',4,5'-Hexachlorobiphenyl	5.0
2,2',4,6-Tetrachlorobiphenyl	5.0	2,2',3,3',4,5'-Hexachlorobiphenyl	5.0
2,2',3,6-Tetrachlorobiphenyl	5.0	2,3,4,4',5,6'-Hexachlorobiphenyl	5.0
2,2',5,5'-Tetrachlorobiphenyl	5.0	2,3,3',4,5,5'-Hexachlorobiphenyl	5.0
2,2',4,5'-Tetrachlorobiphenyl	5.0	2,3',4,4',5,5'-Hexachlorobiphenyl	5.0
2,4,4',6-Tetrachlorobiphenyl	5.0	2,3,3',4,4',5'-Hexachlorobiphenyl	5.0
2,2',3,4-Tetrachlorobiphenyl	5.0	2,2',3,3',5,6,6'-Heptachlorobiphenyl	5.0
2,3',5,5'-Tetrachlorobiphenyl	5.0	2,2',3,3',4,6'-Heptachlorobiphenyl	5.0
2,3,3',5-Tetrachlorobiphenyl	5.0	2,2',3,3',5,5',6'-Heptachlorobiphenyl	5.0
2,3,4',5-Tetrachlorobiphenyl	5.0	2,2',3,3',4,5',6'-Heptachlorobiphenyl	5.0
2,3',4,4'-Tetrachlorobiphenyl	5.0	2,2',3,3',4,4',5'-Heptachlorobiphenyl	5.0
3,3',4,5'-Tetrachlorobiphenyl	5.0	2,2',3,3',4,4',5,6'-Heptachlorobiphenyl	5.0
3,3',4,5-Tetrachlorobiphenyl	5.0	2,2',3,3',4,4',5'-Heptachlorobiphenyl	5.0
2,2',3,6,6'-Pentachlorobiphenyl	5.0	2,3,3',4,4',5',6'-Heptachlorobiphenyl	5.0
2,2',4,5',6-Pentachlorobiphenyl	5.0	2,2',3,3',4,5,5',6'-Heptachlorobiphenyl	5.0
2,2',3,5',6-Pentachlorobiphenyl	5.0	2,3,3',4,4',5,6'-Heptachlorobiphenyl	5.0
2,2',3,4,6-Pentachlorobiphenyl	5.0	2,2',3,3',4,5',6,6'-Octachlorobiphenyl	7.5
2,2',3,4,6'-Pentachlorobiphenyl	5.0	2,2',3,4,4',5,6,6'-Octachlorobiphenyl	7.5
2,2',3,5,5'-Pentachlorobiphenyl	5.0	2,2',3,3',4,5,6,6'-Octachlorobiphenyl	7.5
2,2',3,3',5-Pentachlorobiphenyl	5.0	2,2',3,3',4,5,5',6'-Octachlorobiphenyl	7.5
2,2',3,3',5-Pentachlorobiphenyl	5.0	2,2',3,3',4,4',5'-Octachlorobiphenyl	7.5
2,2',3,4,4',6-Pentachlorobiphenyl	5.0	2,2',3,3',4,4',5,6'-Octachlorobiphenyl	7.5
2,2',3,4,5'-Pentachlorobiphenyl	5.0	2,2',3,3',4,4',5,5'-Octachlorobiphenyl	7.5
2,2',3,4,4'-Pentachlorobiphenyl	5.0	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	7.5
2,2',3,3',4-Pentachlorobiphenyl	5.0		

PCB Congener Mix #2

M-1668A-2-0.01X

At stated conc. ($\mu\text{g/mL}$) in Isooctane

1 x 1 mL

54 comps.

2,4-Dichlorobiphenyl	2.5	2,3,4',5,6-Pentachlorobiphenyl	5.0
2,3-Dichlorobiphenyl	2.5	2,3,3',5,5'-Pentachlorobiphenyl	5.0
3,4-Dichlorobiphenyl	2.5	2,3,3',4,5'-Pentachlorobiphenyl	5.0
2,2',5-Trichlorobiphenyl	2.5	2,3',4,4',5-Pentachlorobiphenyl	5.0
2,3,6-Trichlorobiphenyl	2.5	2,3,4,4',5-Pentachlorobiphenyl	5.0
2,3,5-Trichlorobiphenyl	2.5	2,2',3,4',6,6'-Hexachlorobiphenyl	5.0
2,4,4'-Trichlorobiphenyl	2.5	2,2',3,4,6,6'-Hexachlorobiphenyl	5.0
2,3,4'-Trichlorobiphenyl	2.5	2,2',3,3',5,6'-Hexachlorobiphenyl	5.0
3,4',5-Trichlorobiphenyl	2.5	2,2',3,4',5,6-Hexachlorobiphenyl	5.0
2,2',5,6'-Tetrachlorobiphenyl	5.0	2,2',3,4,4',6-Hexachlorobiphenyl	5.0
2,2',4,6'-Tetrachlorobiphenyl	5.0	2,2',3,3',4,6'-Hexachlorobiphenyl	5.0
2,3',5',6-Tetrachlorobiphenyl	5.0	2,3,3',5,5',6-Hexachlorobiphenyl	5.0
2,2,4,5-Tetrachlorobiphenyl	5.0	2,3',4,4',5',6-Hexachlorobiphenyl	5.0
2,3,4,6-Tetrachlorobiphenyl	5.0	2,2',3,4,4',5-Hexachlorobiphenyl	5.0
2,3',4',6-Tetrachlorobiphenyl	5.0	2,3,3',4,5,6-Hexachlorobiphenyl	5.0
2,3',4,5'-Tetrachlorobiphenyl	5.0	2,2',3,3',4,4'-Hexachlorobiphenyl	5.0
2,3,3',5'-Tetrachlorobiphenyl	5.0	2,3,3',4',5,5'-Hexachlorobiphenyl	5.0
2,3,4,5-Tetrachlorobiphenyl	5.0	2,3,3',4,4',5-Hexachlorobiphenyl	5.0
2,3,3',4-Tetrachlorobiphenyl	5.0	2,2',3,4,4',6,6'-Heptachlorobiphenyl	5.0
2,3,4,4'-Tetrachlorobiphenyl	5.0	2,2',3,4,5,6,6'-Heptachlorobiphenyl	5.0
2,2',3,5,6'-Pentachlorobiphenyl	5.0	2,2',3,4',5,5',6-Heptachlorobiphenyl	5.0
2,2',4,4',6-Pentachlorobiphenyl	5.0	2,2',3,4,5,5',6-Heptachlorobiphenyl	5.0
2,2',3,4',6-Pentachlorobiphenyl	5.0	2,2',3,4,4',5,6-Heptachlorobiphenyl	5.0
2,3',4,5',6-Pentachlorobiphenyl	5.0	2,3,3',4,5,5',6-Heptachlorobiphenyl	5.0
2,2',3,4',5-Pentachlorobiphenyl	5.0	2,2',3,3',4,4',6,6'-Octachlorobiphenyl	7.5
2,2',4,4',5-Pentachlorobiphenyl	5.0	2,2',3,3',4,5,5',6'-Octachlorobiphenyl	7.5
2,2',3,4',6-Pentachlorobiphenyl	5.0	2,2',3,4,4',5,5',6-Octachlorobiphenyl	7.5

PCB Congener Mix #3

M-1668A-3-0,01X

1 x 1 mL

At stated conc. ($\mu\text{g/mL}$) in Isooctane 29 comps.

3,4'-Dichlorobiphenyl	2.5
2,2',4'-Trichlorobiphenyl	2.5
2,4,5-Trichlorobiphenyl	2.5
2,3,3'-Trichlorobiphenyl	2.5
2,2',3,6'-Tetrachlorobiphenyl	5.0
2,3,5,6-Tetrachlorobiphenyl	5.0
2,3,3',6-Tetrachlorobiphenyl	5.0
2,2',3,3'-Tetrachlorobiphenyl	5.0
2,3,4,5-Tetrachlorobiphenyl	5.0
2',3,4,5-Tetrachlorobiphenyl	5.0
2,3',5,5'-Tetrachlorobiphenyl	5.0
2,2',3,5,6-Pentachlorobiphenyl	5.0
2,2',3,3',6-Pentachlorobiphenyl	5.0
2,2',4,5,5'-Pentachlorobiphenyl	5.0
2,3,3',5,6-Pentachlorobiphenyl	5.0
2,2',3,4,5-Pentachlorobiphenyl	5.0
2,3,4,5,6-Pentachlorobiphenyl	5.0
2,3,3',4',5-Pentachlorobiphenyl	5.0
2,2',4,4',5,6'-Hexachlorobiphenyl	5.0
2,2',3,4',5,6'-Hexachlorobiphenyl	5.0
2,2',3,4,4',6'-Hexachlorobiphenyl	5.0
2,2',3,4',5,5'-Hexachlorobiphenyl	5.0
2,2',3,4,5,5'-Hexachlorobiphenyl	5.0
2,3,3',4',5',6'-Hexachlorobiphenyl	5.0
2,3,3',4,4',6'-Hexachlorobiphenyl	5.0
2,2',3,4,4',5,6'-Heptachlorobiphenyl	5.0
2,2',3,3',4,4',5'-Heptachlorobiphenyl	5.0
2,2',3,3',4,4',5,6'-Heptachlorobiphenyl	5.0
2,3,3',4',5',5',6'-Heptachlorobiphenyl	5.0

PCB Congener Mix #4

M-1668A-4-0.01X

1 x 1 mL

At stated conc. ($\mu\text{g/mL}$) in Isooctane 15 comps.

2,3',4'-Trichlorobiphenyl	2.5
2,3,4-Trichlorobiphenyl	2.5
2,3',4,6-Tetrachlorobiphenyl	5.0
2,2',4,4'-Tetrachlorobiphenyl	5.0
2,2',3,4'-Tetrachlorobiphenyl	5.0
2,3,4',6-Tetrachlorobiphenyl	5.0
2,3,4',5-Tetrachlorobiphenyl	5.0
2,2',4,5,6'-Pentachlorobiphenyl	5.0
2,2',3',4,5-Pentachlorobiphenyl	5.0
2,3,4,4',6-Pentachlorobiphenyl	5.0
2',3,4,4',5-Pentachlorobiphenyl	5.0
2,2',3,3',5,6-Hexachlorobiphenyl	5.0
2,2',3,3',4,6-Hexachlorobiphenyl	5.0
2,3,3',4,5,6-Hexachlorobiphenyl	5.0
2,2',3,4,4',5,5'-Heptachlorobiphenyl	5.0

PCB Congener Mix #5

M-1668A-5-0.01X

1 x 1 mL

At stated conc. ($\mu\text{g/mL}$) in Isooctane 28 comps.

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

Method 1668 Level of Chlorination Calibration / Spike

Level of Chlorination
Calibration / Spike Set

M-1668A-LOC-SET 2 x 1 mL
M-1668A-NAT, M-1668A-PAR

Native PCB Calibration Mix

M-1668A-NAT 1 x 1 mL
At stated conc. (µg/mL) in Isooctane 19 comps.

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

PAR PCB Spike Mix

M-1668A-PAR 1 x 1 mL
At stated conc. (µg/mL) in Isooctane 19 comps.

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

Method 1668A - Combined Congener Standard

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

1 x 1 mL
33 comps.

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

Method 1668A - QC Standard

M-1668A-QC

1 x 1 mL

M-1668A-QC-PAK SAVE
At stated conc. (µg/mL) in Isooctane

5 x 1 mL
13 comps.

3,3',4,4'-Tetrachlorobiphenyl	0.2
2,3,3',4,4'-Pentachlorobiphenyl	10
2,3,4,4',5-Pentachlorobiphenyl	10
2,3',4,4',5-Pentachlorobiphenyl	10
2',3,4,4',5-Pentachlorobiphenyl	10
3,3',4,4',5-Pentachlorobiphenyl	1
2,3,3',4,4',5-Hexachlorobiphenyl	10
2,3,3',4,4',5'-Hexachlorobiphenyl	10
2,3',4,4',5,5'-Hexachlorobiphenyl	10
3,3',4,4',5,5'-Hexachlorobiphenyl	2
2,2',3,3',4,4',5-Heptachlorobiphenyl	2
2,2',3,4,4',5,5'-Heptachlorobiphenyl	10
2,3,3',4,4',5,5'-Heptachlorobiphenyl	2

Method 1668 are listed in the PCB section with Congener Numbers.

All 209 Individual PCB Congeners are also listed.

Method 1671 VOCs Specific to PMI by GC/FID**PMI Internal Standard**

M-1671A-IS

1 x 1 mL

M-1671A-IS-PAK

SAVE

5 x 1 mL

1.0 mg/mL in Water

Tetrahydrofuran

Custom Formulations

AccuStandard can obtain PEG with different mixtures of oligomers having molecular weights centered around 200, 300, 400, 550, 1000, 1450, 3350, 8000, 10,000 ca.

Method 1673 Polyethylene glycol-600 by Derivative & HPLC**Poly(ethylene glycol)-600**

M-1673

1 x 1 mL

M-1673-PAK

SAVE

5 x 1 mL

2.5 mg/mL in Tetrahydrofuran

Polyethylene glycol-600

Surrogate Standard

M-1673-SS

1 x 1 mL

M-1673-SS-PAK

SAVE

5 x 1 mL

1.0 mg/mL in Tetrahydrofuran

Diethylene glycol monohexyl ether

Derivatization Reagent

M-1673-DERV-5ML

1 x 5 mL

10 mg/mL in Tetrahydrofuran

3,5-Dinitrobenzyl chloride

**Custom Quotation Requests**

Custom formulations can be requested by contacting
Technical Service: techservice@accustandard.com or
 using our website **AccuStandard.com**.

See back of the catalog for detailed information

Standard Mixtures for EPA Method 8000 Series

For Solid Waste



Background Information

The analytical methods used to identify and quantify organic compounds in solid waste are provided in US EPA SW-846, also known as the 8000 Series Methods.

These methods were developed in response to environmental problem areas such as Love Canal, N.Y. and Times Beach, MO. A historical perspective of the evolution of this series includes the Resource and Conservation Recovery Act (RCRA), which was amended by the Hazardous and Solid Waste Act (HSWA). HSWA also addressed previously exempted underground storage tanks containing petroleum and some hazardous substances.

The 8000 Series product line contains standards used in the proposed and promulgated methods for the identification and 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.

Match frequently
requested products.

Alternate Source

ASL products can be used as
an independent second source.

Methods 8015A, 8020A, 8040A, 8080A, 8270

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EPA Method 8000 Series

Appendix IX Compounds

AccuStandard has assembled the compounds appearing below to aid the analyst in identifying all the contaminants the EPA has regulated for groundwater monitoring. This list (214 compounds), commonly called the Appendix IX list, was first published in July 1987. Federal Register Vol. 52, No. 131.

The entire list of compounds can be purchased as a complete set

APP-9-SET *

214 x 1 mL

All solutions are at 100 µg/mL in 1 mL

Appendix IX Compounds

Compound	CAS No.	Solv.	Cat. No.	Compound	CAS No.	Solv.	Cat. No.
Acenaphthene	83-32-9	MeOH	APP-9-001	1,2-Dichloroethane	107-06-2	MeOH	APP-9-071
Acenaphthylene	208-96-8	MeOH	APP-9-002	1,1-Dichloroethylene	75-35-4	MeOH	APP-9-072
Acetone	67-64-1	MeOH	APP-9-003 *	<i>trans</i> -1,2-Dichloroethylene	156-60-5	MeOH	APP-9-073
Acetonitrile	75-05-8	MeOH	APP-9-005	Dichloromethane	75-09-2	MeOH	APP-9-074
Acetophenone	98-86-2	CH ₂ Cl ₂	APP-9-004	2,4-Dichlorophenol	120-83-2	MeOH	APP-9-075
2-Acetylaminofluorene	53-96-3	CH ₂ Cl ₂	APP-9-006	2,6-Dichlorophenol	87-65-0	CH ₂ Cl ₂	APP-9-076
Acrolein	107-02-8	M:W	APP-9-007 *	1,2-Dichloropropane	78-87-5	MeOH	APP-9-077
Acrylonitrile	107-13-1	MeOH	APP-9-008	<i>cis</i> -1,3-Dichloropropene	10061-01-5	MeOH	APP-9-078
Aldrin	309-00-2	MeOH	APP-9-009	<i>trans</i> -1,3-Dichloropropene	10061-02-6	MeOH	APP-9-079
Allyl chloride	107-05-1	MeOH	APP-9-010	Dieldrin	60-57-1	MeOH	APP-9-080
4-Aminobiphenyl	92-67-1	CH ₂ Cl ₂	APP-9-011	Diethyl phthalate	84-66-2	MeOH	APP-9-081
Aniline	62-53-3	MeOH	APP-9-012	Dimethoate	60-51-5	MeOH	APP-9-082
Anthracene	120-12-7	MeOH	APP-9-013	<i>p</i> -Dimethylaminoazobenzene	60-11-7	CH ₂ Cl ₂	APP-9-083
Aramite	140-57-8	MeOH	APP-9-014	7,12-Dimethylbenz[a]anthracene	57-97-6	CH ₂ Cl ₂	APP-9-084
Benz[a]anthracene	56-55-3	MeOH	APP-9-016	3,3'-Dimethylbenzidine †	119-93-7	CH ₂ Cl ₂	APP-9-085
Benzene	71-43-2	MeOH	APP-9-015	<i>a,a</i> -Dimethylphenethylamine	122-09-8	CH ₂ Cl ₂	APP-9-086
Benzo[b]fluoranthene	205-99-2	MeOH	APP-9-017	2,4-Dimethylphenol	105-67-9	MeOH	APP-9-087
Benzo[k]fluoranthene	207-08-9	MeOH	APP-9-018	Dimethyl phthalate	131-11-3	MeOH	APP-9-088
Benzo[g,h,i]perylene	191-24-2	CH ₂ Cl ₂	APP-9-019	<i>m</i> -Dinitrobenzene	99-65-0	CH ₂ Cl ₂	APP-9-089
Benz[a]pyrene	50-32-8	MeOH	APP-9-020	4,6-Dinitro- <i>o</i> -cresol	534-52-1	MeOH	APP-9-090
Benzyl alcohol	100-51-6	MeOH	APP-9-021	2,4-Dinitrophenol	51-28-5	MeOH	APP-9-091
α-BHC	319-84-6	MeOH	APP-9-022	2,4-Dinitrotoluene	121-14-2	MeOH	APP-9-092
β-BHC	319-85-7	MeOH	APP-9-023	2,6-Dinitrotoluene	606-20-2	MeOH	APP-9-093
δ-BHC	319-86-8	MeOH	APP-9-024	Dinoseb	88-85-7	MeOH	APP-9-094
γ-BHC (Lindane)	58-89-9	MeOH	APP-9-025	Di- <i>n</i> -octyl phthalate	117-84-0	MeOH	APP-9-095
Bromodichloromethane	75-27-4	MeOH	APP-9-030	1,4-Dioxane	123-91-1	MeOH	APP-9-096
Bromoform	75-25-2	MeOH	APP-9-031	Diphenylamine	122-39-4	CH ₂ Cl ₂	APP-9-097
Bromomethane	74-83-9	MeOH	APP-9-032	Disulfoton	298-04-4	MeOH	APP-9-098
4-Bromophenyl phenyl ether	101-55-3	MeOH	APP-9-033	Endosulfan I	959-98-8	MeOH	APP-9-099
Butyl benzyl phthalate	85-68-7	MeOH	APP-9-034	Endosulfan II	33213-65-9	MeOH	APP-9-100
Carbon disulfide	75-15-0	MeOH	APP-9-035	Endosulfan sulfate	1031-07-8	MeOH	APP-9-101
Carbon tetrachloride	56-23-5	MeOH	APP-9-036	Endrin	72-20-8	MeOH	APP-9-102
Chlordane	12789-03-6	MeOH	APP-9-037	Endrin aldehyde	7421-93-4	MeOH	APP-9-103
<i>p</i> -Chloroaniline	106-47-8	MeOH	APP-9-038	Ethylbenzene	100-41-4	MeOH	APP-9-104
Chlorobenzene	108-90-7	MeOH	APP-9-039	bis(2-Ethylhexyl)phthalate	117-81-7	MeOH	APP-9-029
Chlorobenzilate	510-15-6	CH ₂ Cl ₂	APP-9-040	Ethyl methacrylate	97-63-2	MeOH	APP-9-105
<i>p</i> -Chloro- <i>m</i> -cresol	59-50-7	MeOH	APP-9-041	Ethyl methanesulfonate	62-50-0	CH ₂ Cl ₂	APP-9-106
Chloroethane	75-00-3	MeOH	APP-9-042	Famphur	52-85-7	MeOH	APP-9-107
bis(2-Chloroethoxy)methane	111-91-1	CH ₂ Cl ₂	APP-9-026	Fluoranthene	206-44-0	MeOH	APP-9-108
bis(2-Chloroethyl) ether	111-44-4	MeOH	APP-9-027	Fluorene	86-73-7	MeOH	APP-9-109
Chloroform	67-66-3	MeOH	APP-9-043	Heptachlor	76-44-8	MeOH	APP-9-110
bis(2-Chloroisopropyl) ether	108-60-1	CH ₂ Cl ₂	APP-9-028	Heptachlor epoxide (Isomer B)	1024-57-3	MeOH	APP-9-111
Chloromethane	74-87-3	MeOH	APP-9-044	Hexachlorobenzene	118-74-1	MeOH	APP-9-112
2-Chloronaphthalene	91-58-7	MeOH	APP-9-045	Hexachlorobutadiene	87-68-3	MeOH	APP-9-113
2-Chlorophenol	95-57-8	MeOH	APP-9-046	Hexachlorocyclopentadiene	77-47-4	MeOH	APP-9-114
4-Chlorophenyl phenyl ether	7005-72-3	MeOH	APP-9-047	Hexachloroethane	67-72-1	MeOH	APP-9-115
Chloroprene (Xylene-Free)	126-99-8	MeOH	APP-9-048-R1	Hexachlorophene	70-30-4	MeOH	APP-9-116
Chrysene	218-01-9	MeOH	APP-9-049	Hexachloropropene	1888-71-7	MeOH	APP-9-117
<i>m</i> -Cresol	108-39-4	CH ₂ Cl ₂	APP-9-050	2-Hexanone	591-78-6	MeOH	APP-9-118 *
<i>o</i> -Cresol	95-48-7	CH ₂ Cl ₂	APP-9-051	Indeno[1,2,3- <i>cd</i>]pyrene	193-39-5	MeOH	APP-9-119
<i>p</i> -Cresol	106-44-5	CH ₂ Cl ₂	APP-9-052	Isobutanol	78-83-1	MeOH	APP-9-120
2,4-D	94-75-7	MeOH	APP-9-053	Isodrin	465-73-6	MeOH	APP-9-121
4,4'-DDD	72-54-8	MeOH	APP-9-054	Isophorone	78-59-1	MeOH	APP-9-122
4,4'-DDE	72-55-9	MeOH	APP-9-055	Isosafrole	120-58-1	CH ₂ Cl ₂	APP-9-123
4,4'-DDT	50-29-3	MeOH	APP-9-056	Kepone	143-50-0	MeOH	APP-9-124
Diallate	2303-16-4	MeOH	APP-9-057	Methacrylonitrile	126-98-7	MeOH	APP-9-125
Dibenz[a,h]anthracene	53-70-3	MeOH	APP-9-058	Methapyrilene	91-80-5	CH ₂ Cl ₂	APP-9-126
Dibenzofuran	132-64-9	MeOH	APP-9-059	Methoxychlor	72-43-5	MeOH	APP-9-127
Dibromochloromethane	124-48-1	MeOH	APP-9-060	3-Methylcholanthrene	56-49-5	CH ₂ Cl ₂	APP-9-128
1,2-Dibromo-3-chloropropane	96-12-8	MeOH	APP-9-061	Methyl ethyl ketone (MEK)	78-93-3	MeOH	APP-9-129 *
Dibromomethane	74-95-3	MeOH	APP-9-062	Methyl iodide (Iodomethane)	74-88-4	MeOH	APP-9-130
1,2-Dibromoethane (EDB)	106-93-4	MeOH	APP-9-214	Methyl methacrylate	80-62-6	MeOH	APP-9-131
Di- <i>n</i> -butyl phthalate	84-74-2	MeOH	APP-9-063	Methyl methanesulfonate	66-27-3	CH ₂ Cl ₂	APP-9-132
<i>o</i> -Dichlorobenzene	95-50-1	MeOH	APP-9-064	2-Methylnaphthalene	91-57-6	CH ₂ Cl ₂	APP-9-133
<i>m</i> -Dichlorobenzene	541-73-1	MeOH	APP-9-065	Methyl parathion	298-00-0	MeOH	APP-9-134
<i>p</i> -Dichlorobenzene	106-46-7	MeOH	APP-9-066	4-Methyl-2-pentanone (MIBK)	108-10-1	MeOH	APP-9-135
3,3'-Dichlorobenzidine †	91-94-1	MeOH	APP-9-067	Naphthalene	91-20-3	CH ₂ Cl ₂	APP-9-136
<i>trans</i> -1,4-Dichloro-2-butene	110-57-6	MeOH	APP-9-068	1,4-Naphthoquinone	130-15-4	CH ₂ Cl ₂	APP-9-137
Dichlorodifluoromethane	75-71-8	MeOH	APP-9-069	1-Naphthylamine	134-32-7	CH ₂ Cl ₂	APP-9-138
1,1-Dichloroethane	75-34-3	MeOH	APP-9-070	2-Naphthylamine	91-59-8	CH ₂ Cl ₂	APP-9-139

† Subject to oxidation

* ColdPAK required to maintain integrity of product.

EPA Method 8000 Series

Appendix IX Compounds & Mixtures



Custom Appendix IX formulations are available.
Please use our Custom Quotation Request for any
custom mixture you may need.

Appendix IX

Appendix IX Compounds All solutions at 100 µg/mL in 1 mL

Compound	CAS No.	Solv.	Cat. No.	Compound	CAS No.	Solv.	Cat. No.
<i>o</i> -Nitroaniline	88-74-4	CH ₂ Cl ₂	APP-9-140	Pentachlorobenzene	608-93-5	MeOH	APP-9-173
<i>m</i> -Nitroaniline	99-09-2	CH ₂ Cl ₂	APP-9-141	Pentachloroethane	76-01-7	MeOH	APP-9-174
<i>p</i> -Nitroaniline	100-01-6	CH ₂ Cl ₂	APP-9-142	Pentachloronitrobenzene	82-68-8	MeOH	APP-9-175
Nitrobenzene	98-95-3	MeOH	APP-9-143	Pentachlorophenol	87-86-5	MeOH	APP-9-176
<i>o</i> -Nitrophenol	88-75-5	MeOH	APP-9-144	Phenacetin	62-44-2	CH ₂ Cl ₂	APP-9-177
<i>p</i> -Nitrophenol	100-02-7	MeOH	APP-9-145	Phenanthrene	85-01-8	MeOH	APP-9-178
4-Nitroquinoline-1-oxide	56-57-5	CH ₂ Cl ₂	APP-9-146	Phenol	108-95-2	CH ₂ Cl ₂	APP-9-179
N-Nitrosodi- <i>n</i> -butylamine	924-16-3	CH ₂ Cl ₂	APP-9-147	<i>p</i> -Phenylenediamine	106-50-3	MeOH	APP-9-180
N-Nitrosodiethylamine	55-18-5	CH ₂ Cl ₂	APP-9-148	Phorate	298-02-2	MeOH	APP-9-181
N-Nitrosodimethylamine	62-75-9	CH ₂ Cl ₂	APP-9-149	2-Picoline	109-06-8	MeOH	APP-9-182
N-Nitrosodiphenylamine	86-30-6	CH ₂ Cl ₂	APP-9-150	Pronamide	23950-58-5	MeOH	APP-9-183
N-Nitrosodipropylamine	621-64-7	CH ₂ Cl ₂	APP-9-151	Propionitrile	107-12-0	MeOH	APP-9-184
N-Nitrosomethylethylamine	10595-95-6	CH ₂ Cl ₂	APP-9-152	Pyrene	129-00-0	MeOH	APP-9-185
N-Nitrosomorpholine	59-89-2	CH ₂ Cl ₂	APP-9-153	Pyridine	110-86-1	MeOH	APP-9-186-M
N-Nitrosopiperidine	100-75-4	CH ₂ Cl ₂	APP-9-154	Safrole	94-59-7	MeOH	APP-9-187
N-Nitrosopyrrolidine	930-55-2	CH ₂ Cl ₂	APP-9-155	Silvex (2,4,5-TP)	93-72-1	MeOH	APP-9-188
5-Nitro- <i>o</i> -toluidine	99-55-8	CH ₂ Cl ₂	APP-9-156	Styrene	100-42-5	MeOH	APP-9-189
Parathion	56-38-2	MeOH	APP-9-157	2,4,5-T	93-76-5	MeOH	APP-9-190
Polychlorinated biphenyls:				1,2,4,5-Tetrachlorobenzene	95-94-3	MeOH	APP-9-191
Aroclor® 1016	12674-11-2	MeOH	APP-9-158	1,1,1,2-Tetrachloroethane	630-20-6	MeOH	APP-9-192
Aroclor 1221	11104-28-2	MeOH	APP-9-159	1,1,2,2-Tetrachloroethane	79-34-5	MeOH	APP-9-193
Aroclor 1232	11141-16-5	MeOH	APP-9-160	Tetrachloroethylene	127-18-4	MeOH	APP-9-194
Aroclor 1242	53469-21-9	MeOH	APP-9-161	2,3,4,6-Tetrachlorophenol	58-90-2	MeOH	APP-9-195
Aroclor 1248	12672-29-6	MeOH	APP-9-162	Tetraethyl dithiopyrophosphate (Sulfotep)	3689-24-5	MeOH	APP-9-196
Aroclor 1254	11097-69-1	MeOH	APP-9-163	Thionazin	297-97-2	MeOH	APP-9-197
Aroclor 1260	11096-82-5	MeOH	APP-9-164	Toluene	108-88-3	MeOH	APP-9-198
Aroclor 1262	37324-23-5	MeOH	APP-9-165	<i>o</i> -Toluidine	95-53-4	MeOH	APP-9-199
Aroclor 1268	11100-14-4	MeOH	APP-9-166	Toxaphene	8001-35-2	MeOH	APP-9-200
Dioxins:				1,2,4-Trichlorobenzene	120-82-1	MeOH	APP-9-201
1,2,3,4,7,8-HCDD (5 µg/mL)	39227-28-6	Toluene	APP-9-169	1,1,1-Trichloroethane	71-55-6	MeOH	APP-9-202
1,2,3,7,8-PCCD (5 µg/mL)	40321-76-4	Toluene	APP-9-168	1,1,2-Trichloroethane	79-00-5	MeOH	APP-9-203
2,3,7,8-TCDD (5 µg/mL)	1746-01-6	Toluene	APP-9-167	Trichloroethylene	79-01-6	MeOH	APP-9-204
Polychlorinated dibenzofurans:				Trichlorofluoromethane (Freon #11)	75-69-4	MeOH	APP-9-205
1,2,3,4,7,8-HCDF (5 µg/mL)	55684-94-1	Toluene	APP-9-172	2,4,5-Trichlorophenol	95-95-4	MeOH	APP-9-206
1,2,3,7,8-PCDF (5 µg/mL)	57117-41-6	Toluene	APP-9-171	2,4,6-Trichlorophenol	88-06-2	MeOH	APP-9-207
2,3,7,8-TCDF (5 µg/mL)	51207-31-9	Toluene	APP-9-170	1,2,3-Trichloropropane	96-18-4	MeOH	APP-9-208
				O,O,O-Triethylphosphorothioate	126-68-1	MeOH	APP-9-209
				1,3,5-Trinitrobenzene	99-35-4	MeOH	APP-9-210
				Vinyl acetate	108-05-4	MeOH	APP-9-211 *
				Vinyl chloride	75-01-4	MeOH	APP-9-212
				Xylene (total)	1330-20-7	MeOH	APP-9-213

Volatile Appendix IX Mixtures

M-8240A *	1 x 1 mL 41 comps.	M-502B M-502B-PAK SAVE 0.2 mg/mL each in MeOH	1 x 1 mL 5 x 1 mL 6 comps.	M-8240C 0.2 mg/mL each in MeOH	1 x 1 mL 17 comps.
Acetone	<i>cis</i> -1,3-Dichloropropene	Bromomethane	Acetonitrile	Acetonitrile	
Acrolein	<i>trans</i> -1,3-Dichloropropene	Chloromethane	Allyl chloride	Allyl chloride	
Acrylonitrile	Ethanol	Chloroethane	1,2-Dibromo-3-chloropropane	1,2-Dibromo-3-chloropropane	
Benzene	Ethylbenzene	Dichlorodifluoromethane	Dibromomethane	Dibromomethane	
Bromodichloromethane	2-Hexanone	Trichlorofluoromethane	1,2-Dibromoethane	1,2-Dibromoethane	
Bromoform	Iodomethane	Vinyl chloride	1,4-Dioxane	1,4-Dioxane	
Methyl ethyl ketone	4-Methyl-2-pentanone		Ethyl methacrylate	Ethyl methacrylate	
Carbon disulfide	Methylene chloride		Isobutanol	Isobutanol	
Carbon tetrachloride	Styrene		Methacrylonitrile	Methacrylonitrile	
Chlorobenzene	1,1,2,2-Tetrachloroethane		Methyl methacrylate	Methyl methacrylate	
Chloroform	Tetrachloroethene		Nitrobenzene	Nitrobenzene	
Dibromochloromethane	Toluene		Pentachloroethane	Pentachloroethane	
<i>cis</i> -1,4-Dichloro-2-butene (0.1 mg/mL)	1,1,1-Trichloroethane		Propionitrile	Propionitrile	
<i>trans</i> -1,4-Dichloro-2-butene (0.1 mg/mL)	1,1,2-Trichloroethane		Pyridine	Pyridine	
1,2-Dichlorobenzene	Trichloroethene		1,1,1,2-Tetrachloroethane	1,1,1,2-Tetrachloroethane	
1,3-Dichlorobenzene	Vinyl acetate		1,2,4-Trichlorobenzene	1,2,4-Trichlorobenzene	
1,4-Dichlorobenzene	<i>o</i> -Xylene		1,2,3-Trichloropropane	1,2,3-Trichloropropane	
1,1-Dichloroethane	<i>m</i> -Xylene				
1,2-Dichloroethane	<i>p</i> -Xylene				
1,1-Dichloroethene					
<i>trans</i> -1,2-Dichloroethene					
1,2-Dichloropropane					

Certificate will reflect actual
cis/trans ratio



EPA Method 8000 Series

Appendix IX Special Mixtures

Special Mixtures for Laboratories Testing Appendix IX Analytes

Volatile Mixtures

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
Acrolein
Acrylonitrile
Allyl chloride
1,2-Dibromoethane
1,2-Dibromo-3-chloropropane
Dibromomethane

1,4-Dioxane
Propionitrile
Iodomethane
Isobutanol
Methacrylonitrile
1,1,1,2-Tetrachloroethane
1,2,3-Trichloropropane

bis(2-Chloroisopropyl)ether
Dichlorodifluoromethane
Ethyl methacrylate

Methyl methacrylate
Pentachloroethane
Pyridine

Semi-Volatile Mixtures

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 †
1,4-Naphthoquinone

4-Nitroquinoline-1-oxide
p-Phenylenediamine

Mix 2

S-168-MIXB
500 µg/mL each in CH₂Cl₂

1 x 1 mL
38 comps.

Acetophenone
2-Acetylaminofluorene
4-Aminobiphenyl
Aramite
2-sec-Butyl-4,6-dinitrophenol
m-Cresol
2,6-Dichlorophenol
p-Dimethylamino azobenzene
(Methyl Yellow)
7,12-Dimethylbenz[a]anthracene
m-Dinitrobenzene
Ethyl methacrylate
Ethyl methanesulfonate
Hexachlorophene
Hexachloropropene
Isosafrole
Methapyrilene
3-Methylcholanthrene
Methyl methacrylate
Methyl methanesulfonate

1-Naphthylamine
2-Naphthylamine
N-Nitrosodi-*n*-butylamine
N-Nitrosodiethylamine
N-Nitrosomethylethylamine
N-Nitrosomorpholine
N-Nitrosopyrrolidine
5-Nitro-*o*-toluidine
Pentachlorobenzene
Pentachloroethane
Pentachloronitrobenzene
Phenacetin
2-Picoline
Pronamide
Pyridine
Safrole
1,2,4,5-Tetrachlorobenzene
2,3,4,6-Tetrachlorophenol
o-Toluidine



Organic 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.

† Subject to oxidation

* ColdPAK required to maintain integrity of product.

Custom Quotation Requests

Custom formulations can be requested by contacting
Technical Service: techservice@accustandard.com or
using our website **AccuStandard.com**.

See back of the catalog for detailed information



EPA Method 8000 Series

Volatile Internal (ISTD) / Surrogate(SS) Standards



With more proposed and promulgated methods available, analytical chemists are trying to combine analyte lists and shorten run times while still demonstrating method equivalence. AccuStandard has formulated a core evaluation deuterated solution and a second conventional internal/surrogate evaluation solution. These formulations allow the analyst to quickly evaluate ISTD/SS combinations for PID, Hall, FID or GC/MS applications.

Volatile ISTD & SS

Popular Internal Standards

M-502-IS 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
2.0 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 Mix

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

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
2.0 mg/mL each in MeOH 3 comps.

4-Bromofluorobenzene
Fluorobenzene
Pentafluorobenzene

M-8020-SS 1 x 1 mL
2.0 mg/mL each in MeOH 3 comps.

4-Bromochlorobenzene
1,4-Difluorobenzene
Fluorobenzene

M-8021-SS 1 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

4-Bromochlorobenzene
1,4-Dichlorobutane

M-8021-SS-M 1 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

Bromochloromethane
1,4-Dichlorobutane

M-8021A-SS 1 x 1 mL
2.0 mg/mL each in MeOH 4 comps.

4-Bromochlorobenzene
Bromochloromethane
1,4-Dichlorobutane
2-Bromo-1-chloropropane

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

Deuterated ISTD/SS Evaluation Mix

M-DEUT-IS/SS 1 x 1 mL
200 µg/mL each in MeOH 8 comps.

Benzene-d₆ 1,2-Dichlorobenzene-d₄
Chlorobenzene-d₅ Ethylbenzene-d₁₀
1,2-Dichlorobenzene-d₄ Methylene chloride-d₂
1,4-Dichlorobenzene-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 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
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 µg/mL each in MeOH 7 comps.

p-Bromofluorobenzene
Chlorobenzene-d₅
Dibromofluoromethane
1,4-Dichlorobenzene-d₄
1,2-Dichloroethane-d₄
Fluorobenzene
Toluene-d₈



EPA Method 8000 Series

Method 8010 Halogenated VOCs by GC/ELCD (Hall)

Method 8010 Purgeable Halocarbon Set

M-601-SET * 4 x 1 mL
0.2 mg/mL in MeOH M-601A, M-502B, M-601C, M-501

M-601-10X-SET * 4 x 1 mL
2.0 mg/mL in MeOH M-601A-10X, M-502B-10X
M-601C-10X, M-501-10X

Liquids

M-601A 1 x 1 mL
M-601A-PAK 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	* <i>cis</i> (1.06 x conc.)
1,2-Dichloropropane	** <i>trans</i> (0.94 x conc.)

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

* ColdPAK required to maintain integrity of product.

Method 8010A Acetonitrile Version

Method 8010A (Acetonitrile Version)

M-8010A
0.2 mg/mL each in AcCN

Benzyl chloride	1,2-Dichlorobenzene
Bromobenzene	1,3-Dichlorobenzene
Bromoform	1,4-Dichlorobenzene
Bromomethane	Dichlorobromomethane
Carbon tetrachloride	Dichlorodifluoromethane
Chlorobenzene	1,1-Dichloroethane
Chloroethane	1,2-Dichloroethane
2-Chloroethyl vinyl ether	1,1-Dichloroethylene
Chloroform	<i>trans</i> -1,2-Dichloroethylene
Chloromethane	1,2-Dichloropropane
Dibromochloromethane	<i>cis</i> -1,3-Dichloropropylene
Dibromomethane	<i>trans</i> -1,3-Dichloropropylene

Methylene chloride
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethylene
Trichlorofluoromethane
1,2,3-Trichloropropane
Vinyl chloride

Certificate will reflect actual
cis/trans ratio

Internal & Surrogate Standard

M-8010-IS/SS 1 x 1 mL
M-8010-IS/SS-PAK SAVE 5 x 1 mL
150 µg/mL each in MeOH 3 comps.

4-Bromochlorobenzene	Bromochloromethane
4-Bromofluorobenzene	



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	trans-1,2-Dichloroethene
Carbon tetrachloride	1,2-Dichloropropane
Chlorobenzene	1,3-Dichloro-2-propanol
Chloroethane	cis-1,3-Dichloropropene
2-Chloroethanol	trans-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

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

Internal and Surrogate Standard

M-8010-IS/SS

M-8010-IS/SS-PAK

150 µg/mL each in MeOH

SAVE

1 x 1 mL
5 x 1 mL
3 comps.

4-Bromochlorobenzene	4-Bromofluorobenzene
Bromochloromethane	

Surrogate Standard

M-001R

M-001R-PAK

20 mg/mL each in MeOH

SAVE

1 x 1 mL
5 x 1 mL
3 comps

Bromochloromethane	2-Bromo-1-chloropropane
1,4-Dichlorobutane	

Halogenated Volatiles

M-8021B-X2

0.2 mg/mL each in Pentane

1 x 1 mL
2 comps.

Bromoacetone	Chloromethyl methyl ether
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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

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-R1-20X

2000 µg/mL in MeOH

1 x 1 mL

Chloroprene

Method 8011 DBCP & EDB by GC/MS

M-504-10X

M-504-10X-PAK

2.0 mg/mL each in MeOH

SAVE

1 x 1 mL
5 x 1 mL
2 comps.

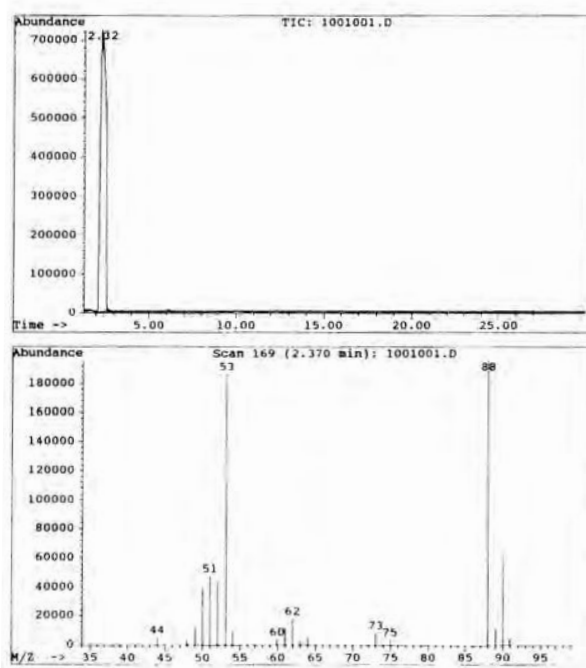
1,2-Dibromo-3-chloropropane (DBCP)

1,2-Dibromoethane (EDB)

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.





EPA Method 8000 Series

Method 8015A (Rev 1, July 1992) 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 12 comps.

Alternate Source

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.	1 mL
Acetone	M-8015B/5031-01	
Acetonitrile	M-8015B/5031-02	
Acrolein	M-8015B/5031-03	
Acrylonitrile	M-8015B/5031-04	
Allyl alcohol	M-8015B/5031-05	
n-Butanol	M-8015B/5031-06	
t-Butanol	M-8015B/5031-07	
Crotonaldehyde	M-8015B/5031-08	
Diethyl ether	M-8015B/5031-09	
p-Dioxane	M-8015B/5031-10	
Ethanol	M-8015B/5031-11	
Ethyl acetate	M-8015B/5031-12	
Ethylene glycol	M-8015B/5031-13	
Ethylene oxide (5.0 mg/mL)	M-8015B/5031-14-R1 *	
Isobutanol	M-8015B/5031-15	
Isopropanol	M-8015B/5031-16	
Methanol	M-8015B/5031-17	
Methyl ethyl ketone	M-8015B/5031-18	
4-Methyl-2-pentanone	M-8015B/5031-19	
N-Nitrosodi-n-butylamine (0.5 mg/mL)	M-8015B/5031-20	
Paraldehyde	M-8015B/5031-21	
2-Pentanone	M-8015B/5031-22	
2-Picoline	M-8015B/5031-23	
n-Propanol	M-8015B/5031-24	
Propionitrile	M-8015B/5031-25	
Pyridine	M-8015B/5031-26	
o-Toluidine	M-8015B/5031-27	

Method 5031 GC/FID Internal Standards for Method 8015B/5031 Azeotropic Distillation

M-8260/5031-IS-FID 1 x 1 mL
5.0 mg/mL each in Water 3 comps.

2-Chloroacetonitrile	Hexafluoro-2-propanol
Hexafluoro-2-methyl-2-propanol	

Technical Note

Method 5031 describes the separation procedures for non-purgeable, water-soluble and volatile organic compounds in aqueous samples of leachates from solid matrices using azeotropic distillation.

Method 8015B is the GC/FID analytical method of analysis. Fuels referenced for analysis by method 8015B can be found in LUFT/LUST.

Method 8020 Aromatic Volatiles by PID

Aromatic Volatile Analytes

M-8020 1 x 1 mL
0.2 mg/mL each in MeOH 10 comps.

M-8020-10X 1 x 1 mL
M-8020-10X-PAK 5 x 1 mL
2.0 mg/mL each in MeOH 10 comps.

SAVE

Benzene	Ethylbenzene
Chlorobenzene	Toluene
1,2-Dichlorobenzene	o-Xylene
1,3-Dichlorobenzene	m-Xylene
1,4-Dichlorobenzene	p-Xylene

M-8020B-R1 1 x 1 mL
M-8020B-R1-PAK 5 x 1 mL
2.0 mg/mL each in MeOH 13 comps.

SAVE

Benzene	Pyridine
Chlorobenzene	Thiophenol
1,2-Dichlorobenzene	Toluene
1,3-Dichlorobenzene	o-Xylene
1,4-Dichlorobenzene	m-Xylene
Ethylbenzene	p-Xylene
2-Picoline	

Performance Check Solution

M-8020-QC 1 x 1 mL
M-8020-QC-PAK 5 x 1 mL
2.0 mg/mL in MeOH

SAVE

MtBE

Internal Standards

M-8020-IS 1 x 1 mL
M-8020-IS-PAK 5 x 1 mL
0.2 mg/mL each in MeOH 2 comps.

SAVE

M-8020-IS-10X 1 x 1 mL
M-8020-IS-10X-PAK 5 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

SAVE

4-Bromofluorobenzene	α,α,α-Trifluorotoluene
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Surrogate Standards

M-8020-SS 1 x 1 mL
M-8020-SS-PAK 5 x 1 mL
2.0 mg/mL each in MeOH 3 comps.

SAVE

4-Bromochlorobenzene	Fluorobenzene
1,4-Difluorobenzene	

M-8020-SS-1 1 x 1 mL
2.0 mg/mL each in MeOH

4-Bromochlorobenzene

Combined ISTD/SS Solution

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

Alternate Source

SAVE

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

* ColdPAK required to maintain integrity of product.



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

A complete set of each component in individual ampules.

M-502-SET	0.2 mg/mL in MeOH	59 x 1 mL
M-502-10X-SET	2.0 mg/mL in MeOH	59 x 1 mL

Individual Component Solutions

To order, specify identity (#) and conc. (0.2 or 2.0 mg/mL)		
M-502-#	0.2 mg/mL in MeOH	1 x 1 mL
M-502-#-10X	2.0 mg/mL in MeOH	1 x 1 mL
M-502-34A & M-502-34B only available as mixture: M-502-34R		
M-502-34-R		1 x 1 mL
0.4 mg/mL each in MeOH		2 comps.
M-502-34-R-10X		1 x 1 mL
4.0 mg/mL each in MeOH		2 comps.
<i>cis</i> -1,3-Dichloropropene	<i>trans</i> -1,3-Dichloropropene	
Certificate will reflect actual cis/trans ratio		

Individual Component Neats

To order, specify identity		Except	
M-502-##N	1 x 1 gram	M-502-##N	1 x 1 gram
		M-502-04N	M-502-28N
		M-502-08N	M-502-29N
		M-502-17N	M-502-31N
		M-502-18N	M-502-32N
		M-502-34N	M-502-43N
		M-502-44N	

Halogenated Non-Aromatic Volatiles Solution #1

M-8021B-NAV	1 x 1 mL
M-8021B-NAV-PAK	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	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



EPA Method 8000 Series

Method 8021B Purgeable Volatiles by PID/ELCD (Hall)

Internal Standard Solutions

M-8021B-IS		1 x 1 mL
M-8021B-IS-PAK	SAVE	5 x 1 mL
5 µg/mL each in MeOH		2 comps.
M-8021B-IS-10X		1 x 1 mL
M-8021B-IS-10X-PAK	SAVE	5 x 1 mL
50 µg/mL each in MeOH		2 comps.
M-8021B-IS-100X		1 x 1 mL
M-8021B-IS-100X-PAK	SAVE	5 x 1 mL
500 µg/mL each in MeOH		2 comps.
2-Bromo-1-chloropropane	Fluorobenzene	

Purgeable Internal Standards

M-001R-0.75X		1 x 1 mL
M-001R-0.75X-PAK	SAVE	5 x 1 mL
15 mg/mL each in MeOH		3 comps.
M-001R-0.075X		1 x 1 mL
M-001R-0.075X-PAK	SAVE	5 x 1 mL
1.5 mg/mL each in MeOH		3 comps.
M-001R-0.0075X		1 x 1 mL
M-001R-0.0075X-PAK	SAVE	5 x 1 mL
150 µg/mL each in MeOH		3 comps.
Bromochloromethane	2-Bromo-1-chloropropane	
1,4-Dichlorobutane		

Surrogate Standard Solutions

M-8021B-SS		1 x 1 mL
M-8021B-SS-PAK	SAVE	5 x 1 mL
15 µg/mL each in MeOH		2 comps.
M-8021B-SS-10X		1 x 1 mL
M-8021B-SS-10X-PAK	SAVE	5 x 1 mL
150 µg/mL each in MeOH		2 comps.
M-8021B-SS-100X		1 x 1 mL
M-8021B-SS-100X-PAK	SAVE	5 x 1 mL
1,500 µg/mL each in MeOH		2 comps.
4-Bromochlorobenzene	1,4-Dichlorobutane	

Surrogate Standards

M-8021-SS		1 x 1 mL
M-8021-SS-PAK	SAVE	5 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
M-8021-SS-M-PAK	SAVE	5 x 1 mL
2.0 mg/mL each in MeOH		2 comps.
Bromochloromethane	1,4-Dichlorobutane	

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		

M-8021A-SS		1 x 1 mL
M-8021A-SS-PAK	SAVE	5 x 1 mL
20 mg/mL each in MeOH		4 comps.
4-Bromochlorobenzene	1,4-Dichlorobutane	
Bromochloromethane	2-Bromo-1-chloropropane	

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		



* ColdPAK required to maintain integrity of product.



Method 8040 Phenols, PFB Derivatives by GC/ECD

Phenols, PFB Derivatives Set

M-8040-PFB-SET

Each at 0.2 mg/mL in Isopropanol

19 x 1 mL

4-Chloro-3-cresol-PFB	Dinoseb-PFB
<i>o</i> -Chlorophenol-PFB	2-Methyl-4,6-dinitrophenol-PFB
<i>m</i> -Cresol-PFB	<i>o</i> -Nitrophenol-PFB
<i>o</i> -Cresol-PFB	<i>p</i> -Nitrophenol-PFB
<i>p</i> -Cresol-PFB	Pentachlorophenol-PFB
2-Cyclohexyl-4,6-dinitrophenol-PFB (Dinex)	Phenol-PFB
2,4-Dichlorophenol-PFB	2,3,4,6-Tetrachlorophenol-PFB
2,6-Dichlorophenol-PFB	2,4,5-Trichlorophenol-PFB
2,4-Dimethylphenol-PFB	2,4,6-Trichlorophenol-PFB
2,4-Dinitrophenol-PFB	

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	<i>o</i> -Nitrophenol-PFB
<i>o</i> -Cresol-PFB	<i>p</i> -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.

<i>o</i> -Chlorophenol-PFB	2,4-Dinitrophenol-PFB
<i>m</i> -Cresol-PFB	Dinoseb-PFB
<i>p</i> -Cresol-PFB	2,3,4,6-Tetrachlorophenol-PFB
2,6-Dichlorophenol-PFB	2,4,5-Trichlorophenol-PFB
2,4-Dimethylphenol-PFB	

Technical Note

2,4-Dinitrophenol, 4-Nitrophenol, and Pentachlorophenol are susceptible to adsorption on active surfaces found in injection ports or contaminated columns.

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
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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
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Method 8040A Phenols by GC/FID

Phenol Set

M-8040-SET

Each at 1.0 mg/mL in MeOH

19 x 1 mL

4-Chloro-3-cresol	Dinoseb
<i>o</i> -Chlorophenol	2-Methyl-4,6-dinitrophenol
<i>m</i> -Cresol	<i>o</i> -Nitrophenol
<i>o</i> -Cresol	<i>p</i> -Nitrophenol
<i>p</i> -Cresol	Pentachlorophenol
2-Cyclohexyl-4,6-dinitrophenol (Dinex)	Phenol
2,4-Dichlorophenol	2,3,4,6-Tetrachlorophenol
2,6-Dichlorophenol	2,4,5-Trichlorophenol
2,4-Dimethylphenol	2,4,6-Trichlorophenol
2,4-Dinitrophenol	

Mix A

M-8040A-R

1 x 1 mL

M-8040A-R-PAK

SAVE

2.0 mg/mL each in Isopropanol

5 x 1 mL

10 comps.

4-Chloro-3-cresol	<i>o</i> -Nitrophenol
<i>o</i> -Cresol	<i>p</i> -Nitrophenol
2-Cyclohexyl-4,6-dinitrophenol (Dinex)	2,4,6-Trichlorophenol
2,4-Dichlorophenol	Pentachlorophenol
2-Methyl-4,6-dinitrophenol	Phenol

Mix B

M-8040B-R

1 x 1 mL

M-8040B-R-PAK

SAVE

2.0 mg/mL each in Isopropanol

5 x 1 mL

9 comps.

<i>o</i> -Chlorophenol	2,4-Dinitrophenol
<i>m</i> -Cresol	Dinoseb
<i>p</i> -Cresol	2,3,4,6-Tetrachlorophenol
2,6-Dichlorophenol	2,4,5-Trichlorophenol
2,4-Dimethylphenol	

Phenols QC Check Standard

M-8040A-ASL

1 x 1 mL

M-8040A-ASL-PAK

Alternate Source

SAVE

100 µg/mL each in Isopropanol

1 x 1 mL

19 comps.

M-8040A-ASL-20X

2000 µg/mL each in Isopropanol

1 x 1 mL

19 comps.

Dinoseb	4,6-Dinitro- <i>o</i> -cresol
4-Chloro-3-methylphenol	2,4-Dinitrophenol
2-Chlorophenol	2-Nitrophenol
<i>o</i> -Cresol	4-Nitrophenol
<i>m</i> -Cresol	Pentachlorophenol
<i>p</i> -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	

Method 8040/8040A Bromophenols and Anisoles

Bromophenols

Each at 100 µg/mL in Toluene

Compound	Cat. No.	1 mL	Compound	Cat. No.	1 mL
2-Bromophenol	BP-002S		2,3,4-Tribromophenol	BP-234S	
3-Bromophenol	BP-003S		2,4,5-Tribromophenol	BP-245S	
4-Bromophenol	BP-004S		2,3,6-Tribromophenol	BP-236S	
2,3-Dibromophenol	BP-023S		2,4,6-Tribromophenol	BP-246S	
2,4-Dibromophenol	BP-024S		3,4,5-Tribromophenol	BP-345S	
2,5-Dibromophenol	BP-025S		2,3,4,5-Tetrabromophenol	BP-2345S	
2,6-Dibromophenol	BP-026S		2,3,4,6-Tetrabromophenol	BP-2346S	
3,5-Dibromophenol	BP-035S		2,3,5,6-Tetrabromophenol	BP-2356S	
			Pentabromophenol	BP-23456S	

Bromoanisoles (Methyl Esters)

Each at 50 µg/mL in Methanol

Compound	Cat. No.	1 mL
2-Bromoanisole	BAN-01	
3-Bromoanisole	BAN-02	
4-Bromoanisole	BAN-03	
2,3-Dibromoanisole	BAN-04	
2,4-Dibromoanisole	BAN-05	
2,5-Dibromoanisole	BAN-06	
2,6-Dibromoanisole	BAN-07	
3,5-Dibromoanisole	BAN-08	
2,4,5-Tribromoanisole	BAN-09	
2,4,6-Tribromoanisole	BAN-10	



EPA Method 8000 Series

Method 8041 Phenols by GC-FID or ECD as the Derivatives

RCRA Target Phenols Solution

M-8041		1 x 1 mL
M-8041-PAK	SAVE	5 x 1 mL
1.0 mg/mL each in Isopropanol		21 comps.
4-Chloro-3-methylphenol	<i>p</i> -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	
<i>o</i> -Cresol	2,4,6-Trichlorophenol	
<i>m</i> -Cresol		

Technical Note

The method analytes were formulated into two distinct solutions to meet the needs of laboratories analyzing only the RCRA analytes or the combined RCRA/non-RCRA analytes.

Non-RCRA Target Phenols Solution

M-8041-X1		1 x 1 mL
M-8041-X1-PAK	SAVE	5 x 1 mL
1.0 mg/mL each in Isopropanol		18 comps.
2-Chloro-5-methylphenol	2,5-Dimethylphenol	
4-Chloro-2-methylphenol	2,6-Dimethylphenol	
3-Chlorophenol	3,4-Dimethylphenol	
4-Chlorophenol	2,5-Dinitrophenol	
2,3-Dichlorophenol	3-Nitrophenol	
2,5-Dichlorophenol	2,3,4-Trichlorophenol	
3,4-Dichlorophenol	2,3,5-Trichlorophenol	
3,5-Dichlorophenol	2,3,6-Trichlorophenol	
2,3-Dimethylphenol	3,4,5-Trichlorophenol	

Internal Standards

M-8041-IS		1 x 1 mL
M-8041-IS-PAK	SAVE	5 x 1 mL
50 µg/mL each in Isopropanol		
M-8041-IS-10X		1 x 1 mL
M-8041-IS-10X-PAK	SAVE	5 x 1 mL
0.5 mg/mL each in Isopropanol		
M-8041-IS-20X		1 x 1 mL
M-8041-IS-20X-PAK	SAVE	5 x 1 mL
1.0 mg/mL each in Isopropanol		2 comps.
2,5-Dibromotoluene	2,2',5,5'-Tetrabromobiphenyl	

Surrogate Standards

M-8041-SS		1 x 1 mL
M-8041-SS-PAK	SAVE	5 x 1 mL
1.6 µg/mL in Isopropanol		
M-8041-SS-10X		1 x 1 mL
M-8041-SS-10X-PAK	SAVE	5 x 1 mL
16 µg/mL in Isopropanol		
M-8041-SS-100X		1 x 1 mL
M-8041-SS-100X-PAK	SAVE	5 x 1 mL
160 µg/mL in Isopropanol		
M-8041-SS-625X		1 x 1 mL
M-8041-SS-625X-PAK	SAVE	5 x 1 mL
1.0 mg/mL in Isopropanol		
2,4-Dibromophenol		

Method 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		

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	
Dihexyl phthalate	bis(4-Methyl-2-pentyl)phthalate	
Diisobutyl phthalate		

M-8061A		1 x 1 mL
M-8061A-PAK	SAVE	5 x 1 mL
1.0 mg/mL each in Hexane		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	

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		

Alternate Source

Nitrosamines Mix

M-8270-03-ASL		1 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂		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		



Method 8080A Organochlorine Pesticides and PCBs by GC/ECD

Organochlorine Pesticides

M-8080		1 x 1 mL
M-8080-PAK	SAVE	5 x 1 mL
2.0 mg/mL each in Acetone		17 comps.
Aldrin	Endosulfan I	
α-BHC	Endosulfan II	
β-BHC	Endosulfan sulfate	
δ-BHC	Endrin	
γ-BHC	Endrin aldehyde	
4,4'-DDD	Heptachlor	
4,4'-DDE	Heptachlor epoxide (Isomer B)	
4,4'-DDT	Methoxychlor	
Dieldrin		

Organochlorine Pesticide QC Standard

M-8080-QC-R		1 x 1 mL	
M-8080-QC-R-PAK		5 x 1 mL	
At stated conc. (mg/mL) in Acetone		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		1 x 1 mL
M-508-IS-PAK	SAVE	5 x 1 mL
0.1 mg/mL in MtBE		
Pentachloronitrobenzene		

Surrogate Standard

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	

Multi-Component Analytes

Polychlorinated Biphenyls, Chlordane & Toxaphene

Each at 1,000 µg/mL in Hexane		SAVE	(5 x 1 mL)
Aroclors®#	Cat. No.	1 mL	PAK
Aroclor 1016	C-216S-H-10X		C-216S-H-10X-PAK
Aroclor 1221	C-221S-H-10X		C-221S-H-10X-PAK
Aroclor 1232	C-232S-H-10X		C-232S-H-10X-PAK
Aroclor 1242	C-242S-H-10X		C-242S-H-10X-PAK
Aroclor 1248	C-248S-H-10X		C-248S-H-10X-PAK
Aroclor 1254	C-254S-H-10X		C-254S-H-10X-PAK
Aroclor 1260	C-260S-H-10X		C-260S-H-10X-PAK
Aroclor 1262	C-262S-H-10X		C-262S-H-10X-PAK
Aroclor 1268	C-268S-H-10X		C-268S-H-10X-PAK
Pesticides			
Chlordane	P-017S-H-10X		P-017S-H-10X-PAK
Toxaphene	P-093S-H-10X		P-093S-H-10X-PAK

Decomposition Solution

M-1618D *				1 x 1 mL
M-1618D-PAK *				5 x 1 mL
At stated conc. (µg/mL) in Acetone				2 comps.
p,p'-DDT	2	Endrin	1	

o,p'-DDT and Metabolites

M-8080-OP		1 x 1 mL
M-8080-OP-PAK	SAVE	5 x 1 mL
0.25 mg/mL each in Hexane:Toluene (50:50)		3 comps.
o,p'-DDD		o,p'-DDT
o,p'-DDE		

Organochlorine Pesticide Mixture

M-8080A-ASL		1 x 1 mL
M-8080A-ASL-PAK	Alternate Source	5 x 1 mL
250 µg/mL each in Hexane:Toluene (50:50)	SAVE	17 comps.
Aldrin	p,p'-DDE	Endrin
α-BHC	p,p'-DDT	Endrin aldehyde
β-BHC	Dieldrin	Heptachlor
δ-BHC	Endosulfan I	Heptachlor epoxide (Isomer B)
γ-BHC	Endosulfan II	Methoxychlor (1000 µg/mL)
p,p'-DDD	Endosulfan sulfate	

Method 8080/8081 Matrix Spike Solutions & Surrogates at Working Level

Matrix Spiking Solutions

For Water Samples

CLP-014-5ML		1 x 5 mL	
CLP-014-25ML		1 x 25 mL	
At stated conc. (ng/mL) in MeOH		6 comps.	
Aldrin	200	Endrin	500
4,4'-DDT	500	Heptachlor	200
Dieldrin	500	Lindane	200

For Waste Samples

CLP-014-5X-5ML		1 x 5 mL	
CLP-014-5X-25ML		1 x 25 mL	
At stated conc. (ng/mL) in MeOH		6 comps.	
Aldrin	1,000	Endrin	2,500
4,4'-DDT	2,500	Heptachlor	1,000
Dieldrin	2,500	Lindane	1,000

Surrogate Solutions

For Water Samples

CLP-032R-WL-10ML		1 x 10 mL
CLP-032R-WL-50ML		1 x 50 mL
CLP-032R-WL-100ML		1 x 100 mL
1 µg/mL each in Acetone		2 comps.
Decachlorobiphenyl	Tetrachloro- <i>m</i> -xylene	

For Waste Samples

CLP-032R-WL-5X-10ML		1 x 10 mL
CLP-032R-WL-5X-50ML		1 x 50 mL
CLP-032R-WL-5X-100ML		1 x 100 mL
5 µg/mL each in Acetone		2 comps.
Decachlorobiphenyl	Tetrachloro- <i>m</i> -xylene	

* ColdPAK required to maintain integrity of product.

EPA Method 8000 Series

Ready-to-Inject Working Level Pesticide Standards

Method 8080/8081 7 Point Working Level Pesticide Curves

AccuStandard has expanded the existing organo-halide pesticide standard line to include the working level Continuing Calibration Check Standard Line for Method 8080/8081. The working level CCC Line revolutionizes the way the analytical chemist prepares standards for pesticide analysis.

M-8080-CAL-SET

At stated conc. (ng/mL) in Isooctane

7 x 1 mL
21 comps.

Components	Level 1	Level 2 (2.5X)	Level 3 (5X)	Level 4 (10X)	Level 5 (25X)	Level 6 (50X)	Level 7 (100X)
Aldrin	2	5	10	20	50	100	200
α-BHC	2	5	10	20	50	100	200
β-BHC	2	5	10	20	50	100	200
γ-BHC	2	5	10	20	50	100	200
δ-BHC	2	5	10	20	50	100	200
α-Chlordane	2	5	10	20	50	100	200
γ-Chlordane	2	5	10	20	50	100	200
4,4'-DDD	4	10	20	40	100	200	400
4,4'-DDE	4	10	20	40	100	200	400
4,4'-DDT	4	10	20	40	100	200	400
Dieldrin	4	10	20	40	100	200	400
Endosulfan I	2	5	10	20	50	100	200
Endosulfan II	4	10	20	40	100	200	400
Endosulfan sulfate	4	10	20	40	100	200	400
Endrin	4	10	20	40	100	200	400
Endrin aldehyde	4	10	20	40	100	200	400
Heptachlor	2	5	10	20	50	100	200
Heptachlor epoxide (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

Level 3 Daily QC Working Level

Low level curves

M-8080-WL-5X-10ML 1 x 10 mL

M-8080-WL-5X-25ML 1 x 25 mL

M-8080-WL-5X-50ML 1 x 50 mL

At stated conc. (ng/mL) in Isooctane 21 comps.

Level 4 Daily QC Working Level

Higher level curves

M-8080-WL-10X-10ML 1 x 10 mL

M-8080-WL-10X-25ML 1 x 25 mL

M-8080-WL-10X-50ML 1 x 50 mL

At stated conc. (ng/mL) in Isooctane 21 comps.

Level 5 Daily QC Working Level

Higher level curves

M-8080-WL-25X-10ML 1 x 10 mL

M-8080-WL-25X-25ML 1 x 25 mL

M-8080-WL-25X-50ML 1 x 50 mL

At stated conc. (ng/mL) in Isooctane 21 comps.

M-8080-R2-CAL-SET

At stated conc. (ng/mL) in Isooctane

7 x 1 mL
23 comps.

Components	Level 1	Level 2 (2.5X)	Level 3 (5X)	Level 4 (10X)	Level 5 (25X)	Level 6 (50X)	Level 7 (100X)
Aldrin	2	5	10	20	50	100	200
α-BHC	2	5	10	20	50	100	200
β-BHC	2	5	10	20	50	100	200
γ-BHC	2	5	10	20	50	100	200
δ-BHC	2	5	10	20	50	100	200
α-Chlordane	2	5	10	20	50	100	200
γ-Chlordane	2	5	10	20	50	100	200
4,4'-DDD	4	10	20	40	100	200	400
4,4'-DDE	4	10	20	40	100	200	400
4,4'-DDT	4	10	20	40	100	200	400
Dieldrin	4	10	20	40	100	200	400
Endosulfan I	2	5	10	20	50	100	200
Endosulfan II	4	10	20	40	100	200	400
Endosulfan sulfate	4	10	20	40	100	200	400
Endrin	4	10	20	40	100	200	400
Endrin aldehyde	4	10	20	40	100	200	400
Endrin ketone	4	10	20	40	100	200	400
Heptachlor	2	5	10	20	50	100	200
Heptachlor epoxide (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

Level 3 Daily QC Working Level

Low level curves

M-8080-R2-WL-5X-10ML 1 x 10 mL

M-8080-R2-WL-5X-25ML 1 x 25 mL

M-8080-R2-WL-5X-50ML 1 x 50 mL

At stated conc. (ng/mL) in Isooctane 23 comps.

Level 4 Daily QC Working Level

Higher level curves

M-8080-R2-WL-10X-10ML 1 x 10 mL

M-8080-R2-WL-10X-25ML 1 x 25 mL

M-8080-R2-WL-10X-50ML 1 x 50 mL

At stated conc. (ng/mL) in Isooctane 23 comps.

Level 5 Daily QC Working Level

Higher level curves

M-8080-R2-WL-25X-10ML 1 x 10 mL

M-8080-R2-WL-25X-25ML 1 x 25 mL

M-8080-R2-WL-25X-50ML 1 x 50 mL

At stated conc. (ng/mL) in Isooctane 23 comps.

Ready-to-Inject

EPA Method 8000 Series

Ready-to-Inject Working Level Standards for Aroclors



Method 8080/8081 Aroclor Calibration Curves

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	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

4 comps.

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

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	Level 2 (2X)	Level 3 (5X)	Level 4 (10X)	Level 5 (15X)	Level 6 (20X)
Aroclor 1221	50	100	250	500	750	1000
Decachlorobiphenyl	10	20	50	100	150	200
Tetrachloro- <i>m</i> -xylene	10	20	50	100	150	200

Level 3 Daily Working Level

Low level curves

C-221-WL-5X-5ML

1 x 5 mL

C-221-WL-5X-10ML

1 x 10 mL

At stated conc. (ng/mL) in Isooctane

3 comps.

Level 4 Daily Working Level

Higher level curves

C-221-WL-10X-5ML

1 x 5 mL

C-221-WL-10X-10ML

1 x 10 mL

At stated conc. (ng/mL) in Isooctane

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	Level 2 (2X)	Level 3 (5X)	Level 4 (10X)	Level 5 (15X)	Level 6 (20X)
Aroclor 1232	50	100	250	500	750	1000
Decachlorobiphenyl	10	20	50	100	150	200
Tetrachloro- <i>m</i> -xylene	10	20	50	100	150	200

Level 3 Daily Working Level

Low level curves

C-232-WL-5X-5ML

1 x 5 mL

C-232-WL-5X-10ML

1 x 10 mL

At stated conc. (ng/mL) in Isooctane

3 comps.

Level 4 Daily Working Level

Higher level curves

C-232-WL-10X-5ML

1 x 5 mL

C-232-WL-10X-10ML

1 x 10 mL

At stated conc. (ng/mL) in Isooctane

3 comps.

Aroclor 1242 Calibration Curve

C-242-CAL-SET

At stated conc. (ng/mL) in Isooctane

6 x 1 mL
3 comps.

Components	Level 1	Level 2 (2X)	Level 3 (5X)	Level 4 (10X)	Level 5 (15X)	Level 6 (20X)
Aroclor 1242	50	100	250	500	750	1000
Decachlorobiphenyl	10	20	50	100	150	200
Tetrachloro- <i>m</i> -xylene	10	20	50	100	150	200

Level 3 Daily Working Level

Low level curves

C-242-WL-5X-5ML

1 x 5 mL

C-242-WL-5X-10ML

1 x 10 mL

At stated conc. (ng/mL) in Isooctane

3 comps.

Level 4 Daily Working Level

Higher level curves

C-242-WL-10X-5ML

1 x 5 mL

C-242-WL-10X-10ML

1 x 10 mL

At stated conc. (ng/mL) in Isooctane

3 comps.

Aroclor 1248 Calibration Curve

C-248-CAL-SET

At stated conc. (ng/mL) in Isooctane

6 x 1 mL
3 comps.

Components	Level 1	Level 2 (2X)	Level 3 (5X)	Level 4 (10X)	Level 5 (15X)	Level 6 (20X)
Aroclor 1248	50	100	250	500	750	1000
Decachlorobiphenyl	10	20	50	100	150	200
Tetrachloro- <i>m</i> -xylene	10	20	50	100	150	200

Level 3 Daily Working Level

Low level curves

C-248-WL-5X-5ML

1 x 5 mL

C-248-WL-5X-10ML

1 x 10 mL

At stated conc. (ng/mL) in Isooctane

3 comps.

Level 4 Daily Working Level

Higher level curves

C-248-WL-10X-5ML

1 x 5 mL

C-248-WL-10X-10ML

1 x 10 mL

At stated conc. (ng/mL) in Isooctane

3 comps.



EPA Method 8000 Series

Ready-to-Inject Working Level Aroclor & GPC Standards

Method 8080/8081 Aroclor Calibration Curves (Continued)

Aroclor 1254 Calibration Curve

C-254-CAL-SET

At stated conc. (ng/mL) in Isooctane

6 x 1 mL
3 comps.

Components	Level 1	Level 2 (2X)	Level 3 (5X)	Level 4 (10X)	Level 5 (15X)	Level 6 (20X)
Aroclor 1254	50	100	250	500	750	1000
Decachlorobiphenyl	10	20	50	100	150	200
Tetrachloro- <i>m</i> -xylene	10	20	50	100	150	200

Level 3 Daily Working Level

Low level curves

C-254-WL-5X-5ML

1 x 5 mL

C-254-WL-5X-10ML

1 x 10 mL

At stated conc. (ng/mL) in Isooctane

3 comps.

Level 4 Daily Working Level

Higher level curves

C-254-WL-10X-5ML

1 x 5 mL

C-254-WL-10X-10ML

1 x 10 mL

At stated conc. (ng/mL) in Isooctane

3 comps.

Toxaphene Calibration Curve

P-093-CAL-SET

At stated conc. (ng/mL) in Isooctane

6 x 1 mL
3 comps.

Components	Level 1	Level 2 (2X)	Level 3 (5X)	Level 4 (10X)	Level 5 (15X)	Level 6 (20X)
Toxaphene	50	100	250	500	750	1000
Decachlorobiphenyl	2	4	10	20	30	40
Tetrachloro- <i>m</i> -xylene	2	4	10	20	30	40

Level 3 Daily Working Level

Low level curves

P-093-WL-5X-5ML

1 x 5 mL

P-093-WL-5X-10ML

1 x 10 mL

At stated conc. (ng/mL) in Isooctane

3 comps.

Level 4 Daily Working Level

Higher level curves

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.

Chlordane Calibration Curve

P-017-CAL-SET

At stated conc. (ng/mL) in Isooctane

6 x 1 mL
3 comps.

Components	Level 1	Level 2 (2X)	Level 3 (5X)	Level 4 (10X)	Level 5 (15X)	Level 6 (20X)
Chlordane	50	100	250	500	750	1000
Decachlorobiphenyl	20	40	70	100	150	200
Tetrachloro- <i>m</i> -xylene	20	40	70	100	150	200

Level 3 Daily Working Level

Low level curves

P-017R-WL-5X-5ML

1 x 5 mL

P-017R-WL-5X-10ML

1 x 10 mL

At stated conc. (ng/mL) in Isooctane

3 comps.

Level 4 Daily Working Level

Higher level curves

P-017R-WL-10X-5ML

1 x 5 mL

P-017R-WL-10X-10ML

1 x 10 mL

At stated conc. (ng/mL) in Isooctane

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

1 x 10 mL
5 comps.

Corn Oil	25	Perylene	0.02
bis(2-Ethylhexyl)phthalate	1.0	Sulfur	0.08
Methoxychlor	0.2		

GPC Calibration Solution for 8/94 SOW OLM03.1

CLP-R27-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		

Florisol Cartridge Check Solution

CLP-FC-WL-10ML

0.1 µg/mL in Acetone

1 x 10 mL

2,4,5-Trichlorophenol

GPC Calibration Check Solutions

GPC-CC-A-WL-10ML

At stated conc. (µg/mL) in CH₂Cl₂

1 x 10 mL
6 comps.

Aldrin	0.1	Dieldrin	0.2
γ-BHC (Lindane)	0.1	Endrin	0.2
4,4'-DDT	0.2	Heptachlor	0.1

GPC-CC-B-WL-10ML

0.2 µg/mL each in CH₂Cl₂

1 x 10 mL
2 comps.

Aroclor 1016

Aroclor 1260



Method 8080/8081A/8081B Organochlorine Pesticides by Capillary Column GC/ECD

Single/Dual Column Organochlorine Pesticides

M-8081-SC 1 x 1 mL
M-8081-SC-PAK 5 x 1 mL
 1.0 mg/mL each in Hexane:Toluene (50:50) 20 comps.

SAVE

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

Technical Note

M-8081A-SC was formulated for use in combination with M-8081-SC when performing single or dual column pesticide analysis. These two product formulations provide the typically analyzed pesticides in one core mixture (M-8081-SC) with the additional 7 analytes (M-8081A-SC) to meet the 27 analytes listed in Method 8081 (January 1995).

Organochlorine Pesticide Mixes

M-8081A-SC 1 x 1 mL
M-8081A-SC-PAK 5 x 1 mL
 1.0 mg/mL each in Hexane:Toluene (50:50) 7 comps.

SAVE

Chlorobenzilate	Hexachlorocyclopentadiene
1,2-Dibromo-3-chloropropane	Isodrin
Diallate	Kepone
Hexachlorobenzene	

M-8081A-SC-R 1 x 1 mL
M-8081A-SC-R-PAK 5 x 1 mL
 1.0 mg/mL each in Hexane:Toluene (50:50) 6 comps.

SAVE

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

* isomer concentration as stated on certificate of product data

Tailing Test Standard

M-8081-T 1 x 1 mL
 1.0 mg/mL each in Hexane:Toluene (50:50) 4 comps.

Carbophenothion	Kepone
Dichlone	Nitrofen

M-8081-T-R 1 x 1 mL
 1.0 mg/mL each in Hexane:Toluene (50:50) 3 comps.

Carbophenothion	Nitrofen
Dichlone	

Surrogate Standards

CLP-032-R 1 x 1 mL
CLP-032-R-PAK 5 x 1 mL
 0.2 mg/mL each in Acetone 2 comps.

SAVE

Decachlorobiphenyl	Tetrachloro- <i>m</i> -xylene
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CLP-034 1 x 1 mL
CLP-034-PAK 5 x 1 mL
 0.2 mg/mL each in Acetone 2 comps.

SAVE

Dibutylchlorendate	Tetrachloro- <i>m</i> -xylene
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M-8081-SS-X 1 x 1 mL
M-8081-SS-X-PAK 5 x 1 mL
 1.0 mg/mL in Acetone

SAVE

2-Bromobiphenyl

For Dual Column

M-8081-SS-DC 1 x 1 mL
M-8081-SS-DC-PAK 5 x 1 mL
 1.0 mg/mL in Acetone

SAVE

4-Chloro-3-nitrobenzotrifluoride

Internal Standards

M-8081-IS 1 x 1 mL
M-8081-IS-PAK 5 x 1 mL
 1.0 mg/mL in Acetone

SAVE

Pentachloronitrobenzene (PCNB)

M-8081-IS-X 1 x 1 mL
M-8081-IS-X-PAK 5 x 1 mL
 1.0 mg/mL in Acetone

SAVE

α,α-Dibromo-*m*-xylene

For Dual Column

M-8081-IS-DC 1 x 1 mL
M-8081-IS-DC-PAK 5 x 1 mL
 1.0 mg/mL in Acetone

SAVE

1-Bromo-2-nitrobenzene

Decomposition Standard

M-8081-DS 1 x 1 mL
M-8081-DS-PAK 5 x 1 mL
 0.2 mg/mL each in Hexane 2 comps.

SAVE

4,4'-DDT	Endrin
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EPA Method 8000 Series

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

PCB Congeners Mixture

M-8082				1 x 1 mL
M-8082-PAK	SAVE			5 x 1 mL
100 µg/mL each in Hexane				19 comps.
1	2-Chlorobiphenyl	137	2,2',3,4,4',5'-Hexachlorobiphenyl	
5	2,3-Dichlorobiphenyl	141	2,2',3,4,5,5'-Hexachlorobiphenyl	
18	2,2',5-Trichlorobiphenyl	151	2,2',3,5,5',6'-Hexachlorobiphenyl	
31	2,4',5-Trichlorobiphenyl	153	2,2',4,4',5,5'-Hexachlorobiphenyl	
44	2,2',3,5'-Tetrachlorobiphenyl	170	2,2',3,3',4,4',5-Heptachlorobiphenyl	
52	2,2',5,5'-Tetrachlorobiphenyl	180	2,2',3,4,4',5,5'-Heptachlorobiphenyl	
66	2,3',4,4'-Tetrachlorobiphenyl	183	2,2',3,4,4',5,6-Heptachlorobiphenyl	
87	2,2',3,4,5'-Pentachlorobiphenyl	187	2,2',3,4',5,5',6-Heptachlorobiphenyl	
101	2,2',4,5,5'-Pentachlorobiphenyl	206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	
110	2,3,3',4',6-Pentachlorobiphenyl			

Reformulated PCB Congeners Mixture

M-8082A				1 x 1 mL
M-8082A-PAK	SAVE			5 x 1 mL
100 µg/mL each in Hexane				19 comps.
1	2-Chlorobiphenyl	138	2,2',3,4,4',5'-Hexachlorobiphenyl	
5	2,3-Dichlorobiphenyl	141	2,2',3,4,5,5'-Hexachlorobiphenyl	
18	2,2',5-Trichlorobiphenyl	151	2,2',3,5,5',6'-Hexachlorobiphenyl	
31	2,4',5-Trichlorobiphenyl	153	2,2',4,4',5,5'-Hexachlorobiphenyl	
44	2,2',3,5'-Tetrachlorobiphenyl	170	2,2',3,3',4,4',5-Heptachlorobiphenyl	
52	2,2',5,5'-Tetrachlorobiphenyl	180	2,2',3,4,4',5,5'-Heptachlorobiphenyl	
66	2,3',4,4'-Tetrachlorobiphenyl	183	2,2',3,4,4',5,6-Heptachlorobiphenyl	
87	2,2',3,4,5'-Pentachlorobiphenyl	187	2,2',3,4',5,5',6-Heptachlorobiphenyl	
101	2,2',4,5,5'-Pentachlorobiphenyl	206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	
110	2,3,3',4',6-Pentachlorobiphenyl			

Technical Note

AccuStandard has formulated these standards for use in determining the concentrations of Aroclors (Industrial PCBs), specific PCB congeners, or "total PCBs". Additional Aroclor stock solutions are available at higher concentrations and in other solvents.

Internal and Surrogate Standard

CLP-032-H-5X		1 x 1 mL
1.0 mg/mL each in Hexane		2 comps.
Decachlorobiphenyl	Tetrachloro- <i>m</i> -xylene	

Surrogate Standards

M-8082-SSA-WL-10ML		1 x 10 mL
M-8082-SSA-WL-10ML-PAK	SAVE	5 x 10 mL
5 µg/mL in Acetone		
Decachlorobiphenyl		

M-8082-SS	1 x 1 mL
100 µg/mL in Hexane	
M-8082-SS-10X	1 x 1 mL
1.0 mg/mL in Hexane	
Tetrachloro- <i>m</i> -xylene	

Internal Standards

M-8082-ISC-WL-10ML		1 x 10 mL
M-8082-ISC-WL-10ML-PAK	SAVE	5 x 10 mL
5 µg/mL in Hexane		
Decachlorobiphenyl		

M-8082-SSC-WL-10ML	1 x 10 mL
M-8082-SSC-WL-10ML-PAK	SAVE
5 µg/mL in Acetone	
Tetrachloro- <i>m</i> -xylene	

Method 8082 Aroclor 1016/1260 Calibration Curve

Aroclor 1016/1260 Calibration Curve

C-216/260-CAL-SET						6 x 1 mL
At stated conc. (ng/mL) in Isooctane						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	1 mL
2-Chlorobiphenyl	C-001S	C-001S-TP	
2,3-Dichlorobiphenyl	C-005S	C-005S-TP	
2,2',5-Trichlorobiphenyl	C-018S	C-018S-TP	
2,4',5-Trichlorobiphenyl	C-031S	C-031S-TP	
2,2',3,5'-Tetrachlorobiphenyl	C-044S	C-044S-TP	
2,2',5,5'-Tetrachlorobiphenyl	C-052S	C-052S-TP	
2,3',4,4'-Tetrachlorobiphenyl	C-066S	C-066S-TP	
2,2',3,4,5'-Pentachlorobiphenyl	C-087S	C-087S-TP	
2,2',4,5,5'-Pentachlorobiphenyl	C-101S	C-101S-TP	
2,3,3',4',6-Pentachlorobiphenyl	C-110S	C-110S-TP	
2,2',3,4,4',5-Hexachlorobiphenyl	C-137S	C-137S-TP	
2,2',3,4,4',5'-Hexachlorobiphenyl	C-138S	C-138S-TP	
2,2',3,4,5,5'-Hexachlorobiphenyl	C-141S	C-141S-TP	
2,2',3,5,5',6-Hexachlorobiphenyl	C-151S	C-151S-TP	
2,2',4,4',5,5'-Hexachlorobiphenyl	C-153S	C-153S-TP	
2,2',3,3',4,4',5-Heptachlorobiphenyl	C-170S	C-170S-TP	
2,2',3,4,4',5,5'-Heptachlorobiphenyl	C-180S	C-180S-TP	
2,2',3,4,4',5,6-Heptachlorobiphenyl	C-183S	C-183S-TP	
2,2',3,4',5,5',6-Heptachlorobiphenyl	C-187S	C-187S-TP	
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	C-206S	C-206S-TP	

Internal Standards

C-209S-H	1 x 1 mL
100 µg/mL in Hexane	
C-209S-H-10X	1 x 1 mL
1.0 mg/mL in Hexane	
Decachlorobiphenyl	

Internal and Surrogate Standard

CLP-032-H-5X	1 x 1 mL
1.0 mg/mL each in Hexane	
Decachlorobiphenyl	Tetrachloro- <i>m</i> -xylene

Surrogate Standard

M-8082-SS	1 x 1 mL
100 µg/mL in Hexane	
M-8082-SS-10X	1 x 1 mL
1.0 mg/mL in Hexane	
Tetrachloro- <i>m</i> -xylene	



Method 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	Prebana	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	Hexachlorobenzene	2.5
Captafol	12.5	Kelthane	10
o,p'-DDE	2.5	Mirex	2.5
o,p'-DDD	2.5	trans-Nonachlor	2.5
o,p'-DDT	2.5		

Compound Independent Calibration (CIC) Mix

M-8085-CIC

At stated conc. (ng/mL) in MtBE

1 x 5 mL
15 comps.

Decachlorobiphenyl	492	Pentachloronitrobenzene	1690
Diazinon	9800	Phorate	2100
4,4'-Dibromooctafluorobiphenyl	1000	Silvex methyl ester	400
Dichlobenil	6140	Terbufos	7600
Dursban	5680	2,4,6-Tribromoanisole	2870
Ethoprop	391	1,2,3-Trichlorobenzene	6810
loxynil methyl	500	Trifluralin	16000
Malathion	1070		

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	Fensulfotiothion	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
2,4-Dinitrotoluene
2,6-Dinitrotoluene

40
20
20

Isophorone
1,4-Naphthoquinone
Nitrobenzene

100
40
100

Method 8091 Nitroaromatics & Cyclic Ketones by GC/ECD or NPD

RCRA Analytes

M-8091

1.0 mg/mL each in Isooctane:Toluene (50:50)

1 x 1 mL

6 comps.

1,4-Dinitrobenzene
2,4-Dinitrotoluene
2,6-Dinitrotoluene

1,4-Naphthoquinone
Nitrobenzene
Pentachloronitrobenzene

Chloronitroaromatics: non-RCRA Analytes

M-8091-X1

1.0 mg/mL each in Isooctane

1 x 1 mL

17 comps.

1-Chloro-2,4-dinitrobenzene
1-Chloro-3,4-dinitrobenzene
1-Chloro-2-nitrobenzene
1-Chloro-4-nitrobenzene
2-Chloro-6-nitrotoluene
4-Chloro-2-nitrotoluene
4-Chloro-3-nitrotoluene
2,3-Dichloronitrobenzene
2,4-Dichloronitrobenzene

3,5-Dichloronitrobenzene
3,4-Dichloronitrobenzene
2,5-Dichloronitrobenzene
2,3,5,6-Tetrachloronitrobenzene
2,3,4,5-Tetrachloronitrobenzene
1,2,3-Trichloro-4-nitrobenzene
1,2,4-Trichloro-5-nitrobenzene
2,4,6-Trichloronitrobenzene

Internal Standard

M-8091-IS-20X

M-8091-IS-20X-PAK

1.0 mg/mL in Acetone

SAVE

1 x 1 mL

5 x 1 mL

Hexachlorobenzene

Surrogate Standard

M-8091-SS-100X

M-8091-SS-100X-PAK

1.0 mg/mL in Acetone

SAVE

1 x 1 mL

5 x 1 mL

1-Chloro-3-nitrobenzene





Method 8095 Explosives by GC/ECD

This method is a companion to EPA Method 8330 found later in this section. Utilizing the sensitivity and selectivity of the ECD as well as the resolution capabilities of capillary columns allows the chemist to quantitatively analyze for the typical explosives. The method uses familiar extraction techniques which reduce sample preparation time.

Explosive Stock Solution A

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

3,4-Dinitrotoluene

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

2-Methyl-4-nitroaniline

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

2,5-Dinitrotoluene

Method 8100 PAHs by GC/FID

Polynuclear Aromatic Hydrocarbon Mix

Z-014G-R 1 x 1 mL
Z-014G-R-PAK 5 x 1 mL
 2.0 mg/mL each in CH₂Cl₂:Benzene (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 5 x 1 mL
 At stated conc. (µg/mL) in AcCN 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 5 x 1 mL
 2.0 mg/mL each in CH₂Cl₂ 2 comps.

2-Fluorobiphenyl	1-Fluoronaphthalene
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Buy AccuPAKs
Save 20-40% 5 x 1 mL



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	



EPA Method 8000 Series

Method 8111 Haloethers Mix: non-RCRA Analytes

Haloethers Mix

M-8111-X1

1.0 mg/mL each in Isooctane

1 x 1 mL
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

Individual Haloethers
see page 79

Haloethers Mix: RCRA Analytes

M-8111

M-8111-PAK

1.0 mg/mL each in Isooctane

SAVE

1 x 1 mL
5 x 1 mL
4 comps.

bis(2-Chloroethoxy)methane
bis(2-Chloroethyl) ether

bis(2-Chloroisopropyl)ether
4-Chlorophenyl phenyl ether

Internal Standard

M-8111-IS-20X

M-8111-IS-20X-PAK

1,000 µg/mL in Acetone

SAVE

1 x 1 mL
5 x 1 mL

4,4'-Dibromobiphenyl

Surrogate Standard

M-8111-SS-50X

1,000 µg/mL each in Acetone

1 x 1 mL
2 comps.

2,4-Dichlorophenyl phenyl ether

2,3,4-Trichlorophenyl phenyl ether

Method 8120 & 8120A Chlorinated Hydrocarbons by GC/ECD

Chlorinated Hydrocarbons

M-8120

Each at 2.0 mg/mL each in Hexane

1 x 1 mL
10 comps.

Compound	Cat.No.	1 mL
2-Chloronaphthalene	M-8120-01	
1,2-Dichlorobenzene	M-8120-02	
1,3-Dichlorobenzene	M-8120-03	
1,4-Dichlorobenzene	M-8120-04	
Hexachlorobenzene	M-8120-05	
Hexachlorobutadiene	M-8120-06	
Hexachlorocyclopentadiene	M-8120-07	
Hexachloroethane	M-8120-08	
1,2,4,5-Tetrachlorobenzene	M-8120-09	
1,2,4-Trichlorobenzene	M-8120-10	

Performance Check Solution

M-8120-QC

At stated conc. (mg/mL) in Acetone

1 x 1 mL
10 comps.

2-Chloronaphthalene	1.0	Hexachlorobutadiene	0.1
1,2-Dichlorobenzene	1.0	Hexachlorocyclopentadiene	0.1
1,3-Dichlorobenzene	1.0	Hexachloroethane	0.1
1,4-Dichlorobenzene	1.0	1,2,4,5-Tetrachlorobenzene	1.0
Hexachlorobenzene	0.1	1,2,4-Trichlorobenzene	1.0

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
Benzotrichloride
Benzyl chloride
α-BHC
β-BHC
γ-BHC
δ-BHC
2-Chloronaphthalene
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene

Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Pentachlorobenzene
1,2,3,4-Tetrachlorobenzene
1,2,3,5-Tetrachlorobenzene
1,2,4,5-Tetrachlorobenzene
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
1,3,5-Trichlorobenzene

Internal Standards

M-8121-IS

M-8121-IS-PAK

50 µg/mL in Acetone

SAVE

1 x 1 mL
5 x 1 mL

1,3,5-Tribromobenzene

M-8121-IS-M

M-8121-IS-M-PAK

50 µg/mL each in Acetone

SAVE

1 x 1 mL
5 x 1 mL
3 comps.

2,5-Dibromotoluene
α,α'-Dibromo-m-xylene

1,3,5-Tribromobenzene

Surrogate Standard

M-8121-SS

M-8121-SS-PAK

At stated conc. (µg/mL) in Acetone

SAVE

1 x 1 mL
5 x 1 mL
3 comps.

1,4-Dichloronaphthalene 1
2,3,4,5,6-Pentachlorotoluene 1

α,2,6-Trichlorotoluene 10

Varied Concentration QC Mix

M-8121-QC

At stated conc. (µg/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/TSD

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	



Method 8140 Organophosphorous Pesticides by GC/NPD/ELCD/FPD

Organophosphorous Pesticides

M-8140M

M-8140M-PAK

0.04 mg/mL each in Hexane

SAVE

1 x 1 mL

5 x 1 mL

20 comps.

M-8140M-5X *

M-8140M-5X-PAK *

0.2 mg/mL each in Hexane:Acetone (95:5)

SAVE

1 x 1 mL

5 x 1 mL

20 comps.

Organophosphorous Pesticide Set

M-8140-SET

20 x 1 mL

Each at 1.0 mg/mL in Hexane, * Hexane:Acetone (95:5)

Compound	Cat. No.	1 mL	Compound	Cat. No.	1 mL	Compound	Cat. No.	1 mL
Azinphosmethyl	M-8140-01		Disulfoton	M-8140-08		Naled	M-8140-15	
Bolstar	M-8140-02		Ethoprop	M-8140-09		Phorate	M-8140-16	
Chlorpyrifos	M-8140-03		Fensulfothion	M-8140-10 *		Ronnel	M-8140-17	
Coumaphos	M-8140-04		Fenthion	M-8140-11		Stirophos	M-8140-18	
Demeton	M-8140-05		Merphos	M-8140-12		Tokuthion	M-8140-19	
Diazinon	M-8140-06		Methyl parathion	M-8140-13		Trichloronate	M-8140-20	
Dichlorovos	M-8140-07		Mevinphos	M-8140-14		* Hexane:Acetone (95:5)		

Method 8141A Additions to Method 8140 Organophosphorous Pesticides by GC/NPD

Mix #1

M-8141M *

M-8141M-PAK *

0.2 mg/mL each in Hexane

SAVE

1 x 1 mL

5 x 1 mL

7 comps.

M-8141-SET

Each at 1.0 mg/mL in Hexane, * Hexane:Acetone (90:10), ** (95:5)

7 x 1 mL

Compound	Cat. No.	1 mL
Dimethoate	M-8141-01 *	
EPN	M-8141-02	
Malathion	M-8141-03	
Monocrotophos	M-8141-04 **	
Ethyl parathion	M-8141-05	
Sulfotep	M-8141-06	
TEPP	M-8141-07	

Industrial Chemicals & Triazine Herbicides

M-8141A-IC

0.2 mg/mL each in Hexane

1 x 1 mL

2 comps.

Hexamethylphosphoramide (HMPA) Tri-o-cresylphosphate (TOCP)

M-8141A-TH

M-8141A-TH-PAK

0.2 mg/mL each in Acetone

SAVE

1 x 1 mL

5 x 1 mL

2 comps.

Atrazine

Simazine

M-8141B-HSD

M-8141B-HSD-PAK

0.2 mg/mL each in Hexane

SAVE

1 x 1 mL

5 x 1 mL

9 comps.

Chlorpyrifos

EPN

Stirophos

Coumaphos

Naled

Trichloronate

Dichlorovos

Ronnel

Tokuthion

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

0.2 mg/mL each in Hexane

1 x 1 mL

10 comps.

M-8141A-1-SET *

Each at 1.0 mg/mL in Hexane

10 x 1 mL

Compound	Cat. No.	1 mL
Azinphos ethyl	M-8141A-1-01	
Carbophenothion	M-8141A-1-02	
Chlorfenvinphos	M-8141A-1-03	
Dioxathion	M-8141A-1-04 *	
Ethion	M-8141A-1-05	
Famphur	M-8141A-1-06	
Leptophos	M-8141A-1-07	
Phosmet	M-8141A-1-08	
Phosphamidon	M-8141A-1-09 *	
Terbufos	M-8141A-1-10	

Internal Standard for NPD

M-8141A-IS

M-8141A-IS-PAK

1.0 mg/mL in Acetone

SAVE

1 x 1 mL

5 x 1 mL

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

M-8141A-SS-PAK

1.0 mg/mL each in Acetone

SAVE

1 x 1 mL

5 x 1 mL

2 comps.

Tributylphosphate

Triphenylphosphate

Surrogate Standard for NPD only

M-8141A-SS-X

M-8141A-SS-X-PAK

1.0 mg/mL in Acetone

SAVE

1 x 1 mL

5 x 1 mL

4-Chloro-3-nitrobenzotrifluoride

Technical Note

Organophosphorus and Nitrogen/Phosphorus pesticides are light sensitive, store in deactivated amber vials.

* ColdPAK required to maintain integrity of product.



EPA Method 8000 Series

Method 8150/8151 7 Point Working Level Phenoxy-Herbicide Methyl Derivative Curve

The CCC Line for Herbicide analysis provides the necessary free acid and derivatized solutions to establish a calibration curve, perform the required daily QC checks and validate extraction efficiencies through the use of surrogates and matrix spikes.

M-8150/51-CAL-SET

At stated conc. (ng/mL) in Isooctane

Components	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7
	M-8150/51-WL	(-2X)	(-4X)	(-10X)	(-25X)	(-35X)	(-50X)
2,4-D	20	40	80	200	500	700	1000
2,4-DB	20	40	80	200	500	700	1000
2,4,5-TP	5	10	20	50	125	175	250
2,4,5-T	5	10	20	50	125	175	250
Dalapon	10	20	40	100	250	350	500
Dicamba	10	20	40	100	250	350	500
Dichloroprop	20	40	80	200	500	700	1000
Dinoseb	5	10	20	50	125	175	250
MCPA	2000	4000	8,000	20,000	50,000	70,000	100,000
MCPP	2000	4000	8,000	20,000	50,000	70,000	100,000
2,4-Dichlorophenylacetic acid	20	40	80	200	500	700	1000

7 x 1 mL
11 comps.

Level 3 Daily QC Working Level

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 Daily QC Working Level

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.

Level 5 Daily QC Working Level

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.

Herbicide Molecular Weights

The COA for the Working Level Herbicide calibration curves and Daily QC check standards lists both the methyl derivative and acid equivalent concentrations. Since the EPA method for Herbicide analysis requires the final analytical results to be calculated and reported as the acid equivalent, AccuStandard provides both formats to ease calculations.

Equivalency conversion to the free acid:

$$\text{ng (free acid)} = \frac{\text{M.W. Herbicide acid}}{\text{M.W. methylated Herbicide}} \times \text{ng (methylated acid)}$$

The molecular weights for conversion of methyl esters to the acid equivalent concentrations are provided above.

Herbicide	Free Acid M.W.	Methylated M.W.
2,4-D	221.04	235.07
Dalapon	143.97	157.00
2,4-DB	249.09	263.12
Dicamba	221.04	235.07
Dichloroprop	235.07	249.09
Dinoseb	240.22	254.24
MCPA	200.62	214.65
MCPP	214.65	228.67
Silvex (2,4,5-TP)	269.51	283.54
2,4,5-T	255.48	269.51

Ready-to-Inject

Method 8150/8151 Working Level Herbicide Standards

Prep Note

To validate instrument response, 10 µL of internal standard is added to a 10 mL herbicide sample extract.

Internal Standard - Herbicide Solution 1

M-8151-IS	1 x 1 mL
M-8151-IS-PAK	5 x 1 mL
250 µg/mL in Acetone	
4,4'-Dibromooctafluorobiphenyl	

SAVE

Internal Standard - Herbicide Solution 2

M-8151-IS-2	1 x 1 mL
M-8151-IS-2-PAK	5 x 1 mL
250 µg/mL in Acetone	
1,4-Dichlorobenzene	

SAVE

Laboratory Performance Check Solution

M-8150/51-LPC-5ML	1 x 5 mL
At stated conc. (ng/mL) in Isooctane	5 comps.
3,5-Dichlorobenzoic acid	618
Dinoseb	4
4-Nitrophenol	1600
2,4-Dichlorophenylacetic acid	500
4,4'-Dibromooctafluorobiphenyl	250

Prep Note

To verify extraction efficiency, 1 mL of surrogate is added to a herbicide sample.

Herbicide Surrogate Spiking Solution

M-8150/51-SS-WL-25ML	1 x 25 mL
M-8150/51-SS-WL-50ML	1 x 50 mL
2 µg/mL in MeOH	
2,4-Dichlorophenylacetic acid (DCAA)	

Prep Note

To verify QA/QC for the analytical batch, 1 mL of matrix spike is added to an herbicide sample.

Herbicide Matrix Spike (Components as Acids)

M-8150/51-MS-WL-10ML	1 x 10 mL
M-8150/51-MS-WL-25ML	1 x 25 mL
M-8150/51-MS-WL-50ML	1 x 50 mL
At stated conc. (µg/mL) in MeOH	5 comps.

2,4-D	2	Dalapon	1
2,4-DB	2	Dicamba	1
2,4,5-TP (Silvex)	0.8		



Method 8150A/8150B Chlorinated Herbicides by GC/ECD

Chlorinated Herbicides in Ground Water (Rev. 1, July 1992) and their Methyl Derivatives

Compound	(mg/mL) Conc.	Herbicides Acids (in MeOH) Cat. No.	Methyl Derivative (in Hexane) Cat. No.	1 mL
2,4-D	0.2	M-8150S-A-01	M-8150-01	
2,4-DB	0.2	M-8150S-A-02	M-8150-02	
2,4,5-T	0.2	M-8150S-A-03	M-8150-03	
2,4,5-TP	0.2	M-8150S-A-04	M-8150-04	
Dalapon	0.2	M-8150S-A-05 *	M-8150-05	
Dicamba	0.2	M-8150S-A-06	M-8150-06	
Dichlorprop	0.2	M-8150S-A-07	M-8150-07	
Dinoseb	0.2	M-8150S-A-08	M-8150-08	
MCPA	2.0	M-8150S-A-09	M-8150-09	
MCPP	2.0	M-8150S-A-10	M-8150-10	
		M-8150A-SET *	M-8150-SET	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	MCPP (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	MCPP
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

* ColdPAK required to maintain integrity of product.

Methyl Derivatives Solutions (Varied Concentration)

M-8150 1 x 1 mL
 0.1 mg/mL in MeOH, except MCPA and MCPP 10 comps.

2,4-D 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

Methyl Derivatives Solutions (Equal Concentration)

M-8150M-SET 2 x 1 mL
 M-8150M, M-8150M-2

M-8150M 1 x 1 mL
M-8150M-PAK **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 MCPP methyl ester

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



EPA Method 8000 Series

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	MCPP 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

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	Dichlorprop
Bentazon	Dinoseb
Chloramben	MCPA (10 mg/mL)
2,4-D	MCPP (10 mg/mL)
Dalapon	4-Nitrophenol
2,4-DB	Pentachlorophenol
DCPA diacid	Picloram
Dicamba	2,4,5-TP
3,5-Dichlorobenzoic acid	2,4,5-T

Internal Standards

M-8151-IS 1 x 1 mL
M-8151-IS-PAK **SAVE** 5 x 1 mL
0.25 mg/mL in Acetone
4,4'-Dibromooctafluorobiphenyl

M-8151-IS-2 1 x 1 mL
M-8151-IS-2-PAK **SAVE** 5 x 1 mL
0.25 mg/mL in Acetone
1,4-Dichlorobenzene

Surrogate Standards

M-515-SS 1 x 1 mL
M-515-SS-PAK **SAVE** 5 x 1 mL
0.1 mg/mL in MtBE
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

Method 8240 Volatile Organics by GC/MS

M-8240A * 1 x 1 mL
0.2 mg/mL each in MeOH 41 comps.

Acetone	<i>cis</i> -1,3-Dichloropropene
Acrolein	<i>trans</i> -1,3-Dichloropropene
Acrylonitrile	Ethanol
Benzene	Ethylbenzene
Bromodichloromethane	2-Hexanone
Bromoform	Iodomethane
Methyl ethyl ketone	4-Methyl-2-pentanone
Carbon disulfide	Methylene chloride
Carbon tetrachloride	Styrene
Chlorobenzene	1,1,2,2-Tetrachloroethane
Chloroform	Tetrachloroethene
Dibromochloromethane	Toluene
<i>cis</i> -1,4-Dichloro-2-butene	1,1,1-Trichloroethane
<i>trans</i> -1,4-Dichloro-2-butene	1,1,2-Trichloroethane
1,2-Dichlorobenzene	Trichloroethene
1,3-Dichlorobenzene	Vinyl acetate
1,4-Dichlorobenzene	<i>o</i> -Xylene
1,1-Dichloroethane	<i>m</i> -Xylene
1,2-Dichloroethane	<i>p</i> -Xylene
1,1-Dichloroethene	
<i>trans</i> -1,2-Dichloroethene	
1,2-Dichloropropane	

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.

Auxiliary Standards for all 8240 Methods (VOC analysis) see Catalog Number Index

Surrogate Standard	see CLP-PS-10X
Internal Standard	see CLP-PI-2.5X
Gases	see M-601B
Matrix Spiking Solution	see CLP-003R
Tuning Standard	see CLP-004
System Performance	see CLP-021
Calibration Check Compounds	see CLP-020

Method 8240A Volatiles by GC/MS

APP-9-048-R1-2X 1 x 1 mL
0.2 mg/mL in MeOH

Chloroprene (Xylene-free)

S-354-2 1 x 1 mL
0.2 mg/mL in Isooctane

Ethylene oxide

* ColdPAK required to maintain integrity of product.



Thousands of Standards, just a click away

AccuStandard.com



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	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	5 x 1 mL
2.0 mg/mL each in MeOH	53 comps.

Gases

M-502B	1 x 1 mL
M-502B-PAK	5 x 1 mL
0.2 mg/mL each in MeOH	6 comps.
M-502B-10X	1 x 1 mL
M-502B-10X-PAK	5 x 1 mL
2.0 mg/mL each in MeOH	6 comps.

Liquid and Gas Sets

M-502A-R2/B-SET	2 x 1 mL
0.2 mg/mL each in MeOH	M-502A-R2, M-502B
M-502A-R2/B-10X-SET	2 x 1 mL
2.0 mg/mL each in MeOH	M-502A-R2-10X, M-502B-10X

All 60 liquid and gas components in One Solution

M-502	1 x 1 mL
M-502-PAK	5 x 1 mL
0.2 mg/mL each in MeOH	60 comps.
M-502-10X	1 x 1 mL
M-502-10X-PAK	5 x 1 mL
2.0 mg/mL each in MeOH	60 comps.

See also Method 8240 & 8260

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 * 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 * 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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* ColdPAK required to maintain integrity of product.



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.

Volatile Organic Compounds (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	<i>cis</i> -1,3-Dichloropropene
Bromochloromethane	<i>trans</i> -1,3-Dichloropropene
Bromodichloromethane	Ethylbenzene
Bromoform	Hexachlorobutadiene
<i>n</i> -Butylbenzene	Isopropylbenzene (<i>Cumene</i>)
<i>sec</i> -Butylbenzene	<i>p</i> -Isopropyltoluene (<i>p</i> - <i>Cymene</i>)
<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	

Certificate will reflect actual
cis/trans ratio

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 *

1.0 mg/mL each in water

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
<i>cis</i> -1,4-Dichloro-2-butene	2.0	Methacrylonitrile	20
<i>trans</i> -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

Additional VOCs by Method 8260B

M-8260B-01

M-8260B-01-PAK

2000 µg/mL each in MeOH

SAVE

1 x 1 mL

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

SAVE

1 x 1 mL

5 x 1 mL

10 comps.

Allyl alcohol	Ethyl acetate
<i>n</i> -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)

SAVE

1 x 1 mL

5 x 1 mL

4 comps.

N-Nitrosodi- <i>n</i> -butylamine	Propylamine
2-Picoline	<i>o</i> -Toluidine

M-8260B-04

M-8260B-04-PAK

2000 µg/mL each in MeOH

SAVE

1 x 1 mL

5 x 1 mL

6 comps.

<i>t</i> -Butanol	<i>n</i> -Propanol
2-Chloroethanol	Isopropanol
1,3-Dichloro-2-propanol	Propargyl alcohol

M-8260B-06-PAK *

2000 µg/mL each in MeOH

SAVE

5 x 1 mL

3 comps.

Bromoacetone	<i>b</i> -Propiolactone
2-Pentanone	

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

* ColdPAK required to maintain integrity of product.

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 (Continued) Volatile Organic Compounds by GC/MS

Internal Standards

M-8260-IS 1 x 1 mL
M-8260-IS-PAK **SAVE** 5 x 1 mL
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

Combined Internal/Surrogate Standard VOA Mix

M-8260A/B-IS/SS 1 x 1 mL
M-8260A/B-IS/SS-PAK **SAVE** 5 x 1 mL
200 µg/mL each in MeOH 7 comps.

M-8260A/B-IS/SS-10X 1 x 1 mL
M-8260A/B-IS/SS-10XPAK **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

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

**Tens of Thousands of Standards
Ready-to-Ship**





EPA Method 8000 Series

Method 8240 & 8260 Volatile Organic Compounds Auxiliary Standards

Internal Standard VOA

M-8240/60-IS 1 x 1 mL
M-8240/60-IS-PAK **SAVE** 5 x 1 mL
0.2 mg/mL each in MeOH 5 comps.

M-8240/60-IS-10X 1 x 1 mL
M-8240/60-IS-10X-PAK **SAVE** 5 x 1 mL
2.0 mg/mL each in MeOH 5 comps.

Bromochloromethane 1,4-Difluorobenzene
Chlorobenzene-d₅ Pentafluorobenzene
1,4-Dichlorobenzene-d₄

Surrogate Standard VOA

M-8240/60-SS 1 x 1 mL
M-8240/60-SS-PAK **SAVE** 5 x 1 mL
0.2 mg/mL each in MeOH 4 comps.

M-8240/60-SS-10X 1 x 1 mL
M-8240/60-SS-10X-PAK **SAVE** 5 x 1 mL
2.0 mg/mL each in MeOH 4 comps.

p-Bromofluorobenzene 1,2-Dichloroethane-d₄
Dibromofluoromethane Toluene-d₈

Internal / Surrogate Standard VOA

M-8240/60-IS/SS 1 x 1 mL
M-8240/60-IS/SS-PAK **SAVE** 5 x 1 mL
0.2 mg/mL each in MeOH 9 comps.

M-8240/60-IS/SS-10X 1 x 1 mL
M-8240/60-IS/SS-10XPAK **SAVE** 5 x 1 mL
2.0 mg/mL each in MeOH 9 comps.

Bromochloromethane 1,2-Dichloroethane-d₄
p-Bromofluorobenzene 1,4-Difluorobenzene
Chlorobenzene-d₅ Pentafluorobenzene
Dibromofluoromethane Toluene-d₈
1,4-Dichlorobenzene-d₄

Volatile Calibration Check Compounds (CCC)

CLP-020 1 x 1 mL
CLP-020-PAK **SAVE** 5 x 1 mL
0.2 mg/mL each in MeOH 6 comps.

CLP-020-10X 1 x 1 mL
CLP-020-10X-PAK **SAVE** 5 x 1 mL
2.0 mg/mL each in MeOH 6 comps.

Chloroform Ethylbenzene
1,1-Dichloroethene Toluene
1,2-Dichloropropane Vinyl chloride

Volatile System Performance Check Compounds (SPCC)

CLP-021 1 x 1 mL
CLP-021-PAK **SAVE** 5 x 1 mL
0.2 mg/mL each in MeOH 5 comps.

CLP-021-10X 1 x 1 mL
CLP-021-10X-PAK **SAVE** 5 x 1 mL
2.0 mg/mL each in MeOH 5 comps.

Bromoform 1,1-Dichloroethane
Chlorobenzene 1,1,2,2-Tetrachloroethane
Chloromethane

Instrument Performance Check Solutions

CLP-004 1 x 1 mL
CLP-004-PAK **SAVE** 5 x 1 mL
25 µg/mL in MeOH

CLP-004-10X 1 x 1 mL
CLP-004-10X-PAK **SAVE** 5 x 1 mL
250 µg/mL in MeOH

CLP-004-100X 1 x 1 mL
CLP-004-100X-PAK **SAVE** 5 x 1 mL
2500 µg/mL in MeOH

p-Bromofluorobenzene

Purgeable Organic Matrix Spiking Solutions

CLP-003-R 1 x 1 mL
CLP-003-R-PAK **SAVE** 5 x 1 mL
0.25 mg/mL each in MeOH 5 comps.

CLP-003-R-10X 1 x 1 mL
CLP-003-R-10X-PAK **SAVE** 5 x 1 mL
2.5 mg/mL each in MeOH 5 comps.

Benzene Toluene
Chlorobenzene Trichloroethene
1,1-Dichloroethene



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Method 8270C/D Semi-Volatile by GC/MS as Core Mix

The primary analytes typically analyzed in Method 8270 version C and D have been formulated based on one of the following considerations: large core mixes, analyte retention time association to ISTD's, similar functional groups, Third Party Certified Standards, or as working level Ready-to-Inject standards.

Use of these Method 8270C/D components in 5 mixtures can save you time and money in preparing your calibration curves. Four high concentration solutions CLP-HC-BN-SET, CLP-HC-A-R, CLP-HC-X1 and Z-014E can be combined to give you the 92 typical analytes needed for Method 8270C/D. Product Z-014E-R can be used in lieu of Z-014E for those labs interested in adding pyridine to their target list.

These mixtures can also serve as your **second source** requirements since they are independently prepared from product M-8270 (7 x 1 mL).

Base-Neutral Mixture

CLP-HC-BN-R

Acenaphthene	4-Chlorophenyl phenyl ether	Hexachlorobenzene
Acenaphthylene	Chrysene	Hexachlorobutadiene
Anthracene	Dibenz[a,h]anthracene	Hexachlorocyclopentadiene
Azobenzene	Di- <i>n</i> -butyl phthalate	Hexachloroethane
Benz[a]anthracene	1,2-Dichlorobenzene	Indeno[1,2,3- <i>cd</i>]pyrene
Benzo[b]fluoranthene	1,3-Dichlorobenzene	Isophorone
Benzo[k]fluoranthene	1,4-Dichlorobenzene	Naphthalene
Benzo[g,h,i]perylene	Diethyl phthalate	Nitrobenzene
Benz[a]pyrene	Dimethyl phthalate	N-Nitrosodimethylamine
4-Bromophenyl phenyl ether	2,4-Dinitrotoluene	N-Nitrosodiphenylamine
Butyl benzyl phthalate	2,6-Dinitrotoluene	N-Nitrosodi- <i>n</i> -propylamine
bis(2-Chloroethoxy)methane	Di- <i>n</i> -octyl phthalate	Phenanthrene
bis(2-Chloroethyl) ether	bis(2-Ethylhexyl)phthalate	Pyrene
bis(2-Chloroisopropyl)ether	Fluoranthene	1,2,4-Trichlorobenzene
2-Chloronaphthalene	Fluorene	

Benzidine Mixture

Z-014F

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-PAK	SAVE	1 x 1 mL
2.0 mg/mL each in Benzene:CH ₂ Cl ₂ :AcCN (40:40:20)		5 x 1 mL
		44 comps.

Benzidine

Z-014F

Z-014F-PAK	1 x 1 mL
2.0 mg/mL each in MeOH	1 x 1 mL
	2 comps.

Base-Neutral and Benzidine Set

CLP-HC-BN-SET	2 x 1 mL
CLP-HC-BN-SET-PAK	SAVE
	5 x (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	SAVE	1 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂		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	SAVE	1 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂		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 CH ₂ Cl ₂	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 CH ₂ Cl ₂	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

M-8270-07-R1 *

2.0 mg/mL each in CH₂Cl₂

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

APP-9-014-D-10X

2.0 mg/mL in CH₂Cl₂

Aramite

M-8270-08

2.0 mg/mL each in CH₂Cl₂

3,3'-Dimethylbenzidine †
4-Nitroquinoline-1-oxide
N-Nitrosodiethylamine
N-Nitrosomethylethylamine
N-Nitrosomorpholine
N-Nitrosopyrrolidine
5-Nitro-*o*-toluidine
p-Phenylenediamine
o-Toluidine

1 x 1 mL

9 comps.

M-8270-09

2.0 mg/mL each in CH₂Cl₂

2-Acetyl aminofluorene
m-Dinitrobenzene
Hexachlorophene
Hexachloropropene
Isodrin
Isosafrole
Methapyrilene
1,4-Naphthoquinone
Safrole
0,0,0-Triethyl phosphorothioate

* ColdPAK required to maintain integrity of product.

† Subject to oxidation



EPA Method 8000 Series

Method 8270C/D (Continued) Semi-Volatiles by Capillary Column GC/MS

These Method 8270C/D formulations are designed based on the association of the analyte to a specific internal standard. These formulations allow for easy preparation of the typical analytes in the calibration curve. In addition, instrument/method problems can be rapidly diagnosed by examining those specific analytes and the associated internal standard in the affected part of the analysis.

Complete 8270 Method Mixture Set

M-8270-SET

7 x 1 mL

M-8270-01, M-8270-02, M-8270-03, M-8270-04A
M-8270-04B, M-8270-05, M-8270-06

M-8270-R-SET

7 x 1 mL

M-8270-01, M-8270-02, M-8270-03, M-8270-04A
M-8270-04B-R1, M-8270-05, M-8270-06

Save when ordering
a complete set over
individual solutions

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

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

Technical Note

Under EPA recommended GC conditions (Method 8270) the analyte 1,2-Diphenylhydrazine is converted in varying degrees to Azobenzene and breakdown products. According to our study, the use of an injection port temperature range 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 EPA recommended injection port temperature range used.

Alternate Formulation

M-8270-04B-R1

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

6 comps.

Azobenzene
Diphenylamine
N-Nitrosodiphenylamine
Pentachloronitrobenzene
Phenacetin
Pronamide

† Subject to oxidation



Method 8270C/D (Continued) Auxiliary Standards

Internal Standard

Z-014J		1 x 1 mL
Z-014J-PAK	SAVE	5 x 1 mL
4.0 mg/mL each in CH ₂ Cl ₂		6 comps.
Acenaphthene-d ₁₀	Naphthalene-d ₈	
Chrysene-d ₁₂	Perylene-d ₁₂	
1,4-Dichlorobenzene-d ₄	Phenanthrene-d ₁₀	

Surrogate Standards

M-8270-SS		1 x 1 mL
M-8270-SS-PAK	SAVE	5 x 1 mL
4.0 mg/mL each in CH ₂ Cl ₂		6 comps.
2-Fluorobiphenyl	Phenol-d ₅	
2-Fluorophenol	p-Terphenyl-d ₁₄	
Nitrobenzene-d ₅	2,4,6-Tribromophenol	

M-8270-SS-R		1 x 1 mL
M-8270-SS-R-PAK	SAVE	5 x 1 mL
At stated conc. (mg/mL) each in CH ₂ Cl ₂ :MeOH (80:20)		6 comps.
2-Fluorobiphenyl 1.0	Phenol-d ₅ 2.0	
2-Fluorophenol 2.0	Terphenyl-d ₁₄ 1.0	
Nitrobenzene-d ₅ 1.0	2,4,6-Tribromophenol 2.0	

Base/Neutrals & Acids
Matrix Standard Spiking Solutions
CLP-007-SET 2 x 1 mL
CLP-007-SET-PAK **SAVE** 5 x (2 x 1 mL)
 CLP-007A, CLP-007B

Base/Neutrals

CLP-007A		1 x 1 mL
1.0 mg/mL each in MeOH		6 comps.
Acenaphthene	N-Nitrosodi-n-propylamine	
1,4-Dichlorobenzene	Pyrene	
2,4-Dinitrotoluene	1,2,4-Trichlorobenzene	

Acids

CLP-007B		1 x 1 mL
2.0 mg/mL each in MeOH		5 comps.
2-Chlorophenol	Pentachlorophenol	
4-Chloro-3-methylphenol	Phenol	
4-Nitrophenol		

GC/MS Tuning Standard

M-625-TS-20X		1 x 1 mL
1.0 mg/mL each in CH ₂ Cl ₂		4 comps.
Benzidine †	DFTPP	
p,p'-DDT	Pentachlorophenol	

Calibration Check Compounds (CCC)

CLP-011-SET	2 x 1 mL
	CLP-011A, CLP-011B

Base/Neutrals

CLP-011A		1 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂		7 comps.
Acenaphthene	Hexachlorobutadiene	
Benz[a]pyrene	Fluoranthene	
1,4-Dichlorobenzene	N-nitroso-diphenylamine	
Di-n-octyl phthalate		

Acids

CLP-011B		1 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂		6 comps.
4-Chloro-3-methylphenol	Pentachlorophenol	
2,4-Dichlorophenol	Phenol	
2-Nitrophenol	2,4,6-Trichlorophenol	

System Performance Check Compounds (SPCC)

CLP-010		1 x 1 mL
0.2 mg/mL each in CH ₂ Cl ₂		4 comps.
CLP-010-10X		1 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂		4 comps.
2,4-Dinitrophenol	4-Nitrophenol	
Hexachlorocyclopentadiene	N-nitroso-di-n-propylamine	

Multi-Component Analytes

Polychlorinated Biphenyls, Chlordane & Toxaphene
 Each at 1,000 µg/mL in Hexane **AccuPAK (5 x 1 mL)**
SAVE

Aroclors #	Cat. No.	1 mL	Cat. No.	PAK
Aroclor 1016	C-216S-H-10X		C-216S-H-10X-PAK	
Aroclor 1221	C-221S-H-10X		C-221S-H-10X-PAK	
Aroclor 1232	C-232S-H-10X		C-232S-H-10X-PAK	
Aroclor 1242	C-242S-H-10X		C-242S-H-10X-PAK	
Aroclor 1248	C-248S-H-10X		C-248S-H-10X-PAK	
Aroclor 1254	C-254S-H-10X		C-254S-H-10X-PAK	
Aroclor 1260	C-260S-H-10X		C-260S-H-10X-PAK	
Aroclor 1262	C-262S-H-10X		C-262S-H-10X-PAK	
Aroclor 1268	C-268S-H-10X		C-268S-H-10X-PAK	
Pesticides				
Chlordane	P-017S-H-10X		P-017S-H-10X-PAK	
Toxaphene	P-093S-H-10X		P-093S-H-10X-PAK	



EPA Method 8000 Series

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

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

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

Carbamates/Pesticides

M-8270-18

1000 µg/mL each in CH₂Cl₂

1 x 1 mL

6 comps.

Carbaryl

Mexacarbate

Carbofuran

Schradan (Octamethylpyrophosphoramide)

Ethyl carbamate

Phenobarbital

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)

Fensulfothion

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)

SAVE

1 x 1 mL

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

* ColdPAK required to maintain integrity of product.

† Subject to oxidation

EPA Method 8000 Series

Ready-to-Inject Working Level Semi-Volatile Standards



Method 8270

Method 8270C/D 5 point Semi-Volatile Calibration Curve

AccuStandard provides a 5 point semi-volatile calibration curve in 2 formats. One calibration curve already incorporates the internal standards in each level of the curve. To begin the analysis, the chemist cracks the ampule open and transfers the content to the autosampler vial. The second semi-volatile curve does not contain the internal standard.

The analytical chemist will need to add 10 µL of internal standard to each level of the curve and the environmental samples as the vials are placed on the GC/MS. We offer both types of curves to meet your laboratory's preference regarding the addition of internal standards.

Target Analytes (Semi-Volatiles)

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

Internal Standard Analytes

Acenaphthene- <i>d</i> ₁₀	Naphthalene- <i>d</i> ₈
Chrysene- <i>d</i> ₁₂	Perylene- <i>d</i> ₁₂
1,4-Dichlorobenzene- <i>d</i> ₄	Phenanthrene- <i>d</i> ₁₀

Surrogates Analytes

2-Fluorobiphenyl	Phenol- <i>d</i> ₅
2-Fluorophenol	<i>p</i> -Terphenyl- <i>d</i> ₁₄
Nitrobenzene- <i>d</i> ₅	2,4,6-Tribromophenol

Technical Note

2,4-Dinitrophenol, 4-Nitrophenol, and Pentachlorophenol are susceptible to adsorption on active surfaces found in injection ports or contaminated columns.

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

Level 2 Daily QC Working Level Internal Standard

M-8270-IS-WL-2.5X-5ML

1 x 5 mL

M-8270-IS-WL-2.5X-10ML

1 x 10 mL

At stated conc. (µg/mL) in CH₂Cl₂

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 without Internal Standard

M-8270-WL-2.5X-5ML

1 x 5 mL

M-8270-WL-2.5X-10ML

1 x 10 mL

At stated conc. (µg/mL) in CH₂Cl₂





EPA Method 8000 Series

Ready-to-Inject Working Level Semi-Volatile Standards

Method 8270C/D (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.

Internal Standard

Z-014J

Z-014J-PAK

4.0 mg/mL each in CH_2Cl_2

SAVE

1 x 1 mL

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}

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

SAVE

1 x 1 mL

5 x 1 mL

4 comps.

Benzidine †	DFTPP
p,p'-DDT	Pentachlorophenol

DFTPP GC/MS Tuning Solution

M-625C-3

M-625C-3-PAK

25 $\mu\text{g/mL}$ in CH_2Cl_2

SAVE

1 x 1 mL

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-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)

SAVE

1 x 1 mL

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-25ML

CLP-031-R-WL-50ML

At stated conc. ($\mu\text{g/mL}$) in MeOH

1 x 25 mL

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.



EPA Method 8000 Series

Alternate Source Line (ASL)



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

Method 8270C/D

M-8270-ASL-SET * Alternate Source		Alternate Source Method 8270C/D Set		17 x 1 mL
M-8270-01-ASL	Ethers & Phthalates Mix	M-8270-08-ASL	Phenols Mix	
M-8270-02-ASL	Chlorinated Hydrocarbons Mix	M-8270-09-ASL	Organochlorine Pesticide Mix	Z-014J Internal Standards Mix
M-8270-03-ASL	Nitrosamines Mix	M-8270-10-ASL	Pesticide Mix	CLP-BNS Base/Neutrals Surrogate Standard
M-8270-04-ASL	Base/Neutrals Mix	M-8270-11-ASL	Toxic Substances Mix	CLP-AS Acid Surrogate Standard
M-8270-05-ASL	Base/Neutrals Mix	M-8270-12-ASL	Phenols Mix	
M-8270-06-ASL	PAH Mix	M-8270-13-ASL	Polynuclear Aromatic Hydrocarbon Mix	
M-8270-07-ASL	Pyridines Mix	M-8270-14-ASL	Organochlorine Pesticide Mix	

ASL Method 8270C/D Alternate Method 8270 Formulations

Alternate Source

Ethers & Phthalates Mix

M-8270-01-ASL

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

11 comps.

bis(2-Chloroethoxy)methane
bis(2-Chloroethyl)ether
bis(2-Ethylhexyl)phthalate
bis(2-Chloroisopropyl)ether
4-Bromophenyl phenyl ether
Benzyl butyl phthalate

4-Chlorophenyl phenyl ether
Diethyl phthalate
Dimethyl phthalate
Dibutyl phthalate
Di-*n*-octyl phthalate

Chlorinated Hydrocarbons Mix

M-8270-02-ASL

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

13 comps.

2-Chloronaphthalene
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene

Hexachloroethane
Hexachloropropene
Pentachlorobenzene
Pentachloroethane
1,2,4,5-Tetrachlorobenzene
1,2,4-Trichlorobenzene

Nitrosamines 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

Base/Neutrals Mix

M-8270-04-ASL

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

13 comps.

2-Acetylaminofluorene
4-Aminobiphenyl
3,3'-Dichlorobenzidine †
4-Dimethylaminoazobenzene
3,3'-Dimethylbenzidine †
α,α-Dimethylphenethylamine
Diphenylamine

1-Naphthylamine
2-Naphthylamine
5-Nitro-*o*-toluidine
Phenacetin
p-Phenylenediamine
o-Toluidine

Base/Neutrals Mix

M-8270-05-ASL

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

13 comps.

Acetophenone
1,3-Dinitrobenzene
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Ethyl methanesulfonate
Isophorone
Isosafrole

Methyl methanesulfonate
1,4-Naphthoquinone
Nitrobenzene
Pentachloronitrobenzene
Safrole
1,3,5-Trinitrobenzene

PAH Mix

M-8270-06-ASL

2.0 mg/mL each CH₂Cl₂:Benzene (50:50)

1 x 1 mL

2 comps.

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

Pyridine Mix

M-8270-07-ASL

2.0 mg/mL each in Acetone

1 x 1 mL

4 comps.

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

Phenol Mix

M-8270-08-ASL

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

8 comps.

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

Organophosphorous Pesticide Mix

M-8270-09-ASL

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

9 comps.

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

Pesticide Mix

M-8270-10-ASL *

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

6 comps.

Aramite
Chlorobenzilate
Diallate
Isodrin
Kepone
Pronamide

Toxic Substance Mix

M-8270-11-ASL

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

8 comps.

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

Internal Standard Mix

Z-014J

Z-014J-PAK

4.0 mg/mL each in CH₂Cl₂

SAVE

1 x 1 mL

5 x 1 mL

6 comps.

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

* ColdPAK required to maintain integrity of product.

† Subject to oxidation

Alternate Method 8270C/D Formulations continued on the next page



EPA Method 8000 Series

Alternate Source Line (ASL)

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

Alternate **Source**

Acid Surrogate Standard

CLP-AS

CLP-AS-PAK

2.0 mg/mL each in MeOH

SAVE

1 x 1 mL

5 x 1 mL

3 comps.

2-Fluorophenol

2,4,6-Tribromophenol

Phenol-d₅

Base/Neutrals Surrogate Standard

CLP-BNS

CLP-BNS-PAK

1.0 mg/mL each in CH₂Cl₂

SAVE

1 x 1 mL

5 x 1 mL

3 comps.

2-Fluorobiphenyl

p-Terphenyl-d₁₄

Nitrobenzene-d₅

Phenol Mixture

M-8270-12-ASL

2.0 mg/mL each in CH₂Cl₂

1 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

2-Methyl-4,6-dinitrophenol

Polynuclear Aromatic Hydrocarbon Mixture

M-8270-13-ASL

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

1 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

Organochlorine Pesticide Mix

M-8270-14-ASL

2.0 mg/mL each in Acetone

1 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

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.

Additions to Method 8270

M-8270-13A-R2

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

10 comps.

4-Aminoazobenzene

2,4-Diaminotoluene

3-Amino-9-ethylcarbazole

4,4'-Methylenebis(N,N-dimethylaniline)

o-Anisidine

4,4'-Methylenebis(2-chloroaniline)

5-Chloro-2-methylaniline

4,4'-Oxydianiline

p-Cresidine

2,4,5-Trimethylaniline

M-8270-13B-R

2.0 mg/mL each in THF

1 x 1 mL

3 comps

2-Aminoanthraquinone

4-Chloro-1,3-phenylenediamine

4-Chloro-1,2-phenylenediamine

M-8270-14A-R1

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

7 comps.

Benzoic acid

Thiophenol

1-Chloronaphthalene

tris-(2,3-Dibromopropyl)phosphate

Dibenz[a,j]acridine

Tri-p-tolyl phosphate

Resorcinol

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 Acetone:CH₂Cl₂ (25:75)

1 x 1 mL

10 comps.

Anilazine

Dioxathion

Azinphos methyl

Mirex

Barbamate

Sulfoxide

Demeton (mixed isomers)

Sulfate

Dichloro

Trifluralin

M-8270-17

1000 µg/mL each in CH₂Cl₂

1 x 1 mL

7 comps.

Brominal

Dinocap

Captafol

Fluchloralin

Captan

Nitrofen

Dinex

Carbamates/Pesticides

M-8270-18

1000 µg/mL each in CH₂Cl₂

1 x 1 mL

6 comps.

Carbaryl

Mexacarbate

Carbofuran

Schradan (Octamethylpyrophosphoramide)

Ethyl carbamate

Phenobarbital

* ColdPAK required to maintain integrity of product.

EPA Method 8000 Series

Alternate Source Line (ASL)



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

Alternate Source

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)
Fensulfothion	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 (Tetraethyl pyrophosphate)
Mevinphos	

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

α-Chlordane	Endrin ketone
γ-Chlordane	

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

† Subject to oxidation

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

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

8270 Semi-Volatile Standards

M-8270-AG01-ASL 1000 µg/mL each in CH₂Cl₂:Benzene (75:25) 1 x 1 mL 64 comps.

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

M-8270-AG02-ASL 1000 µg/mL each in CH₂Cl₂ 1 x 1 mL 39 comps.

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



EPA Method 8000 Series

Alternate Source Line (ASL)

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

Alternate Source

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)		

Pesticides

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

Brominal	Dinex	Fluchloralin
Captafol	Dinocap	Nitrofen
Captan		

Carbamates/Pesticides

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

Carbaryl	Mexacarbate
Carbofuran	Schradan (Octamethylpyrophosphoramidate)
Ethyl carbamate	Phenobarbital

Pesticides

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

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

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

Chlorfenvinphos	Monocrotophos
Ciodrin (Crotoxypfos)	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 5 x 1 mL
2.0 mg/mL each in Toluene:Hexane (50:50) 20 comps. **SAVE**

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

5.0 mg/mL in MeOH 1 x 1 mL
N-Nitrosodiphenylamine

* ColdPAK required to maintain integrity of product.
† Subject to oxidation



Method 8272 PAHs (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 (Thermal Extraction/GC/FID/MS) Semi-Volatiles by Thermal Chromatography

Semi-Volatiles

M-8275			1 x 1 mL
1.0 mg/mL each in Acetone			17 comps.
Aldrin		2,4-Dinitrotoluene	
Benzo[k]fluoranthene		Diphenylamine	
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 Mixture

M-8280A			1 x 1 mL
M-8280A-PAK	SAVE		5 x 1 mL
5 µg/mL each in Toluene			5 comps.
2,3,7,8-Tetrachlorodibenzo-p-dioxin			
1,2,3,7,8-Pentachlorodibenzo-p-dioxin			
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin			
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin			
Octachlorodibenzo-p-dioxin			

Furan Mixture

M-8280B			1 x 1 mL
M-8280B-PAK	SAVE		5 x 1 mL
5 µg/mL each in Toluene			5 comps.
2,3,7,8-Tetrachlorodibenzofuran			
1,2,3,7,8-Pentachlorodibenzofuran			
1,2,3,4,7,8-Hexachlorodibenzofuran			
1,2,3,4,6,7,8-Heptachlorodibenzofuran			
Octachlorodibenzofuran			

Column Performance Check

M-8280-CPC			1 x 1 mL
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			

Canadian Environmental Method Multi-Component Dioxin Mixtures

Custom Window Defining Mixture

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

Formulations at Highest Conc.
for Economical Prices

Custom Calibration Mixture

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

Column Performance Check

M-8280-CPC		1 x 1 mL
5.0 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		

Standards of Interest

For more Canadian Methods see the Regional Section of this catalog



EPA Method 8000 Series

Method 8310 PAHs by HPLC

PAH Mixture

M-8310		1 x 1 mL
M-8310-PAK	SAVE	5 x 1 mL
0.5 mg/mL each in AcCN		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 Quality Control Calibration Mixture

M-610-QC		1 x 1 mL
At stated conc. (mg/mL) in AcCN		16 comps.

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

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 AcCN:THF (50:50)		
Biphenyl		

Florida Method PAH Mixture

Z-014G-FL		1 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂ :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

Florida Administrative Code (continued) PAHs by HPLC

Performance Check Solution

M-610-QC-FL		1 x 1 mL
M-610-QC-FL-PAK	SAVE	5 x 1 mL
At stated conc. (mg/mL) in AcCN		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 AcCN			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

Polynuclear Aromatic Hydrocarbons (HPLC)

M-8310-FL		1 x 1 mL
M-8310-FL-PAK	SAVE	5 x 1 mL
0.5 mg/mL each in AcCN		18 comps.
M-8310-FL-SET		18 x 1 mL

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

Polynuclear Aromatic Hydrocarbons (HPLC)

M-8310-QC-ATI		1 x 1 mL
M-8310-QC-ATI-PAK	SAVE	5 x 1 mL
At stated conc. (µg/mL) in AcCN		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



Method 8315/8315A Ketones/Aldehydes by HPLC

Aldehyde Mixture

M-8315 1 x 1 mL
M-8315-PAK 5 x 1 mL
 1.0 mg/mL each in Water 2 comps.

SAVE

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

Option 1

(Samples Collected from Water, Air, Soil, Waste or Stacks by Method 0011)

Carbonyl Mixture

M-8315-R1 1 x 1 mL
 1.0 mg/mL each in AcCN 12 comps.

Acetaldehyde Heptanal
 Butanal (Butyraldehyde) Hexanal (Hexaldehyde)
 Crotonaldehyde Nonanal
 Cyclohexanone Octanal
 Decanal Pentanal (Valeraldehyde)
 Formaldehyde Propanal (Propionaldehyde)

Carbonyl DNPH Derivative Mixture

M-8315-R1-DNPH 1 x 1 mL
 0.1 mg/mL each in AcCN 12 comps.

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

(Samples Collected from Indoor Air by Method 0100)

Carbonyl Mixture

M-8315-R2 1 x 1 mL
 1.0 mg/mL each in AcCN 15 comps.

Acetaldehyde Hexanal (Hexaldehyde)
 Acetone Isovaleraldehyde
 Acrolein Pentanal (Valeraldehyde)
 Benzaldehyde Propanal (Propionaldehyde)
 Butanal (Butyraldehyde) *m*-Tolualdehyde
 Crotonaldehyde *o*-Tolualdehyde
 2,5-Dimethylbenzaldehyde *p*-Tolualdehyde
 Formaldehyde

Carbonyl DNPH Derivative Mixture

M-8315-R2-DNPH 1 x 1 mL
 0.1 mg/mL each in AcCN 15 comps.

Acetaldehyde-DNPH Hexanal (Hexaldehyde)
 Acetone-DNPH Isovaleraldehyde-DNPH
 Acrolein-DNPH Pentanal-DNPH (Valeraldehyde)
 Benzaldehyde-DNPH Propanal-DNPH (Propionaldehyde)
 Butanal-DNPH (Butyraldehyde) *m*-Tolualdehyde-DNPH
 Crotonaldehyde-DNPH *o*-Tolualdehyde-DNPH
 2,5-Dimethylbenzaldehyde-DNPH *p*-Tolualdehyde-DNPH
 Formaldehyde-DNPH

Carbonyl Compound Set

M-8315-R3-10X-SET 20 x 1 mL
 Each at 1.0 mg/mL in AcCN

Acetaldehyde Heptanal
 Acetone Hexanal (Hexaldehyde)
 Acrolein Isovaleraldehyde
 Benzaldehyde Nonanal
 Butanal (Butyraldehyde) Octanal
 Crotonaldehyde Pentanal (Valeraldehyde)
 Cyclohexanone Propanal (Propionaldehyde)
 Decanal *m*-Tolualdehyde
 2,5-Dimethylbenzaldehyde *o*-Tolualdehyde
 Formaldehyde *p*-Tolualdehyde

Carbonyl DNPH Derivative Set

M-8315-R-DNPH-SET 20 x 1 mL
 Each at 0.1 mg/mL in AcCN 20 comps.

Acetaldehyde-DNPH Heptanal-DNPH
 Acetone-DNPH Hexanal-DNPH (Hexaldehyde)
 Acrolein-DNPH Isovaleraldehyde-DNPH
 Benzaldehyde-DNPH Nonanal-DNPH
 Butanal-DNPH (Butyraldehyde) Octanal-DNPH
 Crotonaldehyde-DNPH Pentanal-DNPH (Valeraldehyde)
 Cyclohexanone-DNPH Propanal-DNPH (Propionaldehyde)
 Decanal-DNPH *m*-Tolualdehyde-DNPH
 2,5-Dimethylbenzaldehyde-DNPH *o*-Tolualdehyde-DNPH
 Formaldehyde-DNPH *p*-Tolualdehyde-DNPH

Technical Note

For initial Method 8315 development, AccuStandard offers individual analyte sets (20 x 1 mL) for both the Carbonyl compounds and their corresponding DNPH derivatives. Use of these sets will allow the analytical chemist to rapidly establish individual analyte retention times and to troubleshoot possible extraction recovery problems.

Method 8318 N-Methylcarbamates by HPLC

N-Methylcarbamates

M-8318M 1 x 1 mL
 0.1 mg/mL each in MeOH 10 comps.

M-8318-SET 10 x 1 mL
 Each at 0.1 mg/mL in MeOH

Aldicarb 3-Hydroxycarbofuran
 Aldicarb sulfone Methiocarb
 Carbaryl Methomyl
 Carbofuran Promecarb
 Dioxacarb Propoxur

Method 8316 Acrolein, Acrylamide, Acrylonitrile by HPLC

M-8316 * 1 x 1 mL
 1.0 mg/mL each in Water 3 comps.

Acrolein Acrylonitrile
 Acrylamide

* ColdPAK required to maintain integrity of product.



EPA Method 8000 Series

Method 8321-8323

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 AcCN

1 x 1 mL
14 comps.

Dalapon	Dinoseb
Dicamba	MCPA
2,4-D	MCPP
2,4-D butoxyethanol ester	Silvex (2,4,5-TP)
2,4-D ethylhexyl ester	2,4,5-T
2,4-DB	2,4,5-T butyl ester
Dichlorprop	2,4,5-T butoxyethanol ester

Organophosphorus Pesticide Mix

M-8321-OP

0.1 mg/mL each in AcCN

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 AcCN: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 AcCN

1 x 1 mL

DFTPPO (Decafluorotriphenylphosphine oxide)

Method 8323 Organometallic Tin Analysis by Electrospray Ion Trap Mass Spectrometry

The following Organo-tin standards were originally formulated to meet custom applications for a number of our customers. AccuStandard has introduced the below set of standards as regular catalog items to meet the increased requests for Organo-tin standards. The environmental interest in these compounds stems from their addition to the list of endocrine disrupters. Organo-tin compounds such as Tributyl-tin were used as marine antifouling agents and Triphenyl-tin as a crop pesticide.

Organometallic Butyltin Chloride Standard

OMT-001

OMT-001-PAK **SAVE**

2000 µg/mL each in CH₂Cl₂

1 x 1 mL
5 x 1 mL
4 comps.

Butyltin trichloride	Tetrabutyltin
Dibutyltin dichloride	Tributyltin chloride

Tri-n-propyltin Surrogate Standard

OMT-003

OMT-003-PAK **SAVE**

2000 µg/mL in CH₂Cl₂

1 x 1 mL
5 x 1 mL

Tri-n-propyltin chloride

Tetra-n-propyltin Internal Standard

OMT-005

OMT-005-PAK **SAVE**

2000 µg/mL in CH₂Cl₂

1 x 1 mL
5 x 1 mL

Tetra-n-propyltin

Organometallic Phenyltin Chloride Standard

OMT-002

OMT-002-PAK **SAVE**

2000 µg/mL each in CH₂Cl₂

1 x 1 mL
5 x 1 mL
4 comps.

Diphenyltin dichloride	Tetraphenyltin
Phenyltin trichloride	Triphenyltin chloride

Triphenyltin Chloride Surrogate Standard

OMT-004

OMT-004-PAK **SAVE**

2000 µg/mL in CH₂Cl₂

1 x 1 mL
5 x 1 mL

Triphenyltin chloride

Tetraphenyltin Internal Standard

OMT-006

OMT-006-PAK **SAVE**

2000 µg/mL in CH₂Cl₂

1 x 1 mL
5 x 1 mL

Tetraphenyltin



Thousands of Standards, just a click away
AccuStandard.com

* ColdPAK required to maintain integrity of product.

† Subject to oxidation



Method 8330 Explosives

TNT Metabolites

Analyte	Conc. (µg/mL)	Solvent	Cat. No.	(1 mL)
2-Amino-4,6-dinitrotoluene	100	AcCN:MeOH (50:50)	M-8330-13-0.1X	
4-Amino-2,6-dinitrotoluene	100	AcCN:MeOH (50:50)	M-8330-14-0.1X	
2,4-Diamino-6-nitrotoluene	100	AcCN	M-8330-ADD-12	
2,6-Diamino-4-nitrotoluene	100	AcCN	M-8330-ADD-13	
1,2-Dinitrobenzene	1000	MeOH	M-8330-SS	
1,3-Dinitrobenzene	100	AcCN:MeOH (50:50)	M-8330-01-0.1X	
2,4-Dinitrotoluene	100	AcCN:MeOH (50:50)	M-8330-02-0.1X	
2,6-Dinitrotoluene	100	AcCN:MeOH (50:50)	M-8330-03-0.1X	
3,4-Dinitrotoluene	1000	MeOH	M-8330-IS	
3,5-Dinitrotoluene	100	AcCN:MeOH (50:50)	M-8330-ADD-39	
2-Hydroxylamino-4,6-dinitrotoluene ★	100	AcCN	M-8330-ADD-18 *	
4-Hydroxylamino-2,6-dinitrotoluene ★	100	AcCN	M-8330-ADD-20 *	
Nitrobenzene	100	AcCN:MeOH (50:50)	M-8330-06-0.1X	
2-Nitrotoluene	100	AcCN:MeOH (50:50)	M-8330-07-0.1X	
3-Nitrotoluene	100	AcCN:MeOH (50:50)	M-8330-08-0.1X	
4-Nitrotoluene	100	AcCN:MeOH (50:50)	M-8330-09-0.1X	
2,2',6,6'-Tetranitro-4,4'-azoxytoluene	100	AcCN:MeOH (50:50)	M-8330-ADD-15	
2,2',6,6'-Tetranitro-4,4'-azotoluene	100	AcCN	M-8330-ADD-17	
4,4',6,6'-Tetranitro-2,2'-azotoluene	100	AcCN	M-8330-ADD-19	
TNT	100	AcCN:MeOH (50:50)	M-8330-11-0.1X	
1,3,5-Trinitrobenzene	100	AcCN:MeOH (50:50)	M-8330-12-0.1X	

Additional Explosives by HPLC

Ammonium picrate	100	AcCN	M-8330-ADD-27
DEGDN	100	AcCN:MeOH (50:50)	M-8330-ADD-36
1,2-Diaminopropane	100	MeOH	M-8330-ADD-9
2,3-Dimethyl-2,3-dinitrobutane (DMNB)	100	AcCN	M-8330-ADD-21
3,5-Dinitroaniline	100	AcCN:MeOH (50:50)	M-8330-ADD-4
1,2-Dinitroglycerin	100	AcCN:MeOH (50:50)	M-8330-ADD-33
1,3-Dinitroglycerin	100	AcCN:MeOH (50:50)	M-8330-ADD-34
EGDN	100	AcCN	M-8330-ADD-5
Guanidine nitrate	100	MeOH	M-8330-ADD-10
Hexamethylenetriperoxide diamine (HMTD)	100	AcCN	M-8330-ADD-25
Hexanitrodiphenylamine	100	AcCN:MeOH (50:50)	M-8330-ADD-37
Hexanitrostilbene (HNS)	100	AcCN	M-8330-ADD-26 *
HMx	100	AcCN:MeOH (50:50)	M-8330-04-0.1X
	1000	AcCN:MeOH (50:50)	M-8330-04
Hydrazine	100	MeOH	M-8330-ADD-8
N-Nitrodimethylamine	100	AcCN	M-8330-ADD-40
Nitroglycerin	100	EtOH	M-8330-ADD-1
	1000	EtOH	M-8330-ADD-1-10X
1-Nitroglycerin	100	AcCN:MeOH (50:50)	M-8330-ADD-31
2-Nitroglycerin	100	AcCN:MeOH (50:50)	M-8330-ADD-32
Nitroguanidine	100	MeOH	M-8330-ADD-6
Nitromethane	100	MeOH	M-8330-ADD-7
PETN	100	MeOH	M-8330-ADD-2
	1000	MeOH	M-8330-ADD-2-10X
Picramic acid	100	AcCN:MeOH (50:50)	M-8330-ADD-22
Picric acid	100	AcCN:MeOH (50:50)	M-8330-ADD-3
			-8330-ADD-11
RDX	100	AcCN:MeOH (50:50)	M-8330-05-0.1X
TEGDN	100	AcCN:MeOH (50:50)	M-8330-ADD-41-R1
Tetryl	100	AcCN:MeOH (50:50)	M-8330-10-0.1X
1,3,5-Triamino-2,4,6-trinitrobenzene (TATB)	40	Dimethyl formamide	M-8330-ADD-14-DMF
TATP	100	AcCN	M-8330-ADD-24 *
2,4,6-Triaminotoluene trihydrochloride	N/A	5 mg	M-8330-ADD-23N-5MG
Trimethylolethane trinitrate	100	AcCN:MeOH (50:50)	M-8330-ADD-28
2,4,6-Trinitroresorcinol	100	AcCN:MeOH (50:50)	M-8330-ADD-29

★ 3 month stability

* ColdPAK required to maintain integrity of product.

Explosives by HPLC Set

M-8330-R-SET * 14 x 1 mL
Each at 100 µg/mL in AcCN:MeOH (50:50)

M-8330-R-10X-SET * 14 x 1 mL
Each at 1000 µg/mL in AcCN:MeOH (50:50)

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

Technical Note

DMNB (M-8330-ADD-21) is a required taggant added to commercially manufactured plastic explosives.

Additional Individual Explosives

Explosive section see page 84-85

Additional Explosive Methods

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

Method 8095 Explosive Intermediate by GC/ECD



EPA Method 8000 Series

Method 8330 Multi-Component Formulations for Explosive Analysis

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

M-8330A * **1 x 1 mL**
0.1 mg/mL each in AcCN:MeOH (50:50) 7 comps.

M-8330A-10X * **1 x 1 mL**
1.0 mg/mL each in AcCN:MeOH (50:50) 7 comps.

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

M-8330A-R * **1 x 1 mL**
0.1 mg/mL each in AcCN:MeOH (50:50)

M-8330A-R-10X * **1 x 1 mL**
1.0 mg/mL each in AcCN:MeOH (50:50) 8 comps.

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

Composite Explosive Mixture

M-8330-R-0.1X **1 x 1 mL**
0.1 mg/mL each in AcCN:MeOH (50:50) 14 comps.

M-8330-R-0.5X **1 x 1 mL**
0.5 mg/mL each in AcCN:MeOH (50:50) 14 comps.

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

Internal Standard

M-8330-IS **1 x 1 mL**
M-8330-IS-PAK **5 x 1 mL** **SAVE**

1.0 mg/mL in MeOH

3,4-Dinitrotoluene

Method 8410 Semi-Volatiles by GC/FTIR

Internal Standard

M-8410-IS **1 x 1 mL**
M-8410-IS-PAK **5 x 1 mL** **SAVE**

2.0 mg/mL each in CH₂Cl₂

1-Fluoronaphthalene	p-Terphenyl-d ₁₄
---------------------	-----------------------------

Method 8430 bis(2-Chloroethyl)ether & Hydrolysis Products

M-8430 **1 x 1 mL**
1.0 mg/mL each in Water 5 comps.

bis(2-Chloroethyl) ether	Diethylene glycol
2-Chloroethanol	Ethylene glycol
2-(2-Chloroethoxy)-ethanol	

M-8330B * **1 x 1 mL**
0.1 mg/mL each in AcCN:MeOH (50:50) 5 comps.

M-8330B-10X * **1 x 1 mL**
1.0 mg/mL each in AcCN:MeOH (50:50) 5 comps.

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

M-8330B-R * **1 x 1 mL**
0.1 mg/mL each in AcCN:MeOH (50:50)

M-8330B-R-10X * **1 x 1 mL**
1.0 mg/mL each in AcCN:MeOH (50:50) 7 comps.

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

M-8330B-R2 * **1 x 1 mL**
0.1 mg/mL each in AcCN:MeOH (50:50)

M-8330B-R2-10X * **1 x 1 mL**
1.0 mg/mL each in AcCN:MeOH (50:50) 6 comps.

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

Surrogate Standard

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

1,2-Dinitrobenzene

Method 8440 Total Petroleum Hydrocarbon

Total Recoverable Petroleum Hydrocarbon Mix

M-8440 **1 x 1 mL**

M-8440-PAK **5 x 1 mL** **SAVE**

At stated Wt. % in Tetrachloroethene

Chlorobenzene	0.10	Isooctane	0.15
n-Hexadecane	0.15		

Silica Gel Cleanup Calibration Solution

M-8440-SGC **1 x 1 mL**

M-8440-SGC-PAK **5 x 1 mL** **SAVE**

10.0 mg/mL in Tetrachloroethene

Corn Oil

Total Petroleum Hydrocarbon Concentrate Mix

M-8440-CON **1 x 1 mL**

M-8440-CON-PAK **5 x 1 mL** **SAVE**

At stated Vol. %

Chlorobenzene	25.0	Isooctane	37.5
n-Hexadecane	37.5		

* ColdPAK required to maintain integrity of product.



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, which went into effect on June 1, 2007. This plan originated out of the desire to replace the patchwork of existing regulations in Europe with a more comprehensive law that encompasses all chemicals, including those placed on the market prior to 1981 when the industry did not have to provide documented health and safety information.

Listed below are the current dates outlined in the REACH directive.

June 1, 2013	PHASE 2 - Deadline for registration of substances supplied at ≥ 100 tons per year
June 1, 2018	PHASE 3 - Deadline for registration of substances supplied at ≥ 1 ton per year

AccuStandard fully supports the efforts and objectives of the REACH Directive and will continue to monitor any changes in the scope of this regulation. Changes may include newly banned substances, expiring exemptions or lowered maximum concentration levels. As a leading manufacturer of chemical reference standards in the world, AccuStandard will take all necessary actions under REACH in order to continue to expand the supply of our products in Europe. For other guidance on REACH, please go to the ECHA-website (www.echa.europa.eu).

Standards for International Testing Protocols

AccuStandard has researched and developed standard solutions that meet the requirements of various governmental bodies around the world. If you do not locate a solution that meets your requirements, please contact our Technical Department, and we will quickly develop a formulation that meets your requirements.

Organic Chemicals	USEPA Methods	DIN	ISO
PCBs	508, 617, 680, 1668, 8082		
Congeners	508, 525.1, 525.2, 1668, 8082	38407-3, 38414-20	6468
PCB Metabolites and Derivatives	8082		
Aroclors	505, 508, 508A, 625		
Dibenzofurans	613, 8280A		
PAHs and Derivatives	525, 550, 553, 610, 625, 8100, 8310, 1653	38407-8, 38407-18, 38414-23	
Nitroaromatics	609, 8070A, 8090, 8091	38407-17	
Amines, Anilines and Amino Aromatics	605, 607, 620, 8131, 8325	38407-16	
Nitrogen Containing Compounds (other)	509, 553		
Phenols and Derivatives	528, 604, 642, 8040, 8040, 8041, 8085	12673	17495
Phthalates	506, 606, 8060, 8061A		
Aldehydes	554, 556, 1667A, 8315, 8315A		
Ketones	554, 556, 8315, 8315A, 8091		
Halo Ethers	611, 8110, 8111		
Haloacetic acids	552		
Pesticides and Herbicides	501, 505, 507, 508, 515, 525, 531, 547, 548, 549, 552, 551, 555, 608, 614, 615, 619, 608.1, 625, 627, 629, 631, 632, 633, 634, 635, 636, 639, 640, 641, 643, 644, 645, 680, 1618, 1656, 1657, 1658, 1659, 8080, 8081, 8085, 8140, 8141, 8318, 8150, 8151	38407-2, 38407-11, 38407-14, 38407-22	6468, 10695
Volatiles	502, 503, 504, 524, 551B, 556, 601, 602, 603, 624, 1666, 8010, 8011, 8015B, 8020, 8021, 8030, 8031, 8032, 8033,	38407-2, 38407-9	10301
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Regional Standards

Canadian Methodologies

PCB Congeners

Toxicity and Abundance based PCB Congener Formulations

These formulations have been selected by the Institute for Biological Sciences of Canada. The concentration level for these formulations is selected so that 1 mL of standard diluted into 100 mL will show equal response by ECD.

PCB Congener (Canadian RM) Set

C-CAN-SET 4 x 1 mL
C-CAN-01, C-CAN-02, C-CAN-03, C-CAN-04

PCB Congeners Mix #1

C-CAN-01	1 x 1 mL
At stated conc. (µg/mL) in Isooctane	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	1 x 1 mL
At stated conc. (µg/mL) in Isooctane	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',5,5',6-Octachlorobiphenyl	3.2
207 2,2',3,3',4,4',5,6,6'-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	1 x 1 mL
At stated conc. (µg/mL) in Isooctane	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	1 x 1 mL
At stated conc. (µg/mL) in Isooctane	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',3,4,4',5'-Hexachlorobiphenyl	4.2
141 2,2',3,4,5,5'-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 Formulation Quebec Ministry of Environment

Quebec Ministry of Environment Congener Mix

C-QME-01	1 x 1 mL
At stated conc. (ng/mL) in Isooctane	41 comps.
17 2,2',4-Trichlorobiphenyl	500
18 2,2',5-Trichlorobiphenyl	2000
28 2,4,4'-Trichlorobiphenyl	2000
31 2,4',5-Trichlorobiphenyl	1500
33 2',3,4-Trichlorobiphenyl	2000
44 2,2',3,5'-Tetrachlorobiphenyl	2000
49 2,2',4,5'-Tetrachlorobiphenyl	2000
52 2,2',5,5'-Tetrachlorobiphenyl	2000
70 2,3',4',5-Tetrachlorobiphenyl	2000
74 2,4,4',5-Tetrachlorobiphenyl	2000
82 2,2',3,3',4-Pentachlorobiphenyl	500
87 2,2',3,4,5'-Pentachlorobiphenyl	2000
95 2,2',3,5',6-Pentachlorobiphenyl	1000
99 2,2',4,4',5-Pentachlorobiphenyl	2000
101 2,2',4,5,5'-Pentachlorobiphenyl	2000
105 2,3,3',4,4'-Pentachlorobiphenyl	500
110 2,3,3',4',6-Pentachlorobiphenyl	2000
118 2,3',4,4',5-Pentachlorobiphenyl	2000
128 2,2',3,3',4,4'-Hexachlorobiphenyl	2000
132 2,2',3,3',4,6'-Hexachlorobiphenyl	1000
138 2,2',3,4,4',5'-Hexachlorobiphenyl	2000
149 2,2',3,4',5',6-Hexachlorobiphenyl	2000
151 2,2',3,5,5',6-Hexachlorobiphenyl	2000
153 2,2',4,4',5,5'-Hexachlorobiphenyl	2000
156 2,3,3',4,4',5-Hexachlorobiphenyl	2000
158 2,3,3',4,4',6-Hexachlorobiphenyl	500
169 3,3',4,4',5,5'-Hexachlorobiphenyl	2000
170 2,2',3,3',4,4',5-Heptachlorobiphenyl	2000
171 2,2',3,3',4,4',6-Heptachlorobiphenyl	2000
177 2,2',3,3',4',5,6-Heptachlorobiphenyl	2000
180 2,2',3,4,4',5,5'-Heptachlorobiphenyl	2000
183 2,2',3,4,4',5',6-Heptachlorobiphenyl	2000
187 2,2',3,4',5,5',6-Heptachlorobiphenyl	2000
191 2,3,3',4,4',5',6-Heptachlorobiphenyl	2000
194 2,2',3,3',4,4',5,5'-Octachlorobiphenyl	2000
195 2,2',3,3',4,4',5,6-Octachlorobiphenyl	2000
199 2,2',3,3',4,5,5',6'-Octachlorobiphenyl	1500
205 2,3,3',4,4',5,5',6-Octachlorobiphenyl	2000
206 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	2000
208 2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	2000
209 Decachlorobiphenyl	2000

Dioxins: Calibration & Window Defining Mixtures (Canadian Environmental Methods)

Custom Window Defining Mixture

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

Custom Calibration Mixture

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



PAH Mixture Quebec Ministry of Environment

PAH Standard

H-QME-01

500 µg/mL each in CH₂Cl₂ : Benzene (50:50)

1 x 1 mL

24 comps

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



Petroleum Brownfield Regulation

The Brownfield Regulation has been approved by the Canadian Ministry of the Environment as of October 1, 2004.

Light Petroleum Fraction

CCME-LPF-SET

At stated conc. (µg/mL) in MeOH

5 x 1 mL

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

At stated conc. (µg/mL) in *n*-Hexane

3 x 1 mL

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> -Tetraatriacontane	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.

n-Pentacontane
n-Tetracontane

Spike Standard

CCME-SPIKE

1 x 1 mL

2500 µg/mL each in *n*-Hexane

2 comps.

SAE 30W Motor Oil - Non-Detergent Formula
#2 Diesel Fuel - 50% Weathered

Canadian Atlantic RBCA EPH Mix

CCME-EPH

1 x 1 mL

1000 µg/mL each in Hexane : CH₂Cl₂ (85:15)

11 comps.

Acenaphthene *n*-Dotriacontane
Anthracene *n*-Heneicosane
Benz[a]pyrene *n*-Hexadecane
Chrysene *n*-Octacosane
n-Decane Naphthalene
n-Dodecane

Canadian Atlantic RBCA VPH Mix

CCME-VPH

1 x 1 mL

1000 µg/mL each in MeOH

12 comps.

Benzene *n*-Octane
n-Decane Toluene
Ethylbenzene 1,2,4-Trimethylbenzene
n-Heptane 1,3,5-Trimethylbenzene
n-Hexane *o*-Xylene
1-Methyl-3-ethylbenzene *p*-Xylene

Surrogate Standard

CCME-EPH/SS

1 x 1 mL

1000 µg/mL each in CH₂Cl₂

2 comps.

n-Dotriacontane Isobutylbenzene

Surrogate Standard

CCME-VPH/SS

1 x 1 mL

1000 µg/mL in MeOH

Isobutylbenzene

Canadian Drinking Water Brownfield Regulation

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 AcCN

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'-DDT
γ-BHC Dieldrin
α-Chlordane Heptachlor
γ-Chlordane Heptachlor epoxide (Isomer B)
2,4'-DDE Methoxychlor
4,4'-DDE Oxychlordane Isomer
2,4'-DDT Trifluralin

† Subject to oxidation



Regional Standards

Municipal & Industrial Strategy for Abatement (MISA) - Canadian

MISA Analytical Test Groups

Group 16: Volatiles, Halogenated Set

MISA-VH-1/VH-2-SET

2 x 1 mL

MISA-VH-1, MISA-VH-2

MISA-VH-1

MISA-VH-1-PAK

0.5 mg/mL each in MeOH

SAVE

1 x 1 mL

5 x 1 mL

22 comps.

Bromoform
Carbon tetrachloride
Chlorobenzene
Chloroform
Dibromochloromethane
1,2-Dibromoethane
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
1,2-Dichloroethane
1,1-Dichloroethane

trans-1,2-Dichloroethene
1,1-Dichloroethene
1,2-Dichloropropane
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Methylene chloride
1,1,2,2-Tetrachloroethane
Tetrachloroethene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene

Certificate will reflect
actual *cis/trans* ratio

MISA-VH-2

MISA-VH-2-PAK

0.5 mg/mL each in MeOH

SAVE

1 x 1 mL

5 x 1 mL

5 comps.

Bromomethane
Chloroethane
Chloromethane

Trichlorofluoromethane
Vinyl chloride

Group 17: Volatiles, Non-Halogenated

MISA-VNH

MISA-VNH-PAK

0.5 mg/mL each in MeOH

SAVE

1 x 1 mL

5 x 1 mL

7 comps.

Benzene
Ethylbenzene
Styrene
Toluene

o-Xylene
m-Xylene
p-Xylene

Group 18: Volatiles, Water Soluble

MISA-VWS

2.0 mg/mL each in Water

1 x 1 mL

2 comps.

Acrolein

Acrylonitrile

Group 19: Extractables, Base-Neutral

Z-014G

Z-014G-PAK

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

SAVE

1 x 1 mL

5 x 1 mL

16 comps.

Acenaphthene
Acenaphthylene
Anthracene
Benz[a]anthracene
Benz[a]pyrene
Benzo[b]fluoranthene
Benzo[ghi]perylene
Benzo[k]fluoranthene

Chrysene
Dibenz[a,h]anthracene
Fluoranthene
Fluorene
Indeno[1,2,3-cd]pyrene
Naphthalene
Phenanthrene
Pyrene

MISA-BN-1

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

8 comps.

Biphenyl
Camphene
1-Chloronaphthalene
2-Chloronaphthalene

1-Methylnaphthalene
2-Methylnaphthalene
5-Nitroacenaphthene
Perylene

MISA-BN-2

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

8 comps.

Benzyl butyl phthalate
4-Bromophenyl phenyl ether
bis(2-Chloroethyl)ether
bis(2-Chloroisopropyl)ether

4-Chlorophenyl phenyl ether
Di-*n*-butyl phthalate
Di-*n*-octyl phthalate
bis(2-Ethylhexyl)phthalate

MISA-BN-3

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

8 comps.

bis(2-Chloroethoxy)methane
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Diphenylamine

Diphenylether
Indole
N-Nitroso-diphenylamine
N-Nitroso-di-*n*-propyl amine

Group 20: Extractables, Acid (Phenolics)

MISA-A

MISA-A-PAK

2.0 mg/mL each in CH₂Cl₂

SAVE

1 x 1 mL

5 x 1 mL

20 comps.

4-Chloro-3-methylphenol
2-Chlorophenol
o-Cresol
m-Cresol
p-Cresol
2,4-Dichlorophenol
2,6-Dichlorophenol
2,4-Dimethylphenol
4,6-Dinitro-2-cresol
2,4-Dinitrophenol

4-Nitrophenol
Pentachlorophenol
Phenol
2,3,4,5-Tetrachlorophenol
2,3,4,6-Tetrachlorophenol
2,3,5,6-Tetrachlorophenol
2,3,4-Trichlorophenol
2,3,5-Trichlorophenol
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol

Group 22: Organochlorine Pesticides

MISA-PEST

MISA-PEST-PAK

2.0 mg/mL each in Acetone

SAVE

1 x 1 mL

5 x 1 mL

18 comps.

Aldrin
 α -BHC
 β -BHC
 γ -BHC
 δ -BHC
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

Group 23: Extractables, Chlorinated Neutrals

MISA-NC

2.0 mg/mL each in CH₂Cl₂

1 x 1 mL

12 comps.

Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Octachlorostyrene
Pentachlorobenzene

1,2,3,4-Tetrachlorobenzene
1,2,3,5-Tetrachlorobenzene
1,2,4,5-Tetrachlorobenzene
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
2,4,5-Trichlorotoluene

Group 27: Polychlorinated Biphenyls Solutions and Sets

Each at 35 μ g/mL	Isooctane	MeOH	1 mL
Aroclor 1016	C-216S	C-216S-M	
Aroclor 1221	C-221S	C-221S-M	
Aroclor 1232	C-232S	C-232S-M	
Aroclor 1242	C-242S	C-242S-M	
Aroclor 1248	C-248S	C-248S-M	
Aroclor 1254	C-254S	C-254S-M	
Aroclor 1260	C-260S	C-260S-M	
Aroclor 1262	C-262S	C-262S-M	
Aroclor 1268	C-268S	C-268S-M	
Z-008S-SET		Z-008S-M-SET	

PCB Congener Standards

PCB Congener Mixture

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

Internal Standard

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

ISO 6468 PCB Standard

ISO6468-PCB 1 x 1 mL
 10 µg/mL each in Hexane 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

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
AE-00060-10ML 1 x 10 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 #27

AE-00081-10ML 1 x 10 mL
 100 µg/mL each in Isooctane 10 comps.

- 28 2,4,4'-Trichlorobiphenyl
- 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
- 153 2,2',4,4',5,5'-Hexachlorobiphenyl
- 156 2,3,3',4,4',5'-Hexachlorobiphenyl
- 180 2,2',3,4,4',5,5'-Heptachlorobiphenyl
- 209 Decachlorobiphenyl

Congener Calibration Mix

AE-00061 1 x 1 mL
AE-00061-10ML 1 x 10 mL
 10 µg/mL each in Isooctane 14 comps.

- 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.



Custom Quotation Requests

Custom formulations can be requested by contacting Technical Service: techservice@accustandard.com or using our website AccuStandard.com.

See back of the catalog for detailed information

Volatiles

DIN 38407-2 Benzene Standard

Determination of water, waste water and sludge for low volatile halogenated hydrocarbons by GC.

DIN38407-2-BENZ 1 x 1 mL
10 µg/mL each in *n*-Hexane 5 comps.

Hexachlorobenzene
Pentachlorobenzene
Pentachloronitrobenzene
1,2,4,5-Tetrachlorobenzene
1,2,4-Trichlorobenzene

Volatile Standard

AE-00048 1 x 1 mL
100 µg/mL each in MeOH 5 comps.

1,1,1-Trichloroethane Dichloromethane
Trichloroethene Tetrachloromethane
Tetrachloroethene

Calibration Solution

Set of 5 ampules with a conc. each in MeOH of
1 µg/mL, 5 µg/mL, 10 µg/mL, 50 µg/mL and 100 µg/mL

Compound	Cat. No.	Unit
1,1,1-Trichloroethane	AE-00034-CAL-SET	5 x 1 mL
Tetrachloroethene	AE-00036-CAL-SET	5 x 1 mL
Dichloromethane	AE-00037-CAL-SET	5 x 1 mL
Carbon tetrachloride	AE-00038-CAL-SET	5 x 1 mL

DIN 38407-9 Benzene Mix

Determination of Benzene and Benzene derivatives in water, wastewater and sludge by GC.

DIN38407-9-BENZ 1 x 1 mL
100 µg/mL each in MeOH 8 comps.

Benzene 1,4-Dichlorobenzene
Toluene *o*-Xylene
Ethylbenzene *m*-Xylene
Chlorobenzene *p*-Xylene

DIN EN ISO 10301 - Halogenated VOCs

Determination of water, waste water and sludge for low volatile halogenated hydrocarbons by GC.

DINENISO-10301 1 x 1 mL
1 µg/mL each in MeOH 17 comps.

Dichloromethane 1,2-Dichloropropane
Trichloromethane 1,3-Dichloropropane
Carbon tetrachloride 1,3-Dichloropropene
1,1-Dichloroethane Dibromomethane
1,2-Dichloroethane Tribromoethene
1,1,1-Trichloroethane Bromochloromethane
1,1,2-Trichloroethane Bromodichloromethane
Trichloroethene Dibromochloromethane
Tetrachloroethene

Volatiles Calibration Curve Mix 1

AE-00039-CAL-SET 5 x 1 mL
1 µg/mL, 5 µg/mL, 10 µg/mL, 50 µg/mL, 100 µg/mL
Each comp. in MeOH 5 comps.

Dichloromethane 1,1,1-Trichloroethane
Tetrachloroethene Trichloroethene
Tetrachloromethane

Volatiles Calibration Curve Mix 2

AE-00040-CAL-SET 5 x 1 mL
1 µg/mL, 5 µg/mL, 10 µg/mL, 50 µg/mL, 100 µg/mL
Each comp. in MeOH 6 comps.

Chloroform Tetrachloromethane
Dichloromethane 1,1,1-Trichloroethane
Tetrachloroethene Trichloroethene

Chlorinated Organic Volatile**Calibration Standards**

Appendix 2, Drinking Water Regulation of May 22, 1986.

Each at 100 µg/mL in MeOH

Compound	Cat. No.	1 mL
1,1,1-Trichloroethane	APP-9-202	
Trichloroethene	APP-9-204	
Tetrachloroethene	APP-9-194	
Dichloromethane	APP-9-074	
Carbon tetrachloride	APP-9-036	

Nitroaromatic Compounds**DIN-38407-17 Nitroaromatic Compounds**

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

DIN38407-17 1 x 1 mL
500 µg/mL each in MeOH 12 comps.

Nitrobenzene
2-Nitrotoluene
4-Nitrotoluene
1,3-Dinitrobenzene
2,6-Dinitrotoluene
2,4-Dinitrotoluene

3,4-Dinitrotoluene
2-Amino-6-nitrotoluene
4-Amino-2-nitrotoluene
4-Amino-2,6-dinitrotoluene
2-Amino-4,6-dinitrotoluene
2,4,6-Trinitrotoluene

Explosives**DIN 38407-21 Explosives**

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

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

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

DIN 38407-21 Related Compounds

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

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

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

PAHs

DIN 38407-8 PAH Mix (WHO 6 List)

Determination of PAH in water, wastewater and sludge by HPLC.

DIN38407-8-PAH

2 µg/mL each in Acetonitrile

1 x 1 mL

6 comps.

Fluoranthene	Benz[a]pyrene
Benzo[b]fluoranthene	Benzo[k]fluoranthene
Benzo[g,h,i]perylene	Indeno[1,2,3-cd]pyrene

DIN 38407-18 PAH Solution

Examination of water, wastewater and sludge for the determination of 15 polycyclic aromatic hydrocarbons (PAH) by HPLC with fluorescence detection.

DIN38407-18

10 µg/mL each in Acetonitrile

1 x 1 mL

15 comps.

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

DIN 38414-23 PAHs

Determination of 15 PAHs in water, waste water and sludge by HPLC and Fluorescence detection.

DIN38414-23

10 µg/mL each in Acetonitrile

1 x 1 mL

15 comps.

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

PAH Standard Kits and Solutions

The following mixtures and kits have been prepared to meet the needs of laboratories utilizing European and USEPA methodologies. Minimum purity 99%, except where indicated.

PAH Mix #1

Regulations for drinking water analysis, (E-DIN 38407-F-18, E-DIN 38414-F-21). Regulations for sediment and sludge

AE-00025

1 x 1 mL

AE-00025-10ML

1 x 10 mL

At stated conc. (µg/mL) in Acetonitrile

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 (98%)	30
Benzo[a]pyrene	20	Pyrene	40

PAH Mix #2

For European methods according to customer requests.

AE-00045

1 x 1 mL

AE-00045-10ML

1 x 10 mL

At stated conc. (µg/mL) in Acetonitrile

7 comps.

Benzo[b]fluoranthene	2	Fluoranthene	10
Benzo[k]fluoranthene	2	Indeno[1,2,3-cd]pyrene	2
Benzo[g,h,i]perylene	2	Perylene	10
Benzo[a]pyrene	2		

PAH Mix #3

German method for drinking water analysis.

AE-00032

1 x 1 mL

AE-00032-10ML

1 x 10 mL

10 µg/mL each in Acetonitrile

7 comps.

Benzo[b]fluoranthene	Fluoranthene
Benzo[k]fluoranthene	Indeno[1,2,3-cd]pyrene
Benzo[g,h,i]perylene	Perylene
Benzo[a]pyrene	

PAH Mix #4

For European methods according to customer requests.

AE-00033

1 x 1 mL

AE-00033-10ML

1 x 10 mL

At stated conc. (µg/mL) in Acetonitrile

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		

ISO/DIS 22032 PBDEs in Sediment & Sludge

Draft International Standard

ISO/DIS 22032 Calibration Curve Set

ISO/DIS-22032-SET

At stated conc. (ng/mL) in Isooctane

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

7 x 1 mL

8 comps. each

Internal Standard for

BDE No. 47, 99 and 100

ISO22032-IS-1-5ML

1 x 5 mL

ISO22032-IS-1-10ML

1 x 10 mL

100 ng/mL each in Isooctane

3,3',4,4'-Tetrabromodiphenyl ether

Internal Standard for

BDE No. 153, 154 and 183

ISO22032-IS-2-5ML

1 x 5 mL

ISO22032-IS-2-10ML

1 x 10 mL

100 ng/mL each in Isooctane

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

Aliphatic, Aromatic Amines and Derivatives

Aryl Amine Multi-Component Solutions

AE-00049-SET

10 µg/mL each in Ethyl acetate

2 x 1 mL

24 comps.

AE-00049-R1, RAC-08

1 x 1 mL

23 comps.

AE-00049-R1

10 µg/mL each in Ethyl acetate

<i>o</i> -Aminoazotoluene	3,3'-Dimethyl-4,4'-diaminodiphenylmethane
4-Aminobiphenyl	4,4'-Methylenebis(2-chloroaniline)
2-Amino-4-nitrotoluene	2-Naphthylamine
Benzidine †	4,4'-Oxydianiline
4-Chloroaniline	4,4'-Thiodianiline
4-Chloro- <i>o</i> -toluidine	<i>o</i> -Toluidine
<i>p</i> -Cresidine	2,4,5-Trimethylaniline
4,4'-Diaminodiphenylmethane	<i>p</i> -Aminoazobenzene
2,4-Diaminotoluene	2-Aminobiphenyl
3,3'-Dichlorobenzidine †	<i>o</i> -Anisidine
3,3'-Dimethoxybenzidine †	3-Chloro- <i>o</i> -toluidine
3,3'-Dimethylbenzidine †	

RAC-08

100 µg/mL each in Pyridine

1 x 1 mL

2,4-Diaminoanisole

Note: 2,4-Diaminoanisole is introduced with the sulfate hydrate

Halo Acetic Acids

DIN 38407-25 Selected Halo

Acetic Acids

DIN38407-25

10 µg/mL in MtBE

1 x 1 mL

7 comps.

Bromochloroacetic acid
Dalapon
Dibromoacetic acid
Dichloroacetic acid
Bromoacetic acid
Chloroacetic acid
Trichloroacetic acid

EFSA for Isopropylthioxanthone (ITX)

Responding to the hazard found in Italy, France, Spain, and Portugal, AccuStandard has formulated Isopropylthioxanth-9-one (a photographical chemical found in baby milk in Italy).

2-Isopropylthioxanthone (ITX)

EFSA-ITX-01

1.0 mg/mL in Isooctane

1 x 1 mL

2-Isopropylthioxanth-9-one

Isopropylthioxanthone (ITX)

Mixed Isomers

EFSA-ITX-02

1.0 mg/mL in Isooctane

1 x 1 mL

2-and 4-Isopropylthioxanth-9-one

† Subject to oxidation



Pesticide Standards

The following Pesticide Standards are for German Regulations (for residue thresholds), Swiss Regulations (for components and contaminants in food), and DFG collected methods.

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	Tridiametofon
Dichlofluanid	Tridiamenol
Dicofol	Trifluarin
Endosulfan sulfate	Pentachloroaniline
Fenson	Procymidon
Folpet	Propyzamid
Imazalil	Quintozen
Iprodion	Vinclozolin

Pesticide Mix #3

AE-00012 1 x 1 mL
AE-00012-10ML 1 x 10 mL
At stated conc. (µg/mL) in Toluene 10 comps.

Captafol	200
Captan	100
Demethon-S-methyl	500
Demethon-S-methyl-sulfone	500
Dicofol	200
Pentachlorophenol	100
Tetrachlorvinphos	10
Trichlorfon	100
Tolyfluanid	100
Vamidithion	200

Pesticide Mix #4

AE-00013 1 x 1 mL
AE-00013-10ML 1 x 10 mL
At stated conc. (µg/mL) in Toluene 5 comps.

Cyproconazole	500
Hexaconazole	500
Penconazole	500
Tebuconazole	500
Tetrachlorvinphos	10

Pesticide Mix #5

AE-00014 1 x 1 mL
AE-00014-10ML 1 x 10 mL
At stated conc. (µg/mL) in Ethyl acetate 8 comps.

Atrazine	200
Cyanazine	200
Desmertryn	500
Metribuzin	500
Prometryne	500
Simazine	200
Terbutryn	500
Tetrachlorvinphos	10

Tetrachlorvinphos Surrogate / Internal Standard

AE-00047 1 x 1 mL
1000 µg/mL in Acetonitrile

Tetrachlorvinphos

Pesticide Mix #6

AE-00015 1 x 1 mL
AE-00015-10ML 1 x 10 mL
At stated conc. (µg/mL) in Toluene 8 comps.

Chlorpyrifos-methyl	100
Diazinon	100
Ethion	100
Etrifos	50
Iodofenphos	200
Malathion	100
Phosphamidon	200
Tetrachlorvinphos	10

Pesticide Mix #7

AE-00016 1 x 1 mL
AE-00016-10ML 1 x 10 mL
At stated conc. (µg/mL) in Toluene 8 comps.

Bromophos-methyl	100
Bromophos-ethyl	150
Fenitrothion	200
Methacryfos	150
Omethoate	150
Phosalone	100
Tetrachlorvinfos	10
Tolclofos-methyl	100

Pesticide Mix #8

AE-00017 1 x 1 mL
AE-00017-10ML 1 x 10 mL
At stated conc. (µg/mL) in Toluene:Acetone:Hexane (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
AE-00018-10ML 1 x 10 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
AE-00019-10ML 1 x 10 mL
At stated conc. (µg/mL) in Toluene 7 comps.

Benalaxyl	500
Carbaryl	500
Oxadixyl	500
Terbutylazine	250
Tetrachlorvinphos	10
Triadimefon	500
Triadimenol	500

**Pesticide Standards continued
on next page**

Pesticide Standards

The following Pesticide Standards are for German Regulations (for residue thresholds), Swiss Regulations (for components and contaminants in food), and DFG collected methods.

Pesticide Mix #11

AE-00020 1 x 1 mL
AE-00020-10ML 1 x 10 mL
 10 µg/mL each in Toluene 19 comps.

Aldrin	β-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 1 x 1 mL
AE-00021-10ML 1 x 10 mL
 At stated conc. (µg/mL) in Toluene 9 comps.

Carbophenithion	100
Disulfoton	150
Fenthion	100
Methamidophos	100
Phorate	150
Phorate sulfonate	100
Phorate sulfone	150
Tetrachlorvinphos	10
Thiomethon	100

Pesticide Mix #13

AE-00022 1 x 1 mL
AE-00022-10ML 1 x 10 mL
 At stated conc. (µg/mL) in Toluene 8 comps.

Chlorfenvinphos (CFVP)	100
Chlorpyrifos	100
Dichlorvos	100
Dimethoate	100
Heptenophos	100
Quinalphos	100
Tetrachlorvinphos	10
Triazophos	100

Pesticide Mix #14

AE-00023 1 x 1 mL
AE-00023-10ML 1 x 10 mL
 At stated conc. (µg/mL) in Toluene 10 comps.

Cyfluthrin	500
λ-Cyhalothrin	500
Cypermethrin	500
Deltamethrin	500
Dichloran	100
Fenvalerate	500
Pendimethalin	100
Permethrin	500
Tefluthrin	100
Tetrachlorvinphos	10

Regulations for drinking water and water used in food manufacturing, May 27, 1986, BGBl, I, S. 760.

Pesticide Mix #15

AE-00024 1 x 1 mL
AE-00024-10ML 1 x 10 mL
 0.02 µg/mL each in Ethyl acetate 33 comps.

Atrazine	Linuron
Bifenox	Pencycuron
Bromacil	Pendimethalin
Carbetamide	Prometryne
Chloridazo	Propazine
Chloroxuron	Metamitron
Chlorpropham	Metazachlor
Chlortoluron	Methabenzthiazuron
Crimidine	Methoprotryne
Cyanazine	Metobromuron
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	Lindane
Atrazine	MCPA *
Bentazone *	Mechlorprop *
Chlortofuron	Metazachlor
Cyanazine	Metobromuron
2,4-D *	Metoxuron
Dichlorprop *	Sebutylazin
1,3-Dichloropropene	Simazine
Endosulfan I	Terbutylazine
Endosulfan II	
Isoproturon	* Underivatized

Regulations - Test methods for organochlorine and organophosphorus compounds and pyrethroid
 Current Science and Technology, German Book of Medicine (1996).

Pesticide Mix #17

AE-00027 1 x 1 mL
AE-00027-10ML 1 x 10 mL
 10 µg/mL each in Toluene 14 comps.

Alachlor
Bromopropylate
Carbophenothion
Cypermethrin
Deltamethrin
Endosulfane sulfate
Fenvalerate
Methyl pentachlorophenyl sulfide
Pentachloraniline
cis-Permethrin
trans-Permethrin
Piperonyl butoxide
Pyrethrins
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 Standards

Pesticide Mix #20

AE-00050 1 x 1 mL
 AE-00050-10ML 1 x 10 mL
 10 µg/mL each in Ethyl acetate 20 comps.

Aldicarb	Isoproturon
Atrazine	γ-BHC
Bentazon	MCPA
Chlortoluron	MCPP acid
Cyanazine	Metazachlor
2,4-D	Metobromuron
Dichlorprop	Metoxuron
1,1-Dichloropropene	Sebutylazin
Endosulfan I	Simazine
Endosulfan II	Terbutylazine

Pesticide Mix #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 Acetonitrile 8 comps.

Atrazine	Metoxuron
Desethyl atrazine	Propazine
Bromacil	Simazine
Chloridazon	Terbutylazine

Pesticide Mix #23

AE-00053 1 x 1 mL
 AE-00053-10ML 1 x 10 mL
 10 µg/mL each in Acetonitrile 6 comps.

2,4-D	MCPA
2,4-DB	MCPB
Dichlorprop	MCPB acid

Pesticide Mix #24

AE-00054 1 x 1 mL
 AE-00054-10ML 1 x 10 mL
 At stated conc. (µg/mL) in Cyclohexane 6 comps.

Aldrin	0.2	α-BHC	0.15
p,p'-DDT	0.4	γ-BHC	0.15
Dieldrin	0.3	Heptachlor	0.2

Pesticide Mix #25

AE-00055 1 x 1 mL
 AE-00055-10ML 1 x 10 mL
 10 µg/mL each in Cyclohexane 4 comps.

α-BHC	γ-BHC
β-BHC	δ-BHC

Pesticide Mix #26

AE-00056 1 x 1 mL
 AE-00056-10ML 1 x 10 mL
 1.0 µg/mL each in Cyclohexane 5 comps.

α-BHC	δ-BHC
β-BHC	ε-BHC
γ-BHC	

Pesticide Mix #27

AE-00057 1 x 1 mL
 AE-00057-10ML 1 x 10 mL
 1.0 µg/mL each in Isooctane 13 comps.

α-BHC	p,p'-DDE
β-BHC	Dieldrin
γ-BHC	Endrin
δ-BHC	Heptachlor epoxide (isomer B)
o,p'-DDD	Methoxychlor
p,p'-DDD	Mirex
o,p'-DDE	



Custom Quotation Requests

Custom formulations can be requested by contacting
 Technical Service: techservice@accustandard.com or
 using our website AccuStandard.com.

See back of the catalog for detailed information

Pesticides

EN ISO 10695 Pesticide Mix

Water quality determination of selected organic nitrogen and phosphorous compound by GC.

ENISO10695-PEST 1 x 1 mL
10 µg/mL each in Acetone 12 comps.

Atrazine	Propazine
Cyanazine	Sebuthylazin
Metazachlor	Simazine
Parathion	Terbuthylazine
Methyl parathion	Trifluralin
Pendimethalin	Vinclozolin

EN ISO 11369 Pesticide Mix 20

Regulation DIN V 38407 Part 12 Method F12

AE-00031 1 x 1 mL
AE-00031-10ML 1 x 10 mL
10 µg/mL each in Ethyl acetate 17 comps.

Atrazine	Methabenzthiazuron
Chlortoluron	Metobromuron
Cyanazine	Metolachlor
Desethyl atrazine	Metoxuron
Hexazinone	Monolinuron
Isoproturon	Sebuthylazin
Karmex (Diuron)	Simazine
Linuron	Terbuthylazine
Metazachlor	

ISO 6468 Pesticide Standard

Water quality determination of certain organochlorine insecticides, polychlorine biphenyls and chlorobenzenes by GC after liquid-liquid extraction.

ISO6468-PEST 1 x 1 mL
10 µg/mL each in n-Hexane 19 comps.

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

DIN 38407-2 Pesticide Standard

Determination of water, waste water and sludge for low volatile halogenated hydrocarbons by GC.

DIN38407-2-PEST 1 x 1 mL
10 µg/mL each in n-Hexane 17 comps.

Aldrin	Endrin
p,p'-DDD	Heptachlor
o,p'-DDE	Heptachlor epoxide (Isomer A)
p,p'-DDE	Heptachlor epoxide (Isomer B)
o,p'-DDT	α-BHC
p,p'-DDT	β-BHC
Dieldrin	γ-BHC
Endosulfan I	Methoxychlor
Endosulfan II	

DIN V 38407-11 Pesticide Mix

Scope: Determination of plant protection agents in water, wastewater and sludge.

DINV38407-11-PST 1 x 1 mL
DINV38407-11-PST-PAK 5 x 1 mL
5 µg/mL each in Acetonitrile 21 comps.

Alachlor	Monuron
Atrazine	Parathion
Chlorfenvinphos	Pendimethalin
Chlortoluron	Propazine
Cyanazine	Sebuthylazin
2,4-D	Simazine
MCPA acid	2,4,5-T
Metazachlor	Terbuthylazine
Metobromuron	Trifluralin
Metolachlor	Vinclozolin
Metoxuron	

DIN 38407-14 Free Acid Mix

Examination of water, wastewater and sludge for phenoxyalkyl carbonic acids by GC and MS detection after solid-liquid extraction and derivatization.

DIN38407-14-ACID 1 x 1 mL
500 µg/mL each in n-Hexane 8 comps.

Mecoprop acid	Fenoprop acid
MCPA acid	MCPB acid
Dichloroprop acid	2,4,5-T acid
2,4-D acid	2,4-DB acid

DIN 38407-14 Methyl Esters Mix

Examination of water, wastewater and sludge for phenoxyalkyl carbonic acids by GC and MS detection after solid-liquid extraction and derivatization.

DIN38407-14-ME 1 x 1 mL
500 µg/mL each in n-Hexane 8 comps.

Mecoprop methyl ester
MCPA methyl ester
Dichloroprop methyl ester
2,4-D methyl ester
Fenoprop methyl ester
MCPB methyl ester
2,4,5-T methyl ester
2,4-DB methyl ester

DIN 38407-22 Glyphosate & AMPA

Examination of water, wastewater, and sludge for Glyphosate and Aminomethyl phosphonic acid (AMPA)

DIN38407-22 1 x 1 mL
100 µg/mL each in Water 2 comps.

Glyphosate
Aminomethylphosphonic acid

Phenols & Derivatives

DIN EN 12673 Chlorophenols

Scope: Determination of selected chlorophenols in water by GC

DINEN-12673 1 x 1 mL
At stated conc. (µg/mL) in Ethanol 19 comps.

2-Chlorophenol	30	2,3,5-Trichlorophenol	3
3-Chlorophenol	30	2,3,6-Trichlorophenol	3
4-Chlorophenol	30	2,4,5-Trichlorophenol	3
2,3-Dichlorophenol	4	2,4,6-Trichlorophenol	3
2,4-Dichlorophenol	4	3,4,5-Trichlorophenol	3
2,5-Dichlorophenol	4	2,3,4,5-Tetrachlorophenol	2
2,6-Dichlorophenol	4	2,3,4,6-Tetrachlorophenol	2
3,4-Dichlorophenol	4	2,3,5,6-Tetrachlorophenol	2
3,5-Dichlorophenol	4	Pentachlorophenol	1
2,3,4-Trichlorophenol	3		

DIN EN ISO 17495 Nitrophenols

Scope: determination of selected nitrophenols by solid-phase extraction and gas chromatography with mass spectrometric detection.

DINENISO-17495 1 x 1 mL
500 µg/mL each in Acetone 14 comps.

2,4-Dinitrophenol	2-Nitrophenol
2,5-Dinitrophenol	3-Nitrophenol
2,6-Dinitrophenol	4-Nitrophenol
2-Methyl-4,6-dinitrophenol	4-Methyl-2-nitrophenol
2,6-Dimethyl-4-nitrophenol	3-Methyl-4-nitrophenol
2,4-Dichlor-6-nitrophenol	5-Methyl-2-nitrophenol
2,6-Dichlor-4-nitrophenol	3-Methyl-2-nitrophenol

ENISO 9377 Determination of Hydrocarbon Oil Index

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

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

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

System Performance Standard of n-alkanes
ENISO9377-2-2 1 x 1 mL
 50 µg/mL each in Hexane 16 comps.

n-Decane	n-Hexacosane
n-Dodecane	n-Octacosane
n-Tetradecane	n-Triacontane
n-Hexadecane	n-Dotriacontane
n-Octadecane	n-Tetratriacontane
n-Eicosane	n-Hexatriacontane
n-Docosane	n-Octatriacontane
n-Tetracosane	n-Tetracontane

Stearyl Stearate Test Solution
ISO/DIS9377-4-2 1 x 10 mL
 2000 µg/mL in Cyclohexane
 Stearyl stearate

ISO/DIS 9377-4 Standard Mix Stock Solution
TPH-006-10X 1 x 1 mL
TPH-006-10X-PAK SAVE 5 x 1 mL
 5000 µg/mL each in Cyclohexane 2 comps.
 #2 Diesel fuel
 Mineral oil

Florisil Cartridge QC Standard Mix
ENISO9377-2-4 1 x 10 mL
 1000 µg/mL each hydrocarbon in Hexane 2 comps.
 #2 Diesel Fuel
 Mineral Oil

European Equivalents of Alcohol Oxidation Products in Automotive Engine Exhaust by HPLC of DNPH Derivatives

Carbonyl-DNPH Mix #1
AE-00043 1 x 1 mL
 20 µg/mL each in Acetonitrile, 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 Acetonitrile, 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 Acetonitrile
 Cyclohexanone-DNPH



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Regional Standards

Pacific Rim Methodologies

Japan Ministry of Health and Welfare Standards

Volatile Organic Solution

JMHW-001 1 x 1 mL
JMHW-001-PAK **SAVE** 5 x 1 mL
1000 µg/mL each in MeOH 23 comps.

Benzene
Bromodichloromethane
Bromoform
Carbon tetrachloride
Chloroform
Dibromochloromethane
1,4-Dichlorobenzene
1,2-Dichloroethane
1,1-Dichloroethene
cis-1,2-Dichloroethene
trans-1,2-Dichloroethene
Dichloromethane
1,2-Dichloropropane
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Tetrachloroethene
Toluene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
m-Xylene
o-Xylene
p-Xylene

Volatile Organic Solution

JMHW-002 1 x 1 mL
JMHW-002-PAK **SAVE** 5 x 1 mL
2000 µg/mL each in MeOH 16 comps.

Benzene
Bromodichloromethane
Bromoform
Carbon tetrachloride
Chloroform
Dibromochloromethane
1,2-Dichloroethane
1,1-Dichloroethene
cis-1,2-Dichloroethene
Dichloromethane
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Tetrachloroethene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene

Method of Interests

Japanese Methods JIS-K0311 and JIS-K0312
See EPA Method 1613 Dioxins & Furans

Volatile Organic Solution B

JMHW-003 1 x 1 mL
JMHW-003-PAK **SAVE** 5 x 1 mL
2000 µg/mL each in MeOH 7 comps.

1,4-Dichlorobenzene
trans-1,2-Dichloroethene
1,2-Dichloropropane
Toluene
m-Xylene
o-Xylene
p-Xylene

Tuning Solution/Surrogate

Standard Mixture

CLP-004-100X 1 x 1 mL
CLP-004-100X-PAK **SAVE** 5 x 1 mL
2.5 mg/mL in MeOH
p-Bromofluorobenzene

Japan Environmental Agency Standards

Volatile Organic Solution

JEAM-001 1 x 1 mL
JEAM-001-PAK **SAVE** 5 x 1 mL
1000 µg/mL each in MeOH 12 comps.

Benzene
Carbon Tetrachloride
1,1-Dichloroethene
cis-1,2-Dichloroethene
Dichloromethane
1,2-Dichloroethane
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Tetrachloroethene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene

Method Aldehydes as DNPH Derivatives

JEAM-002 1 x 1 mL
JEAM-002-PAK **SAVE** 5 x 1 mL
100 µg/mL each in Ethyl acetate 6 comps.

Acetaldehyde-DNPH
Butyraldehyde-DNPH
Isobutyraldehyde-DNPH
Isovaleraldehyde-DNPH
Propionaldehyde-DNPH
Pentanal-DNPH

Internal Standard

M-524-IS 1 x 1 mL
M-524-IS-PAK **SAVE** 5 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

1,2-Dichlorobenzene-d₄
Fluorobenzene

Drinking Water Odor Standard

ODOR-JDWOS 1 x 1 mL
100 µg/mL each in MeOH 2 comps.
(+/-) Geosmin
2-Methylisoborneol

Korean Drinking Water Regulations Standards

VOC Mix A

KDWR-001 1 x 1 mL
KDWR-001-PAK **SAVE** 5 x 1 mL
100 µg/mL each in MeOH 15 comps.

Benzene
Bromodichloromethane
Bromoform
Chloroform
Dibromochloromethane
Ethylbenzene
Dichloromethane
Phenol
Tetrachloroethene
Toluene
1,1,1-Trichloroethane
Trichloroethene
m-Xylene
p-Xylene
o-Xylene

VOC Mix B

KDWR-002 1 x 1 mL
KDWR-002-PAK **SAVE** 5 x 1 mL
100 µg/mL each in MeOH 8 comps.

Bromodichloromethane
Bromoform
Chloroform
Dibromochloromethane
Dichloromethane
Tetrachloroethene
1,1,1-Trichloroethane
Trichloroethene

Pesticide Mix

KDWR-003 1 x 1 mL
KDWR-003-PAK **SAVE** 5 x 1 mL
1000 µg/mL each in MeOH 5 comps.

Carbaryl
Diazinon
Fenitrothion
Malathion
Parathion

Regional Standards

State Methods



California Methods

California Air Resources Board Method 1004

DHPH Derivatives

M-1004 1 x 1 mL
At stated conc. (µg/mL) in AcCN 13 comps.

M-1004-10X 1 x 1 mL
At 10 times the stated conc. (µg/mL) in AcCN 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 AcCN 7 comps.

Acetaldehyde-DNPH	1000	Butyraldehyde-DNPH	500
Acetone-DNPH	500	Formaldehyde-DNPH	1500
Acrolein-DNPH	500	Propionaldehyde-DNPH	500
Benzaldehyde-DNPH	500		

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

Reference Gas Oil Sample

RGS-001 1 x 1 mL
Hydrocarbon Mixture (boiling point range 250-850°F)

Florida Methods PAH 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 5 x 1 mL
At stated conc. (mg/mL) in AcCN 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 5 x 1 mL
At stated conc. (mg/mL) in AcCN 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 5 x 1 mL
0.5 mg/mL each in AcCN 18 comps.

M-8310-FL-SET 18 x 1 mL

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

Polynuclear Aromatic Hydrocarbons (HPLC)

M-8310-QC-ATI 1 x 1 mL
M-8310-QC-ATI-PAK 5 x 1 mL
At stated conc. (µg/mL) in AcCN 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



Regional Standards

State Methods

Minnesota Method 465-D

List of Volatiles

Liquids

M-502A-R
M-502A-R-PAK
0.2 mg/mL each in MeOH

SAVE

1 x 1 mL
5 x 1 mL
54 comps.

Benzene
Bromobenzene
Bromochloromethane
Bromodichloromethane
Bromoform
n-Butylbenzene
sec-Butylbenzene
t-Butylbenzene
Carbon tetrachloride
Chlorobenzene
Chloroform
2-Chlorotoluene
4-Chlorotoluene
Dibromochloromethane
1,2-Dibromo-3-chloropropane
1,2-Dibromoethane
Dibromomethane
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
cis-1,2-Dichloroethene
trans-1,2-Dichloroethene
1,2-Dichloropropane
1,3-Dichloropropane

2,2-Dichloropropane
1,1-Dichloropropene
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Ethylbenzene
Hexachlorobutadiene
Isopropylbenzene (Cumene)
p-Isopropyltoluene (*p*-Cymene)
Methylene chloride
Naphthalene
n-Propylbenzene
Styrene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethene
Toluene
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
1,2,3-Trichloropropane
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
o-Xylene
m-Xylene
p-Xylene

Certificate will reflect
actual *cis/trans* ratio

Gases

M-465B-10X
M-465B-10X-PAK
0.2 mg/mL each in MeOH

SAVE

1 x 1 mL
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-*t*-butyl ether
Tetrahydrofuran
Trichlorotrifluoroethane

Method 465-D Volatiles Set

M-465D-SET * 3 x 1 mL
M-465D-SET-PAK * **SAVE** 5 x (3 x 1 mL)
M-502A-R, M-465B-10X, M-465D-ADD-R

* ColdPAK required to maintain integrity of product.

Pesticides & Herbicides

List 1 - Pesticide Standard

MDA-PEST-01-R1
MDA-PEST-01-R1-PAK
500 µg/mL each in CH₂Cl₂

SAVE

1 x 1 mL
5 x 1 mL
22 comps.

Acetochlor Desethyl atrazine Ethalfluralin
Alachlor Dimethenamid Metolachlor
Atrazine Dursban Metribuzin
Atrazine-desisopropyl Dyfonate Pendimethalin
Cyanazine EPTC

Phorate Simazine
Propachlor Terbufos
Prometon Triallate
Propazine Trifluralin

List 2 - Herbicide Acids Standards

MDA-HERB-01 1 x 1 mL
At stated conc. (mg/mL) in Acetone 9 comps.

2,4-D	0.1	Silvex	0.1	MCPA	10
2,4-DB	0.1	Bentazon	0.1	Picloram	0.1
2,4,5-T	0.1	Dicamba	0.1	Triclopyr	0.1

Butylate

P-088S-10X
1000 µg/mL in MeOH

1 x 1 mL

Technical Note

This expanded analyte list for Method 465-D contains all the analytes in one multi-component standard at a high concentration. This eliminates the need to combine more than one standard to cover the complete analyte list. The "Butylate" pesticide in conjunction with the MDA Method 465 formulation has all the required analytes for the Wisconsin DATCP pesticide program. Since many labs perform work in both Minnesota and Wisconsin, a single calibration curve can be used to monitor analytes covered by both methods.

Wisconsin DNR VOC Mixture

S-989
2.0 mg/mL each in MeOH

1 x 1 mL
52 comps.

Benzene
Bromobenzene
Bromodichloromethane
n-Butylbenzene
sec-Butylbenzene
tert-Butylbenzene
Carbon tetrachloride
Chlorobenzene
Chlorodibromomethane
Chloroethane
Chloroform
Chloromethane
2-Chlorotoluene
4-Chlorotoluene
1,2-Dibromo-3-chloropropane
1,2-Dibromoethane
1,2-Dichlorobenzene
1,3-Dichlorobenzene

1,4-Dichlorobenzene
Dichlorodifluoromethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
cis-1,2-Dichloroethene
trans-1,2-Dichloroethene
1,2-Dichloropropane
1,3-Dichloropropane
2,2-Dichloropropane
Diisopropyl ether
Ethylbenzene
Hexachlorobutadiene
Isopropylbenzene
p-Isopropyltoluene
Methylene chloride
Methyl *tert*-butyl ether

Naphthalene
n-Propylbenzene
1,1,2,2-Tetrachloroethane
Tetrachloroethene
Toluene
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Trichlorofluoromethane
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
Vinyl chloride
o-Xylene
m-Xylene
p-Xylene



Biocides are used in all types of 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 recently revised and is now 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 went into effect in September 2013 and classifies biocides into 22 biocide product types, grouped into four main areas.

MAIN GROUP I: Disinfectants and general biocidal products

Product-type

- 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



Biocides in fracking fluids

see page 305

The underground gas and petroleum production enhancement process of fracking has generated much attention. There is concern about potential short and long-term adverse health effects and environmental contamination associated with the process.

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.

Biocide Standards Reference Guide



Download
Biocide Guide
from our website

MAIN GROUP II: Preservatives

Product-type

- 6: In-can preservatives
- 7: Film preservatives
- 8: Wood preservatives
- 9: Fiber, leather, rubber and 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

Product-type

- 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

Product-type

- 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
Acetamiprid	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
1,2-Benzisothiazol-3(2H)-one	2634-33-5	I, II, IV / 2, 6, 7, 9, 10, 11, 12, 13, 22	BIOC-082N	1 mL
Benzoic acid	65-85-0	I, II, IV / 1, 2, 3, 4, 6, 11, 20	19.3 Wt.% in Water	
Benzyl benzoate	120-51-4	I, III / 2, 18	BIOC-006N-25MG	25 mg
Benzyltrimethylammonium chloride	139-07-1	I, II / 2, 4, 6, 7, 9, 11, 12	BIOC-067N	100 mg
2-Benzyl-4-chlorophenol	120-32-1	I, II / 1, 2, 3, 4, 6	BIOC-197N	10 mg
			BIOC-017N	100 mg

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Biocides

Biocide Standards

Compound	CAS No.	Group / Uses	Cat. No.	Unit
Bifenthrin	82657-04-3	II, III / 8, 18	BIOC-161N-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	25 mg
Busan (TCMTB)	21564-17-0	I, II / 2, 4, 6, 7, 9, 10, 11, 12, 13	BIOC-097S-CN	1 mL
			100 µg/mL in Acetonitrile	
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
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
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-162S	1 mL
			100 µg/mL in Methanol	
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
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	
Diffubenzuron	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



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Compound	CAS No.	Group / Uses	Cat. No.	Unit
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 butylacetecylaminopropionate	52304-36-6	III / 18	BIOC-217S	1 mL
Ethylene oxide	75-21-8	I, IV / 2, 20	100 µg/mL in Methanol BIOC-056S-TP	1 mL
Etofenprox	80844-07-1	I, II, III / 2, 3, 8, 18	5 mg/mL in Isooctane BIOC-106N-10MG	10 mg
Fenitrothion	122-14-5	III / 18	BIOC-191S	1 mL
Fenoxycarb	72490-01-8	II / 8	100 µg/mL in Methanol 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
Flufenoxuron	101463-69-8	II, III / 8, 18	100 µg/mL in Methanol 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-016S-W	1 mL
Glycolic acid	79-14-1	I, II / 2, 3, 4, 12	50% wt. in Water 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
2-Hydroxy-4-isopropyl-2,4,6-cycloheptatrien-1-one	499-44-5	II / 10	100 µg/mL in Methanol BIOC-167N	100 mg
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	1 mL
Imazalil	35554-44-0	I, II, IV / 2, 3, 4, 13, 20	100 µg/mL in Acetonitrile BIOC-099N-10MG	10 mg
Imidacloprid	138261-41-3	III / 18	BIOC-230N-10MG	10 mg
Imiprothrin	72963-72-5	III / 18	BIOC-231S-CN	1 mL
Iodine	7553-56-2	I, II, IV / 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 22	100 µg/mL in Acetonitrile 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
Lauric 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
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	1 mL
2-Mercaptobenzothiazole	149-30-4	I, II / 2, 7, 9, 11, 12, 13	100 µg/mL in Acetonitrile 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	1 mL
Methyl anthranilate	134-20-3	III / 19	100 µg/mL in Methanol BIOC-195N	100 mg
N,N'-Methylenebis(morpholine)	5625-90-1	II / 6, 9, 11, 13	BIOC-129S	1 mL
Methylene dithiocyanate	6317-18-6	II, IV / 6, 7, 9, 10, 11, 12, 13, 22	100 µg/mL in Methanol 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
Nabam	142-59-6	I, II / 2, 4, 6, 9, 10, 11, 12, 13	BIOC-075N-10MG	10 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	1 mL
Peracetic acid	79-21-0	I, II / 1, 2, 3, 4, 5, 6, 11, 12	100 µg/mL in Methanol BIOC-011N	100 mg

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Compound	CAS No.	Group / Uses	Cat. No.	Unit
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 dimethyl dithiocarbamate	128-03-0	I, II / 2, 4, 6, 9, 10, 11, 12, 13	BIOC-069N-50MG	50 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	1 mL
			100 µg/mL in Methanol	
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
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	100 mL
			1000 µg/mL in 2-5% Nitric acid	
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
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
Tebuconazol	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
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
			100 µg/mL in Acetonitrile	
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 pyrrithione	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

Methods Other Than EPA

Halobenzoquinone, Nonylphenol, Octylphenol Ethoxylates, F-List

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.

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

Compound	Each at 10 µg/mL in AcCN, 1 mL	
	CAS	Cat. No.
3,4,5,6-Tetrabromo-1,2-benzoquinone	2435-54-3	HBQ-005S
2,6-Dibromo-3,5-dimethyl-1,4-benzoquinone	87405-27-4	HBQ-006S
2,6-Dibromo-3-chloro-5-methyl-1,4-benzoquinone		HBQ-007S

ASTM D7065-06 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 CH ₂ Cl ₂			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 CH ₂ Cl ₂			2 comps.
Acenaphthene-d ₁₀		Phenanthrene-d ₁₀	

Nonylphenol Target Component Spike Standard

M-1626-S			1 x 1 mL
At stated conc. (µg/mL) in MeOH			5 comps.
Nonylphenol	160	4-tert-Octylphenol	32
Nonylphenol monoethoxylate	320	Bisphenol A	32
Nonylphenol diethoxylate	640		

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	

Bisphenol A (BPA)

M-1626-01S			1 x 1 mL
1000 µg/mL in MeOH			

ASTM D7485 Nonylphenols

Nonylphenols in Environmental Water Set

D-7485-SET			5 x 1 mL
2500 µg/mL each in AcCN:MeOH (90:10), * except (50:50)			7 comps.
Nonylphenol	D-7485-01 *		1 mL
Nonylphenol monoethoxylate	D-7485-02		1 mL
Nonylphenol diethoxylate	D-7485-03		1 mL
Octylphenol	D-7485-04		1 mL
2-Bromo-4-(1,1,3,3-tetramethylbutyl)phenol	D-7485-SS		1 mL

Alkyl-Phenol-Metabolites

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

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	m-Xylene	
n-Butanol	Ethyl ether	o-Xylene	
Cyclohexanone	Methyl isbutyl ketone	p-Xylene	
Ethyl acetate			

Additional Alcohol Solvents

FL-OADD			1 x 1 mL
2.0 mg/mL each in Water			3 comps.
Ethanol	Isopropanol	Methanol	

F004 List Component Mixes

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

Methods Other Than EPA

ASTM and USP 467

D7598 Analysis for Thiodiglycol

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

D7599 Analysis for Ethanolamines

ASTM Ethanolamine Standard

D-7599 1 x 1 mL
50 µg/mL each in MeOH 5 comps.
Diethanolamine N-Ethyldiethanolamine
Triethanolamine Diethanolamine-d₃
N-Methyldiethanolamine

ASTM Ethanolamine Surrogate Standard

D-7599-SS 1 x 1 mL
200 µg/mL in MeOH
Diethanolamine-d₃

D7600 Analysis for Carbamates

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

D7645 Analysis for Carbamates

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-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 Carbamate Surrogate Std.

D-7645-SS 1 x 1 mL
D-7645-SS-PAK **SAVE** 5 x 1 mL
100 µg/mL in MeOH
Carbofuran-d₃

ASTM D5837 Furanic Compound Extraction in Electrical Insulating Liquids by HPLC

Furanic Compound Extraction Standard

D-5837-01 1 x 1 mL
1000 µg/mL each in AcCN 5 comps.
2-Acetylfuran 5-(Hydroxymethyl)-2-furaldehyde
2-Furaldehyde 5-Methylfurfural
Furfuryl alcohol

Furanic Compound Calibration Standard

D-5837-02 1 x 1 mL
1000 µg/mL each in Toluene 5 comps.
2-Acetylfuran 5-(Hydroxymethyl)-2-furaldehyde
2-Furaldehyde 5-Methylfurfural
Furfuryl alcohol

USP / National Formulary 467 Residual Solvent Standards

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
cis-1,2-Dichloroethene 4.7
trans-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
m-Xylene 6.5
o-Xylene 1.0
p-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

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
Acetic acid
Formic acid

USP 467 Cumene Standard

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

CAS Number Index

Check Digit Verification of CAS Registry Numbers

A CAS Registry Number® includes up to 10 digits which are separated into 3 groups by hyphens. The first part of the number, starting from the left, has 2 to 7 digits; the second part has 2 digits. The final part consists of a single check digit.

The check digit is developed by following a standard calculation shown below. Use it to see if you have a valid CAS Registry Number. If the CAS number is represented in the general format of:

$$N9 \dots N4N3 - N2N1 - R$$

Where N represents a sequential number and R represents the check digit. Using the following formula:

$$9(N9) + \dots + 4(N4) + 3(N3) + 2(N2) + 1(N1) = Q$$

If you divide Q by 10, the remainder should equal the check digit.

For example: 74070-46-5

$$7(7) + 6(4) + 5(0) + 4(7) + 3(0) + 2(4) + 1(6) = 49 + 24 + 0 + 28 + 0 + 8 + 6 = 115$$

Dividing 115 by 10 is 11 with a remainder of 5 – the check digit (R) is equal to 5 so this is a valid CAS number.

CAS Registry Number is a Registered Trademark of the American Chemical Society.

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Catalog Number Index

X

Safety, Storage, Packaging

Safety

All products come with Safety Data Sheets (SDS) and Certificates of Analysis (COA) which are also available on AccuStandard.com.



GHS-07

- Irritant
- Skin Sensitizer
- Acute toxicity (harmful)
- Narcotic Effects
- Respiratory Tract Irritant



GHS-05

- Corrosives
- Skin corrosion/burns
- Eye Damage
- Corrosive to Metals



GHS-02

- Flammables
- Self Reactives
- Pyrophorics
- Self-Heating
- Emits Flammable Gas
- Organic Peroxides



GHS-06

- Acute Toxicity (fatal or toxic)



GHS-03

- Oxidizers



GHS-08

- Carcinogen
- Respiratory Sensitizer
- Reproductive Toxicity
- Mutagenicity
- Aspiration Toxicity



GHS-09

- Aquatic Toxicity

Storage

Expiration dates are determined by short-term and long-term stability studies, experience and knowledge of chemical interactions. As part of our long-term studies, standards are analyzed at the end of their assigned period and sometimes can be recertified for an additional length of time.

All products come with storage conditions listed on the label of the ampule or bottle. Some chemical formulations require refrigeration or freezer storage to inhibit adverse reactions among the components. It is imperative that these conditions are followed to preserve the integrity of the material.

Organic Products (Usage, Handling)

Amber ampules are used to ensure the integrity of the contents. The ampule contains at least 120% of the stated volume of a solution, allowing easy transfer. Transfer the required amount using a pipet or clean gastight syringe. Excess solution can be stored in a tightly capped vial.

Smudgeproof, tear and solvent resistant *



Organic 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.

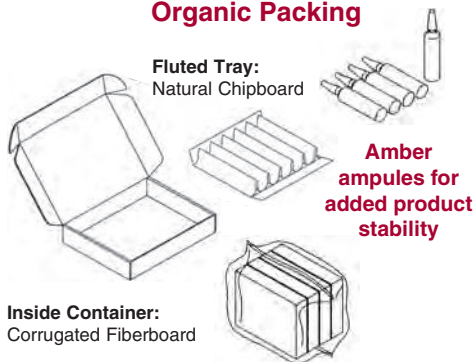
Part Two duplicates required information for labeling transfer vial(s) with correct information.



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

For your protection an ampule opener is included with every order.

Organic Packing



Fluted Tray:
Natural Chipboard

Amber ampules for added product stability

Inside Container:
Corrugated Fiberboard

Cushioning/Absorbent:
Natural Kraft Fiber Material

Inorganic Products (Usage, Handling)

- Shake bottle prior to use and do not pipette directly out of the bottle.
- Use only cleaned Class A volumetric glassware.
- Keep bottles tightly capped when not being used and store under normal laboratory conditions.

ColdPAK *

ColdPAKs 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 "ColdPAK" (a styrofoam container that has an ice pack in it). The purpose is to delay the exposure of the product to higher temperatures, and NOT to keep the product frozen. The product will not immediately go out of specifications when the ColdPAK melts or when the product reaches room temperature. It simply delays exposure to higher temperatures.

Fast and efficient shipping

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.

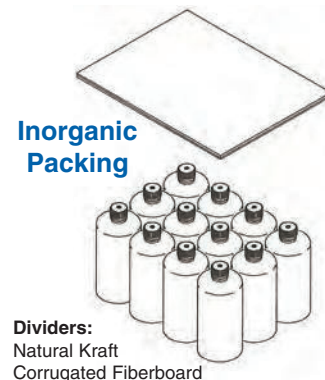
Made with recyclable and biodegradable materials.



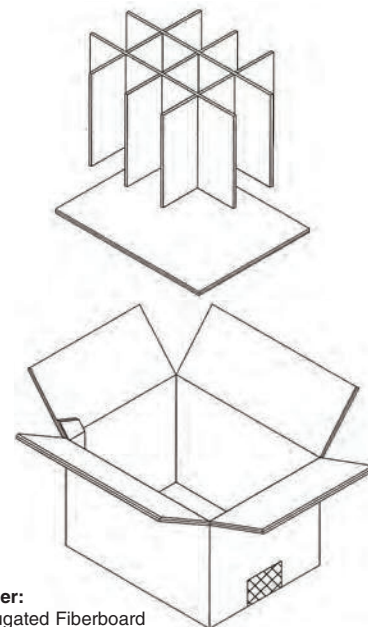
Shipping Container:
Natural Kraft Corrugated Fiberboard

Shipping Container:
Natural Kraft Corrugated Fiberboard

Inorganic Packing



Dividers:
Natural Kraft
Corrugated Fiberboard



Technical Reference

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

For technical information including: methods, papers, FAQs and helpful hints



Visit our website
AccuStandard.com

Alchemist Art Gallery

About the cover



The Alchemist

Francois-Marius Granet
French, 19th century,
Courtesy of the Science History
Institute Collections, and
Roy Eddleman
Photograph by Will Brown

A bearded man reading a book is standing in a great vaulted interior. A large window illuminates the room, with glassware sparsely placed on the shelves.

Past Alchemist covers



**Alchemist artwork available,
please inquire.**

Periodic Table of Elements

Periodic Table of Elements

Atomic Weight

Atomic Number

Element Symbol

Element Name

Electron Configuration

Periodic Table of Elements

Physical State

Block

Group

Period

Block

Atomic Weight

Atomic Number

Element Symbol

Element Name

Electron Configuration

Periodic Table of Elements

Physical State

Block

Group

Period

Block

1

1A

H

Hydrogen

1.00794

1

1

1s¹

Gas

s

1

2

2A

He

Helium

4.002602

2

2

1s²

Gas

s

1

3

3A

Li

Lithium

6.941

3

3

1s² 2s¹

Solid

s

1

4

4A

Be

Beryllium

9.012182

4

4

1s² 2s²

Solid

s

2

5

5A

B

Boron

10.811

5

5

1s² 2s² 2p¹

Solid

p

13

6

6A

C

Carbon

12.0107

6

6

1s² 2s² 2p²

Solid

p

14

7

7A

N

Nitrogen

14.00643

7

7

1s² 2s² 2p³

Gas

p

15

8

8A

O

Oxygen

15.999

8

8

1s² 2s² 2p⁴

Gas

p

16

9

9A

F

Fluorine

18.998403

9

9

1s² 2s² 2p⁵

Gas

p

17

10

10A

Ne

Neon

20.1797

10

10

1s² 2s² 2p⁶

Gas

p

18

11

11A

Na

Sodium

22.989769

11

11

1s² 2s² 2p⁶ 3s¹

Solid

s

1

12

12A

Mg

Magnesium

24.304

12

12

1s² 2s² 2p⁶ 3s²

Solid

s

2

13

13A

Al

Aluminum

26.981538

13

13

1s² 2s² 2p⁶ 3s² 3p¹

Solid

p

13

14

14A

Si

Silicon

28.08558

14

14

1s² 2s² 2p⁶ 3s² 3p²

Solid

p

14

15

15A

P

Phosphorus

30.973762

15

15

1s² 2s² 2p⁶ 3s² 3p³

Solid

p

15

16

16A

S

Sulfur

32.06

16

16

1s² 2s² 2p⁶ 3s² 3p⁴

Solid

p

16

17

17A

Cl

Chlorine

35.453

17

17

1s² 2s² 2p⁶ 3s² 3p⁵

Gas

p

17

18

18A

Ar

Argon

39.948

18

18

1s² 2s² 2p⁶ 3s² 3p⁶

Gas

p

18

19

19A

K

Potassium

39.0983

19

19

1s² 2s² 2p⁶ 3s² 3p⁶ 4s¹

Solid

s

1

20

20A

Ca

Calcium

40.078

20

20

1s² 2s² 2p⁶ 3s² 3p⁶ 4s²

Solid

s

2

21

3A

Sc

Scandium

44.955912

21

3

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹

Solid

d

3

22

4A

Ti

Titanium

47.88

22

4

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d²

Solid

d

4

23

5A

V

Vanadium

50.9415

23

5

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d³

Solid

d

5

24

6A

Cr

Chromium

51.9961

24

6

1s² 2s² 2p⁶ 3s² 3p⁶ 4s¹ 3d⁵

Solid

d

6

25

7A

Mn

Manganese

54.938044

25

7

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d⁵

Solid

d

7

26

8A

Fe

Iron

55.845

26

8

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d⁶

Solid

d

8

27

9A

Co

Cobalt

58.933195

27

9

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d⁷

Solid

d

9

28

10A

Ni

Nickel

58.6934

28

10

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d⁸

Solid

d

10

29

11A

Cu

Copper

63.546

29

11

1s² 2s² 2p⁶ 3s² 3p⁶ 4s¹ 3d¹⁰

Solid

d

11

30

12A

Zn

Zinc

65.38

30

12

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰

Solid

d

12

31

13A

Ga

Gallium

69.723

31

13

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 4p¹

Solid

p

13

32

14A

Ge

Germanium

72.64

32

14

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 4p²

Solid

p

14

33

15A

As

Arsenic

74.9216

33

15

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 4p³

Solid

p

15

34

16A

Se

Selenium

78.96

34

16

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 4p⁴

Solid

p

16

35

17A

Br

Bromine

79.904

35

17

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 4p⁵

Liquid

p

17

36

18A

Kr

Krypton

83.80

36

18

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 4p⁶

Gas

p

18

37

19A

Rb

Rubidium

85.4678

37

19

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s¹

Solid

s

1

38

20A

Sr

Strontium

87.62

38

20

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s²

Solid

s

2

39

3A

Y

Yttrium

88.90584

39

3

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f¹

Solid

f

3

40

4A

Zr

Zirconium

91.224

40

4

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f²

Solid

d

4

41

5A

Nb

Niobium

92.90638

41

5

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f⁴ 5d¹

Solid

d

5

42

6A

Mo

Molybdenum

95.94

42

6

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s¹ 4f⁵ 5d⁵

Solid

d

6

43

7A

Tc

Technetium

98

43

7

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f⁶ 5d⁵

Solid

d

7

44

8A

Ru

Ruthenium

101.07

44

8

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s¹ 4f⁷ 5d⁷

Solid

d

8

45

9A

Rh

Rhodium

102.9055

45

9

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s¹ 4f⁸ 5d⁷

Solid

d

9

46

10A

Pd

Palladium

106.42

46

10

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s¹ 4f⁹ 5d⁸

Solid

d

10

47

11A

Ag

Silver

107.8682

47

11

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s¹ 4f¹⁰ 5d⁹

Solid

d

11

48

12A

Cd

Cadmium

112.4118

48

12

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f¹⁰ 5d¹⁰

Solid

d

12

49

13A

In

Indium

114.818

49

13

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f¹⁰ 5d¹⁰ 6s¹

Solid

p

13

50

14A

Sn

Tin

118.710

50

14

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f¹⁰ 5d¹⁰ 6s²

Solid

p

14

51

15A

Sb

Antimony

121.757

51

15

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f¹⁰ 5d¹⁰ 6s² 5p³

Solid

p

15

52

16A

Te

Tellurium

127.6

52

16

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f¹⁰ 5d¹⁰ 6s² 5p⁴

Solid

p

16

53

17A

I

Iodine

126.905

53

17

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f¹⁰ 5d¹⁰ 6s² 5p⁵

Solid

p

17

54

18A

Xe

Xenon

131.29

54

18

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f¹⁰ 5d¹⁰ 6s² 5p⁶

Gas

p

18

55

19A

Cs

Cesium

132.90545

55

19

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f¹⁰ 5d¹⁰ 6s² 6p¹

Solid

s

1

56

20A

Ba

Barium

137.327

56

20

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f¹⁰ 5d¹⁰ 6s² 6p²

Solid

s

2

57

3A

La

Lanthanum

138.90547

57

3

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f¹⁰ 5d¹⁰ 6s² 6p² 5f¹

Solid

f

3

58

4A

Hf

Hafnium

178.49

58

4

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f¹⁰ 5d¹⁰ 6s² 6p² 5f²

Solid

d

4

59

5A

Ta

Tantalum

180.94788

59

5

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f¹⁰ 5d¹⁰ 6s² 6p² 5f³

Solid

d

5

60

6A

W

Tungsten

183.84

60

6

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f¹⁰ 5d¹⁰ 6s² 6p² 5f⁴

Solid

d

6

61

7A

Re

Rhenium

186.207

61

7

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f¹⁰ 5d¹⁰ 6s² 6p² 5f⁵

Solid

d

7

62

8A

Os

Osmium

190.23

62

8

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f¹⁰ 5d¹⁰ 6s² 6p² 5f⁶

Solid

d

8

63

9A

Ir

Iridium

192.222

63

9

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f¹⁰ 5d¹⁰ 6s² 6p² 5f⁷

Solid

d

9

64

10A

Pt

Platinum

195.084

64

10

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f¹⁰ 5d¹⁰ 6s² 6p² 5f⁸

Solid

d

10

65

11A

Au

Gold

196.96657

65

11

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f¹⁰ 5d¹⁰ 6s² 6p² 5f⁹

Solid

d

11

66

12A

Hg

Mercury

200.59

66

12

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f¹⁰ 5d¹⁰ 6s² 6p² 5f¹⁰

Liquid

d

12

67

13A

Tl

Thallium

204.38

67

13

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f¹⁰ 5d¹⁰ 6s² 6p² 5f¹¹

Solid

p

13

68

14A

Pb

Lead

207.2

68

14

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f¹⁰ 5d¹⁰ 6s² 6p² 5f¹²

Solid

p

14

69

15A

Bi

Bismuth

208.9804

69

15

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f¹⁰ 5d¹⁰ 6s² 6p² 5f¹³

Solid

p

15

70

16A

Po

Polonium

209

70

16

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f¹⁰ 5d¹⁰ 6s² 6p² 5f¹⁴

Solid

p

16

71

17A

At

Astatine

210

71

17

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f¹⁰ 5d¹⁰ 6s² 6p² 5f¹⁵

Solid

p

17

72

18A

Rn

Radon

222

72

18

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f¹⁰ 5d¹⁰ 6s² 6p² 5f¹⁶

Gas

p

18

73

19A

Fr

Francium

223

73

19

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f¹⁰ 5d¹⁰ 6s² 6p² 5f¹⁷

Solid

s

1

74

20A

Ra

Radium

226

74

20

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d¹⁰ 5s² 4f¹⁰ 5d¹⁰ 6s² 6p² 5f¹⁸

Solid

s

2

75

3A

Ac

Actinium

227

75

3

Ac Th | Pa | U | Np | Pu | Am | Cm | Bk | Cf | Es | Fm | Md | No | Lr |

(20 x 20 inch laminated poster)

With references, such as unit conversions, general constants, element symbols, atomic weights and solvent miscibility table with densities and boiling points.

**Periodic Table poster available,
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- Analytes (name and CAS #)
- Concentration
- Quantity
- Application/Instrumentation

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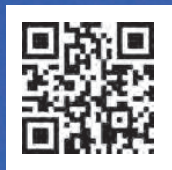
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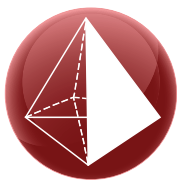
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