



AccuStandard®

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Custom Services

- Synthesis
- Formulations
- Packaging
- Bulk Quantity Requirements

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About the Cover

Alchemist in his Workshop

David Teniers II (Antwerp 1610-1690)

Courtesy of the Chemical Heritage Foundation Collections, and Roy Eddleman, Photograph by Will Brown

This painting is a depiction of an alchemist working at the bellows in his cluttered laboratory. In this work, the mixture of the magical aspects of alchemy (the hanging animal) mix with the more practical aspects of chemistry (the many distillation units near the hearth). Although alchemists were often looked upon as "crackpots" or charlatans, many of their experiments and theories led to modern chemistry.



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New Products in this Catalog

- Phthalates **17 NEW**
- Phosphate Flame Retardants (PFRs)
- PBDE Congeners (209)
- PBDE Metabolites **25 NEW**
- PBCDE Metabolites
- Biocides (EU Directive)
- Pesticides **Over 125 NEW**
- Neonicotinoids
- Plastic Additives **20 NEW**
- Bisphenol Analogs
- Halobenzoquinones
- Imidazoles
- EN14105, EN15721 Biofuels



Visit our
website for
the latest
New
Products

www.accustandard.com



3 Year Minimum Shelf Life on
Single Element ICP, ICP/MS and AA

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About Us

AccuStandard, founded in 1986, is a leading manufacturer of Certified Reference Materials (CRMs). The company started in a business incubator co-sponsored by Yale University and The City of New Haven at the former site of Olin Chemical Company in New Haven, Connecticut, USA. Outgrowing that facility, the company moved across town in 1998 into a fully modernized facility of 37,000 square feet of laboratories, office and storage space. AccuStandard offers a comprehensive selection of organic, inorganic and petroleum reference standards for chemical analysis, serving a global market.

AccuStandard ships products to over 130 countries and maintains a distributor network in 85 of those countries. Since AccuStandard's inception the product line has grown to include over 12,000 Reference Standard products and twice that number of special formulations which have been developed for specific customer needs. Standards include those for EPA Methods, Pesticide Residue Screening, Flame Retardants, Biofuels, Plastic Additives, Dyes, Explosives, UOP and ASTM Methods and up-graded products for PIANO and Physical Property analyses.

The Company is renowned for its recognition and speedy introduction of standards to the market place. The Company's unparalleled Synthesis Department provides important and unique products and product lines, including synthesis of all 209 PCB and PBDE congeners, as well as many halogenated dioxins and dibenzofurans, PAHs and pesticides.

Among the more recent introductions are the hydroxy and methoxy PBDE congeners as well as mixed bromo/chloro hydroxy and methoxy diphenyl ethers, fluorinated PBDE congeners (used as internal standards), organophosphate flame retardants, biofuels, plastic additives (AccuStandard authored a CRC Press Handbook), EPA Method 535 pesticide derivatives and previously unavailable explosives.

AccuStandard's quality system is certified to ISO 9001 and is accredited to ISO Guide 34 and ISO/IEC 17025 as a Reference Material Producer for the manufacture of Certified Reference Materials (CRMs). AccuStandard owes its success in large part to the excellence, loyalty and dedication of its staff. We look forward to serving our customers for many years to come.

AccuStandard, At Your Service



Synthesis



Organic and Inorganic Production



*Organic and Inorganic
Quality Control*



Assembly / Shipping

Quality Control

Organic

- GC/MS
- GC-FID
- GE-ECD
- LC/MS/MS
- HPLC
- Sulfur analyzer

Dedicated scientists responsible for ensuring our products meet the high quality demands of our wide spectrum of clients.

Our years of experience are backed with state-of-the-art analytical instrumentation



Inorganic

- ICP-MS
- ICP
- Ion Chromatography



**You Set the Standards
We make them!®**

Custom Formulations

Fast Turnaround

**25-Plus Years Custom
Formulation Experience**

**Custom Standards are a cost
and time saving alternative**



Custom QC options

1. Gravimetric/Volumetric Certification:

Each purity 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 COA 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.



Private Labeling / OEM

**Manufactured and Tested to meet your
specifications**



Auto Filling/Sealing Machine: Ampule sizes 0.2 mL - 20 mL / Quantities 500 to 500K

Contact Technical Service for inquiries

Quality System

ISO Guide 34 • ISO/IEC 17025 • ISO 9001

AccuStandard has a broad range of products including all 209 **PCBs**, all 209 **PBDEs** and **sulfurs** within the scope of accreditation for ISO Guide 34 and 17025. Since AccuStandard serves a diverse group of customers and industries with a broad-spectrum of quality standards, compliance with the QC requirements set by our accreditations ensures that AccuStandard products are manufactured and tested to the highest industry standards.

Our customers can be confident that our products are acceptable for use in multiple applications and across international borders. This emphasis on documented quality applies to both the organic and inorganic product lines (see below).



SCOPE OF ACCREDITATION TO ISO GUIDE 34:2000

Certified Reference Material (CRM)

Class or Type of Reference Materials Produced

- PCBs
- Pesticides
- Explosives
- VOCs
- Semivolatiles
- Metals
- Anions / Cations
- Sulfur
- PBDEs



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

Chemical Reference Standards (Neat or Solution Form)

- VOCs
- SVOCs
- PCBs
- Pesticides
- Explosives
- Sulfur
- PBDEs
- Anions and Cations
- Metals



CERTIFICATE OF REGISTRATION TO ISO 9001:2008

Quality Management System

Scope of Registration

Design, Development, Production and Distribution of Inorganic and Organic Neat and Synthetic Chemical Reference Materials Formulated to USEPA, ASTM, Internal, and Custom Designed Specifications.

AccuStandard is accredited to ISO Guide 34:2009, ISO/IEC 17025:2005 and certified to ISO 9001:2008.

Visit our website at for a copy of the latest Certificates.

Certificate of Analysis

Sample: Multi-component Organic COA

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New Haven, CT 06513
USA

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

CERTIFICATE OF ANALYSIS

Catalog No: DRH-007S
Description: Proposed DEP(MA) - Aliphatic Hydrocarbons
Lot: 212121171
Solvent: Hexane (50%)
Dichloromethane (50%)
Hazards: **HIGHLY FLAMMABLE** - Refer to SDS for safety info

Date Certified: Dec 14, 2012
Expiration: Dec 14, 2022
Sample Size: 1 mL
Storage Condition: Ambient

☒ Included on ISO/IEC 17025 Scope of Accreditation
☒ Included on ISO Guide 34 Scope of Accreditation


Danger 2

Component	CAS #	Purity % (GC/MS)	Prepared Concentration ¹ (µg/mL)	Certified Analyte Concentration ² (µg/mL)
Nonane	111-84-2	99.8	1001	999
Decane	124-18-5	100.0	1001	1001
Dodecane	112-40-3	98.3	1001	984
n-Tetradecane	629-59-4	100.0	1001	1001
Hexadecane	544-76-3	99.4	1002	996
n-Octadecane	593-45-3	100.0	1001	1001
n-Nonadecane	629-92-5	99.5	1002	997
Eicosane	112-95-8	99.8	1001	999
Docosane	629-97-0	99.1	1002	993
n-Tetracosane	646-31-1	98.9	1002	991
Hexacosane	630-01-3	100.0	1000	1000
n-Octacosane	630-02-4	99.9	1001	1000
n-Triacontane	638-68-6	99.7	1002	999
Hexatriacontane	630-06-8	98.0	1002	982

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.
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.
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.

Certified By: 
Larry Decker, Organic QC Manager

Page 1 of 1

For use in routine laboratory

AccuStandard is accredited to ISO Guide 34, ISO/IEC 17025 and certified to ISO 9001

GHS safety information

CAS Number to easily identify compound

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

We use only high purity starting material.

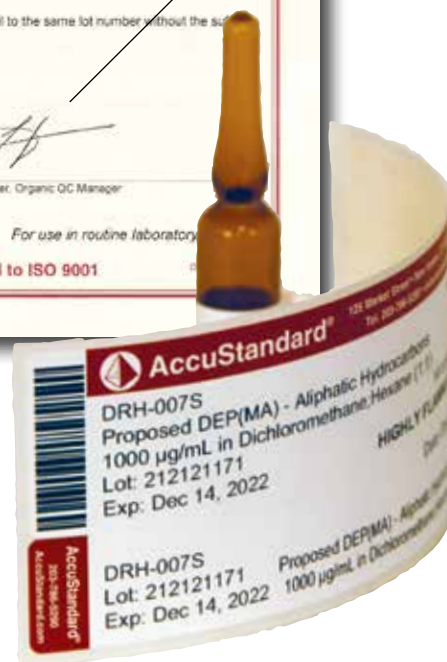
Concentration calculated by using the purity of the starting material

NIST Traceability

QC management approval

Uncertainty reported for statistical confidence.

Accreditations



Custom Synthesis

AccuStandard has developed hundreds of pure chemical compounds for companies, research institutions and governmental agencies around the world. Custom synthesis capabilities range from milligram to kilogram scale. AccuStandard is renowned for its quick response to customer requests for new compounds and its partnership in developing new methods.

Synthesis of many organic pollutants and their metabolites is an integral part of the department's efforts to provide the international community with previously unavailable standards. This is especially true for flame retardants, explosives and pesticides.



Custom Synthesized Products include:

- PCBs (all 209 congeners), hydroxy, methoxy and methylsulfonyl metabolites
- PBDEs (all 209 congeners), hydroxy, methoxy and chloro metabolites
- Chloro- and bromodibenzodioxins and furans
- Fluorinated PBDEs
- Brominated Flame Retardants, metabolites and isomers
- PBBs
- PAHs, nitro-PAHs and methyl-PAHs
- Pesticides and metabolites
- Explosives and metabolites
- Nonyl- and octylphenol ethoxylates
- Mono- and di-phthalate esters
- Organophosphate Flame Retardants

For additional information or
to submit your request, visit
AccuStandard.com

Organic Single Analytes and Select Mixtures

New & Updated Products in RED

Persistent Organic Pollutants (POPs)

POPs are chemical substances that persist in the environment, bioaccumulate through the food web and pose 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 this list was the center of the Stockholm Convention in 2001. The list originally included "the dirty dozen" and was expanded to include other pesticides, PBDEs, and some chemicals used in industrial processes.

Individual analytes used in EPA Methods are listed on page 67-68

Indices: Catalog Number, CAS Number and Organic Analytes are listed in the back of catalog.

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History of PCBs

History

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

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

Regulatory Actions

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

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

Toxicity & Bioaccumulation

The chemical formulation of PCBs and their similarity to the chemical formulation of pesticides such as DDT has led to bioaccumulation.

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

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

The malady was thus termed Yusho Disease. The average amount of actual PCBs consumed by the victims was estimated at 2 grams. By 1973, 22 of the 1200 victims had died, 41% from malignant tumors, suggesting a possible link to PCB ingestion.

PCB Groupings and Formulations

Toxicity and molecular structure

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

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

Analytical Methods and Reference Materials

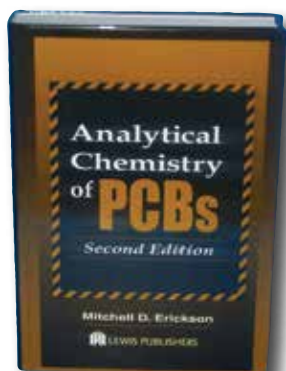
To obtain meaningful analytical data, the congeners need to be formulated into groupings of solutions that are all resolved on a gas chromatographic column. The "holy grail" of columns, the single column on which all 209 congeners are separated has, to this date, eluded all GC column manufacturers.

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

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

The 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 and 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.



PCB Book

Analytical Chemistry of PCBs
BOOK-PCB-001 \$ 225

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.

Analytical Chemistry of PCBs

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

Chlorobiphenyl Congeners (PCBs)



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

Technical Note

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

209 Solutions in a Set **Exclusive**

C-35-SET	35 µg/mL in Isooctane	\$ 2,750 / set of 209 x 1 mL
C-100-SET	100 µg/mL in Isooctane	\$ 2,950 / set of 209 x 1 mL

Purity 99+%

Chlorobiphenyl Congeners (PCBs)

No.	Compound	CAS No.	NEAT Cat. No.	Price / Unit	SOLUTIONS in Isooctane			
					35 µg/mL Cat. No.	1 mL Price	100 µg/mL Cat. No.	1 mL Price
1	2-Chlorobiphenyl	2051-60-7	C-001N	\$ 14 / 50 mg	C-001S	\$ 15	C-001S-TP	\$ 15
2	3-Chlorobiphenyl	2051-61-8	C-002N	14 / 50 mg	C-002S	15	C-002S-TP	15
3	4-Chlorobiphenyl	2051-62-9	C-003N	14 / 50 mg	C-003S	15	C-003S-TP	15
4	2,2'-Dichlorobiphenyl	13029-08-8	C-004N	34 / 25 mg	C-004S	15	C-004S-TP	15
5	2,3-Dichlorobiphenyl	16605-91-7	C-005N	25 / 50 mg	C-005S	15	C-005S-TP	15
6	2,3'-Dichlorobiphenyl	25569-80-6	C-006N	25 / 5 mg	C-006S	30	C-006S-TP	30
7	2,4-Dichlorobiphenyl	33284-50-3	C-007N	25 / 25 mg	C-007S	15	C-007S-TP	15
8	2,4'-Dichlorobiphenyl	34883-43-7	C-008N	58 / 25 mg	C-008S	30	C-008S-TP	30
9	2,5-Dichlorobiphenyl	34883-39-1	C-009N	25 / 50 mg	C-009S	15	C-009S-TP	15
10	2,6-Dichlorobiphenyl	33146-45-1	C-010N	25 / 25 mg	C-010S	15	C-010S-TP	15
11	3,3'-Dichlorobiphenyl	2050-67-1	C-011N	34 / 50 mg	C-011S	15	C-011S-TP	15
12	3,4-Dichlorobiphenyl	2974-92-7	C-012N	25 / 50 mg	C-012S	15	C-012S-TP	15
13	3,4'-Dichlorobiphenyl	2974-90-5	C-013N	55 / 5 mg	C-013S	30	C-013S-TP	30
14	3,5-Dichlorobiphenyl	34883-41-5	C-014N	32 / 50 mg	C-014S	15	C-014S-TP	15
15	4,4'-Dichlorobiphenyl	2050-68-2	C-015N	18 / 10 mg	C-015S	15	C-015S-TP	15
16	2,2',3-Trichlorobiphenyl	38444-78-9	C-016N	55 / 5 mg	C-016S	30	C-016S-TP	30
17	2,2',4-Trichlorobiphenyl	37680-66-3	C-017N	55 / 5 mg	C-017S	30	C-017S-TP	30
18	2,2',5-Trichlorobiphenyl	37680-65-2	C-018N	40 / 25 mg	C-018S	15	C-018S-TP	15
19	2,2',6-Trichlorobiphenyl	38444-73-4	C-019N	55 / 5 mg	C-019S	30	C-019S-TP	30
20	2,3,3'-Trichlorobiphenyl	38444-84-7	C-020N	30 / 5 mg	C-020S	30	C-020S-TP	30
21	2,3,4-Trichlorobiphenyl	55702-46-0	C-021N	44 / 25 mg	C-021S	15	C-021S-TP	15
22	2,3,4'-Trichlorobiphenyl	38444-85-8	C-022N	55 / 5 mg	C-022S	30	C-022S-TP	30
23	2,3,5-Trichlorobiphenyl	55720-44-0	C-023N	55 / 5 mg	C-023S	30	C-023S-TP	30
24	2,3,6-Trichlorobiphenyl	55702-45-9	C-024N	57 / 10 mg	C-024S	30	C-024S-TP	30
25	2,3',4-Trichlorobiphenyl	55712-37-3	C-025N	55 / 5 mg	C-025S	30	C-025S-TP	30
26	2,3',5-Trichlorobiphenyl	38444-81-4	C-026N	49 / 25 mg	C-026S	15	C-026S-TP	15
27	2,3',6-Trichlorobiphenyl	38444-76-7	C-027N	55 / 5 mg	C-027S	30	C-027S-TP	30
28	2,4,4'-Trichlorobiphenyl	7012-37-5	C-028N	50 / 10 mg	C-028S	30	C-028S-TP	30
29	2,4,5-Trichlorobiphenyl	15862-07-4	C-029N	38 / 50 mg	C-029S	15	C-029S-TP	15
30	2,4,6-Trichlorobiphenyl	35693-92-6	C-030N	44 / 50 mg	C-030S	15	C-030S-TP	15
31	2,4',5-Trichlorobiphenyl	16606-02-3	C-031N	49 / 25 mg	C-031S	15	C-031S-TP	15
32	2,4',6-Trichlorobiphenyl	38444-77-8	C-032N	55 / 5 mg	C-032S	30	C-032S-TP	30
33	2',3,4-Trichlorobiphenyl	38444-86-9	C-033N	22 / 10 mg	C-033S	15	C-033S-TP	15
34	2',3,5-Trichlorobiphenyl	37680-68-5	C-034N	55 / 5 mg	C-034S	30	C-034S-TP	30
35	3,3',4-Trichlorobiphenyl	37680-69-6	C-035N	55 / 5 mg	C-035S	30	C-035S-TP	30
36	3,3',5-Trichlorobiphenyl	38444-87-0	C-036N	55 / 5 mg	C-036S	30	C-036S-TP	30
37	3,4,4'-Trichlorobiphenyl	38444-90-5	C-037N	55 / 5 mg	C-037S	30	C-037S-TP	30
38	3,4,5-Trichlorobiphenyl	53555-66-1	C-038N	55 / 5 mg	C-038S	30	C-038S-TP	30
39	3,4',5-Trichlorobiphenyl	38444-88-1	C-039N	55 / 5 mg	C-039S	30	C-039S-TP	30



Chlorobiphenyl Congeners (PCBs)
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Chlorobiphenyl Congeners (PCBs)

Purity 99+%

Chlorobiphenyl Congeners (PCBs)

No.	Compound	CAS No.	NEAT		SOLUTIONS in Isooctane			
			Cat. No.	Price / Unit	35 µg/mL Cat. No.	1 mL Price	100 µg/mL Cat. No.	1 mL Price
40	2,2',3,3'-Tetrachlorobiphenyl	38444-93-8	C-040N	\$ 52 / 50 mg	C-040S	\$ 15	C-040S-TP	\$ 15
41	2,2',3,4-Tetrachlorobiphenyl	52663-59-9	C-041N	55 / 5 mg	C-041S	30	C-041S-TP	30
42	2,2',3,4'-Tetrachlorobiphenyl	36559-22-5	C-042N	55 / 5 mg	C-042S	30	C-042S-TP	30
43	2,2',3,5-Tetrachlorobiphenyl	70362-46-8	C-043N	55 / 5 mg	C-043S	30	C-043S-TP	30
44	2,2',3,5'-Tetrachlorobiphenyl	41464-39-5	C-044N	60 / 25 mg	C-044S	15	C-044S-TP	15
45	2,2',3,6-Tetrachlorobiphenyl	70362-45-7	C-045N	75 / 5 mg	C-045S	30	C-045S-TP	30
46	2,2',3,6'-Tetrachlorobiphenyl	41464-47-5	C-046N	55 / 5 mg	C-046S	30	C-046S-TP	30
47	2,2',4,4'-Tetrachlorobiphenyl	2437-79-8	C-047N	52 / 50 mg	C-047S	15	C-047S-TP	15
48	2,2',4,5-Tetrachlorobiphenyl	70362-47-9	C-048N	55 / 5 mg	C-048S	30	C-048S-TP	30
49	2,2',4,5'-Tetrachlorobiphenyl	41464-40-8	C-049N	42 / 20 mg	C-049S	15	C-049S-TP	15
50	2,2',4,6-Tetrachlorobiphenyl	62796-65-0	C-050N	25 / 5 mg	C-050S	30	C-050S-TP	30
51	2,2',4,6'-Tetrachlorobiphenyl	68194-04-7	C-051N	75 / 5 mg	C-051S	30	C-051S-TP	30
52	2,2',5,5'-Tetrachlorobiphenyl	35693-99-3	C-052N	22 / 10 mg	C-052S	15	C-052S-TP	15
53	2,2',5,6-Tetrachlorobiphenyl	41464-41-9	C-053N	32 / 25 mg	C-053S	15	C-053S-TP	15
54	2,2',6,6'-Tetrachlorobiphenyl	15968-05-5	C-054N	60 / 50 mg	C-054S	15	C-054S-TP	15
55	2,3,3',4-Tetrachlorobiphenyl	74338-24-2	C-055N	55 / 5 mg	C-055S	30	C-055S-TP	30
56	2,3,3',4'-Tetrachlorobiphenyl	41464-43-1	C-056N	55 / 5 mg	C-056S	30	C-056S-TP	30
57	2,3,3',5-Tetrachlorobiphenyl	70424-67-8	C-057N	75 / 5 mg	C-057S	30	C-057S-TP	30
58	2,3,3',5'-Tetrachlorobiphenyl	41464-49-7	C-058N	55 / 5 mg	C-058S	30	C-058S-TP	30
59	2,3,3',6-Tetrachlorobiphenyl	74472-33-6	C-059N	125 / 5 mg	C-059S	30	C-059S-TP	30
60	2,3,4,4'-Tetrachlorobiphenyl	33025-41-1	C-060N	30 / 5 mg	C-060S	30	C-060S-TP	30
61	2,3,4,5-Tetrachlorobiphenyl	33284-53-6	C-061N	38 / 50 mg	C-061S	15	C-061S-TP	15
62	2,3,4,6-Tetrachlorobiphenyl	54230-22-7	C-062N	55 / 5 mg	C-062S	30	C-062S-TP	30
63	2,3,4',5-Tetrachlorobiphenyl	74472-34-7	C-063N	75 / 5 mg	C-063S	30	C-063S-TP	30
64	2,3,4',6-Tetrachlorobiphenyl	52663-58-8	C-064N	105 / 5 mg	C-064S	30	C-064S-TP	30
65	2,3,5,6-Tetrachlorobiphenyl	33284-54-7	C-065N	35 / 25 mg	C-065S	15	C-065S-TP	15
66	2,3',4,4'-Tetrachlorobiphenyl	32598-10-0	C-066N	55 / 20 mg	C-066S	30	C-066S-TP	30
67	2,3',4,5-Tetrachlorobiphenyl	73557-53-8	C-067N	75 / 5 mg	C-067S	30	C-067S-TP	30
68	2,3',4,5'-Tetrachlorobiphenyl	73575-52-7	C-068N	55 / 5 mg	C-068S	30	C-068S-TP	30
69	2,3',4,6-Tetrachlorobiphenyl	60233-24-1	C-069N	55 / 5 mg	C-069S	30	C-069S-TP	30
70	2,3',4',5-Tetrachlorobiphenyl	32598-11-1	C-070N	23 / 10 mg	C-070S	15	C-070S-TP	15
71	2,3',4',6-Tetrachlorobiphenyl	41464-46-4	C-071N	55 / 5 mg	C-071S	30	C-071S-TP	30
72	2,3',5,5'-Tetrachlorobiphenyl	41464-42-0	C-072N	30 / 25 mg	C-072S	15	C-072S-TP	15
73	2,3',5',6-Tetrachlorobiphenyl	74338-23-1	C-073N	75 / 5 mg	C-073S	30	C-073S-TP	30
74	2,4,4',5-Tetrachlorobiphenyl	32690-93-0	C-074N	75 / 5 mg	C-074S	30	C-074S-TP	30
75	2,4,4',6-Tetrachlorobiphenyl	32598-12-2	C-075N	55 / 5 mg	C-075S	30	C-075S-TP	30
76	2',3,4,5-Tetrachlorobiphenyl	70362-48-0	C-076N	55 / 5 mg	C-076S	30	C-076S-TP	30
77	3,3',4,4'-Tetrachlorobiphenyl	32598-13-3	C-077N	28 / 25 mg	C-077S	15	C-077S-TP	15
78	3,3',4,5-Tetrachlorobiphenyl	70362-49-1	C-078N	55 / 5 mg	C-078S	30	C-078S-TP	30
79	3,3',4,5'-Tetrachlorobiphenyl	41464-48-6	C-079N	55 / 5 mg	C-079S	30	C-079S-TP	30
80	3,3',5,5'-Tetrachlorobiphenyl	33284-52-5	C-080N	45 / 5 mg	C-080S	30	C-080S-TP	30
81	3,4,4',5-Tetrachlorobiphenyl	70362-50-4	C-081N	55 / 5 mg	C-081S	30	C-081S-TP	30
82	2,2',3,3',4-Pentachlorobiphenyl	52663-62-4	C-082N	55 / 5 mg	C-082S	30	C-082S-TP	30
83	2,2',3,3',5-Pentachlorobiphenyl	60145-20-2	C-083N	55 / 5 mg	C-083S	30	C-083S-TP	30
84	2,2',3,3',6-Pentachlorobiphenyl	52663-60-2	C-084N	55 / 5 mg	C-084S	30	C-084S-TP	30
85	2,2',3,4,4'-Pentachlorobiphenyl	65510-45-4	C-085N	55 / 5 mg	C-085S	30	C-085S-TP	30
86	2,2',3,4,5-Pentachlorobiphenyl	55312-69-1	C-086N	55 / 5 mg	C-086S	30	C-086S-TP	30
87	2,2',3,4,5'-Pentachlorobiphenyl	38380-02-8	C-087N	47 / 10 mg	C-087S	30	C-087S-TP	30
88	2,2',3,4,6-Pentachlorobiphenyl	55215-17-3	C-088N	55 / 5 mg	C-088S	30	C-088S-TP	30
89	2,2',3,4,6'-Pentachlorobiphenyl	73575-57-2	C-089N	55 / 5 mg	C-089S	30	C-089S-TP	30
90	2,2',3,4',5-Pentachlorobiphenyl	68194-07-0	C-090N	75 / 5 mg	C-090S	30	C-090S-TP	30
91	2,2',3,4',6-Pentachlorobiphenyl	68194-05-8	C-091N	55 / 5 mg	C-091S	30	C-091S-TP	30
92	2,2',3,5,5'-Pentachlorobiphenyl	52663-61-3	C-092N	55 / 5 mg	C-092S	30	C-092S-TP	30
93	2,2',3,5,6-Pentachlorobiphenyl	73575-56-1	C-093N	55 / 5 mg	C-093S	30	C-093S-TP	30
94	2,2',3,5,6'-Pentachlorobiphenyl	73575-55-0	C-094N	100 / 5 mg	C-094S	30	C-094S-TP	30
95	2,2',3,5',6-Pentachlorobiphenyl	38379-99-6	C-095N	55 / 5 mg	C-095S	30	C-095S-TP	30
96	2,2',3,6,6'-Pentachlorobiphenyl	73575-54-9	C-096N	55 / 5 mg	C-096S	30	C-096S-TP	30
97	2,2',3',4,5-Pentachlorobiphenyl	41464-51-1	C-097N	46 / 10 mg	C-097S	30	C-097S-TP	30
98	2,2',3',4,6-Pentachlorobiphenyl	60233-25-2	C-098N	55 / 5 mg	C-098S	30	C-098S-TP	30
99	2,2',4,4',5-Pentachlorobiphenyl	38380-01-7	C-099N	55 / 5 mg	C-099S	30	C-099S-TP	30
100	2,2',4,4',6-Pentachlorobiphenyl	39485-83-1	C-100N	55 / 5 mg	C-100S	30	C-100S-TP	30
101	2,2',4,5,5'-Pentachlorobiphenyl	37680-73-2	C-101N	32 / 10 mg	C-101S	30	C-101S-TP	30
102	2,2',4,5,6'-Pentachlorobiphenyl	68194-06-9	C-102N	55 / 5 mg	C-102S	30	C-102S-TP	30
103	2,2',4,5',6-Pentachlorobiphenyl	60145-21-3	C-103N	45 / 10 mg	C-103S	30	C-103S-TP	30
104	2,2',4,6,6'-Pentachlorobiphenyl	56558-16-8	C-104N	50 / 5 mg	C-104S	30	C-104S-TP	30
105	2,3,3',4,4'-Pentachlorobiphenyl	32598-14-4	C-105N	55 / 5 mg	C-105S	30	C-105S-TP	30
106	2,3,3',4,5-Pentachlorobiphenyl	70424-69-0	C-106N	55 / 5 mg	C-106S	30	C-106S-TP	30

Chlorobiphenyl Congeners (PCBs)



Purity 99+%

PCBs

Chlorobiphenyl Congeners (PCBs)

No.	Compound	CAS No.	NEAT Cat. No.	Price / Unit	SOLUTIONS in Isooctane			
					35 µg/mL Cat. No.	1 mL Price	100 µg/mL Cat. No.	1 mL Price
107	2,3,3',4',5-Pentachlorobiphenyl	70424-68-9	C-107N	\$ 55 / 5 mg	C-107S	\$ 30	C-107S-TP	\$ 30
108	2,3,3',4,5'-Pentachlorobiphenyl	70362-41-3	C-108N	55 / 5 mg	C-108S	30	C-108S-TP	30
109	2,3,3',4,6-Pentachlorobiphenyl	74472-35-8	C-109N	105 / 5 mg	C-109S	30	C-109S-TP	30
110	2,3,3',4',6-Pentachlorobiphenyl	38380-03-9	C-110N	55 / 5 mg	C-110S	30	C-110S-TP	30
111	2,3,3',5,5'-Pentachlorobiphenyl	39635-32-0	C-111N	105 / 5 mg	C-111S	30	C-111S-TP	30
112	2,3,3',5,6-Pentachlorobiphenyl	74472-36-9	C-112N	55 / 5 mg	C-112S	30	C-112S-TP	30
113	2,3,3',5',6-Pentachlorobiphenyl	68194-10-5	C-113N	105 / 5 mg	C-113S	30	C-113S-TP	30
114	2,3,4,4',5-Pentachlorobiphenyl	74472-37-0	C-114N	55 / 5 mg	C-114S	30	C-114S-TP	30
115	2,3,4,4',6-Pentachlorobiphenyl	74472-38-1	C-115N	45 / 5 mg	C-115S	30	C-115S-TP	30
116	2,3,4,5,6-Pentachlorobiphenyl	18259-05-7	C-116N	26 / 10 mg	C-116S	30	C-116S-TP	30
117	2,3,4',5,6-Pentachlorobiphenyl	68194-11-6	C-117N	55 / 5 mg	C-117S	30	C-117S-TP	30
118	2,3',4,4',5-Pentachlorobiphenyl	31508-00-6	C-118N	50 / 5 mg	C-118S	30	C-118S-TP	30
119	2,3',4,4',6-Pentachlorobiphenyl	56558-17-9	C-119N	50 / 5 mg	C-119S	30	C-119S-TP	30
120	2,3',4,5,5'-Pentachlorobiphenyl	68194-12-7	C-120N	55 / 5 mg	C-120S	30	C-120S-TP	30
121	2,3',4,5',6-Pentachlorobiphenyl	56558-18-0	C-121N	46 / 5 mg	C-121S	30	C-121S-TP	30
122	2',3,3',4,5-Pentachlorobiphenyl	76842-07-4	C-122N	55 / 5 mg	C-122S	30	C-122S-TP	30
123	2',3,4,4',5-Pentachlorobiphenyl	65510-44-3	C-123N	55 / 5 mg	C-123S	30	C-123S-TP	30
124	2',3,4,5,5'-Pentachlorobiphenyl	70424-70-3	C-124N	55 / 5 mg	C-124S	30	C-124S-TP	30
125	2',3,4,5,6'-Pentachlorobiphenyl	74472-39-2	C-125N	55 / 5 mg	C-125S	30	C-125S-TP	30
126	3,3',4,4',5-Pentachlorobiphenyl	57465-28-8	C-126N	55 / 5 mg	C-126S	30	C-126S-TP	30
127	3,3',4,5,5'-Pentachlorobiphenyl	39635-33-1	C-127N	55 / 5 mg	C-127S	30	C-127S-TP	30
128	2,2',3,3',4,4'-Hexachlorobiphenyl	38380-07-3	C-128N	60 / 20 mg	C-128S	15	C-128S-TP	15
129	2,2',3,3',4,5'-Hexachlorobiphenyl	55215-18-4	C-129N	55 / 5 mg	C-129S	30	C-129S-TP	30
130	2,2',3,3',4,5'-Hexachlorobiphenyl	52663-66-8	C-130N	55 / 5 mg	C-130S	30	C-130S-TP	30
131	2,2',3,3',4,6'-Hexachlorobiphenyl	61798-70-7	C-131N	55 / 5 mg	C-131S	30	C-131S-TP	30
132	2,2',3,3',4,6'-Hexachlorobiphenyl	38380-05-1	C-132N	55 / 5 mg	C-132S	30	C-132S-TP	30
133	2,2',3,3',5,5'-Hexachlorobiphenyl	35694-04-3	C-133N	55 / 5 mg	C-133S	30	C-133S-TP	30
134	2,2',3,3',5,6'-Hexachlorobiphenyl	52704-70-8	C-134N	55 / 5 mg	C-134S	30	C-134S-TP	30
135	2,2',3,3',5,6'-Hexachlorobiphenyl	52744-13-5	C-135N	105 / 5 mg	C-135S	30	C-135S-TP	30
136	2,2',3,3',6,6'-Hexachlorobiphenyl	38411-22-2	C-136N	60 / 20 mg	C-136S	30	C-136S-TP	30
137	2,2',3,4,4',5-Hexachlorobiphenyl	35694-06-5	C-137N	50 / 5 mg	C-137S	30	C-137S-TP	30
138	2,2',3,4,4',5'-Hexachlorobiphenyl	35065-28-2	C-138N	50 / 5 mg	C-138S	30	C-138S-TP	30
139	2,2',3,4,4',6-Hexachlorobiphenyl	56030-56-9	C-139N	75 / 5 mg	C-139S	30	C-139S-TP	30
140	2,2',3,4,4',6'-Hexachlorobiphenyl	59291-64-4	C-140N	55 / 5 mg	C-140S	30	C-140S-TP	30
141	2,2',3,4,5,5'-Hexachlorobiphenyl	52712-04-6	C-141N	50 / 5 mg	C-141S	30	C-141S-TP	30
142	2,2',3,4,5,6'-Hexachlorobiphenyl	41411-61-4	C-142N	105 / 5 mg	C-142S	30	C-142S-TP	30
143	2,2',3,4,5,6'-Hexachlorobiphenyl	68194-15-0	C-143N	50 / 5 mg	C-143S	30	C-143S-TP	30
144	2,2',3,4,5',6-Hexachlorobiphenyl	68194-14-9	C-144N	105 / 5 mg	C-144S	30	C-144S-TP	30
145	2,2',3,4,6,6'-Hexachlorobiphenyl	74472-40-5	C-145N	55 / 5 mg	C-145S	30	C-145S-TP	30
146	2,2',3,4',5,5'-Hexachlorobiphenyl	51908-16-8	C-146N	175 / 5 mg	C-146S	30	C-146S-TP	30
147	2,2',3,4',5,6'-Hexachlorobiphenyl	68194-13-8	C-147N	55 / 5 mg	C-147S	30	C-147S-TP	30
148	2,2',3,4',5,6'-Hexachlorobiphenyl	74472-41-6	C-148N	75 / 5 mg	C-148S	30	C-148S-TP	30
149	2,2',3,4',5',6-Hexachlorobiphenyl	38380-04-0	C-149N	76 / 5 mg	C-149S	30	C-149S-TP	30
150	2,2',3,4',6,6'-Hexachlorobiphenyl	68194-08-1	C-150N	55 / 5 mg	C-150S	30	C-150S-TP	30
151	2,2',3,5,5',6-Hexachlorobiphenyl	52663-63-5	C-151N	50 / 5 mg	C-151S	30	C-151S-TP	30
152	2,2',3,5,6,6'-Hexachlorobiphenyl	68194-09-2	C-152N	55 / 5 mg	C-152S	30	C-152S-TP	30
153	2,2',4,4',5,5'-Hexachlorobiphenyl	35065-27-1	C-153N	43 / 10 mg	C-153S	15	C-153S-TP	15
154	2,2',4,4',5,6'-Hexachlorobiphenyl	60145-22-4	C-154N	50 / 5 mg	C-154S	30	C-154S-TP	30
155	2,2',4,4',6,6'-Hexachlorobiphenyl	33979-03-2	C-155N	60 / 50 mg	C-155S	15	C-155S-TP	15
156	2,3,3',4,4',5-Hexachlorobiphenyl	38380-08-4	C-156N	50 / 5 mg	C-156S	30	C-156S-TP	30
157	2,3,3',4,4',5'-Hexachlorobiphenyl	69782-90-7	C-157N	55 / 5 mg	C-157S	30	C-157S-TP	30
158	2,3,3',4,4',6-Hexachlorobiphenyl	74472-42-7	C-158N	55 / 5 mg	C-158S	30	C-158S-TP	30
159	2,3,3',4,5,5'-Hexachlorobiphenyl	39635-35-3	C-159N	75 / 5 mg	C-159S	30	C-159S-TP	30
160	2,3,3',4,5,6-Hexachlorobiphenyl	41411-62-5	C-160N	75 / 5 mg	C-160S	30	C-160S-TP	30
161	2,3,3',4,5',6-Hexachlorobiphenyl	74474-43-8	C-161N	55 / 5 mg	C-161S	30	C-161S-TP	30
162	2,3,3',4',5,5'-Hexachlorobiphenyl	39635-34-2	C-162N	75 / 5 mg	C-162S	30	C-162S-TP	30
163	2,3,3',4',5,6-Hexachlorobiphenyl	74472-44-9	C-163N	55 / 5 mg	C-163S	30	C-163S-TP	30
164	2,3,3',4',5',6-Hexachlorobiphenyl	74472-45-0	C-164N	55 / 5 mg	C-164S	30	C-164S-TP	30
165	2,3,3',5,5',6-Hexachlorobiphenyl	74472-46-1	C-165N	55 / 5 mg	C-165S	30	C-165S-TP	30
166	2,3,4,4',5,6-Hexachlorobiphenyl	41411-63-6	C-166N	55 / 5 mg	C-166S	30	C-166S-TP	30
167	2,3',4,4',5,5'-Hexachlorobiphenyl	52663-72-6	C-167N	47 / 5 mg	C-167S	30	C-167S-TP	30
168	2,3',4,4',5',6-Hexachlorobiphenyl	59291-65-5	C-168N	55 / 5 mg	C-168S	30	C-168S-TP	30
169	3,3',4,4',5,5'-Hexachlorobiphenyl	32774-16-6	C-169N	45 / 5 mg	C-169S	30	C-169S-TP	30

Other solvents, concentrations and quantities are available upon request.

Chlorobiphenyl Congeners (PCBs)
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Chlorobiphenyl Congeners (PCBs)

Purity 99+%

Chlorobiphenyl Congeners (PCBs)

No.	Compound	CAS No.	NEAT Cat. No.	Price / Unit	SOLUTIONS in Isooctane			
					35 µg/mL Cat. No.	1 mL Price	100 µg/mL Cat. No.	1 mL Price
170	2,2',3,3',4,4',5-Heptachlorobiphenyl	35065-30-6	C-170N	\$ 55 / 5 mg	C-170S	\$ 30	C-170S-TP	\$ 30
171	2,2',3,3',4,4',6-Heptachlorobiphenyl	52663-71-5	C-171N	55 / 5 mg	C-171S	30	C-171S-TP	30
172	2,2',3,3',4,5,5'-Heptachlorobiphenyl	52663-74-8	C-172N	75 / 5 mg	C-172S	30	C-172S-TP	30
173	2,2',3,3',4,5,6-Heptachlorobiphenyl	68194-16-1	C-173N	150 / 5 mg	C-173S	30	C-173S-TP	30
174	2,2',3,3',4,5,6'-Heptachlorobiphenyl	38411-25-5	C-174N	55 / 5 mg	C-174S	30	C-174S-TP	30
175	2,2',3,3',4,5',6-Heptachlorobiphenyl	40186-70-7	C-175N	75 / 5 mg	C-175S	30	C-175S-TP	30
176	2,2',3,3',4,6,6'-Heptachlorobiphenyl	52663-65-7	C-176N	55 / 5 mg	C-176S	30	C-176S-TP	30
177	2,2',3,3',4',5,6-Heptachlorobiphenyl	52663-70-4	C-177N	55 / 5 mg	C-177S	30	C-177S-TP	30
178	2,2',3,3',5,5',6-Heptachlorobiphenyl	52663-67-9	C-178N	75 / 5 mg	C-178S	30	C-178S-TP	30
179	2,2',3,3',5,6,6'-Heptachlorobiphenyl	52663-64-6	C-179N	55 / 5 mg	C-179S	30	C-179S-TP	30
180	2,2',3,4,4',5,5'-Heptachlorobiphenyl	35065-29-3	C-180N	45 / 5 mg	C-180S	30	C-180S-TP	30
181	2,2',3,4,4',5,6-Heptachlorobiphenyl	74472-47-2	C-181N	55 / 5 mg	C-181S	30	C-181S-TP	30
182	2,2',3,4,4',5,6'-Heptachlorobiphenyl	60145-23-5	C-182N	40 / 5 mg	C-182S	30	C-182S-TP	30
183	2,2',3,4,4',5',6-Heptachlorobiphenyl	52663-69-1	C-183N	55 / 5 mg	C-183S	30	C-183S-TP	30
184	2,2',3,4,4',6,6'-Heptachlorobiphenyl	74472-48-3	C-184N	55 / 5 mg	C-184S	30	C-184S-TP	30
185	2,2',3,4,5,5',6-Heptachlorobiphenyl	52712-05-7	C-185N	55 / 5 mg	C-185S	30	C-185S-TP	30
186	2,2',3,4,5,6,6'-Heptachlorobiphenyl	74472-49-4	C-186N	50 / 5 mg	C-186S	30	C-186S-TP	30
187	2,2',3,4',5,5',6-Heptachlorobiphenyl	52663-68-0	C-187N	55 / 5 mg	C-187S	30	C-187S-TP	30
188	2,2',3,4',5,6,6'-Heptachlorobiphenyl	74487-85-7	C-188N	50 / 5 mg	C-188S	30	C-188S-TP	30
189	2,2',3,3',4,4',5,5'-Heptachlorobiphenyl	39635-31-9	C-189N	55 / 5 mg	C-189S	30	C-189S-TP	30
190	2,3,3',4,4',5,6-Heptachlorobiphenyl	41411-64-7	C-190N	55 / 5 mg	C-190S	30	C-190S-TP	30
191	2,3,3',4,4',5',6-Heptachlorobiphenyl	74472-50-7	C-191N	75 / 5 mg	C-191S	30	C-191S-TP	30
192	2,3,3',4,5,5',6-Heptachlorobiphenyl	74472-51-8	C-192N	75 / 5 mg	C-192S	30	C-192S-TP	30
193	2,3,3',4',5,5',6-Heptachlorobiphenyl	69782-91-8	C-193N	55 / 5 mg	C-193S	30	C-193S-TP	30
194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl	35694-08-7	C-194N	50 / 5 mg	C-194S	30	C-194S-TP	30
195	2,2',3,3',4,4',5,6-Octachlorobiphenyl	52663-78-2	C-195N	55 / 5 mg	C-195S	30	C-195S-TP	30
196	2,2',3,3',4,4',5,6'-Octachlorobiphenyl	42740-50-1	C-196N	75 / 5 mg	C-196S	30	C-196S-TP	30
197	2,2',3,3',4,4',6,6'-Octachlorobiphenyl	33091-17-7	C-197N	75 / 5 mg	C-197S	30	C-197S-TP	30
198	2,2',3,3',4,5,5',6-Octachlorobiphenyl	68194-17-2	C-198N	75 / 5 mg	C-198S	30	C-198S-TP	30
199	2,2',3,3',4,5,5',6'-Octachlorobiphenyl	52663-75-9	C-199N-R1	55 / 5 mg	C-199S-R1	30	C-199S-TP-R1	30
200	2,2',3,3',4,5,6,6'-Octachlorobiphenyl	52663-73-7	C-200N-R1	105 / 5 mg	C-200S-R1	30	C-200S-TP-R1	30
201	2,2',3,3',4,5',6,6'-Octachlorobiphenyl	40186-71-8	C-201N-R1	65 / 5 mg	C-201S-R1	30	C-201S-TP-R1	30
202	2,2',3,3',5,5',6,6'-Octachlorobiphenyl	2136-99-4	C-202N	50 / 5 mg	C-202S	30	C-202S-TP	30
203	2,2',3,4,4',5,5',6-Octachlorobiphenyl	52663-76-0	C-203N	55 / 5 mg	C-203S	30	C-203S-TP	30
204	2,2',3,4,4',5,6,6'-Octachlorobiphenyl	74472-52-9	C-204N	55 / 5 mg	C-204S	30	C-204S-TP	30
205	2,3,3',4,4',5,5',6-Octachlorobiphenyl	74472-53-0	C-205N	55 / 5 mg	C-205S	30	C-205S-TP	30
206	2,2',3,3',4,4',5,5',6'-Nonachlorobiphenyl	40186-72-9	C-206N	64 / 5 mg	C-206S	30	C-206S-TP	30
207	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	52663-79-3	C-207N	50 / 5 mg	C-207S	30	C-207S-TP	30
208	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	52663-77-1	C-208N	50 / 5 mg	C-208S	30	C-208S-TP	30
209	2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl	2051-24-3	C-209N	12 / 10 mg	C-209S	15	C-209S-TP	15

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).

Savings

Significant discounts are available on larger quantities of selected congeners.

Have PCB Questions?

AccuStandard chemists have been involved in the synthesis of PCBs and related compounds for over 35 years.

Our experience and expertise in this area can help you solve related analytical problems.

Contact our Technical Service Department

\$ 700 / 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)



Mixtures for Congener Specific PCB Analysis

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. in Isooctane

1 x 1 mL

15 comps.

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

PCB Congener Mix #5

M-1668A-5-0.01X

At stated conc. in Isooctane

1 x 1 mL

28 comps.

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

Method 1668A/1668 Combined Congener Standards

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

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

20 µg/mL each in Isooctane

\$ 150 / 1 x 1 mL

SAVE 20% \$ 600 / 5 x 1 mL

33 comps.

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

GPC Calibration Solution

CLP-027-R2-WL-10ML

At stated conc. in CH₂Cl₂

\$ 25 / 1 x 10 mL

5 comps.

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

Level of Chlorination Calibration/Spike Set

Determination of Chlorobiphenyl content at each level of chlorination

Calibration/Spike Set

M-1668A-LOC-SET

\$ 150 / 2 x 1 mL (M-1668A-NAT, M-1668A-PAR)

Native PCB Calibration Mix

M-1668A-NAT

At stated conc. in Isooctane

1 x 1 mL

19 comps.

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

PAR PCB Spike Mix

M-1668A-PAR

At stated conc. in Isooctane

1 x 1 mL

19 comps.

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

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

\$ 150 / 4 x 1 mL (set includes C-CAN-01, C-CAN-02, C-CAN-03, C-CAN-04)

PCB Congeners Mix #1

C-CAN-01

\$ 45 / 1 x 1 mL

At stated conc. in Isooctane

14 comps.

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

PCB Congeners Mix #2

C-CAN-02

\$ 45 / 1 x 1 mL

At stated conc. in Isooctane

15 comps.

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

PCB Congeners Mix #3

C-CAN-03

\$ 45 / 1 x 1 mL

At stated conc. in Isooctane

15 comps.

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

PCB Congeners Mix #4

C-CAN-04

\$ 45 / 1 x 1 mL

At stated conc. in Isooctane

15 comps.

No.	
14	4,4'-Dichlorobiphenyl (76.7 µg/mL)
101	2,2',4,5,5'-Pentachlorobiphenyl (8.9 µg/mL)
118	2,3',4,4',5-Pentachlorobiphenyl (3.9 µg/mL)
138	2,2',3,4,4',5'-Hexachlorobiphenyl (4.2 µg/mL)
141	2,2',3,4,5,5'-Hexachlorobiphenyl (2.8 µg/mL)
151	2,2',3,5,5',6-Hexachlorobiphenyl (5 µg/mL)
153	2,2',4,4',5,5'-Hexachlorobiphenyl (3.3 µg/mL)
170	2,2',3,3',4,4',5-Heptachlorobiphenyl (3 µg/mL)
180	2,2',3,4,4',5,5'-Heptachlorobiphenyl (2.8 µg/mL)
187	2,2',3,4',5,5',6-Heptachlorobiphenyl (3.2 µg/mL)
194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl (2.4 µg/mL)
195	2,2',3,3',4,4',5,6-Octachlorobiphenyl (2.6 µg/mL)
196	2,2',3,3',4,4',5,6'-Octachlorobiphenyl (3.3 µg/mL)
199	2,2',3,3',4,5,5',6'-Octachlorobiphenyl (3.6 µg/mL)
209	Decachlorobiphenyl (2.7 µg/mL)

Quebec Ministry of Environment Congener Mix

C-QME-01

\$ 125 / 1 x 1 mL

At stated conc. in Isooctane

41 comps.

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



Congener Specific PCB Analysis

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

\$ 500 / 3 x 1 mL (C-IADN-01, C-IADN-02, C-IADN-03)

IADN Congener Standard #1

C-IADN-01

1 x 1 mL

30 µg/mL each in Isooctane

28 comps.

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

IADN Congener Standard #2

C-IADN-02

1 x 1 mL

30 µg/mL each in Isooctane

28 comps.

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

IADN Congener Standard #3

C-IADN-03

1 x 1 mL

30 µg/mL each in Isooctane

28 comps.

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

PCB Congener Content Evaluation

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

Mix #1

AE-00059

\$ 25 / 1 x 1 mL

AE-00059-10ML

\$ 95 / 1 x 10 mL

10 µg/mL each in Isooctane

6 comps.

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

Mix #2

AE-00060

\$ 25 / 1 x 1 mL

AE-00060-10ML

\$ 95 / 1 x 10 mL

10 µg/mL each in Isooctane

3 comps.

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

Congener Calibration Mix

AE-00061

\$ 45 / 1 x 1 mL

AE-00061-10ML

\$ 210 / 1 x 10 mL

10 µg/mL each in Isooctane

14 comps.

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

Internal Standards

Each at 100 µg/mL in Isooctane

C-030S-TP

\$ 25 / 1 x 1 mL

2,4,6-Trichlorobiphenyl

C-209S-TP

\$ 25 / 1 x 1 mL

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



Formulations for Toxicity and Abundance Studies

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. Jones² as outlined in his article referenced below which is titled, "Determination of polychlorinated biphenyls in human food stuffs and tissues: Suggestions for a selective congener analytical approach".

Literature Reference

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

Complete Set of PCB Congeners

C-SCA-SET

\$ 120 / 5 x 1 mL (includes C-SCA-01, C-SCA-02, C-SCA-03, C-SCA-04, C-SCA-05)

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

C-SCA-01

10 µg/mL each in Isooctane

\$ 30 / 1 x 1 mL

3 comps.

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

Mix #2 Group 1b (Mixed Type Inducers)

C-SCA-02

10 µg/mL each in Isooctane

\$ 30 / 1 x 1 mL

6 comps.

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

Mix #3 Group 2 (PB Type Inducers)

C-SCA-03

10 µg/mL each in Isooctane

\$ 30 / 1 x 1 mL

7 comps.

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

Mix #4 Group 3 (Non-Inducer Type)

C-SCA-04

10 µg/mL each in Isooctane

\$ 35 / 1 x 1 mL

10 comps.

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

Mix #5 Group 4

(Mixed Type Inducers present at very low levels)

C-SCA-05

10 µg/mL each in Isooctane

\$ 35 / 1 x 1 mL

10 comps.

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

Mix #6 (Food & Human Tissue analysis)

C-SCA-06

10 µg/mL each in Isooctane

\$ 60 / 1 x 1 mL

32 comps.

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

Non-Ortho Substituted PCBs

C-SCA-DIOXLIK

10 µg/mL each in Isooctane

\$ 35 / 1 x 1 mL

4 comps.

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

Internal Standard

C-EU-IS-10ML

At stated conc. in Isooctane

\$ 75 / 1 x 10 mL

2 comps.

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

Dutch Seven PCBs Standard

PCB-DUTCH7-SET

100 µg/mL each in Isooctane

\$ 125 / 7 x 1 mL

PCB-DUTCH7

10 µg/mL each in Isooctane

\$ 25 / 1 x 1 mL

7 comps.

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



Congener Specific PCB Analysis

PCB Congener Mix for West Coast Fish Studies

C-WCFS

25 µg/mL each in Isooctane

\$ 95 / 1 x 1 mL

24 comps.

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

WHO/NIST/NOAA Congener List

C-WNN

C-WNN-PAK
10 µg/mL each in Isooctane

\$ 60 / 1 x 1 mL

SAVE 20% \$ 240 / 5 x 1 mL
28 comps.

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

World Health Organization Congener Mix

C-WHO-01

2.0 µg/mL each in Isooctane

\$ 40 / 1 x 1 mL

12 comps.

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

DCMA-PCB Isomer Mixture

M-002

M-002-PAK

At stated conc. in Hexane

\$ 35 / 1 x 1 mL

SAVE 20% \$ 140 / 5 x 1 mL
10 comps.

2-Chlorobiphenyl (100 µg/mL)	2,2',3,3',6,6'-Hexachlorobiphenyl (10 µg/mL)
3,3'-Dichlorobiphenyl (100 µg/mL)	2,2',3,4,5,5',6'-Heptachlorobiphenyl (5 µg/mL)
2,4,5-Trichlorobiphenyl (10 µg/mL)	2,2',3,3',4,4',5,5'-Octachlorobiphenyl (5 µg/mL)
2,2',4,4'-Tetrachlorobiphenyl (10 µg/mL)	2,2',3,3',4,4',5,5',6'-Nonachlorobiphenyl (5 µg/mL)
2,3',4,5',6'-Pentachlorobiphenyl (10 µg/mL)	2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (5 µg/mL)

Technical Note

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

CEN's Workgroup #22 for PCBs in Waste Oil

PCB-W22

10 µg/mL each in Isooctane

PCB-W22-PAK

\$ 35 / 1 x 1 mL

15 comps.

SAVE 20% \$ 140 / 5 x 1 mL

PCB-W22-SET

100 µg/mL in Isooctane

\$ 225 / 15 x 1 mL

(Set of Individual Solutions)

No.	No.	No.
(18) 2,2',5'-Trichlorobiphenyl	(52) 2,2',5,5'-Tetrachlorobiphenyl	(149) 2,2',3,4',5',6'-Hexachlorobiphenyl
(20) 2,3,3'-Trichlorobiphenyl	(101) 2,2',4,5,5'-Pentachlorobiphenyl	(153) 2,2',4,4',5,5'-Hexachlorobiphenyl
(28) 2,4,4'-Trichlorobiphenyl	(105) 2,3,3',4,4'-Pentachlorobiphenyl	(170) 2,2',3,3',4,4',5'-Heptachlorobiphenyl
(31) 2,4',5'-Trichlorobiphenyl	(118) 2,3',4,4',5'-Pentachlorobiphenyl	(180) 2,2',3,4,4',5,5'-Heptachlorobiphenyl
(44) 2,2',3,5'-Tetrachlorobiphenyl	(138) 2,2',3,4,4',5'-Hexachlorobiphenyl	(194) 2,2',3,3',4,4',5,5'-Octachlorobiphenyl

Technical Note

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

Dioxin-Like Congeners

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

C-DIOXLIK1-SET \$ 950 / 5 x 1 mL
Set includes

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

C-DIOXLIK2-SET \$ 950 / 5 x 1 mL
Set includes

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

C-DIOXLIK3-SET \$ 950 / 5 x 1 mL
Set includes

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

Individual Levels 4, 6, 8, 10 12

C-DIOXLIK3-04	\$ 225 / 1 mL
C-DIOXLIK3-06	\$ 225 / 1 mL
C-DIOXLIK3-08	\$ 225 / 1 mL
C-DIOXLIK3-10	\$ 225 / 1 mL
C-DIOXLIK3-12	\$ 225 / 1 mL

PCB Congener Calibration Mixtures



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

PCB Congener Mix #1

C-CS-01 \$ 155 / 1 x 1 mL
10 µg/mL each in Isooctane 39 comps.

No.	
1	2-Chlorobiphenyl
2	3-Chlorobiphenyl †
3	4-Chlorobiphenyl
4	2,2'-Dichlorobiphenyl
6	2,3'-Dichlorobiphenyl
8	2,4'-Dichlorobiphenyl
9	2,5-Dichlorobiphenyl
16	2,2',3-Trichlorobiphenyl
18	2,2',5-Trichlorobiphenyl
19	2,2',6-Trichlorobiphenyl
22	2,3,4'-Trichlorobiphenyl
25	2,3',4-Trichlorobiphenyl
28	2,4,4'-Trichlorobiphenyl
44	2,2',3,5'-Tetrachlorobiphenyl
52	2,2',5,5'-Tetrachlorobiphenyl
56	2,3,3',4'-Tetrachlorobiphenyl
66	2,3',4,4'-Tetrachlorobiphenyl
67	2,3',4,5-Tetrachlorobiphenyl
71	2,3',4',6-Tetrachlorobiphenyl
74	2,4,4',5-Tetrachlorobiphenyl
82	2,2',3,3',4-Pentachlorobiphenyl
87	2,2',3,4,5'-Pentachlorobiphenyl
99	2,2',4,4',5-Pentachlorobiphenyl
110	2,3,3',4',6-Pentachlorobiphenyl
138	2,2',3,4,4',5'-Hexachlorobiphenyl
146	2,2',3,4',5,5'-Hexachlorobiphenyl
147	2,2',3,4',5,6-Hexachlorobiphenyl †
153	2,2',4,4',5,5'-Hexachlorobiphenyl
173	2,2',3,3',4,5,6-Heptachlorobiphenyl
174	2,2',3,3',4,5,6'-Heptachlorobiphenyl
177	2,2',3,3',4',5,6-Heptachlorobiphenyl
179	2,2',3,3',5,6,6'-Heptachlorobiphenyl
180	2,2',3,4,4',5,5'-Heptachlorobiphenyl
187	2,2',3,4',5,5',6-Heptachlorobiphenyl
194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl
195	2,2',3,3',4,4',5,6-Octachlorobiphenyl
199	2,2',3,3',4,4',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 \$ 125 / 1 x 1 mL
10 µg/mL each in Isooctane 22 comps.

No.	
13	3,4'-Dichlorobiphenyl
14	3,5-Dichlorobiphenyl †
35	3,3',4-Trichlorobiphenyl
51	2,2',4,6'-Tetrachlorobiphenyl
53	2,2',5,6'-Tetrachlorobiphenyl
54	2,2',6,6'-Tetrachlorobiphenyl †
73	2,3',5',6-Tetrachlorobiphenyl †
75	2,4,4',6-Tetrachlorobiphenyl
81	3,4,4',5-Tetrachlorobiphenyl †
90	2,2',3,4',5-Pentachlorobiphenyl †
100	2,2',4,4',6-Pentachlorobiphenyl †
117	2,3,4',5,6-Pentachlorobiphenyl
122	2',3,3',4,5-Pentachlorobiphenyl
124	2',3,4,5,5'-Pentachlorobiphenyl
130	2,2',3,3',4,5'-Hexachlorobiphenyl
154	2,2',4,4',5,6'-Hexachlorobiphenyl †
163	2,3,3',4',5,6-Hexachlorobiphenyl
165	2,3,3',5,5',6-Hexachlorobiphenyl †
175	2,2',3,3',4,5',6-Heptachlorobiphenyl
200	2,2',3,3',4,5,6,6'-Octachlorobiphenyl
201	2,2',3,3',4,5',6,6'-Octachlorobiphenyl
202	2,2',3,3',5,5',6,6'-Octachlorobiphenyl

PCB Congener Mix #2

C-CS-02 \$ 150 / 1 x 1 mL
10 µg/mL each in Isooctane 36 comps.

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

PCB Congener Mix #5

C-CS-05 \$ 100 / 1 x 1 mL
10 µg/mL each in Isooctane 20 comps.

No.	
12	3,4-Dichlorobiphenyl
33	2',3,4-Trichlorobiphenyl
49	2,2',4,5'-Tetrachlorobiphenyl
59	2,3,3',6-Tetrachlorobiphenyl
63	2,3,4',5-Tetrachlorobiphenyl
64	2,3,4',6-Tetrachlorobiphenyl
77	3,3',4,4'-Tetrachlorobiphenyl
85	2,2',3,4,4'-Pentachlorobiphenyl
91	2,2',3,4',6-Pentachlorobiphenyl
97	2,2',3',4,5-Pentachlorobiphenyl
104	2,2',4,6,6'-Pentachlorobiphenyl †
114	2,3,4,4',5-Pentachlorobiphenyl
123	2',3,4,4',5-Pentachlorobiphenyl
129	2,2',3,3',4,5-Hexachlorobiphenyl
137	2,2',3,4,4',5-Hexachlorobiphenyl
156	2,3,3',4,4',5-Hexachlorobiphenyl
167	2,3',4,4',5,5'-Hexachlorobiphenyl
176	2,2',3,3',4,6,6'-Heptachlorobiphenyl
185	2,2',3,4,5,5',6-Heptachlorobiphenyl
189	2,3,3',4,4',5,5'-Heptachlorobiphenyl

PCB Congener Mix #3

C-CS-03 \$ 125 / 1 x 1 mL
10 µg/mL each in Isooctane 27 comps.

No.	
15	4,4'-Dichlorobiphenyl
20	2,3,3'-Trichlorobiphenyl
27	2,3',6-Trichlorobiphenyl
29	2,4,5-Trichlorobiphenyl
34	2',3,5-Trichlorobiphenyl
40	2,2',3,3'-Tetrachlorobiphenyl
42	2,2',3,4'-Tetrachlorobiphenyl
47	2,2',4,4'-Tetrachlorobiphenyl
69	2,3',4,6-Tetrachlorobiphenyl †
92	2,2',3,5,5'-Pentachlorobiphenyl
93	2,2',3,5,6-Pentachlorobiphenyl †
101	2,2',4,5,5'-Pentachlorobiphenyl
105	2,3,3',4,4'-Pentachlorobiphenyl
118	2,3',4,4',5-Pentachlorobiphenyl
119	2,3',4,4',6-Pentachlorobiphenyl
128	2,2',3,3',4,4'-Hexachlorobiphenyl
134	2,2',3,3',5,6-Hexachlorobiphenyl
136	2,2',3,3',6,6'-Hexachlorobiphenyl
144	2,2',3,4,5',6-Hexachlorobiphenyl
151	2,2',3,5,5',6-Hexachlorobiphenyl
157	2,3,3',4,4',5'-Hexachlorobiphenyl
158	2,3,3',4,4',6-Hexachlorobiphenyl
190	2,3,3',4,4',5,6-Heptachlorobiphenyl
191	2,3,3',4,4',5',6-Heptachlorobiphenyl
207	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl †
208	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl
209	2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl †

Reference Key

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

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

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

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

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

**PCBs Congeners Calibration Mixtures
NOT present in Aroclors
continued on next page**



PCB Congener Calibration Mixtures

**9 Mixtures provide All 209 Congeners
NOT Present in Aroclors**

PCB Congener Mix #6

C-CS-06 \$ 90 / 1 x 1 mL
10 µg/mL each in Isooctane 18 comps.

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

PCB Congener Mix #7

C-CS-07 \$ 75 / 1 x 1 mL
10 µg/mL each in Isooctane 14 comps.

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

PCB Congener Mix #8

C-CS-08 \$ 75 / 1 x 1 mL
10 µg/mL each in Isooctane 12 comps.

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

PCB Congener Mix #9

C-CS-09 \$ 100 / 1 x 1 mL
10 µg/mL each in Isooctane 21 comps.

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

Congener Calibration Solution Sets

Mixes containing all 209 PCB congeners.

C-CSQ-SET \$ 650 / 9 x 1 mL[†]
1 mL each of:

C-CS-01	C-CS-04	C-CS-07
C-CS-02	C-CS-05	C-CS-08
C-CS-03	C-CS-06	C-CS-09

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

C-CSA-SET \$ 475 / 5 x 1 mL
1 mL each of:

C-CS-01	C-CS-03	C-CS-05
C-CS-02	C-CS-04	

Mixes for non-Aroclor congeners

C-CSN-SET \$ 250 / 4 x 1 mL
1 mL each of:

C-CS-06	C-CS-08
C-CS-07	C-CS-09

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.





Method 680 PCB Analytes

Internal Standards

M-680-IS	\$ 15 / 1 x 1 mL
M-680-IS-PAK	SAVE 20% \$ 60 / 5 x 1 mL
75 µg/mL each in Hexane 2 comps.	
M-680-IS-10X	\$ 25 / 1 x 1 mL
M-680-IS-10X-PAK	SAVE 20% \$ 100 / 5 x 1 mL
750 µg/mL each in Hexane 2 comps.	
Chrysene-d ₁₂	Phenanthrene-d ₁₀

PCB Locator Mixture

M-PCBL	\$ 25 / 1 x 1 mL
M-PCBL-PAK	SAVE 20% \$ 100 / 5 x 1 mL
At stated conc. in Isooctane 5 comps.	
Aroclor 1242	(0.5 µg/mL)
Aroclor 1260	(0.5 µg/mL)
2-Chlorobiphenyl	(0.1 µg/mL)
3-Chlorobiphenyl	(0.1 µg/mL)
Decachlorobiphenyl	(0.1 µg/mL)

Retention Time Calibration Std.

M-680-RT	\$ 25 / 1 x 1 mL
M-680-RT-PAK	SAVE 20% \$ 100 / 5 x 1 mL
100 µg/mL each in Hexane 3 comps.	
3,3',4,4'-Tetrachlorobiphenyl	
2,2',4,6,6'-Pentachlorobiphenyl	
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	

See EPA section Method 680 for complete analyte list.

PCB Isomer Calibration Mix

M-680A	\$ 40 / 1 x 1 mL
At stated conc. in Hexane 9 comps.	
1	2-Chlorobiphenyl (50 µg/mL)
5	2,3-Dichlorobiphenyl (50 µg/mL)
29	2,4,5-Trichlorobiphenyl (50 µg/mL)
50	2,2',4,6-Tetrachlorobiphenyl (100 µg/mL)
87	2,2',3,4,5'-Pentachlorobiphenyl (100 µg/mL)
154	2,2',4,4',5,6'-Hexachlorobiphenyl (100 µg/mL)
188	2,2',3,4',5,6,6'-Heptachlorobiphenyl (150 µg/mL)
201	2,2',3,3',4,5',6,6'-Octachlorobiphenyl (150 µg/mL)
209	2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (250 µg/mL)

Technical Note

The EPA has designated the 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.

Internal Standard

M-680B	\$ 15 / 1 x 1 mL
250 µg/mL in Toluene	
Chrysene-d ₁₂	

Tuning Standard

M-680-TS	\$ 10 / 1 x 1 mL
M-680-TS-PAK	SAVE 20% \$ 40 / 5 x 1 mL
10 µg/mL in CH ₂ Cl ₂	
Decafluorotriphenylphosphine (DFTPP)	

PCB Isomer Calibration Set

M-680-SET	\$ 45 / 2 x 1 mL
Includes: M-680A (Mix) M-680B (Internal Standard)	

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

Instrument Test Solutions

PCB Window Defining Mixture

C-WDM	\$ 60 / 1 x 1 mL
C-WDM-PAK	SAVE 20% \$ 240 / 5 x 1 mL
2.5 µg/mL each in Isooctane 20 comps.	
No.	
0	Biphenyl
1	2-Chlorobiphenyl
3	4-Chlorobiphenyl
10	2,6-Dichlorobiphenyl
15	4,4'-Dichlorobiphenyl
19	2,2',6-Trichlorobiphenyl
37	3,4,4'-Trichlorobiphenyl
54	2,2',6,6'-Tetrachlorobiphenyl
77	3,3',4,4'-Tetrachlorobiphenyl
104	2,2',4,6,6'-Pentachlorobiphenyl
126	3,3',4,4',5-Pentachlorobiphenyl
155	2,2',4,4',6,6'-Hexachlorobiphenyl
169	3,3',4,4',5,5'-Hexachlorobiphenyl
188	2,2',3,4',5,6'-Heptachlorobiphenyl
189	2,3,3',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'-Nonachlorobiphenyl
206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl
209	2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl

PCB Calibration Check Solution

C-CCSEC	\$ 60 / 1 x 1 mL
C-CCSEC-PAK	SAVE 20% \$ 240 / 5 x 1 mL
100 µg/mL each in Acetone 20 comps.	
C-CCSEC-R	\$ 40 / 1 x 1 mL
C-CCSEC-R-PAK	SAVE 20% \$ 160 / 5 x 1 mL
C-CCSEC plus 2,2',3,3',4,5',6,6'-Octachlorobiphenyl 21 comps.	
Special Blend	
No.	
8	2,4'-Dichlorobiphenyl
18	2,2',5-Trichlorobiphenyl
28	2,4,4'-Trichlorobiphenyl
44	2,2',3,5'-Tetrachlorobiphenyl
52	2,2',5,5'-Tetrachlorobiphenyl
66	2,3',4,4'-Tetrachlorobiphenyl
77	3,3',4,4'-Tetrachlorobiphenyl
101	2,2',4,5,5'-Pentachlorobiphenyl
105	2,3,3',4,4'-Pentachlorobiphenyl
118	2,3',4,4',5-Pentachlorobiphenyl
126	3,3',4,4',5-Pentachlorobiphenyl
128	2,2',3,3',4,4'-Hexachlorobiphenyl
138	2,2',3,4,4',5'-Hexachlorobiphenyl
153	2,2',4,4',5,5'-Hexachlorobiphenyl
170	2,2',3,3',4,4',5-Heptachlorobiphenyl
180	2,2',3,4,4',5,5'-Heptachlorobiphenyl
187	2,2',3,4',5,5',6-Heptachlorobiphenyl
195	2,2',3,3',4,4',5,6-Octachlorobiphenyl
206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl
209	2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl

PCB/Selective Ion Monitoring Solution

PCB-SIM	\$ 45 / 1 x 1 mL
PCB-SIM-PAK	SAVE 20% \$ 180 / 5 x 1 mL
At stated conc. in Hexane 12 comps.	
No.	
1	2-Chlorobiphenyl (10 µg/mL)
5	2,3-Dichlorobiphenyl (10 µg/mL)
29	2,4,5-Trichlorobiphenyl (10 µg/mL)
104	2,2',4,6,6'-Pentachlorobiphenyl (20 µg/mL)
87	2,2',3,4,5'-Pentachlorobiphenyl (20 µg/mL)
208	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (40 µg/mL)
50	2,2',4,6-Tetrachlorobiphenyl (20 µg/mL)
209	2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (50 µg/mL)
77	3,3',4,4'-Tetrachlorobiphenyl (20 µg/mL)
200	2,2',3,3',4,4',5,6'-Octachlorobiphenyl (30 µg/mL)
186	2,2',3,4',5,6,6'-Heptachlorobiphenyl (30 µg/mL)
154	2,2',4,4',5,6'-Hexachlorobiphenyl (20 µg/mL)

Technical Note

For use with 5% phenyl methyl silicone type columns



Aroclors

(Industrial PCBs)

Aroclors

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

Aroclor #	Isooctane		SAVE 20% PAK		Isooctane		Methanol		SAVE 20% PAK		Methanol	
	35 µg/mL	1 mL	5 x 1 mL		100 µg/mL	1 mL	35 µg/mL	1 mL	5 x 1 mL		100 µg/mL	1 mL
Aroclor 1016	C-216S	\$ 15	C-216S-PAK	\$ 60	C-216S-TP	\$ 20	C-216S-M	\$ 15	C-216S-M-PAK	\$ 60	C-216S-M-2.85X	\$ 12
Aroclor 1221	C-221S	15	C-221S-PAK	60	C-221S-TP	20	C-221S-M	15	C-221S-M-PAK	60	C-221S-M-2.85X	12
Aroclor 1232	C-232S	15	C-232S-PAK	60	C-232S-TP	20	C-232S-M	15	C-232S-M-PAK	60	C-232S-M-2.85X	10
Aroclor 1242	C-242S	15	C-242S-PAK	60	C-242S-TP	20	C-242S-M	15	C-242S-M-PAK	60	C-242S-M-2.85X	15
Aroclor 1248	C-248S	15	C-248S-PAK	60	C-248S-TP	20	C-248S-M	15	C-248S-M-PAK	60	C-248S-M-2.85X	12
Aroclor 1254	C-254S	15	C-254S-PAK	60	C-254S-TP	20	C-254S-M	15	C-254S-M-PAK	60	C-254S-M-2.85X	12
Aroclor 1260	C-260S	15	C-260S-PAK	60	C-260S-TP	20	C-260S-M	15	C-260S-M-PAK	60	C-260S-M-2.85X	12
Aroclor 1262	C-262S	15	C-262S-PAK	60	C-262S-TP	20	C-262S-M	15	C-262S-M-PAK	60	C-262S-M-2.85X	12
Aroclor 1268	C-268S	15	C-268S-PAK	60	C-268S-TP	20	C-268S-M	15	C-268S-M-PAK	60	C-268S-M-2.85X	12
Set of above	Z-008S-SET	\$ 78 / 9 x 1 mL			Z-008S-M-SET	\$ 78 / 9 x 1 mL						

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

Aroclor #	Hexane		Hexane		SAVE 20% PAK	
	100 µg/mL	1 mL	1000 µg/mL	1 mL	5 x 1 mL	
Aroclor 1016	C-216S-H	\$ 15	C-216S-H-10X	\$ 20	C-216S-H-10X-PAK	\$ 80
Aroclor 1221	C-221S-H	15	C-221S-H-10X	20	C-221S-H-10X-PAK	80
Aroclor 1232	C-232S-H	15	C-232S-H-10X	20	C-232S-H-10X-PAK	80
Aroclor 1242	C-242S-H	15	C-242S-H-10X	20	C-242S-H-10X-PAK	80
Aroclor 1248	C-248S-H	15	C-248S-H-10X	20	C-248S-H-10X-PAK	80
Aroclor 1254	C-254S-H	15	C-254S-H-10X	20	C-254S-H-10X-PAK	80
Aroclor 1260	C-260S-H	15	C-260S-H-10X	20	C-260S-H-10X-PAK	80
Aroclor 1262	C-262S-H	15	C-262S-H-10X	20	C-262S-H-10X-PAK	80
Aroclor 1268	C-268S-H	15	C-268S-H-10X	20	C-268S-H-10X-PAK	80
Set of 9 above	Z-008S-H-SET	78	Z-008S-H-10X-SET	120		

Aroclor Neats (Individuals)

Aroclor #	Neat	Price / Unit
Aroclor 1016	C-216N	\$ 40 / 100 mg
Aroclor 1221	C-221N-50MG	50 / 50 mg
Aroclor 1232	-----	-----
Aroclor 1242	C-242N-50MG	40 / 50 mg
Aroclor 1248	C-248N-50MG	40 / 50 mg
Aroclor 1254	C-254N-50MG	55 / 50 mg
Aroclor 1260	C-260N-50MG	40 / 50 mg
Aroclor 1262	C-262N-50MG	40 / 50 mg
Aroclor 1268	-----	-----

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

Aroclor # CAS No.	Conc. ppm w/w	Individual Price		PAK SAVE 20%	
		Cat. No.	1 mL	Cat. No.	5 x 1 mL
Aroclor 1016	50	C-216-ST-1	\$ 25	C-216-ST-1-PAK	\$ 100
12674-11-2	500	C-216-ST-2	30	C-216-ST-2-PAK	120
Aroclor 1221	50	C-221-ST-1	25	C-221-ST-1-PAK	100
11104-28-2	500	C-221-ST-2	30	C-221-ST-2-PAK	120
Aroclor 1232	50	C-232-ST-1	25	C-232-ST-1-PAK	100
11141-16-5	500	C-232-ST-2	75	C-232-ST-2-PAK	300
Aroclor 1242	50	C-242-ST-1	25	C-242-ST-1-PAK	100
53469-21-9	500	C-242-ST-2	30	C-242-ST-2-PAK	120
Aroclor 1248	50	C-248-ST-1	25	C-248-ST-1-PAK	100
12672-29-6	500	C-248-ST-2	30	C-248-ST-2-PAK	120
Aroclor 1254	50	C-254-ST-1	25	C-254-ST-1-PAK	100
11097-69-1	500	C-254-ST-2	30	C-254-ST-2-PAK	120
Aroclor 1260	50	C-260-ST-1	25	C-260-ST-1-PAK	100
11096-82-5	500	C-260-ST-2	30	C-260-ST-2-PAK	120
Aroclor 1262	50	C-262-ST-1	25	C-262-ST-1-PAK	100
37324-23-5	500	C-262-ST-2	30	C-262-ST-2-PAK	120
Aroclor 1268	50	C-268-ST-1	25	C-268-ST-1-PAK	100
11100-14-4	500	C-268-ST-2	75	C-268-ST-2-PAK	300

Aroclor-free Transformer Oil T-W130 \$ 10 / 1 x 1 mL

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-254S-TYPE1*	C-221S-TYPE2* and C-254S-TYPE2*	C-221S-SET	\$ 40 / 2 x 1 mL
		C-254S-SET	\$ 40 / 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 \$ 30 / 1 x 1 mL
35 µg/mL in Isooctane
3,3',4,4'-Tetrabromobiphenyl

Hydroxy-Chlorobiphenyls

Compound	CAS No.	NEAT Cat. No.	Price / Unit	100 µg/mL in Isooctane Cat. No.	Price / 1 mL
2-Hydroxy-5-chlorobiphenyl	607-12-5	HPCB-1001N	\$ 20 / 5 mg	HPCB-1001S	\$ 15
4-Hydroxy-2-chlorobiphenyl	23719-22-4	HPCB-1002N	20 / 5 mg	HPCB-1002S	15
4-Hydroxy-3-chlorobiphenyl	92-04-6	HPCB-1003N	20 / 5 mg	HPCB-1003S	15
4-Hydroxy-4'-chlorobiphenyl	28034-99-3	HPCB-1004N	40 / 10 mg	HPCB-1004S	20
2-Hydroxy-2',5'-dichlorobiphenyl	53905-30-9	HPCB-2001N	50 / 10 mg	HPCB-2001S	20
3-Hydroxy-2',5'-dichlorobiphenyl	53905-29-6	HPCB-2002N	50 / 10 mg	HPCB-2002S	20
4-Hydroxy-2',5'-dichlorobiphenyl	53905-28-5	HPCB-2003N	50 / 10 mg	HPCB-2003S	20
4-Hydroxy-3,5-dichlorobiphenyl	1137-59-3	HPCB-2004N	50 / 10 mg	HPCB-2004S	20
2-Hydroxy-2',3'-dichlorobiphenyl		HPCB-2005N	50 / 10 mg	HPCB-2005S	20
2-Hydroxy-3',4'-dichlorobiphenyl		HPCB-2006N	50 / 10 mg	HPCB-2006S	20
2-Hydroxy-2',4',6'-trichlorobiphenyl		HPCB-3001N	50 / 10 mg	HPCB-3001S	20
2-Hydroxy-2',5,5'-trichlorobiphenyl		HPCB-3002N	50 / 10 mg	HPCB-3002S	20
3-Hydroxy-2',4',6'-trichlorobiphenyl		HPCB-3003N	50 / 10 mg	HPCB-3003S	20
4-Hydroxy-2,2',5'-trichlorobiphenyl	53905-33-2	HPCB-3004N	40 / 5 mg	HPCB-3004S	30
4-Hydroxy-2',3,5'-trichlorobiphenyl		HPCB-3005N	50 / 5 mg	HPCB-3005S	20
4-Hydroxy-2',4',6'-trichlorobiphenyl	14962-28-8	HPCB-3006N	50 / 10 mg	HPCB-3006S	20
2-Hydroxy-2',3',4',5'-tetrachlorobiphenyl		HPCB-4001N	50 / 10 mg	HPCB-4001S	20
2-Hydroxy-2',3',5',6'-tetrachlorobiphenyl		HPCB-4002N	50 / 10 mg	HPCB-4002S	20
2-Hydroxy-2',4',5,6'-tetrachlorobiphenyl		HPCB-4003N	50 / 10 mg	HPCB-4003S	20
3-Hydroxy-2',3',4',5'-tetrachlorobiphenyl	67651-37-0	HPCB-4004N	50 / 10 mg	HPCB-4004S	20
3-Hydroxy-2',3',5',6'-tetrachlorobiphenyl		HPCB-4005N	50 / 10 mg	HPCB-4005S	20
4-Hydroxy-2,2',4',6'-tetrachlorobiphenyl	150304-08-8	HPCB-4006N	40 / 5 mg	HPCB-4006S	30
4-Hydroxy-2',3',4',5'-tetrachlorobiphenyl	67651-34-7	HPCB-4007N	50 / 10 mg	HPCB-4007S	20
4-Hydroxy-2',3,4',6'-tetrachlorobiphenyl		HPCB-4008N	50 / 5 mg	HPCB-4008S	20
4-Hydroxy-2',3,5,5'-tetrachlorobiphenyl		HPCB-4009N	50 / 10 mg	HPCB-4009S	20
4-Hydroxy-2',3',5',6'-tetrachlorobiphenyl	14962-32-4	HPCB-4010N	50 / 10 mg	HPCB-4010S	20
4'-Hydroxy-3,3',4,5'-tetrachlorobiphenyl NEW		-----	-----	HPCB-4011S	20
3-Hydroxy-2,2',6,6'-tetrachlorobiphenyl		-----	-----	HPCB-4012S	50
2-Hydroxy-2',3,5,6'-tetrachlorobiphenyl NEW		-----	-----	HPCB-4013S	50
5-Hydroxy-2,2',4,6'-tetrachlorobiphenyl		-----	-----	HPCB-4014S	50
4,4'-Dihydroxy-2,2',6,6'-tetrachlorobiphenyl		-----	-----	HPCB-4015S	50
4,6'-Dihydroxy-2,2',4,6'-tetrachlorobiphenyl NEW		-----	-----	HPCB-4016S	50
2-Hydroxy-2',3',4',5,5'-pentachlorobiphenyl	67651-36-9	HPCB-5001N	50 / 10 mg	HPCB-5001S	20
2-Hydroxy-2',3',5,5',6'-pentachlorobiphenyl		HPCB-5002N	50 / 10 mg	HPCB-5002S	20
4-Hydroxy-2,2',3',4',5'-pentachlorobiphenyl		HPCB-5003N	40 / 5 mg	HPCB-5003S	30
4-Hydroxy-2,2',3',5',6'-pentachlorobiphenyl		HPCB-5004N	40 / 5 mg	HPCB-5004S	30
4-Hydroxy-2',3,3',4',5'-pentachlorobiphenyl	67651-35-8	HPCB-5005N	50 / 5 mg	HPCB-5005S	20
4-Hydroxy-2',3,3',5',6'-pentachlorobiphenyl		HPCB-5006N	50 / 5 mg	HPCB-5006S	20
4-Hydroxy-2',3,4',5,6'-pentachlorobiphenyl		HPCB-5007N	50 / 10 mg	HPCB-5007S	20
3-Hydroxy-2,2',4',5,5'-pentachlorobiphenyl	69278-58-6	-----	-----	HPCB-5008S	50
4-Hydroxy-2,2',4',5,5'-pentachlorobiphenyl		-----	-----	HPCB-5009S	50
2-Hydroxy-2',3,4',5,6'-pentachlorobiphenyl		-----	-----	HPCB-5010S	50
4-Hydroxy-2',3,3',4',5,5'-hexachlorobiphenyl	158076-63-2	HPCB-6001N	50 / 10 mg	HPCB-6001S	20
4-Hydroxy-2',3,3',5,5',6'-hexachlorobiphenyl		HPCB-6002N	50 / 10 mg	HPCB-6002S	20
5-Hydroxy-2,2',3,4,4',5'-hexachlorobiphenyl NEW		-----	-----	HPCB-6003S	20
4'-Hydroxy-2,2',3,3',4,5,5'-heptachlorobiphenyl		-----	-----	HPCB-7001S	50
3'-Hydroxy-2,2',3,4,4',5,6'-heptachlorobiphenyl NEW		-----	-----	HPCB-7002S	50
3'-Hydroxy-2,2',3,4,4',5,5'-heptachlorobiphenyl		-----	-----	HPCB-7003S	50
5-Hydroxy-2,2',3,4,4',5,6'-heptachlorobiphenyl		-----	-----	HPCB-7004S	50

Methoxy PCBs

Compound	100 µg/mL in Isooctane Cat. No.	Price / 1 mL	Compound	100 µg/mL in Isooctane Cat. No.	Price / 1 mL
2-Methoxy-5-chlorobiphenyl	MOPCB-1001S	\$ 20	2-Methoxy-2',3',4',5'-tetrachlorobiphenyl	MOPCB-4001S	\$ 25
4-Methoxy-2-chlorobiphenyl	MOPCB-1002S	20	2-Methoxy-2',3',5',6'-tetrachlorobiphenyl	MOPCB-4002S	25
4-Methoxy-3-chlorobiphenyl	MOPCB-1003S	20	2-Methoxy-2',4',5,6'-tetrachlorobiphenyl	MOPCB-4003S	25
4-Methoxy-4'-chlorobiphenyl	MOPCB-1004S	25	3-Methoxy-2',3',4',5'-tetrachlorobiphenyl	MOPCB-4004S	25
2-Methoxy-2'-5-dichlorobiphenyl NEW	MOPCB-2001S	25	3-Methoxy-2',3',5',6'-tetrachlorobiphenyl	MOPCB-4005S	25
3-Methoxy-2',5'-dichlorobiphenyl	MOPCB-2002S	25	4-Methoxy-2',3',4',5'-tetrachlorobiphenyl	MOPCB-4007S	25
4-Methoxy-2',5'-dichlorobiphenyl	MOPCB-2003S	25	4-Methoxy-2',3,4',6'-tetrachlorobiphenyl	MOPCB-4008S	25
4-Methoxy-3,5-dichlorobiphenyl	MOPCB-2004S	25	4-Methoxy-2',3,5,5'-tetrachlorobiphenyl	MOPCB-4009S	25
2-Methoxy-2',3'-dichlorobiphenyl	MOPCB-2005S	25	4'-Methoxy-3,3',4,5'-tetrachlorobiphenyl NEW	MOPCB-4011S	25
2-Methoxy-3',4'-dichlorobiphenyl	MOPCB-2006S	25	3-Methoxy-2,2',6,6'-tetrachlorobiphenyl NEW	MOPCB-4012S-0.5X *	55
2-Methoxy-2',4',6'-trichlorobiphenyl	MOPCB-3001S	25	2-Methoxy-2',3',4',5,5'-pentachlorobiphenyl	MOPCB-5001S	25
2-Methoxy-2',5,5'-trichlorobiphenyl	MOPCB-3002S	25	2-Methoxy-2',3',5,5',6'-pentachlorobiphenyl	MOPCB-5002S	25
3-Methoxy-2',4',6'-trichlorobiphenyl	MOPCB-3003S	25	4-Methoxy-2,2',3',4',5'-pentachlorobiphenyl	MOPCB-5003S	35
4-Methoxy-2,2',5'-trichlorobiphenyl	MOPCB-3004S	35	4-Methoxy-2,2',3',5',6'-pentachlorobiphenyl	MOPCB-5004S	35
4-Methoxy-2',3,5'-trichlorobiphenyl	MOPCB-3005S	25	4-Methoxy-2,2',4',5,5'-pentachlorobiphenyl	MOPCB-5009S	55
4-Methoxy-2',4',6'-trichlorobiphenyl	MOPCB-3006S	25	2-Methoxy-2',3,4',5,6'-pentachlorobiphenyl	MOPCB-5010S	55
			4-Methoxy-2',3,3',4',5,5'-hexachlorobiphenyl	MOPCB-6001S	25
			5-Methoxy-2,2',3,4,4',5'-hexachlorobiphenyl NEW	MOPCB-6003S	55
			4'-Methoxy-2,2',3,3',4,5,5'-heptachlorobiphenyl	MOPCB-7001S-0.5X *	55
			5-Methoxy-2,2',3,4,4',5,6'-heptachlorobiphenyl NEW	MOPCB-7004S-0.5X *	55

* in 50 µg/mL



PCB Metabolites

PCBs

Methylsulfonyl PCB Congeners

Compound	CAS No.	50 µg/mL in Isooctane	
		Cat. No.	Price / 1 mL
3-Methylsulfonyl-2,2',4',5-tetrachlorobiphenyl	116807-52-4	MSCB-3049	\$ 150
3-Methylsulfonyl-2,2',5,5'-tetrachlorobiphenyl	60640-54-2	MSCB-3052	150
3-Methylsulfonyl-2,3',4',5-tetrachlorobiphenyl	116807-53-5	MSCB-3070	150
3-Methylsulfonyl-2,2',3',4',5-pentachlorobiphenyl	66640-58-2	MSCB-3087	150
3-Methylsulfonyl-2,2',4',5,6-pentachlorobiphenyl	149949-86-0	MSCB-3091	150
3-Methylsulfonyl-2,2',3',5,6-pentachlorobiphenyl		MSCB-3095	150
3-Methylsulfonyl-2,2',4',5,5'-pentachlorobiphenyl	66640-60-6	MSCB-3101	150
3-Methylsulfonyl-2,3',4',5,6-pentachlorobiphenyl	116807-23-9	MSCB-3110	150
3-Methylsulfonyl-2,2',3',4',5,6-hexachlorobiphenyl	149949-90-6	MSCB-3132	150
3-Methylsulfonyl-2,2',3',4',5,5'-hexachlorobiphenyl	104086-18-2	MSCB-3141	150
3-Methylsulfonyl-2,2',4',5,5',6-hexachlorobiphenyl	149949-88-2	MSCB-3149	150
3-Methylsulfonyl-2,2',3',4',5,5',6-heptachlorobiphenyl		MSCB-3174	150
4-Methylsulfonyl-2,2',4',5-tetrachlorobiphenyl	69797-52-0	MSCB-4049	150
4-Methylsulfonyl-2,2',5,5'-tetrachlorobiphenyl	60640-55-3	MSCB-4052	150
4-Methylsulfonyl-2,3',4',6-tetrachlorobiphenyl	108736-08-9	MSCB-4064	150
4-Methylsulfonyl-2,3',4',5-tetrachlorobiphenyl	69797-51-9	MSCB-4070	150
4-Methylsulfonyl-2,2',3',4',5-pentachlorobiphenyl	66640-59-3	MSCB-4087	150
4-Methylsulfonyl-2,2',4',5,6-pentachlorobiphenyl	149949-87-1	MSCB-4091	150
4-Methylsulfonyl-2,2',3',5,6-pentachlorobiphenyl		MSCB-4095	150
4-Methylsulfonyl-2,2',4',5,5'-pentachlorobiphenyl	66640-61-7	MSCB-4101	150
4-Methylsulfonyl-2,2',4',5,6'-pentachlorobiphenyl		MSCB-4103	150
4-Methylsulfonyl-2,3',3',4',6-pentachlorobiphenyl	149949-89-3	MSCB-4110	150
4-Methylsulfonyl-2,2',3',3',4',6-hexachlorobiphenyl	104086-16-0	MSCB-4132	150
4-Methylsulfonyl-2,2',3',4',5,5'-hexachlorobiphenyl	104086-19-3	MSCB-4141	150
4-Methylsulfonyl-2,2',3',4',5,6-hexachlorobiphenyl	116806-76-9	MSCB-4149	150
4-Methylsulfonyl-2,2',3',4',5,5',6-heptachlorobiphenyl	153310-30-6	MSCB-4174	150
3-Methylsulfonyl-4-methyl-2',3',4',5,5'-pentachlorobiphenyl (ISTD)		MSCB-IS	150

Technical Note

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

Hydroxy-Biphenyls

Compound	CAS No.	NEAT Cat. No.	Price / Unit	100 µg/mL in MeOH	
				Cat. No.	Price / 1 mL
2-Hydroxy-biphenyl	90-43-7	HBP-001N	\$ 15 / 100 mg	HBP-001S	\$ 15
3-Hydroxy-biphenyl	580-51-8	HBP-002N	15 / 100 mg	HBP-002S	15
4-Hydroxy-biphenyl	92-69-3	HBP-003N	15 / 100 mg	HBP-003S	15
2,2'-Dihydroxy-biphenyl	1806-29-7	HBP-004N	15 / 100 mg	HBP-004S	15
4,4'-Dihydroxy-biphenyl	92-88-6	HBP-006N	15 / 100 mg	HBP-006S	15
2,5-Dihydroxy-biphenyl	1079-21-6	HBP-009N	15 / 100 mg	HBP-009S	15

Purchasing Neat Standards

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

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

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





Perchlorinated Terphenyls

Compound	CAS No.	NEAT Cat. No.	Price / Unit	35 µg/mL in Toluene	
				Cat. No.	Price / 1 mL
o-Terphenyl	84-15-1	T-001N	\$ 13 / 100 mg	-----	--
m-Terphenyl	92-06-8	T-002N	13 / 100 mg	-----	--
p-Terphenyl	92-94-4	T-003N	13 / 100 mg	-----	--
Tetradecachloro-o-terphenyl		-----	-----	T-004S	\$ 25
Tetradecachloro-m-terphenyl	42429-88-9	-----	-----	T-005S	25
Tetradecachloro-p-terphenyl		-----	-----	T-006S	25
Aroclor 5432	63496-31-1	-----	-----	T-432S	25
Aroclor 5442	12642-23-8	-----	-----	T-442S	25
Aroclor 5460	11126-42-4	-----	-----	T-460S	25
Aroclor 6050		-----	-----	T-6050S	25

Perchlorinated Aromatics

Compound	CAS No.	NEAT Cat. No.	Price / Unit	35 µg/mL in Toluene	
				Cat. No.	Price / 1 mL
Decachlorobiphenyl	2051-24-3	C-209N	\$ 12 / 10 mg	-----	--
Hexachlorobenzene	118-74-1	A-012	10 / 100 mg	-----	--
Octachlorodibenzofuran	39001-02-0	F-801N	30 / 50 mg	F-801S **	\$ 15
Octachlorodibenzo-p-dioxin	3268-87-9	D-801N	160 / 50 mg	D-801S **	30
Octachloronaphthalene	2234-13-1	-----	-----	N-003S *	20
Octachlorostyrene	29082-74-4	-----	-----	PC-001S	25
Perchlorinated p,p'-DDE		-----	-----	PC-002S	25
Tetradecachloro-o-terphenyl		-----	-----	T-004S	25
Tetradecachloro-m-terphenyl	42429-88-9	-----	-----	T-005S	25
Tetradecachloro-p-terphenyl		-----	-----	T-006S	25

* 100 µg/mL in MeOH

** 50 µg/mL in Toluene

Polychlorinated Naphthalenes

Halowaxes (Kopper's PCNs)

Compound	CAS No.	NEAT Cat. No.	Price / Unit	100 µg/mL in MeOH	
				Cat. No.	Price / 1 mL
Halowax 1013 (56 %Cl)	1321-64-8	-----	-----	N-1013S	\$ 20
Halowax 1014 (62 %Cl)	1335-87-1	-----	-----	N-1014S	20
Halowax 1051 (70 %Cl)	2234-13-1	-----	-----	N-1051S	20
Halowax 1099 (52 %Cl)	39450-05-0	-----	-----	N-1099S	20

Polychlorinated Naphthalene Congeners

Compound	CAS No.	NEAT Cat. No.	Price / Unit		
Naphthalene	91-20-3	H-152N	\$ 12 / 100 mg		
1-Chloronaphthalene	90-13-1	N-001N	12 / 100 mg		
2-Chloronaphthalene	91-58-7	N-002N	12 / 100 mg		
1,4-Dichloronaphthalene	1825-31-6	N-004N	25 / 10 mg		
Octachloronaphthalene	2234-13-1	N-003S *	20 / 1 mL		
1,2,3,4-Tetrachloronaphthalene	20020-02-4	N-005N	30 / 10 mg		

* 100 µg/mL in MeOH



Halogenated Aromatics (other than PCBs)

Halogenated Aromatics (other than PCBs)

Compound	CAS No.	Conc	Matrix	Cat. No.	Price / 1 mL
Decafluorobiphenyl	434-90-2	10 µg/mL	Acetone	M-551.1-SS	\$ 10
		0.1 mg/mL	AcCN	M-8310-SS	10
		0.2 mg/mL	CH ₂ Cl ₂	M-625-04	20
		1 mg/mL	Acetone	M-551.1-SS-100X	20
		2 mg/mL	CH ₂ Cl ₂	M-625-04-10X	22
4,4'-Dibromobiphenyl	92-86-4	0.1 mg/mL	Ethyl acetate	M-508.1-SS	15
		0.2 mg/mL	CH ₂ Cl ₂	M-625-05	20
		1 mg/mL	Acetone	M-8111-IS-20X	10
		2 mg/mL	CH ₂ Cl ₂	M-625-05-10X	20
		0.2 mg/mL	CH ₂ Cl ₂	M-625-06	20
4,4'-Dibromooctafluorobiphenyl	10386-84-2	2 mg/mL	CH ₂ Cl ₂	M-625-06-10X	20
2,2'-Difluorobiphenyl	388-82-9	0.2 mg/mL	CH ₂ Cl ₂	M-625-07	20
		1 mg/mL	MeOH	M-1653-IIS	20
		2 mg/mL	CH ₂ Cl ₂	M-625-07-10X	20
		5 mg/mL	Acetone	M-1653-IIS-R	20
2-Fluorobiphenyl	321-60-8	0.2 mg/mL	CH ₂ Cl ₂	M-625-09	20
		2 mg/mL	CH ₂ Cl ₂	M-625-09-10X	20
Halowax 1013	1321-64-8	0.1 mg/mL	MeOH	N-1013S	20
Halowax 1014	1335-87-1	0.1 mg/mL	MeOH	N-1014S	20
Halowax 1051		0.1 mg/mL	MeOH	N-1051S	20
Halowax 1099	39450-05-0	0.1 mg/mL	MeOH	N-1099S	20
		5 mg/mL	MeOH	AS-E0470	32
1,2,3,4,5,6,7,8-Octachloronaphthalene	2234-13-1	100 µg/mL	MeOH	N-003S	20
Tetradecachloro- <i>o</i> -terphenyl		35 µg/mL	Toluene	T-004S	25
Tetradecachloro- <i>m</i> -terphenyl		35 µg/mL	Toluene	T-005S	25
Tetradecachloro- <i>p</i> -terphenyl	31710-32-4	35 µg/mL	Toluene	T-006S	25

Chlorodiphenyl Ether

Compound	CAS No.	Conc	Matrix	Cat. No.	Price / 1 mL
4-Chlorophenyl phenyl ether	7005-72-3	10 mg	NEAT	CDE-003N	\$ 30
		50 µg/mL	Isooctane	CDE-003S	30
2,4-Dichlorodiphenyl ether		10 mg	NEAT	CDE-007N	30
		50 µg/mL	Isooctane	CDE-007S	30
4,4'-Dichlorodiphenyl ether	2444-89-5	10 mg	NEAT	CDE-015N	75
		50 µg/mL	Isooctane	CDE-015S	75
3,3',4,4'-Tetrachlorodiphenyl ether		50 µg/mL	Isooctane	CDE-077S	50
2,3,3',4,4'-Pentachlorodiphenyl ether		50 µg/mL	Isooctane	CDE-105S	75
2,3',4,4',5-Pentachlorodiphenyl ether	60123-65-1	10 mg	NEAT	CDE-118N	75
		50 µg/mL	Isooctane	CDE-118S	75
Decachlorodiphenyl ether	31710-30-2	10 mg	NEAT	CDE-209N	30
		50 µg/mL	Isooctane	CDE-209S	30



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%

Dioxins

Dibenzo-p-dioxin Congeners

Compound	CAS No.	NEAT Cat. No.	Price / Unit	SOLUTION Cat. No.	Conc.	Solvent	Price 1 mL
1-Chlorodibenzo-p-dioxin	39227-53-7	D-101N	\$ 54 / 25 mg	D-101S	50 µg/mL	Isooctane	\$ 15
2-Chlorodibenzo-p-dioxin	39227-54-8	D-102N	54 / 50 mg	D-102S	50 µg/mL	Isooctane	15
Dibenzo-p-dioxin	262-12-4	D-100N	80 / 10 mg	D-100S	50 µg/mL	Isooctane	30
1,2-Dichlorodibenzo-p-dioxin		-----	-----	D-207S	50 µg/mL	Isooctane	40
1,3-Dichlorodibenzo-p-dioxin		D-205N	180 / 10 mg	D-205S	50 µg/mL	Isooctane	20
1,4-Dichlorodibenzo-p-dioxin		D-206N	180 / 10 mg	D-206S	50 µg/mL	Isooctane	20
1,6-Dichlorodibenzo-p-dioxin	38178-38-0	D-201N	70 / 5 mg	D-201S	50 µg/mL	Isooctane	30
2,3-Dichlorodibenzo-p-dioxin	29446-15-9	D-202N	130 / 5 mg	D-202S	50 µg/mL	Isooctane	20
2,7-Dichlorodibenzo-p-dioxin	33857-26-0	D-203N	95 / 25 mg	D-203S	50 µg/mL	Isooctane	20
2,8-Dichlorodibenzo-p-dioxin		-----	-----	D-204S	50 µg/mL	Isooctane	30
1,2,3-Trichlorodibenzo-p-dioxin	54536-17-3	D-301N	260 / 5 mg	D-301S	50 µg/mL	Isooctane	50
1,2,4-Trichlorodibenzo-p-dioxin	39227-58-2	D-302N	130 / 10 mg	D-302S	50 µg/mL	Isooctane	15
1,7,8-Trichlorodibenzo-p-dioxin	82306-65-8	D-303N	70 / 5 mg	D-303S	50 µg/mL	Isooctane	30
2,3,7-Trichlorodibenzo-p-dioxin	33857-28-2	D-304N	250 / 5 mg	D-304S	50 µg/mL	Isooctane	30
1,2,3,4-Tetrachlorodibenzo-p-dioxin	30746-58-8	D-401N	150 / 50 mg	D-401S	50 µg/mL	Toluene	15
1,2,7,8-Tetrachlorodibenzo-p-dioxin	34816-53-0	D-402N	200 / 5 mg	D-402S	50 µg/mL	Toluene	50
1,3,7,8-Tetrachlorodibenzo-p-dioxin	50585-46-1	D-403N	250 / 5 mg	D-403S	50 µg/mL	Toluene	85
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	D-404N	175 / 1 mg	APP-9-167	5 µg/mL	Toluene	50
		-----	-----	M-613	10 µg/mL	Toluene	40
		-----	-----	D-404S	50 µg/mL	Toluene	50
1,3,6,8-Tetrachlorodibenzo-p-dioxin	33423-92-6	D-405N	200 / 5 mg	D-405S	50 µg/mL	Toluene	85
1,2,8,9-Tetrachlorodibenzo-p-dioxin	116889-69-1	D-406N	250 / 5 mg	D-406S	50 µg/mL	Toluene	50
1,3,7,9-Tetrachlorodibenzo-p-dioxin	116889-70-4	D-407N	200 / 5 mg	D-407S	50 µg/mL	Toluene	50
1,2,6,8-Tetrachlorodibenzo-p-dioxin	67323-56-2	D-408N	700 / 1 mg	D-408S	50 µg/mL	Toluene	85
1,2,6,7-Tetrachlorodibenzo-p-dioxin	41903-57-5	D-409N	200 / 5 mg	D-409S	50 µg/mL	Toluene	50
1,2,3,4,7-Pentachlorodibenzo-p-dioxin	39227-61-7	D-503N	500 / 1 mg	D-503S	50 µg/mL	Toluene	150
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	D-501N	600 / 5 mg	APP-9-168	5 µg/mL	Toluene	50
		-----	-----	D-501S	50 µg/mL	Toluene	50
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	71925-18-3	D-504N	900 / 1 mg	D-504S	50 µg/mL	Toluene	150
1,2,4,7,8-Pentachlorodibenzo-p-dioxin	58802-08-7	D-502N	300 / 5 mg	D-502S	50 µg/mL	Toluene	50
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	71998-76-0/ 82291-37-0	D-505N	900 / 1 mg	D-505S	50 µg/mL	Toluene	85
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	58200-66-1	D-603N	900 / 1 mg	D-603S	50 µg/mL	Toluene	150
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	D-601N	350 / 5 mg	APP-9-169	5 µg/mL	Toluene	50
		-----	-----	D-601S	50 µg/mL	Toluene	50
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	D-602N	600 / 1 mg	D-602S	50 µg/mL	Toluene	85
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	39227-62-8/ 58802-09-8	D-604N	400 / 1 mg	D-604S	50 µg/mL	Toluene	50
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	D-605N	700 / 1 mg	D-605S	50 µg/mL	Toluene	85
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	D-701N	250 / 1 mg	D-701S	50 µg/mL	Toluene	85
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	58200-70-7	D-702N	400 / 5 mg	D-702S	50 µg/mL	Toluene	50
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268-87-9	D-801N	160 / 50 mg	D-801S	50 µg/mL	Toluene	30

Brominated Dibenzo-p-Dioxins

Compound	Cat. No.	Conc.	Matrix	Price / 1 mL
1,3,7-Tribromodibenzo-p-dioxin	BDD-301S	10 µg/mL	Toluene	\$ 165
	BDD-301S-2.5X	25 µg/mL	Toluene	250
1,3,8-Tribromodibenzo-p-dioxin	BDD-302S	10 µg/mL	Toluene	165
	BDD-302S-2.5X	25 µg/mL	Toluene	250
1,2,3,7-Tetrabromodibenzo-p-dioxin	BDD-401S	10 µg/mL	Toluene	185
	BDD-401S-2.5X	25 µg/mL	Toluene	350
1,2,3,8-Tetrabromodibenzo-p-dioxin	BDD-402S	10 µg/mL	Toluene	185
	BDD-402S-2.5X	25 µg/mL	Toluene	350
Tetrabromodibenzo-p-dioxin-Mixed Isomers	BDD-403S	10 µg/mL	Toluene	200
1,2,4,7-Tetrabromodibenzo-p-dioxin / 1,2,4,8-Tetrabromodibenzo-p-dioxin	BDD-403S-2.5X	25 µg/mL	Toluene	350
2,3,7,8-Tetrabromodibenzo-p-dioxin	X-001	1 mg	NEAT	150



Chlorodibenzo-p-dioxin Congeners

Canadian Method, Method 1613, 8280

Canadian Dioxin Mixtures

Custom Window Defining Mixture

D-WD	20,000 ng/mL in Toluene	\$ 1,100 / 1 x 1 mL
D-WD-2.5X	50,000 ng/mL in Toluene	\$ 2,000 / 1 x 1 mL
		7 comps.

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

High Concentration
Low Cost

Custom Calibration Mixture

D-CAL	20,000 ng/mL in Toluene	\$ 900 / 1 x 1 mL
D-CAL-2.5X	50,000 ng/mL in Toluene	\$ 1,600 / 1 x 1 mL
		6 comps.

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

Standards of Interest

For more Canadian Methods see International Regional Section

Method 8280A Dioxins & Furans by HRGC/LRMS

Dioxin Mixture

M-8280A	\$ 150 / 1 x 1 mL
M-8280A-PAK	SAVE 20% \$ 600 / 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	\$ 150 / 1 x 1 mL
M-8280B-PAK	SAVE 20% \$ 600 / 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	\$ 200 / 1 x 1 mL
M-8280-CPC-PAK	SAVE 20% \$ 800 / 5 x 1 mL
5 µg/mL each in Toluene	7 comps.

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

Method 1613 Dioxins & Furans by HRGC/HRMS

Method 1613 Precision and Recovery Standard

M-1613-PAR Bold (-04)	\$ 525 / 1 x 1 mL
M-1613-PAR-PAK	SAVE 20% \$ 2,100 / 5 x 1 mL
All units in ng/mL in Nonane	17 comps.

Calibration Set

M-1613-CAL-SET (-01,-02,-03,-04,-05)	\$ 2,100 / 5 x 1 mL
--------------------------------------	---------------------

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

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	\$ 75 / 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.

Minimum purity 98%

Chlorinated Dibenzofuran Congeners

Compound	CAS No.	NEAT Cat. No.	Price / Unit	SOLUTION Cat. No.	Conc.	Solvent	Price 1 mL
Dibenzofuran	132-64-9	F-100N	\$ 14 / 50 mg	F-100S	50 µg/mL	Isooctane	\$ 15
		-----	-----	APP-9-059	100 µg/mL	MeOH	12
		-----	-----	APP-9-059-2X	200 µg/mL	MeOH	15
		-----	-----	AS-E0261	5 mg/mL	MeOH	32
2-Chlorodibenzofuran	51230-49-0	-----	-----	F-102S	50 µg/mL	Isooctane	30
4-Chlorodibenzofuran	74992-96-4	-----	-----	F-104S	50 µg/mL	Isooctane	75
2,8-Dichlorodibenzofuran	5409-83-6	F-201N	65 / 10 mg	F-201S	50 µg/mL	Isooctane	30
2,4,8-Trichlorodibenzofuran	54589-71-8	-----	-----	F-301S	50 µg/mL	Isooctane	75
1,2,3,4-Tetrachlorodibenzofuran	24478-72-6	-----	-----	F-401S	50 µg/mL	Toluene	125
1,3,6,8-Tetrachlorodibenzofuran	30402-14-3	-----	-----	F-403S	50 µg/mL	Toluene	75
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	F-402N	250 / 1 mg	APP-9-170	5 µg/mL	Toluene	75
				F-402S	50 µg/mL	Toluene	160
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	-----	-----	APP-9-171	5 µg/mL	Toluene	75
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	-----	-----	F-502S-0.1X	5 µg/mL	Toluene	75
1,2,3,4,7,8-Hexachlorodibenzofuran	55684-94-1	-----	-----	APP-9-172	5 µg/mL	Toluene	75
1,2,3,4,6,7,8-Heptachlorodibenzofuran	38998-75-3	-----	-----	F-701S-0.1X	5 µg/mL	Toluene	75
				F-701S	50 µg/mL	Toluene	250
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001-02-0	F-801N	30 / 50 mg	F-801S	50 µg/mL	Toluene	15
3-Nitrodibenzofuran	5410-97-9	R-009N	30 / 5 mg	R-009S	100 µg/mL	Toluene	17

Custom Synthesized Rare Chemicals

Neat Compounds, except as noted	CAS No.	Cat. No.	Price / Unit
2-Amino-7,8-dibromo-dibenzo-p-dioxin	Solution 0.1 mg/mL in Toluene	X-011	\$ 50 / 1 mL
4-Chlorophenyl methyl sulfoxide	934-73-6	X-004	20 / 10 mg
4,6-Dinitro-o-toluidine	7477-94-3	X-002	20 / 10 mg
1,4-Dioxino(2,3-b:5,6-b')dipyridine (Dipyridine analog of dibenzo-p-dioxin)	262-16-8	X-005	100 / 5 mg
<i>n,n'</i> -bis(4-Isopropylphenyl)urea	113260-74-5	X-012	20 / 10 mg
9-Methylacridine	611-64-3	X-008	30 / 10 mg
2,3,7,8-Tetrabromodibenzo-p-dioxin	50585-41-6	X-001	150 / 1 mg
3,3',4,4'-Tetrachloroazobenzene	14047-09-7	X-009	30 / 10 mg
3,3',4,4'-Tetrachloroazoxybenzene	21232-47-3	X-010	30 / 10 mg
<i>N,N'</i> -bis(2,4,6-Trichlorophenyl)urea	20632-35-3	X-003	20 / 10 mg



Custom Services

Custom Synthesis

The AccuStandard 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 and governmental agencies around the world. The very well-equipped synthetic laboratory with significant analytical support has made many notable synthesis projects possible. We specialize in synthesizing chemicals of high purity to be used as reference standards, and also offer custom synthesis capability on milligram to kilogram scales.



Analytical Capabilities

- GC-MS, GC-FID, GC-ECD, GC-NPD
- HPLC, LC-MS
- ICP, ICP-MS
- access to more analytical instrumentation if necessary

Synthesis and Purification

- Milligram to Kilogram Glassware
- Inert Conditions Equipment
- High Performance Flash Chromatography
- Distillation Equipment - High Vacuum, Molecular (Kugelrohr), and Spinning Band Columns Preparative TLC
- Parr Pressure and Hydrogenation Reactor

Custom Synthesized Products

- PCBs (all 209 congeners), & hydroxy, methoxy, and methylsulfonyl metabolites
- Halo-Dibenzodioxins and Furans
- PBDEs (all 209 congeners) & hydroxy, methoxy, chloro metabolites
- Fluorinated PBDEs
- Other Brominated Flame Retardants
- PBBs
- PAHs, Nitro-PAHs, Methyl-PAHs
- Pesticides and metabolites
- Explosives and metabolites
- Nonyl- and Octylphenol Ethoxylates
- Mono- and Diester Phthalates
- Organophosphates
- Other Rare Chemicals

AccuStandard is renowned for its quick response to the needs for new compounds. The company's especially strong Synthesis Department allows the synthesis of important and unique products. Featured in its history of firsts are all of the 209 congeners of polychlorinated biphenyls (PCBs), 209 congeners of polybrominated diphenyl ethers (PBDEs) as well as many halogenated dioxins and dibenzofurans, PAHs, pesticides and fluorinated surrogates substituting the expensive isotopically labelled compounds.

Among the more recent introductions are the hydroxy and methoxy PBDE congeners, mixed bromo/chloro hydroxy and methoxy diphenyl ethers, organophosphate flame retardants, biofuels, plastic additives (AccuStandard authored the Handbook for the Chemical Analysis of Plastic and Polymer Additives published by CRC Press), EPA Method 535 pesticide derivatives and previously unavailable explosive standards.

Custom Formulations

With over 30,000+ custom and 10,000+ listed standards, there is a good chance that AccuStandard will have a standard to meet your needs. However, if your laboratory requires something specific, our Chemists will manufacture a Custom Standard to meet your unique requirements. Custom Standards are an economical and time saving way to have a Standard prepared for your individual needs.

Custom QC options

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



Custom Packaging and Bulk Quantity Requirements

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

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

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





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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. AccuStandard offers 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. AccuStandard offers 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. Accustandard offers some flame retardants like Hexabromocyclododecane (HBCD) 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 AccuStandard is providing a number of the most widely used OP-FRs for use as reference standards.

Upon special request compounds can be offered in various concentrations and mixes or as neat materials. Custom standards are an economical and time saving way to have a standard prepared for your individual needs. To make an online Custom Quotes Request, go to AccuStandard.com.



Polybrominated Diphenyl Ether (PBDE) Congeners

Polybrominated Diphenyl Ethers (PBDEs) Congeners

Compound	CAS No.	Conc.	Solvent	Cat. No.	Price / 1 mL
2-Bromodiphenyl ether	7025-06-1	50 µg/mL	Isooctane	BDE-001S	\$ 50
3-Bromodiphenyl ether	6876-00-2	50 µg/mL	Isooctane	BDE-002S	50
4-Bromodiphenyl ether	101-55-3	50 µg/mL	Isooctane	BDE-003S	50
2,2'-Dibromodiphenyl ether	51452-87-0	50 µg/mL	Isooctane	BDE-004S	90
2,3-Dibromodiphenyl ether	446254-14-4	50 µg/mL	Isooctane	BDE-005S	200
2,3'-Dibromodiphenyl ether	147217-72-9	50 µg/mL	Isooctane	BDE-006S	90
2,4-Dibromodiphenyl ether	171977-44-9	50 µg/mL	Isooctane	BDE-007S	50
2,4'-Dibromodiphenyl ether	147217-71-8	50 µg/mL	Isooctane	BDE-008S	50
2,5-Dibromodiphenyl ether	33513-66-3	50 µg/mL	Isooctane	BDE-009S	160
2,6-Dibromodiphenyl ether	51930-04-2	50 µg/mL	Isooctane	BDE-010S	50
3,3'-Dibromodiphenyl ether	6903-63-5	50 µg/mL	Isooctane	BDE-011S	50
3,4-Dibromodiphenyl ether	189084-59-1	50 µg/mL	Isooctane	BDE-012S	50
3,4'-Dibromodiphenyl ether	83694-71-7	50 µg/mL	Isooctane	BDE-013S	90
3,5-Dibromodiphenyl ether	46438-88-4	50 µg/mL	Isooctane	BDE-014S	200
4,4'-Dibromodiphenyl ether	2050-47-7	50 µg/mL	Isooctane	BDE-015S	50
2,2',3-Tribromodiphenyl ether	147217-74-1	50 µg/mL	Isooctane	BDE-016S	200
2,2',4-Tribromodiphenyl ether	147217-75-2	50 µg/mL	Isooctane	BDE-017S	50
2,2',5-Tribromodiphenyl ether	407606-55-7	50 µg/mL	Isooctane	BDE-018S	160
2,2',6-Tribromodiphenyl ether	147217-73-0	50 µg/mL	Isooctane	BDE-019S	90
2,3,3'-Tribromodiphenyl ether	147217-76-3	50 µg/mL	Isooctane	BDE-020S	200
2,3,4-Tribromodiphenyl ether	337513-67-4	50 µg/mL	Isooctane	BDE-021S	160
2,3,4'-Tribromodiphenyl ether	446254-15-5	50 µg/mL	Isooctane	BDE-022S	200
2,3,5-Tribromodiphenyl ether	446254-16-6	50 µg/mL	Isooctane	BDE-023S	200
2,3,6-Tribromodiphenyl ether		50 µg/mL	Isooctane	BDE-024S	200
2,3',4-Tribromodiphenyl ether	147217-77-4	50 µg/mL	Isooctane	BDE-025S	50
2,3',5-Tribromodiphenyl ether	337513-75-4	50 µg/mL	Isooctane	BDE-026S	160
2,3',6-Tribromodiphenyl ether	337513-53-8	50 µg/mL	Isooctane	BDE-027S	90
2,4,4'-Tribromodiphenyl ether	41318-75-6	50 µg/mL	Isooctane	BDE-028S	50
2,4,5-Tribromodiphenyl ether	337513-56-1	50 µg/mL	Isooctane	BDE-029S	200
2,4,6-Tribromodiphenyl ether	155999-95-4	50 µg/mL	Isooctane	BDE-030S	50
2,4',5-Tribromodiphenyl ether	65075-08-3	50 µg/mL	Isooctane	BDE-031S	160
2,4',6-Tribromodiphenyl ether	189084-60-4	50 µg/mL	Isooctane	BDE-032S	50
2',3,4-Tribromodiphenyl ether	147217-78-5	50 µg/mL	Isooctane	BDE-033S	50
2',3,5-Tribromodiphenyl ether	446254-17-7	50 µg/mL	Isooctane	BDE-034S	200
3,3',4-Tribromodiphenyl ether	147217-80-9	50 µg/mL	Isooctane	BDE-035S	50
3,3',5-Tribromodiphenyl ether	147217-79-6	50 µg/mL	Isooctane	BDE-036S	200
3,4,4'-Tribromodiphenyl ether	147217-81-0	50 µg/mL	Isooctane	BDE-037S	90
3,4,5-Tribromodiphenyl ether	337513-54-9	50 µg/mL	Isooctane	BDE-038S	200
3,4',5-Tribromodiphenyl ether		50 µg/mL	Isooctane	BDE-039S	200
2,2',3,3'-Tetrabromodiphenyl ether		50 µg/mL	Isooctane	BDE-040S	200
2,2',3,4-Tetrabromodiphenyl ether	337513-68-5	50 µg/mL	Isooctane	BDE-041S	200
2,2',3,4'-Tetrabromodiphenyl ether	446254-18-8	50 µg/mL	Isooctane	BDE-042S	200
2,2',3,5-Tetrabromodiphenyl ether	446254-19-9	50 µg/mL	Isooctane	BDE-043S	200
2,2',3,5'-Tetrabromodiphenyl ether	446254-20-2	50 µg/mL	Isooctane	BDE-044S	250
2,2',3,6-Tetrabromodiphenyl ether		50 µg/mL	Isooctane	BDE-045S	250
2,2',3,6'-Tetrabromodiphenyl ether	446254-22-4	50 µg/mL	Isooctane	BDE-046S	200
2,2',4,4'-Tetrabromodiphenyl ether	5436-43-1	50 µg/mL	Isooctane	BDE-047S	50
2,2',4,5-Tetrabromodiphenyl ether	337513-55-0	50 µg/mL	Isooctane	BDE-048S	200
2,2',4,5'-Tetrabromodiphenyl ether	243982-82-3	50 µg/mL	Isooctane	BDE-049S	160
2,2',4,6-Tetrabromodiphenyl ether	446254-23-5	50 µg/mL	Isooctane	BDE-050S	90
2,2',4,6'-Tetrabromodiphenyl ether	189084-57-9	50 µg/mL	Isooctane	BDE-051S	90
2,2',5,5'-Tetrabromodiphenyl ether	446254-24-6	50 µg/mL	Isooctane	BDE-052S	250
2,2',5,6-Tetrabromodiphenyl ether	446254-25-7	50 µg/mL	Isooctane	BDE-053S	200
2,2',6,6'-Tetrabromodiphenyl ether		50 µg/mL	Isooctane	BDE-054S	250
2,3,3',4-Tetrabromodiphenyl ether	40088-47-9	50 µg/mL	Isooctane	BDE-055S	200
2,3,3',4'-Tetrabromodiphenyl ether		50 µg/mL	Isooctane	BDE-056S	250
2,3,3',5-Tetrabromodiphenyl ether		50 µg/mL	Isooctane	BDE-057S	200
2,3,3',5'-Tetrabromodiphenyl ether		50 µg/mL	Isooctane	BDE-058S	200
2,3,3',6-Tetrabromodiphenyl ether		50 µg/mL	Isooctane	BDE-059S	200
2,3,4,4'-Tetrabromodiphenyl ether	446254-31-5	50 µg/mL	Isooctane	BDE-060S	250
2,3,4,5-Tetrabromodiphenyl ether	446254-32-6	50 µg/mL	Isooctane	BDE-061S	200
2,3,4,6-Tetrabromodiphenyl ether	446254-33-7	50 µg/mL	Isooctane	BDE-062S	160
2,3,4',5-Tetrabromodiphenyl ether	446254-34-8	50 µg/mL	Isooctane	BDE-063S	200
2,3,4',6-Tetrabromodiphenyl ether		50 µg/mL	Isooctane	BDE-064S	200
2,3,5,6-Tetrabromodiphenyl ether		50 µg/mL	Isooctane	BDE-065S	250
2,3',4,4'-Tetrabromodiphenyl ether	189084-61-5	50 µg/mL	Isooctane	BDE-066S	90
2,3',4,5-Tetrabromodiphenyl ether	446254-37-1	50 µg/mL	Isooctane	BDE-067S	200
2,3',4,5'-Tetrabromodiphenyl ether	446254-38-2	50 µg/mL	Isooctane	BDE-068S	200
2,3',4,6-Tetrabromodiphenyl ether	327185-09-1	50 µg/mL	Isooctane	BDE-069S	90
2,3',4',5-Tetrabromodiphenyl ether	446254-39-3	50 µg/mL	Isooctane	BDE-070S	250
2,3',4',6-Tetrabromodiphenyl ether	189084-62-6	50 µg/mL	Isooctane	BDE-071S	90
2,3',5,5'-Tetrabromodiphenyl ether	446254-40-6	50 µg/mL	Isooctane	BDE-072S	200
2,3',5,6-Tetrabromodiphenyl ether	446254-41-7	50 µg/mL	Isooctane	BDE-073S	200
2,4,4',5-Tetrabromodiphenyl ether	446254-42-8	50 µg/mL	Isooctane	BDE-074S	200
2,4,4',6-Tetrabromodiphenyl ether	189084-63-7	50 µg/mL	Isooctane	BDE-075S	90

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.	Price / 1 mL
2,3,4,5-Tetrabromodiphenyl ether	446254-43-9	50 µg/mL	Isooctane	BDE-076S	\$ 200
3,3',4,4'-Tetrabromodiphenyl ether	93703-48-1	50 µg/mL	Isooctane	BDE-077S	90
3,3',4,5-Tetrabromodiphenyl ether	446254-45-1	50 µg/mL	Isooctane	BDE-078S	200
3,3',4,5'-Tetrabromodiphenyl ether	446254-48-4	50 µg/mL	Isooctane	BDE-079S	200
3,3',5,5'-Tetrabromodiphenyl ether	103173-66-6	50 µg/mL	Isooctane	BDE-080S	200
3,4,4',5-Tetrabromodiphenyl ether	446254-50-8	50 µg/mL	Isooctane	BDE-081S	200
2,2',3,3',4-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-082S	250
2,2',3,3',5-Pentabromodiphenyl ether	446254-51-9	50 µg/mL	Isooctane	BDE-083S	250
2,2',3,3',6-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-084S	200
2,2',3,4,4'-Pentabromodiphenyl ether	182346-21-0	50 µg/mL	Isooctane	BDE-085S	90
2,2',3,4,5-Pentabromodiphenyl ether	446254-53-1	50 µg/mL	Isooctane	BDE-086S	200
2,2',3,4,5'-Pentabromodiphenyl ether	446254-54-2	50 µg/mL	Isooctane	BDE-087S	200
2,2',3,4,6-Pentabromodiphenyl ether	446254-55-3	50 µg/mL	Isooctane	BDE-088S	160
2,2',3,4,6'-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-089S	250
2,2',3,4',5-Pentabromodiphenyl ether	446254-57-5	50 µg/mL	Isooctane	BDE-090S	200
2,2',3,4',6-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-091S	200
2,2',3,5,5'-Pentabromodiphenyl ether	446254-59-7	50 µg/mL	Isooctane	BDE-092S	200
2,2',3,5,6-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-093S	250
2,2',3,5,6'-Pentabromodiphenyl ether	446254-61-1	50 µg/mL	Isooctane	BDE-094S	200
2,2',3,5',6-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-095S	200
2,2',3,6,6'-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-096S	200
2,2',3',4,5-Pentabromodiphenyl ether	446254-64-4	50 µg/mL	Isooctane	BDE-097S	200
2,2',3',4,6-Pentabromodiphenyl ether	38463-82-0	50 µg/mL	Isooctane	BDE-098S	200
2,2',4,4',5-Pentabromodiphenyl ether	60348-60-9	50 µg/mL	Isooctane	BDE-099S	90
2,2',4,4',6-Pentabromodiphenyl ether	189084-64-8	50 µg/mL	Isooctane	BDE-100S	90
2,2',4,5,5'-Pentabromodiphenyl ether	446254-65-5	50 µg/mL	Isooctane	BDE-101S	200
2,2',4,5,6'-Pentabromodiphenyl ether	446254-66-6	50 µg/mL	Isooctane	BDE-102S	200
2,2',4,5',6-Pentabromodiphenyl ether	446254-67-7	50 µg/mL	Isooctane	BDE-103S	160
2,2',4,6,6'-Pentabromodiphenyl ether	446254-68-8	50 µg/mL	Isooctane	BDE-104S	200
2,3,3',4,4'-Pentabromodiphenyl ether	373594-78-6	50 µg/mL	Isooctane	BDE-105S	200
2,3,3',4,5-Pentabromodiphenyl ether	446254-69-9	50 µg/mL	Isooctane	BDE-106S	200
2,3,3',4',5-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-107S	200
2,3,3',4,5'-Pentabromodiphenyl ether	446254-71-3	50 µg/mL	Isooctane	BDE-108S	160
2,3,3',4,6-Pentabromodiphenyl ether	446254-72-4	50 µg/mL	Isooctane	BDE-109S	250
2,3,3',4',6-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-110S	200
2,3,3',5,5'-Pentabromodiphenyl ether	446254-74-6	50 µg/mL	Isooctane	BDE-111S	200
2,3,3',5,6-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-112S	250
2,3,3',5',6-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-113S	200
2,3,4,4',5-Pentabromodiphenyl ether	446254-77-9	50 µg/mL	Isooctane	BDE-114S	200
2,3,4,4',6-Pentabromodiphenyl ether	446254-78-0	50 µg/mL	Isooctane	BDE-115S	160
2,3,4,5,6-Pentabromodiphenyl ether	189084-65-9	50 µg/mL	Isooctane	BDE-116S	90
2,3,4',5,6-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-117S	250
2,3',4,4',5-Pentabromodiphenyl ether	446254-80-4	50 µg/mL	Isooctane	BDE-118S	200
2,3',4,4',6-Pentabromodiphenyl ether	189084-66-0	50 µg/mL	Isooctane	BDE-119S	90
2,3',4,5,5'-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-120S	200
2,3',4,5',6-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-121S	200
2',3,3',4,5-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-122S	250
2',3,4,4',5-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-123S	200
2',3,4,5,5'-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-124S	200
2',3,4,5,6'-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-125S	200
3,3',4,4',5-Pentabromodiphenyl ether	366791-32-4	50 µg/mL	Isooctane	BDE-126S	200
3,3',4,5,5'-Pentabromodiphenyl ether		50 µg/mL	Isooctane	BDE-127S	200
2,2',3,3',4,4'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-128S	90
2,2',3,3',4,5-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-129S	250
2,2',3,3',4,5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-130S	200
2,2',3,3',4,6-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-131S	200
2,2',3,3',4,6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-132S	250
2,2',3,3',5,5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-133S	250
2,2',3,3',5,6-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-134S	250
2,2',3,3',5,6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-135S	250
2,2',3,3',6,6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-136S	200
2,2',3,4,4',5-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-137S	200
2,2',3,4,4',5'-Hexabromodiphenyl ether	182677-30-1	50 µg/mL	Isooctane	BDE-138S	90
2,2',3,4,4',6-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-139S	200
2,2',3,4,4',6'-Hexabromodiphenyl ether	243982-83-4	50 µg/mL	Isooctane	BDE-140S	200
2,2',3,4,5,5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-141S	200
2,2',3,4,5,6-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-142S	160
2,2',3,4,5,6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-143S	250
2,2',3,4,5',6-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-144S	160
2,2',3,4,6,6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-145S	250
2,2',3,4',5,5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-146S	200
2,2',3,4',5,6-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-147S	250
2,2',3,4',5,6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-148S	200
2,2',3,4',5',6-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-149S	250
2,2',3,4',6,6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-150S	250

PBDE Congeners continued on next page



PBDE Congeners



Polybrominated Diphenyl Ether (PBDE) Congeners

Polybrominated Diphenyl Ethers (PBDEs) Congeners

Compound	CAS No.	Conc.	Solvent	Cat. No.	Price / 1 mL
2,2',3,5,5',6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-151S	\$ 250
2,2',3,5,6,6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-152S	250
2,2',4,4',5,5'-Hexabromodiphenyl ether	68631-49-2	50 µg/mL	Isooctane	BDE-153S	90
2,2',4,4',5,6'-Hexabromodiphenyl ether	207122-15-4	50 µg/mL	Isooctane	BDE-154S	90
2,2',4,4',6,6'-Hexabromodiphenyl ether	35854-94-5	50 µg/mL	Isooctane	BDE-155S	90
2,3,3',4,4',5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-156S	200
2,3,3',4,4',5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-157S	250
2,3,3',4,4',6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-158S	200
2,3,3',4,5,5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-159S	200
2,3,3',4,5,6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-160S	160
2,3,3',4,5',6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-161S	200
2,3,3',4',5,5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-162S	200
2,3,3',4',5,6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-163S	250
2,3,3',4',5',6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-164S	200
2,3,3',5,5',6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-165S	250
2,3,4,4',5,6'-Hexabromodiphenyl ether	189084-58-0	50 µg/mL	Isooctane	BDE-166S	90
2,3',4,4',5,5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-167S	200
2,3',4,4',5',6'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-168S	200
3,3',4,4',5,5'-Hexabromodiphenyl ether		50 µg/mL	Isooctane	BDE-169S	250
2,2',3,3',4,4',5'-Heptabromodiphenyl ether	327185-13-7	50 µg/mL	Isooctane	BDE-170S	200
2,2',3,3',4,4',6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-171S	250
2,2',3,3',4,5,5'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-172S	200
2,2',3,3',4,5,6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-173S	200
2,2',3,3',4,5,6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-174S	275
2,2',3,3',4,5',6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-175S	200
2,2',3,3',4',6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-176S	250
2,2',3,3',4',5,6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-177S	250
2,2',3,3',5,5',6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-178S	250
2,2',3,3',5,6,6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-179S	275
2,2',3,4,4',5,5'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-180S	200
2,2',3,4,4',5,6'-Heptabromodiphenyl ether	189084-67-1	50 µg/mL	Isooctane	BDE-181S	160
2,2',3,4,4',5',6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-182S	200
2,2',3,4,4',5',6'-Heptabromodiphenyl ether	207122-16-5	50 µg/mL	Isooctane	BDE-183S	160
2,2',3,4,4',6,6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-184S	200
2,2',3,4,5,5',6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-185S	160
2,2',3,4,5,6,6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-186S	250
2,2',3,4',5,5',6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-187S	250
2,2',3,4',5,6,6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-188S	250
2,3,3',4,4',5,5'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-189S	250
2,3,3',4,4',5,6'-Heptabromodiphenyl ether	189084-68-2	50 µg/mL	Isooctane	BDE-190S	90
2,3,3',4,4',5',6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-191S	200
2,3,3',4,5,5',6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-192S	200
2,3,3',4',5,5',6'-Heptabromodiphenyl ether		50 µg/mL	Isooctane	BDE-193S	250
2,2',3,3',4,4',5,5'-Octabromodiphenyl ether		50 µg/mL	Isooctane	BDE-194S	200
2,2',3,3',4,4',5,6'-Octabromodiphenyl ether		50 µg/mL	Isooctane	BDE-195S	250
2,2',3,3',4,4',5,6'-Octabromodiphenyl ether		50 µg/mL	Isooctane	BDE-196S	200
2,2',3,3',4,4',6,6'-Octabromodiphenyl ether		50 µg/mL	Isooctane	BDE-197S	200
2,2',3,3',4,5,5',6'-Octabromodiphenyl ether		50 µg/mL	Isooctane	BDE-198S	200
2,2',3,3',4,5,5',6'-Octabromodiphenyl ether		25 µg/mL	Isooctane	BDE-199S-0.5X	275
2,2',3,3',4,5,6,6'-Octabromodiphenyl ether		25 µg/mL	Isooctane	BDE-200S-0.5X	250
2,2',3,3',4,5',6,6'-Octabromodiphenyl ether		50 µg/mL	Isooctane	BDE-201S	250
2,2',3,3',5,5',6,6'-Octabromodiphenyl ether		50 µg/mL	Isooctane	BDE-202S	250
2,2',3,4,4',5,5',6'-Octabromodiphenyl ether	337513-72-1	50 µg/mL	Isooctane	BDE-203S	200
2,2',3,4,4',5,6,6'-Octabromodiphenyl ether		50 µg/mL	Isooctane	BDE-204S	200
2,3,3',4,4',5,5',6'-Octabromodiphenyl ether	446255-56-7	50 µg/mL	Isooctane	BDE-205S	200
2,2',3,3',4,4',5,5',6'-Nonabromodiphenyl ether	63387-28-0	50 µg/mL	Isooctane	BDE-206S	250
2,2',3,3',4,4',5,6,6'-Nonabromodiphenyl ether	437701-79-6	50 µg/mL	Isooctane	BDE-207S-R1	250
2,2',3,3',4,5,5',6,6'-Nonabromodiphenyl ether		50 µg/mL	Isooctane	BDE-208S	250
Decabromodiphenyl ether	1163-19-5	50 µg/mL	Isooctane:	BDE-209S	50
				Toluene (90:10)	
Internal Standard Short Form (4'-CL-BDE-208)					
4'-Chloro-2,2',3,3',4,5,5',6,6'-Nonabromodiphenyl ether	NEW	10 µg/mL	Isooctane	CBDE-001S-0.2X	250
		50 µg/mL	Isooctane	CBDE-001S	285



Polybrominated Diphenyl Ether (PBDE)

Tech Grade PBDEs, Specific Mixes & Calibration Curve



Technical Grade PBDEs

PBDE Technical Grade

50 µg/mL in Isooctane	Cat. No.	Price / 1 mL
Bromkal™ DE-70-5 (Pentas)	BDE-705	\$ 90
Bromkal DE-71 (Pentas)	BDE-710	90
Bromkal DE-73-6 (Hexas)	BDE-736	90
Bromkal DE-79-8 (Octas)	BDE-798	90
FR-300BA (Deca)	FRS-009N	15 / 10 mg
100 µg/mL in Toluene	FRS-009S	15

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PBDE Congeners common to Technical Mixtures (Bromkal™)

BDE-BROMKAL	\$ 275 / 1 x 1 mL
10 µg/mL each in Isooctane	6 comps.
2,4,4'-Tribromodiphenyl ether (#28)	
2,2',4,4'-Tetrabromodiphenyl ether (#47)	
2,2',4,4',5-Pentabromodiphenyl ether (#99)	
2,2',4,4',6-Pentabromodiphenyl ether (#100)	
2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	
2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	

DE-71 (Pentas) Great Lakes

BDE-710-GL	\$ 250 / 1 x 1 mL
50 µg/mL each in Isooctane	
Bromkal DE-71	

DE-79 (Octas) Great Lakes

BDE-798-GL	\$ 250 / 1 x 1 mL
50 µg/mL each in Isooctane	
DE-79 (Great Lakes)	

Specific Mixtures

PBDEs Common in the Environment

BDE-USE	\$ 250 / 1 x 1 mL
10 µg/mL each in Isooctane	5 comps.

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

PBDEs - Columbia River Study

BDE-CR	\$ 550 / 1 x 1 mL
10 µg/mL each in Isooctane	12 comps.

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

PBDEs Common to California Environment

BDE-CAE-1	\$ 300 / 1 x 1 mL
10 µg/mL each in Isooctane	7 comps.

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

PBDEs - Lake Michigan Study

BDE-LMS	\$ 400 / 1 x 1 mL
10 µg/mL each in Isooctane	9 comps.

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

California Method 750-M Standard

BDE-CALEWS	\$ 600 / 1 x 1 mL
10 µg/mL each in Isooctane	13 comps.

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

Method 527 - PBDE Standard

M-527-BDE	\$ 250 / 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

Calibration Curve

ISO/DIS 22032 Calibration Curve Set

ISO/DIS-22032-SET

At stated conc. (ng/mL) in Isooctane

\$ 475 / 7 x 1 mL
8 comps. each

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

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

ISO22032-IS-1-5ML	\$ 50 / 1 x 5 mL
ISO22032-IS-1-10ML	\$ 75 / 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	\$ 50 / 1 x 5 mL
ISO22032-IS-2-10ML	\$ 75 / 1 x 10 mL
100 ng/mL each in Isooctane	

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



EPA Method 1614

Mixtures of PBDEs Standard Solution for Accuracy & Precision

BDE-AAP-A

\$ 195 / 1 x 1 mL

At stated conc. in Isooctane

39 comps.

ng/mL

2-Bromodiphenyl ether (#1)	100
3-Bromodiphenyl ether (#2)	100
4-Bromodiphenyl ether (#3)	100
2,4-Dibromodiphenyl ether (#7)	100
2,4'-Dibromodiphenyl ether (#8)	100
2,6-Dibromodiphenyl ether (#10)	100
3,3'-Dibromodiphenyl ether (#11)	100
3,4-Dibromodiphenyl ether (#12)	100
3,4'-Dibromodiphenyl ether (#13)	100
4,4'-Dibromodiphenyl ether (#15)	100
2,2',4'-Tribromodiphenyl ether (#17)	100
2,3',4'-Tribromodiphenyl ether (#25)	100
2,4,4'-Tribromodiphenyl ether (#28)	100
2,4,6-Tribromodiphenyl ether (#30)	100
2,4',6-Tribromodiphenyl ether (#32)	100
2',3,4-Tribromodiphenyl ether (#33)	100
3,3',4-Tribromodiphenyl ether (#35)	100
3,4,4'-Tribromodiphenyl ether (#37)	100
2,2',4,4'-Tetrabromodiphenyl ether (#47)	100
2,2',4,5'-Tetrabromodiphenyl ether (#49)	100
2,3',4,4'-Tetrabromodiphenyl ether (#66)	100
2,3',4',6-Tetrabromodiphenyl ether (#71)	100
2,4,4',6-Tetrabromodiphenyl ether (#75)	100
3,3',4,4'-Tetrabromodiphenyl ether (#77)	100
2,2',3,4,4'-Pentabromodiphenyl ether (#85)	150
2,2',4,4',5-Pentabromodiphenyl ether (#99)	150
2,2',4,4',6-Pentabromodiphenyl ether (#100)	150
2,3,4,5,6-Pentabromodiphenyl ether (#116)	150
2,3',4,4',5-Pentabromodiphenyl ether (#118)	150
2,3',4,4',6-Pentabromodiphenyl ether (#119)	150
3,3',4,4',5-Pentabromodiphenyl ether (#126)	150
2,2',3,4,4',5'-Hexabromodiphenyl ether (#138)	200
2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	200
2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	200
2,2',4,4',6,6'-Hexabromodiphenyl ether (#155)	200
2,3,4,4',5,6'-Hexabromodiphenyl ether (#166)	200
2,2',3,4,4',5,6-Heptabromodiphenyl ether (#181)	250
2,2',3,4,4',5',6-Heptabromodiphenyl ether (#183)	250
2,3,3',4,4',5,6-Heptabromodiphenyl ether (#190)	250

BDE-AAP-A-15X

\$ 750 / 1 x 1 mL

At stated conc. in Isooctane

39 comps.

µg/mL

2-Bromodiphenyl ether (#1)	1.5
3-Bromodiphenyl ether (#2)	1.5
4-Bromodiphenyl ether (#3)	1.5
2,4-Dibromodiphenyl ether (#7)	1.5
2,4'-Dibromodiphenyl ether (#8)	1.5
2,6-Dibromodiphenyl ether (#10)	1.5
3,3'-Dibromodiphenyl ether (#11)	1.5
3,4-Dibromodiphenyl ether (#12)	1.5
3,4'-Dibromodiphenyl ether (#13)	1.5
4,4'-Dibromodiphenyl ether (#15)	1.5
2,2',4'-Tribromodiphenyl ether (#17)	1.5
2,3',4'-Tribromodiphenyl ether (#25)	1.5
2,4,4'-Tribromodiphenyl ether (#28)	1.5
2,4,6-Tribromodiphenyl ether (#30)	1.5
2,4',6-Tribromodiphenyl ether (#32)	1.5
2',3,4-Tribromodiphenyl ether (#33)	1.5
3,3',4-Tribromodiphenyl ether (#35)	1.5
3,4,4'-Tribromodiphenyl ether (#37)	1.5
2,2',4,4'-Tetrabromodiphenyl ether (#47)	1.5
2,2',4,5'-Tetrabromodiphenyl ether (#49)	1.5
2,3',4,4'-Tetrabromodiphenyl ether (#66)	1.5
2,3',4',6-Tetrabromodiphenyl ether (#71)	1.5
2,4,4',6-Tetrabromodiphenyl ether (#75)	1.5
3,3',4,4'-Tetrabromodiphenyl ether (#77)	1.5
2,2',3,4,4'-Pentabromodiphenyl ether (#85)	2.25
2,2',4,4',5-Pentabromodiphenyl ether (#99)	2.25
2,2',4,4',6-Pentabromodiphenyl ether (#100)	2.25
2,3,4,5,6-Pentabromodiphenyl ether (#116)	2.25
2,3',4,4',5-Pentabromodiphenyl ether (#118)	2.25
2,3',4,4',6-Pentabromodiphenyl ether (#119)	2.25
3,3',4,4',5-Pentabromodiphenyl ether (#126)	2.25
2,2',3,4,4',5'-Hexabromodiphenyl ether (#138)	3.0
2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	3.0
2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	3.0
2,2',4,4',6,6'-Hexabromodiphenyl ether (#155)	3.0
2,3,4,4',5,6'-Hexabromodiphenyl ether (#166)	3.0
2,2',3,4,4',5,6-Heptabromodiphenyl ether (#181)	3.75
2,2',3,4,4',5',6-Heptabromodiphenyl ether (#183)	3.75
2,3,3',4,4',5,6-Heptabromodiphenyl ether (#190)	3.75

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.

Mixture of Commonly Occurring PBDE Congeners for Precision and Recovery

BDE-COC

\$ 600 / 1 x 1 mL

At stated conc. in Isooctane

14 comps.

µg/mL

2,2',4'-Tribromodiphenyl ether (#17)	5
2,4,4'-Tribromodiphenyl ether (#28)	5
2,2',4,4'-Tetrabromodiphenyl ether (#47)	5
2,3',4,4'-Tetrabromodiphenyl ether (#66)	5
2,3',4',6-Tetrabromodiphenyl ether (#71)	5
2,2',3,4,4'-Pentabromodiphenyl ether (#85)	5
2,2',4,4',5-Pentabromodiphenyl ether (#99)	5
2,2',4,4',6-Pentabromodiphenyl ether (#100)	5
2,2',3,4,4',5'-Hexabromodiphenyl ether (#138)	5
2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	5
2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	5
2,2',4,4',6,6'-Hexabromodiphenyl ether (#155)	5
2,2',3,4,4',5,6-Heptabromodiphenyl ether (#183)	5
2,3,3',4,4',5,6-Heptabromodiphenyl ether (#190)	5
Decabromodiphenyl ether (#209)	25

PBDE Congeners of Primary Interest

BDE-CSM

\$ 225 / 1 x 1 mL

At stated conc. in Isooctane

8 comps.

µg/mL

2,4,4'-Tribromodiphenyl ether (#28)	20
2,2',4,4'-Tetrabromodiphenyl ether (#47)	20
2,2',4,4',5-Pentabromodiphenyl ether (#99)	20
2,2',4,4',6-Pentabromodiphenyl ether (#100)	20
2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	20
2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	20
2,2',3,4,4',5,6-Heptabromodiphenyl ether (#183)	20
Decabromodiphenyl ether (#209)	200

PBDE Congeners of Primary Interest

Calibration Mix

BDE-CM

\$ 65 / 1 x 1 mL

At stated conc. in Isooctane

8 comps.

µg/mL

2,4,4'-Tribromodiphenyl ether (#28)	2.5
2,2',4,4'-Tetrabromodiphenyl ether (#47)	2.5
2,2',4,4',5-Pentabromodiphenyl ether (#99)	2.5
2,2',4,4',6-Pentabromodiphenyl ether (#100)	2.5
2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	2.5
2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	2.5
2,2',3,4,4',5,6-Heptabromodiphenyl ether (#183)	2.5
Decabromodiphenyl ether (#209)	25

Matrix Spiking Solution

BDE-MS

\$ 40 / 1 x 1 mL

At stated conc. in Isooctane

8 comps.

ng/mL

2,4,4'-Tribromodiphenyl ether (#28)	1
2,2',4,4'-Tetrabromodiphenyl ether (#47)	1
2,2',4,4',5-Pentabromodiphenyl ether (#99)	1
2,2',4,4',6-Pentabromodiphenyl ether (#100)	1
2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	1
2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	1
2,2',3,4,4',5,6-Heptabromodiphenyl ether (#183)	1
Decabromodiphenyl ether (#209)	10

PBDEs in Method 1614

BDE-EPA-SET

\$ 500 / 8 x 1 mL

50 µg/mL each in Isooctane

8 comps.

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



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. At Accustandard 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.	Price / 1 mL
Hydroxy					
2'-OH-BDE-003	2'-Hydroxy-4-monobromodiphenyl ether	50 µg/mL	AcCN	HBDE-1001S-CN	\$ 75
3'-OH-BDE-007	3'-Hydroxy-2,4-dibromodiphenyl ether	50 µg/mL	AcCN	HBDE-2001S-CN	75
2'-OH-BDE-007	2'-Hydroxy-2,4-dibromodiphenyl ether	10 µg/mL	AcCN	HBDE-2002S-CN-0.2X	190
2'-OH-BDE-009	2'-Hydroxy-2,5-dibromodiphenyl ether NEW	50 µg/mL	AcCN	HBDE-2003S-CN	190
4'-OH-BDE-017	4'-Hydroxy-2,2',4-tribromodiphenyl ether	50 µg/mL	AcCN	HBDE-3001S-CN	140
3'-OH-BDE-028	3'-Hydroxy-2,4,4'-tribromodiphenyl ether	50 µg/mL	AcCN	HBDE-3002S-CN	75
2'-OH-BDE-028	2'-Hydroxy-2,4,4'-tribromodiphenyl ether	50 µg/mL	AcCN	HBDE-3003S-CN	75
5'-OH-BDE-025	5'-Hydroxy-2,3',4-tribromodiphenyl ether	50 µg/mL	AcCN	HBDE-3004S-CN	140
3'-OH-BDE-029	3'-Hydroxy-2,4,5-tribromodiphenyl ether NEW	50 µg/mL	AcCN	HBDE-3005S-CN	190
3'-OH-BDE-030	3'-Hydroxy-2,4,6-tribromodiphenyl ether NEW	50 µg/mL	AcCN	HBDE-3006S-CN	190
4'-OH-BDE-030	4'-Hydroxy-2,4,6-tribromodiphenyl ether NEW	50 µg/mL	AcCN	HBDE-3007S-CN	190
4'-OH-BDE-042	4'-Hydroxy-2,2',3,4'-tetrabromodiphenyl ether	10 µg/mL	AcCN	HBDE-4001S-CN-0.2X	140
4'-OH-BDE-049	4'-Hydroxy-2,2',4,5'-tetrabromodiphenyl ether	10 µg/mL	AcCN	HBDE-4002S-CN-0.2X	125
3'-OH-BDE-047	3'-Hydroxy-2,2',4,4'-tetrabromodiphenyl ether	50 µg/mL	AcCN	HBDE-4003S-CN	75
5'-OH-BDE-047	5'-Hydroxy-2,2',4,4'-tetrabromodiphenyl ether	50 µg/mL	AcCN	HBDE-4004S-CN	75
6'-OH-BDE-047	6'-Hydroxy-2,2',4,4'-tetrabromodiphenyl ether	10 µg/mL	AcCN	HBDE-4005S-CN-0.2X	190
2'-OH-BDE-068	2'-Hydroxy-2,3',4,5'-tetrabromodiphenyl ether	10 µg/mL	Toluene	HBDE-4005S-T-0.2X	190
		10 µg/mL	AcCN	HBDE-4006S-CN-0.2X	140
		10 µg/mL	Toluene	HBDE-4006S-T-0.2X	140
		50 µg/mL	AcCN	HBDE-4006S-CN	140
6'-OH-BDE-066	6'-Hydroxy-2,3',4,4'-tetrabromodiphenyl ether NEW	50 µg/mL	AcCN	HBDE-4008S-CN	190
5'-OH-BDE-069	5'-Hydroxy-2,3',4,6-tetrabromodiphenyl ether NEW	50 µg/mL	AcCN	HBDE-4009S-CN	190
4'-OH-BDE-069	4'-Hydroxy-2,3',4,6-tetrabromodiphenyl ether NEW	50 µg/mL	AcCN	HBDE-4010S-CN	190
4'-OH-BDE-048	4'-Hydroxy-2,2',4,5-tetrabromodiphenyl ether NEW	50 µg/mL	AcCN	HBDE-4011S-CN	190
4'-OH-BDE-090	4'-Hydroxy-2,2',3,4',5-pentabromodiphenyl ether	10 µg/mL	AcCN	HBDE-5001S-CN-0.2X	160
6'-OH-BDE-085	6'-Hydroxy-2,2',3,4,4'-pentabromodiphenyl ether	10 µg/mL	AcCN	HBDE-5002S-CN-0.2X	160
6'-OH-BDE-087	6'-Hydroxy-2,2',3,4,5'-pentabromodiphenyl ether	10 µg/mL	AcCN	HBDE-5003S-CN-0.2X	160
5'-OH-BDE-100	5'-Hydroxy-2,2',4,4',6-pentabromodiphenyl ether NEW	10 µg/mL	AcCN	HBDE-5004S-CN-0.2X	190
6'-OH-BDE-082	6'-Hydroxy-2,2',3,3',4-pentabromodiphenyl ether	10 µg/mL	AcCN	HBDE-5005S-CN-0.2X	190
6'-OH-BDE-099	6'-Hydroxy-2,2',4,4',5-pentabromodiphenyl ether	10 µg/mL	AcCN	HBDE-5006S-CN-0.2X	190
5'-OH-BDE-099	5'-Hydroxy-2,2',4,4',5-pentabromodiphenyl ether	10 µg/mL	AcCN	HBDE-5007S-CN-0.2X	140
3'-OH-BDE-100	3'-Hydroxy-2,2',4,4',6-pentabromodiphenyl ether	50 µg/mL	AcCN	HBDE-5008S-CN	190
4'-OH-BDE-101	4'-Hydroxy-2,2',4,5,5'-pentabromodiphenyl ether	50 µg/mL	AcCN	HBDE-5009S-CN	190
4'-OH-BDE-121	4'-Hydroxy-2,3',4,5,6-pentabromodiphenyl ether NEW	50 µg/mL	AcCN	HBDE-5010S-CN	190
6'-OH-BDE-123	6'-Hydroxy-2',3,4,4',5-pentabromodiphenyl ether NEW	50 µg/mL	AcCN	HBDE-5011S-CN	190
6'-OH-BDE-157	6'-Hydroxy-2,3,3',4,4',5'-hexabromodiphenyl ether	10 µg/mL	AcCN	HBDE-6001S-CN-0.2X	190
6'-OH-BDE-140	6'-Hydroxy-2,2',3,4,4',6'-hexabromodiphenyl ether	10 µg/mL	AcCN	HBDE-6002S-CN-0.2X	190
3'-OH-BDE-154	3'-Hydroxy-2,2',4,4',5,6'-hexabromodiphenyl ether	10 µg/mL	AcCN	HBDE-6003S-CN-0.2X	140
6'-OH-BDE-137	6'-Hydroxy-2,2',3,4,4',5-hexabromodiphenyl ether	10 µg/mL	AcCN	HBDE-6004S-CN-0.2X	190
3'-OH-BDE-155	3'-Hydroxy-2,2'-4,4',6,6'-hexabromodiphenyl ether NEW	10 µg/mL	AcCN	HBDE-6005S-CN-0.2X	140
		50 µg/mL	AcCN	HBDE-6005S-CN	190
4'-OH-BDE-146	4'-Hydroxy-2,2',3,4',5,5'-hexabromodiphenyl ether NEW	10 µg/mL	AcCN	HBDE-6006S-CN-0.2X	190
		50 µg/mL	Isooctane	HBDE-6006S	190
4'-OH-BDE-187	4'-Hydroxy-2,2',3,4',5,5',6-heptabromodiphenyl ether	50 µg/mL	AcCN	HBDE-7001S-CN	140
6'-OH-BDE-180	6'-Hydroxy-2,2',3,4,4',5,5'-heptabromodiphenyl ether	50 µg/mL	AcCN	HBDE-7002S-CN	140
4'-OH-BDE-188	4'-Hydroxy-2,2',3,4',5,6,6'-heptabromodiphenyl ether	50 µg/mL	AcCN	HBDE-7003S-CN	190
6'-OH-BDE-182	6'-Hydroxy-2,2',3,4,4',5,6'-heptabromodiphenyl ether	50 µg/mL	AcCN	HBDE-7004S-CN-0.2X	190
4'-OH-BDE-201	4'-Hydroxy-2,2',3,3',4,5',6,6'-octabromodiphenyl ether	50 µg/mL	AcCN	HBDE-8001S-CN	190

**Methoxy PBDE Congeners
on next page**



PBDE Metabolites

Methoxy Polybromodiphenyl Ether Congeners

Short Form	Compound	Conc.	Solvent	Cat. No.	Price / 1 mL
Methoxy					
2'-MeO-BDE-003	2'-Methoxy-4-monobromodiphenyl ether	50 µg/mL	MeOH	MOBDE-1001S	75
3'-MeO-BDE-007	3'-Methoxy-2,4-dibromodiphenyl ether	50 µg/mL	MeOH	MOBDE-2001S	75
2'-MeO-BDE-007	2'-Methoxy-2,4-dibromodiphenyl ether	10 µg/mL	MeOH	MOBDE-2002S-0.2X	190
2'-MeO-BDE-009	2'-Methoxy-2,5-dibromodiphenyl ether NEW	50 µg/mL	MeOH	MOBDE-2003S	190
4'-MeO-BDE-017	4'-Methoxy-2,2',4-tribromodiphenyl ether	50 µg/mL	MeOH	MOBDE-3001S	140
3'-MeO-BDE-028	3'-Methoxy-2,4,4'-tribromodiphenyl ether	50 µg/mL	MeOH	MOBDE-3002S	75
2'-MeO-BDE-028	2'-Methoxy-2,4,4'-tribromodiphenyl ether	50 µg/mL	MeOH	MOBDE-3003S	75
5'-MeO-BDE-025	5'-Methoxy-2,3',4-tribromodiphenyl ether	50 µg/mL	MeOH	MOBDE-3004S	190
3'-MeO-BDE-029	3'-Methoxy-2,4,5-tribromodiphenyl ether NEW	50 µg/mL	MeOH	MOBDE-3005S	190
3'-MeO-BDE-030	3'-Methoxy-2,4,6-tribromodiphenyl ether NEW	50 µg/mL	MeOH	MOBDE-3006S	190
4'-MeO-BDE-030	4'-Methoxy-2,4,6-tribromodiphenyl ether NEW	50 µg/mL	MeOH	MOBDE-3007S	190
4-MeO-BDE-042	4-Methoxy-2,2',3,4'-tetrabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-4001S-0.2X	140
4'-MeO-BDE-049	4'-Methoxy-2,2',4,4'-tetrabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-4002S-0.2X	125
3-MeO-BDE-047	3-Methoxy-2,2',4,4'-tetrabromodiphenyl ether	50 µg/mL	MeOH	MOBDE-4003S	75
5-MeO-BDE-047	5-Methoxy-2,2',4,4'-tetrabromodiphenyl ether	50 µg/mL	MeOH	MOBDE-4004S	75
6-MeO-BDE-047	6-Methoxy-2,2',4,4'-tetrabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-4005S-0.2X	160
2'-MeO-BDE-068	2'-Methoxy-2,3',4,5'-tetrabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-4006S-0.2X	140
2'-MeO-BDE-075	2'-Methoxy-2,4,4',6-tetrabromodiphenyl ether	50 µg/mL	MeOH	MOBDE-4007S	190
6'-MeO-BDE-066	6'-Methoxy-2,3',4,4'-tetrabromodiphenyl ether NEW	50 µg/mL	MeOH	MOBDE-4008S	190
5'-MeO-BDE-069	5'-Methoxy-2,3',4,6-tetrabromodiphenyl ether NEW	10 µg/mL	MeOH	MOBDE-4009S-0.2X	140
		50 µg/mL	MeOH	MOBDE-4009S	190
4'-MeO-BDE-069	4'-Methoxy-2,3',4,6-tetrabromodiphenyl ether NEW	50 µg/mL	MeOH	MOBDE-4010S	190
4'-MeO-BDE-048	4'-Methoxy-2,2',4,5-tetrabromodiphenyl ether NEW	50 µg/mL	MeOH	MOBDE-4011S	190
4-MeO-BDE-090	4-Methoxy-2,2',3,4',5-pentabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-5001S-0.2X	160
6-MeO-BDE-085	6-Methoxy-2,2',3,4,4'-pentabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-5002S-0.2X	160
6-MeO-BDE-087	6-Methoxy-2,2',3,4,5'-pentabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-5003S-0.2X	160
5'-MeO-BDE-100	5'-Methoxy-2,2',4,4',6-pentabromodiphenyl ether NEW	50 µg/mL	MeOH	MOBDE-5004S	190
6-MeO-BDE-082	6-Methoxy-2,2',3,3',4-pentabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-5005S-0.2X	140
6'-MeO-BDE-099	6'-Methoxy-2,2',4,4',5-pentabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-5006S-0.2X	190
5'-MeO-BDE-099	5'-Methoxy-2,2',4,4',5-pentabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-5007S-0.2X	140
3-MeO-BDE-100	3-Methoxy-2,2',3,4',6-pentabromodiphenyl ether	50 µg/mL	MeOH	MOBDE-5008S	75
4'-MeO-BDE-101	4'-Methoxy-2,2',4,5,5'-pentabromodiphenyl ether	50 µg/mL	MeOH	MOBDE-5009S	190
4'-MeO-BDE-121	4'-Methoxy-2,3',4,5',6-pentabromodiphenyl ether NEW	50 µg/mL	MeOH	MOBDE-5010S	190
6-MeO-BDE-123	6-Methoxy-2',3,4,4',5-pentabromodiphenyl ether	50 µg/mL	MeOH	MOBDE-5011S	190
6-MeO-BDE-157	6-Methoxy-2,3,3',4,4',5'-hexabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-6001S-0.2X	190
6-MeO-BDE-140	6-Methoxy-2,2',3,4,4',6'-hexabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-6002S-0.2X	190
3'-MeO-BDE-154	3'-Methoxy-2,2',4,4',5,6'-hexabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-6003S-0.2X	140
6-MeO-BDE-137	6-Methoxy-2,2',3,4,4',5-hexabromodiphenyl ether NEW	10 µg/mL	MeOH	MOBDE-6004S-0.2X	140
3-MeO-BDE-155	3-Methoxy-2,2',4,4',6,6'-hexabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-6005S-0.2X	140
		50 µg/mL	MeOH	MOBDE-6005S	190
4-MeO-BDE-146	4-Methoxy-2,2',3,4',5,5'-hexabromodiphenyl ether NEW	10 µg/mL	MeOH	MOBDE-6006S-0.2X	190
4-MeO-BDE-187	4-Methoxy-2,2',3,4',5,5',6-heptabromodiphenyl ether	50 µg/mL	MeOH	MOBDE-7001S	190
6-MeO-BDE-180	6-Methoxy-2,2',3,4,4',5,5'-heptabromodiphenyl ether	50 µg/mL	MeOH	MOBDE-7002S	190
4-MeO-BDE-188	4-Methoxy-2,2',3,4',5,6,6'-heptabromodiphenyl ether	50 µg/mL	MeOH	MOBDE-7003S	190
6-MeO-BDE-182	6-Methoxy-2,2',3,4,4',5,6'-heptabromodiphenyl ether	10 µg/mL	MeOH	MOBDE-7004S-0.2X	190
4'-MeO-BDE-201	4'-Methoxy-2,2',3,3',4,5',6,6'-octabromodiphenyl ether	50 µg/mL	MeOH	MOBDE-8001S	190

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. Several pathways of their formation have been described in the literature.

In saltwater systems, some of the OH-PBDEs are being produced naturally; while 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/Ci-DDs). There is growing concern that both naturally and anthropogenically produced PBDDs and Br/Ci-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.

AccuStandard will synthesize more derivatives as demand for these compounds develops.

Compound (Short Form)	Conc.	Solvent	Cat. No.	Price / 1 mL
Hydroxy				
3-Chloro-6-hydroxy-2,2',4,4'-tetrabromodiphenyl ether (3-Cl-6-OH-BDE-047)	25 µg/mL	Acetonitrile	HCBDE-4001S-0.5X	195
	50 µg/mL	Acetonitrile	HCBDE-4001S	275
3,5-Dichloro-6-hydroxy-2,2',4,4'-tetrabromodiphenyl ether (3,5-Cl ₂ -6-OH-BDE-047)	25 µg/mL	Acetonitrile	HCBDE-4002S-0.5X	195
	50 µg/mL	Acetonitrile	HCBDE-4002S	275
5-Chloro-6-hydroxy-2,2',4,4'-tetrabromodiphenyl ether (5-Cl-6-OH-BDE-047)	25 µg/mL	Acetonitrile	HCBDE-4003S-0.5X	195
	50 µg/mL	Acetonitrile	HCBDE-4003S	275
Methoxy				
3-Chloro-6-methoxy-2,2',4,4'-tetrabromodiphenyl ether (3-Cl-6-MeO-BDE-047)	25 µg/mL	Methanol	MOCBDE-4001S-0.5X	195
	50 µg/mL	Methanol	MOCBDE-4001S	275
3,5-Dichloro-6-methoxy-2,2',4,4'-tetrabromodiphenyl ether (3,5-Cl ₂ -6-MeO-BDE-047)	25 µg/mL	Methanol	MOCBDE-4002S-0.5X	195
	50 µg/mL	Methanol	MOCBDE-4002S	275
5-Chloro-6-methoxy-2,2',4,4'-tetrabromodiphenyl ether (5-Cl-6-MeO-BDE-047)	25 µg/mL	Methanol	MOCBDE-4003S-0.5X	195
	50 µg/mL	Methanol	MOCBDE-4003S	275



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 ^{13}C 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.	Price / 1 mL
F-BDE-003	4'-Fluoro-4-bromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-1001S-0.5X	\$ 190
		50 $\mu\text{g/mL}$	Isooctane	FBDE-1001S	275
F-BDE-007	3'-Fluoro-2,4-dibromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-2001S-0.5X	195
		50 $\mu\text{g/mL}$	Isooctane	FBDE-2001S	275
F-BDE-012	3'-Fluoro-3,4-dibromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-2002S-0.5X	195
		50 $\mu\text{g/mL}$	Isooctane	FBDE-2002S	275
F-BDE-015	2-Fluoro-4,4'-dibromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-2003S-0.5X	190
		50 $\mu\text{g/mL}$	Isooctane	FBDE-2003S	275
F-BDE-025	4'-Fluoro-2,3',4-tribromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-3001S-0.5X	195
		50 $\mu\text{g/mL}$	Isooctane	FBDE-3001S	275
F-BDE-027	4'-Fluoro-2,3',6-tribromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-3002S-0.5X	195
		50 $\mu\text{g/mL}$	Isooctane	FBDE-3002S	275
F-BDE-028	2'-Fluoro-2,4,4'-tribromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-3003S-0.5X	195
		50 $\mu\text{g/mL}$	Isooctane	FBDE-3003S	275
F-BDE-028	3'-Fluoro-2,4,4'-tribromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-3004S-0.5X	195
		50 $\mu\text{g/mL}$	Isooctane	FBDE-3004S	275
F-BDE-069	4'-Fluoro-2,3',4,6-tetrabromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-4001S-0.5X	195
		50 $\mu\text{g/mL}$	Isooctane	FBDE-4001S	275
F-BDE-067	4'-Fluoro-2,3',4,5-tetrabromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-4002S-0.5X	195
		50 $\mu\text{g/mL}$	Isooctane	FBDE-4002S	275
F-BDE-047	6-Fluoro-2,2',4,4'-tetrabromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-4003S-0.5X	195
		50 $\mu\text{g/mL}$	Isooctane	FBDE-4003S	275
F-BDE-066	6-Fluoro-2,3',4,4'-tetrabromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-4004S-0.5X	195
		50 $\mu\text{g/mL}$	Isooctane	FBDE-4004S	275
2F-BDE-047	5,5'-Difluoro-2,2',4,4'-tetrabromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-4005S-0.5X	195
		50 $\mu\text{g/mL}$	Isooctane	FBDE-4005S	275
F-BDE-070	3-Fluoro-2,3',4',5-tetrabromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-4006S-0.5X	190
		50 $\mu\text{g/mL}$	Isooctane	FBDE-4006S	250
F-BDE-077	5-Fluoro-3,3',4,4'-tetrabromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-4007S-0.5X	250
		50 $\mu\text{g/mL}$	Isooctane	FBDE-4007S	350
F-BDE-099	6'-Fluoro-2,2',4,4',5-pentabromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-5001S-0.5X	250
		50 $\mu\text{g/mL}$	Isooctane	FBDE-5001S	350
F-BDE-100	3-Fluoro-2,2',4,4',6-pentabromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-5002S-0.5X	195
		50 $\mu\text{g/mL}$	Isooctane	FBDE-5002S	275
2F-BDE-099	3,6-Difluoro-2,2',4,4',5-pentabromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-5003S-0.5X	195
		50 $\mu\text{g/mL}$	Isooctane	FBDE-5003S	275
2F-BDE-085	5,6-Difluoro-2,2',3,4,4'-pentabromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-5004S-0.5X	195
		50 $\mu\text{g/mL}$	Isooctane	FBDE-5004S	275
2F-BDE-119	3,5-Difluoro-2,3',4,4',6-pentabromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-5005S-0.5X	195
		50 $\mu\text{g/mL}$	Isooctane	FBDE-5005S	275
F-BDE-124	3'-Fluoro-2',3,4,5,5'-pentabromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-5006S-0.5X	190
		50 $\mu\text{g/mL}$	Isooctane	FBDE-5006S	250
F-BDE-118	5'-Fluoro-2,3',4,4',5-pentabromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-5007S-0.5X	190
		50 $\mu\text{g/mL}$	Isooctane	FBDE-5007S	250
F-BDE-126	5'-Fluoro-3,3',4,4',5-pentabromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-5008S-0.5X	190
		50 $\mu\text{g/mL}$	Isooctane	FBDE-5008S	250
F-BDE-160	4'-Fluoro-2,3,3',4,5,6-hexabromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-6001S-0.5X	195
		50 $\mu\text{g/mL}$	Isooctane	FBDE-6001S	275
F-BDE-139	5-Fluoro-2,2',3,4,4',6-hexabromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-6002S-0.5X	195
		50 $\mu\text{g/mL}$	Isooctane	FBDE-6002S	275
F-BDE-153	3-Fluoro-2,2',4,4',5,5'-hexabromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-6003S-0.5X	250
		50 $\mu\text{g/mL}$	Isooctane	FBDE-6003S	350
F-BDE-154	3'-Fluoro-2,2',4,4',5,6'-hexabromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-6004S-0.5X	110
		50 $\mu\text{g/mL}$	Isooctane	FBDE-6004S	190
F-BDE-183	5-Fluoro-2,2',3,4,4',5',6'-heptabromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-7001S-0.5X	250
		50 $\mu\text{g/mL}$	Isooctane	FBDE-7001S	350
2F-BDE-199	4',6-Difluoro-2,2',3,3',4,5,5',6'-octabromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-8001S-0.5X	195
		50 $\mu\text{g/mL}$	Isooctane	FBDE-8001S	275
F-BDE-208	4'-Fluoro-2,2',3,3',4,5,5',6,6'-nonabromodiphenyl ether	25 $\mu\text{g/mL}$	Isooctane	FBDE-9001S-0.5X	195
		50 $\mu\text{g/mL}$	Isooctane	FBDE-9001S	275



HBCD Isomers, Dechlorane Plus Isomers, Bromobiphenyls

Hexabromocyclododecane Isomers

Compound	CAS No.	Conc.	Matrix	Cat. No.	Price / 1 mL
α -Hexabromocyclododecane		100 μ g/mL	Toluene	HXBCD-01	\$ 175
β -Hexabromocyclododecane		100 μ g/mL	Toluene	HXBCD-02	175
γ -Hexabromocyclododecane		100 μ g/mL	Toluene	HXBCD-03	100
HBCD SP-75C (Great Lakes)	3194-55-6-GL	10 mg	NEAT	FRS-028N	15
		100 μ g/mL	Toluene	FRS-028S	15

Dechlorane Plus Isomers

Compound	CAS No.	Conc.	Matrix	Cat. No.	Price / 1 mL
Dechlorane Plus "Anti"	135821-74-8	50 μ g/mL	Toluene	FRS-061S-0.5X	\$ 55
Dechlorane Plus "Syn"	135821-03-3	50 μ g/mL	Toluene	FRS-062S-0.5X	55
Dechlorane Plus (Mixed isomers)	13560-89-9	10 mg	NEAT	FRS-033N	20
		100 μ g/mL	Toluene	FRS-033S	20

Bromobiphenyl Congeners

Compound	CAS No.	Conc.	Matrix	Neats as stated	
				Cat. No.	Price / 1 mL
2-Bromobiphenyl	2052-07-5	50 mg	NEAT	B-001N	\$ 20
		35 μ g/mL	Isooctane	B-001S	20
		1 mg/mL	Acetone	M-8081-SS-X	10
3-Bromobiphenyl	2113-57-7	50 mg	NEAT	B-002N	12
		35 μ g/mL	Isooctane	B-002S	20
4-Bromobiphenyl	92-66-0	50 mg	NEAT	B-003N	12
		35 μ g/mL	Isooctane	B-003S	20
2,2'-Dibromobiphenyl	13029-09-9	10 mg	NEAT	B-004N	55
		35 μ g/mL	Isooctane	B-004S	20
2,4-Dibromobiphenyl	53592-10-2	10 mg	NEAT	B-007N-10MG	18
		35 μ g/mL	Isooctane	B-007S	20
2,5-Dibromobiphenyl	57422-77-2	25 mg	NEAT	B-009N	32
		35 μ g/mL	Isooctane	B-009S	20
2,6-Dibromobiphenyl	59080-32-9	5 mg	NEAT	B-010N-5MG	12
		35 μ g/mL	Isooctane	B-010S	20
4,4'-Dibromobiphenyl	92-86-4	10 mg	NEAT	B-015N	18
		35 μ g/mL	Isooctane	B-015S	20
2,2',5-Tribromobiphenyl	59080-34-1	10 mg	NEAT	B-018N	12
		35 μ g/mL	Isooctane	B-018S	20
2,3',5-Tribromobiphenyl	59080-35-2	10 mg	NEAT	B-026N	12
		35 μ g/mL	Isooctane	B-026S	20
2,4,5-Tribromobiphenyl	115245-07-3	35 μ g/mL	Isooctane	B-029S	85
2,4,6-Tribromobiphenyl	59080-33-0	25 mg	NEAT	B-030N	32
		35 μ g/mL	Isooctane	B-030S	20
2,4',5-Tribromobiphenyl	59080-35-3	10 mg	NEAT	B-031N	12
		35 μ g/mL	Isooctane	B-031S	20
2,2',4,5'-Tetrabromobiphenyl	60044-24-8	5 mg	NEAT	B-049N-5MG	40
		35 μ g/mL	Isooctane	B-049S	20
2,2',5,5'-Tetrabromobiphenyl	59080-37-4	10 mg	NEAT	B-052N	32
		35 μ g/mL	Isooctane	B-052S	20
2,2',5,6'-Tetrabromobiphenyl	60044-25-9	5 mg	NEAT	B-053N-5MG	30
		35 μ g/mL	Isooctane	B-053S	20
3,3',4,4'-Tetrabromobiphenyl	77102-82-0	35 μ g/mL	Isooctane	B-077S	30
3,3',5,5'-Tetrabromobiphenyl	16400-50-3	35 μ g/mL	Isooctane	B-080S	30
2,3,4,4',5-Pentabromobiphenyl	96551-70-1	35 μ g/mL	Isooctane	B-114S	175
2,2',4,5,5'-Pentabromobiphenyl	67888-96-4	5 mg	NEAT	B-101N	145
		35 μ g/mL	Isooctane	B-101S	30
2,2',4,5',6-Pentabromobiphenyl	59080-39-6	5 mg	NEAT	B-103N	42
		35 μ g/mL	Isooctane	B-103S	30
2,2',3,4,4',5-Hexabromobiphenyl	81381-52-4	35 μ g/mL	Isooctane	B-137S	175
2,2',3,4,5,5'-Hexabromobiphenyl	120991-47-1	35 μ g/mL	Isooctane	B-141S	150
2,2',4,4',5,5'-Hexabromobiphenyl	59080-40-9	5 mg	NEAT	B-153N-5MG	175
		35 μ g/mL	Isooctane	B-153S	95
2,2',4,4',6,6'-Hexabromobiphenyl	59261-08-4	5 mg	NEAT	B-155N	65
		35 μ g/mL	Isooctane	B-155S	30
2,3,3',4,4',5-Hexabromobiphenyl	77607-09-1	35 μ g/mL	Isooctane	B-156S	85
2,3,3',4,5,5'-Hexabromobiphenyl		35 μ g/mL	Isooctane	B-159S	115
3,3',4,4',5,5'-Hexabromobiphenyl	60044-26-0	35 μ g/mL	Isooctane	B-169S	30
2,2',3,4,4',5,5'-Heptabromobiphenyl	67733-52-2	35 μ g/mL	Isooctane	B-180S	160
2,3,3',4,4',5,5'-Heptabromobiphenyl		35 μ g/mL	Isooctane	B-189S	85
2,2',3,3',4,4',5,5'-Octabromobiphenyl		35 μ g/mL	Isooctane	B-194S	145
2,2',3,3',4,4',5,6'-Octabromobiphenyl	119264-60-7	35 μ g/mL	Isooctane	B-200S	150
Decabromobiphenyl	13654-09-6	25 mg	NEAT	B-209N	20
		35 μ g/mL	Isooctane : Acetone (98:2)	B-209S	20



Bromophenols and their Methyl ethers

Bromophenols

Each at 100 µg/mL in Toluene

Compound	CAS No.	Cat. No.	Price / 1 mL
2-Bromophenol NEW	95-56-7	BP-002S	\$ 15
3-Bromophenol	591-20-8	BP-003S	15
4-Bromophenol	106-41-2	BP-004S	15
2,3-Dibromophenol	57383-80-9	BP-023S	75
2,4-Dibromophenol	615-58-7	BP-024S	15
2,5-Dibromophenol	28165-52-8	BP-025S	75
2,6-Dibromophenol	608-33-3	BP-026S	25
3,4-Dibromophenol NEW	615-56-5	BP-034S	75
3,5-Dibromophenol	626-41-5	BP-035S	75
2,3,4-Tribromophenol	138507-65-0	BP-234S	75
2,3,5-Tribromophenol NEW		BP-235S	75
2,3,6-Tribromophenol NEW		BP-236S	75
2,4,5-Tribromophenol	14401-61-7	BP-245S	75
2,4,6-Tribromophenol	118-79-6	BP-246S	15
3,4,5-Tribromophenol		BP-345S	75
2,3,4,5-Tetrabromophenol		BP-2345S	75
2,3,4,6-Tetrabromophenol	14400-94-3	BP-2346S	75
2,3,5,6-Tetrabromophenol		BP-2356S	75
Pentabromophenol	608-71-9	BP-23456S	15

Bromoanisoles (Bromophenyl methyl ether)

Each at 50 µg/mL in Methanol

Compound	CAS No.	Cat. No.	Price / 1 mL
2-Bromoanisoole	578-57-4	BAN-01	\$ 45
3-Bromoanisoole	2398-37-0	BAN-02	45
4-Bromoanisoole	104-92-7	BAN-03	45
2,3-Dibromoanisoole		BAN-04	75
2,4-Dibromoanisoole	21702-84-1	BAN-05	45
2,5-Dibromoanisoole	95970-08-4	BAN-06	75
2,6-Dibromoanisoole	38603-09-7	BAN-07	45
3,5-Dibromoanisoole	74137-36-3	BAN-08	45
2,4,5-Tribromoanisoole		BAN-09	95
2,4,6-Tribromoanisoole	607-99-8	BAN-10	45





Industrial Flame Retardants

Bromine Containing (BFRs)

Bromine Containing Industrial Flame Retardants (BFRs) PURE

Compound	CAS No.	Conc.	Matrix	Cat. No.	Price / 1 mL
1,2-Dibromo-4-(1,2-dibromoethyl)cyclohexane (TBECH)	3322-93-8	10 mg	NEAT	FRS-038N	25
		100 mg/mL	MeOH	FRS-038S	25
Dibromoneopentyl glycol	3296-90-0	10 mg	NEAT	FRS-011N	15
		100 µg/mL	Toluene	FRS-011S	15
tris(2,3-Dibromopropyl) isocyanurate	52434-90-9	10 mg	NEAT	FRS-042N	65
		100 µg/mL	Toluene	FRS-042S	35
bis(2,3-Dibromopropyl)phthalate NEW	7415-86-3	10 mg	NEAT	FRS-067N	50
		100 µg/mL	Toluene	FRS-067S	35
tris(2,3-Dibromopropyl)phosphate NEW	126-72-7	10 mg	NEAT	FRS-057N	25
		100 µg/mL	Toluene	FRS-057S	40
(2,3-Dibromopropyl)(2,4,6-tribromophenyl) ether (DPTE)	35109-60-5	10 mg	NEAT	FRS-044N	65
		100 µg/mL	Toluene	FRS-044S	35
Di(2-ethylhexyl)tetrabromophthalate	26040-51-7	10 mg	NEAT	FRS-040N	65
		100 µg/mL	Toluene	FRS-040S	35
2-Ethylhexyl 2,3,4,5-tetrabromobenzoate	183658-27-7	10 mg	NEAT	FRS-041N	65
		100 µg/mL	Toluene	FRS-041S	35
Hexachlorocyclopentadienyl-dibromocyclooctane	51936-55-1	10 mg	NEAT	FRS-039N	25
		100 µg/mL	Toluene	FRS-039S	25
Pentabromobenzene NEW	608-90-2	10 mg	NEAT	FRS-064N	50
		50 µg/mL	Toluene	FRS-064S-0.5X	35
Pentabromobenzylacrylate	59447-55-1	10 mg	NEAT	FRS-035N	30
		100 µg/mL	Toluene	FRS-035S	20
Pentabromobenzylbromide	38521-51-6	10 mg	NEAT	FRS-030N	30
		100 µg/mL	Toluene	FRS-030S	15
Pentabromoethylbenzene	85-22-3	100 µg/mL	Toluene	FRS-048S	25
1,4-bis(Pentabromophenoxy)tetrabromobenzene	58965-66-5	10 mg	NEAT	FRS-052N	25
		100 µg/mL	Toluene	FRS-052S	25
Tetrabromobisphenol A	79-94-7	10 mg	NEAT	FRS-074N	15
		100 µg/mL	Toluene	FRS-074S	15
Tetrabromobisphenol A bis(2,3-dibromopropyl ether) NEW	21850-44-2	10 mg	NEAT	FRS-034N	25
		100 µg/mL	Toluene	FRS-034S	25
Tetrabromobisphenol A bis(hydroxyethyl ether)	4162-45-2	50 mg	NEAT	FRS-032N	25
		100 µg/mL	Toluene	FRS-032S	15
Tetrabromobisphenol A bismethyl ether NEW	37853-61-5	10 mg	NEAT	FRS-069N	45
		100 µg/mL	Toluene	FRS-069S	45
Tetrabromobisphenol A diallyl ether	25327-89-3	10 mg	NEAT	FRS-045N	25
		100 µg/mL	Toluene	FRS-045S	25
Tetrabromobisphenol S NEW	39635-79-5	10 mg	NEAT	FRS-070N	25
		100 µg/mL	Toluene	FRS-070S	25
Tetrabromobisphenol S bis(2,3-dibromopropyl ether) NEW	42757-55-1	10 mg	NEAT	FRS-075N	45
		100 µg/mL	Toluene	FRS-075S	45
1,2,5,6-Tetrabromocyclooctane NEW	3194-57-8	10 mg	NEAT	FRS-068N	50
		100 µg/mL	Toluene	FRS-068S	35
Tetrabromophthalic acid NEW	13810-83-8	10 mg	NEAT	FRS-065N	65
		100 µg/mL	Toluene	FRS-065S	35
Tribromoneopentyl alcohol	1522-92-5 / 36483-57-5	10 mg	NEAT	FRS-046N	15
		100 µg/mL	Toluene	FRS-046S	15
tris(Tribromoneopentyl) phosphate	19186-97-1	10 mg	NEAT	FRS-047N	20
		100 µg/mL	Toluene	FRS-047S	20
1,2-bis(2,4,6-Tribromophenoxy)ethane	37853-59-1	10 mg	NEAT	FRS-037N	30
		100 µg/mL	Toluene	FRS-037S	20
2,4,6-tris(2,4,6-Tribromophenoxy)-1,3,5-triazine	25713-60-4	100 µg/mL	Toluene	FRS-049S	30
2,4,6-Tribromophenyl allyl ether	3278-89-5	10 mg	NEAT	FRS-043N	65
		100 µg/mL	Toluene	FRS-043S	35

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.	Price / 1 mL
Bromkal™ DE-70-5		Penta BDEs	50 µg/mL	Isooctane	BDE-705	\$ 90
Bromkal™ DE-71		Penta BDEs	50 µg/mL	Isooctane	BDE-710	90
Bromkal™ DE-73-6		Hexa BDEs	50 µg/mL	Isooctane	BDE-736	90
Bromkal™ DE-79-8		Octa BDEs	50 µg/mL	Isooctane	BDE-798	90
Dow FR-250	27858-07-7	Mix of Octa and Nonabromobiphenyl	35 µg/mL	Isooctane	B-250S-0.35X	20
			100 µg/mL	Isooctane	B-250S	50
Firemaster™ BP4A	79-94-7	Tetrabromobisphenol A	100 µg/mL	Toluene	FRS-006S	15
Firemaster™ BP-6	59536-65-1	Hexabromobiphenyl	35 µg/mL	Isooctane	B-600S-0.35X	65
			100 µg/mL	Isooctane	B-600S	95
Firemaster™ PHT4	632-79-1	Tetrabromophthalic anhydride	10 mg	NEAT	FRS-007N	15
			100 µg/mL	Toluene	FRS-007S	15
Firemaster™ T23P (Michigan Chemical)	126-72-7	Tris(2,3-dibromopropyl)phosphate	10 mg	NEAT	FRS-008N	15
			100 µg/mL	Toluene	FRS-008S	15
Firemaster™ 680 (Great Lakes)	37853-59-1	1,2-Bis(2,4,6-tribromophenoxy)ethane	50 mg	NEAT	FRS-037N	30
			100 µg/mL	Toluene	FRS-037S	20
Firemaster™ 2100 (Great Lakes)	84852-53-9	Decabromodiphenylethane	50 mg	NEAT	FRS-036N	30
			100 µg/mL	Toluene	FRS-036S	35
FR-300BA	1163-19-5	Decabromodiphenyl ether 85.5%	10 mg	NEAT	FRS-009N	15
			100 µg/mL	Toluene	FRS-009S	15
FR-651A (Dow)	87-84-3	Pentabromochlorocyclohexane	10 mg	NEAT	FRS-010N	15
			100 µg/mL	Toluene	FRS-010S	15
FR-1138 (Dow)	3296-90-0	Dibromoneopentyl glycol 85.0%	10 mg	NEAT	FRS-011N	15
			100 µg/mL	Toluene	FRS-011S	15
HBCD SP-75C (Great Lakes)	3194-55-6-GL	1,2,5,6,9,10-Hexabromocyclododecane	10 mg	NEAT	FRS-028N	15
			100 µg/mL	Toluene	FRS-028S	15
Hexabromobenzene (Michigan Chemical)	87-82-1	Hexabromobenzene	10 mg	NEAT	FRS-012N	15
			100 µg/mL	Toluene	FRS-012S	15
Hexabromobenzene (White Chemical)	87-82-1	Hexabromobenzene	10 mg	NEAT	FRS-013N	15
			100 µg/mL	Toluene	FRS-013S	15
Hexabromobenzene (Hummel)	87-82-1	Hexabromobenzene	10 mg	NEAT	FRS-014N	15
			100 µg/mL	Toluene	FRS-014S	15
Pentabromotoluene (White Chemical)	87-83-2	Pentabromotoluene	10 mg	NEAT	FRS-018N	15
			100 µg/mL	Toluene	FRS-018S	15
Saytex BT-93	32588-76-4	Ethylene bis(tetrabromophthalimide)	50 µg/mL	Toluene	FRS-053S-0.5X	20
Saytex RB-79	77058-07-8	2-(2'-Hydroxyethoxy) ethyl, 2-hydroxypropyl-tetrabromophthalate	10 mg	NEAT	FRS-054N	30
			100 µg/mL	Toluene	FRS-054S	30
Tetrabromo-o-chlorotoluene (White Chemical)		Tetrabromo-o-chlorotoluene (98%)	10 mg	NEAT	FRS-021N	15
			100 µg/mL	Toluene	FRS-021S	15
TP-69 (Great Lakes)	126-72-7	Tris(2,3-dibromopropyl)phosphate	10 mg	NEAT	FRS-023N	15
			100 µg/mL	Toluene	FRS-023S	15

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.

Other BFR Related Chemicals

Compound	CAS No.	Conc.	Matrix	Cat. No.	Price / 1 mL
2-Bromoallyl-2,4,6-tribromophenyl ether NEW	99717-56-3	10 mg	NEAT	FRS-063N	\$ 75
		100 µg/mL	Toluene	FRS-063S	45
3-Bromostyrene	2039-86-3	10 mg	NEAT	FRS-050N	20
		100 µg/mL	Toluene	FRS-050S	20
4-Bromostyrene	2039-82-9	10 mg	NEAT	FRS-051N	20
		100 µg/mL	Toluene	FRS-051S	20
2,3,4,5-Tetrabromobenzoic acid (Metabolite) NEW	27581-13-1	100 µg/mL	Toluene: THF (85:15)	FRS-066S	45
Tetrabromobisphenol A bisglycidyl ether NEW	3072-84-2	10 mg	NEAT	FRS-073N	45
		100 µg/mL	Toluene	FRS-073S	45
Tetrabromobisphenol S bisglycidyl ether NEW		10 mg	NEAT	FRS-072N	45
		100 µg/mL	Toluene	FRS-072S	45
Tetrabromobisphenol S bismethyl ether NEW	70156-79-5	10 mg	NEAT	FRS-071N	45
		100 µg/mL	Toluene	FRS-071S	45
2,4,6-Tribromophenol (Metabolite)	118-79-6	100 µg/mL	Toluene	BP-246S	15



Industrial Flame Retardants

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

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 and 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.	Price / 1 mL
Trimethyl phosphate (TMP)	512-56-1	100 µg/mL	Toluene	PFRS-016S	\$ 15
Dimethyl phosphate	813-78-5	100 µg/mL	Toluene	PFRS-006S	15
Triethyl phosphate (TEP)	78-40-0	100 µg/mL	Toluene	PFRS-012S	15
Diethyl phosphate (mono & di-)	598-02-7	100 µg/mL	Toluene	PFRS-005S	25
Tripropyl phosphate (TPRP)	513-08-6	100 µg/mL	Toluene	PFRS-021S	15
Triisopropyl phosphate (TiPP, TiPrP)	513-02-0	100 µg/mL	Toluene	PFRS-013S	15
Tributyl phosphate	126-73-8	100 µg/mL	Toluene	PFRS-009S	15
Triphenyl phosphate (TPeP)	2528-38-3	100 µg/mL	Hexane	PFRS-019S-H	25
tris(2-ethylhexyl) phosphate	78-42-2	100 µg/mL	Toluene	PFRS-028S	15
Triphenyl phosphate (TPP, TPhP)	115-86-8	100 µg/mL	Toluene	PFRS-020S	15
2-Ethylhexyl diphenyl phosphate (EDP, DPEHP)	1241-94-7	100 µg/mL	Toluene	PFRS-007S	15
Tri(2-isopropylphenyl) phosphate	64532-95-2	100 µg/mL	Toluene	PFRS-014S	25
Isodecyl diphenyl phosphate	29761-21-5	100 µg/mL	Toluene	PFRS-008S	20
Cresyl diphenyl phosphate (CDP)	26444-49-5	100 µg/mL	Toluene	PFRS-004S	15
Tri-o-cresyl phosphate (o-TCP, TOCP, TOTP)	78-30-8	100 µg/mL	Toluene	PFRS-017S	15
Tri-p-cresyl phosphate (p-TCP, TPCP, TPTP)	78-32-0	100 µg/mL	Toluene	PFRS-018S	15
Tricresyl phosphate (mixture of isomers) (TCP, TCrP, TToP)	1330-78-5	100 µg/mL	Toluene	PFRS-011S	15
Tri-m-cresyl phosphate (m-TCP, TMTP)	563-04-2	100 µg/mL	Toluene	PFRS-015S	15
tris(2-butoxyethyl) phosphate (TBEP)	78-51-3	100 µg/mL	Toluene	PFRS-022S	15
tris(2-chloroethyl) phosphate (TCEP)	115-96-8	100 µg/mL	Toluene	PFRS-024S	15
tris(1-chloro-2-propyl) phosphate (TCPP, TCiPP)	13674-84-5	100 µg/mL	Toluene	PFRS-025S	25
tris(2-chloropropyl)phosphate	6145-73-9	100 µg/mL	Toluene	PFRS-023S	15
Tri(3-chloropropyl) phosphate (TCPP)	26248-87-3	100 µg/mL	Toluene	PFRS-010S	25
tris(1,3-dichloro-2-propyl) phosphate (TDCPP, TDCP)	13674-87-8	100 µg/mL	Toluene	PFRS-027S	15
tris(2,3-dibromopropyl) phosphate	126-72-7	100 µg/mL	Toluene	PFRS-026S	15
bis(2,3-dibromopropyl) phosphate	5412-25-9	100 µg/mL	Toluene	PFRS-002S	25
tris(tribromoneopentyl) phosphate (TTBNP)	19186-97-1	100 µg/mL	Toluene	PFRS-029S	20
Tetrakis(2-chloroethyl)dichloroisopentylidiphosphate (V6)	38051-10-4	100 µg/mL	Toluene	PFRS-003S	65
Resorcinol bis(diphenyl phosphate) (RDP)	57583-54-7	100 µg/mL	Toluene	PFRS-030S	55
Bisphenol A bis(diphenyl phosphate) (BADP, BAPP, BPADP, BDP)	5945-33-5	100 µg/mL	Toluene	PFRS-001S	25

Chlorine Containing Industrial Flame Retardants (CFRs)

Compound	CAS No.	Active Ingredient	Conc.	Matrix	Cat. No.	Price / 1 mL
Chlorafin™ 40	63449-39-8	Chlorinated Paraffin	10 mg	NEAT	FRS-002N	\$ 15
			100 µg/mL	Toluene	FRS-002S	15
Chlorendic anhydride	115-27-5	Chlorendic anhydride	10 mg	NEAT	FRS-001N	15
			100 µg/mL	Toluene	FRS-001S	15
bis(2-Chloroethyl)ether	111-44-4	bis(2-Chloroethyl)ether	100 µg/mL	MeOH	APP-9-027	20
			5 mg/mL	MeOH	AS-E0016	32
4-Chlorophenyl phenyl ether	7005-72-3	4-Chlorophenyl phenyl ether	100 µg/mL	MeOH	APP-9-047	20
			5 mg/mL	MeOH	AS-E0038	32
Chlorowax™ 500C	63449-39-8	Chlorinated Hydrocarbons 59.0%	10 mg	NEAT	FRS-004N	15
			100 µg/mL	Toluene	FRS-004S	15
Chlorowax™ 70	63449-39-8	Chlorinated Hydrocarbons 70.0%	10 mg	NEAT	FRS-003N	15
			100 µg/mL	Toluene	FRS-003S	15
Diablo 700X	63449-39-8	Chlorinated Hydrocarbons 70.0%	10 mg	NEAT	FRS-005N	15
			100 µg/mL	Toluene	FRS-005S	15
Dechlorane Plus (Mixed isomers)	13560-89-9	Dechlorane Plus	10 mg	NEAT	FRS-033N	20
			100 µg/mL	Toluene	FRS-033S	20
Hexachlorobutadiene	87-68-3	Hexachlorobutadiene	100 µg/mL	Toluene	FRS-017S	15
Paroil™ 179-HV	63449-39-8	Chlorinated Paraffin	10 mg	NEAT	FRS-015N	15
			100 µg/mL	Toluene	FRS-015S	15
Paroil™ 170-8	63449-39-8	Chlorinated Paraffin	100 µg/mL	Toluene	FRS-016S	15
Phosgard™ C 22-R	4351-70-6	Halogenated organic phosphate ester	10 mg	NEAT	FRS-019N	15
			100 µg/mL	Toluene	FRS-019S	15
Phosgard™ 2XC-20, V6	38051-10-4	Halogenated organic phosphate ester	100 µg/mL	Toluene	FRS-020S	65
Tetrachlorobisphenol A	79-95-8	Tetrachlorobisphenol A	10 mg	NEAT	FRS-022N	15
			100 µg/mL	Toluene	FRS-022S	15
Unichlor™ 40-90	63449-39-8	Chlorinated Hydrocarbons 38.5%	10 mg	NEAT	FRS-024N	15
			100 µg/mL	Toluene	FRS-024S	15
Unichlor™ 502-50	63449-39-8	Chlorinated Hydrocarbons 52.0%	10 mg	NEAT	FRS-025N	15
			100 µg/mL	Toluene	FRS-025S	15
Unichlor™ 70AX	63449-39-8	Chlorinated Hydrocarbons 70.0%	10 mg	NEAT	FRS-026N	15
			100 µg/mL	Toluene	FRS-026S	15

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.

Purity 98+%,
except where
indicated

PAHs in Bulk
Quantities Available

Polynuclear Aromatic Hydrocarbons (PAHs)

Compound	Synonym	CAS No.	NEAT Cat. No.	Price / Unit	50 µg/mL in Toluene SOLUTION Cat. No.	Price 1 mL
Acenaphthene		83-32-9	H-108N	\$ 13 / 100 mg	H-108S	\$ 15
Acenaphthylene		208-96-8	H-125N	50 / 100 mg	H-125S	15
Acridine		260-94-6	H-187N	15 / 100 mg	H-187S	15
Anthanthrene		191-26-4	H-109N	77 / 10 mg	H-109S	40
Anthracene		120-12-7	H-110N	13 / 100 mg	H-110S	15
Azulene		275-51-4	H-127N	18 / 10 mg	H-127S	15
1,2-Benzanthracene	<i>Tetraphene</i>	56-55-3	H-100N	13 / 10 mg	H-100S	15
2,3-Benzanthracene		92-24-0	H-159N	13 / 10 mg	H-159S	15
Benz[a]anthracene-7,12-dione	<i>Benzanthraquinone</i>	2498-66-0	H-111N	25 / 10 mg	H-111S	15
Benzo[b]chrysene		214-17-5	H-183N	65 / 5 mg	H-183S	40
Benzo[b]fluoranthene	<i>Benz[e]acephenanthrylene</i>	205-99-2	H-128N	13 / 10 mg	H-128S	20
Benzo[j]fluoranthene		205-82-3	H-171N	75 / 10 mg	H-171S	30
Benzo[k]fluoranthene		207-08-9	H-129N	26 / 10 mg	H-129S	20
1,2-Benzofluorene		238-84-6	-----	-----	H-130S	20
2,3-Benzofluorene		243-17-4	H-180N	13 / 10 mg	H-180S	15
Benzo[g,h,i]perylene	<i>1,12-Benzoperylene</i>	191-24-2	H-103N	18 / 10 mg	H-103S	20
Benzo[c]phenanthrene		195-19-7	H-244N	60 / 10 mg	H-244S	30
Benzo[a]pyrene (ACS grade)	<i>3,4-Benzopyrene</i>	50-32-8	H-169N-ACS	12 / 10 mg	-----	---
Benzo[a]pyrene (Ames grade)			H-169N	26 / 10 mg	H-169S	20
Benzo[e]pyrene		192-97-2	H-112N	120 / 10 mg	H-112S	20
2,3-Benzofuran		271-89-6	H-237N	10 / 10 mg	H-237S	15
5,6-Benzoquinoline	<i>Benzo[f]quinoline</i>	85-02-9	H-113N-10MG	18 / 10 mg	H-113S	15
7,8-Benzoquinoline		230-27-3	H-245N	35 / 100 mg	H-245S	25
2,2'-Binaphthyl		612-78-2	H-239N	30 / 50 mg	H-239S	15
Biphenyl		92-52-4	H-133N	14 / 500 mg	H-133S	15
Carbazole		86-74-8	H-114N	13 / 100 mg	H-114S	15
Chrysene	<i>Benzo[a]phenanthrene</i>	218-01-9	H-115N	35 / 100 mg	H-115S	15
Coronene		191-07-1	H-116N	32 / 5 mg	H-116S	30
Cyclopenta[c,d]pyrene		27208-37-3	-----	-----	H-242S	50
Dibenz[a,h]acridine		226-36-8	H-172N	150 / 10 mg	H-172S	30
Dibenz[a,j]acridine		224-42-0	H-173N	50 / 10 mg	H-173S	30
1,2,3,4-Dibenzanthracene	<i>Dibenz[a,c]anthracene</i>	215-58-7	H-134N	100 / 10 mg	H-134S	20
1,2,5,6-Dibenzanthracene	<i>Dibenz[a,h]anthracene</i>	53-70-3	H-135N	20 / 10 mg	H-135S	20
7H-Dibenzo[c,g]carbazole		194-59-2	-----	-----	H-176S	30
Dibenzo-p-dioxin		262-12-4	D-100N	80 / 10 mg	D-100S *	30
Dibenzo[a,e]fluoranthene		5385-75-1	-----	-----	H-247S	50
Dibenzofuran		132-64-9	F-100N	14 / 50 mg	-----	--
1,2,4,5-Dibenzopyrene	<i>Dibenzo[a,e]pyrene</i>	192-65-4	-----	-----	H-138S	20
Dibenzo[a,h]pyrene		189-64-0	H-177N	65 / 10 mg	H-177S	15
Dibenzo[a,i]pyrene		189-55-9	H-178N	225 / 5 mg	H-178S	50
Dibenzo[a,l]pyrene		191-30-0	-----	-----	H-179S	45
Diphenylenesulfide	<i>Dibenzothiophene</i>	132-65-0	H-117N	13 / 100 mg	H-117S	15
1,2,8,9-Dibenzpentacene		227-09-8	H-139N **	-- / 5 mg	H-139S	30
9,10-Dihydroanthracene		613-31-0	H-140N	30 / 100 mg	H-140S	15
12,12A-Dihydro-3,9-dimethylbenz[a]anthracene			-----	-----	H-188S	20
Diindeno[1,2,3-cd-1',2',3'-lm]perylene	<i>Periflanthene</i>	188-94-3	-----	-----	H-141S	20
2,3-Dimethylanthracene		613-06-9	H-189N	50 / 10 mg	H-189S	20
9,10-Dimethylanthracene		781-43-1	H-190N	15 / 10 mg	H-190S	15
3,9-Dimethylbenz[a]anthracene		316-51-8	-----	-----	H-191S	20
6,8-Dimethylbenz[a]anthracene		317-64-6	-----	-----	H-192S	20
7,12-Dimethylbenz[a]anthracene		57-97-6	H-174N	13 / 10 mg	H-174S	15
1,12-Dimethylbenzo[c]phenanthrene		4076-43-1	-----	-----	H-193S	20
5,8-Dimethylbenzo[c]phenanthrene		54886-63-9	-----	-----	H-194S	20
7,10-Dimethylbenzo[a]pyrene		63104-33-6	-----	-----	H-195S	20
1,2-Dimethylnaphthalene		573-98-8	H-197N	15 / 10 mg	H-197S	15
1,3-Dimethylnaphthalene (96%)		575-41-7	H-198N	15 / 10 mg	H-198S	15
1,4-Dimethylnaphthalene (95%)		571-53-4	H-199N	15 / 10 mg	H-199S	15
1,5-Dimethylnaphthalene		571-61-9	H-200N	15 / 10 mg	H-200S	15
1,6-Dimethylnaphthalene		575-43-9	H-201N	15 / 10 mg	H-201S	15
1,8-Dimethylnaphthalene (95%)		569-41-5	H-202N	15 / 10 mg	H-202S	15
2,6-Dimethylnaphthalene		581-42-0	H-161N	15 / 10 mg	H-161S	15
2,7-Dimethylnaphthalene		582-16-1	H-203N	15 / 10 mg	H-203S	15

* in Isooctane

** Call for price.



PAHs



Polynuclear Aromatic Hydrocarbons

PAHS

Polynuclear Aromatic Hydrocarbons (PAHs)

Purity 98+%,
except where
indicated

Compound	Synonym	CAS No.	NEAT Cat. No.	Price / Unit	50 µg/mL in Toluene SOLUTION Cat. No.	Price 1 mL
3,6-Dimethylphenanthrene		1576-67-6	H-142N-5MG	\$ 60 / 5 mg	H-142S	\$ 15
9,10-Diphenylanthracene		1499-10-1	H-185N	18 / 100 mg	H-185S	15
Dodecahydrotriphenylene		1610-39-5	H-144N	13 / 100 mg	H-144S	15
6-Ethylchrysene		2732-58-3	H-264N	25 / 10 mg	-----	---
Fluoranthene		206-44-0	H-118N	13 / 100 mg	H-118S	15
Fluorene		86-73-7	H-146N	26 / 100 mg	H-146S	15
Indan		496-11-7	H-231N	20 / 100 mg	H-231S	15
Indene		95-13-6	H-230N	15 / 100 mg	H-230S	15
Indeno[1,2,3-cd]pyrene	<i>o-Phenylene pyrene</i>	193-39-5	H-157N	75 / 10 mg	H-157S	20
Indole		120-72-9	H-236N	15 / 100 mg	H-236S	15
Isoquinoline		119-65-3	H-232N	15 / 100 mg	H-232S	15
1-Methylanthracene		610-48-0	H-222N	55 / 10 mg	H-222S	20
2-Methylanthracene		613-12-7	H-148N	14 / 10 mg	H-148S	20
9-Methylanthracene		779-02-2	H-149N	25 / 10 mg	H-149S	20
1-Methylbenz[a]anthracene		2498-77-3	-----	-----	H-213S	20
2-Methylbenz[a]anthracene		2498-76-2	-----	-----	H-214S	20
3-Methylbenz[a]anthracene		2498-75-1	-----	-----	H-215S	20
4-Methylbenz[a]anthracene		316-49-4	-----	-----	H-216S	20
5-Methylbenz[a]anthracene		2319-96-2	-----	-----	H-217S	20
6-Methylbenz[a]anthracene		316-14-3	-----	-----	H-218S	20
7-Methylbenz[a]anthracene		2541-69-7	-----	-----	H-219S	20
9-Methylbenz[a]anthracene		2381-16-0	-----	-----	H-220S	20
10-Methylbenz[a]anthracene		2381-15-9	-----	-----	H-221S	20
1-Methylbenzo[c]phenanthrene		4076-39-5	-----	-----	H-208S	20
2-Methylbenzo[c]phenanthrene		2606-85-1	-----	-----	H-209S	20
3-Methylbenzo[c]phenanthrene		2381-19-3	-----	-----	H-210S	20
4-Methylbenzo[c]phenanthrene		4076-40-8	-----	-----	H-211S	20
5-Methylbenzo[c]phenanthrene		652-04-0	-----	-----	H-212S	20
7-Methylbenzo[a]pyrene		63041-77-0	H-223N	20 / 10 mg	H-223S	20
8-Methylbenzo[a]pyrene		63041-76-9	-----	-----	H-205S	20
9-Methylbenzo[a]pyrene		70644-19-8	-----	-----	H-206S	20
10-Methylbenzo[a]pyrene		63104-32-5	-----	-----	H-207S	20
3-Methylcholanthrene	<i>20-Methylcholanthrene</i>	56-49-5	H-170N	80 / 10 mg	H-170S	40
4-Methylchrysene		3351-30-2	-----	-----	H-228S	40
5-Methylchrysene		3697-24-3	-----	-----	H-243S	50
6-Methylchrysene		1705-85-7	H-175N	120 / 10 mg	H-175S	15
2-Methylfluoranthene		33543-31-6	H-182N-5MG	45 / 5 mg	H-182S	15
1-Methylnaphthalene		90-12-0	H-001N	12 / 100 mg	H-001S	15
2-Methylnaphthalene		91-57-6	H-002N	12 / 100 mg	H-002S	15
9-Methyl-9-phenylfluorene		56849-83-3	H-204N	15 / 10 mg	H-204S	15
1-Methylphenanthrene		832-69-9	-----	-----	H-162S	40
2-Methylphenanthrene		2531-84-2	-----	-----	H-003S	40
3-Methylphenanthro[3,4-c]phenanthrene		83844-21-7	-----	-----	H-224S	20
1-Methylpyrene		2381-71-7	-----	-----	H-233S	20
4,5-Methylenephenanthrene		203-64-5	-----	-----	H-119S	40
Naphthalene		91-20-3	H-152N	13 / 100 mg	H-152S	15
Perylene		198-55-0	H-121N	26 / 10 mg	H-121S	20
Phenanthrene		85-01-8	H-122N	13 / 100 mg	H-122S	15
9-Phenylanthracene		602-55-1	H-156N	26 / 100 mg	H-156S	15
<i>o-Phenylene pyrene</i>	see Indeno[1,2,3-cd]pyrene					
1-Phenylnaphthalene		605-02-7	H-246N	35 / 100 mg	H-246S	25
2-Phenylnaphthalene		612-94-2	H-158N	45 / 5 mg	H-158S	15
Picene		213-46-7	-----	-----	H-184S	40
Pyrene		129-00-0	H-123N	13 / 100 mg	H-123S	15
Pyrrrole		109-97-7	H-229N	15 / 100 mg	H-229S	15
Quinoline		91-22-5	H-186N	15 / 100 mg	H-186S	15
2,3:6,7-Tetraethylbiphenylene			H-225N	15 / 10 mg	H-225S	15
1,2:3,4-Tetrahydrofluoranthene		42429-92-5	H-165N	16 / 10 mg	H-165S	20
<i>Tetraphene</i>	see 1,2-Benzanthracene					
Thianaphthene		95-15-8	H-238N	15 / 100 mg	H-238S	15
Thianthrene		92-85-3	H-241N	10 / 100 mg	-----	--
4,6,8-Trimethylazulene		941-81-1	H-226N	15 / 10 mg	H-226S	15
8,9,11-Trimethylbenz[a]anthracene		74845-58-2	-----	-----	H-227S	20
Triphenylene		217-59-4	H-235N	10 / 10 mg	H-235S	15
Truxene (95%)		548-35-6	H-124N	28 / 100 mg	H-124S	15



PAH Sets and Solutions

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

PAH Neat Sets

Z-001-SET

\$ 225 / Kit of 20 x 5 mg

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

Z-013N-SET

\$ 175 / 16 x 10 mg

(set includes, 16 individual neat analytes)

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

PAH Solutions

All Solutions at 0.2 mg/mL in 1 mL

Compound	Solvent	Cat. No.	Price
Acenaphthene	MeOH	Z-013-01	\$ 15
Acenaphthylene	MeOH	Z-013-02	15
Anthracene	MeOH	Z-013-03	15
Benz[a]anthracene	CH ₂ Cl ₂	Z-013-04	15
Benzo[a]pyrene	CH ₂ Cl ₂	Z-013-05	15
Benzo[b]fluoranthene	MeOH	Z-013-06	20
Benzo[g,h,i]perylene	CH ₂ Cl ₂	Z-013-07	20
Benzo[k]fluoranthene	CH ₂ Cl ₂	Z-013-08	20
Chrysene	CH ₂ Cl ₂	Z-013-09	15
Dibenz[a,h]anthracene	CH ₂ Cl ₂	Z-013-10	20
Fluoranthene	CH ₂ Cl ₂	Z-013-11	15
Fluorene	MeOH	Z-013-12	15
Indeno[1,2,3-cd]pyrene	MeOH	Z-013-13	20
Naphthalene	MeOH	Z-013-14	8
Phenanthrene (98%)	CH ₂ Cl ₂	Z-013-15	15
Pyrene	CH ₂ Cl ₂	Z-013-16	15
Mixture of the above 16 analytes, at 0.2 mg/mL in MeOH:CH ₂ Cl ₂ (50:50)			30
			16 comps.

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

Z-013-SET \$ 200

PAH Standard (Quebec Ministry of Environmental PAH Mix)

H-QME-01

\$ 110 / 1 x 1 mL

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

24 comps.

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





Nitro-Polynuclear Aromatic Hydrocarbons

The atmosphere of most of the 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.

References:

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

Nitro-PAHs

Compound	CAS No.	NEAT Cat. No.	Price / Unit	100 µg/mL in Toluene SOLUTION Cat. No.	Price 1 mL
1-Amino-4-nitronaphthalene	776-34-1	R-001N	\$ 17 / 100 mg	R-001S	\$ 15
2-Nitroanthracene	3586-69-4	R-105N	45 / 5 mg	R-105S	20
9-Nitroanthracene	602-60-8	R-003N	30 / 5 mg	R-003S	17
7-Nitrobenz[a]anthracene	20268-51-3	R-097N	85 / 5 mg	R-097S	50
6-Nitrobenz[a]pyrene	63041-90-7	-----	-----	R-004S	25
2-Nitrobiphenyl	86-00-0	R-005N	17 / 100 mg	R-005S	15
3-Nitrobiphenyl	2113-58-8	R-006N	17 / 100 mg	R-006S	15
4-Nitrobiphenyl	92-93-3	R-007N	70 / 100 mg	R-007S	15
6-Nitrochrysene	7496-02-8	R-008N	45 / 5 mg	R-008S	20
3-Nitrodibenzofuran	5410-97-9	R-009N	30 / 5 mg	R-009S	17
2-Nitrodibenzothiophene	6639-36-7	R-010N	30 / 5 mg	R-010S	17
3-Nitrofluoranthene	892-21-7	R-013N	40 / 5 mg	R-013S	20
2-Nitrofluorene	607-57-8	R-098N	30 / 100 mg	R-098S	20
5-Nitroacenaphthene	602-87-9	R-115N	45 / 5 mg	R-115S	30
1-Nitronaphthalene	86-57-7	R-016N	17 / 100 mg	R-016S	15
2-Nitronaphthalene	581-89-5	R-085N-10MG	40 / 10 mg	R-085S	15
3-Nitrophenanthrene	17024-19-0	R-045N	45 / 5 mg	R-045S	20
9-Nitrophenanthrene	954-46-1	R-020N	30 / 5 mg	R-020S	17
1-Nitropyrene	5522-43-0	R-022N	25 / 5 mg	R-022S	15

Di- and Tri- Nitro-PAHs

Compound	CAS No.	NEAT Cat. No.	Price / Unit	100 µg/mL in Toluene SOLUTION Cat. No.	Price 1 mL
9,10-Dinitroanthracene	33685-60-8	R-024N	\$ 45 / 5 mg	R-024S	\$ 20
2,2'-Dinitrobiphenyl	2436-96-6	R-025N	17 / 100 mg	R-025S	15
2,8-Dinitrodibenzothiophene	109041-38-5	R-026N	30 / 5 mg	R-026S	17
2,7-Dinitrofluorene	5405-53-8	R-027N	17 / 100 mg	R-027S	15
2,7-Dinitro-9-fluorenone	31551-45-8	R-028N	17 / 100 mg	R-028S	15
1,3-Dinitronaphthalene	606-37-1	R-029N	17 / 100 mg	R-029S	15
1,5-Dinitronaphthalene	605-71-0	R-030N	17 / 100 mg	R-030S	15
1,8-Dinitronaphthalene	602-38-0	R-031N	17 / 100 mg	R-031S	15
1,3-Dinitropyrene	75321-20-9	R-094N	300 / 5 mg	R-094S	50
1,6-Dinitropyrene	42397-64-8	R-032N	400 / 5 mg	R-032S	50
1,8-Dinitropyrene	42397-65-9	R-099N	500 / 5 mg	R-099S	50
2,4,7-Trinitro-9-fluorenone	129-79-3	-----	-----	R-033S	15

Nitro-Aromatics

Compound	CAS No.	NEAT Cat. No.	Price / Unit	100 µg/mL in Toluene SOLUTION Cat. No.	Price 1 mL
Nitrobenzene	98-95-3	R-047N	\$ 10 / 100 mg	R-047S	\$ 10
2-Nitrotoluene	88-72-2	R-048N	10 / 100 mg	R-048S	10
2,4-Dinitrotoluene	121-14-2	R-049N	10 / 100 mg	R-049S	10
2,6-Dinitrotoluene	606-20-2	R-050N	10 / 100 mg	R-050S	10
2-Nitrophenol	51-28-5	R-051N	10 / 100 mg	R-051S	10
4-Nitrophenol	100-02-7	R-052N	10 / 100 mg	R-052S	10
2,4-Dinitrophenol	51-28-5	-----	-----	R-053S	10
2-Nitroaniline	88-74-4	R-054N	10 / 100 mg	R-054S	10
3-Nitroaniline	99-09-2	R-055N	10 / 100 mg	R-055S	10
4-Nitroaniline	100-01-6	R-056N	10 / 100 mg	R-056S	10
4,6-Dinitro-o-cresol (2-Methyl-4,6-dinitrophenol)	534-52-1	R-057N	10 / 100 mg	R-057S	10

PAHs Derivatives continued on next page

Polynuclear Aromatic Hydrocarbons Derivatives



Amino-PAHs

Compound	CAS No.	NEAT Cat. No.	Price / Unit	100 µg/mL in Toluene SOLUTION Cat. No.	Price 1 mL
2-Acetamidofluorene	53-96-3	R-058N	\$ 10 / 10 mg	R-058S	\$ 15
1-Aminoanthracene	610-49-1	R-059N	10 / 50 mg	R-059S	15
2-Aminoanthracene	613-13-8	R-060N	10 / 50 mg	R-060S	15
1-Aminoanthraquinone	82-45-1	R-061N	10 / 50 mg	R-061S	15
2-Aminoanthraquinone	117-79-3	R-093N	15 / 5 mg	R-093S	15
2-Aminobiphenyl	90-41-5	R-062N	10 / 10 mg	R-062S	15
4-Aminobiphenyl	92-67-1	R-063N	20 / 10 mg	R-063S	15
6-Aminochrysene	2642-98-0	R-065N	10 / 10 mg	R-065S	15
2-Aminofluorene	153-78-6	R-066N	10 / 10 mg	R-066S	15
1-Aminonaphthalene	134-32-7	R-067N	10 / 50 mg	R-067S	15
2-Aminonaphthalene	91-59-8	R-084N	20 / 10 mg	R-084S	15
2,7-Diaminofluorene	525-64-4	R-068N	10 / 10 mg	R-068S	15
1,8-Diaminonaphthalene	479-27-6	R-069N	32 / 100 mg	R-069S	15
1,2-Diphenylhydrazine	122-66-7	R-070N	10 / 100 mg	R-070S	15
N-phenyl-1-naphthylamine	90-30-2	R-071N	10 / 50 mg	R-071S	15
o-Tolidine (3,3'-Dimethylbenzidine)	119-93-7	R-072N	10 / 100 mg	R-072S	15

Hydroxy-PAHs

Compound	CAS No.	NEAT Cat. No.	Price / Unit	100 µg/mL in Toluene SOLUTION Cat. No.	Price 1 mL
6-Hydroxychrysene	37515-51-8	R-095N	\$ 13 / 10 mg	R-095S	\$ 15
1-Hydroxypyrene	5315-79-7	R-096N	32 / 10 mg	R-096S	15

Amino-Aromatics

Compound	CAS No.	Neat Cat. No.	Price / Unit	100 µg/mL in Toluene Solution Cat. No.	Price 1 mL
Benzidine	92-87-5	R-073N	\$ 10 / 100 mg	R-073S	\$ 15
3,3'-Diaminobenzidine	91-95-2	R-074N	10 / 50 mg	R-074S	15
3,3'-Dichlorobenzidine	91-94-1	R-075N	20 / 50 mg	R-075S	15
3,3'-Dimethoxybenzidine	119-90-4	R-076N	10 / 50 mg	R-076S	15
4,4'-Diaminodiphenylmethane (4,4'-Methylenedianiline)	101-77-9	R-077N	20 / 100 mg	R-077S	15
2,4-Diaminotoluene	95-80-7	R-078N	10 / 100 mg	R-078S	15
4-Dimethylaminoazobenzene	60-11-7	R-079N	10 / 10 mg	R-079S	15
4,4'-Methylene bis(2-chloroaniline)	101-14-4	R-080N	10 / 50 mg	R-080S	15
N-Methyl-N'-nitro-N-nitrosoguanidine	70-25-7	R-081N	10 / 50 mg	R-081S	35
N-Phenyl-2-naphthylamine	135-88-6	R-082N	10 / 10 mg	R-082S	15
s-Triazine	290-87-9	R-083N	10 / 10 mg	R-083S	15

DIN-38407-17 Nitroaromatic Compounds

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

DIN38407-17 \$ 68 / 1 x 1 mL
500 µg/mL each in MeOH 12 comps.

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



Nitrogen Containing Compounds

Nitrogen Containing Compounds

Compound	CAS No.	Conc.	Matrix	Cat. No.	Price / Unit
Azobenzene	103-33-3	2 mg/mL	CH ₂ Cl ₂	Z-014B-1	\$ 20 / 1 mL
2-Chloronitrobenzene	88-73-3	100 mg	NEAT	R-017N	12 / 100 mg
		100 µg/mL	Toluene	R-017S	10 / 1 mL
4-Chloronitrobenzene	100-00-5	100 mg	NEAT	R-018N	12 / 100 mg
		100 µg/mL	Toluene	R-018S	10 / 1 mL
2,3-Dichloronitrobenzene	3209-22-1	100 mg	NEAT	R-086N	12 / 100 mg
		100 µg/mL	Toluene	R-086S	10 / 1 mL
2,4-Dichloronitrobenzene	611-06-3	100 mg	NEAT	R-087N	12 / 100 mg
		100 µg/mL	Toluene	R-087S	10 / 1 mL
2,5-Dichloronitrobenzene	89-61-2	100 mg	NEAT	R-088N	12 / 100 mg
		100 µg/mL	Toluene	R-088S	10 / 1 mL
2,2'-Dinitrobiphenyl	2436-96-6	100 mg	NEAT	R-025N	17 / 100 mg
		100 µg/mL	Toluene	R-025S	15 / 1 mL
2,4-Dinitrophenol	51-28-5	100 µg/mL	Toluene	R-053S	10 / 1 mL
2,4-Dinitrotoluene	121-14-2	100 mg	NEAT	R-049N	10 / 100 mg
		100 µg/mL	Toluene	R-049S	10 / 1 mL
		100 µg/mL	MeOH	APP-9-092	12 / 1 mL
		5 mg/mL	MeOH	AS-E0033	32 / 1 mL
2,6-Dinitrotoluene	606-20-2	100 mg	NEAT	R-050N	10 / 100 mg
		100 µg/mL	Toluene	R-050S	10 / 1 mL
		100 µg/mL	MeOH	APP-9-093	12 / 1 mL
		5 mg/mL	MeOH	AS-E0034	32 / 1 mL
N-Methyl-N'-nitro-N-nitrosoguanidine	70-25-7	50 mg	NEAT	R-081N	10 / 50 mg
		100 µg/mL	Toluene	R-081S	35 / 1 mL
2-Nitrobiphenyl	86-00-0	100 mg	NEAT	R-005N	17 / 100 mg
		100 µg/mL	Toluene	R-005S	15 / 1 mL
3-Nitrobiphenyl	2113-58-8	100 mg	NEAT	R-006N	17 / 100 mg
		100 µg/mL	Toluene	R-006S	15 / 1 mL
4-Nitrobiphenyl	92-93-3	100 mg	NEAT	R-007N	17 / 100 mg
		100 µg/mL	Toluene	R-007S	15 / 1 mL
2-Nitrophenol	88-75-5	100 mg	NEAT	R-051N	10 / 100 mg
		100 µg/mL	Toluene	R-051S	10 / 1 mL
4-Nitrophenol	100-02-7	100 mg	NEAT	R-052N	10 / 100 mg
		100 µg/mL	Toluene	R-052S	10 / 1 mL
2-Nitrotoluene	88-72-2	100 mg	NEAT	R-048N	10 / 100 mg
		100 µg/mL	Toluene	R-048S	10 / 1 mL
Pyridine	110-86-1	100 µg/mL	MeOH	APP-9-186-M	12 / 1 mL
		2 mg/mL	MeOH	APP-9-186-M-20X	20 / 1 mL
		5 mg/mL	MeOH	AS-E0271	32 / 1 mL
		10 mg/mL	Water	M-8015B/5031-26	25 / 1 mL
2,3,4,5-Tetrachloronitrobenzene	879-39-0	100 mg	NEAT	R-091N	12 / 100 mg
		100 µg/mL	Toluene	R-091S	10 / 1 mL
2,3,5,6-Tetrachloronitrobenzene	117-18-0	100 mg	NEAT	R-092N	12 / 100 mg
		100 µg/mL	Toluene	R-092S	10 / 1 mL
s-Triazine	290-87-9	10 mg	NEAT	R-083N	10 / 10 mg
		100 µg/mL	Toluene	R-083S	15 / 1 mL
2,3,4-Trichloronitrobenzene	17700-09-3	100 mg	NEAT	R-089N	12 / 100 mg
		100 µg/mL	Toluene	R-089S	10 / 1 mL
2,4,5-Trichloronitrobenzene	89-69-0	100 mg	NEAT	R-090N	12 / 100 mg
		100 µg/mL	Toluene	R-090S	10 / 1 mL



Over 1000 Individual Pesticide Standards

Over 125 New Pesticides

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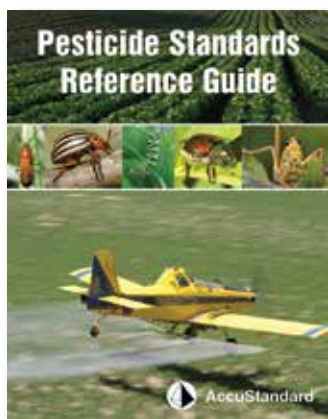
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Pesticides, their by-products, metabolites and degradates

Pesticides are usually viewed as something bad for the environment and human health. The risk/benefit balance needs to be understood, this is what research on the presence and toxicity of these products demonstrates.

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

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



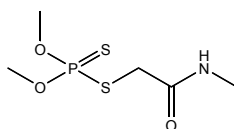
Pesticide Standards Reference Guide

Lists over 1000 pesticides and contains technical information such as: chemical name, structure, CAS number, molecular formula, molecular weight, physical state and for most: 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		Solubility Key (SOL)	
CAS	Chemical Abstract Service Number	A	Acetone
MF	Molecular Formula	CN	Acetonitrile (AcCN)
MW	Molecular Weight	D	Methylene chloride
PS	Physical State (Solid, Liquid)	DMSO	Dimethyl sulfoxide
SOL	Solubility	EA	Ethyl acetate
SG	Specific Gravity (g/cm ³)	H	Hexane
MP	Melting Point (°C)	IPA	Isopropanol
BP	Boiling Point (°C)	MeOH	Methanol
FP	Flash Point (°C)	MC	Methyl cellosolve
		T	Toluene
		TP	Isooctane
		W	Water

Includes formulations for over 50 EPA and international pesticide methods.

Request or download your Pesticide Standards Reference Guide at AccuStandard.com

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.

Call or Visit our website with Custom Requests

Custom pesticide formulations can be prepared for residue screening and other applications.



Analytical Capabilities

Information on Pesticides Catalog Numbers

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 (**an N or S**) specifies whether the product is Neat or in Solution.
4. “-” with letters specify a solvent other than Methanol (MeOH).
5. “-” with a number followed by an X specifies the concentration difference from the 100 µg/mL (ex: -10X is 1000 µg/mL). Check for availability.

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

Key to symbols appearing in the table:

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

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

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



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 \$ 4 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.

Purchasing Neat Standards

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

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

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





Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Price	Compound	Synonym / CAS No.	Matrix	Cat. No.	Price
AAtrex	see Atrazine				Amicarbazone NEW	129909-90-6	AcCN	P-1152S-CN	\$ 52
Abamectin	71751-41-2	NEAT	P-615N	\$ 42	Amidosulfuron	120923-37-7	NEAT	P-821N	52
		MeOH	P-615S	42			AcCN	P-821S-CN	52
Abaphos	see Abate				Amigol	see Amitrole			
Abar	see Leptophos				Aminocarb	2032-59-9	NEAT	P-062N	12
Abate	3383-96-8	NEAT	P-101N	22			MeOH	P-062S	12
		MeOH	P-101S	22	Aminomethylphosphonic acid	1066-51-9	NEAT	P-625N	22
Abathion	see Abate						H2O	P-625S-W	22
Acalarate	see Chloropropylate				Aminopyralid NEW	150114-71-9	NEAT	P-1048N	42
Acarben	see Chlorobenzilate						MeOH	P-1048S	42
Acclaim	see Fenoxaprop-p-ethyl				4-Aminopyridine	504-24-5	NEAT	P-407N	12
Acephate	30560-19-1	NEAT	P-200N	12			MeOH	P-407S	12
		Acetone	P-200S-A	12	Aminotriazole	see Amitrole			
Acequinocyl NEW	3383-96-8	NEAT	P-1037N	32	Aminozone	see Alar			
		MeOH	P-1037S	32	Amiral	see Triadimefon			
Acetamiprid	135410-20-7	NEAT	P-820N	42	Amisulbrom NEW	348635-87-0	MeOH	P-998S	72
		AcCN	P-820S-CN	42	Amitraz	33089-61-1	NEAT	P-409N	12
Acetochlor	34256-82-1	NEAT	P-465N	32			AcCN	P-409S-CN	12
		MeOH	P-465S	32	Amitrole (ATA)	61-82-5	NEAT	P-103N	12
Acibenzolar-S-methyl	135158-54-2	NEAT	P-895N	42			MeOH	P-103S	12
		MeOH	P-895S	42	Amizine	see Simazine			
Acifluorfen	50594-66-6	NEAT	P-245N	12	Amizol	see Amitrole			
		MeOH	P-245S	12	Ammonium sulfamate	7773-06-0	NEAT	P-530N	22
		AcCN	P-245S-CN	12			MeOH	P-530S	22
Acifluorfen methyl ester	50594-67-7	NEAT	P-246N	12	AMS	see Ammonium sulfamate			
		MeOH	P-246S	12	Ancymidol	12771-68-5	NEAT	P-410N	12
Acionifen NEW	74070-46-5	AcCN	P-890S-CN	52			MeOH	P-410S	12
Acrinathrin	101007-06-1	AcCN	P-842S-CN	22	Anilazine	101-05-3	NEAT	P-287N	12
Actellic	see Pirimphos methyl ester						Hexane	P-287S-H	12
Acti-Aid	see Cycloheximide				Anilofos NEW	64249-01-0	AcCN	P-973S-CN	52
Actosin C	see Chlorophacinone				Antiphen	see Dichlorophen			
Admire	see Imidacloprid				Apl-Luster	see Thiabendazole			
Afalon	see Linuron				Aprocarb	see Baygon			
Affirm	see Abamectin				Aracide	see Aramite			
Afugan	see Pyrazophos				Aracnol F	see Cyhexatin			
Agritox	see Trichloronate				Aramite	140-57-8	MeOH	P-132S	22
Agroxone	see MCPA acid				A-Rest	see Ancymidol			
Aimsan	see Phenthoate				Arisan	see Buturon			
Akar	see Chlorobenzilate				Arresin	see Monolinuron			
Alachlor	15972-60-8	NEAT	P-102N	12	Aspon	3244-90-4	MeOH	P-309S	62
		MeOH	P-102S	12	Assure	see Quizalofop ethyl			
Alanap	132-66-1	NEAT	P-274N	12	Asulam	3337-71-1	NEAT	P-276N	12
		MeOH	P-274S	12			MeOH	P-276S	12
Alar	1596-84-5	NEAT	P-174N	12	ATA	see Amitrole			
		MeOH	P-174S	12	Athrombine-K	see Warfarin			
Albendazole	54965-21-8	NEAT	P-498N	12	Atritol	see Atrazine			
		MeOH	P-498S	12	Atraton	see Gesatamin			
Aldicarb	116-06-3	NEAT	P-001N	12	Atrazine	1912-24-9	NEAT	P-005N	12
		MeOH	P-001S	12			MeOH	P-005S	12
Aldicarb sulfone	1646-88-4	NEAT	P-130N	22			Acetone	P-005S-A-10X	24
		MeOH	P-130S	22	Atrazine desethyl	6190-65-4	NEAT	P-343N	22
Aldicarb sulfoxide	1646-87-3	NEAT	P-131N	22			MeOH	P-343S	22
		MeOH	P-131S	22	Atrazine-desethyl-desisopropyl	3397-62-4	NEAT	P-428N	22
Aldoxycarb	see Aldicarb sulfone				Atrazine-desethyl-2-hydroxy	19988-24-0	Methyl cellosolve	P-544S-MC	52
Aldrin	309-00-2	NEAT	P-002N *	12					
		MeOH	P-002S	12	Atrazine-desisopropyl	1007-28-9	NEAT	P-345N	22
Alfa-tox	see Diazinon						MeOH	P-345S	22
Allethrin	584-79-2	NEAT	P-267N	32	Atrazine-desisopropyl-2-hydroxy	7313-54-4	NEAT	P-344N	22
		MeOH	P-267S	32			Methyl cellosolve	P-344S-MC	22
Allidochlor	93-71-0	NEAT	P-670N	22					
		MeOH	P-670S	22	Avadex	see Diallylate			
Allisan	see Botran				Avid	see Abamectin			
Altosid	see Methoprene				Azaconazole NEW	60207-31-0	NEAT	P-971N	42
Alloxydim-sodium	55635-13-7	NEAT	P-510N	22			AcCN	P-971S-CN	42
		MeOH	P-510S	22	Azaditracin	11141-17-6	MeOH	P-711S	75
Amaze	see Isofenphos				Azamethiphos	35575-96-3	NEAT	P-352N	12
Ambush	see Permethrin						MeOH	P-352S	12
Amdro	see Hydramethylnon				Azimsulfuron NEW	120162-55-2	50 µg/mL	P-1036S-CN-0.5X	42
Ametoctradin NEW	865318-97-4	MeOH	P-1039S	52			AcCN		
Ametryn	834-12-8	NEAT	P-003N	12	Azinphos-ethyl	2642-71-9	NEAT	P-201N	32
		MeOH	P-003S	12			MeOH	P-201S	32

► 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.

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Pesticides

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

Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Price	Compound	Synonym / CAS No.	Matrix	Cat. No.	Price
Azinphos-methyl	86-50-0	NEAT	P-007N	\$ 12	Bethrodine	see Benfluralin			
		MeOH	P-007S	12	BHC Tech	608-73-1	NEAT	P-081N	\$ 12
Azocyclotin	41083-11-8	NEAT	P-353N	12			MeOH	P-081S	12
		MeOH	P-353S	12	α-BHC	319-84-6	NEAT	P-010N	22
Azoxystrobin	131860-33-8	NEAT	P-719N	22			MeOH	P-010S	22
		MeOH	P-719S	22	β-BHC	319-85-7	NEAT	P-011N	22
Barvel	see Dicamba						MeOH	P-011S	22
Barbamate	101-27-9	NEAT	P-202N	12	δ-BHC	319-86-8	NEAT	P-012N	32
		MeOH	P-202S	12			MeOH	P-012S	32
Barban	see Barbamate				γ-BHC	see Lindane			
Barben	see Azinphos-methyl				Bidrin	see Dicrotophos			
Barnon	52756-22-6	NEAT	P-646N	32	Bifenazate	149877-41-8	5 mg	P-772N-5MG	52
		MeOH	P-646S	32			MeOH	P-772S	52
Basagran	see Bentazon				Bifenox	42576-02-3	NEAT	P-257N	12
Basalin	see Fluchloralin						MeOH	P-257S	12
Basudin	see Diazinon				Bifenthrin	82657-04-3	NEAT	P-445N	42
Baythroid	see Cyfluthrin						MeOH	P-445S	42
Baycarb	3766-81-2	NEAT	P-347N	12	Biflex	see Bifenthrin			
		MeOH	P-347S	12	Binapacryl	485-31-4	NEAT	P-499N	22
Baycor	See Bitertanol						MeOH	P-499S	22
Bayfidan	see Triadimenol				Bioallethrin	28057-48-9	NEAT	P-665N	22
Baygon	114-26-1	NEAT	P-009N	12			MeOH	P-665S	22
		MeOH	P-009S	12	S-Bioallethrin	28424-00-6	NEAT	P-664N	22
Bayleton	see Triadimefon						MeOH	P-664S	22
Bayluscid	see Niclosamide				Bioresmethrin	28434-01-7	NEAT	P-594N	22
Baytan	see Triadimenol						MeOH	P-594S	22
Baytex	see Fenthion				Bitertanol	55179-31-2	NEAT	P-351N	12
Baythion	see Phoxim						MeOH	P-351S	12
Beam	see Tricyclazole				Bitrex	3734-33-6	NEAT	P-679N	22
Beflubutamid NEW	113614-08-7	NEAT	P-1041N	42			MeOH	P-679S	22
		MeOH	P-1041S	42	Bladafum	see Sulfotep			
Benalaxyl	71626-11-4	NEAT	P-559N	22	Bladan	see Parathion			
		MeOH	P-559S	22	Blattanex	see Baygon			
Benazolin	3813-05-6	NEAT	P-397N	42	Bloc	60168-88-9	NEAT	P-086N	42
		MeOH	P-397S	42			MeOH	P-086S	22
Bendiocarb	22781-23-3	NEAT	P-203N	12	B-Nine	see Alar			
		MeOH	P-203S	12	Bolero	see Thiobencarb			
Benefin	see Benfluralin				Bolstar	35400-43-2	NEAT	P-108N	12
Benelux	see Thiofanox						MeOH	P-108S	12
Benfluralin	1861-40-1	NEAT	P-237N	12	Bonzi	76738-62-0	NEAT	P-669N	30
		MeOH	P-237S	12			MeOH	P-669S	30
Benfuracarb	82560-54-1	NEAT	P-454N	42	Boscalid	188425-85-6	NEAT	P-811N	32
		MeOH	P-454S	42			MeOH	P-811S *	32
Benfuresate NEW	68505-69-1	NEAT	P-1080N	52	Botran	99-30-9	NEAT	P-013N	12
		MeOH	P-1080S	52			MeOH	P-013S	12
Benlate	see Benomyl				BPMC	see Baycarb			
Benodanil	15310-01-7	NEAT	P-671N	22	Bravo	see Chlorothalonil			
		MeOH	P-671S	22	Brigade	see Bifenthrin			
Benomyl	17804-35-2	NEAT	P-104N	12	Brodifacoum	56073-10-0	NEAT	P-677N	32
		AcCN	P-104S-CN *	12			MeOH	P-677S	42
Benoxacor	98730-04-2	NEAT	P-490N	22	Bromacil	314-40-9	NEAT	P-181N	12
		MeOH	P-490S	22			MeOH	P-181S	12
Bensulfuron-methyl	83055-99-6	NEAT	P-597N	32	Bromadiolone	28772-56-7	NEAT	P-316N	42
		MeOH	P-597S	32			MeOH	P-316S *	42
Bensulide	741-58-2	NEAT	P-204N	32	Bromex	see Naled			
		MeOH	P-204S	32	Brominal	1689-84-5	NEAT	P-256N	12
Bensultap	17606-31-4	NEAT	P-678N	22			MeOH	P-256S	12
		MeOH	P-678S	22	Bromobutide NEW	74712-19-9	MeOH	P-1059S	42
Bentazon ►	25057-89-0	NEAT	P-177N	12	Bromofenoxim	13181-17-4	NEAT	P-511N	22
		Acetone	P-177S-A	12			MeOH	P-511S	22
		AcCN	P-177S-CN	12	Bromophos-ethyl	4824-78-6	NEAT	P-372N	42
Bentazon methyl	61592-45-8	NEAT	P-241N	42			MeOH	P-372S	42
		MeOH	P-241S	42	Bromophos-methyl	2104-96-3	NEAT	P-484N	62
Benthiavalicarb-isopropyl NEW	177406-68-7	10 µg/mL	P-1049S-A-0.1X	72			MeOH	P-484S	62
		Acetone			Bromopropylate	18181-80-1	NEAT	P-457N	32
Benthiocarb	see Thiobencarb						MeOH	P-457S	32
Benzofuroline	see Resmethrin				Bromoxynil	see Brominal			
Benzoximate	29104-30-1	AcCN	P-801S-CN	32	Bromoxynil-heptanoate	56634-95-8	MeOH	P-1012S	42
Benzoylprop ethyl	22212-55-1	NEAT	P-340N	22	Bromoxynil methyl ether	3336-39-8	NEAT	P-573N	22
		MeOH	P-340S	22			MeOH	P-573S	22
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.

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Pesticides



Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Price	Compound	Synonym / CAS No.	Matrix	Cat. No.	Price
Bromoxynil octanoate	1689-99-2	NEAT	P-550N	\$ 22	Chloramben methyl ester	7286-84-2	NEAT	P-272N	\$ 22
		MeOH	P-550S	22			MeOH	P-272S	22
Bromuconazol	116255-48-2	NEAT	P-843N	32	Chlorantraniliprole	500008-45-7	NEAT	P-952N	42
		AcCN	P-843S-CN	32			MeOH	P-952S	32
Bueno	2163-80-6	NEAT	P-279N	12	Chlorbenside	103-17-3	NEAT	P-107N	22
		MeOH	P-279S	12			MeOH	P-107S	22
Bupirimate	41483-43-6	NEAT	P-672N	22	Chlorbromuron	13360-45-7	NEAT	P-520N	12
		MeOH	P-672S	22			MeOH	P-520S	12
Buprofezin	69327-76-0	NEAT	P-595N	32	Chlorbufam	1967-16-4	NEAT	P-558N	22
		MeOH	P-595S	32			MeOH	P-558S	22
Busan	21564-17-0	AcCN	P-072S-CN	62	Chlordane (Tech)	12789-03-6	NEAT	P-017N	12
Butachlor	23184-66-9	NEAT	P-191N	12			MeOH	P-017S	12
		MeOH	P-191S	12	α-Chlordane	5103-71-9	NEAT	P-134N	22
Butafenacil	134605-64-4	NEAT	P-940N	42			MeOH	P-134S	22
		MeOH	P-940S	42			Hexane	P-134S-H	22
Butisan S	see Metazachlor				γ-Chlordane	5103-74-2	NEAT	P-135N	22
Butocarboxim	34681-10-2	NEAT	P-518N	32			MeOH	P-135S	22
		MeOH	P-518S	32	cis-Chlordane	see α-Chlordane			
Butocarboxim sulfoxide	34681-24-8	NEAT	P-701N	32	trans-Chlordane	see γ-Chlordane			
		MeOH	P-701S	32	Chlordecone	see Kepone			
Butoflin	see Deltamethrin				Chlordene	3734-48-3	NEAT	P-136N	22
Butox	see Deltamethrin						MeOH	P-136S	22
Butoxycarboxim	34681-23-7	NEAT	P-822N	42	Chlordimeform	6164-98-3	NEAT	P-333N	12
		AcCN	P-822S-CN	42			MeOH	P-333S	12
Butralin	33629-47-9	NEAT	P-574N	32	Chlorethoxyfos	54593-83-8	NEAT	P-1017N	32
		MeOH	P-574S	32			AcCN	P-1017S-CN	22
Buturon	3766-60-7	NEAT	P-301N	22	Chlorfenac	see Fenatrol			
		MeOH	P-301S	22	Chlorfenson	see Ovex			
Butylate	2008-41-5	NEAT	P-088N	12	Chlorfenapyr	122453-73-0	NEAT	P-807N	42
		MeOH	P-088S	12			MeOH	P-807S	42
Cadusafos	95465-99-9	NEAT	P-794N *	42	Chlorfenvinphos	470-90-6	NEAT	P-139N *	22
		MeOH	P-794S	42			MeOH	P-139S	22
Calcium arsenate NEW	7778-44-1	NEAT	P-1076N	15	Chlorfluazuron NEW	71422-67-8	AcCN	P-771S-CN *	32
		MeOH	P-1076S	15	Chlorfluorecol-methyl ester	2536-31-4	NEAT	P-401N	52
Calixin	see Tridemorph						MeOH	P-401S	52
Camphechlor	see Toxaphene				Chlorfluorecol	see Chlorfluorecol-methyl ester			
Caparol	see Prometryne				Chloridazon	see Pyrazon			
Captafol	2425-06-1	NEAT	P-254N	12	Chlorimuron-ethyl	90982-32-4	AcCN	P-284S-CN	50
		MeOH	P-254S	12	Chlormephos	24934-91-6	NEAT	P-329N	32
Captan	133-06-2	NEAT	P-182N	12			MeOH	P-329S	32
		MeOH	P-182S *	12	Chlormequat chloride	999-81-5	NEAT	P-338N	12
Capture	see Bifenthrin						MeOH	P-338S	12
Carbamult	see Promecarb				Chlorobenzilate	510-15-6	NEAT	P-133N	12
Carbaryl	63-25-2	NEAT	P-083N	12			AcCN	P-133S-CN	12
		MeOH	P-083S	12	Chloroea	see Monuron			
Carbendazim	10605-21-7	NEAT	P-278N	12	2-Chloro-2',6'-diethylacetanilide	6967-29-9	NEAT	P-620N	32
		MeOH	P-278S	12			MeOH	P-620S	32
Carbetamide	16118-49-3	NEAT	P-562N	22	2-Chloro-4-ethylamino-6-methylethylamino-s-triazine		NEAT	P-539N	22
		MeOH	P-562S	22			Methyl cellosolve	P-539S-MC	22
Carbexsin	see Oxycarboxin				2-Chloro-4-ethylamino-6-propylamino-s-triazine		NEAT	P-537N	22
Carbicron	see Dicrotophos						Methyl cellosolve	P-537S-MC	22
Carbofuran	1563-66-2	NEAT	P-106N	12	2-Chloro-4-methylamino-6-diethylamino-s-triazine		NEAT	P-541N	22
		MeOH	P-106S	12			Methyl cellosolve	P-541S-MC	22
Carbofuran phenol-3-ketone	17781-16-7	MeOH	P-630S	152	2-Chloro-4-methylamino-6-sec-butylamino-s-triazine		NEAT	P-540N	22
Carbophenothion	786-19-6	NEAT	P-095N	12			Methyl cellosolve	P-540S-MC	22
		MeOH	P-095S	12	Chloroneb	2675-77-6	NEAT	P-212N	12
Carbophenothion methyl-o-analog	10 µg/mL in EtOAc	P-637S-EA-0.1X	52			MeOH	P-212S	12	
Carbosulfan	55285-14-8	NEAT	P-446N	22	Chlorophacinone	3691-35-8	NEAT	P-314N	22
		MeOH	P-446S	22			MeOH	P-314S	22
Carboxin	5234-68-4	NEAT	P-216N	12	[3(2-Chlorophenyl)]-1,1-dimethylurea				
		MeOH	P-216S	12		see 2-Monuron			
Carbyne	see Barbamate				4-Chlorophenoxyacetic acid	see 4-CPA			
Carfentrazone-ethyl NEW	128639-02-1	AcCN	P-957S-CN *	42	Chloropicrin	76-06-2	NEAT	P-398N **	22
Carpropamid NEW	104030-54-8	AcCN	P-1162S-CN	52			MeOH	P-398S	22
Cartap	15263-53-3	MeOH	P-577S	52	4-Chloro-2-methylphenol	1570-64-5	NEAT	P-1026N	22
Cartap hydrochloride	22042-59-7	NEAT	P-949N	22			MeOH	P-1026S	22
CDEC	see Sulfallate				3-Chloro-1,2-propanediol	96-24-2	NEAT	P-408N	12
Cekumethion	see Methyl parathion						MeOH	P-408S	12
Chemathion	see Malathion								
Chinomethionate	2439-01-2	NEAT	P-399N	12					
		Acetone	P-399S-A	12					
Chloramben	133-90-4	NEAT	P-243N	12					
		MeOH	P-243S	12					

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** This product can not ship by air.

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

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

Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Price	Compound	Synonym / CAS No.	Matrix	Cat. No.	Price
2-Chloroethanol NEW	107-07-3	NEAT	P-1079N	\$ 15	Crimidine	535-89-7	NEAT	P-561N	\$ 22
		MeOH	P-1079S	12			MeOH	P-561S	22
1,1-bis(4-Chlorophenyl)ethylene NEW	2642-81-1	NEAT	P-1054N	42	<i>Crotoxyphos</i>	see Ciodrin			
		MeOH	P-1054S	42	Cruformate	299-86-5	NEAT	P-292N	42
Chloropropylate	5836-10-2	NEAT	P-213N	12			MeOH	P-292S	42
		MeOH	P-213S	12	Cryolite NEW	15096-52-3	NEAT	P-1071N	15
Chlorothalonil	1897-45-6	NEAT	P-222N	12	Cumyluron NEW	99485-76-4	AcCN	P-1135S-CN *	72
		MeOH	P-222S	12	<i>Curacron</i>	see Profenofos			
Chloroxuron	1982-47-4	NEAT	P-402N	12	Cyanazine	21725-46-2	NEAT	P-175N	12
		MeOH	P-402S	12			MeOH	P-175S	12
Chlorpropham	101-21-3	NEAT	P-221N	12	Cyanofenphos	13067-93-1	NEAT	P-584N	42
		MeOH	P-221S	12			MeOH	P-584S	42
<i>Chlorpyrifos</i>	see Dursban				Cyanophos	2636-26-2	NEAT	P-531N	32
Chlorpyrifos-methyl	5598-13-0	NEAT	P-223N	12			MeOH	P-531S	32
		MeOH	P-223S	12	Cyazofamid	120116-88-3	NEAT	P-969N	32
Chlorpyrifos-oxon	5598-15-2	NEAT	P-700N	22			MeOH	P-969S	32
		MeOH	P-700S	22	Cyclanilide NEW	113136-77-9	AcCN	P-982S-CN	52
Chlorsulfuron	64902-72-3	NEAT	P-262N	22	Cycloate	1134-23-2	NEAT	P-248N	12
		AcCN	P-262S-CN	22			MeOH	P-248S	12
<i>Chlorthal</i>	see DCPA diacid				Cycloheximide	66-81-9	MeOH	P-411N	32
Chlorthiamid	1918-13-4	NEAT	P-673N	32			MeOH	P-411S	32
		MeOH	P-673S	32	<i>2-Cyclohexyl-4,6-dinitrophenol</i>	see Dinex			
Chlorthion	500-28-7	MeOH	P-674S	52	Cycloprate NEW	54460-46-7	NEAT	P-1069N	22
Chlorthiophos	60238-56-4	NEAT	P-545N	22			MeOH	P-1069S	22
		MeOH	P-545S	22	Cycloxydime	101205-02-1	NEAT	P-735N	32
Chlortoluron	15545-48-9	NEAT	P-434N	22			MeOH	P-735S *	32
		MeOH	P-434S	22	Cycluron NEW	2163-69-1	AcCN	P-791S-CN *	32
Chlozolinate	84332-86-5	AcCN	P-683S-CN	52	Cyflufenamide NEW	180409-60-3	AcCN	P-975S-CN *	52
Cinosulfuron	94593-91-6	NEAT	P-823N	12	Cyfluthrin	68359-37-5	NEAT	P-354N	12
		AcCN	P-823S-CN	12			MeOH	P-354S *	12
Ciodrin	7700-17-6	MeOH	P-218S	52	<i>Cygon</i>	see Dimethoate			
<i>CIPC</i>	see Chlorpropham				Cyhalofop-butyl	122008-85-9	5 mg	P-944N-5MG	52
Clarity	104040-79-1	H ₂ O	P-495S-W	22			MeOH	P-944S	52
<i>Classic</i>	see Chlorimuron-ethyl				λ-Cyhalothrin	91465-08-6	NEAT	P-473N	52
Clethodim	99129-21-2	AcCN	P-602S-CN *	32			MeOH	P-473S *	52
Clodinafop	114420-56-3	NEAT	P-1009N	72	Cyhexatin	13121-70-5	NEAT	P-375N	12
		MeOH	P-1009S	72			MeOH	P-375S	12
Clodinafop-propargyl NEW	105512-06-9	NEAT	P-755N	32	<i>Cyolane</i>	see Phosfolan			
		AcCN	P-755S-CN	32	Cymoxanil	57966-95-7	NEAT	P-493N	52
Clofentezine	74115-24-5	NEAT	P-472N	22			MeOH	P-493S *	52
		MeOH	P-472S	22	Cypermethrin	52315-07-8	NEAT	P-225N	42
Clomazon	81777-89-1	MeOH	P-286S	32			MeOH	P-225S *	42
Clomeprop NEW	84496-56-0	5 mg	P-1065N-5MG	72	α-Cypermethrin	67375-30-8	NEAT	P-548N	42
		Acetone	P-1065S-A	52			AcCN	P-548S-CN	42
<i>Clopyralid</i>	see Lontrel				<i>cis-Cypermethrin</i>	see a-Cypermethrin			
Clopyralid methyl ester	1532-24-7	MeOH	P-488S	32	Cyphenothrin	39515-40-7	NEAT	P-709N	42
Cloquintocet-mexyl	99607-70-2	NEAT	P-929N	22			MeOH	P-709S	42
		MeOH	P-929S	22	<i>Cypona</i>	see Dichlorvos			
Cloransulam methyl	147150-35-4	AcCN	P-981S-CN	52	Cyprazine	22936-86-3	NEAT	P-420N	22
Clothianidin	210880-92-5	NEAT	P-947N	52			MeOH	P-420S	22
		MeOH	P-947S	52			Hexane	P-420S-H	22
<i>CMU</i>	see Monuron				Cyproconazole (Tech)	113096-99-4	MeOH	P-555S	22
<i>Comite</i>	see Propargite				Cyprodinil	121552-61-2	NEAT	P-720N	32
<i>Command</i>	see Clomazone						MeOH	P-720S	32
<i>Confidor</i>	see Imidacloprid				Cyprofuram NEW	69581-33-5	NEAT	P-1272N	12
<i>Conrac</i>	see Bromadiolone						MeOH	P-1272S	12
Copper (II) carbonate NEW	12069-69-1	NEAT	P-1074N	15	Cyromazine	66215-27-8	NEAT	P-296N	22
		MeOH	P-1074S	15			MeOH	P-296S	22
Copper oxychloride	1332-40-7	NEAT	P-458N	12	<i>Cythion</i>	see Malathion			
<i>Cornox</i>	see MCPA acid				2,3-D acid ▶	2976-74-1	NEAT	P-470N	12
<i>Cotoran</i>	see Fluometuron						MeOH	P-470S	12
Coumachlor	81-82-3	MeOH	P-684S	22			AcCN	P-470S-CN	12
<i>Coumaphene</i>	see Warfarin				2,4-D acid ▶	94-75-7	NEAT	P-020N	12
Coumaphos	56-72-4	NEAT	P-019N	12			MeOH	P-020S	12
		MeOH	P-019S	12			AcCN	P-020S-CN	12
Coumatetralyl	5836-29-3	NEAT	P-313N	12	2,6-D acid ▶	575-90-6	NEAT	P-690N	22
		MeOH	P-313S	12			MeOH	P-690S	22
<i>Counter</i>	see Terbufos						AcCN	P-690S-CN	22
4-CPA	122-88-3	NEAT	P-373N	12	2,4-D butoxyethyl ester	1929-73-3	NEAT	P-438N	12
		MeOH	P-373S	12	2,4-D butyl ester	94-80-4	NEAT	P-712N	12
							MeOH	P-712S *	12

Most at Same Low Price in Neat (10 mg) or Solution (100 µg/mL) form
Can't find a Pesticide? Search using CAS No. Index in back of the catalog.

AccuStandard is accredited to ISO Guide 34, ISO/IEC 17025 and certified to ISO 9001



Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Price	Compound	Synonym / CAS No.	Matrix	Cat. No.	Price
2,4-D ethyl ester	533-23-3	NEAT	P-636N	\$ 12	Demeton (mixed isomers)	8065-48-3	NEAT	P-031N	\$ 32
		MeOH	P-636S	12			MeOH	P-031S	32
2,4-D ethylhexyl ester	1928-43-4	NEAT	P-439N	12	Demeton-S	126-75-0	NEAT	P-271N	22
		Hexane	P-439S-H	12			MeOH	P-271S	22
2,4-D isobutyl ester	1713-15-1	NEAT	P-1027N	22	Demeton-S-methyl	919-86-8	NEAT	P-482N	42
		AcCN	P-1027S-CN	22			MeOH	P-482S	42
2,4-D methyl ester	1928-38-7	NEAT	P-021N	12	Demeton-S-methylsulfone	17040-19-6	NEAT	P-554N	32
		MeOH	P-021S	12			MeOH	P-554S	32
2,6-D methyl ester		NEAT	P-691N	32	Demosan	see Chloroneb			
		MeOH	P-691S	32	Desethylterbutylazine	see Terbutylazin desethyl			
Dacamox	see Thiofanox				Desmedipham	13684-56-5	NEAT	P-376N	12
Daconil	see Chlorothalonil						MeOH	P-376S	12
Dacthal diacid	see DCPA diacid				Desmel	see Tilt			
Dacthal monoacid	see Monomethyl tetrachloroterephthalate				Desmetryn	1014-69-3	NEAT	P-566N	22
Dacthal	1861-32-1	NEAT	P-196N	12			MeOH	P-566S	22
		MeOH	P-196S	12	Devrinol	see Napropamide			
Daimuron NEW	42609-52-9	AcCN	P-1087S-CN *	72	Dexon	see Fenaminosulf			
Dalapon acid ►	75-99-0	NEAT	P-140N	12	Diafenthiuron NEW	80060-09-9	NEAT	P-1064N	22
		MeOH	P-140S	12			Acetone	P-1064S-A	12
		AcCN	P-140S-CN	12	Dialifor	see Dialifos			
Dalapon methyl ester	17640-02-7	NEAT	P-226N	32	Dialifos	10311-84-9	NEAT	P-426N	32
		MeOH	P-226S	32			MeOH	P-426S	32
Daminozide	see Alar				Diallate	2303-16-4	NEAT	P-142N	42
Danicut	see Amitraz						MeOH	P-142S	42
Danitol	39515-41-8	NEAT	P-263N	42	Diazinon	333-41-5	NEAT	P-033N	12
		MeOH	P-263S	42			MeOH	P-033S	12
Dasanit	115-90-2	NEAT	P-235N	22	Diazinon-o-analog	962-58-3	NEAT	P-640N	42
		MeOH	P-235S	22			Acetone	P-640S-A	22
Dazomet	533-74-4	NEAT	P-469N	12	Dibam	128-04-1	NEAT	P-487N	12
		MeOH	P-469S	12			MeOH	P-487S	12
2,4-DB acid ►	94-82-6	NEAT	P-141N	12	Dibrom	see Naled			
		MeOH	P-141S	12	Dibutylchloredate	1770-80-5	NEAT	P-109N	12
		AcCN	P-141S-CN	12			MeOH	P-109S	12
2,4-DB methyl ester	18625-12-2	NEAT	P-228N	22	Dicamba ►	1918-00-9	NEAT	P-008N	12
		MeOH	P-228S	22			MeOH	P-008S	12
DBCP	see Fumazone						AcCN	P-008S-CN	12
DCMU	see Karmex				Dicamba diglycolamine (tech)	see Clarity			
DCNA	see Botran				Dicamba methyl ester	6597-78-0	NEAT	P-071N	22
DCPA	see Dacthal						MeOH	P-071S	22
DCPA diacid ►	2136-79-0	NEAT	P-320N	22	Dicaptan	see Dicapthon			
		MeOH	P-320S	22	Dicapthon	2463-84-5	NEAT	P-035N	12
		AcCN	P-320S-CN	22			MeOH	P-035S	12
o,p'-DDD	53-19-0	NEAT	P-024N	12	Dichlobenil	1194-65-6	NEAT	P-275N	12
		MeOH	P-024S	12			MeOH	P-275S	12
o,p'-DDE	3424-82-6	NEAT	P-026N	22	Dichlofenthion	97-17-6	NEAT	P-211N	12
		MeOH	P-026S	22			MeOH	P-211S	12
o,p'-DDT	789-02-6	NEAT	P-028N	22	Dichlofluanid	1085-98-9	NEAT	P-474N	12
		MeOH	P-028S	22			MeOH	P-474S	12
p,p'-DDA	83-05-6	NEAT	P-444N	32	Dichlone	117-80-6	NEAT	P-253N	12
		MeOH	P-444S	32			MeOH	P-253S	12
p,p'-DDD	72-54-8	NEAT	P-025N	12	Dichloran	see Botran			
		MeOH	P-025S	12	Dichlormid	37764-25-3	NEAT	P-675N	32
p,p'-DDE	72-55-9	NEAT	P-027N	12			MeOH	P-675S	32
		MeOH	P-027S	12	3,5-Dichloroaniline	626-43-7	NEAT	P-1008N	12
p,p'-DDT	50-29-3	NEAT	P-029N	12			MeOH	P-1008S	12
		MeOH	P-029S	12	3,6-Dichloroanisic acid	see Clarity			
DDT (Tech)	50-29-3	NEAT	P-346N	12	2,6-Dichlorobenzamide	2008-58-4	NEAT	P-1035N	12
		MeOH	P-346S	12			MeOH	P-1035S	12
		AcCN	P-346S-CN	12	3,5-Dichlorobenzoic acid ►	51-36-5	NEAT	P-242N	12
4,4'-DDMU	1022-22-6	NEAT	P-424N	22			MeOH	P-242S	12
		MeOH	P-424S	22			AcCN	P-242S-CN	12
DDVP	see Dichlorvos				4,4'-Dichlorobenzophenone	90-98-2	NEAT	P-295N	12
Dechlorane	see Mirex						MeOH	P-295S	12
Decis	see Deltamethrin				2,4-Dichloro-6-ethylamino-s-triazine		NEAT	P-538N	52
Dede vap	see Dichlorvos						MC	P-538S-MC	52
Deet	134-62-3	NEAT	P-255N	12	2,3-Dichloronitrobenzene	3209-22-1	NEAT	P-1005N	12
		MeOH	P-255S	12			MeOH	P-1005S-T	12
DEF 6	78-48-8	NEAT	P-150N	12	2,4-Dichlorophenylacetic acid ►	19719-28-9	NEAT	P-244N	12
		MeOH	P-150S	12			MeOH	P-244S	12
Delnav	see Dioxathion						AcCN	P-244S-CN	12
Deltamethrin	52918-63-5	NEAT	P-355N	32	3-(2,3-Dichlorophenyl)-1,1-dimethylurea	see 2,3-Diuron			
		MeOH	P-355S	32					

► 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

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

Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Price	Compound	Synonym / CAS No.	Matrix	Cat. No.	Price
Dichlorophen	97-23-4	NEAT	P-232N	\$ 12	Dimethyl phosphate	813-78-5	NEAT	P-442N	\$ 12
		MeOH	P-232S	12			MeOH	P-442S	12
1-(3,4-Dichlorophenyl)-3-methylurea NEW	3567-62-2	NEAT	P-1038N	32	N-(2,4-Dimethylphenyl)formamide	60397-77-5	AcCN	P-1100S-CN	18
		MeOH	P-1038S	32					
2,4-Dichlorophenylacetic acid Me					Dimetilan NEW	644-64-4	AcCN	P-905S-CN	52
see Methyl-2,4-dichlorophenylacetate					Dimoxystrobin	149961-52-4	AcCN	P-844S-CN	22
Dichlorprop	120-36-5	NEAT	P-143N	12	Dinex	131-89-5	NEAT	P-427N	22
		MeOH	P-143S	12			MeOH	P-427S	22
		AcCN	P-143S-CN	12	Diniconazol	83657-24-3	NEAT	P-845N	32
Dichlorprop methyl ester	57153-17-0	NEAT	P-229N	12			AcCN	P-845S-CN	22
		MeOH	P-229S	12	Dinitramine	29091-05-2	NEAT	P-575N	32
Dichlorvos	62-73-7	NEAT	P-036N	12			MeOH	P-575S	32
		MeOH	P-036S	12	4,6-Dinitro-o-cresol	534-52-1	NEAT	P-384N	12
Diclobutrazol	75736-33-3	NEAT	P-641N	32			MeOH	P-384S	12
		AcCN	P-641S-CN	32	Dinocap	39300-45-3	NEAT	P-288N	40
Diclofop	40843-25-2	NEAT	P-514N	52			MeOH	P-288S	12
		MeOH	P-514S	52	Dinoseb	88-85-7	NEAT	P-144N	12
Diclofop methyl	51338-27-3	NEAT	P-303N	12			MeOH	P-144S	12
		MeOH	P-303S	12	Dinoseb acetate	2813-95-8	NEAT	P-779N	12
Diclosulam NEW	145701-21-9	NEAT	P-904N	32			MeOH	P-779S	12
		MeOH	P-904S	32	Dinoseb methyl ether	6099-79-2	NEAT	P-230N	12
o,p'-Dicofol	10606-46-9	NEAT	P-606N	102			MeOH	P-230S	12
		MeOH	P-606S	102	Dinoterb	1420-07-1	NEAT	P-524N	12
Dicofol	see Kelthane						MeOH	P-524S	12
Dicrotophos	141-66-2	NEAT	P-178N	22	Dioxacarb	6988-21-2	NEAT	P-264N	22
		MeOH	P-178S	22			MeOH	P-264S	22
Dieldrin	60-57-1	NEAT	P-037N *	22	Dioxathion	78-34-2	NEAT	P-219N	52
		MeOH	P-037S	22			MeOH	P-219S	52
Dieltamid	see Deet				Diphacinone	82-66-6	NEAT	P-315N	42
Diethatyl ethyl	38727-55-8	NEAT	P-599N	12			MeOH	P-315S	42
		MeOH	P-599S	12	Diphenamid	957-51-7	NEAT	P-173N	12
Diethofencarb	87130-20-9	NEAT	P-744N	32			MeOH	P-173S	12
		MeOH	P-744S	32	Dipropetryn	4147-51-7	NEAT	P-580N	32
Diethylphosphate	598-02-7	NEAT	P-534N	32			MeOH	P-580S	32
		MeOH	P-534S	32	Diquat dibromide monohydrate	6385-62-2	NEAT	P-231N	12
Diethyl phosphate (mono- & di-)	598-02-7	NEAT	P-443N	12			MeOH	P-231S	12
		MeOH	P-443S	12	Disul-sodium salt	136-78-7	NEAT	P-513N	12
Difenacoum NEW	56073-07-5	AcCN	P-1151S-CN	52			MeOH	P-513S	12
Difenoconazole	119446-68-3	NEAT	P-447N	22	Disulfoton	298-04-4	NEAT	P-042N *	12
		MeOH	P-447S	22			MeOH	P-042S	12
Difenoxyuron	14214-32-5	NEAT	P-604N	22	Disulfoton sulfone	2497-06-5	NEAT	P-582N	52
		MeOH	P-604S	22			MeOH	P-582S	52
Diffubenzuron	35367-38-5	NEAT	P-377N	12	Disulfoton sulfoxide	2497-07-6	NEAT	P-593N	52
		MeOH	P-377S	12			MeOH	P-593S	52
Diffufenican	83164-33-4	NEAT	P-722N	32	Disyston	see Disulfoton			
		MeOH	P-722S	32	Ditalimfos	5131-24-8	NEAT	P-546N	22
2,3-Dihydro-2,2-dimethylbenzofuran-7-ol	1563-38-8	NEAT	P-628N	22			MeOH	P-546S	22
		MeOH	P-628S	22	Dithane D-14	see Nabam			
Dimecron	see Phosphamidon				Dithianon	3347-22-6	NEAT	P-725N	22
Dimefox	115-26-4	NEAT	P-299N	32			Acetone	P-725S-A	22
		MeOH	P-299S	32	Dithiopyr	97886-45-8	NEAT	P-741N	32
Dimefuron	34205-21-5	NEAT	P-565N	22			MeOH	P-741S	32
		MeOH	P-565S	22	Diuron	see Karmex			
Dimepax	22936-75-0	NEAT	P-643N	32	2,3-Diuron	10290-37-6	NEAT	P-632N	22
		MeOH	P-643S	32			MeOH	P-632S	22
Dimepiperate	61432-55-1	50 µg/mL	P-1020S-A-0.5X	52	DMST	66840-71-9	MeOH	P-572S	32
		Acetone			DNBP	see Dinoseb			
Dimetate	see Dimethoate				DNOC	see 4,6-Dinitro-o-cresol			
Dimethachlor	50563-36-5	NEAT	P-642N	32	DNTP	see Parathion			
		MeOH	P-642S	32	Dodemorph acetate	31717-87-0	NEAT	P-385N	22
Dimethenamid	87674-68-8	NEAT	P-747N	52			MeOH	P-385S	22
		MeOH	P-747S	32	Dodine	2439-10-3	NEAT	P-386N	12
Dimethenamide-P	163515-14-8	NEAT	P-934S	42			MeOH	P-386S	12
		MeOH	P-934S	42	Doguardine	see Dodine			
Dimethipin	55290-64-7	NEAT	P-483N	22	Doramectin NEW	117704-25-3	NEAT	P-935N	32
		MeOH	P-483S	22			AcCN	P-935S-CN	32
Dimethoate	60-51-5	NEAT	P-039N	22	Dowpon	see Dalapon acid			
		MeOH	P-039S	22	Dozer	see Fenuron-TCA			
Dimethomorph	110488-70-5	NEAT	P-713N	52	2,4-DP ethyl hexyl	79270-78-3	NEAT	P-429N	22
		MeOH	P-713S	52			MeOH	P-429S	22
Dimethylarsinic acid NEW	75-60-5	NEAT	P-1075N	22					
		MeOH	P-1075S	22					
Dimethylvinphos (Z type) NEW	67628-93-7	Acetone	P-1057S-A	72					

* V-Rated packaging surcharge applies for international shipments

Most 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.

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Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Price	Compound	Synonym / CAS No.	Matrix	Cat. No.	Price
<i>Drinox</i>	see Heptachlor				Ethiolat NEW	2941-55-1	NEAT	P-785N	\$ 22
<i>Dropp</i>	see Thidiazuron						AcCN	P-785S-CN	22
DSMA	144-21-8	NEAT	P-598N	\$ 12	Ethion	563-12-2	NEAT	P-048N	12
		MeOH	P-598S	12			MeOH	P-048S	12
<i>DTMC</i>	see Kelthane				Ethiprole NEW	181587-01-9	NEAT	P-964N	32
<i>Dual</i>	see Metolachlor						AcCN	P-964S-CN	32
Dursban	2921-88-2	NEAT	P-094N	12	Ethiozin	64529-56-2	NEAT	P-660N	32
		MeOH	P-094S	12			MeOH	P-660S	32
<i>Dybar</i>	see Fenuron				Ethirimol	23947-60-6	NEAT	P-645N	32
Dyfonate	944-22-9	NEAT	P-087N	12			MeOH	P-645S	32
		MeOH	P-087S	12	Ethofumesate	26225-79-6	NEAT	P-387N	12
		Hexane	P-087S-H	12			MeOH	P-387S	12
<i>Dylox</i>	see Trichlorfon				Ethoprop	13194-48-4	NEAT	P-129N	22
<i>Dymid</i>	see Diphenamid						MeOH	P-129S	22
<i>Dyrene</i>	see Anilazine				Ethoxyquin	91-53-2	NEAT	P-388N	22
EDDP	see Edifenphos						MeOH	P-388S	22
Edifenphos	17109-49-8	NEAT	P-368N	12	Ethoxysulfuron	126801-58-9	NEAT	P-847N	42
		MeOH	P-368S	12			AcCN	P-847S-CN	42
<i>Ektafos</i>	see Dicrotophos				Ethyl carbamate	51-79-6	NEAT	P-419N	12
<i>Elgetol</i>	see 4,6-Dinitro-o-cresol						MeOH	P-419S	12
<i>Eloncron</i>	see Dioxacarb				<i>Ethylene bisdithiocarbamate, disodium</i>	see Nabam			
Emamectin-benzoate	155569-91-8	5 mg	P-996N-5MG	42					
		MeOH	P-996S	42	Ethylene thiourea	96-45-7	NEAT	P-588N	12
Empenthrin	54406-48-3	NEAT	P-708N	32			MeOH	P-588S	12
Endosulfan I	959-98-8	NEAT	P-091N	22	Ethyl hexanediol (mixed isomers)	94-96-2	NEAT	P-389N	12
		MeOH	P-091S	22			MeOH	P-389S	12
Endosulfan II	33213-65-9	NEAT	P-092N	22	bis(2-Ethylhexyl)adipate	103-23-1	NEAT	P-233N	12
		MeOH	P-092S	22			MeOH	P-233S	12
<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	52
Endosulfan, mixed isomers	115-29-7	NEAT	P-435N	12	Etobenzanid NEW	79540-50-4	AcCN	P-1136S-CN	72
		MeOH	P-435S	12	Etopenprox	80844-07-1	NEAT	P-848N	52
Endosulfan sulfate	1031-07-8	NEAT	P-145N	22			AcCN	P-848S-CN	52
		MeOH	P-145S	22	Etoazole	153233-91-1	MeOH	P-991S	42
Endothall	145-73-3	NEAT	P-183N	36	<i>Etridiazole</i>	see Terrazole			
		MeOH	P-183S	36	Etrifos	38260-54-7	NEAT	P-480N	12
Endothall dimethyl ester		NEAT	P-603N	22			MeOH	P-480S	12
		MeOH	P-603S	22	<i>Etolene</i>	see Ronnel			
Endrin	72-20-8	NEAT	P-045N	22	<i>ETU</i>	see Ethylene thiourea			
		MeOH	P-045S	22	<i>Expand</i>	see Sethoxydim			
Endrin aldehyde	7421-93-4	NEAT	P-046N	22	<i>Famophos</i>	see Famphur			
		MeOH	P-046S	22	Famoxadon	131807-57-3	AcCN	P-849S-CN	62
Endrin ketone	53494-70-5	NEAT	P-146N	22	Famphur	52-85-7	NEAT	P-147N	12
		MeOH	P-146S	22			MeOH	P-147S	12
<i>Enide</i>	see Diphenamid				<i>Fargo</i>	see Triallate			
EPN	2104-64-5	NEAT	P-220N *	12	<i>Fenac</i>	see Fenatrol			
		Acetone	P-220S-A	12	Fenamidone	161326-34-7	NEAT	P-850N	32
Epoxiconazole	135319-73-2	NEAT	P-784N	22			AcCN	P-850S-CN	32
		MeOH	P-784S	22	Fenamiosulf	140-56-7	NEAT	P-058N	12
<i>Eptam</i>	see EPTC						MeOH	P-058S	12
<i>Eptapur</i>	see Buturon				Fenamiphos	22224-92-6	NEAT	P-114N	32
EPTC	759-94-4	NEAT	P-238N	12			MeOH	P-114S	32
		MeOH	P-238S	12	Fenamiphos sulfone	31972-44-8	NEAT	P-623N	62
Esfenvalerate	66230-04-4	NEAT	P-525N	52			MeOH	P-623S	62
		MeOH	P-525S *	52	Fenamiphos sulfoxide	31972-43-7	NEAT	P-622N	62
Esprocarb NEW	85785-20-2	MeOH	P-617S	42			MeOH	P-622S	62
Etaconazole	60207-93-4	NEAT	P-644N	32	<i>Fenarimol</i>	see Bloc			
		MeOH	P-644S	32	Fenatrol	85-34-7	NEAT	P-319N	12
<i>Etazine</i>	see Secbumeton						MeOH	P-319S	12
Ethaboxam NEW	162650-77-3	AcCN	P-1115S-CN	52	Fenazaquin	120928-09-8	Hexane	P-787S-H	32
Ethalfuralin	55283-68-6	NEAT	P-269N	12	Fenbuconazole	114369-43-6	NEAT	P-662N	32
		MeOH	P-269S	12			MeOH	P-662S	32
Ethanedial dioxime NEW	557-30-2	NEAT	P-1070N	15	Fenbutatin oxide	13356-08-6	NEAT	P-481N	22
		MeOH	P-1070S	15			Acetone	P-481S-A	22
Ethephon	16672-87-0	NEAT	P-239N	12	<i>Fenchlorphos</i>	see Ronnel			
		MeOH	P-239S	12	Fenfuram NEW	24691-80-3	NEAT	P-896N	22
Ethidimuron	30043-49-3	NEAT	P-364N	12			MeOH	P-896S	22
		MeOH	P-364S	12	Fenhexamid	126833-17-8	NEAT	P-783N	22
Ethiofencarb	29973-13-5	NEAT	P-448N	12			MeOH	P-783S	22
		MeOH	P-448S	12	Fenitrothion	122-14-5	NEAT	P-259N	12
Ethiofencarb sulfone	53380-23-7	AcCN	P-824S-CN	32			MeOH	P-259S	12
Ethiofencarb sulfoxide	53380-22-6	AcCN	P-825S-CN	32	<i>Fenoprop</i>	see Silvex			
<i>Ethiofencarb metabolite</i>									
	see 2-Ethylthiomethyl phenol								

► 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

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

Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Price	Compound	Synonym / CAS No.	Matrix	Cat. No.	Price
Fenothiocarb	62850-32-2	MeOH	P-1021S	\$ 72	Flufenacet NEW	142459-58-3	AcCN	P-902S-CN	\$ 42
		50 µg/mL MeOH	P-1021S-0.5X	52	Flufenoxuron	101463-69-8	NEAT	P-687N	32
							MeOH	P-687S	32
Fenoxanil	115852-48-7	NEAT	P-997N	32	Flumetralin	62924-70-3	NEAT	P-491N	22
		MeOH	P-997S	32			MeOH	P-491S	22
Fenoxaprop	95617-09-7	NEAT	P-884N	42	Flumetsulam	98967-40-9	NEAT	P-659N	24
		MeOH	P-884S	42			MeOH	P-659S	24
Fenoxaprop-ethyl	66441-23-4	NEAT	P-365N	22	Flumiclorac-pentyl	87546-18-7	NEAT	P-993N	22
		MeOH	P-365S	22			MeOH	P-993S	22
Fenoxaprop-p-ethyl	71283-80-2	NEAT	P-694N	32	Flumioxazin	103361-09-7	CH ₂ Cl ₂	P-992S-D	42
		MeOH	P-694S	32	Fluometuron	2164-17-2	NEAT	P-014N	12
Fenoxycarb	79127-80-3	NEAT	P-686N	22			MeOH	P-014S	12
		MeOH	P-686S	22	Fluopicolide	239110-15-7	NEAT	P-1024N	42
Fenpropathrin	see Danitol						Acetone	P-1024S-A	42
Fenpropidin	67306-00-7	NEAT	P-802N	32	Fluopyram NEW	658066-35-4	MeOH	P-1094S	72
		MeOH	P-802S	22	Fluoxastrobin NEW	361377-29-9	AcCN	P-963S-CN	52
Fenpropimorph	67564-91-4	NEAT	P-705N	42	Fluquinconazole NEW	136426-54-5	NEAT	P-878N	52
		MeOH	P-705S	22			AcCN	P-878S-CN	52
Fenpyroximate	111812-58-9	NEAT	P-724N	52	Flurenol methyl ester	1216-44-0	NEAT	P-412N	12
		MeOH	P-724S	52			MeOH	P-412S	12
Fenson	80-38-6	NEAT	P-551N	22	Fluridone	59756-60-4	NEAT	P-193N	12
		MeOH	P-551S	22			MeOH	P-193S	12
Fensulfothion	see Dasanit				Flurochloridon	61213-25-0	NEAT	P-647N	32
Fenthion	55-38-9	NEAT	P-148N	12			MeOH	P-647S	32
		MeOH	P-148S	12	Flurodifen	15457-05-3	NEAT	P-676N	12
Fenthion-sulfone NEW	3761-42-0	AcCN	P-953S-CN	42			MeOH	P-676S	12
Fenthion sulfoxide NEW	3761-41-9	NEAT	P-1052N	42	Fluoroxypyr	69377-81-7	MeOH	P-521S	52
		CH ₂ Cl ₂	P-1052S-D	42	Fluoroxypyr-1-methylheptyl ester	81406-37-3	NEAT	P-927N	22
Fentin acetate	900-95-8	NEAT	P-680N	22			MeOH	P-927S	22
		MeOH	P-680S	22	Flurprimidol NEW	56425-91-3	NEAT	P-1155N	52
Fentin chloride	see Triphenyltin chloride				Flusilazole	85509-19-9	NEAT	P-578N	42
Fentin hydroxide NEW	76-87-9	NEAT	P-1042N	12			MeOH	P-578S	42
		AcCN	P-1042S-CN	12	Fluthiacet-methyl NEW	117337-19-6	AcCN	P-1095S-CN	62
Fenuron	101-42-8	NEAT	P-004N	12	Flutolanil	66332-96-5	NEAT	P-587N	12
		MeOH	P-004S	12			MeOH	P-587S	12
Fenuron-TCA	4482-55-7	NEAT	P-006N	12	Flutriafol	76674-21-0	NEAT	P-699N	34
		MeOH	P-006S	12			MeOH	P-699S	34
Fenvalerate	51630-58-1	NEAT	P-194N	12	Tau-Fluvalinate	102851-06-9	NEAT	P-356N	32
		MeOH	P-194S	12			MeOH	P-356S	32
Ferbam	14484-64-1	NEAT	P-110N	12			AcCN	P-356S-CN	32
		MeOH	P-110S	12			AcCN	P-1150S-CN	52
Ferber K	see Ferbam				Fluxapyroxad NEW	907204-31-3			
Ficam	see Bendiocarb				Folbex	see Chlorobenzilate			
Fipronil	120068-37-3	NEAT	P-738N	42	Folex	see Merphos			
	See Technical Data, page 66	MeOH	P-738S	42	Folosan	see Pentachloronitrobenzene			
		Acetone	P-738S-A	42	Folpet	133-07-3	NEAT	P-258N	12
Fipronil desulfinyl		Acetone	P-782S-A	150			MeOH	P-258S	12
Fipronil sulfide	120067-83-6	Acetone	P-781S-A	75	Fomesafen	72178-02-0	NEAT	P-907N	22
		5 mg	P-781N-5MG	75			MeOH	P-907S	22
Fipronil sulfone	120068-36-2	Acetone	P-780S-A	50	Fonofos	see Dyfonate			
Flamprop-methyl	52756-25-9	NEAT	P-366N	12	Foramsulfuron	173159-57-4	NEAT	P-852N	32
		MeOH	P-366S	12			AcCN	P-852S-CN	32
Flazasulfuron	104040-78-0	AcCN	P-826S-CN	62	Forchlorfenuron NEW	68157-60-8	NEAT	P-753N	52
Flonicamid	158062-67-0	NEAT	P-926N	52			MeOH	P-753S	52
		MeOH	P-926S	32	Formetanate HCl	23422-53-9	NEAT	P-431N	12
Florasulam	145701-23-1	AcCN	P-827S-CN-0.1X	42			MeOH	P-431S	12
Fluacrypyrim NEW	229977-93-9	MeOH	P-1056S	62	Formothion	2540-82-1	NEAT	P-149N	72
Fluazifop-butyl	69806-50-4	NEAT	P-310N	22			AcCN	P-149S-CN	72
		MeOH	P-310S	22	Fosetyl aluminum	39148-24-8	NEAT	P-532N	62
Fluazifop-p-butyl	79241-46-6	NEAT	P-601N	52			MeOH	P-532S	62
		MeOH	P-601S	52	Fosthiazate NEW	98886-44-3	AcCN	P-828S-CN	52
Fluazinam	79622-59-6	NEAT	P-586N	52	Frescon	see Trifenmorph			
		MeOH	P-586S	42	Frumidor	see Thiophanate-methyl			
Flubendiamide	272451-65-7	NEAT	P-1025N	42	Fuberidazole NEW	3878-19-1	AcCN	P-789S-CN	32
		AcCN	P-1025S-CN	42	Fumazone	96-12-8	NEAT	P-341N	12
Flucarbazone-sodium NEW	181274-17-9	NEAT	P-1124N	32			MeOH	P-341S	12
		AcCN	P-1124S-CN	32	Furadan	see Carbofuran			
Fluchloralin	33245-39-5	NEAT	P-270N	22	Furalaxyl	57646-30-7	NEAT	P-605N	22
		MeOH	P-270S	22			MeOH	P-605S	22
Flucythrinate	70124-77-5	MeOH	P-378S	52	Furathiocarb	65907-30-4	NEAT	P-569N	22
Fludioxonil	131341-86-1	NEAT	P-698N	32			MeOH	P-569S	22
		MeOH	P-698S	32	Furilazole NEW	121776-33-8	AcCN	P-810S-CN	52
					Furmecyclox	60568-05-0	MeOH	P-607S	32

Most at Same Low Price in Neat (10 mg) or Solution (100 µg/mL) form
Can't find a Pesticide? Search using CAS No. Index in back of the catalog.



Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Price	Compound	Synonym / CAS No.	Matrix	Cat. No.	Price
<i>Furore</i>	see Fenoxaprop-ethyl				<i>Hoxan</i>	see Dichlofop methyl			
<i>Fusilade</i>	see Fluazifop-butyl				Hydramethylnon	67485-29-4	NEAT	P-403N	\$ 42
<i>Galtak</i>	see Benazolin						MeOH	P-403S	42
<i>Gardona</i>	see Tetrachlorvinphos				2-Hydroxyatrazine	2163-68-0	MeOH	P-326S	32
<i>Gardoprim</i>	see Terbutylazine				3-Hydroxycarbofuran	16655-82-6	MeOH	P-186S	22
<i>Garlon</i>	see Triclopyr				1-Hydroxychlorodene	24009-05-0	MeOH	P-151S	52
<i>Garrathion</i>	see Carbophenothion				Hymexazol	10004-44-1	MeOH	P-571S	60
<i>Gesaftram</i>	see Prometon				<i>Hyvar</i>	see Bromacil			
<i>Gesagard</i>	see Prometryne				<i>Illoxan</i>	see Dichlofop methyl			
<i>Gesamil</i>	see Propazine				Imazalil	35554-44-0	NEAT	P-332N	32
<i>Gesapax</i>	see Ametryn						MeOH	P-332S	32
<i>Gesaprim</i>	see Atrazine				Imazamethabenz methyl	81405-85-8	NEAT	P-414N	32
Gesatamine	1610-17-9	NEAT	P-189N	\$ 22			MeOH	P-414S	32
		MeOH	P-189S	22	Imazamox NEW	114311-32-9	NEAT	P-806N	42
<i>Gesatop</i>	see Simazine						AcCN	P-806S-CN	42
<i>Gexane</i>	see Lindane				Imazapic NEW	104098-48-8	NEAT	P-1063N	22
Glufosinate, ammonium salt	77182-82-2	NEAT	P-475N	22			MeOH	P-1063S	12
		MeOH	P-475S	22	Imazapyr	81334-34-1	NEAT	P-589N	32
Glyodin	556-22-9	NEAT	P-528N	12			MeOH	P-589S	32
		MeOH	P-528S	12			AcCN	P-589S-CN	32
Glyphosate	1071-83-6	NEAT	P-015N	12	Imazaquin	81335-37-7	NEAT	P-283N	32
		H2O	P-015S-W	12			MeOH	P-283S *	32
<i>Goal</i>	see Oxyfluorfen				Imazethapyr	81335-77-5	MeOH	P-285S	22
<i>Goltix</i>	see Metamitron				Imazosulfuron	122548-33-8	AcCN	P-853S-CN-0.1X	52
<i>Grasidin</i>	see Sethoxydim						10 µg		
<i>Grasp</i>	see Tralkoxydim				Imibenconazole	86598-92-7	AcCN	P-1019S-CN-0.5X	52
Guazatine acetate	115044-19-4	MeOH	P-612S	52			50 µg		
<i>Gusathion M</i>	see Azinphos-methyl				Imidacloprid	138261-41-3	NEAT	P-596N	32
<i>Guthion</i>	see Azinphos-methyl						MeOH	P-596S	32
<i>Gy-bon</i>	see Simetryn				Imidan	732-11-6	NEAT	P-055N	12
Halfenprox NEW	111872-58-3	10 µg/mL	P-1050S-0.1X	82			MeOH	P-055S	12
		MeOH			Imiprothrin NEW	72963-72-5	AcCN	P-983S-CN *	72
Halofenozide NEW	112226-61-6	AcCN	P-804S-CN *	32	Indalone	532-34-3	NEAT	P-648N	12
Halosulfuron methyl NEW	100784-20-1	AcCN	P-1089S-CN *	32			MeOH	P-648S	12
Haloxypop	69806-34-4	NEAT	P-496N	32	Indanofan	133220-30-1	NEAT	P-988N	52
		MeOH	P-496S	32			MeOH	P-988S	52
		AcCN	P-496S-CN	32	Indaziflam NEW	950782-86-2	AcCN	P-1168S-CN	52
Haloxypop-methyl	69806-40-2	NEAT	P-497N	32	Indoxacarb	144171-61-9	NEAT	P-829N	42
		MeOH	P-497S	32			AcCN	P-829S-CN	42
<i>Hanane</i>	see Dimefox				<i>Ingran 80W</i>	see Prebane			
<i>Hedonal</i>	see MCPP acid				<i>INPC</i>	see Propham			
<i>Helothion</i>	see Bolstar				Iodofenphos	18181-70-9	NEAT	P-379N	22
<i>HEOD</i>	see Dieldrin						MeOH	P-379S	22
Heptachlor	76-44-8	NEAT	P-053N	12	Iodosulfuron-methyl-sodium	144550-36-7	NEAT	P-830N	62
		MeOH	P-053S	12			AcCN	P-830S-CN	32
Heptachlor epoxide [Isomer A]	28044-83-9	MeOH	P-294S	32	Ioxynil	1689-83-4	NEAT	P-522N	32
Heptachlor epoxide [Isomer B]	1024-57-3	NEAT	P-054N	22			MeOH	P-522S	32
		MeOH	P-054S	22	<i>IPB</i>	see Iprobenfos			
<i>2-Hepta-decyl-2-imidazoline</i>	see Glyodin				<i>IPC</i>	see Propham			
<i>Heptamul</i>	see Heptachlor				Ipconazole NEW	125225-28-7	AcCN	P-958S-CN *	72
Heptenophos	23560-59-0	NEAT	P-547N	42	Iprobenfos	26087-47-8	NEAT	P-609N	32
		MeOH	P-547S	42			MeOH	P-609S	32
<i>Heptox</i>	see Heptachlor				Iprodione	36734-19-7	NEAT	P-016N	12
<i>Herald</i>	see Danitol						Acetone	P-016S-A	12
<i>Herb-All</i>	see MSMA						AcCN	P-016S-CN	12
<i>Herkol</i>	see Dichlorvos				Iprovalicarb	140923-17-7	NEAT	P-831N	42
Hexaconazole	79983-71-4	NEAT	P-500N	12			AcCN	P-831S-CN	42
		MeOH	P-500S	12	Irgarol	28159-98-0	NEAT	P-746N	32
Hexaflumuron	86479-06-3	NEAT	P-697N	22			MeOH	P-746S	32
		MeOH	P-697S *	22	Isazophos	42509-80-8	NEAT	P-449N	12
Hexamethylphosphoramide	680-31-9	NEAT	P-205N	12			MeOH	P-449S	12
		MeOH	P-205S	12	Isobenzan	297-78-9	MeOH	P-323S	12
Hexazinone	51235-04-2	NEAT	P-123N	12	Isobenzofuranone	87-41-2	NEAT	P-1022N	12
		MeOH	P-123S	12			MeOH	P-1022S	12
<i>Hexylthiocarbam</i>	see Cycloate				Isocarbamid NEW	30979-48-7	AcCN	P-880S-CN	42
Hexythiazox	78587-05-0	NEAT	P-658N	45	Isocarbophos NEW	24353-61-5	NEAT	P-893N	42
		MeOH	P-658S	45			AcCN	P-893S-CN	42
<i>Hoe 2810</i>	see Linuron				Isodrin	465-73-6	NEAT	P-471N	12
<i>Hoelon</i>	see Dichlofop methyl						MeOH	P-471S	12
<i>Horbadox</i>	see Pendimethalin				Isufenphos	25311-71-1	NEAT	P-018N	12
<i>Hostathion</i>	see Triazophos						MeOH	P-018S	12

* V-Rated packaging surcharge applies for international shipments

► 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

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

Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Price	Compound	Synonym / CAS No.	Matrix	Cat. No.	Price
Isufenphos-methyl	99675-03-3	MeOH	P-984S	\$ 62	Mancozan	see Zineb			
Isoprocarb	2631-40-5	NEAT	P-317N	12	Mancozeb	8018-01-7	NEAT	P-322N	\$ 12
		MeOH	P-317S	12	Mandipropamid	374726-62-2	NEAT	P-1023N	42
Isopropalin	33820-53-0	NEAT	P-100N	12			AcCN	P-1023S-CN	42
		MeOH	P-100S	12	Maneb	12427-38-2	NEAT	P-282N	12
2-Isopropylamino-4,6-dichloro-s-triazine		NEAT	P-635N	22	Manzeb	see Mancozeb			
		MeOH	P-635S	22	Marathon	see Imidacloprid			
2-Isopropyl-6-methyl-4-pyrimidinol		NEAT	P-631N	22	Marlate	see Methoxychlor			
2814-20-2		MeOH	P-631S	22	Matacil	see Aminocarb			
1-(4-Isopropylphenyl)-3-methylurea	34123-57-4	MeOH	P-1040S	72	Mataven	see Flamprop-methyl			
	NEW				Mavrik	see Fluvalinate			
Isoprothiolane	50512-35-1	NEAT	P-661N	32	Maxforce	see Hydramethylnon			
		MeOH	P-661S	32	MCPA-acid	94-74-6	NEAT	P-153N	12
Isoproturon	34123-59-6	NEAT	P-302N	12			MeOH	P-153S	12
		MeOH	P-302S	12			AcCN	P-153S-CN	12
Isopyrazam NEW	881685-58-1	AcCN	P-1159S-CN	52	MCPA 2-ethylhexyl ester NEW	29450-45-1	NEAT	P-1082N	32
Isoxaben	82558-50-7	NEAT	P-533N	22			MeOH	P-1082S	15
		MeOH	P-533S	22	MCPA methyl ester	2436-73-9	NEAT	P-038N	12
Isoxaflutole	141112-29-0	NEAT	P-832N	52			MeOH	P-038S	12
		AcCN	P-832S-CN	52	MCPB acid	94-81-5	NEAT	P-370N	12
Isoxathion NEW	18854-01-8	NEAT	P-1096N	42			MeOH	P-370S	12
		AcCN	P-1096S-CN	42	MCPB methyl ester	57153-18-1	NEAT	P-371N	22
Jodfenphos	see Iodofenphos						MeOH	P-371S	22
Kadethrine	58769-20-3	NEAT	P-367N	12	MCPB acid	7085-19-0	NEAT	P-154N	32
		MeOH	P-367S	12			MeOH	P-154S	32
Karbutilate	4849-32-5	NEAT	P-337N	12			AcCN	P-154S-CN	32
		MeOH	P-337S	12	MCPB methyl ester	23844-56-6	NEAT	P-040N	12
Karmex	330-54-1	NEAT	P-227N	12			MeOH	P-040S	12
		MeOH	P-227S	12	Mecarbam	2595-54-2	NEAT	P-318N	22
Kelthane	115-32-2	NEAT	P-057N	22			MeOH	P-318S	22
		MeOH	P-057S	22	Mecoprop	see MCPB acid			
Kepone	143-50-0	NEAT	P-152N	22	Mecoprop, 2-ethylhexyl ester	71526-69-7	NEAT	P-502N	22
		MeOH	P-152S	12			MeOH	P-502S	22
Kerb	see Pronamide				Mecoprop-1-octyl ester	161922-37-8	AcCN	P-1028S-CN	32
3-Ketocarbocofuran	16709-30-1	Acetone	P-298S-A	52	Mecoprop-2-octyl ester	28473-03-2	NEAT	P-1029N	32
Kilprop	see MCPB acid						AcCN	P-1029S-CN	32
Kothar	see Oxyfluorfen				Mecoprop-p NEW	16484-77-8	NEAT	P-1053N	22
Kresoxim-methyl	143390-89-0	NEAT	P-740N	32			Acetone	P-1053S-A	22
		MeOH	P-740S	32	Mediben	see Dicamba			
Lactofen NEW	77501-63-4	NEAT	P-979N	42	Mefenacet	73250-68-7	NEAT	P-745N	22
		AcCN	P-979S-CN	42			MeOH	P-745S	22
Lannate	see Methomyl				Mefenpyr-diethyl	135590-91-9	NEAT	P-1010N	42
Larvadex	see Cyromazine						MeOH	P-1010S	32
Lasso	see Alachlor				Meltatox	see Dodemorph acetate			
Lazo	see Alachlor				Menaphace	see MCPA acid			
Lenacil	2164-08-1	NEAT	P-649N	12	Mepanipyrim	110235-47-7	NEAT	P-855N	52
		MeOH	P-649S	12			AcCN	P-855S-CN	52
Lentagran	see Pyridate				Mephosfolan	950-10-7	NEAT	P-718N	12
Lepton	see Leptophos						MeOH	P-718S	12
Leptophos	21609-90-5	NEAT	P-206N	42	Mepiquat chloride NEW	24307-26-4	NEAT	P-1062N	32
		MeOH	P-206S	42			MeOH	P-1062S	22
Lesan	see Fenaminosulf				Mepro	see MCPB acid			
Lethane 384	112-56-1	NEAT	P-506N	12	Meptyldinocap NEW	131-72-6	MeOH	P-1043S	42
		MeOH	P-506S	12	2-Mercaptobenzothiazole monoethanolamine salt	see Vanicide-20S			
Lindane (γ-BHC)	58-89-9	NEAT	P-059N	12	Mercaptodimethur	see Methiocarb			
		MeOH	P-059S	12	Mercaptophos	see Fenthion			
Linuron	330-55-2	NEAT	P-022N	12	Mercuram	see Thiram			
		MeOH	P-022S	12	Merge 823	see MSMA			
Liphadione	see Chlorophacinone				Merphos	150-50-5	NEAT	P-124N	22
Lonacol	see Zineb						MeOH	P-124S	22
Lontrel	1702-17-6	NEAT	P-224N	22	Mesosulfuron-methyl NEW	208465-21-8	NEAT	P-1044N	32
		MeOH	P-224S	22			MeOH	P-1044S	32
Lorox	see Linuron				Mesotrione NEW	104206-82-8	AcCN	P-962S-CN	42
Lufenuron	103055-07-8	NEAT	P-704N	32	Metacide	see Methyl parathion			
		MeOH	P-704S	32	Metaflumizone NEW	139968-49-3	AcCN	P-1090S-CN	42
Machete	see Butachlor				Metalaxyl	57837-19-1	NEAT	P-120N	32
Malaoxon	1634-78-2	NEAT	P-529N	32			MeOH	P-120S	32
		MeOH	P-529S	32	Metalaxyl-M	70630-17-0	NEAT	P-874N	42
Malaspray	see Malathion						MeOH	P-874S	42
Malathion	121-75-5	NEAT	P-060N	12	Metaldehyde	9002-91-9	NEAT	P-600N	12
		MeOH	P-060S	12			MeOH	P-600S	12
Maleic hydrazide	123-33-1	NEAT	P-380N	12			AcCN	P-600S-CN	12
		MeOH	P-380S	12					

Most 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.

AccuStandard is accredited to ISO Guide 34, ISO/IEC 17025 and certified to ISO 9001



Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Price	Compound	Synonym / CAS No.	Matrix	Cat. No.	Price
Metamitron	41394-05-2	NEAT	P-252N	\$ 12	Metoxuron	19937-59-8	NEAT	P-437N	\$ 12
		MeOH	P-252S	12			MeOH	P-437S	12
Metam-sodium	see Metam-sodium dihydrate				Metafenone	220899-03-6	NEAT	P-1032N	52
Metam-sodium dihydrate	6734-80-1	NEAT	P-381N	12			AcCN	P-1032S-CN	42
		MeOH	P-381S	12	Metribuzin	21087-64-9	NEAT	P-089N	12
Metasystox R	see Oxydemeton methyl						MeOH	P-089S	12
Metazachlor	67129-08-2	NEAT	P-249N	12	Metron	see Methyl parathion			
		MeOH	P-249S	12	Metsulfuron-methyl	74223-64-6	NEAT	P-463N	42
Metconazole	125116-23-6	NEAT	P-856N	32			MeOH	P-463S *	42
		AcCN	P-856S-CN	22	Mevinphos	7786-34-7	NEAT	P-074N *	12
Methabenzthiazuron	18691-97-9	NEAT	P-563N	22			MeOH	P-074S	12
		MeOH	P-563S	22	Mexacarbate	315-18-4	NEAT	P-030N	22
Methacrifos	62610-77-9	NEAT	P-556N	22			MeOH	P-030S	22
		MeOH	P-556S	22	MGK-264	113-48-4	NEAT	P-082N	12
Methamidophos	see Monitor						MeOH	P-082S	12
Methfuroxam NEW	28730-17-8	AcCN	P-881S-CN *	42	MGK-326	136-45-8	NEAT	P-342N	12
Methidathion	950-37-8	NEAT	P-195N *	12			MeOH	P-342S	12
		MeOH	P-195S	12	Milogard	see Propazine			
Methiocarb	2032-65-7	NEAT	P-156N	12	MIPC	see Isoproc carb			
		MeOH	P-156S	12	Mirex	2385-85-5	NEAT	P-066N	12
Methiocarb sulfone NEW	2179-25-1	NEAT	P-570N	42			MeOH	P-066S	12
		AcCN	P-570S-CN	42	Mitac	see Amitraz			
Methiocarb sulfoxide NEW	2635-10-1	NEAT	P-650N	42	Mocap	see Ethoprop			
		MeOH	P-650S	42	Molinate	2212-67-1	NEAT	P-176N	32
Methomyl	16752-77-5	NEAT	P-032N	18			MeOH	P-176S	32
		MeOH	P-032S	18	Monalide	7287-36-7	NEAT	P-737N	32
	1000 µg/mL	MeOH	P-032S-10X	36			MeOH	P-737S	32
Methoprene	40596-69-8	NEAT	P-157N	32	Monceren	see Pencycuron			
		MeOH	P-157S	32	Monitor	10265-92-6	NEAT	P-155N	42
Methoprotryne	841-06-5	NEAT	P-564N	22			MeOH	P-155S	42
		MeOH	P-564S	22	Monocrotophos	6923-22-4	NEAT	P-112N	32
Methoxychlor	72-43-5	NEAT	P-064N	12			MeOH	P-112S	32
		MeOH	P-064S	12	Monolinuron	1746-81-2	NEAT	P-382N	12
o,p'-Methoxychlor	30667-99-3	MeOH	P-535S	52			MeOH	P-382S	12
		Isocytane	P-535S-TP	52	Monomethyltetrachloroterephthalate	887-54-7	NEAT	P-707N	52
p,p'-Methoxychlor-olefin	2132-70-9	MeOH	P-466S	52			Acetone	P-707S-A	52
Methoxy-DDT	see Methoxychlor				Monuron	150-68-5	NEAT	P-023N	12
Methoxyfenozide	161050-58-4	NEAT	P-857N	72			MeOH	P-023S	12
		AcCN	P-857S-CN	72	Monuron TCA	140-41-0	NEAT	P-034N	12
Methylamine hydrochloride	593-51-1	NEAT	P-624N	12			MeOH	P-034S	12
		MeOH	P-624S	12	2-Monuron		NEAT	P-633N	22
Methyl-3,5-dichlorobenzoate	2905-67-1	NEAT	P-247N	12			MeOH	P-633S	22
		MeOH	P-247S	12	Morestan	see Chinomethionate			
2-Methyl-4,6-dinitroanisole	29027-13-2	NEAT	P-611N	22	Moxidectin NEW	113507-06-5	AcCN	P-961S-CN *	72
		MeOH	P-611S	22	MSMA	see Bueno			
2-Methyl-4,6-dinitrophenol methyl ether					Myclobutanil	88671-89-0	NEAT	P-330N	42
	see 2-Methyl-4,6-dinitroanisole						MeOH	P-330S	42
Methyl dursban	see Chlorpyrifos-methyl ester				Nabam	142-59-6	NEAT	P-383N	12
Methyl-2,4-dichlorophenylacetate		NEAT	P-214N	12			MeOH	P-383S	12
	55954-23-9	MeOH	P-214S	12	Naled	300-76-5	NEAT	P-159N	12
3-Methyl-4-nitrophenol	2581-34-2	NEAT	P-509N	12			MeOH	P-159S	12
		MeOH	P-509S	12	1-Naphthalene acetamide	86-86-2	NEAT	P-512N	12
Methyl nonyl ketone	112-12-9	NEAT	P-415N	12			MeOH	P-512S	12
		MeOH	P-415S	12	1-Naphthol	90-15-3	NEAT	P-1007N	12
		AcCN	P-415S-CN	12			MeOH	P-1007S	12
Methyl paraoxon	950-35-6	NEAT	P-311N	32	Napropamide	15299-99-7	NEAT	P-179N	12
		MeOH	P-311S	32			MeOH	P-179S	12
Methyl parathion	298-00-0	NEAT	P-065N *	12	Naptalam	see Alanap			
		MeOH	P-065S	12	1-Naphthylacetic acid	86-87-3	NEAT	P-461N	12
Methylpentachlorophenyl sulfide	1825-19-0	NEAT	P-567N	12			MeOH	P-461S	12
		MeOH	P-567S	12	Navadel	see Dioxathion			
Methyl tiofanato	see Thiophanate-methyl				Neburon	555-37-3	NEAT	P-041N	12
Methyl trithion	953-17-3	MeOH	P-652S	82			MeOH	P-041S	12
Metiram	9006-42-2	NEAT	P-416N	12	Neguvon	see Trichlorfon			
Metobromuron	3060-89-7	NEAT	P-436N	12	Nemacur R	see Fenamiphos			
		MeOH	P-436S	12	Neocidol	see Diazinon			
Metolachlor	51218-45-2	NEAT	P-158N	12	Netrazine	see Cyromazine			
		MeOH	P-158S	12	Niagaramite	see Aramite			
S-Metolachlor	87392-12-9	NEAT	P-1013N	42	Nialate	see Ethion			
		MeOH	P-1013S	32	Niclosamide	50-65-7	NEAT	P-160N	22
Metolcarb	1129-41-5	NEAT	P-494N	22			MeOH	P-160S	22
		MeOH	P-494S	22	Nicosulfuron	111991-09-4	NEAT	P-591N	52
Metosulam NEW	139528-85-1	AcCN	P-900S-CN	52			AcCN	P-591S-CN	52
					Nifos	see TEPP			

* V-Rated packaging surcharge applies for international shipments

► 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

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

Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Price	Compound	Synonym / CAS No.	Matrix	Cat. No.	Price
Nitenpyram	120738-89-8	NEAT	P-858N	\$ 42	Oxycarboxin	5259-88-1	NEAT	P-391N	\$ 12
		AcCN	P-858S-CN	42			MeOH	P-391S	12
Nitralin	4726-14-1	NEAT	P-583N	12	Oxychlordane Isomer	27304-13-8	MeOH	P-331S	77
		MeOH	P-583S	12		10 µg/mL in	MeOH	P-331S-0.1X	34
Nitrapyrin	1929-82-4	NEAT	P-489N	12	Oxydemeton-methyl	301-12-2	Hexane	P-331S-H	77
4-Nitroanisole	100-17-4	MeOH	P-489S	12	Oxyfluorfen	42874-03-3	MeOH	P-290S	22
Nitrofen	1836-75-5	NEAT	P-273N	12			NEAT	P-277N	42
		MeOH	P-273S	12			MeOH	P-277S	42
Nitrothal-isopropyl	10552-74-6	NEAT	P-363N	32	Oxythioquinox	see Chinomethionate			
		MeOH	P-363S	32	Paarlan	see Isopropalin			
		NEAT	P-695N	32	Paraoxon	311-45-5	NEAT	P-453N	22
		MeOH	P-695S	32			MeOH	P-453S	22
Nix-Scald	see Ethoxyquin				Paraquat dichloride tetrahydrate	1910-42-5	NEAT	P-051N *	12
Nomersan	see TEPP						MeOH	P-051S	12
cis-Nonachlor	5103-73-1	NEAT	P-297N	52	Parathion	56-38-2	NEAT	P-070N	12
		MeOH	P-297S	52			MeOH	P-070S	12
trans-Nonachlor	39765-80-5	NEAT	P-184N	22	Paridol	see Methyl parathion			
		MeOH	P-184S	22	PCA	see Pyrazon			
Norflurazon	27314-13-2	NEAT	P-217N	22	PCNB	see Pentachloronitrobenzene			
		MeOH	P-217S	22	PCP methyl ether	see Pentachloroanisole			
Norflurazon-desmethyl NEW	23576-24-1	AcCN	P-1129S-CN *	52	PDU	see Fenuron			
Novaluron	116714-46-6	5 mg	P-966N-5MG	72	PEBC	see Tillam			
		MeOH	P-966S	72	Pebulate	see Tillam			
Noviflumuron NEW	121451-02-3	AcCN	P-967S-CN *	82	Penconazole	66246-88-6	NEAT	P-450N	32
Nuarimol	see Trimidal						MeOH	P-450S	32
Nucidol	see Diazinon				Pencycuron	66063-05-6	NEAT	P-358N	32
Nuvacron	see Monocrotophos						MeOH	P-358S	32
Nuvanol	see Iodofenphos				Pendimethalin	40487-42-1	NEAT	P-097N	12
Octachlor	see Chlordane						MeOH	P-097S	12
Octacide 264	see MGK 264				Penoxalin	see Pendimethalin			
Octalox	see Dieldrin				Penoxsulam NEW	219714-96-2	MeOH	P-1046S	52
Octamethylpyrophosphoramide	see Schradan				Pentachloroaniline	527-20-8	NEAT	P-875N	12
Octhilinone NEW	26530-20-1	NEAT	P-788N	32			AcCN	P-875S-CN	12
		AcCN	P-788S-CN	32	Pentachloroanisole	1825-21-4	NEAT	P-199N	12
OFF	see Deet						MeOH	P-199S	12
Ofanol	see Isufenphos				Pentachloronitrobenzene	82-68-8	NEAT	P-113N	12
Ofurace	58810-48-3	10 µg/mL	P-653S-TP-0.1X	32			MeOH	P-113S	12
		Isooctane			Pentanochlor NEW	2307-68-8	NEAT	P-1067N	42
Omethoate	1113-02-6	NEAT	P-121N	22			MeOH	P-1067S	32
		MeOH	P-121S	22	Penthioapyrad NEW	183675-82-3	AcCN	P-1131S-CN *	62
Omite	see Propargite				Pentoxazone NEW	110956-75-7	MeOH	P-1051S-0.1X	72
OMPA	see Schradan				Permethrin (cis/trans)	52645-53-1	NEAT	P-128N	12
Omtan	see Isobenzan						MeOH	P-128S	12
Option	see Fenoxaprop-ethyl				Perthane	72-56-0	NEAT	P-162N	12
Orbencarb	34622-58-7	NEAT	P-433N	22			MeOH	P-162S	12
		MeOH	P-433S	22	Peropal	see Azocyclotin			
Orbit	see Tilt				Pestox III	see Schradan			
Ordram	see Molinate				Pethoxamid NEW	106700-29-2	NEAT	P-1047N	52
Ornamec	see Fluazifop-p-butyl						MeOH	P-1047S	52
Orthene	see Acephate				Phenacide	see Toxaphene			
Orthocide	see Captan				Phenamiphos	see Fenamiphos			
Orthosulfamuron NEW	213464-77-8	Acetone	P-1045S-A	62	Phenmedipham	13684-63-4	NEAT	P-392N	12
Oryzalin	19044-88-3	NEAT	P-043N	12			MeOH	P-392S	12
		MeOH	P-043S	12	Phenothiazine	92-84-2	NEAT	P-579N	22
Outfox	see Cyprazine						MeOH	P-579S	22
Ovex	80-33-1	NEAT	P-425N	22	Phenothrin	see Sumithrin			
		MeOH	P-425S	22	Phenthoate	2597-03-7	NEAT	P-476N	32
Ovochlor	see Ovex						MeOH	P-476S	32
Oxabetrinil	74782-23-3	NEAT	P-995N	32	Phenyl mercury acetate	62-38-4	NEAT	P-393N	12
		MeOH	P-995S	32			MeOH	P-393S	12
Oxadiargyl	39807-15-3	NEAT	P-1031N	32	o-Phenylphenol	90-43-7	NEAT	P-460N	12
		AcCN	P-1031S-CN	32			MeOH	P-460S	12
Oxadiazon	19666-30-9	NEAT	P-236N	32	Phenyl valerate	20115-23-5	NEAT	P-734N	22
		MeOH	P-236S	32			MeOH	P-734S	22
Oxadixyl	77732-09-3	NEAT	P-560N	42	Phorate	298-02-2	NEAT	P-170N *	12
		MeOH	P-560S	22			MeOH	P-170S	12
Oxamyl	23135-22-0	NEAT	P-161N	12	Phorate-oxon	2600-69-3	10 µg/mL	P-1018S-T-0.1X	22
		MeOH	P-161S	12			Toluene		
Oxamyl oxime NEW	30558-43-1	AcCN	P-1138S-CN	82	Phorate-oxon sulfone NEW	2588-06-9	AcCN	P-1161S-CN	62
Oxasulfuron	144651-06-9	NEAT	P-859N	62	Phorate-oxon sulfoxide NEW	2588-05-8	AcCN	P-1153S-CN	52
		AcCN	P-859S-CN	42	Phorate sulfone	2588-04-7	Hexane	P-655S-H	32
Oxaziclonofone NEW	153197-14-9	MeOH	P-1066S	52					

Most at Same Low Price in Neat (10 mg) or Solution (100 µg/mL) form
Can't find a Pesticide? Search using CAS No. Index in back of the catalog.

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Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Price	Compound	Synonym / CAS No.	Matrix	Cat. No.	Price
Phorate sulfoxide	2588-03-6	NEAT	P-732N	\$ 42	Prodiamine	29091-21-2	NEAT	P-739N	\$ 22
		MeOH	P-732S	42			MeOH	P-739S	22
Phosalone	2310-17-0	NEAT	P-163N	12	Profenofos	41198-08-7	NEAT	P-260N	12
		MeOH	P-163S	12			MeOH	P-260S	12
Phosdrin	see Mevinphos				Profluoralin	26399-36-0	NEAT	P-099N	12
Phosethoprop	see Ethoprop						MeOH	P-099S	12
Phosfolan	947-02-4	NEAT	P-234N	12	Prohexadione-calcium NEW	127277-53-6	NEAT	P-1068N	42
		MeOH	P-234S	12			Water	P-1068S-W	42
Phosmet	see Imidan				Prolate	see Imidan			
Phosmet oxon	3735-33-9	Toluene	P-733S-T	52	Promecarb	2631-37-0	NEAT	P-265N	22
Phosphamidon	13171-21-6	NEAT	P-075N	22			MeOH	P-265S	22
		MeOH	P-075S	22	Prometon	1610-18-0	NEAT	P-077N	12
Phosphothion	see Malathion						MeOH	P-077S	12
Phosvel	see Leptophos				Prometryne	7287-19-6	NEAT	P-078N	12
Phoxim	14816-18-3	NEAT	P-357N	12			MeOH	P-078S	12
		MeOH	P-357S	12	Pronamide	23950-58-5	NEAT	P-164N	12
Phthalide	see 1-Isobenzofuranone						MeOH	P-164S	12
Phthalthrin	see Tetramethrin				Propachlor	1918-16-7	NEAT	P-215N	12
Picloram	1918-02-1	NEAT	P-047N	32			MeOH	P-215S	12
		MeOH	P-047S	32	Propamocarb	24579-73-5	NEAT	P-312N	12
Picloram methyl ester	14143-55-6	NEAT	P-198N	22			MeOH	P-312S	12
		MeOH	P-198S	22	Propamocarb hydrochloride NEW	25606-41-1	AcCN	P-1137S-CN *	32
Picolinafen NEW	137641-05-5	NEAT	P-1061N	52	Propanil	709-98-8	NEAT	P-049N	12
		MeOH	P-1061S	42			MeOH	P-049S	12
4-Picoline	see 4-Aminopyridine				Propaquizafop	111479-05-1	NEAT	P-908N	22
Picoxystrobin	117428-22-5	NEAT	P-860N	102			MeOH	P-908S	22
		AcCN	P-860S-CN	102	Propargite	2312-35-8	NEAT	P-251N	12
Pindone	83-26-1	NEAT	P-394N	12			MeOH	P-251S	12
		MeOH	P-394S	12	Propazine	139-40-2	NEAT	P-079N	12
Pinoxaden NEW	243973-20-8	NEAT	P-1154N	52			MeOH	P-079S	12
		AcCN	P-1154S-CN	52	Propetamphos	31218-83-4	NEAT	P-417N	62
Piperalin	3478-94-2	NEAT	P-663N	24			MeOH	P-417S	22
		MeOH	P-663S	24	Propham	122-42-9	NEAT	P-052N	12
Piperonyl butoxide	51-03-6	NEAT	P-348N	22			MeOH	P-052S	12
		MeOH	P-348S	22	Prophos	see Ethoprop			
Piperophos	24151-93-7	NEAT	P-656N	32	Propiconazole	see Tilt			
Pirimicarb	23103-98-2	NEAT	P-304N	12	Propineb	12071-83-9	NEAT	P-608N	22
		MeOH	P-304S	12	Propoxur	see Baygon			
Pirimicarb-desmethyl NEW	30614-22-3	AcCN	P-1139S-CN	52	Propoxycarbazono-sodium	181274-15-7	NEAT	P-1014N	42
Pirimiphos-ethyl	23505-41-1	NEAT	P-328N	12		50 µg/mL in	Water	P-1014S-W-0.5X	32
		MeOH	P-328S	12	Propylenethiourea (PTU)	2055-46-1	NEAT	P-861N	12
Pirimiphos-methyl	29232-93-7	NEAT	P-305N	32			AcCN	P-861S-CN	12
		MeOH	P-305S	32	Propyzamide	see Pronamide			
Pirimor	see Pirimicarb				Proquinazid NEW	189278-12-4	AcCN	P-1156S-CN	62
Pival	see Pindone				Prosulfocarb	52888-80-9	NEAT	P-742N	52
PMA	see Phenyl mercury acetate						MeOH	P-742S	52
Polytrin	see Cypermethrin				Prosulfuron	94125-34-5	NEAT	P-834N	12
Potassium dimethyl dithiocarbamate	128-03-0	AcCN	P-714S-CN *	52			AcCN	P-834S-CN	12
Potassium n-hydroxymethyl-n-methyl dithiocarbamate	51026-28-9	AcCN	P-715S-CN *	52	Protector 3L	see Busan			
					Protex	see Rotenone			
Prallethrin	23031-36-9	MeOH	P-667S	52	Prothioconazole NEW	178928-70-6	AcCN	P-965S-CN	52
Pramitol	see Prometon				Prothiophos	see Tokuthion			
Prebane	886-50-0	NEAT	P-119N	12	Prowl	see Pendimethalin			
		MeOH	P-119S	12	Proximpam NEW	2828-42-4	NEAT	P-1081N	52
Preeglone	see Paraquat CL						MeOH	P-1081S	15
Prefar	see Bensulide				Pursuit	see Imazethapyr			
Premerg	see Trichlorfon				Pymetrozin	123312-89-0	NEAT	P-835N	22
Pretilachlor	51218-49-6	NEAT	P-485N	22			AcCN	P-835S-CN	22
		MeOH	P-485S	22	Pynamin	see Allethrin			
Primatol P	see Propazine				Pyracarbolid NEW	24691-76-7	AcCN	P-792S-CN *	32
Primatol Q	see Prometryne				Pyraclofos	77458-01-6	MeOH	P-716S	62
Primatol S	see Simazine				Pyraclostrobin	175013-18-0	NEAT	P-863N	22
Primaze	see Prometryne						AcCN	P-863S-CN	22
Primicid	see Pirimiphos-ethyl				Pyraflufen-ethyl	129630-19-9	NEAT	P-1015N	42
Primisulfuron-methyl	86209-51-0	NEAT	P-833N	12			Acetone	P-1015S-A	32
		AcCN	P-833S-CN	12	Pyrasulfotole NEW	365400-11-9	AcCN	P-1144S-CN	52
Princep	see Simazine				Pyrazon	1698-60-8	NEAT	P-395N	22
Probenazole	27605-76-1	NEAT	P-710N	22			MeOH	P-395S	22
		Acetone	P-710S-A	22	Pyrazophos	13457-18-6	NEAT	P-359N	22
Prochloraz	67747-09-5	NEAT	P-549N	32			MeOH	P-359S	22
		MeOH	P-549S	32	Pyrazoxyfen	71561-11-0	NEAT	P-618N	22
Procymidone	32809-16-8	NEAT	P-430N	22			MeOH	P-618S	22
		MeOH	P-430S	22	Pyrethrins	8003-34-7	NEAT	P-187N	42
							MeOH	P-187S	42

► 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

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

Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Price	Compound	Synonym / CAS No.	Matrix	Cat. No.	Price
Pyrethrum	see Pyrethrins				Schradan	152-16-9	NEAT	P-418N	\$ 12
Pyributicarb	88678-67-5	MeOH	P-987S	\$ 72			MeOH	P-418S	12
Pyridaben	96489-71-3	NEAT	P-693N	22	Sebuthylazine	7286-69-3	NEAT	P-432N	22
		MeOH	P-693S	22			MeOH	P-432S	22
Pyridalyl	179101-81-6	NEAT	P-990N	52	Secbumeton	26259-45-0	NEAT	P-165N	22
		MeOH	P-990S	42			MeOH	P-165S	22
Pyridaphenthion	119-12-0	MeOH	P-610S	32	Select	see Clethodim			
Pyridate	55512-33-9	NEAT	P-404N	32	Sencor	see Metribuzin			
		MeOH	P-404S	12	Sethoxydim	74051-80-2	NEAT	P-306N	72
Pyrifluquinazon NEW	337458-27-2	AcCN	P-1093S-CN	52			AcCN	P-306S-CN *	22
Pyrimethanil	53112-28-0	NEAT	P-723N	32	Sevin	see Carbaryl			
		MeOH	P-723S	32	Siduron	1982-49-6	NEAT	P-063N	12
Pyrimidifen	105779-78-0	MeOH	P-989S	72			MeOH	P-063S	12
Pyriminil	see Vacor				Silafluofen	105024-66-6	NEAT	P-717N	32
(E)-Pyriminobac-methyl	147411-69-6	MeOH	P-1030S-0.5X	52			MeOH	P-717S	32
	50 µg/mL				Silmurix	see Schradan			
Pyriphenox	88283-41-4	MeOH	P-668S	32	Silvex	93-72-1	NEAT	P-084N	12
Pyriproxyfen	95737-68-1	NEAT	P-795N	32			MeOH	P-084S	12
		AcCN	P-795S-CN	32			AcCN	P-084S-CN	12
Pyron	see Pyridate				Silvex 2-ethylhexyl ester	53404-76-5	NEAT	P-728N	22
Pyroquilon	57369-32-1	NEAT	P-696N	22			MeOH	P-728S	22
		MeOH	P-696S	22	Silvex methyl ester	4841-20-7	NEAT	P-115N	12
Pyroxsulam NEW	422556-08-9	NEAT	P-1060N	32			MeOH	P-115S	12
		MeOH	P-1060S	22	Simazine	122-34-9	NEAT	P-085N	12
Queletox	see Fenthion						MeOH	P-085S	12
Quinalphos	13593-03-8	NEAT	P-462N	22	Simeton	673-04-1	NEAT	P-501N	32
		MeOH	P-462S	22			MeOH	P-501S	32
Quinclorac	84087-01-4	NEAT	P-692N	22	Simetryn	1014-70-6	NEAT	P-166N	22
		MeOH	P-692S	22			MeOH	P-166S	22
		AcCN	P-692S-CN	22	Sinbar	see Terbacil			
Quinmerac	90717-03-6	NEAT	P-836N	12	Siperin	see Cypermethrin			
		AcCN	P-836S-CN	12	Sipscasan	see Thiophanate-methyl			
Quinoclamine	2797-51-5	NEAT	P-985N	42	Sodium diethyldithiocarbamate trihydrate	20624-25-3	NEAT	P-505N	12
		MeOH	P-985S	32			H ₂ O	P-505S-W	12
Quinoxifen	124495-18-7	5 mg	P-882N-5MG	52	Solfac	see Cyfluthrin			
		MeOH	P-882S	52	Sonalan	see Ethalfuralin			
Quintozene	see Pentachloronitrobenzene				Sonar	see Fluridone			
Quizalofop ethyl	76578-14-8	NEAT	P-293N	22	Spike	see Tebuthiuron			
		AcCN	P-293S-CN	22	Spinetoram NEW	187166-40-1 / mix of isomers J & L	AcCN	P-1083S-CN	82
Racumin	see Coumatetralyl				Spirodiclofen	148477-71-8	NEAT	P-938N	52
Radapon	see Dalapon acid						MeOH	P-938S	22
Ramrod	see Propachlor				Spiromesifen	283594-90-1	AcCN	P-960S-CN	52
Reglone	see Diquat dibromide				Spirotetramat NEW	203313-25-1	NEAT	P-1077N	52
Resmethrin	10453-86-8	NEAT	P-325N	22			AcCN	P-1077S-CN	62
		MeOH	P-325S	22	Spinosad	168316-95-8	NEAT	P-864N	62
Rezifilm	see Thiram						AcCN	P-864S-CN	62
Rimsulfuron	122931-48-0	NEAT	P-837N	32	Spiroxamine	118134-30-8	NEAT	P-869N	12
		AcCN	P-837S-CN *	32			AcCN	P-869S-CN	12
Rogor	see Dimethoate				Stam F-34	see Propanil			
Rogue	see Propanil				Stiropfos	see Tetrachlorvinphos			
Ronilan	see Vinclozolin				Stomp	see Pendimethalin			
Ronnel	299-84-3	NEAT	P-080N	12	Strobane	8001-50-1	NEAT	P-339N	52
		MeOH	P-080S	12			MeOH	P-339S	52
Ronstar	see Oxadiazon				Suffix	see Benzoylprop ethyl			
Rospin	see Chloropropylate				Sulcontrione	99105-77-8	NEAT	P-951N	42
Rotenone	83-79-4	NEAT	P-056N	12			MeOH	P-951S	42
		MeOH	P-056S *	12	Sulfallate	95-06-7	NEAT	P-327N	22
Roundup	see Glyphosate						MeOH	P-327S	22
Rovral	see Iprodione				Sulfentrazone NEW	122836-35-5	NEAT	P-798N	32
Roxion	see Dimethoate						AcCN	P-798S-CN	32
Rubigan	see Bloc				Sulfometuron methyl ester	74222-97-2	NEAT	P-336N	42
Ruelene	see Crufomate				Sulfaquinoxaline	59-40-5	MeOH	P-681S	32
S421	127-90-2	NEAT	P-749N	32	Sulfosulfuron	141776-32-1	10 µg/mL AcCN	P-865S-CN-0.1X	22
		MeOH	P-749S	32	Sulfotep	3689-24-5	NEAT	P-167N	22
SADH	see Alar						MeOH	P-167S	22
Saflufenacil NEW	372137-35-4	NEAT	P-1078N	52	Sulfox-cide	see Sulfoxide			
		MeOH	P-1078S	42	Sulfoxide	120-62-7	NEAT	P-396N	12
Safrofin	see Propetamphos						MeOH	P-396S	12
Sancap	see Dipropetryn								
Sanmarton	see Fenvalerate								
Scepter	see Imazaquin								

Most 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.

AccuStandard is accredited to ISO Guide 34, ISO/IEC 17025 and certified to ISO 9001



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

Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Price	Compound	Synonym / CAS No.	Matrix	Cat. No.	Price
<i>Sulfoxyl</i>	see Sulfoxide				Terbufos	13071-79-9	NEAT	P-208N	\$ 12
<i>Sulprofos</i>	see Bolstar						MeOH	P-208S	12
<i>Sumicidin</i>	see Fenvalerate				Terbufos sulfone	56070-16-7	MeOH	P-729S	42
<i>Sumifty</i>	see Fenvalerate				Terbufos sulfoxide	10548-10-4	NEAT	P-730N	42
<i>Sumipower</i>	see Fenvalerate						MeOH	P-730S	42
Sumithrin	26002-80-2	NEAT	P-050N	\$ 32	Terbumeton	33693-04-8	NEAT	P-504N	22
		MeOH	P-050S	32			MeOH	P-504S	22
<i>Sumitol</i>	see Secbumeton				Terbuthylazine	5915-41-3	NEAT	P-169N	32
<i>Summit</i>	see Triadimenol						MeOH	P-169S	32
<i>Super X</i>	see Terrazole				Terbuthylazine desethyl	30125-63-4	NEAT	P-613N	22
<i>Supracide</i>	see Methidathion						MeOH	P-613S	22
<i>Surcopur</i>	see Propanil				Terbutol	1918-11-2	NEAT	P-464N	12
<i>Surflan</i>	see Oryzalin						MeOH	P-464S	12
<i>Sutan</i>	see Butylate				<i>Terbutryn</i>	see Prebane			
<i>Swebate</i>	see Abate				<i>Terpene polychlorinates</i>	see Strobane			
Sweep	1918-18-9	NEAT	P-061N	12	<i>Terraclor</i>	see Pentachloronitrobenzene			
		MeOH	P-061S	12	<i>Terracur P</i>	see Dasanit			
<i>Systhane</i>	see Myclobutanil				Terrazole	2593-15-9	NEAT	P-190N	12
<i>Systox</i>	see Demeton						MeOH	P-190S	12
2,4,5-T acid ▶	93-76-5	NEAT	P-168N	12	<i>Terre-Sytam</i>	see Dimefox			
		MeOH	P-168S	12	<i>Tersan</i>	see Thiram			
		AcCN	P-168S-CN	12	<i>Tersan SP</i>	see Chloroneb			
2,4,5-T butoxyethyl ester	2545-59-7	NEAT	P-441N	12	1,2,3,4-Tetrachlorobenzene	634-66-2	NEAT	P-999N	12
		AcCN	P-441S-CN	12			MeOH	P-999S	12
2,4,5-T n-butyl ester	93-79-8	NEAT	P-440N	12	1,2,3,5-Tetrachlorobenzene	634-90-2	NEAT	P-1001N	12
		AcCN	P-440S-CN	12			Isocotane	P-1001S-TP	12
2,4,5-T methyl ester	1928-37-6	NEAT	P-067N	12	1,2,4,5-Tetrachlorobenzene	95-94-3	NEAT	P-1003N	12
		MeOH	P-067S	12			MeOH	P-1003S	12
2,4,6-T ▶	575-89-3	NEAT	P-523N	12	1,2,3,4-Tetrachloro-5-nitrobenzene	879-39-0	NEAT	P-1000N	22
		MeOH	P-523S	12			MeOH	P-1000S	22
		AcCN	P-523S-CN	12	2,3,5,6-Tetrachloronitrobenzene	117-18-0	NEAT	P-467N	12
<i>Talstar</i>	see Bifenthrin						MeOH	P-467S	12
<i>Tame</i>	see Danitol				Tetrachlorvinphos	961-11-5	NEAT	P-125N	12
<i>Tamaron</i>	see Monitor						MeOH	P-125S	12
<i>Tamogan</i>	see Bromadiolone				Tetraconazole	112281-77-3	NEAT	P-721N	62
<i>Target</i>	see MSMA						MeOH	P-721S	62
<i>TCA</i>	see Trichloroacetic acid				Tetradifon	116-29-0	NEAT	P-261N	12
<i>TCMTB</i>	see Busan						MeOH	P-261S	12
<i>TCNB</i>	see Tecnazene				cis-d4-Tetrahydrophthalimide	1469-48-3	MeOH	P-116S	22
Tebuconazol	107534-96-3	NEAT	P-451N	42	1,2,3,6-Tetrahydrophthalimide	85-40-5	NEAT	P-621N	22
		MeOH	P-451S	42			MeOH	P-621S	22
Tebufenozide	112410-23-8	NEAT	P-726N	72	Tetramethrin	7696-12-0	NEAT	P-406N	22
		MeOH	P-726S	72			MeOH	P-406S	22
Tebufenpyrad	119168-77-3	NEAT	P-877N	42	Tetrasul	2227-13-6	NEAT	P-552N	22
		MeOH	P-877S	32			MeOH	P-552S	22
Tebupirimfos	96182-53-5	NEAT	P-727N	42	<i>Tetron</i>	see TEPP			
		MeOH	P-727S	32	Thiabendazole	148-79-8	NEAT	P-068N	12
Tebutam	35256-85-0	MeOH	P-879S	32			MeOH	P-068S	12
Tebuthiuron	34014-18-1	NEAT	P-188N	12	Thiacloprid	111988-49-9	NEAT	P-838N	42
		MeOH	P-188S	12			AcCN	P-838S-CN	42
<i>Tecto</i>	see Thiabendazole				Thiamethoxam	153719-23-4	NEAT	P-866N	42
<i>Tecnazene</i>	see 2,3,5,6-Tetrachloronitrobenzene						AcCN	P-866S-CN	42
<i>Tedion</i>	see Tetradifon				Thiazopyr NEW	117718-60-2	NEAT	P-808N	22
Teflubenzuron	83121-18-0	NEAT	P-452N	22			MeOH	P-808S	22
		MeOH	P-452S	22	Thidiazuron	51707-55-2	NEAT	P-369N	12
Tefluthrin	79538-32-2	MeOH	P-568S *	52			MeOH	P-369S	12
<i>Telodrin</i>	see Isobenzan				Thifensulfuron methyl	79277-27-3	NEAT	P-468N	22
Tembotrione NEW	335104-84-2	NEAT	P-1109N	52			MeOH	P-468S	22
		AcCN	P-1109S-CN	52	Thifluzamide NEW	130000-40-7	NEAT	P-1055N	32
<i>Temephos</i>	see Abate						MeOH	P-1055S	22
<i>Temik</i>	see Aldicarb				<i>Thimet</i>	see Phorate			
<i>Temus</i>	see Bromadiolone				Thiobencarb	28249-77-6	NEAT	P-180N	32
<i>Tenoran</i>	see Chloroxuron						MeOH	P-180S	12
TEPP	107-49-3	NEAT	P-207N	12	Thiocyclam hydrogen oxalate	31895-22-4	MeOH	P-688S	32
Terbacil	5902-51-2	NEAT	P-096N	12					
		MeOH	P-096S	12					

Most at Same Low Price in Neat (10 mg) or Solution (100 µg/mL) form
Can't find a Pesticide? Search using CAS No. Index in back of the catalog.

▶ 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 end of Pesticide section



Pesticides

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

Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Price	Compound	Synonym / CAS No.	Matrix	Cat. No.	Price
<i>Thiodan I</i>	see Endosulfan I				1,2,3-Trichlorobenzene	87-61-6	NEAT	P-1002N	\$ 12
<i>Thiodan II</i>	see Endosulfan II						Isocotane	P-1002S-TP	12
Thiodicarb	59669-26-0	NEAT	P-477N	\$ 32	1,2,4-Trichlorobenzene	120-82-1	NEAT	P-1004N	12
		MeOH	P-477S	32			MeOH	P-1004S	12
4,4'-Thiodiphenol	2664-63-3	NEAT	P-117N	12	2,3,5-Trichlorobenzoic acid	50-73-7	NEAT	P-508N	12
		MeOH	P-117S	12			MeOH	P-508S	12
Thiofanox	39196-18-4	NEAT	P-266N	22	Trichloronate	327-98-0	NEAT	P-127N	22
		MeOH	P-266S	22			MeOH	P-127S	22
Thiofanox sulfone		AcCN	P-839S-CN-0.1X	12	2,4,6-Trichlorophenol	88-06-2	NEAT	P-1006N	12
Thiofanox sulfoxide	39184-27-5	NEAT	P-702N	32			MeOH	P-1006S	12
		MeOH	P-702S	32	3,5,6-Trichloro-2-pyridinol	6515-38-4	NEAT	P-626N	52
Thiometon	640-15-3	NEAT	P-486N	32			MeOH	P-626S	52
		MeOH	P-486S	32	<i>Trichloropyrphos</i>	see Dursban			
Thionazin	297-97-2	MeOH	P-171S	42	Triclopyr ▶	55335-06-3	NEAT	P-289N	12
Thiophanate ▶	23564-06-9	NEAT	P-321N	12			MeOH	P-289S	12
		MeOH	P-321S	12			AcCN	P-289S-CN	12
		AcCN	P-321S-CN	12	Triclopyr-2-butoxy ethyl ester	64700-56-7	NEAT	P-703N	22
Thiophanate-methyl	23564-05-8	NEAT	P-349N	12			AcCN	P-703S-CN	22
		MeOH	P-349S	12			MeOH	P-291S	22
<i>Thiophos</i>	see Parathion				Triclopyr methyl ester				
Thiram	137-26-8	NEAT	P-118N	12	Tricresyl phosphate	1330-78-5	NEAT	P-209N	12
		MeOH	P-118S	12			MeOH	P-209S	12
<i>Tiguvon</i>	see Fenthion				Tricyclazole	41814-78-2	NEAT	P-090N	22
Tillam	1114-71-2	NEAT	P-105N	12			MeOH	P-090S	22
		MeOH	P-105S	12	Tridemorph	24602-86-6	NEAT	P-307N	32
Tilt	60207-90-1	NEAT	P-280N	42			MeOH	P-307S	32
		MeOH	P-280S	42	Trietazine	1912-26-1	NEAT	P-492N	42
<i>Tomadorane</i>	see 4-CPA						MeOH	P-492S	42
<i>Tobaz</i>	see Thiabendazole				Triethylphosphate	78-40-0	NEAT	P-335N	12
Tokuthion	34643-46-4	NEAT	P-126N	32			MeOH	P-335S	12
		MeOH	P-126S	32	o,o,o-Triethylphosphorothioate	126-68-1	NEAT	P-172N	12
<i>Tolban</i>	see Profluralin						MeOH	P-172S	12
Tolclofos-methyl	57018-04-9	NEAT	P-557N	22	<i>Trifene</i>	see Fenatrol			
		MeOH	P-557S	22	Trifenmorph	1420-06-0	NEAT	P-300N	22
Tolyfluanide	731-27-1	NEAT	P-553N	22			MeOH	P-300S	22
		MeOH	P-553S *	22	Trifloxystrobin	141517-21-7	NEAT	P-867N	42
<i>Torak</i>	see Dialifos						AcCN	P-867S-CN	42
<i>Tordon</i>	see Picloram				Triflumizole	68694-11-1	AcCN	P-479S-CN	42
Toxaphene (Tech)	8001-35-2	NEAT	P-093N	12	Triflumuron	64628-44-0	NEAT	P-689N	42
		MeOH	P-093S	12			MeOH	P-689S	42
2,4,5-TP	see Silvex				Trifluralin	1582-09-8	NEAT	P-197N	12
2,4,5-TP methyl ester	see Silvex methyl ester						MeOH	P-197S	12
Tralkoxydim	87820-88-0	NEAT	P-405N	12	Triflusaluron-methyl	126535-15-7	NEAT	P-840N	52
		MeOH	P-405S	12			AcCN	P-840S-CN	22
Tralomethrin	66841-25-6	NEAT	P-478N	42	Triforine	26644-46-2	NEAT	P-308N	32
		MeOH	P-478S	42			MeOH	P-308S	32
Transfluthrin	118712-89-3	NEAT	P-743N	32	2,3,5-Triiodobenzoic acid ▶	88-82-4	NEAT	P-507N	12
		MeOH	P-743S	32			MeOH	P-507S	12
<i>Treflan</i>	see Trifluralin						AcCN	P-507S-CN	12
Triadimefon	43121-43-3	NEAT	P-069N	12	2,3,5-Trimethacarb	2655-15-4	NEAT	P-515N	52
		MeOH	P-069S	12			MeOH	P-515S	52
Triadimenol	55219-65-3	NEAT	P-361N	12	3,4,5-Trimethacarb	2686-99-9	NEAT	P-516N	52
		MeOH	P-361S	12			MeOH	P-516S	52
Triallate	2303-17-5	NEAT	P-268N	12	Trimethyl phosphate	512-56-1	NEAT	P-210N	12
		MeOH	P-268S	12			MeOH	P-210S	12
Triasulfuron	82097-50-5	NEAT	P-592N	62	Trimethylsulfonium iodide	2181-42-2	NEAT	P-1016N	12
		MeOH	P-592S	62			MeOH	P-1016S	12
1,2,4-Triazole	288-88-0	NEAT	P-627N	22	Trimidal	63284-71-9	NEAT	P-422N	12
		MeOH	P-627S	22			MeOH	P-422S	12
Triazophos	24017-47-8	NEAT	P-334N	12	Trinexapac-ethyl	95266-40-3	NEAT	P-1034N	42
		MeOH	P-334S	12			MeOH	P-1034S	42
Tribenuron-methyl	101200-48-0	NEAT	P-666N	32	Triphenylphosphate	115-86-6	NEAT	P-192N	12
		MeOH	P-666S	32			MeOH	P-192S	12
<i>Tribufos</i>	see DEF				Triphenyltin chloride	639-58-7	NEAT	P-526N	12
<i>Tributylphosphorotrithioite</i>	see Merphos						MeOH	P-526S	12
bis(Tributyltin)oxide	56-35-9	NEAT	P-455N	12	<i>Trithion</i>	see Carbophenothion			
		MeOH	P-455S	12	Triticonazole	131983-72-7	10 µg/mL	P-868S-TP-0.1X	22
Trichlorfon	52-68-6	NEAT	P-044N	12			Isocotane		
		MeOH	P-044S	12	<i>Trucidor</i>	see Vamidithion			
Trichloroacetic acid	76-03-9	NEAT	P-459N	12	<i>Tugon</i>	see Trichlorfon			
		MeOH	P-459S	12	<i>Tupersan</i>	see Siduron			
		AcCN	P-459S-CN	12	<i>Uden</i>	see Baygon			

Most 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.

AccuStandard is accredited to ISO Guide 34, ISO/IEC 17025 and certified to ISO 9001



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

Pesticide Standards

Compound	Synonym / CAS No.	Matrix	Cat. No.	Price	Compound	Synonym / CAS No.	Matrix	Cat. No.	Price
Uniconazole NEW	83657-22-1	AcCN	P-1092S-CN *	\$ 72	Vinclozolin	50471-44-8	NEAT	P-122N	\$ 12
<i>Urab</i>	see Fenuron-TCA						MeOH	P-122S	12
<i>Urox</i>	see Monuron TCA				<i>Warbex</i>	see Famphur			
<i>Ustilan</i>	see Ethidimuron				Warfarin	81-81-2	NEAT	P-076N	12
Vacor	53558-25-1	NEAT	P-240N	12			MeOH	P-076S	12
		MeOH	P-240S	12	<i>Waylay</i>	see Napropamide			
Vamidothion	2275-23-2	NEAT	P-350N	62	<i>Weedol</i>	see Paraquat CL			
		MeOH	P-350S *	62	<i>Weedone</i>	see 2,4,5-T acid			
<i>Vamidoate</i>	see Vamidothion				XMC NEW	2655-14-3	NEAT	P-1085N	52
<i>Vancide 89</i>	see Captan						MeOH	P-1085S	52
<i>Vandyke 264</i>	see MGK 264				<i>Zectran</i>	see Mexacarbate			
Vanicide-20S		NEAT	P-073N	12	<i>Zerlate</i>	see Ziram			
		MeOH	P-073S	12	Zinc phosphide	1314-84-7	NEAT	P-527N	12
<i>Vapona</i>	see Dichlorvos				Zineb	12122-67-7	NEAT	P-098N	12
<i>Vapotone</i>	see TEPP				<i>Zinophos</i>	see Thionazin			
<i>Vegadex</i>	see Sulfallate				Ziram	137-30-4	NEAT	P-324N	12
<i>Velpar</i>	see Hexazinone						MeOH	P-324S	12
<i>Vernam</i>	see Vernolate				<i>Zolone</i>	see Phosalone			
Vernolate	1929-77-7	NEAT	P-111N	12	Zoxamide NEW	156052-68-5	AcCN	P-970S-CN *	52
		MeOH	P-111S	12					

* 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 \$ 4 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.

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 and Herbicides

Kits & Mixtures

Pesticide Kits and Mixtures

Neat Pesticide Kit

Z-004-SET *

\$ 250 / set of 20 x 10 mg

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

Pesticide (Solid Waste) Kit

Z-017-SET

\$ 45 / set of 6 x 10 mg

2,4-Dichlorophenoxyacetic acid (2,4-D acid)	Methoxychlor
Endrin	Silvex
Lindane	Toxaphene

Pesticide Mixture for Evaluating GC Columns

M-100

\$ 45 / 1 x 1 mL

At stated conc. in Isooctane

13 comps.

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

Technical Note

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

Pesticides in Solutions (Individual and Kits)

Compound (in Isooctane)	Conc.	Cat. No.	Price
Aldrin	200 ng/ μ L	P-002S-1	\$ 12
	2 ng/ μ L	P-002S-2	12
Chlordane	200 ng/ μ L	P-017S-1	12
	2 ng/ μ L	P-017S-2	12
2,4-D methyl ester	200 ng/ μ L	P-021S-1	12
	2 ng/ μ L	P-021S-2	12
p,p'-DDE	200 ng/ μ L	P-027S-1	12
	2 ng/ μ L	P-027S-2	12
p,p'-DDT	200 ng/ μ L	P-029S-1	12
	2 ng/ μ L	P-029S-2	12
Dieldrin	200 ng/ μ L	P-037S-1	12
	2 ng/ μ L	P-037S-2	12
Endrin	200 ng/ μ L	P-045S-1	12
	2 ng/ μ L	P-045S-2	12
Heptachlor	200 ng/ μ L	P-053S-1	12
	2 ng/ μ L	P-053S-2	12
Lindane	200 ng/ μ L	P-059S-1	12
	2 ng/ μ L	P-059S-2	12
Methoxychlor	200 ng/ μ L	P-064S-1	12
	2 ng/ μ L	P-064S-2	12
Silvex methyl ester	200 ng/ μ L	P-115S-1	12
Toxaphene	200 ng/ μ L	P-093S-1	12

Set of above 21 pesticides (21 x 1 mL)

Z-023-SET

\$ 150

At stated concentrations

Technical Note

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

* V-Rated packaging surcharge applies for international shipments

Herbicide Kit and Mixtures

Herbicide Kit

Z-031-SET

\$ 150 / set of 15 x 1 mL

0.1 mg/mL in MeOH

Individual Standards

Atrazine (01)	Prometryn (09)
Dicamba (02)	Prometone (10)
Benfluralin (03)	Propanil (11)
Bentazon (04) *	Propazine (12)
Dacthal (05)	Simazine (13)
Dichlobenil (06)	Tebuthiuron (14)
Diuron (07)	Trifluralin (15)
Metolachlor (08)	

* in Acetone

Herbicide Mix #1

M-HERB-1

\$ 30 / 1 x 1 mL

0.1 mg/mL each in EtOAc

13 comps.

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

Herbicide Mix #2

M-HERB-2

\$ 30 / 1 x 1 mL

0.1 mg/mL each in EtOAc

9 comps.

Benfluralin	Prowl
Metolachlor	Simazine
Oxadiazon	Tolban
Propachlor	Vernam
Propazine	

Pesticides

Triazines & Metabolites, Phenylureas



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

Triazines and Metabolites

Compound	CAS No.	Neat Cat. No.	Price / 10 mg	Solution Cat. No.	Price / 1 mL
2,4-bis(Ethylamino)-6-diethylamino-s-triazine		P-536N	\$ 22	P-536S-MC	\$ 22
2-Chloro-4-ethylamino-6-propylamino-s-triazine	90952-64-0	P-537N	22	P-537S-MC	22
2,4-Dichloro-6-ethylamino-s-triazine		P-538N	52	P-538S-MC	52
2-Chloro-4-ethylamino-6-methylethylamino-s-triazine		P-539N	22	P-539S-MC	22
2-Chloro-4-methylamino-6-sec-butylamino-s-triazine		P-540N	22	P-540S-MC	22
2-Chloro-4-methylamino-6-diethylamino-s-triazine		P-541N	22	P-541S-MC	22
3-(2,3-Dichlorophenyl)-1,1-dimethylurea	10290-37-6	P-632N	22	P-632S	22
Atrazine-desethyl-2-hydroxy (4-Amino-2-hydroxy-6-isopropylamino-s-triazine)	19988-24-0	-----	----	P-544S-MC	52
Desethyl atrazine	6190-65-4	P-343N	22	P-343S	22
Atrazine-desisopropyl	1007-28-9	P-345N	22	P-345S	22
Atrazine-desisopropyl-2-hydroxy	7313-54-4	P-344N	22	P-344S-MC	22
Atrazine	1912-24-9	P-005N	12	P-005S	12
Ametryn	834-12-8	P-003N	12	P-003S	12
Cyanazine	21725-46-2	P-175N	12	P-175S	12
Gesatamine	1610-17-9	P-189N	22	P-189S	22
2-Hydroxyatrazine	2163-68-0	-----	----	P-326S-MC	52
Imazethapyr	81335-77-5	-----	----	P-285S	22
2-Isopropylamino-4,6-dichloro-s-triazine		P-635N	22	P-635S	22
2-Monuron		P-633N	22	P-633S	22
Prometryne	7287-19-6	P-078N	12	P-078S	12
Propazine	139-40-2	P-079N	12	P-079S	12
Prometon	1610-18-0	P-077N	12	P-077S	12
Sebuthylazin	7286-69-3	P-432N	22	P-432S	22
Simazine	122-34-9	P-085N	12	P-085S	12
Terbutylazine	5915-41-3	P-169N	32	P-169S	32

Phenylurea Pesticide Mixtures

Phenylurea Pesticide Mixture

PES-PU-001 \$ 45 / 1 x 1 mL

PES-PU-001-PAK **SAVE 20%** \$ 180 / 5 x 1 mL

200 µg/mL each in AcCN:Acetone 8 comps.

Diffubenzuron	Propanil
Diuron	Siduron
Fluometuron	Tebuthiuron
Linuron	Thidiazuron

Phenylurea Surrogate Mixture

PES-PU-SS \$ 32 / 1 x 1 mL

PES-PU-SS-PAK **SAVE 20%** \$ 128 / 5 x 1 mL

500 µg/mL each in MeOH:AcCN 2 comps.

Carbazole	Monuron
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Honeybee Colony Collapse Disorder (CCD)

Neonicotinoids and Fipronils (CCD) UPDATE

On-going research into honeybee colony collapse disorder (CCD) has revealed that this group of pesticides may be a contributing factor which, may be solely responsible or working synergistically contributing to honeybee decline. Included in this group are the **Neonicotinoid pesticides**. **Fipronil** and **Fipronil metabolites** also have been suspected as possible causative agents.



Neonicotinoids

Compound	CAS	NEAT Cat. No.	Price / Unit	SOLUTION Cat. No.	100 µg/mL Solvent	Price / Unit
Acetamiprid	135410-20-7	P-820N	\$ 42 / 10 mg	P-820S-CN	AcCN	\$ 42 / 1 mL
6-Chloropyridine-3-carboxylic acid NEW	5326-23-8	P-1267N	22 / 10 mg	P-1267S	MeOH	22 / 1 mL
Clothianidin	210880-92-5	P-947N	52 / 10 mg	P-947S	MeOH	52 / 1 mL
n-Desmethylthiamethoxam NEW	171103-04-1	-----	-----	P-1266S	MeOH	62 / 1 mL
Dinotefuran	165252-70-0	-----	-----	P-986S-CN	AcCN	52 / 1 mL
Furathiocarb	65907-30-4	P-569N	22 / 10 mg	P-569S	MeOH	22 / 1 mL
6-Hydroxypyridine-3-carboxylic acid NEW	5006-66-6	P-1226N	22 / 10 mg	P-1226S	MeOH	22 / 1 mL
Imidacloprid	138261-41-3	P-596N	32 / 10 mg	P-596S	MeOH	32 / 1 mL
2-Imidazolidone NEW	120-93-4	P-1224N	22 / 10 mg	P-1224S	MeOH	22 / 1 mL
Nitenpyram	120738-89-8	P-858N	42 / 10 mg	P-858S-CN	AcCN	42 / 1 mL
Sulfoxaflor	946578-00-3	-----	-----	P-1133S	MeOH	72 / 1 mL
Thiacloprid	111988-49-9	P-838N	42 / 10 mg	P-838S-CN	AcCN	42 / 1 mL
Thiacloprid-amide NEW	676228-91-4	P-1223N	75 / 10 mg	P-1223S	MeOH	52 / 1 mL
Thiamethoxam	153719-23-4	P-866N	42 / 10 mg	P-866S-CN	AcCN	42 / 1 mL

Fipronils

Fipronil	120068-37-3	P-738N	\$ 42 / 10 mg	P-738S * P-738S-A *	MeOH Acetone	\$ 42 / 1 mL 42 / 1 mL
Fipronil desulfinyl	205650-65-3	-----	-----	P-782S-A *	Acetone	150 / 1 mL
Fipronil sulfide	120067-83-6	P-781N-5MG	75 / 5 mg	P-781S-A *	Acetone	75 / 1 mL
Fipronil sulfone	120068-36-2	-----	-----	P-780S-A *	Acetone	50 / 1 mL

Fipronil and Metabolite Kit

P-FIP-MET-KIT * \$ 225 / 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, ketones, as well as some light aromatic and straight chain hydrocarbons.

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

EPA Volatile Methods:

502	Volatiles (PID/ELCD), Volatile Surrogates & ISTDs
503	VOC - Aromatics & Alkenes (PID/ELCD)
504	EDB & DBCP (ECD)
524	Volatiles (GC/MS)
551	Chlorinated Solvents, Trihalomethanes
556	Carbonyl Compounds (GC/ECD)
601	Purgeable Halocarbons (ELCD)

602	Purgeable Aromatics (PID)
603	Acrolein & Acrylonitrile (FID)
624	Purgeable Volatiles (GC/MS)
1666	PMI Volatiles (GC/MS)
8010	Halogenated Volatiles (ELCD)
8011	EDB & DBCP (GC/MS)
8015B	Non Halogenated Organics (GC/FID)

8020	Aromatic Volatiles (PID)
8021	Halogenated Volatiles PID/ELCD
8030	Acrolein & Acrylonitrile (GC/FID)
8031	Acrylonitrile (GC/NPD)
8032	Acrylamide (GC/ECD)
8033	Acetonitrile (NPD)

Neats are as stated, Solutions are 1 mL

VOCs									
Compound	Conc.	Matrix	Cat. No.	Price	Compound	Conc.	Matrix	Cat. No.	Price
Acetonitrile 75-05-8	100 µg/mL	MeOH	APP-9-005	\$ 12	Bromotrichloromethane 75-62-7	100 mg	NEAT	K-009N	\$ 12
	10 mg/mL	Water	M-8015B/5031-02	25					
	1 mg/mL	Water	M-8033	12	1,3-Butadiene 106-99-0	0.2 mg/mL	MeOH	S-406A	10
	1 mg/mL	MeOH	APP-9-005-10X	12		2 mg/mL	MeOH	S-406A-10X	20
	5 mg/mL	MeOH	APP-9-005-50X	25	n-Butylbenzene 104-51-8	100 mg	NEAT	V-002	12
	5 mg/mL	IPA	AS-E0473	32		1 gram	NEAT	M-502-07N	20
Acrylamide 79-06-1	1 mg/mL	MeOH	M-8032	10		5 mg/mL	MeOH	AS-E1105	32
Acrylonitrile 107-13-1	100 µg/mL	MeOH	APP-9-008	12		0.2 mg/mL	MeOH	M-502-07	10
	10 mg/mL	Water	M-8015B/5031-04	25		2 mg/mL	MeOH	M-502-07-10X	14
	1 mg/mL	MeOH	APP-9-008-10X	20	iso-Butylbenzene 538-93-2	100 mg	NEAT	V-003	12
	10 mg/mL	MeOH	AS-E0003	32					
Allyl chloride 107-05-1	100 µg/mL	MeOH	APP-9-010	12	sec-Butylbenzene 135-98-8	100 mg	NEAT	V-004	12
	2 mg/mL	MeOH	APP-9-010-20X	20		1 gram	NEAT	M-502-08N	40
	1 mg/mL	MeOH	AS-E0476	32		5 mg/mL	MeOH	AS-E1104	32
n-Amylbenzene 538-68-1	100 mg	NEAT	V-001	12		0.2 mg/mL	MeOH	M-502-08	10
Azobenzene 103-33-3	2 mg/mL	CH ₂ Cl ₂	Z-014B-1	20		2 mg/mL	MeOH	M-502-08-10X	14
Benzene 71-43-2	1 gram	NEAT	M-502-01N	20	tert-Butylbenzene 98-06-6	1 gram	NEAT	M-502-09N	20
	100 µg/mL	MeOH	APP-9-015	12		5 mg/mL	MeOH	AS-E1106	32
	1 mg/mL	MeOH	AS-E0004	32		0.2 mg/mL	MeOH	M-502-09	10
	0.2 mg/mL	MeOH	M-502-01	10		2 mg/mL	MeOH	M-502-09-10X	14
	2 mg/mL	MeOH	M-502-01-10X	14	Carbon disulfide 75-15-0	100 µg/mL	MeOH	APP-9-035	12
Benzene-d₆ 1076-43-3	0.2 mg/mL	MeOH	M-624-SS-01	20		2 mg/mL	MeOH	APP-9-035-20X	20
	2 mg/mL	MeOH	M-624-SS-01-10X	25	Carbon tetrabromide 558-13-4	100 mg	NEAT	K-006N	12
Benzyl chloride 100-44-7	0.2 mg/mL	MeOH	M-8010-01	10					
	5 mg/mL	AcCN	AS-E0169	32	Carbon tetrachloride 56-23-5	100 mg	NEAT	K-003N	12
2-Bromo-1-chloropropane 3017-95-6	20 mg/mL	MeOH	M-001R-3	10		1 gram	NEAT	M-502-10N	20
	0.2 mg/mL	MeOH	M-624-SS-04	10		100 µg/mL	MeOH	APP-9-036	12
1-Bromo-2-nitrobenzene 577-19-5	1 mg/mL	Acetone	M-8081-IS-DC	15		5 mg/mL	MeOH	AS-E0360	32
Bromobenzene 108-86-1	1 gram	NEAT	M-502-02N	20		0.2 mg/mL	MeOH	M-502-10	10
	5 mg/mL	MeOH	AS-E0406	32		2 mg/mL	MeOH	M-502-10-10X	14
	0.2 mg/mL	MeOH	M-502-02	10	Chloral hydrate 302-17-0	1 mg/mL	MeOH	M-E-1179-M *	40
	2 mg/mL	MeOH	M-502-02-10X	14		1 mg/mL	Acetone	AS-E1179	32
Bromochloroacetonitrile 83463-62-1	1 mg/mL	Acetone	AS-E1186	32		5 mg/mL	Acetone	M-551B-2	15
	5 mg/mL	Acetone	M-551B-1	15	1-Chloro-2-fluorobenzene 348-51-6	2 mg/mL	MeOH	S-163	10
2-Bromochlorobenzene 694-80-4	0.2 mg/mL	MeOH	M-624-SS-12	10	1-Chloro-3-nitrobenzene 121-73-3	1 mg/mL	Acetone	M-8091-SS-100X	10
4-Bromochlorobenzene 106-39-8	2 mg/mL	MeOH	M-8020-SS-1	20	1-Chloro-4-fluorobenzene 352-33-0	0.2 mg/mL	MeOH	M-624-SS-13	10
Bromochloromethane 74-97-5	100 mg	NEAT	K-007N	12	Chlorobenzene 108-90-7	100 mg	NEAT	A-001	12
	1 gram	NEAT	M-502-03N	20		1 gram	NEAT	M-502-11N	20
	10 mg/mL	MeOH	AS-E0136	32		100 µg/mL	MeOH	APP-9-039	12
	0.2 mg/mL	MeOH	M-502-03	10		1 mg/mL	MeOH	AS-E0006	32
	2 mg/mL	MeOH	M-502-03-10X	14		0.2 mg/mL	MeOH	M-502-11	10
p-Bromofluorobenzene 460-00-4	25 µg/mL	MeOH	CLP-004	10		2 mg/mL	MeOH	M-502-11-10X	14
	250 µg/mL	MeOH	CLP-004-10X	10	Chlorobenzene-d₅ 3114-55-4	5 mg/mL	MeOH	CLP-PI-3-5X	15
	0.15 mg/mL	MeOH	AS-E0233	32	Chloroethane 75-00-3	100 µg/mL	MeOH	APP-9-042	12
	25 mg/mL	MeOH	CLP-004-1000X	20		1 mg/mL	MeOH	AS-E0015	40
	2.5 mg/mL	MeOH	CLP-004-100X	10		0.2 mg/mL	MeOH	M-502-12	10
	2 mg/mL	MeOH	CLP-004-80X	10		2 mg/mL	MeOH	M-502-12-10X	14
	0.2 mg/mL	MeOH	M-624-SS-03	10	bis(2-Chloroethoxy)methane 111-91-1	100 µg/mL	CH ₂ Cl ₂	APP-9-026	20
	2 mg/mL	MeOH	M-624-SS-03-10X	10		1 mg/mL	MeOH	APP-9-026-M-10X	20
	100 µg/mL	Acetone	M-551.1-IS	10		5 mg/mL	MeOH	AS-E0041	32
	10 mg/mL	Acetone	M-551.1-IS-100X	20	Chloroform 67-66-3	1 gram	NEAT	M-502-13N	20
Bromoform 75-25-2	1 gram	NEAT	M-502-05N	20		0.2 mg/mL	MeOH	M-502-13	10
	0.2 mg/mL	MeOH	M-502-05	10		2 mg/mL	MeOH	M-502-13-10X	14
	2 mg/mL	MeOH	M-502-05-10X	14	1-Chlorohexane 544-10-5	0.2 mg/mL	MeOH	M-8010R-1-04	15
	5 mg/mL	MeOH	AS-E0212	32		2 mg/mL	MeOH	M-8010R-1-04-10X	20
Bromomethane 74-83-9	100 µg/mL	MeOH	APP-9-032	12	Chloromethane 74-87-3	100 µg/mL	MeOH	APP-9-044	12
	0.2 mg/mL	MeOH	M-502-06	10		0.2 mg/mL	MeOH	M-502-14	10
	2 mg/mL	MeOH	M-502-06-10X	14		2 mg/mL	MeOH	M-502-14-10X	14

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Neats are as stated, Solutions are 1 mL

VOCs

Compound	Conc.	Matrix	Cat. No.	Price	Compound	Conc.	Matrix	Cat. No.	Price
Chloroprene 126-99-8	100 µg/mL	MeOH	APP-9-048-R1	\$ 12	1,4-Dichlorobenzene 106-46-7	100 mg	NEAT	A-004	\$ 12
	200 µg/mL	MeOH	APP-9-048-R1-2X	10		1 gram	NEAT	M-502-23N	20
	1 mg/mL	MeOH	APP-9-048-R1-10X	20		100 µg/mL	MeOH	APP-9-066	12
	2.0 mg/mL	MeOH	APP-9-048-R1-20X	30		0.2 mg/mL	MeOH	M-502-23	10
3-Chloropropionitrile 542-76-7	1 mg/mL	MeOH	AS-E0375	32		2 mg/mL	MeOH	M-502-23-10X	14
2-Chlorotoluene 95-49-8	1 gram	NEAT	M-502-15N	20		5 mg/mL	MeOH	AS-E0025	32
	0.2 mg/mL	MeOH	M-502-15	10		0.2 mg/mL	Acetone	M-8151-IS-2	10
	2 mg/mL	MeOH	M-502-15-10X	14		2.0 mg/mL	Hexane	M-8120-04	25
	5 mg/mL	MeOH	AS-E0150	32	1,4-Dichlorobenzene-d₄ 3855-82-1	2 mg/mL	MeOH	Z-014J-3-M-0.5X	20
3-Chlorotoluene 108-41-8	5 mg/mL	MeOH	AS-E0151	32		4 mg/mL	CH ₂ Cl ₂	Z-014J-3	20
4-Chlorotoluene 106-43-4	1 gram	NEAT	M-502-16N	20	Dichlorobromomethane 75-27-4	100 mg	NEAT	M-502-04N	40
	0.2 mg/mL	MeOH	M-502-16	10		0.2 mg/mL	MeOH	M-502-04	10
	2 mg/mL	MeOH	M-502-16-10X	14		2 mg/mL	MeOH	M-502-04-10X	14
Cyclohexane 110-82-7	1 gram	NEAT	TK-102-08N	10		5 mg/mL	MeOH	AS-E0046	32
	2 mg/mL	MeOH	TK-102-08S-10X	20	1,4-Dichlorobutane 110-56-5	0.2 mg/mL	MeOH	M-624-SS-05	10
Decylbenzene 104-72-3	100 mg	NEAT	V-005	12		20 mg/mL	MeOH	M-001R-2	10
Diallate 2303-16-4	1 mg/mL	AcCN	AS-E0623	42	1,4-Dichlorobutane-d₄ 83547-96-0	0.15 mg/mL	MeOH	AS-E0196	50
1,2-Dibromochloromethane 124-48-1	1 gram	NEAT	M-502-17N	40	Dichlorodifluoromethane 75-71-8	100 µg/mL	MeOH	APP-9-069	12
	0.2 mg/mL	MeOH	M-502-17	10		5000 µg/mL	MeOH	AS-E0346	40
	2 mg/mL	MeOH	M-502-17-10X	14		0.2 mg/mL	MeOH	M-502-24	10
1,2-Dibromo-3-chloropropane 96-12-8	1 gram	NEAT	M-502-18N	40		2 mg/mL	MeOH	M-502-24-10X	14
	0.2 mg/mL	MeOH	M-502-18	10	1,1-Dichloroethane 75-34-3	1 gram	NEAT	M-502-25N	20
	2 mg/mL	MeOH	M-502-18-10X	14		100 µg/mL	MeOH	APP-9-070	12
	5 mg/mL	MeOH	AS-E0993	32		0.2 mg/mL	MeOH	M-502-25	10
Dibromoacetonitrile 3252-43-5	5 mg/mL	Acetone	M-551B-4	15		1 mg/mL	MeOH	AS-E0012	32
1,2-Dibromoethane 106-93-4	1 gram	NEAT	M-502-19N **	20		2 mg/mL	MeOH	M-502-25-10X	14
	100 µg/mL	MeOH	APP-9-214	12	1,2-Dichloroethane 107-06-2	1 gram	NEAT	M-502-26N	20
	0.2 mg/mL	MeOH	M-502-19	10		100 µg/mL	MeOH	APP-9-071	12
	2 mg/mL	MeOH	M-502-19-10X	14		1 mg/mL	MeOH	AS-E0009	32
	5 mg/mL	MeOH	AS-E0171	32		0.2 mg/mL	MeOH	M-502-26	10
Dibromofluoromethane 1868-53-7	0.2 mg/mL	MeOH	M-8260-SS-2	20		2 mg/mL	MeOH	M-502-26-10X	14
Dibromomethane 74-95-3	2 mg/mL	MeOH	M-8260-SS-2-10X	25	1,2-Dichloroethane-d₄ 17060-07-0	0.2 mg/mL	MeOH	M-624-SS-06	20
	100 mg	NEAT	K-004N	12		2.0 mg/mL	MeOH	M-624-SS-06-10X	20
	1 gram	NEAT	M-502-20N	20	1,1-Dichloroethene 75-35-4	1 gram	NEAT	M-502-27N	20
	100 µg/mL	MeOH	APP-9-062	12		100 µg/mL	MeOH	APP-9-072	12
	0.2 mg/mL	MeOH	M-502-20	10		0.2 mg/mL	MeOH	M-502-27	10
	2 mg/mL	MeOH	M-502-20-10X	14		2 mg/mL	MeOH	M-502-27-10X	14
	5 mg/mL	MeOH	AS-E1097	32	cis-1,2-Dichloroethene 156-59-2	1 gram	NEAT	M-502-28N	40
a,a-Dibromo-m-xylene 626-15-3	1 mg/mL	Acetone	M-8081-IS-X	10		0.2 mg/mL	MeOH	M-502-28	10
1,2-Dibromopropane 78-75-1	5 mg/mL	MeOH	M-552-IS	15		2 mg/mL	MeOH	M-502-28-10X	14
	10 mg/mL	Hexane	M-556-IS	30		10 mg/mL	MeOH	AS-E0173	32
1,2-Dibromo-1,1,2,2-tetrafluoroethane 124-73-2	1000 µg/mL	MeOH	AS-E0463	32	trans-1,2-Dichloroethene 156-60-5	1 gram	NEAT	M-502-29N	40
2,3-Dichloro-1-propene 78-88-6	4.2 mg/mL	MeOH	AS-E0170	32		100 µg/mL	MeOH	APP-9-073	12
trans-1,4-Dichloro-2-butene 110-57-6	100 µg/mL	MeOH	APP-9-068	12		0.2 mg/mL	MeOH	M-502-29	10
	2 mg/mL	MeOH	APP-9-068-20X	20		1 mg/mL	MeOH	AS-E0028	32
Dichloroacetonitrile 3018-12-0	5 mg/mL	Acetone	M-551B-5	15		2 mg/mL	MeOH	M-502-29-10X	14
1,2-Dichlorobenzene 95-50-1	100 mg	NEAT	A-002	12	Dichlorofluoromethane 75-43-4	0.2 mg/mL	MeOH	M-502-61	10
	1 gram	NEAT	M-502-21N	20		2 mg/mL	MeOH	M-502-61-10X	14
	100 µg/mL	MeOH	APP-9-064	12	Dichloromethane 75-09-2	100 mg	NEAT	K-001N	12
	0.2 mg/mL	MeOH	M-502-21	10		1 gram	NEAT	M-502-39N	20
	2 mg/mL	MeOH	M-502-21-10X	14		100 µg/mL	MeOH	APP-9-074	12
	5 mg/mL	MeOH	AS-E0023	32		0.2 mg/mL	MeOH	M-502-39	10
	2.0 mg/mL	Hexane	M-8120-02	25		2 mg/mL	MeOH	M-502-39-10X	14
1,2-Dichlorobenzene-d₄ 2199-69-1	0.15 mg/mL	MeOH	AS-E0776	32	1,2-Dichloropropane 78-87-5	1 gram	NEAT	M-502-30N	20
	0.2 mg/mL	MeOH	M-624-SS-11	20		100 µg/mL	MeOH	APP-9-077	12
	2 mg/mL	MeOH	M-624-SS-11-10X	20		0.2 mg/mL	MeOH	M-502-30	10
1,3-Dichlorobenzene 541-73-1	100 mg	NEAT	A-003	12		1 mg/mL	MeOH	AS-E0030	32
	1 gram	NEAT	M-502-22N	20		2 mg/mL	MeOH	M-502-30-10X	14
	100 µg/mL	MeOH	APP-9-065	12	1,3-Dichloropropane 142-28-9	1 gram	NEAT	M-502-31N	40
	0.2 mg/mL	MeOH	M-502-22	10		0.2 mg/mL	MeOH	M-502-31	10
	1 mg/mL	MeOH	AS-E0214	32		2 mg/mL	MeOH	M-502-31-10X	14
	2 mg/mL	MeOH	M-502-22-10X	14		5 mg/mL	MeOH	AS-E1109	32
	2.0 mg/mL	Hexane	M-8120-03	25	2,2-Dichloropropane 594-20-7	1 gram	NEAT	M-502-32N	40
						0.2 mg/mL	MeOH	M-502-32	10
						2 mg/mL	MeOH	M-502-32-10X	14
						5 mg/mL	MeOH	AS-E1167	32
					1,3-Dichloropropene (cis/trans) 542-75-6	1 gram	NEAT	M-502-34N	40
						0.2 mg/mL	MeOH	M-502-34	10
						0.4 mg/mL	MeOH	M-502-34-R	10
						4 mg/mL	MeOH	M-502-34-R-10X	15
					1,1-Dichloropropene 563-58-6	0.2 mg/mL	MeOH	M-502-33	10
						2 mg/mL	MeOH	M-502-33-10X	14
					cis-1,3-Dichloropropene 10061-01-5	100 µg/mL	MeOH	APP-9-078	12
					trans-1,3-Dichloropropene 10061-02-6	100 µg/mL	MeOH	APP-9-079	12
					1,3-Dichloropropylene (cis & trans)	5 mg/mL	MeOH	AS-E0218	32

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** This product can not ship by air.

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VOCs

Compound	Conc.	Matrix	Cat. No.	Price	Compound	Conc.	Matrix	Cat. No.	Price
1,1-Dichloro-1-propylene 563-58-6	5 mg/mL	MeOH	AS-E1166	\$ 32	Hexachlorocyclopentadiene 77-47-4	100 µg/mL	MeOH	APP-9-114	\$ 12
2,4-Dichlorotoluene 95-73-8	5 mg/mL	MeOH	AS-E0149	32		1 mg/mL	MeOH	APP-9-114-10X	20
1,2,3,4-Diepoxybutane 1464-53-5	1 mg/mL	AcCN	AS-E0577	32		2.0 mg/mL	Hexane	M-8120-07	25
1,4-Diethylbenzene 105-05-5	100 mg	NEAT	V-008	12	Hexachloroethane 67-72-1	100 µg/mL	MeOH	APP-9-115	12
m-Diethylbenzene 141-93-5	100 µg/mL	Isooctane	M-GRA-ST	10		1 mg/mL	MeOH	AS-E0011	32
o-Diethylbenzene 135-01-3	100 mg	NEAT	V-007	12		2.0 mg/mL	Hexane	M-8120-08	25
1,4-Difluorobenzene 540-36-3	100 µg/mL	NEAT	V-006	12	Hexachlorophene 70-30-4	100 µg/mL	MeOH	APP-9-116	12
Dimethyl sulfate 77-78-1	2 mg/mL	CH ₂ Cl ₂	APP-9-116-D-20X	20		2 mg/mL	CH ₂ Cl ₂	APP-9-116-D-20X	20
1,3-Dimethyl-2-nitrobenzene 81-20-9	1 mg/mL	MeOH	M-624-SS-07	10	Hexachloropropene 1888-71-7	5 mg/mL	MeOH	AS-E0323	32
1,3-Dinitrobenzene 99-65-0	100 µg/mL	AcCN	AS-E0389	32		100 µg/mL	MeOH	APP-9-117	12
	1 mg/mL	MeOH	M-624-SS-07-10X	20	Hexadecylbenzene 1459-09-2	1 mg/mL	MeOH	AS-E0364	32
	5 mg/mL	MeOH	AS-E0527	32		100 mg	NEAT	V-015	12
2,5-Dinitrotoluene 619-15-8	100 µg/mL	AcCN	M-8095-SS-03	50	Hexylbenzene 1077-16-3	100 mg	NEAT	V-013	12
3,4-Dinitrotoluene 610-39-9	100 µg/mL	AcCN	M-8095-SS-01	15	Isopropylbenzene 98-82-8	1 gram	NEAT	M-502-37N	20
Dodecylbenzene 123-01-3	100 mg	NEAT	V-009	12		0.2 mg/mL	MeOH	M-502-37	10
Epichlorohydrin 106-89-8	0.2 mg/mL	MeOH	M-507-SS	10		2 mg/mL	MeOH	M-502-37-10X	14
1,2-Epoxybutane 106-88-7	100 µg/mL	CH ₂ Cl ₂	APP-9-089	20	p-Isopropyltoluene (p-Cymene) 99-87-6	1 gram	NEAT	M-502-38N	20
1,2-Epoxypropane(Propylene oxide) 75-56-9	1 mg/mL	CH ₂ Cl ₂	APP-9-089-10X	20		5 mg/mL	MeOH	AS-E1108	32
Ethyl acetate 141-78-6	5 mg/mL	MeOH	AS-E0527	32		0.2 mg/mL	MeOH	M-502-38	10
Ethyl methacrylate 97-63-2	100 µg/mL	AcCN	M-8095-SS-03	50		2 mg/mL	MeOH	M-502-38-10X	14
Ethyl methanesulfonate 62-50-0	100 µg/mL	AcCN	M-8095-SS-01	15	Methacrylonitrile 126-98-7	100 µg/mL	MeOH	APP-9-125	20
Ethylbenzene 100-41-4	100 µg/mL	AcCN	M-8095-SS-01	15		1 mg/mL	MeOH	AS-E0686	32
	1 gram	NEAT	M-502-35N	20	Methyl 2,3-dibromopropionate 1729-67-5	1 mg/mL	MeOH	M-552.2-SS-ME	10
	100 µg/mL	MeOH	APP-9-104	12		1 mg/mL	MeOH	M-552.1-SS-ME	10
	0.2 mg/mL	MeOH	M-502-35	10	Methyl bromide 74-83-9	1 mg/mL	MeOH	AS-E0044	40
	2 mg/mL	MeOH	M-502-35-10X	14	Methyl chloride 74-87-3	5 mg/mL	MeOH	AS-E0043	40
	10 mg/mL	MeOH	AS-E0036	32	1-Methyl ethyl benzene 98-82-8	5 mg/mL	MeOH	AS-E0669	32
Ethylbenzene-d ₁₀ 25837-05-2	0.2 mg/mL	MeOH	M-624-SS-08	20	Methyl iodide 74-88-4	100 µg/mL	MeOH	APP-9-130	12
Ethylene glycol 107-21-1	2 mg/mL	Water	D-4291-93	20		2.0 mg/mL	MeOH	APP-9-130-20X	20
Ethylene oxide 75-21-8	0.2 mg/mL	Water	S-354-2	10	Methyl isothiocyanate 556-61-6	25 µg/mL	Acetone	M-1659-RPS	10
m-Ethyltoluene 620-14-4	5 mg/mL	Water	M-8015B/5031-14-R1	20	Methyl methacrylate 80-62-6	100 µg/mL	MeOH	APP-9-131	12
o-Ethyltoluene 611-14-3	100 mg	NEAT	V-031	12		1 mg/mL	MeOH	AS-E0439	32
p-Ethyltoluene 622-96-8	100 mg	NEAT	V-010	12		2 mg/mL	MeOH	APP-9-131-20X	20
2-Fluoroacetamide 640-19-7	100 µg/mL	CH ₂ Cl ₂	APP-9-132	20	Methyl methanesulfonate 66-27-3	100 µg/mL	CH ₂ Cl ₂	APP-9-132	20
Fluorobenzene 462-06-6	5 mg/mL	AcCN	AS-E0299	32		1 mg/mL	AcCN	AS-E0431	32
	0.15 mg/mL	MeOH	AS-E0232	32	Methylene chloride 75-09-2	1 mg/mL	MeOH	AS-E0042	32
	0.2 mg/mL	MeOH	M-624-SS-09	10	Methylene chloride-d ₂ 1665-00-5	2 mg/mL	MeOH	M-502-IS-2-3	20
	2 mg/mL	MeOH	M-524-IS-2	12	Naphthalene 91-20-3	1 gram	NEAT	M-502-40N	20
	20 mg/mL	MeOH	M-524-IS-2-10X	20		2 mg/mL	MeOH	M-502-40-10X	14
Fluorotrichloromethane 75-69-4	5 mg/mL	MeOH	AS-E0047	32	Nitrobenzene 98-95-3	100 µg/mL	MeOH	APP-9-143	12
Heptadecylbenzene 14752-75-1	100 mg	NEAT	V-014	12		1 mg/mL	MeOH	APP-9-143-10X	20
Heptylbenzene 1078-71-3	100 mg	NEAT	V-012	12		5 mg/mL	MeOH	AS-E0054	32
Hexachlorobenzene 118-74-1	100 mg	NEAT	A-012	12	Nitrobenzene-d ₅ 4165-60-0	0.2 mg/mL	CH ₂ Cl ₂	M-625-13	20
	100 µg/mL	MeOH	APP-9-112	12		2.0 mg/mL	CH ₂ Cl ₂	M-625-13-10X	20
	1 mg/mL	Acetone	M-8091-IS-20X	17	Nonadecylbenzene 29136-19-4	100 mg	NEAT	V-018	12
	2 mg/mL	CH ₂ Cl ₂	APP-9-112-D-20X	20	Nonylbenzene 1081-77-2	100 mg	NEAT	V-017	12
	2.0 mg/mL	Hexane	M-8120-05	25	Octadecylbenzene 4445-07-2	100 mg	NEAT	V-020	12
Hexachlorobutadiene 87-68-3	1 gram	NEAT	M-502-36N	20	Octylbenzene 2189-60-8	100 mg	NEAT	V-019	12
	100 µg/mL	MeOH	APP-9-113	12	Pentachlorobenzene 608-93-5	100 mg	NEAT	A-011	12
	0.2 mg/mL	MeOH	M-502-36	10		100 µg/mL	MeOH	APP-9-173	12
	2 mg/mL	MeOH	M-502-36-10X	14		2.5 mg/mL	MeOH	AS-E0260	32
	5 mg/mL	MeOH	AS-E0050	32	Pentachloroethane 76-01-7	100 µg/mL	MeOH	APP-9-174	12
	2.0 mg/mL	Hexane	M-8120-06	25		2.0 mg/mL	MeOH	APP-9-174-20X	20
						5 mg/mL	MeOH	AS-E0300	32
					Pentadecylbenzene 2131-18-2	100 mg	NEAT	V-021	12
					Pentafluorobenzene 363-72-4	0.2 mg/mL	MeOH	M-624-SS-10	10
					1,2-Propanediol 57-55-6	1 mg/mL	AcCN	AS-E0524	32
					Propionic acid 79-09-4	5 mg/mL	AcCN	AS-E0673	32
					Propionitrile 107-12-0	100 µg/mL	MeOH	APP-9-184	12
						5 mg/mL	MeOH	AS-E0338	32
						10 mg/mL	Water	M-8015B/5031-25	25

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VOCs

Compound	Conc.	Matrix	Cat. No.	Price	Compound	Conc.	Matrix	Cat. No.	Price
n-Propylbenzene (1-Phenylpropane) 103-65-1	100 mg	NEAT	V-022	\$ 12	1,1,2-Trichloroethane 79-00-5	1 gram	NEAT	M-502-50N	\$ 40
	1 gram	NEAT	M-502-41N	20		100 µg/mL	MeOH	APP-9-203	12
	0.2 mg/mL	MeOH	M-502-41	10		0.2 mg/mL	MeOH	M-502-50	10
	2 mg/mL	MeOH	M-502-41-10X	14		1 mg/mL	MeOH	AS-E0013	32
	5 mg/mL	MeOH	AS-E1112	32		2 mg/mL	MeOH	M-502-50-10X	14
Styrene 100-42-5	1 gram	NEAT	M-502-42N	20	Trichloroethene 79-01-6	1 gram	NEAT	M-502-51N	20
	100 µg/mL	MeOH	APP-9-189	12		100 µg/mL	MeOH	APP-9-204	12
	0.2 mg/mL	MeOH	M-502-42	10		0.2 mg/mL	MeOH	M-502-51	10
	2 mg/mL	MeOH	M-502-42-10X	14		1 mg/mL	MeOH	AS-E0085	32
	5 mg/mL	MeOH	AS-E0257	32		2 mg/mL	MeOH	M-502-51-10X	14
TCMX 877-09-8	100 µg/mL	Hexane	M-8082-SS	20	Trichlorofluoromethane 598-77-6	100 µg/mL	MeOH	APP-9-205	12
	1 mg/mL	Hexane	M-8082-SS-10X	20		0.2 mg/mL	MeOH	M-502-52	10
1,2,3,4-Tetrachlorobenzene 634-66-2	100 mg	NEAT	A-008	12		2 mg/mL	MeOH	M-502-52-10X	14
	1 mg/mL	MeOH	AS-E0225	32	1,1,2-Trichloropropane 598-77-6	200 µg/mL	MeOH	S-1321B	30
1,2,3,5-Tetrachlorobenzene 634-90-2	100 mg	NEAT	A-009	12	1,2,3-Trichloropropane 96-18-4	1 gram	NEAT	M-502-53N	20
1,2,4,5-Tetrachlorobenzene 95-94-3	100 mg	NEAT	A-010	12		100 µg/mL	MeOH	APP-9-208	12
	100 µg/mL	MeOH	APP-9-191	12		0.2 mg/mL	MeOH	M-502-53	10
	1.0 mg/mL	MeOH	APP-9-191-10X	20		1 mg/mL	MeOH	APP-9-208-10X	10
	2.0 mg/mL	Hexane	M-8120-09	25		2 mg/mL	MeOH	M-502-53-10X	14
	2.5 mg/mL	AcCN	AS-E0177	32		5 mg/mL	MeOH	AS-E0368	32
1,1,1,2-Tetrachloroethane 630-20-6	1 gram	NEAT	M-502-43N	40	a,a,a-Trichlorotoluene 98-07-7	0.2 mg/mL	MeOH	M-624-SS-14	10
	100 µg/mL	MeOH	APP-9-192	12	Tridecylbenzene 123-02-4	100 mg	NEAT	V-027	12
	0.2 mg/mL	MeOH	M-502-43	10	1,2,3-Trimethylbenzene 526-73-8	100 mg	NEAT	V-028	12
	1 mg/mL	MeOH	AS-E0335	32	1,2,4-Trimethylbenzene 95-63-6	100 mg	NEAT	V-029	12
	2 mg/mL	MeOH	M-502-43-10X	14		1 gram	NEAT	M-502-54N	20
1,1,1,2-Tetrachloroethane 79-34-5	1 gram	NEAT	M-502-44N	40		0.2 mg/mL	MeOH	M-502-54	10
	100 µg/mL	MeOH	APP-9-193	12		2 mg/mL	MeOH	M-502-54-10X	14
	0.2 mg/mL	MeOH	M-502-44	10		5 mg/mL	MeOH	AS-E1107	32
	2 mg/mL	MeOH	M-502-44-10X	14	1,3,5-Trimethylbenzene 108-67-8	100 mg	NEAT	V-016	12
	5 mg/mL	MeOH	AS-E0014	32		1 gram	NEAT	M-502-55N	20
Tetrachloroethene 127-18-4	1 gram	NEAT	M-502-45N	20		0.2 mg/mL	MeOH	M-502-55	10
	100 µg/mL	MeOH	APP-9-194	12		2 mg/mL	MeOH	M-502-55-10X	14
	0.2 mg/mL	MeOH	M-502-45	10		5 mg/mL	MeOH	AS-E1103	32
	2 mg/mL	MeOH	M-502-45-10X	14	1,2,3-Trimethylbenzene 526-73-8	3 % w/w	Isocetane	M-GRA-FP	20
	5 mg/mL	MeOH	AS-E0083	32	1,3,5-Trinitrobenzene 99-35-4	100 µg/mL	MeOH	APP-9-210	12
Tetrachloro-m-xylene 877-09-8	0.2 mg/mL	MeOH	S-279	10		2 mg/mL	MeOH	M-8270-10	15
	1 mg/mL	MeOH	S-279-5X	10	Undecylbenzene 6742-54-7	2.0 mg/mL	CH ₂ Cl ₂	APP-9-210-D-20X	20
Tetradecylbenzene 1459-10-5	100 mg	NEAT	V-023	12		100 mg	NEAT	V-030	12
Tetrahydrofuran 109-99-9	0.2 mg/mL	MeOH	S-457S	10	Vinyl acetate 108-05-4	100 µg/mL	MeOH	APP-9-211 *	12
	2 mg/mL	MeOH	S-457S-10X	10		2 mg/mL	MeOH	APP-9-211-20X *	20
	1 mg/mL	Water	M-1671A-IS	20		1 mg/mL	AcCN	AS-E0327	32
1,2,3,4-Tetramethylbenzene 488-23-3	100 mg	NEAT	V-024	12	Vinyl chloride 75-01-4	100 µg/mL	MeOH	APP-9-212	12
1,2,3,5-Tetramethylbenzene 527-53-7	100 mg	NEAT	V-025	12		0.2 mg/mL	MeOH	M-502-56	10
1,2,4,5-Tetramethylbenzene 95-93-2	100 mg	NEAT	V-026	12		1 mg/mL	MeOH	AS-E0536	40
Toluene 108-88-3	1 gram	NEAT	M-502-46N	20		2 mg/mL	MeOH	M-502-56-10X	14
	100 µg/mL	MeOH	APP-9-198	12	Xylene (total) 1330-20-7	100 µg/mL	MeOH	APP-9-213	12
	0.2 mg/mL	MeOH	M-502-46	10	m-Xylene 108-38-3	1 gram	NEAT	M-502-58N	20
	1 mg/mL	MeOH	AS-E0084	32		0.2 mg/mL	MeOH	M-502-58	10
	2 mg/mL	MeOH	M-502-46-10X	14		1 mg/mL	MeOH	AS-E0202	32
Toluene-d₈ 2037-26-5	0.25 mg/mL	MeOH	CLP-PS-3	20		2 mg/mL	MeOH	M-502-58-10X	14
	2.5 mg/mL	MeOH	CLP-PS-3-10X	20	o-Xylene 95-47-6	1 gram	NEAT	M-502-57N	20
1,3,5-Tribromobenzene 626-39-1	50 µg/mL	Acetone	M-8121-IS	10		0.2 mg/mL	MeOH	M-502-57	10
Trichloroacetonitrile 545-06-2	5 mg/mL	Acetone	M-551B-7	15		1 mg/mL	MeOH	AS-E0201	32
1,2,3-Trichlorobenzene 87-61-6	100 mg	NEAT	A-005	12		2 mg/mL	MeOH	M-502-57-10X	20
	1 gram	NEAT	M-502-47N	20	p-Xylene 106-42-3	1 gram	NEAT	M-502-59N	20
	0.2 mg/mL	MeOH	M-502-47	10		0.2 mg/mL	MeOH	M-502-59	10
	2 mg/mL	MeOH	M-502-47-10X	14		1 mg/mL	MeOH	AS-E0203	32
	5 mg/mL	MeOH	AS-E0175	32		2 mg/mL	MeOH	M-502-59-10X	14
1,2,4-Trichlorobenzene 120-82-1	100 mg	NEAT	A-006	12					
	1 gram	NEAT	M-502-48N	20					
	100 µg/mL	MeOH	APP-9-201	12					
	0.2 mg/mL	MeOH	M-502-48	10					
	1 mg/mL	MeOH	AS-E0007	32					
	2 mg/mL	MeOH	M-502-48-10X	14					
1,3,5-Trichlorobenzene 108-70-3	100 mg	NEAT	A-007	12					
	5 mg/mL	MeOH	AS-E0176	32					
1,1,1-Trichloroethane 71-55-6	100 µg/mL	MeOH	APP-9-202	12					
	0.2 mg/mL	MeOH	M-502-49	10					
	1 mg/mL	MeOH	AS-E0010	32					
	2 mg/mL	MeOH	M-502-49-10X	14					

* ColdPAK required to maintain integrity of product.

Analytes by Functional Group

Alcohols & Aldehydes and Derivatives



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



Search by

✓ **Functional Group**

Application

EPA Method

See Qualitative Analysis Kits for material of these functional groups. pages 109-111

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Alcohol EPA Methods include: 1673, 8015

Alcohols					
Compound	CAS No.	Conc.	Matrix	Cat. No.	Price
Allyl alcohol	107-18-6	1 mg/mL	MeOH	AS-E0475	\$ 32
		10 mg/mL	Water	M-8015B/5031-05	25
Benzyl alcohol	100-51-6	100 µg/mL	MeOH	APP-9-021	12
		5 mg/mL	MeOH	APP-9-021-50X	25
		5 mg/mL	AcCN	AS-E0326	32
1-Butanol	71-36-3	10 mg/mL	Water	M-8015B/5031-06	25
t-Butanol	75-65-0	10 mg/mL	Water	M-8015B/5031-07	25
		2 mg/mL	MeOH	S-410	10
1,3-Dichloro-2-propanol	96-23-1	5 mg/mL	MeOH	AS-E0928	32
Ethanol	64-17-5	10 mg/mL	Water	M-8015B/5031-11	25
Ethylene glycol	107-21-1	10 mg/mL	Water	M-8015B/5031-13	25
Isobutanol (Isobutyl alcohol)	78-83-1	10 mg/mL	Water	M-8015B/5031-15	25
		100 µg/mL	MeOH	APP-9-120	12
		2.0 mg/mL	MeOH	APP-9-120-20X	20
Isopropanol	67-63-0	10 mg/mL	Water	M-8015B/5031-16	25
Methanol	67-56-1	10 mg/mL	Water	M-8015B/5031-17	20
2-Methyl-1-propanol (Isobutyl alcohol)	78-83-1	5 mg/mL	MeOH	AS-E0659	32
Polyethylene glycol (PEG-600)	25322-68-3	2.5 mg/mL	THF	M-1673	35
1-Propanol	71-23-8	10 mg/mL	Water	M-8015B/5031-24	25
Propargyl alcohol	107-19-7	1 mg/mL	Cyclohexanone	AS-E0543	32

Neats are as stated, Solutions are 1 mL

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

Aldehydes and Derivatives					
Compound	CAS No.	Conc.	Matrix	Cat. No.	Price
Acetaldehyde	75-07-0	1 mg/mL	MeOH	M-554-01 *	\$ 20
		1 mg/mL	Water	M-8315-01	20
Acetaldehyde-DNPH	1019-57-4	1 mg/mL	MeOH:AcCN	M-554-DNPH-01	20
		0.1 mg/mL	AcCN	M-8315-R-DNPH-01	20
Acrolein	107-02-8	100 µg/mL	MeOH:Water	APP-9-007 *	12
		1 mg/mL	MeOH:Water	APP-9-007-10X *	20
		100 µg/mL	Water	APP-9-007-W	10
		1.0 mg/mL	Water	APP-9-007-W-10X	15
		5 mg/mL	p-Dioxane	AS-E0002	32
		10 mg/mL	Water	M-8015B/5031-03	25
Acrolein-DNPH	888-54-0	0.1 mg/mL	AcCN	M-8315-R-DNPH-03	20
		1 µg/mL	AcCN	S-1275-1-03	30
Benzaldehyde-DNPH	1157-84-2	0.1 mg/mL	AcCN	M-8315-R-DNPH-04	20
Butanal	123-72-8	1 mg/mL	MeOH	M-554-02 *	20
Butanal-DNPH	1527-98-6	1 mg/mL	MeOH:AcCN	M-554-DNPH-02	20
		0.1 mg/mL	AcCN	M-8315-R-DNPH-05	20
Crotonaldehyde	123-73-9	1 mg/mL	AcCN	AS-E0479	32
		1 mg/mL	MeOH	M-554-03 *	20
		10 mg/mL	Water	M-8015B/5031-08	25
Crotonaldehyde-DNPH	1527-96-4	1 mg/mL	MeOH:AcCN	M-554-DNPH-03	20
		0.1 mg/mL	AcCN	M-8315-R-DNPH-06	20
Decanal	112-31-2	1 mg/mL	MeOH	M-554-05	20
Decanal-DNPH		1 mg/mL	MeOH:AcCN	M-554-DNPH-05	20
		0.1 mg/mL	AcCN	M-8315-R-DNPH-08	20
2,5-Dimethylbenzaldehyde-DNPH	152477-96-8	0.1 mg/mL	AcCN	M-8315-R-DNPH-09	20

* ColdPAK required to maintain integrity of product.

Aldehydes continued on next page



Analytes by Functional Group

Aldehydes and Derivatives & Ketones

Aldehydes and Derivatives (continued)

Compound	CAS No.	Conc.	Matrix	Cat. No.	Price
Formaldehyde	50-00-0	1 mg/mL	MeOH	M-554-06 *	\$ 20
		1 mg/mL	Water	M-8315-02	20
Formaldehyde-DNPH	1081-15-8	1.0 mg/mL	AcCN	M-1667A-DNPH-01	35
		1 mg/mL	MeOH:AcCN	M-554-DNPH-06	20
		0.1 mg/mL	AcCN	M-8315-R-DNPH-10	20
Formamide	75-12-7	50 µg/mL	Water	M-1666A-DI-R-ADD2	30
2-Furaldehyde-DNPH		1.0 mg/mL	AcCN	M-1667A-DNPH-02	35
Heptanal	111-71-7	1 mg/mL	MeOH	M-554-07	20
		1 mg/mL	MeOH:AcCN	M-554-DNPH-07	20
		0.1 mg/mL	AcCN	M-8315-R-DNPH-11	20
Hexanal	66-25-1	1 mg/mL	MeOH	M-554-08	20
Hexanal-DNPH	1527-97-5	1 mg/mL	MeOH:AcCN	M-554-DNPH-08	20
		0.1 mg/mL	AcCN	M-8315-R-DNPH-12	20
		1.0 mg/mL	AcCN	M-1667A-DNPH-03	35
Isobutyraldehyde-DNPH		0.1 mg/mL	AcCN	M-8315-R-DNPH-13	20
Nonanal	124-19-6	1 mg/mL	MeOH	M-554-09	20
Nonanal-DNPH		1 mg/mL	MeOH:AcCN	M-554-DNPH-09	20
		0.1 mg/mL	AcCN	M-8315-R-DNPH-14	20
Octanal	124-13-0	1 mg/mL	MeOH	M-554-10	20
Octanal-DNPH		1 mg/mL	MeOH:AcCN	M-554-DNPH-10	20
		0.1 mg/mL	AcCN	M-8315-R-DNPH-15	20
Paraldehyde	123-63-7	10 mg/mL	Water	M-8015B/5031-21	25
Pentanal	110-62-3	1 mg/mL	MeOH	M-554-11	20
Pentanal-DNPH	2057-84-3	1 mg/mL	MeOH:AcCN	M-554-DNPH-11	20
		0.1 mg/mL	AcCN	M-8315-R-DNPH-16	20
Propanal	123-38-6	1 mg/mL	MeOH	M-554-12 *	20
Propanal-DNPH	725-00-8	1 mg/mL	MeOH:AcCN	M-554-DNPH-12	20
		0.1 mg/mL	AcCN	M-8315-R-DNPH-17	20
m-Tolualdehyde-DNPH	2880-05-9	0.1 mg/mL	AcCN	M-8315-R-DNPH-18	20
o-Tolualdehyde-DNPH	1773-44-0	0.1 mg/mL	AcCN	M-8315-R-DNPH-19	20
p-Tolualdehyde-DNPH	2571-00-8	0.1 mg/mL	AcCN	M-8315-R-DNPH-20	20

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

Ketones and Derivatives

Compound	CAS No.	Conc.	Matrix	Cat. No.	Price
Acetone	67-64-1	100 µg/mL	MeOH	APP-9-003 *	\$ 12
		2 mg/mL	MeOH	APP-9-003-20X *	20
		5 mg/mL	MeOH	AS-E0284 *	32
		10 mg/mL	Water	M-8015B/5031-01	25
Acetone-DNPH	1567-89-1	0.1 mg/mL	AcCN	M-8315-R2-DNPH-02	20
Acetophenone	98-86-2	100 µg/mL	CH ₂ Cl ₂	APP-9-004	12
		2 mg/mL	CH ₂ Cl ₂	APP-9-004-20X	20
		5 mg/mL	MeOH	AS-E0411	32
2-Chloroacetophenone	532-27-4	100 µg/mL	Hexane	IRT-001S	20
2'-Chloroacetophenone	2142-68-9	100 µg/mL	Hexane	IRT-002S	20
3'-Chloroacetophenone	99-02-5	100 µg/mL	Hexane	IRT-003S	25
4'-Chloroacetophenone	99-91-2	100 µg/mL	Hexane	IRT-004S	25
Cyclohexanone	108-94-1	1 mg/mL	MeOH	M-554-04 *	20
Cyclohexanone-DNPH	1589-62-4	500 µg/mL	AcCN	AE-00046	20
		1 mg/mL	MeOH:AcCN	M-554-DNPH-04	20
		0.1 mg/mL	AcCN	M-8315-R-DNPH-07	20
1,1-Dichloro-2-propanone	513-88-2	5 mg/mL	Acetone	M-551B-6	15
2-Hexanone	591-78-6	100 µg/mL	MeOH	APP-9-118 *	12
		2.0 mg/mL	MeOH	APP-9-118-20X *	25
Isophorone	78-59-1	100 µg/mL	MeOH	APP-9-122	12
		1.0 mg/mL	MeOH	APP-9-122-10X	20
		1 mg/mL	MeOH	AS-E0052	20
Methyl ethyl ketone	78-93-3	100 µg/mL	MeOH	APP-9-129 *	12
		1 mg/mL	MeOH	APP-9-129-10X *	10
		2 mg/mL	MeOH	APP-9-129-20X *	20
		5 mg/mL	MeOH	AS-E0311 *	32
		10 mg/mL	Water	M-8015B/5031-18	25
4-Methyl-2-pentanone (Methyl isobutyl ketone)	108-10-1	10 mg/mL	Water	M-8015B/5031-19	25
		100 µg/mL	MeOH	APP-9-135	12
		2 mg/mL	MeOH	APP-9-135-20X	20
		5 mg/mL	MeOH	AS-E0349	32
2-Pentanone	107-87-9	10 mg/mL	Water	M-8015B/5031-22	25
1,1,1-Trichloro-2-propanone (1,1,1-Trichloroacetone)	918-00-3	5 mg/mL	Acetone	M-551B-8	15
		1 mg/mL	Acetone	AS-E1181	32
2',4',5'-Trifluoroacetophenone	129322-83-4	20 µg/mL	AcCN	M-556-SS	10
		2 mg/mL	AcCN	M-556-SS-100X	20

* ColdPAK required to maintain integrity of product.

Neats are as stated,
Solutions are 1 mL

Analytes by Functional Group

Phenols



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

Phenols					
Compound	CAS No.	Conc.	Matrix	Cat. No.	Price
Bisphenol A (BPA)	80-05-7	1000 µg/mL	MeOH	M-1626-01S	\$ 20
4-Chloro-3-cresol (4-Chloro-3-methylphenol)	59-50-7	1.0 mg/mL	MeOH	M-8040-01	20
		100 µg/mL	MeOH	APP-9-041	12
2-Chlorophenol	95-57-8	100 mg	NEAT	A-013	12
		100 µg/mL	MeOH	APP-9-046	12
		5.0 mg/mL	MeOH	APP-9-046-50X	20
		2 mg/mL	CH ₂ Cl ₂	APP-9-046-D-20X	22
		5 mg/mL	MeOH	AS-E0022	32
3-Chlorophenol	108-43-0	100 mg	NEAT	A-014	12
		5 mg/mL	MeOH	AS-E0182	32
4-Chlorophenol	106-48-9	100 mg	NEAT	A-015	12
		5 mg/mL	MeOH	AS-E0183	32
2-Chlorophenol-d₄	93951-73-6	0.2 mg/mL	CH ₂ Cl ₂	M-625-20	20
o-Chlorophenol	95-57-8	1.0 mg/mL	MeOH	M-8040-02	20
m-Cresol	108-39-4	100 µg/mL	CH ₂ Cl ₂	APP-9-050	12
		1 mg/mL	CH ₂ Cl ₂	APP-9-050-10X	15
		5 mg/mL	MeOH	AS-E0251	32
		1.0 mg/mL	MeOH	M-8040-03	20
o-Cresol	95-48-7	100 µg/mL	CH ₂ Cl ₂	APP-9-051	12
		2 mg/mL	CH ₂ Cl ₂	APP-9-051-20X	20
		1.0 mg/mL	MeOH	M-8040-04	20
		5 mg/mL	MeOH	AS-E0250	32
p-Cresol	106-44-5	100 µg/mL	CH ₂ Cl ₂	APP-9-052	12
		2 mg/mL	CH ₂ Cl ₂	APP-9-052-20X	20
		1.0 mg/mL	MeOH	M-8040-05	20
		5 mg/mL	MeOH	AS-E0252	32
2-Cyclohexyl-4,6-dinitrophenol	131-89-5	1.0 mg/mL	MeOH	M-8040-06	20
2,4-Dibromophenol	615-58-7	1.6 µg/mL	IPA	M-8041-SS	10
		16 µg/mL	IPA	M-8041-SS-10X	10
		160 µg/mL	IPA	M-8041-SS-100X	10
		1 mg/mL	IPA	M-8041-SS-625X	10
2,3-Dichlorophenol	576-24-9	100 mg	NEAT	A-016	12
2,4-Dichlorophenol	120-83-2	100 mg	NEAT	A-017	12
		100 µg/mL	MeOH	APP-9-075	12
		1.0 mg/mL	MeOH	M-8040-07	20
		5 mg/mL	MeOH	APP-9-075-50X	30
		5 mg/mL	MeOH	AS-E0029	32
		1 mg/mL	MtBE	M-552A-R-06	15
2,5-Dichlorophenol	583-78-8	100 mg	NEAT	A-018	12
2,6-Dichlorophenol	87-65-0	100 mg	NEAT	A-019	12
		100 µg/mL	CH ₂ Cl ₂	APP-9-076	12
		1.0 mg/mL	MeOH	M-8040-08	20
		5 mg/mL	MeOH	APP-9-076-M-50X	30
3,4-Dichlorophenol	95-77-2	100 mg	NEAT	A-020	12
3,5-Dichlorophenol	591-35-5	100 mg	NEAT	A-021	12
2,4-Dimethylphenol	105-67-9	100 µg/mL	MeOH	APP-9-087	12
		5 mg/mL	MeOH	APP-9-087-50X	25
		1.0 mg/mL	MeOH	M-8040-09	20
2,4-Dimethylphenol-3,5,6-d₃	93951-75-8	0.1 mg/mL	Acetone	AS-E0190	32
4,6-Dinitro-o-cresol	534-52-1	100 mg	NEAT	R-057N	10
		100 µg/mL	Toluene	R-057S	10
		1 mg/mL	MeOH	APP-9-090-10X	20
		5 mg/mL	MeOH	AS-E0058	32
2,4-Dinitrophenol	51-28-5	100 µg/mL	MeOH	APP-9-091	12
		1.0 mg/mL	MeOH	M-8040-10	20
		5 mg/mL	MeOH	APP-9-091-50X	20
2-Fluorophenol	367-12-4	0.1 mg/mL	Acetone	AS-E0193	32
		2 mg/mL	MeOH	CLP-AS-1	20
		0.2 mg/mL	CH ₂ Cl ₂	M-625-16	20
		2 mg/mL	CH ₂ Cl ₂	M-625-16-10X	25
2-Methyl-4,6-dinitrophenol	534-52-1	1.0 mg/mL	MeOH	M-8040-12	20
2-Nitrophenol (o-Nitrophenol)	88-75-5	100 mg	NEAT	R-051N	10
		100 µg/mL	Toluene	R-051S	10
		100 µg/mL	MeOH	APP-9-144	12
		1.0 mg/mL	MeOH	M-8040-13	20
		5.0 mg/mL	MeOH	APP-9-144-50X	25
3-Nitrophenol	554-84-7	5 mg/mL	MeOH	AS-E0662	32
4-Nitrophenol (p-Nitrophenol)	100-02-7	100 µg/mL	MeOH	APP-9-145	12
		1.0 mg/mL	MeOH	M-8040-14	20
		5 mg/mL	MeOH	APP-9-145-50X	20

Neats are as stated,
Solutions are 1 mL

Phenols & Nitrosamines

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

For Nonylphenols and
Octylphenols see page 261

Phenols continued on next page



Analytes by Functional Group

Phenols, Amines, Anilines and Amino Compounds

Phenols (continued)

Compound	CAS No.	Conc.	Matrix	Cat. No.	Price
Pentachlorophenol	87-86-5	100 mg	NEAT	A-031	\$ 12
		100 µg/mL	MeOH	APP-9-176	12
		1 mg/mL	MeOH	APP-9-176-10X	20
		2 mg/mL	CH ₂ Cl ₂	APP-9-176-D-20X	20
		5 mg/mL	MeOH	AS-E0062	32
		25 µg/mL	CH ₂ Cl ₂	M-625C-2	20
		0.2 mg/mL	CH ₂ Cl ₂	M-625C-2-10X	20
		1.0 mg/mL	MeOH	M-8040-15	20
Pentachlorophenol- ¹³ C ₆	85380-74-1	0.1 mg/mL	Acetone	AS-E0191	40
Pentafluorophenol	771-61-9	0.2 mg/mL	CH ₂ Cl ₂	M-625-17	20
Phenol	108-95-2	100 µg/mL	CH ₂ Cl ₂	APP-9-179	12
		5 mg/mL	MeOH	AS-E0063	32
Phenol-d ₅	4165-62-2	0.1 mg/mL	Acetone	AS-E0189	32
		0.2 mg/mL	CH ₂ Cl ₂	M-625-18	20
		2 mg/mL	CH ₂ Cl ₂	M-625-18-10X	25
2,3,4,5-Tetrachlorophenol	4901-51-3	5 mg	NEAT	A-028	25
2,3,4,6-Tetrachlorophenol	58-90-2	10 mg	NEAT	A-029-10MG	12
		100 µg/mL	MeOH	APP-9-195	20
		1.0 mg/mL	MeOH	M-8040-17	20
2,3,5,6-Tetrachlorophenol	935-95-5	100 mg	NEAT	A-030	65
2,4,6-Tribromophenol	118-79-6	20 µg/mL	MtBE	M-8085-HERB-SS	20
		0.2 mg/mL	CH ₂ Cl ₂	M-625-19	20
		0.2 mg/mL	MeOH	M-604-SS	20
		2 mg/mL	MeOH	CLP-AS-3	20
		6 mg/mL	MeOH	CLP-LC-SS-2	10
2,3,4-Trichlorophenol	15950-66-0	100 mg	NEAT	A-022	45
2,3,5-Trichlorophenol	933-78-8	100 mg	NEAT	A-023	12
		5 mg/mL	MeOH	AS-E0222	32
2,3,6-Trichlorophenol	933-75-5	100 mg	NEAT	A-024	12
		1 mg/mL	MeOH	AS-E0181	32
2,4,5-Trichlorophenol	95-95-4	100 mg	NEAT	A-025	12
		0.1 mg/mL	Acetone	CLP-FC	10
		100 µg/mL	MeOH	APP-9-206	12
		1.0 mg/mL	MeOH	M-8040-18	20
		5 mg/mL	MeOH	AS-E0179	32
		100 mg	NEAT	A-026	12
2,4,6-Trichlorophenol	88-06-2	100 µg/mL	MeOH	APP-9-207	12
		5 mg/mL	MeOH	APP-9-207-50X	20
		0.1 µg/mL	Acetone	M-1618-SE	10
		0.1 mg/mL	Acetone	M-1600-SPE	10
		1 mg/mL	MtBE	M-552A-7	15
		1.0 mg/mL	MeOH	M-8040-19	20
		10 mg	NEAT	A-027	25
		1 mg/mL	MeOH	M-1653-IS	35
3,4,5-Trichlorophenol	609-19-8	1 mg/mL	Acetone	M-1653-IS-R	35

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

Amines, Anilines and other Amino Compounds

Compound	CAS No.	Conc.	Matrix	Cat. No.	Price
2-Amino-4-nitrotoluene	99-55-8	100 µg/mL	AcCN	RAC-03	\$ 25
		1 mg/mL	AcCN	RAC-03-10X	35
p-Aminoazobenzene	60-09-3	100 µg/mL	AcCN	RAC-21	25
		1000 µg/mL	AcCN	RAC-21-10X	35
o-Aminoazotoluene	97-56-3	100 µg/mL	AcCN	RAC-01	25
		1 mg/mL	AcCN	RAC-01-10X	35
2-Aminobiphenyl	90-41-5	10 mg	NEAT	R-062N	10
		100 µg/mL	Toluene	R-062S	15
		100 µg/mL	AcCN	RAC-22	25
		1000 µg/mL	AcCN	RAC-22-10X	35
4-Aminobiphenyl	92-67-1	10 mg	NEAT	R-063N	10
		100 µg/mL	Toluene	R-063S	15
		100 µg/mL	CH ₂ Cl ₂	APP-9-011	20
		100 µg/mL	AcCN	RAC-02	25
		1 mg/mL	AcCN	RAC-02-10X	35
		1 mg/mL	MeOH	AS-E0578	32
Aniline	62-53-3	100 mg	NEAT	L-001N	12
		100 µg/mL	MeOH	APP-9-012	12
		1 mg/mL	MeOH	APP-9-012-10X	20
		5 mg/mL	MeOH	AS-E0542	32
Aniline-d ₅	4165-61-1	0.2 mg/mL	CH ₂ Cl ₂	M-625-01	20
		2 mg/mL	CH ₂ Cl ₂	M-625-01-10X	20
o-Anisidine	90-04-0	100 µg/mL	AcCN	RAC-23	25
		1000 µg/mL	AcCN	RAC-23-10X	35

Neats are as stated,
Solutions are 1 mL

Analytes by Functional Group

Amines, Anilines and other Amino Compounds



Amines, Anilines and other Amino Compounds (continued)

Compound	CAS No.	Conc.	Matrix	Cat. No.	Price
Benzidine	92-87-5	50 µg/mL	CH ₂ Cl ₂	M-625C-1	\$ 20
		2 mg/mL	CH ₂ Cl ₂	M-625C-1-40X	20
		100 µg/mL	AcCN	RAC-04	25
		1 mg/mL	AcCN	RAC-04-10X	35
Benzidine (as dihydrochloride)	531-85-1	1 mg/mL	MeOH	AS-E0005	32
2-Bromo-4,6-dinitroaniline	1817-73-8	100 mg	NEAT	L-017N	12
4-Bromoaniline	106-40-1	100 mg	NEAT	L-007N	12
4-Chloro-2-nitroaniline	89-63-4	100 mg	NEAT	L-013N	12
2-Chloro-4,6-dinitroaniline	3531-19-9	100 mg	NEAT	L-015N	12
2-Chloro-4-nitroaniline	121-87-9	100 mg	NEAT	L-012N	12
2-Chloroaniline	95-51-2	100 mg	NEAT	L-002N	12
3-Chloroaniline	108-42-9	100 mg	NEAT	L-003N	12
4-Chloroaniline (p-Chloroaniline)	106-47-8	100 mg	NEAT	L-004N	12
		100 µg/mL	AcCN	RAC-05	25
		1 mg/mL	AcCN	RAC-05-10X	35
		100 µg/mL	MeOH	APP-9-038	12
		5 mg/mL	MeOH	AS-E0305	32
3-Chloro-o-toluidine	87-60-5	100 µg/mL	AcCN	RAC-24	25
		1000 µg/mL	AcCN	RAC-24-10X	35
4-Chloro-o-toluidine	95-69-2	100 µg/mL	AcCN	RAC-06	25
		1 mg/mL	AcCN	RAC-06-10X	35
p-Cresidine	120-71-8	100 µg/mL	AcCN	RAC-07	25
		1.0 mg/mL	AcCN	RAC-07-10X	35
2,4-Diaminoaniline sulfate hydrate	123333-56-2	100 µg/mL	Pyridine	RAC-08	25
		1 mg/mL	Pyridine	RAC-08-10X	35
3,3'-Diaminobenzidine	91-95-2	50 mg	NEAT	R-074N	10
		100 µg/mL	Toluene	R-074S	15
4,4'-Diaminodiphenylmethane (4,4'-Methylenedianiline)	101-77-9	100 mg	NEAT	R-077N	10
		100 µg/mL	Toluene	R-077S	15
		100 µg/mL	AcCN	RAC-09	25
		1 mg/mL	AcCN	RAC-09-10X	35
2,4-Diaminotoluene	95-80-7	100 mg	NEAT	R-078N	10
		100 µg/mL	Toluene	R-078S	15
		100 µg/mL	AcCN	RAC-10	25
		1 mg/mL	AcCN	RAC-10-10X	35
		1 mg/mL	MeOH	AS-E0932	32
2,6-Dibromo-4-nitroaniline	827-94-1	100 mg	NEAT	L-016N	12
2,6-Dichloro-4-nitroaniline	99-30-9	100 mg	NEAT	L-014N	12
3,4-Dichloroaniline	95-76-1	100 mg	NEAT	L-005N	12
3,3'-Dichlorobenzidine	91-94-1	50 mg	NEAT	R-075N	10
		100 µg/mL	MeOH	APP-9-067	20
		1 mg/mL	MeOH	AS-E0026	32
		100 µg/mL	Toluene	R-075S	15
		100 µg/mL	AcCN	RAC-11	25
		1 mg/mL	AcCN	RAC-11-10X	35
		2 mg/mL	MeOH	Z-014F-2	20
		50 mg	NEAT	R-076N	10
3,3'-Dimethoxybenzidine	119-90-4	100 µg/mL	Toluene	R-076S	15
		100 µg/mL	AcCN	RAC-12	25
		1 mg/mL	AcCN	RAC-12-10X	35
		100 µg/mL	AcCN	RAC-14	25
3,3'-Dimethyl-4,4'-diaminodiphenylmethane	838-88-0	1 mg/mL	AcCN	RAC-14-10X	35
		100 µg/mL	AcCN	RAC-14	25
4-Dimethylaminoazobenzene	60-11-7	10 mg	NEAT	R-079N	10
		100 µg/mL	Toluene	R-079S	15
2,6-Dimethylaniline	87-62-7	100 mg	NEAT	L-018N	12
		100 µg/mL	AcCN	L-018S-CN	25
3,3'-Dimethylbenzidine	119-93-7	100 µg/mL	CH ₂ Cl ₂	APP-9-085	20
		2.0 mg/mL	CH ₂ Cl ₂	APP-9-085-20X	25
		100 µg/mL	AcCN	RAC-13	25
		1 mg/mL	AcCN	RAC-13-10X	35
a,a-Dimethylphenethylamine	122-09-8	100 µg/mL	CH ₂ Cl ₂	APP-9-086	20
		2.0 mg/mL	CH ₂ Cl ₂	APP-9-086-20X	30
2,4-Dinitroaniline	97-02-9	100 mg	NEAT	L-011N	12
Diphenylamine	122-39-4	100 µg/mL	CH ₂ Cl ₂	APP-9-097	12
		1 mg/mL	MeOH	M-620	15
		5 mg/mL	MeOH	AS-E0263	32
Ethylenediamine	107-15-3	1 mg/mL	MeOH	AS-E0358	32
4-Fluoroaniline	371-40-4	0.2 mg/mL	CH ₂ Cl ₂	M-625-08	20
		2 mg/mL	CH ₂ Cl ₂	M-625-08-10X	20
2-Methyl-4-nitroaniline	99-52-5	100 µg/mL	AcCN	M-8095-SS-02	20
Methylamine	74-89-5	2500 µg/mL	Water	M-1666A-DI-R-ADD1	30
4,4'-Methylenebis(2-chloroaniline)	101-14-4	50 mg	NEAT	R-080N	10
		100 µg/mL	Toluene	R-080S	15
		100 µg/mL	AcCN	RAC-15	25
		1 mg/mL	AcCN	RAC-15-10X	35
		5 mg/mL	MeOH	AS-E0322	32
2-Naphthylamine	91-59-8	100 µg/mL	AcCN	RAC-16	25
		1 mg/mL	AcCN	RAC-16-10X	35

Neats are as stated,
Solutions are 1 mL

Amines, Anilines and
other Amino compounds
continued on next page



Analytes by Functional Group

Amines, Anilines and other Amino Compounds

Amines, Anilines and other Amino Compounds (continued)

Neats are as stated,
Solutions are 1 mL

Compound	CAS No.	Conc.	Matrix	Cat. No.	Price
2-Nitroaniline	88-74-4	100 mg	NEAT	L-008N	\$ 12
		100 mg	NEAT	R-054N	10
		100 µg/mL	Toluene	R-054S	10
3-Nitroaniline	99-09-2	100 mg	NEAT	L-009N	12
		100 µg/mL	Toluene	R-055S	10
4-Nitroaniline	100-01-6	100 mg	NEAT	L-010N	12
		100 µg/mL	Toluene	R-056S	10
m-Nitroaniline	99-09-2	100 µg/mL	CH ₂ Cl ₂	APP-9-141	12
o-Nitroaniline	88-74-4	100 µg/mL	CH ₂ Cl ₂	APP-9-140	12
		5 mg/mL	MeOH	AS-E0324	32
p-Nitroaniline	100-01-6	100 µg/mL	CH ₂ Cl ₂	APP-9-142	12
		5 mg/mL	MeOH	AS-E0342	32
		5 mg/mL	AcCN	AS-E0392	32
5-Nitro-o-toluidine	99-55-8	100 µg/mL	CH ₂ Cl ₂	APP-9-156	20
		5 mg/mL	MeOH	AS-E0344	32
N-Nitrosodiethylamine	55-18-5	100 µg/mL	CH ₂ Cl ₂	APP-9-148	20
		2 mg/mL	CH ₂ Cl ₂	APP-9-148-20X	20
		5 mg/mL	MeOH	AS-E0334	32
N-Nitrosodimethylamine	62-75-9	100 µg/mL	CH ₂ Cl ₂	APP-9-149	20
		1 mg/mL	MeOH	APP-9-149-M-10X	30
		5 mg/mL	MeOH	AS-E0059	32
N-Nitrosodi-n-butylamine	924-16-3	100 µg/mL	CH ₂ Cl ₂	APP-9-147	20
		2 mg/mL	CH ₂ Cl ₂	APP-9-147-20X	30
		0.5 mg/mL	Water	M-8015B/5031-20	25
N-Nitrosodi-n-propylamine	621-64-7	100 µg/mL	CH ₂ Cl ₂	APP-9-151	20
		2.5 mg/mL	CH ₂ Cl ₂	APP-9-151-25X	30
		5 mg/mL	MeOH	AS-E0061	32
N-Nitrosodiphenylamine	86-30-6	100 µg/mL	CH ₂ Cl ₂	APP-9-150	20
		1.0 mg/mL	MeOH	APP-9-150-M-10X	30
		5 mg/mL	MeOH	AS-E0060	32
N-Nitrosomethylethylamine	10595-95-6	100 µg/mL	CH ₂ Cl ₂	APP-9-152	20
N-Nitroso-N-methyl ethylamine		1 mg/mL	MeOH	AS-E0974	32
1-Nitrosopiperidine	100-75-4	5 mg/mL	MeOH	AS-E0458	32
4,4'-Oxydianiline	101-80-4	100 µg/mL	AcCN	RAC-17	25
		1 mg/mL	AcCN	RAC-17-10X	35
p-Phenylenediamine	106-50-3	100 µg/mL	MeOH	APP-9-180	20
		1 mg/mL	AcCN	AS-E0275	32
		2 mg/mL	MeOH	APP-9-180-20X	20
1-Propanamine	107-10-8	1 mg/mL	MeOH	AS-E0657	32
Pyridine	110-86-1	100 µg/mL	MeOH	APP-9-186-M	12
		2 mg/mL	MeOH	APP-9-186-M-20X	20
		5 mg/mL	MeOH	AS-E0271	32
		10 mg/mL	Water	M-8015B/5031-26	25
Pyridine-d ₅	7291-22-7	0.2 mg/mL	CH ₂ Cl ₂	M-625-15	20
		2.0 mg/mL	CH ₂ Cl ₂	M-625-15-10X	30
3,3',5,5'-Tetramethylbenzidine	54827-17-7	1 mg/mL	AcCN	RAC-IS	25
		1 mg/mL	Ethyl acetate	RAC-IS-EA	25
4,4'-Thiodianiline	139-65-1	100 µg/mL	AcCN	RAC-18	25
		1 mg/mL	AcCN	RAC-18-10X	35
o-Toluidine	95-53-4	100 µg/mL	MeOH	APP-9-199	12
		2 mg/mL	MeOH	AS-E0503	32
		100 µg/mL	AcCN	RAC-19	25
		1 mg/mL	AcCN	RAC-19-10X	35
		10 mg/mL	Water	M-8015B/5031-27	25
2,4,5-Trichloroaniline	636-30-6	100 mg	NEAT	L-006N	12
2,4,5-Trimethylaniline	137-17-7	100 µg/mL	AcCN	RAC-20	25
		1 mg/mL	AcCN	RAC-20-10X	35



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Analytes by Functional Group

Ethers, Halo Ethers & Haloacetic Acids



Ether EPA Methods: 601, 8150

Ethers

Compound	CAS No.	Conc.	Matrix	Cat. No.	Price
bis(2-Chloroethyl)ether	111-44-4	4.0 mg/mL	MeOH	APP-9-027-40X	\$ 20
2-Chloroethylvinyl ether	110-75-8	2 mg/mL	MeOH	M-601C-10X	10
2,4-Dichlorophenyl-3-methyl-4-nitrophenyl ether	42488-57-3	1.0 mg/mL	Isooctane	E-020S	15
Diethyl ether	60-29-7	10 mg/mL	Water	M-8015B/5031-09	25
Dinoseb methyl ether	6099-79-2	0.2 mg/mL	Hexane	M-8150-08	15
p-Dioxane	123-91-1	100 µg/mL	MeOH	APP-9-096	12
		1 mg/mL	MeOH	APP-9-096-10X	20
		10 mg/mL	MeOH	AS-E0480	32
1,4-Dioxane	123-91-1	10 mg/mL	Water	M-8015B/5031-10	25
MtBE	1634-04-4	0.2 mg/mL	MeOH	S-078	10
		2 mg/mL	MeOH	S-078-10X	12
TAME	994-05-8	0.2 mg/mL	MeOH	S-1019	10

Neats are as stated,
Solutions are 1 mL

Halo Ethers

Compound	CAS No.	Conc.	Matrix	Cat. No.	Price
2-Chlorophenyl-4-nitrophenyl ether	209-61-4	1 mg/mL	Isooctane	E-005S	\$ 15
3-Chlorophenyl-4-nitrophenyl ether	2303-23-3	1 mg/mL	Isooctane	E-006S	15
4-Chlorophenyl-4-nitrophenyl ether	1836-74-4	1 mg/mL	Isooctane	E-007S	15
2,4-Dibromophenyl-4-nitrophenyl ether	2671-93-4	1 mg/mL	Isooctane	E-004S	15
2,3-Dichlorophenyl-4-nitrophenyl ether	82239-20-1	1 mg/mL	Isooctane	E-008S	15
2,5-Dichlorophenyl-4-nitrophenyl ether	391-48-7	1 mg/mL	Isooctane	E-010S	15
2,6-Dichlorophenyl-4-nitrophenyl ether	2093-28-9	1 mg/mL	Isooctane	E-011S	15
3,5-Dichlorophenyl-4-nitrophenyl ether	21105-77-1	1 mg/mL	Isooctane	E-012S	15
2,4-Dichlorophenyl-4-nitrophenyl ether	1836-75-5	1 mg/mL	Isooctane	E-009S	15
3,4-Dichlorophenyl-4-nitrophenyl ether	22532-80-5	1 mg/mL	Isooctane	E-013S	15
4-Nitrophenyl phenyl ether	620-88-2	1 mg/mL	Isooctane	E-003S	15
2,3,5-Trichlorophenyl-4-nitrophenyl ether	142022-59-1	1 mg/mL	Isooctane	E-015S	15
2,3,6-Trichlorophenyl-4-nitrophenyl ether	142022-58-0	1 mg/mL	Isooctane	E-016S	15
2,3,4-Trichlorophenyl-4-nitrophenyl ether	142022-61-5	1 mg/mL	Isooctane	E-014S	15
2,4,5-Trichlorophenyl-4-nitrophenyl ether	22532-68-9	1 mg/mL	Isooctane	E-017S	15
2,4,6-Trichlorophenyl-4-nitrophenyl ether	1836-77-7	1 mg/mL	Isooctane	E-018S	15
3,4,5-Trichlorophenyl-4-nitrophenyl ether		1 mg/mL	Isooctane	E-019S	15

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

Haloacetic Acids

Compound	CAS No.	Conc.	Matrix	Cat. No.	Price
Bromoacetic acid	79-08-3	1 mg/mL	MtBE	M-552A-1	\$ 15
Bromochloroacetic acid	5589-96-8	40 µg/mL	MtBE	M-552.2A-01	15
		1 mg/mL	MtBE	M-552A-R-02	25
Bromodichloroacetic acid	71133-14-7	40 µg/mL	MtBE	M-552.2A-02	20
Chloroacetic acid	79-11-8	1 mg/mL	MtBE	M-552A-2	15
Chlorodibromoacetic acid	5278-95-5	100 µg/mL	MtBE	M-552.2A-03	20
Dibromoacetic acid	631-64-1	20 µg/mL	MtBE	M-552.2A-05	15
		1 mg/mL	MtBE	M-552A-5	15
Dichloroacetic acid	79-43-6	60 µg/mL	MtBE	M-552.2A-06	15
		1 mg/mL	MtBE	M-552A-3	15
2,4-Dichlorophenylacetic acid	19719-28-9	2 µg/mL	Acetone	M-1618-SA	10
2,4-Dichlorophenylacetic methyl ester	55954-23-9	0.1 mg/mL	MtBE	M-515-SS	10
		5 mg/mL	MtBE	M-515-SS-50X	30
Methyl bromoacetate	96-32-2	40 µg/mL	MtBE	M-552.2-02	20
		200 µg/mL	MeOH	M-552.1-02	25
Methyl bromochloroacetate	20428-74-4	40 µg/mL	MtBE	M-552.2-03	20
		200 µg/mL	MeOH	M-552.1-03	25
		1 mg/mL	MtBE	M-552-R-03	30
Methyl bromodichloroacetate	20428-76-6	40 µg/mL	MtBE	M-552.2-04	20
Methyl chloroacetate	96-34-4	60 µg/mL	MtBE	M-552.2-05	20
		300 µg/mL	MeOH	M-552.1-04	25
		1 mg/mL	MtBE	M-552-R-04	30
Methyl chlorodibromoacetate	20428-75-5	100 µg/mL	MtBE	M-552.2-06	20
Methyl dibromoacetate	6482-26-4	20 µg/mL	MtBE	M-552.2-07	20
		100 µg/mL	MeOH	M-552.1-05	25
Methyl dichloroacetate	116-54-1	60 µg/mL	MtBE	M-552.2-08	20
		300 µg/mL	MeOH	M-552.1-06	25
Methyl tribromoacetate	3222-05-7	200 µg/mL	MtBE	M-552.2-09 *	20
Methyl trichloroacetate	598-99-2	20 µg/mL	MtBE	M-552.2-10	20
		100 µg/mL	MeOH	M-552.1-07	25
Monobromoacetic acid	79-08-3	40 µg/mL	MtBE	M-552.2A-07	15
Monochloroacetic acid	79-11-8	60 µg/mL	MtBE	M-552.2A-08	15
Tribromoacetic acid	75-96-7	200 µg/mL	MtBE	M-552.2A-09	15
Trichloroacetic acid	76-03-9	20 µg/mL	MtBE	M-552.2A-10	15

* 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.

Diisononyl (DINP), di-n-octyl (DNOP) and diisodecyl (DIDP) phthalates also were banned on an interim basis. CPSC's advisory panel now recommends a permanent ban on DINP, but recommends the ban on DNOP and DIDP should be lifted. In addition, the panel is considering a ban on diisobutyl, di-n-pentyl, di-n-hexyl and dicyclohexyl phthalates.

Phthalates EPA Methods: 506, 606, 8060, 8061

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



Phthalates

Compound	CAS No.	Conc.	Matrix	Cat. No.	Price
Benzyl butyl phthalate	85-68-7	100 mg	NEAT	ALR-082N	\$ 12
		100 µg/mL	MeOH	ALR-082S	12
		5 mg/mL	MeOH	AS-E0065	32
bis(2-n-Butoxyethyl)phthalate	117-83-9	100 mg	NEAT	J-112	12
bis(2-Ethoxyethyl)phthalate	605-54-9	100 mg	NEAT	J-111	32
bis(2-Ethylhexyl)phthalate	117-81-7	100 mg	NEAT	ALR-097N	12
		100 µg/mL	MeOH	ALR-097S	12
		1 mg/mL	MeOH	APP-9-029-10X	20
bis(2-Methoxyethyl)phthalate	117-82-8	100 mg	NEAT	J-106	32
bis(4-Methyl-2-pentyl)phthalate	146-50-9	100 mg	NEAT	J-109	12
2-Butoxy-2-oxoethyl butyl phthalate	85-70-1	100 mg	NEAT	J-115	15
Diallyl phthalate	131-17-9	100 mg	NEAT	J-002	12
Diamyl phthalate	131-18-0	100 mg	NEAT	ALR-098N	24
		0.1 mg/mL	EtOAc	ALR-098S	24
		100 mg	NEAT	J-104	15
Dibenzyl phthalate	523-31-9	100 mg	NEAT	J-003	12
		100 µg/mL	MeOH	APP-9-063	12
		1 mg/mL	MeOH	APP-9-063-10X	20
		5 mg/mL	MeOH	AS-E0066	32
Dibutyl phthalate	84-74-2	100 mg	NEAT	J-004	12
		100 µg/mL	MeOH	ALR-099S	32
		1 mg/mL	AcCN	AS-E0318	32
Dicyclohexyl phthalate	84-61-7	100 mg	NEAT	PHTH-018N	32
		100 µg/mL	MeOH	PHTH-018S	32
		100 mg	NEAT	J-005	12
Didodecyl phthalate	2432-90-8	100 µg/mL	MeOH	APP-9-081	12
		1 mg/mL	MeOH	APP-9-081-10X	20
		5 mg/mL	MeOH	AS-E0068	32
		100 mg	NEAT	ALR-100N	24
Diethyl phthalate	84-66-2	100 µg/mL	MeOH	ALR-100S	24
		100 mg	NEAT	J-113	12
Dihexyl phthalate	84-75-3	100 mg	NEAT	J-127	12
		100 µg/mL	MeOH	PHTH-019N	12
Diisobutyl phthalate	84-69-5	100 mg	NEAT	PHTH-019S	12
		100 µg/mL	MeOH	J-010	12
Diisopentyl phthalate (Diisoamyl phthalate)	605-50-5	100 mg	NEAT	APP-9-088	12
		1 mg/mL	MeOH	APP-9-088-10X	20
		5 mg/mL	MeOH	AS-E0069	32
		0.1 mg/mL	EtOAc	M-8032-IS	10
Diisopropyl phthalate	605-45-8	100 mg	NEAT	PHTH-020N	32
		100 µg/mL	MeOH	PHTH-020S	32
		100 mg	NEAT	J-011	12
Dimethyl phthalate	131-11-3	100 µg/mL	MeOH	APP-9-095	12
		1 mg/mL	MeOH	AS-E0067	32
		5 mg/mL	MeOH	J-100	20
Di-n-heptyl phthalate	3648-21-3	100 mg	NEAT	J-013	12
		100 µg/mL	MeOH	PHTH-021N	32
Di-n-octyl phthalate	117-84-0	100 mg	NEAT	PHTH-021S	32
		100 µg/mL	MeOH	J-121	12
		100 µg/mL	MeOH	J-123	20
Di-n-propyl phthalate	131-16-8	100 mg	NEAT	J-101	20
Diphenyl phthalate	84-62-8	100 mg	NEAT		
Diundecyl phthalate	3648-20-2	100 mg	NEAT		
Isophthalates					
Dimethyl isophthalate	1459-93-4	100 mg	NEAT	J-009	12
Diphenyl isophthalate	744-45-6	100 mg	NEAT	J-012	12
Terephthalates					
bis(2-Ethylhexyl) terephthalate	6422-86-2	100 mg	NEAT	J-121	12
Diethyl terephthalate	636-09-9	100 mg	NEAT	J-123	20
Dimethyl terephthalate	120-61-6	100 mg	NEAT	J-101	20

Neats are as stated,
Solutions are 1 mL

Phthalate Standards Reference Guide



Guide includes added
technical & physical
information

Request or download
Reference Guide at
AccuStandard.com

Analytes by Functional Group

Phthalates



Phthalates (continued)

Compound	CAS No.	Conc.	Matrix	Cat. No.	Price
Monophthalates					
Monobenzyl phthalate (mBzP) NEW	2528-16-7	100 mg	NEAT	ALR-134N	\$ 24
		100 µg/mL	AcCN	ALR-134S-CN	24
Monobutyl phthalate (mBP)	131-70-4	100 mg	NEAT	ALR-135N	12
		100 µg/mL	AcCN	ALR-135S-CN	12
Monocyclohexyl phthalate NEW	7517-36-4	100 mg	NEAT	ALR-178N	25
		100 µg/mL	AcCN	ALR-178S-CN	25
Monoethyl phthalate (mEP)	2306-33-4	100 mg	NEAT	ALR-137N	12
		100 µg/mL	AcCN	ALR-137S-CN	12
Monoethylhexyl phthalate (mEHP)	4376-20-9	100 mg	NEAT	ALR-138N	24
		100 µg/mL	AcCN	ALR-138S-CN	24
Mono-2-heptyl phthalate NEW		100 mg	NEAT	ALR-143N	25
		100 µg/mL	AcCN	ALR-143S-CN	15
Monohexyl phthalate NEW	24539-57-9	100 mg	NEAT	ALR-175N	30
		100 µg/mL	AcCN	ALR-175S-CN	15
Monoisobutyl phthalate NEW	30833-53-5	100 mg	NEAT	ALR-176N	25
		100 µg/mL	AcCN	ALR-176S-CN	25
Monoisononyl phthalate NEW		100 mg	NEAT	ALR-142N	25
		100 µg/mL	AcCN	ALR-142S-CN	15
Mixture of C9 Isomers					
Monoisopropyl phthalate NEW	35118-50-4	100 mg	NEAT	ALR-179N	25
		100 µg/mL	AcCN	ALR-179S-CN	25
Monomethyl phthalate	4376-18-5	100 mg	NEAT	ALR-139N	12
		100 µg/mL	AcCN	ALR-139S-CN	12
Monooctyl phthalate NEW	5393-19-1	100 mg	NEAT	ALR-141N	25
		100 µg/mL	AcCN	ALR-141S-CN	15
Mono-n-pentyl phthalate NEW	24539-56-8	100 mg	NEAT	ALR-177N	25
		100 µg/mL	AcCN	ALR-177S-CN	25
Deuterated Phthalates					
Dibenzylphthalate-d ₄	1015854-62-2	5 mg	NEAT	PHTH-D4-001N	--
		100 µg/mL	MeOH	PHTH-D4-001S	30
Dicyclohexyl phthalate-3,4,5,6-d ₄	358731-25-6	5 mg	NEAT	PHTH-D4-004N	--
		100 µg/mL	MeOH	PHTH-D4-004S	30
Diethyl phthalate-3,4,5,6-d ₄	93952-12-6	5 mg	NEAT	PHTH-D4-005N	--
		100 µg/mL	MeOH	PHTH-D4-005S	30
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	30
Dimethyl phthalate-3,4,5,6-d ₄	93951-89-4	5 mg	NEAT	PHTH-D4-007N	--
		100 µg/mL	MeOH	PHTH-D4-007S	30
Di-n-butyl phthalate-d ₄	93952-11-5	5 mg	NEAT	PHTH-D4-002N	--
		100 µg/mL	MeOH	PHTH-D4-002S	30
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	30
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	30
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	30
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	30
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	30
Set includes above 11 Deuterated Phthalates					
	NEAT Set		PHTH-D4N-SET	11 x 5 mg	525
	SOLUTION Set		PHTH-D4S-SET	11 x 1 mL	225

Neats are as stated,
Solutions are 1 mL



Phthalates

Phthalates continued on
next page

Analytes by Functional Group

Phthalates

Phthalates (continued)

Compound	CAS No.	Conc.	Matrix	Cat. No.	Price
Phthalates - Technical Mixtures					
Benzyl 2-ethylhexyl phthalate	27215-22-1	100 mg	NEAT	ALR-165N	\$ 35
		100 µg/mL	MeOH	ALR-165S	35
n-Butyl benzyl phthalate NEW	85-68-7	10 mg	NEAT	PHTH-014N	35
		100 µg/mL	MeOH	PHTH-014S	35
Butyl cyclohexyl phthalate	84-64-0	100 mg	NEAT	J-122	35
n-Butyl isobutyl phthalate NEW	17851-53-5	10 mg	NEAT	PHTH-013N	75
		100 µg/mL	MeOH	PHTH-013S	75
Butyl octyl phthalate	84-78-6	100 mg	NEAT	J-001	12
Decyl octyl phthalate NEW	119-07-3	10 mg	NEAT	PHTH-012N	35
		100 µg/mL	MeOH	PHTH-012S	35
Didecyl phthalate NEW	84-77-5	100 mg	NEAT	J-120	12
Diisodecyl phthalate	26761-40-0	100 mg	NEAT	ALR-101N	12
		100 µg/mL	MeOH	ALR-101S	12
Diisoheptyl phthalate	71888-89-6	50 mg	NEAT	PHTH-017N	25
		100 µg/mL	MeOH	PHTH-017S	25
Diisohexyl phthalate	68515-50-4	100 mg	NEAT	J-007	12
Diisononyl phthalate (C8 to C10 Isomers)	68515-48-0	100 mg	NEAT	ALR-102N	32
		100 µg/mL	MeOH	ALR-102S	32
Diisooctyl phthalate (C8 Isomers)	27554-26-3	100 mg	NEAT	ALR-103N	12
		100 µg/mL	MeOH	ALR-103S	12
Dinonyl phthalate NEW	84-76-4	100 mg	NEAT	J-105	12
Hexyl-2-ethylhexyl phthalate NEW	75673-16-4	100 mg	NEAT	J-016	12
Isobutyl benzyl phthalate NEW	72170-45-7	10 mg	NEAT	PHTH-015N	35
		100 µg/mL	MeOH	PHTH-015S	35
Isobutyl cyclohexyl phthalate	5334-09-8	100 mg	NEAT	J-014	12
Pentyl isopentyl phthalate NEW	776297-69-9	10 mg	NEAT	PHTH-016N	35
		100 µg/mL	MeOH	PHTH-016S	35
n-Octyl n-decyl phthalate	119-07-3	100 mg	NEAT	J-015	12

Neats are as stated,
Solutions are 1 mL

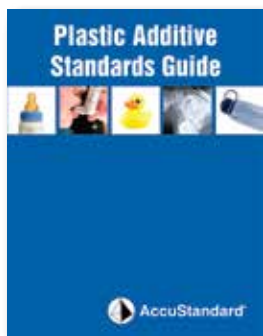




Search by
 Functional Group
 ✓ **Application**
 EPA Method

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.

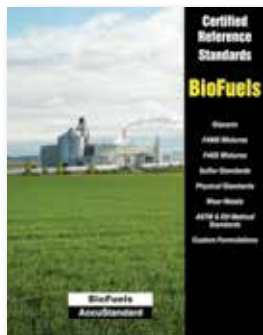


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Explosives

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.

**Widest selection of
Explosives and their
Metabolites**

**EXCLUSIVELY
from
AccuStandard**

**HMTD,
TATP &
HNS**

Matrix Key

AcCN:MeOH in (50:50 ratio) DMF Dimethyl formamide
AcCN Acetonitrile EtOH Ethanol
MeOH Methanol



**Guide includes added
technical & physical
information
Available on website.**

♦ TNT Metabolites

Explosives

Compound	CAS No.	Conc.	Matrix	Cat. No.	Price / 1 mL
2-Amino-4,6-dinitrotoluene ♦	35572-78-2	1 mg/mL	AcCN:MeOH (50:50)	M-8330-13	\$ 20
		0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-13-0.1X	20
4-Amino-2,6-dinitrotoluene ♦	19406-51-0	1 mg/mL	AcCN:MeOH (50:50)	M-8330-14	20
		0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-14-0.1X	20
Ammonium picrate	131-74-8	0.1 mg/mL	AcCN	M-8330-ADD-27	25
DEGDN	693-21-0	100 µg/mL	AcCN:MeOH (50:50)	M-8330-ADD-36	30
1,2-Diaminopropane	78-90-0	0.1 mg/mL	MeOH	M-8330-ADD-9	20
2,4-Diamino-6-nitrotoluene ♦	6629-29-4	0.1 mg/mL	AcCN	M-8330-ADD-12	40
2,6-Diamino-4-nitrotoluene ♦	59229-75-3	0.1 mg/mL	AcCN	M-8330-ADD-13	40
Diazodinitrophenol	4682-03-5	0.1 mg/mL	AcCN	M-8330-ADD-48	45
		1 mg/mL	AcCN	M-8330-ADD-48-10X	60
2,3-Dimethyl-2,3-dinitrobutane (DMNB)	3964-18-9	100 µg/mL	AcCN	M-8330-ADD-21	30
3,5-Dinitroaniline	618-87-1	0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-ADD-4	20
1,2-Dinitrobenzene	528-29-0	1 mg/mL	MeOH	M-8330-SS	20
1,3-Dinitrobenzene	99-65-0	1 mg/mL	AcCN:MeOH (50:50)	M-8330-01	15
		0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-01-0.1X	20
1,2-Dinitroglycerin	621-65-8	100 µg/mL	AcCN:MeOH (50:50)	M-8330-ADD-33	20
1,3-Dinitroglycerin	623-87-0	100 µg/mL	AcCN:MeOH (50:50)	M-8330-ADD-34	20
2,4-Dinitrotoluene ♦	121-14-2	1 mg/mL	AcCN:MeOH (50:50)	M-8330-02	20
		0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-02-0.1X	20
2,6-Dinitrotoluene ♦	606-20-2	1 mg/mL	AcCN:MeOH (50:50)	M-8330-03	20
		0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-03-0.1X	20
3,4-Dinitrotoluene	610-39-9	1 mg/mL	MeOH	M-8330-IS	15
3,5-Dinitrotoluene ♦	618-85-9	100 µg/mL	AcCN:MeOH (50:50)	M-8330-ADD-39	75
Dipentaerythritol hexanitrate NEW	13184-80-0	100 µg/mL	MeOH	M-8330-ADD-43	115
EGDN	628-96-6	0.1 mg/mL	AcCN	M-8330-ADD-5	26
Erythritol tetranitrate (ETN)	7297-25-8	0.1 mg/mL	AcCN	M-8330-ADD-47	20
		1 mg/mL	AcCN	M-8330-ADD-47-10X	30
Guanidine nitrate	506-93-4	0.1 mg/mL	MeOH	M-8330-ADD-10	20
Hexahydro-1,3-trinitroso-1,3,5-triazine	13980-04-6	0.1 mg/mL	AcCN	M-8330-ADD-46	20
		1 mg/mL	AcCN	M-8330-ADD-46-10X	30
Hexanitrodiphenylamine	131-73-7	100 µg/mL	AcCN:MeOH (50:50)	M-8330-ADD-37	40
Hexanitrostilbene (HNS) ♦	20062-22-0	0.1 mg/mL	AcCN	M-8330-ADD-26 *	60
Hexamethylene diperoxide diamine (HMDD) NEW	112204-35-0	100 µg/mL	AcCN	M-8330-ADD-45	20
		1000 µg/mL	AcCN	M-8330-ADD-45-10X	30
Hexamethylenetriperoxide diamine (HMTD)	283-66-9	0.1 mg/mL	AcCN	M-8330-ADD-25	75
HMX	2691-41-0	1 mg/mL	AcCN:MeOH (50:50)	M-8330-04	30
		0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-04-0.1X	20
Hydrazine	302-01-2	0.1 mg/mL	MeOH	M-8330-ADD-8	20
2-Hydroxylamino-4,6-dinitrotoluene ♦ (3 month stability)		0.1 mg/mL	AcCN	M-8330-ADD-18 *	115
4-Hydroxylamino-2,6-dinitrotoluene ♦ (3 month stability)		0.1 mg/mL	AcCN	M-8330-ADD-20 *	115
Nitrobenzene ♦	98-95-3	1 mg/mL	AcCN:MeOH (50:50)	M-8330-06	15
		0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-06-0.1X	20
N-Nitrodimethylamine	4164-28-7	100 µg/mL	AcCN	M-8330-ADD-40	75
Nitroglycerin	55-63-0	0.1 mg/mL	EtOH	M-8330-ADD-1	20
		1.0 mg/mL	EtOH:MeOH (97:3)	M-8330-ADD-1-10X	30
1-Nitroglycerin	624-43-1	100 µg/mL	AcCN:MeOH (50:50)	M-8330-ADD-31	20
2-Nitroglycerin	620-12-2	100 µg/mL	AcCN:MeOH (50:50)	M-8330-ADD-32	20
Nitroguanidine	556-88-7	0.1 mg/mL	MeOH	M-8330-ADD-6	20
Nitromethane	75-52-5	0.1 mg/mL	MeOH	M-8330-ADD-7	20
2-Nitrotoluene ♦	88-72-2	1 mg/mL	AcCN:MeOH (50:50)	M-8330-07	15
		0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-07-0.1X	15
3-Nitrotoluene ♦	99-08-1	1 mg/mL	AcCN:MeOH (50:50)	M-8330-08	15
		0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-08-0.1X	15
4-Nitrotoluene ♦	99-99-0	1 mg/mL	AcCN:MeOH (50:50)	M-8330-09	15
		0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-09-0.1X	15
Pentaerythrityl trinitrate NEW	22026-67-1	100 µg/mL	MeOH	M-8330-ADD-44	115

* ColdPAK required to maintain integrity of product.



Explosives (Continued)

Compound	CAS No.	Conc.	Matrix	Cat. No.	Price / 1 mL
PETN	78-11-5	0.1 mg/mL	MeOH	M-8330-ADD-2	\$ 20
		1 mg/mL	MeOH	M-8330-ADD-2-10X	30
Picramic acid	831-52-7	100 µg/mL	AcCN:MeOH (50:50)	M-8330-ADD-22	30
Picric acid	88-89-1	0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-ADD-3	20
Propyleneglycol dinitrate	6423-43-4	100 µg/mL	MeOH	M-8330-ADD-35	35
PYX	38082-89-2	0.1 mg/mL	AcCN	M-8330-ADD-11	20
RDX	121-82-4	1 mg/mL	AcCN:MeOH (50:50)	M-8330-05	30
		0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-05-0.1X	20
TATP	17088-37-8	0.1 mg/mL	AcCN	M-8330-ADD-24 *	95
TEGDN		0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-ADD-41-R1	30
2,2',6,6'-Tetranitro-4,4'-azotoluene ♦		0.1 mg/mL	AcCN	M-8330-ADD-17	100
4,4',6,6'-Tetranitro-2,2'-azotoluene ♦		0.1 mg/mL	AcCN	M-8330-ADD-19	100
2,2',6,6'-Tetranitro-4,4'-azoxytoluene ♦		0.1 mg/mL	AcCN	M-8330-ADD-15	75
Tetryl	479-45-8	1 mg/mL	AcCN:MeOH (50:50)	M-8330-10	30
		0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-10-0.1X	20
TNT	118-96-7	1 mg/mL	AcCN:MeOH (50:50)	M-8330-11	25
		0.1 mg/mL	AcCN:MeOH (50:50)	M-8330-11-0.1X	20
1,3,5-Triamino-2,4,6-trinitrobenzene	3058-38-6	40 µg/mL	DMF	M-8330-ADD-14-DMF	40
2,4,6-Triaminotoluene trihydrochloride (TNT free)	634-87-7	5 mg	NEAT	M-8330-ADD-23N-5MG	150
Trimethylethane trinitrate	3032-55-1	100 µg/mL	AcCN:MeOH (50:50)	M-8330-ADD-28	30
1,3,5-Trinitrobenzene ♦	99-35-4	1 mg/mL	AcCN:MeOH	M-8330-12	20
		0.1 mg/mL	AcCN:MeOH	M-8330-12-0.1X	20
2,4,6-Trinitroresorcinol	82-71-3	1 mg/mL	AcCN:MeOH	M-8330-ADD-29	60

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. AccuStandard suggest using the high concentration set **M-8330-R-10X-SET** when first performing Method 8330 development..

Mix A

M-8330A *	\$ 40 / 1 x 1 mL
0.1 mg/mL each in AcCN:MeOH (50:50)	7 comps.
M-8330A-10X *	\$ 50 / 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	

Mix B

M-8330B *	\$ 25 / 1 x 1 mL
0.1 mg/mL each in AcCN:MeOH (50:50)	5 comps.
M-8330B-10X *	\$ 40 / 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-8330A-R *	\$ 45 / 1 x 1 mL
0.1 mg/mL each in AcCN:MeOH (50:50)	8 comps.
M-8330A-R-10X *	\$ 55 / 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

M-8330B-R *	\$ 30 / 1 x 1 mL
0.1 mg/mL each in AcCN:MeOH (50:50)	7 comps.
M-8330B-R-10X *	\$ 45 / 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	

Composite Explosive Mixture

M-8330-R-0.1X	\$ 60 / 1 x 1 mL
0.1 mg/mL each in AcCN:MeOH (50:50)	
M-8330-R-0.5X	\$ 85 / 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

M-8330B-R2 *	\$ 30 / 1 x 1 mL
0.1 mg/mL each in AcCN:MeOH (50:50)	6 comps.
M-8330B-R2-10X *	\$ 40 / 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	\$ 20 / 1 x 1 mL
1.0 mg/mL in MeOH	
1,2-Dinitrobenzene	

Internal Standard

M-8330-IS	\$ 15 / 1 x 1 mL
M-8330-IS-PAK	SAVE 20% \$ 60 / 5 x 1 mL
1.0 mg/mL in MeOH	
3,4-Dinitrotoluene	

* ColdPAK required to maintain integrity of product.

Explosives by HPLC Set

M-8330-R-SET *	\$ 175 / 14 x 1 mL
Each at 100 µg/mL in AcCN:MeOH (50:50)	
M-8330-R-10X-SET *	\$ 210 / 14 x 1 mL
Each at 1000 µg/mL in AcCN:MeOH (50:50)	
1,3-Dinitrobenzene (01)	3-Nitrotoluene (08)
2,4-Dinitrotoluene (02)	4-Nitrotoluene (09)
2,6-Dinitrotoluene (03)	Tetryl (10)
HMX (04)	TNT (11)
RDX (05)	1,3,5-Trinitrobenzene (12)
Nitrobenzene (06)	2-Amino-4,6-dinitrotoluene (13)
2-Nitrotoluene (07)	4-Amino-2,6-dinitrotoluene (14)



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

\$ 20 / 1 x 1 mL

3,4-Dinitrotoluene

Internal Standard Fortification Solution

M-529-ISFS

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

\$ 90 / 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

\$ 55 / 1 x 1 mL

SAVE 20% \$ 220 / 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

\$ 15 / 1 x 1 mL

SAVE 20% \$ 60 / 5 x 1 mL

Nitrobenzene-d₅

Surrogate Analyte Fortification Solution

M-529-SAFS

100 µg/mL each in MeOH

\$ 60 / 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)

\$ 55 / 1 x 1 mL

SAVE 20% \$ 220 / 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 Stock Solution B

M-8095-SSB-100X

M-8095-SSB-100X-PAK

At stated conc. in AcCN:MeOH (50:50)

\$ 55 / 1 x 1 mL

SAVE 20% \$ 220 / 5 x 1 mL

7 comps.

Nitrobenzene (500 µg/mL)
3-Nitrotoluene (500 µg/mL)
2-Nitrotoluene (500 µg/mL)
4-Nitrotoluene (500 µg/mL)

Nitroglycerin (500 µg/mL)
PETN (500 µg/mL)
3,5-Dinitroaniline (100 µg/mL)

Explosive Surrogate Standards

M-8095-SS-01

M-8095-SS-01-PAK

100 µg/mL in AcCN

\$ 15 / 1 x 1 mL

SAVE 20% \$ 40 / 5 x 1 mL

3,4-Dinitrotoluene

M-8095-SS-03

M-8095-SS-03-PAK

100 µg/mL in AcCN

\$ 50 / 1 x 1 mL

SAVE 20% \$ 200 / 5 x 1 mL

2,5-Dinitrotoluene

M-8095-SS-02

M-8095-SS-02-PAK

100 µg/mL in AcCN

\$ 20 / 1 x 1 mL

SAVE 20% \$ 80 / 5 x 1 mL

2-Methyl-4-nitroaniline



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 \$ 95 / 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 \$ 65 / 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		1000 µg/mL		10,000 µg/mL	
Matrix	Unit	Cat. No.	Price	Cat. No.	Price
Antimony	50 mL	-----		ICP-02N-10X-0.5	\$ 36
Sb Dilute HNO ₃ tr.	100 mL	ICP-02N-1	\$ 34	ICP-02N-10X-1	65
Tartaric acid	500 mL	ICP-02N-5	67	ICP-02N-10X-5	165
Barium	50 mL	-----		ICP-04N-10X-0.5	32
Ba(NO ₃) ₂	100 mL	ICP-04N-1	34	ICP-04N-10X-1	54
2-5% Nitric acid	500 mL	ICP-04N-5	67	ICP-04N-10X-5	138
Lead	50 mL	-----		ICP-29N-10X-0.5	32
Pb(NO ₃) ₂	100 mL	ICP-29N-1	34	ICP-29N-10X-1	54
2-5% Nitric acid	500 mL	ICP-29N-5	67	ICP-29N-10X-5	138

Gun Surveillance Standard

EXP-GSS

At stated conc. (µg/mL) in AcCN

\$ 35 / 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.	Price / 1 mL
2,4-Dinitrotoluene	100 µg/mL	AcCN:MeOH	M-8330-02-0.1X	20
C ₇ H ₆ N ₂ O ₄	1000 µg/mL	AcCN:MeOH	M-8330-02	20
2,6-Dinitrotoluene	100 µg/mL	AcCN:MeOH	M-8330-03-0.1X	20
C ₇ H ₆ N ₂ O ₄	1000 µg/mL	AcCN:MeOH	M-8330-03	20
3,4-Dinitrotoluene	100 µg/mL	AcCN:MeOH	M-8330-04-0.1X	30
C ₇ H ₆ N ₂ O ₄	1000 µg/mL	AcCN:MeOH	M-8330-04	30
Diphenylamine NEW	100 µg/mL	DCM	APP-9-097	12
C ₁₂ H ₁₁ N				
Ethylcentralite NEW	100 µg/mL	AcCN:MeOH	M-8330-ADD-50	20
C ₁₇ H ₁₂ N ₂ O				
Methylcentralite NEW	100 µg/mL	AcCN:MeOH	M-8330-ADD-49	20
C ₁₅ H ₁₆ N ₂ O				
2-Nitrodiphenylamine NEW	100 µg/mL	AcCN:MeOH	M-8330-ADD-51	15
C ₁₂ H ₁₀ N ₂ O ₂				
4-Nitrodiphenylamine NEW	100 µg/mL	AcCN:MeOH	M-8330-ADD-52	20
C ₁₂ H ₁₀ N ₂ O ₂				
1-Nitroglycerine ►	100 µg/mL	AcCN:MeOH	M-8330-ADD-31	20
C ₃ H ₅ N ₃ O ₉				
2-Nitroglycerine ►	100 µg/mL	AcCN:MeOH	M-8330-ADD-32	20
C ₃ H ₅ N ₃ O ₉				
N-Nitrosodiphenylamine	100 µg/mL	MeOH	APP-9-150	20
C ₁₂ H ₁₀ N ₂ O				
2-Nitrotoluene	1000 µg/mL	AcCN:MeOH	M-8330-07	15
C ₇ H ₇ NO ₃				
3-Nitrotoluene	1000 µg/mL	AcCN:MeOH	M-8330-08	15
C ₇ H ₇ NO ₃				
4-Nitrotoluene	1000 µg/mL	AcCN:MeOH	M-8330-09	15
C ₇ H ₇ NO ₃				

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.

Any compound without ► could contain possible isomers



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:

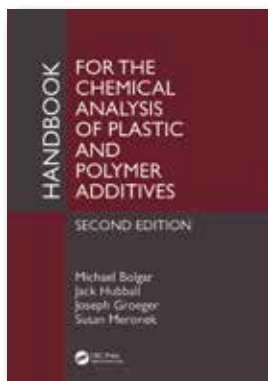
- EU Directives 2002/96/EC and 2002/95/EC WEEE (Waste Electrical and Electronic Equipment) that establishes limits for the content of a product that must be recyclable or reusable.
- EU Directive 2003/11/EC RoHS (restriction of the use of certain hazardous substances) restricting the use of six toxins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

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Deuterated Phthalates	91

PolyAdd  Check™

The perfect companion for your analysis!

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



Each Compound has:

Chemical Information

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

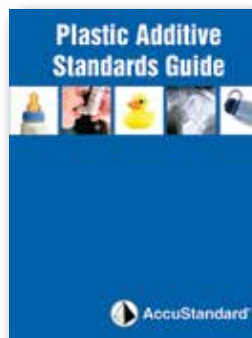
- Mass Spectrum with key ions tabulated
- Chromatogram with conditions

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, much more!

The new book will be available Spring 2015

Cat. No: PLAS-CRC-BOOK2

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
- etc.

For chemical structure, formula and molecular weight, visit our website, to download our catalog.



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)	Price	Solution (1 mL)	Price
Accelerator BBTS	N-(1,1-dimethylethyl)-2-benzo thiazolesulfenamide	95-31-8	PLAS-AC-003N	\$ 50	PLAS-AC-003S	\$ 18
Accelerator CBTS	N-cyclohexyl-2-benzothiazole sulfenamide	95-33-0	PLAS-AC-007N	50	-----	---
Accelerator EZ & EZ-SP	Zinc diethyldithiocarbamate	14324-55-1	PLAS-AC-006N	50	PLAS-AC-006S	18
Accelerator MBT, MBT/MG	2-Mercaptobenzothiazole	149-30-4	PLAS-AC-001N	50	PLAS-AC-001S	18
Activator OT Urea	Urea	57-13-6	PLAS-AC-005N	50	PLAS-AC-005S-A	18
Akroform ETU-22 PM	Ethylene thiourea	96-45-7	PLAS-AC-002N	50	PLAS-AC-002S ☆	18
Cure-Rite® IBT	Tetraisobutylthiuram disulfide	3064-73-1	PLAS-AC-004N	50	PLAS-AC-004S	18
Dipentamethylenethiuram tetrasulfide		120-54-7	PLAS-AC-009N	50	-----	---
1,3-Diphenyl-2-thiourea		102-08-9	PLAS-AC-108N	50	-----	---
1,3-Di-o-tolylguanidine		97-39-2	PLAS-AC-010N	50	-----	---

Antidegradants

Trade Name	Chemical Name	CAS No.	Neat (50 mg)	Price	Solution (1 mL)	Price
Akrochem® Antiox 12	Butylated reaction product of p-cresol and dicyclopentadiene	68610-51-5	PLAS-AD-001N	\$ 50	PLAS-AD-001S	\$ 18
Ethanox® 314	1,3,5-Tris(3,5-di-tert-butyl-4-hydroxybenzyl)-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione	27676-62-6	PLAS-AX-084N	50	PLAS-AX-084S	18
Ethanox® 703	2, 6-Di-tert-butyl-N-N-dimethylamino-p-cresol	88-27-7	PLAS-AX-085N	50	PLAS-AX-085S	18
Santoflex® IPPD	N-phenyl-N'-propan-2-yl-benzene-1,4-diamine	101-72-4	PLAS-AD-003N	50	PLAS-AD-003S ☆	18
Santoflex® 77PD	N,N'-bis(1,4-dimethylpentyl)-p-phenylenediamine	3081-14-9	PLAS-AD-002N	50	PLAS-AD-002S	18

Antifoams

Trade Name	Chemical Name	CAS No.	Neat (50 mg)	Price	Solution (1 mL)	Price
SF100	Dimethyl silicone fluid	9016-00-6	PLAS-AF-001N	\$ 50	PLAS-AF-001S	\$ 18

Antioxidants

Trade Name	Chemical Name	CAS No.	Neat (50 mg)	Price	Solution (1 mL)	Price
Alkanox® P27	bis(2,4-Di-tert-butylphenyl)pentaerythritol diphosphate and magnesium aluminum hydroxy carbonate hydrate	26741-53-7 / 11097-59-9	PLAS-AX-032N	\$ 50	-----	---
Alkanox® TNPP	Tris(mono-nonylphenyl) phosphite with up to 1% triisopropanol amine	26523-78-4	PLAS-AX-077N	50	PLAS-AX-077S	\$ 18
Anox® PP18	Octadecyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propanoate	2082-79-3	PLAS-AX-114N	50	-----	---
Antioxidant 60	2H-benzimidazole-2-thione, 1,3-di-hydro-4(or 5)-methyl	53988-10-6	PLAS-AX-019N	50	PLAS-AX-019S-M	18
Antioxidant S	Benzenamine, N-phenyl, reaction products with 2,4,4-trimethylpentene	68411-46-1	PLAS-AX-057N	50	PLAS-AX-057S	18
2-(2H-Benzotriazol-2-yl)-4,6-bis(1-methyl-1-phenylethyl)phenol		3147-75-9	PLAS-AX-094N	50	-----	---
BLS® 234	2-[2-Hydroxy-3,5-di-(1,1-dimethylbenzyl)]-2H-benzotriazole	70321-86-7	PLAS-AX-088N	50	-----	---
BLS® 292	bis(1,2,2,6,6-pentamethyl-4-piperidinyl)sebacate and Methyl(1,2,2,6,6-pentamethyl-4-piperidinyl)sebacate	41556-26-7 / 8219-37-7	PLAS-AX-089N	50	-----	---
BLS® 1622	Dimethyl succinate polymer with 4-hydroxy-2,2,6,6-tetramethyl-1-piperidine ethanol	65447-77-0	PLAS-AX-096N	50	-----	---
BLS® 1944	Poly[[6-[(1,1,3,3-tetramethylbutyl)amino]]-s-triazine-2,4-diy]][(2,2,6,6-tetramethyl-4-piperidyl)imino]]hexamethylene[(2,2,6,6-tetramethyl-4-piperidyl)imino]	70624-18-9	PLAS-AX-090N	50	-----	---
BNX 1077	Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-, isotridecyl ester	847488-62-4	PLAS-AX-087N	50	-----	---
BNX 1225TPR	Blend of BNX® 1010, Benefos® 1680 and SIS Block Copolymer	6683-19-8/31570-04-4/ 25038-32-8	PLAS-AX-091N	50	-----	---
2-tert-Butyl-6-(5-chloro-2H-benzotriazol-2-yl)-4-methylphenol		3896-11-5	PLAS-AX-093N	50	-----	---
4,4'-Butylidenebis(6-tert-butyl-m-cresol)		85-60-9	PLAS-AX-105N	50	-----	---
Cyanox® 1212	Lauryl stearylthiopropionate	13103-52-1	PLAS-AX-047N	50	PLAS-AX-047S	18
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	50	PLAS-AX-005S	18
Cyanox® 2246	2,2'-Methylene-bis-(4-methyl-6-tert-butyl-phenol)	119-47-1	PLAS-AX-013N	50	PLAS-AX-013S	18
Cyanox® 425	2,2'-Methylene-bis-(4-ethyl-6-tert-butyl-phenol)	88-24-4	PLAS-AX-012N	50	PLAS-AX-012S	18
Cyanox® LTDP	Dilaurylthiopropionate	123-28-4	PLAS-AX-041N	50	PLAS-AX-041S	18
Cyanox® STDP	Distearylthiopropionate	693-36-7	PLAS-AX-044N	50	PLAS-AX-044S	18
Dibenzylhydroxylamine		621-07-8	PLAS-AX-092N	50	-----	---
3,9-Bis(2,4-dicumylphenoxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5,5]undecane		154862-43-8	PLAS-AX-111N	50	-----	---
Diethyl 3,5-Di-tert-butyl-4-hydroxybenzyl phosphonate		976-56-7	PLAS-AX-110N	50	-----	---
N,N'-Diethylthiourea	1,3-Diethyl-2-thiourea	105-55-5	PLAS-AX-103N	50	-----	---
O,O'-Diocetadecylpentaerythritol bis(phosphite)		3806-34-6	PLAS-AX-108N	50	-----	---
Distyryl biphenyl		27344-41-8	PLAS-AX-099N	50	-----	---
2,6-Di-tert-butyl-4-ethylphenol		4130-42-1	PLAS-AX-107N	50	-----	---
2,6-Di-tert-butylphenol		128-39-2	PLAS-AX-112N	50	-----	---
Ethanox® 310	Pentaerythritol tetrakis (3-(3,5-di-t-butyl-4-hydroxyphenyl)propionate	6683-19-8	PLAS-AX-086N	50	PLAS-AX-086S	18
Ethanox® 323	Nonylphenol disulfide oligomer		PLAS-AX-082N	50	PLAS-AX-082S	18
Ethanox® 330	1,3,5-Trimethyl-2,4,6-tris(3,5-di-tert-butyl-4-hydroxybenzyl) benzene	1709-70-2	PLAS-AX-021N	50	PLAS-AX-021S	18
Ethanox® 376	3,5-Di-tert-butyl-4-hydroxyhydrocinnamic acid, octadecyl ester	2082-79-3	PLAS-AX-054N	50	PLAS-AX-054S	18

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)	Price	Solution (1 mL)	Price
Ethanox® 702	4,4'-Methylenebis(2,6-di-tert-butylphenol)	118-82-1	PLAS-AX-025N	50	PLAS-AX-025S	\$ 18
Ethanox® 703	2,6-di-tert-butyl-N,N-dimethylamino-p-cresol	88-27-7	PLAS-AX-085N	50	PLAS-AX-085S	18
Ethaphos® 368	Tris(2,4-di-tert-butylphenyl) phosphite	31570-04-4	PLAS-AX-074N	50	PLAS-AX-074S	18
2,2'-Ethylidene-bis(4,6-di-tert-butylphenol)		35958-30-6	PLAS-AX-106N	50	-----	---
2-(2'-Hydroxy-3',5'-di-tert-amylphenyl) benzotriazole		25973-55-1	PLAS-AX-095N	50	-----	---
Irganox® 245	Triethyleneglycol bis[3-(3'-tert-butyl-4'-hydroxy-5'-methylphenol)propionate]	36443-68-2	PLAS-AX-070N	50	PLAS-AX-070S	18
Irganox 259	Hexamethylene bis(3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate)	35074-77-2	PLAS-AX-045N	50	PLAS-AX-045S	18
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	50	PLAS-AX-014S	18
Irganox 1035	Thiodiethylene bis(3,5-di-tert-butyl-4-hydroxyhydrocinnamate)	41484-35-9	PLAS-AX-069N	50	PLAS-AX-069S	18
Irganox 1081	6,6'-Di-tert-butyl-2,2'-thiodi-p-cresol	90-66-4	PLAS-AX-080N	50	PLAS-AX-080S	18
Irganox 1098	N,N'-1,6-Hexanedyl bis[3,5-bis(1,1-dimethylethyl)-4-hydroxy-benzenepropanamide]	23128-74-7	PLAS-AX-050N	50	PLAS-AX-050S ☆	18
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	50	-----	---
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	50	PLAS-AX-020S ☆	18
Irganox 3144 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	50	PLAS-AX-078S	18
Irganox E 201	alpha-Tocopherol	10191-41-0	PLAS-AX-027N	50	PLAS-AX-027S	18
Irganox MD 1024	1,2-bis(3,5-Di-tert-butyl-4-hydroxyhydrocinnamoyl)hydrazide	32687-78-8	PLAS-AX-001N	50	PLAS-AX-001S ☆	18
Isonox® 132	2,6-Di-tert-butyl-4-sec-butylphenol	17540-75-9	PLAS-AX-018N	50	PLAS-AX-018S	18
Isonox 232	2,6-Di-tert-butyl-4-nonylphenol	4306-88-1	PLAS-AX-063N	50	PLAS-AX-063S	18
Lowinox® AH25	2,5-bis(1,1-Dimethylpropyl)-1,4-benzenediol	79-74-3	PLAS-AX-016N	50	PLAS-AX-016S	18
Lowinox CPL	Polymeric sterically hindered phenol	68610-51-5	PLAS-AX-059N	50	PLAS-AX-059S	18
Lowinox TBM-6	4,4'-Thiobis(2-tert-butyl-5-methylphenol)	96-69-5	PLAS-AX-024N	50	PLAS-AX-024S	18
Markstat® 60	Polyethylene glycol ether (<20% NaClO ₄)		PLAS-AX-028N	50	PLAS-AX-028S	18
Naugard® 412S	beta-Laurylthiopropionate	29598-76-3	PLAS-AX-030N	50	PLAS-AX-030S	18
Naugard 445	4,4'-bis(alpha,alpha-Dimethylbenzyl)diphenylamine	10081-67-1	PLAS-AX-022N	50	PLAS-AX-022S	18
Naugard 635	4-(1-phenylethyl)-N-[4-(1-phenylethyl)phenyl]aniline	68442-68-2	PLAS-AX-113N	50	-----	---
Naugard 956	Proprietary blend of primary and secondary antioxidants		PLAS-AX-060N	50	PLAS-AX-060S-T	18
Naugard A	Acetone diphenylamine condensation products	68412-48-6	PLAS-AX-026N	50	PLAS-AX-026S	18
Naugard B-25	1:1 blend of Naugard® 10 and Naugard® 524	6683-19-8 / 31570-04-4	PLAS-AX-061N	50	PLAS-AX-061S	18
Naugard BHT	2,6-Di-tert-butyl-4-methylphenol	128-37-0	PLAS-AX-017N	50	PLAS-AX-017S	18
Naugard HM-22	Blend of phenolic primary and diphenylamine secondary antioxidants (Naugards 76 and 445)	10081-67-1 / 2082-79-3	PLAS-AX-033N	50	PLAS-AX-033S	18
Naugard J	N,N'-Diphenyl-p-phenylenediamine	74-31-7	PLAS-AX-048N	50	PLAS-AX-048S ☆	18
Naugard NBC	Nickel dibutyl dithiocarbamate	13927-77-0	PLAS-AX-051N	50	PLAS-AX-051S	18
Naugard PANA	N-Phenyl-1-naphthylamine	90-30-2	PLAS-AX-058N	50	PLAS-AX-058S	18
Naugard PHR	Tris(mono-nonylphenyl) phosphite with up to 1% triisopropanol amine	26523-78-4	PLAS-AX-076N	50	PLAS-AX-076S	18
Naugard PS-30	Benzenamine, N-phenyl, reaction products with 2,4,4-trimethylpentene	68411-46-1	PLAS-AX-038N	50	PLAS-AX-038S	18
Naugard PS-35	Butylated, octylated diphenylamine 2,6 di-tert-butyl-4-sec-butyl phenol		PLAS-AX-046N	50	PLAS-AX-046S	18
Naugard Q Extra	1,2-Dihydro-2,2,4-trimethylquinoline (polymerized)	26780-96-1	PLAS-AX-002N	50	PLAS-AX-002S	18
Naugard RM-51	Tris(mono-nonylphenyl)phosphite,2,2'-methylene bis (4-methyl-6-nonyl phenol)	26523-78-4	PLAS-AX-034N	50	PLAS-AX-034S	18
Naugard Super Q	1,2-Dihydro-2,2,4-trimethylquinoline (polymerized)	147-47-7	PLAS-AX-003N	50	PLAS-AX-003S	18
Naugard XL-1	2,2'-Oxamidobis[ethyl-3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate]	70331-94-1	PLAS-AX-008N	50	PLAS-AX-008S ☆	18
Propyl gallate	propyl 3,4,5-trihydroxybenzoate	121-79-9	PLAS-AX-109N	50	-----	---
bis(2,2,6,6-Tetramethyl-4-piperidyl) sebacate NEW		52829-07-9	PLAS-AX-097N	50	-----	---
2,2'-(2,5-thiophenediyl)bis(5-tert-butylbenzoxazole) NEW		7128-64-5	PLAS-AX-098N	50	-----	---
Ultrinox® 626	bis(2,4-Di-tert-butylphenyl)pentaerythritol diphosphite	26741-53-7	PLAS-AX-031N	50	PLAS-AX-031S	18

Antiozonants

Trade Name	Chemical Name	CAS No.	Neat (50 mg)	Price	Solution (1 mL)	Price
Antiozonant NIBUD	Nickel dibutyl dithiocarbamate	13927-77-0	PLAS-AZ-001N	\$ 50	PLAS-AZ-001S	\$ 18
Akrowax™ 195	Petroleum Wax	121-79-9	PLAS-AZ-002N	\$ 50	-----	---

Blowing Agents, Plasticizers

Trade Name	Chemical Name	CAS No.	Neat (50 mg)	Price	Solution (1 mL)	Price
CPW-100	Chlorinated paraffin wax	63449-39-8	PLAS-BA-001N	\$ 50	PLAS-BA-001S	\$ 18
Celogen® AZ	Carbamoyliminoureia	123-77-3	PLAS-BA-002N **	50	PLAS-BA-002S-DMSO	18
Celogen® RA	[(4-methylphenyl)sulfonylamino]urea	10396-10-8	PLAS-BA-003N	50	-----	---

** This product can not ship by air.



Coupling Agents

Trade Name	Chemical Name	CAS No.	Neat (50 mg)	Price	Solution (1 mL)	Price
Silquest® A-187	gamma-Glycidioxypropyltrimethoxysilane	2530-83-8	PLAS-CA-004N	\$ 50	PLAS-CA-004S	\$ 18
Silquest A-1100	gamma-Aminopropyltriethoxysilane	919-30-2	PLAS-CA-002N	50	PLAS-CA-002S	18
Silquest A-1102	gamma-Aminopropyltriethoxysilane (Tech grade)	919-30-2	PLAS-CA-003N	50	PLAS-CA-003S	18
Silquest A-1289	bis-(Triethoxysilylpropyl)tetrasulfane	211519-85-6	PLAS-CA-001N	50	PLAS-CA-001S	18
Silquest A-137	Octyltriethoxysilane	2943-75-1	PLAS-CA-005N	50	PLAS-CA-005S	18
Silquest A-2171	Vinylmethyldimethoxysilane	16753-62-1	PLAS-CA-006N	50	PLAS-CA-006S	18

Cross-Linking Agents

Trade Name	Chemical Name	CAS No.	Neat (50 mg)	Price	Solution (1 mL)	Price
F-300, F-1000, F-1500, F-2000, F-3000	Stearic acid	57-11-4	PLAS-CL-006N	\$ 50	PLAS-CL-006S-D	\$ 18
Perkacit® DPG	N,N'-Diphenylguanidine	102-06-7	PLAS-CL-004N	50	PLAS-CL-004S ☆	18
Perkacit MBT	2-Mercaptobenzothiazole	149-30-4	PLAS-CL-002N	50	PLAS-CL-002S	18
Perkacit MBTS	2,2'-Dithiobis(benzothiazole)	120-78-5	PLAS-CL-001N	50	PLAS-CL-001S	18
Perkacit NDBC	Nickel dibutyl dithiocarbamate	13927-77-0	PLAS-CL-005N	50	PLAS-CL-005S	18
Perkacit ZDEC	Zinc diethyldithiocarbamate	14324-55-1	PLAS-CL-007N	50	PLAS-CL-007S	18
Resimene® 3520	Hexamethoxy methyl melamine	3089-11-0	PLAS-CL-003N	50	PLAS-CL-003S	18

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

Chemical Name	CAS No.	Matrix	Solution (1 mL)	Price
Aroclor® 1016 (Tech Mix)	12674-11-2	1000 µg/mL in Hexane 50 mg	C-216S-H-10X C-216N-50MG	\$ 20 40
Aroclor 1221 (Tech Mix)	11104-28-2	1000 µg/mL in Hexane 50 mg	C-221S-H-10X C-221N-50MG	20 50
Aroclor 1232 (Tech Mix)	11141-16-5	1000 µg/mL in Hexane	C-232S-H-10X	20
Aroclor 1242 (Tech Mix)	53469-21-9	1000 µg/mL in Hexane 50 mg	C-242S-H-10X C-242N-50MG	20 40
Aroclor 1248 (Tech Mix)	12672-29-6	1000 µg/mL in Hexane 50 mg	C-248S-H-10X C-248N-50MG	20 40
Aroclor 1254 (Tech Mix)	11097-69-1	1000 µg/mL in Hexane 50 mg	C-254S-H-10X C-254N-50MG	20 55
Aroclor 1260 (Tech Mix)	11096-82-5	1000 µg/mL in Hexane 50 mg	C-260S-H-10X C-260N-50MG	20 40
Aroclor 1262 (Tech Mix)	37324-23-5	1000 µg/mL in Hexane 50 mg	C-262S-H-10X C-262N-50MG	20 40
Aroclor 1268 (Tech Mix)	11100-14-4	1000 µg/mL in Hexane	C-298S-H-10X	20
Aroclor 5432 (Tech Mix)	63496-31-1	35 µg/mL in Toluene	T-432S	25
Aroclor 5442 (Tech Mix)	12642-23-8	35 µg/mL in Toluene	T-442S	25
Aroclor 5460 (Tech Mix)	11126-42-4	35 µg/mL in Toluene	T-440S	25
Aroclor 6050 (Tech Mix)		35 µg/mL in Toluene	T-6050S	25
Decabromodiphenyl ether	1163-19-5	50 µg/mL in Isooctane:Toluene	BDE-209S	50
Firemaster BP4A (4,4'-(1-methylethylidene) bis (2,6-dibromophenol))	79-94-7	100 µg/mL in Toluene	FRS-006S	15
Halowax 1013 (56 %Cl)	1321-64-8	100 µg/mL in Methanol	N-1013S	20
Halowax 1014 (62 %Cl)	1335-87-1	100 µg/mL in Methanol	N-1014S	20
Halowax 1051 (70 %Cl)	2234-13-1	100 µg/mL in Methanol	N-1051S	20
Halowax 1099 (52 %Cl)	39450-05-0	100 µg/mL in Methanol	N-1099S	20
2,2',3,4,4',5',6-Heptabromodiphenyl ether	207122-16-5	50 µg/mL in Isooctane	BDE-183S	160
2,2',4,4'-Tetrabromodiphenyl ether	40088-47-9	50 µg/mL in Isooctane	BDE-047S	50
2,2',4,4',5-Pentabromodiphenyl ether	60348-60-9	50 µg/mL in Isooctane	BDE-099S	90
2,2',4,4',5,5'-Hexabromodiphenyl ether	36483-60-0	50 µg/mL in Isooctane	BDE-153S	90
2,2',4,4',5,6'-Hexabromodiphenyl ether	207122-15-4	50 µg/mL in Isooctane	BDE-154S	90
2,2',4,4',6-Pentabromodiphenyl ether	189084-64-8	50 µg/mL in Isooctane	BDE-100S	90
m-Terphenyl	92-06-8	100 mg	T-002N	13
o-Terphenyl	84-15-1	100 mg	T-001N	13
p-Terphenyl	92-94-4	100 mg	T-003N	13
Tetradecachloro-m-terphenyl	42429-88-9	35 µg/mL in Toluene	T-005S	25
Tetradecachloro-o-terphenyl		35 µg/mL in Toluene	T-004S	25
Tetradecachloro-p-terphenyl		35 µg/mL in Toluene	T-006S	25
Triethylphosphate	78-40-0	50 mg	PLAS-PL-067N	50

PolyAdd  Check™



Plastic Additives

Trade-named products are usually technical mixtures.

Plasticizers

Trade Name	Chemical Name	CAS No.	Neat (50 mg)	Price	Solution (1 mL)	Price
Benzoflex® 2-45	Diethylene glycol dibenzoate	120-55-8	PLAS-PL-015N	\$ 50	PLAS-PL-015S	\$ 18
Bisphenol A (BPA)	4,4'-Dihydroxy-2,2'-diphenylpropane	80-05-7			M-1626-01S	20
Celogen® SD-125	50% Azodicarbonamide in a phthalate plasticizer		PLAS-PL-009N	50	PLAS-PL-009S	18
Citroflex® 2	2-Hydroxy-1,2,3-propanetricarboxylic acid, triethyl ester	77-93-0	PLAS-PL-028N	50	PLAS-PL-028S	18
Citroflex 4	2-Hydroxy-1,2,3-propanetricarboxylic acid, tributyl ester	77-94-1	PLAS-PL-030N	50	PLAS-PL-030S	18
Citroflex A-2	2-(Acetyloxy)-1,2,3-propanetricarboxylic acid, triethyl ester	77-89-4	PLAS-PL-001N	50	PLAS-PL-001S	18
Citroflex A-4	2-Acetoxy-1,2,3-propanetricarboxylic acid, tributyl ester	77-90-7	PLAS-PL-002N	50	PLAS-PL-002S	18
Citroflex B-6	n-Butyltri-n-hexyl citrate	82469-79-2	PLAS-PL-025N	50	PLAS-PL-025S	18
Cresyl diphenyl phosphate	(4-Methylphenyl) diphenyl phosphate	26444-49-5	PLAS-PL-059N	50	-----	---
Dibutyl phthalate		84-74-2	PLAS-PL-013N	50	PLAS-PL-013S	18
Dibutyl sebacate	Dimethyl decanedioate	109-43-3	PLAS-PL-062N	50	-----	---
Diisooctyl phthalate	bis(6-Methylheptyl)benzene-1,2-dicarboxylate	27554-26-3	PLAS-PL-071N	50	-----	---
Dimethyl adipate	Dimethyl hexanedioate	627-93-0	PLAS-PL-070N	50	-----	---
Dimethyl sebacate	Dimethyl decanedioate	106-79-6	PLAS-PL-061N	50	-----	---
Diocetyl phthalate (DOP)		117-81-7	PLAS-PL-019N	50	PLAS-PL-019S	18
Disflamoll® TKP	Tricresyl phosphate	1330-78-5	PLAS-PL-053N	50	-----	---
Disflamoll® TP	Triphenyl phosphate	115-86-6	PLAS-PL-069N	50	-----	---
2-Ethylhexyl sebacate	bis(2-Ethylhexyl) decanedioate	122-62-3	PLAS-PL-064N	50	-----	---
Bis(2-Ethylhexyl) terephthalate	bis(2-Ethylhexyl) benzene-1,4-dicarboxylate	6422-86-2	PLAS-PL-065N	50	-----	---
Hercoflex® 900	1,3-Isobenzofurandione, polymer with 2,2'-(1,2-ethanediylbis(oxy)) bis(ethanol), benzoate	68186-30-1	PLAS-PL-038N	50	PLAS-PL-038S	18
Hi-Point® PD-1	Methyl ethyl ketone peroxide solution	1338-23-4	PLAS-PL-024N	50	PLAS-PL-024S	18
Jayflex® 77	Diisooheptyl phthalate	71888-89-6	PLAS-PL-017N	50	PLAS-PL-017S	18
Jayflex DIDP	Diisodecyl phthalate	68515-49-1	PLAS-PL-016N	50	PLAS-PL-016S	18
Jayflex DINP	Diisononyl phthalate	68515-48-0	PLAS-PL-018N	50	PLAS-PL-018S	18
Jayflex DTD	Diisotridecyl phthalate	68515-47-9	PLAS-PL-020N	50	PLAS-PL-020S	18
Jayflex L11P-E	Diundecyl phthalate	3648-20-2	PLAS-PL-021N	50	PLAS-PL-021S	18
Jayflex TINTM	Trisononyl trimellitate	53894-23-8	PLAS-PL-029N	50	PLAS-PL-029S	18
Laurex®	Zinc salt of lauric and related fatty acids		PLAS-PL-032N	50	PLAS-PL-032S	18
Markstat® 51	Poly(ethylene glycol) monolaurate	9004-81-3	PLAS-PL-003N	50	PLAS-PL-003S	18
Methyl O-Acetylricinoleate	Methyl (Z)-12-acetyloxyoctadec-9-enoate	140-03-4	PLAS-PL-063N	50	-----	---
Morfex® 150	Dicyclohexyl phthalate	84-61-7	PLAS-PL-014N	50	PLAS-PL-014S	18
Morfex 190	Butylphthalyl butyl glycolate	85-70-1	PLAS-PL-008N	50	PLAS-PL-008S	18
Morfex 560	Tri-n-hexyl trimellitate	1528-49-0	PLAS-PL-031N	50	PLAS-PL-031S	18
Morfex x-1125	Di(tridecyl) phthalate	119-06-2	PLAS-PL-033N	50	PLAS-PL-033S	18
Paraplex® G-30	Proprietary dibasic acid polyester mixture		PLAS-PL-027N	50	PLAS-PL-027S	18
Plasthall® DINP	Diisononyl phthalate	28553-12-0	PLAS-PL-072N	50	-----	---
Plasthall® ESO	Epoxidized soybean oil	8013-07-8	PLAS-PL-035N	50	-----	---
Polycizer® butyl oleate	Butyl oleate	142-77-8	PLAS-PL-007N	50	PLAS-PL-007S	18
Polycizer DP 500	Dipropylene glycol dibenzoate	27138-31-4	PLAS-PL-011N	50	PLAS-PL-011S	18
Santicizer® 141	2-Ethylhexyldiphenyl phosphate	1241-94-7	PLAS-PL-026N	50	PLAS-PL-026S	18
Santicizer 148	Mixture: isodecylidiphenyl phosphate (80-90%) / diisodecyl phenyl phosphate / triphenyl phosphate	29761-21-5	PLAS-PL-022N	50	PLAS-PL-022S	18
Santicizer 160	Benzyl butyl phthalate	85-68-7	PLAS-PL-004N	50	PLAS-PL-004S	18
Santicizer 261	Benzyl octyl phthalate	68515-40-2	PLAS-PL-005N	50	PLAS-PL-005S	18
Santicizer® 278	Benzyl 3-isobutyryloxy-1-isopropyl-2,2-dimethylpropyl phthalate	16883-83-3	PLAS-PL-074N	50	PLAS-PL-074S	18
Tributylphosphate	Tributyl phosphate	126-73-8	PLAS-PL-068N	50	-----	---
2,2,4-Trimethyl-1,3-pentanediol-isobutyrate		25265-77-4	PLAS-PL-066N	50	-----	---
Trimellitate	1,2,4-Benzenetricarboxylic acid, tris(2-ethylhexyl) ester	3319-31-1	PLAS-PL-060N	50	-----	---
Vinsol® powder	Gum rosin	8050-09-7	PLAS-PL-037N	50	PLAS-PL-037S-D	18
Vinsol® resin	Gum rosin	8050-09-7	PLAS-PL-036N	50	PLAS-PL-036S-D	18

Processing Aids

Trade Name	Chemical Name	CAS No.	Neat (50 mg)	Price	Solution (1 mL)	Price
Akrochem® Ceresin Wax		8001-75-0	PLAS-PA-002N	\$ 50	-----	---
Kemamide® E ultra	Erucamide	112-84-5	PLAS-PA-001N	\$ 50	PLAS-PA-001S	\$ 18

Retarders

Trade Name	Chemical Name	CAS No.	Neat (50 mg)	Price	Solution (1 mL)	Price
Akrochem® Retarder BAX		65-85-0	PLAS-RT-011N	\$ 50	-----	---
2-Cyano-2-propyl benzodithioate		201611-85-0	PLAS-RT-002N	50	PLAS-RT-002S ☆	\$ 15
2-Cyano-2-propyl dodecyl trithiocarbamate		870196-83-1	PLAS-RT-004N	50	PLAS-RT-004S	15
4-Cyano-4-[(dodecylsulfanylthiocarbonyl)sulfanyl]pentanoic acid		870196-80-8	PLAS-RT-005N	50	PLAS-RT-005S	15
4-Cyano-4-(phenylcarbonothioylthio)pentanoic acid		201611-92-9	PLAS-RT-003N	50	PLAS-RT-003N	15
Cyanomethyl dodecyl trithiocarbamate		796045-97-1	PLAS-RT-006N	50	PLAS-RT-006S	15
Cyanomethyl methyl(phenyl)carbamoithioate		76926-16-4	PLAS-RT-009N	50	-----	---
2-(Dodecylthiocarbonothioylthio)-2-methylpropionic acid		461642-78-4	PLAS-RT-010N	50	PLAS-RT-010S	50
bis(dodecylsulfanylthiocarbonyl) disulfide		870532-86-8	PLAS-RT-008N	50	PLAS-RT-008S	50
Retarder AK	Phthalic anhydride	85-44-9	PLAS-RT-001N	50	PLAS-RT-001S ☆	18
bis(thiobenzoyl) disulfide		5873-93-8	PLAS-RT-007N	95	PLAS-RT-007S	25



Solutions at 1000 µg/mL in Hexane, except where indicated

☆ Hexane:Acetone, -A Acetone, -T Toluene, -M Methanol, -DMSO, -D Dichloromethane -CN Acetonitrile

Stearates

Trade Name	Chemical Name	CAS No.	Neat (50 mg)	Price	Solution (1 mL)	Price
Stearic acid RG (rubber grade)	Stearic acid	57-11-4	PLAS-ST-001N	\$ 50	PLAS-ST-001S	\$ 18
Stearic acid TP	Stearic acid	57-11-4	PLAS-ST-002N	50	PLAS-ST-002S	18

UV Stabilizers

Trade Name	Chemical Name	CAS No.	Neat (50 mg)	Price	Solution (1 mL)	Price
2-(2-Hydroxy-5-methylphenyl)benzotriazole		2440-22-4???	PLAS-UV-006N	\$ 30	PLAS-UV-006S-CN	\$15
2-(5-tert-Butyl-2-hydroxyphenyl)benzotriazole		3147-76-0	PLAS-UV-007N	30	PLAS-UV-007S-CN	15
2-(2H-Benzotriazol-2-yl)-4,6-bis(1-methyl-1-phenylethyl)phenol		70321-86-7	PLAS-UV-008N	30	PLAS-UV-008S-CN	15
2-tert-Butyl-6-(5-chloro-2H-benzotriazol-2-yl)-4-methylphenol		3896-11-5	PLAS-UV-009N	30	PLAS-UV-009S-CN	15
2-(3,5-Di-tert-butyl-2-hydroxyphenyl)2H-benzotriazole		3846-71-7	PLAS-UV-010N	30	PLAS-UV-010S-CN	15
2,4-Di-tert-butyl-6-(5-chloro-2H-benzotriazol-2-yl)phenol		3864-99-1	PLAS-UV-011N	30	PLAS-UV-011S-CN	15
2-(2H-Benzotriazol-2-yl)-4,6-di-tert-pentylphenol		25973-55-1	PLAS-UV-012N	30	PLAS-UV-012S-CN	15
2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole		3147-75-9	PLAS-UV-013N	30	PLAS-UV-013S-CN	15
2-(3-sec-Butyl-5-tert-butyl-2-hydroxyphenyl)benzotriazole		36437-37-3	PLAS-UV-014N	30	PLAS-UV-014S-CN	15
2-(2H-Benzotriazol-2-yl)-4-methyl-6-(2-propenyl)phenol		2170-39-0	PLAS-UV-015N	30	PLAS-UV-015S-CN	15
UV Stabilizers Solution Set		Set of the above	PLAS-UV-STAB-SET		10 x 1 mL	225
Tinuvin® PED	2-(2-Hydroxy-5-methylphenyl)benzo triazole	2440-22-4	PLAS-UV-005N	50	PLAS-UV-005S	18
Uvinul® 3000	2,4-Dihydroxybenzophenone	131-56-6	PLAS-UV-001N	50	PLAS-UV-001S	18
Uvinul 3008	2-Hydroxy-4-octyloxybenzophenone	1843-05-6	PLAS-UV-002N	50	PLAS-UV-002S	18
Uvinul 3040	2-Hydroxy-4-methoxybenzophenone	131-57-7	PLAS-UV-003N	50	PLAS-UV-003S	18
Uvinul 3049	2,2-Dihydroxy-4,4-dimethoxybenzophenone	131-54-4	PLAS-UV-004N	50	PLAS-UV-004S	18

Vegetable Oils

Trade Name	Chemical Name	CAS No.	Neat (50 mg)	Price	Solution (1 mL)	Price
Akrofax™ A	Vulcanized vegetable oil		PLAS-VA-001N	\$ 50	-----	---
Akrofax B	Vulcanized vegetable oil		PLAS-VA-002N	50	-----	---

Deuterated Phthalates

Trade Name	Chemical Name	CAS No.	Neat	5 mg	Solution (1 mL)	Price
Dibenzyl phthalate-d ₄			PHTH-D4-001N		PHTH-D4-001S	\$ 30
Di-n-butyl phthalate-d ₄		93952-11-5	PHTH-D4-002N		PHTH-D4-002S	30
Di-iso-butyl phthalate-3,4,5,6-d ₄		358730-88-8	PHTH-D4-003N		PHTH-D4-003S	30
Dicyclohexyl phthalate-3,4,5,6-d ₄		358731-25-6	PHTH-D4-004N		PHTH-D4-004S	30
Diethyl phthalate-3,4,5,6-d ₄		93952-12-6	PHTH-D4-005N		PHTH-D4-005S	30
Di-n-hexyl phthalate-3,4,5,6-d ₄			PHTH-D4-006N		PHTH-D4-006S	30
Dimethyl phthalate-3,4,5,6-d ₄		93951-89-4	PHTH-D4-007N		PHTH-D4-007S	30
Di-n-octyl phthalate-3,4,5,6-d ₄		93952-13-7	PHTH-D4-008N		PHTH-D4-008S	30
Di-n-pentyl phthalate-3,4,5,6-d ₄		358730-89-9	PHTH-D4-009N		PHTH-D4-009S	30
Di-n-propyl phthalate-3,4,5,6-d ₄		358731-29-0	PHTH-D4-010N		PHTH-D4-010S	30
bis(2-Ethylhexyl) phthalate-3,4,5,6-d ₄		93951-87-2	PHTH-D4-011N		PHTH-D4-011S	30
Sets of Deuterated Phthalates			PHTH-D4N-SET	\$ 525 / 11 x 5 mg	PHTH-D4S-SET	\$ 225 / 11 x 1 mL
Deuterated Phthalate Solutions in MeOH						

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 \$ 29 / 1 x 1 mL
 PLAS-CAL-001-PAK **SAVE 20%** \$ 116 / 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

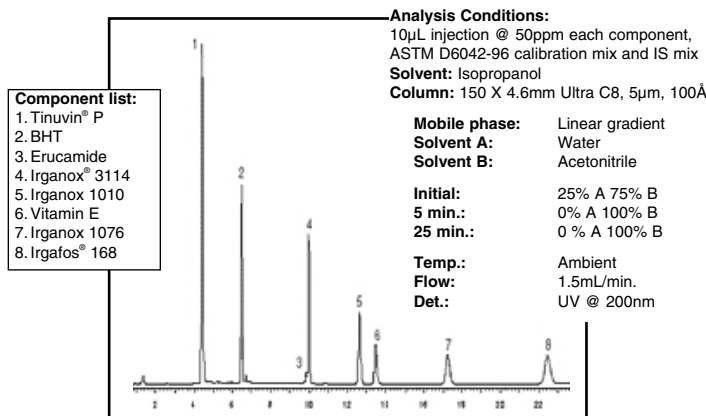
PLAS-IS-001 \$ 20 / 1 x 1 mL
 PLAS-IS-001-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
 51.8 µg/mL in Isopropanol

Tinuvin P

Expanded List of Additives

Each at 50 µg/mL in Isopropanol

Ultrinox 626	PLAS-CAL-002-1\$ 20 / 1 mL	Ethanox 702	PLAS-CAL-002-5\$ 20 / 1 mL
Santanox R	PLAS-CAL-002-2 20 / 1 mL	Ethanox 703	PLAS-CAL-002-6 20 / 1 mL
Ethanox 330	PLAS-CAL-002-3 20 / 1 mL	Irganox 1035	PLAS-CAL-002-7 20 / 1 mL
Ethanox 323	PLAS-CAL-002-4 20 / 1 mL		



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.



Bisphenol Analog, Imidazole, Melamine, EFSA

Bisphenol Analog Standards



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.



Compound	CAS	NEAT Cat. No.	Price / Unit	SOLUTION Cat. No.	10 µg/mL in MeOH Price / Unit
Bisphenol A diglycidyl ether (BADGE)	1675-54-3	BADGE-001N	\$ 15 / 50 mg	BADGE-001S	\$ 12 / 1 mL
Bisphenol A (BPA)	80-05-7	BPA-A-N	15 / 50 mg	BPA-A-S	12 / 1 mL
Bisphenol AF	1478-61-1	BPA-AF-N	15 / 50 mg	BPA-AF-S	12 / 1 mL
Bisphenol AP	1571-75-1	BPA-AP-N	15 / 50 mg	BPA-AP-S	12 / 1 mL
Bisphenol B	77-40-7	BPA-B-N-10MG	25 / 10 mg	BPA-B-S	15 / 1 mL
Bisphenol BP NEW	1844-01-5	BPA-BP-N	25 / 50 mg	BPA-BP-S	20 / 1 mL
Bisphenol C NEW	79-97-0	BPA-C-N	20 / 50 mg	BPA-C-S	15 / 1 mL
Bisphenol C-dichloride NEW	14868-03-2	BPA-C2-N	25 / 20 mg	BPA-C2-S	20 / 1 mL
Bisphenol E NEW	2081-08-5	BPA-E-N	25 / 50 mg	BPA-E-S	20 / 1 mL
Bisphenol F	620-92-8	BPA-F-N-10MG	25 / 10 mg	BPA-F-S	20 / 1 mL
Bisphenol G NEW	127-54-8	BPA-G-N	25 / 20 mg	BPA-G-S	20 / 1 mL
Bisphenol M NEW	13595-25-0	BPA-M-N	25 / 20 mg	BPA-M-S	20 / 1 mL
Bisphenol P	2167-51-3	BPA-P-N	25 / 50 mg	BPA-P-S	12 / 1 mL
Bisphenol PH NEW	24038-68-4	BPA-PH-N	25 / 20 mg	BPA-PH-S	20 / 1 mL
Bisphenol S	80-09-1	BPA-S-N	15 / 50 mg	BPA-S-S	12 / 1 mL
Bisphenol TMC NEW	129188-99-4	BPA-TMC-N-10MG	25 / 10 mg	BPA-TMC-S	20 / 1 mL
Bisphenol Z	843-55-0	BPA-Z-N	15 / 50 mg	BPA-Z-S	12 / 1 mL

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 Cat. No.	Price / Unit	SOLUTION Cat. No.	100 µg/mL in Toluene Price / Unit
4-Methylimidazole (4-MEI)	822-36-6	FAC-001N	\$ 15 / 100 mg	FAC-001S-T	\$ 15 / 1 mL
1-Methylimidazole	616-47-7	FAC-002N	15 / 100 mg	FAC-002S-T	15 / 1 mL
2-Ethylimidazole	1072-62-4	FAC-003N	15 / 100 mg	FAC-003S-T	15 / 1 mL
2-Methylimidazole	693-98-1	FAC-004N	15 / 100 mg	FAC-004S-T	15 / 1 mL
4(5)-(Hydroxymethyl)imidazole	822-55-9	FAC-005N-25MG	15 / 25 mg	FAC-005S-T	15 / 1 mL
Quinoline	91-22-5	-----	-----	FAC-IS-T	15 / 1 mL



Imidazole Solution Set

FAC-SET \$ 65 / 6 x 1 mL

Melamine Kit

Analysis for Melamine in pet food, formula milk, and other foodstuffs can now be more accurate and reliable with the Melamine Reference Standards Set: Melamine, Ammeline, Ammelide, Cyanuric acid, the method recommended Internal Standard, a column clean-up solution, and a Silylating Reagent. Storage Cond. (0-5°C)

FDA-PROP-001-SET \$ 175 / 5 x 1 mL, 2 x 5 mL

		Cat. No.	Price / 1 mL
Melamine	1000 µg/mL in Diethylamine:Water (20:80)	FDA-PROP-001A	\$ 10
Ammeline	1000 µg/mL in Diethylamine:Water (20:80)	FDA-PROP-001B	65
Ammelide	1000 µg/mL in Diethylamine:Water (20:80)	FDA-PROP-001C	65
Cyanuric acid	1000 µg/mL in Diethylamine:Water (20:80)	FDA-PROP-001D	10

Internal Standard

FDA-PROP-001-IS \$ 15 / 1 x 1 mL
1000 µg/mL in Pyridine

2,6-Diamino-4-chloropyrimidine

Silylating Reagent

FDA-PROP-001-DER \$ 35 / 1 x 5 mL
vol/vol%
BSTFA [bis(trimethylsilyl)trifluoroacetamide] 99
TMCS 1

Column Clean-up Check

FDA-PROP-001-CHK \$ 25 / 1 x 5 mL

vol/vol%
Sylon BFT 50
Pyridine 50

EFSA for Isopropylthioxanthone (ITX)

Responding to the hazard found in Italy, France, Spain, and Portugal, we have formulated Isopropylthioxanth-9-one (a 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 \$ 45 / 1 x 1 mL

1.0 mg/mL in Isooctane

2-Isopropylthioxanth-9-one

Isopropylthioxanthone (ITX) mixed isomers

EFSA-ITX-02 \$ 25 / 1 x 1 mL

1.0 mg/mL in Isooctane

2-and 4-Isopropylthioxanth-9-one

Food Analysis

Food Constituents, Lipid Standards



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 guidelines of our ISO Guide 34, 17025 and 9001 Quality System.



Food Analysis Contents	92-97
Unsaturated Methyl Esters	93
Saturated Methyl Esters	94
Saturated Glycerides	94
Unsaturated Glycerides	94
AOCS, Method Ce1-62	95
NIH Profiling Mixes	95
FAME Mixes	96
Vitamins	97
Preservatives and Antimicrobials	107

- High Purity confirmed by GLC & TLC
- Packaged in Sealed Ampules under Nitrogen Blanket

- Certificate of Analysis

Unsaturated Methyl Esters

99% minimum purity Compound	(Storage: -20°C, protect from light) CAS No.	Neat 100 mg	Each 10 mg/mL in Heptane Solution	Price / 1 mL
Methyl cis-9-hexadecenoate (<i>Palmitoleate</i>) C16:1	1120-25-8	UFA-001N	UFA-001S	\$ 12
Methyl trans-9-hexadecenoate C16:1	10030-74-7	UFA-002N	UFA-002S	12
Methyl cis-6-octadecenoate (<i>Petroselinic</i>) C18:1	2777-58-4	UFA-003N	UFA-003S	12
Methyl trans-6-octadecenoate (<i>Petroselaidic</i>) C18:1		UFA-004N	UFA-004S	12
Methyl cis-9-octadecenoate (<i>Oleic</i>) C18:1	112-62-9	UFA-005N	UFA-005S	12
Methyl trans-9-octadecenoate (<i>Elaidic</i>) C18:1	2462-84-2	UFA-006N	UFA-006S	12
Methyl cis-11-octadecenoate (<i>Vaccenic</i>) C18:1	1937-63-9	UFA-007N	UFA-007S	12
Methyl 12-hydroxy-cis-9-octadecenoate (<i>Ricinoleic</i>) C18:1	141-24-2	UFA-008N	UFA-008S	12
Methyl linoleate (<i>Linoleic</i>) C18:2	112-63-0	UFA-010N	UFA-010S	12
Methyl linolelaidate (<i>Linoelaidic</i>) C18:2	2566-97-4	UFA-011N	UFA-011S	20
Methyl octadecadienoate (<i>Conjugated</i>) C18:2		UFA-012N *	UFA-012S	12
Methyl linolenate (<i>Linolenic</i>) C18:3	301-00-8	UFA-014N *	UFA-014S	12
Methyl g-linolenate (<i>Gamma Linolenic</i>) C18:3	16326-32-2	UFA-015N *	UFA-015S	30
Methyl trans-11-eicosenoate C20:1	69119-90-0	UFA-016N	UFA-016S	75
Methyl cis-8-eicosenoate C20:1	69119-99-9	UFA-017N	UFA-017S	95
Methyl cis-11-eicosenoate C20:1	2390-09-2	UFA-018N	UFA-018S	30
Methyl cis-5-eicosenoate C20:1	20839-34-3	UFA-019N	UFA-019S	60
Methyl cis-11,14-eicosadienoate C20:2	2463-02-7	UFA-020N *	UFA-020S	40
Methyl cis-8,11,14-eicosatrienoate (<i>Homogamma linolenic</i>) C20:3	21061-10-9	UFA-022N *	UFA-022S *	120
Methyl cis-11,14,17-eicosatrienoate C20:3	55682-88-7	UFA-023N *	UFA-023S *	50
Methyl arachidonate (<i>Arachidonic</i>) C20:4	2566-89-4	UFA-024N *	UFA-024S	75
Methyl 5,8,11,14,17-Eicosapentaenoate C20:5	2734-47-6	UFA-025N *	UFA-025S *	95
Methyl cis-7,10,13,16,19-Docosapentaenoate (DPA) C22:5	108698-02-8	UFA-026N *	UFA-026S *	120
Methyl cis-13-docosenoate (<i>Erucic</i>) C22:1	1120-34-9	UFA-027N	UFA-027S	12
Methyl trans-13-docosenoate (<i>Brassicidic</i>) C22:1	7439-44-3	UFA-028N	UFA-028S	30
Methyl cis-13,16-docosadienoate C22:2	61012-47-3	UFA-029N *	UFA-029S	120
Methyl cis-13,16,19-docosatrienoate C22:3	108698-01-7	UFA-030N *	UFA-030S *	120
Methyl cis-7,10,13,16-Docosatetraenoate C22:4	13487-42-8	UFA-031N *	UFA-031S *	120
Methyl cis-4,7,10,13,16,19-Docosahexenoate C22:6	301-01-9	UFA-032N *	UFA-032S *	50
Methyl cis-15-tetracosenoate (<i>Nervonic</i>) C24:1	2733-88-2	UFA-033N	UFA-033S	20
Set of Unsaturated Fatty Acid Methyl Ester (UFA-001 to UFA-033)	1 x 30 units	UFA-N-SET *	UFA-S-SET *	\$ 1125
Same Price for Neat or Solutions				

* ColdPAK required to maintain integrity of product.

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



Food Analysis

Lipid Standards

Saturated Methyl Esters

Compound	CAS No.	Neat 100 mg	10 mg/mL in Hexane Solution	Price / 1 mL
Methyloctanoate (<i>Caprylate</i>) C8:0	111-11-5	SFA-001N	SFA-001S	\$ 12
Methylnonoate (<i>Pelargonate</i>) C9:0	1731-84-6	SFA-002N	SFA-002S	12
Methyldecanoate (<i>Caprate</i>) C10:0	110-42-9	SFA-003N	SFA-003S	12
Methylundecanoate C11:0	1731-86-8	SFA-004N	SFA-004S	12
Methyldodecanoate (<i>Laurate</i>) C12:0	111-82-0	SFA-005N	SFA-005S	12
Methyltridecanoate C13:0	1731-88-0	SFA-006N	SFA-006S	12
Methyltetradecanoate (<i>Myristate</i>) C14:0	124-10-7	SFA-007N	SFA-007S	12
Methylpentadecanoate C15:0	7132-64-1	SFA-008N	SFA-008S	12
Methylhexadecanoate (<i>Palmitate</i>) C16:0	112-39-0	SFA-009N	SFA-009S	12
Methylheptadecanoate (<i>Margarate</i>) C17:0	1731-92-6	SFA-010N	SFA-010S	12
Methyloctadecanoate (<i>Stearate</i>) C18:0	112-61-8	SFA-011N	SFA-011S	12
Methyl 12-hydroxystearate C18:0	141-23-1	SFA-012N	SFA-012S	12
Methylnonadecanoate C19:0	1731-94-8	SFA-013N	SFA-013S	24
Methyleicosanoate (<i>Arachidate</i>) C20:0	1120-28-1	SFA-014N	SFA-014S	12
Methylheneicosanoate C21:0	6064-90-0	SFA-015N	SFA-015S	20
Methyldocosanoate (<i>Behenate</i>) C22:0	929-77-1	SFA-016N	SFA-016S	12
Methyltricosanoate C23:0	2433-97-8	SFA-017N	SFA-017S	20
Methyltetracosanoate (<i>Lignocerate</i>) C24:0	2442-49-1	SFA-018N	SFA-018S	20
Set of Saturated Fatty Acid Methyl esters (SFA-001 to SFA-018)	1 x 18 units	SFA-N-SET	SFA-S-SET	\$ 175
Same Price for Neat or Solutions				

Technical Note

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. When a product is shipped with a ColdPAK, the customer should also consider requesting next-day delivery and should avoid having the shipment sent on a Friday unless it is approved for Saturday Delivery.

Glycerides

Saturated Glycerides

Compound	CAS No.	Neat 100 mg	Price
Trioctanoin (<i>Caprylin</i>) C8:0	538-23-8	GS-001N	\$ 20
Dicaprylin C8:0	36354-80-0	GS-002N	40
Monocaprylin C8:0	19670-49-6	GS-003N	20
Tridecanoin (<i>Caprin</i>) C10:0	621-71-6	GS-004N	10
Dicaprin C10:0	53988-07-1	GS-005N	20
Monocaprin C10:0	26402-22-2	GS-006N	40
Tridodecanoin (<i>Laurin</i>) C12:0	538-24-9	GS-007N	10
Dilaurin C12:0	27638-00-2	GS-008N	20
Monolaurin C12:0	142-18-7	GS-009N	20
Tritetradecanoin (<i>Myristin</i>) C14:0	555-45-3	GS-010N	10
Dimyristin C14:0	53563-63-6	GS-011N	40
Monomyristin C14:0	589-68-4	GS-012N	40
Trihexadecanoin (<i>Palmitin</i>) C16:0	555-44-2	GS-013N	10
Dipalmitin C16:0	26657-95-4	GS-014N	20
Monopalmitin C16:0	542-44-9	GS-015N	20
Trioctadecanoin (<i>Stearin</i>) C18:0	555-43-1	GS-016N	10
Distearin C18:0	1323-83-7	GS-017N	20
Monostearin C18:0	22610-63-5	GS-018N	20
Trieicosanoin (<i>Arachidin</i>) C20:0	620-64-4	GS-019N	20
Diarachidin C20:0	60586-60-9	GS-020N	30
Monoarachidin C20:0		GS-021N	30
Tridocosanoin (<i>Behenin</i>) C22:0	18641-57-1	GS-022N	20
Dibehenin C22:0		GS-023N	30
Monobehenin C22:0	6916-74-1	GS-024N	30
Set of Saturated glyceride (GS-001 to GS-024)	1 x 24 units	GS-SET	\$ 320

Unsaturated Glycerides

Compound	CAS No.	Neat 10 mg	Price
Myristolein C14:1 cis		UG-001N	\$ 30
Dimyristolein C14:1		UG-002N	30
Monomyristolein C14:1	56399-71-4	UG-003N	30
Palmitolein C16:1 cis	20246-55-3	UG-004N	30
Dipalmitolein C16:1	113728-10-2	UG-005N	30
Monopalmitolein C16:1	37515-61-0	UG-006N	30
Petroselinin 6 C18:1 cis	3296-43-3	UG-007N	30
Dipetroselinin 6 C18:1		UG-008N	30
Monopetroselinin 6 C18:1		UG-009N	30
Olein 9 C18:1 cis	122-32-7	UG-010N	30
Diiolein 9 C18:1	25637-84-7	UG-011N	30
Monoolein 9 C18:1	111-03-5	UG-012N	30
Trielaidin 9 C18:1 trans	537-39-3	UG-013N	30
Dielaidin 9 C18:1 trans	98168-52-6	UG-014N	30
Monoelaidin 9 C18:1 trans	2716-53-2	UG-015N	30
Vaccenin 11 C18:1 cis		UG-016N	30
Divaccenin 11 C18:1		UG-017N	30
Monovaccenin 11 C18:1		UG-018N	30
Linolein C18:2 cis,cis	537-40-6	UG-019N *	30
Dilinolein C18:2	30606-27-0	UG-020N *	30
Monolinolein C18:2	2277-28-3	UG-021N *	30
Linolenin C18:3 cis,cis,cis	14465-68-0	UG-022N *	30
Dilinoenin C18:3		UG-023N *	30
Monolinolenin C18:3	75685-75-5	UG-024N *	30
Gamma linolenin C18:3 cis,cis,cis		UG-025N *	30
Gamma di-linolenin C18:3		UG-026N *	30
Gamma mono-linolenin C18:3		UG-027N *	30
Triecosenoic C20:1 cis	80380-39-8	UG-028N	30
Dieicosenoic C20:1	102783-82-4	UG-029N	30
Monoeicosenoic C20:1		UG-030N	30
11-14 cis Trieicosadienoic C20:2 cis,cis		UG-031N *	30
Dieicosadienoic C20:2		UG-032N *	30
Monoeicosadienoic C20:2		UG-033N *	30
Set of Unsaturated Glyceride (UFA-001 to UFA-033)	1 x 33 units	UG-N-SET *	\$ 840

(Storage: -20°C, protect from light)

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

* ColdPAK required to maintain integrity of product.



AOCS, Method Ce1-62 Animal & Vegetable Reference Mixes

AOCS Animal & Vegetable Reference Neat Mixtures		Cat. No.	Price / Unit
Mix 1: Suitable standard for corn, cottonseed, kapok, poppyseed, rice, safflower, sesame, soybean, sunflower and walnut oils		AOCS-001N *	\$ 35 / 100 mg
Mix 2: Suitable standard for hempseed, linseed, perrilla & rubberseed oils		AOCS-002N *	35 / 100 mg
Mix 3: Suitable standard for mustard seed, peanut and rapeseed oil		AOCS-003N *	35 / 100 mg
Mix 4: Suitable standard for neatsfoot, olive and teaseed oils		AOCS-004N *	35 / 100 mg
Mix 5: Suitable standard for babassu, coconut, ouri-curi & palm kernel oils		AOCS-005N *	35 / 100 mg
Mix 6: Suitable standard for lard, beef tallow, mutton tallow and palm oil		AOCS-006N *	35 / 100 mg
AOCS Rapeseed Mix, Suitable standard for modern low erucic acid oils		AOCS-007N *	35 / 100 mg
AOCS Animal & Vegetable Reference Mix Set (AOCS-001N to AOCS-007N)		AOCS-SET *	\$ 210 / 7 x 100 mg

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

NHI/NIH Fatty Acid Methyl Ester Profiling Mixes

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

		Methyl Ester (% Composition by Weight)													
		Price per 100 mg	C8:0 Caprylate	C10:0 Caprate	C12:0 Laurate	C14:0 Myristate	C16:0 Palmitate	C16:1 Palmitoleate	C18:0 Stearate	C18:1 Oleate	C20:0 Arachidate	C22:0 Behenate	C24:0 Lignocerate		
NHI/NIH Reference Mix	Cat. No.														
NHI-A	NHI-001N	\$ 20					25.0	10.0		65.0					
NHI-B	NHI-002N	20					4.0	40.0		56.0					
NHI-C *	NHI-003N	20	1.5	3.0	6.0	12	19.4		24.9		33.2				
NHI-D	NHI-004N	20				11.8	23.6	6.9	13.1	44.6					
NHI-E	NHI-005N	20	6.3	9.1	12.0	23.3	49.2								
NHI-F *	NHI-006N	20				2.5	4.2		7.3		13.6	25.4	47.0		
NHI-SET *	\$ 100 / 6 x 100 mg (NHI-001N to NHI-006N)														

* 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 & establishing chromatographic retention times.

Saturated Straight Chain Kit

FAME-001-R1-KIT \$ 150 / 10 units

Methyl esters, purity 99%, 100 mg each

Me Caproic acid (C6:0)
Me Caprylic acid (C8:0)
Me Capric acid (C10:0)
Me Lauric acid (C12:0)
Me Myristic acid (C14:0)
Me Palmitic acid (C16:0)
Me Stearic acid (C18:0)
Me Arachidic acid (C20:0)
Me Behenic acid (C22:0)
Me Lignoceric acid (C24:0)

Unsaturated Straight Chain Kit

FAME-003-R1-KIT * \$ 250 / 14 units

Storage: -20°C, Protect from light

Saturated methyl esters, purity 99%, 10 mg each

Me Myristoleic acid (14:1)
Me Palmitoleic acid (16:1)
Me Petroselinic acid (18:1)
Me Elaidic acid (18:1)
Me cis-Vaccenic acid (18:1, cis)
Me Linoleic acid (18:2, cis)
Me Linolelaidic acid (18:2, trans)
Me Linolenic acid (18:3)
Me cis-11-Eicosenoic acid (20:1)
Me Arachidonic acid (20:4)
Me Erucic acid (22:1)
Me cis-4,7,10,13,16,19-Docosahexaenoic acid (22:6)
Me Nervonic acid (24:1)
Me Oleic acid (18:1)

Methyl Ester Mix #1

FAMQ-001 *

\$ 90 / 40 mg

Storage: -20°C, Protect from light

Approximately 10 mg of each in a qualitative mix

11-Eicosenoic acid methyl ester (20:1)
11,14-Eicosadienoic acid methyl ester (20:2)
Arachidonic acid methyl ester (20:4)
5,8,11,14,17-Eicosapentaenoic acid methyl ester (20:5)

Fatty Acid Methyl Ester Mix #2

FAMQ-002 *

\$ 90 / 50 mg

Storage: -20°C, Protect from light

Approximately 10 mg of each in a qualitative mix

11-Eicosenoic acid methyl ester (20:1)
11,14-Eicosadienoic acid methyl ester (20:2)
11,14,17-Eicosatrienoic acid methyl ester (20:3)
Arachidonic acid methyl ester (20:4)
5,8,11,14,17-Eicosapentaenoic acid methyl ester (20:5)

Volatile Acid Standard Solution

FAMQ-004

\$ 32 / 1 x 100 mL

Storage: Refrigerate

10mM of each component in deionized H₂O.

Formic acid
Acetic acid
Propionic acid
Isobutyric acid
Butyric acid
Isovaleric acid
n-Valeric acid
Isocaproic acid (*4-Methyl valeric acid*)
Hexanoic acid (*n-Caproic acid*)
Heptanoic acid

Saturated Straight Chain Kit

FAME-002-R1-KIT \$ 475 / 19 units

Methyl esters, 99% purity, 100 mg each

Me Caproic acid (6:0)
Me Heptanoic acid (7:0)
Me Caprylic acid (8:0)
Me Nonanoic acid (9:0)
Me Capric acid (10:0)
Me Undecanoic acid (11:0)
Me Lauric Acid (12:0)
Me Tridecanoic acid (13:0)
Me Myristic acid (14:0)
Me Pentadecanoic acid (15:0)
Me Palmitic acid (16:0)
Me Heptadecanoic acid (17:0)
Me Stearic acid (18:0)
Me Nonadecanoic acid (19:0)
Me Arachidic acid (20:0)
Me Heneicosanoic acid (21:0)
Me Behenic acid (22:0)
Me Tricosanoic acid (23:0)
Me Lignoceric acid (24:0)

Odd Carbon Straight Chain Kit

FAME-005-R1-KIT \$ 215 / 9 units

Methyl esters, 99+% purity, 100 mg each

Me Heptanoic acid (C7:0)
Me Nonanoic acid (C9:0)
Me Undecanoic acid (C11:0)
Me Tridecanoic acid (C13:0)
Me Pentadecanoic acid (C15:0)
Me Heptadecanoic acid (C17:0)
Me Nonadecanoic acid (C19:0)
Me Heneicosanoic acid (C21:0)
Me Tricosanoic acid (C23:0)

Standards of Interest

For FAME standards refer to BioFuels in the Petrochemical section.

FAME Quantitative Standard Mix

FAMQ-005 *

\$ 85 / 1 x 1 mL

Storage: -20°C, Protect from light

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

37 comps.

	mg/mL
Me Butyric acid (C4:0)	0.4
Me Caproic acid (C6:0)	0.4
Me Caprylic acid (C8:0)	0.4
Me Capric acid (C10:0)	0.4
Me Undecanoic acid (C11:0)	0.2
Me Lauric acid (C12:0)	0.4
Me Tridecanoic acid (C13:0)	0.2
Me Myristic acid (C14:0)	0.4
Me Myristoleic acid (C14:1)	0.2
Me Pentadecanoic acid (C15:0)	0.2
Me cis-10-Pentadecenoic acid (C15:1)	0.2
Me Palmitic acid (C16:0)	0.6
Me Palmitoleic acid (C16:1)	0.2
Me Heptadecanoic acid (C17:0)	0.2
Me cis-10-Heptadecenoic acid (C17:1)	0.2
Me Stearic acid (C18:0)	0.4
Me Elaidic acid (C18:1n9t)	0.2
Me Oleic acid (C18:1n9c)	0.4
Me Linolelaidic acid (C18:2n6t)	0.2
Me Linoleic acid (C18:2n6c)	0.2
Me Arachidic acid (C20:0)	0.4
Me g-Linolenic acid (C18:3n6)	0.2
Me cis-11-Eicosenoic acid (C20:1)	0.2
Me Linolenic acid (C18:3n3)	0.2
Me Heneicosanoic acid (C21:0)	0.2
Me cis-11,14-Eicosadienoic acid (C20:2)	0.2
Me Behenic acid (C22:0)	0.4
Me cis-8,11,14-Eicosatrienoic acid (C20:3n6)	0.2
Me Erucic acid (C22:1n9)	0.2
Me cis-11,14,17-Eicosatrienoic acid (C20:3n3)	0.2
Me Arachidonic acid (C20:4n6)	0.2
Me Tricosanoic acid (C23:0)	0.2
Me cis-13,16-Docosadienoic acid (C22:2)	0.2
Me Lignoceric acid (C24:0)	0.4
Me cis-5,8,11,14,17-Eicosapentaenoic acid (C20:5n3)	0.2
Me Nervonic acid (C24:1)	0.2
Me cis-4,7,10,13,16,19-Docosahexaenoic acid (C22:6n3)	0.2

* ColdPAK required to maintain integrity of product.



Neats as stated, Solutions in 1 mL

Fatty Acid Ethyl Esters

Compound	CAS No.	Conc.	Matrix	Cat. No.	Price
Ethyl arachidate	18281-05-5	100 mg	NEAT	FAEE-008N	\$ 15
		10 mg/mL	Hexane	FAEE-008S	15
Ethyl behenate	5908-87-2	100 mg	NEAT	FAEE-009N	15
		10 mg/mL	Hexane	FAEE-009S	15
Ethyl caprate	110-38-3	100 mg	NEAT	FAEE-003N	15
		10 mg/mL	Hexane	FAEE-003S	15
Ethyl caprylate	106-32-1	100 mg	NEAT	FAEE-002N	15
		10 mg/mL	Hexane	FAEE-002S	15
Ethyl erucate	37910-77-3	100 mg	NEAT	FAEE-011N	15
		10 mg/mL	Hexane	FAEE-011S	15
Ethyl heptadecanoate	14010-23-2	100 mg	NEAT	FAEE-015N	15
		10 mg/mL	Hexane	FAEE-015S	15
Ethyl laurate	106-33-2	100 mg	NEAT	FAEE-004N	15
		10 mg/mL	Hexane	FAEE-004S	15
Ethyl lignocerate	24634-95-5	100 mg	NEAT	FAEE-010N	25
		10 mg/mL	Hexane	FAEE-010S	25
Ethyl linoleate	544-35-4	100 mg	NEAT	FAEE-012N	15
		10 mg/mL	Hexane	FAEE-012S	15
Ethyl linolenate	1191-41-9	100 mg	NEAT	FAEE-016N	15
		10 mg/mL	Hexane	FAEE-016S	15
Ethyl linolenate gamma	31450-14-3	100 mg	NEAT	FAEE-020N	35
		10 mg/mL	Hexane	FAEE-020S	35
Ethyl myristate	124-06-1	100 mg	NEAT	FAEE-005N	15
		10 mg/mL	Hexane	FAEE-005S	15
Ethyl nervonate	137888-64-3	100 mg	NEAT	FAEE-013N	25
		10 mg/mL	Hexane	FAEE-013S	25
Ethyl oleate	111-62-6	100 mg	NEAT	FAEE-014N	15
		10 mg/mL	Hexane	FAEE-014S	15
Ethyl palmitate	628-97-7	100 mg	NEAT	FAEE-006N	15
		10 mg/mL	Hexane	FAEE-006S	15
Ethyl palmitoleate	56219-10-4	100 mg	NEAT	FAEE-001N	15
		10 mg/mL	Hexane	FAEE-001S	15
Ethyl stearate	111-61-5	100 mg	NEAT	FAEE-007N	15
		10 mg/mL	Hexane	FAEE-007S	15

Vitamin Standards

Water Soluble					Fat Soluble						
	CAS No.	Unit	Cat. No.	Price							
Thiamine • HCL	B1	67-03-8	1 gram	VIT-001N	\$ 20	dl-alpha-Tocopherol	E	10191-41-0	100 mg	VIT-012N	\$ 20
Riboflavin	B2	83-88-5	1 gram	VIT-002N	20	Cholecalciferol	D3	67-97-0	100 mg	VIT-013N	20
Pyridoxine • HCL	B6	58-56-0	1 gram	VIT-003N	20	Retinol Palmitate	A, Palmitate	79-81-2	100 mg	VIT-014N	40
L-Ascorbic acid	C	50-81-7	1 gram	VIT-004N	20	dl-alpha-Tocopherol acetate		7695-91-2	100 mg	VIT-015N	20
Nicotinic acid	Niacin	59-67-6	1 gram	VIT-005N	25	Phylloguinone	K1	84-80-0	100 mg	VIT-016N	20
Nicotinamide		98-92-0	1 gram	VIT-006N	20	Menaquinone	K2	11032-49-8	100 mg	VIT-017N	80
Folic Acid	M	59-30-3	1 gram	VIT-007N	30	Menadione	K3	58-27-5	100 mg	VIT-018N	20
Calcium-D-pantothenate	B5	137-08-6	100 mg	VIT-008N	20	β-Carotene (Substantially free of alpha Carotene)		7235-40-7	10 mg	VIT-019N	20
d-Biotin	H	58-85-5	100 mg	VIT-009N-R1	20	d-alpha-Tocopherol succinate	E	4345-03-3	100 mg	VIT-020N	20
Cyanocobalamin	B12	68-19-9	25 mg	VIT-010N-R1	20	Ergocalciferol	D2	50-14-6	100 mg	VIT-022N	20
Water Soluble Vitamin Set					Fat Soluble Vitamin Set						
VIT-WSK-R1-SET		\$ 170 / 10 units			VIT-FSK-R2-SET		\$ 225 / 10 units				
Includes: VIT-001N to VIT-010N					Includes: VIT-012N to VIT-022N						

Preservative and Antimicrobial Standards

Compound	Purity	CAS No.	Unit	Cat. No.	Price
Benzoic acid	99 %	65-85-0	1 gram	AP-001N	\$ 10
Sodium benzoate	99 %	532-32-1	1 gram	AP-002N	10
Potassium nitrite	97 %	7758-09-0	1 gram	AP-003N	10
Sodium nitrite	99 %	7632-00-0	1 gram	AP-004N	10
Sodium nitrate	99 %	7631-99-4	1 gram	AP-005N	10
Potassium nitrate	99 %	7757-79-1	1 gram	AP-006N	10
Methyl paraben	99 %	99-76-3	1 gram	AP-007N	10
Ethyl paraben	99 %	120-47-8	1 gram	AP-008N	10
Butyl paraben	99 %	94-13-3	1 gram	AP-009N	10
Propionic acid	99 %	79-09-4	1 gram	AP-010N	10
Sodium propionate	97 %	137-40-6	1 gram	AP-011N	10
Calcium propionate	97 %	4075-81-4	1 gram	AP-012N	10
Sorbic acid	99 %	110-44-1	1 gram	AP-013N	10
Potassium sorbate	99 %	590-00-1	1 gram	AP-014N	10
Preservative & Antimicrobial Set			14 x 1 gram	AP-SET	\$ 120

Set includes: AP-001N through AP-014N

Technical Note

Vitamin Standards are tested, packaged and stored under an ISO Guide 34, 17025 and 9001 Quality System. Always store Standards properly, away from light sources. Each Standard is provided with an actual lot analysis and additional transfer vial and label.



Allergens

It has been estimated that 10% of the U.S. population is affected by allergens. Cosmetic allergens can be found in everything from shampoos to skin creams. The average person is now exposed to significantly higher levels of these chemicals than people were exposed to only a generation ago. The resulting synergistic effect, coupled with environmental exposure to chemicals, is the focus of an ever-increasing number of studies.

Phthalates are a health issue as well as a food safety concern as an Indirect Food Additive. They tend to migrate from plastic containers and wrappings into food. Finally, some pesticides are a cosmetic ingredient issue since they can be present with other ingredients such as lanolin.

AccuStandard now offers AllergenCheck™ Standards to meet analytical requirements of the cosmetic, pharmaceutical and food industries. These new products coupled with the widest selection of certified reference materials for pesticide and pesticide metabolite analysis, offer one-stop shopping for the analysis of allergens.

Many of the Standards are synthesized by AccuStandard and are not available elsewhere. If you do not see the chemicals or their metabolites that you need, let us know and we may be able to synthesize them. Additionally, if a certain custom mixture of allergens would make your analysis easier, we can provide you with a custom formulation that will save you time.

Allergen Standards are listed as follows:

- Neats and Single Solutions listed alphabetically by compound
- Allergens regulated by the EU
- Allergen standards listed by type



AllergenCheck™

Neats as stated, Solutions in 1 mL

Allergens

Compound	CAS No.	Conc.	Matrix	Cat. No.	Price
2-Acetylpyridine	1122-62-9	100 mg	Neat	ALR-066N	\$ 25
		100 µg/mL	MeOH	ALR-066S	25
Alanroot (Inula helenium)	97676-35-2	1000 µg/mL	EtOH	ALR-027S-ET-10X	15
Alkylphenol ethoxylates:					
Nonylphenol-ethylene oxide condensate (Nonoxynol-9)	26027-38-3	100 mg	Neat	ALR-079N	35
		100 µg/mL	MeOH	ALR-079S	35
Polyethylene glycol nonaphenyl ether (Triton N-101)	123359-41-1	100 mg	Neat	ALR-078N	35
		100 µg/mL	MeOH	ALR-078S	35
Allylisothiocyanate	57-06-7	100 mg	Neat	ALR-028N	15
		1000 µg/mL	EtOH	ALR-028S-ET-10X	15
Amyl cinnamal	122-40-7	100 mg	Neat	ALR-001N	20
		1000 µg/mL	AcCN	ALR-001S-CN-10X	20
Amylcinnamyl alcohol	101-85-9	1000 µg/mL	EtOH	ALR-008S-ET-10X	20
Anisyl alcohol	105-13-5	100 mg	Neat	ALR-014N	20
		1000 µg/mL	EtOH	ALR-014S-ET-10X	20
Arsenic	7440-38-2	1000 µg/mL	2-5% HNO ₃	ALR-MET-01S	34
Balsam of Peru	8007-00-9	100 mg	Neat	ALR-080N	15
		100 µg/mL	MeOH	ALR-080S	15
Benzophenone-3 (Bp-3)	131-57-7	100 mg	Neat	ALR-081N	10
		100 µg/mL	AcCN	ALR-081S-CN	10
Benzyl alcohol	100-51-6	100 mg	Neat	ALR-002N	20
		1000 µg/mL	EtOH	ALR-002S-ET-10X	20
Benzyl benzoate	120-51-4	100 mg	Neat	ALR-019N	20
		1000 µg/mL	EtOH	ALR-019S-ET-10X	20
Benzyl butyl phthalate	85-68-7	100 mg	Neat	ALR-082N	12
		100 µg/mL	MeOH	ALR-082S	12
Benzyl cinnamate	103-41-3	100 mg	Neat	ALR-015N	20
		1000 µg/mL	EtOH	ALR-015S-ET-10X	20
Benzyl cyanide	140-29-4	100 mg	Neat	ALR-029N	15
		1000 µg/mL	EtOH	ALR-029S-ET-10X	15
Benzyl paraben	94-18-8	100 mg	Neat	ALR-083N	10
		100 µg/mL	MeOH	ALR-083S	10
Benzyl salicylate	118-58-1	100 mg	Neat	ALR-009N	20
		1000 µg/mL	AcCN	ALR-009S-CN-10X	20
Bithionol	97-18-7	100 mg	Neat	ALR-084N	20
		100 µg/mL	MeOH	ALR-084S	20
5-Bromo-5-nitro-1,3-dioxane (Bronidox L) (BND)	30007-47-7	100 mg	Neat	ALR-074N	50
		100 µg/mL	MeOH	ALR-074S	50
2-Bromo-2-nitropropane-1,3-diol (Bronopol)	52-51-7	100 mg	Neat	ALR-067N	10
		100 µg/mL	MeOH	ALR-067S	10
2-(4-tert-Butylbenzyl)propionaldehyde (technical grade)	80-54-6	1000 µg/mL	AcCN	ALR-017S-CN-10X	20
Butylated hydroxyanisole (BHA)	25013-16-5	100 mg	Neat	ALR-087N	10
		100 µg/mL	MeOH	ALR-087S	10
Butylated hydroxytoluene (BHT & 2,6-DBPC)	128-37-0	100 mg	Neat	ALR-088N	20
		100 µg/mL	MeOH	ALR-088S	20
Butylene glycol	107-88-0	100 mg	Neat	ALR-089N	10
		100 µg/mL	MeOH	ALR-089S	10
Butyl-methoxydibenzoylmethane (B-MDM) Sunblock, Parsol1789	70356-09-1	100 µg/mL	MeOH	ALR-086S	75
Butyl paraben	94-26-8	100 mg	Neat	ALR-085N	10
		100 µg/mL	MeOH	ALR-085S	10



Neats as stated, Solutions in 1 mL

Allergens					
Compound	CAS No.	Conc.	Matrix	Cat. No.	Price
p-tert-Butylphenol	98-54-4	100 mg	Neat	ALR-030N	\$ 15
		1000 µg/mL	EtOH	ALR-030S-ET-10X	15
Cetone Alpha (technical grade)	127-51-5	1000 µg/mL	AcCN	ALR-024S-CN-10X	20
Chloroacetamide	79-07-2	100 mg	Neat	ALR-090N	25
		100 µg/mL	MeOH	ALR-090S	25
Chloroform	67-66-3	100 mg	Neat	ALR-091N	10
		100 µg/mL	MeOH	ALR-091S	10
2-Chloropyridine	109-09-1	100 mg	Neat	ALR-068N	25
		100 µg/mL	MeOH	ALR-068S	25
Chromium	7440-47-3	1000 µg/mL	2-5% HNO ₃	ALR-MET-02S	34
Cinnamal	104-55-2	100 mg	Neat	ALR-010N	20
		1000 µg/mL	AcCN	ALR-010S-CN-10X	20
Cinnamyl alcohol	104-54-1	100 mg	Neat	ALR-003N	20
		1000 µg/mL	EtOH	ALR-003S-ET-10X	20
Citral	5392-40-5	100 mg	Neat	ALR-004N	20
		1000 µg/mL	AcCN	ALR-004S-CN-10X	20
β-Citronellol	106-22-9	100 mg	Neat	ALR-020N	20
		1000 µg/mL	EtOH	ALR-020S-ET-10X	20
Coal Tar (black)	8007-45-2	100 mg	Neat	ALR-094N	20
		100 µg/mL	Toluene	ALR-094S-T	20
Cobalt	7440-48-4	1000 µg/mL	2-5% HNO ₃	ALR-MET-03S	34
Coumarin	91-64-5	100 mg	Neat	ALR-011N	20
		1000 µg/mL	AcCN	ALR-011S-CN-10X	20
2,4-Diaminoanisole sulfate hydrate	123333-56-2	100 µg/mL	Pyridine	ALR-070S-R1	30
2,4-Diaminophenol	137-09-7	100 mg	Neat	ALR-063N	15
		100 µg/mL	MeOH	ALR-063S	15
Diamyl phthalate	131-18-0	100 mg	Neat	ALR-098N	24
		100 µg/mL	MeOH	ALR-098S	24
Diazolidinyl urea	78491-02-8	100 mg	Neat	ALR-106N	15
		100 µg/mL	MeOH	ALR-106S	15
Dibromsalon (Halogenated salicylanilides)	87-12-7	100 mg	Neat	ALR-107N	50
		100 µg/mL	MeOH	ALR-107S	50
Dicyclohexyl phthalate	84-61-7	100 mg	Neat	ALR-099N	32
		100 µg/mL	MeOH	ALR-099S	32
Diethanolamine (DEA)	111-42-2	100 mg	Neat	ALR-109N	10
		100 µg/mL	MeOH	ALR-109S	10
Di(2-ethyl hexyl) phthalate (DEHP)	117-81-7	100 mg	Neat	ALR-097N	12
		100 µg/mL	MeOH	ALR-097S	12
Diethyl maleate	141-05-9	100 mg	Neat	ALR-033N	15
		1000 µg/mL	EtOH	ALR-033S-ET-10X	15
Diethyl phthalate	84-66-2	100 mg	Neat	ALR-110N	12
		100 µg/mL	MeOH	ALR-110S	12
Di-hexyl phthalate	84-75-3	100 mg	Neat	ALR-100N	24
		100 µg/mL	MeOH	ALR-100S	24
Dihydrocoumarin	119-84-6	100 mg	Neat	ALR-034N	15
		1000 µg/mL	Acetone	ALR-034S-A-10X	15
Diisodecyl phthalate	26761-40-0	100 mg	Neat	ALR-101N	12
		100 µg/mL	MeOH	ALR-101S	12
Diisononyl phthalate	68515-48-0	100 mg	Neat	ALR-102N	32
		100 µg/mL	MeOH	ALR-102S	32
Diisooctyl phthalate	27554-26-3	100 mg	Neat	ALR-103N	12
		100 µg/mL	MeOH	ALR-103S	12
Dimethyl citraconate	617-54-9	100 mg	Neat	ALR-038N	35
		1000 µg/mL	EtOH	ALR-038S-ET-10X	35
Dimethyl phthalate (DMP)	131-11-3	100 mg	Neat	ALR-111N	12
		100 µg/mL	MeOH	ALR-111S	12
6,10-Dimethyl-3,5,9-undecatrien-2-one (Pseudoionone)	141-10-6	100 mg	Neat	ALR-040N	15
		1000 µg/mL	Acetone	ALR-040S-A-10X	15
Di-n-butyl phthalate (DBP)	84-74-2	100 mg	Neat	ALR-104N	12
		100 µg/mL	MeOH	ALR-104S	12
Di-n-octyl phthalate	117-84-0	100 mg	Neat	ALR-105N	12
		100 µg/mL	MeOH	ALR-105S	12
1,4-Dioxane	123-91-1	100 mg	Neat	ALR-062N	20
		100 µg/mL	MeOH	ALR-062S	20
Diphenylamine	122-39-4	100 mg	Neat	ALR-041N	10
		1000 µg/mL	EtOH	ALR-041S-ET-10X	10
2-Ethoxyethanol	110-80-5	100 mg	Neat	ALR-064N	40
		100 µg/mL	MeOH	ALR-064S	40
2-Ethoxyethanol acetate	111-15-9	100 mg	Neat	ALR-065N	25
		100 µg/mL	MeOH	ALR-065S	25
Ethyl acrylate	140-88-5	100 mg	Neat	ALR-042N	10
		1000 µg/mL	EtOH	ALR-042S-ET-10X	10
Ethyl paraben	120-47-8	100 mg	Neat	ALR-113N	10
		100 µg/mL	MeOH	ALR-113S	10
Ethylene diamine dihydrochloride	333-18-6	100 mg	Neat	ALR-114N	25
		100 µg/mL	MeOH	ALR-114S	25

Allergens continued on next page



Allergens

Allergens

Compound	CAS No.	Conc.	Matrix	Cat. No.	Price
2-Ethylhexyl salicylate	118-60-5	100 mg	Neat	ALR-174N	\$ 20
		100 µg/mL	AcCN	ALR-114S-CN	20
Eugenol	97-53-0	100 mg	Neat	ALR-005N	20
		1000 µg/mL	EtOH	ALR-005S-ET-10X	20
Farnesol	4602-84-0	100 mg	Neat	ALR-016N	20
		1000 µg/mL	EtOH	ALR-016S-ET-10X	20
Formaldehyde	50-00-0	100 µg/mL	Water	ALR-115S-W	10
Freon #11 Trichlorofluoromethane	75-69-4	200 µg/mL	MeOH	ALR-CFC-013S-2X	12
Freon #12 Dichlorodifluoromethane	75-71-8	200 µg/mL	MeOH	ALR-CFC-008S-2X	12
Freon #13 Chlorotrifluoromethane	75-72-9	200 µg/mL	MeOH	ALR-CFC-007S-2X	12
Freon #13b1 Bromotrifluoromethane	75-63-8	200 µg/mL	MeOH	ALR-CFC-001S-2X	12
Freon #21 Dichlorofluoromethane	75-43-4	200 µg/mL	MeOH	ALR-CFC-009S-2X	12
Freon #22 Chlorodifluoromethane	75-45-6	200 µg/mL	MeOH	ALR-CFC-003S-2X	12
Freon #23 Trifluoromethane	75-46-7	200 µg/mL	MeOH	ALR-CFC-015S-2X	12
Freon #40 Chloromethane	74-87-3	200 µg/mL	MeOH	ALR-CFC-005S-2X	12
Freon #113 1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	200 µg/mL	MeOH	ALR-CFC-014S-2X	10
Freon #114 1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	200 µg/mL	MeOH	ALR-CFC-010S-2X	20
Freon #115 Chloropentafluoroethane	76-15-3	200 µg/mL	MeOH	ALR-CFC-006S-2X	20
Freon #134a Tetrafluoroethane	811-97-2	200 µg/mL	MeOH	ALR-CFC-012S-2X	20
Freon #142b 1-Chloro-1,1-difluoroethane	75-68-3	200 µg/mL	MeOH	ALR-CFC-002S-2X	20
Freon #152a 1,1-Difluoroethane	75-37-6	200 µg/mL	MeOH	ALR-CFC-011S-2X	20
Freon #160 Chloroethane	75-00-3	200 µg/mL	MeOH	ALR-CFC-004S-2X	12
Geraniol	106-24-1	100 mg	Neat	ALR-012N	20
		1000 µg/mL	EtOH	ALR-012S-ET-10X	20
trans-2-Heptenal	18829-55-5	100 mg	Neat	ALR-044N	20
		1000 µg/mL	AcCN	ALR-044S-CN-10X	20
Heptyl paraben	1085-12-7	100 mg	Neat	ALR-117N	10
		100 µg/mL	MeOH	ALR-117S	10
trans-2-Hexenal diethyl acetal	67746-30-9	100 mg	Neat	ALR-045N	20
		1000 µg/mL	EtOH	ALR-045S-ET-10X	20
trans-2-Hexenal dimethyl acetal	18318-83-7	100 mg	Neat	ALR-046N	10
		1000 µg/mL	MeOH	ALR-046S-10X	10
Hexachlorophene (HCP)	70-30-4	100 mg	Neat	ALR-118N	25
		100 µg/mL	MeOH	ALR-118S	10
Hexyl cinnamaldehyde	101-86-0	1000 µg/mL	EtOH	ALR-021S-ET-10X	20
Homosalate (HMS)	118-56-9	100 µg/mL	AcCN	ALR-119S-CN	50
Dihydroabietyl alcohol	26266-77-3	100 mg	Neat	ALR-047N	75
		1000 µg/mL	EtOH	ALR-047S-ET-10X	75
Hydroquinone monoethyl ether (4-Ethoxyphenol)	622-62-8	100 mg	Neat	ALR-048N	10
		1000 µg/mL	EtOH	ALR-048S-ET-10X	10
p-Hydroxyanisole	150-76-5	100 mg	Neat	ALR-145N	15
		100 µg/mL	MeOH	ALR-145S	15
4-Hydroxybenzoic acid (Paraben)	99-96-7	100 mg	Neat	ALR-069N	10
		100 µg/mL	AcCN	ALR-069S-CN	10
Hydroxy-citronellal	107-75-5	100 mg	Neat	ALR-006N	20
		1000 µg/mL	AcCN	ALR-006S-CN-10X	20
tris(Hydroxymethyl)nitromethane (Tris Nitro)	126-11-4	100 mg	Neat	ALR-169N	10
		100 µg/mL	MeOH	ALR-169S	10
Hydroxymethylpentylcyclohexenecarboxaldehyde	31906-04-4	100 mg	Neat	ALR-013N	20
		1000 µg/mL	AcCN	ALR-013S-CN-10X	20
Imidazolidinyl urea	39236-46-9	100 mg	Neat	ALR-120N	10
		100 µg/mL	MeOH	ALR-120S	10
α-Ionone	127-41-3	100 mg	Neat	ALR-171N	15
		100 µg/mL	MeOH	ALR-171S	15
β-Ionone	79-77-6	100 mg	Neat	ALR-172N	15
		100 µg/mL	MeOH	ALR-172S	15
Isobutyl paraben	4247-02-3	100 mg	Neat	ALR-121N	20
		100 µg/mL	MeOH	ALR-121S	20
Isoeugenol	97-54-1	100 mg	Neat	ALR-007N	20
		1000 µg/mL	EtOH	ALR-007S-ET-10X	20
Isopropyl paraben	4191-73-5	100 mg	Neat	ALR-122N	20
		100 µg/mL	MeOH	ALR-122S	20
Lanolin, anhydrous	8006-54-0	100 mg	Neat	ALR-123N	20
		100 µg/mL	MeOH	ALR-123S-A	20
Lead	7439-92-1	1000 µg/mL	2-5% HNO ₃	ALR-MET-04S	34
d-Limonene	5989-27-5	100 mg	Neat	ALR-022N	20
		1000 µg/mL	EtOH	ALR-022S-ET-10X	20
Linalool	78-70-6	100 mg	Neat	ALR-018N	20
		1000 µg/mL	EtOH	ALR-018S-ET-10X	20
Mercury	7439-97-6	1000 µg/mL	2-5% HNO ₃	ALR-MET-05S	34
Metabromsalon	2577-72-2	100 mg	Neat	ALR-128N	50
		100 µg/mL	MeOH	ALR-128S	50
7-Methoxycoumarin	531-59-9	100 mg	Neat	ALR-050N	10
		1000 µg/mL	AcCN	ALR-050S-CN-10X	10
4-(p-Methoxyphenyl)-3-butene-2-one	943-88-4	1000 µg/mL	AcCN	ALR-051S-CN-10X	40
4-Methoxy-m-phenylenediamine-sulfate hydrate	6219-67-6	100 mg	Neat	ALR-072N	15
		100 µg/mL	MeOH	ALR-072S	15
1-(p-Methoxyphenyl)-1-penten-3-one	104-27-8	100 mg	Neat	ALR-052N	20
		1000 µg/mL	AcCN	ALR-052S-CN-10X	20



Neats as stated, Solutions in 1 mL

Allergens					
Compound	CAS No.	Conc.	Matrix	Cat. No.	Price
4-Methyl-benzylidene camphor (4-MBC)	36861-47-9	100 mg	Neat	ALR-073N	\$ 50
6-Methylcoumarin (6-MC)	92-48-8	100 µg/mL	MeOH	ALR-073S	50
		100 mg	Neat	ALR-075N	25
		100 µg/mL	MeOH	ALR-075S	25
7-Methylcoumarin	2445-83-2	100 mg	Neat	ALR-054N	10
		1000 µg/mL	AcCN	ALR-054S-CN-10X	10
		100 mg	Neat	ALR-023N	20
Methyl heptyne carbonate	111-12-6	1000 µg/mL	EtOH	ALR-023S-ET-10X	20
5-Methyl-2,3-hexanedione (Acetyl isovaleryl)	13706-86-0	100 mg	Neat	ALR-055N	20
		1000 µg/mL	AcCN	ALR-055S-CN-10X	20
		100 mg	Neat	ALR-129N	10
Methyl methacrylate monomer	80-62-6	100 µg/mL	MeOH	ALR-129S	10
Methyl paraben	99-76-3	100 mg	Neat	ALR-130N	10
		100 µg/mL	MeOH	ALR-130S	10
		100 mg	Neat	ALR-053N	30
Methyl trans-2-butenate	623-43-8	1000 µg/mL	MeOH	ALR-053S-10X	30
		100 mg	Neat	ALR-132N	50
		100 µg/mL	MeOH	ALR-132S	50
Methyldibromoglutaronitrile	35691-65-7	100 mg	Neat	ALR-133N	35
		100 µg/mL	MeOH	ALR-133S	35
		100 mg	Neat	ALR-061N	10
Methylene chloride	75-09-2	1000 µg/mL	EtOH	ALR-061S-ET-10X	10
		100 mg	Neat	ALR-134N	24
		100 µg/mL	AcCN	ALR-134S-CN	24
Monobenzyl phthalate (mBzP)	2528-16-7	100 mg	Neat	ALR-135N	12
		100 µg/mL	AcCN	ALR-135S-CN	12
		100 mg	Neat	ALR-136N	10
Monobutyl phthalate (mBP)	131-70-4	100 µg/mL	MeOH	ALR-136S	10
		100 mg	Neat	ALR-137N	12
		100 µg/mL	AcCN	ALR-137S-CN	12
Monoethanolamine (MEA) (2-Aminoethanol)	141-43-5	100 mg	Neat	ALR-138N	24
		100 µg/mL	AcCN	ALR-138S-CN	24
		100 mg	Neat	ALR-139N	12
Monoethyl phthalate (mEP)	2306-33-4	100 µg/mL	AcCN	ALR-139S-CN	12
		100 mg	Neat	ALR-177S-CN	25
		1000 µg/mL	Water	ALR-MET-07S	34
Monoethylhexyl phthalate (mEHP)	4376-20-9	100 µg/mL	AcCN	ALR-MET-06S	34
		100 mg	Neat	ALR-140N	15
		100 µg/mL	MeOH	ALR-140S	15
Monomethyl phthalate	4376-18-5	100 mg	Neat	ALR-026N	35
		1000 µg/mL	EtOH	ALR-026S-ET-10X	35
		100 mg	Neat	ALR-146N	15
Mono-n-pentyl phthalate NEW	24539-56-8	100 µg/mL	AcCN	ALR-146S	15
		100 µg/mL	AcCN	ALR-144N	20
		1000 µg/mL	Water	ALR-144S	20
Potassium dichromate	7778-50-9	100 mg	Neat	ALR-058N	10
Nickel	7440-02-0	1000 µg/mL	2-5% HNO ₃	ALR-058S-CN-10X	10
		100 mg	Neat	ALR-127N	10
		100 µg/mL	MeOH	ALR-127S	10
N-Phenyl-p-phenylenediamine	101-54-2	100 mg	Neat	ALR-127S	10
		100 µg/mL	MeOH	ALR-147N	10
		100 µg/mL	MeOH	ALR-147S	10
Oak Moss extract	90028-68-5	100 mg	Neat	ALR-149N-MW200	30
		1000 µg/mL	EtOH	ALR-149S-MW200	30
		100 mg	Neat	ALR-149N-MW400	30
Octyl-dimethyl-PABA (OD-PABA)(Padimate O)	21245-02-3	100 µg/mL	MeOH	ALR-149S-MW400	30
		100 mg	Neat	ALR-149N-MW600	30
		100 µg/mL	MeOH	ALR-149S-MW600	30
Octyl-methoxycinnamate (OMC)	5466-77-3	100 mg	Neat	ALR-149N-MW1500	30
		100 µg/mL	MeOH	ALR-149S-MW1500	30
		100 mg	Neat	ALR-149N-MW4000	30
4-Phenyl-3-buten-2-one	122-57-6	100 µg/mL	MeOH	ALR-149S-MW4000	30
		1000 µg/mL	AcCN	ALR-150S	25
		100 mg	Neat	ALR-150S	25
meta-Phenylenediamine (MPD)	108-45-2	100 µg/mL	MeOH	ALR-MET-07S	34
		100 mg	Neat	ALR-152N	10
		100 µg/mL	MeOH	ALR-152S	10
para-Phenylenediamine (PPD)	106-50-3	100 mg	Neat	ALR-153N	10
		100 µg/mL	MeOH	ALR-153S	10
		100 µg/mL	MeOH	ALR-154S	10
Polyethylene glycol (PEG), appr. Molecular weight 200	25322-68-3	100 mg	Neat	ALR-155N	10
		100 µg/mL	MeOH	ALR-155S-CN	10
		100 mg	Neat	ALR-156N	10
Polyethylene glycol (PEG), appr. Molecular weight 400	25322-68-3	100 µg/mL	MeOH	ALR-156S	10
		100 mg	Neat	ALR-157N	20
		100 µg/mL	MeOH	ALR-157S	20
Polyethylene glycol (PEG), appr. Molecular weight 600	25322-68-3	100 mg	Neat	ALR-158N	35
		100 µg/mL	MeOH	ALR-158S	35
		100 mg	Neat		
Polyethylene glycol (PEG), appr. Molecular weight 1500	25322-68-3	100 µg/mL	MeOH		
		100 mg	Neat		
		100 µg/mL	MeOH		
Polyethylene glycol (PEG), appr. Molecular weight 4000	25322-68-3	100 mg	Neat		
		100 µg/mL	MeOH		
		100 mg	Neat		
Polyvinylpyrrolidone PVP/PA Copolymer	9003-39-8	100 µg/mL	MeOH		
Potassium dichromate	7778-50-9	1000 µg/mL	Water		
Potassium sorbate	24634-61-5	100 mg	Neat		
Propyl paraben	94-13-3	100 µg/mL	MeOH		
		100 mg	Neat		
		100 µg/mL	MeOH		
Propylene glycol (PG)	57-55-6	100 µg/mL	MeOH		
Protocatechuic acid	99-50-3	100 mg	Neat		
Pyrocatechol	120-80-9	100 µg/mL	AcCN		
		100 mg	Neat		
		100 µg/mL	MeOH		
Quaternium-15	51229-78-8	100 mg	Neat		
		100 µg/mL	MeOH		
		100 mg	Neat		
Resorcinol	108-46-3	100 µg/mL	MeOH		
		100 mg	Neat		
		100 µg/mL	MeOH		

Allergens continued on next page



Allergens & EU Directive List

Neats as stated, Solutions in 1 mL

Allergens

Compound	CAS No.	Conc.	Matrix	Cat. No.	Price
Salicylic acid	69-72-7	100 mg	Neat	ALR-173N	\$ 20
Sodium hydroxide	1310-73-2	100 µg/mL	Water	ALR-173S-W	20
		100 mg	Neat	ALR-159N	10
Sodium nitrite	7632-00-0	100 µg/mL	MeOH	ALR-159S	10
		100 mg	Neat	ALR-160N	10
Talc	14807-96-6	100 µg/mL	Water	ALR-160S-W	10
		100 mg	Neat	ALR-161N	10
Tetrachlorosalicylanilide	1154-59-2	100 mg	Neat	ALR-162N	50
		100 µg/mL	MeOH	ALR-162S	50
Thimerosal	54-64-8	100 mg	Neat	ALR-163N	30
		100 µg/mL	MeOH	ALR-163S	30
Thiuram (Thiram) (Tetramethylthiuram disulfide)	137-26-8	100 mg	Neat	ALR-164N	10
		100 µg/mL	MeOH	ALR-164S	10
Tree Moss extract	90028-67-4	1000 µg/mL	EtOH	ALR-025S-ET-10X	35
Tribomosalan	87-10-5	100 mg	Neat	ALR-167N	50
		100 µg/mL	MeOH	ALR-167S	50
Triethanolamine (TEA)	102-71-6	100 mg	Neat	ALR-168N	10
		100 µg/mL	MeOH	ALR-168S	10
Verbena oil (Lippia citriodora Kunth)	8024-12-2	100 mg	Neat	ALR-060N	20
		1000 µg/mL	EtOH	ALR-060S-ET-10X	20
Vinyl chloride	75-01-4	100 µg/mL	MeOH	ALR-170S	12
Zirconium	7440-67-7	1000 µg/mL	2-5% HNO ₃	ALR-MET-08S	34

EU Directive 76/768/EEC

EU Directive List of 26 Regulated Contact Allergens:

Set of all 26 EU Allergens (in Solution) ALR-EU26-R1-SET \$ 425 /
Each at 1000 µg/mL Conc. (1 mL) 26 x 1 mL

Compound	CAS No.	Cat. No.	Price/1 mL
Amyl cinnamal	122-40-7	ALR-001S-CN-10X	\$ 20
Amylcinnamyl alcohol	101-85-9	ALR-008S-ET-10X	20
Anisyl alcohol	105-13-5	ALR-014S-ET-10X	20
Benzyl alcohol	100-51-6	ALR-002S-ET-10X	20
Benzyl benzoate	120-51-4	ALR-019S-ET-10X	20
Benzyl cinnamate	103-41-3	ALR-015S-ET-10X	20
Benzyl salicylate	118-58-1	ALR-009S-CN-10X	20
2-(4-tert-Butylbenzyl)propionaldehyde (technical grade)	80-54-6	ALR-017S-CN-10X	20
Cetone Alpha (technical grade)	127-51-5	ALR-024S-CN-10X	20
Cinnamal	104-55-2	ALR-010S-CN-10X	20
Cinnamyl alcohol	104-54-1	ALR-003S-ET-10X	20
Citral	5392-40-5	ALR-004S-CN-10X	20
b-Citronellol	106-22-9	ALR-020S-ET-10X	20
Coumarin	91-64-5	ALR-011S-CN-10X	20
Eugenol	97-53-0	ALR-005S-ET-10X	20
Farnesol	4602-84-0	ALR-016S-ET-10X	20
Geraniol	106-24-1	ALR-012S-ET-10X	20
Hexyl cinnamaldehyde	101-86-0	ALR-021S-ET-10X	20
Hydroxy-citronellal	107-75-5	ALR-006S-CN-10X	20
Hydroxymethylpentylcyclohexene carboxaldehyde	31906-04-4	ALR-013S-CN-10X	20
Isoeugenol	97-54-1	ALR-007S-ET-10X	20
d-Limonene	5989-27-5	ALR-022S-ET-10X	20
Linalool	78-70-6	ALR-018S-ET-10X	20
Methyl heptyne carbonate	111-12-6	ALR-023S-ET-10X	20
Oak Moss extract	90028-68-5	ALR-026S-ET-10X	35
Tree Moss extract	90028-67-4	ALR-025S-ET-10X	35

EU Directive List of substances that may be banned:

Set of 25 Allergens (in Solution) ALR-EU36-R1-SET \$ 400 /
Neats at 100 mg, Solutions are in 1000 µg/mL Conc. (1 mL) 25 x 1 mL

Compound	CAS No.	Cat. No.	Price/1 mL
Alanroot (Inula helenium)	97676-35-2	ALR-027S-ET-10X	\$ 15
Allylthiocyanate	57-06-7	ALR-028S-ET-10X	15
Benzyl cyanide	140-29-4	ALR-029S-ET-10X	15
p-tert-Butylphenol	98-54-4	ALR-030S-ET-10X	15
Diethyl maleate	141-05-9	ALR-033S-ET-10X	15
Dihydrocoumarin	119-84-6	ALR-034S-A-10X	15
Dimethyl citraconate	617-54-9	ALR-038S-ET-10X	35
6,10-Dimethyl-3,5,9-undecatrien-2-one (Pseudoionone)	141-10-6	ALR-040S-A-10X	15
Diphenylamine	122-39-4	ALR-041S-ET-10X	10
Ethyl acrylate	140-88-5	ALR-042S-ET-10X	10
trans-2-Heptenal	18829-55-5	ALR-044S-CN-10X	20
trans-2-Hexenal diethyl acetal	67746-30-9	ALR-045S-ET-10X	10
trans-2-Hexenal dimethyl acetal	18318-83-7	ALR-046S-10X	10
Dihydroabietyl alcohol	26266-77-3	ALR-047S-ET-10X	75
Hydroquinone monoethyl ether (4-Ethoxyphenol)	622-62-8	ALR-048S-ET-10X	10
7-Methoxycoumarin	531-59-9	ALR-050S-CN-10X	10
4-(p-Methoxyphenyl)-3-butene-2-one	943-88-4	ALR-051S-CN-10X	40
1-(p-Methoxyphenyl)-1-penten-3-one	104-27-8	ALR-052S-CN-10X	20
7-Methylcoumarin	2445-83-2	ALR-054S-CN-10X	10
5-Methyl-2,3-hexanedione (Acetyl isovaleryl)	13706-86-0	ALR-055S-CN-10X	20
Methyl trans-2-butenate	623-43-8	ALR-053S-10X	30
Methyleugenol	93-15-2	ALR-061S-ET-10X	10
Musk ambrette (solution only)	83-66-9	ALR-056S-CN-10X	75
4-Phenyl-3-buten-2-one	122-57-6	ALR-058S-CN-10X	10
Verbena oil (Lippia citriodora Kunth)	8024-12-2	ALR-060S-ET-10X	20

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



Sun Block

Set of 6 Sun Block Solutions **ALR-SUN-SET** **\$ 176 / 6 x 1 mL**
Each at 100 µg/mL Conc. (1 mL)

Compound	CAS No.	Cat. No.	Price 1 mL
Benzophenone-3 (Bp-3)	131-57-7	ALR-081S-CN	\$10
Butyl-methoxydibenzoylmethane(B-MDM) Sunblock, Parsol 1789	70356-09-1	ALR-086S	75
Homosalate (HMS)	118-56-9	ALR-119S-CN	50
4-Methyl-benzylidene camphor (4-MBC)	36861-47-9	ALR-073S	50
Octyl-dimethyl-PABA (OD-PABA) (Padimate O)	21245-02-3	ALR-146S	15
Octyl-methoxycinnamate (OMC)	5466-77-3	ALR-144S	20

Parabens

Set of 11 Paraben Solutions **ALR-PAR-SET** **\$ 104 / 11 x 1 mL**
Each at 100 µg/mL Conc. (1 mL)

Compound	CAS No.	Cat. No.	Price 1 mL
Benzyl paraben	94-18-8	ALR-083S	\$ 10
Butyl paraben	94-26-8	ALR-085S	10
Ethyl paraben	120-47-8	ALR-113S	10
Heptyl paraben	1085-12-7	ALR-117S	10
4-Hydroxybenzoic acid (Paraben)	99-96-7	ALR-069S-CN	10
Isobutyl paraben	4247-02-3	ALR-121S	20
Isopropyl paraben	4191-73-5	ALR-122S	20
Methyl paraben	99-76-3	ALR-130S	10
Potassium sorbate	24634-61-5	ALR-152S	10
Propyl paraben	94-13-3	ALR-153S	10
Protocatechuic acid	99-50-3	ALR-155S-CN	10

Phthalates

Set of 17 Phthalate Solutions **ALR-PHT-SET** **\$ 234 / 17 x 1 mL**
Each at 100 µg/mL Conc. (1 mL)

Compound	CAS No.	Cat. No.	Price 1 mL
Benzyl butyl phthalate	85-68-7	ALR-082S	\$ 12
Diamyl phthalate	131-18-0	ALR-098S	24
Dicyclohexyl phthalate	84-61-7	ALR-099S	32
Di(2-ethyl hexyl) phthalate (DEHP)	117-81-7	ALR-097S	12
Diethyl phthalate	84-66-2	ALR-110S	12
Di-hexyl phthalate	84-75-3	ALR-100S	24
Diisodecyl phthalate	26761-40-0	ALR-101S	12
Diisononyl phthalate	68515-48-0	ALR-102S	32
Diisooctyl phthalate	27554-26-3	ALR-103S	12
Dimethyl phthalate (DMP)	131-11-3	ALR-111S	12
Di-n-butyl phthalate (DBP)	84-74-2	ALR-104S	12
Di-n-octyl phthalate	117-84-0	ALR-105S	12
Monobenzyl phthalate (mBzP)	2528-16-7	ALR-134S-CN	24
Monobutyl phthalate (mBP)	131-70-4	ALR-135S-CN	12
Monoethyl phthalate (mEP)	2306-33-4	ALR-137S-CN	12
Monoethylhexyl phthalate (mEHP)	4376-20-9	ALR-138S-CN	12
Monomethyl phthalate	4376-18-5	ALR-139S-CN	12

Chlorofluorocarbon Propellants (CFCs)

Set of 15 ALR-CFCs Solutions **ALR-CFC-SET** **\$ 175 / 15 x 1 mL**
Each at 200 µg/mL Conc. (1 mL)

Freon	Compound	CAS No.	Cat. No.	Price 1 mL
Freon #11	Trichlorofluoromethane	75-69-4	ALR-CFC-013S-2X	\$ 12
Freon #12	Dichlorodifluoromethane	75-71-8	ALR-CFC-008S-2X	12
Freon #13	Chlorotrifluoromethane	75-72-9	ALR-CFC-007S-2X	12
Freon #13b1	Bromotrifluoromethane	75-63-8	ALR-CFC-001S-2X	12
Freon #21	Dichlorodifluoromethane	75-43-4	ALR-CFC-009S-2X	12
Freon #22	Chlorodifluoromethane	75-45-6	ALR-CFC-003S-2X	12
Freon #23	Trifluoromethane	75-46-7	ALR-CFC-015S-2X	12
Freon #40	Chloromethane	74-87-3	ALR-CFC-005S-2X	12
Freon #113	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ALR-CFC-014S-2X	10
Freon #114	1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	ALR-CFC-010S-2X	20
Freon #115	Chloropentafluoroethane	76-15-3	ALR-CFC-006S-2X	20
Freon #134a	Tetrafluoroethane	811-97-2	ALR-CFC-012S-2X	20
Freon #142b	1-Chloro-1,1-difluoroethane	75-68-3	ALR-CFC-002S-2X	20
Freon #152a	1,1-Difluoroethane	75-37-6	ALR-CFC-011S-2X	20
Freon #160	Chloroethane	75-00-3	ALR-CFC-004S-2X	12

Metals

Set of 8 Metals Solutions **ALR-MET-SET** **\$ 225 / 8 x 100 mL**
Each at 1000 µg/mL 2-5% HNO₃ except † in Water (100 mL Volume)

Compound	CAS No.	Cat. No.	Price 100 mL
Arsenic	7440-38-2	ALR-MET-01S	\$ 34
Chromium	7440-47-3	ALR-MET-02S	34
Cobalt	7440-48-4	ALR-MET-03S	34
Lead	7439-92-1	ALR-MET-04S	34
Mercury	7439-97-6	ALR-MET-05S	34
Nickel	7440-02-0	ALR-MET-06S	34
Potassium dichromate	7778-50-9	ALR-MET-07S †	34
Zirconium	7440-67-7	ALR-MET-08S	34

† in Water

Key to Catalog Numbers

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

Purchasing Neat Standards

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

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

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

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

AllergenCheck™



Dyes

Azodyes 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 Price	Solution Cat. No.	1 mL Price
2-Amino-3-nitrophenol		603-85-0	DYE-107N	\$ 22	DYE-107S	\$ 22
2-Amino-4-chlorophenol		95-85-2	-----	---	DYE-034S *	12
2-Amino-5-(diethylamino)toluene monohydrochloride New		2051-79-8	DYE-104N	12	DYE-104S	12
2-Aminophenol		95-55-6	DYE-108N	12	DYE-108S	12
Acid Red 26	<i>Ponceau Xylidine</i>	3761-53-3	-----	---	DYE-031S	12
Acid Violet 7		4321-69-1	DYE-121N	15	DYE-121S	15
Acid Violet 9		6552-76-2	DYE-122N	15	DYE-122S	15
Acid Violet 19		3244-88-0	DYE-123N	15	DYE-123S	15
Acid Violet 20			DYE-124N	15	DYE-124S	15
Acid Violet 30			DYE-125N-5MG	15	DYE-125S	15
Acid Violet 49		1694-09-3	DYE-120N	15	DYE-120S	15
Basic Blue 26	see Victoria Blue					
Basic Blue 7		2390-60-5	DYE-113N	12	DYE-113S	12
Basic Fuchsin		569-61-9	DYE-049N	15	DYE-049S	15
Basic Red 2		477-73-6	DYE-114N	12	DYE-114S	12
Basic Red 9		569-61-9	-----	---	DYE-030S	12
Basic Violet 1		8004-87-3	DYE-027N	12	DYE-027S	12
Basic Violet 3	Crystal Violet	548-62-9	DYE-028N	12	DYE-028S	12
Basic Violet 14		632-99-5	-----	---	DYE-012S	35
Congo Red	see Direct Red 28					
Crocein Scarlet 3b		5413-75-2	DYE-115N	12	DYE-115S	12
Crystal Violet	see Basic Violet 3					
D & C Red 7		5281-04-9	DYE-060N	12	DYE-060S	12
2,4-Diaminodiphenylamine		136-17-4	DYE-102N	22	-----	---
2,6-Diaminopyridine		141-86-6	DYE-103N	12	DYE-103S	12
N,N-Dimethyl-1,4-phenylenediamine		99-89-9	DYE-106N	12	DYE-106S	12
Direct Black 38		1937-37-7	-----	---	DYE-013S	35
Direct Blue 6		2602-46-2	-----	---	DYE-014S	35
Direct Red 28	<i>Congo Red</i>	573-58-0			DYE-064S	12
Disperse Blue 1		2475-45-8	-----	---	DYE-001S	25
Disperse Blue 3		2475-46-9	-----	---	DYE-004S	25
Disperse Blue 7		3179-90-6	-----	---	DYE-015S	35
Disperse Blue 26		3860-63-7	-----	---	DYE-016S	35
Disperse Blue 35		12222-75-2	-----	---	DYE-009S	25
Disperse Blue 102		12222-97-8	-----	---	DYE-017S	35
Disperse Blue 124		61951-51-7	-----	---	DYE-010S	25
Disperse Brown 1		23355-64-8	DYE-051N	25	DYE-051S	25
Disperse Orange 1		2581-69-3	-----	---	DYE-005S	25
Disperse Orange 3		730-40-5	-----	---	DYE-006S	35
Disperse Orange 11		82-28-0	-----	---	DYE-002S	25
Disperse Orange 37		13301-61-6	-----	---	DYE-011S	25
Disperse Red 1		2872-52-8	-----	---	DYE-007S	25
Disperse Red 11		2872-48-2	-----	---	DYE-018S	35
Disperse Red 17		3179-89-3	-----	---	DYE-019S	35
Disperse Yellow 1		119-15-3	-----	---	DYE-053S	25
Disperse Yellow 3		2832-40-8	DYE-003N	25	DYE-003S	25
Disperse Yellow 9		6373-73-5	-----	---	DYE-008S	25
Eosin Y NEW		15086-94-9	DYE-127N	30	DYE-127S	35
Eriochrome Black A		3618-58-4	DYE-109N	12	DYE-109S	12
FD & C Blue 1		3844-45-9	DYE-062N	12	DYE-062S	12
FD & C Blue 2		860-22-0	DYE-063N	12	DYE-063S	12
FD & C Red 3		16423-68-0	DYE-057N	12	DYE-057S	12
FD & C Red 40		25956-17-6	DYE-056N	12	-----	---
FD & C Yellow 5		1934-21-0	DYE-058N	12	DYE-058S	12
FD & C Yellow 6		2783-94-0	DYE-059N	12	DYE-059S	12

* in AcCN



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 Price	Solution Cat. No.	1 mL Price
Food Yellow 3	<i>Sunset Yellow FCF</i>	2783-94-0	DYE-024N	12	DYE-024S	12
Metanil Yellow		587-98-4	DYE-117N	12	DYE-117S	12
Methyl Blue NEW		28983-56-4	DYE-128N	20	DYE-128S	15
2,3-Naphthalenediol		92-44-4	-----	---	DYE-033S *	35
2-Nitro-1,4-phenylenediamine		5307-14-2	DYE-110N	12	DYE-110S	12
Orange II sodium salt NEW		633-96-5	DYE-116N	12	DYE-116S	12
Para Red		6410-10-2	DYE-026N	12	DYE-026S	15
4-Phenylazoaniline hydrochloride		3457-98-5	DYE-046N	12	DYE-046S	12
Ponceau SX		4548-53-2	-----	---	DYE-112S	12
<i>Ponceau Xylidine</i>	see Acid Red 26					
Rhodamine B		81-88-9	-----	---	DYE-118S	30
Solvent Orange 7	Sudan II	3118-97-6	DYE-021N	12	DYE-021S	12
<i>Solvent Orange R</i>	see Solvent Yellow 14					
Solvent Red 19	<i>Sudan Red 7B</i>	6368-72-5	DYE-025N	15	DYE-025S	15
Solvent Red 23	<i>Sudan III</i>	85-86-9	DYE-022N	12	DYE-022S	12
Solvent Red 24	<i>Sudan IV</i>	85-83-6	DYE-023N	15	DYE-023S	15
Solvent Yellow 1		3457-98-5	-----	---	DYE-029S	12
Solvent Yellow 14	<i>Sudan I, Solvent Orange R</i>	842-07-9	DYE-020N	12	DYE-020S	12
<i>Sudan I</i>	see Solvent Yellow 14					
Sudan II	Solvent Orange 7	3115-97-6	DYE-045N	12	DYE-045S	12
<i>Sudan III</i>	see Solvent Red 23					
Sudan IV	see Solvent Red 24					
<i>Sudan Red 7B</i>	see Solvent Red 19					
Sunfast D & C Red 34		569-61-9	DYE-061N	12	DYE-061S	12
<i>Sunset Yellow FCF</i>	see Food Yellow 3					
Timbasol Brown trans oxide		569-61-9	DYE-055N	12	DYE-055S	12
Victoria Blue	<i>Basic Blue 26</i>	2580-56-5	DYE-111N	12	DYE-111S	12

* in AcCN

EU Directive Dyes on next page





Dyes

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

Individual Aryl Amine Standards

Compound	100 µg/mL in AcCN \$ 25 / 1 mL	1000 µg/mL in AcCN \$ 35 / 1 mL	10 µg/mL in Ethyl acetate for 10 mL \$ 20 / 10 mL
<i>o</i> -Aminoazotoluene (01)	RAC-01	RAC-01-10X	RAC-01-EA-0.1X-10ML
4-Aminobiphenyl (02)	RAC-02	RAC-02-10X	RAC-02-EA-0.1X-10ML
2-Amino-4-nitrotoluene (03)	RAC-03	RAC-03-10X	RAC-03-EA-0.1X-10ML
Benzidine (04)	RAC-04	RAC-04-10X	RAC-04-EA-0.1X-10ML
4-Chloroaniline (05)	RAC-05	RAC-05-10X	RAC-05-EA-0.1X-10ML
4-Chloro- <i>o</i> -toluidine (06)	RAC-06	RAC-06-10X	RAC-06-EA-0.1X-10ML
<i>p</i> -Cresidine (07)	RAC-07	RAC-07-10X	RAC-07-EA-0.1X-10ML
2,4-Diaminoanisole * (08)	RAC-08	RAC-08-10X	RAC-08-EA-0.1X-10ML
4,4'-Diaminodiphenylmethane (09)	RAC-09	RAC-09-10X	RAC-09-EA-0.1X-10ML
2,4-Diaminotoluene (10)	RAC-10	RAC-10-10X	RAC-10-EA-0.1X-10ML
3,3'-Dichlorobenzidine (11)	RAC-11	RAC-11-10X	RAC-11-EA-0.1X-10ML
3,3'-Dimethoxybenzidine (12)	RAC-12	RAC-12-10X	RAC-12-EA-0.1X-10ML
3,3'-Dimethylbenzidine (13)	RAC-13	RAC-13-10X	RAC-13-EA-0.1X-10ML
3,3'-Dimethyl-4,4'-diaminodiphenylmethane (14)	RAC-14	RAC-14-10X	RAC-14-EA-0.1X-10ML
4,4'-Methylenebis(2-chloroaniline) (15)	RAC-15	RAC-15-10X	RAC-15-EA-0.1X-10ML
2-Naphthylamine (16)	RAC-16	RAC-16-10X	RAC-16-EA-0.1X-10ML
4,4'-Oxydianiline (17)	RAC-17	RAC-17-10X	RAC-17-EA-0.1X-10ML
4,4'-Thiodianiline (18)	RAC-18	RAC-18-10X	RAC-18-EA-0.1X-10ML
<i>o</i> -Toluidine (19)	RAC-19	RAC-19-10X	RAC-19-EA-0.1X-10ML
2,4,5-Trimethylaniline (20)	RAC-20	RAC-20-10X	RAC-20-EA-0.1X-10ML
<i>p</i> -Aminoazobenzene (21)	RAC-21	RAC-21-10X	RAC-21-EA-0.1X-10ML
2-Aminobiphenyl (22)	RAC-22	RAC-22-10X	RAC-22-EA-0.1X-10ML
<i>o</i> -Anisidine (23)	RAC-23	RAC-23-10X	RAC-23-EA-0.1X-10ML
3-Chloro- <i>o</i> -toluidine (24)	RAC-24	RAC-24-10X	RAC-24-EA-0.1X-10ML

RAC-R1-SET \$ 480 / 24 x 1 mL (Set includes the above ampules) In Acetonitrile
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 \$ 650 / 24 x 1 mL (Set includes the above ampules) In Acetonitrile
1000 µg/mL in AcCN * In the form of the Sulfate hydrate 1,710 µg/mL in Pyridine (1000 µg/mL as the base)

Carcinogenic Aryl Amine Mix

AE-00049-R1 \$ 45 / 1 x 1 mL
10 µg/mL in Ethyl acetate 23 comps.
AE-00049-SET \$ 55 / 2 x 1 mL
Contains **AE-00049-R1** (23 comps. Mix) plus
RAC-08 (2,4-Diaminoanisole) listed on the left
AE-00049-R1-10ML \$ 245 / 1 x 10 mL
10 µg/mL in Ethyl acetate 23 comps.

o-Aminoazotoluene (01)
4-Aminobiphenyl (02)
2-Amino-4-nitrotoluene (03)
Benzidine (04)
4-Chloroaniline (05)
4-Chloro-*o*-toluidine (06)
p-Cresidine (07)
4,4'-Diaminodiphenylmethane (09)
2,4-Diaminotoluene (10)
3,3'-Dichlorobenzidine (11)
3,3'-Dimethoxybenzidine (12)
3,3'-Dimethylbenzidine (13)
3,3'-Dimethyl-4,4'-diaminodiphenylmethane (14)
4,4'-Methylenebis(2-chloroaniline) (15)
2-Naphthylamine (16)
4,4'-Oxydianiline (17)
4,4'-Thiodianiline (18)
o-Toluidine (19)
2,4,5-Trimethylaniline (20)
p-Aminoazobenzene (21)
2-Aminobiphenyl (22)
o-Anisidine (23)
3-Chloro-*o*-toluidine (24)

Internal Standards

RAC-IS \$ 25 / 1 x 1 mL
1000 µg/mL in AcCN
RAC-IS-EA \$ 25 / 1 x 1 mL
1000 µg/mL in Ethyl acetate
3,3',5,5'-Tetramethylbenzidine

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	\$ 25
Disperse Orange 11	DYE-002S	25
Disperse Yellow 3	DYE-003S	25
Basic Violet 14	DYE-012S	35
Direct Black 38	DYE-013S	35
Direct Blue 6	DYE-014S	35

Criterion #23 Regulated Dye Disperse dyes, Sensitizing

Compound	100 µg/ml in MeOH Cat. No.	1 mL
Disperse Blue 3	DYE-004S	\$ 25
Disperse Orange 1	DYE-005S	25
Disperse Orange 3	DYE-006S	35
Disperse Red 1	DYE-007S	25
Disperse Yellow 9	DYE-008S	25
Disperse Blue 35	DYE-009S	25
Disperse Blue 124	DYE-010S	25
Disperse Orange 37	DYE-011S	25
Disperse Blue 7	DYE-015S	35
Disperse Blue 26	DYE-016S	35
Disperse Blue 102	DYE-017S	35
Disperse Red 11	DYE-018S	35
Disperse Red 17	DYE-019S	35

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

Compound	CAS No.	Neat Cat. No.	100 mg Price	100 µg/ml in MeOH Cat. No.	1 mL Price
2-Amino-3-nitrophenol	603-85-0	DYE-107N	\$ 22	DYE-107S	\$ 22
2-Amino-5-(diethylamino)toluene monohydrochloride	2051-79-8	DYE-104N	12	DYE-104S	12
2-Aminophenol	95-55-6	DYE-108N	12	DYE-108S	12
Basic Blue 7	2390-60-5	DYE-113N	12	DYE-113S	12
Basic Red 2	477-73-6	DYE-114N	12	DYE-114S	12
Crocein Scarlet 3b	5413-75-2	DYE-115N	12	DYE-115S	12
2,4-Diaminodiphenylamine	136-17-4	DYE-102N	22	-----	---
2,6-Diaminopyridine	141-86-6	DYE-103N	12	DYE-103S	12
N,N-Diethyl-1,4-phenylenediamine Sulfate	6283-63-2	DYE-105N	12	DYE-105S	12
N,N-Dimethyl-1,4-phenylenediamine	99-89-9	DYE-106N	12	DYE-106S	12
Eriochrome Black A	3618-58-4	DYE-109N	12	DYE-109S	12
2-Nitro-1,4-phenylenediamine	5307-14-2	DYE-110N	12	DYE-110S	12
Ponceau SX	4548-53-2	-----	---	DYE-112S	12
Victoria Blue	2580-56-5	DYE-111N	12	DYE-111S	12

PFOA, Odor and Irritant Standards

Perfluorooctanoic Acid (PFOA)

The acronym PFOA is used to refer to not only the Perfluorooctanoic Acid, but also its principal salts. PFOS is used to refer to Perfluorooctane sulfonate. They are synthetic chemicals that do not occur naturally in the environment and are typically used to aid in the manufacturing of fluoropolymers. These polymers have valuable properties of fire resistance and oil, stain and grease repellence. Another common use is as fire fighting foams. Fluorotelomers will thermally and biologically decompose to form the PFOAs.

The EPA has indicated the potential need for concern and the necessity for additional analytical testing and monitoring. PFOAs have been determined to bioaccumulate and are highly persistent. Continued testing has shown that this class of compounds is widely distributed in the environment.

Compound	CAS No.	Conc.	Matrix	Cat. No.	Price / 1 mL
Perfluorooctanoic acid	335-67-1	100 µg/mL	MeOH	PFOA-001S	\$ 22
Perfluorooctane sulfonic acid	1763-23-1	100 µg/mL	MeOH	PFOS-001S	22
Potassium perfluorooctanesulfonate	2795-39-3	100 mg	NEAT	PFOS-002N	22
		100 µg/mL	MeOH	PFOS-002S	22
Scotchgard™ Pre-2002 Formulation (Tech mix)		100 µg/mL	MeOH	PFOS-SCG-001S	22
Scotchgard™ Post-2002 Formulation (Tech mix)		100 µg/mL	MeOH	PFOS-SCG-002S	22

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.	Price
Cumene	98-82-8	10 mg	NEAT	ODOR-06N	\$ 20
(+/-) Geosmin	16423-19-1	2 µg/mL	MeOH	ODOR-01S	45
Indan	496-11-7	10 mg	NEAT	ODOR-12N	20
Indene	95-13-6	10 mg	NEAT	ODOR-11N	20
2-Isobutyl-3-methoxypyrazine *	24683-00-9	1000 µg/mL	MeOH	ODOR-17S-10ML	45
2-Isopropyl-3-methoxypyrazine *	25773-40-4	1000 µg/mL	MeOH	ODOR-16S-10ML	45
cis-3-Hexenyl acetate	3681-71-8	10 mg	NEAT	ODOR-08N	35
cis-3-Hexen-1-ol	928-96-1	10 mg	NEAT	ODOR-09N	35
2-Methylbenzofuran	4265-25-2	10 mg	NEAT	ODOR-14N	45
2-Methylisoborneol	2371-42-8	2 µg/mL	MeOH	ODOR-02S	45
Methyl isobutyl ketone	108-10-1	10 mg	NEAT	ODOR-10N	20
Naphthalene	91-20-3	10 mg	NEAT	ODOR-13N	20
trans-2, cis-6-Nonadienal	557-48-2	10 mg	NEAT	ODOR-03N	30
Styrene	100-42-5	10 mg	NEAT	ODOR-04N	20
Toluene	108-88-3	10 mg	NEAT	ODOR-05N	20
2,4,6-Trichloroanisole *	87-40-1	1000 µg/mL	MeOH	ODOR-15S-10ML	45
m-Xylene	108-38-3	10 mg	NEAT	ODOR-07N	20



Odor Set

ODOR-STM-SET \$ 200 / 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 \$ 80 / 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.	Price
2-Chloroacetophenone	532-27-4	100 µg/mL	Hexane	IRT-001S	\$ 20
2'-Chloroacetophenone	2142-68-9	100 µg/mL	Hexane	IRT-002S	20
3'-Chloroacetophenone	99-02-5	100 µg/mL	Hexane	IRT-003S	25
4'-Chloroacetophenone	99-91-2	100 µg/mL	Hexane	IRT-004S	25
2'-Methylacetophenone	577-16-2	100 µg/mL	Hexane	IRT-005S	20

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.	Price/ 1 mL
Bromochlorodifluoromethane	353-59-3	0.2 mg/mL	MeOH	M-REF-X-01	\$ 20
Bromotrifluoromethane (Freon #13b1)	75-63-8	0.2 mg/mL	MeOH	M-REF-01	12
1-Chloro-1,1-difluoroethane (Freon #142b)	75-68-3	0.2 mg/mL	MeOH	M-REF-02	20
2-Chloro-1,1,1,2-tetrafluoroethane (Freon #124)	2837-89-0	0.2 mg/mL	MeOH	M-REF-X-02	20
Chlorodifluoromethane (Freon #22)	75-45-6	0.2 mg/mL	MeOH	M-REF-03	12
Chloroethane (Freon #160)	75-00-3	0.2 mg/mL	MeOH	M-REF-04	12
Chloromethane	74-87-3	0.2 mg/mL	MeOH	M-REF-05	12
Chloropentafluoroethane	76-15-3	0.2 mg/mL	MeOH	M-REF-06	20
Chlorotrifluoromethane (Freon #13)	75-72-9	0.2 mg/mL	MeOH	M-REF-07	12
1,2-Dibromotetrafluoroethane	124-73-2	0.2 mg/mL	MeOH	M-REF-X-03	20
1,1-Dichloro-1-fluoroethane (Freon #141B)	1717-00-6	0.2 mg/mL	MeOH	M-REF-X-04	20
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon #114)	76-14-2	0.2 mg/mL	MeOH	M-REF-10	20
2,2-Dichloro-1,1,1-trifluoroethane (Freon #123)	306-83-2	0.2 mg/mL	MeOH	M-REF-X-05	20
Dichlorodifluoromethane (Freon #12)	75-71-8	0.2 mg/mL	MeOH	M-REF-08	12
Dichlorofluoromethane (Freon #21)	75-43-4	0.2 mg/mL	MeOH	M-REF-09	12
1,1-Difluoroethane (Freon 152a)	75-37-6	0.2 mg/mL	MeOH	M-REF-11	20
Pentafluoroethane (Freon #125)	354-33-6	0.2 mg/mL	MeOH	M-REF-X-06	20
1,1,2,2-Tetrafluoroethane (Freon #134)	359-35-3	0.2 mg/mL	MeOH	M-REF-X-07	20
Tetrafluoroethane	811-97-2	0.2 mg/mL	MeOH	M-REF-12	20
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.2 mg/mL	MeOH	M-REF-14	10
		2.0 mg/mL	MeOH	M-REF-14-10X	20
Trichlorofluoromethane	75-69-4	0.2 mg/mL	MeOH	M-REF-13	12
1,1,1-Trifluoroethane (Freon #143A)	420-46-2	0.2 mg/mL	MeOH	M-REF-X-08	20
Trifluoromethane (Freon #23)	75-46-7	0.2 mg/mL	MeOH	M-REF-15	12



Refrigerant Solutions (CFCs)

Individuals

Each at 0.2 mg/mL in MeOH

At stated prices / 1 mL

Set

M-REF-SET

\$ 175 / 15 x 1 mL

Each at 0.2 mg/mL in MeOH

(below 15 comps.)

Multi-Component Solution

M-REF

0.2 mg/mL each in MeOH

\$ 60 / 1 x 1 mL

(below 15 comps.)

Freon #	Compound	Cat. No.	Price
13b1	Bromotrifluoromethane (01)	M-REF-01	\$ 8
142b	1-Chloro-1,1-difluoroethane (02)	M-REF-02	20
22	Chlorodifluoromethane (03)	M-REF-03	8
160	Chloroethane (04)	M-REF-04	8
40	Chloromethane (05)	M-REF-05	8
115	Chloropentafluoroethane (06)	M-REF-06	20
13	Chlorotrifluoromethane (07)	M-REF-07	8
12	Dichlorodifluoromethane (08)	M-REF-08	8
21	Dichlorofluoromethane (09)	M-REF-09	8
114	1,2-Dichloro-1,1,2,2-tetrafluoroethane (10)	M-REF-10	20
152a	1,1-Difluoroethane (11)	M-REF-11	20
134a	Tetrafluoroethane (12)	M-REF-12	20
11	Trichlorofluoromethane (13)	M-REF-13	8
113	1,1,2-Trichloro-1,2,2-trifluoroethane (14)	M-REF-14	10
23	Trifluoromethane (15)	M-REF-15	8

Additional Individual Refrigerant Solutions (CFCs)

Individuals

Each at 0.2 mg/mL in MeOH

At stated prices / 1 mL

Set

M-REF-X-R1-SET

\$ 112 / set of 9 x 1 mL

Each at 0.2 mg/mL in MeOH

(below 9 comps.)

Multi-Component Solution

M-REF-X

0.2 mg/mL each in MeOH

\$ 40 / 1 x 1 mL

(below 8 comps., not including Freon 113a)

Freon #	Compound	Cat. No.	Price
12B1	Bromochlorodifluoromethane	M-REF-X-01	\$ 20
124	2-Chloro-1,1,1,2-tetrafluoroethane	M-REF-X-02	20
114B2	1,2-Dibromotetrafluoroethane	M-REF-X-03	20
141b	1,1-Dichloro-1-fluoroethane	M-REF-X-04	20
123	2,2-Dichloro-1,1,1-trifluoroethane	M-REF-X-05	20
125	Pentafluoroethane	M-REF-X-06	20
134	1,1,2,2-Tetrafluoroethane	M-REF-X-07	20
113a	1,1,1-Trichlorotrifluoroethane (Freon 113a)	M-REF-X-09	18
143a	1,1,1-Trifluoroethane	M-REF-X-08	20

Qualitative Analysis Kits

PolyStandard™



These PolyStandard™ Kits were originally produced by Dr. Seaton Preston of the PolyScience Analytical Division 40 years ago. In 1999 AccuStandard acquired this division and renamed it PolyStandard. This selection of kits for qualitative and retention time analysis, and enables identification of unknown components or to analysis of a broad range of chemicals. All kits are in either vials or ampules and each kit includes an empty transfer vial.

Alcohols

C₁-C₅ Alcohols

PS-111C-R1-SET

\$ 110 / 14 ampules

Neats at 1 mL each.

- (01) Methanol
- (02) Ethanol
- (03) 1-Propanol
- (04) 2-Propanol
- (05) 1-Butanol
- (06) 2-Butanol
- (07) 2-Methyl-1-propanol
- (08) 2-Methyl-2-propanol
- (09) 1-Pentanol
- (10) 2-Pentanol
- (11) 3-Pentanol
- (12) 2-Methyl-1-butanol
- (13) 3-Methyl-1-butanol
- (14) 2-Methyl-2-butanol

C₆-C₈ Alcohols

PS-131C-R1-SET

\$ 185 / 14 ampules

Neats at 1 mL each.

- (01) 1-Hexanol
- (02) 2-Hexanol
- (03) 3-Hexanol
- (04) 2-Methyl-1-pentanol
- (05) 4-Methyl-2-pentanol
- (06) 2-Methyl-3-pentanol
- (07) 3-Methyl-3-pentanol
- (08) 2-Ethyl-1-butanol
- (09) 3,3-Dimethyl-2-butanol
- (10) 1-Heptanol
- (11) 2-Heptanol
- (12) 2,4-Dimethyl-3-pentanol
- (13) 1-Octanol
- (14) 2-Octanol

nC₆-C₂₂ Alcohols

PS-121C-R1-SET

\$ 250 / 14 ampules

Neat at 10 mg each. Solutions are weight % in Ethylbenzene, 1 mL each.

- | | |
|---------------------|------|
| (01) 1-Hexanol | Neat |
| (02) 1-Heptanol | Neat |
| (03) 1-Octanol | Neat |
| (04) 1-Nonanol | Neat |
| (05) 1-Decanol | Neat |
| (06) 1-Undecanol | Neat |
| (07) 1-Dodecanol | 10% |
| (08) 1-Tridecanol | 10% |
| (09) 1-Tetradecanol | 10% |
| (10) 1-Pentadecanol | 10% |
| (11) 1-Hexadecanol | 10% |
| (12) 1-Octadecanol | 5% |
| (13) 1-Eicosanol | 5% |
| (14) 1-Docosanol | 5% |

Aromatics

Aromatics C₆-C₁₆

PS-251C-R1-SET

\$ 180 / 14 ampules

Neats at 1 mL each.

- (01) Benzene
- (02) Toluene
- (03) *o*-Xylene
- (04) *m*-Xylene
- (05) *p*-Xylene
- (06) Ethylbenzene
- (07) Cumene
- (08) Mesitylene
- (09) *p*-Cymene
- (10) *n*-Propylbenzene
- (11) *n*-Butylbenzene
- (12) *n*-Hexylbenzene
- (13) *n*-Octylbenzene
- (14) *n*-Decylbenzene

Ketones

Normal Ketones

PS-411C-R1-SET

\$ 160 / 14 ampules

Neats at 1 mL each.

- (01) 2-Butanone
- (02) 2-Pentanone
- (03) 3-Pentanone
- (04) 2-Hexanone
- (05) 2-Heptanone
- (06) 3-Heptanone
- (07) 4-Heptanone
- (08) 2-Octanone
- (09) 3-Octanone
- (10) 2-Nonanone
- (11) 5-Nonanone
- (12) 2-Methylcyclohexanone
- (13) 3-Methylcyclohexanone
- (14) 4-Methylcyclohexanone

Branched Ketones

PS-421D-R1-SET

\$ 220 / 14 ampules

Neats at 1 mL each.

- (01) 3-Methyl-2-butanone
- (02) 3,3-Dimethyl-2-butanone
- (03) 2-Methyl-3-pentanone
- (04) 4-Methyl-2-pentanone
- (05) 2,4-Dimethyl-3-pentanone
- (06) 2-Methyl-3-hexanone
- (07) 5-Methyl-2-hexanone
- (08) 2-Methyl-3-heptanone
- (09) 5-Methyl-3-heptanone
- (10) 2,6-Dimethyl-4-heptanone
- (11) Mesityl oxide
- (12) Acetophenone
- (13) Cyclopentanone
- (14) Cyclohexanone

Food Additives

Antioxidants

PS-920CX-R1-SET

\$ 180 / 15 vials

Neats at 10 mg each.

- (01) BHA (2 and 3-*tert*-Butyl-4-methoxy phenol)
- (02) BHT (2,6-*di-tert*-Butyl-4-methyl phenol)
- (03) 4-Hydroxymethyl-2,6-*di-tert*-butyl phenol
- (04) THBP (2,4,5-Trihydroxybutyphenone)
- (05) Ethoxyquin (1,2-Dihydro-6-ethoxy-2,2,4-trimethyl quinoline)
- (06) *tert*-Butyl hydroquinone
- (07) DLTDP (Dilaurylthiodipropionate)
- (08) Thiodipmpionic acid
- (09) Propyl gallate
- (10) Ascorbyl palmitate
- (11) Ascorbic acid
- (12) Erythorbic acid (*iso*-Ascorbic acid)
- (13) Tocopherols (mixed)
- (14) Glycine
- (15) Lecithin

Aromatics C₆-C₉

PS-252C-R1-SET

\$ 195 / 14 ampules

Neats at 1 mL each.

- (01) Toluene
- (02) *o*-Xylene
- (03) *m*-Xylene
- (04) *p*-Xylene
- (05) Ethylbenzene
- (06) Cumene
- (07) Mesitylene
- (08) *n*-Propylbenzene
- (09) 1,2,4-Trimethylbenzene
- (10) 1,2,3-Trimethylbenzene
- (11) 1-Ethyl-2-Methylbenzene
- (12) 1-Ethyl-3-Methylbenzene
- (13) 1-Ethyl-4-Methylbenzene
- (14) Benzene

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.

Alkane C₈-C₁₂ Mixture

PS-CP-02-1ML \$ 110 / 1 mL

0.5 mg/mL each in *n*-Hexane

5 comps.

- | | |
|--------|----------|
| Octane | Undecane |
| Nonane | Dodecane |
| Decane | |

Alkane C₁₃-C₂₀ Mixture

PS-CP-03-1ML \$ 115 / 1 mL

0.5 mg/mL each in *n*-Hexane

8 comps.

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

Alkane C₆-C₄₀ Mixture

PS-CP-06A-1ML \$ 130 / 1 mL

0.5 mg/mL each in *n*-Hexane

23 comps.

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

Alkane C₂₂-C₃₂

Even Number Mixture

PS-CP-04-1ML \$ 110 / 1 mL

0.5 mg/mL each in *n*-Hexane

6 comps.

- | | |
|-------------|---------------|
| Docosane | Octacosane |
| Tetracosane | Triacontane |
| Hexacosane | Dotriacontane |

Alkane C₃₄-C₄₄

Even Number Mixture

PS-CP-05A-1ML \$ 120 / 1 mL

0.5 mg/mL each in *n*-Hexane

4 comps.

- | | |
|-------------------|-----------------|
| Tettratriacontane | Octatriacontane |
| Hexatriacontane | Tetracontane |

Non-Polar Columns

Test Mix

PS-CP-01-1ML \$ 95 / 1 mL

At the stated conc. in CH₂Cl₂

12 comps.

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

Contains interactive and labile components.

Refrigerate when not in use.



Qualitative Analysis Kits

PolyStandard™

Hydrocarbons

Alkanes nC_6 - nC_{19}

PS-211C-R1-SET

\$ 115 / 14 ampules

Neats at 1 mL each. Solutions are weight % in Ethylbenzene, 1 mL each.

(01) <i>n</i> -Hexane	Neat
(02) <i>n</i> -Heptane	Neat
(03) <i>n</i> -Octane	Neat
(04) <i>n</i> -Nonane	Neat
(05) <i>n</i> -Decane	Neat
(06) <i>n</i> -Undecane	Neat
(07) <i>n</i> -Dodecane	Neat
(08) <i>n</i> -Tridecane	Neat
(09) <i>n</i> -Tetradecane	Neat
(10) <i>n</i> -Pentadecane	Neat
(11) <i>n</i> -Hexadecane	10%
(12) <i>n</i> -Heptadecane	10%
(13) <i>n</i> -Octadecane	10%
(14) <i>n</i> -Nonadecane	10%

Alkenes C_8 - C_{22}

PS-241D-R1-SET \$ 185 / 14 vials

Neats at the stated quantities.

(01) 2,4,4-Trimethylpentene-1	1 mL
(02) 2,4,4-Trimethylpentene-2	0.5 mL
(03) Nonene-1	0.5 mL
(04) Nonene-4 (<i>cis</i> , <i>trans</i>)	0.5 mL
(05) 3,5,5-Trimethyl-1-hexene	0.5 mL
(06) Decene-1	1 mL
(07) Undecene-1	1 mL
(08) Dodecene-1	1 mL
(09) Tridecene-1	1 mL
(10) Tetradecene-1	1 mL
(11) Hexadecene-1	1 mL
(12) Octadecene-1	1 mL
(13) Eicosene-1	1 mL
(14) Docosene-1	0.5 mL

Alkanes nC_{19} - nC_{40}

PS-261C-R1-SET

\$ 220 / 14 ampules

At the stated conc. by weight % in Ethylbenzene, 1 mL each.

(01) <i>n</i> -Nonadecane	10%
(02) <i>n</i> -Eicosane	10%
(03) <i>n</i> -Heneicosane	10%
(04) <i>n</i> -Docosane	10%
(05) <i>n</i> -tricosane	10%
(06) <i>n</i> -Tetracosane	10%
(07) <i>n</i> -Pentacosane	10%
(08) <i>n</i> -Hexacosane	10%
(09) <i>n</i> -Octacosane	10%
(10) <i>n</i> -triacontane	1%
(11) <i>n</i> -Dotriacontane	1%
(12) <i>n</i> -Hexatriacontane	1%
(13) <i>n</i> -Octatriacontane	1%
(14) <i>n</i> -Tetracontane	1%

Naphthenes C_5 - C_{10}

PS-281C-R1-SET

\$ 210 / 14 ampules

Neats at 1 mL each.

(01) Cyclopentane
(02) Methylcyclopentane
(03) Cyclohexane
(04) Methylcyclohexane
(05) <i>cis</i> -1,2-Dimethylcyclohexane
(06) <i>trans</i> -1,2-Dimethylcyclohexane
(07) <i>cis</i> & <i>trans</i> -1,3-Dimethylcyclohexane
(08) <i>cis</i> & <i>trans</i> -1,4-Dimethylcyclohexane
(09) Ethylcyclohexane
(10) <i>n</i> -Propylcyclohexane
(11) <i>iso</i> -Propylcyclohexane
(12) <i>n</i> -Butylcyclohexane
(13) <i>iso</i> -Butylcyclohexane
(14) <i>tert</i> -Butylcyclohexane

Sugars & Sugar Alcohols

Sugars & Sugar Alcohols

PS-960C-R1-SET \$ 160 / 15 vials

Neats at 10 mg each.

(01) D-Xylose
(02) D-Ribose
(03) L-Arabinose
(04) D-Fructose
(05) D-Galactose
(06) α -D-Glucose
(07) D-Mannose
(08) L-Rhamnose monohydrate
(09) L-Sorbose
(10) Xylitol
(11) Ribitol (Adonitol)
(12) D-Arabitol
(13) L-Arabitol
(14) D-Mannitol
(15) D-Sorbitol

Glycols & Glycol Ethers

Glycols C_3 - C_{12}

PS-151C-SET

\$ 175 / 15 ampules

Neats at 1 mL each. Solutions at the stated conc. by weight % in MeOH, at 1 mL each.

(01) 1,2-Propanediol	Neat	(09) 1,6-Hexanediol	10%
(02) 1,3-Propanediol	Neat	(10) 2,5-Hexanediol	10%
(03) 1,2-Butanediol	Neat	(11) 1,7-Heptanediol	10%
(04) 1,3-Butanediol	Neat	(12) 1,8-Octanediol	10%
(05) 1,4-Butanediol	Neat	(13) 1,9-Nonanediol	10%
(06) 2,3-Butanediol	Neat	(14) 1,10-Decanediol	10%
(07) 1,5-Pentanediol	Neat	(15) 1,12-Dodecanediol	10%
(08) 2,4-Pentanediol	Neat		

Glycols Ethers C_3 - C_{10}

PS-160C-R1-SET

\$ 160 / 15 ampules

Neats at 1 mL each.

- (01) Ethylene glycol methyl ether (2-Methoxyethanol)
- (02) Ethylene glycol ethyl ether (2-Ethoxyethanol)
- (03) Ethylene glycol *n*-butyl ether (2-*n*-Butoxyethanol)
- (04) Ethylene glycol *n*-hexyl ether (2-Hexoxyethanol)
- (05) Ethylene glycol phenyl ether (2-Phenoxyethanol)
- (06) Diethylene glycol methyl ether [2-(2-Methoxyethoxy)-ethanol]
- (07) Diethylene glycol ethyl ether [2-(2-Ethoxyethoxy)-ethanol]
- (08) Diethylene glycol *n*-butyl ether [2-(2-*n*-Butoxyethoxy)-ethanol]
- (09) Diethylene glycol *n*-hexyl ether [2-(2-*n*-Hexoxyethoxy)-ethanol]
- (10) Propylene glycol methyl ether (1-Methoxy-isopropanol)
- (11) Propylene glycol *n*-propyl ether (1-Propoxy-isopropanol)
- (12) Propylene glycol *n*-butyl ether (1-*n*-Butoxy-isopropanol)
- (13) Dipropylene glycol methyl ether [1-(1-Methoxyisopropoxy)isopropanol]
- (14) Tripropylene glycol methyl ether
- (15) Glycol ethers Mixture PS-16C

Neat at the stated weight %.

Ethylene glycol ethyl ether 10%

Ethylene glycol butyl ether 10%

Diethylene glycol ethyl ether 30%

Diethylene glycol butyl ether 50%

Aldehydes

Aldehydes

PS-450E-R2-SET

\$ 190 / 15 ampules

Solutions at the stated conc. by weight % in Toluene, at 1 mL each.

(01) Propionaldehyde (<i>Propanal</i>)	Neat
(02) Butyraldehyde (<i>Butanal</i>)	Neat
(03) Isobutyraldehyde (<i>2-Methylpropanal</i>)	Neat
(04) Valeraldehyde (<i>Pentanal</i>)	Neat
(05) Isovaleraldehyde (<i>3-Methylbutanal</i>)	Neat
(06) Caproic aldehyde (<i>Hexanal</i>)	Neat
(07) Enanthaldehyde (<i>Heptanal</i>)	Neat
(08) Caprylaldehyde (<i>Octanal</i>)	Neat
(09) Pelargonaldehyde (<i>Nonanal</i>)	Neat
(10) Capraldehyde (<i>Decanal</i>)	10%
(11) Undecylaldehyde (<i>Hendecanal</i>)	10%
(12) Lauraldehyde (<i>Dodecanal</i>)	10%
(13) Tridecylaldehyde (<i>Tridecanal</i>)	10%
(15) Benzaldehyde (<i>Benzenecarbonal</i>)	Neat

Qualitative Analysis Kits

PolyStandard™



Acids & Esters

Saturated Fatty Acids

Methyl Ester

SFA-N-SET \$ 175 / 18 vials

Neats at 100 mg each.

- (01) Methyl octanoate (Caprylate) C8:0
- (02) Methyl nonanoate (Pelargonate) C9:0
- (03) Methyl decanoate (Caprate) C10:0
- (04) Methyl undecanoate C11:0
- (05) Methyl dodecanoate (Laurate) C12:0
- (06) Methyl tridecanoate C13:0
- (07) Methyl tetradecanoate (Myristate) C14:0
- (08) Methyl pentadecanoate C15:0
- (09) Methyl hexadecanoate (Palmitate) C16:0
- (10) Methyl heptadecanoate (Margarate) C17:0
- (11) Methyl octadecanoate (Stearate) C18:0
- (12) Methyl 12-hydroxystearate C18:0
- (13) Methyl nonadecanoate C19:0
- (14) Methyl eicosanoate (Arachidate) C20:0
- (15) Methyl heneicosanoate C21:0
- (16) Methyl docosanoate (Behenate) C22:0
- (17) Methyl tricosanoate C23:0
- (18) Methyl tetracosanoate (Lignocerate) C24:0

Mixture

SFA-N-SET \$ 175 / 18 vials

Mixture at 100 mg each.

Ethyl Esters

PS-621C-R1-SET \$ 160 / 14 vials

Solution at stated conc. by weight % in Hexane in 1 mL. Neats at 1 mL each.

- | | |
|------------------------|------|
| (01) Ethyl acetate | Neat |
| (02) Ethyl propionate | Neat |
| (03) Ethyl butyrate | Neat |
| (04) Ethyl valerate | Neat |
| (05) Ethyl caproate | Neat |
| (06) Ethyl heptanoate | Neat |
| (07) Ethyl caprylate | Neat |
| (08) Ethyl pelargonate | Neat |
| (09) Ethyl caprate | Neat |
| (10) Ethyl undecanoate | Neat |
| (11) Ethyl laurate | Neat |
| (12) Ethyl myristate | 10% |
| (13) Ethyl palmitate | 10% |
| (14) Ethyl stearate | 10% |

Fatty Acids C₃-C₁₈

PS-651C-R1-SET \$ 155 / 14 vials

Neat at the stated quantities

- (01) Propionic acid 1 mL
- (02) Butyric acid 1 mL
- (03) Valeric acid 1 mL
- (04) Caproic acid 1 mL
- (05) Heptanoic acid 1 mL
- (06) Caprylic acid 1 mL
- (07) Pelargonic acid 1 mL
- (08) Capric acid 1 mL
- (09) *n*-Hendecanoic acid 1 mL
- (10) 10-Hendecenoic acid 10 mg
- (11) Lauric acid 10 mg
- (12) Myristic acid 10 mg
- (13) Palmitic acid 10 mg
- (14) Stearic acid 10 mg

Dicarboxylic Acids

PS-670CX-R1-SET

\$ 160 / 15 vials

Neats at 10 mg each.

- (01) Oxalic acid
- (02) Malonic acid
- (03) Maleic acid
- (04) Fumaric acid
- (05) Succinic acid
- (06) Glutaric acid
- (07) Adipic acid
- (08) Pimelic acid
- (09) Suberic acid
- (10) Azelaic acid
- (11) Sebacic acid
- (12) 1,12-Dodecanedioic acid
- (13) Phthalic acid
- (14) Isophthalic acid
- (15) Terephthalic acid

Amino Acids

L-Amino Acid Kit

PS-970C-R1-SET \$ 160 / 22 vials

Neats at 10 mg each.

- (01) L-Alanine
- (02) L-Arginine
- (03) L-Asparagine
- (04) L-Aspartic acid
- (05) L-Cysteine
- (06) L-Cystine
- (07) L-Glutamic acid
- (08) L-Glutamine
- (09) Glycine
- (10) L-Histidine
- (11) *trans*-4-Hydroxy-L-proline
- (12) L-Isoleucine
- (13) L-Leucine
- (14) L-Lycine
- (15) L-Methionine
- (16) L-Phenylalanine
- (17) L-Proline
- (18) L-Serine
- (19) L-Threonine
- (20) L-Tryptophan
- (21) L-Tyrosine
- (22) L-Valine

Phenols

PS-170D-R1-SET \$ 105 / 14 vials

At the stated quantities and conc. by weight % in Toluene.

- | | |
|----------------------------------|-----------|
| (01) Phenol | 1 mL/Neat |
| (02) <i>o</i> -Cresol | 1 mL/Neat |
| (03) <i>m</i> -Cresol | 1 mL/Neat |
| (04) <i>p</i> -Cresol | 1 mL/Neat |
| (05) <i>o</i> -Ethylphenol | 1 mL/10% |
| (06) <i>p</i> -Ethylphenol | 1 mL/10% |
| (07) 2- <i>iso</i> -Propylphenol | 1 mL/10% |
| (08) 2,3-Xylenol | 1 mL/10% |
| (09) 2,4-Xylenol | 1 mL/10% |
| (10) 2,5-Xylenol | 1 mL/10% |
| (11) 2,6-Xylenol | 1 mL/10% |
| (12) 3,4-Xylenol | 1 mL/10% |
| (13) 3,5-Xylenol | 1 mL/10% |
| (14) 2,3,5-Trimethylphenol | 1 mL/5% |

Pesticides & Herbicides

Chlorinated Pesticides

PS-510D-R1-SET

\$ 180 / 15 ampules

Solution at 0.1% in MeOH, 1 mL each.

- (01) DDT
- (02) BHC
- (03) DDE
- (04) Endrin
- (05) Lindane
- (06) Toxaphene
- (07) Chlordane
- (08) Methoxychlor
- (09) Heptachlor
- (10) Strobane
- (11) Aldrin
- (12) Dieldrin
- (13) TDE
- (14) Endosulfan (mix of isomers)
- (15) Chloropicrin

Organophosphorus

Insecticides

PS-520E-R1-SET

\$ 215 / 13 ampules

Solution at 0.1% in MeOH, 1 mL each.

- (01) Methyl Parathion
- (02) Ethion
- (03) Co-Ral
- (04) Guthion (Azinphos methyl)
- (05) Di-Syston (Disulfoton)
- (06) Phosdrin
- (07) Naled (Dibrom)
- (08) Diazinon
- (09) DDVP (Vapona) (Dichlorvos)
- (11) Cygon
- (12) Malathion
- (13) Zolone
- (15) Phorate (Thimet)

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 \$ 95 / 1 mL

At the stated conc. in CH₂Cl₂ 12 comps.

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

Sulfur Compounds

PS-710C-R1-SET

\$ 325 / 14 ampules

Neats at 1 mL each.

- (01) *iso*-Propyl mercaptan
- (02) *n*-Propyl mercaptan
- (03) *iso*-Butyl mercaptan
- (04) *n*-Butyl mercaptan
- (05) *sec*-Butyl mercaptan
- (06) *tert*-Butyl mercaptan
- (07) *n*-Amyl mercaptan
- (08) *tert*-Amyl mercaptan
- (09) *n*-Hexyl mercaptan
- (10) *n*-Heptyl mercaptan
- (11) Ethyl sulfide
- (12) Allyl sulfide
- (13) Di-*n*-propyl sulfide
- (14) Di-*n*-butyl sulfide

Calibration Mixture

PS-71C \$ 50 / 1 mL vial

Neat at the stated weight % listed

Mercaptan Mixture PS-71C

- | | |
|-----------------------------|-------|
| Ethyl mercaptan | 13.4% |
| <i>n</i> -Propyl mercaptan | 22.4% |
| <i>iso</i> -Butyl mercaptan | 28.6% |
| <i>n</i> -Butyl mercaptan | 35.6% |

Phthalate Esters

PS-840C-R1-SET

\$ 260 / 15 vials

Neats at 1 mL each.

- (01) Dimethyl phthalate
 - (02) Diethyl phthalate
 - (03) Di-*n*-propyl phthalate
 - (04) Di-*iso*-propyl phthalate
 - (05) Di-*n*-butyl phthalate
 - (06) Di-*iso*-butyl phthalate
 - (07) Dipentyl phthalate
 - (08) Dihexyl phthalate
 - (09) Diheptyl phthalate
 - (10) Dioctyl phthalate
 - (11) Dinonyl phthalate
 - (12) Didecyl phthalate
 - (13) Diundecyl phthalate
 - (14) Didodecyl phthalate
 - (15) Phthalate Mixture PS-84C
- Neat at stated weight %
- | | |
|--------------------------------|-------|
| Dimethyl phthalate | 16.7% |
| Diethyl phthalate | 16.7% |
| Di- <i>n</i> -propyl phthalate | 33.3% |
| Di- <i>n</i> -butyl phthalate | 33.3% |

Calibration Mixture

PS-84C-1ML \$ 70 / 1 mL vial

Neat at the stated weight % listed above.

PCBs

PS-590D-R1-SET

\$ 260 / 15 ampules

At 100 µg/mL in MeOH, 1 mL each.

- (01) Aroclor 1016
- (02) Aroclor 1221
- (03) Aroclor 1232
- (04) Aroclor 1242
- (05) Aroclor 1248
- (06) Aroclor 1254
- (07) Aroclor 1260
- (08) *p,p*-DDT
- (09) *p,p'*-DDE
- (10) *p,p'*-TDE
- (11) Heptachlor
- (12) Heptachlor epoxide
- (13) Aldrin
- (14) Dieldrin
- (15) Lindane

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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 3-6)
- PBDE Congeners (pages 26-28)

- Pesticides (pages 47-66)
- Appendix IX (pages 196-197)

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

Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL Price	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL Price
Acenaphthene 83-32-9	100	M	APP-9-001	\$ 15	4-Aminobiphenyl 92-67-1	100	D	APP-9-011	\$ 20
Acenaphthene-d ₁₀ 15067-26-2	1,000	M	APP-9-001-10X	25	Aminocarb 2032-59-9	100	CN	M-632-01	12
Acenaphthylene 208-96-8	100	M	APP-9-002	15	2-Amino-4,6-dinitrotoluene 35572-78-2	100	M:CN	M-8330-13-0.1X	20
Acetate 30560-19-1	1,000	M	APP-9-002-10X	25	4-Amino-2,6-dinitrotoluene 19406-51-0	1,000	M:CN	M-8330-14-0.1X	20
Acetaldehyde 75-07-0	1,000	A	P-200S-A	12	4-Aminopyridine 504-24-5	1,000	M:CN	M-8330-14	20
Acetaldehyde-DNPH 1019-57-4	1,000	A	P-200S-A-10X	24	4-Aminopyridine 504-24-5	100	M	P-407S	12
Acetochlor 34256-82-1	1,000	W	M-8315-01	20	Anilazine 101-05-3	100	H:A 80:20	P-287S-H	12
Acetone 67-64	1,000	M	M-554-01 *	20	Aniline 62-53-3	100	M	APP-9-012	12
Acetone-DNPH 1567-89-1	1,000	M:CN	M-8315-R-DNPH-01	20	Aniline-d ₅ 4165-61-1	1,000	M	APP-9-012-10X	20
Acetonitrile 75-05-8	100	M	P-465S	32	Aniline-d ₅ 4165-61-1	200	D	M-625-01	20
Acetophenone 98-86-2	10,000	W	M-8015B/5031-01	25	Anthracene 120-12-7	2,000	D	M-625-01-10X	20
2-Acetylaminofluorene 53-96-3	100	CN	M-8315-R2-DNPH-02	20	Anthracene-d ₁₀ 1719-06-8	100	M	APP-9-013	15
Acifluorfen 50594-66-6	100	M	APP-9-003 *	12	Anthracene-d ₁₀ 1719-06-8	1,000	M	APP-9-013-10X	25
Acifluorfen methyl ester 50594-67-7	1,000	M	M-8015B/5031-01	25	Aramite 140-57-8	200	D	M-625-02	20
Acrolein 107-02-8	100	M	APP-9-005	12	Asulam 3337-71-1	100	M	P-132S	22
Acrolein-DNPH 888-54-0	1,000	M	APP-9-005-10X	12	Atrazine 1912-24-9	100	M	P-276S	12
Acrylamide 79-06-1	100	D	APP-9-004	12	Atrazine desethyl 6190-65-4	100	M	P-005S	12
Acrylonitrile 107-13-1	2000	D	APP-9-004-20X	20	Atrazine-desisopropyl 1007-28-9	1,000	M	P-005S-10X	24
Alachlor 15972-60-8	100	D	APP-9-006	20	Azamephosphos 35575-96-3	100	M	P-343S	22
Alanap 132-66-1	100	M	P-245S	12	Azinphos-ethyl 2642-71-9	100	M	P-352S	12
Aldicarb 116-06-3	1,000	M	P-245S-10X	24	Azinphos-methyl 86-50-0	100	M	P-201S	32
Aldicarb sulfone 1646-88-4	100	M	P-246S	12	Azinphos-methyl 86-50-0	1,000	H	M-8141A-1-01	20
Aldicarb sulfoxide 1646-87-3	1,000	M	P-246S-10X	24	Azobenzene 103-33-3	100	M	P-007S	12
Aldrin 309-00-2	1,000	M	APP-9-007 *	12	Barbamate (Barban) 101-27-9	1,000	H	M-8140-01	20
Allethrin 584-79-2	1,000	M	APP-9-007-10X *	20	Baycarb 3766-81-2	2,000	D	Z-014B-1	20
Allyl alcohol 107-18-6	100	CN	M-8315-R-DNPH-03	20	Baygon 114-26-1	100	M	P-202S	12
Allyl chloride 107-05-1	1,000	CN	M-8315-R-DNPH-03-10X	30	Baygon 114-26-1	100	CN	M-632-02	12
Ametryn 834-12-8	1,000	M	M-8032	10	Benazolin 3813-05-6	100	M	P-347S	12
					Bendiocarb 22781-23-3	100	M	P-009S	12
					Benfluralin 1861-40-1	100	CN	M-531-07	12
					Benfluralin 1861-40-1	100	M	P-397S	22
					Benfuracarb 82560-54-1	100	M	P-203S	12
					Benomyl 17804-35-2	100	CN	M-639	20
					Bensulfuron-methyl 83055-99-6	100	M	P-237S	12
								P-454S	42
								P-454S-10X	54
								P-104S-CN *	12
								P-597S	32



Analytes in EPA Methods

Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL Price	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL Price
Bensulide 741-58-2	100	CN	M-636	\$ 32	Bromochlorodifluoromethane 353-59-3	200	M	M-REF-X-01	\$ 20
Bentazon 25057-89-0	100	CN	M-643	12	Bromochloromethane 74-97-5	200	M	M-502-03	10
Bentazon methyl 61592-45-8	100	A	P-177S-A	12		2,000	M	M-502-03-10X	14
Benz[a]anthracene 56-55-3	100	M	P-241S	42	2-Bromo-1-chloropropane 3017-95-6	200	M	M-624-SS-04	10
	1,000	M	APP-9-016	15		20,000	M	M-001R-3	10
	200	D	APP-9-016-10X	20	Bromodichloroacetic acid 71133-14-7	40	MT	M-552.2A-02	20
Benz[a]anthracene-d₁₂ 1718-53-2	2,000	D	M-625-03	20	Bromodichloromethane 75-27-4	200	M	M-502-04	10
Benzaldehyde-DNPH 1157-84-2	2,000	D	M-625-03-10X	20		2,000	M	M-502-04-10X	14
	100	CN	M-8315-R-DNPH-04	20	4-Bromo-3,5-dimethylphenyl-N-methylcarbamate 672-99-1	100	CN	M-531-IS	25
Benzene 71-43-2	200	M	M-502-01	10	p-Bromofluorobenzene 460-00-4	100	A	M-551.1-IS	10
	2,000	M	M-502-01-10X	14		200	M	M-624-SS-03	10
Benzene-d₆ 1076-43-3	200	M	M-624-SS-01	20	Bromoform 75-25-2	200	M	M-502-05	10
	2,000	M	M-624-SS-01-10X	25		2,000	M	M-502-05-10X	14
Benzidine 92-87-5	50	D	M-625C-1	20	Bromomethane 74-83-9	200	M	M-502-06	10
	2,000	D	M-625C-1-40X	20		2,000	M	M-502-06-10X	14
Benzo[a]pyrene 50-32-8	100	M	APP-9-020	20	1-Bromo-2-nitrobenzene 577-19-5	1,000	A	M-8081-IS-DC	10
	500	CN	M-8310-FL-05	25	4-Bromophenyl phenyl ether 101-55-3	100	M	APP-9-033	15
Benzo[b]fluoranthene 205-99-2	100	M	APP-9-017	20	Bromophos-ethyl 4824-78-6	100	M	P-372S	42
	1,000	M	APP-9-017-10X	20		1,000	M	P-372S-10X	54
Benzo[g,h,i]perylene 191-24-2	100	D	APP-9-019	20	2-Bromopropanoic acid 598-72-1	1,000	MT	M-552.1-SS	10
	1,000	D	APP-9-019-10X	25	Bromotrifluoromethane (Freon #13b1)	200	M	M-REF-01	12
Benzo[k]fluoranthene 207-08-9	100	M	APP-9-018	20	Bueno 2163-80-6	100	M	P-279S	12
	500	CN	M-8310-FL-08	30		100	M	P-191S	12
Benzoic acid 65-85-0	2,000	D	Z-014D-1	20	Butachlor 23184-66-9	100	M	P-191S-10X	24
Benzyl alcohol 100-51-6	100	M	APP-9-021	12		1,000	M	P-191S-10X	24
	5,000	M	APP-9-021-50X	25	1,3-Butadiene 106-99-0	200	M	S-406A	10
Benzyl benzoate 120-51-4	5,000	H	M-8061-IS	10		2,000	M	S-406A-10X	20
Benzyl butyl phthalate 85-68-7	100	M	APP-9-034	20	Butanal 123-72-8	1,000	M	M-554-02 *	20
Benzyl chloride 100-44-7	200	M	M-8010-01	10		100	CN	M-8315-R-DNPH-05	20
α-BHC 319-84-6	100	M	P-010S	22		1,000	M:CN	M-554-DNPH-02	20
	1,000	M	P-010S-10X	34	1-Butanol 71-36-3	10,000	W	M-8015B/5031-06	25
β-BHC 319-85-7	100	M	P-011S	22	t-Butanol 75-65-0	2,000	M	S-410	10
	1,000	M	P-011S-10X	34		10,000	W	M-8015B/5031-07	25
δ-BHC 319-86-8	100	M	P-012S	32	Butylate 2008-41-5	100	M	P-088S	12
	1,000	M	P-012S-10X	52		1,000	M	P-088S-10X	24
BHC Tech 608-73-1	100	M	P-081S	12	n-Butylbenzene 104-51-8	200	M	M-502-07	10
Bifenox 42576-02-3	100	M	P-257S	12		2,000	M	M-502-07-10X	14
Bifenthrin 82657-04-3	100	M	P-445S	42	sec-Butylbenzene 135-98-8	200	M	M-502-08	10
	1,000	M	P-445S-10X	54		2,000	M	M-502-08-10X	14
Bitertanol 55179-31-2	100	M	P-351S	12	tert-Butylbenzene 98-06-6	200	M	M-502-09	10
Bloc 60168-88-9	100	M	P-086S	22		2,000	M	M-502-09-10X	14
Bolstar 35400-43-2	100	M	P-108S	12	Captafol 2425-06-1	100	M	P-254S	12
	1,000	H	M-8140-02	30	Captan 133-06-2	100	M	P-182S *	12
Botran 99-30-9	100	M	P-013S	12	Carbaryl 63-25-2	100	M	P-083S	12
Bromacil 314-40-9	100	M	P-181S	12		1,000	M	P-083S-10X	24
Brominal 1689-84-5	100	M	P-256S	12	Carbazole 86-74-8	1,000	M	M-634-IS	15
Bromoacetic acid 79-08-3	1,000	MT	M-552A-1	15	Carbendazim 10605-21-7	100	CN	M-631	20
4-Bromoanisole 108-86-1	50	M	BAN-03	45		100	M	P-278S	12
	200	M	M-502-02	10	Carbofuran 1563-66-2	100	CN	M-531-08	12
Bromobenzene 108-86-1	2,000	M	M-502-02-10X	14		100	M	P-106S	12
2-Bromobiphenyl 2052-07-5	1,000	A	M-8081-SS-X	10	Carbon disulfide 75-15-0	100	M	APP-9-035	12
Bromochloroacetic acid 5589-96-8	40	MT	M-552.2A-01	15		2,000	M	APP-9-035-20X	20
	1,000	MT	M-552A-R-02	25	Carbon tetrachloride 56-23-5	200	M	M-502-10	10
Bromochloroacetonitrile 83463-62-1	5,000	A	M-551B-1	15		2,000	M	M-502-10-10X	14
2-Bromochlorobenzene 694-80-4	200	M	M-624-SS-12	10	Carbophenothion 786-19-6	100	M	P-095S	12
4-Bromochlorobenzene 106-39-8	2,000	M	M-8020-SS-1	20		1,000	H	M-8141A-1-02	20
					Carbosulfan 55285-14-8	100	M	P-446S	22
					Carboxin 5234-68-4	100	M	P-216S	12
					Chloral hydrate 302-17-0	5,000	A	M-551B-2	15
						1,000	M	M-E-1179-M	40

* ColdPAK required to maintain integrity of product.

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 Price	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL Price
Chloramben 133-90-4	100	M	P-243S	\$ 12	3-Chloro-1,2-propanediol 96-24-2	100	M	P-408S	\$ 12
Chloramben methyl ester 7286-84-2	100	M	P-272S	22	Chloropropylate 5836-10-2	100	M	P-213S	12
Chlorbenside 103-17-3	100	M	P-107S	22	2-Chloro-1,1,1,2-tetrafluoroethane (Freon #124)	200	M	M-REF-X-02	20
α-Chlordane 5103-71-9	1,000	M	P-107S-10X	44	Chlorothalonil 1897-45-6	100	M	P-222S	12
Chlordane 57-74-9	100	M	P-134S	22	2-Chlorotoluene 95-49-8	1,000	M	P-222S-10X	24
γ-Chlordane 5103-74-2	100	H	P-134S-H	22	4-Chlorotoluene 106-43-4	200	M	M-502-15	10
Chlordene 3734-48-3	100	M	P-017S	12	Chlorotrifluoromethane (Freon #13)	2,000	M	M-502-15-10X	14
Chlorfenvinphos 470-90-6	1,000	M	P-017S-10X	15	Chlorpropham 101-21-3	200	M	M-502-16	10
Chlorfluorecol-methyl ester 2536-31-4	100	M	P-135S	22	Chlorpyrifos 2921-88-2	2,000	M	M-502-16-10X	14
Chlorimuron-ethyl 90982-32-4	1,000	M	P-135S-10X	34	Chlorpyrifos-methyl 5598-13-0	200	M	M-REF-07	12
bis(2-Chloro-1-methylethyl)ether 108-60-1	100	M	P-136S	22	Chlorpropham 101-21-3	100	CN	M-632-05	12
Chloroacetic acid 79-11-8	100	M	P-139S	22	Chlorpyrifos 2921-88-2	1,000	H	M-8140-03	20
p-Chloroaniline 106-47-8	1,000	H	M-8141A-1-03	20	Chlorpyrifos-methyl 5598-13-0	100	M	P-223S	12
Chlorobenzene 108-90-7	100	M	P-401S	52	Chlorsulfuron 64902-72-3	100	CN	P-262S-CN	22
Chlorobenzilate 510-15-6	100	M	P-401S-10X	64	Chrysene 218-01-9	100	M	APP-9-049	15
Chlorodibromoacetic acid 5278-95-5	100	CN	P-284S-CN	50	Chrysene-d ₁₂ 1719-03-5	500	CN	M-8310-FL-09	25
1-Chloro-1,1-difluoroethane (Freon #142b)	100	MT	M-552A-2	15	Clethodim 99129-21-2	2,500	T	M-680B	15
Chlorodifluoromethane (Freon #22)	200	M	APP-9-038	12	Clopyralid methyl ester 1532-24-7	4,000	D	Z-014J-2	20
Chloroethane 75-00-3	200	M	M-502-11	10	Coumaphos 56-72-4	100	CN	P-602S-CN	32
Chloroethane (Freon #160)	2,000	M	M-502-11-10X	14	4-CPA 122-88-3	1,000	CN	P-602S-CN-10X	44
bis(2-Chloroethoxy)methane 111-91-1	100	CN	P-133S-CN	12	Coumaphos 56-72-4	100	M	P-019S	12
bis(2-Chloroethyl)ether 111-44-4	1,000	CN	P-133S-CN-10X	24	1,000	H	M-8140-04	20	
2-Chloroethylvinyl ether 110-75-8	100	MT	M-552.2A-03	20	100	M	P-373S	12	
1-Chloro-2-fluorobenzene 348-51-6	200	M	M-REF-02	20	m-Cresol 108-39-4	100	D	APP-9-050	12
1-Chloro-4-fluorobenzene 352-33-0	200	M	M-REF-03	12	o-Cresol 108-39-4	1,000	D	APP-9-050-10X	15
Chloroform 67-66-3	200	M	M-502-12	10	p-Cresol 106-44-5	100	D	APP-9-051	12
1-Chlorohexane 544-10-5	2,000	M	M-502-12-10X	14	Crotonaldehyde 123-73-9	2,000	D	APP-9-051-20X	20
Chloromethane 74-87-3	200	M	M-REF-04	12	Crotonaldehyde-DNPH 1527-96-4	100	D	APP-9-052	12
bis(Chloromethyl)ether 542-88-1	200	M	M-502-14	10	Crufomate 299-86-5	1,000	M	M-554-03 *	20
4-Chloro-3-methylphenol 59-50-7	2,000	M	S-163	10	Cyanazine 21725-46-2	100	CN	M-8315-R-DNPH-06	20
2-Chloronaphthalene 91-58-7	200	M	M-624-SS-13	10	Cycloate 1134-23-2	1,000	M:CN	M-554-DNPH-03	20
4-Chloro-3-nitrobenzotrifluoride 121-17-5	200	M	M-502-13	10	Cyclohexanone 108-94-1	100	M	P-292S	12
Chloropentafluoroethane 76-15-3	2,000	M	M-502-13-10X	14	Cyclohexanone-DNPH 1589-62-4	100	CN	M-629	20
2-Chlorophenol 95-57-8	200	M	M-8010R-1-04	15	Cypermethrin 52315-07-8	100	M	P-175S	12
2-Chlorophenol-d ₄ 93951-73-6	2,000	M	M-8010R-1-04-10X	20	Cyprazine 22936-86-3	100	M	P-248S	12
4-Chlorophenyl phenyl ether 7005-72-3	200	M	M-502-14	10	Cyromazine 66215-27-8	1,000	M	M-554-04 *	20
Chloropicrin 76-06-2	200	M	M-502-14-10X	14	2,4-D 94-75-7	100	M	M-8315-R-DNPH-07	20
Chloroprene 126-99-8	100	H	S-006	20	2,4-D ethyl ester 533-23-3	100	CN	P-225S	42
	1,000	H	S-006-20X	30	2,4-D ethylhexyl ester 1928-43-4	1,000	M	P-225S-10X *	54
	100	M	APP-9-041	12	2,4-D methyl ester 1928-38-7	100	M	P-420S	22
	100	M	APP-9-045	12	Dacthal 1861-32-1	100	H	P-420S-H	22
	2000	H	M-8120-01	25	Dalapon acid 75-99-0	100	M	P-296S	22
	1,000	A	M-8081-SS-DC	20		100	M	P-020S	12
	200	M	M-REF-06	20		200	M	M-8150S-A-01	15
	100	M	APP-9-046	12		100	M	P-690S	22
	2000	D	APP-9-046-D-20X	22		100	CN	P-690S-CN	22
	200	D	M-625-20	20		10	mg	P-438N	12
	100	M	APP-9-047	20		100	M	P-636S	12
	5,000	A	M-551B-3	15		100	H	P-439S-H	12
	100	M	P-398S	22		100	M	P-021S	12
	100	M	APP-9-048-R1	12		200	H	M-8150-01	15
	1,000	M	APP-9-048-R1-10X	20		100	M	P-196S	12
						40	MT	M-552.2A-04	15
						200	CN	M-8150S-A-05 *	15

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 Price	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL Price
Dalapon methyl ester 17640-02-7	200 200	M H	M-552.1-01 M-8150-05	\$ 25 15	Dibromoacetic acid 631-64-1	20 1,000	MT MT	M-552.2A-05 M-552A-5	\$ 15 15
Danitrol 39515-41-8	100 1,000	M M	P-263S P-263S-10X	42 54	Dibromoacetone 3252-43-5	5,000	A	M-551B-4	15
Dasanit 115-90-2	100 1000	M H	P-235S P-235S-H-10X	22 20	4,4'-Dibromobiphenyl 92-86-4	200 2,000	D D	M-625-05 M-625-05-10X	20 20
Dazomet 533-74-4	25 100	A M	M-1659-MS P-465S	10 12	Dibromochloromethane 124-48-1	200 2,000	M M	M-502-17 M-502-17-10X	10 14
2,4-D-PFB	100	MT	M-8150-02-PFB	30	1,2-Dibromo-3-chloropropane 96-12-8	200 2,000	M M	M-502-18 M-502-18-10X	10 14
2,4-DB acid 94-82-6	100 200	M M	P-141S M-8150S-A-02	12 15	1,2-Dibromoethane 106-93-4	200 2,000	M M	M-502-19 M-502-19-10X	10 14
2,4-DB methyl ester 18625-12-2	100 200	M H	P-228S M-8150-02	22 15	Dibromofluoromethane 1868-53-7	200 2,000	M M	M-8260-SS-2 M-8260-SS-2-10X	20 25
DCPA diacid 2136-79-0	100 100	M CN	P-320S P-320S-CN	22 22	Dibromomethane 74-95-3	200 2,000	M M	M-502-20 M-502-20-10X	10 14
p,p'-DDA 83-05-6	100 1000	M M	P-444S P-444S-10X	32 44	a,a-Dibromo-m-xylene 626-15-3	1,000	A	M-8081-IS-X	10
o,p'-DDD 53-19-0	100	M	P-024S	12	4,4'-Dibromooctafluorobiphenyl 10386-84-2	200 2,000	D D	M-625-06 M-625-06-10X	20 20
p,p'-DDD 72-54-8	100 1000	M M	P-025S P-025S-10X	12 24	1,2-Dibromopropane 78-75-1	5,000 10,000	M H	M-552-IS M-556-IS	15 30
o,p'-DDE 3424-82-6	100	M	P-026S	22	2,3-Dibromopropionic acid 600-05-5	1,000 20,000	MT MT	M-552.2-SS M-552-SS	10 15
p,p'-DDE 72-55-9	100 1000	M M	P-027S P-027S-10X	12 24	1,2-Dibromotetrafluoroethane 124-73-2	200	M	M-REF-X-03	20
4,4'-DDMU 1022-22-6	100	M	P-424S	22	Dibutylchloride 1770-80-5	2 100	A M	M-1618-SS P-109S	15 12
o,p'-DDT 789-02-6	100	M	P-028S	22	Dicamba 1918-00-9	100 200	M M	P-008S M-8150S-A-06	12 15
p,p'-DDT 50-29-3	100	M	P-029S	12	Dicamba methyl ester 6597-78-0	100 200	M H	P-071S M-8150-06	22 15
DDT, Tech 50-29-3	100 100	M CN	P-346S P-346S-CN	12 12	Dicapthon 2463-84-5	100 1,000	M M	P-035S P-035S-10X	12 24
Decachlorobiphenyl 2051-24-3	200 500	A MT	CLP-032-R-01 M-508-SS-2	15 10	Dichlobenil 1194-65-6	100	M	P-275S	12
Decafluorobiphenyl 434-90-2	200 2,000	D D	M-625-04 M-625-04-10X	20 22	Dichlofenthion 97-17-6	100	M	P-211S	12
Decafluorotriphenylphosphine 5074-71-5	10 25	D D	M-680-TS M-625C-3	10 20	Dichlone 117-80-6	100	M	P-253S	12
Decanal 112-31-2	1,000	M	M-554-05	20	Dichlormid 37764-25-3	100	M	P-675S	32
Decanal-DNPH 1527-95-3	100 1,000	CN M:CN	M-8315-R-DNPH-08 M-554-DNPH-05	20 20	Dichloroacetic acid 79-43-6	60 1,000	MT MT	M-552.2A-06 M-552A-3	15 15
Deet (Off®) 134-62-3	100	M	P-255S	12	Dichloroacetone 3018-12-0	5,000	A	M-551B-5	15
DEF 6 78-48-8	100	M	P-150S	12	1,2-Dichlorobenzene 95-50-1	200 2,000	M M	M-502-21 M-502-21-10X	10 14
Deltamethrin 52918-63-5	100	M	P-355S	32	1,3-Dichlorobenzene 541-73-1	200 2,000	M M	M-502-22 M-502-22-10X	10 14
Demeton-S 126-75-0	100	M	P-271S	22	1,4-Dichlorobenzene 106-46-7	200 2,000	M M	M-502-23 M-502-23-10X	10 14
Demeton-S-methyl 919-86-8	100	M	P-482S	42	1,2-Dichlorobenzene-d ₂ 2199-69-1	200 2,000	M M	M-624-SS-11 M-624-SS-11-10X	20 20
DFTPP 5074-71-5	50 100	A D	M-1653-TS M-525-TS	20 20	1,4-Dichlorobenzene-d ₄ 3855-82-1	2,000 4,000	M D	Z-014J-3-M-0.5X Z-014J-3	20 20
DFTPPO	100	CN	M-553-PC	15	3,3'-Dichlorobenzidine 91-94-1	100 2,000	M M	APP-9-067 Z-014F-2	20 20
Diallate 2303-16-4	100	M	P-142S	12	3,5-Dichlorobenzoic acid 51-36-5	100 1,000	M M	P-242S P-242S-10X	12 14
2,6-Diamino-4-nitrotoluene 59229-75-3	100	CN	M-8330-ADD-13	40	4,4'-Dichlorobenzophenone 90-98-2	100 1,000	M M	P-295S P-295S-10X	12 24
2,4-Diamino-6-nitrotoluene 6629-29-4	100	CN	M-8330-ADD-12	40	4,4'-Dichlorobiphenyl 2050-68-2	500	MT	M-508-SS	10
Diazinon 333-41-5	100 1,000	M H	P-033S M-622-06	12 20	1,4-Dichlorobutane 110-56-5	200	M	M-624-SS-05	10
Dibenz[a,h]anthracene 53-70-3	100 500	M CN	APP-9-058 M-8310-FL-10	15 20	trans-1,4-Dichloro-2-butene 110-57-6	100	M	APP-9-068	12
Dibenzofuran 132-64-9	100	M	APP-9-059	12	Dichlorodifluoromethane 75-71-8	200 2,000	M M	M-502-24 M-502-24-10X	10 14

* ColdPAK required to maintain integrity of product.

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 Price	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL Price
Dichlorodifluoromethane (Freon #12)	200	M	M-REF-08	\$ 12	1,1-Difluoroethane (Freon 152a)	200	M	M-REF-11	\$ 20
1,1-Dichloroethane 75-34-3	200 2,000	M M	M-502-25 M-502-25-10X	10 14	Dimefox 115-26-4	100	M	P-299S	32
1,2-Dichloroethane 107-06-2	200 2,000	M M	M-502-26 M-502-26-10X	10 14	Dimethoate 60-51-5	1,000 1,000	H:A M	M-8141-01 P-039S-10X	20 34
cis-1,2-Dichloroethene 156-59-2	200 2,000	M M	M-502-28 M-502-28-10X	10 14	Dimethyl phosphate 813-78-5	100	M	P-442S	12
1,2-Dichloroethane-d ₄ 17060-07-0	200 2,000	M M	M-624-SS-06 M-624-SS-06-10X	20 20	Dimethyl phthalate 131-11-3	100 1,000	M M	APP-9-088 APP-9-088-10X	12 20
1,1-Dichloroethene 75-35-4	200 2,000	M M	M-502-27 M-502-27-10X	10 14	2,3-Dimethyl-2,3-dinitrobutane (DMNB) 3964-18-9	100	CN	M-8330-ADD-21	30
trans-1,2-Dichloroethene 156-60-5	200 2,000	M M	M-502-29 M-502-29-10X	10 14	1,3-Dimethyl-2-nitrobenzene 81-20-9	250 1,000	MT MT	M-507-SS M-507-SS-4X	10 20
1,1-Dichloro-1-fluoroethane (Freon #141B)	200	M	M-REF-X-04	20	4-Dimethylaminoazobenzene 60-11-7	100	D	APP-9-083	20
Dichlorofluoromethane 75-43-4	200 2,000	M M	M-502-61 M-502-61-10X	10 14	7,12-Dimethylbenz[a]anthracene 57-97-6	100	D	APP-9-084	20
Dichlorofluoromethane (Freon #21)	200	M	M-REF-09	12	2,5-Dimethylbenzaldehyde-DNPH 152477-96-8	100	CN	M-8315-R-DNPH-09	20
Dichloromethane 75-09-2	200 2,000	M M	M-502-39 M-502-39-10X	10 10	3,3'-Dimethylbenzidine 119-93-7	100	D	APP-9-085	20
Dichlorophen 97-23-4	100	M	P-232S	12	a,a-Dimethylphenethylamine 122-09-8	100 100	D D	APP-9-086 APP-9-086-20X	20 30
2,4-Dichlorophenol 120-83-2	1,000 1,000	MT M	M-552A-6 M-8040-07	15 20	2,4-Dimethylphenol 105-67-9	100 1,000	M M	APP-9-087 M-8040-09	12 20
2,6-Dichlorophenol 87-65-0	100 1,000	D M	APP-9-076 M-8040-08	12 20	Di-n-butyl phthalate 84-74-2	100 1,000	M M	APP-9-063 APP-9-063-10X	12 20
2,3-Dichlorophenoxyacetic acid 2976-74-1	100 100	M CN	P-470S P-470S-CN	12 12	Dinex 131-89-5	100 1,000	M M	P-427S P-427S-10X	22 34
2,4-Dichlorophenylacetic acid 19719-28-9	100 1,000	A A	M-8150B-SS M-8150B-SS-10X	10 20	3,5-Dinitroaniline 618-87-1	100	CN:M	M-8330-ADD-4	20
1,2-Dichloropropane 78-87-5	200 2,000	M M	M-502-30 M-502-30-10X	10 14	1,2-Dinitrobenzene 528-29-0	1,000	M	M-8330-SS	20
1,3-Dichloropropane 142-28-9	200 2,000	M M	M-502-31 M-502-31-10X	10 14	1,3-Dinitrobenzene 99-65-0	100 1,000	M:CN M:CN	M-8330-01-0.1X M-8330-01	20 15
2,2-Dichloropropane 594-20-7	200 2,000	M M	M-502-32 M-502-32-10X	10 14	4,6-Dinitro-o-cresol 534-52-1	100 1,000	M M	P-384S P-384S-10X	12 22
1,1-Dichloro-2-propanone 513-88-2	5,000	A	M-551B-6	15	2,4-Dinitrophenol 51-28-5	100 1,000	M M	APP-9-091 M-8040-10	12 20
1,1-Dichloropropene 563-58-6	200 2,000	M M	M-502-33 M-502-33-10X	10 14	2,4-Dinitrophenylhydrazine 119-26-6	1,000	CN	M-1667A-DERV-10ML in 10 mL	13
trans-1,3-Dichloropropene 10061-02-6	100	M	APP-9-079	12	2,4-Dinitrotoluene 121-14-2	100 1,000	M:CN M:CN	M-8330-02-0.1X M-8330-02	20 15
1,3-Dichloropropene (cis/trans) 542-75-6	400 4,000	M M	M-502-34-R M-502-34-R-10X	10 15	2,5-Dinitrotoluene 619-15-8	100	CN	M-8095-SS-03	50
cis-1,3-Dichloropropene 10061-01-5	100	M	APP-9-078	12	2,6-Dinitrotoluene 606-20-2	100 1,000	M:CN M:CN	M-8330-03-0.1X M-8330-03	20 15
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon #114)	200	M	M-REF-10	20	3,4-Dinitrotoluene 610-39-9	100 1,000	CN M	M-8095-SS-01 M-8330-IS	15 15
2,2-Dichloro-1,1,1-trifluoroethane (Freon #123)	200	M	M-REF-X-05	20	Dinocap 39300-45-3	100	M	P-288S	12
Dichlorprop 120-36-5	100 200	M M	P-143S M-8150S-A-07	12 15	Di-n-octyl phthalate 117-84-0	100	M	APP-9-095	12
Dichlorprop methyl ester 57153-17-0	100 200	M H	P-229S M-8150-07	12 15	Dinoseb 88-85-7	100 1,000	M M	P-144S M-8040-11	12 20
Dichlorvos 62-73-7	100 1,000	M H	P-036S M-8140-07	12 20	Dinoseb methyl ether 6099-79-2	100 200	M H	P-230S M-8150-08	12 15
Diclofop methyl 51338-27-3	100	M	P-303S	12	Dioxacarb 6988-21-2	100	M	M-8318-05	22
Dicrotophos 141-66-2	100	M	P-178S	22	p-Dioxane 123-91-1	100 1,000	M M	APP-9-096 APP-9-096-10X	12 20
Dieldrin 60-57-1	100 1,000	M M	P-037S P-037S-10X	22 34	Dioxathion 78-34-2	100 1,000	M H	P-219S M-8141A-1-04	42 54
Diethyl ether 60-29-7	10,000	W	M-8015B/5031-09	25	Diphenamid 957-51-7	100	M	P-173S	12
Diethyl phosphate (mono- & di-) 598-02-7	100	M	P-443S	12	Diphenylamine 122-39-4	100 1,000	D M	APP-9-097 M-620	12 15
Diethyl phthalate 84-66-2	100 1,000	M M	APP-9-081 APP-9-081-10X	12 20	Diquat dibromide monohydrate (as Diquat)	100 1,000	M M	P-231S P-231S-10X	12 24
1,4-Difluorobenzene 540-36-3	200 2,000	M M	M-624-SS-07 M-624-SS-07-10X	10 20	Disulfoton 298-04-4	100 1,000	M H	P-042S M-8140-08	12 20
2,2'-Difluorobiphenyl 388-82-9	200 2,000	D D	M-625-07 M-625-07-10X	20 20	Disulfoton sulfone 2497-06-5	100	M	P-582S	52
4,4'-Difluorobiphenyl 398-23-2	100	CN	M-550-IS	20	2,4-DP ethyl hexyl 79270-78-3	100	M	P-429S	22

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 Price	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL Price
Dursban	100	M	P-094S	\$ 12	Fenthion	100	M	P-148S	\$ 12
2921-88-2	1,000	M	P-094S-10X	24	55-38-9	1,000	H	M-8140-11	20
Dyfonate	100	M	P-087S	12	Fenuron	100	M	P-004S	12
944-22-9	100	H	P-087S-H	12	101-42-8	100	CN	M-632-07	12
EGDN	100	CN	M-8330-ADD-5	20	Fenuron TCA	100	M	P-006S	12
628-96-6					4482-55-7	100	CN	M-632-08	12
Endosulfan I	100	M	P-091S	22	Fenvalerate *	100	M	P-194S	12
959-98-8	10	MT	M-548-IS	10	51630-58-1				
Endosulfan II	100	M	P-092S	22	Ferbam	100	M	P-110S	12
33213-65-9	1,000	M	P-092S-10X	34	14484-64-1				
Endosulfan sulfate	100	M	P-145S	22	Fipronil	100	A	P-738S-A	42
1031-07-8	1,000	M	P-145S-10X	34	120068-37-3	100	M	P-738S	42
Endothall	100	M	P-183S	24	Fipronil sulfide	100	A	P-781S-A	75
145-73-3	1,000	M	P-183S-10X	36	120067-83-6				
Endothall dimethyl ester	100	M	M-548.1-ME	22	Fipronil sulfone	100	A	P-780S-A	50
					120068-36-2				
Endothall pentafluorophenyl hydrazine derivative	100	MT	M-548-CAL	35	Flamprop-methyl	100	M	P-366S	12
Endrin	100	M	P-045S	22	52756-25-9				
72-20-8	1,000	M	P-045S-10X	34	Fluazifop butyl	100	M	P-310S	22
Endrin aldehyde	100	M	P-046S	22	69806-50-4				
7421-93-4	1,000	M	P-046S-10X	34	Fluazifop-p-butyl	100	M	P-601S	52
Endrin ketone	100	M	P-146S	22	79241-46-6				
53494-70-5					Fluchloralin	100	M	P-270S	22
EPN	100	A	P-220S-A	12	33245-39-5				
2104-64-5	1,000	H	M-8141-02	12	Fluometuron	100	M	P-014S	12
Ethalfuralin	100	M	P-269S	12	2164-17-2	100	CN	M-632-09	12
55283-68-6					Fluoranthene	100	M	APP-9-108	15
Ethanol	10,000	W	M-8015B/5031-11	25	206-44-0	500	CN	M-8310-FL-11	20
64-17-5					Fluorene	100	M	APP-9-109	15
Ethephon	100	M	P-239S	12	86-73-7	500	M	M-8310-FL-12	20
16672-87-0					4-Fluoroaniline	200	D	M-625-08	20
Ethion	100	M	P-048S	12	371-40-4	2,000	D	M-625-08-10X	20
563-12-2	1,000	H	M-8141A-1-05	20	Fluorobenzene	20	M	M-524-IS-2-10X	20
Ethoprop	100	M	P-129S	22	462-06-6	2,000	M	M-524-IS-2	12
13194-48-4	1,000	H	M-8140-09	30	2-Fluorobiphenyl	200	D	M-625-09	20
Ethyl acetate	10,000	W	M-8015B/5031-12	25	321-60-8	2,000	D	M-625-09-10X	20
141-78-6					1-Fluoronaphthalene	200	D	M-625-10	20
Ethyl carbamate	100	M	P-419S	12	321-38-0	2,000	D	M-625-10-10X	30
51-79-6					2-Fluoronaphthalene	200	D	M-625-11	20
Ethyl methacrylate	100	M	APP-9-105	12	323-09-1				
97-63-2					2-Fluorophenol	200	D	M-625-16	20
Ethyl methanesulfonate	100	D	APP-9-106	20	367-12-4	2,000	D	M-625-16-10X	25
62-50-0					Flurenol methyl ester	100	M	P-412S	12
Ethylbenzene	200	M	M-502-35	10	1216-44-0				
100-41-4	2,000	M	M-502-35-10X	14	Fluridone	100	M	P-193S	12
Ethylbenzene-d ₁₀	200	M	M-624-SS-08	20	59756-60-4				
25837-05-2					Tau-Fluvalinate	100	CN	P-356S-CN	22
Ethylene glycol	10,000	W	M-8015B/5031-13	25	102851-06-9				
107-21-1					Folpet	100	M	P-258S	12
Ethylene oxide *	5,000	W	M-8015B/5031-14-R1	20	133-07-3				
75-21-8					Formaldehyde	1,000	W	M-8315-02	20
bis(2-Ethylhexyl)adipate	100	M	P-233S	12	50-00-0	1,000	M	M-554-06 *	20
103-23-1	1,000	M	P-233S-10X	24	Formaldehyde-DNPH	100	CN	M-8315-R-DNPH-10	20
bis(2-Ethylhexyl)phthalate	100	M	APP-9-029	12	1081-15-8	1,000	M:CN	M-554-DNPH-06	20
117-81-7	1,000	M	APP-9-029-10X	20	Formothion	100	CN	P-149S-CN	42
Famphur	100	M	P-147S	12	2540-82-1				
52-85-7	1,000	H	M-8141A-1-06	20	Glyphosate	100	W	M-547	20
Fenaminosulf	100	M	P-058S	12	1071-83-6	1,000	W	P-015S-W-10X	22
140-56-7	1,000	M	P-058S-10X	24	Guanidine nitrate	100	M	M-8330-ADD-10	20
Fenamiphos	100	M	P-114S	32	506-93-7				
22224-92-6					Haloxypop	100	M	P-496S	32
Fenitrothion	100	M	P-259S	12	69806-34-4	100	CN	P-496S-CN	32
122-14-5					Haloxypop-methyl	100	M	P-497S	32
Fenoxaprop-ethyl	100	M	P-365S	22	69806-40-2				
66441-23-4					Heptachlor	100	M	P-053S	12
Fenoxycarb	100	M	P-686S	22	76-44-8	1,000	M	P-053S-10X	24
79127-80-3					Heptachlor epoxide (Isomer A)	100	M	P-294S	32
Fensulfthion	1,000	H	M-8140-10	20	28044-83-9				
115-90-2					Heptachlor epoxide (Isomer B)	100	M	P-054S	22
					1024-57-3	1,000	M	P-054S-10X	34

* ColdPAK required to maintain integrity of product.

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Analytes in EPA Methods

Analytes in EPA Methods

Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL Price	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL Price
Heptanal 111-71-7	1,000	M	M-554-07	\$ 20	Linuron 330-55-2	100	M	P-022S	\$ 12
Heptanal-DNPH 2074-05-7	100	CN	M-8315-R-DNPH-11	20	Lontrel 1702-17-6	100	CN	M-632-10	12
Hexachlorobenzene 118-74-1	1,000	A	M-8091-IS-20X	17	Malathion 121-75-5	100	M	P-224S	22
Hexachlorobutadiene 87-68-3	2,000	H	M-8120-05	25	Malathion 121-75-5	1,000	H	M-8141-03	12
Hexachlorocyclopentadiene 77-47-4	200	M	M-502-36	10	MCPA acid 94-74-6	100	M	P-153S	12
Hexachloroethane 67-72-1	2,000	M	M-502-36-10X	14	MCPA methyl ester 2436-73-9	2,000	M	M-8150S-A-09	15
Hexachlorophene 70-30-4	100	M	APP-9-114	12	MCPB acid 94-81-5	100	M	P-038S	12
Hexachloropropene 1888-71-7	2,000	H	M-8120-07	25	MCPB methyl ester 57153-18-1	2,000	H	M-8150-09	15
Hexanal 66-25-1	100	M	APP-9-115	12	MCPB acid 94-81-5	100	M	P-370S	12
Hexanal-DNPH 1527-97-5	2,000	H	M-8120-08	25	MCPB methyl ester 57153-18-1	100	M	P-371S	22
2-Hexanone 591-78-6	100	M	APP-9-116	12	MCPP acid 7085-19-0	100	CN	P-154S-CN	12
Hexazinone 51235-04-2	100	M	APP-9-117	12	MCPP acid 7085-19-0	2,000	M	M-8150S-A-10	15
HMX 2691-41-0	1,000	M	M-554-08 *	20	MCPP methyl ester 2786-19-7	100	M	P-040S	12
Hydrazine 302-01-2	1,000	M:C:N	M-8315-R-DNPH-12	20	MCPP methyl ester 2786-19-7	2,000	H	M-8150-10	15
2-Hydroxyatrazine 2163-68-0	100	M	M-554-DNPH-08	20	Mecoprop, 2-Ethylhexyl ester 71526-69-7	100	M	P-502S	22
3-Hydroxycarbofuran 16655-82-6	100	M	APP-9-118 *	12	Mercaptobenzothiazole 149-30-4	100	CN	M-640	20
1-Hydroxychlorodene 24009-05-0	100	M	P-123S	12	Merphos 150-50-5	1,000	H	M-8140-12	20
Imidan 732-11-6	1,000	M	P-123S-10X	24	Metalaxyl 57837-19-1	100	M	P-120S	32
Indeno[1,2,3-cd]pyrene 193-39-5	100	M:C:N	M-8330-04-0.1X	20	Metaldehyde 9002-91-9	100	M	P-600S	12
Iodofenphos 18181-70-9	1,000	M:C:N	M-8330-04	30	Metaldehyde 9002-91-9	100	CN	P-600S-CN	12
Ioxynil 1689-83-4	100	M	M-8330-ADD-8	20	Metamitron 41394-05-2	100	M	P-252S	12
Iprodione 36734-19-7	100	M:A	P-326S	22	Metazachlor 67129-08-2	100	M	P-249S	12
Isobutyl alcohol 78-83-1	100	CN	M-531-05	20	Methacrylonitrile 126-98-7	100	M	APP-9-125	20
Isodrin 465-73-6	100	M	M-8318-06	22	Methanol 67-56-1	10,000	W	M-8015B/5031-17	20
Isofenphos 25311-71-1	100	M	P-151S	52	Methaprylene 91-80-5	100	D	APP-9-126	20
Isophorone 78-59-1	1,000	H	M-8141A-1-08	20	Methaprylene 91-80-5	1,000	D	APP-9-126-10X	30
Isopropalin 33820-53-0	500	CN	APP-9-119	20	Methidathion 950-37-8	100	M	P-195S	12
Isopropanol 67-63-0	100	M	M-8310-FL-13	35	Methiocarb 2032-65-7	100	M	M-8318-07	12
Isopropylbenzene 98-82-8	100	M	P-379S	22	Methiocarb 2032-65-7	100	CN	M-531-11	12
p-Isopropyltoluene (p-Cymene) 99-87-6	100	A	P-016S-A	12	Methomyl 16752-77-5	100	CN	M-531-04	12
Isosafrole 120-58-1	100	CN	P-016S-CN	12	Methoprene 40596-69-8	1,000	CN	M-531-04-10X	20
Isovaleraldehyde-DNPH 2256-01-1	100	M	APP-9-120	12	Methoxychlor 72-43-5	100	M	P-157S	12
Karmex 330-54-1	1,000	W	M-8015B/5031-15	25	Methoxychlor 72-43-5	1,000	M	P-064S	12
Kelthane 115-32-2	2,000	M	APP-9-121-10X	30	Methoxychlor 72-43-5	100	M	P-064S-10X	24
Kepone 143-50-0	100	M	P-018S	12	o,p'-Methoxychlor 30667-99-3	100	M	P-535S	52
3-Ketocarbonylurea 16709-30-1	100	M	P-018S	12	p,p'-Methoxychlor-olefin 2132-70-9	100	M	P-466S	52
Leptophos 21609-90-5	1,000	M	APP-9-122	12	p,p'-Methoxychlor-olefin 2132-70-9	1,000	M	P-466S-10X	79
Lindane (γ-BHC) 58-89-9	100	M	APP-9-122-10X	20	Methyl-2,3-dibromopropionate 1729-67-5	1,000	MT	M-552.2-SS-ME	10
	100	M	P-100S	12	Methyl bromoacetate 96-32-2	200	M	M-552.1-02	25
	1,000	W	M-8015B/5031-16	25	Methyl bromoacetate 96-32-2	200	M	M-552.1-03	25
	200	M	M-502-37	10	Methyl bromochloroacetate 20428-74-4	1,000	MT	M-552-R-03	30
	2,000	M	M-502-37-10X	14	Methyl bromodichloroacetate 40	40	MT	M-552.2-04	20
	200	M	M-502-38	10	Methyl 2-bromopropionate 5445-17-0	1,000	MT	M-552.1-SS-ME	10
	2,000	M	M-502-38-10X	14	Methyl chlorodibromoacetate 20428-75-5	100	MT	M-552.2-06	20
	100	D	APP-9-123	20	3-Methylcholanthrene 56-49-5	100	D	APP-9-128	20
	100	CN	M-8315-R-DNPH-13	20	Methyl dibromoacetate 6482-26-4	20	MT	M-552.2-07	20
	100	M	P-227S	12	Methyl dichloroacetate 116-54-1	100	M	M-552.1-05	25
	100	CN	M-632-06	12	Methyl dichloroacetate 116-54-1	60	MT	M-552.2-08	20
	100	M	P-057S	22	Methyl 3,5-dichlorobenzoate 2905-67-1	300	M	M-552.1-06	25
	100	M	P-152S	12	Methyl 2,4-Dichlorophenylacetate 55954-23-9	100	M	P-247S	12
	1,000	M	P-152S-10X	24	Methyl 2,4-Dichlorophenylacetate 55954-23-9	1,000	M	P-247S-10X	14
	100	A	P-298S-A	52	Methylene chloride-d ₂ 1665-00-5	100	M	P-214S	\$ 12
	100	M	P-206S	42		2,000	M	M-502-IS-2-3	20
	1,000	H	M-8141A-1-07	20					
	100	M	P-059S	12					
	1,000	M	P-059S-10X	24					

* 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 Price	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL Price
Methyl ethyl ketone 78-93-3	1,000	M	APP-9-129-10X *	\$ 10	1-Naphthalene acetamide 86-86-2	100	M	P-512S	\$ 12
Methyl iodide 74-88-4	100	M	APP-9-130	12	Naphthalene-d ₈ 1146-65-2	200	D	M-625-12	20
Methyl isobutyl ketone 108-10-1	10,000	W	M-8015B/5031-18	25		4,000	D	Z-014J-4	20
Methyl isothiocyanate 556-61-6	25	A	M-8015B/5031-19	25	1-Naphthol 90-15-3	100	CN	M-531-10	12
Methyl methacrylate 80-62-6	100	M	M-1659-RPS	10	1,4-Naphthoquinone 130-15-4	100	D	APP-9-137	20
Methyl methanesulfonate 66-27-3	100	D	APP-9-131	12	1-Naphthylamine 134-32-7	100	D	APP-9-138	20
1-Methylnaphthalene 90-12-0	500	CN	APP-9-132	20	2-Naphthylamine 91-59-8	100	D	APP-9-139	20
2-Methylnaphthalene 91-57-6	100	D	M-8310-FL-14	20	Napropamide 15299-99-7	100	M	P-179S	12
2-Methyl-4-nitroaniline 99-52-5	500	CN	APP-9-133	12	Neburon 555-37-3	100	CN	M-632.1-3	12
3-Methyl-4-nitrophenol 2581-34-2	100	M	M-8310-FL-15	20	Niclosamide 50-65-7	100	M	P-041S	12
Methyl nonyl ketone 112-12-9	100	CN	M-8095-SS-02	20	m-Nitroaniline 99-09-2	100	D	M-632-16	12
Methyl paraoxon 298-00-0	100	M	P-509S	12	o-Nitroaniline 88-74-4	100	D	P-160S	22
Methyl parathion 298-00-0	100	M	P-415S	12	p-Nitroaniline 100-01-6	100	D	APP-9-141	12
4-Methyl-2-pentanone 108-10-1	100	CN	P-415S-CN	12	4-Nitroanisole 100-17-4	100	D	APP-9-142	12
Methyl tribromoacetate 3222-05-7	100	M	P-311S	32	Nitrobenzene 98-95-3	100	M	P-273S	12
Methyl trichloroacetate 598-99-2	100	M	P-065S	12	Nitrobenzene-d ₆ 4165-60-0	100	M:CN	M-8330-06-0.1X	20
Metolachlor 51218-45-2	1,000	H	M-8140-13	20	Nitroguanine 556-88-7	1,000	M:CN	M-8330-06	15
Metribuzin 21087-64-9	100	M	APP-9-135	12	Nitromethane 75-52-5	200	D	M-625-13	20
Metsulfuron methyl 74223-64-6	200	MT	M-552.2-09 *	20	5-Nitro-o-toluidine 99-55-8	2000	D	M-625-13-10X	20
Mevinphos 7786-34-7	100	M	M-552.1-07	25	o-Nitrophenol 88-75-5	100	M	M-8330-ADD-6	20
Mexacarbate 315-18-4	200	MT	M-552.2-10	20	p-Nitrophenol 100-02-7	100	M	M-8330-ADD-7	20
MGK-264 113-48-4	100	M	P-158S	12	4-Nitroquinoline-1-oxide 56-57-5	100	D	APP-9-145	12
MGK-326 136-45-8	1,000	M	P-158S-10X	24	N-Nitrosodiethylamine 55-18-5	100	D	APP-9-146	20
Mirex 2385-85-5	100	M	P-089S	12	N-Nitrosodimethylamine 62-75-9	100	D	APP-9-148	20
Molinate 2212-67-1	1,000	M	P-089S-10X	24	N-Nitrosodi-n-butylamine 924-16-3	100	D	APP-9-149	20
Monitor 10265-92-6	100	M	P-463S	22	N-Nitrosodi-n-propylamine 621-64-7	1,000	M	APP-9-149-M-10X	30
Monobromoacetic acid 79-08-3	100	M	P-074S	12	N-Nitrosodiphenylamine 86-30-6	100	D	APP-9-147	20
Monochloroacetic acid 79-11-8	100	H	M-8140-14	20	N-Nitrosomethylethylamine 10595-95-6	500	W	M-8015B/5031-20	25
Monocrotophos 6923-22-4	100	M	P-030S	22	N-Nitrosomorpholine 59-89-2	100	D	APP-9-151	20
Monuron 150-68-5	1,000	H	M-632-13	12	N-Nitrosopiperidine 100-75-4	100	D	APP-9-150	20
Monuron TCA 140-41-0	100	M	P-082S	12	N-Nitrosopyrrolidine 930-55-2	1,000	M	APP-9-150-M-10X	30
MtBE 1634-04-4	100	M	P-342S	12	2-Nitrotoluene 88-72-2	100	D	APP-9-152	20
Myclobutanil 88671-89-0	100	M	P-066S	12	3-Nitrotoluene 99-08-1	100	D	APP-9-153	20
Nabam 142-59-6	100	M	P-176S	32	4-Nitrotoluene 99-99-0	100	D	APP-9-154	20
Naled 300-76-5	100	M	P-155S	42	cis-Nonachlor 5103-73-1	100	D	APP-9-155	20
Naphthalene 91-20-3	100	M	P-112S	32	trans-Nonachlor 39765-80-5	100	D	APP-9-150	20
	1,000	H	M-8141-04	12		1,000	M	APP-9-150-M-10X	30
	100	CN	M-632-14	12		100	M	APP-9-152	20
	100	M	P-034S	12		100	M:CN	M-8330-07-0.1X	15
	1,000	CN	M-632-15	12		1,000	M:CN	M-8330-07	15
	2,000	M	M-8020-QC	12		100	M:CN	M-8330-08-0.1X	15
	100	M	P-330S	22		1,000	M:CN	M-8330-08	15
	1,000	M	P-330S-10X	34		100	M:CN	M-8330-09-0.1X	15
	100	M	P-383S	12		1,000	M:CN	M-8330-09	15
	100	M	P-159S	12		100	M	P-297S	52
	1,000	H	M-8140-15	20		1,000	M	P-297S-10X	64
	200	M	M-502-40	10		100	M	P-184S	22
	500	M	M-8310-FL-16	20					

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 Price	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL Price
Nonanal 124-19-6	1,000	M	M-554-09	\$ 20	o-Phenylphenol 90-43-7	100	M	P-460S	\$ 12
Nonanal-DNPH 2348-19-8	100	CN	M-8315-R-DNPH-14	20	Phorate 298-02-2	100	M	P-170S	12
Octanal 124-13-0	1,000	M	M-554-10	20	Phorate sulfone 2588-04-7	1,000	H	M-8140-16	20
Octanal-DNPH 1726-77-8	100	CN	M-8315-R-DNPH-15	20	Phosalone 2310-17-0	100	H	P-655S-H	32
Omethoate 1113-02-6	1,000	M	M-554-DNPH-10	20	Phosfolan 947-02-4	100	M	P-163S	12
Oryzalin 19044-88-3	100	M	P-121S	22	Phosfolan 947-02-4	1,000	M	P-234S	12
Oxadiazon 19666-30-9	1,000	M	P-121S-10X	34	Phosphamidon 13171-21-6	100	M	P-234S-10X	24
Oxamyl 23135-22-0	100	CN	M-638	20	Picloram 1918-02-1	100	M	P-075S	22
Oxycarboxin 5259-88-1	100	M	P-236S	12	Picloram methyl ester 14143-55-6	1,000	H	M-8141A-1-09	20
Oxylchlorane Isomer 27304-13-8	1,000	M	P-236S-10X	24	2-Picoline 109-06-8	100	M	P-047S	32
Oxydemeton-methyl 301-12-2	100	M	P-161S	12	Picramic acid 831-52-7	100	CN	M-644	20
Oxyfluorfen 42874-03-3	100	M	M-531-03	12	Picric acid 88-89-1	100	M	P-198S	22
Paraldehyde 123-63-7	100	M	P-391S	12	Pirimicarb 23103-98-2	100	M	APP-9-182	20
Paraoxon 311-45-5	100	M	P-331S	77	Pirimiphos-methyl 29232-93-7	10,000	W	M-8015B/5031-23	25
Paraquat CL tetrahydrate 1910-42-5 (as Paraquat)	100	H	P-331S-H	77	Prebane 886-50-0	100	M	M-8330-ADD-22	30
Parathion 56-38-2	100	M	P-290S	22	Profenofos 41198-08-7	100	CN:M	M-8330-ADD-3	20
Pendimethalin 40487-42-1	100	M	P-277S	42	Profluoralin 26399-36-0	100	M	P-304S	12
Pentachloroanisole 1825-21-4	10,000	W	M-8015B/5031-21	25	Promecarb 2631-37-0	100	M	P-305S	12
Pentachlorobenzene 608-93-5	100	M	P-453S	22	Prometon 1610-18-0	100	M	P-119S	12
Pentachloroethane 76-01-7	1,000	M	P-453S-10X	34	Prometryne 7287-19-6	100	M	P-260S	12
Pentachloronitrobenzene 82-68-8	100	M	P-051S	12	Pronamide 23950-58-5	100	M	P-099S	12
Pentachlorophenol 87-86-5	100	M	P-070S	12	Propachlor 1918-16-7	1,000	M	P-099S-10X	24
Pentafluorobenzene 363-72-4	1,000	H	M-622-19	12	Propanal 123-38-6	1,000	M	M-8318-09	22
Pentafluoroethane (Freon #125)	100	M	P-097S	12	Propanal-DNPH 725-00-8	100	M	M-619-04	12
Pentafluorophenol 771-61-9	100	M	P-097S-10X	24	Propanil 709-98-8	100	M	M-619-05	12
Pentanal 110-62-3	100	M	P-199S	12	1-Propanol 71-23-8	100	M	P-164S	12
Pentanal-DNPH 2057-84-3	100	M	APP-9-173	12	Propargite 2312-35-8	100	M	P-215S	12
2-Pentanone 107-87-9	100	M	APP-9-174	12	Propazine 139-40-2	1,000	M	P-215S-10X	24
Permethrin 52645-53-1	100	M	APP-9-175	12	Propham 122-42-9	1,000	M	M-554-12 *	20
Perthane 72-56-0	100	M	M-508-IS	10	Propionitrile 107-12-0	100	CN	M-8315-R-DNPH-17	20
PETN 78-11-5	1,000	MT	M-508-IS-10X	20	n-Propylbenzene 103-65-1	1,000	M:C:N	M-554-DNPH-12	20
Phenacetin 62-44-2	100	D	M-625C-2	20	Propyleneglycol dinitrate 6423-43-4	100	CN	M-632.1-2	12
Phenanthrene 85-01-8	100	M	M-8040-15	20	Pyraron 1698-60-8	100	M	M-8015B/5031-24	25
Phenanthrene-d ₁₀ 1517-22-2	200	M	M-624-SS-10	10	Pyrazoxifen 71561-11-0	100	M	P-251S	12
Phenol 108-95-2	100	M	M-REF-X-06	20	Pyrene 129-00-0	100	M	M-619-06	12
Phenol-d ₆ 4165-62-2	200	D	M-625-17	20	Pyrene-d ₁₀ 1718-52-1	100	CN	M-632-18	12
Phenthioate 2597-03-7	100	D	M-625-18	20	Pyridine 110-86-1	100	M	APP-9-184	12
p-Phenylenediamine 106-50-3	1,000	M	M-625-18-10X	25	Pyridine-d ₅ 7291-22-7	10,000	W	M-8015B/5031-25	25
	100	M	P-476S	32	PYX 38082-89-2	200	M	M-502-41	10
	100	M	APP-9-180	20		2,000	M	M-502-41-10X	14
						100	M	M-8330-ADD-35	35

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 Price	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL Price
Quizalofop ethyl 76578-14-8	100	CN	P-293S-CN	\$ 22	1,1,2,2-Tetrachloroethane 79-34-5	200	M	M-502-44	\$ 10
RDX	100	M:CN	M-8330-05-0.1X	20	Tetrachloroethene	200	M	M-502-44-10X	14
121-82-4	1,000	M:CN	M-8330-05	30		200	M	M-502-45	10
Ronnel	100	M	P-080S	12	2,3,5,6-Tetrachloronitrobenzene 117-18-0	2,000	M	M-502-45-10X	14
299-84-3	1,000	H	M-8140-17	20		100	M	P-467S	12
Rotenone	100	M	P-056S *	12	2,3,4,6-Tetrachlorophenol 58-90-2	100	M	APP-9-195	20
83-79-4	100	CN	M-635	20		1,000	M	M-8040-17	20
Safole	100	M	APP-9-187	20	Tetrachlorvinphos 961-11-5	100	M	P-125S	12
94-59-7						1,000	CN	AE-00047	20
Secbumeton 26259-45-0	100	M	M-619-07	22	Tetradifon 116-29-0	100	M	P-261S	12
Siduron	100	M	P-063S	12	Tetrafluoroethane 811-97-2	200	M	M-REF-12	20
1982-49-6	100	CN	M-632-20	12					
Silvex	100	M	P-084S	12	1,1,2,2-Tetrafluoroethane (Freon #134)	200	M	M-REF-X-07	20
93-72-1	1,000	M	P-084S-10X	24					
Silvex methyl ester 4841-20-7	100	M	P-115S	12	Tetrahydrofuran 109-99-9	1,000	W	M-1671A-IS	20
Simazine	100	M	P-085S	12					
122-34-9	1,000	M	M-507F	15	Tetryl 479-45-8	100	M:CN	M-8330-10-0.1X	20
Simetryn 1014-70-6	100	M	M-619-08	22		1,000	M:CN	M-8330-10	30
Stiropfos 961-11-5	1,000	H	M-8140-18	30	Thiabendazole 148-79-8	100	M	P-068S	12
						100	CN	M-641	20
Styrene 100-42-5	200	M	M-502-42	10	Thiobencarb 28249-77-6	100	M	P-180S	12
	2,000	M	M-502-42-10X	14		1,000	M	P-180S-10X	24
Sulfotep 3689-24-5	100	M	P-167S	22	4,4'-Thiodiphenol 2664-63-3	100	M	P-117S	12
	1,000	H	M-8141-06	50		1,000	M	P-117S-10X	24
Sulfoxide 120-62-7	100	M	P-396S	12	Thiofanox 39196-18-4	100	M	P-266S	22
Sumithrin 26002-80-2	100	M	P-050S	32					
Swept 1918-18-9	100	M	P-061S	12	Thionazin 297-97-2	100	M	P-171S	12
2,4,6-T 575-89-3	100	CN	M-632-21	12					
	100	M	P-523S	12	Thiophanate 23564-06-9	100	M	P-321S	12
2,4,5-T acid 93-76-5	100	CN	P-523S-CN	12		100	CN	P-321S-CN	12
	100	M	P-168S	12	Thiram 137-26-8	100	M	P-118S	12
2,4,5-T butoxyethyl ester 2545-59-7	1,000	M	P-168S-10X	24		1,000	M	P-118S-10X	24
	100	CN	P-441S-CN	12	Tillam 1114-71-2	100	M	P-105S	12
2,4,5-T methyl ester 1928-37-6	100	M	P-067S	12	Tilt 60207-90-1	100	M	P-280S	42
	200	H	M-8150-03	15					
2,4,5-T n-butyl ester 93-79-8	100	CN	P-440S-CN	12	TNT 118-96-7	100	M:CN	M-8330-11-0.1X	20
TAME 994-05-8	200	M	S-1019	10		1,000	M:CN	M-8330-11	25
TCMX 877-09-8	100	H	M-8082-SS	20	Tokuthion 34643-46-4	100	M	P-126S	32
	1,000	H	M-8082-SS-10X	20		1,000	H	M-8140-19	30
Tebuconazol 107534-96-3	100	M	P-451S	22	m-Tolualdehyde-DNPH 2880-05-9	100	CN	M-8315-R-DNPH-18	20
Tebuthiuron 34014-18-1	100	M	P-188S	12					
					o-Tolualdehyde-DNPH 1773-44-0	100	CN	M-8315-R-DNPH-19	20
Tefluthrin 79538-32-2	100	M	P-568S *	52					
TEPP 107-49-3	1,000	H	M-8141-07	12	p-Tolualdehyde-DNPH 2571-00-8	100	CN	M-8315-R-DNPH-20	20
Terbacil 5902-51-2	100	M	P-096S	12					
Terbufos 13071-79-9	100	M	P-208S	12	Toluene 108-88-3	200	M	M-502-46	10
Terbutylazine 5915-41-3	1,000	H	M-8141A-1-10	54		2,000	M	M-502-46-10X	14
	100	M	M-619-10	32	o-Toluidine 95-53-4	100	M	APP-9-199	12
p-Terphenyl-d ₁₄ 1718-51-0	500	D	M-525-FS-2	20		10,000	W	M-8015B/5031-27	25
Terrazole 2593-15-9	100	M	P-190S	12	Toxaphene 8001-35-2	1,000	M	P-093S-10X	24
1,2,4,5-Tetrachlorobenzene 95-94-3	100	M	APP-9-191	12		2,500	A	M-525-5	20
	2,000	H	M-8120-09	25	2,4,5-TP 93-72-1	200	M	M-8150S-A-04	15
1,1,1,2-Tetrachloroethane 630-20-6	200	M	M-502-43	10	2,4,5-TP methyl ester 4841-20-7	200	H	M-8150-04	15
	2,000	M	M-502-43-10X	14					
					2,4,5-TP-PFB	100	MT	M-8150-04-PFB	30
					Triadimefon 43121-43-3	100	M	P-069S	12
					Triallate 2303-17-5	100	M	P-268S	12
					1,2,4-Triazole 288-88-0	100	M	P-627S	22
					Triazophos 24017-47-8	100	M	P-334S	12
					Tribromoacetic acid 75-96-7	200	MT	M-552.2A-09	15

* ColdPAK required to maintain integrity of product.

Analytes in EPA Methods continued on next page



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 Price	Compound CAS No.	Conc. (µg/mL)	Solv.	Cat. No.	1 mL Price
1,3,5-Tribromobenzene 626-39-1	50	A	M-8121-IS	\$ 10	Tricyclazole 41814-78-2	100	M	P-090S	\$ 22
2,4,6-Tribromophenol 118-79-6	200	D	M-625-19	20	Triethylphosphate 78-40-0	100	M	P-335S	12
2,4,6-Tribromophenol-PFB	200	M	M-604-SS-PFB	20	o,o,o-Triethylphosphorothioate 126-68-1	100	M	P-172S	12
Tributylphosphate 126-73-8	1,000	A	M-8141A-SS-01	20	2',4',5'-Trifluoroacetophenone 129322-83-4	1,000	H	P-172S-H-10X	24
Trichlorfon 52-68-6	100	M	P-044S	12	1,1,1-Trifluoroethane (Freon #143A)	20	CN	M-556-SS	10
1,1,2-Trichloro-1,2,2-trifluoroethane 76-13-1	200	M	M-REF-14	10	Trifluoromethane (Freon #23)	200	M	M-REF-X-08	20
1,1,1-Trichloro-2-propanone 918-00-3	2,000	M	M-REF-14-10X	20	Trifluoromethane (Freon #23)	200	M	M-REF-15	12
Trichloroacetic acid 76-03-9	5,000	A	M-551B-8	15	a,a,a-Trifluorotoluene 98-08-8	200	M	M-602-SS	20
Trichloroacetonitrile 545-06-2	20	MT	M-552.2A-10	15	Trifluralin 1582-09-8	2,000	M	M-602-SS-10X	20
1,2,3-Trichlorobenzene 87-61-6	1,000	MT	M-552A-4 *	15	Trifluralin 1582-09-8	100	M	P-197S	12
1,2,4-Trichlorobenzene 120-82-1	5,000	A	M-551B-7	15	2,3,5-Triiodobenzoic acid 88-82-4	1,000	M	P-197S-10X	24
2,3,5-Trichlorobenzoic acid 50-73-7	200	M	M-502-47	10	2,3,5-Triiodobenzoic acid 88-82-4	100	M	P-507S	12
1,1,1-Trichloroethane 71-55-6	2,000	M	M-502-47-10X	14	2,3,5-Triiodobenzoic acid 88-82-4	100	CN	P-507S-CN	12
1,2,4-Trichloroethane 79-00-5	200	M	M-502-48	10	2,3,5-Trimethacarb 2655-15-4	100	M	P-515S	52
1,1,2-Trichloroethane 79-00-5	2,000	M	M-502-48-10X	14	3,4,5-Trimethacarb 2686-99-9	100	M	P-516S	52
Trichloroethene 79-01-6	100	M	P-508S	12	Trimethyl phosphate 512-56-1	100	M	P-210S	12
Trichlorofluoromethane (Freon #11) 75-69-4	100	CN	P-508S-CN	12	1,2,4-Trimethylbenzene 95-63-6	200	M	M-502-54	10
Trichloronate 327-98-0	200	M	M-502-49	10	1,3,5-Trimethylbenzene 108-67-8	2,000	M	M-502-54-10X	14
2,4,5-Trichlorophenol 95-95-4	2,000	M	M-502-49-10X	14	1,3,5-Trimethylbenzene 108-67-8	200	M	M-502-55	10
2,4,6-Trichlorophenol 88-06-2	2,000	M	M-502-50-10X	14	1,3,5-Trimethylbenzene 108-67-8	2,000	M	M-502-55-10X	14
3,4,5-Trichlorophenol 609-19-8	200	M	M-502-51	10	1,3,5-Trinitrobenzene 99-35-4	100	M:CN	M-8330-12-0.1X	20
1,1,2-Trichloropropane 598-77-6	2,000	M	M-502-51-10X	14	Triphenylphosphate 115-86-6	1,000	M:CN	M-8330-12	20
1,2,3-Trichloropropane 96-18-4	200	M	M-502-52	10	Vacacor 53558-25-1	500	MT	M-507-IS	10
a,a,a-Trichlorotoluene 98-07-7	2,000	M	M-502-52-10X	14	Vernolate 1929-77-7	5,000	MT	M-507-IS-10X	20
Triclopyr 55335-06-3	100	M	P-127S	22	Vinclozolin 50471-44-8	100	M	P-240S	12
Triclopyr methyl ester 60825-26-5	1,000	H	M-8140-20	34	Vinyl acetate 108-05-4	100	CN	M-632.1-1	12
Tricresyl phosphate 1330-78-5	100	A	CLP-FC	10	Vinyl chloride 75-01-4	100	M	P-111S	12
	1,000	M	M-8040-18	20	o-Xylene 95-47-6	100	M	P-122S	12
	100	MT	M-552A-R-08 *	15	m-Xylene 108-38-3	1,000	M	P-122S-10X	24
	1,000	M	M-8040-19	20	p-Xylene 106-42-3	100	M	APP-9-211 *	12
	1,000	M	M-1653-IS	35	Xylene (total) 1330-20-7	200	M	M-502-56	10
	1,000	A	M-1653-IS-R	35	Ziram 137-30-4	2,000	M	M-502-56-10X	14
	200	M	S-1321B	30		200	M	M-502-57	10
	200	M	M-502-53	10		2,000	M	M-502-57-10X	14
	2,000	M	M-502-53-10X	14		200	M	M-502-58	10
	200	M	M-624-SS-14	10		2,000	M	M-502-58-10X	14
	100	M	P-289S	12		200	M	M-502-59	10
	100	CN	P-289S-CN	12		2,000	M	M-502-59-10X	14
	100	M	P-291S	22		100	M	APP-9-213	12
	100	M	P-209S	12		100	CN	M-630-1-0.1X	15

* 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. The most recent EPA Target Compounds are listed in the OLM 04.1 and OLM 04.2 Statement of Work.



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CLP

All the Analytical Documentation required in CLP Analysis

Each CLP Standard is furnished with:

- Quantitative analysis of the product by comparison to a separately prepared Standard.
- Target concentration analytically determined to be within a 95% confidence interval.
- A chromatogram of the product lot with analytes listed by order of elution and instrumental parameters shown.
- Certificate showing actual gravimetric/volumetric weights, purities and analyte CAS No.'s.



VOC Selected Target Compound Solutions

Volatile Target Compounds List (TCL)

CLP-022-SET *

\$ 60 / set of 2 x 1 mL

(CLP-022-PART-A, CLP-022-PART-B)

Part A

CLP-022-PART-A

\$ 55 / 1 x 1 mL

0.5 mg/mL each in MeOH

29 comps.

Benzene
Bromodichloromethane
Bromoform
Bromomethane
Carbon tetrachloride
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
Dibromochloromethane
1,1-Dichloroethane
Dichloromethane
1,2-Dichloroethane
1,1-Dichloroethylene
cis-1,2-Dichloroethylene
trans-1,2-Dichloroethylene

1,2-Dichloropropane
cis-1,3-Dichloropropene *
trans-1,3-Dichloropropene **
Ethylbenzene
1,1,2,2-Tetrachloroethane
Tetrachloroethene
Toluene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Vinyl chloride
m-Xylene
p-Xylene

* *cis* (1.06 x conc.)** *trans* (0.94 x conc.)

Volatile Target Compounds List (TCL)

Gases

CLP-022G 0.2 mg/mL each in MeOH \$ 20 / 1 x 1 mL
CLP-022G-PAK 0.2 mg/mL each in MeOH **SAVE 20%** \$ 80 / 5 x 1 mL
CLP-022G-10X 2.0 mg/mL each in MeOH \$ 20 / 1 x 1 mL
CLP-022G-10X-PAK 2.0 mg/mL each in MeOH **SAVE 20%** \$ 80 / 5 x 1 mL
4 comps.

Bromomethane
Chloroethane

Chloromethane
Vinyl chloride

Ketones

CLP-022K * 0.2 mg/mL each in MeOH \$ 20 / 1 x 1 mL
CLP-022K-10X * 2.0 mg/mL each in MeOH \$ 25 / 1 x 1 mL
CLP-022K-25X * 5.0 mg/mL each in MeOH \$ 25 / 1 x 1 mL
4 comps.

Acetone
2-Butanone

2-Hexanone
4-Methyl-2-pentanone

Part B

CLP-022-PART-B *

\$ 25 / 1 x 1 mL

0.5 mg/mL each in MeOH

8 comps.

Acetone
2-Butanone
Carbendisulfide
2-Hexanone

4-Methyl-2-pentanone
Styrene
Vinyl acetate
o-Xylene

Volatile Target Compounds List (TCL)

CLP-022 *

\$ 60 / 1 x 1 mL

0.2 mg/mL each in MeOH

37 comps.

Acetone
Benzene
Bromodichloromethane
Bromoform
Bromomethane
2-Butanone
Carbendisulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
Dibromochloromethane
1,1-Dichloroethane
Dichloromethane
1,2-Dichloroethane
1,1-Dichloroethylene
cis-1,2-Dichloroethylene
trans-1,2-Dichloroethylene

1,2-Dichloropropane
cis-1,3-Dichloropropene *
trans-1,3-Dichloropropene **
Ethylbenzene
2-Hexanone
4-Methyl-2-pentanone
Styrene
1,1,2,2-Tetrachloroethane
Tetrachloroethene
Toluene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Vinyl acetate
Vinyl chloride
m-Xylene
o-Xylene
p-Xylene

* *cis* (1.06 x conc.)** *trans* (0.94 x conc.)

CLP-022-R2 *

\$ 60 / 1 x 1 mL

0.2 mg/mL each in MeOH

36 comps.

Acetone
Benzene
Bromodichloromethane
Bromoform
Bromomethane
2-Butanone
Carbendisulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
Dibromochloromethane
1,1-Dichloroethane
Dichloromethane
1,2-Dichloroethane
1,1-Dichloroethylene
cis-1,2-Dichloroethylene
trans-1,2-Dichloroethylene

1,2-Dichloropropane
cis-1,3-Dichloropropene *
trans-1,3-Dichloropropene **
Ethylbenzene
2-Hexanone
4-Methyl-2-pentanone
Styrene
1,1,2,2-Tetrachloroethane
Tetrachloroethene
Toluene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Vinyl chloride
m-Xylene
o-Xylene
p-Xylene

* *cis* (1.06 x conc.)** *trans* (0.94 x conc.)

Technical Note

AccuStandard provides CLP Volatile Target Compound List in a single solution in two versions. CLP-022-R2 (Vinyl acetate was removed from the TCL PLM03.1), for CLP laboratories following SOW OLM01.8 (August 1994). CLP-022-SET will continue to be available as an alternate source of reference material.

* ColdPAK required to maintain integrity of product.

Contract Laboratory Program (CLP)

Auxiliary Volatiles

CLP

Volatiles

Volatile Calibration Check Compounds (CCC)

CLP-020	0.2 mg/mL each in MeOH	\$ 30 / 1 x 1 mL
CLP-020-PAK	0.2 mg/mL each in MeOH	SAVE 20% \$ 120 / 5 x 1 mL
CLP-020-10X	2.0 mg/mL each in MeOH	\$ 30 / 1 x 1 mL
CLP-020-10X-PAK	2.0 mg/mL each in MeOH	SAVE 20% \$ 120 / 5 x 1 mL

6 comps.

Chloroform	Ethylbenzene
1,1-Dichloroethene	Toluene
1,2-Dichloropropane	Vinyl chloride

Volatile System Performance Check Compounds (SPCC)

CLP-021	0.2 mg/mL each in MeOH	\$ 30 / 1 x 1 mL
CLP-021-PAK	0.2 mg/mL each in MeOH	SAVE 20% \$ 120 / 5 x 1 mL
CLP-021-10X	2.0 mg/mL each in MeOH	\$ 30 / 1 x 1 mL
CLP-021-10X-PAK	2.0 mg/mL each in MeOH	SAVE 20% \$ 120 / 5 x 1 mL

5 comps.

Bromoform	1,1-Dichloroethane
Chlorobenzene	1,1,2,2-Tetrachloroethane
Chloromethane	

Hexadecane Extraction Volatiles

CLP-BTEX	0.2 mg/mL each in MeOH	\$ 30 / 1 x 1 mL
CLP-BTEX-PAK	0.2 mg/mL each in MeOH	SAVE 20% \$ 120 / 5 x 1 mL
CLP-BTEX-10X	2.0 mg/mL each in MeOH	\$ 30 / 1 x 1 mL
CLP-BTEX-10X-PAK	2.0 mg/mL each in MeOH	SAVE 20% \$ 120 / 5 x 1 mL

6 comps.

Benzene	m-Xylene
Ethylbenzene	o-Xylene
Toluene	p-Xylene

CLP-001B	\$ 15 / 1 x 1 mL
1.0 mg/mL each in MeOH	2 comps.
n-Decane	n-Nonane

Instrument Performance Check Solution

CLP-004	25 µg/mL in MeOH	\$ 10 / 1 x 1 mL
CLP-004-PAK	25 µg/mL in MeOH	SAVE 20% \$ 40 / 5 x 1 mL
CLP-004-10X	250 µg/mL in MeOH	\$ 10 / 1 x 1 mL
CLP-004-10X-PAK	250 µg/mL in MeOH	SAVE 20% \$ 40 / 5 x 1 mL
CLP-004-80X	2000 µg/mL in MeOH	\$ 10 / 1 x 1 mL
CLP-004-80X-PAK	2000 µg/mL in MeOH	SAVE 20% \$ 40 / 5 x 1 mL
CLP-004-100X	2500 µg/mL in MeOH	\$ 10 / 1 x 1 mL
CLP-004-100X-PAK	2500 µg/mL in MeOH	SAVE 20% \$ 40 / 5 x 1 mL
CLP-004-1000X	25 mg/mL in MeOH	\$ 20 / 1 x 1 mL

p-Bromofluorobenzene

Purgeable Surrogate Standard

CLP-PS	0.25 mg/mL each in MeOH	\$ 25 / 1 x 1 mL
CLP-PS-PAK	0.25 mg/mL each in MeOH	SAVE 20% \$ 100 / 5 x 1 mL
CLP-PS-4X	1.0 mg/mL each in MeOH	\$ 25 / 1 x 1 mL
CLP-PS-4X-PAK	1.0 mg/mL each in MeOH	SAVE 20% \$ 100 / 5 x 1 mL
CLP-PS-10X	2.5 mg/mL each in MeOH	\$ 25 / 1 x 1 mL
CLP-PS-10X-PAK	2.5 mg/mL each in MeOH	SAVE 20% \$ 100 / 5 x 1 mL

3 comps.

p-Bromofluorobenzene	Toluene-d ₈
1,2-Dichloroethane-d ₄	

Purgeable Internal Standard

CLP-PI-0.25X	0.25 mg/mL each in MeOH	\$ 25 / 1 x 1 mL
CLP-PI-0.25X-PAK	0.25 mg/mL each in MeOH	SAVE 20% \$ 100 / 5 x 1 mL
CLP-PI	1.0 mg/mL each in MeOH	\$ 25 / 1 x 1 mL
CLP-PI-PAK	1.0 mg/mL each in MeOH	SAVE 20% \$ 100 / 5 x 1 mL
CLP-PI-2.5X	2.5 mg/mL each in MeOH	\$ 25 / 1 x 1 mL
CLP-PI-2.5X-PAK	2.5 mg/mL each in MeOH	SAVE 20% \$ 100 / 5 x 1 mL

3 comps.

Bromochloromethane	1,4-Difluorobenzene
Chlorobenzene-d ₅	

Purgeable Internal/Surrogate Standard

CLP-PIPS	\$ 40 / 1 x 1 mL
CLP-PIPS-PAK	SAVE 20% \$ 160 / 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	0.25 mg/mL each in MeOH	\$ 20 / 1 x 1 mL
CLP-003-R-PAK	0.25 mg/mL each in MeOH	SAVE 20% \$ 80 / 5 x 1 mL
CLP-003-R-10X	2.5 mg/mL each in MeOH	\$ 20 / 1 x 1 mL
CLP-003-R-10X-PAK	2.5 mg/mL each in MeOH	SAVE 20% \$ 80 / 5 x 1 mL

5 comps.

Benzene	Toluene
Chlorobenzene	Trichloroethene
1,1-Dichloroethene	

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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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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 - Volatiles Set

CLP-VOC-SET * \$ 200 / 9 x 1 mL (CLP-022-R3, M-601B, CLP-022K-10X, CLP-BTEX, CLP-PS-10X, CLP-PI-2.5X, CLP-PIPS, CLP-003R-10X, CLP-004-10X)

CLP OLM 04.1 & 04.2 - Volatile Target Compound List

CLP-022-R3 \$ 40 / 1 x 1 mL
CLP-022-R3-PAK **SAVE 20%** \$ 160 / 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-601B \$ 25 / 1 x 1 mL
M-601B-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
0.2 mg/mL each in MeOH 6 comps.

Bromomethane	Dichlorodifluoromethane
Chloromethane	Trichlorofluoromethane
Chloroethane	Vinyl chloride

Ketones

CLP-022K \$ 20 / 1 x 1 mL
0.2 mg/mL each in MeOH
CLP-022K-10X \$ 25 / 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 \$ 30 / 1 x 1 mL
CLP-BTEX-PAK **SAVE 20%** \$ 120 / 5 x 1 mL
0.2 mg/mL each in MeOH 6 comps.
CLP-BTEX-10X \$ 30 / 1 x 1 mL
CLP-BTEX-10X-PAK **SAVE 20%** \$ 120 / 5 x 1 mL
2.0 mg/mL each in MeOH 6 comps.

Benzene	<i>m</i> -Xylene
Ethylbenzene	<i>o</i> -Xylene
Toluene	<i>p</i> -Xylene

Purgeable Surrogate Standard

CLP-PS-10X \$ 25 / 1 x 1 mL
CLP-PS-10X-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
2.5 mg/mL each in MeOH 3 comps.

<i>p</i> -Bromofluorobenzene	Toluene- <i>d</i> ₈
1,2-Dichloroethane- <i>d</i> ₄	

Purgeable Internal Standard

CLP-PI-2.5X \$ 25 / 1 x 1 mL
CLP-PI-2.5X-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
2.5 mg/mL each in MeOH 3 comps.

Bromochloromethane	1,4-Difluorobenzene
Chlorobenzene- <i>d</i> ₅	

Purgeable Internal/Surrogate Standard

CLP-PIPS \$ 40 / 1 x 1 mL
CLP-PIPS-PAK **SAVE 20%** \$ 160 / 5 x 1 mL
2.5 mg/mL each in MeOH 6 comps.

Bromochloromethane	1,2-Dichloroethane- <i>d</i> ₄
<i>p</i> -Bromofluorobenzene	1,4-Difluorobenzene
Chlorobenzene- <i>d</i> ₅	Toluene- <i>d</i> ₈

Purgeable Organic Matrix Spiking Solution

CLP-003-R-10X \$ 20 / 1 x 1 mL
CLP-003-R-10X-PAK **SAVE 20%** \$ 80 / 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 \$ 10 / 1 x 1 mL
CLP-004-10X-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
250 µg/mL in MeOH
CLP-004-100X \$ 10 / 1 x 1 mL
CLP-004-100X-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
2500 µg/mL in MeOH

p-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 \$ 70 / 1 x 1 mL
0.2 mg/mL each in MeOH (except indicated) 42 comps.

Acetone (1.0 mg/mL)	1,2-Dichloroethane
Benzene	1,1-Dichloroethylene
Bromochloromethane	cis-1,2-Dichloroethylene
Bromodichloromethane	trans-1,2-Dichloroethylene
Bromoform	1,2-Dichloropropane
Bromomethane	cis-1,3-Dichloropropene *
2-Butanone (1.0 mg/mL)	trans-1,3-Dichloropropene **
Carbon disulfide	Ethylbenzene
Carbon tetrachloride	2-Hexanone (1.0 mg/mL)
Chlorobenzene	4-Methyl-2-pentanone (1.0 mg/mL)
Chloroethane	Styrene
Chloroform	1,1,2,2-Tetrachloroethane
Chloromethane	Tetrachloroethene
Dibromochloromethane	Toluene
1,2-Dibromo-3-chloropropane	1,1,1-Trichloroethane
1,2-Dibromoethane	1,1,2-Trichloroethane
1,2-Dichlorobenzene	Trichloroethene
1,3-Dichlorobenzene	Vinyl chloride
1,4-Dichlorobenzene	o-Xylene
1,1-Dichloroethane	m-Xylene
Dichloromethane	p-Xylene

* cis (1.06 x conc.)
** trans (0.94 x conc.)

Tuning Solution / Surrogate Standard Mix

CLP-004	25 µg/mL in MeOH	\$ 10 / 1 x 1 mL
CLP-004-PAK	25 µg/mL in MeOH	SAVE 20% \$ 40 / 5 x 1 mL
CLP-004-10X	0.25 mg/mL in MeOH	\$ 10 / 1 x 1 mL
CLP-004-10X-PAK	0.25 mg/mL in MeOH	SAVE 20% \$ 40 / 5 x 1 mL
CLP-004-100X	2.5 mg/mL in MeOH	\$ 10 / 1 x 1 mL
CLP-004-100X-PAK	2.5 mg/mL in MeOH	SAVE 20% \$ 40 / 5 x 1 mL
CLP-004-1000X	25 mg/mL in MeOH	\$ 20 / 1 x 1 mL

p-Bromofluorobenzene

Laboratory Control Sample Spiking Solution

CLP-LCS-V	\$ 25 / 1 x 1 mL
CLP-LCS-V-PAK	SAVE 20% \$ 100 / 5 x 1 mL
0.2 mg/mL each in MeOH	12 comps.

Benzene	1,2-Dichloropropane
Bromoform	cis-1,3-Dichloropropene *
Carbon tetrachloride	Tetrachloroethene
1,2-Dibromoethane	1,1,2-Trichloroethane
1,4-Dichlorobenzene	Trichloroethene
1,2-Dichloroethane	Vinyl chloride

* may contain trace amounts of trans isomer

Internal Standard Mix

CLP-LC-IS	25 µg/mL each in MeOH	\$ 25 / 1 x 1 mL
CLP-LC-IS-PAK	25 µg/mL each in MeOH	SAVE 20% \$ 100 / 5 x 1 mL
CLP-LC-IS-10X	0.25 mg/mL each in MeOH	\$ 25 / 1 x 1 mL
CLP-LC-IS-10X-PAK	0.25 mg/mL each in MeOH	SAVE 20% \$ 100 / 5 x 1 mL
CLP-LC-IS-100X	2.5 mg/mL each in MeOH	\$ 25 / 1 x 1 mL
CLP-LC-IS-100X-PAK	2.5 mg/mL each in MeOH	SAVE 20% \$ 100 / 5 x 1 mL
		3 comps.

Chlorobenzene-d ₆	1,4-Difluorobenzene
1,4-Dichlorobenzene-d ₄	

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.

2-Part Label System

Smudgeproof, tear and solvent resistant * (Organic products in ampules)

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



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 \$ 50 / 1 x 1 mL
Z-014A-PAK **SAVE 20%** \$ 200 / 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 \$ 50 / 1 x 1 mL
Z-014B-PAK **SAVE 20%** \$ 200 / 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 \$ 30 / 1 x 1 mL
Z-014F-PAK **SAVE 20%** \$ 120 / 5 x 1 mL
 2.0 mg/mL each in MeOH 2 comps.

Benzidine
 3,3'-Dichlorobenzidine

Phenols Mix

Z-014H \$ 30 / 1 x 1 mL
Z-014H-PAK **SAVE 20%** \$ 120 / 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 \$ 25 / 1 x 1 mL
Z-014D-PAK **SAVE 20%** \$ 100 / 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 \$ 30 / 1 x 1 mL
Z-014E-PAK **SAVE 20%** \$ 120 / 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 \$ 80 / 1 x 1 mL
Z-014J-PAK **SAVE 37%** \$ 250 / 5 x 1 mL
 4.0 mg/mL each in CH₂Cl₂ 6 comps.

Z-014J-0.5X \$ 50 / 1 x 1 mL
Z-014J-0.5X-PAK \$ 200 / 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

PAH Mix

Z-014G \$ 65 / 1 x 1 mL
Z-014G-PAK **SAVE 20%** \$ 260 / 5 x 1 mL
 2.0 mg/mL each in CH₂Cl₂: Benzene (50:50)
 16 comps.

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

PAH Mix

Z-014G-R \$ 65 / 1 x 1 mL
Z-014G-R-PAK **SAVE 20%** \$ 260 / 5 x 1 mL
 2.0 mg/mL each in CH₂Cl₂: Benzene (50:50)
 17 comps.

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

Expanded PAH Mix

Z-014G-FL \$ 85 / 1 x 1 mL
 2.0 mg/mL each in
 Dichloromethane: Benzene (50:50)
 18 comps.

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

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

Z-014R-SET \$ 350 / 9 x 1 mL
Set includes:
Z-014A Base/Neutrals - Mix #1
Z-014B Base/Neutrals - Mix #2
Z-014C Pesticides - Mix #1
Z-014D Toxic Substances - Mix #1
Z-014E Toxic Substances - Mix #2
Z-014F Benzidine Mix
Z-014G-R PAH Mix
Z-014H Phenols Mix
Z-014J Internal Standard Mix

Z-014R-1-SET \$ 350 / 9 x 1 mL
Set includes:
Z-014A Base/Neutrals - Mix #1
Z-014B Base/Neutrals - Mix #2
Z-014C-R Pesticides - Mix #2
Z-014D Toxic Substances - Mix #1
Z-014E Toxic Substances - Mix #2
Z-014F Benzidine Mix
Z-014G-R PAH Mix
Z-014H Phenols Mix
Z-014J Internal Standard Mix

Z-014R-2-SET \$ 230 / 7 x 1 mL
Set includes:
Z-014A Base/Neutrals - Mix #1
Z-014B Base/Neutrals - Mix #2
Z-014D Toxic Substances - Mix #1
Z-014E Toxic Substances - Mix #2
Z-014F Benzidine Mix
Z-014G PAH Mix
Z-014H Phenols Mix

Z-014R-3-SET \$ 230 / 7 x 1 mL
Set includes:
Z-014A Base/Neutrals - Mix #1
Z-014B Base/Neutrals - Mix #2
Z-014D Toxic Substances - Mix #1
Z-014E Toxic Substances - Mix #2
Z-014F Benzidine Mix
Z-014G-R PAH Mix
Z-014H Phenols Mix

Order a complete Set and Save

Pesticides - Mix #1

Z-014C \$ 75 / 1 x 1 mL
Z-014C-PAK **SAVE 20%** \$ 300 / 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

Pesticides - Mix #2

Z-014C-R \$ 95 / 1 x 1 mL
Z-014C-R-PAK **SAVE 20%** \$ 380 / 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
4,4'-DDT	Methoxychlor

Pesticides - Mix #3

Z-014C-R2 \$ 85 / 1 x 1 mL
Z-014C-R2-PAK **SAVE 20%** \$ 340 / 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
Dieldrin	Methoxychlor

Tuning Standards for EPA Methods

M-625-TS \$ 40 / 1 x 1 mL
M-625-TS-PAK **SAVE 20%** \$ 160 / 5 x 1 mL
50 µg/mL each in CH₂Cl₂ 4 comps.

Benzidine	DFTPP
p,p'-DDT	Pentachlorophenol

CLP-TS \$ 20 / 1 x 1 mL
CLP-TS-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
50 µg/mL in CH₂Cl₂

Perfluorokerosene

EPA Method 625 GC/MS Calibration Standards

M-625C-SET \$ 80 / set of 5 x 1 mL
Individual Solutions M-625C-# \$ 20 / each
At stated conc. in CH₂Cl₂

- (1) Benzidine (50 µg/mL)
- (2) Pentachlorophenol (25 µg/mL)
- (3) Decafluorotriphenylphosphine (25 µg/mL)
- (4) Benzidine (50 µg/mL) + DFTPP (25 µg/mL)
- (5) Pentachlorophenol (25 µg/mL) + DFTPP (25 µg/mL)

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Base/Neutral & Acid Composite Mixtures

For CLP Semi-Volatiles Analysis

CLP Target List

The following composite mixes were formulated to allow flexibility of preparing a final semi-volatile mix to meet your laboratory's specific needs. CLP-HC-BN-SET contains 46 of the Base-Neutral analytes on the CLP semi-volatile Target List. These Base-Neutral analytes are now available in a two ampule set to extend the useful life of your stock calibration standards. CLP-HC-A contains the acidic compounds found in the CLP Target List. An additional composite mix can then be selected to complement your exact requirements for semi-volatile analysis.

Base-Neutral

CLP-HC-BN-R

2.0 mg/mL each in Benzene : CH_2Cl_2 : AcCN (40:40:20)

44 comps.

Acenaphthene	Diethyl phthalate
Acenaphthylene	Dimethyl phthalate
Anthracene	2,4-Dinitrotoluene
Azobenzene	2,6-Dinitrotoluene
Benz[a]anthracene	Di- <i>n</i> -octyl phthalate
Benzo[b]fluoranthene	bis(2-Ethylhexyl)phthalate
Benzo[k]fluoranthene	Fluoranthene
Benzo[g,h,i]perylene	Fluorene
Benzo[a]pyrene	Hexachlorobenzene
4-Bromophenyl phenyl ether	Hexachlorobutadiene
Butyl benzyl phthalate	Hexachlorocyclopentadiene
bis(2-Chloroethoxy)methane	Hexachloroethane
bis(2-Chloroethyl)ether	Indeno[1,2,3-cd]pyrene
bis(2-Chloro-1-methylethyl) ether	Isophorone
2-Chloronaphthalene	Naphthalene
4-Chlorophenyl phenyl ether	Nitrobenzene
Chrysene	N-Nitrosodimethylamine
Dibenz[a,h]anthracene	N-Nitrosodiphenylamine
Di- <i>n</i> -butyl phthalate	N-Nitrosodi- <i>n</i> -propylamine
1,2-Dichlorobenzene	Phenanthrene
1,3-Dichlorobenzene	Pyrene
1,4-Dichlorobenzene	1,2,4-Trichlorobenzene

Benzidine

Z-014F

2.0 mg/mL each in MeOH

2 comps.

Benzidine	3,3'-Dichlorobenzidine
-----------	------------------------

CLP-HC-BN-R

\$ 160 / 1 x 1 mL

CLP-HC-BN-R-PAK

SAVE 20% \$ 640 / 5 x 1 mL

Z-014F

\$ 30 / 1 x 1 mL

CLP Target List Set

CLP-HC-BN-SET

\$ 190 / 2 x 1 mL

(CLP-HC-BN-R, Z-014F)

CLP-HC-BN-SET-PAK

SAVE 20% \$ 760 / 5 x (2 x 1 mL)

Acid Composite Mix

CLP-HC-A-R

\$ 55 / 1 x 1 mL

CLP-HC-A-R-PAK

SAVE 20% \$ 220 / 5 x 1 mL

2.0 mg/mL each in CH_2Cl_2

19 comps.

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

Technical Note

Azobenzene was substituted for 1,2-Diphenylhydrazine 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 CH_2Cl_2

\$ 30 / 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 CH_2Cl_2

\$ 32 / 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 CH_2Cl_2

\$ 30 / 1 x 1 mL

10 comps.

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



Thousands of Standards, just a click away

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Contract Laboratory Program (CLP)

Semi-Volatiles

CLP

GC/MS Analysis of Semi-Volatiles

Method Analytes Mixture

CLP-TCLSV \$ 30 / 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 3 comps.

Benzoic acid N-Nitrosodimethylamine
Benzyl alcohol

Calibration Check Compounds (CCC) Set

CLP-011-SET \$ 35 / 2 x 1 mL
(CLP-011A, CLP-011B)

Base/Neutrals

CLP-011A 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 7 comps.

Acenaphthene Hexachlorobutadiene
Benzo[a]pyrene Fluoranthene
1,4-Dichlorobenzene N-Nitroso-diphenylamine
Di-n-octylphthalate

Acids

CLP-011B \$ 20 / 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 6 comps.

4-Chloro-3-methylphenol Pentachlorophenol
2,4-Dichlorophenol Phenol
2-Nitrophenol 2,4,6-Trichlorophenol

Base/Neutrals & Acids Matrix Standard Spiking Sets

CLP-007-R-SET \$ 35 / 2 x 1 mL (CLP-007A, CLP-007-2)
CLP-007-R-SET-PAK \$ 140 / 5 x (2 x 1 mL) (CLP-007A, CLP-007-2)
CLP-007-SET \$ 35 / 2 x 1 mL (CLP-007A, CLP-007B)

Base/Neutrals

CLP-007A \$ 20 / 1 x 1 mL
1.0 mg/mL each in MeOH 6 comps.

Acenaphthene N-Nitroso-di-n-propylamine
1,4-Dichlorobenzene Pyrene
2,4-Dinitrotoluene 1,2,4-Trichlorobenzene

Acids

CLP-007-2 \$ 20 / 1 x 1 mL
1.5 mg/mL each in MeOH 5 comps.

CLP-007B \$ 20 / 1 x 1 mL
2.0 mg/mL each in MeOH 5 comps.

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

Surrogate Standard

CLP-BNS-3-2X \$ 10 / 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂

4-Terphenyl-d₁₄

Internal Standards Mixture

Z-014J \$ 80 / 1 x 1 mL
Z-014J-PAK **SAVE 37%** \$ 250 / 5 x 1 mL
4.0 mg/mL each in CH₂Cl₂ 6 comps.

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

System Performance Check Compounds (SPCC)

CLP-010 \$ 25 / 1 x 1 mL

0.2 mg/mL each in CH₂Cl₂

CLP-010-10X \$ 25 / 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 4 comps.

2,4-Dinitrophenol 4-Nitrophenol
Hexachlorocyclopentadiene N-nitroso-di-n-propylamine

Semi-Volatile Organic Extract Calibration (Screening Mix)

CLP-009 \$ 20 / 1 x 1 mL

0.1 mg/mL each in CH₂Cl₂

CLP-009-10X \$ 20 / 1 x 1 mL
1.0 mg/mL each in CH₂Cl₂ 3 comps.

Di-n-octylphthalate Phenol
Phenanthrene

Initial Calibration Target Compounds List

CLP-012 \$ 25 / 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 9 comps.

Benzoic acid 4-Nitroaniline
2,4-Dinitrophenol 4-Nitrophenol
4,6-Dinitro-2-methylphenol Pentachlorophenol
2-Nitroaniline 2,4,5-Trichlorophenol
3-Nitroaniline

Acid Surrogate Standard

CLP-AS \$ 25 / 1 x 1 mL
CLP-AS-PAK **SAVE 36%** \$ 80 / 5 x 1 mL

2.0 mg/mL each in MeOH

CLP-AS-10X \$ 50 / 1 x 1 mL
CLP-AS-10X-PAK **SAVE 20%** \$ 200 / 5 x 1 mL

20 mg/mL each in MeOH

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

Base/Neutrals Surrogate Standard

CLP-BNS \$ 25 / 1 x 1 mL
CLP-BNS-PAK **SAVE 36%** \$ 80 / 5 x 1 mL

1.0 mg/mL each in CH₂Cl₂

CLP-BNS-10X \$ 50 / 1 x 1 mL
CLP-BNS-10X-PAK **SAVE 20%** \$ 200 / 5 x 1 mL

2.0 mg/mL each in CH₂Cl₂

2-Fluorobiphenyl p-Terphenyl-d₁₄
Nitrobenzene-d₅

Matrix Spike (SW 846 / Method 8270C/D)

CLP-007-WL-50ML \$ 115 / 1 x 50 mL
At stated conc. in MeOH 11 comps.

4-Chloro-3-methyl phenol (200 µg/mL) 1,4-Dichlorobenzene (100 µg/mL)
2-Chlorophenol (200 µg/mL) 2,4-Dinitrotoluene (100 µg/mL)
4-Nitrophenol (200 µg/mL) N-Nitrosodi-n-propylamine (100 µg/mL)
Pentachlorophenol (200 µg/mL) Pyrene (100 µg/mL)
Phenol (200 µg/mL) 1,2,4-Trichlorobenzene (100 µg/mL)
Acenaphthene (100 µg/mL)

Matrix Spike (3/90 SOW / Method 8270C/D)

CLP-007R-WL-50ML \$ 115 / 1 x 50 mL
At stated conc. in MeOH 11 comps.

4-Chloro-3-methyl phenol (150 µg/mL) 1,4-Dichlorobenzene (100 µg/mL)
2-Chlorophenol (150 µg/mL) 2,4-Dinitrotoluene (100 µg/mL)
4-Nitrophenol (150 µg/mL) N-Nitrosodi-n-propylamine (100 µg/mL)
Pentachlorophenol (150 µg/mL) Pyrene (100 µg/mL)
Phenol (150 µg/mL) 1,2,4-Trichlorobenzene (100 µg/mL)
Acenaphthene (100 µg/mL)

Base/Neutral & Acid Composite Mixtures

For CLP Semi-Volatiles Analysis

August 1994 Statement of Work

Acid Surrogate Standards

CLP-029	\$ 35 / 1 x 1 mL
CLP-029-PAK	SAVE 20% \$ 140 / 5 x 1 mL
2.0 mg/mL each in MeOH	
CLP-029-0.75X	\$ 35 / 1 x 1 mL
CLP-029-0.75X-PAK	SAVE 20% \$ 140 / 5 x 1 mL
1.5 mg/mL each in MeOH	
2-Chlorophenol-d ₄	Phenol-d ₅
2-Fluorophenol	2,4,6-Tribromophenol

Semi-Volatile Surrogate Mixes

CLP-031-R	\$ 75 / 1 x 1 mL
CLP-031-R-PAK	SAVE 20% \$ 300 / 5 x 1 mL
At stated conc. in MeOH:CH ₂ Cl ₂ (50:50)	
8 comps.	
2-Chlorophenol-d ₄ (1.5 mg/mL)	Nitrobenzene-d ₅ (1.0 mg/mL)
1,2-Dichlorobenzene-d ₄ (1.0 mg/mL)	Phenol-d ₅ (1.5 mg/mL)
2-Fluorobiphenyl (1.0 mg/mL)	p-Terphenyl-d ₁₄ (1.0 mg/mL)
2-Fluorophenol (1.5 mg/mL)	2,4,6-Tribromophenol (1.5 mg/mL)

CLP-031-R2	\$ 75 / 1 x 1 mL
CLP-031-R2-PAK	SAVE 20% \$ 300 / 5 x 1 mL
2000 µg/mL each in CH ₂ Cl ₂	
8 comps.	
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	\$ 35 / 1 x 1 mL
CLP-030-PAK	SAVE 20% \$ 140 / 5 x 1 mL
1.0 mg/mL each in CH ₂ Cl ₂	
4 comps.	
1,2-Dichlorobenzene-d ₄	Nitrobenzene-d ₅
2-Fluorobiphenyl	p-Terphenyl-d ₁₄

Instrument Performance Check Solution

CLP-033	\$ 20 / 1 x 1 mL
CLP-033-PAK	SAVE 20% \$ 80 / 5 x 1 mL
0.25 mg/mL in CH ₂ Cl ₂	
Decafluorotriphenylphosphine (DFTPP)	

GC/MS Tuning Solution

CLP-TS	\$ 20 / 1 x 1 mL
CLP-TS-PAK	SAVE 20% \$ 80 / 5 x 1 mL
50 µg/mL in CH ₂ Cl ₂	
Perfluorokerosene	

GPC Solutions for Sample Clean-up

Semi-Volatiles (Gel Permeation)

GPC Calibration Standard Solution

CLP-027	\$ 25 / 1 x 1 mL
CLP-027-PAK	SAVE 20% \$ 100 / 5 x 1 mL
At stated conc. in CH ₂ Cl ₂	
5 comps.	
Corn Oil (250 mg/mL)	Perylene (0.2 mg/mL)
bis(2-Ethylhexyl)phthalate (10 mg/mL)	Sulfur (0.8 mg/mL)
Methoxychlor (2 mg/mL)	

8/94 SOW OLM03.1

CLP-027-R2	\$ 25 / 1 x 1 mL
CLP-027-R2-PAK	SAVE 20% \$ 100 / 5 x 1 mL
At stated conc. in CH ₂ Cl ₂	
5 comps.	
Corn Oil (250 mg/mL)	Perylene (0.2 mg/mL)
bis(2-Ethylhexyl)phthalate (5 mg/mL)	Sulfur (0.8 mg/mL)
Methoxychlor (1 mg/mL)	

Method 3640 - GPC Calibration Solutions and Set

Solution A

CLP-008A	\$ 20 / 1 x 1 mL
200 mg/mL in CH ₂ Cl ₂	
Corn Oil	

Solution B

CLP-008B-R	\$ 20 / 1 x 1 mL
4.0 mg/mL each in CH ₂ Cl ₂	
2 comps.	
bis(2-Ethylhexyl)phthalate	Pentachlorophenol

CLP-008-R-SET

\$ 30 / 2 x 1 mL
(CLP-008A, CLP-008B-R)

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 \$ 50 / 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 13 comps.

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

Base/Neutrals - Mix #2

Z-014B-LC \$ 50 / 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 \$ 40 / 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

Polynuclear Aromatic Hydrocarbon Mix

Z-014G \$ 65 / 1 x 1 mL
Z-014G-PAK **SAVE 20%** \$ 260 / 5 x 1 mL
2.0 mg/mL each in CH₂Cl₂:Benzene (50:50) 16 comps.

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

Phenols Mixture

Z-014H-LC \$ 30 / 1 x 1 mL
Z-014H-LC-PAK **SAVE 20%** \$ 120 / 5 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 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 \$ 50 / 2 x 1 mL
CLP-LCS-SV-R1 1 x 1 mL
At stated conc. in Acetone:MeOH (90:10)
14 comps.

Benzo[a]pyrene (20 µg/mL)
2-Chlorophenol (40 µg/mL)
bis(2-Chloroethyl) ether (20 µg/mL)
Diethylphthalate (20 µg/mL)
2,4-Dinitrotoluene (20 µg/mL)
Hexachlorobenzene (20 µg/mL)
Hexachloroethane (20 µg/mL)
Isophorone (20 µg/mL)
Naphthalene (20 µg/mL)
N-Nitrosodi-*n*-propylamine (20 µg/mL)
N-Nitrosodiphenylamine (20 µg/mL)
Phenol (40 µg/mL)
1,2,4-Trichlorobenzene (20 µg/mL)
2,4,6-Trichlorophenol (40 µg/mL)

CLP-LCS-SV-ADD 1 x 1 mL
40 µg/mL in Acetone:MeOH (9:1)
4-Chloroaniline

Tuning Solution

M-625C-3-2X \$ 20 / 1 x 1 mL
50 µg/mL in CH₂Cl₂
Decafluorotriphenylphosphine

Internal Standard

Z-014J-0.5X \$ 50 / 1 x 1 mL
Z-014J-0.5X-PAK **SAVE 20%** \$ 200 / 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

Surrogate Standards

CLP-LC-SS-1 \$ 40 / 1 x 1 mL
CLP-LC-SS-1-PAK **SAVE 20%** \$ 160 / 5 x 1 mL
2.0 mg/mL each in MeOH:CH₂Cl₂ (20:80)
5 comps.

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

CLP-LC-SS-2 \$ 10 / 1 x 1 mL
CLP-LC-SS-2-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
6.0 mg/mL in MeOH
2,4,6-Tribromophenol

Buy AccuPAKs™
Save 20-40% 5 x 1 mL



CLP OLM 04.1 & 04.2 - Semi-Volatiles

Base Neutrals Mix #1

CLP-HC-SV-MIX1

2000 µg/mL each in CH₂Cl₂\$ 50 / 1 x 1 mL
13 comps.

Benzyl butyl phthalate
4-Bromophenyl phenyl ether
bis(2-Chloroethoxy)methane
bis(2-Chloroethyl) ether
bis(2-Chloro-1-methylethyl) ether
4-Chlorophenyl phenyl ether
Dibutyl phthalate

Diethyl phthalate
Dimethyl phthalate
Di-*n*-octyl phthalate
bis(2-Ethylhexyl)phthalate
N-Nitrosodiphenylamine
N-Nitrosodi-*n*-propylamine

CLP Base Neutral & PAH Mix #2

CLP-HC-SV-MIX2

2000 µg/mL each in CH₂Cl₂ : Benzene (75:25)\$ 95 / 1 x 1 mL
31 comps.

Acenaphthene
Acenaphthylene
Acetophenone
Anthracene
Atrazine
Benzaldehyde
Benz[a]anthracene
Benzo[b]fluoranthene
Benzo[k]fluoranthene
Benzo[g,h,i]perylene
Benzo[a]pyrene
Biphenyl
e-Caprolactam
Carbazole
2-Chloronaphthalene
Chrysene

Dibenz[a,h]anthracene
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Fluoranthene
Fluorene
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Indeno[1,2,3-*cd*]pyrene
Isophorone
Naphthalene
Nitrobenzene
Phenanthrene
Pyrene

CLP Toxic Substance Mix #4

CLP-HC-SV-MIX4

2000 µg/mL each in CH₂Cl₂\$ 35 / 1 x 1 mL
7 comps.

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

2-Nitroaniline
3-Nitroaniline
4-Nitroaniline

CLP OLM 04.1 and 04.2 - Base Neutrals

CLP-HC-SVR-SET

\$ 120 / 3 x 1 mL
(CLP-HC-SV-MIX1, CLP-HC-SV-MIX2, CLP-HC-SV-MIX4)

Phenols

CLP-HC-A-R5

CLP-HC-A-R5-PAK

2000 µg/mL each in CH₂Cl₂

\$ 45 / 1 x 1 mL
SAVE 20% \$ 180 / 5 x 1 mL
14 comps.

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

p-Cresol
2-Nitrophenol
4-Nitrophenol
Pentachlorophenol
Phenol
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol

Base/Neutral Matrix Spike Solution

CLP-BN-MS

CLP-BN-MS-PAK

1000 µg/mL each in MeOH

\$ 30 / 1 x 1 mL
SAVE 20% \$ 120 / 5 x 1 mL
4 comps.

Acenaphthene
2,4-Dinitrotoluene

N-Nitrosodi-*n*-propylamine
Pyrene

Semi-Volatile Organic Extract Calibration

(Screening Mix)

CLP-009-10X

1.0 mg/mL each in CH₂Cl₂\$ 20 / 1 x 1 mL
3 comps.

Di-*n*-octylphthalate
Phenanthrene

Phenol

Instrument Performance Check Solution

CLP-033

CLP-033-PAK

0.25 mg/mL in CH₂Cl₂

\$ 20 / 1 x 1 mL
SAVE 20% \$ 80 / 5 x 1 mL

Decafluorotriphenylphosphine (DFTPP)

Acids

CLP-007-2

1.5 mg/mL each in MeOH

\$ 20 / 1 x 1 mL
5 comps.

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

Pentachlorophenol
Phenol

Internal Standards Mixture

Z-014J

Z-014J-PAK

4.0 mg/mL each in CH₂Cl₂

\$ 80 / 1 x 1 mL
SAVE 37% \$ 250 / 5 x 1 mL
6 comps.

Acenaphthene-*d*₁₀
Chrysene-*d*₁₂
1,4-Dichlorobenzene-*d*₄

Naphthalene-*d*₈
Perylene-*d*₁₂
Phenanthrene-*d*₁₀

Semi-Volatile Surrogate Mixture

CLP-031-R

CLP-031-R-PAK

At stated conc. in MeOH:CH₂Cl₂ (50:50)

\$ 75 / 1 x 1 mL
SAVE 20% \$ 300 / 5 x 1 mL
8 comps.

2-Chlorophenol-*d*₄ (1.5 mg/mL)
1,2-Dichlorobenzene-*d*₄ (1.0 mg/mL)
2-Fluorobiphenyl (1.0 mg/mL)
2-Fluorophenol (1.5 mg/mL)

Nitrobenzene-*d*₅ (1.0 mg/mL)
Phenol-*d*₅ (1.5 mg/mL)
p-Terphenyl-*d*₁₄ (1.0 mg/mL)
2,4,6-Tribromophenol (1.5 mg/mL)

Pesticides Mixture

Z-014C-R

Z-014C-R-PAK

2.0 mg/mL each in Toluene:Hexane (50:50)

\$ 95 / 1 x 1 mL
SAVE 20% \$ 380 / 5 x 1 mL
20 comps.

Aldrin
α-BHC
β-BHC
γ-BHC
δ-BHC
α-Chlordane
γ-Chlordane
4,4'-DDD
4,4'-DDE
4,4'-DDT
Dieldrin
Endosulfan I
Endosulfan II
Endosulfan sulfate

Endrin
Endrin aldehyde
Endrin ketone
Heptachlor
Heptachlor epoxide
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

CLP-031-R-WL-50ML

At stated conc. in MeOH

\$ 110 / 1 x 25 mL
\$ 190 / 1 x 50 mL
8 comps.

2-Chlorophenol-*d*₄ (150 µg/mL)
1,2-Dichlorobenzene-*d*₄ (100 µg/mL)
2-Fluorobiphenyl (100 µg/mL)
2-Fluorophenol (150 µg/mL)

Nitrobenzene-*d*₅ (100 µg/mL)
Phenol-*d*₅ (150 µg/mL)
p-Terphenyl-*d*₁₄ (100 µg/mL)
2,4,6-Tribromophenol (150 µg/mL)

Contract Laboratory Program (CLP)

Pesticide Mixtures

CLP

CLP - Pesticide Mixtures

CLP-018-10X \$ 55 / 1 x 1 mL
CLP-018-10X-PAK **SAVE 20%** \$ 220 / 5 x 1 mL
At stated conc. in Isooctane 11 comps.

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

CLP-019-10X \$ 60 / 1 x 1 mL
CLP-019-10X-PAK **SAVE 20%** \$ 240 / 5 x 1 mL
At stated conc. in Isooctane 12 comps.

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

Pesticide Set

CLP-018/019-10X-SET \$ 100 / 2 x 1 mL
(CLP-018-10X, CLP-019-10X)

CLP - Pesticide Surrogates

CLP-032-R \$ 15 / 1 x 1 mL
CLP-032-R-PAK **SAVE 20%** \$ 60 / 5 x 1 mL
200 µg/mL each in Acetone 2 comps.

Decachlorobiphenyl	Tetrachloro- <i>m</i> -xylene
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CLP-034 \$ 15 / 1 x 1 mL
CLP-034-PAK **SAVE 20%** \$ 60 / 5 x 1 mL
200 µg/mL each in Acetone 2 comps.

Dibutylchloredate	Tetrachloro- <i>m</i> -xylene
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CLP-PES-A \$ 20 / 1 x 1 mL
CLP-PES-A-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
200 µg/mL in Acetone

CLP-PES-A-20X \$ 20 / 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
	CLP-023R	(-4X)	(-10X)	(-30X)	(-160X)
α-BHC	50	200	500	1,500	8,000
γ-BHC	50	200	500	1,500	8,000
p,p'-DDD	100	400	1,000	3,000	16,000
p,p'-DDT	100	400	1,000	3,000	16,000
Decachlorobiphenyl	100	400	1,000	3,000	16,000
Dieldrin	100	400	1,000	3,000	16,000
Endosulfan I	50	200	500	1,500	8,000
Endrin	100	400	1,000	3,000	16,000
Heptachlor	50	200	500	1,500	8,000
Methoxychlor	500	2,000	5,000	15,000	80,000
Tetrachloro- <i>m</i> -xylene	50	200	500	1,500	8,000

CLP-023R-CAL-SET \$ 100 / 3 x 1 mL (Level 1, Level 2, Level 5)

Level 1	CLP-023R	\$ 40 / 1 mL
Level 2	CLP-023R-4X	40 / 1 mL
Level 3	CLP-023R-10X	40 / 1 mL
Level 4	CLP-023R-30X	40 / 1 mL
Level 5	CLP-023R-160X	40 / 1 mL

Level 2 Daily QC (for mid level curves)

CLP-023R-WL-4X-10ML \$ 50 / 1 x 10 mL

CLP-023R-WL-4X-25ML \$ 75 / 1 x 25 mL

CLP-023R-WL-4X-100ML \$ 100 / 1 x 100 mL

At stated conc. in Isooctane 11 comps.

α-BHC (20 ng/mL)	Endosulfan I (20 ng/mL)
γ-BHC (20 ng/mL)	Endrin (40 ng/mL)
p,p'-DDD (40 ng/mL)	Heptachlor (20 ng/mL)
p,p'-DDT (40 ng/mL)	Methoxychlor (200 ng/mL)
Decachlorobiphenyl (40 ng/mL)	Tetrachloro- <i>m</i> -xylene (20 ng/mL)
Dieldrin (40 ng/mL)	

Ready-to-Inject

Working Level Pesticide Standard

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

Compound	Level 1	2	3	4	5
	CLP-024R	(-4X)	(-10X)	(-30X)	(-160X)
Aldrin	50	200	500	1,500	8,000
β-BHC	50	200	500	1,500	8,000
δ-BHC	50	200	500	1,500	8,000
α-Chlordane	50	200	500	1,500	8,000
γ-Chlordane	50	200	500	1,500	8,000
p,p'-DDE	100	400	1,000	3,000	16,000
Decachlorobiphenyl	100	400	1,000	3,000	16,000
Endosulfan II	100	400	1,000	3,000	16,000
Endosulfan sulfate	100	400	1,000	3,000	16,000
Endrin aldehyde	100	400	1,000	3,000	16,000
Endrin ketone	100	400	1,000	3,000	16,000
Heptachlor epoxide	50	200	500	1,500	8,000
Tetrachloro- <i>m</i> -xylene	50	200	500	1,500	8,000

CLP-024R-CAL-SET \$ 100 / 3 x 1 mL (Level 1, Level 2, Level 5)

Level 1	CLP-024R	\$ 40 / 1 mL
Level 2	CLP-024R-4X	40 / 1 mL
Level 3	CLP-024R-10X	40 / 1 mL
Level 4	CLP-024R-30X	40 / 1 mL
Level 5	CLP-024R-160X	40 / 1 mL

Level 2 Daily QC (for mid level curves)

CLP-024R-WL-4X-10ML \$ 50 / 1 x 10 mL

CLP-024R-WL-4X-25ML \$ 75 / 1 x 25 mL

CLP-024R-WL-4X-100ML \$ 100 / 1 x 100 mL

At stated conc. in Isooctane 13 comps.

Aldrin (20 ng/mL)	Endosulfan II (40 ng/mL)
β-BHC (20 ng/mL)	Endosulfan sulfate (40 ng/mL)
δ-BHC (20 ng/mL)	Endrin aldehyde (40 ng/mL)
α-Chlordane (20 ng/mL)	Endrin ketone (40 ng/mL)
γ-Chlordane (20 ng/mL)	Heptachlor epoxide (20 ng/mL)
p,p'-DDE (40 ng/mL)	Tetrachloro- <i>m</i> -xylene (20 ng/mL)
Decachlorobiphenyl (40 ng/mL)	

Pesticide Calibration Sets

CLP-023R/024R-SET \$ 75 / 2 x 1 mL

(CLP-023R, CLP-024R)

CLP-023R/024R-4X-SET \$ 75 / 2 x 1 mL

(CLP-023R-4X, CLP-024R-4X)

CLP-023R/024R-40X-SET \$ 75 / 2 x 1 mL

(CLP-023R-40X, CLP-024R-40X)

CLP-023R/024R-160X-SET \$ 75 / 2 x 1 mL

(CLP-023R-160X, CLP-024R-160X)

CLP - Pesticides

Evaluation Standard Mixture

CLP-017 \$ 25 / 1 x 1 mL
 CLP-017-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
 At stated conc. in Isooctane 4 comps.

Aldrin	(1 µg/mL)	Dibutylchlorodate	(1 µg/mL)
4,4'-DDT	(2 µg/mL)	Endrin	(2 µg/mL)

Florisil Cartridge Check Solution

CLP-FC \$ 10 / 1 x 1 mL
 CLP-FC-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
 100 µg/mL in Acetone

2,4,5-Trichlorophenol

Pesticide Matrix Spiking Solutions

CLP-026-R2 \$ 25 / 1 x 1 mL
 CLP-026-R2-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
 At stated conc. in Acetone 6 comps.

Aldrin	(5 µg/mL)	Dieldrin	(10 µg/mL)
γ-BHC	(5 µg/mL)	Endrin	(10 µg/mL)
4,4'-DDT	(10 µg/mL)	Heptachlor	(5 µg/mL)

CLP-026-R2-10X \$ 25 / 1 x 1 mL
 CLP-026-R2-10X-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
 At stated conc. in Acetone 6 comps.

Aldrin	(50 µg/mL)	Dieldrin	(100 µg/mL)
γ-BHC	(50 µg/mL)	Endrin	(100 µg/mL)
4,4'-DDT	(100 µg/mL)	Heptachlor	(50 µg/mL)

Pesticide Matrix Spiking Solution

CLP-026-R2-WL \$ 10 / 1 x 1 mL
 CLP-026-R2-WL-25ML \$ 50 / 1 x 25 mL
 CLP-026-R2-WL-50ML \$ 75 / 1 x 50 mL
 At stated conc. in Acetone 6 comps.

Aldrin	(0.5 µg/mL)	Dieldrin	(1.0 µg/mL)
γ-BHC	(0.5 µg/mL)	Endrin	(1.0 µg/mL)
4,4'-DDT	(1.0 µg/mL)	Heptachlor	(0.5 µg/mL)

Resolution Check Solution

CLP-028-WL \$ 20 / 1 x 1 mL
 CLP-028-WL-10ML \$ 45 / 1 x 10 mL
 At stated conc. in Isooctane 9 comps.

γ-Chlordane	(10 ng/mL)	Endosulfan sulfate	(20 ng/mL)
Endosulfan I	(10 ng/mL)	Endrin ketone	(20 ng/mL)
p,p'-DDE	(20 ng/mL)	Methoxychlor	(100 ng/mL)
Decachlorobiphenyl	(20 ng/mL)	Tetrachloro- <i>m</i> -xylene	(20 ng/mL)
Dieldrin	(20 ng/mL)		

High Conc. Pesticide Matrix Spiking Solutions

For Water
 CLP-014-1000X \$ 25 / 1 x 1 mL
 CLP-014-1000X-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
 At stated conc. in MeOH 6 comps.

Aldrin	(200 µg/mL)	Endrin	(500 µg/mL)
4,4'-DDT	(500 µg/mL)	Heptachlor	(200 µg/mL)
Dieldrin	(500 µg/mL)	Lindane	(200 µg/mL)

For Soil/Sediment

CLP-016-1000X \$ 25 / 1 x 1 mL
 CLP-016-1000X-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
 At stated conc. in MeOH 6 comps.

Aldrin	(2,000 µg/mL)	Endrin	(5,000 µg/mL)
4,4'-DDT	(5,000 µg/mL)	Heptachlor	(2,000 µg/mL)
Dieldrin	(5,000 µg/mL)	Lindane	(2,000 µg/mL)

Laboratory Control Sample Spiking Solution

CLP-LCS-P-1000X \$ 35 / 1 x 1 mL
 CLP-LCS-P-1000X-PAK **SAVE 20%** \$ 140 / 5 x 1 mL
 At stated conc. in Acetone 7 comps.

γ-BHC	(100 µg/mL)	Endosulfan sulfate	(200 µg/mL)
γ-Chlordane	(100 µg/mL)	Endrin	(200 µg/mL)
Dieldrin	(200 µg/mL)	Heptachlor epoxide	(100 µg/mL)
4,4'-DDE	(200 µg/mL)		

Performance Evaluation Solution

CLP-025-WL \$ 20 / 1 x 1 mL
 CLP-025-WL-10ML \$ 45 / 1 x 10 mL
 At stated conc. in Isooctane 8 comps.

α-BHC	(10 ng/mL)	Decachlorobiphenyl	(20 ng/mL)
β-BHC	(10 ng/mL)	Endrin	(50 ng/mL)
γ-BHC	(10 ng/mL)	Methoxychlor	(250 ng/mL)
4,4'-DDT	(100 ng/mL)	Tetrachloro- <i>m</i> -xylene	(20 ng/mL)

PREP NOTES

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

Pesticide Surrogate Mixtures

CLP-032R-WL-0.2X-10ML \$ 20 / 1 x 10 mL
 CLP-032R-WL-0.2X-50ML \$ 40 / 1 x 50 mL
 CLP-032R-WL-0.2X-100ML \$ 60 / 1 x 100 mL
 0.2 µg/mL each in Acetone 2 comps.

Decachlorobiphenyl	Tetrachloro- <i>m</i> -xylene
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Pesticide and PCBs

Performance Evaluation Solution

CLP-025 \$ 45 / 1 x 1 mL
 CLP-025-PAK **SAVE 20%** \$ 180 / 5 x 1 mL
 At stated conc. in Isooctane 8 comps.

α-BHC	(100 ng/mL)	Decachlorobiphenyl	(200 ng/mL)
β-BHC	(100 ng/mL)	Endrin	(500 ng/mL)
γ-BHC	(100 ng/mL)	Methoxychlor	(2500 ng/mL)
4,4'-DDT	(1000 ng/mL)	Tetrachloro- <i>m</i> -xylene	(200 ng/mL)

Resolution Mixture

CLP-028 \$ 50 / 1 x 1 mL
 CLP-028-PAK **SAVE 20%** \$ 200 / 5 x 1 mL
 At stated conc. in Isooctane 9 comps.

γ-Chlordane	(100 ng/mL)	Dieldrin	(200 ng/mL)
Endosulfan I	(100 ng/mL)	Endosulfan sulfate	(200 ng/mL)
p,p'-DDE	(200 ng/mL)	Endrin ketone	(200 ng/mL)
Decachlorobiphenyl	(200 ng/mL)	Methoxychlor	(1000 ng/mL)
		Tetrachloro- <i>m</i> -xylene	(200 ng/mL)

Polychlorinated Biphenyls, Chlordane & Toxaphene

Each at 1,000 µg/mL in Hexane **SAVE 20%**

Aroclors #	Cat. No.	1 mL	Cat. No. (5 x 1 mL)	PAK
Aroclor 1016	C-216S-H-10X	\$ 20	C-216S-H-10X-PAK	\$ 80
Aroclor 1221	C-221S-H-10X	20	C-221S-H-10X-PAK	80
Aroclor 1232	C-232S-H-10X	20	C-232S-H-10X-PAK	80
Aroclor 1242	C-242S-H-10X	20	C-242S-H-10X-PAK	80
Aroclor 1248	C-248S-H-10X	20	C-248S-H-10X-PAK	80
Aroclor 1254	C-254S-H-10X	20	C-254S-H-10X-PAK	80
Aroclor 1260	C-260S-H-10X	20	C-260S-H-10X-PAK	80
Aroclor 1262	C-262S-H-10X	20	C-262S-H-10X-PAK	80
Aroclor 1268	C-268S-H-10X	20	C-268S-H-10X-PAK	80

Pesticides

Chlordane	P-017S-H-10X	\$ 15	P-017S-H-10X-PAK	\$ 60
Toxaphene	P-093S-H-10X	15	P-093S-H-10X-PAK	60

Aroclors at Working Levels

Aroclors 1016/1260 with Surrogates

CLP-216/260-WL	\$ 10 / 1 x 1 mL
CLP-216/260-WL-5ML	\$ 15 / 1 x 5 mL
CLP-216/260-WL-10ML	\$ 20 / 1 x 10 mL
At stated conc. in Isooctane 4 comps.	

Aroclor 1016	(100 ng/mL)	Decachlorobiphenyl	(20 ng/mL)
Aroclor 1260	(100 ng/mL)	Tetrachloro- <i>m</i> -xylene	(20 ng/mL)

Aroclor 1221 with Surrogates

CLP-221-WL	\$ 10 / 1 x 1 mL
CLP-221-WL-5ML	\$ 15 / 1 x 5 mL
CLP-221-WL-10ML	\$ 20 / 1 x 10 mL
At stated conc. in Isooctane 3 comps.	

Aroclor 1221	(200 ng/mL)	Tetrachloro- <i>m</i> -xylene	(20 ng/mL)
Decachlorobiphenyl	(20 ng/mL)		

Aroclor 1232 with Surrogates

CLP-232-WL	\$ 10 / 1 x 1 mL
CLP-232-WL-5ML	\$ 15 / 1 x 5 mL
CLP-232-WL-10ML	\$ 20 / 1 x 10 mL
At stated conc. in Isooctane 3 comps.	

Aroclor 1232	(100 ng/mL)	Tetrachloro- <i>m</i> -xylene	(20 ng/mL)
Decachlorobiphenyl	(20 ng/mL)		

Aroclor 1242 with Surrogates

CLP-242-WL	\$ 10 / 1 x 1 mL
CLP-242-WL-5ML	\$ 15 / 1 x 5 mL
CLP-242-WL-10ML	\$ 20 / 1 x 10 mL
At stated conc. in Isooctane 3 comps.	

Aroclor 1242	(100 ng/mL)	Tetrachloro- <i>m</i> -xylene	(20 ng/mL)
Decachlorobiphenyl	(20 ng/mL)		

Technical Note

The profiles of some Aroclor products may not always look the same, but the percent total chlorine by weight will be identical.

Aroclor 1248 with Surrogates

CLP-248-WL	\$ 10 / 1 x 1 mL
CLP-248-WL-5ML	\$ 15 / 1 x 5 mL
CLP-248-WL-10ML	\$ 20 / 1 x 10 mL
At stated conc. in Isooctane 3 comps.	

Aroclor 1248	(100 ng/mL)	Tetrachloro- <i>m</i> -xylene	(20 ng/mL)
Decachlorobiphenyl	(20 ng/mL)		

Aroclor 1254 with Surrogates

CLP-254-WL	\$ 10 / 1 x 1 mL
CLP-254-WL-5ML	\$ 15 / 1 x 5 mL
CLP-254-WL-10ML	\$ 20 / 1 x 10 mL
At stated conc. in Isooctane 3 comps.	

Aroclor 1254	(100 ng/mL)	Tetrachloro- <i>m</i> -xylene	(20 ng/mL)
Decachlorobiphenyl	(20 ng/mL)		

Toxaphene with Surrogates

P-093-WL-10X	\$ 12 / 1 x 1 mL
P-093-WL-10X-5ML	\$ 15 / 1 x 5 mL
P-093-WL-10X-10ML	\$ 25 / 1 x 10 mL
At stated conc. in Isooctane 3 comps.	

Toxaphene	(500 ng/mL)	Tetrachloro- <i>m</i> -xylene	(20 ng/mL)
Decachlorobiphenyl	(20 ng/mL)		



Sample Clean-up Solutions at Working Levels

GPC Calibration Solution

CLP-027-WL-10ML	\$ 30 / 1 x 10 mL
At stated conc. in CH ₂ Cl ₂ 5 comps.	

Corn Oil	(25 mg/mL)	Perylene	(0.02 mg/mL)
bis(2-Ethylhexyl)phthalate	(1.0 mg/mL)	Sulfur	(0.08 mg/mL)
Methoxychlor	(0.2 mg/mL)		

GPC Calibration Solution for 8/94 SOW OLM03.1

CLP-027-R2-WL-10ML	\$ 25 / 1 x 10 mL
At stated conc. in CH ₂ Cl ₂ 5 comps.	

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

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

Florisil Cartridge Check Solution

CLP-FC-WL-10ML	\$ 20 / 1 x 10 mL
0.1 µg/mL in Acetone	

2,4,5-Trichlorophenol

GPC Calibration Check Solutions

GPC-CC-A-WL-10ML	\$ 20 / 1 x 10 mL
At stated conc. in CH ₂ Cl ₂ 6 comps.	

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

GPC-CC-B-WL-10ML	\$ 20 / 1 x 10 mL
0.2 µg/mL each in CH ₂ Cl ₂ 2 comps.	

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

Labels, Safety, Storage and Packaging

All organic solutions are in 2 mL Ampules, filled to approximately 1.2 mL to ensure 1 mL can be transferred.

2-Part Label System

Smudgeproof, tear and solvent resistant * (Organic products in ampules)

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



Usage, Handling and Storage

Amber ampules are used to insure 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.

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.

GHS Symbols



- Acute Toxicity (fatal or toxic)

GHS-06



GHS-02

- Flammables
- Self Reactives
- Pyrophorics
- Self-Heating
- Emits Flammable Gas
- Organic Peroxides



GHS-05

- Corrosives
- Skin corrosion/burns
- Eye Damage
- Corrosive to Metals



GHS-07

- Irritant
- Skin Sensitizer
- Acute toxicity (harmful)
- Narcotic Effects
- Respiratory Tract Irritant



GHS-03

- Oxidizers



GHS-08

- Carcinogen
- Respiratory Sensitizer
- Reproductive Toxicity
- Mutagenicity
- Aspiration Toxicity

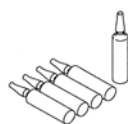


GHS-09

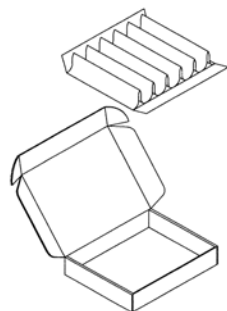
- Aquatic Toxicity

AccuStandard uses recyclable and biogradable material

Package compliant with DOT and International regulations.



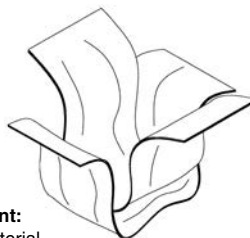
Fluted Tray:
Natural Chipboard



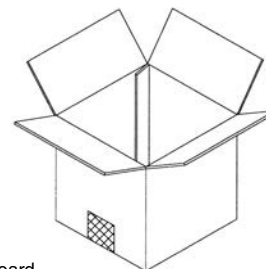
Inside Container:
Corrugated Fiberboard



Cushioning/Absorbent:
Natural Kraft Fiber Material



Shipping Container:
Natural Kraft Corrugated Fiberboard



Standard Mixtures for EPA 500 Series

For Drinking Water



Background Information

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

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

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

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

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

Match frequently requested products.

Alternate Source

ASL products can be used as an independent second source.

Methods 502, 505, 508.1, 525.2

**Thousands of Standards,
just a click away**



AccuStandard.com

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EPA Hazardous Substances List (Volatiles)

HSL Volatiles Standard Mixture

M-HSL *
2.0 mg/mL each in MeOH

\$ 25 / 1 x 1 mL
8 comps.

Acetone
2-Butanone
Carbon disulfide
2-Hexanone

4-Methyl-2-pentanone
Styrene
Vinyl acetate
o-Xylene

* ColdPAK required to maintain integrity of product.

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

Trihalomethanes

M-501
M-501-PAK
0.2 mg/mL each in MeOH
M-501-SET

M-501-10X
M-501-10X-PAK
2.0 mg/mL each in MeOH

Bromoform
Chloroform

\$ 17 / 1 x 1 mL
\$ 68 / 5 x 1 mL
4 comps.
SAVE 20%
\$ 50 / set of 5 x 1 mL
Set contain Each component at 0.2 mg/mL in MeOH + M-501 Mix
\$ 20 / 1 x 1 mL
\$ 80 / 5 x 1 mL
4 comps.
SAVE 20%
Dibromochloromethane
Dichlorobromomethane



EPA Method 500 Series

Method 502.2 Volatile Organic Compounds by PID/ELCD

The following solutions represent a breakdown of Method 502 components into groups containing liquid and gaseous components:

54 Liquid Components

Benzene (01)	1,2-Dibromo-3-chloropropane (18)	1,1-Dichloropropene (33)	Toluene (46)
Bromobenzene (02)	1,2-Dibromoethane (19)	<i>cis</i> -1,3-Dichloropropene (34A) *	1,2,3-Trichlorobenzene (47)
Bromochloromethane (03)	Dibromomethane (20)	<i>trans</i> -1,3-Dichloropropene (34B) **	1,2,4-Trichlorobenzene (48)
Bromodichloromethane (04)	1,2-Dichlorobenzene (21)	Ethylbenzene (35)	1,1,1-Trichloroethane (49)
Bromoform (05)	1,3-Dichlorobenzene (22)	Hexachlorobutadiene (36)	1,1,2-Trichloroethane (50)
<i>n</i> -Butylbenzene (07)	1,4-Dichlorobenzene (23)	Isopropylbenzene (<i>Cumene</i>) (37)	Trichloroethene (51)
<i>sec</i> -Butylbenzene (08)	1,1-Dichloroethane (25)	<i>p</i> -Isopropyltoluene (<i>p-Cymene</i>) (38)	1,2,3-Trichloropropane (53)
<i>tert</i> -Butylbenzene (09)	1,2-Dichloroethane (26)	Methylene chloride (39)	1,2,4-Trimethylbenzene (54)
Carbon tetrachloride (10)	1,1-Dichloroethene (27)	Naphthalene (40)	1,3,5-Trimethylbenzene (55)
Chlorobenzene (11)	<i>cis</i> -1,2-Dichloroethene (28)	<i>n</i> -Propylbenzene (41)	<i>o</i> -Xylene (57)
Chloroform (13)	<i>trans</i> -1,2-Dichloroethene (29)	Styrene (42)	<i>m</i> -Xylene (58)
2-Chlorotoluene (15)	1,2-Dichloropropane (30)	1,1,1,2-Tetrachloroethane (43)	<i>p</i> -Xylene (59)
4-Chlorotoluene (16)	1,3-Dichloropropane (31)	1,1,2,2-Tetrachloroethane (44)	
Dibromochloromethane (17)	2,2-Dichloropropane (32)	Tetrachloroethene (45)	* <i>cis</i> (1.06 x conc.) (34A)
			** <i>trans</i> (0.94 x conc.) (34B)

6 Gas Components

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

54 Liquid Components

M-502A-R	0.2 mg/mL each in MeOH	\$ 60 / 1 x 1 mL
M-502A-R-PAK	0.2 mg/mL each in MeOH	SAVE 20% \$ 240 / 5 x 1 mL
M-502A-R-10X	2.0 mg/mL each in MeOH	\$ 80 / 1 x 1 mL
M-502A-R-10X-PAK	2.0 mg/mL each in MeOH	SAVE 20% \$ 320 / 5 x 1 mL

6 Gas Components

M-502B	0.2 mg/mL each in MeOH	\$ 25 / 1 x 1 mL
M-502B-PAK	0.2 mg/mL each in MeOH	SAVE 20% \$ 100 / 5 x 1 mL
M-502B-10X	2.0 mg/mL each in MeOH	\$ 35 / 1 x 1 mL
M-502B-10X-PAK	2.0 mg/mL each in MeOH	SAVE 20% \$ 140 / 5 x 1 mL

54 Liquid and 6 Gas Component Sets

M-502A-R/B-SET	\$ 80 / 2 x 1 mL
0.2 mg/mL each in MeOH	(M-502A-R, M-502B)
M-502A-R/B-10X-SET	\$ 105 / 2 x 1 mL
2.0 mg/mL each in MeOH	(M-502A-R-10X, M-502B-10X)

Internal & Surrogate Standard

M-502-IS/SS	\$ 20 / 1 x 1 mL
M-502-IS/SS-PAK	SAVE 20% \$ 80 / 5 x 1 mL
2.0 mg/mL each in MeOH	4 comps.

1-Chloro-3-fluorobenzene
2-Chloropropane

Fluorobenzene
 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	\$ 20 / 1 x 1 mL
M-502-IS-ASL-PAK	SAVE 20% \$ 80 / 5 x 1 mL
2.0 mg/mL each in MeOH	2 comps.
2-Bromo-1-chloropropane	1-Chloro-2-fluorobenzene

o,m,p-Xylenes Mix

M-502-60	0.2 mg/mL in MeOH	\$ 10 / 1 x 1 mL
M-502-60-10X	2.0 mg/mL in MeOH	\$ 14 / 1 x 1 mL
		3 comps.
<i>o</i> -Xylene (57)	<i>p</i> -Xylene (59)	
<i>m</i> -Xylene (58)		

Technical Note

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

All 60 liquid & gas components in One Solution

Liquids (54 comps.) and Gases (6 comps.)

M-502	\$ 75 / 1 x 1 mL
M-502-PAK	SAVE 20% \$ 300 / 5 x 1 mL
0.2 mg/mL each in MeOH	60 comps.
M-502-10X	\$ 100 / 1 x 1 mL
M-502-10X-PAK	SAVE 20% \$ 400 / 5 x 1 mL
2.0 mg/mL each in MeOH	60 comps.

Liquids (54 comps.) & Gases (6 comps.) plus MtBE

M-502-R1	\$ 75 / 1 x 1 mL (liquid and gases)
M-502-R1-PAK	SAVE 20% \$ 300 / 5 x 1 mL (liquid and gases)
0.2 mg/mL each in MeOH	61 comps.

Liquids (54 comps.) plus MtBE

M-502A-R3	\$ 60 / 1 x 1 mL
0.2 mg/mL each in MeOH	
M-502A-R3-10X	\$ 80 / 1 x 1 mL
2.0 mg/mL each in MeOH	55 comps.

59 Component Set

As a complete set of each component in individual ampules.

M-502-SET	0.2 mg/mL in MeOH	\$ 300 / 59 x 1 mL
M-502-10X-SET	2.0 mg/mL in MeOH	\$ 350 / 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	\$ 10 / 1 x 1 mL
M-502-#-10X	2.0 mg/mL in MeOH	\$ 14 / 1 x 1 mL

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

M-502-34-R	\$ 10 / 1 x 1 mL
0.4 mg/mL each in MeOH	
M-502-34-R-10X	\$ 15 / 1 x 1 mL
4.0 mg/mL each in MeOH	2 comps.

cis-1,3-Dichloropropene

trans-1,3-Dichloropropene

Individual Component Neats

To order, specify identity

M-502-#N	\$ 20 / 1 x 1 gram
except,	

\$ 40 / 1 x 1 gram

\$ 60 / 1 x 1 gram

M-502-04N	M-502-31N
M-502-08N	M-502-32N
M-502-17N	M-502-34N
M-502-18N	M-502-43N
M-502-28N	M-502-44N
M-502-29N	

M-502-49N



Method 502.2 (Continued) VOCs by PID/ELCD

The following solutions represent an alternate source formulation of Method 502/524 components based on similar volatility groups.

M-502-K1-SET

\$ 150 / 6 x 1 mL
(M-502B-10X, M-502C-02, M-502C-03,
M-502C-04, M-502C-05, M-502C-06)

M-502B-10X M-502B-10X-PAK

2.0 mg/mL each in MeOH

Alternate Source

\$ 35 / 1 x 1 mL
SAVE 20% \$ 140 / 5 x 1 mL
6 comps.

Bromomethane
Chloroethane
Chloromethane

Dichlorodifluoromethane
Trichlorofluoromethane
Vinyl chloride

M-502C-02 M-502C-02-PAK

2.0 mg/mL each in MeOH

Alternate Source

\$ 35 / 1 x 1 mL
SAVE 20% \$ 140 / 5 x 1 mL
6 comps.

Bromodichloromethane
Dibromochloromethane
1,1-Dichloroethylene

cis-1,2-Dichloroethylene
trans-1,2-Dichloroethylene
Methylene chloride

M-502C-03 M-502C-03-PAK

2.0 mg/mL each in MeOH

Alternate Source

\$ 35 / 1 x 1 mL
SAVE 20% \$ 140 / 5 x 1 mL
9 comps.

Bromochloromethane
Bromoform
Carbon tetrachloride
Chloroform
Dibromomethane

1,1-Dichloroethane
2,2-Dichloropropane
Tetrachloroethylene
1,1,1-Trichloroethane

M-502C-04 M-502C-04-PAK

2.0 mg/mL each in MeOH

Alternate Source

\$ 35 / 1 x 1 mL
SAVE 20% \$ 140 / 5 x 1 mL
14 comps.

1,2-Dibromo-3-chloropropane
1,2-Dibromoethane
1,2-Dichloroethane
1,2-Dichloropropane
1,3-Dichloropropane
1,1-Dichloropropylene
cis-1,3-Dichloropropene *
trans-1,3-Dichloropropene **

Hexachlorobutadiene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane
Trichloroethylene
1,2,3-Trichloropropane

* cis (1.06 x conc.)
** trans (0.94 x conc.)

M-502C-05 M-502C-05-PAK

2.0 mg/mL each in MeOH

Alternate Source

\$ 35 / 1 x 1 mL
SAVE 20% \$ 140 / 5 x 1 mL
13 comps.

Benzene
Bromobenzene
n-Butylbenzene
Ethylbenzene
p-Isopropyltoluene
Naphthalene
Styrene

Toluene
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
m-Xylene

M-502C-06 M-502C-06-PAK

2.0 mg/mL each in MeOH

Alternate Source

\$ 35 / 1 x 1 mL
SAVE 20% \$ 140 / 5 x 1 mL
12 comps.

sec-Butylbenzene
tert-Butylbenzene
Chlorobenzene
2-Chlorotoluene
4-Chlorotoluene
1,2-Dichlorobenzene

1,3-Dichlorobenzene
1,4-Dichlorobenzene
Isopropylbenzene
n-Propylbenzene
o-Xylene
p-Xylene

Method 502.2 Volatile Organic Mixtures

Custom Unregulated VOC's

M-502C-09

2.0 mg/mL each in MeOH

\$ 60 / 1 x 1 mL
39 comps.

Bromobenzene
Bromochloromethane
Bromodichloromethane
Bromoform
Bromomethane
n-Butylbenzene
sec-Butylbenzene
tert-Butylbenzene
Chloroethane
Chloroform
Chloromethane
2-Chlorotoluene
4-Chlorotoluene
Dibromochloromethane
Dibromomethane
1,3-Dichlorobenzene
Dichlorodifluoromethane
1,1-Dichloroethane
1,2-Dichloropropane
1,3-Dichloropropane
2,2-Dichloropropane

1,1-Dichloropropene
cis-1,3-Dichloropropene *
trans-1,3-Dichloropropene **
Hexachlorobutadiene
Isopropylbenzene (Cumene)
p-Isopropyltoluene (p-Cymene)
Dichloromethane (Methylene chloride)
Naphthalene
n-Propylbenzene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
1,1,2-Trichloroethane
Trichlorofluoromethane
1,2,3-Trichloropropane
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene (Mesitylene)

* cis (1.06 x conc.)
** trans (0.94 x conc.)

Wisconsin DNR VOC Mixture

S-989

2.0 mg/mL each in MeOH

\$ 100 / 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

Match frequently requested products

Alternate Source

ASL products can be used as an
independent second source



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.

M-502D/E/F-SET

\$ 120 / set of 3 x 1 mL
(set includes M-502D, M-502E and M-502F)

Mix D

M-502D

0.2 mg/mL each in MeOH

\$ 45 / 1 x 1 mL

26 comps.

Benzene	Dichlorodifluoromethane
Bromobenzene	2,2-Dichloropropane
Bromochloromethane	Ethyl benzene
Bromoform	Ethylene dibromide
sec-Butyl benzene	Isopropylbenzene
Carbon tetrachloride	Tetrachloroethene
Chloroethane	1,1,1,2-Tetrachloroethane
4-Chlorotoluene	Toluene
Dibromomethane	1,2,3-Trichlorobenzene
1,2-Dichlorobenzene	1,2,4-Trichlorobenzene
1,4-Dichlorobenzene	Trichloroethene
1,1-Dichloroethene	Vinyl chloride
trans-1,2-Dichloroethene	o-Xylene

Mix E

M-502E

0.2 mg/mL each in MeOH

\$ 45 / 1 x 1 mL

21 comps.

Bromomethane	Hexachlorobutadiene
Chlorobenzene	Methylene chloride
Chloromethane	1,1,1-Trichloroethane
2-Chlorotoluene	1,1,2-Trichloroethane
Dibromochloromethane	Trichlorofluoromethane
1,3-Dichlorobenzene	Styrene
1,1-Dichloroethane	1,2,3-Trichloropropane
1,2-Dichloroethane	1,2,4-Trimethylbenzene
cis-1,2-Dichloroethene	m-Xylene
1,2-Dichloropropane	
cis-1,3-Dichloropropene*	* cis (1.06 x conc.)
trans-1,3-Dichloropropene**	** trans (0.94 x conc.)

Mix F

M-502F

0.2 mg/mL each in MeOH

\$ 45 / 1 x 1 mL

13 comps.

Bromodichloromethane	p-Isopropyl toluene
n-Butyl benzene	Naphthalene
tert-Butyl benzene	n-Propyl benzene
Chloroform	1,1,2,2-Tetrachloroethane
1,2-Dibromo-3-chloropropane	1,3,5-Trimethyl benzene
1,3-Dichloropropane	p-Xylene
1,1-Dichloropropene	

Mixtures of Internal, Surrogate Standards & Fortification Solutions

Internal Standard

M-502-IS

M-502-IS-PAK

2.0 mg/mL each in MeOH

\$ 20 / 1 x 1 mL

SAVE 20% \$ 80 / 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

\$ 30 / 1 x 1 mL

SAVE 20% \$ 120 / 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

\$ 20 / 1 x 1 mL

Methylene chloride-d ₂

Internal Standard

M-524-IS

M-524-IS-PAK

2.0 mg/mL each in MeOH

\$ 20 / 1 x 1 mL

SAVE 20% \$ 80 / 5 x 1 mL

2 comps.

1,2-Dichlorobenzene-d ₄	Fluorobenzene
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Internal Standard 2

M-524-IS-2

M-524-IS-2-PAK

2.0 mg/mL in MeOH

\$ 12 / 1 x 1 mL

SAVE 20% \$ 48 / 5 x 1 mL

Fluorobenzene

Fortification Solution

M-524-FS

M-524-FS-PAK

2.0 mg/mL each in MeOH

\$ 25 / 1 x 1 mL

SAVE 20% \$ 100 / 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

\$ 20 / 1 x 1 mL

SAVE 20% \$ 80 / 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 \$ 20 / 1 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

1-Chloro-2-bromopropane
Fluorobenzene

M-524-IS-2 \$ 12 / 1 x 1 mL
2.0 mg/mL in MeOH

Fluorobenzene

M-524-IS \$ 20 / 1 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

1,2-Dichlorobenzene-d₄
Fluorobenzene

M-502-IS-2 \$ 30 / 1 x 1 mL
2.0 mg/mL each in MeOH 3 comps.

1-Chloro-2-bromopropane
Fluorobenzene
Methylene chloride-d₂

M-001R \$ 15 / 1 x 1 mL
20 mg/mL each in MeOH 3 comps.

Bromochloromethane
1,4-Dichlorobutane
2-Bromo-1-chloropropane

M-8020-IS \$ 25 / 1 x 1 mL
0.2 mg/mL each in MeOH 2 comps.

4-Bromofluorobenzene
α,α,α-Trifluorotoluene

M-8240/60-IS \$ 30 / 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 \$ 30 / 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 \$ 30 / 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 \$ 20 / 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

200 µg/mL each in MeOH

2-Bromochlorobenzene
4-Bromochlorobenzene
Bromochloromethane
p-Bromofluorobenzene
2-Bromo-1-chloropropane
1-Chloro-2-fluorobenzene
1-Chloro-3-fluorobenzene
1-Chloro-4-fluorobenzene

\$ 60 / 1 x 1 mL

15 comps.

2-Chloropropane
Dibromofluoromethane
1,4-Dichlorobutane
1,4-Difluorobenzene
Fluorobenzene
Pentafluorobenzene
α,α,α-Trifluorotoluene

Deuterated ISTD/SS Evaluation Mixture

M-DEUT-IS/SS

200 µg/mL each in MeOH

\$ 60 / 1 x 1 mL

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

2.0 mg/mL each in MeOH

\$ 20 / 1 x 1 mL

2 comps.

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

Alternate Source

M-524-SS

2.0 mg/mL each in MeOH

\$ 20 / 1 x 1 mL

2 comps.

4-Bromofluorobenzene
1,2-Dichlorobenzene-d₄

M-624-SS-M

20 mg/mL each in MeOH

\$ 25 / 1 x 1 mL

3 comps.

4-Bromofluorobenzene
Fluorobenzene
Pentafluorobenzene

M-8020-SS

2.0 mg/mL each in MeOH

\$ 30 / 1 x 1 mL

3 comps.

4-Bromochlorobenzene
1,4-Difluorobenzene
Fluorobenzene

M-8021-SS

2.0 mg/mL each in MeOH

\$ 20 / 1 x 1 mL

2 comps.

4-Bromochlorobenzene
1,4-Dichlorobutane

M-8021-SS-M

2.0 mg/mL each in MeOH

\$ 20 / 1 x 1 mL

2 comps.

Bromochloromethane
1,4-Dichlorobutane

M-8021A-SS

20 mg/mL each in MeOH

\$ 20 / 1 x 1 mL

4 comps.

4-Bromochlorobenzene 1,4-Dichlorobutane
Bromochloromethane 2-Bromo-1-chloropropane

M-8240/60-SS

0.2 mg/mL each in MeOH

\$ 30 / 1 x 1 mL

4 comps.

p-Bromofluorobenzene 1,2-Dichloroethane-d₄
Dibromofluoromethane Toluene-d₈

Popular ISTD/SS Standards

M-502-IS/SS

2.0 mg/mL each in MeOH

\$ 20 / 1 x 1 mL

4 comps.

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

M-502-IS-QC

1.0 mg/mL each in MeOH

\$ 20 / 1 x 1 mL

3 comps.

1-Chloro-2-bromopropane
1-Chloro-2-fluorobenzene
Fluorobenzene

M-524-FS

2.0 mg/mL each in MeOH

\$ 25 / 1 x 1 mL

3 comps.

4-Bromofluorobenzene
1,2-Dichlorobenzene-d₄
Fluorobenzene

M-8010-IS/SS

150 µg/mL each in MeOH

\$ 25 / 1 x 1 mL

3 comps.

4-Bromochlorobenzene
Bromochloromethane
4-Bromofluorobenzene

M-8020-IS/SS-ASL

1.5 mg/mL each in MeOH

\$ 35 / 1 x 1 mL

5 comps.

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

M-8240/60-IS/SS

0.2 mg/mL each in MeOH

\$ 45 / 1 x 1 mL

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

200 µg/mL each in MeOH

\$ 40 / 1 x 1 mL

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 \$ 40 / 1 x 1 mL
M-503-PAK **SAVE 20%** \$ 160 / 5 x 1 mL
0.2 mg/mL each in MeOH 28 comps.

Benzene	4-Isopropyltoluene
Bromobenzene	Naphthalene
n-Butylbenzene	n-Propylbenzene
sec-Butylbenzene	Styrene
tert-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 \$ 20 / 1 x 1 mL
M-602-SS-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
0.2 mg/mL in MeOH
 α,α,α -Trifluorotoluene

Method 504 EDB & DBCP by ECD

EDB & DBCP

M-504 \$ 15 / 1 x 1 mL
M-504-PAK **SAVE 20%** \$ 60 / 5 x 1 mL
0.2 mg/mL each in MeOH
M-504-10X \$ 15 / 1 x 1 mL
M-504-10X-PAK **SAVE 20%** \$ 60 / 5 x 1 mL
2.0 mg/mL each in MeOH 2 comps.
1,2-Dibromoethane (EDB) 1,2-Dibromo-3-chloropropane (DBCP)

Method 504.1 EDB, DBCP & TCP by ECD

Calibration Stock Solution

M-504.1-CSS \$ 15 / 1 x 1 mL
M-504.1-CSS-PAK **SAVE 20%** \$ 60 / 5 x 1 mL
0.2 mg/mL each in MeOH 3 comps.
1,2-Dibromoethane (EDB) 1,2,3-Trichloropropane
1,2-Dibromo-3-chloropropane (DBCP)

Laboratory Fortified Blank Sample Concentrate

M-504.1-LFB \$ 15 / 1 x 1 mL
M-504.1-LFB-PAK **SAVE 20%** \$ 60 / 5 x 1 mL
0.25 µg/mL each in MeOH 3 comps.
1,2-Dibromoethane (EDB) 1,2,3-Trichloropropane
1,2-Dibromo-3-chloropropane (DBCP)

MDL Check Sample Concentrate

M-504.1-MDL \$ 15 / 1 x 1 mL
M-504.1-MDL-PAK **SAVE 20%** \$ 60 / 5 x 1 mL
0.02 µg/mL each in MeOH 3 comps.
1,2-Dibromoethane (EDB) 1,2,3-Trichloropropane
1,2-Dibromo-3-chloropropane (DBCP)

Method 504 Set

M-504.1-SET \$ 30 / 3 x 1 mL
(M-504.1-CSS, M-504.1-LFB, M-504.1-MDL)

Method 505 Organohalide Pesticides by Microextraction & GC/ECD

M-505R-2 \$ 45 / 1 x 1 mL
M-505R-2-PAK **SAVE 20%** \$ 180 / 5 x 1 mL
At stated conc. in MeOH 16 comps.

Alachlor (10 µg/mL)	Heptachlor epoxide (1 µg/mL)
Aldrin (1 µg/mL)	Hexachlorobenzene (1 µg/mL)
Atrazine (250 µg/mL)	Hexachlorocyclopentadiene (1 µg/mL)
α -Chlordane (1 µg/mL)	Lindane (1 µg/mL)
γ -Chlordane (1 µg/mL)	Methoxychlor (5 µg/mL)
Dieldrin (1 µg/mL)	cis-Nonachlor (1 µg/mL)
Endrin (1 µg/mL)	trans-Nonachlor (1 µg/mL)
Heptachlor (1 µg/mL)	Simazine (250 µg/mL)

M-505-ASL **Alternate Source** \$ 45 / 1 x 1 mL
M-505-ASL-PAK **SAVE 20%** \$ 180 / 5 x 1 mL
At stated conc. in Acetone 12 comps.

Alachlor (50 µg/mL)	Heptachlor (20 µg/mL)
Aldrin (20 µg/mL)	Heptachlor epoxide (Isomer B) (20 µg/mL)
Atrazine (500 µg/mL)	Hexachlorobenzene (10 µg/mL)
γ -BHC (20 µg/mL)	Hexachlorocyclopentadiene (20 µg/mL)
Dieldrin (20 µg/mL)	Methoxychlor (200 µg/mL)
Endrin (20 µg/mL)	Simazine (100 µg/mL)

Multi-Component Analytes

(Polychlorinated Biphenyls, Chlordane & Toxaphene)

Each at 1,000 µg/mL in Hexane **AccuPAK™ (5 x 1 mL)**
SAVE 20%

Aroclors #	Cat. No.	1 mL	Cat. No.	PAK
Aroclor 1016	C-216S-H-10X	\$ 20	C-216S-H-10X-PAK	\$ 80
Aroclor 1221	C-221S-H-10X	20	C-221S-H-10X-PAK	80
Aroclor 1232	C-232S-H-10X	20	C-232S-H-10X-PAK	80
Aroclor 1242	C-242S-H-10X	20	C-242S-H-10X-PAK	80
Aroclor 1248	C-248S-H-10X	20	C-248S-H-10X-PAK	80
Aroclor 1254	C-254S-H-10X	20	C-254S-H-10X-PAK	80
Aroclor 1260	C-260S-H-10X	20	C-260S-H-10X-PAK	80
Aroclor 1262	C-262S-H-10X	20	C-262S-H-10X-PAK	80
Aroclor 1268	C-268S-H-10X	20	C-268S-H-10X-PAK	80
Pesticides				
Chlordane	P-017S-H-10X	\$ 15	P-017S-H-10X-PAK	\$ 60
Toxaphene	P-093S-H-10X	15	P-093S-H-10X-PAK	60

Degradation Standard

P-045S \$ 22 / 1 x 1 mL
100 µg/mL in MeOH
Endrin

Method 506 Phthalate Esters by PID

Phthalate Esters

M-506 \$ 25 / 1 x 1 mL
M-506-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
1.0 mg/mL each in Isooctane 7 comps.

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

M-506-QC \$ 25 / 1 x 1 mL
M-506-QC-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
At stated conc. in MeOH 7 comps.

Benzyl butyl phthalate (0.25 mg/mL)	bis(2-Ethylhexyl)adipate (1.2 mg/mL)
Dimethyl phthalate (0.1 mg/mL)	bis(2-Ethylhexyl)phthalate (0.25 mg/mL)
Diethyl phthalate (0.1 mg/mL)	Di-n-octyl phthalate (0.65 mg/mL)
Di-n-butyl phthalate (0.1 mg/mL)	



Method 507 Nitrogen & Phosphorus Containing Pesticides by GC/NPD

Method 507 Set M-507-R-SET

\$ 325 / 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

\$ 30 / 1 x 1 mL
SAVE 20% \$ 120 / 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

\$ 60 / 1 x 1 mL
SAVE 20% \$ 240 / 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

\$ 45 / 1 x 1 mL
SAVE 20% \$ 180 / 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

\$ 25 / 1 x 1 mL
SAVE 20% \$ 100 / 5 x 1 mL
2 comps.

Methyl paraoxon

Simazine

Mix G

M-507G

M-507G-PAK

1.0 mg/mL each in MtBE

\$ 60 / 1 x 1 mL
SAVE 20% \$ 240 / 5 x 1 mL
8 comps.

Benefin
Isopropalin
Pendimethalin
Oxadiazon

Oxyfluorfen
Propachlor
Profluralin
Trifluralin

Mix C

M-507C

M-507C-PAK

1.0 mg/mL each in MtBE

\$ 75 / 1 x 1 mL
SAVE 20% \$ 300 / 5 x 1 mL
9 comps.

Butachlor
Carboxin
Diazinon
Metolachlor
Metribuzin

MGK-264
Norflurazon
Terbufos
Vernolate

Mix H

M-507H

M-507H-PAK

1.0 mg/mL each in MtBE

\$ 15 / 1 x 1 mL
SAVE 20% \$ 60 / 5 x 1 mL

DEF (for Merphos quantitation)

Mix D

M-507D

M-507D-PAK

1.0 mg/mL each in MtBE

\$ 80 / 1 x 1 mL
SAVE 20% \$ 320 / 5 x 1 mL
10 comps.

Alachlor
Atraton
Bromacil
Butylate
Chlorpropham

Hexazinone
Molinate
Pronamide
Stirofos
Tricyclazole

Performance Check Solution

M-507-QC

M-507-QC-PAK

At stated conc. in MtBE

\$ 30 / 1 x 1 mL
SAVE 20% \$ 120 / 5 x 1 mL
6 comps.

Atrazine (150 ng/mL)
DNB (2500 ng/mL)
Bromacil (5000 ng/mL)

Prometon (300 ng/mL)
TPP (2500 ng/mL)
Vernolate (50 ng/mL)

Surrogate Standard

M-507-SS

M-507-SS-PAK

0.25 mg/mL in MtBE

M-507-SS-4X

1.0 mg/mL in MtBE

\$ 10 / 1 x 1 mL
SAVE 20% \$ 40 / 5 x 1 mL

\$ 20 / 1 x 1 mL

1,3-Dimethyl-2-nitrobenzene

Internal Standard

M-507-IS

M-507-IS-PAK

0.5 mg/mL in MtBE

M-507-IS-10X

5.0 mg/mL in MtBE

\$ 10 / 1 x 1 mL
SAVE 20% \$ 40 / 5 x 1 mL

\$ 20 / 1 x 1 mL

Triphenyl phosphate



EPA Method 500 Series

Method 508 Chlorinated Pesticides by GC/ECD

Chlorinated Pesticides Mix A

M-508P-A \$ 55 / 1 x 1 mL
M-508P-A-PAK **SAVE 20%** \$ 220 / 5 x 1 mL
1.0 mg/mL each in MtBE 17 comps.

Aldrin	4,4'-DDE	Endrin
α -BHC	4,4'-DDT	Endrin aldehyde
β -BHC	Dieldrin	Heptachlor
δ -BHC	Endosulfan I	Heptachlor epoxide
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 \$ 10 / 1 x 1 mL
M-508-IS-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
0.1 mg/mL in MtBE
M-508-IS-10X \$ 20 / 1 x 1 mL
1.0 mg/mL in MtBE

Pentachloronitrobenzene

Surrogate Standards

M-508-SS \$ 10 / 1 x 1 mL
M-508-SS-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
0.5 mg/mL in MtBE
4,4'-Dichlorobiphenyl

M-508-SS-2 \$ 10 / 1 x 1 mL
M-508-SS-2-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
0.5 mg/mL in MtBE
Decachlorobiphenyl

Decomposition Solution

M-508-DS-100X \$ 15 / 1 x 1 mL
M-508-DS-100X-PAK **SAVE 20%** \$ 60 / 5 x 1 mL
At stated conc. in MtBE 2 comps.
p,p'-DDT (200 μ g/mL) Endrin (100 μ g/mL)

Performance Check Solution

M-508-QC \$ 25 / 1 x 1 mL
M-508-QC-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
At stated conc. in MtBE 4 comps.
 δ -BHC (40 ng/mL) Chlorpyrifos (2 ng/mL)
Chlorothalonil (50 ng/mL) Dacthal (50 ng/mL)

Chlorinated Pesticides Mix B

M-508P-B-R \$ 45 / 1 x 1 mL
M-508P-B-R-PAK **SAVE 20%** \$ 180 / 5 x 1 mL
1.0 mg/mL each in MtBE 13 comps.

α -Chlordane	Chlorpyrifos	<i>cis</i> -Permethrin (0.5 mg/mL)
γ -Chlordane	DCPA	<i>trans</i> -Permethrin (1.5 mg/mL)
Chlorobenzilate	Etridiazole	Propachlor
Chloroneb	Hexachlorobenzene	Trifluralin
Chlorothalonil		

Certificate will reflect actual *cis/trans* permethrin ratio

M-508P-B-R2 \$ 45 / 1 x 1 mL
M-508P-B-R2-PAK **SAVE 20%** \$ 180 / 5 x 1 mL
1.0 mg/mL each in MtBE 15 comps.

α -Chlordane	Chlorpyrifos	<i>cis</i> -Permethrin (0.5 mg/mL)
γ -Chlordane	DCPA	<i>trans</i> -Permethrin (1.5 mg/mL)
Chlorobenzilate	Etridiazole	Propachlor
Chloroneb	Hexachlorobenzene	Trifluralin
Chlorothalonil	Cyanazine	<i>trans</i> -Nonachlor

Certificate will reflect actual *cis/trans* permethrin ratio

Method 508A PCBs by Perchlorination / GC

Aroclor® Stock Solution

M-508A-1 \$ 15 / 1 x 1 mL
M-508A-1-PAK **SAVE 20%** \$ 60 / 5 x 1 mL
5.0 mg/mL in MeOH
Aroclor 1260

DCB Stock Solution

M-508A-2 \$ 15 / 1 x 1 mL
M-508A-2-PAK **SAVE 20%** \$ 60 / 5 x 1 mL
1.0 mg/mL in Toluene
Decachlorobiphenyl

Perchlorinated Aromatics

Neats	Cat. No.	Price / Unit
Decachlorobiphenyl	C-209N	\$ 12 / 10 mg
Hexachlorobenzene	A-012	12 / 100 mg
Octachlorodibenzofuran	F-801N	30 / 50 mg
Octachlorodibenzo- <i>p</i> -dioxin	D-801N	80 / 50 mg

Solutions	35 μ g/mL in Toluene	1 mL
Octachlorostyrene	PC-001S	\$ 25
Perchlorinated p,p'-DDE	PC-002S	25
Tetradecachloro- <i>o</i> -terphenyl	T-004S	25
Tetradecachloro- <i>m</i> -terphenyl	T-005S	25
Tetradecachloro- <i>p</i> -terphenyl	T-006S	25
Aroclor 5442	T-442S	25



Method 508.1 Chlorinated Pesticides, Herbicides & Organo-Halides by Liquid - Solid Extraction & ECD

Chlorinated Pesticide Mix #1

M-508.1-X1 \$ 70 / 1 x 1 mL
M-508.1-X1-PAK **SAVE 20%** \$ 280 / 5 x 1 mL
 500 µg/mL each in Ethyl acetate 19 comps.

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

Chlorinated Pesticide Mix #2

M-508.1-X2 \$ 70 / 1 x 1 mL
M-508.1-X2-PAK **SAVE 20%** \$ 280 / 5 x 1 mL
 500 µg/mL each in Ethyl acetate 17 comps.

Alachlor	Hexachlorocyclopentadiene
Atrazine	Metolachlor
Chlorobenzilate	Metribuzin
Chloroneb	cis-Permethrin
Chlorothalonil	trans-Permethrin
Cyanazine	Propachlor
DCPA	Simazine
Etridiazole	Trifluralin
Hexachlorobenzene	

Certificate will reflect actual cis/trans permethrin ratio

Regulated Pesticide Mix (SDWA)

M-508.1-ASL \$ 60 / 1 x 1 mL
M-508.1-ASL-PAK **SAVE 20%** \$ 240 / 5 x 1 mL
 100 µg/mL each in MtBE 17 comps.

Alachlor	Dieldrin	Methoxychlor
Aldrin	Endrin	Metolachlor
Atrazine	Heptachlor	Metribuzin
β-BHC	Heptachlor epoxide (Isomer B)	Propachlor
α-Chlordane	Hexachlorobenzene	Simazine
γ-Chlordane	Hexachlorocyclopentadiene	

Decomposition Solution

M-508.1-DS-100X \$ 15 / 1 x 1 mL
M-508.1-DS-100X-PAK **SAVE 20%** \$ 60 / 5 x 1 mL
 100 µg/mL each in Ethyl acetate 2 comps.

4,4'-DDT	Endrin
----------	--------

Internal Standard Solution

M-508.1-IS \$ 15 / 1 x 1 mL
M-508.1-IS-PAK **SAVE 20%** \$ 60 / 5 x 1 mL
 100 µg/mL each in Ethyl acetate

Pentachloronitrobenzene

Surrogate Standard Solution

M-508.1-SS \$ 15 / 1 x 1 mL
M-508.1-SS-PAK **SAVE 20%** \$ 60 / 5 x 1 mL
 100 µg/mL each in Ethyl acetate

4,4'-Dibromobiphenyl

Performance Check Solution

M-508.1-QC \$ 25 / 1 x 1 mL
M-508.1-QC-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
 At stated conc. in MtBE 4 comps.

δ-BHC	(400 ng/mL)	Chlorpyrifos	(20 ng/mL)
Chlorothalonil	(500 ng/mL)	DCPA	(500 ng/mL)

Method 509 Ethylene Thiourea by GC/NPD

Performance Check Solution

M-509-PC \$ 50 / 1 x 1 mL
 At stated conc. in Ethyl acetate containing 0.1% w/v DTT (scavenger) 3 comps.

Ethylene thiourea	(10 ng/mL)
4-Methylimidazolidine-2-thione	(100 ng/mL)
3,4,5,6-Tetrahydro-2-pyrimidinethiol	(1000 ng/mL)

Ethylene Thiourea Standard

M-509 \$ 15 / 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 \$ 15 / 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 \$ 35 / 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 \$ 25 / 1 x 10 mL
 1.0 mg/mL in Ethyl acetate
 Dithiothreitol (DTT)

Thousands of Standards,
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EPA Method 500 Series

Method 515.1 Chlorinated Acids in Water by GC/ECD

Methyl Derivatives

M-515-R \$ 115 / 1 x 1 mL
M-515-R-PAK **SAVE 20%** \$ 460 / 5 x 1 mL
 1.0 mg/mL each in MtBE as methyl derivatives 16 comps.

Acifluorfen, ME	3,5-Dichlorobenzoic acid, ME
Bentazon, ME	Dichlorprop, ME
Chloramben, ME	Dinoseb, ME
2,4-D, ME	4-Nitrophenol, ME
Dalapon, ME	Pentachlorophenol, ME
2,4-DB, ME	Picloram, ME
DCPA, Di ME	2,4,5-T, ME
Dicamba, ME	2,4,5-TP, ME

Underivatized Analytes

M-515A-R2 \$ 90 / 1 x 1 mL
M-515A-R2-PAK **SAVE 20%** \$ 360 / 5 x 1 mL
 At stated conc. in MeOH 16 comps.

Acifluorfen (100 µg/mL)	3,5-Dichlorobenzoic acid (100 µg/mL)
Bentazon (200 µg/mL)	Dichlorprop (300 µg/mL)
Chloramben (100 µg/mL)	Dinoseb (200 µg/mL)
2,4-D (200 µg/mL)	4-Nitrophenol (100 µg/mL)
Dalapon (1300 µg/mL)	Pentachlorophenol (100 µg/mL)
2,4-DB (800 µg/mL)	Picloram (100 µg/mL)
DCPA acid (100 µg/mL)	2,4,5-T (100 µg/mL)
Dicamba (100 µg/mL)	2,4,5-TP (100 µg/mL)

Technical Note

If you require the complete absence of partial esterification, we recommend M-515.4A and M-515.3A products.

Performance Check Solution

M-515-QC \$ 20 / 1 x 1 mL
M-515-QC-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
 At stated conc. in MtBE 3 comps.

3,5-Dichlorobenzoic acid methyl ester	(600 ng/mL)
Dinoseb methyl ether	(4 ng/mL)
4-Nitroanisole	(1600 ng/mL)

Performance Check Solution with ISTD & SS

M-515-QC-R \$ 30 / 1 x 1 mL
M-515-QC-R-PAK **SAVE 20%** \$ 120 / 5 x 1 mL
 At stated conc. in MtBE 5 comps.

4,4'-Dibromooctafluorobiphenyl (ISTD)	(250 ng/mL)
3,5-Dichlorobenzoic acid methyl ester	(600 ng/mL)
2,4-Dichlorophenyl acetic acid methyl ester (SS)	(500 ng/mL)
Dinoseb methyl ether	(4 ng/mL)
4-Nitroanisole	(1600 ng/mL)

Internal Standard

M-515-IS \$ 20 / 1 x 1 mL
M-515-IS-PAK **SAVE 20%** \$ 80 / 1 x 1 mL
 0.1 mg/mL in MtBE

4,4'-Dibromooctafluorobiphenyl

Surrogate Standards

M-515-SS \$ 10 / 1 x 1 mL
M-515-SS-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
 0.1 mg/mL in MtBE
M-515-SS-50X \$ 30 / 5 x 1 mL
 5.0 mg/mL in MtBE

2,4-Dichlorophenylacetic acid methyl ester

P-244S \$ 12 / 1 x 1 mL
 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 \$ 75 / 1 x 1 mL
M-515.2-1-PAK **SAVE 20%** \$ 300 / 5 x 1 mL
 At stated conc. in MeOH 6 comps.

DCPA, ME (100 µg/mL)	Dinoseb, ME (200 µg/mL)
3,5-Dichlorobenzoic acid, ME (500 µg/mL)	Pentachlorophenol, ME (100 µg/mL)
Dichlorprop, ME (100 µg/mL)	2,4,5-T, ME (100 µg/mL)

M-515.2-2 \$ 80 / 1 x 1 mL
M-515.2-2-PAK **SAVE 20%** \$ 320 / 5 x 1 mL
 At stated conc. in MeOH 7 comps.

Acifluorfen, ME (200 µg/mL)	Dicamba, ME (300 µg/mL)
Bentazon, ME (1000 µg/mL)	Picloram, ME (300 µg/mL)
2,4-D, ME (100 µg/mL)	2,4,5-TP, ME (100 µg/mL)
2,4-DB, ME (1000 µg/mL)	

Underivatized Analytes

M-515.2A-1 \$ 40 / 1 x 1 mL
M-515.2A-1-PAK **SAVE 20%** \$ 160 / 5 x 1 mL
 At stated conc. in MeOH 6 comps.

DCPA acid (100 µg/mL)	Dinoseb (200 µg/mL)
3,5-Dichlorobenzoic acid (500 µg/mL)	Pentachlorophenol (100 µg/mL)
Dichlorprop (100 µg/mL)	2,4,5-T (100 µg/mL)

M-515.2A-2 \$ 45 / 1 x 1 mL
M-515.2A-2-PAK **SAVE 20%** \$ 180 / 5 x 1 mL
 At stated conc. in MeOH 7 comps.

Acifluorfen (200 µg/mL)	Dicamba (300 µg/mL)
Bentazon (1000 µg/mL)	Picloram (300 µg/mL)
2,4-D (100 µg/mL)	2,4,5-TP (100 µg/mL)
2,4-DB (1000 µg/mL)	

Method 515.1 & 515.2 Chlorinated Acids in Water by GC/ECD

Laboratory Performance Check Solution

M-8150/51-LPC-5ML \$ 20 / 1 x 5 mL
 At stated conc. in Isooctane 5 comps.

3,5-Dichlorobenzoic acid (600 ng/mL)	DCAA (500 ng/mL)
Dinoseb (4 ng/mL)	DBOB (250 ng/mL)
4-Nitrophenol (1600 ng/mL)	



Method 515.3 Chlorinated Acids in Drinking Water by ECD

Underivatized Acids

M-515.3A \$ 70 / 1 x 1 mL
M-515.3A-PAK **SAVE 20%** \$ 280 / 5 x 1 mL
 At stated conc. in Acetone 17 comps.

Acifluorfen (50 µg/mL)	3,5-Dichlorobenzoic acid (50 µg/mL)
Bentazon (100 µg/mL)	Dichlorprop (100 µg/mL)
Chloramben (50 µg/mL)	Dinoseb (100 µg/mL)
2,4-D (100 µg/mL)	4-Nitrophenol (100 µg/mL)
Dalapon (100 µg/mL)	Pentachlorophenol (10 µg/mL)
2,4-DB (100 µg/mL)	Picloram (100 µg/mL)
DCPA Diacid (50 µg/mL)	2,4,5-T (25 µg/mL)
DCPA monoacid (50 µg/mL)	Silvex (25 µg/mL)
Dicamba (50 µg/mL)	

Laboratory Performance Check

Methyl Derivatives

M-515.3-LPC \$ 30 / 1 x 1 mL
M-515.3-LPC-PAK **SAVE 20%** \$ 120 / 5 x 1 mL
 At stated conc. in MtBE 4 comps.

2,4-DB methyl ester (25 µg/mL)	Chloramben methyl ester (12.5 µg/mL)
Dinoseb methyl ether (25 µg/mL)	4-Nitroanisole (25 µg/mL)

Independent Check Standard Methyl Derivatives

M-515.3-ICS \$ 105 / 1 x 1 mL
M-515.3-ICS-PAK **SAVE 20%** \$ 420 / 5 x 1 mL
 At stated conc. in MtBE 16 comps.

Acifluorfen methyl ester (50 µg/mL)	Methyl-3,5-Dichlorobenzoate (50 µg/mL)
Bentazon methyl (100 µg/mL)	Dichlorprop methyl ester (100 µg/mL)
Chloramben methyl ester (50 µg/mL)	Dinoseb methyl ether (100 µg/mL)
2,4-D methyl ester (100 µg/mL)	4-Nitroanisole (100 µg/mL)
Dalapon methyl ester (100 µg/mL)	Pentachloroanisole (10 µg/mL)
2,4-DB methyl ester (100 µg/mL)	Picloram methyl ester (100 µg/mL)
Dacthal (100 µg/mL)	2,4,5-T methyl ester (25 µg/mL)
Dicamba methyl ester (50 µg/mL)	Silvex methyl ester (25 µg/mL)

Internal Standard

M-515-IS \$ 20 / 1 x 1 mL
M-515-IS-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
 0.1 mg/mL in MtBE

4,4'-Dibromooctafluorobiphenyl

Method 515.4 Chlorinated Acids in Drinking Water by ECD

Underivatized Acids

M-515.4A \$ 70 / 1 x 1 mL
M-515.4A-PAK **SAVE 20%** \$ 280 / 5 x 1 mL
 At stated conc. in Acetone 17 comps.

Acifluorfen (50 µg/mL)	3,5-Dichlorobenzoic acid (50 µg/mL)
Bentazon (100 µg/mL)	Dichlorprop (100 µg/mL)
Chloramben (50 µg/mL)	Dinoseb (100 µg/mL)
2,4-D (100 µg/mL)	Pentachlorophenol (10 µg/mL)
Dalapon (100 µg/mL)	Picloram (50 µg/mL)
2,4-DB (100 µg/mL)	2,4,5-T (25 µg/mL)
DCPA Diacid (50 µg/mL)	Silvex (25 µg/mL)
DCPA monoacid (50 µg/mL)	Quinclorac (50 µg/mL)
Dicamba (50 µg/mL)	

Underivatized Surrogate

M-8150B-SS \$ 10 / 1 x 1 mL
M-8150B-SS-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
 0.1 mg/mL in Acetone
 2,4-Dichlorophenylacetic acid

Quality Control Sample Methyl Derivatives

M-515.4-QCS \$ 125 / 1 x 1 mL
M-515.4-QCS-PAK **SAVE 20%** \$ 500 / 5 x 1 mL
 At stated conc. in MtBE 16 comps.

Acifluorfen methyl ester (50 µg/mL)	Methyl-3,5-Dichlorobenzoate (50 µg/mL)
Bentazon methyl (100 µg/mL)	Dichlorprop methyl ester (100 µg/mL)
Chloramben methyl ester (50 µg/mL)	Dinoseb methyl ether (100 µg/mL)
2,4-D methyl ester (100 µg/mL)	Pentachloroanisole (10 µg/mL)
Dalapon methyl ester (100 µg/mL)	Picloram methyl ester (50 µg/mL)
2,4-DB methyl ester (100 µg/mL)	2,4,5-T methyl ester (25 µg/mL)
Dacthal (100 µg/mL)	Silvex methyl ester (25 µg/mL)
Dicamba methyl ester (50 µg/mL)	Quinclorac methyl ester (50 µg/mL)

Technical Note

M-515.3A and M-515.4A are to be used as procedural standards for the calibration of the method. These standards should be carried through the entire extraction and derivatization procedure associated with the samples.

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EPA Method 500 Series

Method 521 Nitrosamines by SPE & Capillary Column GC

Analyte Stock Solution

M-521 \$ 50 / 1 x 1 mL
200 µg/mL each in CH₂Cl₂ 7 comps.

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

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

Internal Standard Stock Solution

M-521-IS \$ 50 / 1 x 1 mL
M-521-IS-PAK **SAVE 20%** \$ 200 / 5 x 1 mL
1.0 mg/mL in CH₂Cl₂

N-Nitrosodi-n-propylamine-d₄

Surrogate Standard Stock Solution

M-521-SS \$ 35 / 1 x 1 mL
M-521-SS-PAK **SAVE 20%** \$ 140 / 5 x 1 mL
1.0 mg/mL in CH₂Cl₂

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 * \$ 55 / 1 x 1 mL
M-524R-B-PAK * **SAVE 20%** \$ 220 / 5 x 1 mL
2.0 mg/mL each in MeOH 24 comps.

Acetone
Acrylonitrile
Allyl chloride
2-Butanone
Carbon disulfide
Chloroacetonitrile
1-Chlorobutane
trans-1,4-Dichloro-2-butene
1,1-Dichloropropanone
Diethyl ether
Ethyl methacrylate
Hexachloroethane

2-Hexanone
Methacrylonitrile
Methylacrylate
Methyl iodide
Methylmethacrylate
4-Methyl-2-pentanone
Methyl-*t*-butyl ether
Nitrobenzene
2-Nitropropane
Pentachloroethane
Propionitrile
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 \$ 20 / 1 x 1 mL
M-502-IS-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

1-Chloro-2-bromopropane

Fluorobenzene

M-502-IS-2 \$ 30 / 1 x 1 mL
M-502-IS-2-PAK **SAVE 20%** \$ 120 / 5 x 1 mL
2.0 mg/mL each in MeOH 3 comps.

1-Chloro-2-bromopropane
Fluorobenzene

Methylene chloride-d₂

M-524-IS \$ 20 / 1 x 1 mL
M-524-IS-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

1,2-Dichlorobenzene-d₄

Fluorobenzene

Method 524.2 VOCs by GC/MS (Continued)

M-524-IS-2 \$ 12 / 1 x 1 mL
M-524-IS-2-PAK **SAVE 20%** \$ 48 / 5 x 1 mL
2.0 mg/mL in MeOH
M-524-IS-2-10X \$ 20 / 5 x 1 mL
20 mg/mL in MeOH

Fluorobenzene

Fortification Standard

M-524-FS \$ 25 / 1 x 1 mL
M-524-FS-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
2.0 mg/mL each in MeOH 3 comps.

4-Bromofluorobenzene
1,2-Dichlorobenzene-d₄

Fluorobenzene

Surrogate Standard

M-524-SS \$ 20 / 1 x 1 mL
M-524-SS-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

4-Bromofluorobenzene

1,2-Dichlorobenzene-d₄

GC/MS Tuning Solution

M-624-SS-03-10X \$ 10 / 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 \$ 85 / 1 x 1 mL
M-524R-C-PAK **SAVE 20%** \$ 340 / 5 x 1 mL
2.0 mg/mL each in MeOH 18 comps.

1,3-Butadiene
1-Chlorobutane
Allyl chloride
Carbon disulfide
Chlorodifluoromethane
Diethyl ether
Diisopropyl ether
Ethyl methacrylate
Hexachloroethane

Methyl acetate
Methyl iodide
Methyl-*t*-butyl ether
Pentachloroethane
t-Amyl ethyl ether
t-Amyl methyl ether
t-Butyl alcohol
t-Butyl ethyl ether
Tetrahydrofuran

Internal Standard

M-524R-C-IS \$ 40 / 1 x 1 mL
M-524R-C-IS-PAK **SAVE 20%** \$ 160 / 5 x 1 mL
2.0 mg/mL each in MeOH 3 comps.

1,4-Difluorobenzene
Chlorobenzene-d₆

1,4-Dichlorobenzene-d₄

Internal and Surrogate Standard

M-524R-C-IS/SS \$40 / 1 x 1 mL
M-524R-C-IS/SS-PAK **SAVE 20%** \$160 / 5 x 1 mL
2.0 mg/mL each in MeOH 6 comps.

1,4-Difluorobenzene
Chlorobenzene-d₆
1,4-Dichlorobenzene-d₄

tert-Butyl methyl ether-d₃
p-Bromofluorobenzene
1,2-Dichlorobenzene-d₄

Surrogate Standard

M-524R-C-SS \$ 50 / 1 x 1 mL
M-524R-C-SS-PAK **SAVE 20%** \$ 200 / 5 x 1 mL
2.0 mg/mL each in MeOH 3 comps.

tert-Butyl methyl ether-d₃
1,2-Dichlorobenzene-d₄

p-Bromofluorobenzene

* 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	\$ 30 / 1 x 1 mL
M-525-1-PAK	SAVE 20% \$ 120 / 5 x 1 mL
0.1 mg/mL each in Acetone	13 comps.
M-525-1-5X	\$ 30 / 1 x 1 mL
M-525-1-5X-PAK	SAVE 20% \$ 120 / 5 x 1 mL
0.5 mg/mL each in Acetone	13 comps.

Acenaphthylene
Anthracene
Benz[a]anthracene
Benzo[b]fluoranthene
Benzo[k]fluoranthene
Benzo[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	\$ 75 / 1 x 1 mL
M-525-3-PAK	SAVE 20% \$ 300 / 5 x 1 mL
0.1 mg/mL each in Acetone	
M-525-3-5X	\$ 95 / 1 x 1 mL
M-525-3-5X-PAK	SAVE 20% \$ 380 / 5 x 1 mL
0.5 mg/mL each in Acetone	12 comps.

Alachlor
Aldrin
Atrazine
 α -Chlordane
 γ -Chlordane
Endrin

Heptachlor
Heptachlor epoxide
Lindane
Methoxychlor
Simazine
trans-Nonachlor

PCB Congener Mixtures

M-525-2	\$ 35 / 1 x 1 mL
M-525-2-PAK	SAVE 20% \$ 140 / 5 x 1 mL
0.1 mg/mL each in Acetone	8 comps.
M-525-2-5X	\$ 50 / 1 x 1 mL
M-525-2-5X-PAK	SAVE 20% \$ 200 / 5 x 1 mL
0.5 mg/mL each in Acetone	8 comps.

2-Chlorobiphenyl (#1)
2,3-Dichlorobiphenyl (#5)
2,2',3,3',4,4',6-Heptachlorobiphenyl (#171)
2,2',4,4',5,6'-Hexachlorobiphenyl (#154)
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (#200)
2,2',3',4,6-Pentachlorobiphenyl (#98)
2,2',4,4'-Tetrachlorobiphenyl (#47)
2,4,5-Trichlorobiphenyl (#29)

Semi-Volatile Mixtures

M-525-4	\$ 25 / 1 x 1 mL
M-525-4-PAK	SAVE 20% \$ 100 / 5 x 1 mL
0.1 mg/mL in Acetone (PCP 0.4 mg/mL)	
M-525-4-5X	\$ 25 / 1 x 1 mL
M-525-4-5X-PAK	SAVE 20% \$ 100 / 5 x 1 mL
0.5 mg/mL in Acetone (PCP 2.0 mg/mL)	9 comps.

Butylbenzylphthalate
di-n-Butylphthalate
Diethylphthalate
bis(2-Ethylhexyl)adipate
Dimethylphthalate

Hexachlorobenzene
Hexachlorocyclopentadiene
bis(2-Ethylhexyl)phthalate
Pentachlorophenol (PCP)

Multi-Component / Analyte

M-525-5	\$ 20 / 1 x 1 mL
M-525-5-PAK	SAVE 20% \$ 80 / 5 x 1 mL
2.5 mg/mL in Acetone	
Toxaphene	

Internal Standard

M-525-IS	\$ 50 / 1 x 1 mL
M-525-IS-PAK	SAVE 20% \$ 200 / 5 x 1 mL
2.0 mg/mL each in CH_2Cl_2	4 comps.

Acenaphthene- d_{10}
Chrysene- d_{12}

Perylene- d_{12}
Phenanthrene- d_{10}

Fortification Standards

M-525-FS-1	\$ 50 / 1 x 1 mL
M-525-FS-1-PAK	SAVE 20% \$ 200 / 5 x 1 mL
0.5 mg/mL each in Acetone	4 comps.

Acenaphthene- d_{10}
Chrysene- d_{12}

Perylene- d_{12}
Phenanthrene- d_{10}

M-525-FS-2	\$ 20 / 1 x 1 mL
M-525-FS-2-PAK	SAVE 20% \$ 80 / 5 x 1 mL
0.5 mg/mL in CH_2Cl_2	
<i>p</i> -Terphenyl- d_{14}	

Tuning Standards

CLP-TS	\$ 20 / 1 x 1 mL
CLP-TS-PAK	SAVE 20% \$ 80 / 5 x 1 mL
50 μ g/mL in CH_2Cl_2	

Perfluorokerosene

M-525-TS	\$ 20 / 1 x 1 mL
M-525-TS-PAK	SAVE 20% \$ 80 / 5 x 1 mL
0.1 mg/mL in CH_2Cl_2	
DFTPP	

Surrogate Standard

M-525-SS	\$ 30 / 1 x 1 mL
M-525-SS-PAK	SAVE 20% \$ 120 / 5 x 1 mL
0.5 mg/mL in Acetone	
Pyrene- d_{10}	

Buy the Complete Set and Save

Method 525 Organic Compounds in Drinking Water Sets

M-525-R-SET	\$ 150 / 5 x 1 mL (M-525-1, M-525-2, M-525-3, M-525-4, M-525-5)
M-525-R-5X-SET	\$ 170 / 5 x 1 mL (M-525-1-5X, M-525-2-5X, M-525-3-5X, M-525-4-5X, M-525-5)
M-525-SET	\$ 200 / 7 x 1 mL (M-525-1-5X, M-525-2-5X, M-525-3-5X, M-525-4-5X, M-525-5, M-525-IS, M-525-TS)



EPA Method 500 Series

Method 525.2 (Revision 1.0) Organic Compounds in Drinking Water by Liquid-Solid Extraction and Capillary GC/MS

All 112 analytes (excluding Disulfoton sulfoxide and Disulfoton sulfone which can be found in the Pesticide section) listed in this revision can be found in the mixes below. We realize that many labs will not be analyzing for all of these analytes at one time since it is not practical or necessary in many instances. If all the analytes must be determined, the following multiple calibration mixes are offered to accomplish this task. Several of these mixes are from our current product line and are grouped as nitrogen/phosphorus pesticides, organochlorine pesticides, semi-volatiles, polyaromatics, PCB congeners, and individual multi-component solutions for the Aroclors and Toxaphene. These solutions can be purchased individually or as a complete set for your laboratory's particular needs. Additionally, the required surrogate, internal, and tuning standards are offered below.

Nitrogen/Phosphorus Pesticides

M-507A \$ 30 / 1 x 1 mL
1.0 mg/mL each in MtBE 6 comps.

Ametryn	Fenamiphos
Cycloate	Merphos
Disulfoton	Prometon

M-507B \$ 45 / 1 x 1 mL
1.0 mg/mL each in MtBE 9 comps.

Atrazine	Prometryne
Diphenamid	Propazine
EPTC	Terbutryn
Ethoprop	Triadimefon
Mevinphos	

M-507C \$ 75 / 1 x 1 mL
1.0 mg/mL each in MtBE 9 comps.

Butachlor	MGK-264
Carboxin	Norflurazon
Diazinon	Terbufos
Metolachlor	Vernolate
Metribuzin	

M-507D \$ 80 / 1 x 1 mL
1.0 mg/mL each in MtBE 10 comps.

Alachlor	Hexazinone
Atraton	Molinate
Bromacil	Pronamide
Butylate	Stirofos
Chlorpropham	Tricyclazole

M-507E \$ 60 / 1 x 1 mL
1.0 mg/mL each in MtBE 8 comps.

Dichlorvos	Pebulate (Tillam)
Fenarimol	Simetryn
Fluridone	Tebuthiuron
Napropamide	Terbacil

M-507F-R2 \$ 25 / 1 x 1 mL
1.0 mg/mL each in Acetone 2 comps.

Methyl paraoxon	Simazine
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Auxiliary Standards

Internal Standard

M-525.2-IS \$ 40 / 1 x 1 mL
M-525.2-IS-PAK **SAVE 20%** \$ 160 / 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 \$ 30 / 1 x 1 mL
M-525.2-SS-PAK **SAVE 20%** \$ 120 / 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 \$ 50 / 1 x 1 mL
M-525.2-IS/SS-PAK **SAVE 20%** \$ 200 / 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 \$ 30 / 1 x 1 mL
0.5 mg/mL each in CH₂Cl₂ 3 comps.

4,4'-DDT	Endrin
DFTPP	

Technical Note

Endrin & DDT can break down in the injection port at elevated temperatures. Breakdown can be monitored by running the Pesticide Degradation Standard (M-8081-DS). The problem can be alleviated by replacing the dirty injection port liner, or by using a lower injection port temperature.

Multi-Component Technical Solutions

Toxaphene

M-525-5 \$ 20 / 1 x 1 mL
2.5 mg/mL in Acetone

Aroclor® 1016

C-216S-M-28.5X \$ 15 / 1 x 1 mL
1.0 mg/mL in MeOH

Aroclor 1254

C-254S-M-28.5X \$ 15 / 1 x 1 mL
1.0 mg/mL in MeOH

Aroclor 1260

C-260S-M-28.5X \$ 15 / 1 x 1 mL
1.0 mg/mL in MeOH

Complete Method 525.2 Set

M-525.2-SET *

\$ 650 / 18 x 1 mL

M-507A
M-507B
M-507C

M-507D
M-507E
M-507F-R2

M-508P-A
M-508P-B-R2
M-525-1-5X

M-525-2-5X
M-525-4R-5X
M-525-5

M-525.2-IS
M-525.2-SS
M-525.2-TS

C-216S-M-28.5X
C-254S-M-28.5X
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

\$ 55 / 1 x 1 mL

SAVE 20% \$ 220 / 5 x 1 mL

17 comps.

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

Mix B

M-508P-B-R2

M-508P-B-R2-PAK

1.0 mg/mL each in MtBE

\$ 45 / 1 x 1 mL

SAVE 20% \$ 180 / 5 x 1 mL

15 comps.

α-Chlordane	Etridiazole
γ-Chlordane	Hexachlorobenzene
Chlorobenzilate	trans-Nonachlor
Chloroneb	cis-Permethrin (0.5 mg/mL)
Chlorothalonil	trans-Permethrin (1.5 mg/mL)
Chlorpyrifos	Propachlor
Cyanazine	Trifluralin
DCPA	

Certificate will reflect actual cis/trans permethrin ratio

Semi-Volatile Analytes

PAH Mixtures

M-525-1-5X

0.5 mg/mL each in Acetone

\$ 30 / 1 x 1 mL

13 comps.

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

PCB Congener Mixtures

M-525-2-5X

0.5 mg/mL each in Acetone

\$ 50 / 1 x 1 mL

8 comps.

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

Semi-Volatile Mixtures

M-525-4-R-5X

0.5 mg/mL each in Acetone

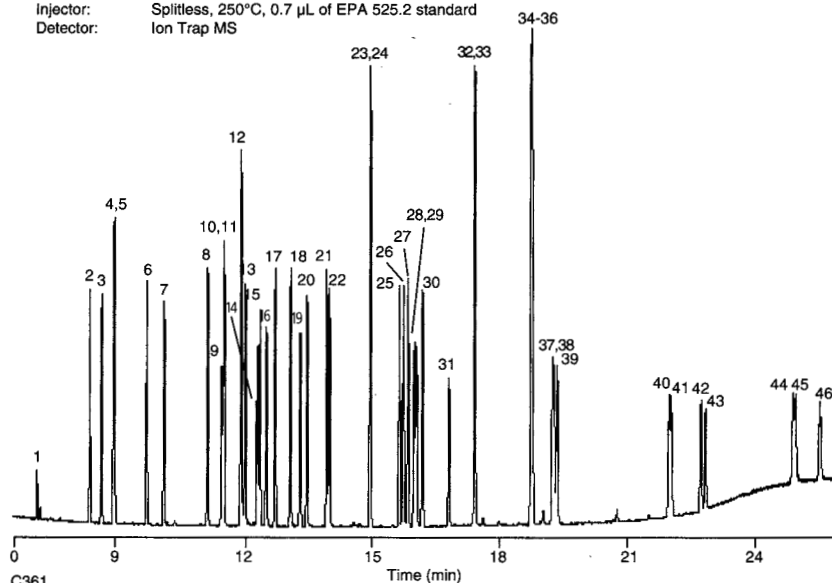
\$ 30 / 1 x 1 mL

11 comps.

Butylbenzylphthalate	2,6-Dinitrotoluene
di-n-Butylphthalate	Hexachlorocyclopentadiene
Diethylphthalate	bis(2-Ethylhexyl)phthalate
bis(2-Ethylhexyl)adipate	Isophorone
Dimethylphthalate	Pentachlorophenol (2.0 mg/mL)
2,4-Dinitrotoluene	

EPA Method 525.2

Column: DB-XLB
30 m x 0.25 mm I.D., 0.25 µm
Agilent p/n: 122-1232
Carrier: Helium at 33.3 cm/sec, measured at 150°C
Oven: 60°C for 0.5 min
60-160°C at 20°/min
160-325°C at 10°/min
325-350°C at 25°/min
350°C for 5 min
Injector: Splitless, 250°C, 0.7 µL of EPA 525.2 standard
Detector: Ion Trap MS



Compound Name	m/z	RT
1. Hexachlorocyclopentadiene	237	07:07
2. Dimethylphthalate	163	08:22
3. Acenaphthylene	152	08:39
4. Acenaphthene-d10	164	08:55
5. 2-Chlorobiphenyl	188	08:57
6. Diethylphthalate	149	09:43
7. Fluorene	166	10:07
8. 2,3-Dichlorobiphenyl	222	11:09
9. Hexachlorobenzene	284	11:29
10. Simazine	201	11:31
11. Atrazine	200,215	11:33
12. Pentachlorophenol	266	11:56
13. Lindane	181	12:02
14. Phenanthrene-d10	188	12:19
15. Phenanthrene	178	12:23
16. Anthracene	178	12:32
17. 2,4,5-Trichlorobiphenyl	256	12:45
18. Alachlor	160	13:06
19. Heptachlor	100,160	13:19
20. Di-n-butylphthalate	149	13:29
21. 2,2',4,4'-Tetrachlorobiphenyl	292	13:57
22. Aldrin	66	14:01
23. Heptachlor epoxide	81,353	14:57
24. 2,2',3',4,6-Pentachlorobiphenyl	326	14:58
25. γ-Chlordane	375	15:39
26. α-Chlordane	375	15:45
27. trans-Nonachlor	409	15:52
28. Pyrene-d10	212	16:00
29. Pyrene	202	16:04
30. 2,2',3',4,6-Pentachlorobiphenyl	326	16:12
31. Endrin	81	16:49
32. Butylbenzylphthalate	149	17:25
33. Di(2-ethylhexyl)adipate	129	17:26
34. 2,2',3,3',4,5',6,6'-Octachlorobiphenyl	430	18:47
35. Methoxychlor	227	18:46
36. Di(2-ethylhexyl)phthalate	149	18:45
37. Benz[a]anthracene	228	19:15
38. Chrysene-d12	240	19:16
39. Chrysene	228	19:22
40. Benzo[b]fluoranthene	252	21:59
41. Benzo[k]fluoranthene	252	22:02
42. Benzo[a]pyrene	252	22:44
43. Perylene-d12	264	22:50
44. Dibenz[a,h]anthracene	278	24:54
45. Indeno[1,2,3-c,d]pyrene	276	24:56
46. Benzo[g,h,i]perylene	276	25:31



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 \$ 170 / 1 x 1 mL
M-525.2-NP1-ASL-PAK **Alternate Source** **SAVE 20%** \$ 680 / 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 \$ 55 / 1 x 1 mL
M-525.2-SV-ASL-PAK **Alternate Source** **SAVE 20%** \$ 220 / 5 x 1 mL
100 µg/mL each in Acetone 33 comps.

Acenaphthylene	2,4-Dinitrotoluene
Anthracene	2,6-Dinitrotoluene
Benz[a]anthracene	Fluorene
Benzo[b]fluoranthene	Hexachlorobenzene
Benzo[k]fluoranthene	2,2',4,4',5,6'-Hexachlorobiphenyl
Benzo[g,h,i]perylene	2,2',3,3',4,4',6-Heptachlorobiphenyl
Benzo[a]pyrene	Hexachlorocyclopentadiene
Benzyol 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 \$ 170 / 1 x 1 mL
100 µg/mL each in Acetone **Alternate Source** 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 \$ 35 / 1 x 1 mL
M-525-REG-ASL-PAK **Alternate Source** **SAVE 20%** \$ 140 / 5 x 1 mL
0.5 mg/mL each in Acetone 6 comps.

Benzo[a]pyrene	Hexachlorobenzene
bis(2-Ethylhexyl)adipate	Hexachlorocyclopentadiene
bis(2-Ethylhexyl)phthalate	Pentachlorophenol (2.0 mg/mL)

ISTD/SS Fortification Solution

M-525.2-FS-ASL \$ 69 / 1 x 1 mL
M-525.2-FS-ASL-PAK **Alternate Source** **SAVE 20%** \$ 276 / 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 \$ 60 / 1 x 1 mL
M-525.2-NP2-ASL-PAK **Alternate Source** **SAVE 20%** \$ 240 / 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 \$ 110 / 1 x 1 mL
M-525.2-CP-ASL-PAK **Alternate Source** **SAVE 20%** \$ 440 / 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 \$ 35 / 1 x 1 mL
M-525.2-SS2-ASL-PAK **Alternate Source** **SAVE 20%** \$ 140 / 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 \$ 125 / 1 x 1 mL
100 µg/mL each in Ethyl acetate 25 comps.
M-525-REG-EA-5X \$ 150 / 1 x 1 mL
500 µg/mL each in Ethyl acetate 25 comps.

Alachlor	Endrin
Aldrin	Heptachlor
Atrazine	Heptachlor epoxide (isomer B)
Benzo(a)pyrene	Hexachlorobenzene
Butachlor	Hexachlorocyclopentadiene
α-Chlordane	Lindane
γ-Chlordane	Methoxychlor
Cyanazine	Metolachlor
Dieldrin	Metribuzin
2,4-Dinitrotoluene	trans-Nonachlor
2,6-Dinitrotoluene	Propachlor
bis(2-Ethylhexyl)adipate	Simazine
bis(2-Ethylhexyl)phthalate	



Method 526 Semi-Volatiles by GC/MS

Primary Dilution Standard

M-526-0.2X-EA	\$ 40 / 1 x 1 mL
M-526-0.2X-EA-PAK	SAVE 20% \$ 160 / 5 x 1 mL
200 µg/mL each in Ethyl acetate	11 comps.
M-526	\$ 50 / 1 x 1 mL
M-526-PAK	SAVE 20% \$ 200 / 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	\$ 45 / 1 x 1 mL
M-526-IS/SS-PAK	SAVE 20% \$ 180 / 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-0.05X	\$ 15 / 1 x 1 mL
5 µg/mL in CH ₂ C ₂	
DFTPP	

Internal Standard

M-525.2-IS	\$ 40 / 1 x 1 mL
M-525.2-IS-PAK	SAVE 20% \$ 160 / 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	\$ 25 / 1 x 1 mL
M-526-SS-PAK	SAVE 20% \$ 100 / 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	\$ 250 / 1 x 1 mL
50 µg/mL each in Isooctane:Ethyl Acetate (80:20)	5 comps.

2,2',4,4'-Tetrabromodiphenyl ether	2,2',4,4',5,5'-Hexabromodiphenyl ether
2,2',4,4',6-Pentabromodiphenyl ether	2,2',4,4',5,5'-Hexabromobiphenyl
2,2',4,4',5-Pentabromodiphenyl ether	

Pesticide Mix A

M-527-PEST-A	\$ 125 / 1 x 1 mL
500 µg/mL each in MeOH	11 comps.

Atrazine	Kepone
Bioallethrin, S-cyclopentyl isomer	Norflurazon
Bromacil	Oxychlorodane isomer
Esfenvalerate	Prometryne
Fenvalerate	Propazine
Hexazinone	

Pesticide Mix B

M-527-PEST-B	\$ 100 / 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	\$ 40 / 1 x 1 mL
M-525.2-IS-PAK	SAVE 20% \$ 160 / 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	\$ 30 / 1 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 \$ 45 / 1 x 1 mL
M-528-CONC-PAK **SAVE 20%** \$ 180 / 5 x 1 mL
2000 µg/mL each in CH₂Cl₂ 12 comps.

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

Internal Standard

M-528-IS \$ 35 / 1 x 1 mL
M-528-IS-PAK **SAVE 20%** \$ 140 / 5 x 1 mL
At stated conc. in CH₂Cl₂ 2 comps.

1,2-Dimethyl-3-nitrobenzene	(1000 µg/mL)
2,3,4,5-Tetrachlorophenol	(2000 µg/mL)

Peak Tailing Factor Standard

M-528-PTF \$ 20 / 1 x 1 mL
M-528-PTF-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
10 µg/mL each in CH₂Cl₂ 4 comps.

2,4-Dimethylphenol	4-Nitrophenol
2-Methyl-4,6-dinitrophenol	Pentachlorophenol

Analyte Fortification Solution

M-528-AFS \$ 40 / 1 x 1 mL
M-528-AFS-PAK **SAVE 20%** \$ 160 / 5 x 1 mL
At stated conc. in MeOH 12 comps.

4-Chloro-3-methylphenol (100 µg/mL)	2-Methyl-4,6-Dinitrophenol (500 µg/mL)
2-Chlorophenol (100 µg/mL)	2-Nitrophenol (100 µg/mL)
o-Cresol (100 µg/mL)	4-Nitrophenol (500 µg/mL)
2,4-Dichlorophenol (100 µg/mL)	Pentachlorophenol (500 µg/mL)
2,4-Dimethylphenol (100 µg/mL)	Phenol (100 µg/mL)
2,4-Dinitrophenol (500 µg/mL)	2,4,6-Trichlorophenol (100 µg/mL)

Surrogate Standards

M-528-SS \$ 55 / 1 x 1 mL
M-528-SS-PAK **SAVE 20%** \$ 220 / 5 x 1 mL
At stated conc. in MeOH 3 comps.

2-Chlorophenol-d ₄	(1000 µg/mL)
2,4-Dimethylphenol-3,5,6-d ₃	(1000 µg/mL)
2,4,6-Tribromophenol	(2500 µg/mL)

M-528-SS2 \$ 50 / 1 x 1 mL
M-528-SS2-PAK **SAVE 20%** \$ 200 / 5 x 1 mL
At stated conc. in MeOH 3 comps.

2-Chlorophenol-d ₄	(1000 µg/mL)
2,4-Dimethylphenol-3,5,6-d ₃	(1000 µg/mL)
2,4,6-Tribromophenol	(2000 µg/mL)

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

Method 529 Calibration Curve

All in µg/mL in Ethyl acetate Storage Cond.: Freeze (<-10°C)

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 \$ 325 / 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 \$ 325 / 7 x 1 mL
M-529-01, M-529-02, M-529-03, M-529-04,
M-529-05, M-529-06, M-529-07

Storage Condition.: Freeze (<-10°C)

Internal Standard Stock Solution

M-529-IS \$ 20 / 1 x 1 mL
2.0 mg/mL Ethyl acetate
3,4-Dinitrotoluene

Internal Standard Fortification Solution

M-529-ISFS \$ 90 / 1 x 1 mL
200 µg/mL Ethyl acetate:AcCN (96:4) 14 comps.

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

Surrogate Analyte Stock Solutions

M-529-SS1 \$ 55 / 1 x 1 mL
M-529-SS1-PAK **SAVE 20%** \$ 220 / 5 x 1 mL
1000 µg/mL each in MeOH 2 comps.
1,3,5-Trimethyl-2-nitrobenzene 1,2,4-Trimethyl-5-nitrobenzene

M-529-SS2 \$ 15 / 1 x 1 mL
M-529-SS2-PAK **SAVE 20%** \$ 60 / 5 x 1 mL
1000 µg/mL each in CH₂Cl₂
Nitrobenzene-d₅

Surrogate Analyte Fortification Solution

M-529-SAFS \$ 60 / 1 x 1 mL
100 µg/mL each in MeOH 3 comps.
1,3,5-Trimethyl-2-nitrobenzene Nitrobenzene-d₅
1,2,4-Trimethyl-5-nitrobenzene



Method 531 + 531.1 N-Methyl carbamoyl oximes & N-Methyl carbamates by HPLC

M-531-SET \$ 90 / set of 11 x 1 mL
Each at 0.1 mg/mL in AcCN Analytes listed below

Each at 0.1 mg/mL in AcCN	Cat. No.	Price / 1 mL
Aldicarb sulfoxide	M-531-01	\$ 20
Aldicarb sulfone	M-531-02	20
Oxamyl	M-531-03	12
Methomyl	M-531-04	12
3-Hydroxycarbofuran	M-531-05	20
Aldicarb	M-531-06	12
Propoxur	M-531-07	12
Carbofuran	M-531-08	12
Carbaryl	M-531-09	12
1-Naphthol	M-531-10	12
Methiocarb	M-531-11	12

M-531M \$ 60 / 1 x 1 mL
M-531M-PAK **SAVE 20%** \$ 240 / 5 x 1 mL
0.1 mg/mL each in AcCN 11 comps.

Performance Check Solution

M-531-QC-R \$ 30 / 1 x 1 mL
At stated conc. in AcCN 4 comps.

Aldicarb sulfoxide (100 µg/mL)	3-Hydroxycarbofuran (2 µg/mL)
BDMC (10 µg/mL)	Methiocarb (20 µg/mL)

Internal Standard

M-531-IS \$ 25 / 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 \$ 25 / 1 x 1 mL
M-531-REG-ASL-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
100 µg/mL in MeOH 2 comps.
Carbofuran Oxamyl

Method 532 Phenylureas by HPLC

Phenylurea Concentrate Standard

M-532-CONC1 \$ 45 / 1 x 1 mL
M-532-CONC1-PAK **SAVE 20%** \$ 180 / 5 x 1 mL
5.0 mg/mL each in MeOH 6 comps.

Karmex	Propanil
Fluometuron	Siduron
Linuron	Tebuthiuron

Phenylurea Concentrate Standard

M-532-CONC2 \$ 30 / 1 x 1 mL
M-532-CONC2-PAK **SAVE 20%** \$ 120 / 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 \$ 50 / 1 x 1 mL
M-532-PAK **SAVE 20%** \$ 200 / 5 x 1 mL
100 µg/mL each in MeOH, except Siduron 8 comps.

Diflubenzuron	Propanil
Karmex	Siduron (200 µg/mL)
Fluometuron	Tebuthiuron
Linuron	Thidiazuron

Phenylurea Surrogate Standard

M-532-SS \$ 35 / 1 x 1 mL
M-532-SS-PAK **SAVE 20%** \$ 140 / 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

M-535-SET \$ 750 / 14 x 1 mL
At stated conc. in MeOH

Acetochlor ESA 50 µg/mL	Propachlor ESA 20 µg/mL
Acetochlor OA 50 µg/mL	Propachlor OA 20 µg/mL
Alachlor ESA 50 µg/mL	Dimethenamid ESA 10 µg/mL
Alachlor OA 50 µg/mL	Dimethenamid OA 10 µg/mL
Flufenacet ESA 20 µg/mL	Internal Standard
Flufenacet OA 20 µg/mL	Butachlor ESA sodium salt 20 µg/mL
Metolachlor ESA 50 µg/mL	Surrogate Standard
Metolachlor OA 50 µg/mL	Dimethachlor ESA sodium salt 20 µg/mL

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.



EPA Method 500 Series

Method 547-551

Method 547 Glyphosate by HPLC

M-547 0.1 mg/mL in Deionized water	\$ 20 / 1 x 1 mL
M-547-10X 1.0 mg/mL in Deionized water	\$ 30 / 1 x 1 mL
Glyphosate	

Glyphosate Metabolite

M-547-02 0.1 mg/mL in Deionized water	\$ 20 / 1 x 1 mL
Aminomethyl phosphonic acid (AMPA)	

Method 548 Endothall by GC/ECD

M-548A 10 µg/mL in Deionized water	\$ 20 / 1 x 1 mL
M-548B 50 µg/mL in Deionized water	\$ 20 / 1 x 1 mL
Endothall	

Internal Standard

M-548-IS 10 µg/mL in MtBE	\$ 10 / 1 x 1 mL
Endosulfan I	

Calibration Standard

M-548-CAL 100 µg/mL in MtBE	\$ 35 / 1 x 1 mL
Endothall pentafluorophenyl hydrazine derivative	

Method 548.1 Endothall by GC/MS

P-183S 100 µg/mL in MeOH	\$ 24 / 1 x 1 mL
Endothall	

Internal Standard

M-548.1-IS 500 µg/mL in MeOH	\$ 30 / 1 x 1 mL
Acenaphthene-d ₁₀	

Methyl Derivative

M-548.1-ME 100 µg/mL in MeOH	\$ 22 / 1 x 1 mL
Dimethyl endothall	

Method 549.1/549.2 Diquat & Paraquat Liquid - Solid Extraction & HPLC

M-549.1 1.0 mg/mL each in Deionized water as non-hydrated species	\$ 22 / 1 x 1 mL 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 At stated conc. in AcCN	\$ 50 / 1 x 1 mL 16 comps.
Acenaphthene (1000 µg/mL)	Chrysene (50 µg/mL)
Acenaphthylene (1000 µg/mL)	Dibenz[a,h]anthracene (10 µg/mL)
Anthracene (50 µg/mL)	Fluoranthene (2.5 µg/mL)
Benz[a]anthracene (1 µg/mL)	Fluorene (100 µg/mL)
Benzo[a]pyrene (5 µg/mL)	Indeno[1,2,3-cd]pyrene (10 µg/mL)
Benzo[b]fluoranthene (1 µg/mL)	Naphthalene (1000 µg/mL)
Benzo[g,h,i]perylene (5 µg/mL)	Phenanthrene (50 µg/mL)
Benzo[k]fluoranthene (1 µg/mL)	Pyrene (50 µg/mL)

Internal Standard

M-550-IS 0.1 mg/mL in AcCN	\$ 20 / 1 x 1 mL
4,4'-Difluorobiphenyl	

Method 551 Chlorinated Organic Solvents + Trihalomethanes by GC/ECD

M-551A M-551A-PAK 5.0 mg/mL each in MeOH	\$ 30 / 1 x 1 mL SAVE 20% \$ 120 / 5 x 1 mL 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		\$ 50 / 1 x 1 mL
<i>5.0 mg/mL each in Acetone</i>		8 comps.
M-551B-SET		\$ 90 / set of 8 x 1 mL
<i>Each at 5.0 mg/mL in Acetone</i>		
	Cat. No.	Price / 1 mL
Bromochloroacetonitrile	M-551B-1	\$ 15
Chloral hydrate	M-551B-2	15
Chloropicrin	M-551B-3	15
Dibromoacetonitrile	M-551B-4	15
Dichloroacetonitrile	M-551B-5	15
1,1-Dichloro-2-propanone	M-551B-6	15
Trichloroacetonitrile	M-551B-7	15
1,1,1-Trichloro-2-propanone	M-551B-8	15



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 \$ 30 / 1 x 1 mL
M-551.1A-PAK **SAVE 20%** \$ 120 / 5 x 1 mL
 At stated conc. in Acetone 12 comps.

Bromodichloromethane	(1000 µg/mL)
Bromoform	(1000 µg/mL)
Carbon tetrachloride	(500 µg/mL)
Chloroform	(1000 µg/mL)
Dibromochloromethane	(1000 µg/mL)
1,2-Dibromo-3-chloropropane	(1000 µg/mL)
1,2-Dibromoethane	(1000 µg/mL)
Tetrachloroethene	(500 µg/mL)
1,1,1-Trichloroethane	(1000 µg/mL)
1,1,2-Trichloroethane	(10,000 µg/mL)
Trichloroethene	(1000 µg/mL)
1,2,3-Trichloropropane	(10,000 µg/mL)

Disinfection By-products

M-551.1B \$ 40 / 1 x 1 mL
M-551.1B-PAK **SAVE 20%** \$ 160 / 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 \$ 45 / 1 x 1 mL
M-551.1C-PAK **SAVE 20%** \$ 180 / 5 x 1 mL
 At stated conc. in Acetone 17 comps.

Alachlor	(10 µg/mL)	Hexachlorobenzene	(1 µg/mL)
Atrazine	(200 µg/mL)	Hexachlorocyclopentadiene	(1 µg/mL)
Bromacil	(10 µg/mL)	Lindane	(1 µg/mL)
Cyanazine	(30 µg/mL)	Methoxychlor	(5 µg/mL)
Endrin	(2 µg/mL)	Metolachlor	(10 µg/mL)
Endrin aldehyde	(2 µg/mL)	Metribuzin	(5 µg/mL)
Endrin ketone	(2 µg/mL)	Simazine	(200 µg/mL)
Heptachlor	(1 µg/mL)	Trifluralin	(1 µg/mL)
Heptachlor epoxide (isomer B)	(1 µg/mL)		

Technical Note

- 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 \$ 25 / 1 x 1 mL
M-551.1-LPC-P-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
 At stated conc. in Pentane 7 comps.

Alachlor	(83 µg/mL)	Hexachlorocyclopentadiene	(20 µg/mL)
Bromacil	(83 µg/mL)	Lindane	(0.2 µg/mL)
Bromodichloromethane	(30 µg/mL)	Trichloroethene	(30 µg/mL)
Endrin	(30 µg/mL)		

MtBE Extracts

M-551.1-LPC \$ 25 / 1 x 1 mL
M-551.1-LPC-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
 At stated conc. in MtBE 7 comps.

Alachlor	(83 µg/mL)	Hexachlorocyclopentadiene	(20 µg/mL)
Bromacil	(83 µg/mL)	Lindane	(0.2 µg/mL)
Bromodichloromethane	(30 µg/mL)	Trichloroethene	(30 µg/mL)
Endrin	(30 µg/mL)		

Internal Standard Solutions

M-551.1-IS \$ 10 / 1 x 1 mL
M-551.1-IS-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
 100 µg/mL in Acetone
M-551.1-IS-100X \$ 20 / 1 x 1 mL
M-551.1-IS-100X-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
 10,000 µg/mL in Acetone
 p-Bromofluorobenzene

Modified Laboratory Performance Check Solutions

Pentane Extracts

M-551.1-MLPC-P \$ 20 / 1 x 1 mL
M-551.1-MLPC-P-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
 At stated conc. in Pentane 4 comps.

γ-BHC	(0.2 µg/mL)	Hexachlorocyclopentadiene	(20 µg/mL)
Bromodichloromethane	(30 µg/mL)	Trichloroethene	(30 µg/mL)

MtBE Extracts

M-551.1-MLPC \$ 20 / 1 x 1 mL
M-551.1-MLPC-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
 At stated conc. in MtBE 4 comps.

γ-BHC	(0.2 µg/mL)	Hexachlorocyclopentadiene	(20 µg/mL)
Bromodichloromethane	(30 µg/mL)	Trichloroethene	(30 µg/mL)

Surrogate Standard Solutions

M-551.1-SS \$ 10 / 1 x 1 mL
M-551.1-SS-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
 10 µg/mL in Acetone
M-551.1-SS-100X \$ 20 / 1 x 1 mL
M-551.1-SS-100X-PAK **SAVE 20%** \$ 80 / 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		\$ 60 / 1 x 1 mL
1.0 mg/mL each in MtBE		8 comps.
M-552-R-SET		\$ 120 / set of 8 x 1 mL
Each at 1.0 mg/mL in MtBE		Price
	Cat. No.	1 mL
2,4-Dichloroanisole	M-552-R-01	\$ 30
Methyl bromoacetate	M-552-R-02	\$ 30
Methyl bromochloroacetate	M-552-R-03	\$ 30
Methyl chloroacetate	M-552-R-04	\$ 30
Methyl dibromoacetate	M-552-R-05	\$ 30
Methyl dichloroacetate	M-552-R-06	\$ 30
Methyl trichloroacetate	M-552-R-07	\$ 30
2,4,6-Trichloroanisole	M-552-R-08	\$ 30

Underivatized Analytes

M-552A-R		\$ 60 / 1 x 1 mL
1.0 mg/mL each in MtBE		8 comps.
M-552A-R-SET		\$ 90 / set of 8 x 1 mL
Each at 1.0 mg/mL in MtBE		Price
	Cat. No.	1 mL
Bromoacetic acid	M-552A-R-01	\$ 15
Bromochloroacetic acid	M-552A-R-02	\$ 25
Chloroacetic acid	M-552A-R-03	\$ 15
Dibromoacetic acid	M-552A-R-04	\$ 15
Dichloroacetic acid	M-552A-R-05	\$ 15
2,4-Dichlorophenol	M-552A-R-06	\$ 15
Trichloroacetic acid	M-552A-R-07	\$ 15
2,4,6-Trichlorophenol	M-552A-R-08	\$ 15

Internal Standards

APP-9-208-10X		\$ 10 / 1 x 1 mL
APP-9-208-10X-PAK		SAVE 20% \$ 40 / 5 x 1 mL
1.0 mg/mL in MeOH		
1,2,3-Trichloropropane		

M-552-IS		\$ 15 / 1 x 1 mL
M-552-IS-PAK		SAVE 20% \$ 60 / 5 x 1 mL
5.0 mg/mL in MeOH		
1,2-Dibromopropane		

Surrogate Standards as Acids & Methyl esters

P-242S-10X		\$ 14 / 1 x 1 mL
P-242S-10X-PAK		SAVE 20% \$ 56 / 5 x 1 mL
1.0 mg/mL in MeOH		
3,5-Dichlorobenzoic acid		

P-247S-10X		\$ 14 / 1 x 1 mL
P-247S-10X-PAK		SAVE 20% \$ 56 / 5 x 1 mL
1.0 mg/mL in MeOH		
3,5-Dichlorobenzoic acid methyl ester		

M-552-SS		\$ 15 / 1 x 1 mL
M-552-SS-PAK		SAVE 20% \$ 60 / 5 x 1 mL
20 mg/mL in MtBE		
2,3-Dibromopropionic acid		

M-552-SS-ME		\$ 15 / 1 x 1 mL
M-552-SS-ME-PAK		SAVE 20% \$ 60 / 5 x 1 mL
20 mg/mL in MtBE		
2,3-Dibromopropionic acid methyl ester		

Method 552.1 Haloacetic Acids by ECD

Methyl Derivatives

M-552.1		\$ 45 / 1 x 1 mL
At stated conc. in MeOH		7 comps.
M-552.1-SET		\$ 105 / set of 7 x 1 mL
Each at stated conc. in MeOH		Price
	Cat. No.	1 mL
Dalapon ME	(200 µg/mL) M-552.1-01	\$ 25
Methyl bromoacetate	(200 µg/mL) M-552.1-02	25
Methyl bromochloroacetate	(200 µg/mL) M-552.1-03	25
Methyl chloroacetate	(300 µg/mL) M-552.1-04	25
Methyl dibromoacetate	(100 µg/mL) M-552.1-05	25
Methyl dichloroacetate	(300 µg/mL) M-552.1-06	25
Methyl trichloroacetate	(100 µg/mL) M-552.1-07	25

Underivatized Analytes

M-552.1A		\$ 45 / 1 x 1 mL
At stated conc. in MeOH		7 comps.
M-552.1A-SET		\$ 90 / set of 7 x 1 mL
Each at stated conc. in MeOH		
Dalapon	(200 µg/mL)	
Bromoacetic acid	(200 µg/mL)	
Bromochloroacetic acid	(200 µg/mL)	
Chloroacetic acid	(300 µg/mL)	
Dibromoacetic acid	(100 µg/mL)	
Dichloroacetic acid	(300 µg/mL)	
Trichloroacetic acid	(100 µg/mL)	

Internal Standard

M-552.1-IS		\$ 10 / 1 x 1 mL
M-552.1-IS-PAK		SAVE 20% \$ 40 / 5 x 1 mL
1.0 mg/mL in MtBE		
1,2,3-Trichloropropane		

Surrogate Standards

M-552.1-SS		\$ 10 / 1 x 1 mL
M-552.1-SS-PAK		SAVE 20% \$ 40 / 5 x 1 mL
1.0 mg/mL in MtBE		
2-Bromopropanoic acid		

M-552.1-SS-ME		\$ 10 / 1 x 1 mL
M-552.1-SS-ME-PAK		SAVE 20% \$ 40 / 5 x 1 mL
1.0 mg/mL in MtBE		
Methyl 2-bromopropionate		

Buy AccuPAKs™
Save 20-40% 5 x 1 mL





Method 552.2 Haloacetic Acids & Dalapon in Drinking Water by L-L extraction, Derivatization & GC by ECD

These convenient sets of 10 individual ampules for Method 552.2, each containing a single analyte or its methyl derivative, were formulated with both the acids & their methyl derivatives and with and without the surrogate.

Methyl Derivatives

Haloacetic Acid Methyl Derivatives without Surrogates

M-552.2-R1			\$ 60 / 1 x 1 mL
At stated conc. in MtBE		10 comps.	
M-552.2-SET			\$ 150 / set of 10 x 1 mL
M-552.3-R1			\$ 75 / 1 x 1 mL
100 µg/mL each in MtBE		Price	
		Cat. No.	1 mL
Dalapon methyl ester	(40 µg/mL)	M-552.2-01	\$ 20
Methyl bromoacetate	(40 µg/mL)	M-552.2-02	20
Methyl bromochloroacetate	(40 µg/mL)	M-552.2-03	20
Methyl bromodichloroacetate	(40 µg/mL)	M-552.2-04	20
Methyl chloroacetate	(60 µg/mL)	M-552.2-05	20
Methyl chlorodibromoacetate	(100 µg/mL)	M-552.2-06	20
Methyl dibromoacetate	(20 µg/mL)	M-552.2-07	20
Methyl dichloroacetate	(60 µg/mL)	M-552.2-08	20
Methyl tribromoacetate	(200 µg/mL)	M-552.2-09 *	20
Methyl trichloroacetate	(20 µg/mL)	M-552.2-10	20

Haloacetic Acid Methyl Derivatives with Surrogate (Methyl-2,3-dibromopropionate)

M-552.2		\$ 60 / 1 x 1 mL
At stated conc. in MtBE		11 comps.
M-552.3		\$ 75 / 1 x 1 mL
100 µg/mL each in MtBE		11 comps.
Dalapon methyl ester	(40 µg/mL)	
Methyl bromoacetate	(40 µg/mL)	
Methyl bromochloroacetate	(40 µg/mL)	
Methyl bromodichloroacetate	(40 µg/mL)	
Methyl chloroacetate	(60 µg/mL)	
Methyl chlorodibromoacetate	(100 µg/mL)	
Methyl dibromoacetate	(20 µg/mL)	
Methyl dichloroacetate	(60 µg/mL)	
Methyl tribromoacetate	(200 µg/mL)	
Methyl trichloroacetate	(20 µg/mL)	
Methyl 2,3-dibromopropionate (Surr.)	(100 µg/mL)	

Surrogate Standard - Haloacetic Acid Methyl Derivative

M-552.2-SS-ME	\$ 10 / 1 x 1 mL
1000 µg/mL in MtBE	
Methyl 2,3-dibromopropionate	

Laboratory Performance Check Solution

M-552.2-LPC	\$ 20 / 1 x 1 mL
M-552.2-LPC-PAK	SAVE 20% \$ 80 / 5 x 1 mL
At stated conc. in MtBE	4 comps.
Methyl bromochloroacetate	(4 µg/mL)
Methyl chloroacetate	(6 µg/mL)
Methyl chlorodibromoacetate	(10 µg/mL)
Methyl 2,3-dibromopropionate	(10 µg/mL)

Working Level

M-552.2-LPC-WL-25ML	\$ 30 / 1 x 25 mL
M-552.2-LPC-WL-50ML	\$ 50 / 1 x 50 mL
At stated conc. in MtBE	4 comps.
Methyl bromochloroacetate	(0.004 µg/mL)
Methyl chloroacetate	(0.006 µg/mL)
Methyl chlorodibromoacetate	(0.010 µg/mL)
Methyl 2,3-dibromopropionate	(0.010 µg/mL)

Haloacetic Acids

Haloacetic Acid without Surrogate

M-552.2A-R1			\$ 60 / 1 x 1 mL
<i>At stated conc. in MtBE</i>			10 comps.
M-552.2A-SET			\$ 125 / set of 10 x 1 mL
M-552.3A-R1			\$ 75 / 1 x 1 mL
<i>100 µg/mL each in MtBE</i>			Price
		Cat. No.	1 mL
Dalapon acid	(40 µg/mL)	M-552.2A-04	\$ 15
Monobromoacetic acid	(40 µg/mL)	M-552.2A-07	15
Bromochloroacetic acid	(40 µg/mL)	M-552.2A-01	15
Bromodichloroacetic acid	(40 µg/mL)	M-552.2A-02	20
Monochloroacetic acid	(60 µg/mL)	M-552.2A-08	15
Chlorodibromoacetic acid	(100 µg/mL)	M-552.2A-03	20
Dibromoacetic acid	(20 µg/mL)	M-552.2A-05	15
Dichloroacetic acid	(60 µg/mL)	M-552.2A-06	15
Tribromoacetic acid	(200 µg/mL)	M-552.2A-09	15
Trichloroacetic acid	(20 µg/mL)	M-552.2A-10	15

Haloacetic Acid Mix with Surrogate (2,3-Dibromopropionic acid)

M-552.2A	\$ 65 / 1 x 1 mL
At stated conc. in MtBE	11 comps.
Dalapon acid	(40 µg/mL)
Monobromoacetic acid	(40 µg/mL)
Bromochloroacetic acid	(40 µg/mL)
Bromodichloroacetic acid	(40 µg/mL)
Monochloroacetic acid	(60 µg/mL)
Chlorodibromoacetic acid	(100 µg/mL)
Dibromoacetic acid	(20 µg/mL)
Dichloroacetic acid	(60 µg/mL)
Tribromoacetic acid	(200 µg/mL)
Trichloroacetic acid	(20 µg/mL)
2,3-Dibromopropionic acid (Surr.)	(100 µg/mL)

Surrogate Standards - Haloacetic Acid

M-552.2-SS	\$ 10 / 1 x 1 mL
1000 µg/mL in MtBE	
2,3-Dibromopropionic acid	

M-552.2-SS2	\$ 15 / 1 x 1 mL
10 mg/mL in MtBE	
2-Bromobutanoic acid	

Internal Standard

M-552.2-IS	\$ 10 / 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 *	\$ 95 / 1 x 1 mL	
<i>At stated conc. in AcCN:MeOH (50:50)</i>		13 comps.
Benzidine	(250 µg/mL)	3,3'-Dimethylbenzidine (350 µg/mL)
Benzoylprop ethyl	(350 µg/mL)	Diuron (450 µg/mL)
Caffeine	(300 µg/mL)	Linuron (1,300 µg/mL)
Carbaryl	(1,000 µg/mL)	Monuron (400 µg/mL)
o-Chlorophenyl thiourea	(750 µg/mL)	Rotenone (3,200 µg/mL)
3,3'-Dichlorobenzidine	(250 µg/mL)	Siduron (450 µg/mL)
3,3'-Dimethoxybenzidine	(750 µg/mL)	

Performance Check Solution

M-553-PC	\$ 15 / 1 x 1 mL
<i>0.1 mg/mL in AcCN</i>	
DFTPPO (Decafluorotriphenylphosphine oxide)	

* ColdPAK required to maintain integrity of product.

Method 554 Carbonyl Compounds as DNPH Derivatives by HPLC

Carbonyl Compounds

M-554-R1	\$ 65 / 1 x 1 mL	
<i>1.0 mg/mL each in AcCN</i>		12 comps.
Acetaldehyde	Heptanal	
Butanal	Hexanal	
Crotonaldehyde	Nonanal	
Cyclohexanone	Octanal	
Decanal	Pentanal	
Formaldehyde	Propanal	

DNPH Derivatives

M-554-DNPH	\$ 100 / 1 x 1 mL	
<i>1.0 mg/mL each in MeOH:AcCN (95:5)</i>		12 comps.
M-554-DNPH-SET	\$ 175 / set of 12 x 1 mL	
<i>Each at 1.0 mg/mL in MeOH:AcCN (95:5)</i>		Price
	Cat. No.	1 mL
Acetaldehyde-DNPH *	M-554-DNPH-01	\$ 20
Butanal-DNPH	M-554-DNPH-02	20
Crotonaldehyde-DNPH *	M-554-DNPH-03	20
Cyclohexanone-DNPH	M-554-DNPH-04	20
Decanal-DNPH	M-554-DNPH-05	20
Formaldehyde-DNPH	M-554-DNPH-06	20
Heptanal-DNPH	M-554-DNPH-07	20
Hexanal-DNPH	M-554-DNPH-08	20
Nonanal-DNPH	M-554-DNPH-09	20
Octanal-DNPH	M-554-DNPH-10	20
Pentanal-DNPH	M-554-DNPH-11	20
Propanal-DNPH	M-554-DNPH-12	20

Method 555 Chlorinated Acids by HPLC

Mix A

M-555A	\$ 55 / 1 x 1 mL	
<i>1.0 mg/mL each in AcCN</i>		8 comps.
Acifluorfen	Dicamba	
Bentazon	Dichlorprop	
Chloramben	Picloram	
2,4-D	2,4,5-TP	

Mix B

M-555B	\$ 55 / 1 x 1 mL	
<i>1.0 mg/mL each in AcCN</i>		8 comps.
2,4-DB	MCPP	
3,5-Dichlorobenzoic acid	4-Nitrophenol	
Dinoseb	Pentachlorophenol	
MCPA	2,4,5-T	

Method 556/556.1 Carbonyl Compounds by PFBHA Derivative with analysis by GC/ECD

Mix A

M-556-MIXA	\$ 85 / 1 x 1 mL	
<i>1.0 mg/mL each in AcCN</i>		13 comps.
Acetaldehyde	Heptanal	
Benzaldehyde	Hexanal	
Butanal	Nonanal	
Crotonaldehyde	Octanal	
Cyclohexanone	Pentanal	
Decanal	Propanal	
Formaldehyde		

Mix B

M-556-MIXB	\$ 40 / 1 x 1 mL	
<i>1.0 mg/mL each in AcCN</i>		2 comps.
Glyoxal	Methyl glyoxal	

Technical Note

Difference between Method 556 & 556.1

This product (M-556) was designed to meet both versions of the carbonyl methods. The primary difference between method 556 and 556.1 is that crotonaldehyde has been removed from the analyte list in the 556.1 method. If you require a formulation without the crotonaldehyde, we can custom formulate a standard to meet your exact requirements.

Procedural Calibration Standard

M-556 is to be used as a procedural standard for calibration of the method. As a procedural calibration standard it should be carried through the entire extraction and derivatization procedure associated with the samples. The oxime derivatives are analyzed by GC/ECD.

We have the capability to manufacture the actual oxime derivatives if required.

Internal Standard

M-556-IS	\$ 30 / 1 x 1 mL
M-556-IS-PAK	SAVE 20% \$ 120 / 5 x 1 mL
<i>10 mg/mL in Hexane</i>	
1,2-Dibromopropane	

Surrogate Standards

M-556-SS	\$ 10 / 1 x 1 mL
M-556-SS-PAK	SAVE 20% \$ 40 / 5 x 1 mL
<i>20 µg/mL in AcCN</i>	
M-556-SS-100X	\$ 20 / 1 x 1 mL
M-556-SS-100X-PAK	SAVE 20% \$ 80 / 5 x 1 mL
<i>2.0 mg/mL in AcCN</i>	
2',4',5'-Trifluoroacetophenone	

PFBHA Reagent

M-556-DER-10ML	\$ 80 / 1 x 10 mL
M-556-DER-10ML-PAK	SAVE 20% \$ 320 / 5 x 10 mL
<i>15 mg/mL in Water</i>	
O-(2,3,4,5,6-Pentafluorobenzyl)hydroxylamine hydrochloride	

Working Level (Internal Standard)

M-556-IS-WL-5ML-VAP	\$ 50 / 10 x 5 mL
<i>400 µg/L in Hexane</i>	
1,2-Dibromopropane	

* ColdPAK required to maintain integrity of product.

Custom Services

Custom Synthesis

The AccuStandard 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 and governmental agencies around the world. The very well-equipped synthetic laboratory with significant analytical support has made many notable synthesis projects possible. We specialize in synthesizing chemicals of high purity to be used as reference standards, and also offer custom synthesis capability on milligram to kilogram scales.



Analytical Capabilities

- GC-MS, GC-FID, GC-ECD, GC-NPD
- HPLC, LC-MS
- ICP, ICP-MS
- access to more analytical instrumentation if necessary

Synthesis and Purification

- Milligram to Kilogram Glassware
- Inert Conditions Equipment
- High Performance Flash Chromatography
- Distillation Equipment - High Vacuum, Molecular (Kugelrohr), and Spinning Band Columns
- Preparative TLC
- Parr Pressure and Hydrogenation Reactor

Custom Synthesized Products

- PCBs (all 209 congeners), & hydroxy, methoxy, and methylsulfonyl metabolites
- Halo-Dibenzodioxins and Furans
- PBDEs (all 209 congeners) & hydroxy, methoxy, chloro metabolites
- Fluorinated PBDEs
- Other Brominated Flame Retardants
- PBBs
- PAHs, Nitro-PAHs, Methyl-PAHs
- Pesticides and metabolites
- Explosives and metabolites
- Nonyl- and Octylphenol Ethoxylates
- Mono- and Diester Phthalates
- Organophosphates
- Other Rare Chemicals

AccuStandard is renowned for its quick response to the needs for new compounds. The company's especially strong Synthesis Department allows the synthesis of important and unique products. Featured in its history of firsts are all of the 209 congeners of polychlorinated biphenyls (PCBs), 209 congeners of polybrominated diphenyl ethers (PBDEs) as well as many halogenated dioxins and dibenzofurans, PAHs, pesticides and fluorinated surrogates substituting the expensive isotopically labelled compounds.

Among the more recent introductions are the hydroxy and methoxy PBDE congeners, mixed bromo/chloro hydroxy and methoxy diphenyl ethers, organophosphate flame retardants, biofuels, plastic additives (AccuStandard authored the Handbook for the Chemical Analysis of Plastic and Polymer Additives published by CRC Press), EPA Method 535 pesticide derivatives and previously unavailable explosive standards.

Custom Formulations

With over 30,000+ custom and 10,000+ listed standards, there is a good chance that AccuStandard will have a standard to meet your needs. However, if your laboratory requires something specific, our Chemists will manufacture a Custom Standard to meet your unique requirements. Custom Standards are an economical and time saving way to have a Standard prepared for your individual needs.



Custom QC options

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

Custom Packaging and Bulk Quantity Requirements

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

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

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





National Primary Drinking Water Standards

EPA Safe Drinking Water Act (SDWA) Amendment National Primary Drinking Water Standards

The Safe Drinking Water Act (SDWA) amendment of 1996 established a new charter for the Nation's public water systems. The Environmental Protection Agency sets standards for protecting the safety of drinking water. The regulatory section of this act eliminates the requirement for the EPA to regulate 25 additional contaminants every three years. Instead, every 5 years from enactment of the amendment, the EPA will determine whether or not to regulate at least 5 new contaminants from a list being published within 18 months of the enactment of the amendment. The following two pages of National Primary Drinking Water Standards are formulated to provide convenience and flexibility when analyzing regulated contaminants from the Drinking Water Priority list.

Volatiles

Phase I

VOCs

M-502C-07

2.0 mg/mL each in MeOH

\$ 35 / 1 x 1 mL
12 comps.

Benzene	1,4-Dichlorobenzene
Bromodichloromethane	1,2-Dichloroethane
Bromoform	1,1-Dichloroethylene
Carbon tetrachloride	1,1,1-Trichloroethane
Chloroform	Trichloroethylene
Dibromochloromethane	Vinyl chloride

Phase II

VOCs

M-502C-08

2.0 mg/mL each in MeOH

\$ 35 / 1 x 1 mL
12 comps.

Chlorobenzene	Styrene
1,2-Dichlorobenzene	Tetrachloroethylene
cis-1,2-Dichloroethylene	Toluene
trans-1,2-Dichloroethylene	o-Xylene
1,2-Dichloropropane	m-Xylene
Ethylbenzene	p-Xylene

Phase V

Additions

M-502C-10

2.0 mg/mL in MeOH

\$ 25 / 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

\$ 30 / 1 x 1 mL
7 comps.

Acrylonitrile	Hexachlorobutadiene
Bromomethane	1,1,1,2-Tetrachloroethane
cis-1,3-Dichloropropene *	1,2,3-Trichloropropene
trans-1,3-Dichloropropene **	

* cis (1.06 x conc.)
** trans (0.94 x conc.)

Combined Phase I, Phase II, Phase V

Volatiles

M-502-REG

M-502-REG-PAK

0.2 mg/mL each in MeOH

M-502-REG-10X

M-502-REG-10X-PAK

2.0 mg/mL each in MeOH

\$ 45 / 1 x 1 mL

SAVE 20% \$ 180 / 5 x 1 mL
27 comps.

\$ 60 / 1 x 1 mL

SAVE 20% \$ 240 / 5 x 1 mL
27 comps.

Benzene	1,2-Dichloropropane
Bromodichloromethane	Ethylbenzene
Bromoform	Styrene
Carbon tetrachloride	Tetrachloroethylene
Chlorobenzene	Toluene
Chloroform	1,2,4-Trichlorobenzene
Dibromochloromethane	1,1,1-Trichloroethane
1,2-Dichlorobenzene	1,1,2-Trichloroethane
1,4-Dichlorobenzene	Trichloroethylene
1,2-Dichloroethane	Vinyl chloride
1,1-Dichloroethylene	m-Xylene
cis-1,2-Dichloroethylene	o-Xylene
trans-1,2-Dichloroethylene	p-Xylene
Dichloromethane	

Method 504 EDB & DBCP

M-504

M-504-PAK

0.2 mg/mL each in MeOH

\$ 15 / 1 x 1 mL

SAVE 20% \$ 60 / 5 x 1 mL
2 comps.

1,2-Dibromoethane (EDB)	1,2-Dibromo-3-chloropropane (DBCP)
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Method Specific Individual Standards

Compounds	Method	Concentration	Cat. No.	Price
Diquat	549.1	100 µg/mL in MeOH	P-231S	\$ 12
Endothall	548.1	100 µg/mL in MeOH	P-183S	22
Ethylene thiourea ††	509	0.1 mg/mL in 0.17 w/v DTT in Ethyl acetate	M-509	15
Glyphosate	547	100 µg/mL in H ₂ O	M-547	20
2,3,7,8-TCDD	525	500 µg/mL in Toluene	D-404S	50
Toxaphene	525	2.5 mg/mL in Acetone	M-525-5	20

Water Treatment Chemicals

Acrylamide	8032	1.0 mg/mL in MeOH	M-8032	10
Epichlorohydrin	8260B	2000 µg/mL in MeOH	M-8260B-02	45

†† Proposed Phase VIB Additions, 0.1% w/v DDT as a scavenger

Technical Note

If you require formulations with additional analytes found on the contaminant list, please contact our Technical Department.

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 \$ 30 / 1 x 1 mL
At stated conc. in Acetone 8 comps.

Acifluorfen ^{††}	(100 µg/mL)	Dinoseb	(200 µg/mL)
2,4-D	(300 µg/mL)	Pentachlorophenol	(100 µg/mL)
Dalapon	(1000 µg/mL)	Picloram	(100 µg/mL)
Dicamba ^{††}	(100 µg/mL)	2,4,5-TP	(100 µg/mL)

Regulated Herbicide Mixtures (Methyl Derivatives)

M-515-REG-ME \$ 35 / 1 x 1 mL
At stated conc. MtBE 8 comps.

Acifluorfen methyl ester ^{††}	(250 ng/mL)	Dinoseb methyl ether	(500 ng/mL)
2,4-D methyl ester	(500 ng/mL)	Pentachloroanisole	(100 ng/mL)
Dalapon methyl ester	(2000 ng/mL)	Picloram methyl ester	(250 ng/mL)
Dicamba methyl ester ^{††}	(500 ng/mL)	2,4,5-TP methyl ester	(500 ng/mL)

M-515-REG-ME-1000X \$ 55 / 1 x 1 mL
At stated conc. MtBE 8 comps.

Acifluorfen methyl ester ^{††}	(250 µg/mL)	Dinoseb methyl ether	(500 µg/mL)
2,4-D methyl ester	(500 µg/mL)	Pentachloroanisole	(100 µg/mL)
Dalapon methyl ester	(2000 µg/mL)	Picloram methyl ester	(250 µg/mL)
Dicamba methyl ester ^{††}	(500 µg/mL)	2,4,5-TP methyl ester	(500 µg/mL)

Regulated Semi-Volatiles Mixture

M-525-REG-EA \$ 125 / 1 x 1 mL
0.1 mg/mL each in Ethyl Acetate 25 comps.

M-525-REG-EA-5X \$ 150 / 1 x 1 mL
0.5 mg/mL each in Ethyl Acetate 25 comps.

Alachlor	Endrin
Aldrin [†]	Heptachlor
Atrazine	Heptachlor epoxide
Benzo[a]pyrene	Hexachlorobenzene
Butachlor [†]	Hexachlorocyclopentadiene
α-Chlordane	Lindane
γ-Chlordane	Methoxychlor
Cyanazine ^{††}	Metolachlor ^{††}
Dieldrin [†]	Metribuzin ^{††}
2,4-Dinitrotoluene ^{††}	trans-Nonachlor
2,6-Dinitrotoluene ^{††}	Propachlor [†]
bis(2-Ethylhexyl)adipate	Simazine
bis(2-Ethylhexyl)phthalate	

[†] Unregulated Additions
^{††} Proposed Phase VIB Additions

Regulated Pesticide Mixture

M-531-REG \$ 55 / 1 x 1 mL
0.1 mg/mL each in Acetonitrile 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 \$ 60 / 1 x 1 mL
M-508.1-ASL-PAK **Alternate Source** **SAVE 20%** \$ 240 / 5 x 1 mL
100 µg/mL each in MtBE 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 \$ 35 / 1 x 1 mL
M-525-REG-ASL-PAK **Alternate Source** **SAVE 20%** \$ 140 / 5 x 1 mL
0.5 mg/mL each in Acetone 6 comps.

Benzo[a]pyrene	Hexachlorobenzene
bis(2-Ethylhexyl)adipate	Hexachlorocyclopentadiene
bis(2-Ethylhexyl)phthalate	Pentachlorophenol (2.0 mg/mL)

Carbamate Pesticide Mixture

M-531-REG-ASL \$ 25 / 1 x 1 mL
M-531-REG-ASL-PAK **Alternate Source** **SAVE 20%** \$ 100 / 5 x 1 mL
100 µg/mL each in MeOH 2 comps.

Carbofuran	Oxamyl
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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 \$ 20 / 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 \$ 20 / 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 \$ 25 / 1 x 1 mL
0.2 mg/mL each in MeOH 5 comps.

Bromomethane
Chloroethane
Chloromethane
Dichlorodifluoromethane
Vinyl chloride

Base/Neutral 1

M-001D \$ 30 / 1 x 1 mL
At stated conc. in MeOH
M-001D-D \$ 30 / 1 x 1 mL
At stated conc. in CH₂Cl₂ 12 comps.

Acenaphthylene (0.2 mg/mL)
Benzo[b]fluoranthene (0.1 mg/mL)
4-Bromophenyl phenyl ether (0.2 mg/mL)
bis(2-Chloroethyl) ether (0.2 mg/mL)
bis(2-Chloro-1-methylethyl) ether (0.2 mg/mL)
1,4-Dichlorobenzene (0.2 mg/mL)
3,3-Dichlorobenzidine (0.2 mg/mL)
Dimethyl phthalate (0.2 mg/mL)
Di-n-butyl phthalate (0.2 mg/mL)
2,6-Dinitrotoluene (0.2 mg/mL)
bis(2-Ethylhexyl)phthalate (0.2 mg/mL)
Nitrobenzene (0.2 mg/mL)

Base/Neutral 2

M-001E \$ 30 / 1 x 1 mL
At stated conc. in MeOH
M-001E-D \$ 30 / 1 x 1 mL
At stated conc. in CH₂Cl₂ 15 comps.

Acenaphthene (0.2 mg/mL)
Anthracene (0.2 mg/mL)
Benz[a]anthracene (0.1 mg/mL)
Chrysene (0.1 mg/mL)
Dibenz[a,h]anthracene (0.1 mg/mL)
1,2-Dichlorobenzene (0.2 mg/mL)
1,3-Dichlorobenzene (0.2 mg/mL)
Diethyl phthalate (0.2 mg/mL)
2,4-Dinitrotoluene (0.2 mg/mL)
Fluorene (0.2 mg/mL)
Hexachlorobenzene (0.2 mg/mL)
Hexachlorobutadiene (0.2 mg/mL)
Naphthalene (0.2 mg/mL)
bis(2-Chloroethoxy)methane (0.2 mg/mL)
Pyrene (0.1 mg/mL)

Base/Neutral 3

M-001F-D \$ 30 / 1 x 1 mL
At stated conc. in CH₂Cl₂ 11 comps.

Butyl benzyl phthalate (0.2 mg/mL)
2-Chloronaphthalene (0.2 mg/mL)
1,2-Diphenylhydrazine (0.2 mg/mL)
Fluoranthene (0.1 mg/mL)
Hexachlorocyclopentadiene (0.2 mg/mL)
Hexachloroethane (0.2 mg/mL)
Isophorone (0.2 mg/mL)
N-Nitroso-*di-n*-propylamine (0.2 mg/mL)
N-Nitrosodiphenylamine (0.2 mg/mL)
Phenanthrene (0.2 mg/mL)
1,2,4-Trichlorobenzene (0.2 mg/mL)

Base/Neutral 4

M-001G \$ 30 / 1 x 1 mL
At stated conc. in MeOH:CH₂Cl₂(50:50)

M-001G-D \$ 30 / 1 x 1 mL
At stated conc. in CH₂Cl₂ 9 comps.

Benidine (0.2 mg/mL)
Benzo[k]fluoranthene (0.1 mg/mL)
Benzo[g,h,i]perylene (0.1 mg/mL)
Benzo[a]pyrene (0.1 mg/mL)
2-Chloroethyl vinyl ether (0.2 mg/mL)
4-Chlorophenylphenyl ether (0.2 mg/mL)
Di-*n*-octyl phthalate (0.2 mg/mL)
Indeno[1,2,3-*cd*]pyrene (0.1 mg/mL)
N-Nitrosodimethylamine (0.2 mg/mL)

Pesticide Mixture

M-001H \$ 40 / 1 x 1 mL
At stated conc. in MeOH 16 comps.

Aldrin (0.1 mg/mL)
 α -BHC (0.1 mg/mL)
 β -BHC (0.1 mg/mL)
 γ -BHC (0.1 mg/mL)
 δ -BHC (0.1 mg/mL)
p,p'-DDT (0.6 mg/mL)
p,p'-DDE (0.2 mg/mL)
p,p'-DDD (0.6 mg/mL)
Dieldrin (0.2 mg/mL)
Endosulfan I (0.2 mg/mL)
Endosulfan II (0.2 mg/mL)
Endosulfan sulfate (0.6 mg/mL)
Endrin (0.2 mg/mL)
Endrin aldehyde (0.6 mg/mL)
Heptachlor (0.1 mg/mL)
Heptachlor epoxide (0.1 mg/mL)

Phenol Mixture

M-001P \$ 25 / 1 x 1 mL
At stated conc. in MeOH
M-001P-D \$ 25 / 1 x 1 mL
1.0 mg/mL each in CH₂Cl₂ 11 comps.

4-Chloro-3-methylphenol (2.5 mg/mL)
2-Chlorophenol (0.5 mg/mL)
2,4-Dichlorophenol (0.5 mg/mL)
2,4-Dimethylphenol (0.5 mg/mL)
2,4-Dinitrophenol (1.5 mg/mL)
2-Nitrophenol (0.5 mg/mL)
4-Nitrophenol (2.5 mg/mL)
2-Methyl-4,6-dinitrophenol (2.5 mg/mL)
Pentachlorophenol (2.5 mg/mL)
Phenol (0.5 mg/mL)
2,4,6-Trichlorophenol (1.5 mg/mL)

Polychlorinated Biphenyls

Each Aroclor® is a mixture of numerous comps., and considerable overlap in composition occurs between Aroclors.
Both at 0.2 mg/mL each in MeOH

Aroclor Mix 1

M-001K \$ 15 / 1 x 1 mL

Aroclor 1016 Aroclor 1248
Aroclor 1232 Aroclor 1260

Aroclor Mix 2

M-001L \$ 15 / 1 x 1 mL

Aroclor 1221 Aroclor 1254
Aroclor 1242

Chlordane & Toxaphene

M-001J \$ 15 / 1 x 1 mL
At stated conc. in MeOH 2 comps.

Chlordane (0.02 mg/mL)
Toxaphene (0.20 mg/mL)

Acrolein & Acrylonitrile

M-603 \$ 14 / 1 x 1 mL
1.0 mg/mL each in H₂O 2 comps.

Internal Standard -

Anthracene-d₁₀

M-001N \$ 20 / 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 \$ 15 / 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

\$ 225 / 15 x 1 mL

(M-001A,M-001B-2,M-001C,M-001D,M-001E,M-001F,M-001G,M-001H,M-001P,M-001K,M-001L,M-001J,M-603A,M-001N,M-001R)

Purgeable A
Purgeable B
Purgeable C (Gases)

Base/Neutral 1
Base/Neutral 2
Base/Neutral 3
Base/Neutral 4

Pesticide Mixture
Phenol Mixture
Chlordane & Toxaphene
Aroclor Mix 1
Aroclor Mix 2

Acrolein-Acrylonitrile
Anthracene-d₁₀
Internal Standard

Standard Mixtures for EPA 600 Series

For Waste Water



Background Information

The EPA Methods for evaluating municipal and industrial wastewater pollutants are designated in the EPA 600 Series. This Series of methods evolved from the 1976 agreement by the EPA to study and, if necessary, to regulate 65 "priority pollutants." Several laboratories within the EPA collaborated on research projects that led to the 600 Series Methods.

Methods 601-612 were first published in 1979, along with a GC/MS method for the measurement of TCDD. AccuStandard followed the expansion of the 600 series methods by formulating analytical standards for additional 600 series methods listed in the EPA book "Methods for the Determination of Nonconventional Pesticides in Municipal and Industrial Wastewater."

The 600 Series product line contains standards used in the proposed and promulgated methods for the identification and quantification of organic compounds in municipal and industrial waste water. The organic compounds listed in the various methods include volatile organic compounds (VOCs), pesticides and synthetic organic compounds (SOCs).

Instrumentation

Analytical techniques used in the identification and quantification of the above compounds include gas chromatography with selective detectors (PID, ELCD, ECD, FID, NPD, FPD), gas chromatography/mass spectrometry (GC/MS) and high performance liquid chromatography (HPLC). The 600 series methods typically utilize packed columns, but chromatographic conditions can be modified (i.e. incorporation of advances in technology like capillary columns) if the modifications do not decrease the accuracy or lessen the precision of the method.

Comprehensive

Complete analysis of the target compounds by these 600 Series Methods can be accomplished using the series of standards formulated by AccuStandard for each method along with the suggested internal and surrogate standards. Formulations have been developed as easy to use large core mixes containing the target compounds and as high concentration sub-mixes for combination with other formulations to meet laboratory specific analyte detection requirements.

Match frequently requested products.

Alternate Source

ASL products can be used as an independent second source.

Methods 601, 608, 615

Thousands of Standards,
just a click away



AccuStandard.com

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EPA Method 600 Series

Method 601 Purgeable Halocarbons by Purge & Trap - GC/MS

Liquids

M-601A	\$ 35 / 1 x 1 mL
M-601A-PAK	SAVE 20% \$ 140 / 5 x 1 mL
0.2 mg/mL each in MeOH	
M-601A-10X	\$ 35 / 1 x 1 mL
M-601A-10X-PAK	SAVE 20% \$ 140 / 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
* *cis* (1.06 x conc.)
** *trans* (0.94 x conc.)

Gases

M-502B	\$ 25 / 1 x 1 mL
M-502B-PAK	SAVE 20% \$ 100 / 5 x 1 mL
0.2 mg/mL each in MeOH	
M-502B-10X	\$ 25 / 1 x 1 mL
M-502B-10X-PAK	SAVE 20% \$ 100 / 5 x 1 mL
2.0 mg/mL each in MeOH	6 comps.

Bromomethane
Chloromethane
Chloroethane

Dichlorodifluoromethane
Trichlorofluoromethane
Vinyl chloride

Liquid Component

M-601C *	\$ 10 / 1 x 1 mL
M-601C-PAK *	SAVE 20% \$ 40 / 5 x 1 mL
0.2 mg/mL each in MeOH	
M-601C-10X *	\$ 10 / 1 x 1 mL
M-601C-10X-PAK *	SAVE 20% \$ 40 / 5 x 1 mL
2.0 mg/mL each in MeOH	
2-Chloroethylvinyl ether	

Trihalomethanes

M-501	\$ 17 / 1 x 1 mL
M-501-PAK	SAVE 20% \$ 68 / 5 x 1 mL
0.2 mg/mL each in MeOH	
M-501-10X	\$ 20 / 1 x 1 mL
2.0 mg/mL each in MeOH	4 comps.

Bromoform
Chloroform

Dichlorobromomethane
Dibromochloromethane

Purgeable Halocarbon Sets

M-601-SET *	\$ 50 / 4 x 1 mL
0.2 mg/mL each in MeOH	(M-601A, M-502B, M-601C, M-501)
M-601-10X-SET *	\$ 75 / 4 x 1 mL
2.0 mg/mL each in MeOH	(M-601A-10X, M-502B-10X, M-601C-10X, M-501-10X)

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	\$ 15 / 1 x 1 mL
M-001R-PAK	SAVE 20% \$ 60 / 5 x 1 mL
20 mg/mL each in MeOH	3 comps.
Bromochloromethane	2-Bromo-1-chloropropane
1,4-Dichlorobutane	

Purgeable Halocarbon Mix

M-601-ASL	\$ 40 / 1 x 1 mL
M-601-ASL-PAK	SAVE 20% \$ 160 / 5 x 1 mL
100 µg/mL each in MeOH	28 comps.
Bromodichloromethane	1,2-Dichloroethane
Bromoform	1,1-Dichloroethene
Bromomethane	<i>trans</i> -1,2-Dichloroethene
Carbon tetrachloride	1,2-Dichloropropane
Chlorobenzene	<i>cis</i> -1,3-Dichloropropene
Chloroethane	<i>trans</i> -1,3-Dichloropropene
Chloroform	Dichloromethane
Chloromethane	1,1,2,2-Tetrachloroethane
Dibromochloromethane	Tetrachloroethene
1,2-Dichlorobenzene	1,1,1-Trichloroethane
1,3-Dichlorobenzene	1,1,2-Trichloroethane
1,4-Dichlorobenzene	Trichloroethene
Dichlorodifluoromethane	Trichlorofluoromethane
1,1-Dichloroethane	Vinyl chloride

Performance Check Solution

S-532-ASL	\$ 25 / 1 x 1 mL
S-532-ASL-PAK	SAVE 20% \$ 100 / 5 x 1 mL
0.2 mg/mL each in MeOH	8 comps.
Benzene	1,1-Dichloroethene
Carbon tetrachloride	1,1,1-Trichloroethane
1,4-Dichlorobenzene	Trichloroethene
1,2-Dichloroethane	Vinyl chloride

Technical Note

2 alternate approaches to perform Method 601 analysis:

Option 1 Use of the 4 ampule set (M-601) allows you to differentiate the more volatile analytes (M-502B) or less stable analytes (M-601C) and the THMs from the stable Method 601 liquids, which can then be ordered less frequently to optimize economy.

Option 2 The M-601-ASL formulation will serve as a convenient single injection standard for all analytes other than 2-chloroethylvinyl ether. It can also be used as a second source or QC standard.

Buy AccuPAKs™
Save 20-40% 5 x 1 mL





Method 601/602 Purgeable Halocarbons by GC/MS

Purgeable Halocarbons & Aromatics

M-601/602 \$ 45 / 1 x 1 mL
M-601/602-PAK **SAVE 20%** \$ 180 / 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	

* cis (1.06 x conc.)
 ** trans (0.94 x conc.)

Gases

M-601B \$ 25 / 1 x 1 mL
M-601B-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
 0.2 mg/mL each in MeOH 6 comps.

Bromomethane	Dichlorodifluoromethane
Chloromethane	Trichlorofluoromethane
Chloroethane	Vinyl chloride

Liquids

M-601C * \$ 10 / 1 x 1 mL
M-601C-PAK * **SAVE 20%** \$ 40 / 5 x 1 mL
 0.2 mg/mL in MeOH
M-601C-10X * \$ 10 / 1 x 1 mL
M-601C-10X-PAK * **SAVE 20%** \$ 40 / 5 x 1 mL
 2.0 mg/mL in MeOH
 2-Chloroethylvinyl ether

Purgeable Aromatics

M-602 \$ 20 / 1 x 1 mL
M-602-PAK **SAVE 20%** \$ 80 / 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 \$ 30 / 1 x 1 mL
M-602-GAS-PAK **SAVE 20%** \$ 120 / 5 x 1 mL
 0.2 mg/mL each in MeOH
M-602-GAS-10X \$ 30 / 1 x 1 mL
M-602-GAS-10X-PAK **SAVE 20%** \$ 120 / 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 \$ 20 / 1 x 1 mL
M-602-SS-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
 0.2 mg/mL in MeOH
M-602-SS-100X \$ 20 / 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 \$ 55 / 1 x 1 mL
M-601-CHG-PAK **SAVE 20%** \$ 220 / 5 x 1 mL
 100 µg/mL each in MeOH 35 comps.

Benzene	1,2-Dichloropropane
Bromodichloromethane	cis-1,3-Dichloropropylene *
Bromoform	trans-1,3-Dichloropropylene **
Bromomethane	Dichloromethane
Carbon tetrachloride	Ethylbenzene
Chlorobenzene	MtBE
Chloroethane	1,1,2,2-Tetrachloroethane
Chloroform	Tetrachloroethane
Chloromethane	Toluene
Dibromochloromethane	1,1,1-Trichloroethane
1,2-Dichlorobenzene	1,1,2-Trichloroethane
1,3-Dichlorobenzene	Trichloroethene
1,4-Dichlorobenzene	Trichlorofluoromethane
Dichlorodifluoromethane	m-Xylene
1,1-Dichloroethane	o-Xylene
1,2-Dichloroethane	p-Xylene
1,1-Dichloroethene	Vinyl chloride
trans-1,2-Dichloroethene	

* cis (1.06 x conc.)
 ** trans (0.94 x conc.)

Technical Note

AccuStandard designed two sets of formulations for those laboratories analyzing Method 601/602 analytes by PID/HALL in series allowing for simultaneous screening 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 \$ 50 / 1 x 1 mL
 0.2 mg/mL each in MeOH
M-601/602/BTEX-10X \$ 60 / 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
Methyl-t-butyl ether	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 \$ 10 / 1 x 1 mL
 200 µg/mL in MeOH
S-078-10X \$ 12 / 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	\$ 14 / 1 x 1 mL
M-603-PAK	SAVE 20% \$ 56 / 5 x 1 mL
1.0 mg/mL each in Water	2 comps.
M-603-10X	\$ 17 / 1 x 1 mL
10 mg/mL each in Water	2 comps.
M-603-M-0.1X *	\$ 25 / 1 x 1 mL
0.1 mg/mL each in MeOH:Water 90:10	2 comps.
M-603-M-5X *	\$ 30 / 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		\$ 25 / 1 x 1 mL
M-604-PAK	SAVE 20%	\$ 100 / 5 x 1 mL
0.5 mg/mL each in MeOH		11 comps.
4-Chloro-3-methylphenol	2,4-Dinitrophenol	Pentachlorophenol
2-Chlorophenol	2-Methyl-4,6-dinitrophenol	Phenol
2,4-Dichlorophenol	2-Nitrophenol	2,4,6-Trichlorophenol
2,4-Dimethylphenol	4-Nitrophenol	

Surrogate Standard

M-604-SS	\$ 20 / 1 x 1 mL
M-604-SS-PAK	SAVE 20% \$ 80 / 5 x 1 mL
0.2 mg/mL each in MeOH	
2,4,6-Tribromophenol	

Phenol as Pentafluorobenzyl Derivatives by GC/ECD

M-604-PFB		\$ 65 / 1 x 1 mL
M-604-PFB-PAK	SAVE 20%	\$ 260 / 5 x 1 mL
<i>0.2 mg/mL each in MeOH</i>		11 comps.
4-Chloro-3-methylphenol	2,4-Dinitrophenol	Pentachlorophenol
2-Chlorophenol	2-Methyl-4,6-dinitrophenol	Phenol
2,4-Dichlorophenol	2-Nitrophenol	2,4,6-Trichlorophenol
2,4-Dimethylphenol	4-Nitrophenol	

Surrogate Standard

M-604-SS-PFB	\$ 20 / 1 x 1 mL
M-604-SS-PFB-PAK	SAVE 20% \$ 80 / 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	\$ 20 / 1 x 1 mL
1.0 mg/mL each in AcCN	2 comps.
Hexachlorophene	Dichlorophene

Method 605 Benzidines by HPLC

M-605-10X	\$ 25 / 1 x 1 mL
M-605-10X-PAK	SAVE 20% \$ 100 / 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	\$ 20 / 1 x 1 mL
M-606-PAK	SAVE 20% \$ 80 / 5 x 1 mL
0.2 mg/mL each in MeOH	6 comps.
Benzyl butyl phthalate	Di-n-butyl phthalate
Dimethyl phthalate	Di-n-octyl phthalate
Diethyl phthalate	bis(2-Ethylhexyl)phthalate

Method 607 Nitrosamines by GC/NPD

M-607	\$ 18 / 1 x 1 mL
M-607-PAK	SAVE 20% \$ 72 / 5 x 1 mL
At stated conc. in MeOH	3 comps.
N-Nitrosodimethylamine (0.2 mg/mL)	N-Nitrosodi-n-propylamine (0.2 mg/mL)
N-Nitrosodiphenylamine (0.4 mg/mL)	

Method 608 Pesticides and PCBs by GC/ECD

M-001H		\$ 40 / 1 x 1 mL	
<i>At stated conc. in MeOH</i>		16 comps.	
Aldrin	(0.1 mg/mL)	Dieldrin	(0.2 mg/mL)
α-BHC	(0.1 mg/mL)	Endosulfan I	(0.2 mg/mL)
β-BHC	(0.1 mg/mL)	Endosulfan II	(0.2 mg/mL)
δ-BHC	(0.1 mg/mL)	Endosulfan sulfate	(0.6 mg/mL)
γ-BHC	(0.1 mg/mL)	Endrin	(0.2 mg/mL)
4,4'-DDD	(0.6 mg/mL)	Endrin aldehyde	(0.6 mg/mL)
4,4'-DDE	(0.2 mg/mL)	Heptachlor	(0.1 mg/mL)
4,4'-DDT	(0.6 mg/mL)	Heptachlor epoxide	(0.1 mg/mL)

M-001J		\$ 15 / 1 x 1 mL	
<i>At stated conc. in MeOH</i>		2 comps.	
Chlordane	(0.02 mg/mL)	Toxaphene	(0.20 mg/mL)

M-001K	\$ 15 / 1 x 1 mL
0.2 mg/mL each in MeOH	4 comps.
Aroclor 1016	Aroclor 1248
Aroclor 1232	Aroclor 1260

M-001L	\$ 15 / 1 x 1 mL
0.2 mg/mL each in MeOH	3 comps.
Aroclor 1221	Aroclor 1254
Aroclor 1242	

Pesticides and PCBs Set

M-608-SET	\$ 60 / 4 x 1 mL
(M-001H, M-001J, M-001K, M-001L)	

Performance Check Solution

M-608-QC *	\$ 50 / 1 x 1 mL
M-608-QC-PAK *	SAVE 20% \$ 200 / 5 x 1 mL
At stated conc. in MeOH	17 comps.

Aldrin	(0.02 mg/mL)	Endosulfan I	(0.02 mg/mL)
α-BHC	(0.02 mg/mL)	Endosulfan II	(0.10 mg/mL)
β-BHC	(0.02 mg/mL)	Endosulfan sulfate	(0.10 mg/mL)
δ-BHC	(0.02 mg/mL)	Endrin	(0.10 mg/mL)
γ-BHC	(0.02 mg/mL)	Endrin aldehyde	(0.02 mg/mL)
4,4'-DDD	(0.10 mg/mL)	Heptachlor	(0.02 mg/mL)
4,4'-DDE	(0.02 mg/mL)	Heptachlor epoxide	(0.02 mg/mL)
4,4'-DDT	(0.10 mg/mL)	Methoxychlor	(0.02 mg/mL)
Dieldrin	(0.02 mg/mL)		

Pesticides

M-608-ASL	Alternate Source	\$ 50 / 1 x 1 mL
M-608-ASL-PAK	SAVE 20%	\$ 200 / 5 x 1 mL
20 µg/mL each in MeOH		16 comps.

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

Technical Mix Analytes - Aroclors (Polychlorinated Biphenyls)

Each at 1,000 µg/mL in Hexane	AccuPAK™ (5 x 1 mL)
	SAVE 20%

Aroclors #	Cat. No.	1 mL	Cat. No.	PAK
Aroclor 1016	C-216S-H-10X	\$ 20	C-216S-H-10X-PAK	\$ 80
Aroclor 1221	C-221S-H-10X	20	C-221S-H-10X-PAK	80
Aroclor 1232	C-232S-H-10X	20	C-232S-H-10X-PAK	80
Aroclor 1242	C-242S-H-10X	20	C-242S-H-10X-PAK	80
Aroclor 1248	C-248S-H-10X	20	C-248S-H-10X-PAK	80
Aroclor 1254	C-254S-H-10X	20	C-254S-H-10X-PAK	80
Aroclor 1260	C-260S-H-10X	20	C-260S-H-10X-PAK	80
Aroclor 1262	C-262S-H-10X	20	C-262S-H-10X-PAK	80
Aroclor 1268	C-268S-H-10X	20	C-268S-H-10X-PAK	80

* ColdPAK required to maintain integrity of product.



Method 608.1 & 608.2 Organochlorine Pesticides in Municipal & Industrial Wastewater by GC/ECD

M-608.1 \$ 35 / 1 x 1 mL
M-608.1-PAK **SAVE 20%** \$ 140 / 5 x 1 mL
 100 µg/mL each in Isooctane 7 comps.

Chlorobenzilate	Etridiazole
Chloroneb	PCNB
Chloropropylate	Propachlor
Dibromochloropropane	

M-608.2 \$ 35 / 1 x 1 mL
M-608.2-PAK **SAVE 20%** \$ 140 / 5 x 1 mL
 100 µg/mL each in Isooctane 6 comps.

Chlorothalonil	Methoxychlor
DCPA	cis-Permethrin *
Dichloram	trans-Permethrin *

* Actual concentrations stated on Certificate of Product Data

Method 609 Nitroaromatics & Isophorone by GC/ECD/FID

M-609A-R \$ 15 / 1 x 1 mL
 1.0 mg/mL each in Hexane 2 comps.

Isophorone	Nitrobenzene
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M-609B-R \$ 15 / 1 x 1 mL
 1.0 mg/mL each in Hexane 2 comps.

2,4-Dinitrotoluene	2,6-Dinitrotoluene
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M-609-R-SET \$ 20 / 2 x 1 mL
 (M-609A-R, M-609B-R)

Performance Check Solution

M-609-QC \$ 20 / 1 x 1 mL
 At stated conc. in Acetone 4 comps.

Isophorone (100 µg/mL)	2,4-Dinitrotoluene (20 µg/mL)
Nitrobenzene (100 µg/mL)	2,6-Dinitrotoluene (20 µg/mL)

Method 610 PAHs by GC/FID or HPLC

M-610 \$ 30 / 1 x 1 mL
 At stated conc. in MeOH:CH₂Cl₂ (50:50) 16 comps.
M-610A \$ 35 / 1 x 1 mL
 At stated conc. in MeOH:CH₂Cl₂ (50:50) 16 comps.
M-610-QC \$ 35 / 1 x 1 mL
 At stated conc in AcCN 16 comps.

Compound	M-610 (mg/mL)	M-610A (mg/mL)	M-610-QC (mg/mL)
Acenaphthene	0.1	1.0	0.1
Acenaphthylene	0.1	2.0	0.1
Anthracene	0.1	0.1	0.1
Benzo[a]anthracene	0.1	0.1	0.01
Benzo[a]pyrene	0.1	0.1	0.01
Benzo[b]fluoranthene	0.1	0.2	0.01
Benzo[g,h,i]perylene	0.1	0.2	0.01
Benzo[k]fluoranthene	0.1	0.1	0.005
Chrysene	0.1	0.1	0.01
Dibenz[a,h]anthracene	0.1	0.2	0.01
Fluoranthene	0.1	0.2	0.01
Fluorene	0.1	0.2	0.1
Indeno[1,2,3-cd]pyrene	0.1	0.1	0.01
Naphthalene	0.1	1.0	0.1
Phenanthrene	0.1	0.1	0.1
Pyrene	0.1	0.1	0.01

Method 611 Haloethers by GC/ECD or ECLD

M-611 \$ 30 / 1 x 1 mL
 0.2 mg/mL each in MeOH 5 comps.

bis(2-Chloroethyl) ether	4-Bromophenyl phenyl ether
bis(2-Chloroethoxy)methane	4-Chlorophenyl phenyl ether
bis(2-Chloro-1-methylethyl) ether	

Method 612 Chlorinated Hydrocarbons by GC/ECD

M-612 \$ 25 / 1 x 1 mL
 At stated conc. in Isooctane 9 comps.

2-Chloronaphthalene (400 µg/mL)	Hexachlorobutadiene (1 µg/mL)
1,2-Dichlorobenzene (200 µg/mL)	Hexachloroethane (1 µg/mL)
1,3-Dichlorobenzene (200 µg/mL)	Hexachlorocyclopentadiene (1 µg/mL)
1,4-Dichlorobenzene (400 µg/mL)	1,2,4-Trichlorobenzene (40 µg/mL)
Hexachlorobenzene (1 µg/mL)	

Method 613 2,3,7,8-TCDD by GC/MS

M-613 \$ 40 / 1 x 1 mL
M-613-PAK **SAVE 20%** \$ 160 / 5 x 1 mL
 10 µg/mL in Toluene

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

Method 614 & 614.1 Organophosphorus Pesticides by GC/NPD

M-614 \$ 30 / 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 \$ 30 / 1 x 1 mL
 1,000 µg/mL each in Acetone:Hexane (50:50) 4 comps.

Dioxathion	Ethion
EPN	Terbufos

M-614.1-ASL \$ 46 / 1 x 1 mL
 At stated conc. in Hexane 4 comps.

Alternate Source

Dioxathion (10 µg/mL)	Ethion (100 µg/mL)
EPN (200 µg/mL)	Terbufos (4 µg/mL)

Matrix Spiking Solution

M-610-MS \$ 30 / 1 x 1 mL
M-610-MS-PAK **SAVE 20%** \$ 120 / 5 x 1 mL
 At stated conc. in AcCN 6 comps.

Benz[a]pyrene (0.5 mg/mL)	2-Methylnaphthalene (5.0 mg/mL)
Chrysene (0.5 mg/mL)	Phenanthrene (0.5 mg/mL)
1-Methylnaphthalene (5.0 mg/mL)	Pyrene (0.5 mg/mL)

For additional formulations also see Method 8310



EPA Method 600 Series

Method 615 Chlorinated Herbicides

Chlorinated Herbicides

Each at 0.2 mg/mL *	Herbicide Acids		Methyl Derivatives	
	In MeOH	Cat. No.	In Hexane	1 mL Price
Compound			Cat. No.	
2,4-D	M-8150S-A-01		M-8150-01	\$ 15
2,4-DB	M-8150S-A-02		M-8150-02	15
2,4,5-T	M-8150S-A-03		M-8150-03	15
2,4,5-TP	M-8150S-A-04		M-8150-04	15
Dalapon	M-8150S-A-05		M-8150-05	15
Dicamba	M-8150S-A-06		M-8150-06	15
Dichlorprop	M-8150S-A-07		M-8150-07	15
Dinoseb	M-8150S-A-08		M-8150-08	15
MCPA (2.0 mg/mL) *	M-8150S-A-09		M-8150-09	15
MCPP (2.0 mg/mL) *	M-8150S-A-10		M-8150-10	15
Set of 10 x 1 mL	M-8150A-SET		M-8150-SET	
Each Solution at 0.2 mg/mL, * except MCPA & MCPP			Above analytes	

Underivatized

M-8150A \$ 40 / 1 x 1 mL
0.1 mg/mL in MeOH, except MCPA and MCPP 10 comps.

2,4-D	Dinoseb
Dalapon	MCPA (10 mg/mL)
2,4-DB	MCPP (10 mg/mL)
Dicamba	2,4,5-TP
Dichlorprop	2,4,5-T

Methyl Derivatives

M-8150 \$ 45 / 1 x 1 mL
0.1 mg/mL in MeOH, except MCPA and MCPP 10 comps.

2,4-D	Dinoseb
Dalapon	MCPA (10 mg/mL)
2,4-DB	MCPP (10 mg/mL)
Dicamba	2,4,5-TP
Dichlorprop	2,4,5-T

Method 615 Underivatized Chlorinated Herbicides

M-615A-ASL \$ 50 / 1 x 1 mL
M-615A-ASL-PAK **SAVE 20%** \$ 200 / 5 x 1 mL
At stated conc. in MeOH 10 comps.

Method 615 Methyl Derivatives of Chlorinated Herbicides

M-615-ASL \$ 55 / 1 x 1 mL
M-615-ASL-PAK **SAVE 20%** \$ 220 / 5 x 1 mL
At stated conc. in MeOH 10 comps.

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

Method 617 Chlorinated Pesticides & PCBs by GC/ECD

Mix #1 - Analytes

Z-014C-R2 \$ 85 / 1 x 1 mL
Z-014C-R2-PAK **SAVE 20%** \$ 340 / 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
4,4'-DDD	Endosulfan sulphate	Methoxychlor

Mix #2 - Analytes

M-617-2 \$ 45 / 1 x 1 mL
2.0 mg/mL each in Hexane:Toluene (50:50) 9 comps.

Captan	Dicofol	PCNB
Carbophenothion	Isodrin	Perthane
Dichloran	Mirex	Trifluralin

Method 617 Chlorinated Pesticides & PCBs (Cont.)

Chlordane

P-017S-20X \$ 24 / 1 x 1 mL
2.0 mg/mL in MeOH

Toxaphene

P-093S-40X \$ 24 / 1 x 1 mL
4.0 mg/mL in MeOH

Method 618 Volatile Pesticides by GC/ECD

Volatile Pesticides

M-618 \$ 20 / 1 x 1 mL
20 mg/mL each in Isooctane 2 comps.
Chloropicrin Ethylene dibromide

Internal Standard

M-618-IS \$ 10 / 1 x 1 mL
20 mg/mL in Isooctane
Bromoform

Method 619 Triazine Herbicides by GC/NPD

Triazine Herbicides

Each at 0.1 mg/mL in MeOH

Compound	Cat. No.	1 mL	Compound	Cat. No.	1 mL
Ametryn	M-619-01	\$ 12	Secbumeton	M-619-07	\$ 22
Atraton	M-619-02	22	Simetryn	M-619-08	22
Atrazine	M-619-03	12	Simazine	M-619-09	12
Prometon	M-619-04	12	Terbutylazine	M-619-10	32
Prometryn	M-619-05	12	Terbutryn	M-619-11	12
Propazine	M-619-06	12			

M-619-SET \$ 130 / 11 x 1 mL
Each at 0.1 mg/mL in MeOH Above 11 compounds
M-619M \$ 85 / 1 x 1 mL
0.1 mg/mL each in MeOH Above 11 compounds

Method 620 Diphenylamine by GC/NPD

Diphenylamine

M-620 * \$ 15 / 1 x 1 mL
1000 µg/mL each in MeOH

Diphenylamine

Method 622 Organophosphorus Pesticides by GC/NPD

Organophosphorus Pesticides

M-622-SET \$ 390 / 27 x 1 mL
1000 µg/mL each in Hexane

Azinphos methyl (01)	Merphos (15)
Bolstar (<i>Sulprofos</i>) (02)	Mevinphos (16)
Chlorpyrifos (03)	Monocrotophos (17)
Coumaphos (04)	Naled (18)
Demeton, O & S (05)	Parathion ethyl (19)
Diazinon (06)	Parathion methyl (20)
Dichlorvos (07)	Phorate (21)
Dimethoate (08)	Ronnel (22)
Disulfoton (09)	Stirophos (23)
EPN (10)	Sulfotep (24)
Ethoprop (11)	TEPP (25)
Fensulfthion (12)	Tokuthion (26)
Fenthion (13)	Trichloronate (27)
Malathion (14)	

* ColdPAK required to maintain integrity of product.

Method 622.1 Thiophosphate Pesticides by GC/NPD

Thiophosphate Pesticides

M-622.1

1.0 mg/mL each in MtBE

\$ 40 / 1 x 1 mL

7 comps.

Aspon
Dichlofenthion
Famphur
Fenitrothion

Fonophos
Phosmet
Thionazin

Method 624 Purgeables by GC/MS

Purgeables

M-624

0.2 mg/mL each in MeOH

\$ 30 / 1 x 1 mL

31 comps.

Benzene	<i>trans</i> -1,2-Dichloroethene
Bromodichloromethane	1,2-Dichloropropane
Bromoform	<i>cis</i> -1,3-Dichloropropene *
Bromomethane	<i>trans</i> -1,3-Dichloropropene **
Carbon tetrachloride	Ethylbenzene
Chlorobenzene	Methylene chloride
Chloroethane	1,1,2,2-Tetrachloroethane
2-Chloroethylvinyl ether	Tetrachloroethene
Chloroform	Toluene
Chloromethane	1,1,1-Trichloroethane
Dibromochloromethane	1,1,2-Trichloroethane
1,2-Dichlorobenzene	Trichloroethene
1,3-Dichlorobenzene	Trichlorofluoromethane
1,4-Dichlorobenzene	Vinyl chloride
1,1-Dichloroethane	
1,2-Dichloroethane	
1,1-Dichloroethene	

* *cis* (1.06 x conc.)

** *trans* (0.94 x conc.)

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.	Price / 1 mL
Benzene-d ₆	M-624-SS-01	\$ 20
Bromochloromethane	M-624-SS-02	20
4-Bromofluorobenzene	M-624-SS-03	10
1-Chloro-2-bromopropane	M-624-SS-04	10
1,4-Dichlorobutane	M-624-SS-05	10
1,2-Dichloroethane-d ₄	M-624-SS-06	20
1,4-Difluorobenzene	M-624-SS-07	10
Ethylbenzene-d ₁₀	M-624-SS-08	20
Fluorobenzene	M-624-SS-09	10
Pentafluorobenzene	M-624-SS-10	10
1,2-Dichlorobenzene-d ₄	M-624-SS-11	20
2-Bromochlorobenzene	M-624-SS-12	10
4-Chlorofluorobenzene	M-624-SS-13	10
a,a,a-Trichlorotoluene	M-624-SS-14	10

Surrogate Standards

M-624-SS-M

\$ 25 / 1 x 1 mL

M-624-SS-M-PAK

SAVE 20% \$ 100 / 5 x 1 mL

20 mg/mL each in MeOH

3 comps.

4-Bromofluorobenzene
Fluorobenzene

Pentafluorobenzene

Internal Standard

M-001R

\$ 15 / 1 x 1 mL

M-001R-PAK

SAVE 20% \$ 60 / 5 x 1 mL

20 mg/mL each in MeOH

3 comps.

Bromochloromethane
1,4-Dichlorobutane

2-Bromo-1-chloropropane

Tens of thousands of Standards Ready-to-Ship



Method 622-624



EPA Method 600 Series

Method 625 Semi-Volatiles Analysis by GC/MS

The following composite mixtures were formulated to allow the flexibility of preparing a complete semi-volatile mix to meet your laboratory's specific needs. These Base/Neutral analytes are also available in a two-ampule set to extend the useful life of your stock calibration standards.

M-625-BN	\$ 55 / 1 x 1 mL
M-625-BN-PAK	SAVE 20% \$ 220 / 5 x 1 mL
0.1 mg/mL each in CH_2Cl_2 44 Base-Neutrals and 2 Benzidines	
M-625-BN-5X	\$ 115 / 1 x 1 mL
M-625-BN-5X-PAK	SAVE 20% \$ 460 / 5 x 1 mL
0.5 mg/mL each in CH_2Cl_2 44 Base-Neutrals and 2 Benzidines	
CLP-HC-BN	\$ 150 / 1 x 1 mL
CLP-HC-BN-PAK	SAVE 20% \$ 600 / 5 x 1 mL
2.0 mg/mL each in Benzene : CH_2Cl_2 : AcCN (40:40:20) 44 Base-Neutrals and 2 Benzidines	
CLP-HC-BN-SET	\$ 190 / 2 x 1 mL
CLP-HC-BN-SET-PAK	SAVE 20% \$ 760 / 5 x (2 x 1 mL)
CLP-HC-BN-R & Z-014F	

Base-Neutral Analytes (44 comps.)

Acenaphthene	Diethyl phthalate
Acenaphthylene	Dimethyl phthalate
Anthracene	2,4-Dinitrotoluene
Azobenzene	2,6-Dinitrotoluene
Benz[a]anthracene	Di-n-octyl phthalate
Benzo[b]fluoranthene	bis(2-Ethylhexyl)phthalate
Benzo[k]fluoranthene	Fluoranthene
Benzo[g,h,i]perylene	Fluorene
Benzo[a]pyrene	Hexachlorobenzene
4-Bromophenyl phenyl ether	Hexachlorobutadiene
Butyl benzyl phthalate	Hexachlorocyclopentadiene
bis(2-Chloroethoxy)methane	Hexachloroethane
bis(2-Chloroethyl) ether	Indeno[1,2,3-cd]pyrene
bis(2-Chloro-1-methylethyl) ether	Isophorone
2-Chloronaphthalene	Naphthalene
4-Chlorophenyl phenyl ether	Nitrobenzene
Chrysene	N-Nitrosodimethylamine
Dibenz[a,h]anthracene	N-Nitrosodiphenylamine
Di-n-butyl phthalate	N-Nitrosodi-n-propylamine
1,2-Dichlorobenzene	Phenanthrene
1,3-Dichlorobenzene	Pyrene
1,4-Dichlorobenzene	1,2,4-Trichlorobenzene

Benzidine Analytes (2 comps.)

Benzidine	3,3'-Dichlorobenzidine
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Base-Neutral Mix

CLP-HC-BN-R	\$ 160 / 1 x 1 mL
2.0 mg/mL each in Benzene : CH_2Cl_2 : AcCN (40:40:20) 44 comps.	
CLP-HC-BN-R-PAK	SAVE 20% \$ 640 / 5 x 1 mL
2.0 mg/mL each in Benzene : CH_2Cl_2 : AcCN (40:40:20) 44 comps.	

Benzidine Analytes (2 comps.)

Z-014F	\$ 30 / 1 x 1 mL
2.0 mg/mL each in MeOH 2 comps.	

Method 625 Modification Standard

M-625-MOD	\$ 50 / 1 x 1 mL
M-625-MOD-PAK	SAVE 20% \$ 200 / 5 x 1 mL
2000 µg/mL each in CH_2Cl_2 17 comps.	

Acetophenone	n-Dodecane
Aniline	n-Eicosane
Benzoic acid	n-Hexadecane
Carbazole	1-Methylphenanthrene
p-Cresol	n-Octadecane
o-Cresol	Pyridine
2,3-Dichloroaniline	a-Terpineol
n-Decane	n-Tetradecane
n-Docosane	

Daily QA/QC Standards

M-625-BN-1	\$ 25 / 1 x 1 mL
M-625-BN-1-PAK	SAVE 20% \$ 100 / 5 x 1 mL
0.5 mg/mL each in CH_2Cl_2 12 comps.	
Acenaphthylene	3,3'-Dichlorobenzidine
Benzo[b]fluoranthene	Dimethyl phthalate
4-Bromophenylphenyl ether	Di-n-butyl phthalate
bis(2-Chloroethyl) ether	2,6-Dinitrotoluene
bis(2-Chloro-1-methylethyl) ether	bis(2-Ethylhexyl)phthalate
1,4-Dichlorobenzene	Nitrobenzene

M-625-BN-2	\$ 25 / 1 x 1 mL
M-625-BN-2-PAK	SAVE 20% \$ 100 / 5 x 1 mL
0.5 mg/mL each in CH_2Cl_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	\$ 25 / 1 x 1 mL
M-625-BN-3-PAK	SAVE 20% \$ 100 / 5 x 1 mL
0.5 mg/mL each in CH_2Cl_2 11 comps.	

Azobenzene	Isophorone
Benzyl butyl phthalate	N-Nitrosodi-n-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	\$ 25 / 1 x 1 mL
M-625-BN-4-PAK	SAVE 20% \$ 100 / 5 x 1 mL
0.5 mg/mL each in CH_2Cl_2 8 comps.	

Benzidine	4-Chlorophenylphenyl ether
Benzo[a]pyrene	Di-n-octyl phthalate
Benzo[g,h,i]perylene	Indeno[1,2,3-cd]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	\$ 30 / 1 x 1 mL
Z-014H-PAK	SAVE 20% \$ 120 / 5 x 1 mL
2.0 mg/mL each in CH_2Cl_2 11 comps.	

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



Method 625 Semi-Volatiles Analysis by GC/MS (Continued)

Acid Extractables Mixture

M-625A	\$ 25 / 1 x 1 mL
M-625A-PAK	SAVE 20% \$ 100 / 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

Individual solutions at 0.2 mg/mL in CH₂Cl₂

Component	Cat. No.	1 mL
Aniline-d ₅	M-625-01	\$ 20
Anthracene-d ₁₀	M-625-02	20
Benz[a]anthracene-d ₁₂	M-625-03	20
Decafluorobiphenyl	M-625-04	20
4,4'-Dibromobiphenyl	M-625-05	20
4,4'-Dibromooctafluorobiphenyl	M-625-06	20
2,2'-Difluorobiphenyl	M-625-07	20
4-Fluoroaniline	M-625-08	20
2-Fluorobiphenyl	M-625-09	20
1-Fluoronaphthalene	M-625-10	20
2-Fluoronaphthalene	M-625-11	20
Naphthalene-d ₈	M-625-12	20
Nitrobenzene-d ₅	M-625-13	20
Phenanthrene-d ₁₀	M-625-14	20
Pyridine-d ₅	M-625-15	20

Acids

Individual solution at 0.2 mg/mL in CH₂Cl₂

Component	Cat. No.	1 mL
2-Fluorophenol	M-625-16	\$ 20
Pentafluorophenol	M-625-17	20
Phenol-d ₅	M-625-18	20
2,4,6-Tribromophenol	M-625-19	20
2-Chlorophenol-d ₄	M-625-20	20

Pesticide Extractables Mixture

M-625P	\$ 35 / 1 x 1 mL
M-625P-PAK	SAVE 20% \$ 140 / 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
4,4'-DDT	

GC/MS Calibration Standards

M-625C-SET	\$ 80 / set of 5 x 1 mL
5 solutions each at stated conc. in CH ₂ Cl ₂	

Component	Cat. No.	1 mL
Benzidine (50 µg/mL)	M-625C-1	\$ 20
Pentachlorophenol (25 µg/mL)	M-625C-2	20
Decafluorotriphenylphosphine (DFTPP) (25 µg/mL)	M-625C-3	20
Benzidine (50 µg/mL) + DFTPP (25 µg/mL)	M-625C-4	20
Pentachlorophenol(25 µg/mL) + DFTPP(25 µg/mL)	M-625C-5	20

GC/MS Tuning Standards

M-625-TS	\$ 40 / 1 x 1 mL
M-625-TS-PAK	SAVE 20% \$ 160 / 5 x 1 mL
50 µg/mL each in CH ₂ Cl ₂	4 comps.
M-625-TS-20X	\$ 40 / 1 x 1 mL
M-625-TS-20X-PAK	SAVE 20% \$ 160 / 5 x 1 mL
1000 µg/mL each in CH ₂ Cl ₂	4 comps.
Benzidine	DFTPP
p,p'-DDT	Pentachlorophenol
CLP-TS	\$ 20 / 1 x 1 mL
CLP-TS-PAK	SAVE 20% \$ 80 / 5 x 1 mL
50 µg/mL in CH ₂ Cl ₂	
Perfluorokerosene	

Multi-Component Analytes (Polychlorinated Biphenyls, Chlordane & Toxaphene)

Each at 1,000 µg/mL in Hexane

AccuPAK™ (5 x 1 mL)

SAVE 20%

Aroclors #	Cat. No.	1 mL	Cat. No.	PAK
Aroclor 1016	C-216S-H-10X	\$ 20	C-216S-H-10X-PAK	\$ 80
Aroclor 1221	C-221S-H-10X	20	C-221S-H-10X-PAK	80
Aroclor 1232	C-232S-H-10X	20	C-232S-H-10X-PAK	80
Aroclor 1242	C-242S-H-10X	20	C-242S-H-10X-PAK	80
Aroclor 1248	C-248S-H-10X	20	C-248S-H-10X-PAK	80
Aroclor 1254	C-254S-H-10X	20	C-254S-H-10X-PAK	80
Aroclor 1260	C-260S-H-10X	20	C-260S-H-10X-PAK	80
Aroclor 1262	C-262S-H-10X	20	C-262S-H-10X-PAK	80
Aroclor 1268	C-268S-H-10X	20	C-268S-H-10X-PAK	80
Pesticides				
Chlordane	P-017S-H-10X	\$ 15	P-017S-H-10X-PAK	\$ 60
Toxaphene	P-093S-H-10X	15	P-093S-H-10X-PAK	60

Chlordane and Toxaphene

M-001J	\$ 15 / 1 x 1 mL
M-001J-PAK	SAVE 20% \$ 60 / 5 x 1 mL
At stated conc. in MeOH	2 comps.
Chlordane (0.02 mg/mL)	Toxaphene (0.20 mg/mL)

Polychlorinated Biphenyls

Aroclor Mix #1

M-001K	\$ 15 / 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	\$ 15 / 1 x 1 mL
0.2 mg/mL each in MeOH	3 comps.
Aroclor 1221	Aroclor 1254
Aroclor 1242	

Internal Standard Mix

Z-014J	\$ 80 / 1 x 1 mL
Z-014J-PAK	SAVE 37% \$ 250 / 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 ₂	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. 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 \$ 50 / 1 x 1 mL
Z-014A-PAK **SAVE 20%** \$ 200 / 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 \$ 50 / 1 x 1 mL
Z-014B-PAK **SAVE 20%** \$ 200 / 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

Toxic Substances - Mix #1

Z-014D \$ 25 / 1 x 1 mL
Z-014D-PAK **SAVE 20%** \$ 100 / 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 \$ 30 / 1 x 1 mL
Z-014E-PAK **SAVE 20%** \$ 120 / 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

Benzidine Mix

Z-014F \$ 30 / 1 x 1 mL
Z-014F-PAK **SAVE 20%** \$ 120 / 5 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

Benzidine

3,3'-Dichlorobenzidine

PAH Mix

Z-014G \$ 65 / 1 x 1 mL
Z-014G-PAK **SAVE 20%** \$ 260 / 5 x 1 mL
2.0 mg/mL each in CH₂Cl₂:Benzene (50:50) 16 comps.

Acenaphthene
Acenaphthylene
Anthracene
Benz[a]anthracene
Benzo[a]pyrene
Benzo[b]fluoranthene
Benzo[g,h,i]perylene
Benzo[k]fluoranthene

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

PAH Mix

Z-014G-R \$ 65 / 1 x 1 mL
Z-014G-R-PAK **SAVE 20%** \$ 260 / 5 x 1 mL
2.0 mg/mL each in CH₂Cl₂:Benzene (50:50) 17 comps.

Acenaphthene
Acenaphthylene
Anthracene
Benz[a]anthracene
Benzo[a]pyrene
Benzo[b]fluoranthene
Benzo[g,h,i]perylene
Benzo[k]fluoranthene
Carbazole

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

Phenols Mix

Z-014H \$ 30 / 1 x 1 mL
Z-014H-PAK **SAVE 20%** \$ 120 / 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

Internal Standard Mix

Z-014J \$ 80 / 1 x 1 mL
Z-014J-PAK **SAVE 38%** \$ 250 / 5 x 1 mL
4.0 mg/mL each in CH₂Cl₂ 6 comps.

Acenaphthene-d₁₀
Chrysene-d₁₂
1,4-Dichlorobenzene-d₄

Naphthalene-d₈
Perylene-d₁₂
Phenanthrene-d₁₀

Method 625 Priority Pollutant Set

Order a complete Set **SAVE 25%**

Z-014R-SET \$ 350 / set of 9 x 1 mL

Set includes:

Z-014A Base/Neutrals - Mix #1
Z-014B Base/Neutrals - Mix #2
Z-014C Pesticides - Mix #1
Z-014D Toxic Substances - Mix #1
Z-014E Toxic Substances - Mix #2
Z-014F Benzidine Mix
Z-014G-R PAH Mix
Z-014H Phenols Mix
Z-014J Internal Standard Mix

Z-014R-1-SET \$ 350 / set of 9 x 1 mL

Set includes:

Z-014A Base/Neutrals - Mix #1
Z-014B Base/Neutrals - Mix #2
Z-014C-R Pesticides - Mix #2
Z-014D Toxic Substances - Mix #1
Z-014E Toxic Substances - Mix #2
Z-014F Benzidine Mix
Z-014G-R PAH Mix
Z-014H Phenols Mix
Z-014J Internal Standard Mix

Z-014R-2-SET \$ 230 / set of 7 x 1 mL

Set includes:

Z-014A Base/Neutrals - Mix #1
Z-014B Base/Neutrals - Mix #2
Z-014D Toxic Substances - Mix #1
Z-014E Toxic Substances - Mix #2
Z-014F Benzidine Mix
Z-014G PAH Mix
Z-014H Phenols Mix

Z-014R-3-SET \$ 230 / set of 7 x 1 mL

Set includes:

Z-014A Base/Neutrals - Mix #1
Z-014B Base/Neutrals - Mix #2
Z-014D Toxic Substances - Mix #1
Z-014E Toxic Substances - Mix #2
Z-014F Benzidine Mix
Z-014G-R PAH Mix
Z-014H Phenols Mix



Method 625 (continued) Priority Pollutant Standards

Pesticides - Mix #1

Z-014C \$ 75 / 1 x 1 mL
Z-014C-PAK **SAVE 20%** \$ 300 / 5 x 1 mL
 2.0 mg/mL each in Toluene:Hexane (50:50) 16 comps.

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

Pesticides - Mix #2

Z-014C-R \$ 95 / 1 x 1 mL
Z-014C-R-PAK **SAVE 20%** \$ 380 / 5 x 1 mL
 2.0 mg/mL each in Toluene:Hexane (50:50) 20 comps.

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

Pesticides - Mix #3

Z-014C-R2 \$ 85 / 1 x 1 mL
Z-014C-R2-PAK **SAVE 20%** \$ 340 / 5 x 1 mL
 2.0 mg/mL each in Toluene:Hexane (50:50) 18 comps.

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

Tuning Standards

M-625-TS \$ 40 / 1 x 1 mL
M-625-TS-PAK **SAVE 20%** \$ 160 / 5 x 1 mL
 50 µg/mL each in CH₂Cl₂ 4 comps.

Benzidine	DFTPP
p,p'-DDT	Pentachlorophenol

CLP-TS \$ 20 / 1 x 1 mL
CLP-TS-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
 50 µg/mL in CH₂Cl₂

Perfluorokerosene

EPA Method 625 GC/MS Calibration Standards

M-625C-SET \$ 80 / set of 5 x 1 mL
 5 solutions each at stated conc. in CH₂Cl₂

Compound	Cat. No.	Price
Benzidine (50 µg/mL)	M-625C-1	\$ 20
Pentachlorophenol (25 µg/mL)	M-625C-2	20
Decafluorotriphenylphosphine (DFTPP) (25 µg/mL)	M-625C-3	20
Benzidine (50 µg/mL) + DFTPP (25 µg/mL)	M-625C-4	20
Pentachlorophenol (25 µg/mL) + DFTPP(25 µg/mL)	M-625C-5	20

Method 627 Dinitroaniline Pesticides by GC/ECD

Dinitroaniline Pesticide Mixes

M-627 \$ 30 / 1 x 1 mL
 1.0 mg/mL each in MeOH 4 comps.

Ethalfuralin	Tolban (Profluralin)
Paarlan (Isopropalin)	Trifluralin

M-627-R \$ 30 / 1 x 1 mL
 1.0 mg/mL each in MeOH 5 comps.

Benfluralin	Tolban (Profluralin)
Ethalfuralin	Trifluralin
Paarlan (Isopropalin)	

Method 632 Carbamates & Urea Pesticides in Waste Water by HPLC

Carbamates & Urea Pesticides in Waste Water

M-632-SET \$ 200 / set of 21 x 1 mL
 Individual Solutions, in 0.1 mg/mL in AcCN

M-632M \$ 125 / 1 x 1 mL
 Mixture containing the 21 analytes @ 0.1 mg/mL each in AcCN

M-632M-10X \$ 150 / 1 x 1 mL
 Mixture containing the 21 analytes @ 1.0 mg/mL each in AcCN

	Cat. No.	Price		Cat. No.	Price
Aminocarb	M-632-01	\$ 12	Methomyl	M-632-12	\$ 12
Barban	M-632-02	12	Mexacarbate	M-632-13	12
Carbaryl	M-632-03	12	Monuron	M-632-14	12
Carbofuran	M-632-04	12	Monuron-TCA	M-632-15	12
Chlorpropham	M-632-05	12	Neburon	M-632-16	12
Diuron	M-632-06	12	Oxamyl	M-632-17	12
Fenuron	M-632-07	12	Propham	M-632-18	12
Fenuron-TCA	M-632-08	12	Propoxur	M-632-19	12
Fluometuron	M-632-09	12	Siduron	M-632-20	12
Linuron	M-632-10	12	Swep	M-632-21	12
Methiocarb	M-632-11	12			

Method 632.1 Carbamates & Amides in Waste Water by HPLC

Carbamates & Amides in Waste Water

M-632.1-SET \$ 35 / set of 4 x 1 mL
 Each in 0.1 mg/mL in AcCN

Vacor	M-632.1-1	\$ 12	Napropamide	M-632.1-3	\$ 12
Propanil	M-632.1-2	12	Carbaryl	M-632.1-4	12

Method 633 Organonitrogen Pesticides by GC/NPD

Organonitrogen Pesticides Mix

M-633 \$ 30 / 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 \$ 45 / 1 x 1 mL
 1.0 mg/mL each in MeOH 6 comps.

Butylate	EPTC	Pebutate
Cycloate	Molinate	Vernolate

Internal Standard

M-634-IS \$ 15 / 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

\$ 45 / 1 x 1 mL

6 comps.

Alachlor	Diphenamid	Lethane
Butachlor	Fluridone	Norflurazon

HPLC 600's Additional Methods for Pesticides in Waste Water by HPLC

Method	Solutions at 0.1 mg/mL in AcCN	Cat. No.	Price
604.1	Hexachlorophene & Dichlorophene	M-604.1	\$ 20
629	Cyanazine	M-629	20
631	Carbendazim	M-631	20
635	Rotenone	M-635	20
636	Bensulide	M-636	32
638	Oryzalin	M-638	20

Method	Solutions at 0.1 mg/mL in AcCN	Cat. No.	Price
639	Bendiocarb	M-639	\$ 20
640	Mercaptobenzothiazole	M-640	20
641	Thiabendazole	M-641	20
642	Biphenyl & o-Phenylphenol	M-642	20
643	Bentazon (<i>Basagran</i>)	M-643	20
644	Picloram	M-644	20

Method 680 Determination of Pesticides & PCBs in Water & Soil/Sediment by GC/MS

PCB Isomer Calibration Mix

M-680A

At stated conc. in Hexane

\$ 40 / 1 x 1 mL

9 comps.

2-Chlorobiphenyl	(50 µg/mL)
2,3-Dichlorobiphenyl	(50 µg/mL)
2,4,5-Trichlorobiphenyl	(50 µg/mL)
2,2',4,6-Tetrachlorobiphenyl	(100 µg/mL)
2,2',3,4,5'-Pentachlorobiphenyl	(100 µg/mL)
2,2',4,4',5,6'-Hexachlorobiphenyl	(100 µg/mL)
2,2',3,4',5,6,6'-Heptachlorobiphenyl	(150 µg/mL)
2,2',3,3',4,5',6,6'-Octachlorobiphenyl	(150 µg/mL)
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl	(250 µg/mL)

Internal Standard

M-680B

\$ 15 / 1 x 1 mL

250 µg/mL in Toluene

Chrysene-d₁₂

Method 680 PCB Isomer Calibration Set

M-680-SET

\$ 45 / 2 x 1 mL

(M-680A, M-680B)

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	2,2',3,3',4,4',5,5',6,6'-deca	209	0.144	0.150

Pesticide Mix

M-680P

\$ 65 / 1 x 1 mL

M-680P-PAK

SAVE 20% \$ 260 / 5 x 1 mL

At stated conc. in Toluene:Hexane (50:50)

22 comps.

Aldrin	(1,000 µg/mL)	Endosulfan I	(2,000 µg/mL)
α-BHC	(1,000 µg/mL)	Endosulfan II	(2,000 µg/mL)
β-BHC	(1,000 µg/mL)	Endosulfan sulfate	(1,000 µg/mL)
γ-BHC	(1,000 µg/mL)	Endrin	(1,000 µg/mL)
δ-BHC	(1,000 µg/mL)	Endrin aldehyde	(1,000 µg/mL)
α-Chlordane	(1,000 µg/mL)	Endrin ketone	(1,000 µg/mL)
γ-Chlordane	(1,000 µg/mL)	Heptachlor	(1,000 µg/mL)
4,4'-DDD	(1,000 µg/mL)	Heptachlor epoxide (Isomer B)	(1,000 µg/mL)
4,4'-DDE	(1,000 µg/mL)	Methoxychlor	(1,000 µg/mL)
4,4'-DDT	(1,000 µg/mL)	cis-Nonachlor	(1,000 µg/mL)
Dieldrin	(1,000 µg/mL)	trans-Nonachlor	(1,000 µg/mL)

Internal Standard

M-680-IS

\$ 15 / 1 x 1 mL

M-680-IS-PAK

SAVE 20% \$ 60 / 5 x 1 mL

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

2 comps.

M-680-IS-10X

\$ 25 / 1 x 1 mL

M-680-IS-10X-PAK

SAVE 20% \$ 100 / 5 x 1 mL

750 µg/mL each in Hexane:CH₂Cl₂ (50:50)

2 comps.

Chrysene-d₁₂

Phenanthrene-d₁₀

Tuning Standard

M-680-TS

\$ 10 / 1 x 1 mL

M-680-TS-PAK

SAVE 20% \$ 40 / 5 x 1 mL

10 µg/mL in CH₂Cl₂

Decafluorotriphenylphosphine (DFTPP)

Pesticide Mid-Level Check

M-680P-MLC

\$ 65 / 1 x 1 mL

M-680P-MLC-PAK

SAVE 20% \$ 260 / 5 x 1 mL

At stated conc. Toluene:Hexane (50:50)

21 comps.

Aldrin	(1,000 µg/mL)	Endosulfan I	(2,000 µg/mL)
α-BHC	(1,000 µg/mL)	Endosulfan II	(2,000 µg/mL)
β-BHC	(1,000 µg/mL)	Endosulfan sulfate	(1,000 µg/mL)
γ-BHC	(1,000 µg/mL)	Endrin	(1,000 µg/mL)
δ-BHC	(1,000 µg/mL)	Endrin ketone	(1,000 µg/mL)
α-Chlordane	(1,000 µg/mL)	Heptachlor	(1,000 µg/mL)
γ-Chlordane	(1,000 µg/mL)	Heptachlor epoxide (Isomer B)	(1,000 µg/mL)
4,4'-DDD	(1,000 µg/mL)	Methoxychlor	(1,000 µg/mL)
4,4'-DDE	(1,000 µg/mL)	cis-Nonachlor	(1,000 µg/mL)
4,4'-DDT	(1,000 µg/mL)	trans-Nonachlor	(1,000 µg/mL)
Dieldrin	(1,000 µg/mL)		

Retention Time Calibration Standard

M-680-RT

\$ 25 / 1 x 1 mL

M-680-RT-PAK

SAVE 20% \$ 100 / 5 x 1 mL

At stated conc. in Hexane

3 comps.

3,3',4,4'-Tetrachlorobiphenyl (100 µg/mL)

2,2',4,6,6'-Pentachlorobiphenyl (100 µg/mL)

2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (200 µg/mL)

Method 1311 Toxicity Characteristic Leaching Procedure (TCLP)

Volatile Spiking Mixture

TCLP-VOC \$ 30 / 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 \$ 50 / 1 x 1 mL
TCLP-BNA-PAK **SAVE 20%** \$ 200 / 5 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 13 comps.

o-Cresol	Hexachloroethane
m-Cresol	Nitrobenzene
p-Cresol	Pentachlorophenol
1,4-Dichlorobenzene	Pyridine
2,4-Dinitrotoluene	2,4,5-Trichlorophenol
Hexachlorobenzene	2,4,6-Trichlorophenol
Hexachlorobutadiene	

Semi-Volatile Spiking Set

TCLP-BNA-SET \$ 50 / set of 2 x 1 mL
(TCLP-A and TCLP-BN)

TCLP-A \$ 25 / 1 x 1 mL
TCLP-A-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
2.0 mg/mL each in MeOH 6 comps.

o-Cresol	Pentachlorophenol
m-Cresol	2,4,5-Trichlorophenol
p-Cresol	2,4,6-Trichlorophenol

TCLP-BN \$ 25 / 1 x 1 mL
TCLP-BN-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
2.0 mg/mL each in Acetone 7 comps.

1,4-Dichlorobenzene	Hexachloroethane
2,4-Dinitrotoluene	Nitrobenzene
Hexachlorobenzene	Pyridine
Hexachlorobutadiene	

2-Part Label System

Smudgeproof, tear and solvent resistant *
(Organic products in ampules)

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

Pesticide Spiking Mix

TCLP-PES \$ 50 / 1 x 1 mL
TCLP-PES-PAK **SAVE 20%** \$ 200 / 5 x 1 mL
2.0 mg/mL each in MeOH, except Toxaphene 7 comps.

Chlordane	Lindane
Endrin	Methoxychlor
Heptachlor	Toxaphene (4.0 mg/mL)
Heptachlor epoxide	

Pesticide Spiking Set

TCLP-PES-1/2-SET \$ 50 / set of 2 x 1 mL
(CLP-PES-1 and TCLP-PES-2)

TCLP-PES-1 \$ 35 / 1 x 1 mL
TCLP-PES-1-PAK **SAVE 20%** \$ 140 / 5 x 1 mL
2.0 mg/mL each in MeOH 5 comps.

Endrin	Lindane
Heptachlor	Methoxychlor
Heptachlor epoxide	

TCLP-PES-2 \$ 20 / 1 x 1 mL
TCLP-PES-2-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
At stated conc. in MeOH 2 comps.

Chlordane (2.0 mg/mL)	Toxaphene (4.0 mg/mL)
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Herbicide, PFB Derivative Mix

TCLP-HERB-PFB \$ 40 / 1 x 1 mL
0.1 mg/mL each in MtBE 2 comps.

2,4-D-PFB	2,4,5-TP-PFB
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Herbicide, PFB Derivatives

M-8150-02-PFB \$ 30 / 1 x 1 mL
0.1 mg/mL in MtBE

2,4-D-PFB

M-8150-04-PFB \$ 30 / 1 x 1 mL
0.1 mg/mL in MtBE

2,4,5-TP-PFB

Herbicide Spiking Mixes

TCLP-HERB \$ 20 / 1 x 1 mL
TCLP-HERB-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

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

TCLP-HERB-ME \$ 20 / 1 x 1 mL
TCLP-HERB-ME-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

2,4-D, Me	2,4,5-TP, Me
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Method 1311 TCLP continued
on next page



Method 1311 TCLP Regulatory Level Mixtures

Volatiles

TCLP-QC* \$ 40 / 1 x 1 mL
 TCLP-QC-PAK* **SAVE 20%** \$ 160 / 5 x 1 mL
 At stated conc. in MeOH 10 comps.

Benzene (5 µg/mL)	1,2-Dichloroethane (5 µg/mL)
2-Butanone (2000 µg/mL)	1,1-Dichloroethene (7 µg/mL)
Carbon tetrachloride (5 µg/mL)	Tetrachloroethene (7 µg/mL)
Chlorobenzene (1000 µg/mL)	Trichloroethene (5 µg/mL)
Chloroform (60 µg/mL)	Vinyl chloride (2 µg/mL)

Pesticides

TCLP-PES-1-QC \$ 35 / 1 x 1 mL
 TCLP-PES-1-QC-PAK **SAVE 20%** \$ 140 / 5 x 1 mL
 At stated conc. in MeOH 5 comps.

Endrin (0.2 µg/mL)	Lindane (4.0 µg/mL)
Heptachlor (0.4 µg/mL)	Methoxychlor (100 µg/mL)
Heptachlor epoxide (0.04 µg/mL)	

TCLP-PES-2-QC \$ 20 / 1 x 1 mL
 TCLP-PES-2-QC-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
 At stated conc. in MeOH 2 comps.

Chlordane (0.3 µg/mL)	Toxaphene (5.0 µg/mL)
-----------------------	-----------------------

Pesticide Set

TCLP-PES-1/2-QC-SET \$ 50 / set of 2 x 1 mL
 (includes TCLP-PEST-1-QC & TCLP-PEST-2-QC)

Semi-Volatiles

TCLP-BNA-QC \$ 60 / 1 x 1 mL
 At stated conc. in CH₂Cl₂ 13 comps.

o-Cresol (2000 µg/mL)	Hexachloroethane (30 µg/mL)
m-Cresol (2000 µg/mL)	Nitrobenzene (20 µg/mL)
p-Cresol (2000 µg/mL)	Pentachlorophenol (1000 µg/mL)
1,4-Dichlorobenzene (75 µg/mL)	Pyridine (50 µg/mL)
2,4-Dinitrotoluene (1.3 µg/mL)	2,4,5-Trichlorophenol (4000 µg/mL)
Hexachlorobenzene (1.3 µg/mL)	2,4,6-Trichlorophenol (20 µg/mL)
Hexachlorobutadiene (5 µg/mL)	

Herbicides

TCLP-HERB-ME-QC \$ 20 / 1 x 1 mL
 TCLP-HERB-ME-QC-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
 At stated conc. in MeOH 2 comps.

Concentration as Methyl Derivative	as Acid
2,4-D, ME (106.3 µg/mL)	(100 µg/mL)
2,4,5-TP, ME (10.5 µg/mL)	(10 µg/mL)

* ColdPAK required to maintain integrity of product.

Method 1312 Synthetic Leaching Procedure

Semi-Volatiles

TCLP-BNA-1312 \$ 50 / 1 x 1 mL
 TCLP-BNA-1312-PAK **SAVE 20%** \$ 200 / 5 x 1 mL
 2.0 mg/mL each in CH₂Cl₂ 14 comps.

Acenaphthene	2,4-Dinitrophenol
β-BHC	2,4-Dinitrotoluene
γ-BHC	o-Cresol
bis-2-Chloroethyl ether	2,4-Dimethylphenol
2-Chlorophenol	Hexachlorobenzene
1,2-Dichlorobenzene	Hexachlorobutadiene
1,4-Dichlorobenzene	Nitrobenzene



EPA Method 1600 Series

Dioxins and Furans

1600

Method 1613

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Method 1613 Dioxins & Furans by HRGC/HRMS

Precision and Recovery Standard

M-1613-PAR Bold (-04)

M-1613-PAR-PAK

All units in ng/mL in Nonane

\$ 525 / 1 x 1 mL

\$ 2,100 / 5 x 1 mL

17 comps.

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

Calibration Set

M-1613-CAL-SET

All in ng/mL in Nonane

\$ 2,100 / 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 USEPA Method 1613 analytes can also be used for USEPA Method 23, 8280, 8290, EU Method EN-1948 and Japanese Methods JIS-K0311 and JIS-K0312.

2,3,7,8 Isomers only Mix

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

M-1613-DF

40 ng/mL each in Nonane

\$ 75 / 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

Responding to the need for the analysis of polybrominated diphenyl ether (PBDE) congeners, the EPA has developed Method 1614. Method 1614 is recommended for analysis of aqueous, solid, tissue, and multi-phase environmental samples. AccuStandard has the largest offering of synthesized PBDEs - see Flame Retardant section for complete listing.

PBDEs Standard Solution for Accuracy & Precision

At stated conc. in Isooctane

39 comps.

	BDE-AAP-A \$ 195 / 1 mL ng/mL	BDE-AAP-A-15X \$ 750 / 1 mL µg/mL
2-Bromodiphenyl ether (#1)	100	1.5
3-Bromodiphenyl ether (#2)	100	1.5
4-Bromodiphenyl ether (#3)	100	1.5
2,4-Dibromodiphenyl ether (#7)	100	1.5
2,4'-Dibromodiphenyl ether (#8)	100	1.5
2,6-Dibromodiphenyl ether (#10)	100	1.5
3,3'-Dibromodiphenyl ether (#11)	100	1.5
3,4-Dibromodiphenyl ether (#12)	100	1.5
3,4'-Dibromodiphenyl ether (#13)	100	1.5
4,4'-Dibromodiphenyl ether (#15)	100	1.5
2,2',4-Tribromodiphenyl ether (#17)	100	1.5
2,3',4-Tribromodiphenyl ether (#25)	100	1.5
2,4,4'-Tribromodiphenyl ether (#28)	100	1.5
2,4,6-Tribromodiphenyl ether (#30)	100	1.5
2,4',6-Tribromodiphenyl ether (#32)	100	1.5
2',3,4-Tribromodiphenyl ether (#33)	100	1.5
3,3',4-Tribromodiphenyl ether (#35)	100	1.5
3,4,4'-Tribromodiphenyl ether (#37)	100	1.5
2,2',4,4'-Tetrabromodiphenyl ether (#47)	100	1.5
2,2',4,5'-Tetrabromodiphenyl ether (#49)	100	1.5
2,3',4,4'-Tetrabromodiphenyl ether (#66)	100	1.5
2,3',4',6-Tetrabromodiphenyl ether (#71)	100	1.5
2,4,4',6-Tetrabromodiphenyl ether (#75)	100	1.5
3,3',4,4'-Tetrabromodiphenyl ether (#77)	100	1.5
2,2',3,4,4'-Pentabromodiphenyl ether (#85)	150	2.25
2,2',4,4',5-Pentabromodiphenyl ether (#99)	150	2.25
2,2',4,4',6-Pentabromodiphenyl ether (#100)	150	2.25
2,3,4,5,6-Pentabromodiphenyl ether (#116)	150	2.25
2,3',4,4',5-Pentabromodiphenyl ether (#118)	150	2.25
2,3',4,4',6-Pentabromodiphenyl ether (#119)	150	2.25
3,3',4,4',5-Pentabromodiphenyl ether (#126)	150	2.25
2,2',3,4,4',5'-Hexabromodiphenyl ether (#138)	200	3.0
2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	200	3.0
2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	200	3.0
2,2',4,4',6,6'-Hexabromodiphenyl ether (#155)	200	3.0
2,3,4,4',5,6-Hexabromodiphenyl ether (#166)	200	3.0
2,2',3,4,4',5,6-Heptabromodiphenyl ether (#181)	250	3.75
2,2',3,4,4',5',6-Heptabromodiphenyl ether (#183)	250	3.75
2,3,3',4,4',5,6-Heptabromodiphenyl ether (#190)	250	3.75

Commonly Occurring PBDE Congeners for Precision and Recovery

BDE-COC

At stated conc. in Isooctane

\$ 600 / 1 x 1 mL

14 comps.

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

PBDE Congeners of Primary Interest

BDE-CSM

At stated conc. in Isooctane:Toluene

\$ 225 / 1 x 1 mL

8 comps.

	µg/mL
2,4,4'-Tribromodiphenyl ether (#28)	20
2,2',4,4'-Tetrabromodiphenyl ether (#47)	20
2,2',4,4',5-Pentabromodiphenyl ether (#99)	20
2,2',4,4',6-Pentabromodiphenyl ether (#100)	20
2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	20
2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	20
2,2',3,4,4',5',6-Heptabromodiphenyl ether (#183)	20
Decabromodiphenyl ether (#209)	200

Calibration Mix

BDE-CM

At stated conc. in Isooctane

\$ 65 / 1 x 1 mL

8 comps.

Matrix Spiking Solution

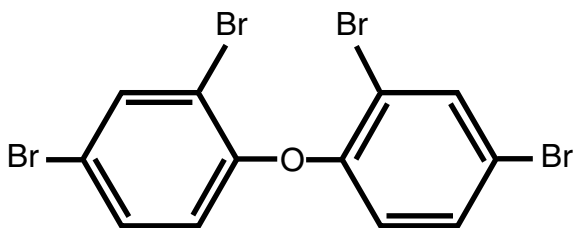
BDE-MS

At stated conc. in Isooctane

\$ 40 / 1 x 1 mL

8 comps.

	BDE-CM µg/mL	BDE-MS ng/mL
2,4,4'-Tribromodiphenyl ether (#28)	2.5	1
2,2',4,4'-Tetrabromodiphenyl ether (#47)	2.5	1
2,2',4,4',5-Pentabromodiphenyl ether (#99)	2.5	1
2,2',4,4',6-Pentabromodiphenyl ether (#100)	2.5	1
2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	2.5	1
2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	2.5	1
2,2',3,4,4',5',6-Heptabromodiphenyl ether (#183)	2.5	1
Decabromodiphenyl ether (#209)	25	10



EPA Method 1600 Series

Pesticides and Herbicides

1600

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 \$ 75 / 1 x 1 mL
M-1618-1-PAK **SAVE 20%** \$ 300 / 5 x 1 mL
 At stated conc. in Isooctane 14 comps.

Aldrin (100 ng/mL)	Endosulfan II (200 ng/mL)
Captan (200 ng/mL)	Endrin aldehyde (100 ng/mL)
Chlorobenzilate (500 ng/mL)	Heptachlor (100 ng/mL)
Diallate (250 ng/mL)	Heptachlor epoxide (100 ng/mL)
p,p'-DDE (200 ng/mL)	Lindane (100 ng/mL)
p,p'-DDT (200 ng/mL)	Methoxychlor (200 ng/mL)
Endosulfan I (200 ng/mL)	Isodrin (100 ng/mL)

M-1618-2 \$ 75 / 1 x 1 mL
 At stated conc. in Isooctane 16 comps.

α-BHC (100 ng/mL)	Dichlone (100 ng/mL)
β-BHC (100 ng/mL)	Dieldrin (100 ng/mL)
δ-BHC (100 ng/mL)	Endrin (100 ng/mL)
α-Chlordane (100 ng/mL)	Endosulfan sulfate (100 ng/mL)
γ-Chlordane (100 ng/mL)	Endrin ketone (100 ng/mL)
Carbophenothion (1000 ng/mL)	Mirex (100 ng/mL)
Captafol (200 ng/mL)	PCNB (100 ng/mL)
p,p'-DDD (100 ng/mL)	Trifluralin (200 ng/mL)

Organophosphate Pesticides

M-1618-3 \$ 90 / 1 x 1 mL
 At stated conc. in Isooctane 19 comps.

Azinphos methyl (100 ng/mL)	Mephos (200 ng/mL)
Coumaphos (50 ng/mL)	Methyl parathion (100 ng/mL)
Diazinon (100 ng/mL)	Malathion (100 ng/mL)
Dichlorvos (50 ng/mL)	Phorate (100 ng/mL)
Dimethoate (100 ng/mL)	Ronnel (100 ng/mL)
EPN (100 ng/mL)	Sulprofos (50 ng/mL)
Ethyl parathion (100 ng/mL)	Terbufos (100 ng/mL)
Ethoprop (100 ng/mL)	Tetrachlorvinphos (100 ng/mL)
Ethyl azinphos (100 ng/mL)	Trichlorofon (100 ng/mL)
Fensulfothion (200 ng/mL)	

M-1618-4 \$ 90 / 1 x 1 mL
 At stated conc. in Isooctane 16 comps.

Chlorfenvinphos (50 ng/mL)	Ethion (100 ng/mL)
Chlorpyrifos (50 ng/mL)	Famphur (200 ng/mL)
Chlorpyrifos methyl (100 ng/mL)	Fenthion (100 ng/mL)
Crotoxyphos (200 ng/mL)	Leptophos (100 ng/mL)
Dichlorofenthion (100 ng/mL)	Mevinphos (100 ng/mL)
Demeton (400 ng/mL)	Naled (100 ng/mL)
Dioxathion (600 ng/mL)	Phosmet (200 ng/mL)
Disulfoton (100 ng/mL)	Sulfotep (50 ng/mL)

Phenoxyacid Herbicides

M-8150M \$ 40 / 1 x 1 mL
M-8150M-PAK **SAVE 20%** \$ 160 / 5 x 1 mL
 20 µg/mL each in Hexane 8 comps.

2,4-D	Dalapon
2,4-DB	Dicamba
2,4,5-T	Dichlorprop
2,4,5-TP	Dinoseb

M-8150M-2 \$ 15 / 1 x 1 mL
M-8150M-2-PAK **SAVE 20%** \$ 60 / 5 x 1 mL
 2.0 mg/mL in Hexane 2 comps.

MCPA	MCPP
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Surrogate Standards

Organochlorine Pesticide
M-1618-SS \$ 15 / 1 x 1 mL
M-1618-SS-PAK **SAVE 20%** \$ 60 / 5 x 1 mL
 2 µg/mL in Acetone
 Dibutylchlorendate

Organophosphate Pesticide

M-1618-SP \$ 20 / 1 x 1 mL
 2 µg/mL each in Acetone 2 comps.
 Tributyl phosphate Triphenyl phosphate

Phenoxyacid Herbicide

M-1618-SA \$ 10 / 1 x 1 mL
 2 µg/mL in Acetone
 2,4-Dichlorophenyl acetic acid

Decomposition Solution

M-1618D * \$ 15 / 1 x 1 mL
M-1618D-PAK * **SAVE 20%** \$ 60 / 5 x 1 mL
 At stated conc. in Acetone 2 comps.
 p,p'-DDT (2.0 µg/mL) Endrin (1.0 µg/mL)

GPC Calibration Solution

M-1618-GP-5ML \$ 35 / 1 x 5 mL
 At stated conc. in Acetone 5 comps.

Corn oil	(300.0 mg/mL)	Perylene	(0.1 mg/mL)
bis(2-Ethylhexyl)phthalate	(15.0 mg/mL)	Sulfur	(0.5 mg/mL)
Pentachlorophenol	(1.4 mg/mL)		

SPE Cartridge Calibration Solution

M-1618-SE \$ 10 / 1 x 1 mL
M-1618-SE-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
 0.1 µg/mL in Acetone
 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		\$ 250 / set of 4 x 1 mL (M-1653A, M-1653B, M-1653C, M-1653D-AC)	
M-1653A		\$ 25 / 1 x 1 mL	
M-1653A-PAK		SAVE 20% \$ 100 / 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		\$ 125 / 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		\$ 95 / 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		\$ 65 / 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	\$ 35 / 1 x 1 mL
1.0 mg/mL in MeOH	
M-1653-IS-R	\$ 35 / 1 x 1 mL
1.0 mg/mL in Acetone	
3,4,5-Trichlorophenol	

Instrument Internal Standard

M-1653-IIS	\$ 20 / 1 x 1 mL
1.0 mg/mL in MeOH	
M-1653-IIS-R	\$ 20 / 1 x 1 mL
5.0 mg/mL in Acetone	
2,2'-Difluorobiphenyl	

M-1653A-D-R2-SET		\$ 250 / set of 4 x 1 mL (M-1653A-R, M-1653B-R, M-1653C-R, M-1653D-R)	
M-1653A-R		\$ 25 / 1 x 1 mL	
At stated conc. in Acetone		7 comps.	
4-Chlorophenol	(25 µg/mL)	2,4,6-Trichlorophenol	(50 µg/mL)
2,4-Dichlorophenol	(50 µg/mL)	2,3,4,6-Tetrachlorophenol	(50 µg/mL)
2,6-Dichlorophenol	(50 µg/mL)	Pentachlorophenol	(100 µg/mL)
2,4,5-Trichlorophenol	(50 µg/mL)		
M-1653B-R		\$ 125 / 1 x 1 mL	
At stated conc. in Acetone		8 comps.	
4-Chloroguaiacol	(25 µg/mL)	3,4,5-Trichloroguaiacol	(50 µg/mL)
3,4-Dichloroguaiacol	(50 µg/mL)	3,4,6-Trichloroguaiacol	(50 µg/mL)
4,5-Dichloroguaiacol	(50 µg/mL)	4,5,6-Trichloroguaiacol	(50 µg/mL)
4,6-Dichloroguaiacol	(50 µg/mL)	Tetrachloroguaiacol	(100 µg/mL)
M-1653C-R		\$ 95 / 1 x 1 mL	
At stated conc. in Acetone		7 comps.	
4-Chlorocatechol	(25 µg/mL)	3,4,5-Trichlorocatechol	(100 µg/mL)
3,4-Dichlorocatechol	(50 µg/mL)	3,4,6-Trichlorocatechol	(100 µg/mL)
3,6-Dichlorocatechol	(50 µg/mL)	Tetrachlorocatechol	(100 µg/mL)
4,5-Dichlorocatechol	(50 µg/mL)		
M-1653D-R		\$ 65 / 1 x 1 mL	
At stated conc. in Acetone		6 comps.	
5-Chlorovanillin	(50 µg/mL)	2-Chlorosyringaldehyde	(50 µg/mL)
6-Chlorovanillin	(50 µg/mL)	2,6-Dichlorosyringaldehyde	(100 µg/mL)
5,6-Dichlorovanillin	(100 µg/mL)	Trichlorosyringol	(50 µg/mL)

US EPA Pulp, Paper & Paperboard Cluster Rule

M-PAPCLUS	\$ 30 / 1 x 1 mL
M-PAPCLUS-PAK	SAVE 20% \$ 120 / 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	\$ 20 / 1 x 1 mL
50 µg/mL in Acetone	
DFTPP	

Method 1656 Organo-Halide Pesticides in Municipal & Industrial Wastewater by HSD

Method 1656 is a consolidation of several EPA wastewater methods used to determine the organo-halide pesticides and polychlorinated biphenyls (PCBs) associated with the Clean Water Act, the Resource Conservation and Recovery Act, and the Comprehensive Environmental Response, Compensation and Liability Act; and other compounds amenable to extraction and analysis by wide-bore capillary column GC with a HSD.

GPC Calibration Solution

M-1600-GPC-5ML		\$ 35 / 1 x 5 mL	
<i>At stated conc. in CH₂Cl₂</i>		5 comps.	
Corn oil	(300 mg/mL)	Perylene	(0.1 mg/mL)
bis(2-Ethylhexyl)phthalate	(15 mg/mL)	Sulfur	(0.5 mg/mL)
Pentachlorophenol	(1.4 mg/mL)		

Solid-phase Extraction Cartridge Calibration Solution

M-1600-SPE	\$ 10 / 1 x 1 mL
0.1 mg/mL in Acetone	
2,4,6-Trichlorophenol	

Decomposition Test Solution

M-1656-DS	\$ 25 / 1 x 1 mL
At stated conc. in Isooctane	2 comps.
4,4'-DDT (2 µg/mL)	Endrin (1 µg/mL)

Surrogate Spiking Solutions

CLP-PES-A	\$ 15 / 1 x 1 mL
0.2 mg/mL in Acetone	
Dibutylchlorendate	
CLP-032-R	\$ 15 / 1 x 1 mL
0.2 mg/mL each in Acetone	2 comps.
Decachlorobiphenyl	Tetrachloro- <i>m</i> -xylene
CLP-034	\$ 15 / 1 x 1 mL
0.2 mg/mL each in Acetone	2 comps.
Dibutylchlorendate	Tetrachloro- <i>m</i> -xylene

Method 1656 (continued) Calibration Solutions & Suggested Calibration Groups

M-1656-CAL-SET

\$ 360 / 7 x (3 x 1 mL) (contains all 7 calibration groups at respective low, medium and high ranges)

Calibration Group 1

M-1656-01-CAL-SET

\$ 75 / 3 x 1 mL

All solutions in Isooctane

14 comps.

Components (units in ng/mL)	Low (1X)	Medium (5X)	High (20X)
Acephate	2,000	10,000	40,000
Alachlor	20	100	400
Atrazine	1,000	5,000	20,000
β-BHC	10	50	200
Bromoxynil octanoate	50	250	1,000
Captafol	200	1,000	4,000
Diallate	200	1,000	4,000
Decachlorobiphenyl	10	50	200
Endosulfan sulfate	10	50	200
Endrin	20	100	400
Isodrin	10	50	200
Pendimethalin	50	250	1,000
Permethrin (cis & trans) *200	1,000	4,000	
Tetrachloro- <i>m</i> -xylene	5	25	100

* Actual isomer concentration is stated on certificate of product data

Calibration Group 2

M-1656-02-CAL-SET

\$ 60 / 3 x 1 mL

All solutions in Isooctane

11 comps.

Components (units in ng/mL)	Low (1X)	Medium (5X)	High (20X)
α-BHC	5	25	100
DCPA	5	25	100
4,4'-DDE	10	50	200
4,4'-DDT	10	50	200
Decachlorobiphenyl	10	50	200
Dichloro	20	100	400
Ethalfuralin	10	50	200
Fenarimol	20	100	400
Methoxychlor	20	100	400
Metribuzin	10	50	200
Tetrachloro- <i>m</i> -xylene	5	25	100



Calibration Group 3

M-1656-03-CAL-SET

\$ 60 / 3 x 1 mL

All solutions in Isooctane

10 comps.

Components (units in ng/mL)	Low (1X)	Medium (5X)	High (20X)
γ-BHC	5	25	100
γ-Chlordane	5	25	100
Decachlorobiphenyl	10	50	200
Endrin ketone	10	50	200
Heptachlor epoxide	5	25	100
Isopropalin	20	100	400
Nitrofen	20	100	400
PCNB	5	25	100
Tetrachloro- <i>m</i> -xylene	5	25	100
Trifluralin	10	50	200

Calibration Group 4

M-1656-04-CAL-SET

\$ 60 / 3 x 1 mL

All solutions in Isooctane

10 comps.

Components (units in ng/mL)	Low (1X)	Medium (5X)	High (20X)
Benfluralin	20	100	400
Chlorobenzilate	50	250	1,000
Decachlorobiphenyl	10	50	200
Dieldrin	5	25	100
Endosulfan I	10	50	200
Mirex	20	100	400
Terbacil	200	1,000	4,000
Terbuthylazine	500	2,500	10,000
Tetrachloro- <i>m</i> -xylene	5	25	100
Triadimefon	100	500	2,000

Calibration Group 5

M-1656-05-CAL-SET

\$ 60 / 3 x 1 mL

All solutions in Isooctane

8 comps.

Components (units in ng/mL)	Low (1X)	Medium (5X)	High (20X)
Benfluralin	20	100	400
Captan	100	500	2,000
Chlorothalonil	20	100	400
4,4'-DDD	20	100	400
Decachlorobiphenyl	10	50	200
Norflurazon	100	500	2,000
Simazine	800	4,000	16,000
Tetrachloro- <i>m</i> -xylene	5	25	100

Calibration Group 6

M-1656-06-CAL-SET

\$ 60 / 3 x 1 mL

All solutions in Isooctane

9 comps.

Components (units in ng/mL)	Low (1X)	Medium (5X)	High (20X)
Aldrin	20	100	400
δ-BHC	5	25	100
Bromacil	100	500	2,000
Butachlor	50	250	1,000
Decachlorobiphenyl	10	50	200
Endosulfan II	10	50	200
Heptachlor	10	50	200
Kepone	100	500	2,000
Tetrachloro- <i>m</i> -xylene	5	25	100

Calibration Group 7

M-1656-07-CAL-SET

\$ 75 / 3 x 1 mL

All solutions in Isooctane

13 comps.

Components (units in ng/mL)	Low (1X)	Medium (5X)	High (20X)
Carbophenothion	80	400	1,600
Chloroneb	300	1,500	6,000
Chloropropylate	200	1,000	4,000
DBCP	25	125	500
Decachlorobiphenyl	10	50	200
Dicofol	300	1,500	6,000
Endrin aldehyde	80	400	1,600
Etridiazole	80	400	1,600
Perthane	1,000	5,000	20,000
Propachlor	500	2,500	10,000
Propanil	200	1,000	4,000
Propazine	1,000	5,000	20,000
Tetrachloro- <i>m</i> -xylene	5	25	100

Method 1657 Organo-Phosphorus Pesticides in Municipal & Industrial Wastewater by FPD

Method 1657 is a consolidation of several EPA wastewater methods used to determine the organo-phosphorus pesticides associated with the Clean Water Act, the Resource and Conservation and Recovery Act, & the Comprehensive Environmental Response, Compensation and Liability Act; and other compounds amenable to extraction and analysis by wide-bore capillary column gas chromatography with a flame photometric detector (FPD).

GPC Calibration Solution

M-1600-GPC-5ML \$ 35 / 1 x 5 mL
At stated conc. in CH_2Cl_2 5 comps.

Corn oil	(300 mg/mL)
bis(2-Ethylhexyl)phthalate	(15 mg/mL)
Pentachlorophenol	(1.4 mg/mL)
Perylene	(0.1 mg/mL)
Sulfur	(0.5 mg/mL)

Solid-phase Extraction Cartridge Calibration Solution

M-1600-SPE \$ 10 / 1 x 1 mL

0.1 mg/mL in Acetone
2,4,6-Trichlorophenol

Surrogate Spiking Solution

M-1657-SS \$ 20 / 1 x 1 mL
0.2 mg/mL each in Acetone 2 comps.

Tributyl phosphate
Triphenyl phosphate

Method 1657 Calibration Solutions & Suggested Calibration Groups

Calibration Group 1

M-1657-01-R1-CAL-SET \$ 60 / 3 x 1 mL
All solutions in Isooctane 9 comps.

Components (units in ng/mL)	Low (1X)	Medium (5X)	High (20X)
Azinphos methyl	100	500	2,000
Dichlorvos	500	2,500	10,000
Disulfoton	200	1,000	4,000
Fenthion	200	1,000	4,000
Merphos (A + B)	400	2,000	8,000
Ronnel	200	1,000	4,000
Sulprofos	200	1,000	4,000
Tributyl phosphate	200	1,000	4,000
Triphenyl phosphate	200	1,000	4,000

Low M-1657-01-R1-1X \$ 30 / 1 mL
Medium M-1657-01-R1-5X 30 / 1 mL
High M-1657-01-R1-20X 40 / 1 mL

Calibration Group 2

M-1657-02-CAL-SET \$ 60 / 3 x 1 mL
All solutions in Isooctane 12 comps.

Components (units in ng/mL)	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 \$ 30 / 1 mL
Medium M-1657-02-5X 30 / 1 mL
High M-1657-02-20X 40 / 1 mL

Calibration Group 3

M-1657-03-CAL-SET \$ 65 / 3 x 1 mL
All solutions in Isooctane 14 comps.

Components (units in ng/mL)	Low (1X)	Medium (5X)	High (20X)
Azinphos ethyl	200	1,000	4,000
Crotoxyphos	500	2,500	10,000
DEF	200	1,000	4,000
Fensulfothion	500	2,500	10,000
Methyl chlorpyrifos	200	1,000	4,000
Mevinphos	500	2,500	10,000
Naled	500	2,500	10,000
Parathion	200	1,000	4,000
Phosmet	500	2,500	10,000
Phosphamidon (E + Z)	100	500	2,000
Sulfotepp	200	1,000	4,000
Terbufos	200	1,000	4,000
Tributyl phosphate	200	1,000	4,000
Triphenyl phosphate	200	1,000	4,000

Low M-1657-03-1X \$ 30 / 1 mL
Medium M-1657-03-5X 30 / 1 mL
High M-1657-03-20X 40 / 1 mL

M-1657-CAL-SET \$ 195 / 4 x (3 x 1 mL)
Contains all 4 calibration groups at
Low, Medium and High Ranges

Calibration Group 4

M-1657-04-CAL-SET \$ 60 / 3 x 1 mL
All solutions in Isooctane 11 comps.

Components (units in ng/mL)	Low (1X)	Medium (5X)	High (20X)
Coumaphos	500	2,500	10,000
Diazinon	200	1,000	4,000
EPN	200	1,000	4,000
Ethion	200	1,000	4,000
Ethoprop	200	1,000	4,000
Malathion	200	1,000	4,000
Phorate	200	1,000	4,000
Tetrachlorvinphos	200	1,000	4,000
Tributyl phosphate	200	1,000	4,000
Trichloronate	200	1,000	4,000
Triphenyl phosphate	200	1,000	4,000

Low M-1657-04-1X \$ 30 / 1 mL
Medium M-1657-04-5X 30 / 1 mL
High M-1657-04-20X 40 / 1 mL



Method 1658 Phenoxy-Acid Herbicides

Method 1658 consolidates several EPA wastewater methods used to determine Phenoxy-Acid Herbicides & Herbicide esters associated with the CWA, RCRA, & CERCLA; & other compounds amenable to extraction & analysis by wide-bore capillary column GC/ECD.

M-1658-CAL-SET

\$ 75 / 3 x 1 mL

All solutions in Isooctane

12 comps.

Components (units in ng/mL)	Low (1X)	Medium (10X)	High (100X)
2,4-D	100	1,000	10,000
Dalapon	50	500	5,000
2,4-DB	200	2,000	20,000
2,4-Dichlorophenylacetic acid (Surrogate)	10	100	1,000
Dicamba	20	200	2,000
Dichlorprop	100	1,000	10,000
Dinoseb	50	500	5,000
MCPA	5,000	50,000	500,000
MCPP	5,000	50,000	500,000
Picloram	50	500	5,000
2,4,5-T	20	200	2,000
2,4,5-TP	20	200	2,000

Method 1659 Dazomet in Municipal & Industrial Wastewater by NPD

Method 1659 is used to determine Dazomet by base hydrolysis to Methyl Isothiocyanate (MITC) and subsequent determination of MITC by wide-bore fused-silica capillary column gas chromatography with a Nitrogen Phosphorus Detector (NPD).

Recovery & Precision Solution

M-1659-RPS

\$ 10 / 1 x 1 mL

25 µg/mL in Acetone

Methyl isothiocyanate (MITC)

Matrix Spiking Solution

M-1659-MS

\$ 10 / 1 x 1 mL

25 µg/mL in Acetone

Dazomet

Calibration Solutions

M-1659-CAL-SET

\$ 25 / 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 324) or Inorganic (page 341) 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.

GPC Calibration Solution

M-1618-GP-5ML

\$ 35 / 1 x 5 mL

At stated conc. in Acetone

5 comps.

Corn oil (300.0 mg/mL)
bis(2-Ethylhexyl)phthalate (15.0 mg/mL)
Pentachlorophenol (1.4 mg/mL)

Perylene (0.1 mg/mL)
Sulfur (0.5 mg/mL)

PMI Stock Standard

M-1665

\$ 60 / 1 x 1 mL

2000 µg/mL each in CH₂Cl₂

6 comps.

Aniline
N,N-Dimethylacetamide
N,N-Dimethylaniline

Dimethylformamide
2-Picoline
Pyridine

Instrument Performance Check Solution

M-1653-TS

\$ 20 / 1 x 1 mL

50 µg/mL in Acetone

DFTPP

PMI Labeled Stock Standard (Not for individual sale)

M-1665-LAB

1 x 1 mL

500 µg/mL each in CH₂Cl₂

5 comps.

Aniline-d.
N,N-Dimethylaniline-d.
Dimethylformamide-d.

2-Picoline-d.
Pyridine-d.

PMI Internal Standard

M-625-07-10X

\$ 20 / 1 x 1 mL

2.0 mg/mL in CH₂Cl₂

2,2'-Difluorobiphenyl

PMI Semi-Volatile Set

M-1665-SET

\$ 320 / 5 x 1 mL

(M-1618-GP-5ML, M-1653-TS, M-625-07-10X, M-1665, M-1665-LAB)

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

M-1666A-SSA-ADD \$ 20 / 1 x 1 mL
1000 µg/mL in MeOH
Isopropyl ether

PMI Stock Standard A

M-1666A-SSA-R2 \$ 60 / 1 x 1 mL
At stated conc. in Water 7 comps.

1-Butanol (2500 µg/mL)	Isopropanol (1000 µg/mL)
t-Butanol (2500 µg/mL)	4-Methyl-2-pentanone (1000 µg/mL)
2-Furaldehyde (2500 µg/mL)	1-Pentanol (2500 µg/mL)
Isobutyraldehyde (2500 µg/mL)	

PMI Stock Standard B

M-1666A-SSB \$ 60 / 1 x 1 mL
At stated conc. in MeOH 9 comps.

Cyclohexane (1000 µg/mL)	Trifluoromethane (1000 µg/mL)
N-Heptane (1000 µg/mL)	m-Xylene (1000 µg/mL)
n-Hexane (1000 µg/mL)	o-Xylene (1000 µg/mL)
Methyl formate (2500 µg/mL)	p-Xylene (1000 µg/mL)
Tetrahydrofuran (1000 µg/mL)	

PMI Stock Standard C

M-1666A-SSC \$ 35 / 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 \$ 200 / 1 x 1 mL
At stated conc. in MeOH 8 comps.

L-Butanol-d ₁₀ (500 µg/mL)	n-Hexane-d ₁₄ (50 µg/mL)
Cyclohexane-d ₁₂ (50 µg/mL)	Tetrahydrofuran-d ₈ (50 µg/mL)
Ethyl Acetate-c ₁₃ (50 µg/mL)	o-Xylene-d ₁₀ (50 µg/mL)
N-Heptane-d ₁₆ (50 µg/mL)	m-Xylene-d ₁₀ (50 µg/mL)

PMI Purgeable Analytes

M-1666A-R2-SET \$ 240 / 5 x 1 mL
M-1666A-SSA-ADD, M-1666A-SSA-R2, M-1666A-SSB
M-1666A-SSC, M-1666A-LAB

PMI Standard Direct Injection

M-1666A-DI-R1 \$ 70 / 1 x 1 mL
At stated conc. in Water 10 comps.

Acetonitrile (1000 µg/mL)	Ethylene glycol (2500 µg/mL)
Diethylamine (2500 µg/mL)	Methanol (1000 µg/mL)
Dimethylamine (1000 µg/mL)	2-Methoxyethanol (1000 µg/mL)
Dimethyl sulfoxide (1000 µg/mL)	1-Propanol (1000 µg/mL)
Ethanol (1000 µg/mL)	Triethylamine (2500 µg/mL)

M-1666A-DI-R-ADD1 \$ 30 / 1 x 1 mL
2500 µg/mL in Water
Methylamine

M-1666A-DI-R-ADD2 \$ 30 / 1 x 1 mL
5000 µg/mL in Water
Formamide

PMI Labeled Standard Direct Injection

M-1666A-DI-LAB \$ 100 / 1 x 1 mL
1000 µg/mL each in Water 6 comps.

Acetonitrile-d ₃	Methanol-d ₃
Dimethyl sulfoxide-d ₆	n-Propanol-1-d ₁
Ethanol-d ₆	Tetrahydrofuran-d ₈

PMI Direct Injection Set

M-1666A-DI-R1-SET \$ 155 / 4 x 1 mL
M-1666A-DI-R1, M-1666A-DI-R-ADD1
M-1666A-DI-R-ADD2, M-1666A-DI-LAB

PMI Instrument Performance

Purgeable Internal Standard

CLP-PI \$ 25 / 1 x 1 mL
CLP-PI-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
1.0 mg/mL each in MeOH 3 comps.

Bromochloromethane	1,4-Difluorobenzene
Chlorobenzene-d ₅	

PMI Resolution Standard

M-1666A-RES \$ 30 / 1 x 1 mL
M-1666A-RES-PAK **SAVE 20%** \$ 120 / 5 x 1 mL
100 µg/mL each in MeOH 2 comps.

o-Xylene	o-Xylene-d ₁₀
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Instrument Performance Check Solution

CLP-004-10X \$ 10 / 1 x 1 mL
CLP-004-10X-PAK **SAVE 20%** \$ 40 / 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

\$ 40 / 3 x 1 mL

Each at 1.0 mg/mL in AcCN

	Cat. No.	Price / 1 mL
Formaldehyde	M-1667A-01	\$ 20
2-Furaldehyde	M-1667A-02	20
Isobutylaldehyde	M-1667A-03	25

PMI Carbonyl DNPH Set

M-1667A-DNPH-SET

\$ 65 / 3 x 1 mL

Each at 1.0 mg/mL in AcCN

	Cat. No.	Price / 1 mL
Formaldehyde-DNPH	M-1667A-DNPH-01	\$ 35
2-Furaldehyde-DNPH	M-1667A-DNPH-02	35
Isobutylaldehyde-DNPH	M-1667A-DNPH-03	35

PMI QA/QC Carbonyl Mixture

M-1667A-M

\$ 35 / 1 x 1 mL

M-1667A-M-PAK

SAVE 20% \$ 140 / 5 x 1 mL

250 µg/mL each in AcCN

3 comps.

Formaldehyde
2-Furaldehyde

Isobutylaldehyde

PMI QA/QC Carbonyl Derivative DNPH Mixture

M-1667A-DNPH

\$ 60 / 1 x 1 mL

M-1667A-DNPH-PAK

SAVE 20% \$ 240 / 5 x 1 mL

250 µg/mL each in AcCN

3 comps.

Formaldehyde-DNPH
2-Furaldehyde-DNPH

Isobutylaldehyde-DNPH

PMI Derivatization Reagent

M-1667A-DERV-10ML

\$ 13 / 10 mL

M-1667A-DERV-10ML-PAK

SAVE 20% \$ 50 / 5 x 10 mL

1.0 mg/mL in AcCN

2,4-Dinitrophenylhydrazine (DNPH)

2-Part Label System

Smudgeproof, tear and solvent resistant * (Organic products in ampules)

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



Method 1668 Congener Set - 209 Chlorinated Biphenyl Congeners by HRGC/HRMS

PCB Congener Mix #1

M-1668A-1-0.01X

At stated conc. in Isooctane

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

1 x 1 mL

83 comps.

2,3',4,5,5'-Pentachlorobiphenyl	(5.0 µg/mL)
2',3,4,5,5'-Pentachlorobiphenyl	(5.0 µg/mL)
2,3,3',4,5-Pentachlorobiphenyl	(5.0 µg/mL)
2',3,3',4,5-Pentachlorobiphenyl	(5.0 µg/mL)
2,3,3',4,4'-Pentachlorobiphenyl	(5.0 µg/mL)
3,3',4,5,5'-Pentachlorobiphenyl	(5.0 µg/mL)
2,2',3,5,6,6'-Hexachlorobiphenyl	(5.0 µg/mL)
2,2',3,3',6,6'-Hexachlorobiphenyl	(5.0 µg/mL)
2,2',3,4',5,6'-Hexachlorobiphenyl	(5.0 µg/mL)
2,2',3,5,5',6-Hexachlorobiphenyl	(5.0 µg/mL)
2,2',3,4,4',5-Hexachlorobiphenyl	(5.0 µg/mL)
2,2',3,4,5,6'-Hexachlorobiphenyl	(5.0 µg/mL)
2,2',3,4,5,6-Hexachlorobiphenyl	(5.0 µg/mL)
2,2',3,3',5,5'-Hexachlorobiphenyl	(5.0 µg/mL)
2,3,3',4,5',6-Hexachlorobiphenyl	(5.0 µg/mL)
2,2',4,4',5,5'-Hexachlorobiphenyl	(5.0 µg/mL)
2,2',3,3',4,5'-Hexachlorobiphenyl	(5.0 µg/mL)
2,2',3,3',4,5-Hexachlorobiphenyl	(5.0 µg/mL)
2,3,4,4',5,6-Hexachlorobiphenyl	(5.0 µg/mL)
2,3,3',4,5,5'-Hexachlorobiphenyl	(5.0 µg/mL)
2,3',4,4',5,5'-Hexachlorobiphenyl	(5.0 µg/mL)
2,3,3',4,4',5-Hexachlorobiphenyl	(5.0 µg/mL)
2,2',3,3',5,6,6'-Heptachlorobiphenyl	(5.0 µg/mL)
2,2',3,3',4,6,6'-Heptachlorobiphenyl	(5.0 µg/mL)
2,2',3,3',5,5',6-Heptachlorobiphenyl	(5.0 µg/mL)
2,2',3,3',4,5',6-Heptachlorobiphenyl	(5.0 µg/mL)
2,2',3,3',4,4',5,6-Heptachlorobiphenyl	(5.0 µg/mL)
2,2',3,3',4,4',6-Heptachlorobiphenyl	(5.0 µg/mL)
2,2',3,3',4,4',5,5'-Heptachlorobiphenyl	(5.0 µg/mL)
2,3,3',4,4',5,6-Heptachlorobiphenyl	(5.0 µg/mL)
2,2',3,3',4,4',5'-Heptachlorobiphenyl	(5.0 µg/mL)
2,2',3,3',4,4',5,6-Octachlorobiphenyl	(7.5 µg/mL)
2,2',3,4,4',5,6,6'-Octachlorobiphenyl	(7.5 µg/mL)
2,2',3,3',4,5,6,6'-Octachlorobiphenyl	(7.5 µg/mL)
2,2',3,3',4,5,5',6-Octachlorobiphenyl	(7.5 µg/mL)
2,2',3,3',4,4',5,6-Octachlorobiphenyl	(7.5 µg/mL)
2,2',3,3',4,4',5,6-Octachlorobiphenyl	(7.5 µg/mL)
2,2',3,3',4,4',5,5'-Octachlorobiphenyl	(7.5 µg/mL)
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	(7.5 µg/mL)

PCB Congener Mix #2

M-1668A-2-0.01X

At stated conc. in Isooctane

1 x 1 mL

54 comps.

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

PCB Congener Mix #3

M-1668A-3-0.01X

At stated conc. in Isooctane

1 x 1 mL

29 comps.

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

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

M-1668A-0.01X-SET

\$ 700 / 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)

All 209 Individual PCB Congeners are listed in PCB Section.

Method 1668 (Continued) Congener Set - 209 Chlorinated Biphenyl Congeners by HRGC/HRMS

PCB Congener Mix #4

M-1668A-4-0.01X

At stated conc. in Isooctane

1 x 1 mL

15 comps.

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

PCB Congener Mix #5

M-1668A-5-0.01X

At stated conc. in Isooctane

1 x 1 mL

28 comps.

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

Method 1668 Level of Chlorination Calibration / Spike

Native PCB Calibration Mix

M-1668A-NAT

At stated conc. in Isooctane

1 x 1 mL

19 comps.

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

Method 1668A - Combined Congener Standard

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

20 µg/mL each in Isooctane

\$ 150 / 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',6,6'-Nonachlorobiphenyl
2',3,4,4',5-Pentachlorobiphenyl	2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl
3,3',4,4',5-Pentachlorobiphenyl	

PAR PCB Spike Mix

M-1668A-PAR

At stated conc. in Isooctane

1 x 1 mL

19 comps.

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

Method 1668A - QC Standard

M-1668A-QC

M-1668A-QC-PAC

At stated conc. in Isooctane

\$ 80 / 1 x 1 mL

SAVE 20% \$ 320 / 5 x 1 mL

13 comps.

3,3',4,4'-Tetrachlorobiphenyl	(0.2 µg/mL)
2,3,3',4,4'-Pentachlorobiphenyl	(10 µg/mL)
2,3,4,4',5-Pentachlorobiphenyl	(10 µg/mL)
2,3',4,4',5-Pentachlorobiphenyl	(10 µg/mL)
2',3,4,4',5-Pentachlorobiphenyl	(10 µg/mL)
3,3',4,4',5-Pentachlorobiphenyl	(1 µg/mL)
2,3,3',4,4',5-Hexachlorobiphenyl	(10 µg/mL)
2,3,3',4,4',5'-Hexachlorobiphenyl	(10 µg/mL)
2,3',4,4',5,5'-Hexachlorobiphenyl	(10 µg/mL)
3,3',4,4',5,5'-Hexachlorobiphenyl	(2 µg/mL)
2,2',3,3',4,4',5-Heptachlorobiphenyl	(2 µg/mL)
2,2',3,4,4',5,5'-Heptachlorobiphenyl	(10 µg/mL)
2,3,3',4,4',5,5'-Heptachlorobiphenyl	(2 µg/mL)

Level of Chlorination Calibration / Spike Set

M-1668A-LOC-SET \$ 150 / 2 x 1 mL (M-1668A-NAT, M-1668A-PAR)

Method 1671 VOCs Specific to PMI by GC/FID

PMI Internal Standard

M-1671A-IS

\$ 20 / 1 x 1 mL

M-1671A-IS-PAK

SAVE 20% \$ 80 / 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

\$ 35 / 1 x 1 mL

M-1673-PAK

SAVE 20% \$ 140 / 5 x 1 mL

2.5 mg/mL in Tetrahydrofuran

Polyethylene glycol-600

Surrogate Standard

M-1673-SS

\$ 25 / 1 x 1 mL

M-1673-SS-PAK

SAVE 20% \$ 100 / 5 x 1 mL

1.0 mg/mL in Tetrahydrofuran

Diethylene glycol monohexyl ether

Derivatization Reagent

M-1673-DERV-5ML

\$ 30 / 1 x 5 mL

10 mg/mL in Tetrahydrofuran

3,5-Dinitrobenzyl chloride



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, PID, ELCD, ECD, FID, FTIR, NPD, FPD, TEA, TCD) gas chromatography /mass spectrometry, and high performance liquid chromatography.

Comprehensive

Complete analysis of target compounds by these 8000 Series Methods can be accomplished using the series of standards formulated by AccuStandard for each method along with the required internal and surrogate standards. Formulations for 8000 series methods have been developed as easy-to-use large core mixes containing target compounds and as high concentration sub mixes for combination with other formulations to meet laboratory specific analyte detection requirements.

Match frequently requested products

Alternate Source

ASL products can be used as an independent second source

Methods 8015A, 8020A, 8040A, 8080A, 8270

*Thousands of Standards,
just a click away*



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8033	Acetonitrile (NPD)	204
8040, 8040A	Phenols, PFB Derivatives (ECD)	205
8041	Phenols as PFB Derivatives (FID/ECD)	206
8060	Phthalate Esters (ECD)	206
8061A	Phthalate Esters (ECD)	206
8070A	Nitrosamines (NPD/TEA)	206
8080A	Organochlorine Pesticides & PCBs	207
8081/8081A/B	Organochlorine Pesticides (ECD)	207-211
8082	PCBs (ECD or ELCD)	212
8085	Pesticides (AED)	213-214
8090	Nitroaromatics & Isophorone (TCD/FID)	214
8091	Nitroaromatics & Cyclic Ketones (ECD/NPD)	214
8095	Explosives (ECD)	215
8100	Polynuclear Aromatic Hydrocarbons (FID)	215
8110	Haloethers (FID)	215
8111	Haloethers (GC)	216
8120, 8120A	Chlorinated Hydrocarbons (ECD)	216
8121	Chlorinated Hydrocarbons (ECD)	216
8131	Aniline & Derivatives (NPD/AFD/TSD)	216
8140	Organophosphorous Pesticides (NPD/ELCD/FPD)	217
8141A	Additions to Method 8140 (GC/NPD)	217
8150A, 8150B	Chlorinated Herbicides (ECD)	218-219
8151/8151A	Chlorinated Herbicides (ECD)	220
8240, 8240A	Volatiles (GC/MS)	220
8240 & 8260	Combined Method Volatile Organics (GC/MS)	221, 224
8260B	Volatiles (GC/MS)	222-223
8270, 8270C/D	Semi-Volatile (GC/MS) Alternate Source Line (ASL)	225-234
8272	PAHs (GC/MS)	235
8275A	Semi-Volatiles (Thermal Chromatography)	235
8280A	Dioxins & Furans (HRGC/LRMS)	235
8310	Polynuclear Aromatic Hydrocarbons (HPLC)	236
8315, 8315A	Ketones/Aldehydes (HPLC)	237
8316	Acrolein, Acrylamide, Acrylonitrile (HPLC)	237
8318	N-Methylcarbamates (HPLC)	237
8321	Solvent Extractable Non-Volatiles (HPLC/TSP/MS)	238
8323	Organometallic Tin Analysis (Ion Trap MS)	238
8325	Benzidine & Nitrogen Pesticides (HPLC/MS)	238
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8430	bis(2-Chloroethyl) ether & Hydrolysis Products	240
8440	Total Petroleum Hydrocarbons (IR)	240



EPA Method 8000 Series

Appendix IX Compounds

AccuStandard has assembled the compounds appearing below to aid the analyst in identifying all the contaminants the EPA has regulated for groundwater monitoring. This list (214 compounds), commonly called the Appendix IX list, was first published in July 1987. Federal Register Vol. 52, No. 131.

The entire list of compounds can be purchased as a complete set as:

APP-9-SET \$ 1,450 / 214 x 1 mL

All solutions are at 100 µg/mL in 1 mL

Appendix IX Compounds

Compound	CAS No.	Solv.	Cat. No.	Price	Compound	CAS No.	Solv.	Cat. No.	Price
Acenaphthene	83-32-9	MeOH	APP-9-001	\$ 15	1,2-Dichloroethane	107-06-2	MeOH	APP-9-071	\$ 12
Acenaphthylene	208-96-8	MeOH	APP-9-002	15	1,1-Dichloroethylene	75-34-4	MeOH	APP-9-072	12
Acetone	67-64-1	MeOH	APP-9-003	12	<i>trans</i> -1,2-Dichloroethylene	156-60-5	MeOH	APP-9-073	12
Acetonitrile	75-05-8	MeOH	APP-9-005	12	Dichloromethane	75-09-2	MeOH	APP-9-074	12
Acetophenone	98-86-2	CH ₂ Cl ₂	APP-9-004	12	2,4-Dichlorophenol	120-83-2	MeOH	APP-9-075	12
2-Acetylaminofluorene	53-96-3	CH ₂ Cl ₂	APP-9-006	20	2,6-Dichlorophenol	87-65-0	CH ₂ Cl ₂	APP-9-076	12
Acrolein	107-02-8	M:W	APP-9-007	12	1,2-Dichloropropane	78-87-5	MeOH	APP-9-077	12
Acrylonitrile	107-13-1	MeOH	APP-9-008	12	<i>cis</i> -1,3-Dichloropropene	10061-01-5	MeOH	APP-9-078	12
Aldrin	309-00-2	MeOH	APP-9-009	12	<i>trans</i> -1,3-Dichloropropene	10061-02-6	MeOH	APP-9-079	12
Allyl chloride	107-05-1	MeOH	APP-9-010	12	Dieldrin	60-57-1	MeOH	APP-9-080	22
4-Aminobiphenyl	92-67-1	CH ₂ Cl ₂	APP-9-011	20	Diethyl phthalate	84-66-2	MeOH	APP-9-081	12
Aniline	62-53-3	MeOH	APP-9-012	12	Dimethoate	60-51-5	MeOH	APP-9-082	22
Anthracene	120-12-7	MeOH	APP-9-013	15	<i>p</i> -(Dimethylamino)azobenzene	60-11-7	CH ₂ Cl ₂	APP-9-083	20
Aramite	140-57-8	MeOH	APP-9-014	22	7,12-Dimethylbenz[a]anthracene	57-97-6	CH ₂ Cl ₂	APP-9-084	20
Benz[a]anthracene	56-55-3	MeOH	APP-9-016	15	3,3'-Dimethylbenzidine	119-93-7	CH ₂ Cl ₂	APP-9-085	20
Benzene	71-43-2	MeOH	APP-9-015	12	<i>a,a</i> -Dimethylphenethylamine	122-09-8	CH ₂ Cl ₂	APP-9-086	20
Benzo[b]fluoranthene	205-99-2	MeOH	APP-9-017	20	2,4-Dimethylphenol	105-67-9	MeOH	APP-9-087	12
Benzo[k]fluoranthene	2070-08-9	MeOH	APP-9-018	20	Dimethyl phthalate	131-11-3	MeOH	APP-9-088	12
Benzo[g,h,i]perylene	191-24-2	CH ₂ Cl ₂	APP-9-019	20	<i>m</i> -Dinitrobenzene	99-65-0	CH ₂ Cl ₂	APP-9-089	20
Benzo[a]pyrene	50-32-8	MeOH	APP-9-020	20	4,6-Dinitro- <i>o</i> -cresol	534-52-1	MeOH	APP-9-090	12
Benzyl alcohol	100-51-6	MeOH	APP-9-021	12	2,4-Dinitrophenol	51-28-5	MeOH	APP-9-091	12
α-BHC	319-84-6	MeOH	APP-9-022	22	2,4-Dinitrotoluene	121-14-2	MeOH	APP-9-092	12
β-BHC	319-85-7	MeOH	APP-9-023	22	2,6-Dinitrotoluene	606-20-2	MeOH	APP-9-093	12
δ-BHC	319-86-8	MeOH	APP-9-024	42	Dinoseb	88-85-7	MeOH	APP-9-094	12
γ-BHC (Lindane)	58-89-9	MeOH	APP-9-025	12	Di- <i>n</i> -octyl phthalate	117-84-0	MeOH	APP-9-095	12
Bromodichloromethane	75-27-4	MeOH	APP-9-030	12	1,4-Dioxane	123-91-1	MeOH	APP-9-096	12
Bromoform	75-25-2	MeOH	APP-9-031	12	Diphenylamine	122-39-4	CH ₂ Cl ₂	APP-9-097	12
Bromomethane	74-83-9	MeOH	APP-9-032	12	Disulfoton	298-04-4	MeOH	APP-9-098	12
4-Bromophenyl phenyl ether	101-55-3	MeOH	APP-9-033	15	Endosulfan I	959-98-8	MeOH	APP-9-099	22
Butyl benzyl phthalate	85-68-7	MeOH	APP-9-034	20	Endosulfan II	33213-65-9	MeOH	APP-9-100	22
Carbon disulfide	75-15-0	MeOH	APP-9-035	12	Endosulfan sulfate	1031-07-8	MeOH	APP-9-101	22
Carbon tetrachloride	56-23-5	MeOH	APP-9-036	12	Endrin	72-20-8	MeOH	APP-9-102	22
Chlordane	57-74-9	MeOH	APP-9-037	12	Endrin aldehyde	7421-93-4	MeOH	APP-9-103	22
<i>p</i> -Chloroaniline	106-47-8	MeOH	APP-9-038	12	Ethylbenzene	100-41-4	MeOH	APP-9-104	12
Chlorobenzene	108-90-7	MeOH	APP-9-039	12	bis(2-Ethylhexyl)phthalate	117-81-7	MeOH	APP-9-029	12
Chlorobenzilate	510-15-6	CH ₂ Cl ₂	APP-9-040	12	Ethyl methacrylate	97-63-2	MeOH	APP-9-105	12
<i>p</i> -Chloro- <i>m</i> -cresol	59-50-7	MeOH	APP-9-041	12	Ethylmethanesulfonate	62-50-0	CH ₂ Cl ₂	APP-9-106	20
Chloroethane	75-00-3	MeOH	APP-9-042	12	Famphur	52-55-7	MeOH	APP-9-107	12
bis(2-Chloroethoxy)methane	111-91-1	CH ₂ Cl ₂	APP-9-026	20	Fluoranthene	206-44-0	MeOH	APP-9-108	15
bis(2-Chloroethyl) ether	111-44-4	MeOH	APP-9-027	20	Fluorene	86-73-7	MeOH	APP-9-109	15
Chloroform	67-66-3	MeOH	APP-9-043	12	Heptachlor	76-44-8	MeOH	APP-9-110	12
bis(2-Chloro-1-methylethyl) ether (2,2-Dichlorodisopropyl ether)	108-60-1	CH ₂ Cl ₂	APP-9-028	20	Heptachlor epoxide [Isomer B]	1024-57-3	MeOH	APP-9-111	22
Chloromethane	74-87-3	MeOH	APP-9-044	12	Hexachlorobenzene	118-74-1	MeOH	APP-9-112	12
2-Chloronaphthalene	91-58-7	MeOH	APP-9-045	12	Hexachlorobutadiene	87-68-3	MeOH	APP-9-113	12
2-Chlorophenol	95-57-8	MeOH	APP-9-046	12	Hexachlorocyclopentadiene	77-47-4	MeOH	APP-9-114	12
4-Chlorophenyl phenyl ether	7005-72-3	MeOH	APP-9-047	20	Hexachloroethane	67-72-1	MeOH	APP-9-115	12
Chloroprene (Xylene-Free)	126-99-8	MeOH	APP-9-048-R1	12	Hexachlorophene	70-30-4	MeOH	APP-9-116	12
Chrysene	218-01-9	MeOH	APP-9-049	15	Hexachloropropene	1888-71-7	MeOH	APP-9-117	12
<i>m</i> -Cresol	108-39-4	CH ₂ Cl ₂	APP-9-050	12	2-Hexanone	591-78-6	MeOH	APP-9-118	12
<i>o</i> -Cresol	95-48-7	CH ₂ Cl ₂	APP-9-051	12	Indeno[1,2,3- <i>cd</i>]pyrene	193-39-5	MeOH	APP-9-119	20
<i>p</i> -Cresol	106-44-5	CH ₂ Cl ₂	APP-9-052	12	Isobutyl alcohol	78-83-1	MeOH	APP-9-120	12
2,4-D	94-75-7	MeOH	APP-9-053	12	Isodrin	465-73-6	MeOH	APP-9-121	12
4,4'-DDD	72-54-8	MeOH	APP-9-054	12	Isophorone	78-59-1	MeOH	APP-9-122	12
4,4'-DDE	72-55-9	MeOH	APP-9-055	12	Isosafrole	120-58-1	CH ₂ Cl ₂	APP-9-123	20
4,4'-DDT	50-29-3	MeOH	APP-9-056	12	Kepone	143-50-0	MeOH	APP-9-124	12
Diallate	2303-16-4	MeOH	APP-9-057	42	Methacrylonitrile	126-98-7	MeOH	APP-9-125	20
Dibenz[a,h]anthracene	53-70-3	MeOH	APP-9-058	15	Methapyrilene	91-80-5	CH ₂ Cl ₂	APP-9-126	20
Dibenzofuran	132-64-9	MeOH	APP-9-059	12	Methoxychlor	72-43-5	MeOH	APP-9-127	12
Dibromochloromethane	124-48-1	MeOH	APP-9-060	12	3-Methylcholanthrene	56-49-5	CH ₂ Cl ₂	APP-9-128	20
1,2-Dibromo-3-chloropropane	96-12-8	MeOH	APP-9-061	12	Methyl ethyl ketone; MEK	78-93-3	MeOH	APP-9-129	12
Dibromomethane	74-95-3	MeOH	APP-9-062	12	Methyl iodide; Iodomethane	74-88-4	MeOH	APP-9-130	12
1,2-Dibromoethane, EDB	107-06-2	MeOH	APP-9-214	12	Methyl methacrylate	80-62-6	MeOH	APP-9-131	12
Di- <i>n</i> -butyl phthalate	84-74-2	MeOH	APP-9-063	12	Methyl methanesulfonate	66-27-3	CH ₂ Cl ₂	APP-9-132	20
<i>o</i> -Dichlorobenzene	95-50-1	MeOH	APP-9-064	12	2-Methylnaphthalene	91-57-6	CH ₂ Cl ₂	APP-9-133	12
<i>m</i> -Dichlorobenzene	541-73-1	MeOH	APP-9-065	12	Methyl parathion	298-00-0	MeOH	APP-9-134	32
<i>p</i> -Dichlorobenzene	106-46-7	MeOH	APP-9-066	12	4-Methyl-2-pentanone (<i>MIBK</i>)	108-10-1	MeOH	APP-9-135	12
3,3'-Dichlorobenzidine	91-94-1	MeOH	APP-9-067	20	Naphthalene	91-20-3	CH ₂ Cl ₂	APP-9-136	15
<i>trans</i> -1,4-Dichloro-2-butene	110-57-6	MeOH	APP-9-068	12	1,4-Naphthoquinone	130-15-4	CH ₂ Cl ₂	APP-9-137	20
Dichlorodifluoromethane	75-71-8	MeOH	APP-9-069	12	1-Naphthylamine	134-32-7	CH ₂ Cl ₂	APP-9-138	20
1,1-Dichloroethane	75-34-3	MeOH	APP-9-070	12	2-Naphthylamine	91-59-8	CH ₂ Cl ₂	APP-9-139	20
					<i>o</i> -Nitroaniline	88-74-4	CH ₂ Cl ₂	APP-9-140	12

* 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.

The entire list of compounds can
be purchased as a complete set

APP-9-SET \$ 1,450 / 214 x 1 mL

Appendix IX

Appendix IX Compounds					All solutions are in 100 µg/mL in 1 mL				
Compound	CAS No.	Solv.	Cat. No.	Price	Compound	CAS No.	Solv.	Cat. No.	Price
<i>m</i> -Nitroaniline	99-09-2	CH ₂ Cl ₂	APP-9-141	\$ 12	Pentachlorobenzene	608-93-5	MeOH	APP-9-173	\$ 12
<i>p</i> -Nitroaniline	100-01-6	CH ₂ Cl ₂	APP-9-142	12	Pentachloroethane	76-01-7	MeOH	APP-9-174	12
Nitrobenzene	98-95-3	MeOH	APP-9-143	12	Pentachloronitrobenzene	82-68-8	MeOH	APP-9-175	12
<i>o</i> -Nitrophenol	88-75-5	MeOH	APP-9-144	12	Pentachlorophenol	87-86-5	MeOH	APP-9-176	12
<i>p</i> -Nitrophenol	100-02-7	MeOH	APP-9-145	12	Phenacetin	62-44-2	CH ₂ Cl ₂	APP-9-177	20
4-Nitroquinoline-1-oxide	56-57-5	CH ₂ Cl ₂	APP-9-146	20	Phenanthrene	85-01-8	MeOH	APP-9-178	15
N-Nitrosodi- <i>n</i> -butylamine	924-16-3	CH ₂ Cl ₂	APP-9-147	20	Phenol	108-95-2	CH ₂ Cl ₂	APP-9-179	12
N-Nitrosodiethylamine	55-18-5	CH ₂ Cl ₂	APP-9-148	20	<i>p</i> -Phenylenediamine	106-50-3	MeOH	APP-9-180	20
N-Nitrosodimethylamine	62-75-9	CH ₂ Cl ₂	APP-9-149	20	Phorate	298-02-2	MeOH	APP-9-181	12
N-Nitrosodiphenylamine	86-30-6	CH ₂ Cl ₂	APP-9-150	20	2-Picoline	109-06-8	MeOH	APP-9-182	20
N-Nitrosodipropylamine	621-64-7	CH ₂ Cl ₂	APP-9-151	20	Pronamide	23950-58-5	MeOH	APP-9-183	12
N-Nitrosomethylethylamine	10595-95-6	CH ₂ Cl ₂	APP-9-152	20	Propionitrile	107-12-0	MeOH	APP-9-184	12
N-Nitrosomorpholine	59-89-2	CH ₂ Cl ₂	APP-9-153	20	Pyrene	129-00-0	MeOH	APP-9-185	15
N-Nitrosopiperidine	100-75-4	CH ₂ Cl ₂	APP-9-154	20	Pyridine	110-86-1	MeOH	APP-9-186-M	12
N-Nitrosopyrrolidine	930-55-2	CH ₂ Cl ₂	APP-9-155	20	Safrole	94-59-7	MeOH	APP-9-187	20
5-Nitro- <i>o</i> -toluidine	99-55-8	CH ₂ Cl ₂	APP-9-156	20	Silvex (2,4,5-TP)	93-72-1	MeOH	APP-9-188	12
Parathion	56-38-2	MeOH	APP-9-157	12	Styrene	100-42-5	MeOH	APP-9-189	12
Polychlorinated biphenyls:					2,4,5-Trichlorophenoxy acetic acid	93-76-5	MeOH	APP-9-190	12
Aroclor® 1016	12674-11-2	MeOH	APP-9-158	12	1,2,4,5-Tetrachlorobenzene	95-94-3	MeOH	APP-9-191	12
Aroclor 1221	11104-28-2	MeOH	APP-9-159	12	1,1,1,2-Tetrachloroethane	630-20-6	MeOH	APP-9-192	12
Aroclor 1232	11141-16-5	MeOH	APP-9-160	12	1,1,2,2-Tetrachloroethane	79-34-5	MeOH	APP-9-193	12
Aroclor 1242	53469-21-9	MeOH	APP-9-161	15	Tetrachloroethylene	127-18-4	MeOH	APP-9-194	12
Aroclor 1248	12672-29-6	MeOH	APP-9-162	12	2,3,4,6-Tetrachlorophenol	58-90-2	MeOH	APP-9-195	20
Aroclor 1254	11097-69-1	MeOH	APP-9-163	12	Tetraethyl dithiopyrophosphate (Sulfotep)	3689-24-5	MeOH	APP-9-196	22
Aroclor 1260	11096-82-5	MeOH	APP-9-164	12	Thionazin	297-97-2	MeOH	APP-9-197	42
Aroclor 1262	37324-23-5	MeOH	APP-9-165	12	Toluene	108-88-3	MeOH	APP-9-198	12
Aroclor 1268	11100-14-4	MeOH	APP-9-166	12	<i>o</i> -Toluidine	95-53-4	MeOH	APP-9-199	12
	0.5 mg/mL in	MeOH	APP-9-166-5X	15	Toxaphene	8001-35-2	MeOH	APP-9-200	12
Dioxins:					1,2,4-Trichlorobenzene	120-82-1	MeOH	APP-9-201	12
1,2,3,4,7,8-HCDD (5 µg/mL)	39227-28-6	Toluene	APP-9-169	50	1,1,1-Trichloroethane	71-55-6	MeOH	APP-9-202	12
1,2,3,7,8-PCDD (5 µg/mL)	40321-76-4	Toluene	APP-9-168	50	1,1,2-Trichloroethane	79-00-5	MeOH	APP-9-203	12
2,3,7,8-TCDD (5 µg/mL)	1746-01-6	Toluene	APP-9-167	50	Trichloroethylene	79-01-6	MeOH	APP-9-204	12
Polychlorinated dibenzofurans:					Trichlorofluoromethane	75-69-4	MeOH	APP-9-205	12
1,2,3,4,7,8-HCDF (5 µg/mL)	55684-94-1	Toluene	APP-9-172	75	2,4,5-Trichlorophenol	95-95-4	MeOH	APP-9-206	12
1,2,3,7,8-PCDF (5 µg/mL)	57117-41-6	Toluene	APP-9-171	75	2,4,6-Trichlorophenol	88-06-2	MeOH	APP-9-207	12
2,3,7,8-TCDF (5 µg/mL)	51207-31-9	Toluene	APP-9-170	75	1,2,3-Trichloropropane	96-18-4	MeOH	APP-9-208	12
					O,O,O-Triethyl phosphorothioate	126-68-1	MeOH	APP-9-209	12
					sym-Trinitrobenzene	99-35-4	MeOH	APP-9-210	12
					Vinyl acetate *	108-05-4	MeOH	APP-9-211	12
					Vinyl chloride	75-01-4	MeOH	APP-9-212	12
					Xylene (total)	1330-20-7	MeOH	APP-9-213	12

Volatile Appendix IX Mixtures

M-8240A *
0.2 mg/mL each in MeOH

\$ 70 / 1 x 1 mL
41 comps.

Acetone
Acrolein
Acrylonitrile
Benzene
Bromodichloromethane
Bromoform
2-Butanone
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroform
Dibromochloromethane
cis-1,4-Dichloro-2-butene *
trans-1,4-Dichloro-2-butene **
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
trans-1,2-Dichloroethene
1,2-Dichloropropane

cis-1,3-Dichloropropene *
trans-1,3-Dichloropropene **
Ethanol
Ethylbenzene
2-Hexanone
Iodomethane
4-Methyl-2-pentanone
Methylene chloride
Styrene
1,1,2,2-Tetrachloroethane
Tetrachloroethene
Toluene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Vinyl acetate
o-Xylene
m-Xylene
p-Xylene

* *cis* (1.06 x conc.)
** *trans* (0.94 x conc.)
+ *cis* (0.1 mg/mL)
++ *trans* (0.1 mg/mL)

M-502B **\$ 25 / 1 x 1 mL**
M-502B-PAK SAVE 20% \$ 100 / 5 x 1 mL
0.2 mg/mL each in MeOH 6 comps.

Bromomethane
Chloromethane
Chloroethane
Dichlorodifluoromethane
Trichlorofluoromethane
Vinyl chloride

M-8240C **\$ 35 / 1 x 1 mL**
0.2 mg/mL each in MeOH 17 comps.

Acetonitrile
Allyl chloride
1,2-Dibromo-3-chloropropane
Dibromomethane
1,2-Dibromoethane
1,4-Dioxane
Ethyl methacrylate
Isobutyl alcohol
Methacrylonitrile
Methyl methacrylate
Nitrobenzene
Pentachloroethane
Propionitrile
Pyridine
1,1,1,2-Tetrachloroethane
1,2,4-Trichlorobenzene
1,2,3-Trichloropropane

* ColdPAK required to maintain integrity of product.



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

\$ 30 / 1 x 1 mL
14 comps.

S-181M
0.1 mg/mL each in MeOH

\$ 20 / 1 x 1 mL
6 comps.

Acetonitrile
Acrolein
Acrylonitrile
Allyl chloride
1,2-Dibromoethane (*Ethylene dibromide*)
1,2-Dibromo-3-chloropropane (*Fumazone*)
Dibromomethane

1,4-Dioxane
Ethyl cyanide (*Propionitrile*)
Iodomethane
Isobutanol
Methacrylonitrile
1,1,1,2-Tetrachloroethane
1,2,3-Trichloropropane

bis(2-Chloro-1-methylethyl) ether
Dichlorodifluoromethane
Ethyl methacrylate

Methyl methacrylate
Pentachloroethane
Pyridine

Semi-Volatile Mixtures

S-168-R1-SET

\$ 150 / 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

2-Part Label System

Smudgeproof, tear and solvent resistant * (Organic products in ampules)

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



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 \$ 20 / 1 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

1-Chloro-2-bromopropane
Fluorobenzene

M-524-IS-2 \$ 12 / 1 x 1 mL
2.0 mg/mL in MeOH

Fluorobenzene

M-524-IS \$ 20 / 1 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

1,2-Dichlorobenzene-d₄
Fluorobenzene

M-502-IS-2 \$ 30 / 1 x 1 mL
2.0 mg/mL each in MeOH 3 comps.

1-Chloro-2-bromopropane
Fluorobenzene
Methylene chloride-d₂

M-001R \$ 15 / 1 x 1 mL
2.0 mg/mL each in MeOH 3 comps.

Bromochloromethane
1,4-Dichlorobutane
2-Bromo-1-chloropropane

M-8020-IS \$ 25 / 1 x 1 mL
0.2 mg/mL each in MeOH 2 comps.

4-Bromofluorobenzene
α,α,α-Trifluorotoluene

M-8240/60-IS \$ 30 / 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 \$ 30 / 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 \$ 30 / 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 \$ 20 / 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 \$ 60 / 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 \$ 20 / 1 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

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

M-524-SS \$ 20 / 1 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

4-Bromofluorobenzene
1,2-Dichlorobenzene-d₄

M-624-SS-M \$ 25 / 1 x 1 mL
2.0 mg/mL each in MeOH 3 comps.

4-Bromofluorobenzene
Fluorobenzene
Pentafluorobenzene

M-8020-SS \$ 30 / 1 x 1 mL
2.0 mg/mL each in MeOH 3 comps.

4-Bromochlorobenzene
1,4-Difluorobenzene
Fluorobenzene

M-8021-SS \$ 20 / 1 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

4-Bromochlorobenzene
1,4-Dichlorobutane

M-8021-SS-M \$ 20 / 1 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

Bromochloromethane
1,4-Dichlorobutane

M-8021A-SS \$ 20 / 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 \$ 30 / 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 \$ 60 / 1 x 1 mL
200 µg/mL each in MeOH 8 comps.

Benzene-d₆ 1,2-Dichloroethane-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 \$ 20 / 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 \$ 25 / 1 x 1 mL
2.0 mg/mL each in MeOH 3 comps.

4-Bromofluorobenzene
1,2-Dichlorobenzene-d₄
Fluorobenzene

M-8010-IS/SS \$ 25 / 1 x 1 mL
150 µg/mL each in MeOH 3 comps.

4-Bromochlorobenzene
Bromochloromethane
4-Bromofluorobenzene

M-8020-IS/SS-ASL \$ 35 / 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 \$ 45 / 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 \$ 40 / 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 *	\$ 50 / 4 x 1 mL
0.2 mg/mL in MeOH	(M-601A, M-502B, M-601C, M-501)
M-601-10X-SET *	\$ 75 / 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	\$ 35 / 1 x 1 mL
M-601A-PAK	SAVE 20% \$ 140 / 5 x 1 mL
0.2 mg/mL each in MeOH	
M-601A-10X	\$ 35 / 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	\$ 25 / 1 x 1 mL
M-502B-PAK	SAVE 20% \$ 100 / 5 x 1 mL
0.2 mg/mL each in MeOH	
M-502B-10X	\$ 35 / 1 x 1 mL
2.0 mg/mL each in MeOH	6 comps.
Bromomethane	Dichlorodifluoromethane
Chloromethane	Trichlorofluoromethane
Chloroethane	Vinyl chloride

Liquid Component

M-601C *	\$ 10 / 1 x 1 mL
M-601C-PAK *	SAVE 20% \$ 40 / 5 x 1 mL
0.2 mg/mL in MeOH	
M-601C-10X *	\$ 10 / 1 x 1 mL
2.0 mg/mL in MeOH	
2-Chloroethylvinyl ether	

Trihalomethanes

M-501	\$ 17 / 1 x 1 mL
M-501-PAK	SAVE 20% \$ 68 / 5 x 1 mL
0.2 mg/mL each in MeOH	
M-501-10X	\$ 20 / 1 x 1 mL
2.0 mg/mL each in MeOH	4 comps.
Bromoform	Dichlorobromomethane
Chloroform	Dibromochloromethane

Method 8010 Additional Analytes

M-8010R-1	\$ 25 / 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	\$ 15 / 1 x 1 mL
M-001R-PAK	SAVE 20% \$ 60 / 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 *	\$ 55 / 2 x 1 mL
	(M-8010A-M, M-601C)

Method 8010A (Methanol Version)

M-8010A-M	\$ 55 / 1 x 1 mL
0.2 mg/mL each in MeOH	33 comps.
Benzylchloride	1,2-Dichloroethane
Bromobenzene	1,1-Dichloroethylene
Bromoform	<i>trans</i> -1,2-Dichloroethylene
Bromomethane	1,2-Dichloropropane
Carbon tetrachloride	<i>cis</i> -1,3-Dichloropropylene *
Chlorobenzene	<i>trans</i> -1,3-Dichloropropylene **
Chloroethane	Methylene chloride
Chloroform	1,1,1,2-Tetrachloroethane
Chloromethane	1,1,2,2-Tetrachloroethane
Dibromochloromethane	Tetrachloroethylene
Dibromomethane	1,1,1-Trichloroethane
1,2-Dichlorobenzene	1,1,2-Trichloroethane
1,3-Dichlorobenzene	Trichloroethylene
1,4-Dichlorobenzene	Trichlorofluoromethane
Dichlorobromomethane	1,2,3-Trichloropropane
Dichlorodifluoromethane	Vinyl chloride
1,1-Dichloroethane	
	* 1.06 times conc.
	** 0.94 times conc.

M-601C *	\$ 10 / 1 x 1 mL
0.2 mg/mL in MeOH	
2-Chloroethylvinyl ether	

Internal & Surrogate Standard

M-8010-IS/SS	\$ 25 / 1 x 1 mL
M-8010-IS/SS-PAK	SAVE 20% \$ 100 / 5 x 1 mL
150 µg/mL each in MeOH	3 comps.
4-Bromochlorobenzene	
4-Bromofluorobenzene	
Bromochloromethane	

* ColdPAK required to maintain integrity of product.

Method 8010A Acetonitrile Version

Method 8010A (Acetonitrile Version)

M-8010A	\$ 55 / 1 x 1 mL
0.2 mg/mL each in AcCN	34 comps.
Benzylchloride	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-Chloroethylvinyl 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 **
	* 1.06 times conc.
	** 0.94 times conc.

Method 8010B Halogenated VOCs by GC/ELCD (Hall)

Halogenated Volatiles (Acetonitrile Version)

M-8010A \$ 55 / 1 x 1 mL
0.2 mg/mL each in AcCN 34 comps.

Benzylchloride	1,2-Dichloroethane
Bromobenzene	1,1-Dichloroethylene
Bromoform	trans-1,2-Dichloroethylene
Bromomethane	1,2-Dichloropropane
Carbon tetrachloride	cis-1,3-Dichloropropylene *
Chlorobenzene	trans-1,3-Dichloropropylene **
Chloroethane	Methylene chloride
2-Chloroethylvinyl ether	1,1,1,2-Tetrachloroethane
Chloroform	1,1,2,2-Tetrachloroethane
Chloromethane	Tetrachloroethylene
Dibromochloromethane	1,1,1-Trichloroethane
Dibromomethane	1,1,2-Trichloroethane
1,2-Dichlorobenzene	Trichloroethylene
1,3-Dichlorobenzene	Trichlorofluoromethane
1,4-Dichlorobenzene	1,2,3-Trichloropropane
Dichlorobromomethane	Vinyl chloride
Dichlorodifluoromethane	
1,1-Dichloroethane	

* 1.06 times conc.
** 0.94 times conc.

Halogenated Volatiles (Methanol Versions)

Mix #1

M-8010B \$ 45 / 1 x 1 mL
0.2 mg/mL each in MeOH 40 comps.

Allyl chloride	1,1-Dichloroethane
Bromobenzene	1,2-Dichloroethane
Bromoform	1,1-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	Ethylene dibromide
1-Chlorohexane	Methylene chloride
Chloromethane	1,1,1,2-Tetrachloroethane
4-Chlorotoluene	1,1,2,2-Tetrachloroethane
Dibromochloromethane	Tetrachloroethene
1,2-Dibromo-3-chloropropane	1,1,1-Trichloroethane
Dibromomethane	1,1,2-Trichloroethane
1,2-Dichlorobenzene	Trichloroethene
1,3-Dichlorobenzene	Trichlorofluoromethane
1,4-Dichlorobenzene	1,2,3-Trichloropropane
Dichlorobromomethane	Vinyl chloride
1,4-Dichloro-2-butene	
Dichlorodifluoromethane	

* 1.06 times conc.
** 0.94 times conc.

Mix #2

M-8021B-X1 \$ 35 / 1 x 1 mL
0.2 mg/mL each in MeOH 5 comps.

Benzyl chloride	bis(2-Chloro-1-methylethyl) ether
bis(2-Chloroethoxy)methane	Epichlorohydrin
2-Chloroethylvinyl ether	

Internal and Surrogate Standard

M-8010-IS/SS \$ 25 / 1 x 1 mL
M-8010-IS/SS-PAK SAVE 20% \$ 100 / 5 x 1 mL
150 µg/mL each in MeOH 3 comps.

4-Bromochlorobenzene	4-Bromofluorobenzene
Bromochloromethane	

Surrogate Standard

M-001R \$ 15 / 1 x 1 mL
M-001R-PAK SAVE 20% \$ 60 / 5 x 1 mL
20 mg/mL each in MeOH 3 comps

Bromochloromethane	2-Bromo-1-chloropropane
1,4-Dichlorobutane	

Halogenated Volatiles

M-8021B-X2 \$ 35 / 1 x 1 mL
0.2 mg/mL each in Pentane 2 comps.

Bromoacetone	Chloromethylmethyl ether
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APP-9-030 \$ 12 / 1 x 1 mL
100 µg/mL in MeOH

Bromodichloromethane

APP-9-130 \$ 12 / 1 x 1 mL
100 µg/mL in MeOH

Methyl iodide

Chloroprene (Xylene-Free)

APP-9-048-R1 \$ 12 / 1 x 1 mL
100 µg/mL in MeOH

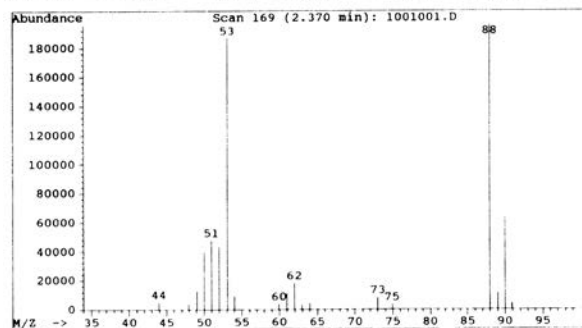
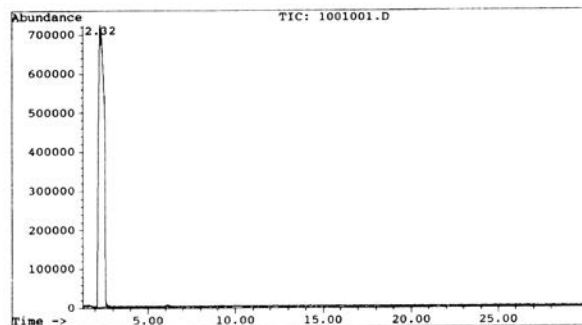
APP-9-048-R1-2X \$ 12 / 1 x 1 mL
200 µg/mL in MeOH

APP-9-048-R1-20X \$ 30 / 1 x 1 mL
2000 µg/mL in MeOH

Chloroprene

Pure Chloroprene

Unlike traditional sources, this Chloroprene does not contain any xylenes and is not contaminated with extraneous solvents and by-products of commercial Chloroprene. It will facilitate quantification of analytes by EPA Methods 524.2, 502.2, 8010, 8021 and 8240/8260 without interference from the xylenes previously present.



Method 8011 DBCP & EDB by GC/MS

M-504-10X \$ 15 / 1 x 1 mL
M-504-10X-PAK SAVE 20% \$ 60 / 5 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

1,2-Dibromo-3-chloropropane (DBCP)	1,2-Dibromoethane (EDB)
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EPA Method 8000 Series

Method 8015A (Rev 1, July 1992) Non-Halogenated Volatile Organics by GC/FID

M-8015A	\$ 20 / 1 x 1 mL
0.2 mg/mL each in MeOH	4 comps.
M-8015A-10X	\$ 20 / 1 x 1 mL
2.0 mg/mL each in MeOH	4 comps.
Diethyl ether	Methyl ethyl ketone
Ethanol	Methyl isobutyl ketone

Non-Halogenated Volatile Organics

M-8015-ASL	\$ 40 / 1 x 1 mL
100 µg/mL each in MeOH	12 comps.
Acetonitrile	Ethyl methacrylate
Acrylamide	Isobutyl alcohol
2-Butanone	Methacrylonitrile
Diethyl ether	Methyl methacrylate
1,4-Dioxane	4-Methyl-2-pentanone
Ethanol	Propionitrile

Internal Standard

M-8015B-IS-10X	\$ 30 / 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	\$ 300 / set of 27 x 1 mL
Each at 10 mg/mL in H ₂ O	

Compound	Cat. No.	Price / 1 mL
Acetone	M-8015B/5031-01	\$ 25
Acetonitrile	M-8015B/5031-02	25
Acrolein	M-8015B/5031-03	25
Acrylonitrile	M-8015B/5031-04	25
Allyl alcohol	M-8015B/5031-05	25
1-Butanol	M-8015B/5031-06	25
t-Butanol	M-8015B/5031-07	25
Crotonaldehyde	M-8015B/5031-08	25
Diethyl ether	M-8015B/5031-09	25
p-Dioxane	M-8015B/5031-10	25
Ethanol	M-8015B/5031-11	25
Ethyl acetate	M-8015B/5031-12	25
Ethylene glycol	M-8015B/5031-13	25
Ethylene oxide (5.0 mg/mL)	M-8015B/5031-14-R1 *	20
Isobutyl alcohol	M-8015B/5031-15	25
Isopropanol	M-8015B/5031-16	25
Methanol	M-8015B/5031-17	20
Methyl ethyl ketone	M-8015B/5031-18	25
4-Methyl-2-pentanone	M-8015B/5031-19	25
N-Nitrosodi-n-butylamine (0.5 mg/mL)	M-8015B/5031-20	25
Paraldehyde	M-8015B/5031-21	25
2-Pentanone	M-8015B/5031-22	25
2-Picoline	M-8015B/5031-23	25
1-Propanol	M-8015B/5031-24	25
Propionitrile	M-8015B/5031-25	25
Pyridine	M-8015B/5031-26	25
o-Toluidine	M-8015B/5031-27	25

Method 5031 GC/FID Internal Standards for Method 8015B/5031 Azeotropic Distillation

M-8260/5031-IS-FID	\$ 30 / 1 x 1 mL
5.0 mg/mL each in H ₂ O	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	\$ 30 / 1 x 1 mL
0.2 mg/mL each in MeOH	10 comps.
M-8020-10X	\$ 30 / 1 x 1 mL
M-8020-10X-PAK	SAVE 20% \$ 120 / 5 x 1 mL
2.0 mg/mL each in MeOH	10 comps.
Benzene	Ethylbenzene
Chlorobenzene	Toluene
1,2-Dichlorobenzene	o-Xylene
1,3-Dichlorobenzene	m-Xylene
1,4-Dichlorobenzene	p-Xylene

M-8020B-R1	\$ 40 / 1 x 1 mL
M-8020B-R1-PAK	SAVE 20% \$ 160 / 5 x 1 mL
2.0 mg/mL each in MeOH	13 comps.

Benzene	Pyridine
Chlorobenzene	Thiophenol
1,2-Dichlorobenzene	Toluene
1,3-Dichlorobenzene	o-Xylene
1,4-Dichlorobenzene	m-Xylene
Ethylbenzene	p-Xylene
2-Picoline	

Performance Check Solution

M-8020-QC	\$ 12 / 1 x 1 mL
M-8020-QC-PAK	SAVE 20% \$ 48 / 5 x 1 mL
2.0 mg/mL in MeOH	
Methyl t-butyl ether	

Internal Standards

M-8020-IS	\$ 25 / 1 x 1 mL
M-8020-IS-PAK	SAVE 20% \$ 100 / 5 x 1 mL
0.2 mg/mL each in MeOH	2 comps.
M-8020-IS-10X	\$ 25 / 1 x 1 mL
M-8020-IS-10X-PAK	SAVE 20% \$ 100 / 5 x 1 mL
2.0 mg/mL each in MeOH	2 comps.
4-Bromofluorobenzene	α,α,α-Trifluorotoluene

Surrogate Standards

M-8020-SS	\$ 30 / 1 x 1 mL
M-8020-SS-PAK	SAVE 20% \$ 120 / 5 x 1 mL
2.0 mg/mL each in MeOH	3 comps.
4-Bromochlorobenzene	Fluorobenzene
1,4-Difluorobenzene	

M-8020-SS-1	\$ 20 / 1 x 1 mL
2.0 mg/mL each in MeOH	
4-Bromochlorobenzene	

Combined ISTD/SS Solution

M-8020-IS/SS-ASL	\$ 35 / 1 x 1 mL
M-8020-IS/SS-ASL-PAK	SAVE 20% \$ 140 / 5 x 1 mL
1.5 mg/mL each in MeOH	5 comps.
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 (<i>Cumene</i>) (37)
<i>sec</i> -Butylbenzene (08)	<i>p</i> -Isopropyltoluene (<i>p-Cymene</i>) (38)
<i>tert</i> -Butylbenzene (09)	Methylene chloride (39)
Carbon tetrachloride (10)	Naphthalene (40)
Chlorobenzene (11)	<i>n</i> -Propylbenzene (41)
Chloroform (13)	Styrene (42)
2-Chlorotoluene (15)	1,1,1,2-Tetrachloroethane (43)
4-Chlorotoluene (16)	1,1,2,2-Tetrachloroethane (44)
Dibromochloromethane (17)	Tetrachloroethene (45)
1,2-Dibromo-3-chloropropane (18)	Toluene (46)
1,2-Dibromoethane (19)	1,2,3-Trichlorobenzene (47)
Dibromomethane (20)	1,2,4-Trichlorobenzene (48)
1,2-Dichlorobenzene (21)	1,1,1-Trichloroethane (49)
1,3-Dichlorobenzene (22)	1,1,2-Trichloroethane (50)
1,4-Dichlorobenzene (23)	Trichloroethene (51)
1,1-Dichloroethane (25)	1,2,3-Trichloropropane (53)
1,2-Dichloroethane (26)	1,2,4-Trimethylbenzene (54)
1,1-Dichloroethene (27)	1,3,5-Trimethylbenzene (55)
<i>cis</i> -1,2-Dichloroethene (28)	<i>o</i> -Xylene (57)
<i>trans</i> -1,2-Dichloroethene (29)	<i>m</i> -Xylene (58)
1,2-Dichloropropane (30)	<i>p</i> -Xylene (59)
1,3-Dichloropropane (31)	
2,2-Dichloropropane (32)	

* *cis* (1.06 x conc.)
** *trans* (0.94 x conc.)

6 Gas Components

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

All 60 liquid & gas components in One Solution

Liquids (54 comps.) and Gases (6 comps.)

M-502	\$ 75 / 1 x 1 mL
M-502-PAK	SAVE 20% \$ 300 / 5 x 1 mL
0.2 mg/mL each in MeOH	
M-502-10X	\$ 100 / 1 x 1 mL
M-502-10X-PAK	SAVE 20% \$ 400 / 5 x 1 mL
2.0 mg/mL each in MeOH	60 comps.

59 Component Set

As a complete set of each component in individual ampules.

M-502-SET	0.2 mg/mL in MeOH	\$ 300 / 59 x 1 mL
M-502-10X-SET	2.0 mg/mL in MeOH	\$ 350 / 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	\$ 10 / 1 x 1 mL
M-502-#-10X	2.0 mg/mL in MeOH	\$ 14 / 1 x 1 mL

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

M-502-34-R	\$ 10 / 1 x 1 mL
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0.4 mg/mL each in MeOH

M-502-34-R-10X	\$ 15 / 1 x 1 mL
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4.0 mg/mL each in MeOH

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

Individual Component Neats

To order, specify identity (#)

M-502-#N	\$ 20 / 1 x 1 gram
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except M-502-32N & M-502-43N \$ 30 / 1 x 1 gram

Halogenated Non-Aromatic Volatiles Solution #1

M-8021B-NAV	\$ 50 / 1 x 1 mL
M-8021B-NAV-PAK	SAVE 20% \$ 200 / 5 x 1 mL
0.2 mg/mL each in MeOH	35 comps.

Bromochloromethane	Dichloromethane
Bromodichloromethane	1,2-Dichloropropane
Bromoform	1,3-Dichloropropane
Bromomethane	2,2-Dichloropropane
Carbon tetrachloride	1,1-Dichloropropene
Chloroethane	<i>cis</i> -1,3-Dichloropropene
Chloroform	<i>trans</i> -1,3-Dichloropropene
Chlorodibromomethane	Hexachlorobutadiene
Chloromethane	Tetrachloroethene
1,2-Dibromo-3-chloropropane	1,1,1,2-Tetrachloroethane
1,2-Dibromoethane	1,1,2,2-Tetrachloroethane
Dibromomethane	Trichloroethene
Dichlorodifluoromethane	1,1,1-Trichloroethane
1,1-Dichloroethane	1,1,2-Trichloroethane
1,2-Dichloroethane	Trichlorofluoromethane
1,1-Dichloroethene	1,2,3-Trichloropropane
<i>cis</i> -1,2-Dichloroethene	Vinyl chloride
<i>trans</i> -1,2-Dichloroethene	

Aromatic Volatiles Solution #2

M-8021B-AV	\$ 30 / 1 x 1 mL
M-8021B-AV-PAK	SAVE 20% \$ 120 / 5 x 1 mL
0.2 mg/mL each in MeOH	25 comps.

Benzene	Isopropylbenzene
Bromobenzene	<i>p</i> -Isopropyltoluene
<i>n</i> -Butylbenzene	Naphthalene
<i>sec</i> -Butylbenzene	<i>n</i> -Propylbenzene
<i>tert</i> -Butylbenzene	Styrene
Chlorobenzene	Toluene
2-Chlorotoluene	1,2,3-Trichlorobenzene
4-Chlorotoluene	1,2,4-Trichlorobenzene
1,2-Dichlorobenzene	1,2,4-Trimethylbenzene
1,3-Dichlorobenzene	1,3,5-Trimethylbenzene
1,4-Dichlorobenzene	<i>o</i> -Xylene
Ethylbenzene	<i>m</i> -Xylene
	<i>p</i> -Xylene

Halogenated Volatiles Solution #3

M-8021B-X1	\$ 20 / 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-Chloroethylvinyl ether	Epichlorohydrin

Halogenated Volatiles Solution #4

M-8021B-X2	\$ 35 / 1 x 1 mL
0.2 mg/mL each in Pentane	2 comps.

Bromoacetone	Chloromethyl methyl ether
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EPA Method 8000 Series

Method 8021B Purgeable Volatiles by PID/ELCD (Hall)

Internal Standard Solutions

M-8021B-IS	\$ 15 / 1 x 1 mL
M-8021B-IS-PAK	SAVE 20% \$ 60 / 5 x 1 mL
5 µg/mL each in MeOH	
M-8021B-IS-10X	\$ 15 / 1 x 1 mL
M-8021B-IS-10X-PAK	SAVE 20% \$ 60 / 5 x 1 mL
50 µg/mL each in MeOH	
M-8021B-IS-100X	\$ 15 / 1 x 1 mL
M-8021B-IS-100X-PAK	SAVE 20% \$ 60 / 5 x 1 mL
500 µg/mL each in MeOH	2 comps.
2-Bromo-1-chloropropane	Fluorobenzene

Purgeable Internal Standards

M-001R-0.75X	\$ 15 / 1 x 1 mL
M-001R-0.75X-PAK	SAVE 20% \$ 60 / 5 x 1 mL
15 mg/mL each in MeOH	
M-001R-0.075X	\$ 15 / 1 x 1 mL
M-001R-0.075X-PAK	SAVE 20% \$ 60 / 5 x 1 mL
1.5 mg/mL each in MeOH	
M-001R-0.0075X	\$ 15 / 1 x 1 mL
M-001R-0.0075X-PAK	SAVE 20% \$ 60 / 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	\$ 15 / 1 x 1 mL
M-8021B-SS-PAK	SAVE 20% \$ 60 / 5 x 1 mL
15 µg/mL each in MeOH	
M-8021B-SS-10X	\$ 15 / 1 x 1 mL
M-8021B-SS-10X-PAK	SAVE 20% \$ 60 / 5 x 1 mL
150 µg/mL each in MeOH	
M-8021B-SS-100X	\$ 15 / 1 x 1 mL
M-8021B-SS-100X-PAK	SAVE 20% \$ 60 / 5 x 1 mL
1,500 µg/mL each in MeOH	2 comps.
4-Bromochlorobenzene	1,4-Dichlorobutane

Surrogate Standards

M-8021-SS	\$ 20 / 1 x 1 mL
M-8021-SS-PAK	SAVE 20% \$ 80 / 5 x 1 mL
2.0 mg/mL each in MeOH	2 comps.
4-Bromochlorobenzene	1,4-Dichlorobutane

M-8021-SS-M	\$ 20 / 1 x 1 mL
M-8021-SS-M-PAK	SAVE 20% \$ 80 / 5 x 1 mL
2.0 mg/mL each in MeOH	2 comps.
Bromochloromethane	1,4-Dichlorobutane

M-001R	\$ 15 / 1 x 1 mL
M-001R-PAK	SAVE 20% \$ 60 / 5 x 1 mL
20 mg/mL each in MeOH	3 comps.
Bromochloromethane	2-Bromo-1-chloropropane
1,4-Dichlorobutane	

M-8021A-SS	\$ 20 / 1 x 1 mL
M-8021A-SS-PAK	SAVE 20% \$ 80 / 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	\$ 14 / 1 x 1 mL
0.2 mg/mL in MeOH	
Chloroprene (Xylene-free)	

Method 8030A Acrolein & Acrylonitrile by GC/FID

M-603-10X	\$ 17 / 1 x 1 mL
10 mg/mL each in Water	2 comps.
Acrolein	Acrylonitrile

Method 8031 Acrylonitrile by GC/NPD

APP-9-008-10X	\$ 20 / 1 x 1 mL
APP-9-008-10X-PAK	SAVE 20% \$ 80 / 5 x 1 mL
1.0 mg/mL in MeOH	
Acrylonitrile	

Method 8032/8032A Acrylamide by GC/ECD

Acrylamide	
M-8032	\$ 10 / 1 x 1 mL
M-8032-PAK	SAVE 20% \$ 40 / 5 x 1 mL
1.0 mg/mL in MeOH	
Acrylamide	

Brominated Analyte

M-8032B	\$ 20 / 1 x 1 mL
M-8032B-PAK	SAVE 20% \$ 80 / 5 x 1 mL
0.1 mg/mL in Ethyl acetate	
2,3-Dibromopropionamide	

Internal Standard

M-8032-IS	\$ 10 / 1 x 1 mL
M-8032-IS-PAK	SAVE 20% \$ 40 / 5 x 1 mL
0.1 mg/mL in Ethyl acetate	
Dimethyl phthalate	

Method 8033 Acrylonitrile by GC/NPD

Acrylonitrile	
M-8033	\$ 12 / 1 x 1 mL
M-8033-PAK	SAVE 20% \$ 48 / 5 x 1 mL
1,000 µg/mL in H ₂ O	
Acrylonitrile	

Buy AccuPAKs™
Save 20-40% 5 x 1 mL





Method 8040 Phenols, PFB Derivatives by GC/ECD

Phenols, PFB Derivatives Set

M-8040-PFB-SET

\$ 300 / 19 x 1 mL

Each at 0.2 mg/mL in Isopropyl alcohol

(01) 4-Chloro-3-cresol	(11) Dinoseb
(02) <i>o</i> -Chlorophenol	(12) 2-Methyl-4,6-dinitrophenol
(03) <i>m</i> -Cresol	(13) <i>o</i> -Nitrophenol
(04) <i>o</i> -Cresol	(14) <i>p</i> -Nitrophenol
(05) <i>p</i> -Cresol	(15) Pentachlorophenol
(06) 2-Cyclohexyl-4,6-dinitrophenol (<i>Dinex</i>)	(16) Phenol
(07) 2,4-Dichlorophenol	(17) 2,3,4,6-Tetrachlorophenol
(08) 2,6-Dichlorophenol	(18) 2,4,5-Trichlorophenol
(09) 2,4-Dimethylphenol	(19) 2,4,6-Trichlorophenol
(10) 2,4-Dinitrophenol	

Phenols, PFB Derivatives - Mix A

M-8040A-R-PFB

\$ 80 / 1 x 1 mL

M-8040A-R-PFB-PAK

SAVE 20% \$ 320 / 5 x 1 mL

0.2 mg/mL each in MeOH

10 comps.

4-Chloro-3-cresol	<i>o</i> -Nitrophenol
<i>o</i> -Cresol	<i>p</i> -Nitrophenol
2-Cyclohexyl-4,6-dinitrophenol (<i>Dinex</i>)	2,4,6-Trichlorophenol
2,4-Dichlorophenol	Pentachlorophenol
2-Methyl-4,6-dinitrophenol	Phenol

Phenols, PFB Derivatives - Mix B

M-8040B-R-PFB

\$ 80 / 1 x 1 mL

M-8040B-R-PFB-PAK

SAVE 20% \$ 320 / 5 x 1 mL

0.2 mg/mL each in MeOH

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	

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

\$ 10 / 1 x 1 mL

M-8040-SS-PAK

SAVE 20% \$ 40 / 5 x 1 mL

2.0 mg/mL each in Isopropyl alcohol

2 comps.

2-Fluorophenol	2,4,6-Tribromophenol
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Surrogate Standard, PFB Derivatives

M-8040-SS-PFB

\$ 30 / 1 x 1 mL

M-8040-SS-PFB-PAK

SAVE 20% \$ 120 / 5 x 1 mL

2.0 mg/mL each in MeOH

2 comps.

2-Fluorophenol	2,4,6-Tribromophenol
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Method 8040A Phenols by GC/FID

Phenol Set

M-8040-SET

\$ 200 / 19 x 1 mL

Each at 1.0 mg/mL in MeOH

(01) 4-Chloro-3-cresol	(11) Dinoseb
(02) <i>o</i> -Chlorophenol	(12) 2-Methyl-4,6-dinitrophenol
(03) <i>m</i> -Cresol	(13) <i>o</i> -Nitrophenol
(04) <i>o</i> -Cresol	(14) <i>p</i> -Nitrophenol
(05) <i>p</i> -Cresol	(15) Pentachlorophenol
(06) 2-Cyclohexyl-4,6-dinitrophenol (<i>Dinex</i>)	(16) Phenol
(07) 2,4-Dichlorophenol	(17) 2,3,4,6-Tetrachlorophenol
(08) 2,6-Dichlorophenol	(18) 2,4,5-Trichlorophenol
(09) 2,4-Dimethylphenol	(19) 2,4,6-Trichlorophenol
(10) 2,4-Dinitrophenol	

Mix A

M-8040A-R

\$ 40 / 1 x 1 mL

M-8040A-R-PAK

SAVE 20% \$ 160 / 5 x 1 mL

2.0 mg/mL each in Isopropyl alcohol

10 comps.

4-Chloro-3-cresol	<i>o</i> -Nitrophenol
<i>o</i> -Cresol	<i>p</i> -Nitrophenol
2-Cyclohexyl-4,6-dinitrophenol (<i>Dinex</i>)	2,4,6-Trichlorophenol
2,4-Dichlorophenol	Pentachlorophenol
2-Methyl-4,6-dinitrophenol	Phenol

Mix B

M-8040B-R

\$ 35 / 1 x 1 mL

M-8040B-R-PAK

SAVE 20% \$ 140 / 5 x 1 mL

2.0 mg/mL each in Isopropyl alcohol

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

\$ 40 / 1 x 1 mL

M-8040A-ASL-PAK

SAVE 20% \$ 160 / 1 x 1 mL

100 µg/mL each in Isopropyl alcohol

M-8040A-ASL-20X

\$ 70 / 1 x 1 mL

2000 µg/mL each in Isopropyl alcohol

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	2,3,4,6-Tetrachlorophenol
2,4-Dichlorophenol	2,4,5-Trichlorophenol
2,6-Dichlorophenol	2,4,6-Trichlorophenol
2,4-Dimethylphenol	

Method 8040/8040A Bromo Phenols and Anisoles

Bromo Phenols

Each at 100 µg/mL in Toluene

Compound	Cat. No.	Price / 1 mL	Compound	Cat. No.	Price / 1 mL
3-Bromophenol	BP-003S	\$ 15	2,3,4-Tribromophenol	BP-234S	\$ 75
4-Bromophenol	BP-004S	15	2,4,5-Tribromophenol	BP-245S	75
2,3-Dibromophenol	BP-023S	75	2,3,6-Tribromophenol	BP-236S	75
2,4-Dibromophenol	BP-024S	15	2,4,6-Tribromophenol	BP-246S	15
2,5-Dibromophenol	BP-025S	75	3,4,5-Tribromophenol	BP-345S	75
2,6-Dibromophenol	BP-026S	25	2,3,4,5-Tetrabromophenol	BP-2345S	75
3,5-Dibromophenol	BP-035S	75	2,3,4,6-Tetrabromophenol	BP-2346S	75
			2,3,5,6-Tetrabromophenol	BP-2356S	75
			Pentabromophenol	BP-23456S	15

Bromo Anisoles (Methyl Esters)

Each at 50 µg/mL in Methanol

Price

Compound	Cat. No.	1 mL
2-Bromoanisole	BAN-01	\$ 45
3-Bromoanisole	BAN-02	45
4-Bromoanisole	BAN-03	45
2,3-Dibromoanisole	BAN-04	75
2,4-Dibromoanisole	BAN-05	45
2,5-Dibromoanisole	BAN-06	75
2,6-Dibromoanisole	BAN-07	45
3,5-Dibromoanisole	BAN-08	45
2,4,5-Tribromoanisole	BAN-09	95
2,4,6-Tribromoanisole	BAN-10	45



EPA Method 8000 Series

Method 8041 Phenols by GC-FID or ECD as the Derivatives

RCRA Target Phenols Solution

M-8041 \$ 70 / 1 x 1 mL
M-8041-PAK **SAVE 20%** \$ 280 / 5 x 1 mL
 1.0 mg/mL each in Isopropanol 21 comps.

4-Chloro-3-methylphenol	4-Methylphenol (<i>p</i> -Cresol)
2-Chlorophenol	2-Nitrophenol
2-Cyclohexyl-4,6-dinitrophenol	4-Nitrophenol
2,4-Dichlorophenol	Pentachlorophenol
2,6-Dichlorophenol	Phenol
2,4-Dimethylphenol	2,3,4,5-Tetrachlorophenol
Dinoseb (<i>DNBP</i>)	2,3,4,6-Tetrachlorophenol
2,4-Dinitrophenol	2,3,5,6-Tetrachlorophenol
2-Methyl-4,6-dinitrophenol	2,4,5-Trichlorophenol
2-Methylphenol (<i>o</i> -Cresol)	2,4,6-Trichlorophenol
3-Methylphenol (<i>m</i> -Cresol)	

Technical Note

The method analytes were formulated into two distinct solutions to meet the needs of laboratories analyzing only the RCRA analytes or the combined RCRA/non-RCRA analytes.

Non-RCRA Target Phenols Solution

M-8041-X1 \$ 60 / 1 x 1 mL
M-8041-X1-PAK **SAVE 20%** \$ 240 / 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 \$ 15 / 1 x 1 mL
M-8041-IS-PAK **SAVE 20%** \$ 60 / 5 x 1 mL
 50 µg/mL each in Isopropanol
M-8041-IS-10X \$ 30 / 1 x 1 mL
M-8041-IS-10X-PAK **SAVE 20%** \$ 120 / 5 x 1 mL
 0.5 mg/mL each in Isopropanol
M-8041-IS-20X \$ 40 / 1 x 1 mL
M-8041-IS-20X-PAK **SAVE 20%** \$ 160 / 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 \$ 10 / 1 x 1 mL
M-8041-SS-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
 1.6 µg/mL in Isopropanol
M-8041-SS-10X \$ 10 / 1 x 1 mL
M-8041-SS-10X-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
 16 µg/mL in Isopropanol
M-8041-SS-100X \$ 10 / 1 x 1 mL
M-8041-SS-100X-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
 160 µg/mL in Isopropanol
M-8041-SS-625X \$ 10 / 1 x 1 mL
M-8041-SS-625X-PAK **SAVE 20%** \$ 40 / 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 \$ 25 / 1 x 1 mL
M-8070-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
 2.0 mg/mL each in MeOH 3 comps.
 N-Nitrosodimethylamine N-Nitrosodi-*n*-propylamine
 N-Nitrosodiphenylamine

Method 8060 Phthalate Esters by GC/ECD

Phthalate Esters

M-8060 \$ 25 / 1 x 1 mL
M-8060-PAK **SAVE 20%** \$ 100 / 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 \$ 25 / 1 x 1 mL
M-8060-QC-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
 At stated conc. in MeOH 6 comps.

Benzyl butyl phthalate (0.1 mg/mL)	Di- <i>n</i> -butyl phthalate (0.25 mg/mL)
Diethyl phthalate (0.25 mg/mL)	Di- <i>n</i> -octyl phthalate (0.5 mg/mL)
Dimethyl phthalate (0.25 mg/mL)	bis(2-Ethylhexyl)phthalate (0.5 mg/mL)

Method 8061A Phthalate Esters by GC/ECD

Phthalate Esters

M-8061-R1 \$ 60 / 1 x 1 mL
M-8061-R1-PAK **SAVE 20%** \$ 240 / 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 \$ 25 / 1 x 1 mL
M-8061A-PAK **SAVE 20%** \$ 100 / 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 \$ 15 / 1 x 1 mL
M-8061A-MS-PAK **SAVE 20%** \$ 60 / 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 \$ 10 / 1 x 1 mL
M-8061-IS-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
 5.0 mg/mL in Hexane
 Benzyl benzoate

Surrogate Standards

M-8061-SS \$ 20 / 1 x 1 mL
M-8061-SS-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
 50 µg/mL each in Acetone
M-8061-SS-10X \$ 20 / 1 x 1 mL
M-8061-SS-10X-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
 500 µg/mL each in Acetone 3 comps.
 Dibenzyl phthalate Diphenyl phthalate
 Diphenyl isophthalate

Nitrosamines Mix

M-8270-03-ASL \$ 60 / 1 x 1 mL
 2.0 mg/mL each in CH₂Cl₂ 9 comps.
 N-Nitrosodi-*n*-butylamine N-Nitrosomethylethylamine
 N-Nitrosodiethylamine N-Nitrosomorpholine
 N-Nitrosodimethylamine N-Nitrosopiperidine
 N-Nitrosodiphenylamine N-Nitrosopyrrolidine
 N-Nitrosodi-*n*-propylamine

Alternate Source



Method 8080A Organochlorine Pesticides and PCBs by GC/ECD

Organochlorine Pesticides

M-8080 \$ 60 / 1 x 1 mL
M-8080-PAK **SAVE 20%** \$ 240 / 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
4,4'-DDT	Methoxychlor
Dieldrin	

Organochlorine Pesticide QC Standard

M-8080-QC-R \$ 50 / 1 x 1 mL
M-8080-QC-R-PAK **SAVE 20%** \$ 200 / 5 x 1 mL
At stated conc. in Acetone 17 comps.

Aldrin (0.02 mg/mL)	Endosulfan I (0.02 mg/mL)
α-BHC (0.02 mg/mL)	Endosulfan II (0.1 mg/mL)
β-BHC (0.02 mg/mL)	Endosulfan sulfate (0.1 mg/mL)
δ-BHC (0.02 mg/mL)	Endrin (0.1 mg/mL)
γ-BHC (0.02 mg/mL)	Endrin aldehyde (0.02 mg/mL)
4,4'-DDD (0.1 mg/mL)	Heptachlor (0.02 mg/mL)
4,4'-DDE (0.02 mg/mL)	Heptachlor epoxide (0.02 mg/mL)
4,4'-DDT (0.1 mg/mL)	Methoxychlor (0.02 mg/mL)
Dieldrin (0.02 mg/mL)	

Internal Standard

M-508-IS \$ 10 / 1 x 1 mL
M-508-IS-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
0.1 mg/mL in MtBE
Pentachloronitrobenzene

Surrogate Standard

CLP-032-R \$ 15 / 1 x 1 mL
CLP-032-R-PAK **SAVE 20%** \$ 60 / 5 x 1 mL
0.2 mg/mL each in Acetone 2 comps.

Decachlorobiphenyl	Tetrachloro- <i>m</i> -xylene
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Multi-Component Analytes

Polychlorinated Biphenyls, Chlordane & Toxaphene
Each at 1,000 µg/mL in Hexane
AccuPAK™ (5 x 1 mL)
SAVE 20%

Aroclors®#	Cat. No.	1 mL	Cat. No.	PAK
Aroclor 1016	C-216S-H-10X	\$ 20	C-216S-H-10X-PAK	\$ 80
Aroclor 1221	C-221S-H-10X	20	C-221S-H-10X-PAK	80
Aroclor 1232	C-232S-H-10X	20	C-232S-H-10X-PAK	80
Aroclor 1242	C-242S-H-10X	20	C-242S-H-10X-PAK	80
Aroclor 1248	C-248S-H-10X	20	C-248S-H-10X-PAK	80
Aroclor 1254	C-254S-H-10X	20	C-254S-H-10X-PAK	80
Aroclor 1260	C-260S-H-10X	20	C-260S-H-10X-PAK	80
Aroclor 1262	C-262S-H-10X	20	C-262S-H-10X-PAK	80
Aroclor 1268	C-268S-H-10X	20	C-268S-H-10X-PAK	80

Pesticides

Chlordane	P-017S-H-10X	\$ 15	P-017S-H-10X-PAK	\$ 60
Toxaphene	P-093S-H-10X	15	P-093S-H-10X-PAK	60

Decomposition Solution

M-1618D * \$ 15 / 1 x 1 mL
M-1618D-PAK * **SAVE 20%** \$ 60 / 5 x 1 mL
At stated conc. in Acetone 2 comps.
p,p'-DDT (2 µg/mL) Endrin (1 µg/mL)

o,p'-DDT and Metabolites

M-8080-OP \$ 30 / 1 x 1 mL
M-8080-OP-PAK **SAVE 20%** \$ 120 / 5 x 1 mL
0.25 mg/mL each in Hexane:Toluene (50:50) 3 comps.
o,p'-DDD o,p'-DDE o,p'-DDT

Organochlorine Pesticide Mixture

M-8080A-ASL \$ 50 / 1 x 1 mL
M-8080A-ASL-PAK **Alternate Source** **SAVE 20%** \$ 200 / 5 x 1 mL
250 µg/mL each in Hexane:Toluene (50:50) 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 \$ 35 / 1 x 5 mL
CLP-014-25ML \$ 50 / 1 x 25 mL
At stated conc. in MeOH 6 comps.

Aldrin (200 ng/mL)	Endrin (500 ng/mL)
4,4'-DDT (500 ng/mL)	Heptachlor (200 ng/mL)
Dieldrin (500 ng/mL)	Lindane (200 ng/mL)

For Waste Samples

CLP-014-5X-5ML \$ 55 / 1 x 5 mL
CLP-014-5X-25ML \$ 75 / 1 x 25 mL
At stated conc. in MeOH 6 comps.

Aldrin (1,000 ng/mL)	Endrin (2,500 ng/mL)
4,4'-DDT (2,500 ng/mL)	Heptachlor (1,000 ng/mL)
Dieldrin (2,500 ng/mL)	Lindane (1,000 ng/mL)

Surrogate Solutions

For Water Samples

CLP-032R-WL-10ML \$ 20 / 1 x 10 mL
CLP-032R-WL-50ML \$ 45 / 1 x 50 mL
CLP-032R-WL-100ML \$ 75 / 1 x 100 mL
1 µg/mL each in Acetone 2 comps.

Decachlorobiphenyl	Tetrachloro- <i>m</i> -xylene
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For Waste Samples

CLP-032R-WL-5X-10ML \$ 20 / 1 x 10 mL
CLP-032R-WL-5X-50ML \$ 45 / 1 x 50 mL
CLP-032R-WL-5X-100ML \$ 75 / 1 x 100 mL
5 µg/mL each in Acetone 2 comps.

Decachlorobiphenyl	Tetrachloro- <i>m</i> -xylene
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* 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

All solutions in Isooctane

\$ 70 / 7 x 1 mL
21 comps.

Components (units in ng/mL)	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	2	5	10	20	50	100	200
Methoxychlor	20	50	100	200	500	1,000	2,000
Tetrachloro- <i>m</i> -xylene	2	5	10	20	50	100	200
Decachlorobiphenyl	4	10	20	40	100	200	400

Level 3 Daily QC Working Level CCC (for low level curves)

M-8080-WL-5X-10ML \$ 50 / 1 x 10 mL

M-8080-WL-5X-25ML \$ 75 / 1 x 25 mL

M-8080-WL-5X-50ML \$ 100 / 1 x 50 mL

At stated conc. in Isooctane

Level 4 Daily QC Working Level CCC (for higher level curves)

M-8080-WL-10X-10ML \$ 50 / 1 x 10 mL

M-8080-WL-10X-25ML \$ 75 / 1 x 25 mL

M-8080-WL-10X-50ML \$ 100 / 1 x 50 mL

At stated conc. in Isooctane

Level 5 Daily QC Working Level CCC (for higher level curves)

M-8080-WL-25X-10ML \$ 50 / 1 x 10 mL

M-8080-WL-25X-25ML \$ 75 / 1 x 25 mL

M-8080-WL-25X-50ML \$ 100 / 1 x 50 mL

At stated conc. in Isooctane

M-8080-R2-CAL-SET

All solutions in Isooctane

\$ 80 / 7 x 1 mL
23 comps.

Components (units in ng/mL)	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	2	5	10	20	50	100	200
Isodrin	2	5	10	20	50	100	200
Methoxychlor	20	50	100	200	500	1,000	2,000
Tetrachloro- <i>m</i> -xylene	2	5	10	20	50	100	200
Decachlorobiphenyl	4	10	20	40	100	200	400

Level 3 Daily QC Working Level CCC (for low level curves)

M-8080-R2-WL-5X-10ML \$ 60 / 1 x 10 mL

M-8080-R2-WL-5X-25ML \$ 85 / 1 x 25 mL

M-8080-R2-WL-5X-50ML \$ 115 / 1 x 50 mL

At stated conc. in Isooctane

Level 4 Daily QC Working Level CCC (for higher level curves)

M-8080-R2-WL-10X-10ML \$ 60 / 1 x 10 mL

M-8080-R2-WL-10X-25ML \$ 85 / 1 x 25 mL

M-8080-R2-WL-10X-50ML \$ 115 / 1 x 50 mL

At stated conc. in Isooctane

Level 5 Daily QC Working Level CCC (for higher level curves)

M-8080-R2-WL-25X-10ML \$ 60 / 1 x 10 mL

M-8080-R2-WL-25X-25ML \$ 85 / 1 x 25 mL

M-8080-R2-WL-25X-50ML \$ 115 / 1 x 50 mL

At stated conc. in Isooctane

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

All solutions in Isooctane

\$ 40 / 6 x 1 mL
4 comps.

Components (units in ng/mL)	Level 1	Level 2 (2X)	Level 3 (5X)	Level 4 (10X)	Level 5 (15X)	Level 6 (20X)
Aroclor 1016	50	100	250	500	750	1000
Aroclor 1260	50	100	250	500	750	1000
Decachlorobiphenyl	10	20	50	100	150	200
Tetrachloro- <i>m</i> -xylene	10	20	50	100	150	200

Level 3 Daily Working Level CCC (for low level curves)

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

\$ 15 / 1 x 5 mL

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

\$ 25 / 1 x 10 mL

At stated conc. in Isooctane

Level 4 Daily Working Level CCC (for higher level curves)

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

\$ 15 / 1 x 5 mL

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

\$ 25 / 1 x 10 mL

At stated conc. in Isooctane

Aroclor 1221 Calibration Curve

C-221-CAL-SET

All solutions in Isooctane

\$ 40 / 6 x 1 mL
3 comps.

Components (units in ng/mL)	Level 1	Level 2 (2X)	Level 3 (5X)	Level 4 (10X)	Level 5 (15X)	Level 6 (20X)
Aroclor 1221	50	100	250	500	750	1000
Decachlorobiphenyl	10	20	50	100	150	200
Tetrachloro- <i>m</i> -xylene	10	20	50	100	150	200

Level 3 Daily Working Level CCC (for low level curves)

C-221-WL-5X-5ML

\$ 15 / 1 x 5 mL

C-221-WL-5X-10ML

\$ 25 / 1 x 10 mL

At stated conc. in Isooctane

Level 4 Daily Working Level CCC (for higher level curves)

C-221-WL-10X-5ML

\$ 15 / 1 x 5 mL

C-221-WL-10X-10ML

\$ 25 / 1 x 10 mL

At stated conc. in Isooctane

Aroclor 1232 Calibration Curve

C-232-CAL-SET

All solutions in Isooctane

\$ 40 / 6 x 1 mL
3 comps.

Components (units in ng/mL)	Level 1	Level 2 (2X)	Level 3 (5X)	Level 4 (10X)	Level 5 (15X)	Level 6 (20X)
Aroclor 1232	50	100	250	500	750	1000
Decachlorobiphenyl	10	20	50	100	150	200
Tetrachloro- <i>m</i> -xylene	10	20	50	100	150	200

Level 3 Daily Working Level CCC (for low level curves)

C-232-WL-5X-5ML

\$ 15 / 1 x 5 mL

C-232-WL-5X-10ML

\$ 25 / 1 x 10 mL

At stated conc. in Isooctane

Level 4 Daily Working Level CCC (for higher level curves)

C-232-WL-10X-5ML

\$ 15 / 1 x 5 mL

C-232-WL-10X-10ML

\$ 25 / 1 x 10 mL

At stated conc. in Isooctane

Aroclor 1242 Calibration Curve

C-242-CAL-SET

All solutions in Isooctane

\$ 40 / 6 x 1 mL
3 comps.

Components (units in ng/mL)	Level 1	Level 2 (2X)	Level 3 (5X)	Level 4 (10X)	Level 5 (15X)	Level 6 (20X)
Aroclor 1242	50	100	250	500	750	1000
Decachlorobiphenyl	10	20	50	100	150	200
Tetrachloro- <i>m</i> -xylene	10	20	50	100	150	200

Level 3 Daily Working Level CCC (for low level curves)

C-242-WL-5X-5ML

\$ 15 / 1 x 5 mL

C-242-WL-5X-10ML

\$ 25 / 1 x 10 mL

At stated conc. in Isooctane

Level 4 Daily Working Level CCC (for higher level curves)

C-242-WL-10X-5ML

\$ 15 / 1 x 5 mL

C-242-WL-10X-10ML

\$ 25 / 1 x 10 mL

At stated conc. in Isooctane

Aroclor 1248 Calibration Curve

C-248-CAL-SET

All solutions in Isooctane

\$ 40 / 6 x 1 mL
3 comps.

Components (units in ng/mL)	Level 1	Level 2 (2X)	Level 3 (5X)	Level 4 (10X)	Level 5 (15X)	Level 6 (20X)
Aroclor 1248	50	100	250	500	750	1000
Decachlorobiphenyl	10	20	50	100	150	200
Tetrachloro- <i>m</i> -xylene	10	20	50	100	150	200

Level 3 Daily Working Level CCC (for low level curves)

C-248-WL-5X-5ML

\$ 15 / 1 x 5 mL

C-248-WL-5X-10ML

\$ 25 / 1 x 10 mL

At stated conc. in Isooctane

Level 4 Daily Working Level CCC (for higher level curves)

C-248-WL-10X-5ML

\$ 15 / 1 x 5 mL

C-248-WL-10X-10ML

\$ 25 / 1 x 10 mL

At stated conc. in Isooctane

Method 8080/8081



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

All solutions in Isooctane

\$ 40 / 6 x 1 mL
3 comps.

Components (units in ng/mL)	Level 1	Level 2 (2X)	Level 3 (5X)	Level 4 (10X)	Level 5 (15X)	Level 6 (20X)
Aroclor 1254	50	100	250	500	750	1000
Decachlorobiphenyl	10	20	50	100	150	200
Tetrachloro- <i>m</i> -xylene	10	20	50	100	150	200

Level 3 Daily Working Level

CCC (for low level curves)

C-254-WL-5X-5ML

\$ 15 / 1 x 5 mL

C-254-WL-5X-10ML

\$ 25 / 1 x 10 mL

At stated conc. in Isooctane

Level 4 Daily Working Level

CCC (for higher level curves)

C-254-WL-10X-5ML

\$ 15 / 1 x 5 mL

C-254-WL-10X-10ML

\$ 25 / 1 x 10 mL

At stated conc. in Isooctane

Toxaphene Calibration Curve

P-093-CAL-SET

All solutions in Isooctane

\$ 40 / 6 x 1 mL
3 comps.

Components (units in ng/mL)	Level 1	Level 2 (2X)	Level 3 (5X)	Level 4 (10X)	Level 5 (15X)	Level 6 (20X)
Toxaphene	50	100	250	500	750	1000
Decachlorobiphenyl	2	4	10	20	30	40
Tetrachloro- <i>m</i> -xylene	2	4	10	20	30	40

Level 3 Daily Working Level

CCC (for low level curves)

P-093-WL-5X-5ML

\$ 15 / 1 x 5 mL

P-093-WL-5X-10ML

\$ 25 / 1 x 10 mL

At stated conc. in Isooctane

Level 4 Daily Working Level

CCC (for higher level curves)

P-093-WL-10X-5ML

\$ 15 / 1 x 5 mL

P-093-WL-10X-10ML

\$ 25 / 1 x 10 mL

At stated conc. in Isooctane

Chlordane Calibration Curve

P-017-CAL-SET

All solutions in Isooctane

\$ 40 / 6 x 1 mL
3 comps.

Components (units in ng/mL)	Level 1	Level 2 (2X)	Level 3 (5X)	Level 4 (10X)	Level 5 (15X)	Level 6 (20X)
Chlordane	50	100	250	500	750	1000
Decachlorobiphenyl	20	40	70	100	150	200
Tetrachloro- <i>m</i> -xylene	20	40	70	100	150	200

Level 3 Daily Working Level

CCC (for low level curves)

P-017R-WL-5X-5ML

\$ 15 / 1 x 5 mL

P-017R-WL-5X-10ML

\$ 25 / 1 x 10 mL

At stated conc. in Isooctane

Level 4 Daily Working Level

CCC (for higher level curves)

P-017R-WL-10X-5ML

\$ 15 / 1 x 5 mL

P-017R-WL-10X-10ML

\$ 25 / 1 x 10 mL

At stated conc. in Isooctane



GPC Standards Sample Clean-up Solutions at Working Level

GPC Calibration Solution

CLP-027-WL-10ML

At stated conc. in CH₂Cl₂

\$ 30 / 1 x 10 mL
5 comps.

Corn Oil	(25 mg/mL)	Perylene	(0.02 mg/mL)
bis(2-Ethylhexyl)phthalate	(1.0 mg/mL)	Sulfur	(0.08 mg/mL)
Methoxychlor	(0.2 mg/mL)		

Florisol Cartridge Check Solution

CLP-FC-WL-10ML

0.1 µg/mL in Acetone

\$ 20 / 1 x 10 mL

2,4,5-Trichlorophenol

GPC Calibration Solution for 8/94 SOW OLM03.1

CLP-R27-R2-WL-10ML

At stated conc. in CH₂Cl₂

\$ 25 / 1 x 10 mL
5 comps.

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

GPC Calibration Check Solutions

GPC-CC-A-WL-10ML

At stated conc. in CH₂Cl₂

\$ 20 / 1 x 10 mL
6 comps.

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

GPC-CC-B-WL-10ML

0.2 µg/mL each in CH₂Cl₂

\$ 10 / 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 \$ 75 / 1 x 1 mL
M-8081-SC-PAK **SAVE 20%** \$ 300 / 5 x 1 mL
 1.0 mg/mL each in Hexane:Toluene (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
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 \$ 25 / 1 x 1 mL
M-8081A-SC-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
 1.0 mg/mL each in Hexane:Toluene (50:50) 7 comps.

Chlorobenzilate	Hexachlorocyclopentadiene
DBCP	Isodrin
Diallate	Kepone
Hexachlorobenzene	

M-8081A-SC-R \$ 25 / 1 x 1 mL
M-8081A-SC-R-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
 1.0 mg/mL each in Hexane:Toluene (50:50) 6 comps.

Chlorobenzilate	Hexachlorobenzene
1,2-Dibromo-3-chloropropane	Hexachlorocyclopentadiene
Diallate	Isodrin

Dual Column Organochlorine Pesticides

M-8081-DC \$ 75 / 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	PCNB
DBCP	Perthane
DCEPA	Propachlor
Diallate	Permethrin * (cis & trans)
Dicofol	Trifluralin

* isomer concentration as stated on certificate of product data

Tailing Test Standard

M-8081-T \$ 25 / 1 x 1 mL
 1.0 mg/mL each in Hexane:Toluene (50:50) 4 comps.

Carbophenothion	Kepone
Dichlone	Nitrofen

M-8081-T-R \$ 25 / 1 x 1 mL
 1.0 mg/mL each in Hexane:Toluene (50:50) 3 comps.

Carbophenothion	Nitrofen
Dichlone	

Surrogate Standards

CLP-032-R \$ 15 / 1 x 1 mL
CLP-032-R-PAK **SAVE 20%** \$ 60 / 5 x 1 mL
 0.2 mg/mL each in Acetone 2 comps.

Decachlorobiphenyl	Tetrachloro- <i>m</i> -xylene
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CLP-034 \$ 15 / 1 x 1 mL
CLP-034-PAK **SAVE 20%** \$ 60 / 5 x 1 mL
 0.2 mg/mL each in Acetone 2 comps.

Dibutylchlorendate	Tetrachloro- <i>m</i> -xylene
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M-8081-SS-X \$ 10 / 1 x 1 mL
M-8081-SS-X-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
 1.0 mg/mL in Acetone

2-Bromobiphenyl

For Dual Column

M-8081-SS-DC \$ 20 / 1 x 1 mL
M-8081-SS-DC-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
 1.0 mg/mL in Acetone

4-Chloro-3-nitrobenzotrifluoride

Internal Standards

M-8081-IS \$ 10 / 1 x 1 mL
M-8081-IS-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
 1.0 mg/mL in Acetone

Pentachloronitrobenzene (PCNB)

M-8081-IS-X \$ 10 / 1 x 1 mL
M-8081-IS-X-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
 1.0 mg/mL in Acetone

α,α-Dibromo- <i>m</i> -xylene

For Dual Column

M-8081-IS-DC \$ 10 / 1 x 1 mL
M-8081-IS-DC-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
 1.0 mg/mL in Acetone

1-Bromo-2-nitrobenzene

Decomposition Standard

M-8081-DS \$ 25 / 1 x 1 mL
M-8081-DS-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
 0.2 mg/mL each in Hexane 2 comps.

4,4'-DDT	Endrin
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EPA Method 8000 Series

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

PCB Congeners Mixture

M-8082 \$ 120 / 1 x 1 mL
M-8082-PAK **SAVE 20%** \$ 480 / 5 x 1 mL
100 µg/mL each in Hexane 19 comps.

No.	No.	
1	137	2,2',3,4,4',5'-Hexachlorobiphenyl
5	141	2,2',3,4,5,5'-Hexachlorobiphenyl
18	151	2,2',3,5,5',6'-Hexachlorobiphenyl
31	153	2,2',4,4',5,5'-Hexachlorobiphenyl
44	170	2,2',3,3',4,4',5'-Heptachlorobiphenyl
52	180	2,2',3,4,4',5,5'-Heptachlorobiphenyl
66	183	2,2',3,4,4',5,6'-Heptachlorobiphenyl
87	187	2,2',3,4,4',5,5',6'-Heptachlorobiphenyl
101	206	2,2',3,3',4,4',5,5',6'-Nonachlorobiphenyl
110		2,3,3',4',6'-Pentachlorobiphenyl

Reformulated PCB Congeners Mixture

M-8082A \$ 120 / 1 x 1 mL
M-8082A-PAK **SAVE 20%** \$ 480 / 5 x 1 mL
100 µg/mL each in Hexane 19 comps.

No.	No.	
1	138	2,2',3,4,4',5'-Hexachlorobiphenyl
5	141	2,2',3,4,5,5'-Hexachlorobiphenyl
18	151	2,2',3,5,5',6'-Hexachlorobiphenyl
31	153	2,2',4,4',5,5'-Hexachlorobiphenyl
44	170	2,2',3,3',4,4',5'-Heptachlorobiphenyl
52	180	2,2',3,4,4',5,5'-Heptachlorobiphenyl
66	183	2,2',3,4,4',5,6'-Heptachlorobiphenyl
87	187	2,2',3,4,4',5,5',6'-Heptachlorobiphenyl
101	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 \$ 20 / 1 x 1 mL
1.0 mg/mL each in Hexane 2 comps.
Decachlorobiphenyl Tetrachloro-*m*-xylene

Surrogate Standards

M-8082-SSA-WL-10ML \$ 20 / 1 x 10 mL
M-8082-SSA-WL-10ML-PAK **SAVE 20%** \$ 80 / 5 x 10 mL
5 µg/mL in Acetone

Decachlorobiphenyl

M-8082-SS \$ 20 / 1 x 1 mL

100 µg/mL in Hexane

M-8082-SS-10X \$ 20 / 1 x 1 mL

1.0 mg/mL in Hexane

Tetrachloro-*m*-xylene

Internal Standards

M-8082-ISC-WL-10ML \$ 20 / 1 x 10 mL
M-8082-ISC-WL-10ML-PAK **SAVE 20%** \$ 80 / 5 x 10 mL
5 µg/mL in Hexane

Decachlorobiphenyl

M-8082-SSC-WL-10ML \$ 20 / 1 x 10 mL

M-8082-SSC-WL-10ML-PAK **SAVE 20%** \$ 80 / 5 x 10 mL

5 µg/mL in Acetone

Tetrachloro-*m*-xylene

Method 8082 Aroclor 1016/1260 Calibration Curve

Aroclor 1016/1260 Calibration Curve

C-216/260-CAL-SET \$ 40 / 6 x 1 mL
All solutions in Isooctane 4 comps.

Components (units in ng/mL)	Level 1	Level 2 (2X)	Level 3 (5X)	Level 4 (10X)	Level 5 (15X)	Level 6 (20X)
Aroclor 1016	50	100	250	500	750	1000
Aroclor 1260	50	100	250	500	750	1000
Decachlorobiphenyl	10	20	50	100	150	200
Tetrachloro- <i>m</i> -xylene	10	20	50	100	150	200

Level 3 Daily Working Level

CCC (for low level curves)

C-216/260-WL-5X-5ML \$ 15 / 1 x 5 mL

C-216/260-WL-5X-10ML \$ 25 / 1 x 10 mL

At stated conc. in Isooctane

Level 4 Daily Working Level

CCC (for higher level curves)

C-216/260-WL-10X-5ML \$ 15 / 1 x 5 mL

C-216/260-WL-10X-10ML \$ 25 / 1 x 10 mL

At stated conc. in Isooctane

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

Individual PCB Congener Solutions

Congener	35 µg/mL in Isooctane	100 µg/mL in Isooctane	Price 1 mL
2-Chlorobiphenyl	C-001S	C-001S-TP	\$ 15
2,3-Dichlorobiphenyl	C-005S	C-005S-TP	15
2,2',5-Trichlorobiphenyl	C-018S	C-018S-TP	15
2,4',5-Trichlorobiphenyl	C-031S	C-031S-TP	15
2,2',3,5'-Tetrachlorobiphenyl	C-044S	C-044S-TP	15
2,2',5,5'-Tetrachlorobiphenyl	C-052S	C-052S-TP	15
2,3',4,4'-Tetrachlorobiphenyl	C-066S	C-066S-TP	30
2,2',3,4,5'-Pentachlorobiphenyl	C-087S	C-087S-TP	30
2,2',4,5,5'-Pentachlorobiphenyl	C-101S	C-101S-TP	30
2,3,3',4',6-Pentachlorobiphenyl	C-110S	C-110S-TP	30
2,2',3,4,4',5-Hexachlorobiphenyl	C-137S	C-137S-TP	30
2,2',3,4,4',5'-Hexachlorobiphenyl	C-138S	C-138S-TP	30
2,2',3,4,5,5'-Hexachlorobiphenyl	C-141S	C-141S-TP	30
2,2',3,5,5',6-Hexachlorobiphenyl	C-151S	C-151S-TP	30
2,2',4,4',5,5'-Hexachlorobiphenyl	C-153S	C-153S-TP	15
2,2',3,3',4,4',5-Heptachlorobiphenyl	C-170S	C-170S-TP	30
2,2',3,4,4',5,5'-Heptachlorobiphenyl	C-180S	C-180S-TP	30
2,2',3,4,4',5,6-Heptachlorobiphenyl	C-183S	C-183S-TP	30
2,2',3,4',5,5',6-Heptachlorobiphenyl	C-187S	C-187S-TP	30
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	C-206S	C-206S-TP	30

Internal Standards

C-209S-H \$ 15 / 1 x 1 mL

100 µg/mL in Hexane

C-209S-H-10X \$ 15 / 1 x 1 mL

1.0 mg/mL in Hexane

Decachlorobiphenyl

Internal and Surrogate Standard

CLP-032-H-5X \$ 20 / 1 x 1 mL
1.0 mg/mL each in Hexane 2 comps.

Decachlorobiphenyl

Tetrachloro-*m*-xylene

Surrogate Standard

M-8082-SS \$ 20 / 1 x 1 mL

100 µg/mL in Hexane

M-8082-SS-10X \$ 20 / 1 x 1 mL

1.0 mg/mL in Hexane

Tetrachloro-*m*-xylene



Method 8085 Pesticides by GC/AED

Nitrogen Containing Pesticides

Mix #1

M-8085-N1

At stated conc. in MtBE

\$ 60 / 1 x 5 mL

20 comps.

Alachlor	(18 µg/mL)	Norflurazon	(10 µg/mL)
Atrazine	(5 µg/mL)	Oxyfluorfen	(20 µg/mL)
Bromacil	(20 µg/mL)	Pendimethalin	(7.5 µg/mL)
Dichlobenil	(10 µg/mL)	Prometryne	(5 µg/mL)
Diphenamid	(15 µg/mL)	Pronamide	(20 µg/mL)
Ethalfuralin	(7.5 µg/mL)	Propachlor	(12 µg/mL)
Fluridone	(30 µg/mL)	Simazine	(5 µg/mL)
Metolachlor	(20 µg/mL)	Tebuthiuron	(7.5 µg/mL)
Metribuzin	(5 µg/mL)	Terbacil	(15 µg/mL)
Napropamide	(15 µg/mL)	Trifluralin	(7.5 µg/mL)

Mix #2

M-8085-N2

At stated conc. in MtBE

\$ 50 / 1 x 5 mL

18 comps.

Ametryn	(5 µg/mL)	Molinate	(10 µg/mL)
Benfluralin	(7.5 µg/mL)	Prebane	(5 µg/mL)
Butylate	(10 µg/mL)	Profluoralin	(12 µg/mL)
Chlorpropham	(20 µg/mL)	Prometon	(5 µg/mL)
Chlorothalonil	(12 µg/mL)	Propargite	(10 µg/mL)
Cyanazine	(7.5 µg/mL)	Propazine	(5 µg/mL)
Cycloate	(10 µg/mL)	Tillam	(10 µg/mL)
EPTC	(10 µg/mL)	Triallate	(13 µg/mL)
Hexazinone	(7.5 µg/mL)	Vernolate	(10 µg/mL)

Mix #3

M-8085-N3

At stated conc. in MtBE

\$ 60 / 1 x 5 mL

15 comps.

Butachlor	(30 µg/mL)	Metalaxyl	(30 µg/mL)
Carboxin	(30 µg/mL)	MGK-264	(40 µg/mL)
Diallate	(35 µg/mL)	cis-Permethrin	(10 µg/mL)
Fenarimol	(15 µg/mL)	Resmethrin	(10 µg/mL)
Fenvalerate	(20 µg/mL)	Sumithrin	(10 µg/mL)
Gesatamine	(7.5 µg/mL)	Triadimefon	(13 µg/mL)
Hexazinone	(7.5 µg/mL)	Triallate	(15 µg/mL)
Karmex	(30 µg/mL)		

Technical Note

These standards are for those laboratories participating in the analysis of pesticides by EPA Method 8085 Pesticide Screening and Compound Independent Elemental Quantitation by Gas Chromatography with Atomic Emission Detection (AED).

Chlorinated Pesticides

Mix #1

M-8085-C1

2.5 µg/mL each in Hexane

\$ 75 / 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. in Hexane

\$ 45 / 1 x 5 mL

9 comps.

Captan	(6.75 µg/mL)	Hexachlorobenzene	(2.5 µg/mL)
Captafol	(12.5 µg/mL)	Kelthane	(10 µg/mL)
o,p'-DDE	(2.5 µg/mL)	Mirex	(2.5 µg/mL)
o,p'-DDD	(2.5 µg/mL)	trans-Nonachlor	(2.5 µg/mL)
o,p'-DDT	(2.5 µg/mL)		

Organo Phosphorous Pesticides

Mix #1

M-8085-P1

At stated conc. in MtBE

\$ 50 / 1 x 5 mL

14 comps.

Azinphos ethyl	(8 µg/mL)	EPN	(5 µg/mL)
Carbophenothion	(5 µg/mL)	Ethion	(3.5 µg/mL)
Chlorpyrifos methyl ester	(4 µg/mL)	Fenamiphos	(5 µg/mL)
Demeton (mixed isomers)	(7 µg/mL)	Fenitrothion	(3.5 µg/mL)
Disulfoton	(3 µg/mL)	Malathion	(4 µg/mL)
Dursban	(4 µg/mL)	Merphos	(6 µg/mL)
Dyfonate	(3 µg/mL)	Sulfotep	(3 µg/mL)

Mix #2

M-8085-P2

At stated conc. in MtBE

\$ 50 / 1 x 5 mL

12 comps.

Azinphos methyl	(8 µg/mL)	Fenthion	(3.5 µg/mL)
Bolstar	(3.5 µg/mL)	Imidan	(5.5 µg/mL)
Diazinon	(4 µg/mL)	Methyl parathion	(3.5 µg/mL)
Dimethoate	(4 µg/mL)	Parathion	(4 µg/mL)
Ethoprop	(4 µg/mL)	Phorate	(3.5 µg/mL)
Fensulfthion	(5 µg/mL)	Ronnel	(3.5 µg/mL)

Herbicides as Methyl Derivatives

Mix #1

M-8085-H1-M

At stated conc. in MtBE

\$ 75 / 1 x 5 mL

13 comps.

Acifluorfen methyl ester	(20 µg/mL)	4-Nitroanisole	(10 µg/mL)
Bentazon methyl ester	(7.5 µg/mL)	Pentachloroanisole	(2.5 µg/mL)
Bromoxynil methyl ether	(5 µg/mL)	2,3,4,5-Tetrachloroanisole	(2.75 µg/mL)
Chloramben methyl ester	(5 µg/mL)	2,3,4,6-Tetrachloroanisole	(2.75 µg/mL)
Dinoseb methyl ether	(7.5 µg/mL)	2,4,5-Trichloroanisole	(3 µg/mL)
MCPA methyl ester	(10 µg/mL)	2,4,6-Trichloroanisole	(3 µg/mL)
MCPP methyl ester	(10 µg/mL)		

Mix #2

M-8085-H2-M

At stated conc. in MtBE

\$ 75 / 1 x 5 mL

13 comps.

Dalapon methyl ester	(4 µg/mL)	Ioxynil methyl ether	(5 µg/mL)
2,4-D methyl ester	(5 µg/mL)	Methyl 3,5-Dichlorobenzoate	(5 µg/mL)
2,4-DB methyl ester	(6 µg/mL)	Picloram methyl ester	(5 µg/mL)
DCPA methyl ester	(4 µg/mL)	Silvex methyl ester	(4 µg/mL)
Dicamba methyl ester	(5 µg/mL)	2,4,5-T methyl ester	(4 µg/mL)
Dichloroprop methyl ester	(5.5 µg/mL)	Triclopyr methyl ester	(4 µg/mL)
Diclofop methyl	(7.5 µg/mL)		

Surrogates

M-8085-PEST-SS

At stated conc. in MtBE

\$ 25 / 1 x 5 mL

4 comps.

Decachlorobiphenyl	(10 µg/mL)	1,3-Dimethyl-2-nitrobenzene	(20 µg/mL)
4,4'-Dibromooctafluorobiphenyl	(20 µg/mL)	Triphenylphosphate	(20 µg/mL)

Technical Note

Organophosphorus and Nitrogen/Phosphorus pesticides are light sensitive, store in deactivated amber vials.

Method 8085 continued
on next page



EPA Method 8000 Series

Method 8085 (Continued) Pesticides by GC/AED

Alternate Surrogates

M-8085-PEST-SS2	\$ 25 / 1 x 5 mL
20 µg/mL each in MtBE	2 comps.
Dibutylchloroendate	TCMX

Herbicide Surrogate

M-8085-HERB-SS	\$ 20 / 1 x 5 mL
20 µg/mL in MtBE	
2,4,6-Tribromophenol	

Compound Independent Calibration (CIC) Mix

M-8085-CIC	\$ 50 / 1 x 5 mL
At stated conc. in MtBE	15 comps.
Decachlorobiphenyl (492 ng/mL)	Pentachloronitrobenzene (1690 ng/mL)
Diazinon (9800 ng/mL)	Phorate (2100 ng/mL)
4,4'-Dibromooctafluorobiphenyl (1000 ng/mL)	Silvex methyl ester (400 ng/mL)
Dichlobenil (6140 ng/mL)	Terbufos (7600 ng/mL)
Dursban (5680 ng/mL)	2,4,6-Tribromoanisole (2870 ng/mL)
Ethoprop (391 ng/mL)	1,2,3-Trichlorobenzene (6810 ng/mL)
Ioxynil methyl ether (500 ng/mL)	Trifluralin (16000 ng/mL)
Malathion (1070 ng/mL)	

Method 8090 Nitroaromatics & Isophorone by GC/TCD or FID

Analyte Calibration Set (609)

M-609-10X-SET	\$ 20 / set of 2 x 1 mL
	(M-609A-10X, M-609B-10X)

M-609A-10X	\$ 15 / 1 x 1 mL
2.0 mg/mL each in MeOH	2 comps.
Isophorone	Nitrobenzene

M-609B-10X	\$ 15 / 1 x 1 mL
2.0 mg/mL each in MeOH	2 comps.
2,4-Dinitrotoluene	2,6-Dinitrotoluene

M-609-QC	\$ 20 / 1 x 1 mL
At stated conc. in Acetone	4 comps.
Isophorone (100 µg/mL)	2,6-Dinitrotoluene (20 µg/mL)
2,4-Dinitrotoluene (20 µg/mL)	Nitrobenzene (100 µg/mL)

Analyte Calibration Set (8090)

M-8090-10X-SET	\$ 25 / set of 2 x 1 mL
	(M-8090-10X, M-609B-10X)

M-8090-10X	\$ 20 / 1 x 1 mL
2.0 mg/mL each in MeOH	4 comps.
1,3-Dinitrobenzene	1,4-Naphthoquinone
Isophorone	Nitrobenzene

M-609B-10X	\$ 15 / 1 x 1 mL
2.0 mg/mL each in MeOH	2 comps.
2,4-Dinitrotoluene	2,6-Dinitrotoluene

M-8090-QC	\$ 25 / 1 x 1 mL
At stated conc. in Acetone	6 comps.
1,3-Dinitrobenzene (40 µg/mL)	Isophorone (100 µg/mL)
2,4-Dinitrotoluene (20 µg/mL)	1,4-Naphthoquinone (40 µg/mL)
2,6-Dinitrotoluene (20 µg/mL)	Nitrobenzene (100 µg/mL)

Method 8091 Nitroaromatics & Cyclic Ketones by GC/ECD or NPD

RCRA Analytes

M-8091	\$ 25 / 1 x 1 mL
1.0 mg/mL each in Isooctane:Toluene (50:50)	6 comps.
1,4-Dinitrobenzene	1,4-Naphthoquinone
2,4-Dinitrotoluene	Nitrobenzene
2,6-Dinitrotoluene	Pentachloronitrobenzene

Chloronitroaromatics: non-RCRA Analytes

M-8091-X1	\$ 55 / 1 x 1 mL
1.0 mg/mL each in Isooctane	17 comps.
1-Chloro-2,4-dinitrobenzene	3,5-Dichloronitrobenzene
1-Chloro-3,4-dinitrobenzene	3,4-Dichloronitrobenzene
1-Chloro-2-nitrobenzene	2,5-Dichloronitrobenzene
1-Chloro-4-nitrobenzene	2,3,5,6-Tetrachloronitrobenzene
2-Chloro-6-nitrotoluene	2,3,4,5-Tetrachloronitrobenzene
4-Chloro-2-nitrotoluene	1,2,3-Trichloro-4-nitrobenzene
4-Chloro-3-nitrotoluene	1,2,4-Trichloro-5-nitrobenzene
2,3-Dichloronitrobenzene	2,4,6-Trichloronitrobenzene
2,4-Dichloronitrobenzene	

Internal Standard

M-8091-IS-20X	\$ 17 / 1 x 1 mL
M-8091-IS-20X-PAK	SAVE 20% \$ 68 / 5 x 1 mL
1.0 mg/mL in Acetone	
Hexachlorobenzene	

Surrogate Standard

M-8091-SS-100X	\$ 10 / 1 x 1 mL
M-8091-SS-100X-PAK	SAVE 20% \$ 40 / 5 x 1 mL
1.0 mg/mL in Acetone	
1-Chloro-3-nitrobenzene	

Buy AccuPAKs™
Save 20-40% 5 x 1 mL





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 \$ 55 / 1 x 1 mL
M-8095-SSA-100X-PAK **SAVE 20%** \$ 220 / 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 \$ 55 / 1 x 1 mL
M-8095-SSB-100X-PAK **SAVE 20%** \$ 220 / 5 x 1 mL
 At stated conc. in AcCN:MeOH (50:50) 7 comps.

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

Explosive Surrogate Standards

M-8095-SS-01 \$ 15 / 1 x 1 mL
M-8095-SS-01-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
 100 µg/mL in AcCN

3,4-Dinitrotoluene

M-8095-SS-02 \$ 20 / 1 x 1 mL
M-8095-SS-02-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
 100 µg/mL in AcCN

2-Methyl-4-nitroaniline

M-8095-SS-03 \$ 50 / 1 x 1 mL
M-8095-SS-03-PAK **SAVE 20%** \$ 200 / 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 \$ 60 / 1 x 1 mL
Z-014G-R-PAK **SAVE 20%** \$ 240 / 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
Benzo[a]pyrene	Indeno[1,2,3-cd]pyrene
Benzo[b]fluoranthene	Naphthalene
Benzo[g,h,i]perylene	Phenanthrene
Benzo[k]fluoranthene	Pyrene
Carbazole	

PAH Additions to Method 8100 by GC/FID

M-8100-R \$ 160 / 1 x 1 mL
 1.0 mg/mL each in CH₂Cl₂ 8 comps.

Benzo[j]fluoranthene	Dibenzo[a,e]pyrene
Dibenz[a,h]acridine	Dibenzo[a,h]pyrene
Dibenz[a,j]acridine	Dibenzo[a,i]pyrene
7H-Dibenzo[c,g]carbazole	3-Methylcholanthrene

PAH QC Mix

M-8100-QC \$ 65 / 1 x 1 mL
M-8100-QC-PAK **SAVE 20%** \$ 260 / 5 x 1 mL
 At stated conc. in AcCN 24 comps.

Acenaphthene (100 µg/mL)	Dibenz[a,h]anthracene (10 µg/mL)
Acenaphthylene (100 µg/mL)	7H-Dibenzo[c,g]carbazole (10 µg/mL)
Anthracene (100 µg/mL)	Dibenzo[a,e]pyrene (10 µg/mL)
Benz[a]anthracene (10 µg/mL)	Dibenzo[a,h]pyrene (10 µg/mL)
Benzo[b]fluoranthene (10 µg/mL)	Dibenzo[a,i]pyrene (10 µg/mL)
Benzo[j]fluoranthene (10 µg/mL)	Fluoranthene (10 µg/mL)
Benzo[k]fluoranthene (5 µg/mL)	Fluorene (100 µg/mL)
Benzo[g,h,i]perylene (10 µg/mL)	Indeno[1,2,3-cd]pyrene (10 µg/mL)
Benzo[a]pyrene (10 µg/mL)	3-Methylcholanthrene (10 µg/mL)
Chrysene (10 µg/mL)	Naphthalene (100 µg/mL)
Dibenz[a,h]acridine (10 µg/mL)	Phenanthrene (100 µg/mL)
Dibenz[a,j]acridine (10 µg/mL)	Pyrene (10 µg/mL)

Surrogate Standard

M-8100-SS \$ 20 / 1 x 1 mL
M-8100-SS-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
 2.0 mg/mL each in CH₂Cl₂ 2 comps.

2-Fluorobiphenyl	1-Fluoronaphthalene
------------------	---------------------

Method 8110 Haloethers by GC/FID

Haloethers

M-611-10X \$ 45 / 1 x 1 mL
 2.0 mg/mL each in MeOH 5 comps.

4-Bromophenyl phenyl ether	bis(2-Chloro-1-methylethyl) ether
bis(2-Chloroethoxy)methane	4-Chlorophenyl phenyl ether
bis(2-Chloroethyl) ether	



EPA Method 8000 Series

Method 8111 Haloethers Mix: non-RCRA Analytes

Haloethers Mix

M-8111-X1 \$ 300 / 1 x 1 mL
1.0 mg/mL each in Isooctane 19 comps.
Individual products each at 1.0 mg/mL in Isooctane

Compound	Cat.No.	Price / 1 mL
4-Bromophenyl phenyl ether	E-001S	\$ 15
2-Chlorophenyl-4-nitrophenyl ether	E-005S	15
3-Chlorophenyl-4-nitrophenyl ether	E-006S	15
4-Chlorophenyl-4-nitrophenyl ether	E-007S	15
2,4-Dibromophenyl-4-nitrophenyl ether	E-004S	15
2,4-Dichlorophenyl-3-methyl-4-nitrophenyl ether	E-020S	15
2,6-Dichlorophenyl-4-nitrophenyl ether	E-011S	15
3,5-Dichlorophenyl-4-nitrophenyl ether	E-012S	15
2,5-Dichlorophenyl-4-nitrophenyl ether	E-010S	15
2,4-Dichlorophenyl-4-nitrophenyl ether	E-009S	15
2,3-Dichlorophenyl-4-nitrophenyl ether	E-008S	15
3,4-Dichlorophenyl-4-nitrophenyl ether	E-013S	15
4-Nitrophenyl phenyl ether	E-003S	15
2,4,6-Trichlorophenyl-4-nitrophenyl ether	E-018S	15
2,3,6-Trichlorophenyl-4-nitrophenyl ether	E-016S	15
2,3,5-Trichlorophenyl-4-nitrophenyl ether	E-015S	15
2,4,5-Trichlorophenyl-4-nitrophenyl ether	E-017S	15
3,4,5-Trichlorophenyl-4-nitrophenyl ether	E-019S	15
2,3,4-Trichlorophenyl-4-nitrophenyl ether	E-014S	15

Haloethers Mix: RCRA Analytes

M-8111 \$ 20 / 1 x 1 mL
M-8111-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
1.0 mg/mL each in Isooctane 4 comps.

bis(2-chloroethoxy)methane
bis(2-Chloroethyl) ether

bis(2-Chloro-1-methylethyl) ether
4-Chlorophenyl phenyl ether

Internal Standard

M-8111-IS-20X \$ 10 / 1 x 1 mL
M-8111-IS-20X-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
1,000 µg/mL in Acetone
4,4'-Dibromobiphenyl

Surrogate Standard

M-8111-SS-50X \$ 10 / 1 x 1 mL
1,000 µg/mL each in Acetone 2 comps.
2,4-Dichlorophenyl phenyl ether 2,3,4-Trichlorophenyl phenyl ether

Method 8120 & 8120A Chlorinated Hydrocarbons by GC/ECD

Chlorinated Hydrocarbons

M-8120 \$ 25 / 1 x 1 mL
2.0 mg/mL each in Hexane 10 comps.
Individuals each in 2.0 mg/mL each in Hexane **NEW**

Compound	Cat.No.	Price / 1 mL
2-Chloronaphthalene	M-8120-01	\$ 25
1,2-Dichlorobenzene	M-8120-02	25
1,3-Dichlorobenzene	M-8120-03	25
1,4-Dichlorobenzene	M-8120-04	25
Hexachlorobenzene	M-8120-05	25
Hexachlorobutadiene	M-8120-06	25
Hexachlorocyclopentadiene	M-8120-07	25
Hexachloroethane	M-8120-08	25
1,2,4,5-Tetrachlorobenzene	M-8120-09	25
1,2,4-Trichlorobenzene	M-8120-10	25

Performance Check Solution

M-8120-QC \$ 25 / 1 x 1 mL
At stated conc. in Acetone 10 comps.

2-Chloronaphthalene(1.0 mg/mL)	Hexachlorobutadiene (0.1 mg/mL)
1,2-Dichlorobenzene(1.0 mg/mL)	Hexachlorocyclopentadiene (0.1 mg/mL)
1,3-Dichlorobenzene(1.0 mg/mL)	Hexachloroethane (0.1 mg/mL)
1,4-Dichlorobenzene(1.0 mg/mL)	1,2,4,5-Tetrachlorobenzene (1.0 mg/mL)
Hexachlorobenzene(0.1 mg/mL)	1,2,4-Trichlorobenzene (1.0 mg/mL)

Method 8121 Chlorinated Hydrocarbons by GC/ECD

Chlorinated Hydrocarbons

M-8121 \$ 55 / 1 x 1 mL
1.0 mg/mL each in Hexane 22 comps.

Benzal chloride	Hexachlorobenzene
Benzotrichloride	Hexachlorobutadiene
Benzyl chloride	Hexachlorocyclopentadiene
α-BHC	Hexachloroethane
β-BHC	Pentachlorobenzene
γ-BHC	1,2,3,4-Tetrachlorobenzene
δ-BHC	1,2,3,5-Tetrachlorobenzene
2-Chloronaphthalene	1,2,4,5-Tetrachlorobenzene
1,2-Dichlorobenzene	1,2,3-Trichlorobenzene
1,3-Dichlorobenzene	1,2,4-Trichlorobenzene
1,4-Dichlorobenzene	1,3,5-Trichlorobenzene

Internal Standards

M-8121-IS \$ 10 / 1 x 1 mL
M-8121-IS-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
50 µg/mL in Acetone
1,3,5-Tribromobenzene

M-8121-IS-M \$ 20 / 1 x 1 mL
M-8121-IS-M-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
50 µg/mL each in Acetone 3 comps.
2,5-Dibromotoluene 1,3,5-Tribromobenzene
α,α'-Dibromo-*m*-xylene

Surrogate Standard

M-8121-SS \$ 25 / 1 x 1 mL
M-8121-SS-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
At stated conc. in Acetone 3 comps.
1,4-Dichloronaphthalene (1 µg/mL) α,2,6-Trichlorotoluene (10 µg/mL)
2,3,4,5,6-Pentachlorotoluene (1 µg/mL)

Varied Concentration QC Mix

M-8121-QC \$ 55 / 1 x 1 mL
At stated conc. in Hexane 22 comps.

Benzal chloride (100 µg/mL)	Hexachlorobenzene (10 µg/mL)
Benzotrichloride (100 µg/mL)	Hexachlorobutadiene (10 µg/mL)
Benzyl chloride (100 µg/mL)	Hexachlorocyclopentadiene (10 µg/mL)
α-BHC (100 µg/mL)	Hexachloroethane (10 µg/mL)
β-BHC (100 µg/mL)	Pentachlorobenzene (10 µg/mL)
γ-BHC (100 µg/mL)	1,2,3,4-Tetrachlorobenzene (100 µg/mL)
δ-BHC (100 µg/mL)	1,2,3,5-Tetrachlorobenzene (100 µg/mL)
2-Chloronaphthalene (2,000 µg/mL)	1,2,4,5-Tetrachlorobenzene (100 µg/mL)
1,2-Dichlorobenzene (1,000 µg/mL)	1,2,3-Trichlorobenzene (100 µg/mL)
1,3-Dichlorobenzene (1,000 µg/mL)	1,2,4-Trichlorobenzene (100 µg/mL)
1,4-Dichlorobenzene (1,000 µg/mL)	1,3,5-Trichlorobenzene (100 µg/mL)

Method 8131 Aniline & Selected Derivatives by GC/NPD, GC/AFD, GC/TS

Aniline & Selected Derivatives

M-8131 \$ 60 / 1 x 1 mL
1.0 mg/mL each in Toluene 19 comps.

Aniline	2,6-Dibromo-4-nitroaniline
4-Bromoaniline	3,4-Dichloroaniline
2-Bromo-6-chloro-4-nitroaniline	2,6-Dichloro-4-nitroaniline
2-Bromo-4,6-dinitroaniline	2,4-Dinitroaniline
2-Chloroaniline	2-Nitroaniline
3-Chloroaniline	3-Nitroaniline
4-Chloroaniline	4-Nitroaniline
2-Chloro-4,6-dinitroaniline	2,4,6-Trichloroaniline
2-Chloro-4-nitroaniline	2,4,5-Trichloroaniline
4-Chloro-2-nitroaniline	



Method 8140 Organophosphorous Pesticides by GC/NPD/ELCD/FPD

Organophosphorous Pesticides

M-8140M	\$ 80 / 1 x 1 mL
M-8140M-PAK	SAVE 20% \$ 320 / 5 x 1 mL
0.04 mg/mL each in Hexane	
M-8140M-5X *	\$ 125 / 1 x 1 mL
M-8140M-5X-PAK *	SAVE 20% \$ 500 / 5 x 1 mL
0.2 mg/mL each in Hexane:Acetone (95:5)	
20 comps.	
Azinphosmethyl (<i>Guthion</i>) (01)	Diazinon (06)
Bolstar (02)	Dichlorovos (07)
Chlorpyrifos (03)	Disulfoton (<i>Di-Syston</i>) (08)
Coumaphos (04)	Ethoprop (09)
Demeton (05)	Fensulfothion (10)

Organophosphorous Pesticide Set

M-8140-SET	\$ 300 / 20 x 1 mL
Individual solutions listed below, each at 1.0 mg/mL in Hexane	

Fenthion (11)	Phorate (<i>Thimet</i>) (16)
Merphos (12)	Ronnel (17)
Methyl parathion (13)	Stirophos (18)
Mevinphos (<i>Phosdrin</i>) (14)	Tokuthion (19)
Naled (<i>Dibrom</i>) (15)	Trichloronate (<i>Agritox</i>) (20)

Method 8141A Additions to Method 8140 Organophosphorus Pesticides by GC/NPD

Mix #1

M-8141M *	\$ 60 / 1 x 1 mL
M-8141M-PAK *	SAVE 20% \$ 240 / 5 x 1 mL
Mixture, 0.2 mg/mL each in Hexane	
7 comps.	
M-8141-SET	\$ 90 / 7 x 1 mL
Individual solutions, Each at 1.0 mg/mL in Hexane, Dimethoate is in Hexane:Acetone (90:10)	

Compound	Cat. No.	Price / 1 mL
Dimethoate	M-8141-01	\$ 20
EPN	M-8141-02	12
Malathion	M-8141-03	12
Monocrotophos	M-8141-04	12
Ethyl parathion	M-8141-05	12
Sulfotep	M-8141-06	50
TEPP	M-8141-07	12

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	\$ 65 / 1 x 1 mL
Mixture, 0.2 mg/mL each in Hexane	
10 comps.	
M-8141A-1-SET *	SAVE 20% \$ 80 / 10 x 1 mL
Individual solutions, Each at 1.0 mg/mL in Hexane	

Compound	Cat. No.	Price / 1 mL
Azinphos ethyl	M-8141A-1-01	\$ 20
Carbophenothion	M-8141A-1-02	20
Chlorfenvinphos	M-8141A-1-03	20
Dioxathion	M-8141A-1-04 *	54
Ethion	M-8141A-1-05	24
Famphur	M-8141A-1-06	20
Leptophos	M-8141A-1-07	20
Phosmet	M-8141A-1-08	20
Phosphamidon	M-8141A-1-09 *	20
Terbufos	M-8141A-1-10	54

Mix #3

M-8141A-2M	\$ 70 / 1 x 1 mL
Mixture, 0.2 mg/mL each in Hexane	
9 comps.	
M-8141A-2-SET	SAVE 20% \$ 90 / 9 x 1 mL
Individual solutions, Each at 1.0 mg/mL in Hexane	

Aspon (01)	Fenitrothion (06)
Chlorpyrifos methyl ester (02)	Fonophos (07)
Crotoxyphos (03)	Thionazin (08)
Dichlofenthion (04)	Trichlorfon (09)
Dicrotophos (05)	

Internal Standard for NPD

M-8141A-IS	\$ 15 / 1 x 1 mL
M-8141A-IS-PAK	SAVE 20% \$ 60 / 5 x 1 mL
1.0 mg/mL in Acetone	
1-Bromo-2-nitrobenzene	

Industrial Chemicals & Triazine Herbicides

M-8141A-IC	\$ 20 / 1 x 1 mL
0.2 mg/mL each in Hexane	
2 comps.	
Hexamethylphosphoramide (<i>HMPA</i>)	Tri-o-cresylphosphate (<i>TOCP</i>)

M-8141A-TH	\$ 20 / 1 x 1 mL
M-8141A-TH-PAK	SAVE 20% \$ 80 / 5 x 1 mL
0.2 mg/mL each in Acetone	
2 comps.	
Atrazine	Simazine

M-8141B-HSD	\$ 60 / 1 x 1 mL
M-8141B-HSD-PAK	SAVE 20% \$ 240 / 5 x 1 mL
0.2 mg/mL each in Hexane	
9 comps.	

Chlorpyrifos	Ronnel
Coumaphos	Stirophos
Dichlorvos	Trichloronate
EPN	Tokuthion
Naled	

Technical Note

For use with a halogen-specific detector (i.e., electrolytic conductivity or microcoulometry). ECD should only be used when previous analyses have demonstrated that interferences do not adversely affect quantitation.

Surrogate Standard for NPD & FPD

M-8141A-SS	\$ 20 / 1 x 1 mL
M-8141A-SS-PAK	SAVE 20% \$ 80 / 5 x 1 mL
1.0 mg/mL each in Acetone	
2 comps.	
Tributylphosphate	Triphenylphosphate

Surrogate Standard for NPD only

M-8141A-SS-X	\$ 20 / 1 x 1 mL
M-8141A-SS-X-PAK	SAVE 20% \$ 80 / 5 x 1 mL
1.0 mg/mL in Acetone	
4-Chloro-3-nitrobenzotrifluoride	

Technical Note

Organophosphorus and Nitrogen/Phosphorus pesticides are light sensitive, store in deactivated amber vials.

* 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

\$ 75 / 7 x 1 mL
11 comps.

Components	Level 1 M-8150/51-WL	Level 2 (-2X)	Level 3 (-4X)	Level 4 (-10X)	Level 5 (-25X)	Level 6 (-35X)	Level 7 (-50X)
2,4-D	20	40	80	200	500	700	1000
2,4-DB	20	40	80	200	500	700	1000
2,4,5-TP	5	10	20	50	125	175	250
2,4,5-T	5	10	20	50	125	175	250
Dalapon	10	20	40	100	250	350	500
Dicamba	10	20	40	100	250	350	500
Dichloroprop	20	40	80	200	500	700	1000
Dinoseb	5	10	20	50	125	175	250
MCPA	2000	4000	8,000	20,000	50,000	70,000	100,000
MCPD	2000	4000	8,000	20,000	50,000	70,000	100,000
DCAA	20	40	80	200	500	700	1000

Level 1 M-8150/51-WL \$ 25 / 1 mL

Level 2 M-8150/51-WL-2X 25 / 1 mL

Level 3 M-8150/51-WL-4X 25 / 1 mL

Level 4 M-8150/51-WL-10X 25 / 1 mL

Level 5 M-8150/51-WL-25X 25 / 1 mL

Level 6 M-8150/51-WL-35X 25 / 1 mL

Level 7 M-8150/51-WL-50X 25 / 1 mL

Level 3 Daily QC Working Level CCC (for low level curves)

M-8150/51-WL-4X-10ML \$ 60 / 1 x 10 mL

M-8150/51-WL-4X-25ML \$ 80 / 1 x 25 mL

M-8150/51-WL-4X-50ML \$ 120 / 1 x 50 mL

At stated conc. in Isooctane

Level 4 Daily QC Working Level CCC (for higher level curves)

M-8150/51-WL-10X-10ML \$ 60 / 1 x 10 mL

M-8150/51-WL-10X-25ML \$ 80 / 1 x 25 mL

M-8150/51-WL-10X-50ML \$ 120 / 1 x 50 mL

At stated conc. in Isooctane

Level 5 Daily QC Working Level CCC (for higher level curves)

M-8150/51-WL-25X-10ML \$ 60 / 1 x 10 mL

M-8150/51-WL-25X-25ML \$ 80 / 1 x 25 mL

M-8150/51-WL-25X-50ML \$ 120 / 1 x 50 mL

At stated conc. in Isooctane

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
MCPD	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 \$ 20 / 1 x 1 mL

M-8151-IS-PAK **SAVE 20%** \$ 80 / 5 x 1 mL

250 µg/mL in Acetone

4,4'-Dibromooctafluorobiphenyl

Internal Standard - Herbicide Solution 2

M-8151-IS-2 \$ 10 / 1 x 1 mL

M-8151-IS-2-PAK **SAVE 20%** \$ 40 / 5 x 1 mL

250 µg/mL in Acetone

1,4-Dichlorobenzene

Laboratory Performance Check Solution

M-8150/51-LPC-5ML \$ 20 / 1 x 5 mL

At stated conc. in Isooctane

3,5-Dichlorobenzoic acid	(600 ng/mL)
Dinoseb	(4 ng/mL)
4-Nitrophenol	(1600 ng/mL)
DCAA	(500 ng/mL)
DBO	(250 ng/mL)

Prep Note

To verify extraction efficiency, 1 mL of surrogate is added to a herbicide sample.

Herbicide Surrogate Spiking Solution

M-8150/51-SS-WL-25ML \$ 25 / 1 x 25 mL

M-8150/51-SS-WL-50ML \$ 45 / 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 \$ 25 / 1 x 10 mL

M-8150/51-MS-WL-25ML \$ 50 / 1 x 25 mL

M-8150/51-MS-WL-50ML \$ 75 / 1 x 50 mL

At stated conc. in MeOH

2,4-D	(2 µg/mL)	Dalapon	(1 µg/mL)
2,4-DB	(2 µg/mL)	Dicamba	(1 µg/mL)
2,4,5-TP (Silvex)	(0.8 µg/mL)		

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.	Price / 1 mL
2,4-D	0.2	M-8150S-A-01	M-8150-01	\$ 15
2,4-DB	0.2	M-8150S-A-02	M-8150-02	15
2,4,5-T	0.2	M-8150S-A-03	M-8150-03	15
2,4,5-TP	0.2	M-8150S-A-04 *	M-8150-04	15
Dalapon	0.2	M-8150S-A-05 *	M-8150-05	15
Dicamba	0.2	M-8150S-A-06	M-8150-06	15
Dichlorprop	0.2	M-8150S-A-07	M-8150-07	15
Dinoseb	0.2	M-8150S-A-08	M-8150-08	15
MCPA	2.0	M-8150S-A-09	M-8150-09	15
MCPP	2.0	M-8150S-A-10	M-8150-10	15
Set of 10 x 1 mL		M-8150A-SET *	M-8150-SET	\$ 125 / 10 x 1 mL

Underivatized Solution (Varied Concentration)

M-8150A \$ 40 / 1 x 1 mL
M-8150A-PAK **SAVE 20%** \$ 160 / 5 x 1 mL
 0.1 mg/mL in MeOH, except MCPA and MCPP 10 comps.

2,4-D	Dinoseb
Dalapon	MCPA (10 mg/mL)
2,4-DB	MCPP (10 mg/mL)
Dicamba	2,4,5-TP
Dichlorprop	2,4,5-T

Methyl Derivatives Solutions (Varied Concentration)

M-8150 \$ 45 / 1 x 1 mL
 0.1 mg/mL in MeOH, except MCPA and MCPP 10 comps.

2,4-D ME	Dinoseb ME
Dalapon ME	MCPA ME (10 mg/mL)
2,4-DB ME	MCPP ME (10 mg/mL)
Dicamba ME	2,4,5-TP ME
Dichlorprop ME	2,4,5-T ME

Underivatized Solution (Equal Concentration)

M-8150M-A \$ 40 / 1 x 1 mL
M-8150M-A-PAK **SAVE 20%** \$ 160 / 5 x 1 mL
 0.2 mg/mL each in MeOH 10 comps.

2,4-D	Dinoseb
Dalapon	MCPA
2,4-DB	MCPP
Dicamba	2,4,5-TP
Dichlorprop	2,4,5-T

Methyl Derivatives Solutions (Equal Concentration)

M-8150M-SET \$ 6 / 2 x 1 mL
 (M-8150M, M-8150M-2)
M-8150M \$ 40 / 1 x 1 mL
M-8150M-PAK **SAVE 20%** \$ 160 / 5 x 1 mL
 20 µg/mL each in Hexane 8 comps.

2,4-D ME	Dichlorprop ME
Dalapon ME	Dinoseb ME
2,4-DB ME	2,4,5-TP ME
Dicamba ME	2,4,5-T ME

Underivatized Surrogate Standards

M-8150B-SS \$ 10 / 1 x 1 mL
M-8150B-SS-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
 0.1 mg/mL in Acetone
M-8150B-SS-10X \$ 20 / 1 x 1 mL
 1.0 mg/mL in Acetone

2,4-Dichlorophenylacetic acid

M-8150M-2 \$ 15 / 1 x 1 mL
M-8150M-2-PAK **SAVE 20%** \$ 60 / 5 x 1 mL
 2,000 µg/mL each in Hexane 2 comps.
 MCPA ME MCPP ME

Methyl Derivative Surrogate Standard

M-515-SS \$ 10 / 1 x 1 mL
M-515-SS-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
 0.1 mg/mL in MtBE
 2,4-Dichlorophenylacetic acid methyl ester

Internal Standard

M-8151-IS \$ 20 / 1 x 1 mL
M-8151-IS-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
 0.25 mg/mL in Acetone
 4,4'-Dibromooctafluorobiphenyl

* ColdPAK required to maintain integrity of product.

PFB Derivatized Chlorinated Herbicides

M-8150-02-PFB \$ 30 / 1 x 1 mL
 0.1 mg/mL in MtBE
 2,4-D-PFB
M-8150-04-PFB \$ 30 / 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 \$ 80 / 1 x 1 mL
0.1 mg/mL each in MtBE, 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	Picloram
Dicamba	2,4,5-TP
3,5-Dichlorobenzoic acid	2,4,5-T

Underivatized

M-8151A \$ 80 / 1 x 1 mL
M-8151A-PAK **SAVE 20%** \$ 320 / 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 \$ 20 / 1 x 1 mL
M-8151-IS-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
0.25 mg/mL in Acetone
4,4'-Dibromooctafluorobiphenyl

M-8151-IS-2 \$ 10 / 1 x 1 mL
M-8151-IS-2-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
0.25 mg/mL in Acetone
1,4-Dichlorobenzene

Surrogate Standards

M-515-SS \$ 10 / 1 x 1 mL
M-515-SS-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
0.1 mg/mL in MtBE
2,4-Dichlorophenylacetic acid methyl ester

M-8150B-SS \$ 10 / 1 x 1 mL
M-8150B-SS-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
0.1 mg/mL in Acetone
M-8150B-SS-10X \$ 20 / 1 x 1 mL
1.0 mg/mL in Acetone
2,4-Dichlorophenylacetic acid

Method 8240 Volatile Organics by GC/MS

M-8240A * \$ 70 / 1 x 1 mL
0.2 mg/mL each in MeOH 41 comps.

Acetone	1,2-Dichloropropane
Acrolein	cis-1,3-Dichloropropene *
Acrylonitrile	trans-1,3-Dichloropropene **
Benzene	Ethanol
Bromodichloromethane	Ethylbenzene
Bromoform	2-Hexanone
2-Butanone	Iodomethane
Carbon disulfide	4-Methyl-2-pentanone
Carbon tetrachloride	Methylene chloride
Chlorobenzene	Styrene
Chloroform	1,1,2,2-Tetrachloroethane
Dibromochloromethane	Tetrachloroethene
cis-1,4-Dichloro-2-butene +	Toluene
trans-1,4-Dichloro-2-butene **	1,1,1-Trichloroethane
1,2-Dichlorobenzene	1,1,2-Trichloroethane
1,3-Dichlorobenzene	Trichloroethene
1,4-Dichlorobenzene	Vinyl acetate
1,1-Dichloroethane	o-Xylene
1,2-Dichloroethane	m-Xylene
1,1-Dichloroethene	p-Xylene
trans-1,2-Dichloroethene	

* cis (1.06 x conc.)
** trans (0.94 x conc.)
+ cis (0.1 mg/mL)
++ trans (0.1 mg/mL)

Technical Note

Acrolein quickly polymerizes and degrades in methanol solutions; therefore these standards have a short shelf life.

* ColdPAK required to maintain integrity of product.

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 \$ 14 / 1 x 1 mL
0.2 mg/mL in MeOH
Chloroprene (Xylene-free)

S-354-2 \$ 10 / 1 x 1 mL
0.2 mg/mL in Isooctane
Ethylene oxide



Method 8240 & 8260 Volatile Organic Compounds by GC/MS

The following solutions can be used to construct a single calibration curve containing the volatile analytes in Appendix IX for analysis by either Method 8240 or Method 8260 by GC/MS.

Bromochloromethane is excluded in the calibration solutions since it is used as an internal standard in Method 8240. If Method 8260 methodology is used, the addition of bromochloromethane from the internal standard mix can serve as the source for bromochloromethane to complement the target compound list.

Liquids (53 components, does not include Bromochloromethane)

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

* *cis* (1.06 x conc.)
** *trans* (0.94 x conc.)

6 Gas Components

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

Liquids (53 components)

M-502A-R2	\$ 60 / 1 x 1 mL
M-502A-R2-PAK	SAVE 20% \$ 240 / 5 x 1 mL
0.2 mg/mL each in MeOH	
M-502A-R2-10X	\$ 80 / 1 x 1 mL
M-502A-R2-10X-PAK	SAVE 20% \$ 320 / 5 x 1 mL
2.0 mg/mL each in MeOH	53 comps.

Gases (6 components)

M-502B	\$ 25 / 1 x 1 mL
M-502B-PAK	SAVE 20% \$ 100 / 5 x 1 mL
0.2 mg/mL each in MeOH	
M-502B-10X	\$ 35 / 1 x 1 mL
M-502B-10X-PAK	SAVE 20% \$ 140 / 5 x 1 mL
2.0 mg/mL each in MeOH	6 comps.

Liquid and Gas Sets

M-502A-R2/B-SET	\$ 80 / 2 x 1 mL
0.2 mg/mL each in MeOH	(M-502A-R2, M-502B)
M-502A-R2/B-10X-SET	\$ 100 / 2 x 1 mL
2.0 mg/mL each in MeOH	(M-502A-R2-10X, M-502B-10X)

All 60 liquid and gas components in One Solution

Liquids (54 comps.) and Gases (6 comps.)

M-502	\$ 75 / 1 x 1 mL
M-502-PAK	SAVE 20% \$ 300 / 5 x 1 mL
0.2 mg/mL each in MeOH	
M-502-10X	\$ 100 / 1 x 1 mL
M-502-10X-PAK	SAVE 20% \$ 400 / 5 x 1 mL
2.0 mg/mL each in MeOH	60 comps.

See also Method 8240 & 8260

Appendix IX Volatiles

M-8240C \$ 35 / 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
Isobutyl alcohol	1,2,3-Trichloropropane
Methacrylonitrile	

M-8240C-R3 \$ 40 / 1 x 1 mL
At stated conc. in MeOH 12 comps.

Acetonitrile (2.0 mg/mL)	Ethyl methacrylate (0.2 mg/mL)
Allyl chloride (0.2 mg/mL)	Isobutyl alcohol (4.0 mg/mL)
<i>cis</i> -1,4-Dichloro-2-butene (0.2 mg/mL)	Methacrylonitrile (2.0 mg/mL)
<i>trans</i> -1,4-Dichloro-2-butene (0.2 mg/mL)	Methyl methacrylate (0.2 mg/mL)
1,4-Dioxane (4.0 mg/mL)	Pentachloroethane (0.2 mg/mL)
Ethanol (4.0 mg/mL)	Propionitrile (2.0 mg/mL)

M-8240C-R3-10X \$ 45 / 1 x 1 mL
At stated conc. in MeOH 12 comps.

Acetonitrile (20 mg/mL)	Ethyl methacrylate (2.0 mg/mL)
Allyl chloride (2.0 mg/mL)	Isobutyl alcohol (40 mg/mL)
<i>cis</i> -1,4-Dichloro-2-butene (2.0 mg/mL)	Methacrylonitrile (20 mg/mL)
<i>trans</i> -1,4-Dichloro-2-butene (2.0 mg/mL)	Methyl methacrylate (2.0 mg/mL)
1,4-Dioxane (40 mg/mL)	Pentachloroethane (2.0 mg/mL)
Ethanol (40 mg/mL)	Propionitrile (20 mg/mL)

Same as M-8240C-R3-10X without Pentachloroethane

M-8240C-R6 \$ 40 / 1 x 1 mL
At stated conc. in MeOH 11 comps.

Acetonitrile (20 mg/mL)	Ethyl methacrylate (2.0 mg/mL)
Allyl chloride (2.0 mg/mL)	Isobutyl alcohol (40 mg/mL)
<i>cis</i> -1,4-Dichloro-2-butene (2.0 mg/mL)	Methacrylonitrile (20 mg/mL)
<i>trans</i> -1,4-Dichloro-2-butene (2.0 mg/mL)	Methyl methacrylate (2.0 mg/mL)
1,4-Dioxane (40 mg/mL)	Propionitrile (20 mg/mL)
Ethanol (40 mg/mL)	

M-8260-ADD * \$ 30 / 1 x 1 mL
0.2 mg/mL each in MeOH 8 comps.

M-8260-ADD-10X * \$ 30 / 1 x 1 mL
M-8260-ADD-10X-PAK * **SAVE 20%** \$ 120 / 5 x 1 mL
2.0 mg/mL each in MeOH 8 comps.

Acetone	2-Hexanone
2-Butanone	Iodomethane
Carbon disulfide	4-Methyl-2-pentanone
2-Chloroethylvinyl ether	Vinyl acetate

M-603 \$ 14 / 1 x 1 mL
M-603-PAK **SAVE 20%** \$ 56 / 5 x 1 mL

1.0 mg/mL each in Water 2 comps.
M-603-10X \$ 17 / 1 x 1 mL
10.0 mg/mL each in Water 2 comps.

M-603-M-0.1X * \$ 25 / 1 x 1 mL
100 µg/mL each in MeOH:Water (90:10) 2 comps.

M-603-M-5X * \$ 30 / 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.

Liquids

M-502A-R

0.2 mg/mL each in MeOH

\$ 60 / 1 x 1 mL

54 comps.

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

* *cis* (1.06 x conc.)

** *trans* (0.94 x conc.)

Additional VOCs by Method 8260B

M-8260B-01

M-8260B-01-PAK

2000 µg/mL each in MeOH

\$ 45 / 1 x 1 mL

SAVE 20% \$ 180 / 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

\$ 45 / 1 x 1 mL

SAVE 20% \$ 180 / 5 x 1 mL

10 comps.

Allyl alcohol	Ethyl acetate
1-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)

\$ 45 / 1 x 1 mL

SAVE 20% \$ 180 / 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

\$ 45 / 1 x 1 mL

SAVE 20% \$ 180 / 5 x 1 mL

6 comps.

<i>t</i> -Butanol	1-Propanol
2-Chloroethanol	Isopropanol
1,3-Dichloro-2-propanol	Propargyl alcohol

M-8260B-06-PAK *

2000 µg/mL each in MeOH

SAVE 20% \$ 120 / 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

\$ 20 / 1 x 1 mL

APP-9-048-R1-20X

2.0 mg/mL in MeOH

\$ 30 / 1 x 1 mL

Ethylene oxide

M-8015B/5031-14-R1 *

5 mg/mL in H₂O

\$ 20 / 1 x 1 mL

Chloral hydrate

M-E-1179-M

1.0 mg/mL in MeOH

\$ 40 / 1 x 1 mL

M-8260B continued to the next page

* To delay premature breakdown of thermally labile products in transit a ColdPAK is required.

Gases

M-502B

0.2 mg/mL each in MeOH

\$ 25 / 1 x 1 mL

6 comps.

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

Volatile Organic Compounds (VOC) Set

M-502A-R/B-SET

\$ 85 / set of 2 x 1 mL

(includes 1 mL of 54 liquids and 1 mL of 6 gas components)

M-603

1.0 mg/mL each in water

\$ 14 / 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. in MeOH

\$ 45 / 1 x 1 mL

12 comps.

Acetonitrile (20 mg/mL)	Ethyl methacrylate (2.0 mg/mL)
Allyl chloride (2.0 mg/mL)	Isobutyl alcohol (40 mg/mL)
<i>cis</i> -1,4-Dichloro-2-butene (2.0 mg/mL)	Methacrylonitrile (20 mg/mL)
<i>trans</i> -1,4-Dichloro-2-butene (2.0 mg/mL)	Methyl methacrylate (2.0 mg/mL)
1,4-Dioxane (40 mg/mL)	Pentachloroethane (2.0 mg/mL)
Ethanol (40 mg/mL)	Propionitrile (20 mg/mL)

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	\$ 30 / 1 x 1 mL
M-8260-IS-PAK	SAVE 20% \$ 120 / 5 x 1 mL
0.2 mg/mL each in MeOH	4 comps.
M-8260-IS-10X	\$ 35 / 1 x 1 mL
M-8260-IS-10X-PAK	SAVE 20% \$ 140 / 5 x 1 mL
2.0 mg/mL each in MeOH	4 comps.

Chlorobenzene-d₅
1,4-Difluorobenzene

1,4-Dichlorobenzene-d₄
Pentafluorobenzene

M-8260-IS-R	\$ 30 / 1 x 1 mL
M-8260-IS-R-PAK	SAVE 20% \$ 120 / 5 x 1 mL
0.2 mg/mL each in MeOH	4 comps.
M-8260-IS-R-10X	\$ 40 / 1 x 1 mL
M-8260-IS-R-10X-PAK	SAVE 20% \$ 160 / 5 x 1 mL
2.0 mg/mL each in MeOH	4 comps.

2-Bromo-1-chloropropane
1,4-Difluorobenzene

1,4-Dichlorobenzene-d₄
Pentafluorobenzene

M-8260A/B-IS	\$ 20 / 1 x 1 mL
M-8260A/B-IS-PAK	SAVE 20% \$ 80 / 5 x 1 mL
0.2 mg/mL each in MeOH	3 comps.
M-8260A/B-IS-10X	\$ 30 / 1 x 1 mL
M-8260A/B-IS-10X-PAK	SAVE 20% \$ 120 / 5 x 1 mL
2.0 mg/mL each in MeOH	3 comps.

Chlorobenzene-d₅
1,4-Dichlorobenzene-d₄

Fluorobenzene

Combined Internal/Surrogate Standard VOA Mix

M-8260A/B-IS/SS	\$ 40 / 1 x 1 mL
M-8260A/B-IS/SS-PAK	SAVE 20% \$ 160 / 5 x 1 mL
200 µg/mL each in MeOH	7 comps.
M-8260A/B-IS/SS-10X	\$ 50 / 1 x 1 mL
M-8260A/B-IS/SS-10XPAK	SAVE 20% \$ 200 / 5 x 1 mL
2.0 mg/mL each in MeOH	7 comps.

p-Bromofluorobenzene
Chlorobenzene-d₅
Dibromofluoromethane
1,4-Dichlorobenzene-d₄

1,2-Dichloroethane-d₄
Fluorobenzene
Toluene-d₈

Surrogate Standards

M-8260-SS	\$ 30 / 1 x 1 mL
M-8260-SS-PAK	SAVE 20% \$ 120 / 5 x 1 mL
0.2 mg/mL each in MeOH	3 comps.
M-8260-SS-10X	\$ 40 / 1 x 1 mL
M-8260-SS-10X-PAK	SAVE 20% \$ 160 / 5 x 1 mL
2.0 mg/mL each in MeOH	3 comps.

4-Bromofluorobenzene
Dibromofluoromethane

Toluene-d₈

M-8260-SS-2	\$ 20 / 1 x 1 mL
0.2 mg/mL in MeOH	
M-8260-SS-2-10X	\$ 25 / 1 x 1 mL
2.0 mg/mL in MeOH	

Dibromofluoromethane

M-8260A/B-SS	\$ 30 / 1 x 1 mL
M-8260A/B-SS-PAK	SAVE 20% \$ 120 / 5 x 1 mL
0.2 mg/mL each in MeOH	4 comps.
M-8260A/B-SS-10X	\$ 40 / 1 x 1 mL
M-8260A/B-SS-10X-PAK	SAVE 20% \$ 160 / 5 x 1 mL
2.0 mg/mL each in MeOH	4 comps.

p-Bromofluorobenzene
Dibromofluoromethane

1,2-Dichloroethane-d₄
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	\$ 30 / 1 x 1 mL
M-8240/60-IS-PAK	SAVE 20% \$ 120 / 5 x 1 mL
0.2 mg/mL each in MeOH	5 comps.
M-8240/60-IS-10X	\$ 40 / 1 x 1 mL
M-8240/60-IS-10X-PAK	SAVE 20% \$ 160 / 5 x 1 mL
2.0 mg/mL each in MeOH	5 comps.
Bromochloromethane	1,4-Difluorobenzene
Chlorobenzene-d ₅	Pentafluorobenzene
1,4-Dichlorobenzene-d ₄	

Surrogate Standard VOA

M-8240/60-SS	\$ 30 / 1 x 1 mL
M-8240/60-SS-PAK	SAVE 20% \$ 120 / 5 x 1 mL
0.2 mg/mL each in MeOH	4 comps.
M-8240/60-SS-10X	\$ 40 / 1 x 1 mL
M-8240/60-SS-10X-PAK	SAVE 20% \$ 160 / 5 x 1 mL
2.0 mg/mL each in MeOH	4 comps.
p-Bromofluorobenzene	1,2-Dichloroethane-d ₄
Dibromofluoromethane	Toluene-d ₈

Internal / Surrogate Standard VOA

M-8240/60-IS/SS	\$ 45 / 1 x 1 mL
M-8240/60-IS/SS-PAK	SAVE 20% \$ 180 / 5 x 1 mL
0.2 mg/mL each in MeOH	9 comps.
M-8240/60-IS/SS-10X	\$ 60 / 1 x 1 mL
M-8240/60-IS/SS-10XPAK	SAVE 20% \$ 240 / 5 x 1 mL
2.0 mg/mL each in MeOH	9 comps.
Bromochloromethane	1,2-Dichloroethane-d ₄
p-Bromofluorobenzene	1,4-Difluorobenzene
Chlorobenzene-d ₅	Pentafluorobenzene
Dibromofluoromethane	Toluene-d ₈
1,4-Dichlorobenzene-d ₄	

Volatile Calibration Check Compounds (CCC)

CLP-020	\$ 30 / 1 x 1 mL
CLP-020-PAK	SAVE 20% \$ 120 / 5 x 1 mL
0.2 mg/mL each in MeOH	6 comps.
CLP-020-10X	\$ 30 / 1 x 1 mL
CLP-020-10X-PAK	SAVE 20% \$ 120 / 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	\$ 30 / 1 x 1 mL
CLP-021-PAK	SAVE 20% \$ 120 / 5 x 1 mL
0.2 mg/mL each in MeOH	5 comps.
CLP-021-10X	\$ 30 / 1 x 1 mL
CLP-021-10X-PAK	SAVE 20% \$ 120 / 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	\$ 10 / 1 x 1 mL
CLP-004-PAK	SAVE 20% \$ 40 / 5 x 1 mL
25 µg/mL in MeOH	
CLP-004-10X	\$ 10 / 1 x 1 mL
CLP-004-10X-PAK	SAVE 20% \$ 40 / 5 x 1 mL
250 µg/mL in MeOH	
CLP-004-100X	\$ 10 / 1 x 1 mL
CLP-004-100X-PAK	SAVE 20% \$ 40 / 5 x 1 mL
2500 µg/mL in MeOH	
p-Bromofluorobenzene	

Purgeable Organic Matrix Spiking Solutions

CLP-003-R	\$ 20 / 1 x 1 mL
CLP-003-R-PAK	SAVE 20% \$ 80 / 5 x 1 mL
0.25 mg/mL each in MeOH	5 comps.
CLP-003-R-10X	\$ 20 / 1 x 1 mL
CLP-003-R-10X-PAK	SAVE 20% \$ 80 / 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 mixtures

The primary analytes typically analyzed in Method 8270 version C and D have been formulated based on one of the following considerations: large core mixes, analyte retention time association to ISTD's, similar functional groups, Third Party Certified Standards or as working level Ready-to-Inject standards.

Use of these Method 8270C/D components in 5 mixtures can save you time and money in preparing your calibration curves. Four high concentration solutions CLP-HC-BN-SET, CLP-HC-A-R, CLP-HC-X1 and Z-014E can be combined to give you the 92 typical analytes needed for Method 8270C/D. Product Z-014E-R can be used in lieu of Z-014E for those labs interested in adding pyridine to their target list.

These mixtures can also serve as your **second source** requirements since they are independently prepared from product M-8270 (7 x 1 mL).

Base-Neutral Mixture (44 components)

CLP-HC-BN-R

Acenaphthene	4-Chlorophenyl phenyl ether	Hexachlorobenzene
Acenaphthylene	Chrysene	Hexachlorobutadiene
Anthracene	Dibenz[a,h]anthracene	Hexachlorocyclopentadiene
Azobenzene	Di- <i>n</i> -butyl phthalate	Hexachloroethane
Benz[a]anthracene	1,2-Dichlorobenzene	Indeno[1,2,3-cd]pyrene
Benzo[b]fluoranthene	1,3-Dichlorobenzene	Isophorone
Benzo[k]fluoranthene	1,4-Dichlorobenzene	Naphthalene
Benzo[g,h,i]perylene	Diethyl phthalate	Nitrobenzene
Benzo[a]pyrene	Dimethyl phthalate	N-Nitrosodimethylamine
4-Bromophenyl phenyl ether	2,4-Dinitrotoluene	N-Nitrosodiphenylamine
Butyl benzyl phthalate	2,6-Dinitrotoluene	N-Nitrosodi- <i>n</i> -propylamine
bis(2-Chloroethoxy)methane	Di- <i>n</i> -octyl phthalate	Phenanthrene
bis(2-Chloroethyl) ether	bis(2-Ethylhexyl)phthalate	Pyrene
bis(2-Chloro-1-methylethyl) ether	Fluoranthene	1,2,4-Trichlorobenzene
2-Chloronaphthalene	Fluorene	

Benzidine Mixture (2 comps.)

Z-014F

Benzidine
3,3'-Dichlorobenzidine

Technical Note

Azobenzene was substituted for 1,2-diphenylhydrazine since it pyrolyses to azobenzene under GC operating conditions.

Base-Neutrals

CLP-HC-BN-R

2.0 mg/mL each in Benzene:CH₂Cl₂:AcCN (40:40:20)

\$ 160 / 1 x 1 mL

44 comps.

CLP-HC-BN-R-PAK

2.0 mg/mL each in Benzene:CH₂Cl₂:AcCN (40:40:20)

SAVE 20% \$ 640 / 5 x 1 mL

44 comps.

Base-Neutral and Benzidine Sets

CLP-HC-BN-SET

\$ 190 / 2 x 1 mL

(CLP-HC-BN-R, Z-014F)

CLP-HC-BN-SET-PAK

SAVE 20% \$ 760 / 5 x (2 x 1 mL)

5 x (CLP-HC-BN-R, Z-014F)

Benzidine

Z-014F

2.0 mg/mL each in MeOH

\$ 30 / 1 x 1 mL

2 comps.

Additional Analyte Solutions

Acid Composite Mixture

CLP-HC-A-R

2.0 mg/mL each in CH₂Cl₂

\$ 55 / 1 x 1 mL

19 comps.

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

Composite #1

Z-014E

2.0 mg/mL each in CH₂Cl₂

\$ 30 / 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

\$ 32 / 1 x 1 mL

9 comps.

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

Composite #3A

CLP-HC-X1

2.0 mg/mL each in CH₂Cl₂

\$ 85 / 1 x 1 mL

19 comps.

Acetophenone
4-Aminobiphenyl
1-Chloronaphthalene
Dibenz[a,j]acridine
<i>p</i> -Dimethylaminoazobenzene
7,12-Dimethylbenz[a]anthracene
α,α -Dimethylphenethylamine
Diphenylamine
3-Methylcholanthrene
1-Naphthylamine
2-Naphthylamine
N-Nitrosodi- <i>n</i> -butylamine
N-Nitrosopiperidine
Pentachlorobenzene
Pentachloronitrobenzene
Phenacetin
2-Picoline
Pronamide
1,2,4,5-Tetrachlorobenzene

M-8270-07

2.0 mg/mL each in CH₂Cl₂

\$ 160 / 1 x 1 mL

15 comps.

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

M-8270-08

2.0 mg/mL each in CH₂Cl₂

\$ 65 / 1 x 1 mL

9 comps.

3,3'-Dimethyl benzidine	N-Nitrosopyrrolidine
4-Nitroquinoline-1-oxide	5-Nitro- <i>o</i> -toluidine
N-Nitrosodiethylamine	<i>p</i> -Phenylenediamine
N-Nitrosomethylethylamine	<i>o</i> -Toluidine
N-Nitrosomorpholine	

M-8270-09

2.0 mg/mL each in CH₂Cl₂

\$ 65 / 1 x 1 mL

10 comps.

2-Acetyl aminofluorene	Isosafrole
<i>m</i> -Dinitrobenzene	Methapyrilene
Hexachlorophene	1,4-Naphthoquinone
Hexachloropropene	Safrole
Isodrin	O,O,O-Triethyl phosphorothioate



EPA Method 8000 Series

Method 8270C/D (Continued) Auxiliary Standards

Internal Standard

Z-014J	\$ 80 / 1 x 1 mL
Z-014J-PAK	SAVE 37% \$ 250 / 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	\$ 80 / 1 x 1 mL
M-8270-SS-PAK	SAVE 20% \$ 320 / 5 x 1 mL
4.0 mg/mL each in CH ₂ Cl ₂	6 comps.
2-Fluorobiphenyl	Phenol-d ₅
2-Fluorophenol	<i>p</i> -Terphenyl-d ₁₄
Nitrobenzene-d ₅	2,4,6-Tribromophenol

M-8270-SS-R	\$ 75 / 1 x 1 mL
M-8270-SS-R-PAK	SAVE 20% \$ 300 / 5 x 1 mL
At stated conc. each in CH ₂ Cl ₂ :MeOH (80:20)	6 comps.

2-Fluorobiphenyl (1.0 mg/mL)	Phenol-d ₅ (2.0 mg/mL)
2-Fluorophenol (2.0 mg/mL)	Terphenyl-d ₁₄ (1.0 mg/mL)
Nitrobenzene-d ₅ (1.0 mg/mL)	2,4,6-Tribromophenol (2.0 mg/mL)

Base/Neutrals & Acids - Matrix Standard Spiking Solutions

CLP-007-SET	\$ 35 / 2 x 1 mL
CLP-007-SET-PAK	SAVE 20% \$ 140 / 5 x (2 x 1 mL)
	(CLP-007A, CLP-007B)

Base/Neutrals

CLP-007A	\$ 20 / 1 x 1 mL
1.0 mg/mL each in MeOH	6 comps.
Acenaphthene	N-nitroso-di- <i>n</i> -propylamine
1,4-Dichlorobenzene	Pyrene
2,4-Dinitrotoluene	1,2,4-Trichlorobenzene

Acids

CLP-007B	\$ 20 / 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	\$ 40 / 1 x 1 mL
1.0 mg/mL each in CH ₂ Cl ₂	4 comps.
Benzidine	DFTPP
<i>p,p'</i> -DDT	Pentachlorophenol

Calibration Check Compounds (CCC)

CLP-011-SET	\$ 35 / set of 2 x 1 mL
	(CLP-011A, CLP-011B)

Base/Neutrals

CLP-011A	\$ 20 / 1 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂	7 comps.
Acenaphthene	Hexachlorobutadiene
Benzo[a]pyrene	Fluoranthene
1,4-Dichlorobenzene	N-nitroso-diphenylamine
Di- <i>n</i> -octyl phthalate	

Acids

CLP-011B	\$ 20 / 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	\$ 25 / 1 x 1 mL
0.2 mg/mL each in CH ₂ Cl ₂	4 comps.
CLP-010-10X	\$ 25 / 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- <i>n</i> -propylamine

Multi-Component Analytes

Polychlorinated Biphenyls, Chlordane & Toxaphene

Each at 1,000 µg/mL in Hexane
AccuPAK™ (5 x 1 mL)
SAVE 20%

Aroclors #	Cat. No.	1 mL	Cat. No.	PAK
Aroclor 1016	C-216S-H-10X	\$ 20	C-216S-H-10X-PAK	\$ 80
Aroclor 1221	C-221S-H-10X	20	C-221S-H-10X-PAK	80
Aroclor 1232	C-232S-H-10X	20	C-232S-H-10X-PAK	80
Aroclor 1242	C-242S-H-10X	20	C-242S-H-10X-PAK	80
Aroclor 1248	C-248S-H-10X	20	C-248S-H-10X-PAK	80
Aroclor 1254	C-254S-H-10X	20	C-254S-H-10X-PAK	80
Aroclor 1260	C-260S-H-10X	20	C-260S-H-10X-PAK	80
Aroclor 1262	C-262S-H-10X	20	C-262S-H-10X-PAK	80
Aroclor 1268	C-268S-H-10X	20	C-268S-H-10X-PAK	80
Pesticides				
Chlordane	P-017S-H-10X	\$ 15	P-017S-H-10X-PAK	\$ 80
Toxaphene	P-093S-H-10X	15	P-093S-H-10X-PAK	80



Method 8270C/D (Continued) Semi-Volatiles by Capillary Column GC/MS

These Method 8270C/D formulations are designed based on the association of the analyte to a specific internal standard. These formulations allow for easy preparation of the typical analytes in the calibration curve. In addition, instrument/method problems can be rapidly diagnosed by examining those specific analytes and the associated internal standard in the affected part of the analysis.

Save when ordering a complete set over individual solutions

Complete 8270 Method Mixture Set

M-8270-SET
M-8270-R-SET

\$ 505 / 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)
\$ 480 / 7 x 1 mL (M-8270-01,M-8270-02,M-8270-03,M-8270-04A,M-8270-04B-R1,M-8270-05,M-8270-06)

M-8270-01 \$ 80 / 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 17 comps.

Aniline
Benzyl alcohol
bis(2-Chloroethyl) ether
bis(2-Chloro-1-methylethyl) ether
2-Chlorophenol
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
Ethylmethanesulfonate
Hexachloroethane
Methylmethanesulfonate
2-Methylphenol
4-Methylphenol
N-Nitrosodimethylamine
N-Nitrosodi-*n*-propylamine
Phenol
2-Picoline

M-8270-02 \$ 80 / 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 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 \$ 120 / 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 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 \$ 45 / 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 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 \$ 35 / 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 6 comps.

Diphenylamine
1,2-Diphenylhydrazine
N-Nitrosodiphenylamine
Pentachloronitrobenzene
Phenacetin
Pronamide

M-8270-05 \$ 80 / 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 8 comps.

Benzidine
Benzo[a]anthracene
bis(2-Ethylhexyl)phthalate
Butylbenzylphthalate
Chrysene
3,3'-Dichlorobenzidine
p-Dimethylaminoazobenzene
Pyrene

M-8270-06 \$ 120 / 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 10 comps.

Benzo[b]fluoranthene
Benzo[k]fluoranthene
Benzo[g,h,i]perylene
Benzo[a]pyrene
Dibenz[a,j]acridine
Dibenz[a,h]anthracene
7,12-Dimethylbenz[a]anthracene
Di-*n*-octylphthalate
Indeno[1,2,3-cd]pyrene
3-Methylcholanthrene

Technical Note

Under EPA recommended GC conditions (Method 8270) the analyte 1,2-Diphenylhydrazine is converted in varying degrees to Azobenzene and breakdown products. According to our study, the use of an injection port temperature range (240°C - 300°C) will cause the 1,2-Diphenylhydrazine to break down.

Substituting Azobenzene for 1,2-Diphenylhydrazine will allow analysis yielding a single peak regardless of the EPA recommended injection port temperature range used.

Alternate Formulation

M-8270-04B-R1 \$ 35 / 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 6 comps.

Azobenzene
Diphenylamine
N-Nitrosodiphenylamine
Pentachloronitrobenzene
Phenacetin
Pronamide

M-8270-07 \$ 160 / 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 15 comps.

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

M-8270-08 \$ 65 / 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 9 comps.

3,3'-Dimethyl benzidine
4-Nitroquinoline-1-oxide
N-Nitrosodiethylamine
N-Nitrosomethylethylamine
N-Nitrosomorpholine
N-Nitrosopyrrolidine
5-Nitro-*o*-toluidine
p-Phenylenediamine
o-Toluidine

M-8270-09 \$ 65 / 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 10 comps.

2-Acetyl aminofluorene
1,3-Dinitrobenzene
Hexachlorophene
Hexachloropropene
Isodrin
Isosafrole
Methapyrilene
1,4-Naphthoquinone
Safrole
O,O,O-Triethylphosphorothioate



EPA Method 8000 Series

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

M-8270-10 \$ 15 / 1 x 1 mL
2.0 mg/mL in MeOH
sym-Trinitrobenzene

M-8270-10-R \$ 15 / 1 x 1 mL
2.0 mg/mL each in MeOH 2 comps.
Pyridine sym-Trinitrobenzene

Additions to Method 8270

M-8270-13-SET \$ 95 / 2 x 1 mL
(M-8270-13A-R, M-8270-13B-R)

M-8270-13A-R \$ 85 / 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 \$ 25 / 1 x 1 mL
2.0 mg/mL each in THF 3 comps.
2-Aminoanthraquinone 4-Chloro-1,3-phenylenediamine
4-Chloro-1,2-phenylenediamine

M-8270-14-SET \$ 95 / 3 x 1 mL
(M-8270-14A, M-8270-14B, M-8270-14C)

M-8270-14A \$ 35 / 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 6 comps.
m-Cresol Thiophenol
o-Cresol tris(2,3-Dibromopropyl)phosphate
Resorcinol Tri-p-tolyl phosphate

M-8270-14B \$ 35 / 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 * \$ 35 / 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 \$ 95 / 1 x 1 mL
1.0 mg/mL each in CH₂Cl₂:MeOH (90:10) 13 comps.
Dibenzo[a,e]pyrene Nicotine
1,2-Dibromo-3-chloropropane 5-Nitroacenaphthene
Diethyl stilbestrol 5-Nitro-o-anisidine
1,2-Dinitrobenzene 4-Nitrobiphenyl
1,4-Dinitrobenzene Propylthiouracil
5,5-Diphenylhydantoin Strychnine
Mestranol

Pesticides

M-8270-16 \$ 50 / 1 x 1 mL
1000 µg/mL each in CH₂Cl₂ 10 comps.
Anilazine Dioxathion
Azinphos methyl Mirex
Barbamate Sulfoxide
Demeton (mixed isomers) Sulfallate
Dichlone Trifluralin

M-8270-17 \$ 50 / 1 x 1 mL
1000 µg/mL each in CH₂Cl₂ 7 comps.
Brominal Dinocap
Captafol Fluchloralin
Captan Nitrofen
Dinex

Carbamates/Pesticides

M-8270-18 \$ 75 / 1 x 1 mL
1000 µg/mL each in CH₂Cl₂ 6 comps.
Carbaryl Mexacarbate
Carbofuran Schradan (Octamethylpyrophosphoramide)
Ethyl carbamate Phenobarbital

Pesticides

M-8270-19 \$ 50 / 1 x 1 mL
1000 µg/mL each in CH₂Cl₂ 12 comps.
Carbophenothion Leptophos
Coumaphos Malathion
EPN Phosalone
Ethion Imidan (Phosmet)
Fensulfthion Terbufos
Fenthion Tetrachlorvinphos

M-8270-20 \$ 50 / 1 x 1 mL
1000 µg/mL each in CH₂Cl₂ 9 comps.
Chlorfenvinphos Monocrotophos
Ciodrin (Crotoxyphos) Naled
Dichlorvos Phosphamidon
Dicrotophos TEPP (Tetraethyl pyrophosphate)
Mevinphos

Azo Dye

RAC-12-10X \$ 35 / 1 x 1 mL
1.0 mg/mL in CH₂Cl₂
3,3'-Dimethoxybenzidine

Pesticide Mix

Z-014C-R \$ 95 / 1 x 1 mL
Z-014C-R-PAK **SAVE 20%** \$ 380 / 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
4,4'-DDT Methoxychlor

* ColdPAK required to maintain integrity of product.

EPA Method 8000 Series

Ready-to-Inject Working Level Semi-Volatile Standards



Method 8270

Method 8270C/D 5 point Semi-Volatile Calibration Curve

AccuStandard provides a 5 point semi-volatile calibration curve in 2 formats. One calibration curve already incorporates the internal standards in each level of the curve. To begin analysis, the chemist just cracks the ampule open and transfers the content to the autosampler vial. The second semi-volatile curve does not contain the internal standard.

The analytical chemist will need to add 10 µL of internal standard to each level of the curve and the environmental samples as the vials are placed on the GC/MS. 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-Chloro-1-methylethyl) ether	3,3'-Dichlorobenzidine	Hexachlorobutadiene	N-Nitrosodiphenylamine
Benz[a]anthracene	4-Chloro-3-methylphenol	2,4-Dichlorophenol	Hexachlorocyclopentadiene	N-Nitrosodi- <i>n</i> -propylamine
Benidine	2-Chloronaphthalene	Diethyl phthalate	Hexachloroethane	Pentachlorophenol
Benzo[b]fluoranthene	2-Chlorophenol	2,4-Dimethylphenol	Indeno[1,2,3- <i>cd</i>]pyrene	Phenanthrene
Benzo[k]fluoranthene	4-Chlorophenyl phenyl ether	Dimethyl phthalate	Isophorone	Phenol
Benzoic acid	Chrysene	4,6-Dinitro-2-methylphenol	2-Methylnaphthalene	Pyrene
Benzo[g,h,i]perylene	<i>o</i> -Cresol	2,4-Dinitrophenol	Naphthalene	Pyridine
Benzo[a]pyrene	<i>p</i> -Cresol	2,4-Dinitrotoluene	2-Nitroaniline	1,2,4-Trichlorobenzene
Benzyl alcohol	Dibenz[a,h]anthracene	2,6-Dinitrotoluene	3-Nitroaniline	2,4,5-Trichlorophenol
4-Bromophenyl phenyl ether	Dibenzofuran	Di- <i>n</i> -octyl phthalate	4-Nitroaniline	2,4,6-Trichlorophenol
Butyl benzyl phthalate				

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

Working Level Semi-Volatiles Curve

With Internal Standards

M-8270-CAL-IS-SET

All solutions in CH₂Cl₂

\$ 275 / 5 x 1 mL

83 comps.

Components (units in µg/mL)	Level 1	Level 2 (2.5X)	Level 3 (4X)	Level 4 (6X)	Level 5 (8X)
Target Analytes	20	50	80	120	160
Surrogate Analytes	20	50	80	120	160
Internal Analytes	40	40	40	40	40

Level 2 Daily QC Working Level

CCC (with Internal Standard)

M-8270-IS-WL-2.5X-5ML

\$ 275 / 1 x 5 mL

M-8270-IS-WL-2.5X-10ML

\$ 425 / 1 x 10 mL

At stated conc. in CH₂Cl₂

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

Without Internal Standards

M-8270-CAL-SET

All solutions in CH₂Cl₂

\$ 250 / 5 x 1 mL

77 comps.

Components (units in µg/mL)	Level 1	Level 2 (2.5X)	Level 3 (4X)	Level 4 (6X)	Level 5 (8X)
Target Analytes	20	50	80	120	160
Surrogate Analytes	20	50	80	120	160

Level 2 Daily QC Working Level

CCC (without Internal Standard)

M-8270-WL-2.5X-5ML

\$ 250 / 1 x 5 mL

M-8270-WL-2.5X-10ML

\$ 400 / 1 x 10 mL

At stated conc. 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

\$ 115 / 1 x 50 mL

At stated conc. in MeOH

11 comps.

4-Chloro-3-methyl phenol (200 µg/mL)	1,4-Dichlorobenzene (100 µg/mL)
2-Chlorophenol (200 µg/mL)	2,4-Dinitrotoluene (100 µg/mL)
4-Nitrophenol (200 µg/mL)	N-Nitrosodi-n-propylamine (100 µg/mL)
Pentachlorophenol (200 µg/mL)	Pyrene (100 µg/mL)
Phenol (200 µg/mL)	1,2,4-Trichlorobenzene (100 µg/mL)
Acenaphthene (100 µg/mL)	

Prep Note

To help maximize instrument performance, add 10 µL of internal standard to a 1 mL sample extract.

Internal Standard

Z-014J

\$ 80 / 1 x 1 mL

Z-014J-PAK

SAVE 37% \$ 250 / 5 x 1 mL

4.0 mg/mL each in CH₂Cl₂

6 comps.

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

Benzidine Solution

M-625C-1-40X

\$ 20 / 1 x 1 mL

2.0 mg/mL in CH₂Cl₂

Benzidine

GC/MS Tuning Solution

M-625-TS

\$ 40 / 1 x 1 mL

M-625-TS-PAK

SAVE 20% \$ 160 / 5 x 1 mL

50 µg/mL each in CH₂Cl₂

4 comps.

Benzidine	DFTPP
p,p'-DDT	Pentachlorophenol

DFTPP GC/MS Tuning Solution

M-625C-3

\$ 20 / 1 x 1 mL

M-625C-3-PAK

SAVE 20% \$ 80 / 5 x 1 mL

25 µg/mL in CH₂Cl₂

Decafluorotriphenylphosphine (DFTPP)

Technical Note

Benzidine and 3,3'-Dichlorobenzidine are easily oxidized and are light sensitive.

Matrix Spike (3/90 SOW)

CLP-007R-WL-50ML

\$ 115 / 1 x 50 mL

At stated conc. in MeOH

11 comps.

4-Chloro-3-methyl phenol (150 µg/mL)	1,4-Dichlorobenzene (100 µg/mL)
2-Chlorophenol (150 µg/mL)	2,4-Dinitrotoluene (100 µg/mL)
4-Nitrophenol (150 µg/mL)	N-Nitrosodi-n-propylamine (100 µg/mL)
Pentachlorophenol (150 µg/mL)	Pyrene (100 µg/mL)
Phenol (150 µg/mL)	1,2,4-Trichlorobenzene (100 µg/mL)
Acenaphthene (100 µg/mL)	

Method 8270 Surrogate Spiking Solutions

M-8270-SS-R-WL-PAK

\$ 190 / 5 x 10 mL

M-8270-SS-R-WL-VAP

\$ 300 / 10 x 10 mL

At stated conc. in CH₂Cl₂:MeOH (80:20)

6 comps.

2-Fluorobiphenyl (100 µg/mL)	Phenol-d ₅ (200 µg/mL)
2-Fluorophenol (200 µg/mL)	Terphenyl-d ₁₄ (100 µg/mL)
Nitrobenzene-d ₅ (100 µg/mL)	2,4,6-Tribromophenol (200 µg/mL)

M-8270-SS-R

\$ 75 / 1 x 1 mL

M-8270-SS-R-PAK

SAVE 20% \$ 300 / 5 x 1 mL

At stated conc. in CH₂Cl₂:MeOH (80:20)

6 comps.

2-Fluorobiphenyl (1000 µg/mL)	Phenol-d ₅ (2000 µg/mL)
2-Fluorophenol (2000 µg/mL)	Terphenyl-d ₁₄ (1000 µg/mL)
Nitrobenzene-d ₅ (1000 µg/mL)	2,4,6-Tribromophenol (2000 µg/mL)

Prep Note

To ensure extraction efficiency add, 1 mL of Surrogate to the sample.

CLP Surrogate Spiking Solution

CLP-031-R-WL-25ML

\$ 110 / 1 x 25 mL

CLP-031-R-WL-50ML

\$ 190 / 1 x 50 mL

At stated conc. in MeOH

8 comps.

2-Chlorophenol-d ₄ (150 µg/mL)	Nitrobenzene-d ₅ (100 µg/mL)
1,2-Dichlorobenzene-d ₄ (100 µg/mL)	Phenol-d ₅ (150 µg/mL)
2-Fluorobiphenyl (100 µg/mL)	p-Terphenyl-d ₁₄ (100 µg/mL)
2-Fluorophenol (150 µg/mL)	2,4,6-Tribromophenol (150 µg/mL)

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.

M-8270-ASL-SET		Alternate Source		Alternate Source Method 8270C/D Set		\$ 675 / 17 x 1 mL	
M-8270-01-ASL	Ethers & Phthalates Mix	M-8270-08-ASL	Phenols Mix	The set includes the following 17 products			
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				

Method 8270C/D

ASL Method 8270C/D Alternate Method 8270 Formulations

Ethers & Phthalates Mix

M-8270-01-ASL	\$ 60 / 1 x 1 mL
2.0 mg/mL each in CH_2Cl_2	11 comps.
bis(2-Chloroethoxy)methane	4-Chlorophenyl phenyl ether
bis(2-Chloroethyl)ether	Diethyl phthalate
bis(2-Ethylhexyl)phthalate	Dimethyl phthalate
bis(2-Chloro-1-methylethyl)ether	Dibutyl phthalate
4-Bromophenyl phenyl ether	Di-n-octyl phthalate
Benzyl butyl phthalate	

Chlorinated Hydrocarbons Mix

M-8270-02-ASL	\$ 60 / 1 x 1 mL
2.0 mg/mL each in CH_2Cl_2	13 comps.
2-Chloronaphthalene	Hexachloroethane
1,2-Dichlorobenzene	Hexachloropropene
1,3-Dichlorobenzene	Pentachlorobenzene
1,4-Dichlorobenzene	Pentachloroethane
Hexachlorobenzene	1,2,4,5-Tetrachlorobenzene
Hexachlorobutadiene	1,2,4-Trichlorobenzene
Hexachlorocyclopentadiene	

Nitrosamines Mix

M-8270-03-ASL	\$ 60 / 1 x 1 mL
2.0 mg/mL each in CH_2Cl_2	9 comps.
N-Nitrosodi-n-butylamine	N-Nitrosomethylethylamine
N-Nitrosodiethylamine	N-Nitrosomorpholine
N-Nitrosodimethylamine	N-Nitrosopiperidine
N-Nitrosodiphenylamine	N-Nitrosopyrrolidine
N-Nitrosodi-n-propylamine	

Base/Neutrals Mix

M-8270-04-ASL	\$ 60 / 1 x 1 mL
2.0 mg/mL each in CH_2Cl_2	13 comps.
2-Acetylaminofluorene	1-Naphthylamine
4-Aminobiphenyl	2-Naphthylamine
3,3'-Dichlorobenzidine	5-Nitro-o-toluidine
4-Dimethylaminoazobenzene	Phenacetin
3,3'-Dimethylbenzidine	p-Phenylenediamine
α,α -Dimethylphenethylamine	o-Toluidine
Diphenylamine	

Base/Neutrals Mix

M-8270-05-ASL	\$ 60 / 1 x 1 mL
2.0 mg/mL each in CH_2Cl_2	13 comps.
Acetophenone	Methyl methanesulfonate
1,3-Dinitrobenzene	1,4-Naphthoquinone
2,4-Dinitrotoluene	Nitrobenzene
2,6-Dinitrotoluene	Pentachloronitrobenzene
Ethyl methanesulfonate	Safrole
Isophorone	1,3,5-Trinitrobenzene
Isosafrole	

PAH Mix

M-8270-06-ASL	\$ 30 / 1 x 1 mL
2.0 mg/mL each CH_2Cl_2 :Benzene (50:50)	2 comps.
7,12-Dimethylbenz[a]anthracene	
3-Methylcholanthrene	

Pyridine Mix

M-8270-07-ASL	\$ 45 / 1 x 1 mL
2.0 mg/mL each in Acetone	4 comps.
Methapyrilene	2-Picoline
4-Nitroquinoline-1-oxide	Pyridine

Phenol Mix

M-8270-08-ASL	\$ 60 / 1 x 1 mL
2.0 mg/mL each in CH_2Cl_2	8 comps.
o-Cresol	Dinoseb
m-Cresol	Hexachlorophene
p-Cresol	2,3,4,6-Tetrachlorophenol
2,6-Dichlorophenol	2,4,5-Trichlorophenol

Organophosphorous Pesticide Mix

M-8270-09-ASL	\$ 60 / 1 x 1 mL
2.0 mg/mL each in CH_2Cl_2	9 comps.
Dimethoate	o,o,o-Triethylphosphorothioate
Disulfoton	Methyl parathion
Famphur	Parathion
Thionazin	Phorate
Sulfotep	

Pesticide Mix

M-8270-10-ASL	\$ 60 / 1 x 1 mL
2.0 mg/mL each in CH_2Cl_2	6 comps.
Aramite	Isodrin
Chlorobenzilate	Kepone
Diallate	Pronamide

Toxic Substance Mix

M-8270-11-ASL	\$ 30 / 1 x 1 mL
2.0 mg/mL each in CH_2Cl_2	8 comps.
Aniline	2-Methylnaphthalene
Benzyl alcohol	2-Nitroaniline
4-Chloroaniline	3-Nitroaniline
Dibenzofuran	4-Nitroaniline

Internal Standard Mix

Z-014J	\$ 80 / 1 x 1 mL
Z-014J-PAK	SAVE 37% \$ 250 / 5 x 1 mL
4.0 mg/mL each in CH_2Cl_2	6 comps.
Acenaphthene-d ₁₀	Naphthalene-d ₈
Chrysene-d ₁₂	Perylene-d ₁₂
1,4-Dichlorobenzene-d ₄	Phenanthrene-d ₁₀

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	\$ 25 / 1 x 1 mL
CLP-AS-PAK	SAVE 36% \$ 80 / 5 x 1 mL
2.0 mg/mL each in MeOH	3 comps.
2-Fluorophenol	2,4,6-Tribromophenol
Phenol-d ₅	

Base/Neutrals Surrogate Standard

CLP-BNS	\$ 25 / 1 x 1 mL
CLP-BNS-PAK	SAVE 36% \$ 80 / 5 x 1 mL
1.0 mg/mL each in CH ₂ Cl ₂	3 comps.
2-Fluorobiphenyl	p-Terphenyl-d ₁₄
Nitrobenzene-d ₅	

Phenol Mixture

M-8270-12-ASL	\$ 30 / 1 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	

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	\$ 75 / 1 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂	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	\$ 25 / 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	\$ 50 / 1 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂	7 comps.
Benzoic acid	Thiophenol
1-Chloronaphthalene	tris-(2,3-Dibromopropyl)phosphate
Dibenz[a,j]acridine	Tri-p-tolyl phosphate
Resorcinol	

M-8270-14B	\$ 35 / 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 *	\$ 35 / 1 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂ :MeOH (75:25)	5 comps.
1-Acetyl-2-thiourea	3-Picolyl chloride HCL
Diethyl sulfate	Toluene diisocyanate
Hexamethylphosphoramide	

Polynuclear Aromatic Hydrocarbon Mixture

M-8270-13-ASL	\$ 75 / 1 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂ :Benzene (50:50)	16 comps.
Acenaphthene	Chrysene
Acenaphthylene	Dibenz[a,h]anthracene
Anthracene	Fluoranthene
Benz[a]anthracene	Fluorene
Benzo[a]pyrene	Indeno[1,2,3-cd]pyrene
Benzo[b]fluoranthene	Naphthalene
Benzo[g,h,i]perylene	Phenanthrene
Benzo[k]fluoranthene	Pyrene

Organochlorine Pesticide Mix

M-8270-14-ASL	\$ 75 / 1 x 1 mL
2.0 mg/mL each in Acetone	17 comps.
Aldrin	Endosulfan I
α-BHC	Endosulfan II
β-BHC	Endosulfan sulfate
δ-BHC	Endrin
γ-BHC	Endrin aldehyde
4,4'-DDD	Heptachlor
4,4'-DDE	Heptachlor epoxide
4,4'-DDT	Methoxychlor
Dieldrin	

M-8270-15	\$ 95 / 1 x 1 mL
1.0 mg/mL each in CH ₂ Cl ₂ :MeOH (90:10)	13 comps.
Dibenzo[a,e]pyrene	Nicotine
1,2-Dibromo-3-chloropropane	5-Nitroacenaphthene
Diethyl stilbestrol	5-Nitro-o-anisidine
1,2-Dinitrobenzene	4-Nitrobiphenyl
1,4-Dinitrobenzene	Propylthiouracil
5,5-Diphenylhydantoin	Strychnine
Mestranol	

Pesticides

M-8270-16		\$ 50 / 1 x 1 mL
1000 µg/mL each in CH ₂ Cl ₂		10 comps.
Anilazine	Dichlone	Sulfoxide
Azinphos methyl	Dioxathion	Sulfallate
Barbamate	Mirex	Trifluralin
Demeton (mixed isomers)		

M-8270-17		\$ 50 / 1 x 1 mL
1000 µg/mL each in CH ₂ Cl ₂		7 comps.
Brominal	Dinex	Fluchloralin
Captafol	Dinocap	Nitrofen
Captan		

Carbamates/Pesticides

M-8270-18	\$ 75 / 1 x 1 mL
1000 µg/mL each in CH ₂ Cl ₂	6 comps.
Carbaryl	Mexacarbate
Carbofuran	Schradan (Octamethylpyrophosphoramide)
Ethyl carbamate	Phenobarbital

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 \$ 50 / 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 \$ 50 / 1 x 1 mL
1000 µg/mL each in CH₂Cl₂ 9 comps.

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

M-8270-21 \$ 35 / 1 x 1 mL
2.0 mg/mL each in Acetone 3 comps.

α-Chlordane	Endrin ketone
γ-Chlordane	

Semi-Volatile additions

M-8270-22 \$ 30 / 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 2 comps.

Benzidine	3,3'-Dimethoxybenzidine
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APP-9-126-10X \$ 30 / 1 x 1 mL
1.0 mg/mL in CH₂Cl₂

Methapyrilene

P-427S-10X \$ 34 / 1 x 1 mL
1.0 mg/mL in MeOH

Dinex

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

Alternate Source

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 \$ 105 / 1 x 1 mL
1000 µg/mL each in CH₂Cl₂:Benzene (75:25) 64 comps.

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

M-8270-AG02-ASL \$ 95 / 1 x 1 mL
1000 µg/mL each in CH₂Cl₂ 39 comps.

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



EPA Method 8000 Series

Alternate Source Line (ASL)

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

Alternate **Source**

M-8270-07 \$ 150 / 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 15 comps.

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

Additions to Method 8270

M-8270-13A-R \$ 85 / 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)
<i>o</i> -Anisidine	4,4'-Oxydianiline
5-Chloro-2-methylaniline	2-Picoline
<i>p</i> -Cresidine	Pyridine
2,4-Diaminotoluene	2,4,5-Trimethylaniline

M-8270-13B-R \$ 25 / 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 \$ 50 / 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- <i>p</i> -tolyl phosphate
Resorcinol	

M-8270-14B \$ 35 / 1 x 1 mL
2.0 mg/mL each in THF 5 comps.

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

M-8270-14C \$ 35 / 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 \$ 95 / 1 x 1 mL
1.0 mg/mL each in CH₂Cl₂:MeOH (90:10) 13 comps.

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

Pesticides

M-8270-16 \$ 50 / 1 x 1 mL
1000 µg/mL each in CH₂Cl₂ 10 comps.

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

M-8270-17 \$ 50 / 1 x 1 mL
1000 µg/mL each in CH₂Cl₂ 7 comps.

Brominal	Dinex	Fluchloralin
Captafol	Dinocap	Nitrofen
Captan		

Carbamates/Pesticides

M-8270-18 \$ 75 / 1 x 1 mL
1000 µg/mL each in CH₂Cl₂ 6 comps.

Carbaryl	Mexacarbate
Carbofuran	Schradan (Octamethylpyrophosphoramide)
Ethyl carbamate	Phenobarbital

Pesticides

M-8270-19 \$ 50 / 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 \$ 50 / 1 x 1 mL
1000 µg/mL each in CH₂Cl₂ 9 comps.

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

Semi-Volatile additions

M-8270-22 \$ 30 / 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 \$ 95 / 1 x 1 mL
Z-014C-R-PAK **SAVE 20%** \$ 380 / 5 x 1 mL
2.0 mg/mL each in Toluene:Hexane (50:50) 20 comps.

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

Semi-Volatile additions

M-8270-23-R1 \$ 50 / 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 4 comps.

3,3'-Dichlorobenzidine	<i>a,a</i> -Dimethylphenethylamine
3,3'-Dimethylbenzidine	<i>p</i> -Phenylenediamine

M-8270-24 \$ 50 / 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ 4 comps

Hexachlorophene	Pronamide
Isodrin	<i>o,o,o</i> -Triethylphosphorothioate

AS-E0060 \$ 32 / 1 x 1 mL
5.0 mg/mL in MeOH

N-Nitrosodiphenylamine

Method 8272 PAHs (GC/MS)

M-8272		\$ 45 / 1 x 1 mL	
At stated conc. in Dichloromethane		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		\$ 200 / 1 x 1 mL	
At stated conc. 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		\$ 60 / 1 x 1 mL	
1.0 mg/mL each in Acetone		17 comps.	
Aldrin	2,4-Dinitrotoluene		
Benzo[k]fluoranthene	Diphenylamine		
Benzo[a]pyrene	Fluorene		
Carbazole	Hexachlorobenzene		
4-Chloro-3-methylphenol	4-Methylphenol		
1-Chloronaphthalene	Naphthalene		
2-Chlorophenol	Phenanthrene		
Dibenzothiophene	Pyrene		
2,4-Dichlorophenol			

Internal Standard

Z-014J		\$ 80 / 1 x 1 mL	
Z-014J-PAK		SAVE 37% \$ 250 / 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		

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Method 8280A Dioxins & Furans by HRGC/LRMS

Dioxin Mixture

M-8280A		\$ 150 / 1 x 1 mL	
M-8280A-PAK		SAVE 20% \$ 600 / 5 x 1 mL	
5 µg/mL each in Toluene		5 comps.	
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin		
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	Octachlorodibenzo-p-dioxin		
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin			

Furan Mixture

M-8280B		\$ 150 / 1 x 1 mL	
M-8280B-PAK		SAVE 20% \$ 600 / 5 x 1 mL	
5 µg/mL each in Toluene		5 comps.	
2,3,7,8-Tetrachlorodibenzofuran	1,2,3,4,6,7,8-Heptachlorodibenzofuran		
1,2,3,7,8-Pentachlorodibenzofuran	Octachlorodibenzofuran		
1,2,3,4,7,8-Hexachlorodibenzofuran			

Column Performance Check

M-8280-CPC		\$ 200 / 1 x 1 mL	
5 µg/mL each in Toluene		7 comps.	
1,2,3,4-Tetrachlorodibenzo-p-dioxin	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin		
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin		
1,2,3,4,7-Pentachlorodibenzo-p-dioxin	2,3,7,8-Tetrachlorodibenzofuran		
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin			

Canadian Environmental Method Multi-Component Dioxin Mixtures

Custom Window Defining Mixture

D-WD	20,000 ng/mL in Toluene	\$ 1,100 / 1 x 1 mL
D-WD-2.5X	50,000 ng/mL in Toluene	\$ 2,000 / 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

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Custom Calibration Mixture

D-CAL	20,000 ng/mL in Toluene	\$ 900 / 1 x 1 mL
D-CAL-2.5X	50,000 ng/mL in Toluene	\$ 1,600 / 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

Column Performance Check

M-8280-CPC		\$ 200 / 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
1,2,3,4,6,7,8,9-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 \$ 75 / 1 x 1 mL
M-8310-PAK **SAVE 20%** \$ 300 / 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
Benzo[a]pyrene	Indeno[1,2,3-cd]pyrene
Benzo[b]fluoranthene	Naphthalene
Benzo[g,h,i]perylene	Phenanthrene
Benzo[k]fluoranthene	Pyrene

PAH Quality Control Calibration Mixture

M-610-QC \$ 35 / 1 x 1 mL
 At stated conc. in AcCN 16 comps.

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

Surrogate Standard

M-8310-SS \$ 10 / 1 x 1 mL
M-8310-SS-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
 0.1 mg/mL in Acetonitrile
 Decafluorobiphenyl

Internal Standard Post Supercritical Fluid Extraction

M-8310-SFE-IS-100X \$ 10 / 1 x 1 mL
M-8310-SFE-IS-100X-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
 20,000 µg/mL in AcCN:THF (50:50)
 Biphenyl

Florida Method PAH Mixture

Z-014G-FL \$ 85 / 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
Benzo[a]pyrene	Naphthalene
Benzo[b]fluoranthene	Phenanthrene
Benzo[g,h,i]perylene	Pyrene
Benzo[k]fluoranthene	1-Methylnaphthalene
Chrysene	2-Methylnaphthalene

Florida Administrative Code (continued) PAHs by HPLC

Performance Check Solution

M-610-QC-FL \$ 35 / 1 x 1 mL
M-610-QC-FL-PAK **SAVE 20%** \$ 140 / 5 x 1 mL
 At stated conc. in AcCN 18 comps.

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

Matrix Spiking Solution

M-610-MS \$ 30 / 1 x 1 mL
M-610-MS-PAK **SAVE 20%** \$ 120 / 5 x 1 mL
 At stated conc. in AcCN 6 comps.

Benz[a]pyrene (0.5 mg/mL)	2-Methylnaphthalene (5.0 mg/mL)
Chrysene (0.5 mg/mL)	Phenanthrene (0.5 mg/mL)
1-Methylnaphthalene (5.0 mg/mL)	Pyrene (0.5 mg/mL)

PAH Mix Additions

H-001S/002S-M-20X \$ 30 / 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 \$ 85 / 1 x 1 mL
M-8310-FL-PAK **SAVE 20%** \$ 340 / 5 x 1 mL
 0.5 mg/mL each in AcCN 18 comps.
M-8310-FL-SET \$ 360 / 18 x 1 mL

Acenaphthene	M-8310-FL-01	\$ 20
Acenaphthylene	M-8310-FL-02	20
Anthracene	M-8310-FL-03	20
Benz[a]anthracene	M-8310-FL-04	25
Benzo[a]pyrene	M-8310-FL-05	25
Benzo[b]fluoranthene	M-8310-FL-06	30
Benzo[g,h,i]perylene	M-8310-FL-07	30
Benzo[k]fluoranthene	M-8310-FL-08	30
Chrysene	M-8310-FL-09	25
Dibenz[a,h]anthracene	M-8310-FL-10	20
Fluoranthene	M-8310-FL-11	20
Fluorene	M-8310-FL-12	20
Indeno[1,2,3-cd]pyrene	M-8310-FL-13	35
1-Methylnaphthalene	M-8310-FL-14	20
2-Methylnaphthalene	M-8310-FL-15	20
Naphthalene	M-8310-FL-16	20
Phenanthrene	M-8310-FL-17	20
Pyrene	M-8310-FL-18	20

Polynuclear Aromatic Hydrocarbons (HPLC)

M-8310-QC-ATI \$ 55 / 1 x 1 mL
M-8310-QC-ATI-PAK **SAVE 20%** \$ 220 / 5 x 1 mL
 At stated conc. in AcCN 18 comps.

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



Method 8315/8315A Ketones/Aldehydes by HPLC

Aldehyde Mixture

M-8315 \$ 20 / 1 x 1 mL
M-8315-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
 1.0 mg/mL each in H₂O 2 comps.

Acetaldehyde Formaldehyde

Aldehyde Individuals

Acetaldehyde (1.0 mg/mL in H₂O) **M-8315-01** \$ 20 / 1 x 1 mL
 Formaldehyde (1.0 mg/mL in H₂O) **M-8315-02** \$ 20 / 1 x 1 mL

Aldehyde as DNPH Derivatives

M-8315-DNPH-10ML \$ 30 / 1 x 10 mL
 1.0 mg/mL each in MeOH 2 comps. as DNPH derivatives

Acetaldehyde Formaldehyde

Option 1

(Samples Collected from Water, Air, Soil, Waste or Stacks by Method 0011)

Carbonyl Mixture

M-8315-R1 \$ 65 / 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 \$ 90 / 1 x 1 mL
 0.1 mg/mL each in AcCN 12 comps. as DNPH derivatives

Acetaldehyde Heptanal
 Butanal (*Butyraldehyde*) Hexanal (*Hexaldehyde*)
 Crotonaldehyde Nonanal
 Cyclohexanone Octanal
 Decanal Pentanal (*Valeraldehyde*)
 Formaldehyde Propanal (*Propionaldehyde*)

Option 2

(Samples Collected from Indoor Air by Method 0100)

Carbonyl Mixture

M-8315-R2 \$ 75 / 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 \$ 120 / 1 x 1 mL
 0.1 mg/mL each in AcCN 15 comps. as DNPH derivatives

Acetaldehyde Hexanal (*Hexaldehyde*)
 Acetone Isovaleraldehyde
 Acrolein Pentanal (*Valeraldehyde*)
 Benzaldehyde Propanal (*Propionaldehyde*)
 Butanal (*Butyraldehyde*) *m*-Tolualdehyde
 Crotonaldehyde *o*-Tolualdehyde
 2,5-Dimethylbenzaldehyde *p*-Tolualdehyde
 Formaldehyde

Carbonyl Compound Set

M-8315-R3-10X-SET \$ 200 / 20 x 1 mL
 Each at 1.0 mg/mL in AcCN

Acetaldehyde (01) Heptanal (11)
 Acetone (02) Hexanal (12)
 Acrolein (03) Isovaleraldehyde (13)
 Benzaldehyde (04) Nonanal (14)
 Butanal (05) Octanal (15)
 Crotonaldehyde (06) Pentanal (16)
 Cyclohexanone (07) Propanal (17)
 Decanal (08) *m*-Tolualdehyde (18)
 2,5-Dimethylbenzaldehyde (09) *o*-Tolualdehyde (19)
 Formaldehyde (10) *p*-Tolualdehyde (20)

Carbonyl DNPH Derivative Set

M-8315-R-DNPH-SET \$ 250 / 20 x 1 mL
 Each at 0.1 mg/mL in AcCN 20 comps. as DNPH Derivatives

Acetaldehyde (01) Heptanal (11)
 Acetone (02) Hexanal (*Hexaldehyde*) (12)
 Acrolein (03) Isovaleraldehyde (13)
 Benzaldehyde (04) Nonanal (14)
 Butanal (*Butyraldehyde*) (05) Octanal (15)
 Crotonaldehyde (06) Pentanal (*Valeraldehyde*) (16)
 Cyclohexanone (07) Propanal (*Propionaldehyde*) (17)
 Decanal (08) *m*-Tolualdehyde (18)
 2,5-Dimethylbenzaldehyde (09) *o*-Tolualdehyde (19)
 Formaldehyde (10) *p*-Tolualdehyde (20)

Technical Note

For initial Method 8315 development, AccuStandard offers individual analyte sets (20 x 1 mL) for both the Carbonyl compounds and their corresponding DNPH derivatives. Use of these sets will allow the analytical chemist to rapidly establish individual analyte retention times and to troubleshoot possible extraction recovery problems.

Method 8316 Acrolein, Acrylamide, Acrylonitrile by HPLC

M-8316 * \$ 20 / 1 x 1 mL
 1.0 mg/mL each in Water 3 comps.

Acrolein Acrylonitrile
 Acrylamide

* ColdPAK required to maintain integrity of product.

Method 8318 N-Methylcarbamates by HPLC

N-Methylcarbamates

M-8318-SET \$ 140 / 10 x 1 mL
 Each at 0.1 mg/mL in MeOH

M-8318M \$ 60 / 1 x 1 mL
 Mixture, 0.1 mg/mL each in MeOH 10 comps.

Aldicarb (01) 3-Hydroxycarbofuran (06)
 Aldicarb sulfone (02) Methiocarb (07)
 Carbaryl (03) Methomyl (08)
 Carbofuran (04) Promecarb (09)
 Dioxacarb (05) Propoxur (10)



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

\$ 75 / 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

\$ 75 / 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. in AcCN:MeOH (50:50)

\$ 95 / 1 x 1 mL
13 comps.

Benzidine (250 µg/mL)	3,3'-Dimethylbenzidine (350 µg/mL)
Benzoylprop ethyl (350 µg/mL)	Diuron (450 µg/mL)
Caffeine (300 µg/mL)	Linuron (1,300 µg/mL)
Carbaryl (1,000 µg/mL)	Monuron (400 µg/mL)
o-Chlorophenyl thiourea (750 µg/mL)	Rotenone (3,200 µg/mL)
3,3'-Dichlorobenzidine (250 µg/mL)	Siduron (450 µg/mL)
3,3'-Dimethoxybenzidine (750 µg/mL)	

Performance Check Solution

M-553-PC

0.1 mg/mL in AcCN

\$ 20 / 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 \$ 40 / 1 x 1 mL
OMT-001-PAK **SAVE 20%** \$ 160 / 5 x 1 mL
2000 µg/mL each in CH₂Cl₂ 4 comps.

Butyltin trichloride	Tetrabutyltin
Dibutyltin dichloride	Tributyltin chloride

Tri-n-propyltin Surrogate Standard

OMT-003 \$ 30 / 1 x 1 mL
OMT-003-PAK **SAVE 20%** \$ 120 / 5 x 1 mL
2000 µg/mL in CH₂Cl₂

Tri-n-propyltin chloride

Tetra-n-propyl tin Internal Standard

OMT-005 \$ 40 / 1 x 1 mL
OMT-005-PAK **SAVE 20%** \$ 160 / 5 x 1 mL
2000 µg/mL in CH₂Cl₂

Tetra-n-propyl tin

Organometallic Phenyltin Chloride Standard

OMT-002 \$ 40 / 1 x 1 mL
OMT-002-PAK **SAVE 20%** \$ 160 / 5 x 1 mL
2000 µg/mL each in CH₂Cl₂ 4 comps.

Diphenyltin dichloride	Tetraphenyltin
Phenyltin trichloride	Triphenyltin chloride

Triphenyltin Chloride Surrogate Standard

OMT-004 \$ 30 / 1 x 1 mL
OMT-004-PAK **SAVE 20%** \$ 120 / 5 x 1 mL
2000 µg/mL in CH₂Cl₂

Triphenyltin chloride

Tetraphenyltin Internal Standard

OMT-006 \$ 30 / 1 x 1 mL
OMT-006-PAK **SAVE 20%** \$ 120 / 5 x 1 mL
2000 µg/mL in CH₂Cl₂

Tetraphenyltin



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* ColdPAK required to maintain integrity of product.

EPA Method 8000 Series

Explosives



Method 8330 Explosives

TNT Metabolites

Analyte	Concentration (µg/mL)	Solvent	Cat. No.	Price (1 mL)
2-Amino-4,6-dinitrotoluene	100	AcCN:MeOH (50:50)	M-8330-13-0.1X	\$ 20
4-Amino-2,6-dinitrotoluene	100	AcCN:MeOH (50:50)	M-8330-14-0.1X	20
2,4-Diamino-6-nitrotoluene	100	AcCN	M-8330-ADD-12	40
2,6-Diamino-4-nitrotoluene	100	AcCN	M-8330-ADD-13	40
1,3-Dinitrobenzene	100	AcCN:MeOH (50:50)	M-8330-01-0.1X	20
2,4-Dinitrotoluene	100	AcCN:MeOH (50:50)	M-8330-02-0.1X	20
2,6-Dinitrotoluene	100	AcCN:MeOH (50:50)	M-8330-03-0.1X	20
3,5-Dinitrotoluene	100	AcCN:MeOH (50:50)	M-8330-ADD-39	75
Hexanitrostilbene (HNS)	100	AcCN	M-8330-ADD-26	60
2-Hydroxylamino-4,6-dinitrotoluene ★	100	AcCN	M-8330-ADD-18 *	115
4-Hydroxylamino-2,6-dinitrotoluene ★	100	AcCN	M-8330-ADD-20 *	115
Nitrobenzene	100	AcCN:MeOH (50:50)	M-8330-06-0.1X	20
2-Nitrotoluene	100	AcCN:MeOH (50:50)	M-8330-07-0.1X	15
3-Nitrotoluene	100	AcCN:MeOH (50:50)	M-8330-08-0.1X	15
4-Nitrotoluene	100	AcCN:MeOH (50:50)	M-8330-09-0.1X	15
2,2',6,6'-Tetranitro-4,4'-azoxytoluene	100	AcCN:MeOH (50:50)	M-8330-ADD-15	75
2,2',6,6'-Tetranitro-4,4'-azotoluene	100	AcCN	M-8330-ADD-17	100
4,4',6,6'-Tetranitro-2,2'-azotoluene	100	AcCN	M-8330-ADD-19	100
TNT	100	AcCN:MeOH (50:50)	M-8330-11-0.1X	20
1,3,5-Trinitrobenzene	100	AcCN:MeOH (50:50)	M-8330-12-0.1X	20

Additional Explosives by HPLC

Ammonium picrate	100	AcCN	M-8330-ADD-27	25
DEGDN	100	AcCN:MeOH (50:50)	M-8330-ADD-36	30
1,2-Diaminopropane	100	MeOH	M-8330-ADD-9	20
2,3-Dimethyl-2,3-dinitrobutane (DMNB)	100	AcCN	M-8330-ADD-21	30
3,5-Dinitroaniline	100	AcCN:MeOH (50:50)	M-8330-ADD-4	30
1,3-Dinitrobenzene	100	AcCN:MeOH (50:50)	M-8330-01-0.1X	20
1,2-Dinitroglycerin	100	AcCN:MeOH (50:50)	M-8330-ADD-33	20
1,3-Dinitroglycerin	100	AcCN:MeOH (50:50)	M-8330-ADD-34	20
EGDN	100	AcCN	M-8330-ADD-5	26
Guanidine nitrate	100	MeOH	M-8330-ADD-10	20
Hexamethylene diperoxide diamine (HMDD)	100	AcCN	M-8330-ADD-45	20
NEW Hexamethylenetriperoxide diamine (HMTD)	1000	AcCN	M-8330-ADD-45-10X	30
Hexamethylenetriperoxide diamine (HMTD)	100	AcCN	M-8330-ADD-25	75
Hexanitrodiphenylamine	100	AcCN:MeOH (50:50)	M-8330-ADD-37	40
Hexanitrostilbene (HNS)	100	AcCN	M-8330-ADD-26	60
HMX	100	AcCN:MeOH (50:50)	M-8330-04-0.1X	20
	1000	AcCN:MeOH (50:50)	M-8330-04	30
Hydrazine	100	MeOH	M-8330-ADD-8	20
N-Nitrodimethylamine	100	AcCN	M-8330-ADD-40	75
Nitroglycerin	100	EtOH	M-8330-ADD-1	20
	1000	EtOH	M-8330-ADD-1-10X	30
1-Nitroglycerin	100	AcCN:MeOH (50:50)	M-8330-ADD-31	20
2-Nitroglycerin	100	AcCN:MeOH (50:50)	M-8330-ADD-32	20
Nitroguanidine	100	MeOH	M-8330-ADD-6	20
Nitromethane	100	MeOH	M-8330-ADD-7	20
PETN	100	MeOH	M-8330-ADD-2	20
	1000	MeOH	M-8330-ADD-2-10X	30
Picramic acid	100	AcCN:MeOH (50:50)	M-8330-ADD-22	30
Picric acid	100	AcCN:MeOH (50:50)	M-8330-ADD-3	20
PYX(2,6-bis,bis-(picrylamine)-3,5-dinitropyridine	100	AcCN	M-8330-ADD-11	20
RDX	100	AcCN:MeOH (50:50)	M-8330-05-0.1X	20
TEGDN	100	AcCN:MeOH (50:50)	M-8330-ADD-41-R1	30
Tetryl	100	AcCN:MeOH (50:50)	M-8330-10-0.1X	20
1,3,5-Triamino-2,4,6-trinitrobenzene (TATB)	40	Dimethyl formamide	M-8330-ADD-14-DMF	40
Triacetone triperoxide (TATP)	100	AcCN	M-8330-ADD-24 *	95
2,4,6-Triaminotoluene trihydrochloride	N/A	5 mg	M-8330-ADD-23N-5MG	150
Trimethylolethane trinitrate	100	AcCN:MeOH (50:50)	M-8330-ADD-28	30
2,4,6-Trinitroresorcinol	100	AcCN:MeOH (50:50)	M-8330-ADD-29	60

★ 3 month stability

* ColdPAK required to maintain integrity of product.

Explosives by HPLC Set

M-8330-R-SET * \$ 175 / 14 x 1 mL

Each at 100 µg/mL in AcCN:MeOH (50:50)

M-8330-R-10X-SET * \$ 210 / 14 x 1 mL

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

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

Technical Note

DMNB (M-8330-ADD-21) is a required taggant added to commercially manufactured plastic explosives.

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 * \$ 40 / 1 x 1 mL

0.1 mg/mL each in AcCN:MeOH (50:50)

M-8330A-10X * \$ 50 / 1 x 1 mL

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

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

M-8330A-R * \$ 45 / 1 x 1 mL

0.1 mg/mL each in AcCN:MeOH (50:50)

M-8330A-R-10X * \$ 55 / 1 x 1 mL

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

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 \$ 60 / 1 x 1 mL

0.1 mg/mL each in AcCN:MeOH (50:50)

M-8330-R-0.5X \$ 85 / 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 \$ 15 / 1 x 1 mL

M-8330-IS-PAK **SAVE 20%** \$ 60 / 5 x 1 mL

1.0 mg/mL in MeOH

3,4-Dinitrotoluene

Method 8410 Semi-Volatiles by GC/FTIR

Internal Standard

M-8410-IS \$ 30 / 1 x 1 mL

M-8410-IS-PAK **SAVE 20%** \$ 120 / 5 x 1 mL

2.0 mg/mL each in CH₂Cl₂

1-Fluoronaphthalene	p-Terphenyl-d ₁₀
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Method 8430 bis(2-Chloroethyl)ether & Hydrolysis Products

M-8430 \$ 20 / 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	

* ColdPAK required to maintain integrity of product.

M-8330B * \$ 25 / 1 x 1 mL

0.1 mg/mL each in AcCN:MeOH (50:50)

M-8330B-10X * \$ 40 / 1 x 1 mL

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

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

M-8330B-R * \$ 30 / 1 x 1 mL

0.1 mg/mL each in AcCN:MeOH (50:50)

M-8330B-R-10X * \$ 45 / 1 x 1 mL

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

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

M-8330B-R2 * \$ 30 / 1 x 1 mL

0.1 mg/mL each in AcCN:MeOH (50:50)

M-8330B-R2-10X * \$ 40 / 1 x 1 mL

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

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

Surrogate Standard

M-8330-SS \$ 20 / 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 \$ 20 / 1 x 1 mL

M-8440-PAK **SAVE 20%** \$ 80 / 5 x 1 mL

At stated conc. in Tetrachloroethene

Chlorobenzene	(0.10 w/w %)	Isooctane	(0.15 w/w %)
n-Hexadecane	(0.15 w/w %)		

Silica Gel Cleanup Calibration Solution

M-8440-SGC \$ 10 / 1 x 1 mL

M-8440-SGC-PAK **SAVE 20%** \$ 40 / 5 x 1 mL

10.0 mg/mL in Tetrachloroethene

Corn Oil

Total Petroleum Hydrocarbon Concentrate Mix

M-8440-CON \$ 30 / 1 x 1 mL

M-8440-CON-PAK **SAVE 20%** \$ 120 / 5 x 1 mL

3 comps.

Chlorobenzene	(25.0 vol %)	Isooctane	(37.5 vol %)
n-Hexadecane	(37.5 vol %)		



REACH Statement

In an effort to ensure that all chemicals are tested and used in safe ways, the European Union has adopted 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
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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 Set

C-CAN-SET

\$ 150 / 4 x 1 mL (C-CAN-01, C-CAN-02, C-CAN-03, C-CAN-04)

PCB Congener Mix #1

C-CAN-01 \$ 45 / 1 x 1 mL

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

PCB Congener Mix #3

C-CAN-03 \$ 45 / 1 x 1 mL

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

PCB Congener Mix #2

C-CAN-02 \$ 45 / 1 x 1 mL

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

PCB Congener Mix #4

C-CAN-04 \$ 45 / 1 x 1 mL

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

PCB Congener Formulation Quebec Ministry of Environment

PCB Congener Mix

C-QME-01 \$ 125 / 1 x 1 mL

At stated conc. in Isooctane (Congener No.)	41 comps. ng/mL
2,2',4-Trichlorobiphenyl (17)	500
2,2',5-Trichlorobiphenyl (18)	2000
2,4,4'-Trichlorobiphenyl (28)	2000
2,4',5-Trichlorobiphenyl (31)	1500
2',3,4-Trichlorobiphenyl (33)	2000
2,2',3,5'-Tetrachlorobiphenyl (44)	2000
2,2',4,5'-Tetrachlorobiphenyl (49)	2000
2,2',5,5'-Tetrachlorobiphenyl (52)	2000
2,3',4',5-Tetrachlorobiphenyl (70)	2000
2,4,4',5-Tetrachlorobiphenyl (74)	2000
2,2',3,3',4-Pentachlorobiphenyl (82)	500
2,2',3,4,4',5-Pentachlorobiphenyl (87)	2000
2,2',3,5',6-Pentachlorobiphenyl (95)	1000
2,2',4,4',5-Pentachlorobiphenyl (99)	2000
2,2',4,5,5'-Pentachlorobiphenyl (101)	2000
2,3,3',4,4'-Pentachlorobiphenyl (105)	500
2,3,3',4,4',6-Pentachlorobiphenyl (110)	2000
2,3',4,4',5-Pentachlorobiphenyl (118)	2000
2,2',3,3',4,4'-Hexachlorobiphenyl (128)	2000
2,2',3,3',4,6'-Hexachlorobiphenyl (132)	1000
2,2',3,4,4',5'-Hexachlorobiphenyl (138)	2000
2,2',3,4',5,6'-Hexachlorobiphenyl (149)	2000
2,2',3,5,5',6-Hexachlorobiphenyl (151)	2000
2,2',4,4',5,5'-Hexachlorobiphenyl (153)	2000
2,3,3',4,4',5-Hexachlorobiphenyl (156)	2000
2,3,3',4,4',6-Hexachlorobiphenyl (158)	500
3,3',4,4',5,5'-Hexachlorobiphenyl (169)	2000
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)	2000
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)	2000
2,2',3,3',4,4',5,6-Heptachlorobiphenyl (177)	2000
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)	2000
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)	2000
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)	2000
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)	2000
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)	2000
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)	2000
2,2',3,3',4,4',5,5',6-Octachlorobiphenyl (199)	1500
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)	2000
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (206)	2000
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (208)	2000
Decachlorobiphenyl (209)	2000

Dioxins: Calibration & Window Defining Mixtures (Canadian Environmental Methods)

Custom Window Defining Mixture

D-WD

20,000 ng/mL in Toluene

D-WD-2.5X

50,000 ng/mL in Toluene

\$ 1,100 / 1 x 1 mL

\$ 2,000 / 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

20,000 ng/mL in Toluene

D-CAL-2.5X

50,000 ng/mL in Toluene

\$ 900 / 1 x 1 mL

\$ 1,600 / 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)

\$ 110 / 1 x 1 mL

24 comps

Acenaphthene	Dibenz[a,h]anthracene
Acenaphthylene	Dibenzo[a,h]pyrene
Anthracene	Dibenzo[a,i]pyrene
Benz[a]anthracene	Dibenzo[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
Benzo[a]pyrene	Naphthalene
Benzo[e]pyrene	Phenanthrene
Chrysene	Pyrene



Canadian Methods

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

\$ 95 / 5 x 1 mL

8 comps.

Compound	0.05X	0.1X	0.2X	0.5X	1X
n-Decane	12.5	25	50	125	250
n-Hexane	12.5	25	50	125	250
Toluene	12.5	25	50	125	250
Benzene	12.5	25	50	125	250
o-Xylene	12.5	25	50	125	250
m-Xylene	6.25	12.5	25	62.5	125
p-Xylene	6.25	12.5	25	62.5	125
Ethylbenzene	12.5	25	50	125	250

Medium & Heavy Petroleum Fraction

CCME-MHPF-SET

At stated conc. (µg/mL) in n-Hexane

\$ 75 / 3 x 1 mL

3 comps.

Compound	0.1X	0.5X	1X
n-Decane	40	200	400
n-Hexadecane	40	200	400
n-Tetraatriacontane	40	200	400

Performance Check Standard

CCME-QC

\$ 45 / 1 x 1 mL

CCME-QC-PAK

\$ 180 / 5 x 1 mL

40 µg/mL each in n-Hexane:Cyclohexane (50:50)
2 comps.

n-Pentacontane
n-Tetracontane

Spike Standard

CCME-SPIKE

\$ 30 / 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

\$ 35 / 1 x 1 mL

1000 µg/mL each in Hexane:CH₂Cl₂ (85:15)

11 comps.

Acenaphthene
Anthracene
Benzo[a]pyrene
Chrysene
n-Decan
n-Dodecane
n-Dotriacontane
n-Heneicosane
n-Hexadecane
n-Octacosane
Naphthalene

Canadian Atlantic RBCA VPH Mix

CCME-VPH

\$ 30 / 1 x 1 mL

1000 µg/mL each in MeOH

12 comps.

Benzene
n-Decane
Ethylbenzene
n-Heptane
n-Hexane
1-Methyl-3-ethylbenzene
n-Octane
Toluene
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
o-Xylene
p-Xylene

Surrogate Standard

CCME-EPH/SS

\$ 20 / 1 x 1 mL

1000 µg/mL each in CH₂Cl₂

2 comps.

n-Dotriacontane
Isobutylbenzene

Surrogate Standard

CCME-VPH/SS

\$ 15 / 1 x 1 mL

1000 µg/mL in MeOH

Isobutylbenzene

Canadian Drinking Water Brownfield Regulation

Phenoxyacid Herbicides Mix

CCME-CDW-PHERB

\$ 45 / 1 x 1 mL

1000 µg/mL each in Acetone

11 comps.

Bromoxynil
2,4-D
Dicamba
2,4-Dichlorophenol
Diclofop methyl
Dinoseb
Pentachlorophenol
Picloram
2,4,5-T
2,3,4,6-Tetrachlorophenol
2,4,6-Trichlorophenol

Carbamates Mix

CCME-CDW-CARB

\$ 30 / 1 x 1 mL

100 µg/mL each in AcCN

5 comps.

Aldicarb
Bendiocarb
Carbaryl
Carbofuran
Triallate

Chlorinated Pesticide Mix

CCME-CDW-CPEST

\$ 40 / 1 x 1 mL

200 µg/mL each in Hexane:Toluene (50:50)

14 comps.

Aldrin
γ-BHC
α-Chlordane
γ-Chlordane
2,4'-DDE
4,4'-DDE
2,4'-DDT
4,4'-DDT
Dieldrin
Heptachlor
Heptachlor epoxide (Isomer B)
Methoxychlor
Oxychlordane Isomer
Trifluralin



Regional Standards

Municipal & Industrial Strategy for Abatement (MISA) - Canadian

MISA Analytical Test Groups

Set MISA-VH-1/VH-2-SET \$ 60 / 2 x 1 mL (MISA-VH-1, MISA-VH-2)

Group 16: Volatiles, Halogenated

MISA-VH-1 \$ 40 / 1 x 1 mL
MISA-VH-1-PAK **SAVE 20%** \$ 160 / 5 x 1 mL
 0.5 mg/mL each in MeOH 22 comps.

Bromoform	trans-1,2-Dichloroethene
Carbon tetrachloride	1,1-Dichloroethene
Chlorobenzene	1,2-Dichloropropane
Chloroform	cis-1,3-Dichloropropene*
Dibromochloromethane	trans-1,3-Dichloropropene**
1,2-Dibromoethane	Methylene chloride
1,2-Dichlorobenzene	1,1,2,2-Tetrachloroethane
1,3-Dichlorobenzene	Tetrachloroethene
1,4-Dichlorobenzene	1,1,1-Trichloroethane
1,2-Dichloroethane	1,1,2-Trichloroethane
1,1-Dichloroethane	Trichloroethene

* cis (1.06 x conc.)

** trans (0.94 x conc.)

MISA-VH-2 \$ 25 / 1 x 1 mL
MISA-VH-2-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
 0.5 mg/mL each in MeOH 5 comps.

Bromomethane	Trichlorofluoromethane
Chloroethane	Vinyl chloride
Chloromethane	

Group 17: Volatiles, Non-Halogenated

MISA-VNH \$ 30 / 1 x 1 mL
MISA-VNH-PAK **SAVE 20%** \$ 120 / 5 x 1 mL
 0.5 mg/mL each in MeOH 7 comps.

Benzene	o-Xylene
Ethylbenzene	m-Xylene
Styrene	p-Xylene
Toluene	

Group 18: Volatiles, Water Soluble

MISA-VWS \$ 15 / 1 x 1 mL
 2.0 mg/mL each in Water 2 comps.

Acrolein	Acrylonitrile
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Group 19: Extractables, Base-Neutral

Z-014G \$ 65 / 1 x 1 mL
Z-014G-PAK **SAVE 20%** \$ 260 / 5 x 1 mL
 2.0 mg/mL each in CH₂Cl₂: Benzene (50:50) 16 comps.

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

MISA-BN-1 \$ 35 / 1 x 1 mL
 2.0 mg/mL each in CH₂Cl₂ 8 comps.

Biphenyl	1-Methylnaphthalene
Camphene	2-Methylnaphthalene
1-Chloronaphthalene	5-Nitroacenaphthene
2-Chloronaphthalene	Perylene

MISA-BN-2 \$ 35 / 1 x 1 mL
 2.0 mg/mL each in CH₂Cl₂ 8 comps.

Benzylbutylphthalate	4-Chlorophenyl phenyl ether
4-Bromophenyl phenyl ether	Di-n-butyl phthalate
bis(2-Chloroethyl) ether	Di-n-octyl phthalate
bis(2-Chloroisopropyl) ether	bis(2-Ethylhexyl)phthalate

MISA-BN-3 \$ 35 / 1 x 1 mL
 2.0 mg/mL each in CH₂Cl₂ 8 comps.

bis(2-Chloroethoxy)methane	Diphenylether
2,4-Dinitrotoluene	Indole
2,6-Dinitrotoluene	N-Nitroso-diphenylamine
Diphenylamine	N-Nitroso-di-n-propyl amine

Group 20: Extractables, Acid (Phenolics)

MISA-A \$ 60 / 1 x 1 mL
MISA-A-PAK **SAVE 20%** \$ 240 / 5 x 1 mL
 2.0 mg/mL each in CH₂Cl₂ 20 comps.

4-Chloro-3-methylphenol	4-Nitrophenol
2-Chlorophenol	Pentachlorophenol
2-Cresol	Phenol
3-Cresol	2,3,4,5-Tetrachlorophenol
4-Cresol	2,3,4,6-Tetrachlorophenol
2,4-Dichlorophenol	2,3,5,6-Tetrachlorophenol
2,6-Dichlorophenol	2,3,4-Trichlorophenol
2,4-Dimethylphenol	2,3,5-Trichlorophenol
4,6-Dinitro-2-cresol	2,4,5-Trichlorophenol
2,4-Dinitrophenol	2,4,6-Trichlorophenol

Group 22: Organochlorine Pesticides

MISA-PEST \$ 75 / 1 x 1 mL
MISA-PEST-PAK **SAVE 20%** \$ 300 / 5 x 1 mL
 2.0 mg/mL each in Acetone 18 comps.

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

Group 23: Extractables, Chlorinated Neutrals

MISA-NC \$ 40 / 1 x 1 mL
 2.0 mg/mL each in CH₂Cl₂ 12 comps.

Hexachlorobenzene	1,2,3,4-Tetrachlorobenzene
Hexachlorobutadiene	1,2,3,5-Tetrachlorobenzene
Hexachlorocyclopentadiene	1,2,4,5-Tetrachlorobenzene
Hexachloroethane	1,2,3-Trichlorobenzene
Octachlorostyrene	1,2,4-Trichlorobenzene
Pentachlorobenzene	2,4,5-Trichlorotoluene

Group 27: Polychlorinated Biphenyls Solutions and Sets

Each at 35 µg/mL	Isooctane	MeOH	Price / 1 mL
Aroclor 1016	C-216S	C-216S-M	\$ 15
Aroclor 1221	C-221S	C-221S-M	15
Aroclor 1232	C-232S	C-232S-M	15
Aroclor 1242	C-242S	C-242S-M	15
Aroclor 1248	C-248S	C-248S-M	15
Aroclor 1254	C-254S	C-254S-M	15
Aroclor 1260	C-260S	C-260S-M	15
Aroclor 1262	C-262S	C-262S-M	15
Aroclor 1268	C-268S	C-268S-M	15
Set of 9 above	Z-008S-SET	\$ 78	Z-008S-M-SET \$ 78

PCB Congener Standards

PCB Congener Mixture

PCB-W22 \$ 35 / 1 x 1 mL

10 µg/mL each in Isooctane 15 comps.

PCB-W22-PAK **SAVE 20%** \$ 140 / 5 x 1 mL

PCB-W22-SET \$ 225 / 15 x 1 mL

100 µg/mL in Isooctane (Set of Individual Solutions)

No.	
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 \$ 75 / 1 x 10 mL

At stated conc. in Isooctane 2 comps.

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

ISO 6468 PCB Standard

ISO6468-PCB \$ 35 / 1 x 1 mL

10 µg/mL each in Hexane 7 comps.

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

PCB Congener Content

Evaluation Mix #1

AE-00059 \$ 25 / 1 x 1 mL

AE-00059-10ML \$ 95 / 1 x 10 mL

10 µg/mL each in Isooctane 6 comps.

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

PCB Congener Content

Evaluation Mix #2

AE-00060 \$ 30 / 1 x 1 mL

AE-00060-10ML \$ 95 / 1 x 10 mL

10 µg/mL each in Isooctane 3 comps.

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

Congener Calibration Mix #27

AE-00081-10ML \$ 325 / 1 x 1 mL

100 µg/mL each in Isooctane 10 comps.

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

Congener Calibration Mix

AE-00061 \$ 35 / 1 x 1 mL

AE-00061-10ML \$ 180 / 1 x 10 mL

10 µg/mL each in Isooctane 14 comps.

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

Internal Standards

Each in 100 µg/mL in Isooctane

C-030S-TP \$ 15 / 1 x 1 mL

2,4,6-Trichlorobiphenyl

C-209S-TP \$ 15 / 1 x 1 mL

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

Technical Note

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



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Volatiles

DIN 38407-2 Benzene Standard

Determination of water, waste water and sludge for low volatile halogenated hydrocarbons by GC.

DIN38407-2-BENZ \$ 20 / 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 \$ 25 / 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.	Price / Unit
1,1,1-Trichloroethane	AE-00034-CAL-SET	\$ 45 / 5 x 1 mL
Trichloroethene	AE-00035-CAL-SET	45 / 5 x 1 mL
Tetrachloroethene	AE-00036-CAL-SET	45 / 5 x 1 mL
Dichloromethane	AE-00037-CAL-SET	45 / 5 x 1 mL
Carbon tetrachloride	AE-00038-CAL-SET	45 / 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 \$ 22 / 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 \$ 35 / 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 \$ 60 / 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 \$ 70 / 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.

Compound	Each at 100 µg/mL in MeOH	
	Cat. No.	Price / 1 mL
1,1,1-Trichloroethane	APP-9-202	\$ 12
Trichloroethene	APP-9-204	12
Tetrachloroethene	APP-9-194	12
Dichloromethane	APP-9-074	12
Carbon tetrachloride	APP-9-036	12

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 \$ 68 / 1 x 1 mL
500 µg/mL each in MeOH 12 comps.

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

Explosives

DIN 38407-21 Explosives

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

DIN38407-21-A \$ 95 / 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 \$ 65 / 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 \$ 15 / 1 x 1 mL
2 µg/mL each in Acetonitrile 6 comps.

Fluoranthene	Benzo[a]pyrene
Benzo[b]fluoranthene	Benzo[k]fluoranthene
Benzo[g,h,i]perylene	Indeno[1,2,3-cd]pyrene

DIN 38407-18 PAH Solution

Examination of water, wastewater, and sludge for the determination of 15 polycyclic aromatic hydrocarbons (PAH) by HPLC with fluorescence detection.

DIN38407-18 \$ 45 / 1 x 1 mL
10 µg/mL each in Acetonitrile 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 \$ 45 / 1 x 1 mL
10 µg/mL each in Acetonitrile 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 \$ 48 / 1 x 1 mL
AE-00025-10ML \$ 240 / 1 x 10 mL
At stated conc. in Acetonitrile 16 comps.

Acenaphthene (25 µg/mL)	Chrysene (20 µg/mL)
Acenaphthylene (25 µg/mL)	Dibenz[a,h]anthracene (40 µg/mL)
Anthracene (25 µg/mL)	Fluoranthene (40 µg/mL)
Benzo[a]anthracene (10 µg/mL)	Fluorene (40 µg/mL)
Benzo[b]fluoranthene (25 µg/mL)	Indeno[1,2,3-cd]pyrene (25 µg/mL)
Benzo[k]fluoranthene (10 µg/mL)	Naphthalene (50 µg/mL)
Benzo[g,h,i]perylene (25 µg/mL)	Phenanthrene (98%) (30 µg/mL)
Benzo[a]pyrene (20 µg/mL)	Pyrene (40 µg/mL)

PAH Mix #2

For European methods according to customer requests.

AE-00045 \$ 16 / 1 x 1 mL
AE-00045-10ML \$ 80 / 1 x 10 mL
At stated conc. in Acetonitrile 7 comps.

Benzo[b]fluoranthene (2 µg/mL)	Fluoranthene (10 µg/mL)
Benzo[k]fluoranthene (2 µg/mL)	Indeno[1,2,3-cd]pyrene (2 µg/mL)
Benzo[g,h,i]perylene (2 µg/mL)	Perylene (10 µg/mL)
Benzo[a]pyrene (2 µg/mL)	

PAH Mix #3

German method for drinking water analysis.

AE-00032 \$ 20 / 1 x 1 mL
AE-00032-10ML \$ 100 / 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 \$ 24 / 1 x 1 mL
AE-00033-10ML \$ 120 / 1 x 10 mL
In Acetonitrile 7 comps.

Benzo[b]fluoranthene (20 µg/mL)	Fluoranthene (50 µg/mL)
Benzo[k]fluoranthene (20 µg/mL)	Indeno[1,2,3-cd]pyrene (40 µg/mL)
Benzo[g,h,i]perylene (20 µg/mL)	Perylene (20 µg/mL)
Benzo[a]pyrene (20 µg/mL)	

ISO/DIS 22032 PBDEs in Sediment & Sludge

DRAFT INTERNATIONAL STANDARD

ISO/DIS 22032 Calibration Curve Set

ISO/DIS-22032-SET

At stated conc. (ng/mL) in Isooctane

ISO/DIS-22032 (Congener No.)	01	02	03	04	05	06	07
2,2',4,4'-Tetrabromodiphenyl ether (#47)	5	12.5	25	50	100	150	250
2,2',4,4',5-Pentabromodiphenyl ether (#99)	5	12.5	25	50	100	150	250
2,2',4,4',6-Pentabromodiphenyl ether (#100)	5	12.5	25	50	100	150	250
2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	5	12.5	25	50	100	150	250
2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	5	12.5	25	50	100	150	250
2,2',3,4,4',5',6-Heptabromodiphenyl ether (#183)	5	12.5	25	50	100	150	250
2,3,3',4,4',5,5',6-Octabromodiphenyl ether (#205)	5	12.5	25	50	100	150	250
2,2',3,3',4,4',5,5',6,6'-Decabromodiphenyl ether (#209)	25	50	100	200	500	700	1000

\$ 475 / 7 x 1 mL
8 comps. each

Internal Standard for BDE# 47, 99 and 100

ISO22032-IS-1-5ML \$ 50/1 x 5 mL
ISO22032-IS-1-10ML \$ 75/1 x 10 mL
100 ng/mL each in Isooctane

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

Internal Standard for BDE# 153, 154 and 183

ISO22032-IS-2-5ML \$ 50/1 x 5 mL
ISO22032-IS-2-10ML \$ 75/1 x 10 mL
100 ng/mL each in Isooctane

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

Aliphatic, Aromatic Amines and Derivatives

Aryl Amine Multi-Component Solution

AE-00049-SET
\$ 55 / 2 x 1 mL

10 µg/mL each in Ethyl acetate

24 comps. (Includes AE-00049-R1 plus RAC-08)

AE-00049-R1
\$ 45 / 1 mL

10 µg/mL each 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

RAC-08
\$ 25 / 1 mL

100 µg/mL each in Pyridine

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
\$ 45 / 1 x 1 mL

10 µg/mL in MtBE

7 comps.

Bromochloroacetic acid
 Dalapon
 Dibromoacetic acid
 Dichloroacetic acid
 Bromoacetic acid
 Chloroacetic acid
 Trichloroacetic acid

EFSA for Isopropylthioxanthone (ITX)

Responding to the hazard found in Italy, France, Spain, and Portugal, AccuStandard has 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
\$ 45 / 1 x 1 mL

1.0 mg/mL in Isooctane

2-Isopropylthioxanth-9-one

Isopropylthioxanthone (ITX)

Mixed Isomers
EFSA-ITX-02
\$ 25 / 1 x 1 mL

1.0 mg/mL in Isooctane

2- and 4- Isopropylthioxanth-9-one



Service with a smile

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 / Congener Mix #1

AE-00010 \$ 64 / 1 x 1 mL

AE-00010-10ML \$ 320 / 1 x 10 mL

At stated conc. (µg/mL) in Toluene 31 comps.

2,4,4'-Trichlorobiphenyl	1
2,2',5,5'-Tetrachlorobiphenyl	1
2,2',4,5,5'-Pentachlorobiphenyl	1
2,2',3,4,4',5'-Hexachlorobiphenyl	1
2,2',4,4',5,5'-Hexachlorobiphenyl	1
2,2',3,4,4',5,5'-Heptachlorobiphenyl	1
Aldrine	10
cis-Chlordane	10
trans-Chlordane	10
oxy-Chlordane	10
o,p'-DDD	10
p,p'-DDD	10
o,p'-DDE	10
p,p'-DDE	10
o,p'-DDT	10
p,p'-DDT	10
Dieldrine	10
Endosulfan I	10
Endosulfan II	10
Endrine	10
α-HCH	10
β-HCH	10
γ-HCH	10
δ-HCH	10
Heptachlor	10
cis-Heptachlorepoxide	10
trans-Heptachlorepoxide	10
Hexachlorbenzene	10
Isodrin	10
Methoxychlor	10
Mirex	10

Pesticide Mix #2

AE-00011 \$ 62 / 1 x 1 mL

AE-00011-10ML \$ 310 / 1 x 10 mL

10 µg/mL each in Toluene 22 comps.

Anilazine	Tecnacene
Captan	Tetradifon
Chlorthalonil	Tetrasul
Clorfenson	Tridiametol
Dichlofluanid	Trifluar
Dicofol	Pentachloroaniline
Endosulfane-sulfate	Procymidon
Fenson	Propyzamid
Folpet	Quintozen
Imazalil	Vinclozolin
Iprodion	

Pesticide Mix #3

AE-00012 \$ 32 / 1 x 1 mL

AE-00012-10ML \$ 160 / 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
Tolyfluand	100
Vamidithion	200

Pesticide Mix #4

AE-00013 \$ 25 / 1 x 1 mL

AE-00013-10ML \$ 125 / 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 \$ 25 / 1 x 1 mL

AE-00014-10ML \$ 125 / 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 \$ 20 / 1 x 1 mL

1000 µg/mL in Acetonitrile

Tetrachlorvinphos

Pesticide Mix #6

AE-00015 \$ 30 / 1 x 1 mL

AE-00015-10ML \$ 150 / 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 \$ 30 / 1 x 1 mL

AE-00016-10ML \$ 150 / 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 \$ 25 / 1 x 1 mL

AE-00017-10ML \$ 125 / 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 \$ 36 / 1 x 1 mL

AE-00018-10ML \$ 180 / 1 x 10 mL

At stated conc. (µg/mL) in Toluene 9 comps.

Azinophos-ethyl	100
Fenchlorvos	100
Fonophos	150
Methidathion	100
Mevinphos	200
Parathion-ethyl	150
Parathion-methyl	100
Pirimiphos-methyl	100
Tetrachlorvinphos	10

Pesticide Mix #10

AE-00019 \$ 26 / 1 x 1 mL

AE-00019-10ML \$ 130 / 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 \$ 80 / 1 x 1 mL
AE-00020-10ML \$ 400 / 1 x 10 mL
 10 µg/mL each in Toluene 19 comps.

Aldrin	β-HCH
Chloridazon	γ-HCH
o,p'-DDD	δ-HCH
p,p'-DDD	Heptachlor
o,p'-DDE	cis-Heptachlorepoxide
p,p'-DDE	trans-Heptachlorepoxide
o,p'-DDT	Hexachlorobenzene
p,p'-DDT	Tecnazene
Endrin	Tetrachlorvinphos
α-HCH	

Pesticide Mix #12

AE-00021 \$ 36 / 1 x 1 mL
AE-00021-10ML \$ 180 / 1 x 10 mL
 At stated conc. (µg/mL) in Toluene 9 comps.

Carbophenithion	100
Disulfoton	150
Fenthion	100
Methamidophos	100
Phorate	150
Phorate-sulfatone	100
Phorate-sulfone	150
Tetrachlorvinphos	10
Thiomethon	100

Pesticide Mix #13

AE-00022 \$ 30 / 1 x 1 mL
AE-00022-10ML \$ 150 / 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 \$ 34 / 1 x 1 mL
AE-00023-10ML \$ 170 / 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 \$ 84 / 1 x 1 mL
AE-00024-10ML \$ 420 / 1 x 10 mL
 0.02 µg/mL each in Ethyl acetate 33 comps.

Atrazine	Linuron
Bifenox	Pencycuron
Bromacil	Pendimethalin
Carbetamide	Prometryne
Chloridazo	Propazine
Chloroxuron	Metamitron
Chlorpropham	Metazachlor
Chlortoluron	Methabenzthiazuron
Crimidine	Methoprotryne
Cyanazine	Metobromuron
Desethylatrazine	Metolachlor
Desisopropylatrazine	Monolinuron
Desethylterbutylazine	Sebuthylazin
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 \$ 44 / 1 x 1 mL
AE-00030-10ML \$ 220 / 1 x 10 mL
 10 µg/mL each in Ethyl acetate 20 comps.

Aldicarb	Lindane
Atrazine	MCPA *
Bentazone *	Mecoprop *
Chlortofuron	Metazachlor
Cyanazine	Metobromuron
2,4-D *	Metoxuron
Dichlorprop *	Sebuthylazin
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 \$ 36 / 1 x 1 mL
AE-00027-10ML \$ 180 / 1 x 10 mL
 10 µg/mL each in Toluene 14 comps.

Alachlor	Methyl pentachlorophenyl sulfide
Bromopropylate	Pentachloraniline
Carbophenothion	cis-Permethrin
Cypermethrin	trans-Permethrin
Deltamethrin	Piperonyl butoxide
Endosulfane sulfate	Pyrethrins
Fenvalerate	Quintozene

Pesticide Mix #18

AE-00028 \$ 40 / 1 x 1 mL
AE-00028-10ML \$ 200 / 1 x 10 mL
 10 µg/mL each in Toluene 16 comps.

Azinphos-methyl	Ethyl parathion
Carbophenothion	Fenitrothion
Chlorfenvinphos	Fonofos
Chlorpyrifos-ethyl	Methyl parathion
Chlorpyrifos-methyl	Malathion
Diazinon	Methidathion
Dichlorphos	Phosalone
Ethion	Pirimiphos-methyl

Pesticide Mix #19

AE-00029 \$ 36 / 1 x 1 mL
AE-00029-10ML \$ 180 / 1 x 10 mL
 10 µg/mL each in Toluene 13 comps.

Chlorpyrifos-methyl	Fenitrothion
p,p'-DDT	Lindane
Deltamethrin	Methyl parathion
Dichlorvos	Phosalone
Dieldrin	Quintozene
Endosulfan sulfate	Tecnazene
Ethion	

Pesticide Standards

Pesticide Mix #20

AE-00050 \$ 45 / 1 x 1 mL
 AE-00050-10ML \$ 125 / 1 x 10 mL
 10 µg/mL each in Ethyl acetate 20 comps.

Aldicarb	Isoproturon
Atrazine	γ-BHC
Bentazon	MCPA
Chlortoluron	MCPP acid
Cyanazine	Metazachlor
2,4-D	Metobromuron
Dichlorprop	Metoxuron
1,1-Dichloropropene	Sebutylazin
Endosulfan I	Simazine
Endosulfan II	Terbutylazine

Pesticide Mix #20

Regulation DIN V 38407 Part 12 Method F12
 AE-00031 \$ 45 / 1 x 1 mL
 AE-00031-10ML \$ 220 / 1 x 10 mL
 10 µg/mL each in Ethyl acetate 17 comps.

Atrazine	Metazachlor
Chlortoluron	Methabenzthiazuron
Cyanazine	Metobromuron
Desethyl atrazine	Metolachlor
Hexazinone	Metoxuron
Isoproturon	Monolinuron
Karmex	Sebutylazin
Linuron	Simazine
	Terbutylazine

Pesticide Mix #21

AE-00051 \$ 45 / 1 x 1 mL
 10 µg/mL each in Cyclohexane 16 comps.

Aldrin	Endrin
p,p'-DDD	Heptachlor
p,p'-DDE	Heptachlor epoxide (isomer B)
o,p'-DDT	Hexachlorobenzene
p,p'-DDT	α-BHC
Dieldrin	β-BHC
Endosulfan I	γ-BHC
Endosulfan II	Methoxychlor

Pesticide Mix #22

AE-00052 \$ 20 / 1 x 1 mL
 AE-00052-10ML \$ 100 / 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 \$ 20 / 1 x 1 mL
 AE-00053-10ML \$ 100 / 1 x 10 mL
 10 µg/mL each in Acetonitrile 6 comps.

2,4-D	MCPA
2,4-DB	MCPB
Dichlorprop	MCPP acid

Pesticide Mix #24

AE-00054 \$ 20 / 1 x 1 mL
 AE-00054-10ML \$ 100 / 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 \$ 20 / 1 x 1 mL
 AE-00055-10ML \$ 100 / 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 \$ 25 / 1 x 1 mL
 AE-00056-10ML \$ 125 / 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 \$ 40 / 1 x 1 mL
 AE-00057-10ML \$ 100 / 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	

2-Part Label System

Smudgeproof, tear and solvent resistant *

(Organic products in ampules)

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



Pesticide Standards

ISO 6468 Pesticide Standard

Water quality determination of certain organochlorine insecticides, polychlorine biphenyls and chlorobenzenes by GC after liquid-liquid extraction.

ISO6468-PEST \$ 30 / 1 x 1 mL
10 µg/mL each in *n*-Hexane 19 comps.

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

EN ISO 10695 Pesticide Mix

Water quality determination of selected organic nitrogen and phosphorous compound by GC.

ENISO10695-PEST \$ 50 / 1 x 1 mL
10 µg/mL each in Acetone 12 comps.

Atrazine	Propazine
Cyanazine	Sebuthylazin
Metazachlor	Simazine
Parathion	Terbuthylazine
Methyl parathion	Trifluralin
Pendimethalin	Vinclozolin

DIN 38407-2 Pesticide Standard

Determination of water, waste water and sludge for low volatile halogenated hydrocarbons by GC.

DIN38407-2-PEST \$ 50 / 1 x 1 mL
10 µg/mL each in *n*-Hexane 17 comps.

Aldrin	Endrin
p,p'-DDD	Heptachlor
o,p'-DDE	Heptachlor epoxide (Isomer A)
p,p'-DDE	Heptachlor epoxide (Isomer B)
o,p'-DDT	α-BHC
p,p'-DDT	β-BHC
Dieldrin	γ-BHC
Endosulfan I	Methoxychlor
Endosulfan II	

EN ISO 11369 Pesticide Mix 20

Regulation DIN V 38407 Part 12 Method F12

AE-00031 \$ 45 / 1 x 1 mL
AE-00031-10ML \$ 220 / 1 x 10 mL
10 µg/mL each in Ethyl acetate 17 comps.

Atrazine	Methabenzthiazuron
Chlortoluron	Metobromuron
Cyanazine	Metolachlor
Desethyl atrazine	Metoxuron
Hexazinone	Monolinuron
Isoproturon	Sebuthylazin
Karmex (Diuron)	Simazine
Linuron	Terbuthylazine
Metazachlor	

DIN V 38407-11 Pesticide Mix

Scope: Determination of plant protection agents in water, wastewater and sludge.

DINV38407-11-PST \$ 55 / 1 x 1 mL
DINV38407-11-PST-PAK \$ 220 / 5 x 1 mL
5 µg/mL each in Acetonitrile 21 comps.

Alachlor	Monuron
Atrazine	Parathion
Chlorfenvinphos	Pendimethalin
Chlortoluron	Propazine
Cyanazine	Sebuthylazin
2,4-D	Simazine
MCPA acid	2,4,5-T
Metazachlor	Terbuthylazine
Metobromuron	Trifluralin
Metolachlor	Vinclozolin
Metoxuron	

DIN 38407-14 Methyl Esters Mix

Examination of water, wastewater and sludge for phenoxyalkyl carbonic acids by GC and MS detection after solid-liquid extraction and derivatization.

DIN38407-14-ME \$ 65 / 1 x 1 mL
500 µg/mL each in *n*-Hexane 8 comps.

Mecoprop methyl ester
MCPA methyl ester
Dichlorprop methyl ester
2,4-D methyl ester
Fenoprop methyl ester
MCPB methyl ester
2,4,5-T methyl ester
2,4-DB methyl ester

DIN 38407-22 Glyphosate & AMPA

Examination of water, wastewater, and sludge for Glyphosate and Aminomethyl phosphonic acid (AMPA)

DIN38407-22 \$ 45 / 1 x 1 mL
100 µg/mL each in Water 2 comps.

Glyphosate
Aminomethylphosphonic acid

Pesticide Mix 16

Regulations for drinking water analysis, (E-DIN 38407-F-18, E-DIN 38414-F-21) Regulations for sediment and sludge.

AE-00030 \$ 44 / 1 x 1 mL
AE-00030-10ML \$ 220 / 1 x 10 mL
10 µg/mL each in Ethyl acetate 20 comps.

Aldicarb	Lindane
Atrazine	MCPA *
Bentazone *	Mecoprop *
Chlortoluron	Metazachlor
Cyanazine	Metobromuron
2,4-D *	Metoxuron
Dichlorprop *	Sebuthylazine
1,3-Dichloropropene	Simazine
Endosulfan I	Terbuthylazine
Endosulfan II	
Isoproturon	* Underivatized

DIN 38407-14 Acid Mix

Examination of water, wastewater and sludge for phenoxyalkyl carbonic acids by GC and MS detection after solid-liquid extraction and derivatization.

DIN38407-14-ACID \$ 55 / 1 x 1 mL
500 µg/mL each in *n*-Hexane 8 comps.

Mecoprop acid
MCPA acid
Dichlorprop acid
2,4-D acid
Fenoprop acid
MCPB acid
2,4,5-T acid
2,4-DB acid

Phenols & Derivatives

DIN EN 12673 Chlorophenols

Scope: Determination of selected chlorophenols in water by GC

DINEN-12673 \$ 40 / 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 \$ 50 / 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 \$ 25 / 1 x 1 mL
 10000 µg/mL total hydrocarbons in Hexane
 2 comps.
 #2 Diesel Fuel (5000 µg/mL)
 Mineral Oil (5000 µg/mL)

Quality Control Standard Mix
ISO/DIS9377-4-1 \$ 25 / 1 x 1 mL
 1000 µg/mL total hydrocarbons in Acetone
 2 comps.
 #2 Diesel Fuel (500 µg/mL)
 Mineral Oil (500 µg/mL)

Extraction Solvent Stock Solution
ENISO9377-2-3 \$ 25 / 1 x 5 mL
 At stated conc. in Hexane 2 comps.
 n-Decane (20 µL/L)
 n-Tetracontane (20 mg/L)

System Performance Standard of n-alkanes
ENISO9377-2-2 \$ 45 / 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 \$ 45 / 1 x 10 mL
 2000 µg/mL in Cyclohexane
 Stearyl stearate

ISO/DIS 9377-4 Standard Mix Stock Solution
TPH-006-10X \$ 35 / 1 x 1 mL
TPH-006-10X-PAK SAVE 20% \$ 140 / 5 x 1 mL
 5000 µg/mL each in Cyclohexane 2 comps.
 #2 Diesel fuel
 Mineral oil

Florisol Cartridge QC Standard Mix
ENISO9377-2-4 \$ 40 / 1 x 10 mL
 2000 µg/mL total hydrocarbons in Hexane 2 comps.

#2 Diesel Fuel (1000 µg/mL)
 Mineral Oil (1000 µg/mL)

European Equivalents of Alcohol Oxidation Products in Automotive Engine Exhaust by HPLC of DNPH Derivatives

Carbonyl-DNPH Mix #1
AE-00043 \$ 45 / 1 x 1 mL
 20 µg/mL each in Acetonitrile 13 comps.

Acetaldehyde-DNPH	Formaldehyde-DNPH (40 µg/mL)
Acetone-DNPH	Hexanal-DNPH
Acrolein-DNPH	Methacrolein-DNPH
Benzaldehyde-DNPH	Propionaldehyde-DNPH
Butanonal-DNPH	p-Tolualdehyde-DNPH
Methyl ethyl ketone-DNPH	Valeraldehyde-DNPH
Crotonaldehyde-DNPH	

Carbonyl-DNPH Mix #2
AE-00044 \$ 45 / 1 x 1 mL
 2 µg/mL each in Acetonitrile 14 comps.

Acetaldehyde-DNPH	Cyclohexanone-DNPH (5 µg/mL)
Acetone-DNPH	Formaldehyde-DNPH (4 µg/mL)
Acrolein-DNPH	Hexanal-DNPH
Benzaldehyde-DNPH	Methacrolein-DNPH
Butanone-DNPH	Propionaldehyde-DNPH
n-Butyraldehyde-DNPH	p-Tolualdehyde-DNPH
Crotonaldehyde-DNPH	Valeraldehyde-DNPH

Cyclohexanone
AE-00046 \$ 20 / 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 \$ 50 / 1 x 1 mL
JMHW-001-PAK **SAVE 20%** \$ 200 / 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 \$ 25 / 1 x 1 mL
JMHW-002-PAK **SAVE 20%** \$ 100 / 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

Volatile Organic Solution B

JMHW-003 \$ 20 / 1 x 1 mL
JMHW-003-PAK **SAVE 20%** \$ 80 / 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 \$ 10 / 1 x 1 mL
CLP-004-100X-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
2.5 mg/mL in MeOH

p-Bromofluorobenzene

Method of Interests

Japanese Methods JIS-K0311 and JIS-K0312

See EPA Method 1613 Dioxins & Furans which can be used for EPA Method 23, 8280, 8290 and EU Method EN-1948

Japan Environmental Agency Standards

Volatile Organic Solution

JEAM-001 \$ 25 / 1 x 1 mL
JEAM-001-PAK **SAVE 20%** \$ 100 / 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 \$ 30 / 1 x 1 mL
JEAM-002-PAK **SAVE 20%** \$ 120 / 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 \$ 20 / 1 x 1 mL
M-524-IS-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
2.0 mg/mL each in MeOH 2 comps.

1,2-Dichlorobenzene-*d*₄
Fluorobenzene

Drinking Water Odor Standard

ODOR-JDWOS \$ 80 / 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 \$ 25 / 1 x 1 mL
KDWR-001-PAK **SAVE 20%** \$ 100 / 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 \$ 25 / 1 x 1 mL
KDWR-002-PAK **SAVE 20%** \$ 100 / 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 \$ 30 / 1 x 1 mL
KDWR-003-PAK **SAVE 20%** \$ 120 / 5 x 1 mL
1000 µg/mL each in MeOH 5 comps.

Carbaryl
Diazinon
Fenitrothion
Malathion
Parathion

California Methods

California Air Resources Board Method 1004 Carbonyl Compounds as DNPH derivatives by HPLC

M-1004 \$ 25 / 1 x 1 mL
At stated conc. in AcCN 13 comps.
M-1004-10X \$ 35 / 1 x 1 mL
At 10 times the stated conc. in AcCN 13 comps.

Carbonyl Compound	DNPH Derivative
Acetaldehyde	3.0 µg/mL 15.3 µg/mL
Acetone	3.0 µg/mL 12.3 µg/mL
Acrolein	3.0 µg/mL 12.7 µg/mL
Benzaldehyde	3.0 µg/mL 8.1 µg/mL
2-Butanone (MEK)	3.0 µg/mL 10.5 µg/mL
n-Butyraldehyde	3.0 µg/mL 10.5 µg/mL
Crotonaldehyde	3.0 µg/mL 10.7 µg/mL
Formaldehyde	3.0 µg/mL 21.0 µg/mL
Hexanal	3.0 µg/mL 8.4 µg/mL
Methacrolein	3.0 µg/mL 10.7 µg/mL
Propionaldehyde	3.0 µg/mL 12.3 µg/mL
m-Tolualdehyde	3.0 µg/mL 7.5 µg/mL
Valeraldehyde	3.0 µg/mL 9.3 µg/mL

CAR-DNPH \$ 20 / 1 x 1 mL
At stated conc. in AcCN as DNPH derivatives 7 comps.

Acetaldehyde-DNPH	1000 µg/mL	Butyraldehyde-DNPH	500 µg/mL
Acetone-DNPH	500 µg/mL	Formaldehyde-DNPH	1500 µg/mL
Acrolein-DNPH	500 µg/mL	Propionaldehyde-DNPH	500 µg/mL
Benzaldehyde-DNPH	500 µg/mL		

Reference Gas Oil Sample

RGS-001 \$ 20 / 1 x 1 mL
Hydrocarbon Mixture (boiling point range 250-850°F)

California Method 750-M Standard

BDE-CALEWS \$ 600 / 1 x 1 mL
10 µg/mL each in Isooctane 13 comps.

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

Florida Methods PAH by HPLC

Z-014G-FL \$ 85 / 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂:Benzene 18 comps.

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

Performance Check Solution

M-610-QC-FL \$ 35 / 1 x 1 mL
M-610-QC-FL-PAK SAVE 20% \$ 140 / 5 x 1 mL
At stated conc. in AcCN 18 comps.

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

Matrix Spiking Solution

M-610-MS \$ 30 / 1 x 1 mL
M-610-MS-PAK SAVE 20% \$ 120 / 5 x 1 mL
At stated conc. in AcCN 6 comps.

Benz[a]pyrene (0.5 mg/mL)	2-Methylnaphthalene (5.0 mg/mL)
Chrysene (0.5 mg/mL)	Phenanthrene (0.5 mg/mL)
1-Methylnaphthalene (5.0 mg/mL)	Pyrene (0.5 mg/mL)

PAH Mix Additions

H-001S/002S-M-20X \$ 30 / 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 \$ 85 / 1 x 1 mL
M-8310-FL-PAK SAVE 20% \$ 340 / 5 x 1 mL
0.5 mg/mL each in AcCN 18 comps.
M-8310-FL-SET \$ 360 / 18 x 1 mL

Acenaphthene	M-8310-FL-01	\$ 20
Acenaphthylene	M-8310-FL-02	20
Anthracene	M-8310-FL-03	20
Benzo[a]anthracene	M-8310-FL-04	25
Benzo[a]pyrene	M-8310-FL-05	25
Benzo[b]fluoranthene	M-8310-FL-06	30
Benzo[g,h,i]perylene	M-8310-FL-07	30
Benzo[k]fluoranthene	M-8310-FL-08	30
Chrysene	M-8310-FL-09	25
Dibenz[a,h]anthracene	M-8310-FL-10	20
Fluoranthene	M-8310-FL-11	20
Fluorene	M-8310-FL-12	20
Indeno[1,2,3-cd]pyrene	M-8310-FL-13	35
1-Methylnaphthalene	M-8310-FL-14	20
2-Methylnaphthalene	M-8310-FL-15	20
Naphthalene	M-8310-FL-16	20
Phenanthrene	M-8310-FL-17	20
Pyrene	M-8310-FL-18	20

Polynuclear Aromatic Hydrocarbons (HPLC)

M-8310-QC-ATI \$ 55 / 1 x 1 mL
M-8310-QC-ATI-PAK SAVE 20% \$ 220 / 5 x 1 mL
At stated conc. in AcCN 18 comps.

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

Minnesota Method 465-D

List of Volatiles

Liquids

M-502A-R

M-502A-R-PAK

0.2 mg/mL each in MeOH

\$ 60 / 1 x 1 mL

SAVE 20% \$ 240 / 5 x 1 mL

54 comps.

Benzene (01)
Bromobenzene (02)
Bromochloromethane (03)
Bromodichloromethane (04)
Bromoform (05)
n-Butylbenzene (07)
sec-Butylbenzene (08)
tert-Butylbenzene (09)
Carbon tetrachloride (10)
Chlorobenzene (11)
Chloroform (13)
2-Chlorotoluene (15)
4-Chlorotoluene (16)
Dibromochloromethane (17)
1,2-Dibromo-3-chloropropane (18)
1,2-Dibromoethane (19)
Dibromomethane (20)
1,2-Dichlorobenzene (21)
1,3-Dichlorobenzene (22)
1,4-Dichlorobenzene (23)
1,1-Dichloroethane (25)
1,2-Dichloroethane (26)
1,1-Dichloroethene (27)
cis-1,2-Dichloroethene (28)
trans-1,2-Dichloroethene (29)
1,2-Dichloropropane (30)
1,3-Dichloropropane (31)

2,2-Dichloropropane (32)
1,1-Dichloropropene (33)
cis-1,3-Dichloropropene (34A) *
trans-1,3-Dichloropropene (34B) **
Ethylbenzene (35)
Hexachlorobutadiene (36)
Isopropylbenzene (*Cumene*) (37)
p-Isopropyltoluene (*p*-*Cymene*) (38)
Methylene chloride (39)
Naphthalene (40)
n-Propylbenzene (41)
Styrene (42)
1,1,1,2-Tetrachloroethane (43)
1,1,2,2-Tetrachloroethane (44)
Tetrachloroethene (45)
Toluene (46)
1,2,3-Trichlorobenzene (47)
1,2,4-Trichlorobenzene (48)
1,1,1-Trichloroethane (49)
1,1,2-Trichloroethane (50)
Trichloroethene (51)
1,2,3-Trichloropropane (53)
1,2,4-Trimethylbenzene (54)
1,3,5-Trimethylbenzene (55)
o-Xylene (57)
m-Xylene (58) * *cis* (1.06 x conc.) (34A)
p-Xylene (59) ** *trans* (0.94 x conc.) (34B)

Gases

M-465B-10X

M-465B-10X-PAK

0.2 mg/mL each in MeOH

\$ 25 / 1 x 1 mL

SAVE 20% \$ 100 / 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

\$ 30 / 1 x 1 mL

8 comps.

Acetone
Allyl chloride
Ethyl ether
Methyl ethyl ketone

Methyl isobutyl ketone
Methyl-*t*-butyl ether
Tetrahydrofuran
Trichlorotrifluoroethane

* ColdPAK required to maintain integrity of product.

Method 465-D Volatiles Set

M-465D-SET

\$ 75 / 3 x 1 mL

(M-502A-R, M-465B-10X, M-465D-ADD-R)

M-465D-SET-PAK

SAVE 20% \$ 300 / 5 x (3 x 1 mL)

Pesticides & Herbicides

List 1 - Pesticide Standard

MDA-PEST-01-R1

MDA-PEST-01-R1-PAK

500 µg/mL each in CH₂Cl₂

\$ 105 / 1 x 1 mL

SAVE 20% \$ 420 / 5 x 1 mL

22 comps.

Acetochlor Dimethenamid
Alachlor Dursban
Atrazine Dyfonate
Atrazine-desisopropyl EPTC
Cyanazine Ethalfuralin
Desethyl atrazine Metolachlor

Metribuzin Propazine
Pendimethalin Simazine
Phorate Terbufos
Propachlor Triallate
Prometon Trifluralin

List 2 - Herbicide Acids Standards

MDA-HERB-01

At stated conc. in Acetone

\$ 60 / 1 x 1 mL

9 comps.

2,4-D (0.1 mg/mL)
2,4-DB (0.1 mg/mL)
2,4,5-T (0.1 mg/mL)
Silvex (0.1 mg/mL)
Bentazon (0.1 mg/mL)

Dicamba (0.1 mg/mL)
MCPA (10 mg/mL)
Picloram (0.1 mg/mL)
Triclopyr (0.1 mg/mL)

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

\$ 100 / 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.

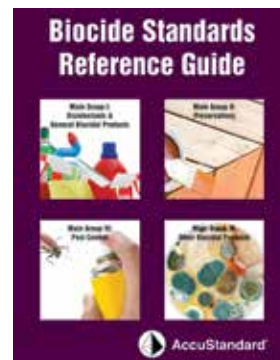


One such regulation is the Biological Products Directive 98/8/EC (BPD) which has been recently revised and is now designated as EU Biocides Regulation 528/2012 (EU BPR). Under this legislation, active compounds are submitted for approval on the list of Approved Active Substances. This regulation went 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



Biocide Guide include chemical structures and physical data.

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	Price
Abamectin	71751-41-2	III / 18	BIOC-236N-10MG	10 mg	\$ 42
Acetamidrid	135410-20-7	III / 18	BIOC-237N-10MG	10 mg	42
Allethrin	584-79-2	III / 18	BIOC-239N-10MG	10 mg	32
Ammonium bromide	1212-97-9	I, II / 2, 4, 6, 7, 9, 11, 12	BIOC-095N-10MG	10 mg	15
Ammonium sulfate	7783-20-2	II / 11, 12	BIOC-168N	100 mg	15
Azamethiphos	35575-96-3	III / 18	BIOC-215N-10MG	10 mg	12
Bendiocarb	22781-23-3	III / 18	BIOC-211N-10MG	10 mg	12
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	15
Benzethonium chloride	121-54-0	I / 1	BIOC-018N-25MG	25 mg	15
1,2-Benzisothiazol-3(2H)-one	2634-33-5	I, II, IV / 2, 6, 7, 9, 10, 11, 12, 13, 22	BIOC-082S-W	1 mL	25
Benzoic acid	65-85-0	I, II, IV / 1, 2, 3, 4, 6, 11, 20	BIOC-006N-25MG	25 mg	15
Benzyl benzoate	120-51-4	I, III / 2, 18	BIOC-067N	100 mg	20
2-Benzyl-4-chlorophenol	120-32-1	I, II / 1, 2, 3, 4, 6	BIOC-017N	100 mg	25
Bifenthrin	82657-04-3	II, III / 8, 18	BIOC-161N-10MG	10 mg	42
2-Biphenylol sodium salt tetrahydrate	132-27-4	I, II / 1, 2, 3, 4, 6, 7, 9, 10, 13	BIOC-022N	100 mg	15
N,N'-Bis(hydroxymethyl)urea (MFG)	140-95-4	I, II / 2, 6, 9, 11, 12, 13	BIOC-074N	100 mg	25
Bis(trichloromethyl) sulphone	3064-70-8	II, IV / 6, 9, 10, 11, 12, 22	BIOC-128N-10MG	10 mg	35
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	12
Brodifacoum	56073-10-0	III / 14	BIOC-180N-10MG	10 mg	32

Biocide Standards continued on next page



Biocides

Biocide Standards

Compound	CAS No.	Group / Uses	Cat. No.	Unit	Price
Bromadiolone	28772-56-7	III / 14	BIOC-178N-10MG	10 mg	\$ 42
Bromoacetic acid	79-08-3	I / 4	BIOC-114N	100 mg	15
2-Bromo-2-(bromomethyl)pentanedinitrile	35691-65-7	II / 6, 7, 9, 10, 11, 13	BIOC-136N	100 mg	50
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	20
Busan (TCMTB)	21564-17-0	I, II / 2, 4, 6, 7, 9, 10, 11, 12, 13	BIOC-097S-CN	1 mL	62
			100 µg/mL in Acetonitrile		
Calcium hydroxide	1305-62-0	I / 2, 3	BIOC-078N	100 mg	25
Calcium hypochlorite	7778-54-3	I, II / 1, 2, 3, 4, 5, 11	BIOC-041N	100 mg	15
Calcium oxide	1305-78-8	I / 2, 3	BIOC-079N	100 mg	12
Calcium sorbate	7492-55-9	I, II, IV / 1, 3, 6, 7, 9, 20	BIOC-032N	100 mg	25
Captan	133-06-2	II / 6, 7, 9, 10	BIOC-122N-10MG	10 mg	12
Carbendazim	10605-21-7	II / 6, 7, 9, 10, 11, 12, 13	BIOC-133N-10MG	10 mg	12
Cetylpyridinium chloride	123-03-5	I, II, IV / 1, 2, 3, 4, 5, 6, 7, 9, 20	BIOC-020N	100 mg	35
Chloralose	15879-93-3	III, IV / 14, 15, 23	BIOC-177N-10MG	10 mg	15
Chloramine T trihydrate	7080-50-4	I, II / 1, 2, 3, 4, 5, 6, 9, 10, 11	BIOC-021N	100 mg	15
Chlorfenapyr	122453-73-0	II, III / 6, 7, 8, 9, 10, 12, 13, 18	BIOC-143N-10MG	10 mg	42
Chloroacetamide	79-07-2	I, II / 3, 6, 7, 9, 10, 11, 13	BIOC-109N	100 mg	25
4-Chloro-3,5-dimethylphenol	88-04-0	I, II / 1, 2, 3, 4, 5, 6	BIOC-012N-25MG	25 mg	15
4-Chloro-3-methylphenol	59-50-7	I, II / 1, 2, 3, 4, 6, 9, 10, 13	BIOC-003N-25MG	25 mg	15
Chlorophacinone	3691-35-8	III / 14	BIOC-175N-10MG	10 mg	22
Chlorothalonil	1897-45-6	II / 6, 7, 9, 10	BIOC-126N-10MG	10 mg	12
Chlorotoluron	15545-48-9	II / 6, 7, 9, 10, 11, 12, 13	BIOC-134N-10MG	10 mg	22
Cinnamal	104-55-2	I / 2	BIOC-062N	100 mg	20
Citric acid	77-92-9	I / 1, 2, 3	BIOC-010N-25MG	25 mg	15
Clothianidin	210880-92-5	I, II, III / 3, 8, 18	BIOC-112N-10MG	10 mg	52
Copper	7440-50-8	I, II, IV / 2, 4, 5, 11, 21	BIOC-089S	100 mL	34
			1000 µg/mL in tr. Nitric acid		
Copper (II) carbonate basic	12069-69-1	II / 8	BIOC-154N	100 mg	25
Copper dihydroxide	20427-59-2	II / 8	BIOC-155N	100 mg	15
Copper (I) oxide	1317-39-1	IV / 21	BIOC-151N	100 mg	20
Copper (II) oxide	1317-38-0	II / 8	BIOC-203N	100 mg	15
Copper (II) sulfate	7758-98-7	I / 1, 2, 4	BIOC-039N-1G	1 gram	15
Copper thiocyanate	1111-67-7	III, IV / 19, 21	BIOC-202N	100 mg	15
Coumatetralyl	5836-29-3	III / 14	BIOC-176N-10MG	10 mg	12
Creosote from beechwood tar	8021-39-4	II / 8	BIOC-153N	100 mg	45
m-Cresol	108-39-4	I / 2, 3	BIOC-064N	100 mg	20
Cyanamide	420-04-2	I, III / 3, 18	BIOC-110N	100 mg	25
N-Cyclopropyl-1,3,5-triazine-2,4,6-triamine	66215-27-8	III / 18	BIOC-221N-10MG	10 mg	22
Cyfluthrin	68359-37-5	III / 18	BIOC-222N-10MG	10 mg	12
L-Cyhalothrin	91465-08-6	III / 18	BIOC-227N-10MG	10 mg	52
a-Cypermethrin	67375-30-8	II, III / 6, 9, 18	BIOC-142N-10MG	10 mg	42
Cypermethrin	52315-07-8	II, III / 8, 9, 18	BIOC-156N-10MG	10 mg	42
Cyphenothrin	39515-40-7	III / 18	BIOC-216N-10MG	10 mg	42
Cyproconazole	94361-06-5	II / 8	BIOC-162S	1 mL	22
			100 µg/mL in Methanol		
Dazomet	533-74-4	I, II / 6, 7, 8, 9, 10, 11, 12	BIOC-125N-10MG	10 mg	12
Decanoic acid	334-48-5	I, III / 4, 18, 19	BIOC-116N *	100 mg	15
Deltamethrin	52918-63-5	III / 18	BIOC-218N-10MG	10 mg	32
Diazinon	333-41-5	III / 18	BIOC-201N-10MG	10 mg	12
Diazolidinyl urea	78491-02-8	II / 6, 7	BIOC-140N	100 mg	15
Diboron trioxide	1303-86-2	II / 8	BIOC-150N	100 mg	25
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	20
1,3-Dibromo-5,5-dimethylhydantoin	77-48-5	I, II / 2, 11, 12	BIOC-057N	100 mg	20
Dichlofluanid	1085-98-9	II, IV / 7, 8, 10, 21	BIOC-146N-10MG	10 mg	12
2,4-Dichlorobenzyl alcohol	1777-82-8	I, II / 2, 6, 7, 9, 10, 12, 13	BIOC-081N	100 mg	25
1,3-Dichloro-5,5-dimethylhydantoin	118-52-5	I, II / 2, 11, 12	BIOC-066N-1G	1 gram	15
Dichlorophen	97-23-4	I, II / 2, 3, 4, 6, 7, 9, 10, 11, 12, 13	BIOC-061N-10MG	10 mg	12
Dichlorvos	62-73-7	III / 18	BIOC-185N-10MG	10 mg	12
Didecyldimethylammonium chloride	7173-51-5	I, II / 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13	BIOC-030N-10MG	10 mg	75
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	35
N,N-Diethyl-m-toluamide (DEET, OFF)	134-62-3	III, IV / 19, 22	BIOC-196N-10MG	10 mg	12
Difenacoum	56073-07-5	III / 14	BIOC-179S-D	1 mL	35
			100 µg/mL in Dichloromethane		
Diffubenzuron	35367-38-5	III / 18	BIOC-214N-10MG	10 mg	12
Dimethyloctadecyl[3-(trimethoxysilyl)propyl ammonium chloride]	27668-52-6	I, II / 2, 7, 9, 10	BIOC-098N	100 mg	20
4,4-Dimethyloxazolidine	51200-87-4	II / 6, 11, 12, 13	BIOC-137N-10MG	10 mg	55
Diphenoxarsin-10-yl oxide	58-36-6	II / 9	BIOC-163N	100 mg	25
Dipotassium disulfite	16731-55-8	I, II, IV / 1, 2, 4, 5, 6, 9, 11, 12, 13, 20, 22	BIOC-047N-1G	1 gram	15
Diuron (Karmex)	330-54-1	II / 6, 7, 10	BIOC-124N-10MG	10 mg	12
Disilver oxide	20667-12-3	II / 11	BIOC-169N	100 mg	25
2,2'-Dithiobis(pyridine-N-oxide)	3696-28-4	II / 9	BIOC-165N-10MG	10 mg	25
Empenthrin	54406-48-3	III / 18	BIOC-219N-10MG	10 mg	32
Esfenvalerate	66230-04-4	III / 18	BIOC-235N-10MG	10 mg	52
Ethanol	64-17-5	I / 1, 2, 3, 4	BIOC-004N-25MG	25 mg	20
5-Ethyl-1-aza-3,7-dioxabicyclo[3,3,0]octane	7747-35-5	II / 6, 11, 12, 13	BIOC-132N	100 mg	25



Biocide Standards

Compound	CAS No.	Group / Uses	Cat. No.	Unit	Price
Ethyl butylacetylaminopropionate	52304-36-6	III / 18	BIOC-217S 100 µg/mL in Methanol	1 mL	\$ 35
Ethylene oxide	75-21-8	I, IV / 2, 20	BIOC-056S-TP 5 mg/mL in Isooctane	1 mL	20
Etofenprox	80844-07-1	I, II, III / 2, 3, 8, 18	BIOC-106N-10MG	10 mg	52
Fenitrothion	122-14-5	III / 18	BIOC-191S 100 µg/mL in Methanol	1 mL	12
Fenoxycarb	72490-01-8	II / 8	BIOC-157N-10MG	10 mg	22
Fenpropimorph	67564-91-4	II / 6, 7, 8, 9, 10, 12, 13	BIOC-139N-10MG	10 mg	22
Fipronil	120068-37-3	III / 18	BIOC-229N-10MG	10 mg	42
Flocoumafen	90035-08-8	III / 14	BIOC-181S 100 µg/mL in Methanol	1 mL	55
Flufenoxuron	101463-69-8	II, III / 8, 18	BIOC-158N-10MG	10 mg	22
Fluometuron	2164-17-2	II / 6, 7, 9, 10, 11, 12, 13	BIOC-127N-10MG	10 mg	12
Folpet	133-07-3	II / 6, 7, 9, 10	BIOC-123N-10MG	10 mg	12
Formic acid	64-18-6	I, II / 1, 2, 3, 4, 5, 6, 9, 11, 12, 13	BIOC-005N-25MG	25 mg	15
Geraniol	106-24-1	III / 18, 19	BIOC-188N	100 mg	12
Gluteraldehyde	111-30-8	I, II, IV / 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 22	BIOC-016S-W 50% wt. in Water	1 mL	25
Glycolic acid	79-14-1	I, II / 2, 3, 4, 12	BIOC-058N	100 mg	25
Guazatine acetate (Tech)	115044-19-4	I / 2	BIOC-108N-10MG	10 mg	52
Hexaflumuron	86479-06-3	III / 18	BIOC-224N-10MG	10 mg	22
Hexahydro-1,3,5-tris(hydroxyethyl)triazine	4719-04-4	I, II / 2, 3, 4, 6, 9, 11, 12, 13	BIOC-086N	100 mg	25
Hydramethylnon	67485-29-4	III / 18	BIOC-226S 100 µg/mL in Methanol	1 mL	42
2-Hydroxy-4-isopropyl-2,4,6-cycloheptatrien-1-one	499-44-5	II / 10	BIOC-167N	100 mg	35
Icaridin	119515-38-7	III / 19	BIOC-228S-CN 100 µg/mL in Acetonitrile	1 mL	85
Imazalil	35554-44-0	I, II, IV / 2, 3, 4, 13, 20	BIOC-099N-10MG	10 mg	32
Imidacloprid	138261-41-3	III / 18	BIOC-230N-10MG	10 mg	32
Imiprothrin	72963-72-5	III / 18	BIOC-231S-CN 100 µg/mL in Acetonitrile	1 mL	125
Iodine	7553-56-2	I, II, IV / 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 22	BIOC-033N	100 mg	15
3-Iodo-2-propynyl butylcarbamate	5546-53-6	II / 6, 7, 8, 9, 10, 11, 13	BIOC-138N	100 mg	45
Irgarol	28159-98-0	II / 7, 9, 10	BIOC-148N-10MG	10 mg	32
Isopropanol	67-63-0	I, II / 1, 2, 3, 4, 5, 6, 9, 10, 11, 12	BIOC-007N-25MG	25 mg	15
Isoproturon	34123-59-6	II / 6, 7, 9, 10, 11, 12, 13	BIOC-135N-10MG	10 mg	12
L-(+)-Lactic acid	79-33-4	I, II, IV / 2, 3, 4, 6, 20	BIOC-059N-50MG	50 mg	45
Lauric acid	143-07-7	III / 19	BIOC-199N	100 mg	25
Lauryl dimethylamine oxide	70592-80-2	I / 1, 2	BIOC-053N	100 mg	12
Lignin (Alkaline)	9005-53-2	I, II / 1, 2, 3, 4, 6, 7, 9, 10, 11, 12, 13	BIOC-043N-1G	1 gram	25
Linalool	78-70-6	III / 19	BIOC-186N	100 mg	20
Magnesium bis(monoperoxyphthalate) hexahydrate	84665-66-7	I / 2, 3, 4	BIOC-104N	100 mg	20
Margosa extract	84696-25-3	III / 18, 19	BIOC-223N	100 mg	25
(R)-p-Mentha-1,8-diene	5989-27-5	II / 12	BIOC-170N	100 mg	15
(+)-cis-p-Menthane-3,8-diol	42822-86-6	I, III / 1, 2, 19	BIOC-050S-CN 100 µg/mL in Acetonitrile	1 mL	55
2-Mercaptobenzothiazole	149-30-4	I, II / 2, 7, 9, 11, 12, 13	BIOC-077N-10MG	10 mg	15
Metam-sodium dihydrate	6734-80-1	I, II, IV / 2, 4, 6, 9, 11, 12, 13, 20	BIOC-073N-10MG	10 mg	15
S-Methoprene	65733-16-6	III / 18	BIOC-234S 100 µg/mL in Methanol	1 mL	55
Methyl anthranilate	134-20-3	III / 19	BIOC-195N	100 mg	20
N,N'-Methylenbis(morpholine)	5625-90-1	II / 6, 9, 11, 13	BIOC-129S 100 µg/mL in Methanol	1 mL	55
Methylene dithiocyanate	6317-18-6	II, IV / 6, 7, 9, 10, 11, 12, 13, 22	BIOC-130N	100 mg	35
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	45
Monolinuron	1746-81-2	I / 2	BIOC-080N-10MG	10 mg	15
Myristyltrimethylammonium bromide	1119-97-7	I / 1	BIOC-024N	100 mg	20
Nabam	142-59-6	I, II / 2, 4, 6, 9, 10, 11, 12, 13	BIOC-075N-10MG	10 mg	15
Naled	300-76-5	III / 18	BIOC-200N-10MG	10 mg	12
Naphthalene	91-20-3	III / 19	BIOC-187N	100 mg	13
Nonanoic acid	112-05-0	I, II, III / 2, 10, 19	BIOC-065N	100 mg	20
Octanoic acid	124-07-2	I, III / 4, 18	BIOC-115N	100 mg	15
Oct-1-ene-3-ol	3391-86-4	III / 19	BIOC-205N	100 mg	25
2-Octyl-2H-isothiazol-3-one	26530-20-1	I, II / 4, 6, 7, 9, 10, 11, 12, 13	BIOC-119N-10MG	10 mg	55
Orthophosphoric acid	7664-38-2	I / 4	BIOC-117N-1G	1 gram	15
Oxazolidine	121776-33-8	I, II / 2, 6, 10, 11, 12, 13	BIOC-102S 100 µg/mL in Methanol	1 mL	65
Peracetic acid	79-21-0	I, II / 1, 2, 3, 4, 5, 6, 11, 12	BIOC-011N	100 mg	20
Permethrin	52645-53-1	I, II, III, IV / 2, 3, 5, 8, 9, 18, 22	BIOC-100N-10MG	10 mg	12
2-Phenoxyethanol	122-99-6	I, II / 1, 2, 3, 4, 6, 7, 10, 11, 13	BIOC-019N-25MG	25 mg	15
o-Phenylphenol	90-43-7	I, II / 1, 2, 3, 4, 6, 7, 9, 10, 13	BIOC-013N-25MG	25 mg	15
Piperonyl butoxide	51-03-6	III / 18, 19	BIOC-184N-10MG	10 mg	22
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	45
Potassium dimethyl dithiocarbamate	128-03-0	I, II / 2, 4, 6, 9, 10, 11, 12, 13	BIOC-069N-50MG	50 mg	55

Biocide Standards continued on next page



Biocides

Biocide Standards

Compound	CAS No.	Group / Uses	Cat. No.	Unit	Price
Potassium monopersulfate triple salt	70693-62-8	I, II / 1, 2, 3, 4, 5, 11, 12	BIOC-054N-1G	1 gram	\$ 15
Potassium permanganate	7722-64-7	I / 5	BIOC-121N	100 mg	20
Potassium sorbate	24634-61-5	I, II / 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	BIOC-049N	100 mg	12
Potassium sulfite	10117-38-1	I, II, IV / 1, 2, 4, 5, 6, 9, 11, 12, 13, 20, 22	BIOC-045N	100 mg	15
Prallethrin	23031-36-9	III / 18	BIOC-212S	1 mL	52
			100 µg/mL in Methanol		
Prometryne	7287-19-6	II / 6, 7, 9, 10, 11, 12, 13	BIOC-131N-10MG	10 mg	12
1-Propanol	71-23-8	I / 1, 2, 3, 4	BIOC-009N-25MG	25 mg	15
Propiconazole	60207-90-1	I, II, IV / 1, 2, 4, 7, 8, 9, 10, 12, 13, 20	BIOC-051N-10MG	10 mg	52
Propoxur	114-26-1	III / 18	BIOC-190N-10MG	10 mg	12
Pyrethrins (Tech Mix)	8003-34-7	III / 18, 19	BIOC-209N-10MG	10 mg	42
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	35
Pyriproxyfen	95737-68-1	III / 18	BIOC-232N-10MG	10 mg	32
Quaternium-15	51229-78-8	II / 6, 9, 12, 13	BIOC-141N	100 mg	20
Rotenone	83-79-4	III / 17	BIOC-183N-10MG	10 mg	12
Salicylic acid	69-72-7	I, II / 1, 2, 3, 4, 6	BIOC-008N-25MG	25 mg	20
Silicic acid	61790-53-2	III / 18	BIOC-233N	100 mg	12
Silicon dioxide	7631-86-9	I, III, IV / 3, 18, 20	BIOC-111N	100 mg	20
Silver	7440-22-4	I, II / 2, 4, 5, 9, 11	BIOC-088S	100 mL	34
			1000 µg/mL in tr. Nitric acid in H ₂ O		
Silver chloride	7783-90-6	I, II / 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 13	BIOC-042N	100 mg	15
Silver nitrate	7761-88-8	I / 1	BIOC-040N	100 mg	15
Sodium benzoate	532-32-1	I, II, IV / 1, 2, 6, 11, 20	BIOC-023N	100 mg	12
Sodium bisulfite	7631-90-5	I, II, IV / 1, 2, 4, 5, 6, 9, 11, 12, 13, 20, 22	BIOC-034N-1G	1 gram	12
Sodium bromide	7647-15-6	I, II / 2, 4, 6, 7, 9, 11, 12, 13	BIOC-091N	100 mg	15
Sodium chlorate	7775-09-9	I, II / 2, 5, 11, 12	BIOC-093N	100 mg	20
Sodium chloride	7647-14-5	I / 5	BIOC-120N	100 mg	12
Sodium chlorite	7758-19-2	I, II, IV / 2, 3, 4, 5, 11, 12, 20	BIOC-092N	100 mg	20
Sodium dichloroisocyanurate dihydrate	51580-86-0	I, II / 1, 2, 3, 4, 5, 6, 9, 11, 12	BIOC-028N	100 mg	12
Sodium dimethylarsinate	124-65-2	III / 18	BIOC-194N-10MG	10 mg	15
Sodium dimethyldithiocarbamate hydrate	207233-95-2	I, II / 2, 3, 4, 5, 6, 9, 10, 11, 12, 13	BIOC-070N	100 mg	25
Sodium lignosulfonate (Tech)	8061-51-6	II / 12	BIOC-171N	100 mg	15
Sodium metabisulfite	7681-57-4	I, II, IV / 1, 2, 4, 5, 6, 9, 11, 12, 13, 20, 22	BIOC-036N-1G	1 gram	12
Sodium persulfate	7775-27-1	I / 4	BIOC-118N	100 mg	15
Sodium sulphite	7757-83-7	I, II, IV / 1, 2, 4, 5, 6, 9, 11, 12, 13, 20, 22	BIOC-038N-1G	1 gram	12
Sodium tetraborate	1330-43-4	I, II / 1, 2, 7, 8, 9, 10, 11, 13	BIOC-025N	100 mg	12
Sorbic acid	110-44-1	I, II / 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	BIOC-015N	100 mg	15
Spinosad (Tech)	168316-95-8	I, III / 3, 18	BIOC-113N-10MG	10 mg	62
Sumithrin	26002-80-2	III / 18	BIOC-238N-10MG	10 mg	32
Symclosene	87-90-1	I, II / 2, 3, 4, 5, 6, 7, 9, 11, 12	BIOC-060N	100 mg	25
Tebuconazol	107534-96-3	II / 7, 8, 9, 10	BIOC-149N-10MG	10 mg	42
Terbutylazine	5915-41-3	I, II / 2, 11, 12	BIOC-087N-10MG	10 mg	35
Terbutryn	886-50-0	II / 7, 9, 10	BIOC-145N-10MG	10 mg	12
Tetramethrin	7696-12-0	III / 18	BIOC-207N-10MG	10 mg	22
Thiabendazole	148-79-8	I, II, IV / 2, 6, 7, 8, 9, 10, 11, 12, 13, 20	BIOC-076N-10MG	10 mg	15
Thiamethoxam	153719-23-4	II, III / 8, 9, 18	BIOC-159N-10MG	10 mg	42
Thiram	137-26-8	I, II / 2, 6, 7, 9, 10, 11, 12	BIOC-071N	100 mg	15
THPS (Tech Grade)	55566-30-8	I, II / 2, 6, 9, 11, 12	BIOC-101N	100 mg	15
Tolnaftate	2398-96-1	II / 9	BIOC-164N-25MG	25 mg	35
Tolylfluamide	731-27-1	II, IV / 7, 8, 10, 21	BIOC-144N-10MG	10 mg	22
Transfluthrin	118712-89-3	III / 18	BIOC-225N-10MG	10 mg	32
Tributyltetradecylphosphonium chloride	81741-28-8	I, II / 2, 4, 9, 11, 12	BIOC-105N	100 mg	20
2,4,6-Trichlorophenol sodium salt	3784-03-0	I, II / 2, 3, 6, 9	BIOC-084N	100 mg	45
Triclocarban	101-20-2	I / 1, 2, 4	BIOC-014N-25MG	25 mg	15
Triclosan	3380-34-5	I, II / 1, 2, 3, 7, 9	BIOC-029N	100 mg	25
cis-Tricos-9-ene	27519-02-4	III / 18, 19	BIOC-213N	100 mg	55
Triflumuron	64628-44-0	III / 18	BIOC-220N-10MG	10 mg	32
Tris(hydroxymethyl)nitromethane	126-11-4	I, II / 2, 3, 6, 11, 12, 13	BIOC-068N	100 mg	15
Undecan-2-one (Methyl-nonyl-ketone)	112-12-9	III / 19	BIOC-189S-CN	1 mL	12
			100 µg/mL in Acetonitrile		
Warfarin	81-81-2	III / 14	BIOC-172N-10MG	10 mg	12
Warfarin sodium	129-06-6	III / 14	BIOC-174N	100 mg	25
Zinc borate (Tech)	12767-90-7	II / 9	BIOC-166N	100 mg	15
Zinc pyrrhione	13463-41-7	I, II, IV / 2, 6, 7, 9, 10, 13, 21	BIOC-096N	100 mg	30
Zinc sulfide	1314-98-3	II / 7, 9, 10	BIOC-147N	100 mg	15
Zineb	12122-67-7	IV / 21	BIOC-210N-10MG	10 mg	12
Ziram	137-30-4	I, II / 2, 6, 7, 9, 10, 11, 12	BIOC-072N-10MG	10 mg	15

Methods Other Than EPA

Halobenzoquinone, Nonylphenol and Octylphenol Ethoxylates

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.

Halobenzoquinones

Compound	CAS	All in 10 µg/mL in AcCN	
		Cat. No.	Price / 1 mL
2,3-Dibromo-5,6-dimethyl-1,4-benzoquinone	38969-08-3	HBQ-001S	\$ 52
2,6-Dichloro-1,4-benzoquinone	697-91-6	HBQ-002S	52
2,5-Dibromo-(1,4)benzoquinone	1633-14-3	HBQ-003S	52
2,3,5,6-Tetrabromo-(1,4)benzoquinone	488-48-2	HBQ-004S	52
3,4,5,6-Tetrabromo-(1,2)benzoquinone	2435-54-3	HBQ-005S	52
2,6-Dibromo-3,5-dimethyl-1,4-benzoquinone	87405-27-4	HBQ-006S	52
2,6-Dibromo-3-chloro-5-methyl-(1,4)benzoquinone		HBQ-007S	52



Nonylphenols (NPs) have been known to disrupt endocrine function and sexual development in aquatic organisms. Environmental exposure occurs from breakdown products of the industrially important alkylphenol (poly)ethoxylates (APEs). Due to the outstanding surfactant properties of APEs they have been produced from NP in large quantities and used in detergents and cleaning products as well as emulsifiers in paints, pesticides, and textiles. Ninety percent of the APEs produced are nonylphenol ethoxylates (NPEs). Octylphenol ethoxylates are less commonly used.

The US EPA is working collaboratively with ASTM to develop and validate an analytical method for NPs and APEs. Under its plan, the US EPA will add nonylphenols (NPs) and nonylphenol ethoxylates (NPEs) to the Toxic Release Inventory thus requiring companies to report their discharge of the substances into water, air, or land. Some U.S. corporations have recognized the dangers of NPEs and voluntarily eliminated NPEs in their products.

The European Union and Canada have already banned the use of NPEs in detergents. According to the European Union's Directive 76/769/EEC, the use of these compounds is restricted.

ASTM D7065-06 4-tert-Octylphenol, 4-Nonylphenol and their Tech Equivalents, Mono and Multi-Ethoxylates

Nonylphenol Calibration Standard Solution

M-1626 \$ 95 / 1 x 1 mL
At stated conc. in CH₂Cl₂ 7 comps.

Nonylphenol	(160 µg/mL)
Nonylphenol monoethoxylate	(320 µg/mL)
Nonylphenol diethoxylate	(640 µg/mL)
4-tert-Octylphenol	(32 µg/mL)
Bisphenol A (BPA)	(32 µg/mL)
4-Nonylphenol	(32 µg/mL)
4-Nonylphenol monoethoxylate	(32 µg/mL)

Nonylphenol Internal Standard

M-1626-IS \$ 40 / 1 x 1 mL
2000 µg/mL each in CH₂Cl₂ 2 comps.
Acenaphthene-d₁₀ Phenanthrene-d₁₀

Nonylphenol Target Component Spike Standard

M-1626-S \$ 35 / 1 x 1 mL
At stated conc. in MeOH 5 comps.

Nonylphenol	(160 µg/mL)
Nonylphenol monoethoxylate	(320 µg/mL)
Nonylphenol diethoxylate	(640 µg/mL)
4-tert-Octylphenol	(32 µg/mL)
Bisphenol A	(32 µg/mL)

Nonylphenol Surrogate Component Spike Standard

M-1626-SS \$ 45 / 1 x 1 mL
32 µg/mL each in MeOH 2 comps.

4-Nonylphenol	4-Nonylphenol monoethoxylate
---------------	------------------------------

M-1626-01S \$ 20 / 1 x 1 mL

1000 µg/mL in MeOH

Bisphenol A (BPA)

ASTM D7485

Nonylphenols in Environmental Water Set

D-7485-SET \$ 265 / 5 x 1 mL
2500 µg/mL each in AcCN:MeOH(90:10), * except (50:50) 7 comps.

Nonylphenol	D-7485-1 *	\$ 20 / 1 mL
Nonylphenol monoethoxylate	D-7485-2	\$ 110 / 1 mL
Nonylphenol diethoxylate	D-7485-3	\$ 110 / 1 mL
Octylphenol	D-7485-4	\$ 20 / 1 mL
2-Bromo-4-(1,1,3,3-tetramethylbutyl)phenol	D-7485-09-SS	\$ 75 / 1 mL

Storage Refrig (0-5°C)

Alkyl-Phenol-Metabolites

Compound	CAS No.	100 µg/mL in MeOH	Cat. No.	Price / 1 mL
Tech Grades				
Nonylphenol (tech)	84852-15-3	PEO-002S		\$ 15
Nonylphenol monoethoxylate (tech)	68412-54-4	PEO-005S		60
Nonylphenol diethoxylate (tech)		PEO-006S		60
Nonylphenol triethoxylate (tech)		PEO-008S		95
Nonylphenoxy acetic acid (tech)	3115-49-9	PEO-009S		125
Nonylphenoxyethoxyacetic acid (tech)		PEO-012S		125
4-n-Nonylphenol	104-40-5	PEO-004S		60
4-n-Nonylphenol monoethoxylate	104-35-8	PEO-007S		125
4-n-Nonylphenol diethoxylate	20427-84-3	PEO-014S		125
4-tert-Octylphenol	140-66-9	PEO-003S		15
4-tert-Octylphenol monoethoxylate		PEO-010S		75
4-tert-Octylphenol diethoxylate		PEO-011S		75
4-tert-Octylphenol triethoxylate		PEO-013S		75
4-n-Octylphenol	1806-26-4	PEO-001S		40
4-n-Octylphenol monoethoxylate	51437-89-9	PEO-016S		75
4-n-Octylphenol diethoxylate	51437-90-2	PEO-017S		75
4-n-Octylphenol triethoxylate		PEO-018S		75
2-Bromo-4-tert-octylphenol (Internal Standard)		PEO-015S-IS		75



Methods Other Than EPA

USP 467 VOCs, F-List Hazardous Waste

Method USP 467 VOCs from Stack Gas Effluents

USP/National Formulary VOC Mixtures

NF-467 \$ 20 / 1 x 1 mL
NF-467-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
 At stated conc. in MeOH 5 comps.

Benzene (200 µg/mL)	Methylene chloride (200 µg/mL)
Chloroform (100 µg/mL)	Trichloroethene (200 µg/mL)
1,4-Dioxane (200 µg/mL)	

NF-467-R4 \$ 25 / 1 x 1 mL
NF-467-R4-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
 At stated conc. in Dimethyl sulfoxide 5 comps.

Benzene (2 µg/mL)	Dichloromethane (600 µg/mL)
Chloroform (60 µg/mL)	Trichloroethene (80 µg/mL)
p-Dioxane (380 µg/mL)	

NF-467-R \$ 20 / 1 x 1 mL
NF-467-R-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
 At stated conc. in DMSO 6 comps.

Benzene (200 µg/mL)	Ethylene oxide (20 µg/mL)
Chloroform (100 µg/mL)	Methylene chloride (200 µg/mL)
1,4-Dioxane (200 µg/mL)	Trichloroethene (200 µg/mL)

NF-467-R6 \$ 20 / 1 x 1 mL
NF-467-R6-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
 At stated conc. in Dimethyl sulfoxide 5 comps.

Benzene (100 µg/mL)	Dichloromethane (500 µg/mL)
Chloroform (50 µg/mL)	Trichloroethene (100 µg/mL)
p-Dioxane (100 µg/mL)	

NF-467-R3 \$ 25 / 1 x 1 mL
NF-467-R3-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
 At stated conc. in MeOH 5 comps.

Benzene (2 µg/mL)	Dichloromethane (600 µg/mL)
Chloroform (60 µg/mL)	Trichloroethene (80 µg/mL)
p-Dioxane (380 µg/mL)	

F-List Hazardous Waste from Non-Specific Sources

F001 & F002 Solvent List Components

FL-0102 \$ 25 / 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

F004 List Component Mixes

FL-0004-CR \$ 20 / 1 x 1 mL
 2.0 mg/mL in MeOH 3 comps.

m-Cresol	p-Cresol
o-Cresol	

F003 List Components (excluding MeOH as analyte)

FL-0003 \$ 25 / 1 x 1 mL
 2.0 mg/mL in MeOH 10 comps.

Acetone	Ethyl ether
n-Butanol	Methyl isobutyl ketone
Cyclohexanone	m-Xylene
Ethyl acetate	o-Xylene
Ethylbenzene	p-Xylene

FL-0004-CA \$ 15 / 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 \$ 25 / 1 x 1 mL
 2.0 mg/mL each in MeOH 9 comps.

Benzene	Nitrobenzene
Carbon disulfide	2-Nitropropane
2-Ethoxyethanol	Pyridine
Isobutanol	Toluene
Methyl ethyl ketone	

Additional Alcohol Solvents

FL-OADD \$ 15 / 1 x 1 mL
 2.0 mg/mL each in H₂O 3 comps.

Ethanol	Methanol
Isopropanol	



Petrochemical Standards

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Over 100
ASTM Methods



Cross references to ISO, DIN, IP, JIS and AFNOR methods.

Our selection of Biofuel reference standards include FAMES, FAEEs (from popular biomasses), sulfurs, physical standards, wear metals and free and total glycerin.

Reference standards to meet the most common UOP LLC (a Honeywell company) methods.

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D4628	Wear Metals in Lube Oil
D4927	Wear Metals and Additives by WDXRF
D4951	Wear Metals and Additives by ICP
D5185	Wear Metals and Additives by ICP
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ASTM Committee D02 has jurisdiction over 580 published methods pertaining to petroleum products and lubricants. AccuStandard is a member of this technical committee, as well as ASTM Committee D16 on Aromatic Hydrocarbons. Working with fellow committee members has given us the opportunity to formulate products to meet the requirements of many of these methods.

In addition, AccuStandard can prepare, package and ship products for both ASTM PTP's (proficiency testing programs) and round robin studies. Please contact our Technical Service Department for more information.

Use this Cross-reference Table to match other Methods for known Petrochemical analysis.

ANALYSIS	ASTM	IP	ISO	DIN	JIS	AFNOR
Tag Flash Point	D56			51411	K 2580	M07-003
Distillation	D86	123	3405	51751	K 2254	M07-002
COC Flash Point	D92	36	2592	51376	K 2265	T60-118
PMCC Flash Point	D93	34	2719	51758	K 2265	M07-019
Kinematic Viscosity	D445	71-1	3104	51562	K 2283	T60-100
Aniline Point	D611	2	2977	51775		M07-021
Hydrocarbon Types by FID	D1319	156	3837	51791	K 2536	M07-024
Water (Karl Fischer)	D1744		6296			T60-154
Freezing Point	D2386	16	3013	51421	K 2276	M07-048
Cloud Point	D2500	219	3015	51597	K 2269	T60-105
Sulfur by XRF	D2622			51400T6	K 2541	
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Benzene by GC	D3606	425				
Sulfur by ED-XRF	D4294	336	8754			M07-053
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Metals by AA	D4628	308		51391T1		
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This is a partial list of Standards available for ASTM Methods.

Tables Generated from

(a) R.A. Nadkarni, "Guide to ASTM Test Methods for the Analysis of Petroleum Products and Lubricants," Manual 44 (200), ASTM West Conshohocken, PA
(b) Annual Book of ASTM Standards 2000, Volumes 05.01 to 05.05

Shipping Symbols

- ▲ Hazardous fee required.
- ▼ Hazardous fee not required
- * A ColdPAK is required
- ✖ Can not be shipped by Air
- ✈ Reformulated to ship by Air



On site Viscosity testing



ASTM

Physical Properties

ASTM D56, D92, D93 Flash Point Standards

The reference material is a stable, pure hydrocarbon with a method specific flash point determined by using the ASTM Method # referenced.

ASTM #	Nominal Flash Point	Cat. No.	Price / Unit
PMCC D93	60 °C	ASTM-P-132-01	\$ 110 / 250 mL
PMCC D93	93 °C	ASTM-P-132-02	110 / 250 mL
COC D92	200 °C	ASTM-P-132-03	110 / 250 mL
COC D92	230 °C	ASTM-P-132-04	110 / 250 mL
PMCC D93	65 °C	ASTM-P-133-01	\$ 175 / 250 mL
PMCC D93	134 °C	ASTM-P-133-02	130 / 250 mL
COC D92	138 °C	ASTM-P-133-03	130 / 250 mL
TCC D56	67 °C	ASTM-P-133-04	175 / 250 mL

Note: nominal 250 mL fill

ASTM D86 Distillation Standards

The automatic distillation apparatus duplicates the distillation conditions of the manual method. The increased reliance on electronic control requires an independent standard to verify that the apparatus is performing correctly. This synthetic blend of hydrocarbons boil in the temperature range specified in ASTM D86 distillation Groups 1 and 2, and a fuel oil that meets the group 4 criteria.

The Group 1 and 2 standards cover the boiling range 129-368°F (54-187°C). The Group 4 standard covers the range from 410-670°F (210-355°C).

Group	Description	Cat. No.	Price / Unit
1, 2	Synthetic Distillation Standard	ASTM-P-126-01 ▲	\$ 160 / 500 mL
		ASTM-P-126-VAP ▲	290 / 2 x 500 mL
4	Distillation Standard	ASTM-P-127-01 ▲	160 / 250 mL
		ASTM-P-127-02 ▲	290 / 500 mL

Note: nominal 500 mL fill, or 250 mL fill



Distillation apparatus

ASTM D445 Viscosity Calibration Standards

Viscosity @ 40°C	Cat. No.	Price / Unit
4 Cst	ASTM-P-128-01	\$ 60 / 500 mL
7 Cst	ASTM-P-128-02	60 / 500 mL
19 Cst	ASTM-P-128-03	60 / 500 mL
61 Cst	ASTM-P-128-04	60 / 500 mL
180 Cst	ASTM-P-128-05	60 / 500 mL
520 Cst	ASTM-P-128-06	60 / 500 mL

Note: nominal 500 mL fill

ASTM D611 Aniline Point Standards

The accuracy of automated aniline point apparatus can be verified using a range of standards whose aniline points are determined using ASTM D611 (Method A) and ASTM D611 (Method E). Standards are packaged in 20 mL ampules in an inert atmosphere.

Aniline Point Verification Method 611(A)

Set include 5 Standards listed below

Nominal Aniline Point	Cat. No.	Price / Unit
	D-611-SET	\$ 90 / 5 x 20 mL
0°C	D-611-01	20 mL
30°C	D-611-02	20 mL
55°C	D-611-03	20 mL
68°C	D-611-04	20 mL
94°C	D-611-05	20 mL

Aniline Point Verification Method 611(E)

Set include 3 Standards listed below

Nominal Aniline Point	Cat. No.	Price / Unit
	D-611E-SET	\$ 90 / 3 x 20 mL
43 °C	D-611E-01	20 mL
62 °C	D-611E-02	20 mL
77 °C	D-611E-03	20 mL
Pure Aniline	ASTM-P-134-PAK	\$ 30 / 5 x 15 mL

Technical Note

For routine purposes pure Aniline is packaged in ampules under dry nitrogen. This minimizes the risk of oxidation.

ASTM D1015, D2386, D5972 Freezing Points of High Purity Hydrocarbons

Nominal Freezing Point	Cat. No.	Price / Unit
- 50 °C	ASTM-P-129-01	\$ 110 / 250 mL
- 45 °C	ASTM-P-129-02	110 / 250 mL

Note: nominal 250 mL fill

▲ Hazardous fee required.



ASTM D1319 Calibration Standards by Fluorescent Indicator Adsorption FIA

Olefin FIA Calibration Curve

FIA-CAL-SET

\$ 350 / Set of 7 x 1 mL

	Std. 1 Target Vol. %	Std. 2 Vol. %	Std. 3 Vol. %	Std. 4 Vol. %	Std. 5 Vol. %	Std. 6 Vol. %	Std. 7 Vol. %
Total Olefins	2.0	4.0	5.0	6.0	8.0	10.0	12.0
Total Paraffins	57.0	55.0	52.0	51.0	45.0	45.0	40.0
Total Aromatics	23.0	24.0	25.0	26.0	29.0	28.0	30.0
Total Oxygenate	18.0	17.0	18.0	17.0	18.0	17.0	18.0

	Cat. No.	Price / 1 mL
Standard 1	FIA-CAL-01	\$ 60
Standard 2	FIA-CAL-02	60
Standard 3	FIA-CAL-03	60
Standard 4	FIA-CAL-04	60
Standard 5	FIA-CAL-05	60
Standard 6	FIA-CAL-06	60
Standard 7	FIA-CAL-07	60

FIA Olefin Standard

FIA-OLE

FIA-OLE-5ML

\$ 45 / 1 x 1 mL

\$ 135 / 1 x 5 mL

3 comps.

	Vol. %		Vol. %
1-Pentene	33.3	1-Heptene	33.3
2,3-Dimethyl-2-butene	33.3		

D1319
Meets
EPA Guidelines
for RFG
Analysis

Technical Note

These standards have been prepared for the determination of aromatics, olefins, oxygenates and saturates in petroleum fractions by Fluorescent Indicator Adsorption (FIA) IP designation 156/95.

The certificate for the FIA calibration curve lists both the volume percents for the hydrocarbon types and the individual volume percents for each analyte in the functional group.

The weight fraction for each hydrocarbon type and individual analyte is also listed on the certificate.

FIA Paraffin Standard

FIA-PAR

\$ 35 / 1 x 1 mL

FIA-PAR-5ML

\$ 115 / 1 x 5 mL

8 comps.

	Vol. %		Vol. %
<i>n</i> -Pentane	8	2,3-Dimethylpentane	14
<i>n</i> -Hexane	9	Isooctane	16
Cyclohexane	15	<i>n</i> -Octane	14
<i>n</i> -Heptane	14	<i>n</i> -Decane	7

FIA Aromatic Standard

FIA-ARO

\$ 35 / 1 x 1 mL

FIA-ARO-5ML

\$ 115 / 1 x 5 mL

10 comps.

	Vol. %		Vol. %
Benzene	4	<i>m</i> -Xylene	16
Toluene	32	1,2,4-Trimethylbenzene	8
Ethylbenzene	8	1,3,5-Trimethylbenzene	8
<i>p</i> -Xylene	8	1,2,4,5-Tetramethylbenzene	4
<i>o</i> -Xylene	8	Naphthalene	4

ASTM D1744, E1064, D4377 Water in Liquid Petroleum Products by Karl Fischer D4928, D6304

Standards are available for coulometric Karl Fischer titrations and are packaged in 2 mL, 5 mL, and 20 mL ampoules in sets of 5 and 10. The following concentrations are available:

Description	Cat. No.	Price / Unit
Water content 60 µg/g	KF-0.6X-5ML-VAP	\$ 65 / 10 x 5 mL
Water content 100 µg/g	KF-1X-2ML-VAP	40 / 10 x 2 mL
	KF-1X-5ML-VAP	45 / 10 x 5 mL
	KF-1X-20ML-PAK	50 / 5 x 20 mL
Water content 1000 µg/g	KF-10X-2ML-VAP	40 / 10 x 2 mL
	KF-10X-5ML-VAP	45 / 10 x 5 mL
	KF-10X-20ML-PAK	50 / 5 x 20 mL
Water content 5000 µg/g	KF-50X-2ML-VAP	40 / 10 x 2 mL
	KF-50X-5ML-VAP	45 / 10 x 5 mL
	KF-50X-20ML-PAK	50 / 5 x 20 mL

Value Added PAK

Packaged in ready to use quantities.



Karl Fischer titrator

Value Added Paks (Cat. No.'s ending in -VAP) provide multiple single units packaged together for both greater stability and cost savings.

ASTM D2500, D5771, D5772, D5773 Cloud Point Calibration Standards

Cloud Point, Approx. Value	Cat. No.	Price / Unit
+ 5 °C	ASTM-P-131-01 ▲	\$ 110 / 250 mL
- 2 °C	ASTM-P-131-02 ▲	110 / 250 mL
- 10 °C	ASTM-P-131-03 ▲	110 / 250 mL
- 15 °C	ASTM-P-131-04 ▲	110 / 250 mL
- 20 °C	ASTM-P-131-05 ▲	110 / 250 mL

▲ Hazardous fee required.



Cloud Point



D2622, D3120, D3246, D4294, D5453, D6334, D6445 & Proposed ASTM Sulfur Methods

These calibration standards are designed for the analysis of sulfur in a wide variety of matrices such as #2 diesel fuel, white mineral oil, kerosene, gasoline, crude oil and residual oil.

Traceability, Quality and Certification

All sulfur standards are manufactured from the highest quality raw materials, including well characterized starting materials and the lowest sulfur matrices available. Most standards are manufactured on a weight/weight basis using balances that are calibrated and verified daily against reference mass standards directly traceable to NIST. The concentration of these working level Sulfur standards have established traceability links to NIST SRM's where available.

Sulfur Standards for ASTM D2622, D3120, D3246, D4294, D5453, D6334, D6445 & Proposed ASTM Sulfur Methods

Sulfur in Heavy Weight Mineral Oil (75 cSt)

Ready-to-Use

Concentration		\$ 55 /		\$ 60 / PAK	
µg/g	Wt. %	Cat. No.	100 mL	Cat. No.	5 x 20 mL
Blank	0.000	SWMO-BL-100ML		SWMO-BL-20ML-PAK	
100	0.010	SWMO-1X-100ML		SWMO-1X-20ML-PAK	
200	0.020	SWMO-2X-100ML		SWMO-2X-20ML-PAK	
300	0.030	SWMO-3X-100ML		SWMO-3X-20ML-PAK	
400	0.040	SWMO-4X-100ML		SWMO-4X-20ML-PAK	
500	0.050	SWMO-5X-100ML		SWMO-5X-20ML-PAK	
750	0.075	SWMO-7.5X-100ML		SWMO-7.5X-20ML-PAK	
1,000	0.10	SWMO-10X-100ML		SWMO-10X-20ML-PAK	
1,500	0.15	SWMO-15X-100ML		SWMO-15X-20ML-PAK	
3,000	0.30	SWMO-30X-100ML		SWMO-30X-20ML-PAK	
5,000	0.50	SWMO-50X-100ML		SWMO-50X-20ML-PAK	
7,000	0.70	SWMO-70X-100ML		SWMO-70X-20ML-PAK	
10,000	1.00	SWMO-100X-100ML		SWMO-100X-20ML-PAK	
15,000	1.50	SWMO-150X-100ML		SWMO-150X-20ML-PAK	
20,000	2.00	SWMO-200X-100ML		SWMO-200X-20ML-PAK	
30,000	3.00	SWMO-300X-100ML		SWMO-300X-20ML-PAK	
40,000	4.00	SWMO-400X-100ML		SWMO-400X-20ML-PAK	
50,000	5.00	SWMO-500X-100ML		SWMO-500X-20ML-PAK	
60,000	6.00	SWMO-600X-100ML		SWMO-600X-20ML-PAK	

Set of above **SWMO-CAL-100ML-SET**
19 x 100 mL \$ 850

At stated concentration
5 x 20 mL \$ 60 / ea

Sulfur in #2 Diesel Fuel

Ready-to-Use

Concentration		100 mL		PAK 5 x 20 mL	
µg/g	Wt. %	Cat. No.		Cat. No.	
Blank	0.000	SDF-BL-100ML ▲		SDF-BL-20ML-PAK	
100	0.010	SDF-1X-100ML ▲		SDF-1X-20ML-PAK	
200	0.020	SDF-2X-100ML ▲		SDF-2X-20ML-PAK	
300	0.030	SDF-3X-100ML ▲		SDF-3X-20ML-PAK	
400	0.040	SDF-4X-100ML ▲		SDF-4X-20ML-PAK	
500	0.050	SDF-5X-100ML ▲		SDF-5X-20ML-PAK	
750	0.075	SDF-7.5X-100ML ▲		SDF-7.5X-20ML-PAK	
1,000	0.10	SDF-10X-100ML ▲		SDF-10X-20ML-PAK	
1,500	0.15	SDF-15X-100ML ▲		SDF-15X-20ML-PAK	
3,000	0.30	SDF-30X-100ML ▲		SDF-30X-20ML-PAK	
5,000	0.50	SDF-50X-100ML ▲		SDF-50X-20ML-PAK	
7,000	0.70	SDF-70X-100ML ▲		SDF-70X-20ML-PAK	
10,000	1.00	SDF-100X-100ML ▲		SDF-100X-20ML-PAK	
15,000	1.50	SDF-150X-100ML ▲		SDF-150X-20ML-PAK	
20,000	2.00	SDF-200X-100ML ▲		SDF-200X-20ML-PAK	
30,000	3.00	SDF-300X-100ML ▲		SDF-300X-20ML-PAK	
40,000	4.00	SDF-400X-100ML ▲		SDF-400X-20ML-PAK	
50,000	5.00	SDF-500X-100ML ▲		SDF-500X-20ML-PAK	
60,000	6.00	SDF-600X-100ML ▲		SDF-600X-20ML-PAK	

Set of above **SDF-CAL-100ML-SET**
19 x 100 mL \$ 850

SDF-CAL-20ML-SET
19 x (5 x 20 mL) \$ 950

Individual Sulfur Standards 100 mL Bottle \$ 55 ea

At stated concentration
5 x 20 mL \$ 60

▲ Hazardous fee required.

Custom Concentrations

AccuStandard can custom design a sulfur set for your specific needs. Contact our Technical Service Department for assistance or additional information.

Sulfur in Light Weight Mineral Oil (20 cSt)

Ready-to-Use

Concentration		\$ 55 /		\$ 60 / PAK	
µg/g	Wt. %	Cat. No.	100 mL	Cat. No.	5 x 20 mL
Blank	0.000	SWMO-LT-BL-100ML		SWMO-LT-BL-20ML-PAK	
100	0.010	SWMO-LT-1X-100ML		SWMO-LT-1X-20ML-PAK	
200	0.020	SWMO-LT-2X-100ML		SWMO-LT-2X-20ML-PAK	
300	0.030	SWMO-LT-3X-100ML		SWMO-LT-3X-20ML-PAK	
400	0.040	SWMO-LT-4X-100ML		SWMO-LT-4X-20ML-PAK	
500	0.050	SWMO-LT-5X-100ML		SWMO-LT-5X-20ML-PAK	
750	0.075	SWMO-LT-7.5X-100ML		SWMO-LT-7.5X-20ML-PAK	
1,000	0.10	SWMO-LT-10X-100ML		SWMO-LT-10X-20ML-PAK	
1,500	0.15	SWMO-LT-15X-100ML		SWMO-LT-15X-20ML-PAK	
3,000	0.30	SWMO-LT-30X-100ML		SWMO-LT-30X-20ML-PAK	
5,000	0.50	SWMO-LT-50X-100ML		SWMO-LT-50X-20ML-PAK	
7,000	0.70	SWMO-LT-70X-100ML		SWMO-LT-70X-20ML-PAK	
10,000	1.00	SWMO-LT-100X-100ML		SWMO-LT-100X-20ML-PAK	
15,000	1.50	SWMO-LT-150X-100ML		SWMO-LT-150X-20ML-PAK	
20,000	2.00	SWMO-LT-200X-100ML		SWMO-LT-200X-20ML-PAK	
30,000	3.00	SWMO-LT-300X-100ML		SWMO-LT-300X-20ML-PAK	
40,000	4.00	SWMO-LT-400X-100ML		SWMO-LT-400X-20ML-PAK	
50,000	5.00	SWMO-LT-500X-100ML		SWMO-LT-500X-20ML-PAK	
60,000	6.00	SWMO-LT-600X-100ML		SWMO-LT-600X-20ML-PAK	

Set of above **SWMO-LT-CAL-100ML-SET**
19 x 100 mL \$ 850

At stated concentration
5 x 20 mL \$ 60

Sulfur in Light Distillate Kerosene

Ready-to-Use

Concentration		\$ 55 /		\$ 60 / PAK	
µg/g	Wt. %	Cat. No.	100 mL	Cat. No.	5 x 20 mL
Blank	0.000	SK-BL-100ML		SK-BL-20ML-PAK	
100	0.010	SK-1X-100ML		SK-1X-20ML-PAK	
300	0.030	SK-3X-100ML		SK-3X-20ML-PAK	
500	0.050	SK-5X-100ML		SK-5X-20ML-PAK	
750	0.075	SK-7.5X-100ML		SK-7.5X-20ML-PAK	
1,000	0.10	SK-10X-100ML		SK-10X-20ML-PAK	
2,000	0.20	SK-20X-100ML		SK-20X-20ML-PAK	
3,000	0.30	SK-30X-100ML		SK-30X-20ML-PAK	
4,000	0.40	SK-40X-100ML		SK-40X-20ML-PAK	
5,000	0.50	SK-50X-100ML		SK-50X-20ML-PAK	
10,000	1.00	SK-100X-100ML		SK-100X-20ML-PAK	
20,000	2.00	SK-200X-100ML		SK-200X-20ML-PAK	

Set of above **SK-CAL-100ML-SET ▲**
12 x 100 mL \$ 500

At stated conc.
5 x 20 mL \$ 60

Technical Note

Sulfur introduced using di-*n*-butyl sulfide

Technical Note

Standards are prepared by adding well characterized sulfur compounds gravimetrically to the matrix. Since the matrix may contain some native sulfur, a blank must be used for correction and should be purchased with the standard.



Sulfur Standards for ASTM D2622, D3120, D3246, D4294, D5453, D6334, D6445 & Proposed ASTM Sulfur Methods (Continued)

Sulfur in Heavy Distillate Kerosene

Concentration			\$ 55 /		Concentration			\$ 55 /	
µg/g	Wt. %	Cat. No.	100 mL		µg/g	Wt. %	Cat. No.	100 mL	
Blank	0.000	SK-HD-BL-100ML			3,000	0.30	SK-HD-30X-100ML		
100	0.010	SK-HD-1X-100ML			4,000	0.40	SK-HD-40X-100ML		
200	0.020	SK-HD-2X-100ML			5,000	0.50	SK-HD-50X-100ML		
300	0.030	SK-HD-3X-100ML			7,000	0.70	SK-HD-70X-100ML		
400	0.040	SK-HD-4X-100ML			10,000	1.00	SK-HD-100X-100ML		
500	0.050	SK-HD-5X-100ML			15,000	1.50	SK-HD-150X-100ML		
750	0.075	SK-HD-7.5X-100ML			20,000	2.00	SK-HD-200X-100ML		
1,000	0.10	SK-HD-10X-100ML			30,000	3.00	SK-HD-300X-100ML		
1,500	0.15	SK-HD-15X-100ML			40,000	4.00	SK-HD-400X-100ML		
2,000	0.20	SK-HD-20X-100ML			50,000	5.00	SK-HD-500X-100ML		
					60,000	6.00	SK-HD-600X-100ML		

Technical Note

Sulfur introduced using di-*n*-butyl sulfide

Set of above SK-HD-CAL-100ML-SET ▲
21 x 100 mL \$ 950

Technical Note

Standards are prepared by adding well characterized sulfur compounds gravimetrically to the matrix. Since the matrix may contain some native sulfur, a blank must be used for correction and should be purchased with the standard.

ASTM D2622, D4294 Sulfur Calibration

Sulfur Calibration Standards for Gasoline & Reformulated Gasoline Analysis

In Isooctane

Sulfur Conc.	Sulfur Wt. %	Cat. No.
Blank	0.0	STP-BL-100ML ▲
10 µg/g	0.001	STP-1X-100ML ▲
20 µg/g	0.002	STP-2X-100ML ▲
30 µg/g	0.003	STP-3X-100ML ▲
50 µg/g	0.005	STP-5X-100ML ▲
100 µg/g	0.010	STP-10X-100ML ▲
200 µg/g	0.020	STP-20X-100ML ▲
300 µg/g	0.030	STP-30X-100ML ▲
400 µg/g	0.040	STP-40X-100ML ▲
600 µg/g	0.060	STP-60X-100ML ▲
1000 µg/g	0.10	STP-100X-100ML ▲
2000 µg/g	0.20	STP-200X-100ML ▲
3000 µg/g	0.30	STP-300X-100ML ▲

\$ 60 / 100 mL

Individual Bottles

In Isooctane

STP-CAL-100ML-SET ▲

\$ 650 / 13 x 100 mL

Set of 13 bottles

Technical Note

Di-*n*-butyl sulfide starting material is used with a low sulfur Isooctane matrix for RFG/gasoline sulfur standards.

ASTM D3120, D3246 Sulfur Calibration

Sulfur Calibration Set

D-3120-92-CAL-SET

\$ 75 / 8 x 1 mL

In Isooctane

Sulfur Conc.	Sulfur Wt. %	Cat. No.
Blank	—	D-3120-92-BL
1 µg/g	0.0001	D-3120-92-1X
3 µg/g	0.0003	D-3120-92-3X
10 µg/g	0.0010	D-3120-92-10X
30 µg/g	0.0030	D-3120-92-30X
50 µg/g	0.0050	D-3120-92-50X
75 µg/g	0.0075	D-3120-92-75X
100 µg/g	0.010	D-3120-92-100X

Technical Note

Well characterized di-*n*-butyl sulfide is used in a low sulfur Isooctane matrix for this calibration set.

ASTM D2622, D6334, D6445 Sulfur Calibration

Sulfur Calibration Standards used on XRF Energy Dispersive or Wavelength Instruments

Low Level

In Isooctane:Toluene (3:1)

Sulfur Conc.	Sulfur Wt. %	Cat. No.
Blank	0.0	D-2622-LL-BL-100ML ▲
5 µg/g	0.0005	D-2622-LL-5X-100ML ▲
10 µg/g	0.0010	D-2622-LL-10X-100ML ▲
30 µg/g	0.0030	D-2622-LL-30X-100ML ▲
50 µg/g	0.0050	D-2622-LL-50X-100ML ▲
75 µg/g	0.0075	D-2622-LL-75X-100ML ▲
100 µg/g	0.010	D-2622-LL-100X-100ML ▲
300 µg/g	0.030	D-2622-LL-300X-100ML ▲
500 µg/g	0.050	D-2622-LL-500X-100ML ▲
1000 µg/g	0.100	D-2622-LL-1000X-100ML ▲

D-2622-LL-CAL-100ML-SET ▲

\$ 450 / 10 x 100 mL

In Isooctane:Toluene (75:25)

Set of 10 bottles

Mid Level Additions

200 µg/g	0.020	D-2622-LL-200X-100ML ▲
400 µg/g	0.040	D-2622-LL-400X-100ML ▲
600 µg/g	0.060	D-2622-LL-600X-100ML ▲
700 µg/g	0.070	D-2622-LL-700X-100ML ▲
800 µg/g	0.080	D-2622-LL-800X-100ML ▲
900 µg/g	0.090	D-2622-LL-900X-100ML ▲
1100 µg/g	0.110	D-2622-LL-1100X-100ML ▲
1200 µg/g	0.120	D-2622-LL-1200X-100ML ▲

In Isooctane:Toluene (75:25)

\$ 60 / 100 mL

Individual Bottles

Technical Note

Thiophene & 2-methyl thiophene are used as starting material in these products.



ASTM Methods - Sulfur in Oil

Sulfur in Crude Oil Standards

µg/g	Wt. %	Cat. No. (100 mL)	Price
1,000	0.10	SCO-10X-100ML ▲	\$ 145
2,500	0.25	SCO-25X-100ML ▲	145
5,000	0.50	SCO-50X-100ML ▲	145
10,000	1.00	SCO-100X-100ML ▲	145
20,000	2.00	SCO-200X-100ML ▲	145
30,000	3.00	SCO-300X-100ML ▲	145
40,000	4.00	SCO-400X-100ML ▲	145
50,000	5.00	SCO-500X-100ML ▲	145

SCO-CAL-100ML-SET ▲
In Crude oil

\$ 1160 / 8 x 100 mL
Set of 8 individual bottles

Sulfur in Residual Oil Standards

µg/g	Wt. %	Cat. No. (100 mL)	Price
3,500	0.35	SRO-35X-100ML	\$ 145
7,000	0.70	SRO-70X-100ML	145
10,000	1.00	SRO-100X-100ML	145
15,000	1.50	SRO-150X-100ML	190
20,000	2.00	SRO-200X-100ML	145
30,000	3.00	SRO-300X-100ML	145
40,000	4.00	SRO-400X-100ML	145

SRO-CAL-100ML-SET
In Residual oil

\$ 1060 / x 100 mL
Set of 7 individual bottles

ASTM Methods Sulfur in Aromatic Hydrocarbons

Total Sulfur in Aromatic Compounds by Hydrogenolysis & Rateometric Colorimetry

ASTM-P-0010-PAK

\$ 75 / 5 x 1 mL

1000 µg/mL in Toluene

Sulfur (as Thiophene)

Trace Quantities of Sulfur in Liquid Aromatic Hydrocarbons by Oxidative Microcoulometry

ASTM-P-0020-PAK

\$ 75 / 5 x 1 mL

1000 µg/mL in Xylenes

Sulfur (as Dibenzothiophene)

ASTM-SSTDA/B-SET
in isooctane

\$ 100 / 10 x 2 mL
Set of 10 bottles

Sulfur	Cat. No. (2 mL)
Sulfur Blank	ASTM-SSTDA-BL
Sulfur @ 0.5 µg/g in Isooctane	ASTM-SSTDA-01
Sulfur @ 1.0 µg/g in Isooctane	ASTM-SSTDA-02
Sulfur @ 2.5 µg/g in Isooctane	ASTM-SSTDA-03
Sulfur @ 5.0 µg/g in Isooctane	ASTM-SSTDA-04
Sulfur Blank	ASTM-SSTDDB-BL
Sulfur @ 5.0 µg/g in Isooctane	ASTM-SSTDDB-04
Sulfur @ 10.0 µg/g in Isooctane	ASTM-SSTDDB-05
Sulfur @ 25.0 µg/g in Isooctane	ASTM-SSTDDB-06
Sulfur @ 50.0 µg/g in Isooctane	ASTM-SSTDDB-07

Standards of Interest

We can provide **Ready-to-Inject** working level calibration standards to meet unique laboratory applications.



AccuStandard is an active member in ASTM and strives to keep abreast of ASTM method revisions. If our listed formulation does not meet the most recent method revision, please contact Technical Support for an updated product.

Technical Note

Standards are prepared by adding well characterized sulfur compounds gravimetrically to the matrix. Since the matrix may contain some native sulfur, a blank must be used for correction and should be purchased with the standard.



Antek 900 Series Sulfur Analyzer



XOS Optical Systems, Sulfur Analyzer (Monochromatic Wavelength-Dispersive X-Ray Fluorescence Spectrometer)

▲ Hazardous fee required.



PIANO/PONA analysis is useful for fuel type differentiation as well as for estimating alteration by weathering and biodegradation. These complex mixes are prepared from materials of the highest available purity, accurate to four decimal places, and include a detailed data sheet on the formulation composition. The exact composition on a weight % basis for each analyte is provided on the certificate.

Products are prepared and certified gravimetrically.

- All weights are traceable through the National Institute of Standards and Technology.
- The uncertainty value is +/- 1% and is determined in accordance with the CITAC guide to quantifying Uncertainty in Analytical Measurement and is reported as an Expanded Uncertainty [U(Ccd)]. Assuming a normal distribution, a coverage factor K=2 (95% confidence level) is used in the calculation.

PIANO / PONA Analysis

PIANO Mix Set

ASTM-PIANO-R1-SET

\$ 1300 / 6 x 100 µL

Set includes the following ASTM-P-0030, ASTM-P-0031, ASTM-P-0032, ASTM-P-0033, ASTM-P-0034, ASTM-P-0035

PIANO *n*-Paraffins Mix

ASTM-P-0031-R1 \$ 210 / 1 mL

11 paraffins listed below at varying Wt. % typically in the range from 7.0 to 11.0 Wt. %. The actual certificate will have the exact Wt. % for each analyte.

	Typ. Wt. %
<i>n</i> -Pentane	9.4375
<i>n</i> -Hexane	9.5661
<i>n</i> -Heptane	9.8048
<i>n</i> -Octane	9.5518
<i>n</i> -Nonane	9.0482
<i>n</i> -Decane	9.2517
<i>n</i> -Undecane	9.3172
<i>n</i> -Dodecane	9.1855
<i>n</i> -Tridecane	8.9332
<i>n</i> -Tetradecane	8.7989
<i>n</i> -Pentadecane	7.1057

PIANO Isoparaffins Mix

ASTM-P-0032-R1

\$ 210 / 100 µL

35 Isoparaffins listed below at varying Wt. % typically in the range from 0.5 to 6.0 Wt. %. The actual certificate will have the exact Wt. % for each analyte.

	Typ. Wt. %		Typ. Wt. %		Typ. Wt. %
Isopentane	2.1928	2,2-Dimethylhexane	1.3061	2,3-Dimethylheptane	1.4870
2,3-Dimethylbutane	0.4466	2,5-Dimethyl hexane	3.6975	3,4-Dimethylheptane	3.7450
2-Methylpentane	3.2815	2,2,3-Trimethylpentane	1.7371	2-Methyloctane	3.7576
3-Methylpentane	5.3865	2,4-Dimethylhexane	1.6252	3-Methyloctane	5.6020
2,2-Dimethylpentane	1.7747	2,3-Dimethylhexane	1.6212	3,3-Diethylpentane	1.5755
2,4-Dimethylpentane	3.6993	2-Methylheptane	4.4073	2,2-Dimethyloctane	3.4135
2,2,3-Trimethylbutane	3.9291	4-Methylheptane	3.2015	3,3-Dimethyloctane	3.2582
3,3-Dimethylpentane	1.1848	3-Methylheptane	5.5186	2,3-Dimethyloctane	3.8842
2-Methylhexane	2.2384	3-Ethylhexane	0.6999	3-Ethylheptane	3.7482
2,3-Dimethylpentane	1.7883	3,3-Dimethylheptane	1.7011	2-Methylnonane	3.7144
3-Methylhexane	1.6708	2,5-Dimethylheptane	5.6731	3-Methylnonane	5.7687
3-Ethylpentane	0.5080	3,5-Dimethylheptane	0.7565		

PIANO Aromatics Mix

ASTM-P-0033-R1 \$ 210 / 100 µL

38 Aromatics listed below at varying Wt. % typically in the range from 0.2 to 7.0 Wt. %. The actual certificate will have the exact Wt. % for each analyte.

	Typ. Wt. %
Benzene	3.45
Toluene	4.5738
Ethylbenzene	6.7670
<i>m</i> -Xylene	2.2259
<i>p</i> -Xylene	4.4815
<i>o</i> -Xylene	2.2519
Isopropylbenzene	2.2248
<i>n</i> -Propylbenzene	4.4979
1-Methyl-3-ethylbenzene	2.2243
1-Methyl-4-ethylbenzene	2.2206
1,3,5-Trimethylbenzene	1.1076
1-Methyl-2-ethylbenzene	2.2611
1,2,4-Trimethylbenzene	2.2535
<i>tert</i> -Butylbenzene	4.5310
Isobutylbenzene	4.4216
<i>sec</i> -Butylbenzene	2.2368
1-Methyl-3-isopropylbenzene	1.1066
1-Methyl-4-isopropylbenzene	1.0668
1-Methyl-2-isopropylbenzene	1.1241
1-Methyl-3- <i>n</i> -propylbenzene	2.1135
1-Methyl-4- <i>n</i> -propylbenzene	2.2336
<i>n</i> -Butylbenzene	2.2087
1,2-Diethylbenzene	1.0947
1-Methyl-2- <i>n</i> -propylbenzene	2.2641
1,4-Dimethyl-2-ethylbenzene	2.2803
1,3-Dimethyl-5-ethylbenzene	2.2858
1,2-Dimethyl-4-ethylbenzene	2.2558
1,3-Dimethyl-2-ethylbenzene	1.1416
1,2-Dimethyl-3-ethylbenzene	2.1864
1,2,4,5-Tetramethylbenzene	0.2360
2-Methylbutylbenzene	1.1453
1- <i>tert</i> -Butyl-2-methylbenzene	0.7641
<i>n</i> -Pentylbenzene	4.4828
1- <i>tert</i> -Butyl-3,5-dimethylbenzene	2.1641
1- <i>tert</i> -Butyl-4-ethylbenzene	2.2322
1,3,5-Triethylbenzene	4.5671
1,2,4-Triethylbenzene	1.1087
<i>n</i> -Hexylbenzene	4.5029

PIANO Naphthenes Mix

ASTM-P-0034-R1 \$ 210 / 100 µL

30 Naphthenes listed below at varying Wt. % typically in the range from 0.5 to 8.0 Wt. %. The actual certificate will have the exact Wt. % for each analyte.

	Typ. Wt. %
Cyclopentane	4.9143
Methylcyclopentane	3.2829
Cyclohexane	5.3268
1,1-Dimethylcyclopentane	3.4612
<i>cis</i> -1,3-Dimethylcyclopentane	0.5963
<i>trans</i> -1,2-Dimethylcyclopentane	1.4715
<i>trans</i> -1,3-Dimethylcyclopentane	2.7531
Methylcyclohexane	5.6091
Ethylcyclopentane	3.5534
<i>ctc</i> -1,2,3-Trimethylcyclopentane	1.5859
<i>cct</i> -1,2,4-Trimethylcyclopentane	3.7208
<i>ctc</i> -1,2,4-Trimethylcyclopentane	1.6467
<i>trans</i> -1,4-Dimethylcyclohexane	3.6499
1-Ethyl-1-methylcyclopentane	1.0554
<i>trans</i> -1,2-Dimethylcyclohexane	1.6537
<i>ccc</i> -1,2,3-Trimethylcyclopentane	0.7971
Isopropylcyclopentane	3.5042
<i>cis</i> -1,2-Dimethylcyclohexane	3.7159
<i>n</i> -Propylcyclopentane	3.6438
<i>ccc</i> -1,3,5-Trimethylcyclohexane	3.5263
1,1,4-Trimethylcyclohexane	3.6791
<i>ctt</i> -1,2,4-Trimethylcyclohexane	3.6107
<i>ctc</i> -1,2,4-Trimethylcyclohexane	3.5069
1,1,2-Trimethylcyclohexane	3.3354
Isobutylcyclopentane	3.7123
Isopropylcyclohexane	5.7233
<i>n</i> -Butylcyclopentane	3.6944
Isobutylcyclohexane	5.6729
<i>t</i> -1-Methyl-2-propylcyclohexane	3.8434
<i>t</i> -1-Methyl-2-(4MP)cyclopentane	3.7534

PIANO Olefins Mix

ASTM-P-0035-R1 \$ 210 / 100 µL

25 Olefins listed below at varying Wt. % typically in the range from 1.2 to 9.0 Wt. %. The actual certificate will have the exact Wt. % for each analyte.

	Typ. Wt. %
3-Methyl-1-butene	1.9396
1-Pentene	4.1355
Cyclohexyl-1-butene	1.4440
2-Methyl-1,3-butadiene	2.3889
<i>trans</i> -2-Pentene	1.8034
<i>cis</i> -2-Pentene	1.9792
4-Methylpentene-1	3.4372
1-Hexene	7.0484
<i>trans</i> -2-Hexene	1.7302
2-Methylpentene-2	3.3901
<i>cis</i> -2-Hexene	3.8765
1-Heptene	7.6134
<i>trans</i> -3-Heptene	3.3469
<i>cis</i> -3-Heptene	5.8657
<i>trans</i> -2-Heptene	3.7217
<i>cis</i> -2-Heptene	5.7679
1-Octene	7.6901
<i>trans</i> -2-Octene	1.9432
<i>cis</i> -2-Octene	3.9502
1-Nonene	7.6425
<i>trans</i> -3-Nonene	1.9972
<i>cis</i> -3-Nonene	4.0042
<i>trans</i> -2-Nonene	1.9848
<i>cis</i> -2-Nonene	2.7952
1-Decene	8.2053

Technical Note

PIANO analytes may be added and/or subtracted and may vary by weight percentage. The certificate will reflect the exact analyte composition.

PIANO Mixture

ASTM-P-0030-R1

\$ 625 / 100 µL

139 comps.

The PIANO formulation contains the *n*-Paraffins, Isoparaffins, Aromatics, Naphthenes, and Olefins:

ASTM-P-0031-R1, ASTM-P-0032-R1, ASTM-P-0033-R1, ASTM-P-0034-R1, ASTM-P-0035-R1. Approximate weight %s for the total: *n*-Paraffins 18.5%, Isoparaffins 17.9%, Aromatics 23.6%, Naphthenes 20.9%, Olefins 19.0%. The certificate lists the weight % for all analytes in the formulation.



ASTM

Detailed Hydrocarbon Analysis

ASTM D2789 Hydrocarbon Types in Low Olefinic Gas by MS

Hydrocarbon Mixture

D-2789-CTM

D-2789-CTM-PAK

\$ 40 / 1 x 1 mL
SAVE 20% \$ 160 / 5 x 1 mL
9 comps.

Technical Note

Actual volume percent ratio and the final weight fractions for each analyte will be listed on the certificate.

	Vol. %		Vol. %
2-Methylpentane	7.2	<i>cis</i> -1,2-Dimethylcyclohexane	15.5
2,4-Dimethylpentane	9.4	Benzene	7.7
<i>n</i> -Octane	16.6	Toluene	10
Methylcyclopentane	7.1	<i>p</i> -Xylene	16.5
Methylcyclohexane	10		

ASTM D2887 Boiling Range Distribution of Petroleum Fractions by GC

Calibration Mixture

DRH-002N

DRH-002N-10X

\$ 30 / 100 mg
\$ 40 / 1 gm
17 comps.

Wt. %		Wt. %	
<i>n</i> -Hexane	6	<i>n</i> -Octadecane	5
<i>n</i> -Heptane	6	<i>n</i> -Eicosane	2
<i>n</i> -Octane	8	<i>n</i> -Tetracosane	2
<i>n</i> -Nonane	8	<i>n</i> -Octacosane	1
<i>n</i> -Decane	12	<i>n</i> -Dotriacontane	1
<i>n</i> -Undecane	12	<i>n</i> -Hexatriacontane	1
<i>n</i> -Dodecane	12	<i>n</i> -Tetracontane	1
<i>n</i> -Tetradecane	12	<i>n</i> -Tetratetracontane	1
<i>n</i> -Hexadecane	10		

Hydrocarbon Window Defining Standard

DRH-008S-R2

DRH-008S-R2-PAK **SAVE 20%**

500 µg/mL each in Chloroform

\$ 65 / 1 x 1 mL

\$ 260 / 5 x 1 mL

35 comps.

Octane	Nonadecane	Triacontane
Nonane	Phytane	<i>n</i> -Hentriacontane
Decane	Eicosane	Dotriacontane
Undecane	Heneicosane	Tritriacontane
Dodecane	Docosane	Tetraatriacontane
Tridecane	Tricosane	Pentatriacontane
Tetradecane	Tetracosane	Hexatriacontane
Pentadecane	Pentacosane	Heptatriacontane
Hexadecane	Hexacosane	Octatriacontane
Heptadecane	Heptacosane	Nonatriacontane
Octadecane	Octacosane	Tetracontane
Pristane	Nonacosane	

Fuel Oil Degradation/Retention Time Mix for Quantification of C₁₇/Pristane & C₁₈/Phytane ratios

DRH-005S-10X

2.0 mg/mL each in CH₂Cl₂:CS₂ (1:1)

4 comps.

DRH-005S-R1-10X

DRH-005S-R1-10X-PAK **SAVE 20%**

2.0 mg/mL each in Chloroform

Heptadecane
Octadecane
Phytane (2,6,10,14-Tetramethylhexadecane)
Pristane (2,6,10,14-Tetramethylpentadecane)

Technical Note

Pristane and phytane are included in the hydrocarbon window defining standard with C₈ to C₃₀ odd and even alkanes. Measuring the C₁₇/pristane and C₁₈/phytane ratios can be used to estimate fuel oil degradation.

We offer a fuel oil degradation mix containing just the four required analytes to determine the C₁₇/pristane and C₁₈/phytane ratio (DRH-005S-10X).

Column Test Mixture

D-2887

1% w/v in *n*-Octane

\$ 10 / 1 x 1 mL

2 comps.

n-Hexadecane *n*-Octadecane

Reference Gas Oil Sample Lot #2

D-2887-REFOIL

\$ 55 / 1 x 1 mL

Calibration Solutions

DRH-002S-R1

DRH-002S-R1-PAK

At stated conc. in Chloroform



\$ 50 / 1 x 1 mL

SAVE 20% \$ 200 / 5 x 1 mL

17 comps.

µg/mL		µg/mL	
<i>n</i> -Hexane	600	<i>n</i> -Octadecane	500
<i>n</i> -Heptane	600	<i>n</i> -Eicosane	200
<i>n</i> -Octane	800	<i>n</i> -Tetracosane	200
<i>n</i> -Nonane	800	<i>n</i> -Octacosane	100
<i>n</i> -Decane	1200	<i>n</i> -Dotriacontane	100
<i>n</i> -Undecane	1200	<i>n</i> -Hexatriacontane	100
<i>n</i> -Dodecane	1200	<i>n</i> -Tetracontane	100
<i>n</i> -Tetradecane	1200	<i>n</i> -Tetratetracontane	100
<i>n</i> -Hexadecane	1000		

DRH-002S-R2

DRH-002S-R2-PAK

0.1 % Wt./Wt. each in Chloroform



\$ 50 / 1 x 1 gm

SAVE 20% \$ 200 / 5 x 1 gm

20 comps.

<i>n</i> -Tetratetracontane	<i>n</i> -Octadecane	<i>n</i> -Octane
<i>n</i> -Tetracontane	<i>n</i> -Hexadecane	<i>n</i> -Heptane
<i>n</i> -Hexatriacontane	<i>n</i> -Tetradecane	<i>n</i> -Hexane
<i>n</i> -Dotriacontane	<i>n</i> -Dodecane	<i>n</i> -Pentane
<i>n</i> -Octacosane	<i>n</i> -Undecane	<i>n</i> -Pentadecane
<i>n</i> -Tetracosane	<i>n</i> -Decane	<i>n</i> -Heptadecane
<i>n</i> -Eicosane	<i>n</i> -Nonane	



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Simulated Distillation (SIM DIS)



Simulated Distillation (SIM DIS) and Proposed Motor Oil Volatility Method

AccuStandard has developed an extensive line of SIM DIS standards for normal and high temperature analytical requirements when generating boiling point versus retention time calibration curves. Since normal paraffins above Alkane C60 are not readily available, Polywax 500, 655, 850 and 1000 standards have been incorporated to perform SIM DIS analysis of heavy petroleum fractions with boiling points up to 1350°F.

SIM DIS Simulated Distillation Standards

Stock SIM DIS Paraffin Solution

ASTM-P-0050 \$ 85 / 1 x 5 mL
14 comps.

	Wt. %		Wt. %
<i>n</i> -Pentane	6.66	<i>n</i> -Dodecane	13.33
<i>n</i> -Hexane	6.66	<i>n</i> -Tetradecane	6.66
<i>n</i> -Heptane	6.66	<i>n</i> -Pentadecane	6.66
<i>n</i> -Octane	6.66	<i>n</i> -Hexadecane	6.66
<i>n</i> -Nonane	6.66	<i>n</i> -Heptadecane	6.66
<i>n</i> -Decane	6.66	<i>n</i> -Octadecane	6.66
<i>n</i> -Undecane	6.66	<i>n</i> -Eicosane	6.66

Working Level SIM DIS Paraffin Solution with Polywax 500

ASTM-P-0052 \$ 40 / 1 x 1 mL
ASTM-P-0052-PAK **SAVE 20%** \$ 160 / 5 x 1 mL
At stated conc. in Carbon disulfide 15 comps.

	Wt. %		Wt. %
<i>n</i> -Pentane	0.0333	<i>n</i> -Tetradecane	0.0333
<i>n</i> -Hexane	0.0333	<i>n</i> -Pentadecane	0.0333
<i>n</i> -Heptane	0.0333	<i>n</i> -Hexadecane	0.0333
<i>n</i> -Octane	0.0333	<i>n</i> -Heptadecane	0.0333
<i>n</i> -Nonane	0.0333	<i>n</i> -Octadecane	0.0333
<i>n</i> -Decane	0.0333	<i>n</i> -Eicosane	0.0333
<i>n</i> -Undecane	0.0333	Polywax 500	0.5
<i>n</i> -Dodecane	0.0666		



Carbon disulfide can not ship by air.
When possible alternate solvents can be used.
Contact our Technical Service Department for other options.

Polywax 850®

ASTM-P-0137N-2G \$ 20 / 2 grams

Polywax 850

Polywax 1000®

ASTM-P-0138N-2G \$ 20 / 2 grams

Polywax 1000

Polywax 500®

ASTM-P-0051N-2G \$ 20 / 2 grams

Polywax 500

Polywax 655®

ASTM-P-0053N-2G \$ 20 / 2 grams

Polywax 655

Standards of Interest

See ASTM Methods D3710, D5307, D5442, D6352 for additional calibration standards for hydrocarbon analysis.

ASTM D3120 & D3246 Trace Quantities of Sulfur in Light Liquid Petroleum Hydrocarbons by Oxidative Microcoulometry

Sulfur Calibration Set

D-3120-92-CAL-SET

\$ 75 / set of 8 x 1 mL

In Isooctane

Sulfur Conc.	Sulfur Wt. %	Cat. No.	Sulfur Conc.	Sulfur Wt. %	Cat. No.
Blank	—	D-3120-92-BL	30 µg/g	0.0030	D-3120-92-30X
1 µg/g	0.0001	D-3120-92-1X	50 µg/g	0.0050	D-3120-92-50X
3 µg/g	0.0003	D-3120-92-3X	75 µg/g	0.0075	D-3120-92-75X
10 µg/g	0.0010	D-3120-92-10X	100 µg/g	0.010	D-3120-92-100X

Technical Note

Standards are prepared by adding well characterized sulfur compounds gravimetrically to the matrix. Since the matrix may contain some native sulfur, a blank must be used for correction and should be purchased with the standard.

ASTM D3230 Determination of Salts in Crude Oil

see page 405

ASTM D3237 Lead in Gasoline by AA Spectroscopy

see page 405

ASTM D3246 Sulfur in Petroleum Gas by Oxidative Microcoulometry

see pages 276-279

ASTM D3524 Diesel Fuel Diluent in Used Diesel Engine Oils by GC

Calibration Curve

D-3524-CAL-5ML-SET

\$ 150 / 6 x 5 mL

D-3524-CAL-10ML-SET

\$ 250 / 6 x 10 mL

Analyte	Std. 1	Std. 2	Std. 3	Std. 4	Std. 5	Std. 6
Target Wt. %	Target Wt. %	Target Wt. %	Target Wt. %	Target Wt. %	Target Wt. %	Target Wt. %
# 2 Diesel	10	7.5	5.0	2.5	1.0	0
30 W Motor oil	90	92.5	95	97.5	99	100

Internal Standard

D-3524-IS-10ML

\$ 20 / 1 x 10 mL

D-3524-IS-10ML-PAK **SAVE 20%** \$ 100 / 5 x 10 mL

At stated conc. in *n*-Heptane 2 comps.

	Wt./Wt. %
<i>n</i> -Decane	1.0
<i>n</i> -Octadecane	0.2

Mid Level Daily QC Solution

D-3524-QC-10ML

\$ 30 / 1 x 10 mL

At stated conc.

Wt. / Wt. %

# 2 Diesel	5.0
30 W Motor oil	95.0

Column Resolution Mix

D-3524-CR

\$ 10 / 1 x 1 mL

D-3524-CR-PAK **SAVE 20%** \$ 40 / 5 x 1 mL

At stated conc. in *n*-Heptane 2 comps.

	Wt. / Wt. %
<i>n</i> -Hexadecane	1.0
<i>n</i> -Octadecane	1.0

ASTM D3605 Trace Metals in Gas Turbine Fuels by AA & Flame Emission & Spectroscopy

see page 405



ASTM D3606 Benzene & Toluene in Finished Motor & Aviation Gasoline by GC

Aromatics Quantitative Calibration Standards

Without Internal Standards

D-3606-25ML-SET

\$ 800 / 7 x 25 mL

Analyte	Std. 1	Std. 2	Std. 3	Std. 4	Std. 5	Std. 6	Std. 7
Calibr. range	Target Vol. %	Vol. %	Vol. %	Vol. %	Vol. %	Vol. %	Vol. %
Benzene	0.06 - 5.0	5.00	2.50	1.25	0.67	0.33	0.12
Toluene	0.5 - 20	20.00	15.00	10.00	5.00	2.50	1.00
Isooctane		75.00	82.50	88.75	94.33	97.17	98.88



With Internal Standard: MEK

D-3606/IS-SET

\$ 115 / 7 x 1 mL

D-3606/IS-2ML-SET

\$ 190 / 7 x 2 mL

D-3606/IS-2ML-SET-PAK

\$ 760 / 5 x (7 x 2) mL

Analyte	Std. 1	Std. 2	Std. 3	Std. 4	Std. 5	Std. 6	Std. 7
Calibr. range	Target Vol. %	Vol. %	Vol. %	Vol. %	Vol. %	Vol. %	Vol. %
Benzene	0.06 - 5.0	4.8	2.4	1.2	0.6432	0.3168	0.1152
Toluene	0.5 - 20	19.2	14.4	9.6	4.8000	2.4000	0.9600
Isooctane		72.0	79.2	85.2	90.5568	93.2832	94.9248
Methyl ethyl ketone (Internal Std.)	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Aromatics Quantitative Calibration Standard

With Internal Standard: sec Butanol

D-3606/IS2-SET

\$ 115 / 7 x 1 mL

D-3606/IS2-SET-PAK

\$ 460 / 5 x (7 x 1) mL

Analyte	Std. 1	Std. 2	Std. 3	Std. 4	Std. 5	Std. 6	Std. 7
Calibr. range	Target Vol. %	Vol. %	Vol. %	Vol. %	Vol. %	Vol. %	Vol. %
Benzene	0.06 - 5.0	4.8	2.4	1.2	0.6432	0.3168	0.1152
Toluene	0.5 - 20	19.2	14.4	9.6	4.8000	2.4000	0.9600
Isooctane		72.0	79.2	85.2	90.5568	93.2832	94.9248
sec Butanol (Internal Std.)	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Technical Note

Due to the possible use of other oxygenates (i.e. ethanol) in gasoline, a calibration curve using sec-butanol as an internal standard has been formulated. The use of this internal standard minimizes coelution caused by the oxygenate(s) and pre column - standard column configuration in the GC system.

Aromatics Quantitative Calibration Curve

D-3606/IS2-R1-SET

\$ 115 / set of 7 x 1 mL

Analyte	Std. 1	Std. 2	Std. 3	Std. 4	Std. 5	Std. 6	Std. 7
Calibr. range	Target Vol. %	Vol. %	Vol. %	Vol. %	Vol. %	Vol. %	Vol. %
Benzene	0.06 - 5.0	5	4.2	3.4	2.6	1.7	0.9
Toluene	0.5 - 20	20	17	14	11	8	5
Isooctane		75	78.8	82.6	86.4	90.3	94.1
sec Butanol (Internal Std.)	4	4	4	4	4	4	4

Daily Gasoline Refinery Quality Control Standards

With Internal Standard: sec Butanol

D-3606-QC-IS2-25ML

\$ 125 / 1 x 25 mL

D-3606-QC-IS2-25ML-PAK

\$ 600 / 5 x 25 mL

Each at stated quantities

4 comps.

Compound	Target Vol. %
Benzene	0.6432
Toluene	4.8000
Isooctane	90.5568
sec-Butanol (Internal Std.)	4.0

100

With Internal Standard: MEK

D-3606-QC/IS-10ML

\$ 75 / 1 x 10 mL

D-3606-QC/IS-10ML-PAK

\$ 300 / 5 x 10 mL

Each at stated quantities

4 comps.

Compound	Target Vol. %
Benzene	0.6432
Toluene	4.8000
Isooctane	90.5568
Methyl ethyl ketone (Internal Std.)	4.0

100

Without Internal Standard

D-3606-QC-25ML

\$ 125 / 1 x 25 mL

D-3606-QC-25ML-PAK

\$ 500 / 5 x 25 mL

Each at stated quantities

3 comps.

Compound	Target Vol. %
Benzene	0.67
Toluene	5.00
Isooctane	94.33

100



ASTM D3710 Boiling Range Distribution of Gasoline & Gasoline Fractions by GC

This **SIM DIS** (Simulated Distillation or GCD) Method is used to determine the boiling range distribution of gasoline and gasoline components. ASTM Method D3710 is used for petroleum products and fractions with a final boiling point of 500°F (260°C) or lower. By having an insight into the composition of the gasoline blend, essential data for the calculation of vapor pressure and a prediction of the D86 distillation curve can be made.

Qualitative Calibration Standard

D-3710-QUAL \$ 50 / 1 x 1 mL
 D-3710-QUAL-PAK **SAVE 20%** \$ 200 / 5 x 1 mL
 19 comps.

Approx. Wt./ Wt. %	Approx. Wt./ Wt. %
<i>n</i> -Butane 4.5	<i>n</i> -Octane 5.4
<i>n</i> -Butylbenzene 3.2	<i>n</i> -Pentadecane 2.2
<i>n</i> -Decane 3.2	<i>n</i> -Pentane 7.6
2,4-Dimethylpentane 5.4	<i>n</i> -Propane 1.5
<i>n</i> -Dodecane 3.2	<i>n</i> -Propylbenzene 4.3
<i>n</i> -Heptane 9.7	<i>n</i> -Tetradecane 2.2
<i>n</i> -Hexane 5.4	Toluene 10.8
2-Methylbutane 9.7	<i>n</i> -Tridecane 2.2
2-Methylpentane 5.4	<i>p</i> -Xylene 13
2-Methylpropane 1.5	

Quantitative Calibration Standard

D-3710 \$ 40 / 1 x 1 mL
 D-3710-PAK **SAVE 20%** \$ 160 / 5 x 1 mL
 16 comps.

Vol./Vol. %	Vol./Vol. %
<i>n</i> -Butylbenzene 3.5	<i>n</i> -Octane 5.8
<i>n</i> -Decane 3.5	<i>n</i> -Pentadecane 2.3
2,4-Dimethylpentane 5.8	<i>n</i> -Pentane 8.1
<i>n</i> -Dodecane 3.5	<i>n</i> -Propylbenzene 4.7
<i>n</i> -Heptane 10.5	<i>n</i> -Tetradecane 2.3
<i>n</i> -Hexane 5.8	Toluene 11.6
2-Methylbutane 10.5	<i>n</i> -Tridecane 2.3
2-Methylpentane 5.8	<i>p</i> -Xylene 14.0

ASTM D2887 Boiling Range Distribution of Petroleum Fractions by GC

Calibration Solution

DRH-002S-R1
 DRH-002S-R1-PAK
 At stated conc. in Chloroform

\$ 50 / 1 x 1 mL
SAVE 20% \$ 200 / 5 x 1 mL
 17 comps.

Reformulated to ship by Air

µg/mL	µg/mL	µg/mL	µg/mL
<i>n</i> -Hexane 600	<i>n</i> -Undecane 1200	<i>n</i> -Octadecane 500	<i>n</i> -Dotriacontane 100
<i>n</i> -Heptane 600	<i>n</i> -Dodecane 1200	<i>n</i> -Eicosane 200	<i>n</i> -Hexatriacontane 100
<i>n</i> -Octane 800	<i>n</i> -Tetradecane 1200	<i>n</i> -Tetracosane 200	<i>n</i> -Tetracontane 100
<i>n</i> -Nonane 800	<i>n</i> -Hexadecane 1000	<i>n</i> -Octacosane 100	<i>n</i> -Tetratetracontane 100
<i>n</i> -Decane 1200			

ASTM D3798 Analysis of *p*-Xylene by GC

p-Xylene Impurity Standards

With Internal Standard

D-3798-IS \$ 30 / 1 x 1 mL
 D-3798-IS-PAK **SAVE 20%** \$ 120 / 5 x 1 mL
 At stated conc. by weight 11 comps.

Wt./Wt. %	Wt./Wt. %
<i>n</i> -Pentane 0.15	<i>o</i> -Xylene 0.15
<i>n</i> -Octane 0.15	Cumene 0.15
Benzene 0.15	Propylbenzene 0.15
Toluene 0.15	
Ethylbenzene 0.15	Total Analytes 100
<i>p</i> -Xylene 98.65	plus <i>n</i> -Undecane* (ISTD) 0.500
<i>m</i> -Xylene 0.15	grams

Without Internal Standard

D-3798-10ML \$ 65 / 1 x 10 mL
 D-3798-10ML-PAK **SAVE 20%** \$ 260 / 5 x 10 mL
 At stated conc. by weight 10 comps.

Wt./Wt. %	Wt./Wt. %
<i>n</i> -Pentane 0.15	<i>p</i> -Xylene 98.65
<i>n</i> -Octane 0.15	<i>m</i> -Xylene 0.15
Benzene 0.15	<i>o</i> -Xylene 0.15
Toluene 0.15	Cumene 0.15
Ethylbenzene 0.15	Propylbenzene 0.15

Technical Note

Other internal standards can be used in conjunction with the bulk packaged D-3798 (1 x 10 mL) to meet your specific application. If you prefer to eliminate making standards, contact our Technical Service Department with your unique formulation for a custom quotation. A custom quotation request form is located in the back of this catalog.

ASTM D3831 Manganese in Gasoline by AA Spectroscopy

see page 383

ASTM D4059 Polychlorinated Biphenyls in Insulating Liquids by GC

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

Aroclor #	Conc.	Individual Price	PAK SAVE 20%	Aroclor #	Conc.	Individual Price	PAK SAVE 20%
CAS No.	ppm w/w	Cat. No. 1 mL	Cat. No. 5 x 1 mL	CAS No.	ppm w/w	Cat. No. 1 mL	Cat. No. 5 x 1 mL
Aroclor 1016	50	C-216-ST-1 \$ 25	C-216-ST-1-PAK \$ 100	Aroclor 1262	50	C-262-ST-1 25	C-262-ST-1-PAK 100
12674-11-2	500	C-216-ST-2 30	C-216-ST-2-PAK 120		500	C-262-ST-2 30	C-262-ST-2-PAK 120
Aroclor 1221	50	C-221-ST-1 25	C-221-ST-1-PAK 100	Aroclor 1268	50	C-268-ST-1 25	C-268-ST-1-PAK 100
11104-28-2	500	C-221-ST-2 30	C-221-ST-2-PAK 120		500	C-268-ST-2 75	C-268-ST-2-PAK 300
Aroclor 1232	50	C-232-ST-1 25	C-232-ST-1-PAK 100				
11141-16-5	500	C-232-ST-2 75	C-232-ST-2-PAK 300				
Aroclor 1242	50	C-242-ST-1 25	C-242-ST-1-PAK 100				
53469-21-9	500	C-242-ST-2 30	C-242-ST-2-PAK 120				
Aroclor 1248	50	C-248-ST-1 25	C-248-ST-1-PAK 100				
12672-29-6	500	C-248-ST-2 30	C-248-ST-2-PAK 120				
Aroclor 1254	50	C-254-ST-1 25	C-254-ST-1-PAK 100				
11097-69-1	500	C-254-ST-2 30	C-254-ST-2-PAK 120				
Aroclor 1260	50	C-260-ST-1 25	C-260-ST-1-PAK 100				
11096-82-5	500	C-260-ST-2 30	C-260-ST-2-PAK 120				

Neats (Individuals)

Aroclor #	Cat. No.	Price / Unit
Aroclor 1016	C-216N	\$ 40 / 100 mg
Aroclor 1221	C-221N-50MG	50 / 50 mg
Aroclor 1242	C-242N-50MG	25 / 50 mg
Aroclor 1248	C-248N-50MG	40 / 50 mg
Aroclor 1254	C-254N-50MG	55 / 50 mg
Aroclor 1260	C-260N-50MG	40 / 50 mg
Aroclor 1262	C-262N-50MG	40 / 50 mg

Aroclor-free Transformer Oil

T-W130 \$ 10 / 1 x 1 mL



ASTM D4291 Trace Ethylene Glycol in Used Engine Oil

D-4291-93
D-4291-93-PAK
2000 µg/mL in water
Ethylene glycol

\$ 20 / 5 x 1 mL
SAVE 20% \$ 80 / 5 x 1 mL

ASTM D4294 Sulfur in Petroleum Products by ED-XRF Spectroscopy

see pages 276-279

ASTM D4377 Water in Crude oils by Potentiometric Karl Fischer Titration

see page 267

ASTM D4420 Aromatics in Finished Gasoline by GC

see page 402

Aromatics in Gasoline by GC/TC

D-4420-CAL-SET

Analyte	Std. 1	Std. 2	Std. 3	Std. 4	Std. 5	Std. 6	Std. 7
	Target	Target	Target	Target	Target	Target	Target
	Vol. %	Vol. %	Vol. %	Vol. %	Vol. %	Vol. %	Vol. %
Benzene	0.05	0.10	0.25	0.75	1.25	2.50	5.00
Toluene	0.5	1.00	2.50	5.00	10.00	15.00	25.00
Total Xylenes (C ₈ aromatics)	5	10.00	15.00	20.00	25.00	1.00	3.00
n-Butylbenzene (C ₉ + aromatics)	30.00	25.00	20.00	10.00	5.00	15.00	2.50
Isooctane	64.45	63.90	62.25	64.25	58.75	66.50	64.50

\$ 105 / set of 7 x 1 mL

D-4420-94	\$ 20 / 1 x 1 mL
D-4420-94-PAK	SAVE 20% \$ 80 / 5 x 1 mL
	5 comps.
	Vol. %
Benzene	3.00
Toluene	10.00
Total Xylenes (C ₈ aromatics)	15.00
n-Butylbenzene (C ₉ + aromatics)	15.00
Isooctane	57.00

ASTM D4628 Barium, Calcium, Magnesium & Zinc in Unused Lubricating Oil

see page 380-382

ASTM D4629 Trace Nitrogen in Liquid Petroleum Hydrocarbons by Syringe/Inlet Oxidative Combustion and Chemiluminescence Detection. IP 379/88

D4629 is used to determine trace total nitrogen naturally found in liquid hydrocarbons boiling from 50 to 400°C with viscosities 0.2 - 10 cSt. This method monitors feed stocks for nitrogen to prevent the poisoning of some process catalysts when trace nitrogenous materials are present.

Nitrogen Calibration Set - Low Boiling Solvents

D-4629-LB-CAL-R1-SET

Nitrogen introduced using Pyridine

\$ 85 / 8 x 1 mL

Set includes the following Cat. No.s

Each in Isooctane	Cat. No.	Price / 1 mL	Each in Isooctane	Cat. No.	Price / 1 mL
Blank	D-4629-91-LB-BL	\$ 20	Nitrogen @ 25 µg/mL	D-4629-91-LB-25X	\$ 20
Nitrogen @ 0.3 µg/mL	D-4629-91-LB-0.3X	20	Nitrogen @ 50 µg/mL	D-4629-91-LB-50X	20
Nitrogen @ 1 µg/mL	D-4629-91-LB-1X	20	Nitrogen @ 75 µg/mL	D-4629-91-LB-75X	20
Nitrogen @ 10 µg/mL	D-4629-91-LB-10X	20	Nitrogen @ 100 µg/mL	D-4629-91-LB-100X	20

Stock Nitrogen Solution Low Boiling Solvents

D-4629-91-LB-CON	\$ 20 / 1 x 1 mL
D-4629-91-LB-CON-PAK	\$ 80 / 5 x 1 mL
1000 µg/mL in Isooctane	

Nitrogen introduced using Pyridine

Nitrogen Calibration Set - High Boiling Solvents

D-4629-HB-CAL-R1-SET

Nitrogen introduced using Carbazole

\$ 85 / set of 8 x 1 mL

Set includes the following Cat. No.s

Each in Toluene	Cat. No.	Price / 1 mL	Each in Toluene	Cat. No.	Price / 1 mL
Blank	D-4629-91-HB-BL	\$ 20	Nitrogen @ 25 µg/mL	D-4629-91-HB-25X	\$ 20
Nitrogen @ 0.3 µg/mL	D-4629-91-HB-0.3X	20	Nitrogen @ 50 µg/mL	D-4629-91-HB-50X	20
Nitrogen @ 1 µg/mL	D-4629-91-HB-1X	20	Nitrogen @ 75 µg/mL	D-4629-91-HB-75X	20
Nitrogen @ 10 µg/mL	D-4629-91-HB-10X	20	Nitrogen @ 100 µg/mL	D-4629-91-HB-100X	20

Stock Nitrogen Solution High Boiling Solvents

D-4629-91-HB-CON	\$ 20 / 1 x 1 mL
D-4629-91-HB-CON-PAK	\$ 80 / 5 x 1 mL
1000 µg/mL in Toluene:Acetone (9:1)	

Nitrogen introduced using Carbazole

Nitrogen Calibration Set - Low Level

ASTM-P-0070-SET

Nitrogen introduced using Aniline

\$ 75 / 6 x 1 mL

Set includes the following Cat. No.s

Each in Isooctane	Cat. No.	Unit	Each in Isooctane	Cat. No.	Unit
Isooctane Blank	ASTM-P-0070-BL	1 mL	Nitrogen @ 2.0 µg/g	ASTM-P-0070-4X	1 mL
Nitrogen @ 0.5 µg/g	ASTM-P-0070-1X	1 mL	Nitrogen @ 5.0 µg/g	ASTM-P-0070-10X	1 mL
Nitrogen @ 1.0 µg/g	ASTM-P-0070-2X	1 mL	Nitrogen @ 10.0 µg/g	ASTM-P-0070-20X	1 mL

Technical Note

Standards are prepared by adding well characterized nitrogen compounds gravimetrically to the matrix. Since the matrix may contain some native nitrogen, a blank must be used for correction and should be purchased with the standard.

Low Level Nitrogen & Sulfur Calibration Set

ASTM-P-0071-SET

The Nitrogen is introduced using Aniline and the Sulfur is introduced using di-n-butyl sulfide

\$ 50 / 4 x 1 mL

Set includes the following Cat. No.s

Concentration in Benzene	Cat. No.	Unit
Benzene Blank	ASTM-P-0071-BL	1 mL
Nitrogen @ 0.25 µg/g & Sulfur @ 0.25 µg/g	ASTM-P-0071-01	1 mL
Nitrogen @ 0.50 µg/g & Sulfur @ 0.50 µg/g	ASTM-P-0071-02	1 mL
Nitrogen @ 1.00 µg/g & Sulfur @ 1.00 µg/g	ASTM-P-0071-03	1 mL


ASTM D4815 MtBE, EtBE, TAME, DIPE, Tertiary-amyl & C1 to C4 Alcohols in Gasoline by GC
Oxygenate Quantitative Calibration Mixtures
Without Internal Standard
D-4815-10ML-SET
\$ 300 / set of 5 x 10 mL of 5 component mix

Analyte	Target Concentrations				
	Std. 1 Wt. %	Std. 2 Wt. %	Std. 3 Wt. %	Std. 4 Wt. %	Std. 5 Wt. %
Ethanol	3.00	0.10	6.00	9.00	12.00
<i>t</i> -Butanol	0.10	3.00	6.00	8.00	12.00
Methyl <i>t</i> -butyl ether (<i>MtBE</i>)	20.0	15.00	10.00	5.00	0.10
<i>t</i> -Pentanol	1.25	5.00	2.50	3.75	0.10
Isooctane/xylene (65:35)	75.65	76.90	75.50	74.25	75.80

With Internal Standard
D-4815/IS-SET of 6 component mix
D-4815/IS-SET-PAK
**\$ 125 / set of 5 x 1 mL
\$ 500 / set of 5 x (5 x 1 mL)**

Analyte	Calibration Range	Target Concentrations				
		Std. 1 Wt. %	Std. 2 Wt. %	Std. 3 Wt. %	Std. 4 Wt. %	Std. 5 Wt. %
Ethanol	0.1 - 11.40	2.85	0.095	5.70	8.55	11.40
<i>t</i> -Butanol	0.1 - 11.40	0.095	2.85	5.70	7.60	11.40
Methyl <i>t</i> -butyl ether (<i>MtBE</i>)	0.1 - 19.0	19.00	14.25	9.50	4.75	0.095
<i>t</i> -Pentanol	0.1 - 4.79	1.19	4.75	2.38	3.56	0.095
1,2-Dimethoxyethane (<i>DME</i>) (Internal Standard)		5.00	5.00	5.00	5.00	5.00
Isooctane/xylene (65:35)		71.87	73.06	71.73	70.54	72.01
Total Oxygenates & Internal Standard		28.14	26.95	28.28	29.46	28.00

Oxygenate Internal Standard
M-GRO-IS-5ML \$ 10 / 1 x 5 mL
M-GRO-IS-5ML-PAK *SAVE 20%* \$ 40 / 5 x 5 mL

1,2-Dimethoxyethane (neat)

Oxygenate Free Refinery Gasoline Blank
RFA-BLNK-10ML \$ 10 / 1 x 10 mL
RFA-BLNK-10ML-PAK *SAVE 20%* \$ 40 / 5 x 10 mL

RFA Gasoline (neat)

Quantitative Peak ID and Retention Time Mixture
D-4815-RT
\$ 25 / 1 x 1 mL
D-4815-RT-PAK
***SAVE 20%* \$ 100 / 5 x 1 mL**

16 comp. core mix

	Wt. %
Methylcyclopentane	4.00
Methanol	7.30
Ethanol	7.30
Isopropanol	7.30
<i>tert</i> -Butanol	7.30
<i>n</i> -Propanol	7.30
Methyl <i>tert</i> -butyl ether (<i>MtBE</i>)	4.00
<i>sec</i> -Butanol	7.30
Diisopropyl ether (<i>DIPE</i>)	4.00
Isobutanol	7.30
Ethyl <i>tert</i> -butyl ether (<i>EtBE</i>)	4.00
<i>tert</i> -Pentanol	7.30
1,2-Dimethoxyethane (ISTD)	6.00
<i>n</i> -Butanol	7.30
Benzene	5.00
<i>tert</i> -Amyl methyl ether	7.30
	100

Valve Timing Mixture
D-4815-VT
\$ 25 / 1 x 1 mL
D-4815-VT-PAK
***SAVE 20%* \$ 100 / 5 x 1 mL**

5 comps.

	Wt. %
Methylcyclopentane	10.00
Diisopropyl ether (<i>DIPE</i>)	10.00
Ethyl <i>tert</i> -butyl ether (<i>EtBE</i>)	10.00
Methyl <i>tert</i> -butyl ether (<i>MtBE</i>)	10.00
<i>n</i> -Hexane	60.00

ASTM D4927 Elemental Analysis of Lubricant and Additive Components - Ba, Ca, P, S, and Zn by WD-XRF Spectroscopy

see page 380-382

ASTM D4928 Water in Crude Oils by Potentiometric Karl Fischer Titration

see page 267

ASTM D4929 Organic Chloride Content in Crude Oil - Test Method B Combustion and Microcoulometry
Working Level Chlorine Standard
D-4929-94 \$ 10 / 1 x 5 mL
D-4929-94-PAK *SAVE 20%* \$ 40 / 5 x 5 mL

10 µg/mL in Isooctane

Chlorine

Stock Chlorine Standard
D-4929-94-100X \$ 15 / 1 x 5 mL
D-4929-94-100X-PAK *SAVE 20%* \$ 60 / 5 x 5 mL

1000 µg/mL in Isooctane

Chlorine

Chlorine in Lube Oils
ASTM-P-0092-100ML-SET

Each in 75 cSt mineral oil

ASTM-P-0092-BL-100ML
\$ 475 / set of 7 x 100 mL

Cat. No.	Chlorine Wt. %	Chlorine µg/g	Unit	\$ 75 / 100 mL Price
ASTM-P-0092-BL-100ML	Blank	Blank	100 mL	\$ 75
ASTM-P-0092-0.1X-100ML	0.001	10	100 mL	75
ASTM-P-0092-1X-100ML	0.01	100	100 mL	75
ASTM-P-0092-5X-100ML	0.05	500	100 mL	75
ASTM-P-0092-10X-100ML	0.1	1,000	100 mL	75
ASTM-P-0092-100X-100ML	1	10,000	100 mL	75
ASTM-P-0092-500X-100ML	5	50,000	100 mL	75

ASTM D4951 Additive Elements in Lubricating Oils by Inductively Coupled Plasma Atomic Emission Spectrometry

see page 381-382

ASTM D5056 Trace Metals in Petroleum Coke by AA

see pages 375



ASTM D5059 Lead in Gasoline by X-Ray Spectroscopy IP Designation 228/79

Part A - Lead in Gasoline Standards

D-5059-A-CAL-100ML-SET ▲

7 solutions in Isooctane

\$ 450 / 7 x 100 mL

Lead Concentration g Pb/US gal	g Pb/ UK gal	mg Pb/mL	Cat. No.	Price 100 mL
0.0000	0.000	0.000	D-5059-A-01-100ML ▲	\$ 10
0.1000	0.120	0.026	D-5059-A-02-100ML ▲	80
1.0000	1.200	0.264	D-5059-A-03-100ML ▲	80
2.0000	2.400	0.528	D-5059-A-04-100ML ▲	80
3.0000	3.600	0.793	D-5059-A-05-100ML ▲	80
4.0000	4.800	1.057	D-5059-A-06-100ML ▲	80
5.0000	6.000	1.321	D-5059-A-07-100ML ▲	80

Internal Standard

D-5059-IS-100ML

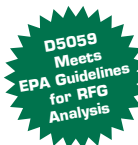
\$ 80 / 1 x 100 mL

D-5059-IS-10ML-PAK

\$ 60 / 5 x 10 mL ampules

0.793 mg/mL in Mineral Oil

Bismuth



Technical Note

AccuStandard has formulated D5059 standards to measure the lead content in gasoline for both high and low concentrations using bismuth as an internal standard. The 100 mL quantities are designed for laboratories analyzing many samples while the 10 mL ampules are for laboratories that have limited requests for the test method. Should you require bulk quantities of the internal standard packaged in single-use ampules, contact our Technical Service Department for a quotation.

Technical Note

Certificates for D5059 standards have the lead content listed in 3 concentration units.

Part C - Lead in Gasoline Standards

D-5059-C-CAL-100ML-SET ▲

\$ 450 / set of 7 x 100 mL

The set contains the following 7 solutions in Isooctane

Lead Concentration g Pb/US gal	g Pb/ UK gal	µg Pb/mL	Cat. No.	Price 100 mL
0.0000	0.000	0.000	D-5059-C-01-100ML ▲	\$ 10
0.0010	0.001	0.264	D-5059-C-02-100ML ▲	80
0.0050	0.006	1.321	D-5059-C-03-100ML ▲	80
0.0100	0.012	2.642	D-5059-C-04-100ML ▲	80
0.0500	0.060	13.209	D-5059-C-05-100ML ▲	80
0.1000	0.120	26.417	D-5059-C-06-100ML ▲	80
0.3000	0.360	79.252	D-5059-C-07-100ML ▲	80

ASTM D5134 Petroleum Naphthas through n-Nonane by Capillary GC

Qualitative Reference Petroleum Set

D-5134-92-SET

\$ 75 / 3 x 1 mL

Qualitative Reference Standards	Cat. No.	Price / 1 mL
Alkylate Standard neat fraction approx. 30 comps. identified	D-5134-92-ALK	\$ 30
Naphtha Standard neat fraction approx. 70 comps. identified	D-5134-92-NAP	30
Reformate Standard neat fraction approx. 100 comps. identified	D-5134-92-REF	20

Column Evaluation Mix

D-5134-92-CEM

\$ 35 / 1 x 1 mL

7 comps.

	Wt. / Wt. %	Wt. / Wt. %
Toluene	0.5	4-Methylheptane 1.0
n-Heptane	1.0	n-Octane 1.0
2,3,3-Trimethylpentane	1.0	2-Methylpentane 94.5
2-Methylheptane	1.0	

Linearity Check Mix

D-5134-92-LCM-PAK

10% w/w each component

\$ 55 / 5 x 50 mg

10 comps.

Benzene	2-Methylheptane
2,4-Dimethylheptane	2-Methylhexane
2,4-Dimethylhexane	n-Nonane
n-Heptane	n-Octane
n-Hexane	Toluene

ASTM D5184 Al and Si in Fuel Oils by Ashing, Fusion, ICP-AES & AA Spectrometry

see page 370

ASTM D5185 Additive Elements, Wear Metals & Contaminants in Used Lubricating Oils by ICP-AES

see page 375

ASTM D5186 Aromatic Content & Polynuclear Aromatic Content of Diesel Fuels & Aviation Turbine Fuels by SFC

Performance Solution

D-5186-96-PM

\$ 40 / 1 x 1 mL

D-5186-96-PM-PAK

SAVE 20% \$ 160 / 5 x 1 mL

At stated approx. Wt. %

4 comps.

Wt./Wt. %	Wt./Wt. %	Wt./Wt. %	Wt./Wt. %
n-Hexadecane 75	Tetralin 3.0		
Naphthalene 2.0	Toluene 20		

Detector Linearity

Check Solution Set

D-5186-96-DLC-SET

\$ 30 / 2 x 1 mL

Set includes the below two Cat. No.'s

#2 Diesel Fuel in n-Hexadecane

25% w/w	D-5186-96-DLC-25X
50% w/w	D-5186-96-DLC-50X

Docosane

D-5186-91-PM-0.4X

20% w/w in Toluene

\$ 20 / 1 x 1 mL

▲ Hazardous fee required.



ASTM D5188 Vapor - Liquid Ratio Temperature Standards

Performance Check Samples for daily monitoring of instrument performance

Volume/Liquid Temp	Cat. No.	Price / Set
36.1°C (96.9°F)	ASTM-P-125-01-VAP	\$ 45 / 5 x 20 mL
68.0°C (155.7°F)	ASTM-P-125-02-VAP	45 / 5 x 20 mL

ASTM D5191 & D5482 Vapor Pressure Standards

Vapor Pressure Quality Control Samples

Vapor Pressure	Cat. No.	Price / Set
68.3kPa (9.91 psi)	ASTM-P-124-01-VAP	\$ 65 / 10 x 10 mL
68.0kPa (9.86 psi)	ASTM-P-124-02-VAP	90 / 10 x 10 mL
51.1kPa (7.41 psi)	ASTM-P-124-03-VAP	150 / 10 x 10 mL
46.7kPa (6.77 psi)	ASTM-P-124-04-VAP	129 / 10 x 10 mL
22.5kPa (3.26 psi)	ASTM-P-124-05-VAP	50 / 10 x 10 mL
7.1kPa (1.03 psi)	ASTM-P-124-06-VAP	50 / 10 x 10 mL

Technical Note

Consists of pure solvents with known vapor pressures.

Value Added PAK

Packaged in ready to use quantities.

ASTM D5307 Boiling Range Distribution of Crude Petroleum by GC

Quantitative Paraffins Standard

D-5307-QUANT \$ 60 / 1 x 2 mL
D-5307-QUANT-PAK **SAVE 20%** \$ 240 / 5 x 2 mL
Equal Wt. % 16 comps.

<i>n</i> -Decane	<i>n</i> -Octadecane
<i>n</i> -Undecane	<i>n</i> -Eicosane
<i>n</i> -Dodecane	<i>n</i> -Tetracosane
<i>n</i> -Tridecane	<i>n</i> -Octacosane
<i>n</i> -Tetradecane	<i>n</i> -Dotriacontane
<i>n</i> -Pentadecane	<i>n</i> -Hexatriacontane
<i>n</i> -Hexadecane	<i>n</i> -Tetracontane
<i>n</i> -Heptadecane	<i>n</i> -Tetratetracontane

Qualitative Paraffins Standard

D-5307-QUAL \$ 40 / 1 x 1 mL
D-5307-QUAL-PAK **SAVE 20%** \$ 160 / 5 x 1 mL
At stated approx. Wt. % 7 comps.

	Wt./Wt. %		Wt./Wt. %
Propane	10	<i>n</i> -Heptane	15
Butane	15	<i>n</i> -Octane	15
<i>n</i> -Pentane	15	<i>n</i> -Nonane	15
<i>n</i> -Hexane	15		

Column Resolution Mix

D-5307-CR \$ 15 / 1 x 1 mL
D-5307-CR-PAK **SAVE 20%** \$ 60 / 5 x 1 mL
At stated approx. Wt. % 3 comps.

	Wt./Wt. %		Wt./Wt. %
<i>n</i> -Hexadecane	1.0	<i>n</i> -Octane	98.0
<i>n</i> -Octadecane	1.0		

Internal Standard

D-5307-IS-10ML \$ 30 / 1 x 10 mL
D-5307-IS-10ML-PAK **SAVE 20%** \$ 120 / 5 x 10 mL
4 comps.

	Wt./Wt. %		Wt./Wt. %
<i>n</i> -Tetradecane	25	<i>n</i> -Hexadecane	25
<i>n</i> -Pentadecane	25	<i>n</i> -Heptadecane	25





ASTM D5441 Analysis of Methyl tert-butyl ether (MtBE) by GC

ASTM Committee D02 on Petroleum Products and Lubricants has issued the Standard Method D5441 for the determination of the purity of methyl tert-butyl ether (MtBE) by Gas Chromatography. This method provides a procedure to measure impurities in MtBE such as C₄ to C₁₂ olefins, methyl, isopropyl and tert-butyl alcohols, methyl sec-butyl and methyl tert-amyl ethers, acetone, and methyl ethyl ketones. The presence of these impurities in MtBE can have a direct effect upon the value of the MtBE as a gasoline additive. The following reference standards have been formulated to meet the method specifications. Different packaging sizes are available to meet various sample testing capacities.

MtBE Contaminant Standard

Low Concentration

D-5441		\$ 30 / 1 x 1 mL
D-5441-PAK	SAVE 20%	\$ 120 / 5 x 1 mL
D-5441-5ML		\$ 100 / 1 x 5 mL
D-5441-5ML-PAK	SAVE 20%	\$ 400 / 5 x 5 mL
0.1% Wt./Wt. each in MtBE		12 comps.

tert-Amyl methyl ether
tert-Butanol
tert-Butyl ethyl ether
4,4-Dimethyl-2-neopentyl-1-pentene
Methanol
2-Methylbutane
2-Methyl-2-butene
2,2',4,6,6'-Pentamethyl-3-heptene
Pentane
cis-2-Pentene
trans-2-Pentene
2,4,4-Trimethyl-1-pentene

MtBE Contaminant Standard

High Concentration

D-5441-10X		\$ 30 / 1 x 1 mL
D-5441-10X-PAK	SAVE 20%	\$ 120 / 5 x 1 mL
D-5441-10X-5ML		\$ 100 / 1 x 5 mL
D-5441-10X-5ML-PAK	SAVE 20%	\$ 400 / 5 x 5 mL
1% Wt./Wt. each in MtBE		12 comps.

tert-Amyl methyl ether
tert-Butanol
tert-Butyl ethyl ether
4,4-Dimethyl-2-neopentyl-1-pentene
Methanol
2-Methylbutane
2-Methyl-2-butene
2,2',4,6,6'-Pentamethyl-3-heptene
Pentane
cis-2-Pentene
trans-2-Pentene
2,4,4-Trimethyl-1-pentene

Qualitative Standard

D-5441-QUAL	\$ 145 / 1 x 1 mL
0.1% Wt./Wt. each in <i>n</i> -Dodecane	33 comps.

Methanol	MtBE
Isobutylene	2,3-Dimethyl-1-butene
n-Butane	4-Methyl-cis-2-pentene
trans-2-butene	2-Methylpentane
cis-2-butene	Methylethyl ketone
3-Methyl-1-butene	3-Methylpentane
Acetone	sec-Butyl methyl ether
Isopentane	ETBE
2-Propanol	TAME
1-Pentene	3,5-Dimethyl-1-hexene
2-Methyl-1-butene	2,4,4-Trimethyl-1-pentene
n-Pentane	2,4,4-Trimethyl-2-pentene
trans-2-Pentene	3,4,4-Trimethyl-trans-2-pentene
t-Butanol	2,3,4-Trimethyl-2-pentene
cis-2-Pentene	4,4-Dimethyl-2-neopentyl-1-pentene
2-Methyl-2-butene	2,2',4,6,6'-Pentamethyl-3-heptene
Cyclopentene	

Quantitative Standard

D-5441-QUANT-R1	\$ 130 / 1 x 1 mL
<i>0.1% Wt./Wt. each in n-Dodecane</i>	<i>29 comps.</i>

Methanol (0.04 Wt/Wt)	2-Methylpentane
3-Methyl-1-butene	Methyl ethyl ketone
Acetone	3-Methylpentane
Isopentane	sec-Butyl methyl ether
2-Propanol	Ethyl tert-butyl ether
1-Pentene	TAME
2-Methyl-1-butene	3,5-Dimethyl-1-hexene
n-Pentane	2,4,4-Trimethyl-1-pentene
trans-2-Pentene	2,4,4-Trimethyl-2-pentene
t-Butanol	3,4,4-Trimethyl-trans-2-pentene
cis-2-Pentene	2,3,4-Trimethyl-2-pentene
2-Methyl-2-butene	4,4-Dimethyl-2-neopentyl-1-pentene
Cyclopentene	2,2',4,6,6'-Pentamethyl-3-heptene
MtBE	
2,3-Dimethyl-1-butene	
4-Methyl-cis-2-pentene	

MtBE Resolution Test Mix

D-5441-RES		\$ 20 / 1 x 1 mL
D-5441-RES-PAK	SAVE 20%	\$ 80 / 5 x 1 mL
D-5441-RES-5ML		\$ 60 / 1 x 5 mL
D-5441-RES-5ML-PAK	SAVE 20%	\$ 240 / 5 x 5 mL
1% Wt./Wt. each in MtBE		3 comps.

trans-2-Pentene cis-Pentene
tert-Butanol



Member

AccuStandard is an active member in ASTM and strives to keep abreast of ASTM method revisions. If our listed formulation does not meet the most recent method revision, contact Technical Service for an updated product.



ASTM D5442 Analysis of Petroleum Waxes by GC

Quantitative Wax Standard

D-5442 \$ 25 / 1 x 1 mL
D-5442-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
 At stated Wt. % in Cyclohexane 16 comps.

Wt./Wt. %	Wt./Wt. %
<i>n</i> -Dodecane 0.02	<i>n</i> -Octacosane 0.12
<i>n</i> -Tetradecane 0.03	<i>n</i> -triacontane 0.10
<i>n</i> -Hexadecane 0.04	<i>n</i> -Dotriacontane 0.08
<i>n</i> -Octadecane 0.05	<i>n</i> -Hexatriacontane 0.06
<i>n</i> -Eicosane 0.06	<i>n</i> -Tetracontane 0.05
<i>n</i> -Docosane 0.08	<i>n</i> -Tetratetracontane 0.04
<i>n</i> -Tetracosane 0.10	<i>n</i> -Pentacontane 0.03
<i>n</i> -Hexacosane 0.12	<i>n</i> -Hexacontane 0.02

Column Resolution Standard

D-5442-CR-PAK \$ 40 / 5 x 1 mL
 At stated Wt. % in Cyclohexane 2 comps.

Wt./Wt. %
<i>n</i> -Eicosane 0.05
<i>n</i> -Tetracontane 0.05

Hydrocarbon Standard Brownfield Regulation

D-5442-R1 \$ 60 / 1 x 1 mL
 100 µg/mL each in Cyclohexane 18 comps.

<i>n</i> -Decane	<i>n</i> -Octacosane
<i>n</i> -Dodecane	<i>n</i> -triacontane
<i>n</i> -Tetradecane	<i>n</i> -Dotriacontane
<i>n</i> -Hexadecane	<i>n</i> -Tetratriacontane
<i>n</i> -Octadecane	<i>n</i> -Hexatriacontane
<i>n</i> -Eicosane	<i>n</i> -Octatriacontane
<i>n</i> -Docosane	<i>n</i> -Tetracontane
<i>n</i> -Tetracosane	<i>n</i> -Tetratetracontane
<i>n</i> -Hexacosane	<i>n</i> -Pentacontane

Retention Time Standard Mix 1

D-5442-RT1 \$ 50 / 500 mg
 Equal parts by weight 12 comps.

<i>n</i> -Hexadecane (c16)	<i>n</i> -Octacosane (c28)
<i>n</i> -Octadecane (c18)	<i>n</i> -triacontane (c30)
<i>n</i> -Eicosane (c20)	<i>n</i> -Dotriacontane (c32)
<i>n</i> -Docosane (c22)	<i>n</i> -Hexatriacontane (c36)
<i>n</i> -Tetracosane (c24)	<i>n</i> -Tetracontane (c40)
<i>n</i> -Hexacosane (c26)	<i>n</i> -Tetratetracontane (c44)

Retention Time Standard Mix 2

D-5442-RT2 \$ 80 / 500 mg
 Equal parts by weight 16 comps.

<i>n</i> -Dodecane (c12)	<i>n</i> -Octacosane (c28)
<i>n</i> -Tetradecane (c14)	<i>n</i> -triacontane (c30)
<i>n</i> -Hexadecane (c16)	<i>n</i> -Dotriacontane (c32)
<i>n</i> -Octadecane (c18)	<i>n</i> -Hexatriacontane (c36)
<i>n</i> -Eicosane (c20)	<i>n</i> -Tetracontane (c40)
<i>n</i> -Docosane (c22)	<i>n</i> -Tetratetracontane (c44)
<i>n</i> -Tetracosane (c24)	<i>n</i> -Pentacontane (c50)
<i>n</i> -Hexacosane (c26)	<i>n</i> -Hexacontane (c60)

Standards of Interest

See ASTM Methods D3710, D5307, and D6352 for additional calibration standards for hydrocarbon analysis.

ASTM D5443 Paraffin, Naphthene and Aromatic Hydrocarbon Type Analysis in Petroleum Distillates through 200°C by Multi-dimensional GC

Hydrocarbon Test Mixture

D-5443-93-HTM \$ 100 / 1 x 1 mL
 At stated Wt. % 28 comps.

Wt./Wt. %	Wt./Wt. %	Wt./Wt. %
Cyclopentane 1.00	1cis,2-Dimethylcyclohexane 5.00	<i>trans</i> -Decahydronaphthelene 4.25
<i>n</i> -Pentane 1.00	Isooctane 5.00	<i>n</i> -Tetradecane 4.50
Cyclohexane 2.00	<i>n</i> -Octane 5.00	Ethylbenzene 4.50
2,3-Dimethylbutane 2.00	1cis,2 cis,4-Trimethylcyclohexane 4.25	<i>o</i> -Xylene 4.25
<i>n</i> -Hexane 2.00	<i>n</i> -Nonane 4.50	<i>n</i> -Propylbenzene 5.00
<i>n</i> -Hexene 1.50	<i>n</i> -Decane 4.25	1,2,4-Trimethylbenzene 4.50
Methylcyclohexane 4.25	<i>n</i> -Undecane 3.50	1,2,3-Trimethylbenzene 5.00
4-Methyl-1-hexene 1.50	<i>n</i> -Dodecane 3.25	1,2,4,5-Tetramethylbenzene 5.00
<i>n</i> -Heptane 3.50	Benzene 2.25	Pentamethylbenzene 5.00
	Toluene 2.25	

ASTM D5453 Total Sulfur in Light Hydrocarbons, Motor Fuels and Oils by Ultraviolet Fluorescence

Low Level Sulfur Set

D-5453-LL-SET \$ 90 / 5 x 2 mL
 Contains the following 5 standards in Isooctane

Description	Unit
Sulfur Blank	2 mL
Sulfur @ 0.5 ng/µL	2 mL
Sulfur @ 2.5 ng/µL	2 mL
Sulfur @ 5.0 ng/µL	2 mL
Sulfur @ 10.0 ng/µL	2 mL

Mid Level Sulfur Set

D-5453-ML-SET \$ 90 / 6 x 2 mL
 Contains the following 5 standards in Isooctane

Description	Unit
Sulfur Blank	2 mL
Sulfur @ 5.0 ng/µL	2 mL
Sulfur @ 25 ng/µL	2 mL
Sulfur @ 50 ng/µL	2 mL
Sulfur @ 100 ng/µL	2 mL
Sulfur @ 200 ng/µL	2 mL

High Level Sulfur Set

D-5453-HL-SET \$ 90 / 5 x 2 mL
 Contains the following 5 standards in Isooctane

Description	Unit
Sulfur Blank	2 mL
Sulfur @ 100 ng/µL	2 mL
Sulfur @ 250 ng/µL	2 mL
Sulfur @ 500 ng/µL	2 mL
Sulfur @ 1000 ng/µL	2 mL

Standards of Interest

ASTM Method D5453 Sulfur as Di-*n*-butyl sulfide in Biodiesel see ASTM D6751.

Real World Sulfur in Various Gasoline & Fuels QC Samples

SBPT-LSGAS-VAP \$ 25 / 2 x 15 mL

Parameter	Method	Approx. Range
Sulfur	D-5453-00	0 - 50 µg/g

As the matrix may contain some native sulfur, AccuStandard encourages purchasing sulfur blanks for calibration analysis



ASTM D5480 Engine Oil Volatility by GC

Stock Column Resolution Standard

D-5480-CR-PAK \$ 40 / 5 x 1 mL

10 µg/mL each in Carbon disulfide 5 comps.

D-5480-CR-100X-PAK \$ 50 / 5 x 1 mL

1000 µg/mL each in Carbon disulfide 5 comps.

n-Decane

n-Dodecane

n-Hexadecane

n-Octadecane

n-Tetracosane



Carbon disulfide can not ship by air. When possible alternate solvents can be used. Please contact our Technical Service Department for other options.

Tetracosane (Solution A)

D-5480-C40-5ML \$ 15 / 1 x 5 mL

D-5480-C40-5ML-PAK **SAVE 20%** \$ 60 / 5 x 5 mL

500 µg/mL in Carbon disulfide

D-5480-C40-R1-5ML \$ 15 / 1 x 5 mL

D-5480-C40-R1-5ML-PAK **SAVE 20%** \$ 60 / 5 x 5 mL

500 µg/mL in Chloroform

n-Tetracosane

Internal Standard Solution

D-5480-IS-5ML \$ 30 / 1 x 5 mL

D-5480-IS-5ML-PAK **SAVE 20%** \$ 120 / 5 x 5 mL

Each comp. at equal weights 3 comps.

n-Decane

n-Undecane

n-Dodecane

ASTM D5482 & D5191 Vapor Pressure Standards

Vapor Pressure Quality Control Samples

Vapor Pressure	Cat. No	Price / Set of 10
68.3kPa (9.91 psi)	ASTM-P-124-01	\$ 65 / 10 x 10 mL
68.0kPa (9.86 psi)	ASTM-P-124-02	75 / 10 x 10 mL
51.1kPa (7.41 psi)	ASTM-P-124-03	70 / 10 x 10 mL
46.7kPa (6.77 psi)	ASTM-P-124-04	125 / 10 x 10 mL
22.5kPa (3.26 psi)	ASTM-P-124-05	50 / 10 x 10 mL
7.1kPa (1.03 psi)	ASTM-P-124-06	50 / 10 x 10 mL

ASTM D5501 Ethanol Content of Denatured Fuel Ethanol by GC

Denatured Fuel Ethanol Calibration Set

D-5501-94-SET \$ 75 / 7 x 1 mL

Comp.1	Wt./ Wt.%	Comp.2	Wt./ Wt.%	Comp.3	Wt./ Wt.%	Unit
Ethanol	92	Methanol	0.6	Heptane	7.4	1 mL
Ethanol	93	Methanol	0.5	Heptane	6.5	1 mL
Ethanol	94	Methanol	0.4	Heptane	5.6	1 mL
Ethanol	95	Methanol	0.3	Heptane	4.7	1 mL
Ethanol	96	Methanol	0.2	Heptane	3.8	1 mL
Ethanol	97	Methanol	0.1	Heptane	2.9	1 mL
Ethanol	98	Methanol	0.05	Heptane	1.95	1 mL

ASTM Method D5501-12 Update

D-5501-12-SET  \$ 165 / 5 x 1 mL

	D-5501-12-01 Wt./ Wt.%	D-5501-12-02 Wt./ Wt.%	D-5501-12-03 Wt./ Wt.%	D-5501-12-04 Wt./ Wt.%	D-5501-12-05 Wt./ Wt.%
Ethanol	20	50	75	90	99.4
Methanol	0.6	0.5	0.3	0.2	0.1
Heptane	10	10	10	4	0.5
Isooctane	69.4	39.5	14.8	5.8	0

Technical Note

Additional oxygenate calibration, check standards, and independent reference standards can be found in ASTM method D4815 or D5622. The required QA/QC procedures in EPA methods stipulate a calibration check standard be used once per analytical batch or per 10 sample set. AccuStandard has bulk packaged check standards to meet this increased usage.





ASTM D5580 Benzene, Toluene, Ethylbenzene, m/p-Xylene, o-Xylene, C9 & Heavier Aromatics & Total Aromatics in Finished Gasoline by GC

Aromatics Quantitative Calibration Mixes

Without Internal Standard

D-5580-95-CAL-10ML-SET

\$ 300 / 5 x 10 mL (of 6 component mix)

Analyte	Calibration range	Std. 1 Wt. %	Std. 2 Wt. %	Std. 3 Wt. %	Std. 4 Wt. %	Std. 5 Wt. %
Benzene	0.10 - 5.00	0.10	0.50	1.00	2.00	5.00
Toluene	1.00 - 15.00	15.00	10.00	5.00	2.50	1.00
Ethylbenzene	0.50 - 10.00	0.50	1.00	2.50	5.00	10.00
o-Xylene	0.50 - 10.00	1.00	2.50	10.00	5.00	0.50
1,2,4-Trimethylbenzene	0.50 - 10.00	1.00	10.00	0.50	5.00	2.50
Isooctane		82.40	76.00	81.00	80.50	81.00

With Internal Standard

D-5580-95-CAL-IS-SET

\$ 100 / 5 x 1 mL (of 7 component mix)

Analyte	Calibration range	Std. 1 Wt. %	Std. 2 Wt. %	Std. 3 Wt. %	Std. 4 Wt. %	Std. 5 Wt. %
Benzene	0.09 - 4.50	0.09	0.45	0.90	1.80	4.50
Toluene	0.90 - 13.50	13.50	9.00	4.50	2.25	0.90
Ethylbenzene	0.45 - 9.00	0.45	0.90	2.25	4.50	9.00
o-Xylene	0.45 - 9.00	0.90	2.25	9.00	4.50	0.45
1,2,4-Trimethylbenzene	0.45 - 9.00	0.90	9.00	0.45	4.50	2.25
2-Hexanone (Internal Standard)		10.00	10.00	10.00	10.00	10.00
Isooctane		74.16	68.40	72.90	72.45	72.90

Standard 2 D-5580-95-CAL-IS-2 \$ 25 / 1 mL

Valve Timing Calibration Mixes

With Internal Standard

M-GRA-VT/IS-AS \$ 25 / 1 x 1 mL

M-GRA-VT/IS-AS-PAK **SAVE 20%** \$ 100 / 5 x 1 mL

Each at stated conc. 6 comps.

Wt./Wt. %

Benzene	4.5
Toluene	4.5
Ethylbenzene	9.0
o-Xylene	9.0
2-Hexanone (Internal Std.)	10.0
Isooctane	63.0

Without Internal Standard

M-GRA-VT-AS-10ML \$ 100 / 1 x 10 mL

M-GRA-VT-AS-10ML-PAK **SAVE 20%** \$ 400 / 5 x 10 mL

Each at stated conc. 5 comps.

Wt./Wt. %

Benzene	5.0
Toluene	5.0
Ethylbenzene	10.0
o-Xylene	10.0
Isooctane	70.0

Daily Quality Control Standard

Without Internal Standard

D-5580-QC-R1-10ML \$ 125 / 1 x 10 mL

D-5580-QC-R1-10ML-PAK **SAVE 20%** \$ 500 / 5 x 10 mL

14 comps.

Wt./Wt. %		Wt./Wt. %	
<i>n</i> -Hexane	12	Toluene	9
<i>n</i> -Heptane	20	Ethylbenzene	2
<i>n</i> -Octane	15	<i>p</i> -Xylene	3
<i>n</i> -Decane	10	<i>o</i> -Xylene	2
<i>n</i> -Dodecane	1	1,2,4-Trimethylbenzene	3
Isooctane	20	1,2,4,5-Tetramethylbenzene	1
Benzene	1	Naphthalene	1

Internal Standard

M-GRA-IS-AS-5ML \$ 20 / 1 x 5 mL

M-GRA-IS-AS-5ML-PAK **SAVE 20%** \$ 80 / 5 x 5 mL

2-Hexanone (Neat)

Selectivity Check Standard

M-GRA-SCS-AS \$ 10 / 1 x 1 mL

M-GRA-SCS-AS-PAK **SAVE 20%** \$ 40 / 5 x 1 mL

Each at stated conc. 2 comps.

Wt./Wt. %

n-Dodecane	1.5
Isooctane	98.5

Daily Quality Control Standard

Without Internal Standard

D-5580-QC-10ML \$ 125 / 1 x 10 mL

D-5580-QC-10ML-PAK **SAVE 20%** \$ 500 / 5 x 10 mL

14 comps.

Wt./Wt. %		Wt./Wt. %	
<i>n</i> -Hexane	12	Toluene	9
<i>n</i> -Heptane	20	Ethylbenzene	2
<i>n</i> -Octane	15	<i>p</i> -Xylene	3
<i>n</i> -Decane	10	<i>o</i> -Xylene	2
<i>n</i> -Tridecane	1	1,2,4-Trimethylbenzene	3
Isooctane	20	1,2,4,5-Tetramethylbenzene	1
Benzene	1	Naphthalene	1

Technical Note

The configuration of the instrument valve time switching and the pre-column incorporated determines which QA/QC standard provides optimum performance when analyzing gasoline samples by Method D5580. Use of the D5580 standards in conjunction with the real world gasoline standards can provide added assurance that the analytical results generated are reproducible and the analytical system is performing to method specifications.



ASTM D5599 Oxygenates in Gas by GC & O-FID

Oxygenates Calibration Curves

With Internal Standard

M-GRO-CAL/IS-SET

\$ 250 / 8 x 1 mL

M-GRO-CAL/IS-SET-PAK

SAVE 20% \$ 1,000 / 5 x (8 x 1) mL

of 15 Comp. Mix

Calibration range	Std. 1 Wt. %	Std. 2 Wt. %	Std. 3 Wt. %	Std. 4 Wt. %	Std. 5 Wt. %	Std. 6 Wt. %	Std. 7 Wt. %	Std. 8 Wt. %
Methanol 0.1 - 5.0	---	0.1	2.5	---	5	0.5	1	---
Ethanol 1.0 - 12.0	12	---	3	---	8	5	1	---
Isopropanol 0.1 - 2.0	2	1	---	0.1	0.3	---	0.5	---
t-Butanol 0.1 - 2.0	0.5	0.1	1	---	2	0.3	---	---
Propanol 0.2 - 2.0	2	---	0.7	0.2	1	---	0.4	---
MtBE 1.0 - 17.0	5	17	---	---	1	2.5	10	---
sec-Butanol 0.1 - 2.5	1	---	0.5	0.1	---	2.5	0.7	---
Diisopropyl ether 0.1 - 2.0	---	0.5	0.3	0.1	2	1	---	---
iso-Butanol 0.1 - 2.0	2	0.5	---	1	0.1	0.3	---	---
EtBE 1.0 - 18.0	---	3.5	18	7.5	---	1	12	---
t-Pentanol 0.1 - 2.0	0.3	1	---	0.5	0.1	2	---	---
Butanol 0.1 - 2.0	1	---	0.3	---	0.5	0.1	2	---
TAME 1.0 - 18.0	---	3.5	1	18	7.5	12	---	---
1,2-Dimethoxyethane (ISTD)	4	4	4	4	4	4	4	---
RFA Gasoline	70.2	68.8	68.7	68.5	68.5	68.8	68.4	100
Total oxygenates and ISTD	29.8	31.2	31.3	31.5	31.5	31.2	31.6	0

Technical Note

This certified oxygenate calibration curve can be used in combination with other aromatic standards for combined oxygenate/aromatic analysis to change the amount of internal standard added, or to incorporate alternative internal standard analytes.

With Internal Standard

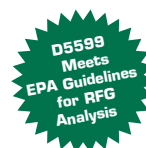
M-GRO-CAL/IS-R1-SET

\$ 250 / 8 x 1 mL

M-GRO-CAL/IS	Analyte	01-R1 Wt. %	02-R1 Wt. %	03-R1 Wt. %	04-R1 Wt. %	05-R1 Wt. %	06-R1 Wt. %	07-R1 Wt. %	08-R1 Wt. %
Calibration range									
Methanol 0.1 - 5.0	--	0.1	2.5	--	5	0.5	1	--	--
Ethanol 1.0 - 12.0	12	--	3	--	8	5	1	--	--
Isopropanol 0.1 - 2.0	2	1	--	0.1	0.3	--	0.5	--	--
t-Butanol 0.1 - 2.0	0.5	0.1	1	--	2	0.3	--	--	--
Propanol 0.2 - 2.0	2	--	0.7	0.2	1	--	0.4	--	--
MtBE 1.0 - 17.0	5	17	--	--	1	2.5	10	--	--
sec-Butanol 0.1 - 2.5	1	--	0.5	0.1	--	2.5	0.7	--	--
Diisopropyl ether 0.1 - 2.0	--	0.5	0.3	0.1	2	1	--	--	--
Isobutanol 0.1 - 2.0	2	0.5	--	1	0.1	0.3	--	--	--
EtBE 1.0 - 18.0	--	3.5	18	7.5	--	1	12	--	--
tert-Pentanol 0.1 - 2.0	0.3	1	--	0.5	0.1	2	--	--	--
Butanol 0.1 - 2.0	1	--	0.3	--	0.5	0.1	2	--	--
TAME 1.0 - 18.0	--	3.5	1	18	7.5	12	--	--	--
1,2-Dimethoxyethane (ISTD)	4	4	4	4	4	4	4	--	--
RFA Gasoline	74.2	72.8	72.7	72.5	72.5	72.8	72.4	100	--
Total oxygenates and ISTD	28.6	30.0	30.1	30.3	30.3	30.0	30.4	0	--

Technical Note

The revised set formulates the product components and gasoline to 100 mL volume and then adds the Internal Standard for a total volume of 104 mL.



Without Internal Standard

M-GRO-CAL-SET

\$ 850 / 8 x 10 mL

of 14 Comp. Mix

Calibration range	Std. 1 Wt. %	Std. 2 Wt. %	Std. 3 Wt. %	Std. 4 Wt. %	Std. 5 Wt. %	Std. 6 Wt. %	Std. 7 Wt. %	Std. 8 Wt. %
Methanol 0.1 - 5.0	---	0.1	2.5	---	5	0.5	1	---
Ethanol 1.0 - 12.0	12	---	3	---	8	5	1	---
Isopropanol 0.1 - 2.0	2	1	---	0.1	0.3	---	0.5	---
t-Butanol 0.1 - 2.0	0.5	0.1	1	---	2	0.3	---	---
Propanol 0.2 - 2.0	2	---	0.7	0.2	1	---	0.4	---
MtBE 1.0 - 17.0	5	17	---	---	1	2.5	10	---
sec-Butanol 0.1 - 2.5	1	---	0.5	0.1	---	2.5	0.7	---
Diisopropyl ether 0.1 - 2.0	---	0.5	0.3	0.1	2	1	---	---
iso-Butanol 0.1 - 2.0	2	0.5	---	1	0.1	0.3	---	---
EtBE 1.0 - 18.0	---	3.5	18	7.5	---	1	12	---
t-Pentanol 0.1 - 2.0	0.3	1	---	0.5	0.1	2	---	---
Butanol 0.1 - 2.0	1	---	0.3	---	0.5	0.1	2	---
TAME 1.0 - 18.0	---	3.5	1	18	7.5	12	---	---
RFA Gasoline	74.2	72.8	72.7	72.5	72.5	72.8	72.4	100
Total oxygenates	25.8	27.2	27.3	27.5	27.5	27.2	27.6	0



ASTM D5599 (Continued) Oxygenates in Gas by GC & O-FID

Daily QC Standard

Without Internal Standard

M-GRO-QC-10ML \$ 100 / 1 x 10 mL
 M-GRO-QC-10ML-PAK **SAVE 20%** \$ 400 / 5 x 10 mL
 14 comps.

Oxygenate	Target Wt. %	Compound Oxygenate	Target Wt. %
Methanol	1	<i>Di</i> -isopropyl ether	3
Ethanol	1	iso-Butanol	1
Isopropanol	1	EtBE	3
<i>t</i> -Butanol	1	<i>t</i> -Pentanol	1
Propanol	1	Butanol	1
MtBE	3	TAME	3
sec-Butanol	1	RFA Gasoline	79

Revised Daily QC Standard

Without Internal Standard

M-GRO-QC-R-10ML \$ 100 / 1 x 10 mL
 M-GRO-QC-R-10ML-PAK **SAVE 20%** \$ 400 / 5 x 10 mL
 14 comps.

Oxygenate	Target Wt. %	Oxygenate	Target Wt. %
Methanol	1	<i>Di</i> -isopropyl ether	1
Ethanol	1	iso-Butanol	1
Isopropanol	1	EtBE	3
<i>t</i> -Butanol	1	<i>t</i> -Pentanol	1
Propanol	1	Butanol	1
MtBE	3	TAME	3
sec-Butanol	1	RFA Gasoline	81

D5599
Meets
EPA Guidelines
for RFG
Analysis

Technical Note

Additional oxygenate calibration, check standards, and independent reference standards can be found in ASTM method D4815 or D5622. The required QA/QC procedures in EPA methods stipulate a calibration check standard be used once per analytical batch or per 10 sample set. AccuStandard has bulk packaged check standards to meet this increased usage.

Daily QC Standard

With Internal Standard

M-GRO-QC/IS-5ML \$ 75 / 1 x 5 mL
 M-GRO-QC/IS-5ML-PAK **SAVE 20%** \$ 300 / 5 x 5 mL
 Internal Standard 1,2-Dimethoxyethane is 15 comps.
 combined in a 4 to 100 weight ratio.

Oxygenate	Target Wt. %	Oxygenate	Target Wt. %
Methanol	1	<i>Di</i> -isopropyl ether	3
Ethanol	1	iso-Butanol	1
Isopropanol	1	EtBE	3
<i>t</i> -Butanol	1	<i>t</i> -Pentanol	1
Propanol	1	Butanol	1
MtBE	3	TAME	3
sec-Butanol	1	RFA Gasoline	79

Revised Daily QC Standard

With Internal Standard

M-GRO-QC-R/IS-5ML \$ 75 / 1 x 5 mL
 M-GRO-QC-R/IS-5ML-PAK **SAVE 20%** \$ 300 / 5 x 5 mL
 Internal Standard 1,2-Dimethoxyethane is 15 comps.
 combined in a 4 to 100 weight ratio.

Oxygenate	Target Wt. %	Oxygenate	Target Wt. %
Methanol	1	<i>Di</i> -isopropyl ether	1
Ethanol	1	iso-Butanol	1
Isopropanol	1	EtBE	3
<i>t</i> -Butanol	1	<i>t</i> -Pentanol	1
Propanol	1	Butanol	1
MtBE	3	TAME	3
sec-Butanol	1	RFA Gasoline	81

Gasoline Refinery Blank

With Internal Standard

M-GRO-BLNK/IS-10ML \$ 15 / 1 x 10 mL
 M-GRO-BLNK/IS-10ML-PAK **SAVE 20%** \$ 60 / 5 x 10 mL
 2 comps.

	Wt. %
1,2-Dimethoxyethane (ISTD)	4
RFA Gasoline	96

O-FID/EPA Gasoline Refinery

Internal Standard

M-GRO-IS-5ML \$ 10 / 1 x 5 mL
 M-GRO-IS-5ML-PAK **SAVE 20%** \$ 40 / 5 x 5 mL

1,2-Dimethoxyethane (Internal Standard)

O-FID Gasoline Refinery Blank

RFA-BLNK-10ML \$ 10 / 1 x 10 mL
 RFA-BLNK-10ML-PAK **SAVE 20%** \$ 40 / 5 x 10 mL

RFA Gasoline (neat)

Cross Reference Table

ASTM IP ISO DIN JIS AFNOR

see page 265



ASTM D5599 EPA Gasoline Refinery Oxygenates Calibration Curves

EPA O-FID Quantitative Calibration Mixes

Without Internal Standard

M-GRO-CAL-EPA-10ML-SET

5 comps.

\$ 350 / 5 x 10 mL

	Calibr. range	Std. 1 Wt. %	Std. 2 Wt. %	Std. 3 Wt. %	Std. 4 Wt. %	Std. 5 Wt. %
Methanol	0.30 - 12.00	6.00	12.00	3.00	0.30	9.00
Ethanol	0.30 - 12.00	0.30	3.00	6.00	9.00	12.00
<i>t</i> -Butanol	0.30 - 12.00	0.30	6.00	9.00	12.00	3.00
MtBE	0.30 - 15.00	15.00	7.50	11.25	3.75	0.30
RFA Gasoline		78.40	71.50	70.75	74.95	75.70

Technical Note

EPA O-FID Oxygenate
Petrochemical Standards

This second oxygenate version has been formulated to meet the specific analyte requirements of the EPA methodology.

With Internal Standard

M-GRO-CAL-IS/EPA-SET

6 comps.

\$ 175 / 5 x 1 mL

	Calibr. range	Std. 1 Wt. %	Std. 2 Wt. %	Std. 3 Wt. %	Std. 4 Wt. %	Std. 5 Wt. %
Methanol	0.29 - 11.40	5.70	11.40	2.85	0.29	8.55
Ethanol	0.29 - 11.40	0.29	2.85	5.70	8.55	11.40
<i>t</i> -Butanol	0.29 - 11.40	0.29	5.70	8.55	11.40	2.85
MtBE	0.29 - 14.29	14.25	7.13	10.69	3.56	0.29
1,2-Dimethoxyethane (ISTD)		5.00	5.00	5.00	5.00	5.00
RFA Gasoline		74.48	67.93	67.31	71.20	71.92

EPA O-FID Quantitative Calibration
Check Standard

Without Internal Standard

M-GRO-EPA-CC-10ML \$ 50 / 1 x 10 mL

M-GRO-EPA-CC-10ML-PAK **SAVE 20%** \$ 200 / 5 x 10 mL

5 comps.

	Wt./Wt. %		Wt./Wt. %
Methanol	4.0	Methyl <i>tert</i> -butyl ether	12.0
Ethanol	8.0	RFA gasoline	71.0
<i>tert</i> -Butanol	5.0		

EPA O-FID Quantitative Calibration
Check Standard

With Internal Standard

M-GRO-EPACC/IS-5ML \$ 35 / 1 x 5 mL

M-GRO-EPACC/IS-5ML-PAK **SAVE 20%** \$ 150 / 5 x 5 mL

6 comps.

	Wt./Wt. %		Wt./Wt. %
Methanol	3.80	Methyl <i>tert</i> -butyl ether	11.40
Ethanol	7.60	RFA gasoline	67.45
<i>tert</i> -Butanol	4.75	DME (Internal Standard)	5.0

Technical Note

Additional Oxygenate calibration, check standards, and independent reference standards can be found in ASTM method D4815 or D5622. The required QA/QC procedures in EPA methods stipulate a calibration check standard be used once per analytical batch or per 10 sample set. AccuStandard has bulk packaged check standards to meet this increased usage.

EPA O-FID Spiking Solution

M-GRO-EPA-SP-5ML \$ 50 / 1 x 5 mL

M-GRO-EPA-SP-5ML-PAK **SAVE 20%** \$ 200 / 5 x 5 mL

4 comps.

	Wt./Wt. %		Wt./Wt. %
Methanol	14.3	<i>tert</i> -Butanol	14.3
Ethanol	28.6	Methyl <i>tert</i> -butyl ether	42.8

Oxygenate Free Gasoline Refinery
Blank

RFA-BLNK-10ML \$ 10 / 1 x 10 mL

RFA-BLNK-10ML-PAK **SAVE 20%** \$ 40 / 5 x 10 mL

RFA Gasoline (neat)

Internal Standard

M-GRO-IS-5ML \$ 10 / 1 x 10 mL

M-GRO-IS-5ML-PAK **SAVE 20%** \$ 40 / 5 x 10 mL

1,2-Dimethoxyethane (Internal Standard)

ASTM D5600 Trace Metals in Petroleum Coke by ICP-AES

see page 370



ASTM D5622 Total Oxygen in Gasoline & MeOH Fuels by Reductive Pyrolysis

Description (2 x 10 mL, plus an RFA gasoline blank)	Oxygenate Wt. %	Cat. No.	Price / Unit
Ethanol in Oxygenate free RFA gasoline	5.0	ASTM-P-0061-SET	\$ 50 / 3 x 10 mL
Ethanol in Oxygenate free RFA gasoline	10.0	ASTM-P-0062-SET	50 / 3 x 10 mL
t-Amyl methyl ether in Oxygenate free RFA gasoline	10.0	ASTM-P-0063-SET	50 / 3 x 10 mL
t-Amyl methyl ether in Oxygenate free RFA gasoline	15.0	ASTM-P-0064-SET	50 / 3 x 10 mL
Ethyl t-butyl ether in Oxygenate free RFA gasoline	10.0	ASTM-P-0065-SET	50 / 3 x 10 mL
Ethyl t-butyl ether in Oxygenate free RFA gasoline	15.0	ASTM-P-0066-SET	50 / 3 x 10 mL
Methyl t-butyl ether in Oxygenate free RFA gasoline	10.0	ASTM-P-0067-SET	50 / 3 x 10 mL
Methyl t-butyl ether in Oxygenate free RFA gasoline	15.0	ASTM-P-0068-SET	50 / 3 x 10 mL
Methanol & t-Butanol in Oxygenate free RFA gasoline	10.0 & 5.0	ASTM-P-0069-SET	50 / 3 x 10 mL

Technical Note

All oxygenate blends come with a certificate to maintain traceability links to NIST SRMs (when available). The 10 mL size eliminates the need for special packaging and hazardous material fees.

Oxygenate Free Gasoline Refinery Blank

RFA-BLNK-10ML

\$ 10 / 1 x 10 mL

RFA Gasoline (neat)

ASTM D5623 Sulfur Compounds in Light Petroleum Liquids by GC & Sulfur Selective Detection

ASTM-P-0091-10X-SET

\$ 625 / set of 22 x 1 mL

Approx. 2.0 mg/mL each in Toluene

Compound	Cat. No.	Price / 1 mL
Hydrogen sulfide	ASTM-P-0091-01-10X	\$ 35
Carbonyl sulfide (Carbon oxysulfide)	ASTM-P-0091-02-10X	35
Methyl mercaptan (Methanethiol)	ASTM-P-0091-03-10X	35
Ethyl mercaptan (Ethanethiol)	ASTM-P-0091-04-10X	35
Methyl sulfide (Dimethyl sulfide)	ASTM-P-0091-05-10X	35
Carbon disulfide	ASTM-P-0091-06-10X	35
2-Propanethiol (Isopropyl mercaptan)	ASTM-P-0091-07-10X	35
2-Methyl-2-propanethiol (t-butyl mercaptan)	ASTM-P-0091-08-10X	35
1-Propanethiol (Propyl mercaptan)	ASTM-P-0091-09-10X	35
Ethyl methyl sulfide	ASTM-P-0091-10-10X	35
1-Methyl-1-propanethiol (2-butanethiol)	ASTM-P-0091-11-10X	35
Thiophene	ASTM-P-0091-12-10X	35
2-Methyl-1-propanethiol (Isobutyl mercaptan)	ASTM-P-0091-13-10X	35
Diethyl sulfide	ASTM-P-0091-14-10X	35
1-Butanethiol (Butyl mercaptan)	ASTM-P-0091-15-10X	35
Methyl disulfide (Dimethyl disulfide)	ASTM-P-0091-16-10X	35
2-Methylthiophene	ASTM-P-0091-17-10X	35
3-Methylthiophene	ASTM-P-0091-18-10X	35
Diethyl disulfide (Ethyl disulfide)	ASTM-P-0091-19-10X	35
3-Methylbenzo[b]thiophene	ASTM-P-0091-20-10X	35
5-Methylbenzo[b]thiophene	ASTM-P-0091-21-10X	75
Diphenyl sulfide	ASTM-P-0091-22-10X	35

Technical Note

This set of qualitative Sulfur Standards is formulated for research evaluation of the presence of the sulfur analytes or their breakdown products.

ASTM D5708 Nickel, Vanadium, & Iron in Crude Oils & Residual Fuels by ICP-AES

see page 379

ASTM D5762 Nitrogen in Petroleum & Petroleum Products by Boat-Inlet Chemiluminescence

Nitrogen Calibration Set

D-5762-95-CAL-SET

\$ 75 / 6 x 1 mL

Nitrogen introduced using Acridine

Description	Cat. No.	Price / 1 mL
Xylene Blank	D-5762-95-BL	\$ 10
Nitrogen @ 1.0 µg/mL in Xylene	D-5762-95-1X	15
Nitrogen @ 5.0 µg/mL in Xylene	D-5762-95-5X	15
Nitrogen @ 10 µg/mL in Xylene	D-5762-95-10X	15
Nitrogen @ 50 µg/mL in Xylene	D-5762-95-50X	15
Nitrogen @ 100 µg/mL in Xylene	D-5762-95-100X	15

Nitrogen Calibration Set - Low Level

ASTM-P-0070-SET

\$ 75 / 6 x 1 mL

Nitrogen introduced using Aniline

Description	Cat. No. (1 mL)
Isooctane Blank	ASTM-P-0070-BL
Nitrogen @ 0.5 µg/g in Isooctane	ASTM-P-0070-1X
Nitrogen @ 1.0 µg/g in Isooctane	ASTM-P-0070-2X
Nitrogen @ 2.0 µg/g in Isooctane	ASTM-P-0070-4X
Nitrogen @ 5.0 µg/g in Isooctane	ASTM-P-0070-10X
Nitrogen @ 10.0 µg/g in Isooctane	ASTM-P-0070-20X

Low Level Nitrogen & Sulfur Calibration Set

ASTM-P-0071-SET

\$ 50 / 4 x 1 mL

The Nitrogen is introduced using Aniline, the Sulfur is introduced using di-n-butyl sulfide

Description	Cat. No. (1 mL)
Benzene Blank	ASTM-P-0071-BL
Nitrogen @ 0.25 µg/g & Sulfur @ 0.25 µg/g in Benzene	ASTM-P-0071-01
Nitrogen @ 0.50 µg/g & Sulfur @ 0.50 µg/g in Benzene	ASTM-P-0071-02
Nitrogen @ 1.00 µg/g & Sulfur @ 1.00 µg/g in Benzene	ASTM-P-0071-03

Stock Nitrogen Standard

D-5762-95-500X-PAK

\$ 60 / 5 x 1 mL

Nitrogen @ 500 µg/mL in Xylene (Acridine @ 6397 µg/mL)

Technical Note

Standards are prepared by adding well characterized nitrogen and/or sulfur compounds gravimetrically to the matrix. Since the matrix may contain some native nitrogen and/or sulfur, a blank must be used for correction and should be purchased with the standard.



ASTM D5769 Benzene, Toluene & Total Aromatics in Finished Gasoline by GC/MS

These standards and methods are used in the monitoring of total aromatics according to the methods and amendments to the US Clean Air Act. Amendments containing more stringent specifications are in effect and can be found listed under this method. Standards for Method D5769 are listed on pages 299-306.

Calibration Curve with 3 Component Deuterated Internal Standard Added

Aromatics Calibration Standards Kit

Internal Standard Version

M-GRA-CAL/IS-SET

\$ 375 / set of 5 x 1 mL

Core Calibration Mix 24 Comps.	Std. 1 Target Vol. %	Std. 2 Vol. %	Std. 3 Vol. %	Std. 4 Vol. %	Std. 5 Vol. %
Benzene	3	1.50	0.75	0.375	0.1875
Toluene	19	9.50	4.75	2.375	1.1875
Ethylbenzene	5	2.50	1.25	0.625	0.3125
<i>m</i> -Xylene	6	3.00	1.50	0.750	0.3750
<i>p</i> -Xylene	6	3.00	1.50	0.750	0.3750
<i>o</i> -Xylene	6	3.00	1.50	0.750	0.3750
Isopropylbenzene	3	1.50	0.75	0.375	0.1875
<i>n</i> -Propylbenzene	3	1.50	0.75	0.375	0.1875
1-Methyl-3-ethylbenzene	3	1.50	0.75	0.375	0.1875
1-Methyl-4-ethylbenzene	3	1.50	0.75	0.375	0.1875
1,3,5-Trimethylbenzene	3	1.50	0.75	0.375	0.1875
1-Methyl-2-ethylbenzene	3	1.50	0.75	0.375	0.1875
1,2,4-Trimethylbenzene	5	2.50	1.25	0.625	0.3125
1,2,3-Trimethylbenzene	3	1.50	0.75	0.375	0.1875
Indan	3	1.50	0.75	0.375	0.1875
1,4-Diethylbenzene	3	1.50	0.75	0.375	0.1875
<i>n</i> -Butylbenzene	3	1.50	0.75	0.375	0.1875
1,2-Diethylbenzene	3	1.50	0.75	0.375	0.1875
1,2,4,5-Tetramethylbenzene	2	1.00	0.50	0.250	0.1250
1,2,3,5-Tetramethylbenzene	2	1.00	0.50	0.250	0.1250
Naphthalene	2	1.00	0.50	0.250	0.1250
Pentamethylbenzene	2	1.00	0.50	0.250	0.1250
1-Methylnaphthalene	2	1.00	0.50	0.250	0.1250
2-Methylnaphthalene	2	1.00	0.50	0.250	0.1250
Isooctane	--	Bal	Bal	Bal	Bal

Internal Standard (M-GRA-IS)

Benzene-d ₆	2	2	2	2	2
Ethylbenzene-d ₁₀	2	2	2	2	2
Naphthalene-d ₈	1	1	1	1	1

Optional Sixth Standard

Internal Standard Added

M-GRA-ADD/IS

\$ 100 / 1 x 1 mL

Core Calibr. Mix 24 Comps.	Optional Std. 6 Target Vol. %
Benzene	2.25
Toluene	15
Ethylbenzene	3.75
<i>m</i> -Xylene	4.50
<i>p</i> -Xylene	4.50
<i>o</i> -Xylene	4.50
Isopropylbenzene	2.25
<i>n</i> -Propylbenzene	2.25
3-Ethyltoluene	2.25
4-Ethyltoluene	2.25
1,3,5-Trimethylbenzene	2.25
2-Ethyltoluene	2.25
1,2,4-Trimethylbenzene	3.75
1,2,3-Trimethylbenzene	2.25
Indan	2.25
1,4-Diethylbenzene	2.25
<i>n</i> -Butylbenzene	2.25
1,2-Diethylbenzene	2.25
1,2,4,5-Tetramethylbenzene	4.0
1,2,3,5-Tetramethylbenzene	1.5
Naphthalene	1.5
Pentamethylbenzene	1.5
1-Methylnaphthalene	1.5
2-Methylnaphthalene	1.5
Isooctane	Bal

Internal Standard (M-GRA-IS)

Benzene-d ₆	2
Ethylbenzene-d ₁₀	2
Naphthalene-d ₈	1

CD Provided

CALAMTS™

Contains Calibration Amounts

Each analyte is individually weighed. Actual weights and weight percents are provided.

Daily Quality Control Standard

Without Internal Standard

M-GRA-QC-10ML

\$ 125 / 1 x 10 mL

M-GRA-QC-10ML-PAK **SAVE 20%** \$ 500 / 5 x 10 mL
13 comps.

Wt. Ratio		Wt. Ratio	
<i>n</i> -Hexane	12	Toluene	9
<i>n</i> -Heptane	17	Ethylbenzene	3
<i>n</i> -Octane	17	<i>m</i> -Xylene	3
<i>n</i> -Decane	12	<i>o</i> -Xylene	3
<i>n</i> -Dodecane	5	1,2,4-Trimethylbenzene	3
Isooctane	12	1,2,4,5-Tetramethylbenzene	3
Benzene	1		

Daily Quality Control Standard

With Internal Standard

M-GRA-QC/IS-5ML

\$ 100 / 1 x 5 mL

M-GRA-QC/IS-5ML-PAK **SAVE 20%** \$ 400 / 5 x 5 mL
16 comps.

Wt. Ratio	Compound	Wt. Ratio	
<i>n</i> -Hexane	12	Toluene	9
<i>n</i> -Heptane	17	Ethylbenzene	3
<i>n</i> -Octane	17	<i>m</i> -Xylene	3
<i>n</i> -Decane	12	<i>o</i> -Xylene	3
<i>n</i> -Dodecane	5	1,2,4-Trimethylbenzene	3
Isooctane	12	1,2,4,5-Tetramethylbenzene	3
Benzene	1		
13 comp. Core Mix		100	

Technical Note

Use with any M-GRA Calibration Curve.

Includes M-GRA-IS (3 comp. Internal Standards mix) combined with the above 13 comp. Core Mix in a 5 to 100 weight ratio.

ASTM/EPA Sensitivity Test Solution

M-GRA-ST

\$ 10 / 1 x 1 mL

M-GRA-ST-PAK

SAVE 20% \$ 40 / 5 x 1 mL

100 µg/mL in Isooctane

1,4-Diethylbenzene

3 Comp. Deuterated Internal Std. Mix

M-GRA-IS-5ML

\$ 158 / 1 x 5 mL

M-GRA-IS-5ML-PAK

SAVE 20% \$ 632 / 5 x 5 mL

3 comps.

Mix Ratio		Mix Ratio	
Benzene-d ₆	2 mL	Naphthalene-d ₈	1 gm
Ethylbenzene-d ₁₀	2 mL		

ASTM D5769 continued on Next Pages



ASTM D5769 Benzene, Toluene & Total Aromatics in Finished Gasoline by GC/MS

Calibration Curve with 4 Component Deuterated Internal Standard Added

Aromatics Calibration Standards Kit

With Internal Standard

M-GRA-CAL-R/IS-R-SET

\$ 425 / set of 5 x 1 mL

Core Calibr. Mix 24 comps.	Std. 1 Target Wt. %	Std. 2 Wt. %	Std. 3 Wt. %	Std. 4 Wt. %	Std. 5 Wt. %
Benzene	3.13	1.78	0.95	0.490	0.2490
Toluene	19.65	11.11	5.90	3.058	1.5547
Ethylbenzene	5.12	2.92	1.55	0.805	0.4090
<i>m</i> -Xylene	6.27	3.50	1.86	0.962	0.4891
<i>p</i> -Xylene	6.33	3.50	1.86	0.962	0.4891
<i>o</i> -Xylene	6.51	3.56	1.89	0.980	0.4981
Isopropylbenzene	3.06	1.74	0.93	0.480	0.2439
<i>n</i> -Propylbenzene	3.04	1.74	0.93	0.480	0.2440
3-Ethyltoluene	3.08	1.75	0.93	0.481	0.2446
4-Ethyltoluene	3.05	1.74	0.93	0.479	0.2437
1,3,5-Trimethylbenzene	3.07	1.75	0.93	0.481	0.2448
2-Ethyltoluene	3.14	1.78	0.95	0.490	0.2492
1,2,4-Trimethylbenzene	5.18	2.95	1.57	0.812	0.4130
1,2,3-Trimethylbenzene	3.19	1.81	0.96	0.498	0.2530
Indan	3.46	1.95	1.04	0.536	0.2726
1,4-Diethylbenzene	3.04	1.74	0.93	0.480	0.2439
<i>n</i> -Butylbenzene	3.05	1.74	0.92	0.479	0.2434
1,2-Diethylbenzene	3.22	1.78	0.95	0.490	0.2489
1,2,4,5-Tetramethylbenzene	2.10	1.20	0.64	0.329	0.1674
1,2,3,5-Tetramethylbenzene	2.09	1.20	0.64	0.330	0.1679
Naphthalene	2.35	1.34	0.71	0.369	0.1877
Pentamethylbenzene	2.16	1.23	0.66	0.340	0.1727
1-Methylnaphthalene	2.32	1.34	0.71	0.369	0.1877
2-Methylnaphthalene	2.41	1.37	0.73	0.378	0.1922
Isooctane	-----	43.47	69.96	84.441	92.0905

Internal Standard

(M-GRA-IS-R) Mix Ratio					
Benzene-d ₆	(2 mL)	16.57	16.57	16.57	16.57
Ethylbenzene-d ₁₀	(2 mL)	16.76	16.76	16.76	16.76
Naphthalene-d ₈	(1 gm)	8.78	8.78	8.78	8.78
Toluene-d ₈	(7 mL)	57.88	57.88	57.88	57.88

The 4 component internal standard mix (M-GRA-IS-R) is combined with the 25 component core calibration curve mixtures in a 12 to 100 weight ratio to formulate a complete calibration solution containing 29 components.

Optional Sixth Standard

With Internal Standard

M-GRA-ADD/IS-R

\$ 100 / 1 x 1 mL

Core Calibr. Mix 24 comps.	Optional Std. 6 Target Wt. %
Benzene	2.48
Toluene	16.29
Ethylbenzene	4.07
<i>m</i> -Xylene	4.87
<i>p</i> -Xylene	4.87
<i>o</i> -Xylene	4.96
Isopropylbenzene	2.43
<i>n</i> -Propylbenzene	2.43
3-Ethyltoluene	2.44
4-Ethyltoluene	2.43
1,3,5-Trimethylbenzene	2.44
2-Ethyltoluene	2.48
1,2,4-Trimethylbenzene	4.11
1,2,3-Trimethylbenzene	2.52
Indan	2.71
1,4-Diethylbenzene	2.43
<i>n</i> -Butylbenzene	2.42
1,2-Diethylbenzene	2.48
1,2,4,5-Tetramethylbenzene	4.44
1,2,3,5-Tetramethylbenzene	1.67
Naphthalene	1.87
Pentamethylbenzene	1.72
1-Methylnaphthalene	1.87
2-Methylnaphthalene	1.91
Isooctane	17.67

Internal Standard

(M-GRA-IS-R) Mix Ratio		
Benzene-d ₆	(2 mL)	16.57
Ethylbenzene-d ₁₀	(2 mL)	16.76
Naphthalene-d ₈	(1 mL)	8.78
Toluene-d ₈	(7 mL)	57.88

Technical Note

A sixth standard has been formulated to improve the linearity at the high end of the calibration curve. This can be helpful in the quantification of gasoline containing high levels of toluene.

Technical Note

This set of calibration solutions was formulated to improve the quantification of toluene by using toluene-d₈ as an additional ISTD.

Daily Quality Control Standard

Without Internal Standard

M-GRA-QC-10ML

\$ 125 / 1 x 10 mL

M-GRA-QC-10ML-PAK **SAVE 20%** \$ 500 / 5 x 10 mL
13 comps.

Wt. Ratio		Wt. Ratio	
<i>n</i> -Hexane	12	Toluene	9
<i>n</i> -Heptane	17	Ethylbenzene	3
<i>n</i> -Octane	17	<i>m</i> -Xylene	3
<i>n</i> -Decane	12	<i>o</i> -Xylene	3
<i>n</i> -Dodecane	5	1,2,4-Trimethylbenzene	3
Isooctane	12	1,2,4,5-Tetramethylbenzene	3
Benzene	1		

Daily Quality Control Standard

With Internal Standard

M-GRA-QC/IS-R-5ML

\$ 125 / 1 x 5 mL

M-GRA-QC/IS-R-5ML-PAK **SAVE 20%** \$ 500 / 5 x 5 mL
17 comps.

Wt. Ratio		Wt. Ratio	
<i>n</i> -Hexane	12	Toluene	9
<i>n</i> -Heptane	17	Ethylbenzene	3
<i>n</i> -Octane	17	<i>m</i> -Xylene	3
<i>n</i> -Decane	12	<i>o</i> -Xylene	3
<i>n</i> -Dodecane	5	1,2,4-Trimethylbenzene	3
Isooctane	12	1,2,4,5-Tetramethylbenzene	3
Benzene	1	13 comp. Core Mix	100

Includes M-GRA-IS-R (4 comp. Internal Standard Mix) combined with the above 13 comp. Core Mix in a 12 to 100 weight ratio.

4 comp. Deuterated Internal Std. Mix

M-GRA-IS-R-10ML

\$ 225 / 1 x 10 mL

M-GRA-IS-R-10ML-PAK **SAVE 20%** \$ 900 / 5 x 10 mL
4 comps.

Mix Ratio		Mix Ratio	
Benzene-d ₆	2 mL	Naphthalene-d ₈	1 gm
Ethylbenzene-d ₁₀	2 mL	Toluene-d ₈	7 mL

ASTM/EPA Sensitivity Test Solution

M-GRA-ST

\$ 10 / 1 x 1 mL

M-GRA-ST-PAK

SAVE 20% \$ 40 / 5 x 1 mL

100 µg/mL in Isooctane

1,4-Diethylbenzene



ASTM D5769 Benzene, Toluene & Total Aromatics in Finished Gasoline by GC/MS

Calibration Curve with No Internal Standard

Calibration Curve

Without Internal Standard

D-5769-CAL-5ML-SET

D-5769-CAL-10ML-SET

\$ 1500 / set of 5 x 5 mL

\$ 2750 / set of 5 x 10 mL

Core Calibr. Mix 23 Comps.	Target Wt. %	Std. 1 Wt. %	Std. 2 Wt. %	Std. 3 Wt. %	Std. 4 Wt. %	Std. 5 Wt. %
Benzene	5.25	2.95	1.575	0.8144	0.4143	
Toluene	19.67	11.06	5.898	3.0505	1.5519	
Ethylbenzene	5.18	2.91	1.552	0.8026	0.4083	
<i>m</i> -Xylene	6.19	3.48	1.856	0.9598	0.4883	
<i>p</i> -Xylene	6.19	3.48	1.856	0.9598	0.4883	
<i>o</i> -Xylene	6.30	3.54	1.890	0.9776	0.4973	
Isopropylbenzene	3.09	1.74	0.925	0.4786	0.2435	
<i>n</i> -Propylbenzene	3.09	1.74	0.926	0.4787	0.2435	
3-Ethyltoluene	3.10	1.74	0.928	0.4801	0.2442	
4-Ethyltoluene	3.08	1.73	0.925	0.4782	0.2433	
1,3,5-Trimethylbenzene	3.10	1.74	0.929	0.4804	0.2444	
2-Ethyltoluene	3.15	1.77	0.945	0.4890	0.2488	
1,2,4-Trimethylbenzene	5.23	2.94	1.567	0.8104	0.4123	
1,2,3-Trimethylbenzene	3.20	1.80	0.960	0.4965	0.2526	
Indan	3.45	1.94	1.034	0.5350	0.2722	
1,4-Diethylbenzene	3.09	1.74	0.925	0.4786	0.2435	
<i>n</i> -Butylbenzene	3.08	1.73	0.923	0.4776	0.2430	
1,2-Diethylbenzene	3.15	1.77	0.945	0.4885	0.2485	
1,2,4,5-Tetramethylbenzene	2.12	1.19	0.635	0.3284	0.1671	
1,2,3,5-Tetramethylbenzene	2.12	1.19	0.637	0.3295	0.1676	
Naphthalene	2.37	1.34	0.712	0.3683	0.1874	
1-Methylnaphthalene	2.37	1.34	0.712	0.3683	0.1874	
2-Methylnaphthalene	2.43	1.37	0.730	0.3773	0.1919	
Isooctane	-----	43.77	70.015	84.4922	92.1105	

Optional Sixth Standard

Without Internal Standard

D-5769-ADD-5ML

\$ 150 / 1 x 5 mL

D-5769-ADD-10ML

\$ 300 / 1 x 10 mL

Core Calibration Mix 23 Comps.	Target Wt. %
Benzene	4.16
Toluene	16.41
Ethylbenzene	4.10
<i>m</i> -Xylene	4.91
<i>p</i> -Xylene	4.91
<i>o</i> -Xylene	5.00
Isopropylbenzene	2.45
<i>n</i> -Propylbenzene	2.45
3-Ethyltoluene	2.45
4-Ethyltoluene	2.44
1,3,5-Trimethylbenzene	2.46
2-Ethyltoluene	2.50
1,2,4-Trimethylbenzene	4.14
1,2,3-Trimethylbenzene	2.54
Indan	2.73
1,4-Diethylbenzene	2.45
<i>n</i> -Butylbenzene	2.44
1,2-Diethylbenzene	2.50
1,2,4,5-Tetramethylbenzene	1.68
1,2,3,5-Tetramethylbenzene	1.68
Naphthalene	1.88
1-Methylnaphthalene	1.88
2-Methylnaphthalene	1.93
Isooctane	19.92

CD Provided

CALAMTS™

Contains Calibration Amounts

Each analyte is individually weighed. Actual weights and weight percents are provided.

Daily Quality Control Standard

Without Internal Standard

D-5769-QC-10ML

\$ 125 / 1 x 10 mL

D-5769-QC-10ML-PAK

SAVE 20% \$ 500 / 5 x 10 mL

14 comps.

Wt. Ratio	Wt. Ratio
<i>n</i> -Hexane 12	Toluene 9
<i>n</i> -Heptane 17	Ethylbenzene 3
<i>n</i> -Octane 17	<i>m</i> -Xylene 3
<i>n</i> -Decane 12	<i>o</i> -Xylene 3
<i>n</i> -Dodecane 5	1,2,4-Trimethylbenzene 3
Isooctane 12	1,2,4,5-Tetramethylbenzene 2
Benzene 1	Naphthalene 1

4 comp. Deuterated Internal Std. Mix

M-GRA-IS-R-10ML

\$ 225 / 1 x 10 mL

M-GRA-IS-R-10ML-PAK

SAVE 20% \$ 900 / 5 x 10 mL

4 comps.

Mix Ratio	Mix Ratio
Benzene-d ₆ 2 mL	Naphthalene-d ₈ 1 gm
Ethylbenzene-d ₁₀ 2 mL	Toluene-d ₈ 7 mL

3 comp. Deuterated Internal Std. Mix

M-GRA-IS-5ML

\$ 158 / 1 x 5 mL

M-GRA-IS-5ML-PAK

SAVE 20% \$ 632 / 5 x 5 mL

3 comps.

Mix Ratio	Mix Ratio
Benzene-d ₆ 2 mL	Naphthalene-d ₈ 1 gm
Ethylbenzene-d ₁₀ 2 mL	



ASTM D5769 Benzene, Toluene & Total Aromatics in Finished Gasoline by GC/MS

With 3 Component Internal Standard

Calibration Curve

With Internal Standard

D-5769-CAL/IS-SET

\$ 375 / 5 x 1 mL

Core Calibr. Mix 24 Comps.	Std. 1 Target Wt. %	Std. 2 Wt. %	Std. 3 Wt. %	Std. 4 Wt. %	Std. 5 Wt. %
Benzene	5.25	2.95	1.575	0.8144	0.4143
Toluene	19.67	11.06	5.898	3.0505	1.5519
Ethylbenzene	5.18	2.91	1.552	0.8026	0.4083
<i>m</i> -Xylene	6.19	3.48	1.856	0.9598	0.4883
<i>p</i> -Xylene	6.19	3.48	1.856	0.9598	0.4883
<i>o</i> -Xylene	6.30	3.54	1.890	0.9776	0.4973
Isopropylbenzene	3.09	1.74	0.925	0.4786	0.2435
<i>n</i> -Propylbenzene	3.09	1.74	0.926	0.4787	0.2435
3-Ethyltoluene	3.10	1.74	0.928	0.4801	0.2442
4-Ethyltoluene	3.08	1.73	0.925	0.4782	0.2433
1,3,5-Trimethylbenzene	3.10	1.74	0.929	0.4804	0.2444
2-Ethyltoluene	3.15	1.77	0.945	0.4890	0.2488
1,2,4-Trimethylbenzene	5.23	2.94	1.567	0.8104	0.4123
1,2,3-Trimethylbenzene	3.20	1.80	0.960	0.4965	0.2526
Indan	3.45	1.94	1.034	0.5350	0.2722
1,4-Diethylbenzene	3.09	1.74	0.925	0.4786	0.2435
<i>n</i> -Butylbenzene	3.08	1.73	0.923	0.4776	0.2430
1,2-Diethylbenzene	3.15	1.77	0.945	0.4885	0.2485
1,2,4,5-Tetramethylbenzene	2.12	1.19	0.635	0.3284	0.1671
1,2,3,5-Tetramethylbenzene	2.12	1.19	0.637	0.3295	0.1676
Naphthalene	2.37	1.34	0.712	0.3683	0.1874
1-Methylnaphthalene	2.37	1.34	0.712	0.3683	0.1874
2-Methylnaphthalene	2.43	1.37	0.730	0.3773	0.1919
Isooctane	-----	43.77	70.015	84.4922	92.1105

Internal Standard

M-GRA-IS

Mix ratio

Benzene-d ₆	2 mL
Ethylbenzene-d ₁₀	2 mL
Naphthalene-d ₈	1 gm

The 3 comp. Internal Standard Mix (M-GRA-IS) is combined with the 24 component Core Calibration Curve Mixes above in a 5 to 100 weight ratio to formulate these 27 comp. calibration solutions.

Daily Quality Control Standard

With Internal Standard

D-5769-QC/IS-5ML

\$ 100 / 1 x 5 mL

D-5769-QC/IS-5ML-PAK

SAVE 20% \$ 400 / 5 x 5 mL

17 comps.

Wt. Ratio		Wt. Ratio	
<i>n</i> -Hexane	12	Toluene	9
<i>n</i> -Heptane	17	Ethylbenzene	3
<i>n</i> -Octane	17	<i>m</i> -Xylene	3
<i>n</i> -Decane	12	<i>o</i> -Xylene	3
<i>n</i> -Dodecane	5	1,2,4-Trimethylbenzene	3
Isooctane	12	1,2,4,5-Tetramethylbenzene	2
Benzene	1	Naphthalene	1

Includes M-GRA-IS (3 comp. mix) added in 5 to 100 weight ratio

Resolution Standard

M-GRA-RES

\$ 30 / 1 x 1 mL

M-GRA-RES-PAK

SAVE 20% \$ 120 / 5 x 1 mL

3 comps.

	Wt. %
1,3,5-Trimethylbenzene	3.0
1-Methyl-2-ethylbenzene	3.0
Isooctane	94.0

Optional Sixth Standard

With Internal Standard

D-5769-ADD/IS

\$ 100 / 1 x 1 mL

Core Calibration Mix 24 Comps.	Target Wt. %
Benzene	4.16
Toluene	16.41
Ethylbenzene	4.10
<i>m</i> -Xylene	4.91
<i>p</i> -Xylene	4.91
<i>o</i> -Xylene	5.00
Isopropylbenzene	2.45
<i>n</i> -Propylbenzene	2.45
3-Ethyltoluene	2.45
4-Ethyltoluene	2.44
1,3,5-Trimethylbenzene	2.46
2-Ethyltoluene	2.50
1,2,4-Trimethylbenzene	4.14
1,2,3-Trimethylbenzene	2.54
Indan	2.73
1,4-Diethylbenzene	2.45
<i>n</i> -Butylbenzene	2.44
1,2-Diethylbenzene	2.50
1,2,4,5-Tetramethylbenzene	1.68
1,2,3,5-Tetramethylbenzene	1.68
Naphthalene	1.88
1-Methylnaphthalene	1.88
2-Methylnaphthalene	1.93
Isooctane	19.92

Technical Note

A sixth standard has been formulated to improve the linearity at the high end of the calibration curve. This can be especially helpful in the quantification of gasoline containing high levels of toluene.

3 comp. Deuterated Internal Std. Mix

M-GRA-IS-5ML

\$ 158 / 1 x 5 mL

M-GRA-IS-5ML-PAK

SAVE 20% \$ 632 / 5 x 5 mL

3 comps.

Mix Ratio

Benzene-d ₆	2 mL
Ethylbenzene-d ₁₀	2 mL
Naphthalene-d ₈	1 gm

Sensitivity Test Solution

M-GRA-ST

\$ 10 / 1 x 1 mL

M-GRA-ST-PAK

SAVE 20% \$ 40 / 5 x 1 mL

100 µg/mL in Isooctane

1,4-Diethyl benzene

Fragmentation Pattern Standard

M-GRA-FP

\$ 20 / 1 x 1 mL

M-GRA-FP-PAK

SAVE 20% \$ 80 / 5 x 1 mL

3.0% w/w in Isooctane

1,2,3-Trimethylbenzene

Mass Scan Range Standard

M-GRA-MSR

\$ 20 / 1 x 1 mL

M-GRA-MSR-PAK

SAVE 20% \$ 80 / 5 x 1 mL

3.0% w/w in Isooctane

Toluene



ASTM D5769 Benzene, Toluene & Total Aromatics in Finished Gasoline by GC/MS

With 4 Component Internal Standard (includes Toluene-d₈)

Calibration Curve with Deuterated Toluene

With Internal Standard

D-5769-CAL/IS-R-SET

\$ 375 / 5 x 1 mL

Core Calibr. Mix 24 Comps.	Std. 1 Target Wt. %	Std. 2 Wt. %	Std. 3 Wt. %	Std. 4 Wt. %	Std. 5 Wt. %
Benzene	5.25	2.95	1.575	0.8144	0.4143
Toluene	19.67	11.06	5.898	3.0505	1.5519
Ethylbenzene	5.18	2.91	1.552	0.8026	0.4083
<i>m</i> -Xylene	6.19	3.48	1.856	0.9598	0.4883
<i>p</i> -Xylene	6.19	3.48	1.856	0.9598	0.4883
<i>o</i> -Xylene	6.30	3.54	1.890	0.9776	0.4973
Isopropylbenzene	3.09	1.74	0.925	0.4786	0.2435
<i>n</i> -Propylbenzene	3.09	1.74	0.926	0.4787	0.2435
3-Ethyltoluene	3.10	1.74	0.928	0.4801	0.2442
4-Ethyltoluene	3.08	1.73	0.925	0.4782	0.2433
1,3,5-Trimethylbenzene	3.10	1.74	0.929	0.4804	0.2444
2-Ethyltoluene	3.15	1.77	0.945	0.4890	0.2488
1,2,4-Trimethylbenzene	5.23	2.94	1.567	0.8104	0.4123
1,2,3-Trimethylbenzene	3.20	1.80	0.960	0.4965	0.2526
Indan	3.45	1.94	1.034	0.5350	0.2722
1,4-Diethylbenzene	3.09	1.74	0.925	0.4786	0.2435
<i>n</i> -Butylbenzene	3.08	1.73	0.923	0.4776	0.2430
1,2-Diethylbenzene	3.15	1.77	0.945	0.4885	0.2485
1,2,4,5-Tetramethylbenzene	2.12	1.19	0.635	0.3284	0.1671
1,2,3,5-Tetramethylbenzene	2.12	1.19	0.637	0.3295	0.1676
Naphthalene	2.37	1.34	0.712	0.3683	0.1874
1-Methylnaphthalene	2.37	1.34	0.712	0.3683	0.1874
2-Methylnaphthalene	2.43	1.37	0.730	0.3773	0.1919
Isooctane	-----	43.77	70.015	84.4922	92.1105

Optional Sixth Standard

With Internal Standard

D-5769-ADD/IS-R

\$ 100 / 1 x 1 mL

Core Calibration Mix 24 Comp.	Target Wt. %
Benzene	4.16
Toluene	16.41
Ethylbenzene	4.10
<i>m</i> -Xylene	4.91
<i>p</i> -Xylene	4.91
<i>o</i> -Xylene	5.00
Isopropylbenzene	2.45
<i>n</i> -Propylbenzene	2.45
3-Ethyltoluene	2.45
4-Ethyltoluene	2.44
1,3,5-Trimethylbenzene	2.46
2-Ethyltoluene	2.50
1,2,4-Trimethylbenzene	4.14
1,2,3-Trimethylbenzene	2.54
Indan	2.73
1,4-Diethylbenzene	2.45
<i>n</i> -Butylbenzene	2.44
1,2-Diethylbenzene	2.50
1,2,4,5-Tetramethylbenzene	1.68
1,2,3,5-Tetramethylbenzene	1.68
Naphthalene	1.88
1-Methylnaphthalene	1.88
2-Methylnaphthalene	1.93
Isooctane	19.92

Internal Standard

M-GRA-IS-R

Mix ratio

Benzene-d ₆	2 mL
Ethylbenzene-d ₁₀	2 mL
Naphthalene-d ₈	1 gm
Toluene-d ₈	7 mL

The 4 comp. Internal Standard Mix (M-GRA-IS-R) is combined with the 24 component core calibration curve mixtures above in a 12 to 100 weight ratio to formulate these 28 component calibration solutions.

Daily Quality Control Standard

With Internal Standard

D-5769-QC/IS-R-5ML

\$ 100 / 1 x 5 mL

D-5769-QC/IS-R-5ML-PAK **SAVE 20%** \$ 400 / 5 x 5 mL

18 comps.

Wt. Ratio		Wt. Ratio	
<i>n</i> -Hexane	12	Toluene	9
<i>n</i> -Heptane	17	Ethylbenzene	3
<i>n</i> -Octane	17	<i>m</i> -Xylene	3
<i>n</i> -Decane	12	<i>o</i> -Xylene	3
<i>n</i> -Dodecane	5	1,2,4-Trimethylbenzene	3
Isooctane	12	1,2,4,5-Tetramethylbenzene	2
Benzene	1	Naphthalene	1

Includes M-GRA-IS-R (4 comp. mix) added in 12 to 100 weight ratio

Sensitivity Test Solution

M-GRA-ST

\$ 10 / 1 x 1 mL

M-GRA-ST-PAK

SAVE 20% \$ 40 / 5 x 1 mL

100 µg/mL in Isooctane

1,4-Diethyl benzene

Resolution Standard

M-GRA-RES

\$ 30 / 1 x 1 mL

M-GRA-RES-PAK

SAVE 20% \$ 120 / 5 x 1 mL

3 comps.

	Wt. %
1,3,5-Trimethylbenzene	3.0
1-Methyl-2-ethylbenzene	3.0
Isooctane	94.0

4 comp. Deuterated Internal Std. Mix

M-GRA-IS-R-10ML

\$ 225 / 1 x 10 mL

M-GRA-IS-R-10ML-PAK **SAVE 20%** \$ 900 / 5 x 10 mL

Mix Ratio		Mix Ratio	
Benzene-d ₆	2 mL	Naphthalene-d ₈	1 gm
Ethylbenzene-d ₁₀	2 mL	Toluene-d ₈	7 mL

Fragmentation Pattern Standard

M-GRA-FP

\$ 20 / 1 x 1 mL

M-GRA-FP-PAK

SAVE 20% \$ 80 / 5 x 1 mL

3.0 w/w in Isooctane

1,2,3-Trimethylbenzene



ASTM D5769 Benzene, Toluene & Total Aromatics in Finished Gasoline by GC/MS

Proposed / Promulgated Method Modifications

Calibration Curve

With Chlorinated Internal Standard

D-5769-CAL/IS-R2-SET

\$ 375 / 5 x 1 mL

Core Calibr. Mix 24 Comps.	Target	Std. 1 Wt. %	Std. 2 Wt. %	Std. 3 Wt. %	Std. 4 Wt. %	Std. 5 Wt. %
Benzene		5.25	2.95	1.575	0.8144	0.4143
Toluene		19.67	11.06	5.898	3.0505	1.5519
Ethylbenzene		5.18	2.91	1.552	0.8026	0.4083
<i>m</i> -Xylene		6.19	3.48	1.856	0.9598	0.4883
<i>p</i> -Xylene		6.19	3.48	1.856	0.9598	0.4883
<i>o</i> -Xylene		6.30	3.54	1.890	0.9776	0.4973
Isopropylbenzene		3.09	1.74	0.925	0.4786	0.2435
<i>n</i> -Propylbenzene		3.09	1.74	0.926	0.4787	0.2435
3-Ethyltoluene		3.10	1.74	0.928	0.4801	0.2442
4-Ethyltoluene		3.08	1.73	0.925	0.4782	0.2433
1,3,5-Trimethylbenzene		3.10	1.74	0.929	0.4804	0.2444
2-Ethyltoluene		3.15	1.77	0.945	0.4890	0.2488
1,2,4-Trimethylbenzene		5.23	2.94	1.567	0.8104	0.4123
1,2,3-Trimethylbenzene		3.20	1.80	0.960	0.4965	0.2526
Indan		3.45	1.94	1.034	0.5350	0.2722
1,4-Diethylbenzene		3.09	1.74	0.925	0.4786	0.2435
<i>n</i> -Butylbenzene		3.08	1.73	0.923	0.4776	0.2430
1,2-Diethylbenzene		3.15	1.77	0.945	0.4885	0.2485
1,2,4,5-Tetramethylbenzene		2.12	1.19	0.635	0.3284	0.1671
1,2,3,5-Tetramethylbenzene		2.12	1.19	0.637	0.3295	0.1676
Naphthalene		2.37	1.34	0.712	0.3683	0.1874
1-Methylnaphthalene		2.37	1.34	0.712	0.3683	0.1874
2-Methylnaphthalene		2.43	1.37	0.730	0.3773	0.1919
Isooctane	-----	43.77	70.015	84.4922	92.1105	

Internal Standard

M-GRA-IS-R2

Mix ratio	
Chlorobenzene	2 mL
1,2-Dichlorobenzene	2 mL
1,2,4-Trichlorobenzene	1 mL

The 3 comp. Internal Standard Mix (M-GRA-IS-R2) is combined with the 24 Comp. Core Calibration Curve mixtures above in a 5 to 100 weight ratio to formulate these 27 Comp. calibration solutions.

Daily QC Standard

With Internal Standard

D-5769-QC/IS-R2-5ML

\$ 100 / 1 x 5 mL

D-5769-QC/IS-R2-5ML-PAK **SAVE 20%** \$ 400 / 5 x 5 mL

17 comps.

Wt. Ratio		Wt. Ratio	
<i>n</i> -Hexane	12	Toluene	9
<i>n</i> -Heptane	17	Ethylbenzene	3
<i>n</i> -Octane	17	<i>m</i> -Xylene	3
<i>n</i> -Decane	12	<i>o</i> -Xylene	3
<i>n</i> -Dodecane	5	1,2,4-Trimethylbenzene	3
Isooctane	12	1,2,4,5-Tetramethylbenzene	2
Benzene	1	Naphthalene	1

Includes M-GRA-IS-R2 added in 5 to 100 weight ratio.

3 comp. Chlorinated Internal Std. Mix

M-GRA-IS-R2-VAP

\$ 125 / set of 25 x 1 mL

M-GRA-IS-R2-25ML

\$ 100 / 1 x 25 mL

3 comps.

Mix Ratio	
Chlorobenzene	2 mL
1,2-Dichlorobenzene	2 mL
1,2,4-Trichlorobenzene	1 mL

Optional Sixth Standard

With Internal Standard

D-5769-ADD/IS-R2

\$ 100 / 1 x 1 mL

Core Calibration Mix 24 Components	Target Wt. %
Benzene	4.16
Toluene	16.41
Ethylbenzene	4.10
<i>m</i> -Xylene	4.91
<i>p</i> -Xylene	4.91
<i>o</i> -Xylene	5.00
Isopropylbenzene	2.45
<i>n</i> -Propylbenzene	2.45
3-Ethyltoluene	2.45
4-Ethyltoluene	2.44
1,3,5-Trimethylbenzene	2.46
2-Ethyltoluene	2.50
1,2,4-Trimethylbenzene	4.14
1,2,3-Trimethylbenzene	2.54
Indan	2.73
1,4-Diethylbenzene	2.45
<i>n</i> -Butylbenzene	2.44
1,2-Diethylbenzene	2.50
1,2,4,5-Tetramethylbenzene	1.68
1,2,3,5-Tetramethylbenzene	1.68
Naphthalene	1.88
1-Methylnaphthalene	1.88
2-Methylnaphthalene	1.93
Isooctane	19.92

CD Provided

CALAMTS™

Contains Calibration Amounts

Each analyte is individually weighed. Actual weights and weight percents are provided.

Sensitivity Test Solution

M-GRA-ST

\$ 10 / 1 x 1 mL

M-GRA-ST-PAK

SAVE 20% \$ 40 / 5 x 1 mL

100 µg/mL in Isooctane

1,4-Diethyl benzene

Fragmentation Pattern Standard

M-GRA-FP

\$ 20 / 1 x 1 mL

M-GRA-FP-PAK

SAVE 20% \$ 80 / 5 x 1 mL

3.0 w/w in Isooctane

1,2,3-Trimethylbenzene

Resolution Standard

M-GRA-RES

\$ 30 / 1 x 1 mL

M-GRA-RES-PAK

SAVE 20% \$ 120 / 5 x 1 mL

3 comps.

Wt. %	
1,3,5-Trimethylbenzene	3.0
1-Methyl-2-ethylbenzene	3.0
Isooctane	94



ASTM D5769 Benzene, Toluene & Total Aromatics in Finished Gasoline by GC/MS

Special QA/QC Formulations

Daily QC Standard

Without Internal Standard

M-GRA-QC-R-10ML \$ 125 / 1 x 10 mL
M-GRA-QC-R-10ML-PAK **SAVE 20%** \$ 500 / 5 x 10 mL
15 comps.

Wt. Ratio		Wt. Ratio	
<i>n</i> -Hexane	12	Ethylbenzene	3
<i>n</i> -Heptane	17	<i>m</i> -Xylene	3
<i>n</i> -Octane	17	<i>o</i> -Xylene	3
<i>n</i> -Decane	12	1,2,4-Trimethylbenzene	3
<i>n</i> -Dodecane	5	1,2,4,5-Tetramethylbenzene	1
Isooctane	12	Pentamethylbenzene	1
Benzene	1	1-Methylnaphthalene	1
Toluene	9		

For use with any M-GRA Calibration Curve

Daily QC Standard

With Internal Standard M-GRA-IS

M-GRA-QC-R/IS-5ML \$ 100 / 1 x 5 mL
M-GRA-QC-R/IS-5ML-PAK **SAVE 20%** \$ 400 / 5 x 5 mL
18 comps.

Wt. Ratio		Wt. Ratio	
<i>n</i> -Hexane	12	Ethylbenzene	3
<i>n</i> -Heptane	17	<i>m</i> -Xylene	3
<i>n</i> -Octane	17	<i>o</i> -Xylene	3
<i>n</i> -Decane	12	1,2,4-Trimethylbenzene	3
<i>n</i> -Dodecane	5	1,2,4,5-Tetramethylbenzene	1
Isooctane	12	Pentamethylbenzene	1
Benzene	1	1-Methylnaphthalene	1
Toluene	9		

Includes M-GRA-IS combined with the above 15 comp. Core Mix in a 5 to 100 weight ratio.

3 comp. Deuterated Internal Std. Mix

M-GRA-IS-5ML \$ 158 / 1 x 5 mL
M-GRA-IS-5ML-PAK **SAVE 20%** \$ 632 / 5 x 5 mL
3 comps.

Mix Ratio	
Benzene-d ₆	2 mL
Ethylbenzene-d ₁₀	2 mL
Naphthalene-d ₈	1 gm

4 comp. Deuterated Internal Std. Mix

M-GRA-IS-R-10ML \$ 225 / 1 x 10 mL
M-GRA-IS-R-10ML-PAK **SAVE 20%** \$ 900 / 5 x 10 mL
4 comps.

Mix Ratio	
Benzene-d ₆	2 mL
Ethylbenzene-d ₁₀	2 mL
Naphthalene-d ₈	1 gm
Toluene-d ₈	7 mL

Daily QC Standard

With Internal Standard M-GRA-IS-R

M-GRA-QCR/IS-R-5ML \$ 125 / 1 x 5 mL
M-GRA-QCR/IS-R-5ML-PAK **SAVE 20%** \$ 500 / 5 x 5 mL
19 comps.

Wt. Ratio		Wt. Ratio	
<i>n</i> -Hexane	12	Ethylbenzene	3
<i>n</i> -Heptane	17	<i>m</i> -Xylene	3
<i>n</i> -Octane	17	<i>o</i> -Xylene	3
<i>n</i> -Decane	12	1,2,4-Trimethylbenzene	3
<i>n</i> -Dodecane	5	1,2,4,5-Tetramethylbenzene	1
Isooctane	12	Pentamethylbenzene	1
Benzene	1	1-Methylnaphthalene	1
Toluene	9		

Includes M-GRA-IS-R combined with the above 15 comp. Core Mix in a 12 to 100 weight ratio.

Aromatics for Analysis by GC/MS (Daily QC Standards) Set

Original Formulations

M-GRA-K1-SET \$ 600 / Set

Set includes:	Units	Function
M-GRA-CAL/IS-SET	5 x 1 mL	5 Point Curve with 3 Internal Standards
M-GRA-QC/IS-5ML	1 x 5 mL	Daily QC with 3 Internal Standards
M-GRA-IS-5ML	1 x 5 mL	3 Component Internal Standard
M-GRA-ST	1 x 1 mL	Sensitivity Test Solution

4 Component Internal Standard Formulations

M-GRA-K4-SET \$ 850 / Set

Set includes:	Units	Function
M-GRA-CAL-R/IS-R-SET	5 x 1 mL	5 Point Curve with 4 Internal Standards
M-GRA-ADD/IS-R	1 x 1 mL	6th Standard for Revision 5 F
M-GRA-QC-R/IS-R-5ML	1 x 5 mL	Daily QC with 4 Internal Standards
M-GRA-IS-R-10ML	1 x 10 mL	4 Component Internal Standard
M-GRA-ST	1 x 1 mL	Sensitivity Test Solution

Revision 5 F

M-GRA-K2-SET \$ 700 / Set

Set includes:	Units	Function
M-GRA-CAL/IS-SET	5 x 1 mL	5 Point Curve with 3 Internal Standards
M-GRA-ADD/IS	1 x 1 mL	6th Standard for Revision 5 F
M-GRA-QC/IS-5ML	1 x 5 mL	Daily QC with 3 Internal Standards
M-GRA-IS-5ML	1 x 5 mL	3 Component Internal Standard
M-GRA-ST	1 x 1 mL	Sensitivity Test Solution

Technical Note

Used to meet the toluene-d₈ internal standard version recommended by a network of major petroleum refineries.



ASTM D5769 Additional Internal, Deuterated and Quality Control Standards

4 comp. Deuterated Internal Std. Mix

ASTM-P-0140-IS \$ 75 / 1 x 10 mL
 ASTM-P-0140-IS-PAK **SAVE 20%** \$ 300 / 5 x 10 mL
 4 comps.

	Vol. %	Compound	Vol. %
Benzene-d ₆	2	Naphthalene-d ₈	1
Ethylbenzene-d ₁₀	2	Isooctane *	balance

4 comp. Deuterated Internal Std. Mix

ASTM-P-0140-IS2 \$ 75 / 1 x 10 mL
 ASTM-P-0140-IS2-PAK **SAVE 20%** \$ 300 / 5 x 10 mL
 5 comps.

	Vol. %		Vol. %
Benzene-d ₆	2	Toluene-d ₈	7
Ethylbenzene-d ₁₀	2	Isooctane *	balance
Naphthalene-d ₈	1		

Performance Evaluation Standard

ASTM-P-0140-PES \$ 55 / 1 x 1 mL
 ASTM-P-0140-PES-PAK **SAVE 20%** \$ 220 / 5 x 1 mL
 11 comps.

	Target Vol. %
Benzene	1
1,2-Diethylbenzene	0.005
1,3,5-Trimethylbenzene	1
1-Methyl-2-ethylbenzene	1
Styrene	0.1
Indene	0.1
Biphenyl	0.1
1,2,4,5-Tetramethylbenzene	1
1,2,3,5-Tetramethylbenzene	1
Hexadecane	1
Isooctane:Toluene (50:50) *	balance

Composition of Daily QC Standard

ASTM-P-0140-QC \$ 125 / 1 x 10 mL
 ASTM-P-0140-QC-PAK **SAVE 20%** \$ 500 / 5 x 10 mL
 9 comps.

	Target Vol. %
Benzene	1
Toluene	10
Ethylbenzene	3
1,3-Dimethylbenzene	6
1,2-Dimethylbenzene	3
1,2,4-Trimethylbenzene	3
1,2-Diethylbenzene	0.02
Naphthalene	1
Isooctane (solvent) *	balance

* The isooctane balance is the amount of material to make up a 100 mL calibration standard.
 Certificate will reflect actual weight of each component in the 100 mL batch including the isooctane.





ASTM D5836 Determination of Diisocyanates (1,2-PP Method)

Diisocyanate Sets

D-5836-SET \$ 175 / 9 x 1 mL

D-5836-01N, D-5836-02N, D-5836-03N, D-5836-04N,
D-5836-01-DER, D-5836-02-DER, D-5836-03-DER, D-5836-04-DER, D-5836-DER-5ML-VAP

Underivatized Diisocyanates

Compound	Unit	Cat. No.	Price
2,4-Toluene diisocyanate	100 mg	D-5836-01N	\$ 25
2,6-Toluene diisocyanate	100 mg	D-5836-02N	25
Hexamethylene diisocyanate	100 mg	D-5836-03N	25
4,4'-Methylenebis(phenyl isocyanate)	100 mg	D-5836-04N	25

Diisocyanate Storage - Refrig 0-5° C

Derivatized Diisocyanates (Weight Compensated to 1000 µg/mL of each Diisocyanate)

Compound	Cat. No.	Price / 1 mL
N,N'-(4-Methyl-1,3-phenylene)bis[4-(2-pyridinyl)-1-piperazinecarboxamide] 72375-21-4 (2,4-TDIP)	D-5836-01-DER 2840 µg/mL in DMSO	\$ 25
N,N'-(2-Methyl-1,3-phenylene)bis[4-(2-pyridinyl)-1-piperazinecarboxamide] (2,6-TDIP)	D-5836-02-DER 2840 µg/mL in DMSO	25
N,N'-1,6-Hexanediybis[4-(2-pyridinyl)-1-piperazinecarboxamide] 72375-27-0 (1,6-HDIP)	D-5836-03-DER 2900 µg/mL in DMSO	25
N,N'-(Methylenediphenylene)bis[4-(2-pyridinyl)-1-piperazinecarboxamide] 72375-24-7 (4,4'-MDIP)	D-5836-04-DER 2280 µg/mL in DMSO	25

Derivatizing Agents

1-(2-Pyridyl)piperazine
34803-66-2D-5836-DER-5ML-VAP \$ 25 /
2 mg/mL in CH₂Cl₂ 4 x 5 mL

Individual Derivatized Diisocyanates

N,N'-(4-Methyl-1,3-phenylene)bis[4-(2-pyridinyl)-1-piperazinecarboxamide] 72375-21-4 (2,4-TDIP)	D-5836-01A-DER 1000 µg/mL in DMSO	\$ 25
N,N'-(2-Methyl-1,3-phenylene)bis[4-(2-pyridinyl)-1-piperazinecarboxamide] (2,6-TDIP)	D-5836-02A-DER 1000 µg/mL in DMSO	\$ 25
N,N'-1,6-Hexanediybis[4-(2-pyridinyl)-1-piperazinecarboxamide] 72375-27-0 (1,6-HDIP)	D-5836-03A-DER 1000 µg/mL in DMSO	\$ 25
N,N'-(Methylenediphenylene)bis[4-(2-pyridinyl)-1-piperazinecarboxamide] 72375-24-7 (4,4'-MDIP)	D-5836-04A-DER 1000 µg/mL in DMSO	\$ 25

ASTM D5863 Ni, V, Fe, & Na in Crude Oils & Residual Fuels by Flame AA Spectrometry

see page 379

ASTM D5986 Oxygenates, Benzene, Toluene, C8-C12, Aromatics & Total Aromatics in Finished Gasolines by GC/FTIR

Daily QC Standard

Without Internal Standard

M-GRA-QC-10ML \$ 125 / 1 x 10 mL
M-GRA-QC-10ML-PAK SAVE 20% \$ 500 / 5 x 10 mL

Technical Note

This quality control standard was formulated to meet Section 11 of ASTM D-5986 specification which stipulates "analyze the quality control reference material before every batch of samples. Bracket the samples with the reference materials".

	Wt. Ratio		Wt. Ratio
<i>n</i> -Hexane	12	Toluene	9
<i>n</i> -Heptane	17	Ethylbenzene	3
<i>n</i> -Octane	17	<i>m</i> -Xylene	3
<i>n</i> -Decane	12	<i>o</i> -Xylene	3
<i>n</i> -Dodecane	5	1,2,4-Trimethylbenzene	3
Isooctane	12	1,2,4,5-Tetramethylbenzene	3
Benzene	1	13 Comp. Core Mix	100

Cross Reference Table

ASTM IP ISO DIN JIS AFNOR

see page 265



ASTM D6160 Polychlorinated Biphenyls (PCBs in Waste Materials by GC)

Aroclor Standards

Aroclor #	35 µg/mL in Isooctane		35 µg/mL in MeOH		1000 µg/mL in Hexane	
	Cat. No.	1 mL Price	Cat. No.	1 mL Price	Cat. No.	1 mL Price
Aroclor 1016	C-216S	\$ 15	C-216S-M	\$ 15	C-216S-H-10X	\$ 20
Aroclor 1221	C-221S	15	C-221S-M	15	C-221S-H-10X	20
Aroclor 1232	C-232S	15	C-232S-M	15	C-232S-H-10X	20
Aroclor 1242	C-242S	15	C-242S-M	15	C-242S-H-10X	20
Aroclor 1248	C-248S	15	C-248S-M	15	C-248S-H-10X	20
Aroclor 1254	C-254S	15	C-254S-M	15	C-254S-H-10X	20
Aroclor 1260	C-260S	15	C-260S-M	15	C-260S-H-10X	20
Aroclor 1262	C-262S	15	C-262S-M	15	C-262S-H-10X	20
Aroclor 1268	C-268S	15	C-268S-M	15	C-268S-H-10X	20

ASTM D6258 Solvent Red 164 Dye Concentration in Diesel Fuels

Stock Solvent Red 26 Standard

D-6258-CONC-5ML

\$ 45 / 1 x 5 mL

Solvent Red 26 @ 300 µg/mL in Xylene

D-6258 Calibration Curve

D-6258-5ML-SET

\$ 125 / 6 x 5 mL

Set includes the following Cat. No.'s

Description	Cat. No	Unit
Xylene Blank	D-6258-BL	1 x 5 mL
Solvent Red 26 Dye @ 3 µg/mL in Xylene	D-6258-01	1 x 5 mL
Solvent Red 26 Dye @ 6 µg/mL in Xylene	D-6258-02	1 x 5 mL
Solvent Red 26 Dye @ 9 µg/mL in Xylene	D-6258-03	1 x 5 mL
Solvent Red 26 Dye @ 12 µg/mL in Xylene	D-6258-04	1 x 5 mL
Solvent Red 26 Dye @ 15 µg/mL in Xylene	D-6258-05	1 x 5 mL

Technical Note

Solvent Red 26 is the azo dye standard against which the concentration of Solvent Red 164 is measured. The visible spectrum of Solvent Red 164 is virtually identical to the spectrum of Solvent Red 26.

ASTM D6293 Oxygenates & Paraffin, Olefin, Naphthene, Aromatics (O-PONA) Hydrocarbon types in Low-Olefin Spark-Ignition Engine Fuels by GC

O-PONA System Validation Mixture

ASTM-P-0080

\$ 135 / 1 x 1 mL

ASTM-P-0080-PAK

SAVE 20% \$ 540 / 5 x 1 mL
33 comps.

	Wt./Wt. %		Wt./Wt. %
Cyclopentane	1.5	Benzene	2.5
n-Pentane	1.5	Toluene	2.5
Cyclohexane	2.0	trans-Decahydronaphthelene	3.5
2,3-Dimethylbutane	2.0	n-Tetradecane	2.0
n-Hexane	2.0	Ethylbenzene	3.5
1-Hexene	1.5	o-Xylene	3.0
Methylcyclohexane	3.5	n-Propylbenzene	3.5
4-Methyl-1-hexene	1.5	1,2,4-Trimethylbenzene	3.0
n-Heptane	3.0	1,2,3-Trimethylbenzene	2.0
cis-1,2-Dimethylcyclohexane	4.5	1,2,4,5-Tetramethylbenzene	2.0
Isooctane	4.0	Pentamethylbenzene	2.5
n-Octane	4.0	Ethanol	5.0
1,2,4-Trimethylcyclohexane	3.5	t-Butanol	4.0
n-Nonane	3.0	MtBE	8.0
n-Decane	3.5	ETBE	3.0
n-Undecane	2.0	TAME	5.0
n-Dodecane	2.0		

O-PONA Olefin Mix

ASTM-P-0081

\$ 45 / 1 x 1 mL

ASTM-P-0081-PAK

\$ 180 / 5 x 1 mL

At stated conc. in Hexane:Heptane (50:50)
5 comps.

	Wt./Wt. %
1-Pentene	5.0
1-Hexene	2.0
1-Heptene	2.0
1-Octene	2.0
1-Nonene	3.0

O-PONA Paraffin Mixes

ASTM-P-0082

\$ 25 / 1 x 1 mL

ASTM-P-0082-PAK

\$ 100 / 5 x 1 mL

At stated conc. in Hexane:Heptane (50:50)
2 comps.

	Wt./Wt. %
n-Nonane	5.0
n-Decane	2.0

ASTM-P-0082-R1

\$ 25 / 1 x 1 mL

ASTM-P-0082-R1-PAK \$ 100 / 5 x 1 mL

At stated conc. in Hexane:Heptane (50:50)
2 comps.

	Wt./Wt. %
n-Nonane	3.0
n-Decane	3.0



ASTM D6296 Total Olefins in Spark-Ignition Engine Fuels by Multidimensional GC

System Setup & Verification Standard Set

D-6296-VER-SET

\$ 40 / 2 x 1 mL

(D-6296-VER1, D-6296-VER2)

SAVE 20% \$ 160 / 5 x (2 x 1 mL)

D-6296-VER-SET-PAK

Set of 5 each (D-6296-VER1, D-6296-VER2)

System Setup & Verification 1

D-6296-VER1

1 x 1 mL

2 comps.

	Wt. %		Wt. %
MTBE	5%	Isooctane	95%

System Setup & Verification 2

D-6296-VER2

1 x 1 mL

2 comps.

	Wt. %		Wt. %
ETBE	5%	Isooctane	95%

Calibration Standard with MTBE

D-6296-CAL1

\$ 65 / 1 x 1 mL

D-6296-CAL1-PAK

SAVE 20%

\$ 260 / 5 x 1 mL

10 comps.

	Wt. %		Wt. %
Pentene	1.0	Decene	1.0
Hexene	1.0	Undecane	1.0
Heptene	1.0	Dodecane	1.0
Octene	1.0	Isooctane	87.0
Nonene	1.0	MTBE	5.0

Calibration Standard with ETBE

D-6296-CAL2

\$ 65 / 1 x 1 mL

D-6296-CAL2-PAK

SAVE 20%

\$ 260 / 5 x 1 mL

11 comps.

	Wt. %		Wt. %
Pentene	1.0	Decane	1.0
Hexene	1.0	Undecane	1.0
Heptene	1.0	Dodecane	1.0
Octene	1.0	Isooctane	86.0
Nonene	1.0	ETBE	5.0
Decene	1.0		

Isooctane Blank Compensation

Standard

D-6296-BL

\$ 15 / 1 x 5 mL

Isooctane (Neat)

ASTM D6304 Determination of Water in Petroleum Products Lubricating oil, and additives by Coulometric Karl Fischer Titration

see page 267

ASTM D6334 Sulfur in Gasoline by Wavelength Dispersive X-Ray Fluorescence

see pages 269-268

ASTM D6352 Boiling Range Distribution of Petroleum Distillates from 174 to 700°C by GC

Polywax 500®

ASTM-P-0051N-2G

\$ 20 / 2 grams

Polywax 500

Polywax 850®

ASTM-P-0137N-2G

\$ 20 / 2 grams

Polywax 850

Polywax 655®

ASTM-P-0053N-2G

\$ 20 / 2 grams

Polywax 655

Polywax 1000®

ASTM-P-0138N-2G

\$ 20 / 2 grams

Polywax 1000

Hydrocarbon Window Defining

Standard

DRH-008S-R2

\$ 65 / 1 x 1 mL

DRH-008S-R2-PAK

SAVE 20%

\$ 260 / 5 x 1 mL

500 µg/mL each in Chloroform

35 comps.

Octane	Nonadecane	Triacontane
Nonane	Phytane	<i>n</i> -Hentriacontane
Decane	Eicosane	Dotriacontane
Undecane	Heneicosane	Tritriacontane
Dodecane	Docosane	Tetraatriacontane
Tridecane	Tricosane	Pentatriacontane
Tetradecane	Tetracosane	Hexatriacontane
Pentadecane	Pentacosane	Heptatriacontane
Hexadecane	Hexacosane	Octatriacontane
Heptadecane	Heptacosane	Nonatriacontane
Octadecane	Octacosane	Tetracontane
Pristane	Nonacosane	

Calibration Mix

DRH-002N

\$ 30 / 100 mg

DRH-002N-10X

\$ 40 / 1 gm

17 comps.

	Wt. %		Wt. %
<i>n</i> -Hexane	6	<i>n</i> -Octadecane	5
<i>n</i> -Heptane	6	<i>n</i> -Eicosane	2
<i>n</i> -Octane	8	<i>n</i> -Tetracosane	2
<i>n</i> -Nonane	8	<i>n</i> -Octacosane	1
<i>n</i> -Decane	12	<i>n</i> -Dotriacontane	1
<i>n</i> -Undecane	12	<i>n</i> -Hexatriacontane	1
<i>n</i> -Dodecane	12	<i>n</i> -Tetracontane	1
<i>n</i> -Tetradecane	12	<i>n</i> -Tetratetracontane	1
<i>n</i> -Hexadecane	10		

Column Test Mixture

D-2887

\$ 10 / 1 x 1 mL

1% w/v in *n*-Octane

2 comps.

n-Hexadecane

n-Octadecane


ASTM D6378 Vapor Pressure (VPx) of Petroleum Products, Hydrocarbons, & Hydrocarbon-Oxygenate Mixtures (Triple Expansion Method)

see page 279

ASTM D6379 Aromatic Hydrocarbon Types in Aviation Fuels & Petroleum Distillates - HPLC method with Refractive Index
System Resolution Standards
D-6379-SRS \$ 40 / 1 x 1 mL

D-6379-SRS-PAK **SAVE 20%** \$ 160 / 5 x 1 mL

At stated conc. (mg/mL) in n-Heptane 3 comps.

Cyclohexane	10
o-Xylene	0.5
1-Methyl naphthalene	0.05

D-6379-SRS-R1 \$ 40 / 1 x 1 mL

D-6379-SRS-R1-PAK **SAVE 20%** \$ 160 / 5 x 1 mL

At stated conc. (mg/mL) in n-Heptane 3 comps.

Cyclohexane	10
o-Xylene	5
1-Methyl naphthalene	0.5

Calibration Curves
D-6379-SET \$ 100 / 4 x 1 mL

D-6379-SET-PAK **SAVE 20%** \$ 400 / 5 x (4 x 1 mL)

At stated conc. (mg/mL) in n-Heptane

Analyte	Std. 1	Std. 2	Std. 3	Std. 4
Cyclohexane	5	2	0.5	0.1
o-Xylene	15	5	1.0	0.1
1-Methyl naphthalene	5	1.0	0.2	0.05

D-6379-10X-SET \$ 100 / 4 x 1 mL

D-6379-10X-SET-PAK **SAVE 20%** \$ 400 / 5 x (4 x 1 mL)

At stated conc. (mg/mL) in n-Heptane

Analyte	Std. 1	Std. 2	Std. 3	Std. 4
Cyclohexane	50	20	5	1
o-Xylene	150	50	10	1
1-Methyl naphthalene	50	10	2	0.5

ASTM D6417 Estimation of Engine Oil Volatility by Capillary GC

see page 298

ASTM D6428 Sulfur by Combustion and Electrochemical Detection
D-6428-R1-100ML-SET

\$ 300 / 7 x 100 mL

D-6428-R1-SET

\$ 65 / 7 x 1 mL

In Isooctane

Description	D-6428-R1-100ML-SET 7 x 100 mL	D-6428-R1-SET 7 x 1 mL
Sulfur Blank	D-6428-BL-100ML	D-6428-BL
Sulfur @ 0.1 µg/g	D-6428-0.1X-100ML	D-6428-0.1X
Sulfur @ 0.5 µg/g	D-6428-0.5X-100ML	D-6428-0.5X
Sulfur @ 1.0 µg/g	D-6428-1X-100ML	D-6428-1X
Sulfur @ 2.5 µg/g	D-6428-2.5X-100ML	D-6428-2.5X
Sulfur @ 5.0 µg/g	D-6428-5X-100ML	D-6428-5X
Sulfur @ 10 µg/g	D-6428-10X-100ML	D-6428-10X

D-6428-R2-100ML-SET

\$ 275 / 6 x 100 mL

D-6428-R2-SET

\$ 65 / 6 x 1 mL

In Isooctane

Description	D-6428-R2-100ML-SET 6 x 100 mL	D-6428-R2-SET 6 x 1 mL
Sulfur Blank	D-6428-BL-100ML	D-6428-BL
Sulfur @ 10 µg/g	D-6428-10X-100ML	D-6428-10X
Sulfur @ 25 µg/g	D-6428-25X-100ML	D-6428-25X
Sulfur @ 50 µg/g	D-6428-50X-100ML	D-6428-50X
Sulfur @ 75 µg/g	D-6428-75X-100ML	D-6428-75X
Sulfur @ 100 µg/g	D-6428-100X-100ML	D-6428-100X

Technical Note

Sulfur introduced using di-n-butyl sulfide

Technical Note

Standards are prepared by adding well characterized sulfur compounds gravimetrically to the matrix. Since the matrix may contain some native sulfur, a blank must be used for correction and should be purchased with the standard.

ASTM D6443 Ca, Cl, Cu, Mg, P, S, Zn in Unused Lubricating Oils & Additives by Wave-length Dispersive X-ray Fluorescence & Spectrometry

see pages 381-382

ASTM D6445 Sulfur in Gasoline by ED - XRF

see pages 268-269

ASTM D6481 P, S, Ca and Zn in Lube Oils by ED-XRF

see pages 380-382

ASTM D6550 Olefin Content of Gasolines by SFC
Stock Olefin Calibration Standard
D-6550-CONC

\$ 80 / 1 x 1 mL

D-6550-CONC-5ML

\$ 350 / 1 x 5 mL

At stated Conc. by Wt. %

15 comps.

	Wt. %		Wt. %		Wt. %
1-Nonene	2.5	2-Methyl-1,3-butadiene	5	2-Methyl-2-pentene	10
Cyclohexene	5	4-Methyl-1-pentene	5	1-Heptene	10
1-Hexene	5	1,5-Hexadiene	3	2-Methyl-1-octene	2.5
1-Octene	5	3-Methyl-1,3-pentadiene	2	2-Methyl-1-heptene	5
1-Decene	5	2-Methyl-1-butene	25	5-Methyl-1-hexene	10



ASTM D6584 Free and Total Glycerin in Biodiesel by GC

Compound	Conc.	Matrix	Cat. No.	Price / Unit
Glycerin	0.5 mg/mL	Pyridine	BF-D-6584-01 *	\$ 25 / 2 mL
Monoolein	5 mg/mL	Pyridine	BF-D-6584-02 *	25 / 2 mL
1,3-Diolein	5 mg/mL	Pyridine	BF-D-6584-03 *	25 / 2 mL
Triolein	5 mg/mL	Pyridine	BF-D-6584-04 *	25 / 2 mL
(S)-(-)-1,2,4-Butanetriol	1 mg/mL	Pyridine	BF-D-6584-05-IS *	145 / 5 mL
Tricaprin	8 mg/mL	Pyridine	BF-D-6584-06 *	145 / 5 mL
MSTFA	5 mL	Neat	BF-D-6584-07N *	145 / 5 mL
Set of 7 above compounds			BF-D-6584-SET *	450 / 7 units
Mix of above compounds, on right (MSTFA separate)				
Biofuel 20	0.5 mg/mL	CH ₂ Cl ₂	BF-FU-030-D	10 / 2 mL
	20 mg/mL	CH ₂ Cl ₂	BF-FU-030-D-40X	20 / 2 mL
Biofuel 100 Consumer grade	0.5 mg/mL	CH ₂ Cl ₂	BF-FU-029-D	20 / 2 mL
	20 mg/mL	CH ₂ Cl ₂	BF-FU-029-40X	45 / 2 mL
Biofuel 100	0.5 mg/mL	CH ₂ Cl ₂	BF-FU-032-D	20 / 2 mL
	20 mg/mL	CH ₂ Cl ₂	BF-FU-032-D-40X	45 / 2 mL

ASTM D6584 Mixture

BF-D-6584-MIX * \$ 225 / 1 x 5 mL
At stated conc. in Pyridine 6 comps.

Glycerol	0.5 mg/mL
Monoolein	5 mg/mL
1,3-Diolein	5 mg/mL
Trioctadecenoin (Olein)	5 mg/mL
(S)-(-)-1,2,4-Butanetriol	1 mg/mL
Tricaprin	8 mg/mL

Note: MSTFA (BF-D-6584-07N) can be ordered separately.

EN 14105 Free and Total Glycerin in Biodiesel by GC



EN 14105 Biofuel Glyceride Solution I

EN-14105-01 * \$ 35 / 1 x 1 mL
At stated conc. (µg/mL) in Pyridine 6 comps.

(S)-(-)-1,2,4-Butanetriol	80
Monoolein	250
Diolein	50
Triolein	50
Glycerol	5
Tricaprin	800

EN 14105 Biofuel Glyceride Solution II

EN-14105-02 * \$ 35 / 1 x 1 mL
At stated conc. (µg/mL) in Pyridine 6 comps.

(S)-(-)-1,2,4-Butanetriol	80 µg/mL
Monoolein	600 µg/mL
Diolein	200 µg/mL
Triolein	150 µg/mL
Glycerol	20 µg/mL
Tricaprin	800 µg/mL

EN 14105 Biofuel Glyceride Solution III

EN-14105-03 * \$ 35 / 1 x 1 mL
At stated conc. (µg/mL) in Pyridine 6 comps.

(S)-(-)-1,2,4-Butanetriol	80 µg/mL
Monoolein	950 µg/mL
Diolein	350 µg/mL
Triolein	300 µg/mL
Glycerol	35 µg/mL
Tricaprin	800 µg/mL

EN 14105 Biofuel Glyceride Solution IV

EN-14105-04 * \$ 35 / 1 x 1 mL
At stated conc. (µg/mL) in Pyridine 6 comps.

(S)-(-)-1,2,4-Butanetriol	80 µg/mL
Monoolein	1250 µg/mL
Diolein	500 µg/mL
Triolein	400 µg/mL
Glycerol	50 µg/mL
Tricaprin	800 µg/mL

ASTM D6591-11 (IP 391) Aromatic Hydrocarbon Types in Middle Distillates - HPLC method with Refractive Index Detection

System Performance Standard

ASTM-P-0135 \$ 75 / 1 x 5 mL
ASTM-P-0135-PAK SAVE 20% \$ 300 / 5 x 5 mL
At stated conc. (mg/mL) in n-Heptane 4 comps.

Cyclohexane	10
o-Xylene	5.0
Dibenzothiophene	0.5
9-Methylanthracene	0.5

IP 391-95 Calibration Curve

ASTM-P-0136-SET \$ 145 / 4 x 1 mL
At stated conc. (mg/mL) in n-Heptane

Analyte	Std. 1	Std. 2	Std. 3	Std. 4
Cyclohexane	50	20	5	1
o-Xylene	40	10	2.5	0.5
1-Methyl naphthalene	40	10	2.5	0.2
Phenanthrene	4	2	0.5	0.1

* ColdPAK required to maintain integrity of product.



ASTM D6751 & ASTM D5453 Sulfur as Di-n-butyl sulfide in Biodiesel

Sulfur in Biodiesel 5%

ppm (µg/g)	% Wt.	Cat. No.	Price / 100 mL
0	0	BF-5453-B5-BL	\$ 65
5	0.0005	BF-5453-B5-5X-SET	80 / 2 x 100 mL
10	0.001	BF-5453-B5-10X-SET	80 / 2 x 100 mL
15	0.0015	BF-5453-B5-15X-SET	80 / 2 x 100 mL
30	0.003	BF-5453-B5-30X	65
50	0.005	BF-5453-B5-50X	65
75	0.0075	BF-5453-B5-75X	65
100	0.01	BF-5453-B5-100X	65
200	0.02	BF-5453-B5-200X	65
500	0.05	BF-5453-B5-500X	65

Sulfur in Biodiesel 20%

0	0	BF-5453-B20-BL	\$ 65
5	0.0005	BF-5453-B20-5X-SET	80 / 2 x 100 mL
10	0.001	BF-5453-B20-10X-SET	80 / 2 x 100 mL
15	0.0015	BF-5453-B20-15X-SET	80 / 2 x 100 mL
30	0.003	BF-5453-B20-30X	65
50	0.005	BF-5453-B20-50X	65
75	0.0075	BF-5453-B20-75X	65
100	0.01	BF-5453-B20-100X	65
200	0.02	BF-5453-B20-200X	65
500	0.05	BF-5453-B20-500X	65

Technical Note

All products are refinery grade stock, unless specifically marked consumer grade.

Sulfur in Biodiesel 100%

ppm (µg/g)	% Wt.	Cat. No.	Price / 100 mL
0	0	BF-5453-B100-BL	\$ 65
5	0.0005	BF-5453-B100-5X-SET	80 / 2 x 100 mL
10	0.001	BF-5453-B100-10X-SET	80 / 2 x 100 mL
15	0.0015	BF-5453-B100-15X-SET	80 / 2 x 100 mL
30	0.003	BF-5453-B100-30X	65
50	0.005	BF-5453-B100-50X	65
75	0.0075	BF-5453-B100-75X	65
100	0.01	BF-5453-B100-100X	65
200	0.02	BF-5453-B100-200X	65
500	0.05	BF-5453-B100-500X	65

Technical Note

The 5, 10 and 15 ppm sulfurs are supplied as a set including a blank. We suggest using the blank for analysis to compensate for matrix interferences, such as low levels of native sulfur.

Technical Note

Standards are prepared by adding well characterized sulfur compounds gravimetrically to the matrix. Since the matrix may contain some native sulfur, a blank must be used for correction and should be purchased with the standard.

Note: 10,000 ppm = 1% Wt.

Physical Standards

Compound	Conc.	Matrix	Cat. No.	Unit	Price
ASTM D2500					
Cloud Point	-16 °C *	B5	BF-D-2500-B5	200 mL	\$ 120
	-14 °C *	B20	BF-D-2500-B20	200 mL	120
	-1 °C *	B100	BF-D-2500-B100	200 mL	120
ASTM D93 / EN-ISO 3679					
Flash Point	60 °C *		BF-D-93-60C	200 mL	140
	65 °C *		BF-D-93-65C	200 mL	140
	140 °C *		BF-D-93-140C	200 mL	140
ASTM D4951 / EN 14107					
Phosphorus Content	0.001 % Wt.	B100	BF-D-4951-B100	100 g	200
ASTM D6304 / EN ISO 12937					
(KF) Water Content	60 µg/g		BF-KF-0.6X-5ML-VAP	10 x 5 mL	70
	100 µg/g		BF-KF-1X-5ML-VAP	10 x 5 mL	50
	1000 µg/g		BF-KF-10X-5ML-VAP	10 x 5 mL	50
	5000 µg/g		BF-KF-50X-5ML-VAP	10 x 5 mL	50
ASTM D6751 / UOP 391 / EN 14108 / EN 14109					
Sodium / Potassium	100 ppm	B100	BF-UOP-391-B100	100 g	225
EN 14538					
Calcium / Magnesium	100 ppm	B100	BF-14538-B100	100 g	225

* These are nominal values and the actual value will be recorded on the certificate.



UOP (Universal Oil Products) methods were developed to facilitate the refining industry in analyzing refinery feeds, products and process streams for composition, purity and physical and chemical properties. In addition to the products listed below, AccuStandard can custom formulate products to fit your exact needs. Please contact our Technical Service Department for additional information.

UOP Method 543 Standard

Non-Aromatic Hydrocarbons in High-Purity Aromatics by GC.

UOP-M-543-PAK \$ 50 / 5 x 1 mL
At stated Wt./Wt.% 2 comps.

	Wt./Wt.%
n-Dodecane	70
Toluene	30

UOP Method 551 Standard

Hexanes and Lower-Boiling Hydrocarbons in Olefin-Free Gasolines by GC. May also be used for UOP Method 690 - Octanes and Lower Boiling Hydrocarbons in Olefin-Free Gasolines by GC.

UOP-M-551-PAK \$ 50 / 5 x 1 mL
Equal Mass % 7 comps.

n-Hexane	o-Xylene
Benzene	m-Xylene
Toluene	p-Xylene
Ethylbenzene	

UOP Method 660 Standard

UOP-M-660-PAK \$ 50 / 5 x 1 mL

1% in Water

UOP-M-660-10X-PAK \$ 50 / 5 x 1 mL

10% in Water

UOP-M-660-0.1X-PAK \$ 50 / 5 x 1 mL

1000 ppm in Water

Tetramethylene sulfone

UOP Method 720 Standard

Impurities in High Purity p-Xylene by GC.

UOP-M-720-PAK \$ 50 / 5 x 1 mL
At stated Mass % 5 comps.

	Mass %
o-Xylene	0.1
m-Xylene	0.1
Ethylbenzene	0.1
n-Undecane	1.0
p-Xylene	98.7

UOP Method 744 Standard

Aromatics in Hydrocarbons by GC.

UOP-M-744-PAK \$ 50 / 5 x 1 mL
At stated Wt./Wt.% 8 comps.

	Wt./Wt.%
n-Heptane	25
Benzene	15
Toluene	20
m-Xylene	6.7
o-Xylene	6.6
p-Xylene	6.7
o-Ethyltoluene	10
1,2,3,4-Tetramethylbenzene	10

UOP Method 831 Standard

UOP-M-831-PAK \$ 50 / 5 x 1 mL
10 µg/g each in Sulfolane 5 comps.

Benzene	Isopropylbenzene
Toluene	n-Nonane
Ethylbenzene	

UOP Method 868 Standard

Trace Saturates in High Purity Aromatics by GC.

UOP-M-868-PAK \$ 50 / 5 x 1 mL
Stated conc. in Toluene 10 comps.

	µg/g
n-Butylcyclohexane	500
n-Propylcyclohexane	400
n-Decane	500
n-Nonane	500
n-Octane	300
n-Hexane	100
Ethylcyclohexane	300
Cyclohexane	100
n-Heptane	200
Methylcyclohexane	200

UOP Method 931 Standard

Trace Impurities in Mixed Xylenes by GC.

UOP-M-931-PAK \$ 50 / 5 x 1 mL
At stated Wt./Wt.% 5 comps.

	Wt./Wt.%
Benzene	2.0
Toluene	2.0
o-Ethyltoluene	2.0
n-Undecane	2.0
n-Heptane	92.0



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Skinner List for Refinery Waste

Semi-Volatiles

Base/Neutral Extractables

M-005B	\$ 150 / 1 x 1 mL
M-005B-PAK	SAVE 20% \$ 600 / 5 x 1 mL
0.2 mg/mL each in CH ₂ Cl ₂	
M-005B-10X	\$ 200 / 1 x 1 mL
M-005B-10X-PAK	SAVE 20% \$ 800 / 5 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂	27 comps.

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

Acid Extractables

M-005A	\$ 35 / 1 x 1 mL
M-005A-PAK	SAVE 20% \$ 140 / 5 x 1 mL
0.2 mg/mL each in CH ₂ Cl ₂	
M-005A-10X	\$ 40 / 1 x 1 mL
M-005A-10X-PAK	SAVE 20% \$ 160 / 5 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂	8 comps.
o-Cresol	2,4-Dinitrophenol
m-Cresol	4-Nitrophenol
p-Cresol	Phenol
2,4-Dimethylphenol	Thiophenol

Volatiles

M-005V	\$ 35 / 1 x 1 mL
M-005V-PAK	SAVE 20% \$ 140 / 5 x 1 mL
0.2 mg/mL each in MeOH	
M-005V-10X	\$ 40 / 1 x 1 mL
M-005V-10X-PAK	SAVE 20% \$ 160 / 5 x 1 mL
2.0 mg/mL each in MeOH	14 comps.
Benzene	Ethylene dibromide
Carbon disulfide	Methyl ethyl ketone
Chlorobenzene	Styrene
Chloroform	Toluene
1,2-Dichloroethane	o-Xylene
1,4-Dioxane	m-Xylene
Ethyl benzene	p-Xylene

Resolution Check for Fire Debris Analysis

ASTM E1387 Resolution Check Mix

ASTM-E1387	\$ 30 / 1 x 1 mL
ASTM-E1387-PAK	SAVE 20% \$ 120 / 5 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂	13 comps.

Decane	Hexadecane	Tetradecane
Dodecane	Hexane	Toluene
Eicosane	Octadecane	1,2,4-Trimethylbenzene
2-Ethyltoluene	Octane	p-Xylene
3-Ethyltoluene		

ASTM E1618 Test Mix for Fire Debris Analysis

ASTM-E1618	\$ 35 / 1 x 1 mL
ASTM-E1618-PAK	SAVE 20% \$ 140 / 5 x 1 mL
0.05% v/v (0.50 µL/mL) each in CH ₂ Cl ₂	13 comps.

n-Decane	n-Hexadecane	n-Tetradecane
n-Dodecane	n-Hexane	Toluene
n-Eicosane	n-Octadecane	1,2,4-Trimethylbenzene
o-Ethyltoluene	n-Octane	p-Xylene
m-Ethyltoluene		

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BioFuel Standards

ASTM, EN and other test methods have been developed to monitor the properties (physical and chemical), constituent distribution, impurities and suitability of use.

The source materials that are used to produce these fuels vary from plant oils, ethyl alcohol (usually from corn) and even waste products.

Biodiesel refineries have opened all over the world.

- The Minister for the Environment and Heritage of Australia signed the Fuel Standard (Biodiesel) which sets out the physical and chemical parameters with the associated test methods to determine compliance.
- In Germany the sale of biodiesel in gas stations is over 2 million cubic meters.
- In the USA, some state legislatures have mandated 2% biodiesel content in all diesels sold in those states.

ASTM D6584 / EN 14105 Free and Total Glycerin in Biodiesel by GC

Compound	Qty. /	Conc.	Matrix	Cat. No.	Price / Unit
Glycerin	0.5	mg/mL	Pyridine	BF-D-6584-01 *	\$ 25 / 2 mL
Monoolein	5	mg/mL	Pyridine	BF-D-6584-02 *	25 / 2 mL
1,3-Diolein	5	mg/mL	Pyridine	BF-D-6584-03 *	25 / 2 mL
Triolein	5	mg/mL	Pyridine	BF-D-6584-04 *	25 / 2 mL
(S)-(-)-1,2,4-Butanetriol	1	mg/mL	Pyridine	BF-D-6584-05-IS *	145 / 5 mL
Tricaprin	8	mg/mL	Pyridine	BF-D-6584-06 *	145 / 5 mL
MSTFA	5	mL	Neat	BF-D-6584-07N *	145 / 5 mL
Set of 7 above compounds				BF-D-6584-SET *	450 / 7 units
Mix of above compounds, on right (MSTFA separate)					
Biofuel 20	0.5	mg/mL	CH ₂ Cl ₂	BF-FU-030-D	10 / 2 mL
	20	mg/mL	CH ₂ Cl ₂	BF-FU-030-D-40X	20 / 2 mL
Biofuel 100 Consumer grade	0.5	mg/mL	CH ₂ Cl ₂	BF-FU-029-D	20 / 2 mL
	20	mg/mL	CH ₂ Cl ₂	BF-FU-029-40X	45 / 2 mL
Biofuel 100	0.5	mg/mL	CH ₂ Cl ₂	BF-FU-032-D	20 / 2 mL
	20	mg/mL	CH ₂ Cl ₂	BF-FU-032-D-40X	45 / 2 mL

ASTM D6584 Mixture

BF-D-6584-MIX \$ 225 / 1 x 5 mL
At stated conc. in Pyridine 6 comps.

Glycerol	0.5 mg/mL
Monoolein	5 mg/mL
1,3-Diolein	5 mg/mL
Triolein	5 mg/mL
Triolein (Olein)	5 mg/mL
(S)-(-)-1,2,4-Butanetriol	1 mg/mL
Tricaprin	8 mg/mL

Note: MSTFA (BF-D-6584-07N) can be ordered separately.

EN 14105 BioFuel Glyceride Solutions



Solution I

EN-14105-01 * \$ 35 / 1 mL
At stated (µg/mL) conc. in Pyridine 6 comps.

(s)-(-)-1,2,4-Butanetriol	80
Monoolein	250
Diolein	50
Triolein	50
Glycerol	5
Tricaprin	8

Solution II

EN-14105-02 * \$ 35 / 1 mL
At stated (µg/mL) conc. in Pyridine 6 comps.

(s)-(-)-1,2,4-Butanetriol	80
Monoolein	600
Diolein	200
Triolein	150
Glycerol	20
Tricaprin	800

Solution III

EN-14105-03 * \$ 35 / 1 mL
At stated (µg/mL) conc. in Pyridine 6 comps.

(s)-(-)-1,2,4-Butanetriol	80
Monoolein	950
Diolein	350
Triolein	300
Glycerol	35
Tricaprin	800

Solution IV

EN-14105-04 * \$ 35 / 1 mL
At stated (µg/mL) conc. in Pyridine 6 comps.

(s)-(-)-1,2,4-Butanetriol	80
Monoolein	1250
Diolein	500
Triolein	400
Glycerol	50
Tricaprin	800

EN 14103 Fatty Acid Methyl Esters (FAMES)

The methyl esters in the mixture are those derived from typical glycerides present in biomass sources.

Soy & Corn

BF-SOY-ME * \$ 145 / 100 mg

16:0 Palmitate	6% Wt.
18:0 Stearate	3% Wt.
20:0 Arachidate	3% Wt.
18:1 Oleate	35% Wt.
18:2 Linoleate	50% Wt.
18:3 Linolenate	3% Wt.

Palm Kernel

BF-PALM-ME * \$ 200 / 100 mg

8:0 Caprylate	7% Wt.
10:0 Caprate	5% Wt.
12:0 Laurate	48% Wt.
14:0 Myristate	15% Wt.
16:0 Palmitate	7% Wt.
18:0 Stearate	3% Wt.
18:1 Oleate	12% Wt.
18:2 Linoleate	3% Wt.

Percent Methanol Calibration Standard Set (EN 14110)

BF-MEOH-SET \$ 65 / 5 x 1 mL

BF-MEOH-1X (100 µg/g)	BF-MEOH-25X (2500 µg/g)
BF-MEOH-5X (500 µg/g)	BF-MEOH-50X (5000 µg/g)
BF-MEOH-10X (1000 µg/g)	

Methanol in Water

Rapeseed Oil

BF-RAP-ME * \$ 200 / 100 mg

14:0 Myristate	1% Wt.
16:0 Palmitate	4% Wt.
18:0 Stearate	3% Wt.
20:0 Arachidate	3% Wt.
22:0 Behenate	3% Wt.
24:0 Lignocerate	3% Wt.
18:1 Oleate	60% Wt.
22:1 Erucate	5% Wt.
18:2 Linoleate	12% Wt.
18:3 Linolenate	5% Wt.
20:1 Eicosenoate	1% Wt.

Beef Tallow & Palm Oil

BF-BT-ME * \$ 175 / 100 mg

14:0 Myristate	2% Wt.
16:0 Palmitate	30% Wt.
16:1 Palmitoleate	3% Wt.
18:0 Stearate	14% Wt.
18:1 Oleate	41% Wt.
18:2 Linoleate	7% Wt.
18:3 Linolenate	3% Wt.

Technical Note

All products are refinery grade stock, unless specifically marked consumer grade.

Technical Note

Individual mixes packaged under Nitrogen for stability.

* ColdPAK required to maintain integrity of product.



Fatty Acid Ethyl Esters (FAEEs)

Ethyl Esters in Soy & Corn

BF-SOY-EE \$ 185 / 100 mg	
16:0 Ethyl palmitate	6% Wt.
18:0 Ethyl stearate	3% Wt.
20:0 Ethyl arachidate	3% Wt.
18:1 Ethyl oleate	35% Wt.
18:2 Ethyl linoleate	50% Wt.
18:3 Ethyl linolenate	3% Wt.

Ethyl Esters in Palm Kernel Oil

BF-PALM-EE \$ 250 / 100 mg	
8:0 Ethyl caprylate	7% Wt.
10:0 Ethyl caprate	5% Wt.
12:0 Ethyl laurate	48% Wt.
14:0 Ethyl myristate	15% Wt.
16:0 Ethyl palmitate	7% Wt.
18:0 Ethyl stearate	3% Wt.
18:1 Ethyl oleate	12% Wt.
18:2 Ethyl linoleate	3% Wt.

Ethyl Esters in Rapeseed Oil

BF-RAP-EE \$ 250 / 100 mg	
14:0 Ethyl myristate	1% Wt.
16:0 Ethyl palmitate	4% Wt.
18:0 Ethyl stearate	3% Wt.
20:0 Ethyl arachidate	3% Wt.
22:0 Ethyl behenate	3% Wt.
24:0 Ethyl lignocerate	3% Wt.
18:1 Ethyl oleate	60% Wt.
22:1 Ethyl erucate	5% Wt.
18:2 Ethyl linoleate	12% Wt.
18:3 Ethyl linolenate	5% Wt.
20:1 Ethyl eicosenoate	1% Wt.

Ethyl Esters in Beef Tallow

BF-BT-EE \$ 225 / 100 mg	
14:0 Ethyl myristate	2% Wt.
16:0 Ethyl palmitate	30% Wt.
16:1 Ethyl palmitoleate	3% Wt.
18:0 Ethyl stearate	14% Wt.
18:1 Ethyl oleate	41% Wt.
18:2 Ethyl linoleate	7% Wt.
18:3 Ethyl linolenate	3% Wt.

Compound	Neat (100 mg)		Solution (10 mg/mL in Hexane)	
	Cat. No.	Price	Cat. No.	Price / 1 mL
Ethyl palmitate (16:0)	FAEE-006N	\$ 15	FAEE-006S	\$ 15
Ethyl stearate (18:0)	FAEE-007N	15	FAEE-007S	15
Ethyl arachidate (20:0)	FAEE-008N	15	FAEE-008S	15
Ethyl oleate (18:1)	FAEE-014N	15	FAEE-014S	15
Ethyl linoleate (18:2)	FAEE-012N	15	FAEE-012S	15
Ethyl linolenate (18:3)	FAEE-016N	15	FAEE-016S	15
Ethyl myristate (14:0)	FAEE-005N	15	FAEE-005S	15
Ethyl behenate (22:0)	FAEE-009N	15	FAEE-009S	15
Ethyl lignocerate (24:0)	FAEE-010N	25	FAEE-010S	25
Ethyl erucate (22:1)	FAEE-011N	15	FAEE-011S	15
Ethyl caprylate (8:0)	FAEE-002N	15	FAEE-002S	15
Ethyl caprate (10:0)	FAEE-003N	15	FAEE-003S	15
Ethyl laurate (12:0)	FAEE-004N	15	FAEE-004S	15
Ethyl palmitoleate (16:1)	FAEE-001N	15	FAEE-001S	15
Ethyl nervonate (24:1)	FAEE-013N	25	FAEE-013S	25
Ethyl heptadecanoate (17:0)	FAEE-015N	15	FAEE-015S	15
Ethyl linolenate (gamma) (18:3)	FAEE-020N	35	FAEE-020S	35

ASTM D6751 & ASTM D5453 Sulfur as Di-n-butyl sulfide in Biodiesel

Sulfur in Biodiesel 5%

ppm (µg/g)	% Wt.	Cat. No.	Price / 100 mL
0	0	BF-5453-B5-BL	\$ 65
5	0.0005	BF-5453-B5-5X-SET	80 / 2 x 100 mL
10	0.001	BF-5453-B5-10X-SET	80 / 2 x 100 mL
15	0.0015	BF-5453-B5-15X-SET	80 / 2 x 100 mL
30	0.003	BF-5453-B5-30X	65
50	0.005	BF-5453-B5-50X	65
75	0.0075	BF-5453-B5-75X	65
100	0.01	BF-5453-B5-100X	65
200	0.02	BF-5453-B5-200X	65
500	0.05	BF-5453-B5-500X	65

Sulfur in Biodiesel 100%

ppm (µg/g)	% Wt.	Cat. No.	Price / 100 mL
0	0	BF-5453-B100-BL	\$ 65
5	0.0005	BF-5453-B100-5X-SET	80 / 2 x 100 mL
10	0.001	BF-5453-B100-10X-SET	80 / 2 x 100 mL
15	0.0015	BF-5453-B100-15X-SET	80 / 2 x 100 mL
30	0.003	BF-5453-B100-30X	65
50	0.005	BF-5453-B100-50X	65
75	0.0075	BF-5453-B100-75X	65
100	0.01	BF-5453-B100-100X	65
200	0.02	BF-5453-B100-200X	65
500	0.05	BF-5453-B100-500X	65

Sulfur in Biodiesel 20%

0	0	BF-5453-B20-BL	\$ 65
5	0.0005	BF-5453-B20-5X-SET	80 / 2 x 100 mL
10	0.001	BF-5453-B20-10X-SET	80 / 2 x 100 mL
15	0.0015	BF-5453-B20-15X-SET	80 / 2 x 100 mL
30	0.003	BF-5453-B20-30X	65
50	0.005	BF-5453-B20-50X	65
75	0.0075	BF-5453-B20-75X	65
100	0.01	BF-5453-B20-100X	65
200	0.02	BF-5453-B20-200X	65
500	0.05	BF-5453-B20-500X	65

Technical Note

Standards are prepared by adding well characterized sulfur compounds gravimetrically to the matrix. Since the matrix may contain some native sulfur, a blank must be used for correction and should be purchased with the standard.

Note: 10,000 ppm = 1% Wt.



BioFuel Standards

Physical Standards

Compound	Conc.	Matrix	Cat. No.	Unit	Price
ASTM D2500					
Cloud Point	-16 °C *	B5	BF-D-2500-B5	200 mL	\$ 120
	-14 °C *	B20	BF-D-2500-B20	200 mL	120
	-1 °C *	B100	BF-D-2500-B100	200 mL	120
ASTM D93 / EN-ISO 3679					
Flash Point	60 °C *		BF-D-93-60C	200 mL	140
	65 °C *		BF-D-93-65C	200 mL	140
	140 °C *		BF-D-93-140C	200 mL	140
ASTM D4951 / EN 14107					
Phosphorus Content	0.001 % Wt.	B100	BF-D-4951-B100	100 g	200
ASTM D6304 / EN ISO 12937					
(KF) Water Content	60 µg/g		BF-KF-0.6X-5ML-VAP	10 x 5 mL	70
	100 µg/g		BF-KF-1X-5ML-VAP	10 x 5 mL	50
	1000 µg/g		BF-KF-10X-5ML-VAP	10 x 5 mL	50
	5000 µg/g		BF-KF-50X-5ML-VAP	10 x 5 mL	50
ASTM D6751 / UOP 391 / EN 14108 / EN 14109					
Sodium / Potassium	100 ppm	B100	BF-UOP-391-B100	100 g	225
EN 14538					
Calcium / Magnesium	100 ppm	B100	BF-14538-B100	100 g	225

* These are nominal values and the actual value will be recorded on the certificate.



EN 14214 Wear Metals

Each is 100 grams at 500 µg/g concentration.

Compound	Matrix	Cat. No.	Price / 100 grams
Aluminum	B100	BF-WM-B100-01-0.5X	200
Calcium	B100	BF-WM-B100-09-0.5X	200
Chromium	B100	BF-WM-B100-13-0.5X	200
Copper	B100	BF-WM-B100-15-0.5X	200
Iron	B100	BF-WM-B100-27-0.5X	200
Lead	B100	BF-WM-B100-29-0.5X	200
Magnesium	B100	BF-WM-B100-32-0.5X	200
Phosphorus	B100	BF-WM-B100-41-0.5X	200
Potassium	B100	BF-WM-B100-43-0.5X	200
Sodium	B100	BF-WM-B100-54-0.5X	200
Zinc	B100	BF-WM-B100-70-0.5X	200

Biofuel Metals Mix

Multi-Element Biofuel Standard

BF-WM-B100-MIX \$ 275 / 100 g
200 µg/g each in B100
5 comps.
Ca (Calcium) Na (Sodium)
K (Potassium) P (Phosphorus)
Mg (Magnesium)

Biofuel Blank

B100

BF-WM-B100-BL-1 \$ 85 / 100 g
BF-WM-B100-BL-5 \$ 125 / 500 g

Technical Note

All products are refinery grade stock, unless specifically marked consumer grade.

EN 15721 Ethanol Impurities



Ethanol Impurities Solution A

EN-15721-A \$ 75 / 1 mL
1% w/w each in Ethanol 10 comps.

Methanol 2-Butanol
Acetaldehyde 1-Butanol
3-Methyl-1-butanol 1-Propanol
2-Methyl-1-butanol Ethyl acetate
2-Methyl-1-propanol Acetal

Internal Standard Solution A

EN-15721-A-IS \$ 25 / 1 mL
1% w/w in Ethanol

3-Propanol

EN 15721 Solution A Set

EN-15721-A-SET \$85 / 2 x 1 mL
EN-15721-A and **EN-15721-A-IS**



TPH, Fuel and Hydrocarbons



Petroleum is a broadly defined class of liquid hydrocarbon mixtures that are used in a large variety of products for many different uses. In general, they are oil-based products that can be obtained by distillation and are normally used outside the refining industry. Petroleum products include aviation gasoline, motor gasoline, jet fuels, kerosene, gas/diesel oil, heavy fuel oil, naphtha, and lubricants among others.

Most analytical methods for petroleum products focus on the level of benzene, toluene, ethyl benzene and xylene (BTEX), the total petroleum hydrocarbon number (TPH) and the finger print of the petroleum product.

Individual Fuel and Hydrocarbons									
Compound	Conc.	Matrix	Cat. No.	Price / 1 mL	Compound	Conc.	Matrix	Cat. No.	Price / 1 mL
5-alpha Androstane 438-22-2	1 mg/mL	CH ₂ Cl ₂	GRH-IS	\$ 15	Gasoline Regular, unleaded	0.5 mg/mL	MeOH	GA-001	\$ 10
Aviation (gas) (grade 100-LL)	10 mg/mL	CH ₂ Cl ₂	GRH-IS-10X	30		5 mg/mL	MeOH	GA-001-10X	20
	0.5 mg/mL	MeOH	GA-004	10		20 mg/mL	MeOH	GA-001-40X	22
	20 mg/mL	MeOH	GA-004-40X	20		20 mg/mL	CH ₂ Cl ₂	GA-001-D-40X	20
	20 mg/mL	CH ₂ Cl ₂	GA-004-D-40X	20	Gasoline Premium	0.5 mg/mL	MeOH	GA-003	10
Biodiesel 20	0.5 mg/mL	CH ₂ Cl ₂	FU-030-D	10		20 mg/mL	MeOH	GA-003-40X	20
	20 mg/mL	CH ₂ Cl ₂	FU-030-D-40X	25		20 mg/mL	CH ₂ Cl ₂	GA-003-D-40X	20
Biodiesel 100	0.5 mg/mL	CH ₂ Cl ₂	FU-029-D	20	Hydraulic Fluid 64742-54-7	0.5 mg/mL	Hexane	FU-020-H	10
	20 mg/mL	CH ₂ Cl ₂	FU-029-D-40X	45		20 mg/mL	Hexane	FU-020-H-40X	20
Biodiesel 100 (refinery grade)	0.5 mg/mL	CH ₂ Cl ₂	FU-032-D	20		20 mg/mL	CH ₂ Cl ₂	FU-020-D-40X	20
	20 mg/mL	CH ₂ Cl ₂	FU-032-D-40X	45	Jet Reference Fuel Type I	0.5 mg/mL	MeOH	FU-011	10
p-Bromofluorobenzene 460-00-4	2.5 mg/mL	Acetone	GARH-SS	20		20 mg/mL	MeOH	FU-011-40X	20
1-Chloro-4-fluorobenzene 352-33-0	2 mg/mL	MeOH	AK-101.0-IS-10X	20		20 mg/mL	CH ₂ Cl ₂	FU-011-D-40X	20
1-Chlorooctadecane 3386-33-2	1 mg/mL	Hexane	DRH-007-SS	15	JP-4 Jet Fuel (weathered)	0.5 mg/mL	MeOH	FU-010	10
1-Chloro-4-fluorobenzene 352-33-0	1 mg/mL	CH ₂ Cl ₂	GARH-IS	15		20 mg/mL	MeOH	FU-010-40X	20
2,5-Dibromotoluene 615-59-8	50 µg/mL	MeOH	GRH-004-SS	10		20 mg/mL	CH ₂ Cl ₂	FU-010-D-40X	20
	500 µg/mL	MeOH	GRH-004-SS-10X	20	JP-5 Fuel	0.5 mg/mL	MeOH	FU-012	10
	5 mg/mL	MeOH	GRH-004-SS-100X	20		20 mg/mL	MeOH	FU-012-40X	20
Diesel	0.5 mg/mL	MeOH	FU-009	10		20 mg/mL	CH ₂ Cl ₂	FU-012-D-40X	20
	5 mg/mL	CH ₂ Cl ₂	FU-009-D-10X	20	JP-7 Fuel	0.5 mg/mL	MeOH	FU-014	10
	20 mg/mL	MeOH	FU-009-40X	20		20 mg/mL	MeOH	FU-014-40X	20
	20 mg/mL	CH ₂ Cl ₂	FU-009-D-40X	20		20 mg/mL	CH ₂ Cl ₂	FU-014-D-40X	20
#1 Diesel - Low Sulfur	0.5 mg/mL	MeOH	FU-013	10	JP-8 Fuel	0.5 mg/mL	MeOH	FU-015	10
	20 mg/mL	MeOH	FU-013-40X	20		20 mg/mL	MeOH	FU-015-40X	20
	20 mg/mL	CH ₂ Cl ₂	FU-013-D-40X	20		20 mg/mL	CH ₂ Cl ₂	FU-015-D-40X	20
	50 mg/mL	Acetone	AK-102-LCS-R1-10X	20	JP-TS Aviation Fuel 64742-47-8	0.5 mg/mL	MeOH	FU-016	10
#2 Diesel 68334-30-5	0.5 mg/mL	MeOH	FU-017	10		20 mg/mL	MeOH	FU-016-40X	20
#2 Diesel (Extra Low Sulfur)	5 mg/mL	CH ₂ Cl ₂	FU-017-D-10X	20		20 mg/mL	CH ₂ Cl ₂	FU-016-D-40X	20
	5 mg/mL	Acetone	AK-102.0-LCS	10	JP-10 Aviation Fuel 2825-82-3	0.5 mg/mL	MeOH	FU-022	10
	50 mg/mL	Acetone	AK-102.0-LCS-10X	20		20 mg/mL	MeOH	FU-022-40X	20
	20 mg/mL	MeOH	FU-017-40X	20		20 mg/mL	CH ₂ Cl ₂	FU-022-D-40X	20
	20 mg/mL	CH ₂ Cl ₂	FU-017-D-40X	20	Kerosene 25% Weathered	5 mg/mL	CH ₂ Cl ₂	FK-W25-10X	25
#2 Diesel (Low Sulfur) 25% Weathered	5 mg/mL	CH ₂ Cl ₂	FD2-W25-10X	25	Kerosene 50% Weathered	5 mg/mL	CH ₂ Cl ₂	FK-W50-10X	25
#2 Diesel (Low Sulfur) 50% Weathered	5 mg/mL	CH ₂ Cl ₂	FD2-W50-10X	25	Kerosene 75% Weathered	5 mg/mL	CH ₂ Cl ₂	FK-W75-10X	25
#2 Diesel (Low Sulfur) 75% Weathered	5 mg/mL	CH ₂ Cl ₂	FD2-W75-10X	25	Kerosene 8008-20-6	0.5 mg/mL	MeOH	FU-005	10
#2 Diesel 25% Weathered	5 mg/mL	CH ₂ Cl ₂	FD2-W25-R1-10X	25		20 mg/mL	MeOH	FU-005-40X	20
#2 Diesel 50% Weathered	5 mg/mL	CH ₂ Cl ₂	FD2-W50-R1-10X	25		5 mg/mL	CH ₂ Cl ₂	FU-005-D-10X	20
#2 Diesel 75% Weathered	5 mg/mL	CH ₂ Cl ₂	FD2-W75-R1-10X	25		20 mg/mL	CH ₂ Cl ₂	FU-005-D-40X	20
Docosane 629-97-0	50 % w/w	Toluene	D-5186-91-PM	20	Lacquer Thinner	1 gram	Neat	HS-001N	20
n-Dodecane 112-40-3	5 mg/mL	MeOH	AS-E0238	32		0.5 mg/mL	MeOH	HS-001S	10
	1.5 % w/w	Isocetane	M-GRA-SCS-AS	10		20 mg/mL	MeOH	HS-001S-40X	20
#1 Fuel oil 70892-10-3	0.5 mg/mL	MeOH	FU-001	10		20 mg/mL	CH ₂ Cl ₂	HS-001S-D-40X	20
	20 mg/mL	MeOH	FU-001-40X	20	Mineral Spirits 8030-30-6	1 gram	Neat	HS-002N	20
	20 mg/mL	CH ₂ Cl ₂	FU-001-D-40X	20		0.5 mg/mL	MeOH	HS-002S	10
#2 Fuel oil 68476-30-2	0.5 mg/mL	MeOH	FU-002	10		20 mg/mL	MeOH	HS-002S-40X	20
	20 mg/mL	MeOH	FU-002-40X	20		20 mg/mL	CH ₂ Cl ₂	HS-002S-D-40X	20
	20 mg/mL	CH ₂ Cl ₂	FU-002-D-40X	20	Naphtha 64742-89-8	1 gram	Neat	HS-003N	20
#3 Fuel oil	0.5 mg/mL	Hexane	FU-003	10		0.5 mg/mL	MeOH	HS-003S	10
	20 mg/mL	Hexane	FU-003-40X	20		20 mg/mL	MeOH	HS-003S-40X	20
	20 mg/mL	CH ₂ Cl ₂	FU-003-D-40X	20		20 mg/mL	CH ₂ Cl ₂	HS-003S-D-40X	20
#4 Fuel oil 68476-31-3	0.5 mg/mL	Hexane	FU-004	10	Nonatriacontane 7194-86-7	750 µg/mL	Chloroform	DRH-FL-SS-R1	60
	20 mg/mL	Hexane	FU-004-40X	20		1 mg/mL	CS ₂	DRH-FL-SS	20
	20 mg/mL	CH ₂ Cl ₂	FU-004-D-40X	20		3 mg/mL	CS ₂	DRH-FL-SS-3X	27
#6 Fuel Oil 68553-00-4	0.5 mg/mL	Hexane	FU-008	10	n-Pentadecane 629-62-9	5 mg/mL	MeOH	AS-E0241	32
	20 mg/mL	Hexane	FU-008-40X	20	RFA Gasoline (oxygenate-free)	0.5 mg/mL	MeOH	GA-005	10
	20 mg/mL	CH ₂ Cl ₂	FU-008-D-40X	20		20 mg/mL	MeOH	GA-005-40X	20
						20 mg/mL	CH ₂ Cl ₂	GA-005-D-40X	20
					Regular Leaded Gasoline	0.5 mg/mL	MeOH	GA-002	10
						20 mg/mL	MeOH	GA-002-40X	20
						20 mg/mL	CH ₂ Cl ₂	GA-002-D-40X	20

Individual Fuels and Hydrocarbons continued on next page



TPH, Fuel and Hydrocarbons

Individual Fuel and Hydrocarbons

Compound	Conc.	Matrix	Cat. No.	Price / 1 mL	Compound	Conc.	Matrix	Cat. No.	Price / 1 mL
SAE 5W30 Motor oil	0.5 mg/mL	Hexane	FU-025-H	\$ 10	o-Terphenyl 84-15-1	200 µg/mL	Acetone	AK-102.0-SS	\$ 10
	20 mg/mL	Hexane	FU-025-H-40X	20		1 mg/mL	CH ₂ Cl ₂	DRH-006-SS	15
	20 mg/mL	CH ₂ Cl ₂	FU-025-D-40X	20		2 mg/mL	Acetone	AK-102.0-SS-10X	15
SAE 10W30 Motor oil	0.5 mg/mL	Hexane	FU-026-H	10		2 mg/mL	Acetone	GRH-SS	17
	20 mg/mL	Hexane	FU-026-H-40X	20	n-Tetradecane 629-59-4	5 mg/mL	MeOH	AS-E0240	32
	20 mg/mL	CH ₂ Cl ₂	FU-026-D-40X	20	Tetracosane (5 mL) 646-31-1	500 µg/mL	CS ₂	D-5480-C40-5ML	15
SAE 10W40 Motor oil	0.5 mg/mL	Hexane	FU-027-H	10		500 µg/mL	Chloroform	D-5480-C40-R1-5ML	20
	20 mg/mL	Hexane	FU-027-H-40X	20		5 mg/mL	MeOH	AS-E0239	32
	20 mg/mL	CH ₂ Cl ₂	FU-027-D-40X	20	n-Tridecane 629-50-5	1 mg/mL	CH ₂ Cl ₂	V-028S-D-10X	20
SAE 20W50 Motor oil	0.5 mg/mL	Hexane	FU-028-H	10					
	20 mg/mL	Hexane	FU-028-H-40X	20	1,2,3-Trimethylbenzene 526-73-8	500 µg/mL	Acetone	AK-103.0-SS	20
	20 mg/mL	CH ₂ Cl ₂	FU-028-D-40X	20					
SAE 30W Motor oil	0.5 mg/mL	Hexane	FU-018-H	10		5 mg/mL	Acetone:THF	AK-103.0-SS-10X	30
	20 mg/mL	Hexane	FU-018-H-40X	20	Turbine (Jet) fuel	5 mg/mL	THF	DRH-SS	30
	20 mg/mL	CH ₂ Cl ₂	FU-018-D-40X	20		0.5 mg/mL	MeOH	FU-006	10
SAE 40W Motor oil	0.5 mg/mL	Hexane	FU-019-H	10		20 mg/mL	MeOH	FU-006-40X	20
	5 mg/mL	Acetone	AK-103.0-LCS	10		20 mg/mL	CH ₂ Cl ₂	FU-006-D-40X	20
	20 mg/mL	Hexane	FU-019-H-40X	20	Turpentine 8006-64-2	1 gram	Neat	HS-004N	20
	20 mg/mL	CH ₂ Cl ₂	FU-019-D-40X	20		0.5 mg/mL	MeOH	HS-004S	10
	25 mg/mL	Acetone:CH ₂ Cl ₂	AK-103.0-LCS-5X	20		20 mg/mL	MeOH	HS-004S-40X	20
SAE 50W Motor oil	20 mg/mL	CH ₂ Cl ₂	FU-021-D-40X	20		20 mg/mL	CH ₂ Cl ₂	HS-004S-D-40X	20
	1 gram	Neat	HS-005N	20		5 mg/mL	MeOH	GA-W25-10X	25
	0.5 mg/mL	MeOH	HS-005S	10	Unleaded Gasoline 25% Weathered	5 mg/mL	MeOH	GA-W50-10X	25
	5 mg/mL	MeOH	HS-005S-10X	20					
	20 mg/mL	MeOH	HS-005S-40X	20	Unleaded Gasoline 50% Weathered	5 mg/mL	MeOH	GA-W75-10X	25
Stoddard solvent 8052-41-3	20 mg/mL	CH ₂ Cl ₂	HS-005S-D-40X	20					
	0.5 mg/mL	MeOH	HS-005S	10	Unleaded Gasoline 75% Weathered	5 mg/mL	MeOH	GA-W75-10X	25
	5 mg/mL	MeOH	HS-005S-10X	20					
	20 mg/mL	MeOH	HS-005S-40X	20					
	20 mg/mL	CH ₂ Cl ₂	HS-005S-D-40X	20					

Complete Set of Total Petroleum Hydrocarbon (TPH) Pattern Recognition Standards

AccuStandard has assembled the following sets to identify specific petroleum product types found during LUFT/LUST investigations. The sets can be purchased using one convenient Cat. No. or as individuals. **Other concentrations are listed on the next page.**

TPH-R2-SET

\$ 585 / 33 x 1 mL (includes TPH-001-R2-SET, TPH-002-R1-SET, TPH-003-SET, TPH-004-SET)

Motor Fuels & Lubricating Oils Set

TPH-001-R2-SET

\$ 235 / 12 x 1 mL

	mg/mL	Solv.	Cat. No.	Price
Gasoline, regular unleaded	20	MeOH	GA-001-40X	\$ 20
Gasoline, regular leaded	20	MeOH	GA-002-40X	20
Gasoline, premium	20	MeOH	GA-003-40X	20
RFA Gasoline (oxygenate free)	20	MeOH	GA-005-40X	20
#2 Diesel (conventional)	20	CH ₂ Cl ₂	FU-009-D-40X	20
#1 Diesel (low sulfur)	20	CH ₂ Cl ₂	FU-013-D-40X	20
#2 Diesel (extra low sulfur)	20	CH ₂ Cl ₂	FU-017-D-40X	20
SAE 30W Motor oil	20	CH ₂ Cl ₂	FU-018-D-40X	20
SAE 40W Motor oil	20	CH ₂ Cl ₂	FU-019-D-40X	20
SAE 50W Motor oil	20	CH ₂ Cl ₂	FU-021-D-40X	20
Biodiesel 20	20	CH ₂ Cl ₂	FU-030-D-40X	20
Biodiesel 100 (consumer grade)	20	CH ₂ Cl ₂	FU-029-D-40X	45

Heating Fuel Oils Set

TPH-002-R1-SET

\$ 100 / 6 x 1 mL

	mg/mL	Solv.	Cat. No.	Price
#1 Fuel oil	20	CH ₂ Cl ₂	FU-001-D-40X	\$ 20
#2 Fuel oil	20	CH ₂ Cl ₂	FU-002-D-40X	20
#3 Fuel oil	20	CH ₂ Cl ₂	FU-003-D-40X	20
#4 Fuel oil	20	CH ₂ Cl ₂	FU-004-D-40X	20
#6 Fuel oil	20	CH ₂ Cl ₂	FU-008-D-40X	20
Kerosene	20	CH ₂ Cl ₂	FU-005-D-40X	20

Aviation Fuels & Oils Set

TPH-003-SET

\$ 160 / 10 x 1 mL

	mg/mL	Solv.	Cat. No.	Price
Aviation gasoline Grade 100 LL	20	CH ₂ Cl ₂	GA-004-D-40X	\$ 20
JP-4 Fuel (weathered)	20	CH ₂ Cl ₂	FU-010-D-40X	20
JP-5 Fuel	20	CH ₂ Cl ₂	FU-012-D-40X	20
JP-7 Fuel	20	CH ₂ Cl ₂	FU-014-D-40X	20
JP-8 Fuel	20	CH ₂ Cl ₂	FU-015-D-40X	20
JP-10 Fuel (Cruise Missile)	20	CH ₂ Cl ₂	FU-022-D-40X	20
JP-TS	20	CH ₂ Cl ₂	FU-016-D-40X	20
Jet Fuel (type 1)	20	CH ₂ Cl ₂	FU-011-D-40X	20
Turbine (Jet A) Fuel	20	CH ₂ Cl ₂	FU-006-D-40X	20
Hydraulic oil	20	CH ₂ Cl ₂	FU-020-D-40X	20

Household & Industrial Solvent Set

TPH-004-SET

\$ 80 / 5 x 1 mL

	mg/mL	Solv.	Cat. No.	Price
Lacquer thinner	20	CH ₂ Cl ₂	HS-001S-D-40X	\$ 20
Mineral Spirits	20	CH ₂ Cl ₂	HS-002S-D-40X	20
Naphtha	20	CH ₂ Cl ₂	HS-003S-D-40X	20
Turpentine	20	CH ₂ Cl ₂	HS-004S-D-40X	20
Stoddard solvent	20	CH ₂ Cl ₂	HS-005S-D-40X	20

Motor Oil Standards

	mg/mL	Solv.	Cat. No.	Price
SAE 5W30 Motor oil	0.5	Hexane	FU-025-H	\$ 10
	20.0	Hexane	FU-025-H-40X	20
	20.0	CH ₂ Cl ₂	FU-025-D-40X	20
SAE 10W30 Motor oil	0.5	Hexane	FU-026-H	10
	20.0	Hexane	FU-026-H-40X	20
	20.0	CH ₂ Cl ₂	FU-026-D-40X	20
SAE 10W40 Motor oil	0.5	Hexane	FU-027-H	10
	20.0	Hexane	FU-027-H-40X	20
	20.0	CH ₂ Cl ₂	FU-027-D-40X	20

	mg/mL	Solv.	Cat. No.	Price
SAE 20W50 Motor oil	0.5	Hexane	FU-028-H	\$ 10
	20.0	Hexane	FU-028-H-40X	20
	20.0	CH ₂ Cl ₂	FU-028-D-40X	20
Composite Standard	20.0	CH ₂ Cl ₂	MO-COMP-D-40X	30



AccuStandard designed the weathered fuel line to mimic the weathering, evaporation, and migration process. Use of these standards can help in the identification of the fuel type if it has been present in the ground for some time, in a sandy type soil with possible evaporation loss, or has migrated from the plume point of origin.

Weathered LUFT/LUST Fuel Sets

Weathered Gasoline Set

WGA-SET	Each in 5.0 mg/mL in MeOH	Cat. No.	\$ 85 / 4 x 1 mL
Gasoline, regular unleaded		GA-001-10X	20 / 1 mL
Gasoline, regular unleaded (25% Weathered)		GA-W25-10X	25 / 1 mL
Gasoline, regular unleaded (50% Weathered)		GA-W50-10X	25 / 1 mL
Gasoline, regular unleaded (75% Weathered)		GA-W75-10X	25 / 1 mL

Weathered Kerosene Set

WFK-SET	Each in 5.0 mg/mL in CH ₂ Cl ₂		\$ 85 / 4 x 1 mL
Kerosene		FU-005-D-10X	20 / 1 mL
Kerosene (25% Weathered)		FK-W25-10X	25 / 1 mL
Kerosene (50% Weathered)		FK-W50-10X	25 / 1 mL
Kerosene (75% Weathered)		FK-W75-10X	25 / 1 mL

Weathered #2 Diesel (extra Low Sulfur Content) Set

WFD2-SET	Each in 5.0 mg/mL in CH ₂ Cl ₂		\$ 85 / 4 x 1 mL
#2 Diesel (extra Low Sulfur)		FU-017-D-10X	20 / 1 mL
#2 Diesel (extra Low Sulfur) (25% Weathered)		FD2-W25-10X	25 / 1 mL
#2 Diesel (extra Low Sulfur) (50% Weathered)		FD2-W50-10X	25 / 1 mL
#2 Diesel (extra Low Sulfur) (75% Weathered)		FD2-W75-10X	25 / 1 mL

Weathered #2 Diesel (Conventional) Set

WFD2-R1-SET	Each in 5.0 mg/mL in CH ₂ Cl ₂		\$ 85 / 4 x 1 mL
#2 Diesel (Conventional)		FU-009-D-10X	20 / 1 mL
#2 Diesel (Conventional) (25% Weathered)		FD2-W25-R1-10X	25 / 1 mL
#2 Diesel (Conventional) (50% Weathered)		FD2-W50-R1-10X	25 / 1 mL
#2 Diesel (Conventional) (75% Weathered)		FD2-W75-R1-10X	25 / 1 mL

Technical Note

Petroleum Products contain many different chemicals, plus synthetic product additives. Typically, these petroleum products are subdivided into two groups based on their volatility: [a] gasoline related products (more volatile) and [b] fuel related products (less volatile such as kerosene, aviation fuels, diesel fuels and heating oils).

Most analytical methods for petroleum products focus on several items: the level of BTEX, the total petroleum hydrocarbon number (TPH), and the fingerprint of the petroleum product. Depending on the volatility of the petroleum product spilled, the nature of the contaminated soil, and the age of the spill, analysis becomes even more difficult. Weathering, evaporation, and the migration of the lighter volatiles at the contamination site can affect the fingerprint identification portion of the fuel products analysis.

Total Petroleum Hydrocarbon Pattern Recognition Standards

This book contains chromatography for the various petroleum products typically found during LUFT/LUST site investigations. The chromatography shows each fuel pattern in a 25 minute analytical run for early eluting petroleum products like gasoline to late eluting products like motor oil. In addition, an n-alkane standard (DRH-008S) analyzed under identical conditions has been overlaid on each petroleum product chromatogram. Use of the book will assist the chemist's identification of the fuel for pattern recognition.

The n-alkane standard (DRH-008S) overlay provides n-alkane reference points between the standard and the unknown sample. These beginning and ending n-alkane reference points can be used to establish gross hydrocarbon concentrations. By comparing the specific n-alkane range of the closest identified petroleum standard to that of the unknown sample, a reproducible gross hydrocarbon number can be achieved.

To Order,

BOOK-TPH-001 \$ 35





TPH, Fuel and Hydrocarbons

Brownfield Regulation & ISO/DIS 9337

Petroleum Brownfield Regulation

Brownfield Regulation that 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

	CCME-LPF-0.05X	CCME-LPF-0.1X	CCME-LPF-0.2X	CCME-LPF-0.5X	CCME-LPF
n-Decane	12.5	25	50	125	250
n-Hexane	12.5	25	50	125	250
Toluene	12.5	25	50	125	250
Benzene	12.5	25	50	125	250
o-Xylene	12.5	25	50	125	250
m-Xylene	6.25	12.5	25	62.5	125
p-Xylene	6.25	12.5	25	62.5	125
Ethylbenzene	12.5	25	50	125	250

\$ 95 / 5 x 1 mL
8 comps.

Medium & Heavy Petroleum Fraction

CCME-MHPF-SET

At stated conc. (µg/mL) in n-Hexane

	CCME-MHPF-0.1X	CCME-MHPF-0.5X	CCME-MHPF
n-Decane	40	200	400
n-Hexadecane	40	200	400
n-Tetraatriacontane	40	200	400

\$ 75 / 3 x 1 mL
3 comps.

Performance Check Standard

CCME-QC

\$ 45 / 1 x 1 mL

CCME-QC-PAK **SAVE 20%** \$ 180 / 5 x 1 mL

At 40 µg/mL each in n-Hexane:Cyclohexane

2 comps.

n-Pentacontane
n-Tetracontane

Hydrocarbon Standard

D-5442-R1

\$ 60 / 1 x 1 mL

100 µg/mL each in Cyclohexane

18 comps.

n-Decane
n-Dodecane
n-Tetradecane
n-Hexadecane
n-Octadecane
n-Eicosane
n-Docosane
n-Tetracosane
n-Hexacosane

n-Octacosane
n-Triacontane
n-Dotriacontane
n-Tetraatriacontane
n-Hexatriacontane
n-Octatriacontane
n-Tetracontane
n-Tetraetracontane
n-Pentacontane

Spike Standard

CCME-SPIKE

\$ 30 / 1 x 1 mL

At 2500 µg/mL each in n-Hexane

2 comps.

SAE 30W Motor Oil - Non-Detergent Formula
#2 Diesel - 50% Weathered

Canadian Atlantic RBCA EPH Mix

CCME-EPH

\$ 35 / 1 x 1 mL

1000 µg/mL each in Hexane:CH₂Cl₂ 85:15

11 comps.

Acenaphthene
Anthracene
Benzo[a]pyrene
Chrysene
n-Decane
n-Dodecane

n-Dotriacontane
n-Heneicosane
n-Hexadecane
n-Octacosane
Naphthalene

Surrogate Standard

CCME-EPH/SS

\$ 20 / 1 x 1 mL

1000 µg/mL each in CH₂Cl₂

2 comps.

n-Dotriacontane

Isobutylbenzene

Canadian Atlantic RBCA VPH Mix

CCME-VPH

\$ 30 / 1 x 1 mL

1000 µg/mL each in MeOH

12 comps.

Benzene
n-Decane
Ethylbenzene
n-Heptane
n-Hexane
1-Methyl-3-ethylbenzene

n-Octane
Toluene
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
o-Xylene
p-Xylene

Surrogate Standard

CCME-VPH/SS

\$ 15 / 1 x 1 mL

1000 µg/mL in MeOH

Isobutylbenzene

ISO/DIS 9377 Hydrocarbon Oil Index

Diesel #2/Mineral Oil Standard

ENISO9377-2-1

\$ 25 / 1 x 1 mL

10000 µg/mL total hydrocarbons in Hexane

2 comps.

#2 Diesel (5000 µg/mL)
Mineral Oil (5000 µg/mL)

Extraction Solvent Stock Soln.

ENISO9377-2-3

\$ 25 / 1 x 5 mL

At stated conc. in Hexane

2 comps.

n-Decane (20 µg/L)
n-Tetracontane (20 mg/L)

Stearyl Stearate Test Solution

ISO/DIS9377-4-2

\$ 45 / 1 x 10 mL

2000 µg/mL in Cyclohexane

Stearyl stearate

Florasil Cartridge QC Std. Mix

ENISO9377-2-4

\$ 40 / 1 x 10 mL

2000 µg/mL total hydrocarbons in Hexane

2 comps.

#2 Diesel (1000 µg/mL)
Mineral Oil (1000 µg/mL)

System Performance Standard of n-alkanes

ENISO9377-2-2

\$ 45 / 1 x 1 mL

50 µg/mL each in Hexane

16 comps.

n-Decane
n-Dodecane
n-Tetradecane
n-Hexadecane
n-Octadecane
n-Eicosane
n-Docosane
n-Tetracosane

n-Hexacosane
n-Octacosane
n-Triacontane
n-Dotriacontane
n-Tetraatriacontane
n-Hexatriacontane
n-Octatriacontane
n-Tetracontane

Quality Control Standard Mix

ISO/DIS9377-4-1

\$ 25 / 1 x 1 mL

1000 µg/mL total hydrocarbons in Acetone

2 comps.

#2 Diesel (500 µg/mL)
Mineral Oil (500 µg/mL)

ISO/DIS 9377-4 Standard Mixture Stock Solution

TPH-006-10X

\$ 35 / 1 x 1 mL

TPH-006-10X-PAK **SAVE 20%** \$ 140 / 5 x 1 mL

5000 µg/mL each in Cyclohexane

2 comps.

#2 Diesel
Mineral oil

LUFT/LUST (UST) Standards

Multi-State



There are approximately 571,000 underground storage tanks nationwide that store petroleum or hazardous substances that can harm the environment and human health if their contents are released. Until the mid-1980s, most tanks were made of bare steel. Over time, these tanks would corrode and their contents would leak into the environment. Leaking could also occur due to faulty installation or inadequate maintenance procedures. The greatest potential hazard from a leaking underground storage tank is contaminated groundwater, the source of drinking water for nearly half of all Americans. Other health and environmental risks, including the potential for fire and explosion, also exist.

From 1988 through March of 2008 there have been 478,457 confirmed releases reported, 453,065 cleanups have been initiated, and 371,880 cleanups have been completed.

The standards listed in this section are designed to meet federal and state monitoring and testing regulations for underground storage tanks.

LUFT/LUST (UST) Standards

Leaking
Underground
Fuel
Tank

Leaking
Underground
Storage
Tank



Multi-State Hydrocarbon Window Defining Arizona Diesel Range California Gasoline Connecticut Extractable TPH Mississippi DRO New Jersey Pennsylvania Storage Tank Monitoring Standards Tennessee DRO Wisconsin Gasoline Range Hydrocarbons	311-313
Alaska GRO, DRO Hydrocarbons, RRO, DRO Hydrocarbons (Fuel) DRO Hydrocarbons (Standards)	314-315
Florida FTRPH	316
Massachusetts EPH, VPH	317-318
Texas Method 1005 (PST)	319
Washington VPH, EPH	320-321
Gasoline Range Hydrocarbons (GRH)	322
Diesel Range Hydrocarbons (DRH)	323
Oil, Grease & TPH (Method 1664, 413.2/418.1 and 8440) Weathered Fuel Sets	324

Multi-State LUFT/LUST (UST)

Additional LUFT/LUST

GRH

DRH, Oil, Grease & TPH (Method 1664, 413.2/418.1 & 8440)

Automotive Engine Exhaust, Refinery Waste (Method 1004, ASTM E1387, E1618, Skinner List)

Multi-State Method Hydrocarbon Window Defining

DRH-008S-R2
DRH-008S-R2-PAK

500 µg/mL each in Chloroform

\$ 65 / 1 x 1 mL
SAVE 20% \$ 260 / 5 x 1 mL
35 comps.

Octane	Heptadecane	Tetracosane	Tritriacontane
Nonane	Pristane	Pentacosane	Tetrtatriacontane
Decane	Octadecane	Hexacosane	Pentatriacontane
Undecane	Phytane	Heptacosane	Hexatriacontane
Dodecane	Nonadecane	Octacosane	Heptatriacontane
Tridecane	Eicosane	Nonacosane	Octatriacontane
Tetradecane	Heneicosane	Triacontane	Nonatriacontane
Pentadecane	Docosane	n-Hentriacontane	Tetracontane
Hexadecane	Tricosane	Dotriacontane	

Technical Note

We offer a hydrocarbon window defining standard with the C₈ to C₄₀ odd and even alkanes. Use of this one standard should meet the numerous state-to-state variations for hydrocarbon validation and reporting. As an added benefit, AccuStandard has included Pristane and Phytane in the formulation. Again, use of this one standard can meet numerous LUFT/LUST programs requiring that the C₁₇ (Pristane) and C₁₈ (Phytane) ratio be used to estimate subsurface degradation of fuel oil spills.



LUFT/LUST Standards

Arizona / California Methods

Arizona Method 8015 Determination of Diesel Range and Oil Range Organic (DRO & ORO) Hydrocarbons

Diesel & Oil Range Standard

DRO/ORO-AZ-8015 \$ 40 / 1 x 1 mL
DRO/ORO-AZ-8015-PAK **SAVE 20%** \$ 160 / 5 x 1 mL
2000 µg/mL each in CH₂Cl₂ 12 comps.

<i>n</i> -Decane	<i>n</i> -Hexadecane
<i>n</i> -Dodecane	<i>n</i> -Octacosane
<i>n</i> -Docosane	<i>n</i> -Octadecane
<i>n</i> -Dotriacontane	<i>n</i> -Tetracosane
<i>n</i> -Eicosane	<i>n</i> -Tetradecane
<i>n</i> -Hexacosane	<i>n</i> -Triacontane

Retention Time Verification Standard

DRO/ORO-AZ-8015-RTV \$ 25 / 1 x 1 mL
DRO/ORO-AZ-8015-RTV-PAK **SAVE 20%** \$ 100 / 1 x 1 mL
1000 µg/mL each in CH₂Cl₂ 3 comps.

<i>n</i> -Decane	<i>n</i> -Dotriacontane
<i>n</i> -Docosane	

Stock Calibration Standard

DRO/ORO-AZ-8015-SCS \$ 40 / 1 x 1 mL
DRO/ORO-AZ-8015-SCS-PAK **SAVE 20%** \$ 160 / 1 x 1 mL
10,000 µg/mL each in CH₂Cl₂ 2 comps.

#2 Diesel	10W 30 Motor Oil
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Surrogate Standards

DRO-AK-102-SS-10X \$ 15 / 1 x 1 mL
DRO-AK-102-SS-10X-PAK **SAVE 20%** \$ 60 / 5 x 1 mL
2.0 mg/mL in Acetone

o-Terphenyl

California Method (including LA County)

California - Gasoline Range Hydrocarbons

S-603A-10X \$ 25 / 1 x 1 mL
S-603A-10X-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
2.0 mg/mL each in MeOH 7 comps.

Benzene	<i>o</i> -Xylene
Ethylbenzene	<i>m</i> -Xylene
Methyl <i>t</i> -butyl ether	<i>p</i> -Xylene
Toluene	

LA County Well Investigation & Monitoring Program

Purgeable Aromatics - Gasoline ID

M-602-GAS-10X \$ 30 / 1 x 1 mL
2.0 mg/mL each in MeOH 11 comps.

Benzene	Toluene
Chlorobenzene	<i>o</i> -Xylene
1,2-Dichlorobenzene	<i>p</i> -Xylene
1,3-Dichlorobenzene	<i>m</i> -Xylene
1,4-Dichlorobenzene	MtBE
Ethylbenzene	

Oxygenate Gasoline Additive Standard

OGAD-001 \$ 30 / 1 x 1 mL
OGAD-001-PAK **SAVE 20%** \$ 120 / 5 x 1 mL
At stated conc. in MeOH 5 comps.

MtBE (2000 µg/mL)	TAME (2000 µg/mL)
ETBE (2000 µg/mL)	<i>t</i> -Butanol (10000 µg/mL)
Isopropyl ether (2000 µg/mL)	

Ethanol

M-8015B/5031-11 \$ 25 / 1 x 1 mL
10 mg/mL in Water

Methanol

M-8015B/5031-17 \$ 20 / 1 x 1 mL
10 mg/mL in Water

Method 1004 Carbonyl Compounds as DNPH Derivatives by HPLC

M-1004 \$ 25 / 1 x 1 mL
At stated conc. in AcCN 13 comps.
M-1004-10X \$ 35 / 1 x 1 mL
At 10 times the stated conc. in AcCN 13 comps.

Carbonyl Compound	DNPH Derivative
Acetaldehyde (3.0 µg/mL)	(15.3 µg/mL)
Acetone (3.0 µg/mL)	(12.3 µg/mL)
Acrolein (3.0 µg/mL)	(12.7 µg/mL)
Benzaldehyde (3.0 µg/mL)	(8.1 µg/mL)
2-Butanone (MEK) (3.0 µg/mL)	(10.5 µg/mL)
<i>n</i> -Butyraldehyde (3.0 µg/mL)	(10.5 µg/mL)
Crotonaldehyde (3.0 µg/mL)	(10.7 µg/mL)
Formaldehyde (3.0 µg/mL)	(21.0 µg/mL)
Hexanal (3.0 µg/mL)	(8.4 µg/mL)
Methacrolein (3.0 µg/mL)	(10.7 µg/mL)
Propionaldehyde (3.0 µg/mL)	(12.3 µg/mL)
<i>m</i> -Tolualdehyde (3.0 µg/mL)	(7.5 µg/mL)
Valeraldehyde (3.0 µg/mL)	(9.3 µg/mL)

CAR-DNPH \$ 20 / 1 x 1 mL
At stated conc. in AcCN as DNPH derivatives 7 comps.

Acetaldehyde (1000 µg/mL)	Butyraldehyde (500 µg/mL)
Acetone (500 µg/mL)	Formaldehyde (1500 µg/mL)
Acrolein (500 µg/mL)	Propionaldehyde (500 µg/mL)
Benzaldehyde (500 µg/mL)	

Reference Gas Oil Sample

RGS-001 \$ 20 / 1 x 1 mL
Hydrocarbon Mixture (boiling point range 250-850°F)

Technical Note

Alcohol Oxidation Products in Automotive Engine Exhaust by HPLC of DNPH Derivatives The California Air Resources Board, in conjunction with some of the larger automobile manufacturers, has developed an HPLC method in which the 2,4-Dinitrophenylhydrazine derivatives of the by-products are quantitated.

LUFT/LUST Standards

Connecticut / Mississippi / New Jersey / Tennessee / Pennsylvania / Wisconsin Methods



Connecticut Method Extractable Total Petroleum Hydrocarbons

CT ETPH Alkane Standard

DRH-009S \$ 35 / 1 x 1 mL
 DRH-009S-PAK **SAVE 20%** \$ 140 / 5 x 1 mL
 1000 µg/mL in CH₂Cl₂ 15 comps.

<i>n</i> -Nonane	<i>n</i> -Tetracosane
<i>n</i> -Decane	<i>n</i> -Hexacosane
<i>n</i> -Dodecane	<i>n</i> -Octacosane
<i>n</i> -Tetradecane	<i>n</i> -Triacontane
<i>n</i> -Hexadecane	<i>n</i> -Dotriacontane
<i>n</i> -Octadecane	<i>n</i> -Tetratriacontane
<i>n</i> -Eicosane	<i>n</i> -Hexatriacontane
<i>n</i> -Docosane	

Internal Standard

GRH-IS \$ 15 / 1 x 1 mL
 GRH-IS-PAK **SAVE 20%** \$ 60 / 5 x 1 mL
 1.0 mg/mL in CH₂Cl₂
 5- α Androstane

Surrogate Standard

GRH-SS \$ 17 / 1 x 1 mL
 GRH-SS-PAK **SAVE 20%** \$ 68 / 5 x 1 mL
 2.0 mg/mL in Acetone
o-Terphenyl (OTP)

Mississippi Method

DRO Defining Mix

DRO-AK-102-NAS-10X \$ 40 / 1 x 1 mL
 DRO-AK-102-NAS-10X-PAK **SAVE 20%** \$ 160 / 5 x 1 mL
 2.0 mg/mL each in CH₂Cl₂ 16 comps.

<i>n</i> -Decane	<i>n</i> -Hexadecane	<i>n</i> -Heneicosane
<i>n</i> -Undecane	<i>n</i> -Heptadecane	<i>n</i> -Docosane
<i>n</i> -Dodecane	<i>n</i> -Octadecane	<i>n</i> -Tricosane
<i>n</i> -Tridecane	<i>n</i> -Nonadecane	<i>n</i> -Tetracosane
<i>n</i> -Tetradecane	<i>n</i> -Eicosane	<i>n</i> -Pentacosane
<i>n</i> -Pentadecane		

New Jersey Method

DEP (NJ) Aliphatic Hydrocarbon Standard

DRH-NJ-001S \$ 60 / 1 x 1 mL
 1.0 mg/mL each in Hexane 20 comps.

<i>n</i> -Nonane	<i>n</i> -Heneicosane	<i>n</i> -Tetratriacontane
<i>n</i> -Decane	<i>n</i> -Docosane	<i>n</i> -Hexatriacontane
<i>n</i> -Dodecane	<i>n</i> -Tetracosane	<i>n</i> -Octatriacontane
<i>n</i> -Tetradecane	<i>n</i> -Hexacosane	<i>n</i> -Tetracontane
<i>n</i> -Hexadecane	<i>n</i> -Octacosane	Naphthalene
<i>n</i> -Octadecane	<i>n</i> -Triacontane	2-Methylnaphthalene
<i>n</i> -Eicosane	<i>n</i> -Dotriacontane	

DEP (NJ) Aromatic Hydrocarbon Standard

DRH-NJ-002S \$ 80 / 1 x 1 mL
 2.0 mg/mL each in CH₂Cl₂ 18 comps.

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

Pennsylvania Method Storage Tank Site Closure & Monitoring Petroleum Standards

PA Extractable PAH Standard

DRH-PA-001 \$ 25 / 1 x 1 mL
 DRH-PA-001-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
 2000 µg/mL each in CH₂Cl₂ 5 comps.

Benz[a]anthracene	Naphthalene
Benzo[a]pyrene	Phenanthrene
Fluorene	

PA Volatile Petroleum Standard

GRH-PA-001 \$ 25 / 1 x 1 mL
 GRH-PA-001-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
 At stated conc. in MeOH 9 comps.

Benzene (1000 µg/mL)	<i>o</i> -Xylene (1000 µg/mL)
Ethylbenzene (1000 µg/mL)	<i>m</i> -Xylene (1000 µg/mL)
MtBE (2000 µg/mL)	<i>p</i> -Xylene (1000 µg/mL)
Naphthalene (1000 µg/mL)	Isopropylbenzene (1000 µg/mL)
Toluene (1000 µg/mL)	

Tennessee Method

DRO Defining Mix

DRO-AK-102-NAS-10X \$ 40 / 1 x 1 mL
 DRO-AK-102-NAS-10X-PAK **SAVE 20%** \$ 160 / 5 x 1 mL
 2.0 mg/mL each in CH₂Cl₂ 16 comps.

<i>n</i> -Decane	<i>n</i> -Hexadecane	<i>n</i> -Heneicosane
<i>n</i> -Undecane	<i>n</i> -Heptadecane	<i>n</i> -Docosane
<i>n</i> -Dodecane	<i>n</i> -Octadecane	<i>n</i> -Tricosane
<i>n</i> -Tridecane	<i>n</i> -Nonadecane	<i>n</i> -Tetracosane
<i>n</i> -Tetradecane	<i>n</i> -Eicosane	<i>n</i> -Pentacosane
<i>n</i> -Pentadecane		

Wisconsin Method

Wisconsin DNR - Gasoline Range Hydrocarbons

GRH-003S \$ 35 / 1 x 1 mL
 GRH-003S-PAK **SAVE 20%** \$ 140 / 5 x 1 mL
 2.0 mg/mL each in MeOH 10 comps.

Benzene	Toluene	<i>o</i> -Xylene
Ethylbenzene	1,2,4-Trimethylbenzene	<i>m</i> -Xylene
MtBE	1,3,5-Trimethylbenzene	<i>p</i> -Xylene
Naphthalene		

CT, MS, NJ, PA, TN, WI LUFT/LUST



LUFT/LUST Standards

Alaska GRO/DRO Methods

Alaska Method 101 Determination of Gasoline Range Organic (GRO) Hydrocarbons

Normal Alkane Standard - GRO Defining Mix

GRO-AK-101-NAS-10X \$ 20 / 1 x 1 mL
 GRO-AK-101-NAS-10X-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
 2.0 mg/mL each in MeOH 5 comps.

n-Hexane *n*-Octane *n*-Decane
n-Heptane *n*-Nonane

Laboratory Control Standard

GRO-AK-101-LCS \$ 20 / 1 x 1 mL
 GRO-AK-101-LCS-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
 5.0 mg/mL in MeOH

Gasoline, regular unleaded

Internal Standard

GRO-AK-101-IS-10X \$ 20 / 1 x 1 mL
 GRO-AK-101-IS-10X-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
 2.0 mg/mL in MeOH

1-Chloro-4-fluorobenzene

Surrogate Control Standard

GRO-AK-101-SS \$ 10 / 1 x 1 mL
 GRO-AK-101-SS-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
 50 µg/mL each in MeOH
 GRO-AK-101-SS-10X \$ 20 / 1 x 1 mL
 GRO-AK-101-SS-10X-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
 500 µg/mL each in MeOH
 GRO-AK-101-SS-100X \$ 20 / 1 x 1 mL
 GRO-AK-101-SS-100X-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
 5,000 µg/mL each in MeOH 2 comps.

p-Bromofluorobenzene *a,a,a*-Trifluorotoluene

Alaska Method Determination of Aromatic & Aliphatic Hydrocarbons in GRO

AK101AA Aromatics Mix

GRO-AK-101AA-ARO \$ 30 / 1 x 1 mL
 GRO-AK-101AA-ARO-PAK **SAVE 20%** \$ 120 / 5 x 1 mL
 2000 µg/mL each in MeOH 14 comps.

Benzene *o*-Xylene *m*-Ethyltoluene
 Toluene 1,2,3-Trimethylbenzene *p*-Ethyltoluene
 Ethylbenzene 1,2,4-Trimethylbenzene *o*-Ethyltoluene
m-Xylene 1,3,5-Trimethylbenzene *n*-Propylbenzene
p-Xylene Isopropylbenzene

Alaska Method 102 Determination of Diesel Range Organic (DRO) Hydrocarbons

Diesel Calibration Composite Mixture (low sulfur)

DRO-AK-102-DCS \$ 25 / 1 x 1 mL
 DRO-AK-102-DCS-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
 Total 5.0 mg/mL in CH₂Cl₂
 DRO-AK-102-DCS-10X \$ 40 / 1 x 1 mL
 DRO-AK-102-DCS-10X-PAK **SAVE 20%** \$ 160 / 5 x 1 mL
 Total 50.0 mg/mL in CH₂Cl₂ 3 comps.

	DRO-AK-102-DCS	DRO-AK-102-DCS-10X
Diesel Fuel (Arctic)	1.66 mg/mL	16.6 mg/mL
#1 Diesel (Low Sulfur)	1.67 mg/mL	16.6 mg/mL
#2 Diesel (extra Low Sulfur)	1.67 mg/mL	16.6 mg/mL

Stock Concentrate Diesel Calibration Composite Mix

DRO-AK-102-DCS-10X-R1 \$ 40 / 1 x 1 mL
 DRO-AK-102-DCS-10X-R1-PAK **SAVE 20%** \$ 160 / 5 x 1 mL
 Total 50.0 mg/mL in CH₂Cl₂ 3 comps.

	Wt. Vol.		Wt. Vol.
Diesel Fuel (Arctic)	16.6 mg/mL	#2 Diesel	16.7 mg/mL
#1 Diesel (Low Sulfur)	16.7 mg/mL	(Conventional)	

Alaska Method 102 DRO Hydrocarbons
 continued on next page

Certified BTEX in Gasoline (Single Source)

GA-001-20X-BTEX \$ 55 / 1 x 1 mL
 10.0 mg/mL in MeOH
 Gasoline, regular unleaded

Technical Note

Laboratory Control Standard

The gasoline laboratory control standard was taken from an ASTM selected fuel set and a source independent of what is being used in the Gasoline Composite Mix.

Simultaneous BTEX / Gasoline QA/QC

Our QC Department has certified the benzene, toluene, ethyl benzene and xylene concentrations in the unleaded gasoline standard and GRO-AK-101-GCS-BTEX). This allows the use of a single injection to verify that the QA/QC requirements are being met for the BTEX analytes as well as for the gasoline.

We have added a multi source certified BTEX in gasoline composite mix (GRO-AK-101-GCS-BTEX). The BTEX values for this multi-source calibration standard have been determined through in-house analysis against a BTEX multi-level calibration curve listed on the certificate.

Certified BTEX in Gasoline Composite (Multi Source)

GRO-AK-101-GCS-BTEX \$ 55 / 1 x 1 mL
 5 mg/mL total in MeOH 3 comps.

	Wt. Vol.
Gasoline, premium	1.66 mg/mL
Gasoline, regular leaded	1.67 mg/mL
Gasoline, regular unleaded	1.67 mg/mL

Gasoline Calibration Composite Mix

GRO-AK-101-GCS \$ 25 / 1 x 1 mL
 GRO-AK-101-GCS-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
 Total 5.0 mg/mL in MeOH 3 comps.

	Wt. Vol.
Gasoline, premium	1.66 mg/mL
Gasoline, regular leaded	1.67 mg/mL
Gasoline, regular unleaded	1.67 mg/mL

Gasoline Calibration Mix Version

GRO-AK-101-GSC-R1 \$ 25 / 1 x 1 mL
 GRO-AK-101-GSC-R1-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
 Equal parts by weight of each

Gasoline, regular unleaded Gasoline, premium unleaded
 Gasoline, plus unleaded

Technical Note

Laboratory Control Standards are prepared from an independent source.

Technical Note

AccuStandard formulated the Diesel Calibration Composite Mix and Laboratory Control Standard using two independent sources of #2 Diesel as required by the Alaskan method. Unfortunately, the chromatographic patterns for the #2 diesel sources (conventional & extra low sulfur) are different. We have obtained independent sources of each type of #2 diesel to assure similar chromatographic patterns and recommend that when a customer is analyzing the Diesel Calibration Composite and Laboratory Control standard that the client orders DRO-AK-102-DCS and DRO-AK-102-LCS products together to obtain similar chromatographic patterns for #2 diesel extra low sulfur patterns and DRO-AK-102-DCS-10X-R1 and DRO-AK-102-LCS-10X-R1 products to obtain similar chromatographic patterns for #2 Diesel conventional patterns. Laboratories performing the Alaskan DRO analysis will find the #2 Diesel conventional chromatographic pattern more closely resembles typical Diesel samples drawn from environmental sites.

Laboratory Control Standard (low sulfur)

DRO-AK-102-LCS \$ 10 / 1 x 1 mL
 DRO-AK-102-LCS-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
 5.0 mg/mL in Acetone
 DRO-AK-102-LCS-10X \$ 20 / 1 x 1 mL
 DRO-AK-102-LCS-10X-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
 50.0 mg/mL in Acetone

#2 Diesel (extra Low Sulfur)

LUFT/LUST Standards

Alaska DRO/RRO Methods



Alaska Method 102 Determination of Diesel Range Organic (DRO) Hydrocarbons (Continued)

Laboratory Control Standard

DRO-AK-102-LCS-10X-R1	\$ 20 / 1 x 1 mL
DRO-AK-102-LCS-10X-R1-PAK	SAVE 20% \$ 80 / 5 x 1 mL
50.0 mg/mL in Acetone	
#2 Diesel (Conventional)	

Normal Alkane Standard - DRO Defining Mix

DRO-AK-102-NAS-10X		\$ 40 / 1 x 1 mL
DRO-AK-102-NAS-10X-PAK		SAVE 20% \$ 160 / 5 x 1 mL
2.0 mg/mL each in CH ₂ Cl ₂		16 comps.
<i>n</i> -Decane	<i>n</i> -Hexadecane	<i>n</i> -Heneicosane
<i>n</i> -Undecane	<i>n</i> -Heptadecane	<i>n</i> -Docosane
<i>n</i> -Dodecane	<i>n</i> -Octadecane	<i>n</i> -Tricosane
<i>n</i> -Tridecane	<i>n</i> -Nonadecane	<i>n</i> -Tetracosane
<i>n</i> -Tetradecane	<i>n</i> -Eicosane	<i>n</i> -Pentacosane
<i>n</i> -Pentadecane		

Surrogate Standards

DRO-AK-102-SS	\$ 10 / 1 x 1 mL
DRO-AK-102-SS-PAK	SAVE 20% \$ 40 / 5 x 1 mL
200 µg/mL in Acetone	
DRO-AK-102-SS-10X	\$ 15 / 1 x 1 mL
DRO-AK-102-SS-10X-PAK	SAVE 20% \$ 60 / 5 x 1 mL
2.0 mg/mL in Acetone	
<i>o</i> -Terphenyl	

Internal Standard

DRO-AK-102-IS	\$ 15 / 1 x 1 mL
DRO-AK-102-IS-PAK	SAVE 20% \$ 60 / 5 x 1 mL
1.0 mg/mL in CH ₂ Cl ₂	
5- α Androstane	

Alaska Method 102/103AA Determination of Aromatic & Aliphatic Hydrocarbons in Diesel Range Organic (DRO)

Diesel Range Standard

DRO-AK-102AA			\$ 40 / 1 x 1 mL
DRO-AK-102AA-PAK			SAVE 20% \$ 160 / 5 x 1 mL
2000 µg/mL each in CH ₂ Cl ₂			10 comps.
<i>n</i> -Undecane	<i>n</i> -Tetracosane	Fluorene	
<i>n</i> -Pentadecane	Naphthalene	Pyrene	
<i>n</i> -Heptadecane	Acenaphthene	Anthracene	
<i>n</i> -Octadecane			

Surrogate Standard

DRO-AK-102/103AA-SS	\$ 35 / 1 x 1 mL
DRO-AK-102/103AA-SS-PAK	SAVE 20% \$ 140 / 5 x 1 mL
1000 µg/mL each in CH ₂ Cl ₂	
3 comps.	
Squalane	5,6,7,8-Tetrahydro-1-naphthol
<i>o</i> -Terphenyl	

Retention Time Marker Standard

DRO-AK-102/103AA-RT	\$ 25 / 1 x 1 mL
DRO-AK-102/103AA-RT-PAK	SAVE 20% \$ 100 / 5 x 1 mL
50 µg/mL each in CH ₂ Cl ₂	
3 comps.	
<i>n</i> -Decane	<i>n</i> -Hexatriacontane
<i>n</i> -Pentacosane	

Alaska Method 103 Determination of Residual Range Organic (RRO) Hydrocarbons

Residual Composite Mixtures

RRO-AK-103-RCS	\$ 40 / 1 x 1 mL
RRO-AK-103-RCS-PAK	SAVE 20% \$ 160 / 5 x 1 mL
Total 5.0 mg/mL in CH ₂ Cl ₂	
3 comps.	
SAE 30W Motor oil (1.66 mg)	SAE 50W Motor Oil (1.67 mg)
SAE 40W Motor oil (1.67 mg)	

RRO-AK-103-RCS-10X	\$ 40 / 1 x 1 mL
RRO-AK-103-RCS-10X-PAK	SAVE 20% \$ 160 / 5 x 1 mL
Total 50.0 mg/mL in CH ₂ Cl ₂	
3 comps.	
SAE 30W Motor oil (16.6 mg)	SAE 50W Motor Oil (16.7 mg)
SAE 40W Motor oil (16.7 mg)	

Laboratory Control Standard

RRO-AK-103-LCS	\$ 10 / 1 x 1 mL
RRO-AK-103-LCS-PAK	SAVE 20% \$ 40 / 5 x 1 mL
5.0 mg/mL in Acetone	
RRO-AK-103-LCS-5X	\$ 20 / 1 x 1 mL
RRO-AK-103-LCS-5X-PAK	SAVE 20% \$ 80 / 5 x 1 mL
25.0 mg/mL in Acetone: CH ₂ Cl ₂ (1:1)	
SAE 40W Motor oil	

Surrogate Control Standard

RRO-AK-103-SS	\$ 20 / 1 x 1 mL
RRO-AK-103-SS-PAK	SAVE 20% \$ 80 / 5 x 1 mL
500 µg/mL in Acetone:THF (9:1)	
RRO-AK-103-SS2	\$ 30 / 1 x 1 mL
RRO-AK-103-SS2-PAK	SAVE 20% \$ 120 / 5 x 1 mL
5.0 mg/mL in THF:Acetone (3:1)	
<i>n</i> -Triacotane-d ₆₂	

Alaska Method 103AA Determination of Aromatic & Aliphatic Hydrocarbons in Residual Range Organic

Residual Standard

RRO-AK-103AA	\$ 35 / 1 x 1 mL
RRO-AK-103AA-PAK	SAVE 20% \$ 140 / 5 x 1 mL
2000 µg/mL each in CH ₂ Cl ₂	
9 comps.	
<i>n</i> -Hexacosane	Benzo[b]fluoranthene
<i>n</i> -Octacosane	Benzo[a]pyrene
<i>n</i> -Triacotane	Benzo[g,h,i]perylene
<i>n</i> -Dotriacontane	Dibenz[a,h]anthracene
<i>n</i> -Tetracontane	

Surrogate Standard

DRO-AK-102/103AA-SS	\$ 35 / 1 x 1 mL
DRO-AK-102/103AA-SS-PAK	SAVE 20% \$ 140 / 5 x 1 mL
1000 µg/mL each in CH ₂ Cl ₂	
3 comps.	
Squalane	5,6,7,8-Tetrahydro-1-naphthol
<i>o</i> -Terphenyl	

Retention Time Marker Standard

DRO-AK-102/103AA-RT	\$ 25 / 1 x 1 mL
DRO-AK-102/103AA-RT-PAK	SAVE 20% \$ 100 / 5 x 1 mL
50 µg/mL each in CH ₂ Cl ₂	
3 comps.	
<i>n</i> -Decane	<i>n</i> -Hexatriacontane
<i>n</i> -Pentacosane	



LUFT/LUST Standards

Florida Methods

Florida Method Total Recoverable Petroleum Hydrocarbon (FTRPH) Standard & Surrogates

Calibration/Window Defining Hydrocarbon Standard

DRH-004S-R1-5X \$ 50 / 1 x 1 mL
 DRH-004S-R1-5X-PAK **SAVE 20%** \$ 200 / 5 x 1 mL
 1.0 mg/mL each in Chloroform 17 comps.

Octane	C ₈	Eicosane	C ₂₀	Dotriacontane	C ₃₂
Decane	C ₁₀	Docosane	C ₂₂	Tetratriacontane	C ₃₄
Dodecane	C ₁₂	Tetracosane	C ₂₄	Hexatriacontane	C ₃₆
Tetradecane	C ₁₄	Hexacosane	C ₂₆	Octatriacontane	C ₃₈
Hexadecane	C ₁₆	Octacosane	C ₂₈	Tetracontane	C ₄₀
Octadecane	C ₁₈	triacontane	C ₃₀		

FTRPH Calibration / Window Defining Standard

DRH-FTRPH \$ 35 / 1 x 1 mL
 DRH-FTRPH-PAK **SAVE 20%** \$ 140 / 5 x 1 mL
 500 µg/mL each in Hexane 17 comps.
 DRH-FTRPH-0.1X \$ 30 / 1 x 1 mL
 50 µg/mL each in Hexane 17 comps.

<i>n</i> -Octane	<i>n</i> -Eicosane	<i>n</i> -Dotriacontane
<i>n</i> -Decane	<i>n</i> -Docosane	<i>n</i> -Tetratriacontane
<i>n</i> -Dodecane	<i>n</i> -Tetracosane	<i>n</i> -Hexatriacontane
<i>n</i> -Tetradecane	<i>n</i> -Hexacosane	<i>n</i> -Octatriacontane
<i>n</i> -Hexadecane	<i>n</i> -Octacosane	<i>n</i> -Tetracontane
<i>n</i> -Octadecane	<i>n</i> -triacontane	

Technical Note

FTRPH Calibration/Window Defining Standard was formulated at a lower concentration to insure solubility of the analytes & eliminate the odor caused by the introduction of Carbon disulfide as a cosolvent.

Internal Standard

GRH-IS \$ 15 / 1 x 1 mL
 GRH-IS-PAK **SAVE 20%** \$ 60 / 5 x 1 mL
 1.0 mg/mL in CH₂Cl₂
 5-alpha Androstane

Surrogate Standards

DRH-SS \$ 30 / 1 x 1 mL
 DRH-SS-PAK **SAVE 20%** \$ 120 / 5 x 1 mL
 5.0 mg/mL in THF
n-Triacontane-d₃₂

GRH-SS \$ 17 / 1 x 1 mL
 GRH-SS-PAK **SAVE 20%** \$ 68 / 5 x 1 mL
 2.0 mg/mL in Acetone
o-Terphenyl (OTP)

FTRPH Surrogate Standard

DRH-FL-SS-3X \$ 27 / 1 x 1 mL
 DRH-FL-SS-3X-PAK **SAVE 20%** \$ 108 / 5 x 1 mL
 3.0 mg/mL in Carbon disulfide
 DRH-FL-SS \$ 20 / 1 x 1 mL
 DRH-FL-SS-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
 1.0 mg/mL in Carbon disulfide
 Nonatriacontane

FTRPH Combined Surrogate Standard

DRH/GRH-FL-SS \$ 50 / 1 x 1 mL
 DRH/GRH-FL-SS-PAK **SAVE 20%** \$ 200 / 5 x 1 mL
 5.0 mg/mL in Carbon disulfide 2 comps.
 Nonatriacontane *o*-Terphenyl (OTP)

Technical Note

FTRPH Surrogate Standard was formulated at a higher concentration for combined DRH & GRH analysis. This standard has proven useful for those laboratories performing gasoline & diesel analysis simultaneously.

DRH/GRH-FL-SS-R2 \$ 50 / 1 x 1 mL
 DRH/GRH-FL-SS-R2-PAK **SAVE 20%** \$ 200 / 5 x 1 mL
 At stated conc. in Carbon disulfide 2 comps.
 Nonatriacontane (6000 µg/mL) *o*-Terphenyl (OTP) (1500 µg/mL)



Carbon disulfide can not ship by air. When possible alternate solvents can be used. Please contact our Technical Service Department for other options.

LUFT/LUST Standards

Massachusetts Methods - Ready-to-Inject Working Level EPH Standards



Massachusetts Method Determination of Extractable Petroleum Hydrocarbons (EPH)

Aromatic Hydrocarbons Calibration Set

DRH-006-CAL-SET

\$ 125 / 5 x 1 mL

At stated conc. in CH₂Cl₂

18 comps.

Components (units in µg/mL)	Level 1 (1X)	Level 2 (4X)	Level 3 (10X)	Level 4 (20X)	Level 5 (40X)
Acenaphthene	5	20	50	100	200
Acenaphthylene	5	20	50	100	200
Anthracene	5	20	50	100	200
Benz[a]anthracene	5	20	50	100	200
Benzo[a]pyrene	5	20	50	100	200
Benzo[b]fluoranthene	5	20	50	100	200
Benzo[g,h,i]perylene	5	20	50	100	200
Benzo[k]fluoranthene	5	20	50	100	200
Chrysene	5	20	50	100	200
Dibenz[a,h]anthracene	5	20	50	100	200
Fluoranthene	5	20	50	100	200
Fluorene	5	20	50	100	200
Indeno[1,2,3-cd]pyrene	5	20	50	100	200
2-Methylnaphthalene	5	20	50	100	200
Naphthalene	5	20	50	100	200
Phenanthrene	5	20	50	100	200
Pyrene	5	20	50	100	200
o-Terphenyl (Surrogate)	5	20	50	100	200

Aliphatic Hydrocarbons Calibration Set

DRH-007-CAL-R1-SET

\$ 125 / 5 x 1 mL

At stated conc. in CH₂Cl₂ : n-Hexane (1:1)

15 comps.

Components (units in µg/mL)	Level 1 (1X)	Level 2 (4X)	Level 3 (10X)	Level 4 (20X)	Level 5 (40X)
n-Nonane	5	20	50	100	200
n-Decane	5	20	50	100	200
n-Dodecane	5	20	50	100	200
n-Tetradecane	5	20	50	100	200
n-Hexadecane	5	20	50	100	200
n-Octadecane	5	20	50	100	200
n-Nonadecane	5	20	50	100	200
n-Eicosane	5	20	50	100	200
n-Docosane	5	20	50	100	200
n-Tetracosane	5	20	50	100	200
n-Hexacosane	5	20	50	100	200
n-Octacosane	5	20	50	100	200
n-Triacontane	5	20	50	100	200
n-Hexatriacontane	5	20	50	100	200
1-Chlorooctadecane (Surrogate)	5	20	50	100	200

Combined Aromatic/Aliphatic Matrix Spike Standard

DRH-MS-ASL

\$ 45 / 1 x 1 mL

DRH-MS-ASL-PAK

SAVE 20% \$ 180 / 5 x 1 mL

25 µg/mL each in Hexane

31 comps.

Acenaphthene	n-Docosane	Naphthalene
Acenaphthylene	n-Dodecane	n-Nonadecane
Anthracene	n-Eicosane	n-Nonane
Benz[a]anthracene	Fluoranthene	n-Octacosane
Benzo[a]pyrene	Fluorene	n-Octadecane
Benzo[b]fluoranthene	n-Hexacosane	Phenanthrene
Benzo[g,h,i]perylene	n-Hexadecane	Pyrene
Benzo[k]fluoranthene	n-Hexatriacontane	n-Tetracosane
Chrysene	Indeno[1,2,3-cd]pyrene	n-Tetradecane
n-Decane	2-Methylnaphthalene	n-Triacontane
Dibenz[a,h]anthracene		

DEP (MA) - Fractionation Surrogate Spike

DRH-MA-FSS-10ML

40 µg/mL in Hexane

\$ 25 / 1 x 10 mL

DRH-MA-FSS-50X

2.0 mg/mL in Hexane

\$ 25 / 1 x 1 mL

DRH-MA-FSS-50X-PAK

2.0 mg/mL in Hexane

SAVE 20% \$ 100 / 5 x 1 mL

2 comps.

2-Fluorobiphenyl

2-Bromonaphthalene

Aromatic Surrogate

DRH-006-SS

\$ 15 / 1 x 1 mL

DRH-006-SS-PAK

SAVE 20% \$ 60 / 5 x 1 mL

1.0 mg/mL in CH₂Cl₂

o-Terphenyl

DEP (MA) - Aromatic Hydrocarbons

DRH-006S

\$ 65 / 1 x 1 mL

DRH-006S-PAK

SAVE 20% \$ 260 / 5 x 1 mL

1.0 mg/mL each in CH₂Cl₂

17 comps.

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

Technical Note

Two high concentration EPH stocks for laboratories that prepare in-house working level solutions are available. In addition, Ready-to-Use working level aromatic and aliphatic calibration sets are also available. Larger volumes of daily calibration solutions can be purchased by contacting our Technical Service Department.

DEP (MA) - Aliphatic Hydrocarbons

DRH-007S

\$ 40 / 1 x 1 mL

DRH-007S-PAK

SAVE 20% \$ 160 / 5 x 1 mL

1.0 mg/mL each in CH₂Cl₂ : Hexane (1:1)

14 comps.

n-Nonane	n-Octadecane	n-Hexacosane
n-Decane	n-Nonadecane	n-Octacosane
n-Dodecane	n-Eicosane	n-Triacontane
n-Tetradecane	n-Docosane	n-Hexatriacontane
n-Hexadecane	n-Tetracosane	

Aliphatic Surrogate

DRH-007-SS

\$ 15 / 1 x 1 mL

DRH-007-SS-PAK

SAVE 20% \$ 60 / 5 x 1 mL

1.0 mg/mL in Hexane

1-Chlorooctadecane

EPH Surrogate Spike

DRH-MA-SS

20 µg/mL each in Acetone

\$ 10 / 1 x 1 mL

DRH-MA-SS-10X

200 µg/mL each in Acetone

\$ 20 / 1 x 1 mL

DRH-MA-SS-100X

2,000 µg/mL each in Acetone

\$ 22 / 1 x 1 mL

DRH-MA-SS-100X-PAK

2,000 µg/mL each in Acetone

\$ 88 / 5 x 1 mL

2 comps.

1-Chlorooctadecane

o-Terphenyl

EPH Matrix Spike

DRH-MA-MS

25 µg/mL in Acetone

\$ 20 / 1 x 1 mL

DRH-MA-MS-PAK

25 µg/mL in Acetone

SAVE 20% \$ 80 / 5 x 1 mL

DRH-MA-MS-10X

250 µg/mL in Acetone

\$ 30 / 1 x 1 mL

DRH-MA-MS-10X-PAK

250 µg/mL in Acetone

SAVE 20% \$ 120 / 5 x 1 mL

DRH-MA-MS-40X

1,000 µg/mL in Acetone

\$ 30 / 1 x 1 mL

DRH-MA-MS-40X-PAK

1,000 µg/mL in Acetone

SAVE 20% \$ 120 / 5 x 1 mL

10 comps.

Acenaphthene	n-Nonadecane
Anthracene	n-Nonane
Chrysene	n-Octacosane
n-Eicosane	Pyrene
Naphthalene	n-Tetradecane

Internal Standard

GRH-IS

1,000 µg/mL in CH₂Cl₂

\$ 15 / 1 x 1 mL

GRH-IS-PAK

1,000 µg/mL in CH₂Cl₂

SAVE 20% \$ 60 / 5 x 1 mL

GRH-IS-10X

10.0 mg/mL in CH₂Cl₂

\$ 30 / 1 x 1 mL

5-alpha Androstane



LUFT/LUST Standards

Massachusetts Methods - Ready-to-Inject Working Level EPH Standards

Massachusetts Method Determination of Volatile Petroleum Hydrocarbons (VPH)

Stock Concentrate

Volatile Petroleum Hydrocarbon Mix

GRH-004S-10X \$ 40 / 1 x 1 mL
GRH-004S-10X-PAK **SAVE 20%** \$ 160 / 5 x 1 mL
At stated conc. (mg/mL) in MeOH 13 comps.

Benzene	(5.0)	<i>n</i> -Pentane	(10.0)
Ethylbenzene	(5.0)	Toluene	(15.0)
Isooctane	(15.0)	1,2,4-Trimethylbenzene	(10.0)
2-Methylpentane	(15.0)	<i>o</i> -Xylene	(10.0)
MtBE	(15.0)	<i>m</i> -Xylene	(10.0)
Naphthalene	(10.0)	<i>p</i> -Xylene	(10.0)
<i>n</i> -Nonane	(10.0)		

DEP (MA)-VPH Surrogate Standard

GRH-004-SS \$ 10 / 1 x 1 mL
GRH-004-SS-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
50 µg/mL in MeOH
GRH-004-SS-10X \$ 20 / 1 x 1 mL
GRH-004-SS-10X-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
500 µg/mL in MeOH
GRH-004-SS-100X \$ 20 / 1 x 1 mL
GRH-004-SS-100X-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
5,000 µg/mL in MeOH

2,5-Dibromotoluene

MA VPH Matrix Spike Mix with Surrogate

GRH-004-MS/SS \$ 30 / 1 x 1 mL
50 µg/mL each in MeOH 14 comps.

Benzene	Naphthalene
<i>n</i> -Butylcyclohexane	<i>n</i> -Nonane
<i>n</i> -Decane	<i>n</i> -Pentane
2,5-dibromotoluene	Toluene
Ethylbenzene	1,2,4-Trimethylbenzene
2-Methylpentane	Isooctane
MtBE	<i>m</i> -Xylene

VPH Matrix Spike

GRH-004-MS \$ 15 / 1 x 1 mL
GRH-004-MS-PAK **SAVE 20%** \$ 60 / 5 x 1 mL
50 µg/mL each in MeOH
GRH-004-MS-10X \$ 25 / 1 x 1 mL
GRH-004-MS-10X-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
500 µg/mL each in MeOH
GRH-004-MS-100X \$ 25 / 1 x 1 mL
GRH-004-MS-100X-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
5,000 µg/mL each in MeOH 8 comps.

Benzene	Toluene
Ethylbenzene	<i>o</i> -Xylene
MtBE	<i>m</i> -Xylene
Naphthalene	<i>p</i> -Xylene

Certified BTEX in Unleaded Gasoline

GA-001-20X-BTEX \$ 55 / 1 x 1 mL
10.0 mg/mL in MeOH
Gasoline - Regular, unleaded

Volatile Petroleum Hydrocarbons without Surrogate

GRH-004S-R1-10X \$ 55 / 1 x 1 mL
At stated conc. (mg/mL) in MeOH 15 comps.

Benzene	(5.0)	Toluene	(15.0)
Ethylbenzene	(5.0)	1,2,4-Trimethylbenzene	(10.0)
Isooctane	(15.0)	<i>o</i> -Xylene	(10.0)
2-Methylpentane	(15.0)	<i>m</i> -Xylene	(10.0)
MtBE	(15.0)	<i>p</i> -Xylene	(10.0)
Naphthalene	(10.0)	<i>n</i> -Butylcyclohexane	(10.0)
<i>n</i> -Nonane	(10.0)	<i>n</i> -Decane	(10.0)
<i>n</i> -Pentane	(10.0)		

GRH-004S-R2 \$ 50 / 1 x 1 mL
10 mg/mL each in MeOH 15 comps.

Benzene	Toluene
Ethylbenzene	1,2,4-Trimethylbenzene
Isooctane	<i>o</i> -Xylene
2-Methylpentane	<i>m</i> -Xylene
MtBE	<i>p</i> -Xylene
Naphthalene	<i>n</i> -Butylcyclohexane
<i>n</i> -Nonane	<i>n</i> -Decane
<i>n</i> -Pentane	

Volatile Petroleum Hydrocarbons with Surrogate

GRH-004S/SS \$ 30 / 1 x 1 mL
GRH-004S/SS-PAK **SAVE 20%** \$ 120 / 5 x 1 mL
At stated conc. (µg/mL) in MeOH 14 comps.

Benzene	(500)	<i>n</i> -Nonane	(1,000)
2,5-Dibromotoluene (Surrogate)	(1,000)	<i>n</i> -Pentane	(1,000)
Ethylbenzene	(500)	Toluene	(1,500)
Isooctane	(1,500)	1,2,4-Trimethylbenzene	(1,000)
2-Methylpentane	(1,500)	<i>o</i> -Xylene	(1,000)
MtBE	(1,500)	<i>m</i> -Xylene	(1,000)
Naphthalene	(1,000)	<i>p</i> -Xylene	(1,000)

GRH-004S/SS-R1 \$ 45 / 1 x 1 mL
At stated conc. (µg/mL) in MeOH 16 comps.

Benzene	(500)	<i>n</i> -Pentane	(1,000)
2,5-Dibromotoluene (Surrogate)	(1,000)	Toluene	(1,500)
Ethylbenzene	(500)	1,2,4-Trimethylbenzene	(1,000)
Isooctane	(1,500)	<i>o</i> -Xylene	(1,000)
2-Methylpentane	(1,500)	<i>m</i> -Xylene	(1,000)
MtBE	(1,500)	<i>p</i> -Xylene	(1,000)
Naphthalene	(1,000)	<i>n</i> -Butylcyclohexane	(1,000)
<i>n</i> -Nonane	(1,000)	<i>n</i> -Decane	(1,000)

GRH-004S/SS-R2 \$ 50 / 1 x 1 mL
10.0 mg/mL each in MeOH 16 comps.

Benzene	<i>n</i> -Pentane
2,5-Dibromotoluene (Surrogate)	Toluene
Ethylbenzene	1,2,4-Trimethylbenzene
Isooctane	<i>o</i> -Xylene
2-Methylpentane	<i>m</i> -Xylene
MtBE	<i>p</i> -Xylene
Naphthalene	<i>n</i> -Butylcyclohexane
<i>n</i> -Nonane	<i>n</i> -Decane

Technical Note

Calibration Curve

Analytical chemists can develop the VPH Calibration Curve using one primary dilution standard that includes the surrogate.

Simultaneous BTEX / Gasoline QA/QC

Our QC Dept. has certified the benzene, toluene, ethyl benzene and xylene concentrations in the unleaded gasoline standard (GA-001-20X-BTEX). This allows the use of a single injection to verify that the QA/QC requirements are being met for the BTEX analytes as well as for the gasoline.



Texas Method 1005 & 1006 Petroleum Storage Tanks (PST)

Stock Hydrocarbon Calibration Standard

DRH-TX-001-10X \$ 25 / 1 x 1 mL
 DRH-TX-001-10X-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
 2000 µg/mL each in *n*-Pentane 12 comps.

<i>n</i> -Hexane	<i>n</i> -Tetradecane	<i>n</i> -Docosane
<i>n</i> -Octane	<i>n</i> -Hexadecane	<i>n</i> -Tetracosane
<i>n</i> -Decane	<i>n</i> -Octadecane	<i>n</i> -Hexacosane
<i>n</i> -Dodecane	<i>n</i> -Eicosane	<i>n</i> -Octacosane

Gasoline & Diesel Calibration Curve Set

DRH-TX-002-D-SET \$ 75 / 8 x 1 mL
 Each at stated conc. in CH₂Cl₂ 2 comps.

Regular Unleaded Gasoline #2 Diesel Fuel

Each set contains 8 concentrations:

5 µg/mL	50 µg/mL	200 µg/mL	1000 µg/mL
20 µg/mL	100 µg/mL	500 µg/mL	5000 µg/mL

Gasoline/Diesel Continuing Calibration Standard

DRH-TX-002-D-0.4X-10ML \$ 50 / 1 x 10 mL
 200 µg/mL each in CH₂Cl₂ 2 comps.

Regular Unleaded Gasoline #2 Diesel Fuel

Gasoline/Diesel Calibration/Matrix Spike Standard

DRH-TX-002-10X \$ 25 / 1 x 1 mL
 DRH-TX-002-10X-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
 5000 µg/mL each in MeOH 2 comps.

Regular Unleaded Gasoline #2 Diesel Fuel

Stock Gasoline/Diesel Calibration Standard

DRH-TX-002-D-40X \$ 25 / 1 x 1 mL
 DRH-TX-002-D-40X-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
 20,000 µg/mL each in CH₂Cl₂ 2 comps.

Regular Unleaded Gasoline #2 Diesel Fuel

Technical Note

TCEQ Methods 1005 and 1006

Texas Commission on Environmental Quality (TCEQ) has developed these methods in response to notifications of leaking petroleum storage tanks that have contaminated ground water. These methods govern the testing of Total Petroleum Hydrocarbon (TPH) concentrations.

Gasoline & Diesel Calibration Curve Set

DRH-TX-003-SET \$ 125 / 8 x 1 mL
 Each at stated conc. in Pentane 2 comps.

Regular Unleaded Gasoline #2 Diesel Fuel

Each set contains 8 concentrations:

20 µg/mL	250 µg/mL	750 µg/mL	5000 µg/mL
100 µg/mL	500 µg/mL	1000 µg/mL	10,000 µg/mL

Gasoline and Diesel Standard

DRH-TX-003-20X \$ 25 / 1 x 5 mL
 DRH-TX-003-20X-PAK **SAVE 20%** \$ 100 / 5 x 5 mL
 10,000 µg/mL each in Pentane 2 comps.

Regular Unleaded Gasoline #2 Diesel Fuel

Surrogate Standard

DRH-TX-003-SS1 \$ 35 / 1 x 5 mL
 DRH-TX-003-SS1-PAK **SAVE 20%** \$ 140 / 5 x 5 mL
 10 mg/mL each in Pentane 2 comps.

1-Chlorooctadecane 1-Chlorooctane

Carbon Number Distribution Maker

DRH-TX-003-CNM \$ 30 / 1 x 1 mL
 DRH-TX-003-CNM-PAK **SAVE 20%** \$ 120 / 5 x 1 mL
 2000 µg/mL each in Pentane 9 comps.

<i>n</i> -Decane	<i>n</i> -Heptane	<i>n</i> -Octacosane
<i>n</i> -Dodecane	<i>n</i> -Hexadecane	<i>n</i> -Octane
<i>n</i> -Heneicosane	<i>n</i> -Hexane	<i>n</i> -Pentatriacontane

Aromatic Fractionation Check Standard

DRH-TX-003-FCS \$ 55 / 1 x 10 mL
 DRH-TX-003-FCS-PAK **SAVE 20%** \$ 220 / 5 x 10 mL
 20 µg/mL each in Pentane 24 comps.

Acenaphthene	Benzo[e]pyrene	Naphthalene
Acenaphthylene	Benzo[g,h,i]perylene	Phenanthrene
Anthracene	Chrysene	Pyrene
Benzene	Dibenz[a,h]anthracene	Toluene
Benz[a]anthracene	Ethylbenzene	1,2,3-Trimethylbenzene
Benzo[b]fluoranthene	Fluoranthene	<i>m</i> -Xylene
Benzo[k]fluoranthene	Fluorene	<i>p</i> -Xylene
Benzo[a]pyrene	Indeno[1,2,3-cd]pyrene	<i>o</i> -Xylene



LUFT/LUST Standards

Washington Method

Washington Method Determination of Volatile Petroleum Hydrocarbons (VPH)

VPH Standard

VPH-WA \$ 20 / 1 x 1 mL
VPH-WA-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
200 µg/mL each in MeOH 15 comps.

Benzene	<i>p</i> -Xylene	<i>n</i> -Decane
Ethylbenzene	MtBE	<i>n</i> -Dodecane
Toluene	<i>n</i> -Pentane	1-Methylnaphthalene
<i>o</i> -Xylene	<i>n</i> -Hexane	Naphthalene
<i>m</i> -Xylene	<i>n</i> -Octane	1,2,3-Trimethylbenzene

VPH Primary Dilution Standard with Surrogate

VPH-WA-SS-10X \$ 35 / 1 x 1 mL
VPH-WA-SS-10X-PAK **SAVE 20%** \$ 140 / 5 x 1 mL
2,000 µg/mL each in MeOH 16 comps.

Benzene	MtBE	<i>n</i> -Dodecane
Ethylbenzene	<i>n</i> -Pentane	1-Methylnaphthalene
Toluene	<i>n</i> -Hexane	Naphthalene
<i>o</i> -Xylene	<i>n</i> -Octane	1,2,3-Trimethylbenzene
<i>m</i> -Xylene	<i>n</i> -Decane	2,5-Dibromotoluene (surrogate)
<i>p</i> -Xylene		

Stock Concentrate VPH Standards

VPH-WA-10X \$ 30 / 1 x 1 mL
VPH-WA-10X-PAK **SAVE 20%** \$ 120 / 5 x 1 mL
2,000 µg/mL each in MeOH 15 comps.
VPH-WA-100X \$ 40 / 1 x 1 mL
VPH-WA-100X-PAK **SAVE 20%** \$ 160 / 5 x 1 mL
20.0 mg/mL each in MeOH 15 comps.

Benzene	<i>p</i> -Xylene	<i>n</i> -Decane
Ethylbenzene	MtBE	<i>n</i> -Dodecane
Toluene	<i>n</i> -Pentane	1-Methylnaphthalene
<i>o</i> -Xylene	<i>n</i> -Hexane	Naphthalene
<i>m</i> -Xylene	<i>n</i> -Octane	1,2,3-Trimethylbenzene

Certified BTEX in Unleaded Gasoline (Single Source)

GA-001-20X-BTEX \$ 55 / 1 x 1 mL

10.0 mg/mL in MeOH

Regular Unleaded Gasoline

Certified BTEX in Gasoline Composite (Multi Source)

GRO-AK-101-GCS-BTEX \$ 55 / 1 x 1 mL
5 mg/mL in MeOH 3 comps.

	Wt. Vol.
Gasoline (Premium)	1.66 mg/mL
Gasoline (Regular Leaded)	1.67 mg/mL
Gasoline (Regular Unleaded)	1.67 mg/mL

VPH Matrix Spike

VPH-WA-MS \$ 25 / 1 x 1 mL
VPH-WA-MS-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
Varied conc. in MeOH 11 comps.

Benzene	(60 µg/mL)	Toluene	(60 µg/mL)
Ethylbenzene	(60 µg/mL)	1,2,3-Trimethylbenzene	(60 µg/mL)
MtBE	(180 µg/mL)	<i>m</i> -Xylene	(60 µg/mL)
Naphthalene	(360 µg/mL)	<i>p</i> -Xylene	(60 µg/mL)
<i>n</i> -Nonane	(200 µg/mL)	<i>o</i> -Xylene	(60 µg/mL)
<i>n</i> -Pentane	(600 µg/mL)		

VPH Surrogate Standard

GRH-004-SS \$ 10 / 1 x 1 mL
GRH-004-SS-PAK **SAVE 20%** \$ 40 / 5 x 1 mL
50 µg/mL in MeOH

GRH-004-SS-10X \$ 20 / 1 x 1 mL
GRH-004-SS-10X-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
500 µg/mL in MeOH

GRH-004-SS-100X \$ 20 / 1 x 1 mL
GRH-004-SS-100X-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
5,000 µg/mL in MeOH

2,5-Dibromotoluene

VPH Retention Time Marker

VPH-WA-RT \$ 20 / 1 x 1 mL
VPH-WA-RT-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
2,000 µg/mL each in MeOH 6 comps.

<i>n</i> -Pentane	<i>n</i> -Octane	<i>n</i> -Dodecane
<i>n</i> -Hexane	<i>n</i> -Decane	<i>n</i> -Tridecane

1,2,3-Trimethylbenzene Standard

V-028S-D-10X \$ 20 / 1 x 1 mL
V-028S-D-10X-PAK **SAVE 20%** \$ 80 / 5 x 1 mL
1000 µg/mL each in CH₂Cl₂

1,2,3-Trimethylbenzene

Technical Note

Simultaneous BTEX / Gasoline QA/QC

We have certified the benzene, toluene, ethyl benzene and xylene concentrations in the unleaded gasoline standard GA-001-20X-BTEX and GRO-AK-101-GCS-BTEX. This allows the use of a single injection to verify that the QA/QC requirements are being met for the BTEX analytes as well as for the gasoline.

We have added a multi source certified BTEX in gasoline composite mix GRO-AK-101-GCS-BTEX. The BTEX values for this multi-source calibration standard have been determined through in-house analysis against a BTEX multi-level calibration curve listed on the certificate.

LUFT/LUST Standards

Washington Method



Washington Method Determination of Extractable Petroleum Hydrocarbons (EPH)

EPH Aromatic/PAH Standard

EPH-WA-10X		\$ 75 / 1 x 1 mL
EPH-WA-10X-PAK		SAVE 20% \$ 300 / 5 x 1 mL
1.0 mg/mL each in CH ₂ Cl ₂		18 comps.
Acenaphthene	Benzo[g,h,i]perylene	Indeno[1,2,3-cd]pyrene
Acenaphthylene	Benzo[k]fluoranthene	2-Methylnaphthalene
Anthracene	Chrysene	Naphthalene
Benz[a]anthracene	Dibenz[a,h]anthracene	Phenanthrene
Benzo[a]pyrene	Fluoranthene	Pyrene
Benzo[b]fluoranthene	Fluorene	1,2,3-Trimethylbenzene

Internal Standard

GRH-IS	\$ 15 / 1 x 1 mL
GRH-IS-PAK	SAVE 20% \$ 60 / 5 x 1 mL
1000 µg/mL in CH ₂ Cl ₂	
GRH-IS-10X	\$ 30 / 1 x 1 mL
10.0 mg/mL in CH ₂ Cl ₂	
5-alpha Androstane	

EPH Surrogate Spike

DRH-MA-SS	\$ 10 / 1 x 1 mL
20 µg/mL each in Acetone	2 comps.
DRH-MA-SS-10X	\$ 20 / 1 x 1 mL
200 µg/mL each in Acetone	2 comps.
DRH-MA-SS-100X	\$ 22 / 1 x 1 mL
DRH-MA-SS-100X-PAK	SAVE 20% \$ 88 / 5 x 1 mL
2,000 µg/mL each in Acetone	2 comps.
1-Chlorooctadecane	o-Terphenyl

EPH Matrix Spike

EPH-WA-MS2-20ML	\$ 30 / 1 x 20 mL
EPH-WA-MS2-20ML-PAK	SAVE 20% \$ 120 / 5 x 20 mL
25 µg/mL each in Acetone	10 comps.

Acenaphthene	n-Decane	n-Heneicosane
Anthracene	n-Dodecane	Naphthalene
Benzo[g,h,i]perylene	n-Hexadecane	Pyrene
Benzo[a]pyrene		

EPH Aliphatic Check Mix

EPH-WA-ALI	\$ 20 / 1 x 1 mL	
EPH-WA-ALI-PAK	SAVE 20% \$ 80 / 5 x 1 mL	
1.0 mg/mL each in CH ₂ Cl ₂	5 comps.	
<i>n</i> -Octane	<i>n</i> -Dodecane	<i>n</i> -Heneicosane
<i>n</i> -Decane	<i>n</i> -Hexadecane	

EPH Aromatic Check Mix

EPH-WA-ARO	\$ 30 / 1 x 1 mL	
EPH-WA-ARO-PAK	SAVE 20% \$ 120 / 5 x 1 mL	
1.0 mg/mL each in CH ₂ Cl ₂	5 comps.	
Acenaphthene	Naphthalene	1,2,3-Trimethylbenzene
Benzo[g,h,i]perylene	Pyrene	

Revised EPH Aliphatic Check Mix

EPH-WA-ALI-R1	\$ 20 / 1 x 1 mL	
EPH-WA-ALI-R1-PAK	SAVE 20% \$ 80 / 5 x 1 mL	
1.0 mg/mL each in CH ₂ Cl ₂	6 comps.	
<i>n</i> -Octane	<i>n</i> -Dodecane	<i>n</i> -Heneicosane
<i>n</i> -Decane	<i>n</i> -Hexadecane	<i>n</i> -Tetatriacontane

EPH Fractionation Check Standard

EPH-WA-FCS		\$ 45 / 1 x 1 mL
EPH-WA-FCS-PAK	SAVE 20%	\$ 180 / 5 x 1 mL
<i>25 µg/mL each in Hexane</i>		<i>24 comps.</i>
Acenaphthene	Chrysene	Pyrene
Acenaphthylene	Dibenz[a,h]anthracene	<i>n</i> -Decane
Anthracene	Fluoranthene	<i>n</i> -Dodecane
Benz[a]anthracene	Fluorene	<i>n</i> -Tetradecane
Benzo[a]pyrene	Indeno[1,2,3-cd]pyrene	<i>n</i> -Hexadecane
Benzo[b]fluoranthene	2-Methylnaphthalene	<i>n</i> -Octadecane
Benzo[g,h,i]perylene	Naphthalene	<i>n</i> -Eicosane
Benzo[k]fluoranthene	Phenanthrene	<i>n</i> -Heneicosane

Revised EPH Fractionation Check Standard

EPH-WA-FCS-R1		\$ 45 / 1 x 1 mL
EPH-WA-FCS-R1-PAK		SAVE 20% \$ 180 / 5 x 1 mL
<i>25 µg/mL each in Hexane</i>		<i>23 comps</i>
Acenaphthene	Chrysene	Pyrene
Acenaphthylene	Dibenz[a,h]anthracene	<i>n</i> -Octane
Anthracene	Fluoranthene	<i>n</i> -Decane
Benz[a]anthracene	Fluorene	<i>n</i> -Dodecane
Benzo[a]pyrene	Indeno[1,2,3-cd]pyrene	<i>n</i> -Hexadecane
Benzo[b]fluoranthene	2-Methylnaphthalene	<i>n</i> -Heneicosane
Benzo[g,h,i]perylene	Naphthalene	<i>n</i> -Tetatriacontane
Benzo[k]fluoranthene	Phenanthrene	

1,2,3-Trimethylbenzene Standard

V-028S-D-10X	\$ 20 / 1 x 1 mL
V-028S-D-10X-PAK	SAVE 20% \$ 80 / 5 x 1 mL
1000 µg/mL each in CH ₂ Cl ₂	
1,2,3-Trimethylbenzene	

Revised EPH Aromatic Check Mix

EPH-WA-ARO-R1	\$ 30 / 1 x 1 mL	
EPH-WA-ARO-R1-PAK	SAVE 20% \$ 120 / 5 x 1 mL	
1.0 mg/mL each in CH ₂ Cl ₂	6 comps.	
Acenaphthene	Naphthalene	1,2,3-Trimethylbenzene
Benzo[g,h,i]perylene	Pyrene	Toluene

Aliphatic Surrogate

DRH-007-SS	\$ 15 / 1 x 1 mL
DRH-007-SS-PAK	SAVE 20% \$ 60 / 5 x 1 mL
1.0 mg/mL in Hexane	
1-Chlorooctadecane	

Aromatic Surrogate

DRH-006-SS	\$ 15 / 1 x 1 mL
DRH-006-SS-PAK	SAVE 20% \$ 60 / 5 x 1 mL
1.0 mg/mL in CH ₂ Cl ₂	
o-Terphenyl	



LUFT/LUST Standards

Gasoline Range Hydrocarbon (GRH)

Gasoline Range Hydrocarbon Analysis

EPA Method - Gasoline Range Hydrocarbons

Gasoline Standard

GRH-002S

\$ 25 / 1 x 1 mL

GRH-002S-10X

\$ 30 / 1 x 1 mL

At stated conc. in MeOH

10 comps.

	GRH-002S	GRH-002-10X
2-Methylpentane	(1.5 mg/mL)	(15 mg/mL)
2,2,4-Trimethylpentane	(1.5 mg/mL)	(15 mg/mL)
Heptane	(0.5 mg/mL)	(5 mg/mL)
Benzene	(0.5 mg/mL)	(5 mg/mL)
Toluene	(1.5 mg/mL)	(15 mg/mL)
Ethylbenzene	(0.5 mg/mL)	(5 mg/mL)
m-Xylene	(1.0 mg/mL)	(10 mg/mL)
p-Xylene	(1.0 mg/mL)	(10 mg/mL)
o-Xylene	(1.0 mg/mL)	(10 mg/mL)
1,2,4-Trimethylbenzene	(1.0 mg/mL)	(10 mg/mL)

Internal Standard

GARH-IS

\$15 / 1 x 1 mL

1.0 mg/mL in CH₂Cl₂

Chloro-4-fluorobenzene

Surrogate Standard

GARH-SS

\$ 20 / 1 x 1 mL

2.5 mg/mL in Acetone

4-Bromofluorobenzene

Gasoline Additives

GAD-001

\$ 20 / 1 x 1 mL

GAD-001-PAK

SAVE 20% \$ 80 / 5 x 1 mL

0.2 mg/mL each in MeOH

4 comps.

Dibromomethane
1,2-Dibromoethane

1,2-Dichloroethane
Methyl t-butyl ethers

Technical Note

Simultaneous BTEX / Gasoline QA/QC

We have certified the benzene, toluene, ethyl benzene and xylene concentrations in the unleaded gasoline standard (GA-001-20X-BTEX). This allows the use of a single injection to verify that the QA/QC requirements are being met for the BTEX analytes as well as for the gasoline.

Certified BTEX in Unleaded Gasoline

GA-001-20X-BTEX

\$ 55 / 1 x 1 mL

10.0 mg/mL in MeOH

Regular unleaded gasoline

Hexadecane Extraction Volatiles

CLP-BTEX

\$ 30 / 1 x 1 mL

CLP-BTEX-PAK

SAVE 20% \$ 120 / 5 x 1 mL

0.2 mg/mL each in MeOH

6 comps.

CLP-BTEX-10X

\$ 30 / 1 x 1 mL

CLP-BTEX-10X-PAK

SAVE 20% \$ 120 / 5 x 1 mL

2.0 mg/mL each in MeOH

6 comps.

Benzene
Ethyl benzene
Toluene

o-Xylene
m-Xylene
p-Xylene

California - Gasoline Range Hydrocarbons

S-603A-10X

\$ 25 / 1 x 1 mL

S-603A-10X-PAK

SAVE 20% \$ 100 / 5 x 1 mL

2.0 mg/mL each in MeOH

7 comps.

Benzene
Ethylbenzene
Methyl t-butyl ether
Toluene

o-Xylene
m-Xylene
p-Xylene

Los Angeles County Well Investigation and Monitoring Program

Purgeable Aromatics - Gasoline ID

M-602-GAS-10X

\$ 30 / 1 x 1 mL

2.0 mg/mL each in MeOH

11 comps.

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

Toluene
o-Xylene
p-Xylene
m-Xylene
MtBE

Oxygenate Gasoline Additive Standard

OGAD-001

\$ 30 / 1 x 1 mL

OGAD-001-PAK

SAVE 20% \$ 120 / 5 x 1 mL

At stated conc. in MeOH

5 comps.

MtBE (2000 µg/mL)
ETBE (2000 µg/mL)
Isopropyl ether (2000 µg/mL)

TAME (2000 µg/mL)
t-Butanol (10000 µg/mL)

Ethanol

M-8015B/5031-11

\$ 25 / 1 x 1 mL

10 mg/mL in Water

Methanol

M-8015B/5031-17

\$ 20 / 1 x 1 mL

10 mg/mL in Water

Pennsylvania DER - Gasoline Range Hydrocarbons

GRH-001S

\$ 25 / 1 x 1 mL

GRH-001S-PAK

SAVE 20% \$ 100 / 5 x 1 mL

1.0 mg/mL each in MeOH

10 comps.

Benzene
Ethylbenzene
Heptane
2-Methyl pentane
Toluene

1,2,4-Trimethylbenzene
2,2,4-Trimethylpentane
o-Xylene
m-Xylene
p-Xylene

Wisconsin DNR - Gasoline Range Hydrocarbons

GRH-003S

\$ 35 / 1 x 1 mL

GRH-003S-PAK

SAVE 20% \$ 140 / 5 x 1 mL

2.0 mg/mL each in MeOH

10 comps.

Benzene
Ethylbenzene
MtBE
Naphthalene
Toluene

1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
o-Xylene
m-Xylene
p-Xylene

LUFT/LUST Standards

Diesel Range Hydrocarbons (DRH)



Diesel Range Hydrocarbon Analysis

EPA Method - Diesel Range Hydrocarbons

DRH-001S \$ 20 / 1 x 1 mL
0.2 mg/mL each in CH₂Cl₂: Hexane (1:1)
10 comps.
DRH-001S-10X \$ 30 / 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂: Hexane (1:1)
10 comps.

n-Decane C₁₀ *n*-Hexadecane C₁₆ *n*-Docosane C₂₂ *n*-Hexacosane C₂₆
n-Dodecane C₁₂ *n*-Octadecane C₁₈ *n*-Tetracosane C₂₄ *n*-Octacosane C₂₈
n-Tetradecane C₁₄ *n*-Eicosane C₂₀

Surrogate Standard

GRH-SS \$ 17 / 1 x 1 mL
GRH-SS-PAK SAVE 20% \$ 68 / 5 x 1 mL
2.0 mg/mL in Acetone
o-Terphenyl (OTP)

Internal Standard

GRH-IS \$ 15 / 1 x 1 mL
GRH-IS-PAK SAVE 20% \$ 60 / 5 x 1 mL
1.0 mg/mL in CH₂Cl₂
5- α Androstane

Calibration/Window Defining Hydrocarbon Standard

DRH-004S-R1-5X \$ 50 / 1 x 1 mL
DRH-004S-R1-5X-PAK SAVE 20% \$ 200 / 5 x 1 mL
1.0 mg/mL each in Chloroform
17 comps.

Octane C₈ Octadecane C₁₈ Hexacosane C₂₆ Tetratriacontane C₃₄
Decane C₁₀ Eicosane C₂₀ Octacosane C₂₈ Hexatriacontane C₃₆
Dodecane C₁₂ Docosane C₂₂ Triacontane C₃₀ Octatriacontane C₃₈
Tetradecane C₁₄ Tetracosane C₂₄ Dotriacontane C₃₂ Tetracontane C₄₀
Hexadecane C₁₆

Surrogate Standard

DRH-SS \$ 30 / 1 x 1 mL
DRH-SS-PAK SAVE 20% \$ 120 / 5 x 1 mL
5.0 mg/mL in THF
n-Triacontane-d₃₂

D-2887 Calibration Solution

Calibration Solution

DRH-002S \$ 45 / 1 x 1 mL
At stated conc. in CS₂
17 comps.

Hexane (600 μ g/mL) Dodecane (1,200 μ g/mL) Octacosane (100 μ g/mL)
Heptane (600 μ g/mL) Tetradecane (1,200 μ g/mL) Dotriacontane (100 μ g/mL)
Octane (800 μ g/mL) Hexadecane (1,000 μ g/mL) Hexatriacontane (100 μ g/mL)
Nonane (800 μ g/mL) Octadecane (500 μ g/mL) Triacontane (100 μ g/mL)
Decane (1,200 μ g/mL) Eicosane (200 μ g/mL) Tetracontane (100 μ g/mL)
Undecane (1,200 μ g/mL) Tetracosane (200 μ g/mL)

Column Test Mixture

ASTM-D2887 \$ 10 / 1 x 1 mL
1% v/v in *n*-Octane
2 comps.
n-Hexadecane *n*-Octadecane

Wisconsin Diesel Range Hydrocarbons

DRH-003S \$ 20 / 1 x 1 mL
0.2 mg/mL each in Hexane
11 comps.

n-Decane C₁₀ *n*-Tetradecane C₁₄ *n*-Octadecane C₁₈
n-Undecane C₁₁ *n*-Pentadecane C₁₅ *n*-Nonadecane C₁₉
n-Dodecane C₁₂ *n*-Hexadecane C₁₆ *n*-Eicosane C₂₀
n-Tridecane C₁₃ *n*-Heptadecane C₁₇

Complete Hydrocarbon Analysis

Multi-State Hydrocarbon Window Defining Standard

DRH-008S-R2 \$ 65 / 1 x 1 mL
DRH-008S-R2-PAK SAVE 20% \$ 260 / 5 x 1 mL
500 μ g/mL each in Chloroform
35 comps.

Octane	Heptadecane	Tetracosane	Trtriacontane
Nonane	Pristane	Pentacosane	Tetratriacontane
Decane	Octadecane	Hexacosane	Pentatriacontane
Undecane	Phytane	Heptacosane	Hexatriacontane
Dodecane	Nonadecane	Octacosane	Heptatriacontane
Tridecane	Eicosane	Nonacosane	Octatriacontane
Tetradecane	Heneicosane	Triacontane	Nonatriacontane
Pentadecane	Docosane	<i>n</i> -Hentriacontane	Tetracontane
Hexadecane	Tricosane	Dotriacontane	

Technical Note

We offer a hydrocarbon window defining standard with the C₈ to C₃₆ odd and even Alkanes. Use of this one standard should meet the numerous state to state variations for hydrocarbon validation and reporting. As an added benefit pristane and phytane are included in the formulation. This one standard can meet numerous LUFT/LUST programs requiring that the C₁₇/pristane and C₁₈/phytane ratio be used to estimate subsurface degradation of fuel oil spills.

A fuel oil degradation mixture containing just the four required analytes to determine the C₁₇/pristane and C₁₈/phytane ratio (DRH-005S-10X) is also available.

Fuel Oil Degradation/Retention Time Mixture for Quantification of C₁₇/Pristane and C₁₈/Phytane Ratios

DRH-005S-10X \$ 20 / 1 x 1 mL
2.0 mg/mL each in CH₂Cl₂ : CS₂ (1:1)
4 comps.

Heptadecane	Phytane (2,6,10,14-Tetramethylhexadecane)
Octadecane	Pristane (2,6,10,14-Tetramethylpentadecane)

FTRPH Calibration/Window Defining Standard

DRH-FTRPH \$ 35 / 1 x 1 mL
DRH-FTRPH-PAK SAVE 20% \$ 140 / 5 x 1 mL
500 μ g/mL each in Hexane
17 comps.

<i>n</i> -Octane	<i>n</i> -Octadecane	<i>n</i> -Hexacosane	<i>n</i> -Tetratriacontane
<i>n</i> -Decane	<i>n</i> -Eicosane	<i>n</i> -Octacosane	<i>n</i> -Hexatriacontane
<i>n</i> -Dodecane	<i>n</i> -Docosane	<i>n</i> -Triacontane	<i>n</i> -Octatriacontane
<i>n</i> -Tetradecane	<i>n</i> -Tetracosane	<i>n</i> -Dotriacontane	<i>n</i> -Tetracontane
<i>n</i> -Hexadecane			

Hydrocarbon Window Defining Standard

DRH-FTRPH2 \$ 60 / 1 x 1 mL
DRH-FTRPH2-PAK SAVE 20% \$ 240 / 5 x 1 mL
500 μ g/mL each in Hexane
18 comps.

<i>n</i> -Nonane	Pristane	<i>n</i> -Pentacosane	<i>n</i> -Trtriacontane
<i>n</i> -Undecane	Phytane	<i>n</i> -Heptacosane	<i>n</i> -Pentatriacontane
<i>n</i> -Tridecane	<i>n</i> -Nonadecane	<i>n</i> -Nonacosane	<i>n</i> -Heptatriacontane
<i>n</i> -Pentadecane	<i>n</i> -Heneicosane	<i>n</i> -Hentriacontane	<i>n</i> -Nonatriacontane
<i>n</i> -Heptadecane	<i>n</i> -Tricosane		

Hydrocarbon Window Defining Standard Set

DRH-FTRPH-SET \$ 80 / 2 x 1 mL
(DRH-FTRPH, DRH-FTRPH2)
DRH-FTRPH-SET-PAK SAVE 20% \$ 320 / 5 (2 x 1 mL)
500 μ g/mL each in Hexane



LUFT/LUST Standards

Oil, Grease & TPH (Method 1664, 413.2/418.1 & 8440) Weathered Fuel Sets

Method 1664 Oil, Grease & Total Petroleum Hydrocarbon Determination

Precision and Recovery (PAR) Spiking Solution

M-1664-5ML	\$ 15 / 1 x 5 mL
M-1664-5ML-PAK	SAVE 20% \$ 60 / 5 x 5 mL
4.0 mg/mL each in Acetone	
M-1664-20ML	\$ 25 / 1 x 20 mL
M-1664-20ML-PAK	SAVE 20% \$ 100 / 5 x 20 mL
4.0 mg/mL each in Acetone	2 comps.
Hexadecane	Stearic acid

Technical Note

Precision and Recovery (PAR) Spiking Solution was developed for Method 1664. This performance based method was developed to replace previous gravimetric procedures which incorporated Freon-113 as the extraction solvent for the determination of Oil and Grease and Total Petroleum Hydrocarbons. Each standard is packaged in a flame sealed ampule conveniently sized for quality control of the analytical batch.

Silica Gel Hexane Extraction Material

SGT-HEM	\$ 15 / 1 x 1 mL
20 µg/mL each in Acetone	2 comps.
Stearic acid	Hexadecane

Method 413.2 & 418.1 Total Petroleum Hydrocarbon Analysis by IR

Oil, Grease & Petroleum Hydrocarbon Concentrates Mix

M-418-CON	\$ 35 / 1 x 1 mL
% by volume	3 comps.
Chlorobenzene (25.0)	Hexadecane (37.5)
Isooctane (37.5)	

Oil, Grease and Petroleum Hydrocarbon Total Recoverable (IR Method)

M-418	\$ 30 / 1 x 1 mL
M-418-PAK	SAVE 20% \$ 120 / 5 x 1 mL
Total 4.15 mg/mL in Freon 113, (Parts by volume)	3 comps.
Chlorobenzene (10.0)	Isooctane (15.0)
n-Hexadecane (15.0)	

Method 8440 Total Petroleum Hydrocarbon Analysis

Total Recoverable Petroleum Hydrocarbon Mix

M-8440	\$ 20 / 1 x 1 mL
M-8440-PAK	SAVE 20% \$ 80 / 5 x 1 mL
At stated conc. in Tetrachloroethene	3 comps.
Chlorobenzene (0.10 w/w %)	Isooctane (0.15 w/w %)
n-Hexadecane (0.15 w/w %)	

Leaking Underground Storage Tank Retention Time Standard

This product can be used to screen a sample to determine what type of petroleum spill that may have caused the contamination.

Retention Time Standard

DRH-010S	\$ 20 / 1 x 1 mL	
DRH-010S-PAK	SAVE 20%	\$ 80 / 5 x 1 mL
25 µg/mL each in CH ₂ Cl ₂	7 comps.	
<i>n</i> -Hexane	<i>n</i> -Tetracosane	<i>n</i> -Triacontane
<i>n</i> -Decane	<i>n</i> -Octacosane	<i>n</i> -Tetracontane
<i>n</i> -Dodecane		

Silica Gel Cleanup Calibration Solution

M-8440-SGC	\$ 10 / 1 x 1 mL
M-8440-SGC-PAK	SAVE 20% \$ 40 / 5 x 1 mL
10.0 mg/mL in Tetrachloroethene	
Corn Oil	

Total Petroleum Hydrocarbon Concentrate Mix

M-8440-CON	\$ 30 / 1 x 1 mL
M-8440-CON-PAK	SAVE 20% \$ 120 / 5 x 1 mL
	3 comps.
Chlorobenzene (25.0 vol %)	Isooctane (37.5 vol %)
n-Hexadecane (37.5 vol %)	

Technical Note

A sample showing peaks in the C₆-C₁₀ range generally indicates a gasoline spill. Samples with the peaks in the C₁₂-C₂₄ range are indicative of a diesel spill while samples with the higher carbon numbers above C₂₄ are typically oils or lubricants. Once the initial screen is complete, more detailed work can be done to further identify the contaminant.

Inorganic Standards

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3 Year Minimum Shelf Life on
Single Element ICP, ICP/MS
and AA Standards



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Certificate of Analysis

Sample: Single Element ICP

Directly traceable to NIST SRM's - where available

GHS safety information

Most Single element standards have a minimum 3 Year expiration period.

Density included for easy conversion to weight/weight applications.

Impurity Scan for 68 elements in final solution.

Concentration verified by two independent methods for added assurance.

Uncertainty reported for statistical confidence.

Highest purity starting materials & matrices used.

QC management approval

Accreditations

Inorganic products containing acid generally require a hazardous shipping fee.

Inorganic products in water generally do not.



125 Market Street
New Haven, CT 06513
USA

AccuStandard® Inc.

CERTIFICATE OF ANALYSIS

AccuTrace™ Reference Standard

Catalog No: ICP-15N-10X-5
Description: Copper ICP Standard
Element: Copper (Cu)
SRM: 3114
Lot: 213085107
Matrix: 2-5% Nitric acid
Hazards: **CORROSIVE** - Refer to SDS for safety info

Date Certified: Oct 8, 2013
Expiration: Oct 8, 2018
Concentration: 10000 µg/mL
Density: 1.040g/mL
Sample Size: 500 mL
Storage Condition: Ambient

☒ Included on ISO/IEC 17025 Scope of Accreditation
☒ Included on ISO Guide 34 Scope of Accreditation

Danger 1

Elements in µg/mL						
Ag nd<0.02	Ce nd<0.2	Gd nd<0.02	Lu nd<0.02	Pb N/A	Sc nd<0.02	Ti nd<0.02
Al nd<0.02	Co nd<0.02	Ge nd<0.2	Mg nd<0.02	Pd N/A	Se nd<0.2	Tl nd<0.2
As nd<0.2	Cr nd<0.02	Hf nd<0.02	Mn nd<0.02	Pr nd<0.2	Si N/A	Tm nd<0.02
Au nd<0.02	Cs N/A	Hg nd<0.2	Mo nd<0.02	Pt nd<0.2	Sm nd<0.2	U nd<0.2
B nd<0.2	Cu *	Ho nd<0.02	Na 0.02	Rb N/A	Sn N/A	V nd<0.02
Ba nd<0.02	Dy nd<0.02	In nd<0.2	Nb nd<0.2	Re nd<0.2	Sr nd<0.02	W nd<0.2
Be nd<0.02	Er nd<0.02	Ir nd<0.2	Nd nd<0.02	Rh nd<0.2	Ta nd<0.2	Y nd<0.02
Bi N/A	Eu nd<0.02	K nd<0.2	Ni N/A	Ru nd<0.02	Tb nd<0.02	Yb nd<0.02
Ca 0.04	Fe N/A	La nd<0.02	Os N/A	S N/A	Te nd<0.2	Zn nd<0.02
Cd nd<0.02	Ga nd<0.02	Li nd<0.02	P N/A	Sb nd<0.2	Th nd<0.02	Zr nd<0.02

This solution was assayed titrimetrically using EDTA which was standardized against NIST SRM 8005 (lead nitrate). In order to verify the concentration(s), the final solution was checked by plasma emission spectroscopy (ICP) against material traceable to the above listed NIST SRM(s).

All trace level elemental impurities were determined via plasma emission spectroscopy on the concentrate.

All bottles are acid leached and triple rinsed with de-ionized water prior to use.

The gravimetric uncertainty for this product is ±0.24%. The CRM uncertainty is ±5%. See reverse side for details.

We use the highest purity raw materials available to minimize impurity levels in the final solution. Typically 99.999%+ pure starting materials are used as well as high purity acids and ASTM Type 19 megohm deionized water.

Balances used during preparation are calibrated regularly using NIST traceable weights.

All glassware used in preparation is Class A and calibrated regularly.

Use good laboratory procedure when diluting this product. Shake bottle prior to use and do not pipette directly out of the bottle. Use only cleaned Class A volumetric glassware.

We certify the accuracy of this standard to be ±0.5% of the stated value until its expiration date provided it is kept tightly capped and stored under the conditions stated above.

Certified By: *Lydia Snyder*
Lydia Snyder, Inorganic QC Manager

Page 1 of 1

For use in routine laboratory analysis.

AccuStandard is accredited to ISO Guide 34, ISO/IEC 17025 and certified to ISO 9001

08-00000-001 Rev. 011

ICP

Single Element



- Traceable to NIST Reference Materials
- Formulated from Ultra High Purity Starting Materials and Acids
- 18 Megohm de-ionized Water
- Concentration verified by Wet Chemical and Instrumental Analysis
- Packaged in specially prepared Acid leached bottles

**3 Year Minimum Shelf Life on
Single Element ICP Standards**

Save with NoHaz Option on ICP Single Elements

- No Hazardous Shipping Fees
- Lower Shipping Costs (less weight)
- Yields More - 200 mL from 20 mL concentrate

Includes empty pre-washed, pre-labeled HDPE 250 mL bottle



Single Element ICP						NoHaz 20 mL Size	
Element Starting Material Matrix	Unit	1000 µg/mL		10,000 µg/mL		20 mL (NoHaz) 10,000 µg/mL	
		Cat. No.	Price	Cat. No.	Price	Cat. No.	Price
Aluminum	50 mL	-----	--	ICP-01N-10X-0.5	\$ 34	ICP-01N-10X-20ML	\$ 37
Al(NO ₃) ₃ • 9H ₂ O	100 mL	ICP-01N-1	34	ICP-01N-10X-1	59		
2-5% Nitric acid	500 mL	ICP-01N-5	67	ICP-01N-10X-5	175		
Antimony	50 mL	-----	--	ICP-02N-10X-0.5	36	ICP-02N-10X-20ML	37
Sb Dilute HNO ₃ tr	100 mL	ICP-02N-1	34	ICP-02N-10X-1	65		
Tartaric acid	500 mL	ICP-02N-5	67	ICP-02N-10X-5	165		
Arsenic	50 mL	-----	--	ICP-03N-10X-0.5	32	ICP-03N-10X-20ML	37
As	100 mL	ICP-03N-1	34	ICP-03N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-03N-5	67	ICP-03N-10X-5	138		
Barium	50 mL	-----	--	ICP-04N-10X-0.5	32	ICP-04N-10X-20ML	37
Ba(NO ₃) ₂	100 mL	ICP-04N-1	34	ICP-04N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-04N-5	67	ICP-04N-10X-5	138		
Beryllium	50 mL	-----	--	ICP-05N-10X-0.5	57	ICP-05N-10X-20ML	37
BeO(C ₂ H ₃ O ₂) ₆	100 mL	ICP-05N-1	42	ICP-05N-10X-1	110		
2-5% Nitric acid	500 mL	ICP-05N-5	82	ICP-05N-10X-5	555		
Bismuth	50 mL	-----	--	ICP-06N-10X-0.5	36	ICP-06N-10X-20ML	37
Bi	100 mL	ICP-06N-1	34	ICP-06N-10X-1	65		
2-10% Nitric acid	500 mL	ICP-06N-5	67	ICP-06N-10X-5	135		
Boron	50 mL	-----	--	ICP-07W-10X-0.5 ▼	32	ICP-07W-10X-20ML	37
H ₃ BO ₃	100 mL	ICP-07W-1 ▼	34	ICP-07W-10X-1 ▼	54		
Water tr. NH ₄ OH	500 mL	ICP-07W-5 ▼	67	ICP-07W-10X-5 ▼	138		
Cadmium	50 mL	-----	--	ICP-08N-10X-0.5	32	ICP-08N-10X-20ML	37
Cd	100 mL	ICP-08N-1	34	ICP-08N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-08N-5	67	ICP-08N-10X-5	138		
Calcium	50 mL	-----	--	ICP-09N-10X-0.5	32	ICP-09N-10X-20ML	37
CaCO ₃	100 mL	ICP-09N-1	34	ICP-09N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-09N-5	67	ICP-09N-10X-5	138		
Cerium	50 mL	-----	--	ICP-11N-10X-0.5	32	ICP-11N-10X-20ML	37
Ce(NO ₃) ₃	100 mL	ICP-11N-1	34	ICP-11N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-11N-5	67	ICP-11N-10X-5	168		
Cesium	50 mL	-----	--	ICP-12N-10X-0.5	45	ICP-12N-10X-20ML	55
CsNO ₃	100 mL	ICP-12N-1	42	ICP-12N-10X-1	75		
2-5% Nitric acid	500 mL	ICP-12N-5	82	ICP-12N-10X-5	231		
Chromium reduced to (+3) state	50 mL	-----	--	ICP-13N-10X-0.5	34	ICP-13N-10X-20ML	37
(NH ₄) ₂ Cr ₂ O ₇	100 mL	ICP-13N-1	34	ICP-13N-10X-1	59		
2-5% Nitric acid	500 mL	ICP-13N-5	67	ICP-13N-10X-5	144		
Cobalt	50 mL	-----	--	ICP-14N-10X-0.5	32	ICP-14N-10X-20ML	37
Co	100 mL	ICP-14N-1	34	ICP-14N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-14N-5	67	ICP-14N-10X-5	168		
Copper	50 mL	-----	--	ICP-15N-10X-0.5	32	ICP-15N-10X-20ML	37
Cu	100 mL	ICP-15N-1	34	ICP-15N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-15N-5	67	ICP-15N-10X-5	138		
Dysprosium	50 mL	-----	--	ICP-16N-10X-0.5	45	ICP-16N-10X-20ML	55
Dy ₂ O ₃	100 mL	ICP-16N-1	42	ICP-16N-10X-1	75		
2-5% Nitric acid	500 mL	ICP-16N-5	82	ICP-16N-10X-5	231		
Erbium	50 mL	-----	--	ICP-17N-10X-0.5	52	ICP-17N-10X-20ML	55
Er ₂ O ₃	100 mL	ICP-17N-1	42	ICP-17N-10X-1	85		
2-5% Nitric acid	500 mL	ICP-17N-5	82	ICP-17N-10X-5	259		
Europium	50 mL	-----	--	ICP-18N-10X-0.5	52	ICP-18N-10X-20ML	55
Eu ₂ O ₃	100 mL	ICP-18N-1	42	ICP-18N-10X-1	85		
2-5% Nitric acid	500 mL	ICP-18N-5	82	ICP-18N-10X-5	225		

▼ Hazardous fee not required.



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- Yields More - 200 mL from 20 mL concentrate

Includes empty pre-washed, pre-labeled HDPE 250 mL bottle



Single Element ICP					NoHaz 20 mL Size	
Element Starting Material Matrix	Unit	1000 µg/mL Cat. No.	Price	10,000 µg/mL Cat. No.	Price	20 mL (NoHaz) 10,000 µg/mL Cat. No. Price
Gadolinium	50 mL	-----	--	ICP-19N-10X-0.5	69	ICP-19N-10X-20ML 55
Gd ₂ O ₃	100 mL	ICP-19N-1	42	ICP-19N-10X-1	115	
2-5% Nitric acid	500 mL	ICP-19N-5	82	ICP-19N-10X-5	315	
Gallium	50 mL	-----	--	ICP-20N-10X-0.5	45	ICP-20N-10X-20ML 55
Ga	100 mL	ICP-20N-1	42	ICP-20N-10X-1	75	
2-5% Nitric acid	500 mL	ICP-20N-5	82	ICP-20N-10X-5	165	
Germanium	50 mL	-----	--	ICP-21W-10X-0.5 ▼	52	ICP-21W-10X-20ML 55
(NH ₄) ₂ GeF ₆	100 mL	ICP-21W-1 ▼	42	ICP-21W-10X-1 ▼	85	
Water tr. HF	500 mL	ICP-21W-5 ▼	82	ICP-21W-10X-5 ▼	231	
Gold	50 mL	-----	--	ICP-22H-10X-0.5	175	ICP-22H-10X-20ML 95
Au	100 mL	ICP-22H-1	78	ICP-22H-10X-1	295	
10% HCl (min.)	500 mL	ICP-22H-5	152	-----	--	
Hafnium	50 mL	-----	--	ICP-23N-10X-0.5	80	ICP-23N-10X-20ML 75
HfO ₂	100 mL	ICP-23N-1	60	ICP-23N-10X-1	135	
2-5% Nitric acid tr. HF	500 mL	ICP-23N-5	118	ICP-23N-10X-5	445	
Holmium	50 mL	-----	--	ICP-24N-10X-0.5	52	ICP-24N-10X-20ML 55
Ho ₂ O ₃	100 mL	ICP-24N-1	42	ICP-24N-10X-1	85	
2-5% Nitric acid	500 mL	ICP-24N-5	82	ICP-24N-10X-5	259	
Indium	50 mL	-----	--	ICP-25N-10X-0.5	52	ICP-25N-10X-20ML 55
In	100 mL	ICP-25N-1	42	ICP-25N-10X-1	85	
2-5% Nitric acid	500 mL	ICP-25N-5	82	ICP-25N-10X-5	185	
Iridium	50 mL	-----	--	ICP-26H-10X-0.5	175	ICP-26H-10X-20ML 95
IrCl ₃ • 3H ₂ O	100 mL	ICP-26H-1	78	ICP-26H-10X-1	295	
10% HCl (min.)	500 mL	ICP-26H-5	152	-----	--	
Iron	50 mL	-----	--	ICP-27N-10X-0.5	32	ICP-27N-10X-20ML 37
Fe	100 mL	ICP-27N-1	34	ICP-27N-10X-1	54	
2-5% Nitric acid	500 mL	ICP-27N-5	67	ICP-27N-10X-5	168	
Lanthanum	50 mL	-----	--	ICP-28N-10X-0.5	32	ICP-28N-10X-20ML 37
La ₂ O ₃	100 mL	ICP-28N-1	34	ICP-28N-10X-1	54	
2-5% Nitric acid	500 mL	ICP-28N-5	67	ICP-28N-10X-5	168	
Lead	50 mL	-----	--	ICP-29N-10X-0.5	32	ICP-29N-10X-20ML 37
Pb(NO ₃) ₂	100 mL	ICP-29N-1	34	ICP-29N-10X-1	54	
2-5% Nitric acid	500 mL	ICP-29N-5	67	ICP-29N-10X-5	138	
Lithium	50 mL	-----	--	ICP-30N-10X-0.5	32	ICP-30N-10X-20ML 37
Li ₂ CO ₃	100 mL	ICP-30N-1	34	ICP-30N-10X-1	54	
2-5% Nitric acid	500 mL	ICP-30N-5	67	ICP-30N-10X-5	138	
Lutetium	50 mL	-----	--	ICP-31N-10X-0.5	175	ICP-31N-10X-20ML 132
Lu ₂ O ₃	100 mL	ICP-31N-1	121	ICP-31N-10X-1	295	
2-5% Nitric acid	500 mL	ICP-31N-5	236	ICP-31N-10X-5	842	
Magnesium	50 mL	-----	--	ICP-32N-10X-0.5	32	ICP-32N-10X-20ML 37
MgO	100 mL	ICP-32N-1	34	ICP-32N-10X-1	54	
2-5% Nitric acid	500 mL	ICP-32N-5	67	ICP-32N-10X-5	138	
Manganese	50 mL	-----	--	ICP-33N-10X-0.5	32	ICP-33N-10X-20ML 37
Mn(C ₂ H ₃ O ₂) ₂	100 mL	ICP-33N-1	34	ICP-33N-10X-1	54	
2-5% Nitric acid	500 mL	ICP-33N-5	67	ICP-33N-10X-5	168	
Mercury	50 mL	-----	--	ICP-34N-10X-0.5	32	ICP-34N-10X-20ML 37
Hg	100 mL	ICP-34N-1	34	ICP-34N-10X-1	54	
10% Nitric acid	500 mL	ICP-34N-5	67	ICP-34N-10X-5	138	
Molybdenum	50 mL	-----	--	ICP-35W-10X-0.5 ▼	32	ICP-35W-10X-20ML 37
(NH ₄) ₂ MoO ₄	100 mL	ICP-35W-1 ▼	34	ICP-35W-10X-1 ▼	54	
Water tr. NH ₄ OH	500 mL	ICP-35W-5 ▼	67	ICP-35W-10X-5 ▼	138	

▼ Hazardous fee not required.

ICP

Single Element



Single Element ICP

Element Starting Material Matrix		1000 µg/mL		10,000 µg/mL		20 mL (NoHaz) 10,000 µg/mL	
Unit		Cat. No.	Price	Cat. No.	Price	Cat. No.	Price
Neodymium	50 mL	-----	--	ICP-36N-10X-0.5	45	ICP-36N-10X-20ML	37
Nd ₂ O ₃	100 mL	ICP-36N-1	34	ICP-36N-10X-1	75		
2-5% Nitric acid	500 mL	ICP-36N-5	67	ICP-36N-10X-5	203		
Nickel	50 mL	-----	--	ICP-37N-10X-0.5	32	ICP-37N-10X-20ML	37
Ni	100 mL	ICP-37N-1	34	ICP-37N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-37N-5	67	ICP-37N-10X-5	138		
Niobium	50 mL	-----	--	ICP-38W-10X-0.5 ▼	38	ICP-38W-10X-20ML	37
Nb ₂ O ₅	100 mL	ICP-38W-1 ▼	34	ICP-38W-10X-1 ▼	64		
Water tr. HF	500 mL	ICP-38W-5 ▼	67	ICP-38W-10X-5 ▼	175		
Palladium	50 mL	-----	--	ICP-40H-10X-0.5	175	ICP-40H-10X-20ML	95
Pd	100 mL	ICP-40H-1	78	ICP-40H-10X-1	295		
10% HCl (min.)	500 mL	ICP-40H-5	152	-----	--		
Phosphorus	50 mL	-----	--	ICP-41W-10X-0.5 ▼	32	ICP-41W-10X-20ML	37
NH ₄ H ₂ PO ₄	100 mL	ICP-41W-1 ▼	34	ICP-41W-10X-1 ▼	54		
Water	500 mL	ICP-41W-5 ▼	67	ICP-41W-10X-5 ▼	138		
Platinum	50 mL	-----	--	ICP-42H-10X-0.5	175	ICP-42H-10X-20ML	95
Pt	100 mL	ICP-42H-1	78	ICP-42H-10X-1	295		
10% HCl (min.)	500 mL	ICP-42H-5	152	-----	--		
Potassium	50 mL	-----	--	ICP-43N-10X-0.5	32	ICP-43N-10X-20ML	37
KNO ₃	100 mL	ICP-43N-1	34	ICP-43N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-43N-5	67	ICP-43N-10X-5	138		
Praseodymium	50 mL	-----	--	ICP-44N-10X-0.5	72	ICP-44N-10X-20ML	55
Pr ₆ O ₁₁	100 mL	ICP-44N-1	42	ICP-44N-10X-1	120		
2-5% Nitric acid	500 mL	ICP-44N-5	82	ICP-44N-10X-5	329		
Rhenium	50 mL	-----	--	ICP-45W-10X-0.5 ▼	132	ICP-45W-10X-20ML	67
Re	100 mL	ICP-45W-1 ▼	55	ICP-45W-10X-1 ▼	222		
Water tr. Nitric acid	500 mL	ICP-45W-5 ▼	108	ICP-45W-10X-5 ▼	495		
Rhodium	50 mL	-----	--	ICP-46H-10X-0.5	444	ICP-46H-10X-20ML	290
RhCl ₃ • 3H ₂ O	100 mL	ICP-46H-1	220	ICP-46H-10X-1	750		
10% HCl (min.)	500 mL	ICP-46H-5	490	-----	--		
Rubidium	50 mL	-----	--	ICP-47N-10X-0.5	52	ICP-47N-10X-20ML	37
RbNO ₃	100 mL	ICP-47N-1	36	ICP-47N-10X-1	85		
2-5% Nitric acid	500 mL	ICP-47N-5	70	ICP-47N-10X-5	265		
Ruthenium	50 mL	-----	--	ICP-48H-10X-0.5	175	ICP-48H-10X-20ML	95
RuCl ₃ • 3H ₂ O	100 mL	ICP-48H-1	78	ICP-48H-10X-1	295		
10% HCl	500 mL	ICP-48H-5	152	-----	--		
Samarium	50 mL	-----	--	ICP-49N-10X-0.5	45	ICP-49N-10X-20ML	55
Sm ₂ O ₃	100 mL	ICP-49N-1	42	ICP-49N-10X-1	75		
2-5% Nitric acid	500 mL	ICP-49N-5	82	ICP-49N-10X-5	231		
Scandium	50 mL	-----	--	ICP-50N-10X-0.5	175	ICP-50N-10X-20ML	95
Sc ₂ O ₃	100 mL	ICP-50N-1	78	ICP-50N-10X-1	295		
2-5% Nitric acid	500 mL	ICP-50N-5	152	ICP-50N-10X-5	795		
Selenium	50 mL	-----	--	ICP-51N-10X-0.5	32	ICP-51N-10X-20ML	37
Se	100 mL	ICP-51N-1	34	ICP-51N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-51N-5	67	ICP-51N-10X-5	138		
Silicon	50 mL	-----	--	ICP-52W-10X-0.5 ▼	32	ICP-52W-10X-20ML	37
(NH ₄) ₂ SiF ₆	100 mL	ICP-52W-1 ▼	34	ICP-52W-10X-1 ▼	54		
Water tr. HF	500 mL	ICP-52W-5 ▼	67	ICP-52W-10X-5 ▼	168		
Silver	50 mL	-----	--	ICP-53N-10X-0.5	42	ICP-53N-10X-20ML	37
AgNO ₃	100 mL	ICP-53N-1	34	ICP-53N-10X-1	70		
2-5% Nitric acid	500 mL	ICP-53N-5	67	ICP-53N-10X-5	145		
Sodium	50 mL	-----	--	ICP-54N-10X-0.5	34	ICP-54N-10X-20ML	37
NaNO ₃	100 mL	ICP-54N-1	34	ICP-54N-10X-1	59		
2-5% Nitric acid	500 mL	ICP-54N-5	67	ICP-54N-10X-5	175		
Strontium	50 mL	-----	--	ICP-55N-10X-0.5	42	ICP-55N-10X-20ML	37
Sr(NO ₃) ₂	100 mL	ICP-55N-1	34	ICP-55N-10X-1	70		
2-5% Nitric acid	500 mL	ICP-55N-5	67	ICP-55N-10X-5	203		
Sulfur	50 mL	-----	--	ICP-56W-10X-0.5 ▼	32	ICP-56W-10X-20ML	37
(NH ₄) ₂ SO ₄	100 mL	ICP-56W-1 ▼	34	ICP-56W-10X-1 ▼	54		
Water	500 mL	ICP-56W-5 ▼	67	ICP-56W-10X-5 ▼	138		
Tantalum	50 mL	-----	--	ICP-57W-10X-0.5 ▼	52	ICP-57W-10X-20ML	55
Ta	100 mL	ICP-57W-1 ▼	42	ICP-57W-10X-1 ▼	85		
Water tr. HF	500 mL	ICP-57W-5 ▼	82	ICP-57W-10X-5 ▼	224		

NoHaz 20 mL Size

3 Year Minimum Shelf Life on Single Element ICP Standards



▼ Hazardous fee not required.

Single Element ICP



ICP Single Element

- Traceable to NIST Reference Materials
- Formulated from Ultra High Purity Starting Materials and Acids
- 18 Megohm de-ionized Water
- Concentration verified by Wet Chemical and Instrumental Analysis
- Packaged in specially prepared Acid leached bottles

**3 Year Minimum Shelf Life on
Single Element ICP Standards**

Save with NoHaz Option on ICP Single Elements

- No Hazardous Shipping Fees
- Lower Shipping Costs (less weight)
- Yields More - 200 mL from 20 mL concentrate

Includes empty pre-washed, pre-labeled HDPE 250 mL bottle



Single Element ICP					NoHaz 20 mL Size	
Element Starting Material Matrix	Unit	1000 µg/mL Cat. No.	Price	10,000 µg/mL Cat. No.	Price	20 mL (NoHaz) 10,000 µg/mL Cat. No. Price
Tellurium	50 mL	-----	--	ICP-58H-10X-0.5	46	ICP-58H-10X-20ML 37
Te	100 mL	ICP-58H-1	34	ICP-58H-10X-1	78	
20% HCl (min.)	500 mL	ICP-58H-5	67	ICP-58H-10X-5	210	
Terbium	50 mL	-----	--	ICP-59N-10X-0.5	69	ICP-59N-10X-20ML 55
Tb ₂ O ₃	100 mL	ICP-59N-1	42	ICP-59N-10X-1	115	
2-5% Nitric acid	500 mL	ICP-59N-5	82	ICP-59N-10X-5	315	
Thallium	50 mL	-----	--	ICP-60N-10X-0.5	32	ICP-60N-10X-20ML 37
Tl	100 mL	ICP-60N-1	34	ICP-60N-10X-1	54	
2-5% Nitric acid	500 mL	ICP-60N-5	67	ICP-60N-10X-5	144	
Thorium	-----	-----	--	-----	--	----- --
Th(NO ₃) ₄ • 4H ₂ O	100 mL	ICP-61N-1	34			
2-5% Nitric acid	500 mL	ICP-61N-5	67			
Thulium	50 mL	-----	--	ICP-62N-10X-0.5	78	ICP-62N-10X-20ML 75
Tm ₂ O ₃	100 mL	ICP-62N-1	58	ICP-62N-10X-1	130	
2-5% Nitric acid	500 mL	ICP-62N-5	120	-----	--	
Tin	50 mL	-----	--	ICP-63N-10X-0.5	42	ICP-63N-10X-20ML 37
Sn	100 mL	ICP-63N-1	34	ICP-63N-10X-1	70	
2-5% Nitric acid tr. HF	500 mL	ICP-63N-5	67	ICP-63N-10X-5	179	
Titanium	50 mL	-----	--	ICP-64W-10X-0.5 ▼	32	----- --
(NH ₄) ₂ TiF ₆	100 mL	ICP-64W-1 ▼	34	ICP-64W-10X-1 ▼	54	
Water tr. HF	500 mL	ICP-64W-5 ▼	67	ICP-64W-10X-5 ▼	138	
Tungsten	50 mL	-----	--	ICP-65W-10X-0.5 ▼	32	ICP-65W-10X-20ML 37
(NH ₄) ₁₀ WO ₄	100 mL	ICP-65W-1 ▼	34	ICP-65W-10X-1 ▼	54	
Water tr. NH ₄ OH	500 mL	ICP-65W-5 ▼	67	ICP-65W-10X-5 ▼	168	
Uranium	-----	-----	--	-----	--	----- --
U ₃ O ₈	100 mL	ICP-66N-1	42			
2-5% Nitric acid	500 mL	ICP-66N-5	82			
Vanadium	50 mL	-----	--	ICP-67N-10X-0.5	36	ICP-67N-10X-20ML 37
NH ₄ VO ₃	100 mL	ICP-67N-1	34	ICP-67N-10X-1	65	
2-5% Nitric acid	500 mL	ICP-67N-5	67	ICP-67N-10X-5	135	
Ytterbium	50 mL	-----	--	ICP-68N-10X-0.5	60	ICP-68N-10X-20ML 55
Yb ₂ O ₃	100 mL	ICP-68N-1	42	ICP-68N-10X-1	100	
2-5% Nitric acid	500 mL	ICP-68N-5	82	ICP-68N-10X-5	273	
Yttrium	50 mL	-----	--	ICP-69N-10X-0.5	32	ICP-69N-10X-20ML 37
Y ₂ O ₃	100 mL	ICP-69N-1	34	ICP-69N-10X-1	54	
2-5% Nitric acid	500 mL	ICP-69N-5	67	ICP-69N-10X-5	138	
Zinc	50 mL	-----	--	ICP-70N-10X-0.5	32	ICP-70N-10X-20ML 37
Zn	100 mL	ICP-70N-1	34	ICP-70N-10X-1	54	
2-5% Nitric acid	500 mL	ICP-70N-5	67	ICP-70N-10X-5	138	
Zirconium	50 mL	-----	--	ICP-71N-10X-0.5	42	ICP-71N-10X-20ML 37
ZrO(NO ₃) ₂	100 mL	ICP-71N-1	34	ICP-71N-10X-1	70	
2-5% Nitric acid	500 mL	ICP-71N-5	67	ICP-71N-10X-5	203	

▼ Hazardous fee not required.

Calibration and Matrix Blanks

Nitric Acid Blank

CLP-BLN-5 \$ 30 / 500 mL
CLP-BLN-L-VAP \$ 45 / 1L
(2 x 500 mL)

5% HNO₃ in 18 Megohm ASTM
Type I deionized Water

Hydrochloric Acid Blank

CLP-BLH-5 \$ 30 / 500 mL
CLP-BLH-L-VAP \$ 45 / 1L
(2 x 500 mL)

5% HCl in 18 Megohm ASTM Type I
deionized Water

Mixed Acid Blank

CLP-BLMA-5 \$ 30 / 500 mL
CLP-BLMA-L-VAP \$ 45 / 1L
(2 x 500 mL)

5% HCl + 1% HNO₃ in 18 Megohm
ASTM Type I deionized Water

Water Blank

CLP-BLW-5 ▼ \$ 30 / 500 mL
CLP-BLW-L-VAP ▼ \$ 40 / 1L
(2 x 500 mL)

18 Megohm ASTM Type I deionized
Water

▼ Hazardous fee not required.

AccuStandard is accredited to ISO Guide 34, ISO/IEC 17025 and certified to ISO 9001

ICP/MS

Single Element



AccuStandard's ICP/MS Standards are formulated to meet the needs of this very special instrument. As matrix effect is of utmost concern, each standard is formulated in specially purified 18 megohm de-ionized water and ultra pure acids.

- Traceable to NIST Reference Materials
- Formulated from Ultra High Purity Starting Materials and Acids
- 18 Megohm de-ionized Water
- Concentration verified by Wet Chemical and Instrumental Analysis

3 Year Minimum Shelf Life on
Single Element ICP/MS Standards



Single Element ICP/MS

Element	Matrix	Unit	100 µg/mL		1,000 µg/mL		10,000 µg/mL	
			Cat. No.	Price	Cat. No.	Price	Cat. No.	Price
Al (Aluminum)	2-5% HNO ₃	100 mL	ICP-MS-01N-0.01X-1	\$ 34	ICP-MS-01N-0.1X-1	\$ 45	ICP-MS-01N-1	\$ 76
Sb (Antimony)	2-5% HNO ₃	100 mL	ICP-MS-02N-0.01X-1	34	ICP-MS-02N-0.1X-1	45	ICP-MS-02N-1	76
As (Arsenic)	2-5% HNO ₃	100 mL	ICP-MS-03N-0.01X-1	34	ICP-MS-03N-0.1X-1	45	ICP-MS-03N-1	76
Ba (Barium)	2-5% HNO ₃	100 mL	ICP-MS-04N-0.01X-1	34	ICP-MS-04N-0.1X-1	45	ICP-MS-04N-1	76
Be (Beryllium)	2-5% HNO ₃	100 mL	ICP-MS-05N-0.01X-1	42	ICP-MS-05N-0.1X-1	53	ICP-MS-05N-1	123
Bi (Bismuth)	2-10% HNO ₃	100 mL	ICP-MS-06N-0.01X-1	34	ICP-MS-06N-0.1X-1	45	ICP-MS-06N-1	76
B (Boron) ▼	H ₂ O tr. NH ₄ OH	100 mL	ICP-MS-07W-0.01X-1	34	ICP-MS-07W-0.1X-1	45	ICP-MS-07W-1	76
Cd (Cadmium)	2-5% HNO ₃	100 mL	ICP-MS-08N-0.01X-1	34	ICP-MS-08N-0.1X-1	45	ICP-MS-08N-1	76
Ca (Calcium)	2-5% HNO ₃	100 mL	ICP-MS-09N-0.01X-1	34	ICP-MS-09N-0.1X-1	45	ICP-MS-09N-1	76
Ce (Cerium)	2-5% HNO ₃	100 mL	ICP-MS-11N-0.01X-1	34	ICP-MS-11N-0.1X-1	45	ICP-MS-11N-1	76
Cs (Cesium)	2-5% HNO ₃	100 mL	ICP-MS-12N-0.01X-1	42	ICP-MS-12N-0.1X-1	53	ICP-MS-12N-1	84
Cr (Chromium)	2-5% HNO ₃	100 mL	ICP-MS-13N-0.01X-1	34	ICP-MS-13N-0.1X-1	45	ICP-MS-13N-1	76
Co (Cobalt)	2-5% HNO ₃	100 mL	ICP-MS-14N-0.01X-1	34	ICP-MS-14N-0.1X-1	45	ICP-MS-14N-1	76
Cu (Copper)	2-5% HNO ₃	100 mL	ICP-MS-15N-0.01X-1	34	ICP-MS-15N-0.1X-1	45	ICP-MS-15N-1	76
Dy (Dysprosium)	2-5% HNO ₃	100 mL	ICP-MS-16N-0.01X-1	42	ICP-MS-16N-0.1X-1	53	ICP-MS-16N-1	84
Er (Erbium)	2-5% HNO ₃	100 mL	ICP-MS-17N-0.01X-1	42	ICP-MS-17N-0.1X-1	53	ICP-MS-17N-1	84
Eu (Europium)	2-5% HNO ₃	100 mL	ICP-MS-18N-0.01X-1	42	ICP-MS-18N-0.1X-1	53	ICP-MS-18N-1	84
Gd (Gadolinium)	2-5% HNO ₃	100 mL	ICP-MS-19N-0.01X-1	42	ICP-MS-19N-0.1X-1	53	ICP-MS-19N-1	84
Ga (Gallium)	2-5% HNO ₃	100 mL	ICP-MS-20N-0.01X-1	42	ICP-MS-20N-0.1X-1	53	ICP-MS-20N-1	84
Ge (Germanium) ▼	H ₂ O tr. HF	100 mL	ICP-MS-21W-0.01X-1	42	ICP-MS-21W-0.1X-1	53	ICP-MS-21W-1	84
Au (Gold)	10% HCl	100 mL	ICP-MS-22H-0.01X-1	78	ICP-MS-22H-0.1X-1	89	ICP-MS-22H-1	330
Hf (Hafnium)	2-5% HNO ₃ tr. HF	100 mL	ICP-MS-23N-0.01X-1	60	ICP-MS-23N-0.1X-1	72	ICP-MS-23N-1	111
Ho (Holmium)	2-5% HNO ₃	100 mL	ICP-MS-24N-0.01X-1	42	ICP-MS-24N-0.1X-1	53	ICP-MS-24N-1	84
In (Indium)	2-5% HNO ₃	100 mL	ICP-MS-25N-0.01X-1	42	ICP-MS-25N-0.1X-1	53	ICP-MS-25N-1	84
Ir (Iridium)	10% HCl	100 mL	ICP-MS-26H-0.01X-1	78	ICP-MS-26H-0.1X-1	89	ICP-MS-26H-1	120
Fe (Iron)	2-5% HNO ₃	100 mL	ICP-MS-27N-0.01X-1	34	ICP-MS-27N-0.1X-1	45	ICP-MS-27N-1	76
La (Lanthanum)	2-5% HNO ₃	100 mL	ICP-MS-28N-0.01X-1	34	ICP-MS-28N-0.1X-1	45	ICP-MS-28N-1	76
Pb (Lead)	2-5% HNO ₃	100 mL	ICP-MS-29N-0.01X-1	34	ICP-MS-29N-0.1X-1	45	ICP-MS-29N-1	76
Li (Lithium)	2-5% HNO ₃	100 mL	ICP-MS-30N-0.01X-1	34	ICP-MS-30N-0.1X-1	45	ICP-MS-30N-1	76
Lu (Lutetium)	2-5% HNO ₃	100 mL	ICP-MS-31N-0.01X-1	121	ICP-MS-31N-0.1X-1	138	ICP-MS-31N-1	354
Mg (Magnesium)	2-5% HNO ₃	100 mL	ICP-MS-32N-0.01X-1	34	ICP-MS-32N-0.1X-1	45	ICP-MS-32N-1	76
Mn (Manganese)	2-5% HNO ₃	100 mL	ICP-MS-33N-0.01X-1	34	ICP-MS-33N-0.1X-1	45	ICP-MS-33N-1	76
Hg (Mercury)	10% HNO ₃	100 mL	ICP-MS-34N-0.01X-1	34	ICP-MS-34N-0.1X-1	45	ICP-MS-34N-1	76
Mo (Molybdenum) ▼	H ₂ O tr. NH ₄ OH	100 mL	ICP-MS-35W-0.01X-1	34	ICP-MS-35W-0.1X-1	45	ICP-MS-35W-1	76
Nd (Neodymium) ▼	2-5% HNO ₃	100 mL	ICP-MS-36N-0.01X-1	34	ICP-MS-36N-0.1X-1	45	ICP-MS-36N-1	76

▼ Hazardous fee not required.





ICP/MS

Single Element

3 Year Minimum Shelf Life on
Single Element ICP/MS Standards

Single Element ICP/MS (Continued)

Element	Matrix	Unit	100 µg/mL		1,000 µg/mL		10,000 µg/mL	
			Cat. No.	Price	Cat. No.	Price	Cat. No.	Price
Ni (Nickel)	2-5% HNO ₃	100 mL	ICP-MS-37N-0.01X-1	34	ICP-MS-37N-0.1X-1	45	ICP-MS-37N-1	\$ 76
Nb (Niobium)	H ₂ O tr. HF	100 mL	ICP-MS-38W-0.01X-1	34	ICP-MS-38W-0.1X-1	45	ICP-MS-38W-1	76
Pd (Palladium)	10% HCl	100 mL	ICP-MS-40H-0.01X-1	78	ICP-MS-40H-0.1X-1	89	ICP-MS-40H-1	120
P (Phosphorous) ▼	H ₂ O	100 mL	ICP-MS-41W-0.01X-1	34	ICP-MS-41W-0.1X-1	45	ICP-MS-41W-1	76
Pt (Platinum)	10% HCl	100 mL	ICP-MS-42H-0.01X-1	78	ICP-MS-42H-0.1X-1	89	ICP-MS-42H-1	120
K (Potassium)	2-5% HNO ₃	100 mL	ICP-MS-43N-0.01X-1	34	ICP-MS-43N-0.1X-1	45	ICP-MS-43N-1	76
Pr (Praseodymium)	2-5% HNO ₃	100 mL	ICP-MS-44N-0.01X-1	42	ICP-MS-44N-0.1X-1	53	ICP-MS-44N-1	84
Re (Rhenium) ▼	H ₂ O tr. HNO ₃	100 mL	ICP-MS-45W-0.01X-1	55	ICP-MS-45W-0.1X-1	63	ICP-MS-45W-1	248
Rh (Rhodium)	10% HCl	100 mL	ICP-MS-46H-0.01X-1	220	ICP-MS-46H-0.1X-1	251	ICP-MS-46H-1	838
Rb (Rubidium)	2-5% HNO ₃	100 mL	ICP-MS-47N-0.01X-1	36	ICP-MS-47N-0.1X-1	48	ICP-MS-47N-1	96
Ru (Ruthenium)	10% HCl	100 mL	ICP-MS-48H-0.01X-1	78	ICP-MS-48H-0.1X-1	89	ICP-MS-48H-1	120
Sm (Samarium)	2-5% HNO ₃	100 mL	ICP-MS-49N-0.01X-1	42	ICP-MS-49N-0.1X-1	53	ICP-MS-49N-1	84
Sc (Scandium)	2-5% HNO ₃	100 mL	ICP-MS-50N-0.01X-1	78	ICP-MS-50N-0.1X-1	89	ICP-MS-50N-1	330
Se (Selenium)	2-5% HNO ₃	100 mL	ICP-MS-51N-0.01X-1	34	ICP-MS-51N-0.1X-1	45	ICP-MS-51N-1	76
Si (Silicon) ▼	H ₂ O tr. HF	100 mL	ICP-MS-52W-0.01X-1	34	ICP-MS-52W-0.1X-1	45	ICP-MS-52W-1	76
Ag (Silver)	2-5% HNO ₃	100 mL	ICP-MS-53N-0.01X-1	34	ICP-MS-53N-0.1X-1	45	ICP-MS-53N-1	76
Na (Sodium)	2-5% HNO ₃	100 mL	ICP-MS-54N-0.01X-1	34	ICP-MS-54N-0.1X-1	45	ICP-MS-54N-1	76
Sr (Strontium)	2-5% HNO ₃	100 mL	ICP-MS-55N-0.01X-1	34	ICP-MS-55N-0.1X-1	45	ICP-MS-55N-1	76
S (Sulfur) ▼	H ₂ O	100 mL	ICP-MS-56W-0.01X-1	34	ICP-MS-56W-0.1X-1	45	ICP-MS-56W-1	76
Ta (Tantalum) ▼	H ₂ O tr. HF	100 mL	ICP-MS-57W-0.01X-1	42	ICP-MS-57W-0.1X-1	53	ICP-MS-57W-1	84
Te (Tellurium)	10% HCl (min.)	100 mL	ICP-MS-58H-0.01X-1	34	ICP-MS-58H-0.1X-1	45	ICP-MS-58H-1	76
Tb (Terbium)	2-5% HNO ₃	100 mL	ICP-MS-59N-0.01X-1	42	ICP-MS-59N-0.1X-1	53	ICP-MS-59N-1	129
Tl (Thallium)	2-5% HNO ₃	100 mL	ICP-MS-60N-0.01X-1	34	ICP-MS-60N-0.1X-1	45	ICP-MS-60N-1	76
Th (Thorium)	2-5% HNO ₃	100 mL	ICP-MS-61N-0.01X-1	34	ICP-MS-61N-0.1X-1	45	-----	--
Tm (Thulium)	2-5% HNO ₃	100 mL	ICP-MS-62N-0.01X-1	58	ICP-MS-62N-0.1X-1	70	ICP-MS-62N-1	108
Sn (Tin)	2-5% HNO ₃ tr. HF	100 mL	ICP-MS-63N-0.01X-1	34	ICP-MS-63N-0.1X-1	45	ICP-MS-63N-1	76
Ti (Titanium) ▼	H ₂ O tr. HF	100 mL	ICP-MS-64W-0.01X-1	34	ICP-MS-64W-0.1X-1	45	ICP-MS-64W-1	76
W (Tungsten) ▼	H ₂ O tr. NH ₄ OH	100 mL	ICP-MS-65W-0.01X-1	34	ICP-MS-65W-0.1X-1	45	ICP-MS-65W-1	76
U (Uranium)	2-5% HNO ₃	100 mL	ICP-MS-66N-0.01X-1	42	ICP-MS-66N-0.1X-1	53	-----	--
V (Vanadium)	2-5% HNO ₃	100 mL	ICP-MS-67N-0.01X-1	34	ICP-MS-67N-0.1X-1	45	ICP-MS-67N-1	76
Yb (Ytterbium)	2-5% HNO ₃	100 mL	ICP-MS-68N-0.01X-1	42	ICP-MS-68N-0.1X-1	53	ICP-MS-68N-1	84
Y (Yttrium)	2-5% HNO ₃	100 mL	ICP-MS-69N-0.01X-1	34	ICP-MS-69N-0.1X-1	45	ICP-MS-69N-1	76
Zn (Zinc)	2-5% HNO ₃	100 mL	ICP-MS-70N-0.01X-1	34	ICP-MS-70N-0.1X-1	45	ICP-MS-70N-1	76
Zr (Zirconium)	2-5% HNO ₃	100 mL	ICP-MS-71N-0.01X-1	34	ICP-MS-71N-0.1X-1	45	ICP-MS-71N-1	76

▼ Hazardous fee not required.



AA

Single Element



Each standard is prepared from high purity starting materials, 18 megohm de-ionized water and high purity acids. Every standard is instrumentally assayed to verify concentration of specified element. Actual Lot Analysis is provided on the label and a Certificate of Analysis is included for ease of record keeping and availability at audits.

- Traceable to NIST Reference Materials
- Certificate of Analysis included

- 18 megohm de-ionized Water
- 36 Month Shelf Life

**3 Year Minimum Shelf Life on
Single Element ICP/MS Standards**

Single Element AA

Element Starting Material Matrix	Unit	1000 µg/mL Cat. No.	Price	Element Starting Material Matrix	Unit	1000 µg/mL Cat. No.	Price
Aluminum	100 mL	AA01N-1	\$ 13	Molybdenum	100 mL	AA35W-1 ▼	13
2-5% Nitric acid	500 mL	AA01N-5	33	Water tr. NH ₄ OH	500 mL	AA35W-5 ▼	33
Antimony	100 mL	AA02N-1	13	Nickel	100 mL	AA37N-1	12
2-5% HNO ₃ tr. Tartaric acid	500 mL	AA02N-5	33	2-5% Nitric acid	500 mL	AA37N-5	30
Arsenic	100 mL	AA03N-1	13	Phosphorus	100 mL	AA41W-1 ▼	13
2-5% Nitric acid	500 mL	AA03N-5	33	Water	500 mL	AA41W-5 ▼	33
Barium	100 mL	AA04N-1	12	Platinum	100 mL	AA42H-1	62
2-5% Nitric acid	500 mL	AA04N-5	30	2% HCl (min.)	500 mL	AA42H-5	145
Boron	100 mL	AA07W-1 ▼	13	Potassium	100 mL	AA43N-1	12
Water tr. NH ₄ OH	500 mL	AA07W-5 ▼	33	2-5% Nitric acid	500 mL	AA43N-5	30
Cadmium	100 mL	AA08N-1	13	Selenium	100 mL	AA51N-1	19
2-5% Nitric acid	500 mL	AA08N-5	33	2-5% Nitric acid	500 mL	AA51N-5	46
Calcium	100 mL	AA09N-1	12	Silicon	100 mL	AA52W-1 ▼	13
2-5% Nitric acid	500 mL	AA09N-5	30	Water tr. HF	500 mL	AA52W-5 ▼	33
Chromium	100 mL	AA13N-1	12	Silver	100 mL	AA53N-1	16
2-5% Nitric acid	500 mL	AA13N-5	30	2-5% Nitric acid	500 mL	AA53N-5	40
Cobalt	100 mL	AA14N-1	12	Sodium	100 mL	AA54N-1	13
2-5% Nitric acid	500 mL	AA14N-5	30	2-5% Nitric acid	500 mL	AA54N-5	33
Copper	100 mL	AA15N-1	12	Strontium	100 mL	AA55N-1	120
2-5% Nitric acid	500 mL	AA15N-5	30	2-5% Nitric acid	500 mL	AA55N-5	30
Gold	100 mL	AA22H-1	66	Sulfur	100 mL	AA56W-1 ▼	15
5% HCl (min.)	500 mL	AA22H-5	179	Water	500 mL	AA56W-5 ▼	35
Iron	100 mL	AA27N-1	12	Thallium	100 mL	AA60N-1	15
2-5% Nitric acid	500 mL	AA27N-5	30	2-5% Nitric acid	500 mL	AA60N-5	35
Lead	100 mL	AA29N-1	12	Tin	100 mL	AA63N-1	19
2-5% Nitric acid	500 mL	AA29N-5	30	2-5% Nitric acid tr. HF	500 mL	AA63N-5	46
Lithium	100 mL	AA30N-1	12	Titanium	100 mL	AA64W-1 ▼	13
2-5% Nitric acid	500 mL	AA30N-5	30	Water tr. HF	500 mL	AA64W-5 ▼	33
Magnesium	100 mL	AA32N-1	12	Vanadium	100 mL	AA67N-1	13
2-5% Nitric acid	500 mL	AA32N-5	30	5-10% Nitric acid	500 mL	AA67N-5	33
Manganese	100 mL	AA33N-1	11	Yttrium	100 mL	AA69N-1	15
2-5% Nitric acid	500 mL	AA33N-5	28	2-5% Nitric acid	500 mL	AA69N-5	35
Mercury	100 mL	AA34N-1	13	Zinc	100 mL	AA70N-1	13
2-5% Nitric acid	500 mL	AA34N-5	33	2-5% Nitric acid	500 mL	AA70N-5	33

▼ Hazardous fee not required.



Single Element AA



AA

Matrix Modifier & Calibration

Matrix Modifier Solutions for Graphite Furnace AA

These Matrix Modifiers enhance sensitivity and suppress background interferences observed in trace metal analysis.

Modifier Description	Modifier Source	Unit	Cat. No.	Price
Ammonium dihydrogen phosphate 40% in H ₂ O	NH ₄ H ₂ PO ₄	50 mL	MOD-02-0.5 ▼	\$ 225
		100 mL	MOD-02-1 ▼	375
		500 mL	MOD-02-5 ▼	535
Ammonium nitrate 5% in H ₂ O	NH ₄ NO ₃	50 mL	MOD-03-0.5 ▼	165
		100 mL	MOD-03-1 ▼	270
		500 mL	MOD-03-5 ▼	385
Calcium nitrate 2% Calcium in 5% in HNO ₃	Ca(NO ₃) ₂ • 4H ₂ O	50 mL	MOD-04-0.5	140
		100 mL	MOD-04-1	235
		500 mL	MOD-04-5	340
Lanthanum chloride 5% Lanthanum in 5% HCl	LaCl	50 mL	MOD-05-0.5	165
		100 mL	MOD-05-1	270
		500 mL	MOD-05-5	385
Lanthanum nitrate 5% Lanthanum in 5% HNO ₃	LaNO ₃	50 mL	MOD-06-0.5	165
		100 mL	MOD-06-1	270
		500 mL	MOD-06-5	385
Magnesium nitrate 2% Magnesium in 5% HNO ₃	Mg(NO ₃) ₂	50 mL	MOD-07-0.5	90
		100 mL	MOD-07-1	150
		500 mL	MOD-07-5	210
Nickel nitrate 5% Nickel in 5% HNO ₃	Ni(NO ₃) ₂	50 mL	MOD-08-0.5	160
		100 mL	MOD-08-1	265
		500 mL	MOD-08-5	375
Palladium nitrate 0.2% Palladium in 5% HNO ₃	Pd(NO ₃) ₂	50 mL	MOD-09A-0.5	60
		100 mL	MOD-09A-1	95
		500 mL	MOD-09A-5	135
Palladium nitrate 0.5% Palladium in 5% HNO ₃	Pd(NO ₃) ₂	50 mL	MOD-09B-0.5	120
		100 mL	MOD-09B-1	200
		500 mL	MOD-09B-5	285
Palladium nitrate 1.0% Palladium in 10% HNO ₃	Pd(NO ₃) ₂	50 mL	MOD-09C-0.5	225
		100 mL	MOD-09C-1	375
		500 mL	MOD-09C-5	890

Calibration and Matrix Blanks

Nitric Acid Blank

CLP-BLN-5 \$ 30 / 500 mL
CLP-BLN-L-VAP \$ 45 / 1L
 (2 x 500 mL)

5% HNO₃ in 18 Megohm ASTM Type I deionized Water

Hydrochloric Acid Blank

CLP-BLH-5 \$ 30 / 500 mL
CLP-BLH-L-VAP \$ 45 / 1L
 (2 x 500 mL)

5% HCl in 18 Megohm ASTM Type I deionized Water

Mixed Acid Blank

CLP-BLMA-5 \$ 30 / 500 mL
CLP-BLMA-L-VAP \$ 45 / 1L
 (2 x 500 mL)

5% HCl + 1% HNO₃ in 18 Megohm ASTM Type I deionized Water

Water Blank

CLP-BLW-5 ▼ \$ 30 / 500 mL
CLP-BLW-L-VAP ▼ \$ 40 / 1L
 (2 x 500 mL)

18 Megohm ASTM Type I deionized Water

Multi-Element Graphite Furnace AA Calibration & Spiking Standards

GFAA Instrument Calibration Standard

CLP-CAL-AA \$ 44 / 50 mL
 At stated conc. (µg/mL) in 5% HNO₃ 6 comps.

Sb (Antimony)	100
As (Arsenic)	50
Cd (Cadmium)	10
Pb (Lead)	50
Se (Selenium)	100
Tl (Thallium)	50

GFAA Predigestion Spike Solution

CLP-SP1-AA \$ 44 / 50 mL
 At stated conc. (µg/mL) in 5% HNO₃ 6 comps.

Sb (Antimony)	100
As (Arsenic)	40
Cd (Cadmium)	5
Pb (Lead)	20
Se (Selenium)	10
Tl (Thallium)	50

GFAA Initial Calibration Verification

(Meets CLP Second Source Requirements)

CLP-ICV-AA \$ 44 / 50 mL
 At stated conc. (µg/mL) in 5% HNO₃ 6 comps.

Sb (Antimony)	50
As (Arsenic)	25
Cd (Cadmium)	5
Pb (Lead)	25
Se (Selenium)	50
Tl (Thallium)	25

GFAA Mercury Standard for Calibration or Spiking

CLP-HG-AA \$ 44 / 50 mL
 100 µg/mL in 5% HNO₃

Hg (Mercury)

GFAA Postdigestion Spike Solution

(2 x CRDL except for Lead)
CLP-SP2-AA \$ 44 / 50 mL
 At stated conc. (µg/mL) in 5% HNO₃ 6 comps.

Sb (Antimony)	120
As (Arsenic)	20
Cd (Cadmium)	10
Pb (Lead)	20
Se (Selenium)	10
Tl (Thallium)	20

▼ Hazardous fee not required.

GFAA Set

CLP-AA-SET \$ 175 / 5 x 50 mL

CLP-CAL-AA	CLP-HG-AA
CLP-SPI-AA	CLP-SP2-AA
CLP-ICV-AA	



- 99.99% High Purity Starting Materials
- 18 Megohm, ASTM type I de-ionized Water
- Packaged in pre-cleaned high quality HDPE bottles.
- Each Standard is Supplied with a Certificate of Analysis, stating traceability to NIST, certified value and expiration date.
- Final Solution is filtered through a 0.2 µm filter to eliminate contaminants (such as suspended solids and microbes). This extends shelf life and protects your column.
- Ready-To-Use Mixes and Calibration Sets.
- Standards may be used for other "Classical or Wet" methods.



Anions							
Water Matrix	Unit	100 µg/mL		200 µg/mL		1000 µg/mL	
		Cat. No.	Price	Cat. No.	Price	Cat. No.	Price
Acetate	100 mL	IC-ACET-1X-1	\$ 15	-----	--	IC-ACET-10X-1	\$ 45
	500 mL	IC-ACET-1X-5	55	-----	--	IC-ACET-10X-5	70
Br (Bromate)	100 mL	-----	--	-----	--	IC-BROM-10X-1	45
	500 mL	-----	--	-----	--	IC-BROM-10X-5	70
Br (Bromide)	100 mL	IC-BR-1X-1	15	IC-BR-2X-1	\$ 25	IC-BR-10X-1	45
	500 mL	IC-BR-1X-5	55	IC-BR-2X-5	60	IC-BR-10X-5	70
Citrate	100 mL	-----	--	-----	--	IC-CITR-10X-1	45
Chlorate	100 mL	IC-CHLR-1X-1	15	-----	--	IC-CHLR-10X-1	45
	500 mL	IC-CHLR-1X-5	55	-----	--	IC-CHLR-10X-5	70
Cl (Chloride)	100 mL	IC-Cl-1X-1	15	IC-Cl-2X-1	25	IC-Cl-10X-1	45
	500 mL	IC-Cl-1X-5	55	IC-Cl-2X-5	60	IC-Cl-10X-5	70
Chlorite	100 mL	IC-CHLT-1X-1	--	-----	--	IC-CHLT-10X-1	--
Call for availability	500 mL	IC-CHLT-1X-5	--	-----	--	IC-CHLT-10X-5	--
Chromate	100 mL	IC-CHRM-1X-1	15	-----	--	IC-CHRM-10X-1	45
	500 mL	IC-CHRM-1X-5	55	-----	--	IC-CHRM-10X-5	70
F (Fluoride)	100 mL	IC-F-1X-1	15	IC-F-2X-1	25	IC-F-10X-1	45
	500 mL	IC-F-1X-5	55	IC-F-2X-5	60	IC-F-10X-5	70
Formate	100 mL	IC-FORM-1X-1	15	-----	--	IC-FORM-10X-1	45
	500 mL	IC-FORM-1X-5	55	-----	--	IC-FORM-10X-5	70
Glycolate	100 mL	-----	--	-----	--	IC-GLYC-10X-1	45
Iodide	100 mL	-----	--	-----	--	IC-I-10X-1	45
Lactate	100 mL	-----	--	-----	--	IC-LACT-10X-1	45
Malate	100 mL	-----	--	-----	--	IC-MALA-10X-1	45
Maleate	100 mL	-----	--	-----	--	IC-MALE-10X-1	45
NO ₂ (Nitrite)	100 mL	IC-NO2-1X-1	15	IC-NO2-2X-1	25	IC-NO2-10X-1	45
	500 mL	IC-NO2-1X-5	55	IC-NO2-2X-5	60	IC-NO2-10X-5	70
NO ₃ (Nitrate)	100 mL	IC-NO3-1X-1	15	IC-NO3-2X-1	25	IC-NO3-10X-1	45
	500 mL	IC-NO3-1X-5	55	IC-NO3-2X-5	60	IC-NO3-10X-5	70
Oxalate	100 mL	IC-OXAL-1X-1	15	-----	--	IC-OXAL-10X-1	45
	500 mL	IC-OXAL-1X-5	55	-----	--	IC-OXAL-10X-5	70
Perchlorate	100 mL	-----	--	-----	--	IC-PER-10X-1	55
Phthalate	100 mL	-----	--	-----	--	IC-PHTH-10X-1	45
PO ₄ (Phosphate)	100 mL	IC-PO4-1X-1	15	IC-PO4-2X-1	25	IC-PO4-10X-1	45
	500 mL	IC-PO4-1X-5	55	IC-PO4-2X-5	60	IC-PO4-10X-5	70
Propionate	100 mL	-----	--	-----	--	IC-PROP-10X-1	45
Succinate	100 mL	-----	--	-----	--	IC-SUCC-10X-1	45
SO ₄ (Sulfate)	100 mL	IC-SO4-1X-1	15	IC-SO4-2X-1	25	IC-SO4-10X-1	45
	500 mL	IC-SO4-1X-5	55	IC-SO4-2X-5	60	IC-SO4-10X-5	70
Sulfide	20 mL	-----	--	-----	--	IC-SULF-10X-20ML	55
Dilute NaOH, stabilizer	5 x 20 mL	-----	--	-----	--	IC-SULF-10X-20ML-VAP	195
Tartrate	100 mL	-----	--	-----	--	IC-TART-10X-1	45

Anion Kits

IC-AN-1X-1-SET \$ 75 / 7 x 100 mL
 IC-AN-1X-5-SET \$ 285 / 7 x 500 mL

Each at 100 µg/mL in Water

IC-AN-2X-1-SET \$ 130 / 7 x 100 mL
 IC-AN-2X-5-SET \$ 315 / 7 x 500 mL

Each at 200 µg/mL in Water

IC-AN-10X-1-SET \$ 235 / 7 x 100 mL
 IC-AN-10X-5-SET \$ 365 / 7 x 500 mL

Each at 1000 µg/mL in Water

Fluoride	Bromide
Chloride	Phosphate
Nitrite	Sulfate
Nitrate	

Inorganic products containing acid generally require a hazardous shipping fee.

Inorganic products in water generally do not.



Ion Chromatography

Ion Chrom - Ion Singles as the Element

	Unit	100 µg/mL	Price	1000 µg/mL	Price
NO₂-N (Nitrite-Nitrogen)	100 mL	IC-NO2-N-1X-1	\$ 15	IC-NO2-N-10X-1	\$ 45
Water Matrix	500 mL	IC-NO2-N-1X-5	55	IC-NO2-N-10X-5	70
NO₃-N (Nitrate-Nitrogen)	100 mL	IC-NO3-N-1X-1	15	IC-NO3-N-10X-1	45
Water Matrix	500 mL	IC-NO3-N-1X-5	55	IC-NO3-N-10X-5	70
PO₄-P (Phosphate-Phosphorous)	100 mL	IC-PO4-P-1X-1	15	IC-PO4-P-10X-1	45
Water Matrix	500 mL	IC-PO4-P-1X-5	55	IC-PO4-P-10X-5	70
SO₄-S (Sulfate-Sulfur)	100 mL	IC-SO4-S-1X-1	15	IC-SO4-S-10X-1	45
Water Matrix	500 mL	IC-SO4-S-1X-5	55	IC-SO4-S-10X-5	70
NH₄-N (Ammonium-Nitrogen)	100 mL	IC-NH4-N-1X-1	15	IC-NH4-N-10X-1	45
Water Matrix	500 mL	IC-NH4-N-1X-5	55	IC-NH4-N-10X-5	70

Anion Single Kits

IC-AN-R-10X-1-SET	\$ 235 / 7 x 100 mL
IC-AN-R-10X-5-SET	\$ 365 / 7 x 500 mL
<i>Each at 1000 µg/mL</i>	
Fluoride	Bromide
Chloride	Phosphate-Phosphorous
Nitrite-Nitrogen	Sulfate-Sulfur
Nitrate-Nitrogen	

Organic Acid Salt Standard

	Unit	100 µg/mL	Price	1000 µg/mL	Price
Formate	100 mL	IC-FORM-1X-1	\$ 15	IC-FORM-10X-1	\$ 45
Water Matrix	500 mL	IC-FORM-1X-5	55	IC-FORM-10X-5	70
Acetate	100 mL	IC-ACET-1X-1	15	IC-ACET-10X-1	45
Water Matrix	500 mL	IC-ACET-1X-5	55	IC-ACET-10X-5	70
Oxalate	100 mL	IC-OXAL-1X-1	15	IC-OXAL-10X-1	45
Water Matrix	500 mL	IC-OXAL-1X-5	55	IC-OXAL-10X-5	70
Chromate	100 mL	IC-CHRM-1X-1	15	IC-CHRM-10X-1	45
Water Matrix	500 mL	IC-CHRM-1X-5	55	IC-CHRM-10X-5	70

Method 314.0 Perchlorate in Drinking Water by IC

Perchlorate has become an analyte of environmental interest since being detected in a number of drinking and groundwater supplies located in Midwestern states. EPA method 314.0 was released as an approved method to achieve the required sensitivity.

Perchlorate Standard

IC-PER-10X-1 \$ 45 / 100 mL
1000 µg/mL in Water
Perchlorate

Conductivity Meter Calibration Standard

M-314.0-CMCS-1 \$ 35 / 100 mL
1410 µs/cm @ 25 °C in Water

Mixed Common Anion Stock

M-314.0-MCA-250X-1 \$ 150 / 100 mL
25 mg/mL in Water 3 comps.
Chloride
Sulfate
Carbonate

Method 314.0 Perchlorate Calibration Set

M-314.0-SET \$ 205 / 3 x 100 mL
IC-PER-10X-1
M-314.0-MCA-250X-1
M-314.0-CMCS-1



Ion Chrom Eluents

0.5 M Sodium bicarbonate (100X concentrate)	50 mL \$ 45	100 mL \$ 60	5 x 50 mL \$ 180	5 x 100 mL \$ 240
	IC-ELU-01-0.5	IC-ELU-01-1	IC-ELU-01-0.5-PAK	IC-ELU-01-1-PAK
0.5 M Sodium carbonate (100X concentrate)	50 mL \$ 45	100 mL \$ 60	5 x 50 mL \$ 180	5 x 100 mL \$ 240
	IC-ELU-02-0.5	IC-ELU-02-1	IC-ELU-02-0.5-PAK	IC-ELU-02-1-PAK
0.18 M Sodium carbonate/ 0.17 M Sodium bicarbonate (100X concentrate)	50 mL \$ 25	100 mL \$ 30	5 x 50 mL \$ 100	5 x 100 mL \$ 120
	IC-ELU-03-0.5	IC-ELU-03-1	IC-ELU-03-0.5-PAK	IC-ELU-03-1-PAK

Technical Note

Ready to dilute concentrates. Open a fresh bottle and dilute the volume (50 mL to 5 L or 100 mL to 10 L) and be assured of a fresh uncontaminated mobile phase



Anion Mixes

Anion Mix #1

IC-MAN-01-1	\$ 100 / 100 mL
Water Matrix	5 comps.
F (Fluoride)	20 µg/mL
Cl (Chloride)	30 µg/mL
NO ₃ (Nitrate)	100 µg/mL
PO ₄ (Phosphate)	150 µg/mL
SO ₄ (Sulfate)	150 µg/mL

Anion Mix #2

IC-MAN-02-1	\$ 115 / 100 mL
Water Matrix	6 comps.
F (Fluoride)	100 µg/mL
Cl (Chloride)	200 µg/mL
Br (Bromide)	400 µg/mL
NO ₃ (Nitrate)	400 µg/mL
PO ₄ (Phosphate)	600 µg/mL
SO ₄ (Sulfate)	400 µg/mL

Anion Mix #3

IC-MAN-03-1	\$ 75 / 100 mL
Water Matrix	3 comps.
F (Fluoride)	100 µg/mL
Cl (Chloride)	100 µg/mL
SO ₄ (Sulfate)	100 µg/mL

Anion Mix #4

IC-MAN-04-1	\$ 115 / 100 mL
Water Matrix	6 comps.
F (Fluoride)	100 µg/mL
Cl (Chloride)	100 µg/mL
Br (Bromide)	100 µg/mL
NO ₃ (Nitrate)	100 µg/mL
PO ₄ (Phosphate)	100 µg/mL
SO ₄ (Sulfate)	100 µg/mL

Anion Mix #5

IC-MAN-05-R1-1	\$ 85 / 100 mL
Water Matrix	6 comps.
F (Fluoride)	10 µg/mL
Cl (Chloride)	20 µg/mL
Br (Bromide)	20 µg/mL
NO ₃ (Nitrate)	20 µg/mL
PO ₄ (Phosphate)	5 µg/mL
SO ₄ (Sulfate)	30 µg/mL

Anion Mix #6

IC-MAN-06-R1-1	\$ 85 / 100 mL
Water Matrix	6 comps.
F (Fluoride)	1 µg/mL
Cl (Chloride)	5 µg/mL
Br (Bromide)	5 µg/mL
NO ₃ (Nitrate)	5 µg/mL
PO ₄ (Phosphate)	5 µg/mL
SO ₄ (Sulfate)	10 µg/mL

Anion Mix #7

IC-MAN-07-R1-1	\$ 85 / 100 mL
Water Matrix	6 comps.
F (Fluoride)	1 µg/mL
Cl (Chloride)	10 µg/mL
Br (Bromide)	10 µg/mL
NO ₃ (Nitrate)	10 µg/mL
PO ₄ (Phosphate)	10 µg/mL
SO ₄ (Sulfate)	10 µg/mL

Anion Mix #8

IC-MAN-08-R1-1	\$ 85 / 100 mL
Water Matrix	6 comps.
F (Fluoride)	10 µg/mL
Cl (Chloride)	20 µg/mL
Br (Bromide)	20 µg/mL
NO ₃ (Nitrate)	20 µg/mL
PO ₄ (Phosphate)	20 µg/mL
SO ₄ (Sulfate)	20 µg/mL

Anion Mix #9

IC-MAN-09-R1-1	\$ 85 / 100 mL
Water Matrix	6 comps.
F (Fluoride)	20 µg/mL
Cl (Chloride)	40 µg/mL
Br (Bromide)	40 µg/mL
NO ₃ (Nitrate)	40 µg/mL
PO ₄ (Phosphate)	40 µg/mL
SO ₄ (Sulfate)	40 µg/mL

Anion Mix #10

IC-MAN-10-R1-1	\$ 85 / 100 mL
Water Matrix	6 comps.
F (Fluoride)	25 µg/mL
Cl (Chloride)	50 µg/mL
Br (Bromide)	50 µg/mL
NO ₃ (Nitrate)	50 µg/mL
PO ₄ (Phosphate)	50 µg/mL
SO ₄ (Sulfate)	50 µg/mL

Anion Mix #11

IC-MAN-11-1	\$ 175 / 100 mL
Water Matrix	5 comps.
Cl (Chloride)	1000 µg/mL
Br (Bromide)	1000 µg/mL
NO ₃ (Nitrate)	1000 µg/mL
PO ₄ (Phosphate)	1000 µg/mL
SO ₄ (Sulfate)	1000 µg/mL

Anion Mix #12

IC-MAN-12-1	\$ 100 / 100 mL
Water Matrix	5 comps.
Cl (Chloride)	15 µg/mL
Br (Bromide)	15 µg/mL
NO ₃ (Nitrate)	15 µg/mL
PO ₄ (Phosphate)	15 µg/mL
SO ₄ (Sulfate)	15 µg/mL

Anion Mix #13

IC-MAN-13-1	\$ 75 / 100 mL
Water Matrix	3 comps.
F (Fluoride)	25 µg/mL
Cl (Chloride)	50 µg/mL
SO ₄ (Sulfate)	100 µg/mL

Anion Mix #14

IC-MAN-14-R3-1	\$ 100 / 100 mL
Water Matrix	6 comps.
F (Fluoride)	20 µg/mL
Cl (Chloride)	30 µg/mL
Br (Bromide)	100 µg/mL
NO ₃ (Nitrate)	100 µg/mL
PO ₄ (Phosphate)	150 µg/mL
SO ₄ (Sulfate)	150 µg/mL

Anion Mix #14 Revised

IC-MAN-14-R2-1	\$ 100 / 100 mL
Water Matrix	6 comps.
F (Fluoride)	20 µg/mL
Cl (Chloride)	30 µg/mL
Br (Bromide)	100 µg/mL
N-NO ₃ (Nitrogen-Nitrate)	100 µg/mL
P-PO ₄ (Phosphorus-Phosphate)	150 µg/mL
SO ₄ (Sulfate)	150 µg/mL

**Anion Mix #14-R2 plus
IC-NO2-N-1X is perfect
for Method 300.1**

Nitrite

IC-NO2-N-1X-1	\$ 15 / 100 mL
NO ₂ (Nitrite)	100 µg/mL

Dichloroacetate Surrogate Standard

M-300.1-SS	\$ 125 / 100 mL
0.5 mg/mL Dichloroacetate in Water	

Nitrite

IC-NO2-10X-1	\$ 45 / 100 mL
NO ₂ (Nitrite)	1000 µg/mL
IC-NO2-1X-1	\$ 15 / 100 mL
NO ₂ (Nitrite)	100 µg/mL
IC-NO2-0.1X-1	\$ 15 / 100 mL
NO ₂ (Nitrite)	10 µg/mL

Anion Mix #15

IC-MAN-15-R2-1	\$ 70 / 100 mL
Water Matrix	3 comps.
F (Fluoride)	100 µg/mL
NO ₃ (Nitrate)	100 µg/mL
PO ₄ (Phosphate)	100 µg/mL

Anion Mix #16

IC-MAN-16-R1-1	\$ 100 / 100 mL
Water Matrix	6 comps.
F (Fluoride)	100 µg/mL
Cl (Chloride)	200 µg/mL
Br (Bromide)	100 µg/mL
NO ₃ (Nitrate)	20 µg/mL
PO ₄ (Phosphate)	30 µg/mL
SO ₄ (Sulfate)	20 µg/mL

Anion Mix #17

IC-MAN-17-R1-1	\$ 85 / 100 mL
Water Matrix	5 comps.
Cl (Chloride)	20 µg/mL
Br (Bromide)	12 µg/mL
NO ₃ (Nitrate)	12 µg/mL
PO ₄ (Phosphate)	12 µg/mL
SO ₄ (Sulfate)	80 µg/mL

Anion Mix #18

IC-MAN-18-R1-1	\$ 85 / 100 mL
Water Matrix	5 comps.
F (Fluoride)	100 µg/mL
Cl (Chloride)	100 µg/mL
NO ₃ (Nitrate)	100 µg/mL
PO ₄ (Phosphate)	100 µg/mL
SO ₄ (Sulfate)	100 µg/mL

Technical Note

To enhance the shelf life and long term stability of our IC products, Nitrite has been removed from mixes that contain Nitrate.

Technical Note

We offer several Nitrite concentrations that can be added just prior to analysis for maximum stability.



Ion Chromatography

Ion Chrom - Cation Singles

Dilute HNO ₃ Matrix	Unit	100 µg/mL		200 µg/mL		1,000 µg/mL	
		Cat. No.	Price	Cat. No.	Price	Cat. No.	Price
Ca (Calcium)	100 mL	IC-CA-1X-1	\$ 15	IC-CA-2X-1	\$ 25	IC-CA-10X-1	\$ 45
	500 mL	IC-CA-1X-5	55	IC-CA-2X-5	60	IC-CA-10X-5	70
NH ₄ (Ammonium)	100 mL	IC-NH4-1X-1	15	IC-NH4-2X-1	25	IC-NH4-10X-1 †	45
	500 mL	IC-NH4-1X-5	55	IC-NH4-2X-5	60	IC-NH4-10X-5 †	70
Mg (Magnesium)	100 mL	IC-MG-1X-1	15	IC-MG-2X-1	25	IC-MG-10X-1	45
	500 mL	IC-MG-1X-5	55	IC-MG-2X-5	60	IC-MG-10X-5	70
K (Potassium)	100 mL	IC-K-1X-1	15	IC-K-2X-1	25	IC-K-10X-1	45
	500 mL	IC-K-1X-5	55	IC-K-2X-5	60	IC-K-10X-5	70
Na (Sodium)	100 mL	IC-NA-1X-1	15	IC-NA-2X-1	25	IC-NA-10X-1	45
	500 mL	IC-NA-1X-5	55	IC-NA-2X-5	60	IC-NA-10X-5	70
Li (Lithium)	100 mL	IC-LI-1X-1	15	IC-LI-2X-1	25	IC-LI-10X-1	45
	500 mL	IC-LI-1X-5	55	IC-LI-2X-5	60	IC-LI-10X-5	70
Ba (Barium)	100 mL	IC-BA-1X-1	15	IC-BA-2X-1	25	IC-BA-10X-1	45
	500 mL	IC-BA-1X-5	55	IC-BA-2X-5	60	IC-BA-10X-5	70
Sr (Strontium)	100 mL	IC-SR-1X-1	15	IC-SR-2X-1	25	IC-SR-10X-1	45
	500 mL	IC-SR-1X-5	55	IC-SR-2X-5	60	IC-SR-10X-5	70
Sets	8 x 100 mL	IC-CAT-1X-1-SET	75	IC-CAT-2X-1-SET	130	IC-CAT-10X-1-SET	235
Above Listed	8 x 500 mL	IC-CAT-1X-5-SET	285	IC-CAT-2X-5-SET	315	IC-CAT-10X-5-SET	365

† 1,000 µg/mL as Ammonium (NH₄) Other Nitrogen species equivalents are:

NH₃ (Ammonia) = 944 µg/mL N (Nitrogen) = 776 µg/mL

Ion Chrom - Cation Mixes

Cation Mix #1

IC-MCA-01-1 \$ 150 / 100 mL
Dilute HNO₃ 6 comps.

Ca (Calcium) 1000 µg/mL
NH₄ (Ammonium) 400 µg/mL
Mg (Magnesium) 200 µg/mL
K (Potassium) 200 µg/mL
Na (Sodium) 200 µg/mL
Li (Lithium) 50 µg/mL

Cation Mix #2

IC-MCA-02-1 \$ 125 / 100 mL
Dilute HNO₃ 6 comps.

Ca (Calcium) 100 µg/mL
NH₄ (Ammonium) 100 µg/mL
Mg (Magnesium) 100 µg/mL
K (Potassium) 100 µg/mL
Na (Sodium) 100 µg/mL
Li (Lithium) 100 µg/mL

Cation Mix #3

IC-MCA-03-1 \$ 100 / 100 mL
Dilute HNO₃ 4 comps.

Ca (Calcium) 100 µg/mL
K (Potassium) 100 µg/mL
Na (Sodium) 50 µg/mL
Li (Lithium) 10 µg/mL

Cation Mix #4

IC-MCA-04-1 \$ 100 / 100 mL
Dilute HNO₃ 4 comps.

Ca (Calcium) 400 µg/mL
Mg (Magnesium) 200 µg/mL
Ba (Barium) 1600 µg/mL
Sr (Strontium) 600 µg/mL

Cation Mix #5

IC-MCA-05-1 \$ 100 / 100 mL
Dilute HNO₃ 4 comps.

NH₄ (Ammonium) 3 µg/mL
K (Potassium) 6 µg/mL
Na (Sodium) 3 µg/mL
Li (Lithium) 0.5 µg/mL

Cation Mix #6

IC-MCA-06-1 \$ 100 / 100 mL
Dilute HNO₃ 6 comps.

Ca (Calcium) 2 µg/mL
NH₄ (Ammonium) 1.5 µg/mL
Mg (Magnesium) 2 µg/mL
K (Potassium) 2.5 µg/mL
Na (Sodium) 1.5 µg/mL
Li (Lithium) 0.2 µg/mL

Inorganic products containing acid generally require a hazardous shipping fee.

Inorganic products in water generally do not.



Our Wet Chemical Standards are prepared from the highest quality raw material according to ASTM, EPA or "Standard Methods" ¹ procedures. All balances used for preparation are calibrated regularly against NIST traceable weights. Each batch of finished product is analyzed to verify concentration, against NIST standards when possible. All of our Wet Chemical standards are subjected to the same rigorous quality control procedures as our ICP and IC standards.

¹ Standard Methods for the Examination of Water and Wastewater. American Public Health Association, American Water Works Association, Water Environment Federation

Inorganic Constituents

Many of these methods use classical wet chemical methods to determine the components of either potable or wastewater.

Bromide

IC-BR-10X-1 \$ 45 / 100 mL
1000 µg/mL Bromide in Water

Method 300.1 Ion Chrom Standard Revised

IC-MAN-14-R2-1 \$ 100 / 100 mL
Water Matrix 6 comps.

F (Fluoride)	20 µg/mL
Cl (Chloride)	30 µg/mL
Br (Bromide)	100 µg/mL
NO ₃ -N (Nitrate-Nitrogen)	100 µg/mL
PO ₄ -P (Phosphate-Phosphorus)	150 µg/mL
SO ₄ (Sulfate)	150 µg/mL

Technical Note

This product was designed to more closely meet the EPA standard by having the concentrations for the nutrients calculated back to the element rather than the anion.

Dichloroacetate Surrogate Standard

M-300.1-SS \$ 125 / 100 mL
0.5 mg/mL Dichloroacetate in Water

Cyanide

WC-CN-1X-1 ▲ \$ 15 / 100 mL
WC-CN-1X-5 ▲ \$ 55 / 500 mL
100 µg/mL Cyanide in 2% NaOH

WC-CN-10X-1 ▲ \$ 45 / 100 mL
WC-CN-10X-5 ▲ \$ 70 / 500 mL
1000 µg/mL Cyanide in 2% NaOH

Chloride

IC-CL-10X-1 \$ 45 / 100 mL
1000 µg/mL Chloride in Water

Total Residual Chlorine

WC-TRC-10X-10ML \$ 35 / 10 mL
1000 µg/mL Chlorine in Water

Technical Note

This product is shipped in an amber flame sealed ampule for maximum stability.

Fluoride

IC-F-10X-1 \$ 45 / 100 mL
1000 µg/mL Fluoride in Water

Iodide

IC-I-10X-1 \$ 45 / 100 mL
1000 µg/mL Iodide in Water

pH

WC-PH-4-1 \$ 25 / 100 mL
WC-PH-4-5 \$ 60 / 500 mL
pH of 4.0 in Water

WC-PH-7-1 \$ 25 / 100 mL
WC-PH-7-5 \$ 60 / 500 mL
pH of 7.0 in Water

WC-PH-10-1 \$ 25 / 100 mL
WC-PH-10-5 \$ 60 / 500 mL
pH of 10.0 in Water

Phosphorus - Total

IC-PO4-P-10X-1 \$ 45 / 100 mL
1000 µg/mL Phosphorus in Water

Technical Note

Can also be used for ortho-phosphate analysis.

▲ Hazardous fee require

Technical Note

Nitrogen Species are all calculated back to Nitrogen - Not the Anion or Cation species.

Nitrogen - Ammonium

IC-NH4-N-10X-1 \$ 45 / 100 mL
1000 µg/mL Ammonium-Nitrogen in Water

Nitrogen - Nitrite

IC-NO2-N-10X-1 \$ 45 / 100 mL
1000 µg/mL Nitrite-Nitrogen in Water

Nitrogen - Nitrate

IC-NO3-N-10X-1 \$ 45 / 100 mL
1000 µg/mL Nitrate-Nitrogen in Water

Silica

WC-SIO2-10X-1 \$ 45 / 100 mL
1000 µg/mL as Silica (SiO₂) in Water tr. HF

Sulfate

IC-SO4-10X-1 \$ 45 / 100 mL
1000 µg/mL Sulfate (SO₄) in Water

Hexavalent Chromium

WC-HEX-10X-1 \$ 45 / 100 mL
1000 µg/mL in Water

Standards of Interest

Anions available in additional concentrations, see page 358 for complete product listing.

Physical & Aggregate Properties

These Standards are concerned primarily with measuring actual physical characteristics of a sample as opposed to the chemical characteristics. These analytes are measured frequently in both drinking and waste waters.

Turbidity

WC-TURB-4X-1 \$ 45 / 100 mL
400 NTU non-ratio Turbidity Standard

A stable solution of microspheres in an aqueous matrix. Can be diluted in turbidity free water to make a calibration curve. Do not shake prior to use.

Alkalinity

WC-ALK-10X-1 \$ 25 / 100 mL
1000 µg/mL CaCO₃ to pH 4.5

Hardness

WC-HARD-10X-1 \$ 45 / 100 mL
1000 µg/mL equivalent CaCO₃

A combination of Ca and Mg to give an approximate concentration of 1000 µg/mL CaCO₃. Hardness µg/mL equivalent CaCO₃ = 2.497 [Ca µg/mL] + 4.118 [Mg µg/mL]

Conductivity

WC-COND-10X-1 \$ 25 / 100 mL
1000 µmhos in Water

Solids

WC-SOL \$ 30 / sample
2 comps.
1000 ppm TSS (Total Suspended Solids) and 1000 ppm TDS (Total Dissolved Solids) for a 2000 ppm TS (Total Solids).

Dilute to 100 mL. Rinse vial and cap several times to recover all solids.

Methylene Blue Activated Substance (MBAS)

WC-MBAS-R1-10X-1 \$ 35 / 100 mL
1000 µg/mL in Water



Wet Chemicals

Aggregate Organic

Rather than determining individual organic analytes, these Standards are used to determine organic matter in broad categories, based primarily on how they react.

Biochemical Oxygen Demand (BOD)

WC-BOD-10ML \$ 25 / 10 mL
100 µg/mL BOD (After Dilution)

75 mg/L glucose and 75 mg / L glutamic acid provided in a flame sealed ampule. Dilute to 1L immediately before use.

Absorbable Organic Halogens (AOX)

WC-AOX-2X-1 \$ 45 / 100 mL
200 µg/mL Chlorine in Water

Chemical Oxygen Demand (COD)

WC-COD-5X-10ML \$ 25 / 10 mL
500 µg/mL COD in water

Total Organic Carbon (TOC)

WC-TOC-10X-1 \$ 25 / 100 mL
1000 µg/mL TOC in water, tr. H₂SO₄

Total Inorganic Carbon (TIC)

WC-TIC-10X-1 \$ 25 / 100 mL
1000 µg/mL Total Inorganic Carbon in Water

Total Organic Halides (TOX)

WC-TOX-10X-1 \$ 25 / 1 mL
WC-TOX-10X-1-PAK **SAVE 20%** \$ 100 / 5 x 1 mL
1000 µg/mL in MeOH

Total Organic Nitrogen (TON)

WC-TON-10X-1 \$ 45 / 100 mL
1000 µg/mL Total Organic Nitrogen in Water

Total Kjeldahl Nitrogen (TKN)

WC-TKN-10X-1 \$ 45 / 100 mL
1000 µg/mL Total Kjeldahl Nitrogen in Water

Oil and Grease

WC-OILG-10X-1 ▲ \$ 45 / 100 mL
1000 µg/mL Total Oil and Grease in n-Propanol

Contains 500 µg/mL vegetable oil and 500 µg/mL of petroleum oil. Shake well before use.

Phenols

WC-PHEN-10X-1 \$ 45 / 100 mL
1000 µg/mL Phenol in water.

▲ Hazardous fee required

Inorganic products containing acid generally require a hazardous shipping fee.

Inorganic products in water generally do not.





Method 1664 Oil, Grease & Total Petroleum Hydrocarbon (TPH)

Precision and Recovery (PAR) Spiking Solution

M-1664-5ML	\$ 15 / 1 x 5 mL
M-1664-5ML-PAK	SAVE 20% \$ 60 / 5 x 5 mL
4.0 mg/mL each in Acetone	2 comps.
M-1664-20ML	\$ 25 / 1 x 20 mL
M-1664-20ML-PAK	SAVE 20% \$ 100 / 5 x 20 mL
4.0 mg/mL each in Acetone	2 comps.
Hexadecane	Stearic acid

Technical Note

This Precision and Recovery (PAR) Spiking Solution was developed for Method 1664. This performance based method was developed to replace previous gravimetric procedures incorporating Freon-113 as the extraction solvent for the determination of Oil and Grease and Total Petroleum Hydrocarbons. Each standard is packaged in a flame sealed ampule conveniently sized for quality control of the analytical batch.

Method 413.2 & 418.1 Total Petroleum Hydrocarbon Analysis by IR

Oil, Grease & Petroleum Hydrocarbon Concentrates Mix

M-418-CON	\$ 35 / 1 x 1 mL
% by volume	3 comps.
Chlorobenzene (25.0)	Hexadecane (37.5)
Isooctane (37.5)	

Oil, Grease and Petroleum Hydrocarbon Total Recoverable (IR Method)

M-418	\$ 30 / 1 x 1 mL
M-418-PAK	SAVE 20% \$ 120 / 5 x 1 mL
Total 4.15 mg/mL in Freon 113, (Parts by volume)	3 comps.
Chlorobenzene (10.0)	Isooctane (15.0)
n-Hexadecane (15.0)	

Method 8440 Total Petroleum Hydrocarbon Analysis

Total Recoverable Petroleum Hydrocarbon Mix

M-8440	\$ 20 / 1 x 1 mL
M-8440-PAK	SAVE 20% \$ 80 / 5 x 1 mL
At stated conc. in Tetrachloroethene	3 comps.
Chlorobenzene (0.10 w/w %)	Isooctane (0.15 w/w %)
n-Hexadecane (0.15 w/w %)	

Total Petroleum Hydrocarbon Concentrate Mix

M-8440-CON	\$ 30 / 1 x 1 mL
M-8440-CON-PAK	SAVE 20% \$ 120 / 5 x 1 mL
	3 comps.
Chlorobenzene (25.0 vol %)	Isooctane (37.5 vol %)
n-Hexadecane (37.5 vol %)	

Silica Gel Cleanup Calibration Solution

M-8440-SGC	\$ 10 / 1 x 1 mL
M-8440-SGC-PAK	SAVE 20% \$ 40 / 5 x 1 mL
10.0 mg/mL in Tetrachloroethene	
Corn Oil	

Standards of Interest

AccuStandard offers the widest selection of Petroleum standards. These TPH oil analysis standards are a sample of the hundreds in our Fuel and Hydrocarbon section.

Custom Formulations

Fast Turnaround

**20-Plus Years Custom
Formulation Experience**

**Custom Standards are a cost
and time saving alternative**



Certification

- Concentrations are certified gravimetrically and QC verified instrumentally.
- Traceable to NIST wherever possible.
- Each component within $\pm 0.5\%$ of the requested value unless otherwise stated on the Certificate of Analysis.
- Certificate of Analysis documents the certified gravimetric values.
- 18 month expiration period for most products.

Preparation

- Balances used are calibrated against NIST traceable weights.
- Solutions diluted to volume using Class A glassware.
- Highest purity raw materials and acids used.
- Packaged in pre-cleaned bottles.

Packaging Options

- Discounted pricing for bulk quantities.
- 5 x 100 mL or 1 x 500 mL minimum purchase.

Contact Inorganic Technical Service for inquiries

**You Set the Standards
We make them!®**



Multi-Element Contents

- Traceable to NIST Reference Materials
- Formulated from Ultra High Purity Starting Materials, Water & Acids
- Meets EPA and Customer Applications
- Concentration Verified by Wet Chemical and Instrumental Analysis
- Packaged in Specially prepared Acid Leached Bottles
- Full Documentation



Inorganic products containing acid generally require a hazardous shipping fee.
Inorganic products in water generally do not.

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ICP

Multi-Element QC & Second Source QC

Quality Control Standards

Quality Control Standards can be used for many different applications. AccuTrace QC Standards are ideal for calibration when performing NPDES monitoring requirements and can be used for standard curve checks, inter-element correction methods, interference checks or any other unique application.

QC Standard #1

QCS-01-1 \$ 182 / 100 mL
QCS-01-5 \$ 354 / 500 mL
 100 µg/mL each in 5% HNO₃ tr. HF 23 comps.

Sb (Antimony)	Mn (Manganese)
As (Arsenic)	Mo (Molybdenum)
Be (Beryllium)	Ni (Nickel)
Cd (Cadmium)	P (Phosphorus)
Ca (Calcium)	Se (Selenium)
Cr (Chromium)	Sr (Strontium)
Co (Cobalt)	Tl (Thallium)
Cu (Copper)	Sn (Tin)
Fe (Iron)	Ti (Titanium)
Pb (Lead)	V (Vanadium)
Li (Lithium)	Zn (Zinc)
Mg (Magnesium)	

QC Standard #2

QCS-02-1 \$ 89 / 100 mL
QCS-02-5 \$ 174 / 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ tr. HF 7 comps

Al (Aluminum)	100
Ba (Barium)	100
B (Boron)	100
K (Potassium)	1000
Si (Silicon) †	500
Ag (Silver)	50
Na (Sodium)	100

† 1070 µg/mL as SiO₂

QC Standard #2R

QCS-02-R1-1 \$ 89 / 100 mL
QCS-02-R1-5 \$ 174 / 500 mL
 100 µg/mL each in 5% HNO₃ tr. HF 7 comps.

Al (Aluminum)	Si (Silicon) †
Ba (Barium)	Ag (Silver)
B (Boron)	Na (Sodium)
K (Potassium)	† 214 µg/mL as SiO ₂

QC Standard #3

QCS-03-1 \$ 135 / 100 mL
QCS-03-5 \$ 264 / 500 mL
 100 µg/mL each in 5% HNO₃ 15 comps.

Al (Aluminum)	Pb (Lead)
Ba (Barium)	Mg (Magnesium)
Cd (Cadmium)	Mn (Manganese)
Ca (Calcium)	Ni (Nickel)
Cr (Chromium)	Na (Sodium)
Co (Cobalt)	Ti (Titanium)
Cu (Copper)	Zn (Zinc)
Fe (Iron)	

QC Standard #4

QCS-04-1 \$ 176 / 100 mL
 At stated conc. (µg/mL) in 5% HNO₃ 19 comps.

Al (Aluminum)	100
Ba (Barium)	5
Be (Beryllium)	1
Bi (Bismuth)	200
B (Boron)	15
Cd (Cadmium)	20
Cr (Chromium)	25
Co (Cobalt)	20
Cu (Copper)	20
Ga (Gallium)	150
In (Indium)	200
Fe (Iron)	15
Pb (Lead)	200
Mn (Manganese)	5
Ni (Nickel)	50
Ag (Silver)	50
Sr (Strontium)	1
Tl (Thallium)	40
Zn (Zinc)	20

QC Standard #5

QCS-05-1 \$ 109 / 100 mL
 At stated conc. (µg/mL) in 2% HNO₃ 3 comps.

Li (Lithium)	250
K (Potassium)	10,000
Na (Sodium)	1000

QC Standard #6

QCS-06-1 \$ 109 / 100 mL
 1000 µg/mL each in 2% HNO₃ 4 comps.

Ba (Barium)	Mg (Magnesium)
Ca (Calcium)	Sr (Strontium)

Quality Control Standards Sets

QCS-1-SET \$ 325 / 3 x 100 mL
 QCS-01-1 QCS-02-1 QCS-03-1

QCS-5-SET \$ 635 / 3 x 500 mL
 QCS-01-5 QCS-02-5 QCS-03-5

QCS-R1-1-SET \$ 325 / 3 x 100 mL
 QCS-01-1 QCS-02-R1-1 QCS-03-1

QCS-R1-5-SET \$ 635 / 3 x 500 mL
 QCS-01-5 QCS-02-R1-5 QCS-03-5



Second Source QC Standards

These Alternative Source Standards exactly match a formulation from another source you may be already using. These formulations save you the cost of a custom formulation by providing you with true independent lots.

- NIST Traceable
- Independent Lots
- Exact Match

Second Source QC Standard #1

QCS-ASL-7-1 \$ 85 / 1 x 100 mL
QCS-ASL-7-5 \$ 165 / 1 x 500 mL
 At stated conc. (µg/mL) in 2-5% HNO₃ tr. HF 7 comps.

Al (Aluminum)	100
Ba (Barium)	100
B (Boron)	100
K (Potassium)	1000
Si (Silicon)	50
Ag (Silver)	100
Na (Sodium)	100

Second Source QC Standard #2

QCS-ASL-21-1 \$ 190 / 1 x 100 mL
QCS-ASL-21-5 \$ 370 / 1 x 500 mL
 100 µg/mL each in 2-5% HNO₃ tr. HF 21 comps.

Sb (Antimony)	Mg (Magnesium)
As (Arsenic)	Mn (Manganese)
Be (Beryllium)	Mo (Molybdenum)
Cd (Cadmium)	Ni (Nickel)
Ca (Calcium)	Se (Selenium)
Cr (Chromium)	Sr (Strontium)
Co (Cobalt)	Tl (Thallium)
Cu (Copper)	Ti (Titanium)
Fe (Iron)	V (Vanadium)
Pb (Lead)	Zn (Zinc)
Li (Lithium)	

Second Source QC Standard #3

QCS-ASL-19-1 \$ 175 / 1 x 100 mL
QCS-ASL-19-5 \$ 360 / 1 x 500 mL
 100 µg/mL each in 2-5% HNO₃ tr. HF 19 comps.

Sb (Antimony)	Mg (Magnesium)
As (Arsenic)	Mn (Manganese)
Be (Beryllium)	Mo (Molybdenum)
Cd (Cadmium)	Ni (Nickel)
Ca (Calcium)	Se (Selenium)
Cr (Chromium)	Tl (Thallium)
Co (Cobalt)	Ti (Titanium)
Cu (Copper)	V (Vanadium)
Fe (Iron)	Zn (Zinc)
Pb (Lead)	

Match Other Supplier's Products.
 Use as a **True Second Source.**



Instrument Check Standards

These instrument check standards are used to verify ICP instrumentation performance over specific wavelength ranges from 160 nm to 790 nm. These standards are ideal for method development, technician training and other calibration uses.

Instrument Check Standard #1

ICS-01-1 \$ 90 / 100 mL
ICS-01-5 \$ 175 / 500 mL

At stated conc. (µg/mL) in 2% HNO₃ 9 comps.

Al (Aluminum)	100
Ba (Barium)	10
Be (Beryllium)	10
B (Boron)	100
Ca (Calcium)	10
Ni (Nickel)	100
P (Phosphorus)	1000
Sc (Scandium)	10
Zn (Zinc)	100

Instrument Check Standard #2

ICS-02-1 \$ 77 / 100 mL
ICS-02-5 \$ 150 / 500 mL

At stated conc. (µg/mL) in 2% HNO₃ 7 comps.

Ba (Barium)	50
Be (Beryllium)	20
La (Lanthanum)	20
Mn (Manganese)	20
Ni (Nickel)	20
Sc (Scandium)	20
Zn (Zinc)	20

Instrument Check Standard #3

ICS-03-1 \$ 104 / 100 mL
ICS-03-5 \$ 202 / 500 mL

At stated conc. (µg/mL) in 2% HNO₃ tr. HF 11 comps.

As (Arsenic)	20
La (Lanthanum)	20
Li (Lithium)	20
Mn (Manganese)	20
Mo (Molybdenum)	20
Ni (Nickel)	20
P (Phosphorus)	100
K (Potassium)	100
Sc (Scandium)	20
Na (Sodium)	20
S (Sulfur)	100

Instrument Check Standard #4

ICS-04-1 \$ 112 / 100 mL
ICS-04-5 \$ 218 / 500 mL

At stated conc. (µg/mL) in 2% HNO₃ 12 comps.

Al (Aluminum)	100
As (Arsenic)	100
Ba (Barium)	10
Cu (Copper)	100
Pb (Lead)	100
Mn (Manganese)	100
Ni (Nickel)	100
P (Phosphorus)	100
K (Potassium)	500
Sc (Scandium)	100
Na (Sodium)	100
Zn (Zinc)	100

Instrument Check Standard #5

ICS-05-1 \$ 134 / 100 mL
ICS-05-5 \$ 261 / 500 mL

At stated conc. (µg/mL) in 2% HNO₃ 15 comps.

Al (Aluminum)	100
As (Arsenic)	100
Cd (Cadmium)	100
Cr (Chromium)	100
Co (Cobalt)	100
Cu (Copper)	100
Fe (Iron)	100
Pb (Lead)	100
Mg (Magnesium)	100
Mn (Manganese)	100
Ni (Nickel)	100
K (Potassium)	100
Na (Sodium)	100
Y (Yttrium)	600
Zn (Zinc)	100

Instrument Check Standard #6

ICS-06-1 \$ 86 / 100 mL
ICS-06-5 \$ 168 / 500 mL

50 µg/mL each in 2% HNO₃ 9 comps.

Al (Aluminum)	Pb (Lead)
As (Arsenic)	P (Phosphorus)
Cr (Chromium)	K (Potassium)
Co (Cobalt)	Na (Sodium)
Cu (Copper)	

Instrument Check Standard #7

ICS-07-1 \$ 90 / 100 mL
ICS-07-5 \$ 175 / 500 mL

At stated conc. (µg/mL) in 2% HNO₃ 7 comps.

Al (Aluminum)	50
Ba (Barium)	50
Cd (Cadmium)	50
Cu (Copper)	50
Mn (Manganese)	50
K (Potassium)	500
Zn (Zinc)	50

Screening Standards

These four Qualitative Standards can be combined to scan samples quickly and easily for elements present. They should be used for element identification only. The concentration of each element is approximately 10 µg/mL. To screen for all 68 elements these 4 semi-quantitative standards can be blended together and used immediately.

Semi-Quantitative Standard #1

SQS-01-1 \$ 175 / 1 x 100 mL

10 µg/mL each in 2-5% HNO₃ tr. HF 33 comps.

Al (Aluminum)	Na (Sodium)
As (Arsenic)	Nd (Neodymium)
Ba (Barium)	P (Phosphorus)
Bi (Bismuth)	Pb (Lead)
Ca (Calcium)	Pr (Praseodymium)
Cd (Cadmium)	Sc (Scandium)
Ce (Cerium)	Se (Selenium)
Dy (Dysprosium)	Sm (Samarium)
Er (Erbium)	Sr (Strontium)
Eu (Europium)	Tb (Terbium)
Ga (Gallium)	Th (Thorium)
Gd (Gadolinium)	Tl (Thallium)
Ho (Holmium)	Tm (Thulium)
In (Indium)	U (Uranium)
La (Lanthanum)	Y (Yttrium)
Lu (Lutetium)	Yb (Ytterbium)
Mg (Magnesium)	

Semi-Quantitative Standard #2

SQS-02-R1-1 \$ 175 / 1 x 100 mL

10 µg/mL each in 2-5% HNO₃ tr. HCl tr. HF 33 comps.

B (Boron)	Pt (Platinum)
Be (Beryllium)	Rb (Rubidium)
Co (Cobalt)	Re (Rhenium)
Cr (Chromium)	Rh (Rhodium)
Cs (Cesium)	Ru (Ruthenium)
Cu (Copper)	S (Sulfur)
Fe (Iron)	Sb (Antimony)
Ge (Germanium)	Si (Silicon)
Hf (Hafnium)	Sn (Tin)
Ir (Iridium)	Ta (Tantalum)
K (Potassium)	Te (Tellurium)
Li (Lithium)	Ti (Titanium)
Mn (Manganese)	V (Vanadium)
Mo (Molybdenum)	W (Tungsten)
Nb (Niobium)	Zn (Zinc)
Ni (Nickel)	Zr (Zirconium)
Pd (Palladium)	

Semi-Quantitative Standard #3

SQS-03-1 \$ 45 / 1 x 100 mL

10 µg/mL each in 2-5% HNO₃ 2 comps.

Hg (Mercury)	Ag (Silver)
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Semi-Quantitative Standard #4

SQS-04-1 \$ 45 / 1 x 100 mL

10 µg/mL each in 5% HNO₃

Au (Gold)

Screening Standard Set

SQS-R1-1-SET \$ 352 / 4 x 100 mL

SQS-01-1 SQS-02-R1-1
SQS-03-1 SQS-04-1

Technical Note

To verify screening results, use single element standards to confirm and quantify the concentration.



ICP

SDWA (Safe Drinking Water Act) Standards

SDWA Standards

For use in SW-846, Method 1310 and U.S. NPDR 40CFR Part 141. The three Drinking Water Standards are used for monitoring drinking water and/or ground and surface water.

Primary Drinking Water Metals

SDWA-01-1 \$ 85 / 100 mL

SDWA-01-5 \$ 165 / 500 mL

At stated conc. (µg/mL) in 2% HNO₃ 7 comps.

As (Arsenic)	10
Ba (Barium)	100
Cd (Cadmium)	5
Cr (Chromium)	10
Pb (Lead)	10
Se (Selenium)	5
Ag (Silver)	10

Secondary Drinking Water Metals

SDWA-02-1 \$ 72 / 100 mL

SDWA-02-5 \$ 139 / 500 mL

At stated conc. (µg/mL) in 2% HNO₃ 4 comps.

Cu (Copper)	100
Fe (Iron)	30
Mn (Manganese)	5
Zn (Zinc)	500

Mercury Solution

SDWA-03-1 \$ 34 / 100 mL

SDWA-03-5 \$ 67 / 500 mL

10 µg/mL in 5% HNO₃

Hg (Mercury)

Drinking Water Sets

SDWA-1-SET \$ 154 / 3 x 100 mL

SDWA-01-1 SDWA-02-1 SDWA-03-1

SDWA-5-SET \$ 298 / 3 x 500 mL

SDWA-01-5 SDWA-02-5 SDWA-03-5

Standards for Analytes covered in the Safe Drinking Water Act (SDWA)

Primary Metals for Analysis by ICP

Contains all approved elements

SDWA-04-1 \$ 95 / 100 mL

SDWA-04-5 \$ 185 / 500 mL

At stated conc. (µg/mL) in 2-5% HNO₃ 9 comps.

As (Arsenic)	100
Ba (Barium)	10
Be (Beryllium)	10
Cd (Cadmium)	10
Ca (Calcium)	100
Cr (Chromium)	10
Cu (Copper)	10
Ni (Nickel)	10
Na (Sodium)	100

Primary Metals for Analysis by ICP-MS

Contains all approved elements

SDWA-06-MS-1 \$ 115 / 100 mL

SDWA-06-MS-5 \$ 225 / 500 mL

10 µg/mL each in 2% HNO₃ 11 comps.

Sb (Antimony)	Cu (Copper)
As (Arsenic)	Pb (Lead)
Ba (Barium)	Ni (Nickel)
Be (Beryllium)	Se (Selenium)
Cd (Cadmium)	Tl (Thallium)
Cr (Chromium)	

Primary Metals for Analysis by GFAA/ICP/ICP-MS

SDWA-07-1 \$ 135 / 100 mL

SDWA-07-5 \$ 264 / 500 mL

At stated conc. (µg/mL) in 2% HNO₃ tr. HF 14 comps.

Sb (Antimony)	100
As (Arsenic)	100
Ba (Barium)	10
Be (Beryllium)	10
Cd (Cadmium)	10
Ca (Calcium)	100
Cr (Chromium)	10
Cu (Copper)	10
Pb (Lead)	10
Ni (Nickel)	10
Se (Selenium)	10
Si (Silicon) †	100
Na (Sodium)	100
Tl (Thallium)	10

† 214 µg/mL as SiO₂

Secondary Metals for Analysis by GFAA/ICP/ICP-MS

SDWA-08-1 \$ 75 / 100 mL

SDWA-08-5 \$ 146 / 500 mL

At stated conc. (µg/mL) in 2-5% HNO₃ 5 comps.

Al (Aluminum)	10
Fe (Iron)	100
Mn (Manganese)	10
Ag (Silver)	10
Zn (Zinc)	10

Primary & Secondary Metals for Analysis by GFAA/ICP/ICP-MS

Contains all Primary & Secondary Metals

SDWA-09-1 \$ 195 / 100 mL

SDWA-09-5 \$ 370 / 500 mL

At stated conc. (µg/mL) in 2% HNO₃ 19 comps.

Al (Aluminum)	10
Sb (Antimony)	100
As (Arsenic)	100
Ba (Barium)	10
Be (Beryllium)	10
Cd (Cadmium)	10
Ca (Calcium)	100
Cr (Chromium)	10
Cu (Copper)	10
Fe (Iron)	100
Pb (Lead)	10
Mn (Manganese)	10
Ni (Nickel)	10
Se (Selenium)	10
Si (Silicon) †	100
Ag (Silver)	10
Na (Sodium)	100
Tl (Thallium)	10
Zn (Zinc)	10

† 214 µg/mL as SiO₂

Inorganic products containing acid generally require a hazardous shipping fee.

Inorganic products in water generally do not.



Groundwater & Wastewater Standards

Trace Metals I, II, III

Trace Metals I

WPTM-01-1 \$ 140 / 100 mL
WPTM-01-5 \$ 273 / 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 15 comps.

Al (Aluminum)	500
As (Arsenic)	100
Be (Beryllium)	100
Cd (Cadmium)	25
Cr (Chromium)	100
Co (Cobalt)	100
Cu (Copper)	100
Fe (Iron)	100
Pb (Lead)	100
Mn (Manganese)	100
Hg (Mercury)	5
Ni (Nickel)	100
Se (Selenium)	25
V (Vanadium)	250
Zn (Zinc)	100

Trace Metals II

WPTM-02-1 \$ 64 / 100 mL
WPTM-02-5 \$ 123 / 500 mL
 At stated conc. (µg/mL) in 2% HNO₃ 3 comps.

Sb (Antimony)	20
Ag (Silver)	10
Tl (Thallium)	20

Trace Metal Sets

WPTM-1-SET \$ 230 / 3 x 100 mL
 WPTM-01-1 WPTM-03-1
 WPTM-02-1
WPTM-5-SET \$ 445 / 3 x 500 mL
 WPTM-01-5 WPTM-03-5
 WPTM-02-5

Trace Metals III

WPTM-03-1 \$ 85 / 100 mL
WPTM-03-5 \$ 165 / 500 mL
 At stated conc. (µg/mL) in 2% HNO₃ tr. HF 6 comps.

Ba (Barium)	500
Ca (Calcium)	500
Mg (Magnesium)	100
Mo (Molybdenum)	500
K (Potassium)	100
Na (Sodium)	500

Alternate Metals for Groundwater and Wastewater Analysis

Alternate Metals I

WPAM-01-1 \$ 105 / 100 mL
WPAM-01-5 \$ 200 / 500 mL
 At stated conc. (µg/mL) in 2% HNO₃ 11 comps.

Al (Aluminum)	20
Sb (Antimony)	5
Be (Beryllium)	5
Co (Cobalt)	10
Cu (Copper)	10
Fe (Iron)	20
Mn (Manganese)	10
Ni (Nickel)	10
Tl (Thallium)	5
V (Vanadium)	20
Zn (Zinc)	10

Alternate Metals III

WPAM-03-1 \$ 65 / 100 mL
WPAM-03-5 \$ 125 / 500 mL
 At stated conc. (µg/mL) in 2% HNO₃ 4 comps.

Ca (Calcium)	500
Mg (Magnesium)	100
K (Potassium)	100
Na (Sodium)	500

Alternate Trace Metal Sets

WPAM-1-SET \$ 133 / 2 x 100 mL
 WPAM-01-1 WPAM-03-1
WPAM-5-SET \$ 260 / 2 x 500 mL
 WPAM-01-5 WPAM-03-5

TCLP Multi-Element Calibration Standards

For use in SW-846, Method 1311 Toxicity Characteristic Leaching Procedure

TCLP Standard #1

TCLP-01-1 \$ 98 / 100 mL
TCLP-01-5 \$ 190 / 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 7 comps.

As (Arsenic)	25
Ba (Barium)	500
Cd (Cadmium)	5
Cr (Chromium)	25
Pb (Lead)	25
Se (Selenium)	5
Ag (Silver)	25

TCLP Standard for ICP

TCLP-ICP-1 \$ 68 / 100 mL
TCLP-ICP-5 \$ 132 / 500 mL
 At stated conc. (µg/mL) in 2% HNO₃ 4 comps.

Ba (Barium)	500
Cd (Cadmium)	5
Cr (Chromium)	25
Ag (Silver)	25

TCLP Standard for GFAA

TCLP-GFAA-1 \$ 50 / 100 mL
TCLP-GFAA-5 \$ 110 / 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 3 comps.

As (Arsenic)	25
Pb (Lead)	25
Se (Selenium)	5

TCLP Standard #2

For Mercury Analysis using ICP or Cold Vapor AA

TCLP-02-1 \$ 34 / 100 mL
TCLP-02-5 \$ 67 / 500 mL
 20 µg/mL in 5% HNO₃

Hg (Mercury)



ICP

MISA Test Group 29

MISA Test Group 29 Analysis Calibration Standards

For use in MISA Test Group 29 Analysis or general use standards. Set of six standards contains 69 elements at 100 µg/mL each. Ideal for the laboratory that wants to analyze for everything.

MISA Standard 1

Rare Earth Metals

MISA-01-1 \$ 125 / 100 mL
100 µg/mL each in 5% HNO₃ 18 comps.

Ce (Cerium)	Pr (Praseodymium)
Dy (Dysprosium)	Sc (Scandium)
Er (Erbium)	Sm (Samarium)
Eu (Europium)	Tb (Terbium)
Gd (Gadolinium)	Th (Thorium)
Ho (Holmium)	Tm (Thulium)
La (Lanthanum)	U (Uranium)
Lu (Lutetium)	Yb (Ytterbium)
Nd (Neodymium)	Y (Yttrium)

MISA Standard 2

Precious Metals

MISA-02-1 \$ 125 / 100 mL
100 µg/mL each in 10% HCl 6 comps.

Au (Gold)	Pt (Platinum)
Ir (Iridium)	Rh (Rhodium)
Pd (Palladium)	Ru (Ruthenium)

MISA Standard 3

Tellurium

MISA-03-1 \$ 34 / 100 mL
100 µg/mL in 10% HCl

Te (Tellurium)

MISA Standard 4

Alkali, Alkaline Earth, Non-Transition Group

MISA-04-1 \$ 125 / 100 mL
100 µg/mL each in 10% HNO₃ 16 comps.

Al (Aluminum)	In (Indium)
As (Arsenic)	Li (Lithium)
Ba (Barium)	Mg (Magnesium)
Be (Beryllium)	K (Potassium)
Bi (Bismuth)	Rb (Rubidium)
Ca (Calcium)	Se (Selenium)
Cs (Cesium)	Na (Sodium)
Ga (Gallium)	Sr (Strontium)

MISA Standard 5

Fluoride Soluble Group

MISA-05-1 \$ 125 / 100 mL
100 µg/mL each in 5% HNO₃ tr. HF 15 comps.

Sb (Antimony)	Si (Silicon)
B (Boron)	S (Sulfur)
Ge (Germanium)	Ta (Tantalum)
Hf (Hafnium)	Sn (Tin)
Mo (Molybdenum)	Ti (Titanium)
Nb (Niobium)	W (Tungsten)
P (Phosphorus)	Zr (Zirconium)
Re (Rhenium)	

MISA Standard 6

Transition Metals

MISA-06-1 \$ 125 / 100 mL
100 µg/mL each in 10% HNO₃ 13 comps.

Cd (Cadmium)	Hg (Mercury)
Co (Cobalt)	Ni (Nickel)
Cu (Copper)	Ag (Silver)
Cr (Chromium)	Tl (Thallium)
Fe (Iron)	V (Vanadium)
Pb (Lead)	Zn (Zinc)
Mn (Manganese)	

MISA Calibration Set

MISA-1-SET \$ 525 / 6 x 100 mL

MISA-01-1	MISA-03-1	MISA-05-1
MISA-02-1	MISA-04-1	MISA-06-1

Calibration and Matrix Blanks

Nitric Acid Blank

CLP-BLN-5 \$ 30 / 500 mL
CLP-BLN-L-VAP \$ 45 / 1 L
(2 x 500 mL)

5% HNO₃ in 18 Megohm ASTM Type I deionized Water

Mixed Acid Blank

CLP-BLMA-5 \$ 30 / 500 mL
CLP-BLMA-L-VAP \$ 45 / 1 L
(2 x 500 mL)

5% HCl + 1% HNO₃ in 18 Megohm ASTM Type I deionized Water

Hydrochloric Acid Blank

CLP-BLH-5 \$ 30 / 500 mL
CLP-BLH-L-VAP \$ 45 / 1 L
(2 x 500 mL)

5% HCl in 18 Megohm ASTM Type I deionized Water

Water Blank

CLP-BLW-5 ▼ \$ 30 / 500 mL
CLP-BLW-L-VAP ▼ \$ 40 / 1 L
(2 x 500 mL)

18 Megohm ASTM Type I deionized Water

▼ Hazardous fee not required.





Calibration Check Standards

Calibration Standard #1

CLP-CAL-01-1 \$ 110 / 100 mL
5000 µg/mL each in 5% HNO₃ 4 comps.

Ca (Calcium)	K (Potassium)
Mg (Magnesium)	Na (Sodium)

Calibration Standard #2

CLP-CAL-02-1 \$ 75 / 100 mL
At stated conc. (µg/mL) in 5% HNO₃ 5 comps.

Cr (Chromium)	100
Mn (Manganese)	150
Ni (Nickel)	400
Ag (Silver)	100
Zn (Zinc)	200

CLP Calibration Standard Set

CLP-CAL-1-SET \$ 375 / 7 x 100 mL

CLP-CAL-01	CLP-CAL-04	CLP-CAL-06
CLP-CAL-02	CLP-CAL-05	CLP-CAL-07
CLP-CAL-03		

Calibration Standard #3

CLP-CAL-03-1 \$ 95 / 100 mL
At stated conc. (µg/mL) in 5% HNO₃ 7 comps.

Al (Aluminum)	2000
Ba (Barium)	2000
Be (Beryllium)	50
Co (Cobalt)	500
Cu (Copper)	250
Fe (Iron)	1000
V (Vanadium)	500

Calibration Standard #4

CLP-CAL-04-1 \$ 65 / 100 mL
At stated conc. (µg/mL) in 5% HNO₃ 5 comps.

As (Arsenic)	100
Cd (Cadmium)	50
Pb (Lead)	50
Se (Selenium)	50
Tl (Thallium)	100

Calibration Standard #5

CLP-CAL-05-1 \$ 34 / 100 mL
600 µg/mL in 2% HNO₃

Sb (Antimony)

Calibration Standard #6

CLP-CAL-06-1 \$ 34 / 100 mL
100 µg/mL in 5% HNO₃

Hg (Mercury)

Calibration Standard #7

CLP-CAL-07-1 \$ 55 / 100 mL
500 µg/mL each in 5% HNO₃ tr. HF 3 comps.

B (Boron)	Si (Silicon)
Mo (Molybdenum)	





ICP

Contract Laboratory Program (CLP)

Verification Standards

Initial Calibration Verification

CLP-ICV-01-1 \$ 225 / 100 mL
 CLP-ICV-01-5 \$ 445 / 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 22 comps.

Al (Aluminum)	200
Sb (Antimony)	60
As (Arsenic)	10
Ba (Barium)	200
Be (Beryllium)	5
Cd (Cadmium)	5
Ca (Calcium)	5000
Cr (Chromium)	10
Co (Cobalt)	50
Cu (Copper)	25
Fe (Iron)	100
Pb (Lead)	5
Mg (Magnesium)	5000
Mn (Manganese)	15
Ni (Nickel)	40
K (Potassium)	5000
Se (Selenium)	5
Ag (Silver)	10
Na (Sodium)	5000
Tl (Thallium)	10
V (Vanadium)	50
Zn (Zinc)	20

Initial Calibration Verification

CLP-ICV-01-R-1 \$ 225 / 100 mL
 CLP-ICV-01-R-5 \$ 445 / 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 22 comps.

Al (Aluminum)	200
Sb (Antimony)	60
As (Arsenic)	10
Ba (Barium)	200
Be (Beryllium)	5
Cd (Cadmium)	5
Ca (Calcium)	500
Cr (Chromium)	10
Co (Cobalt)	50
Cu (Copper)	25
Fe (Iron)	100
Pb (Lead)	5
Mg (Magnesium)	500
Mn (Manganese)	15
Ni (Nickel)	40
K (Potassium)	500
Se (Selenium)	5
Ag (Silver)	10
Na (Sodium)	500
Tl (Thallium)	10
V (Vanadium)	50
Zn (Zinc)	20

Continuing Calibration Verification

(Meets CLP QA Second Source Requirements)

CLP-CCV-01-1 \$ 225 / 100 mL
 CLP-CCV-01-5 \$ 445 / 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 16 comps.

Al (Aluminum)	1000
Ba (Barium)	1000
Be (Beryllium)	25
Ca (Calcium)	2500
Cr (Chromium)	50
Co (Cobalt)	250
Cu (Copper)	125
Fe (Iron)	500
Mg (Magnesium)	2500
Mn (Manganese)	75
Ni (Nickel)	200
K (Potassium)	2500
Ag (Silver)	50
Na (Sodium)	2500
V (Vanadium)	250
Zn (Zinc)	100

CLP-CCV-02-1 \$ 75 / 100 mL
 CLP-CCV-02-5 \$ 146 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 5 comps.

As (Arsenic)	50
Cd (Cadmium)	25
Pb (Lead)	25
Se (Selenium)	25
Tl (Thallium)	50

CLP-CCV-03-1 \$ 34 / 100 mL
 CLP-CCV-03-5 \$ 67 / 500 mL

300 µg/mL in 2% HNO₃

Sb (Antimony)

Technical Note

CLP-ICV-01-R has Ca, Mg, K & Na at 1/10 the concentration of CLP-ICV-01. This improves plasma robustness and often results in superior recoveries.

Initial & Continuing Calibration Verification Sets

CLP-VER-1-SET \$ 445 / 4 x 100 mL

CLP-ICV-01-1 CLP-CCV-02-1
 CLP-CCV-01-1 CLP-CCV-03-1

CLP-VER-5-SET \$ 870 / 4 x 500 mL

CLP-ICV-01-5 CLP-CCV-02-5
 CLP-CCV-01-5 CLP-CCV-03-5

Initial & Continuing Calibration Revised Verification Sets

CLP-VER-R-1-SET \$ 445 / 4 x 100 mL

CLP-ICV-01-R-1 CLP-CCV-02-1
 CLP-CCV-01-1 CLP-CCV-03-1

CLP-VER-R-5-SET \$ 870 / 4 x 500 mL

CLP-ICV-01-R-5 CLP-CCV-02-5
 CLP-CCV-01-5 CLP-CCV-03-5

Continuing Calibration Verification Standard Sets

CLP-CCV-1-SET \$ 275 / 3 x 100 mL

CLP-CCV-01-1 CLP-CCV-03-1
 CLP-CCV-02-1

CLP-CCV-5-SET \$ 525 / 3 x 500 mL

CLP-CCV-01-5 CLP-CCV-03-5
 CLP-CCV-02-5

Spiking Standards

Spiking Solution

CLP-SPS-01-1 \$ 185 / 100 mL
 At stated conc. (µg/mL) in 5% HNO₃ 18 comps.

Al (Aluminum)	200
Sb (Antimony)	50
As (Arsenic)	200
Ba (Barium)	200
Be (Beryllium)	5
Cd (Cadmium)	5
Cr (Chromium)	20
Co (Cobalt)	50
Cu (Copper)	25
Fe (Iron)	100
Pb (Lead)	50
Mn (Manganese)	50
Ni (Nickel)	50
Se (Selenium)	200
Ag (Silver)	5
Tl (Thallium)	200
V (Vanadium)	50
Zn (Zinc)	50

CLP Soil Spiking Solution

CLP-SPS-02-1 \$ 175 / 100 mL
 At stated conc. (µg/mL) in 5% HNO₃ 16 comps.

Sb (Antimony)	100
As (Arsenic)	400
Ba (Barium)	400
Be (Beryllium)	10
Cd (Cadmium)	10
Cr (Chromium)	40
Co (Cobalt)	100
Cu (Copper)	50
Pb (Lead)	100
Mn (Manganese)	100
Ni (Nickel)	100
Se (Selenium)	400
Ag (Silver)	10
Tl (Thallium)	400
V (Vanadium)	100
Zn (Zinc)	100

Technical Note

Spiking solution CLP-SPS-01 can be used for both aqueous and solid samples. An additional spiking solution for soil as outlined in CLP SOW ILM03.0 is also available, CLP-SPS-02.

CLP Spiking Set

CLP-SPS-1-SET \$ 288 / 2 x 100 mL

CLP-SPS-01-1 CLP-SPS-02-1



Interference Check & Analyte Standards

The common interferents checked for CLP requirements and their associated analytes are listed in our primary interferent analyte solutions. Occasionally, additional interferents may cause other analytical problems according to CLP SOW ILM03.0. These additional six elements are available with their respective analytes in the alternate interferent/analyte solutions.

Primary Analytes

CLP-PAN-01-1 \$ 110 / 100 mL
CLP-PAN-01-5 \$ 225 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 12 comps.

Ag (Silver)	100
Ba (Barium)	50
Be (Beryllium)	50
Cd (Cadmium)	100
Co (Cobalt)	50
Cr (Chromium)	50
Cu (Copper)	50
Mn (Manganese)	50
Ni (Nickel)	100
Pb (Lead)	100
V (Vanadium)	50
Zn (Zinc)	100

Alternate Interferents

CLP-PIN-02-1 \$ 98 / 100 mL
CLP-PIN-02-5 \$ 185 / 500 mL

1000 µg/mL each in 5% HNO₃ 6 comps.

Cr (Chromium)	Ni (Nickel)
Cu (Copper)	Ti (Titanium)
Mn (Manganese)	V (Vanadium)

Alternate Analytes

CLP-PAN-02-1 \$ 115 / 100 mL
CLP-PAN-02-5 \$ 225 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ tr. HF 12 comps.

Al (Aluminum)	100
Sb (Antimony)	100
As (Arsenic)	100
B (Boron)	100
Ca (Calcium)	10
Fe (Iron)	10
Mg (Magnesium)	10
Mo (Molybdenum)	100
Se (Selenium)	100
Si (Silicon)	10
Na (Sodium)	100
Tl (Thallium)	100

Interferent / Analyte Sets

CLP-IA-1-SET \$ 345 / 4 x 100 mL

CLP-PIN-01-1	CLP-PIN-02-1
CLP-PAN-01-1	CLP-PAN-02-1

CLP-IA-5-SET \$ 680 / 4 x 500 mL

CLP-PIN-01-5	CLP-PIN-02-5
CLP-PAN-01-5	CLP-PAN-02-5

Primary Interferents

CLP-PIN-01-1 \$ 110 / 100 mL
CLP-PIN-01-5 \$ 215 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 4 comps.

Al (Aluminum)	5000
Ca (Calcium)	5000
Fe (Iron)	2000
Mg (Magnesium)	5000

Detection Limit Standards

Contract Required Detection Limits (CRDL) Standard Solutions. We offer the flexibility of two convenient solutions:

CLP Detection Limits Standard #1

CLP-CRDL-01-1 \$ 130 / 100 mL
 At stated conc. (µg/mL) in 5% HNO₃ 15 comps.

Sb (Antimony)	120
As (Arsenic)	120
Be (Beryllium)	10
Cd (Cadmium)	10
Cr (Chromium)	20
Co (Cobalt)	100
Cu (Copper)	50
Pb (Lead)	120
Mn (Manganese)	30
Ni (Nickel)	80
Se (Selenium)	120
Ag (Silver)	20
Tl (Thallium)	120
V (Vanadium)	100
Zn (Zinc)	40

Contract Required Detection Limits (CRDL) Set

CLP-CRDL-1-SET \$ 205 / 2 x 100 mL

CLP-CRDL-01	CLP-CRDL-02
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Technical Note

These standards are prepared to meet the requirements of the CLP protocol; Arsenic (As), Lead (Pb), Selenium (Se) and Thallium (Tl) are at a concentration two times the instrument detection limit (IDL) while the remaining elements are at two times the CRDL.

CLP Detection Limits Standard #2

CLP-CRDL-02-1 \$ 130 / 100 mL
 At stated conc. (µg/mL) in 5% HNO₃ 15 comps.

Sb (Antimony)	120
As (Arsenic)	20
Be (Beryllium)	10
Cd (Cadmium)	10
Cr (Chromium)	20
Co (Cobalt)	100
Cu (Copper)	50
Pb (Lead)	6
Mn (Manganese)	30
Ni (Nickel)	80
Se (Selenium)	10
Ag (Silver)	20
Tl (Thallium)	20
V (Vanadium)	100
Zn (Zinc)	40

Technical Note

These standards are designed for ICPs equipped with ultrasonic nebulizers and offer the elements of interest at two times the CRDL level.



ICP

EPA Method 200.7

Method 200.7 (Revision 4.4, May 1994) Calibration Standards

Mixed Calibration Standard #1

M-200.7-01-1 \$ 96 / 100 mL

M-200.7-01-5 \$ 187 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 10 comps.

Sb (Antimony)	50
As (Arsenic)	100
Ba (Barium)	10
B (Boron)	20
Cd (Cadmium)	20
Ca (Calcium)	100
Cu (Copper)	20
Mn (Manganese)	20
Se (Selenium)	50
Ag (Silver)	5

Mixed Calibration Standard #2

M-200.7-02R-1 \$ 75 / 100 mL

M-200.7-02R-5 \$ 135 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ tr. HF
6 comps.

Li (Lithium)	50
Mo (Molybdenum)	100
K (Potassium)	200
Na (Sodium)	100
Sr (Strontium)	10
Ti (Titanium)	100

Mixed Calibration Standard #3

M-200.7-03R-1 \$ 55 / 100 mL

M-200.7-03R-5 \$ 105 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 4 comps.

Ce (Cerium)	20
Co (Cobalt)	20
P (Phosphorus)	100
V (Vanadium)	20

Mixed Calibration Standard #4

M-200.7-04-1 \$ 69 / 100 mL

M-200.7-04-5 \$ 134 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ tr. HF
5 comps.

Al (Aluminum)	100
Cr (Chromium)	50
Si (Silicon) †	100
Sn (Tin)	40
Zn (Zinc)	50

† 214 µg/mL as SiO₂

Mixed Calibration Standard #5

M-200.7-05-1 \$ 69 / 100 mL

M-200.7-05-5 \$ 134 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 6 comps.

Be (Beryllium)	10
Fe (Iron)	100
Pb (Lead)	100
Mg (Magnesium)	100
Ni (Nickel)	20
Tl (Thallium)	50

Mixed Calibration Standards Sets

M-200.7-R-1-SET \$ 280 / 5 x 100 mL

M-200.7-01-1 M-200.7-04-1

M-200.7-02R-1 M-200.7-05-1

M-200.7-03R-1

M-200.7-5-R-5-SET \$ 545 / 5 x 500 mL

M-200.7-01-5 M-200.7-04-5

M-200.7-02R-5 M-200.7-05-5

M-200.7-03-5R

Method 200.7 Instrument Performance Standards

Instrument Performance Check Standard #1

M-200.7-IPC-01-1 \$ 210 / 100 mL

M-200.7-IPC-01-5 \$ 430 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 26 comps.

Al (Aluminum)	20	Li (Lithium)	20
As (Arsenic)	20	Mg (Magnesium)	20
Ba (Barium)	20	Mn (Manganese)	20
Be (Beryllium)	20	Ni (Nickel)	20
B (Boron)	20	P (Phosphorus)	100
Cd (Cadmium)	20	K (Potassium)	100
Ca (Calcium)	20	Se (Selenium)	20
Ce (Cerium)	20	Ag (Silver)	2.5
Cr (Chromium)	20	Na (Sodium)	20
Co (Cobalt)	20	Sr (Strontium)	20
Cu (Copper)	20	Tl (Thallium)	20
Fe (Iron)	20	V (Vanadium)	20
Pb (Lead)	20	Zn (Zinc)	20

Instrument Performance Check Standard #2

M-200.7-IPC-02-1 \$ 70 / 100 mL

M-200.7-IPC-02-5 \$ 135 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ tr. HF
5 comps.

Sb (Antimony)	20
Mo (Molybdenum)	20
Si (Silicon) †	100
Sn (Tin)	20
Ti (Titanium)	20

† 214 µg/mL as SiO₂



Method 200.7 Performance Check, Fortifying Solution & Mercury Standard

Laboratory Performance Check Standard

For use in demonstrating the initial and continuing verification of the calibration curves produced by this method.

LPCS-01-1 \$ 220 / 100 mL
LPCS-01-5 \$ 440 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ tr. HF
 29 comps.

Al (Aluminum)	20
Sb (Antimony)	20
As (Arsenic)	20
Ba (Barium)	20
Be (Beryllium)	20
B (Boron)	20
Cd (Cadmium)	20
Ca (Calcium)	20
Cr (Chromium)	20
Co (Cobalt)	20
Cu (Copper)	20
Fe (Iron)	20
Pb (Lead)	20
Li (Lithium)	20
Mg (Magnesium)	20
Mn (Manganese)	20
Mo (Molybdenum)	20
Ni (Nickel)	20
P (Phosphorus)	100
K (Potassium)	100
Se (Selenium)	20
Si (Silicon) †	100
Ag (Silver)	5
Na (Sodium)	20
Sr (Strontium)	20
Tl (Thallium)	20
Sn (Tin)	20
V (Vanadium)	20
Zn (Zinc)	20

† 214 µg/mL as SiO₂

Laboratory Fortifying Stock Solution

For use in preparing the laboratory fortified blank and the laboratory fortified sample matrix.

LFSS-01-1 \$ 195 / 100 mL
LFSS-01-5 \$ 380 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ tr. HF
 25 comps.

Al (Aluminum)	25
Sb (Antimony)	25
As (Arsenic)	25
Ba (Barium)	25
Be (Beryllium)	5
B (Boron)	25
Cd (Cadmium)	10
Cr (Chromium)	25
Co (Cobalt)	10
Cu (Copper)	25
Fe (Iron)	25
Pb (Lead)	25
Li (Lithium)	25
Mn (Manganese)	25
Mo (Molybdenum)	10
Ni (Nickel)	25
P (Phosphorus)	50
Se (Selenium)	25
Si (Silicon) †	25
Ag (Silver)	2.5
Sr (Strontium)	25
Tl (Thallium)	25
Sn (Tin)	10
V (Vanadium)	10
Zn (Zinc)	25

† 53.5 µg/mL as SiO₂

Mercury Standard

Mercury is available in a separate solution due to incompatibility with other elements.

TCLP-02-1 \$ 34 / 100 mL
TCLP-02-5 \$ 67 / 500 mL

20 µg/mL in 5% HNO₃

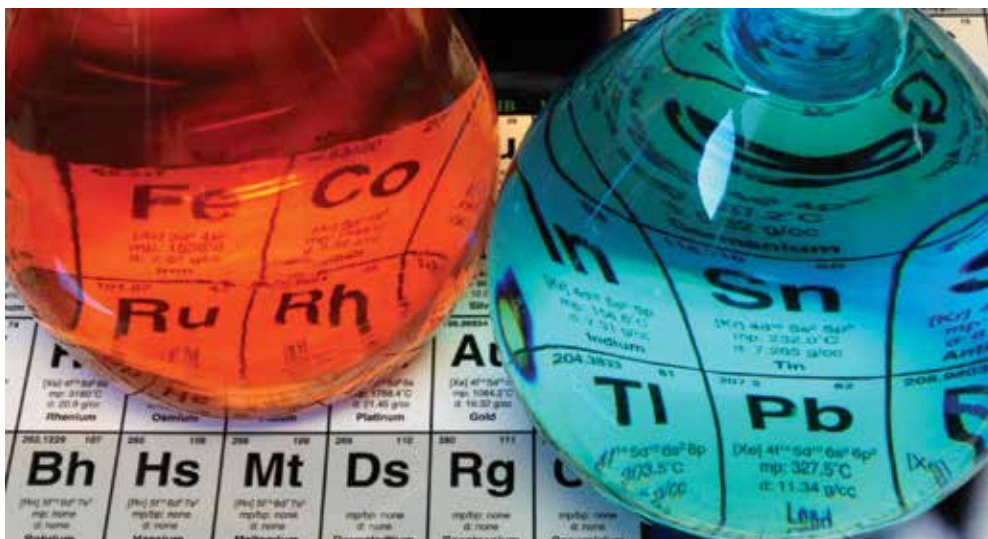
Hg (Mercury)

Technical Note

The analytes Ca, K, Mg, and Na are not included in the stock solution because their concentrations vary widely in environmental samples.

Inorganic products containing acid generally require a hazardous shipping fee.

Inorganic products in water generally do not.





ICP

EPA Method 200.7

Method 200.7 Fortifying (Spiking & Instrument Performance Standards)

These Standards have been split for stability and ease of use. Choose the Instrument Fortifying Standard you require for Part 1 & use with Part 2 to complete the analyte list. For Lab Fortified Blank use M-200.7-LFSS-01, for Water Samples use M-200.7-LFSS-01W, and for Solid Samples use M-200.7-LFSS-01S.

Part 1

Instrument Fortifying Standard

M-200.7-LFSS-01-1 \$ 200 / 100 mL

M-200.7-LFSS-01-5 \$ 390 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 26 comps.

Al (Aluminum)	20
As (Arsenic)	20
Ba (Barium)	20
Be (Beryllium)	20
B (Boron)	20
Cd (Cadmium)	20
Ca (Calcium)	20
Ce (Cerium)	20
Cr (Chromium)	20
Co (Cobalt)	20
Cu (Copper)	20
Fe (Iron)	20
Pb (Lead)	20
Li (Lithium)	20
Mg (Magnesium)	20
Mn (Manganese)	20
Ni (Nickel)	20
P (Phosphorus)	20
K (Potassium)	500
Se (Selenium)	20
Ag (Silver)	7.5
Na (Sodium)	20
Sr (Strontium)	20
Tl (Thallium)	20
V (Vanadium)	20
Zn (Zinc)	20

Instrument Fortifying Standard for Water

M-200.7-LFSS-01W-1 \$ 195 / 100 mL

M-200.7-LFSS-01W-5 \$ 380 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 22 comps.

Al (Aluminum)	20
As (Arsenic)	20
Ba (Barium)	20
Be (Beryllium)	20
B (Boron)	20
Cd (Cadmium)	20
Ce (Cerium)	20
Cr (Chromium)	20
Co (Cobalt)	20
Cu (Copper)	20
Fe (Iron)	20
Pb (Lead)	20
Li (Lithium)	20
Mn (Manganese)	20
Ni (Nickel)	20
P (Phosphorus)	20
K (Potassium)	500
Se (Selenium)	20
Ag (Silver)	7.5
Tl (Thallium)	20
V (Vanadium)	20
Zn (Zinc)	20

Instrument Fortifying Standard for Solids

M-200.7-LFSS-01S-1 \$ 200 / 100 mL

M-200.7-LFSS-01S-5 \$ 390 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 24 comps.

As (Arsenic)	20
Ba (Barium)	20
Be (Beryllium)	20
B (Boron)	20
Cd (Cadmium)	20
Ca (Calcium)	20
Ce (Cerium)	20
Cr (Chromium)	20
Co (Cobalt)	20
Cu (Copper)	20
Pb (Lead)	20
Li (Lithium)	20
Mg (Magnesium)	20
Mn (Manganese)	20
Ni (Nickel)	20
P (Phosphorus)	20
K (Potassium)	500
Se (Selenium)	20
Ag (Silver)	7.5
Na (Sodium)	20
Sr (Strontium)	20
Tl (Thallium)	20
V (Vanadium)	20
Zn (Zinc)	20

Part 2

Instrument Fortifying Standard #2

M-200.7-LFSS-02-1 \$ 60 / 100 mL

M-200.7-LFSS-02-5 \$ 120 / 500 mL

20 µg/mL each in 5% HNO₃ tr. HF 5 comps.

Sb (Antimony)	Sn (Tin)
Mo (Molybdenum)	Ti (Titanium)
Si (Silicon) †	† 42.78 µg/mL as SiO ₂





Method 200.7 Spiking Solutions for Drinking Water

Spiking Standard #1R

M-200.7-SP-01-R ▼ \$ 50 / 50 mL
At stated conc. (µg/mL) in H₂O tr. HF 4 comps.

B (Boron)	400
Mo (Molybdenum)	200
Si (Silicon) †	2000
P (Phosphorus)	400

† 4278 µg/mL SiO₂

Spiking Standard #2R

M-200.7-SP-02-R \$ 70 / 50 mL
M-200.7-SP-02-R-1 \$ 135 / 100 mL
M-200.7-SP-02-R-5 \$ 550 / 500 mL
10,000 µg/mL each in 2% HNO₃ 4 comps.

Ca (Calcium)	K (Potassium)
Mg (Magnesium)	Na (Sodium)

Spiking Standard #3

M-200.7-SP-03 \$ 95 / 50 mL
At stated conc. (µg/mL) in 5% HNO₃ 12 comps.

Al (Aluminum)	2000
Ba (Barium)	2000
Be (Beryllium)	50
Cr (Chromium)	200
Co (Cobalt)	500
Cu (Copper)	250
Fe (Iron)	1000
Mn (Manganese)	500
Ni (Nickel)	500
Ag (Silver)	50
V (Vanadium)	500
Zn (Zinc)	500

Method 200.7 Spiking Set

M-200.7-SP-R-SET \$ 225 / 5 x 50 mL
M-200.7-SP-01-R M-200.7-SP-04-R
M-200.7-SP-02-R M-200.7-SP-05-R
M-200.7-SP-03

Spiking Standard #4R

M-200.7-SP-04-R \$ 20 / 50 mL
200 µg/mL in dilute HNO₃

Sb (Antimony)

Spiking Standard #5R

M-200.7-SP-05-R \$ 55 / 50 mL
At stated conc. (µg/mL) in 5% HNO₃ 5 comps.

As (Arsenic)	200
Cd (Cadmium)	100
Pb (Lead)	200
Se (Selenium)	400
Tl (Thallium)	400

Method 200.7 Interference Check Standards

For use in testing and verifying the inter-element spectral correction process.

SIC Solution #1

Used to evaluate the spectral interference for the analytes: Al, Sb, Se, Sn, V

SICS-01-1 \$ 34 / 100 mL
SICS-01-5 \$ 67 / 500 mL

50 µg/mL in Water tr. NH₄OH

Mo (Molybdenum)

Check Solutions Sets

SIC-1-SET \$ 120 / 3 x 100 mL
SICS-01-1 SICS-03-1
SICS-02-1

SIC-5-SET \$ 230 / 3 x 500 mL
SICS-01-5 SICS-03-5
SICS-02-5

SIC Solution #2

Used to evaluate the spectral interference for the analytes: Sb, Pb, Zn, Mo, As, Be

SICS-02-1 \$ 61 / 100 mL
SICS-02-5 \$ 119 / 500 mL

At stated conc. (µg/mL) in 2% HNO₃ 5 comps.

Cr (Chromium)	20
Co (Cobalt)	10
Cu (Copper)	40
Mn (Manganese)	20
V (Vanadium)	10

SIC Solution #3

Used to evaluate the spectral interference for the analytes: Sb, Zn, As, Ag, Cr, Mn, V

SICS-03-1 \$ 52 / 100 mL
SICS-03-5 \$ 102 / 500 mL

At stated conc. (µg/mL) in 2% HNO₃ 3 comps.

Al (Aluminum)	30
Fe (Iron)	150
Ni (Nickel)	20

Since everyone experiences different interference problems in their analysis, it is often easiest to design standards to match the "real world" samples. Below is a set of single element standards that can be used for making these standards in your lab.

Spectral Interference Check Set Single Elements

SIC-SING-1-SET \$ 240 / 9 x 100 mL
Each at 1,000 µg/mL in HNO₃

Al (Aluminum)	Mn (Manganese)
Cr (Chromium)	Mo (Molybdenum)
Co (Cobalt)	Ni (Nickel)
Cu (Copper)	V (Vanadium)
Fe (Iron)	

▼ Hazardous fee not required.



ICP

EPA Method 6010

Method 6010B (Revision 2, from SW-846) Calibration Standards

Mixed Calibration Standard #1

MCS-01-1 \$ 85 / 100 mL

MCS-01-5 \$ 165 / 500 mL

At stated conc. (µg/mL) in 2% HNO₃ 6 comps.

Be (Beryllium)	50
Cd (Cadmium)	150
Pb (Lead)	500
Mn (Manganese)	100
Se (Selenium)	200
Zn (Zinc)	150

Mixed Calibration Standard #2

MCS-02-1 \$ 85 / 100 mL

MCS-02-5 \$ 165 / 500 mL

At stated conc. (µg/mL) in 2% HNO₃ 5 comps.

Ba (Barium)	100
Co (Cobalt)	100
Cu (Copper)	100
Fe (Iron)	10,000
V (Vanadium)	100

Complete Calibration Set 6010B, Rev. 2, 1996 and 6010C, Rev. 3, 2000

MCS-1996-1-SET \$ 385 / 7 x 100 mL

MCS-01-1 MCS-04R-1 MCS-06R-1
MCS-02-1 MCS-05R-1 TCLP-02-1
MCS-03R-1

MCS-1996-5-SET \$ 750 / 7 x 500 mL

MCS-01-5 MCS-04R-5 MCS-06R-5
MCS-02-5 MCS-05R-5 TCLP-02-5
MCS-03R-5

Mixed Calibration Standard #3R

MCS-03R-1 \$ 55 / 100 mL

MCS-03R-5 \$ 107 / 500 mL

At stated conc. (µg/mL) in 2% HNO₃ tr. HF
2 comps.

As (Arsenic)	500
Mo (Molybdenum)	100

Mixed Calibration Standard #4R

MCS-04R-1 \$ 98 / 100 mL

MCS-04R-5 \$ 191 / 500 mL

At stated conc. (µg/mL) in 2% HNO₃ 8 comps.

Al (Aluminum)	200
Ca (Calcium)	1000
Cr (Chromium)	20
Li (Lithium)	100
Ni (Nickel)	20
K (Potassium)	400
Na (Sodium)	200
Sr (Strontium)	10

Mixed Calibration Standard #5R

MCS-05R-1 \$ 76 / 100 mL

MCS-05R-5 \$ 148 / 500 mL

At stated conc. (µg/mL) in 2% HNO₃ 4 comps.

Sb (Antimony)	200
Mg (Magnesium)	1000
Ag (Silver)	50
Tl (Thallium)	200

Mixed Calibration Standard 6R

MCS-06R-1 \$ 64 / 100 mL

MCS-06R-5 \$ 123 / 500 mL

At stated conc. (µg/mL) in 2-5% HNO₃ tr. HF
5 comps.

P (Phosphorus)	200
Sn (Tin)	200
Ti (Titanium)	100
B (Boron)	50
Si (Silicon) †	100

† 214 µg/mL as SiO₂

Technical Note

Additional Analyte Calibration Standards.

The use of this Standard Solution (MCS-06R), plus a Mercury Standard (TCLP-02), completes the analyte list for the 1996 Rev. 2 and 2000 Rev. 3.

Mercury Standard

Mercury is available in a separate solution due to its incompatibility with other elements.

TCLP-02-1 \$ 34 / 100 mL

TCLP-02-5 \$ 67 / 500 mL

20 µg/mL in 5% HNO₃

Hg (Mercury)

Method 6010B Spiking Standards

Three convenient solutions that can be used for spiking samples pre- or post- digestion.

Spiking Standard #1

QCS-01-1 \$ 182 / 100 mL

QCS-01-5 \$ 354 / 500 mL

100 µg/mL each in 5% HNO₃ tr. HF 23 comps.

Sb (Antimony)	Mn (Manganese)
As (Arsenic)	Mo (Molybdenum)
Be (Beryllium)	Ni (Nickel)
Cd (Cadmium)	P (Phosphorus)
Ca (Calcium)	Se (Selenium)
Cr (Chromium)	Sr (Strontium)
Co (Cobalt)	Tl (Thallium)
Cu (Copper)	Sn (Tin)
Fe (Iron)	Ti (Titanium)
Pb (Lead)	V (Vanadium)
Li (Lithium)	Zn (Zinc)
Mg (Magnesium)	

Spiking Standard #2

QCS-02-1 \$ 89 / 100 mL

QCS-02-5 \$ 174 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ tr. HF
7 comps.

Al (Aluminum)	100
Ba (Barium)	100
B (Boron)	100
K (Potassium)	1000
Si (Silicon) †	500
Ag (Silver)	50
Na (Sodium)	100

† 1070 µg/mL as SiO₂

QC Standard #2R

QCS-02-R1-1 \$ 89 / 100 mL

QCS-02-R1-5 \$ 174 / 500 mL

100 µg/mL each in 5% HNO₃ tr. HF 7 comps.

Al (Aluminum)	Ag (Silver)
Ba (Barium)	Na (Sodium)
B (Boron)	
K (Potassium)	† 214 µg/mL as SiO ₂
Si (Silicon) †	

Mercury Standard

Mercury is available in a separate solution due to incompatibility with other elements.

TCLP-02-1 \$ 34 / 100 mL

TCLP-02-5 \$ 67 / 500 mL

20 µg/mL in 5% HNO₃

Hg (Mercury)



Method 6010B (Revision 2 from SW-846, Dec. 1996) Performance and Interference Check Standards

Laboratory Performance Check Standard

LPCS-01R-1 \$ 230 / 100 mL
LPCS-01R-5 \$ 450 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ tr. HF
 30 comps.

Al (Aluminum)	20
Sb (Antimony)	20
As (Arsenic)	20
Ba (Barium)	20
Be (Beryllium)	20
B (Boron)	20
Cd (Cadmium)	20
Ca (Calcium)	20
Cr (Chromium)	20
Co (Cobalt)	20
Cu (Copper)	20
Fe (Iron)	20
Pb (Lead)	20
Li (Lithium)	20
Mg (Magnesium)	20
Mn (Manganese)	20
Mo (Molybdenum)	20
Ni (Nickel)	20
P (Phosphorus)	100
K (Potassium)	100
Se (Selenium)	20
Si (Silicon) †	100
Ag (Silver)	5
Na (Sodium)	20
Sr (Strontium)	20
Tl (Thallium)	20
Sn (Tin)	20
Ti (Titanium)	20
V (Vanadium)	20
Zn (Zinc)	20

† 214 µg/mL as SiO₂

Primary Interferents

CLP-PIN-01-1 \$ 110 / 100 mL
CLP-PIN-01-5 \$ 215 / 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 4 comps.

Al (Aluminum)	5000
Ca (Calcium)	5000
Fe (Iron)	2000
Mg (Magnesium)	5000

Alternate Interferents

CLP-PIN-02-1 \$ 98 / 100 mL
CLP-PIN-02-5 \$ 225 / 500 mL
 1000 µg/mL each in 5% HNO₃ 6 comps.

Cr (Chromium)	Ni (Nickel)
Cu (Copper)	Ti (Titanium)
Mn (Manganese)	V (Vanadium)

Interference Set

SIC-SING-R-1-SET \$300 / set of 10 x 100 mL
 10 individual single element standards at 1,000 µg/mL in HNO₃

Al (Aluminum)	Mg (Magnesium)
Ca (Calcium)	Mn (Manganese)
Cr (Chromium)	Ni (Nickel)
Cu (Copper)	Ti (Titanium)
Fe (Iron)	V (Vanadium)

Technical Note

Because interference problems are dependent on the types of sample matrices encountered, it is often easier to create your own set of matrix matching interference check solutions. Therefore, we are offering a set of single element solutions to be used for that purpose.

If you would like us to formulate an interference check solution to meet your needs, please call our Inorganic Technical Service Department for a custom quotation.

Set-up Solutions

Nebulizer Adjustment Solution

ICP-69N-1 \$ 34 / 100 mL
 1000 µg/mL in HNO₃
 Y (Yttrium)

Method 6010 (Revision 0, Sept. 1986) Interference Check Standards

Four standard mixtures are available for interference checks in SW-846, Method 6010 (Rev. 0, Sept. 1986) and Method 200.7.

Interference Check Standard #1

INT-01-1 \$ 242 / 100 mL
INT-01-5 \$ 472 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 17 comps.

As (Arsenic)	1000
Ba (Barium)	300
Be (Beryllium)	100
Cd (Cadmium)	300
Cr (Chromium)	300
Co (Cobalt)	300
Cu (Copper)	300
Pb (Lead)	1000
Mn (Manganese)	200
Hg (Mercury)	50
Ni (Nickel)	300
K (Potassium)	20,000
Se (Selenium)	500
Ag (Silver)	300
Tl (Thallium)	1000
V (Vanadium)	300
Zn (Zinc)	300

Interference Check Standard #2

INT-02-1 \$ 85 / 100 mL
INT-02-5 \$ 165 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ tr. HF
 4 comps.

B (Boron)	500
Mo (Molybdenum)	300
Si (Silicon)	200
Ti (Titanium)	1000

Interference Check Standard #3

INT-03-1 \$ 34 / 100 mL
INT-03-5 \$ 67 / 500 mL

500 µg/mL in 2% HNO₃ tr. Tartaric acid

Sb (Antimony)

Interference Check Standard #4

INT-04-1 \$ 115 / 100 mL
INT-04-5 \$ 225 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 5 comps.

Al (Aluminum)	1200
Ca (Calcium)	6000
Fe (Iron)	5000
Mg (Magnesium)	3000
Na (Sodium)	1000

Interference Check Standards Sets

INT-1986-1-SET \$ 385 / 4 x 100 mL

INT-01-1	INT-03-1
INT-02-1	INT-04-1

INT-1986-5-SET \$ 765 / 4 x 500 mL

INT-01-5	INT-03-5
INT-02-5	INT-04-5



ICP Alternate Source

Instrument	Page
Merck ICP Standards	359-360
Agilent	361-362
Horiba/Jobin Yvon	363
Perkin Elmer	364-368
Teledyne	369



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Cross Reference Part No. Index

These calibration and testing standards have been carefully formulated to be used for specific instrument setup and verification.

Over 100

ICP Alternate Source
Multi-Element
Standards

Instrument	AccuStandard	Page	Instrument	AccuStandard	Page	Instrument	AccuStandard	Page
Merck			Horiba/Jobin Yvon			Perkin Elmer		
1.09410	MES-23	3	JYICP-MIXHM	JY-CALHM	7	N9300280	PE-QC7	11
1.09411	MES-24	3	JYICP-MIXMAJ	JY-CAL	7	N9300281	PE-QC21	11
1.09480	MES-13 *	3	JYICP-MIX7HSI	JY-QC7	7	N9301720	PE-MECAL3	10
1.09481	MES-14	3	JYICP-MIX9	JY-CHK	7	N9301721	PE-CAL2	8
1.09482	MES-15	3	JYICP-MIX21	JY-QC21	7	N9302946	PE-VISWAVE	12
1.09487	MES-16	3	JYICP-MIX23	JY-QC23	7	N9303816	PE-CAL1	8
1.09490	MES-12 *	3	JYICP-QC1	JY-CHK1	7	N9303818	PE-CAL3	8
1.09491	MES-11 *	2	Perkin Elmer			N9303821	PE-CHK1	9
1.09492	MES-08 *	2	N0582152	PE-UVWAVE	12	N9303822	PE-CHK3	9
1.09493	MES-10 *	2	N0691579	PE-MCS	10	N9303823	PE-CHK4	9
1.09494	MES-09 *	2	N0691580	PE-UV	12	N9303824	PE-CHK5	9
1.09495	MES-17	3	N8122014	PE-SETUP2 *	11	N9303825	PE-VER1	12
1.09496	MES-19 *	3	N8122017	PE-CRDL3 *	8	N9303826	PE-VER2	12
1.09497	MES-20 *	3	N8125030	PE-STAB *	12	N9303827	PE-INTFRA	9
1.09498	MES-21	3	N8125031	PE-CRDL4 *	8	N9303828	PE-INTFR1	9
1.09499	MES-22 *	3	N8125032	PE-SETUP1 *	11	N9303829	PE-INTFRB	9
1.09500	MES-18	3	N8125034	PE-SENS *	11	N9303830	PE-INTFR2	9
1.10322	MES-07	2	N8125040	PE-SMTUNE *	11	N9303831	PE-INTFRC	9
1.10580	MES-06 *	2	N8125041	PE-SMTUNE2 *	11	N9303832	PE-INT	9
1.10714	MES-05 *	2	N9300200	PE-MCS1	10	N9303834	PE-MEINT	10
1.11355	MES-04	2	N9300201	PE-MCS2	10	N9303835	PE-MEM1	10
1.15474	MES-01	2	N9300202	PE-MCS3	10	N9303836	PE-MEM2	10
1.15626	MES-03	2	N9300203	PE-MCS4	10	N9303839	PE-SPIKE1	11
1.15708	MES-02	2	N9300204	PE-MCS5	10	N9303840	PE-SPIKE2	11
Agilent			N9300205	PE-ICS18	9	N9303841	PE-SPIKE3	11
5183-4681	AG-INT	6	N9300208	PE-ICS5	9	N9303843	PE-TUNSOL	12
5183-4682	AG-VER1	4	N9300211	PE-WPTM1	12	N9307113	PE-MES1	9
5183-4687	AG-SPIKE	4	N9300212	PE-WPTM2	12	N9307114	PE-MES2	9
5183-4688	AG-CAL	6	N9300213	PE-WPTM3	12	N9307115	PE-MES3	9
5188-6524	AG-TUN	4	N9300214	PE-WPAM1	12	N9307116	PE-MES4	9
5188-6525	AG-INTSTD	4	N9300215	PE-WPAM3	12	Teledyne		
5188-6526	AG-INTFR-6020	6	N9300216	PE-SDWA1	11	601-3110	TELE-CHK1 *	13
5188-6527	AG-INTFR2-6020	6	N9300217	PE-SDWA2	11	601-4101	TELE-CHK2 *	13
5188-6564	AG-TUNSTOCK	4	N9300218	PE-CAL4	8	601-4102	TELE-CHK3 *	13
5190-0465	AG-TUNSTOCK1	4	N9300219	PE-CAL5	8	602-00065	TELE-CHK4	13
8500-6940	AG-MECAL2A	6	N9300220	PE-CAL6	8	602-00067	TELE-CHK4	13
8500-6942	AG-MECAL4	6	N9300221	PE-CAL7	8	602-00068	TELE-CHK5	13
8500-6944	AG-MECAL1	6	N9300224	PE-CRDL1 *	8	602-00070	TELE-CHK5	13
8500-6948	AG-MECAL3	6	N9300225	PE-CRDL2	8	602-00071	TELE-CHK6	13
190024400	VAR-TUN	4	N9300226	PE-INTA	9	602-00073	TELE-CHK6	13
190064800	AG-INTFA	5	N9300227	PE-ANAB	8	620-403	TELE-CHK7	13
190024900	AG-ICV7	5	N9300228	PE-ALTINTA	8	602-00125	TELE-CHK8-0.1X *	13
190025000	AG-QCS27	5	N9300229	PE-ALTB	8	* similar formulation		
190025100	AG-ANALTB	5	N9300230	PE-SPIKE	11	AccuStandard is not affiliated with the companies and brands on these pages. The brands and company names appear for the purpose of cross reference with the corresponding AccuStandard products.		
6610030000	AG-WAVECAL-10X	4	N9300231	PE-MECAL1	10			
6610030100	AG-WAVECAL	4	N9300232	PE-MECAL2	10			
6610030400	AG-INT2	6	N9300233	PE-MECAL3	10			
6610030500	AG-CAL1	6	N9300234	PE-MECAL4	10			
6610030600	AG-CAL2	6	N9300235	PE-MECAL5	10			
6610030700	AG-CALMAJOR	6						



AccuStandard has received many requests for the following multi-element standards. We offer our own version of these popular mixes offered by Merck. Products are made to the same specifications as other mixes in our product line and subject to the same rigorous quality control.

AccuStandard equivalent of Merck Multi-Element Standards

ICP Multi-Element Standard Solution I

MES-01-1 \$ 176 / 100 mL
MES-01-5 \$ 343 / 500 mL
 At stated conc. (µg/mL) in 1 mol/L HNO₃ 19 comps.

Ag (Silver)	50
Al (Aluminum)	100
B (Boron)	15
Ba (Barium)	5
Be (Beryllium)	1
Bi (Bismuth)	200
Cd (Cadmium)	20
Co (Cobalt)	20
Cr (Chromium)	25
Cu (Copper)	20
Fe (Iron)	15
Ga (Gallium)	150
In (Indium)	200
Mn (Manganese)	5
Ni (Nickel)	50
Pb (Lead)	200
Sr (Strontium)	1
Tl (Thallium)	400
Zn (Zinc)	20

ICP Multi-Element Standard Solution II

MES-02-1 \$ 109 / 100 mL
MES-02-5 \$ 214 / 500 mL
 At stated conc. (µg/mL) in 1 mol/L HNO₃ 3 comps.

Li (Lithium)	250
K (Potassium)	10,000
Na (Sodium)	1000

ICP Multi-Element Standard Solution III

MES-03-1 \$ 109 / 100 mL
MES-03-5 \$ 214 / 500 mL
 1000 µg/mL each in 1 mol/L HNO₃ 4 comps.

Ba (Barium)	Mg (Magnesium)
Ca (Calcium)	Sr (Strontium)

ICP Multi-Element Standard Solution IV

MES-04-1 \$ 227 / 100 mL
MES-04-5 \$ 681 / 500 mL
 1000 µg/mL each in 1 mol/L HNO₃ 23 comps.

Ag (Silver)	In (Indium)
Al (Aluminum)	K (Potassium)
B (Boron)	Li (Lithium)
Ba (Barium)	Mg (Magnesium)
Bi (Bismuth)	Mn (Manganese)
Ca (Calcium)	Na (Sodium)
Cd (Cadmium)	Ni (Nickel)
Co (Cobalt)	Pb (Lead)
Cr (Chromium)	Sr (Strontium)
Cu (Copper)	Tl (Thallium)
Fe (Iron)	Zn (Zinc)
Ga (Gallium)	

ICP Multi-Element Standard Solution V

MES-05-1-SET \$200 / 2x100 mL
MES-05-5-SET \$390 / 2x500 mL
 At stated conc. (µg/mL) in 2-10% HCl tr. HNO₃ 26 comps.

MES-05	
Al (Aluminum)	20
As (Arsenic)	20
B (Boron)	2
Ba (Barium)	2
Be (Beryllium)	1
Ca (Calcium)	10
Cd (Cadmium)	2
Cr (Chromium)	2
Cu (Copper)	2
Fe (Iron)	2
K (Potassium)	100
Li (Lithium)	2
Mg (Magnesium)	1
Mn (Manganese)	1
Na (Sodium)	20
Ni (Nickel)	5
P (Phosphorus)	10
Pb (Lead)	20
Sc (Scandium)	1
Se (Selenium)	20
Sr (Strontium)	1
Te (Tellurium)	20
Ti (Titanium)	2
Y (Yttrium)	1
Zn (Zinc)	2

MES-05-HG
 5% HNO₃
 Hg (Mercury) 5
 Supplied separately for better stability

ICP Multi-Element Standard Solution VII

MES-07-1 ▼ \$ 188 / 100 mL
MES-07-5 ▼ \$ 367 / 500 mL
 100 µg/mL each in Water tr. HNO₃ 9 comps.

NH ₄ (Ammonium)	Mn (Manganese)
Ba (Barium)	Na (Sodium)
Ca (Calcium)	Sr (Strontium)
K (Potassium)	
Li (Lithium)	
Mg (Magnesium)	

ICP Multi-Element Standard Solution VI for MS

MES-06-1-SET \$ 230 / 100 mL
MES-06-5-SET \$ 450 / 500 mL
 At stated conc. (µg/mL) in 1 mol/L HNO₃ tr. HF 30 comps.

Ag (Silver)	10
Al (Aluminum)	10
As (Arsenic)	100
B (Boron)	100
Ba (Barium)	10
Be (Beryllium)	100
Bi (Bismuth)	10
Ca (Calcium)	1000
Cd (Cadmium)	10
Co (Cobalt)	10
Cr (Chromium)	10
Cu (Copper)	10
Fe (Iron)	100
Ga (Gallium)	10
K (Potassium)	10
Li (Lithium)	10
Mg (Magnesium)	10
Mn (Manganese)	10
Mo (Molybdenum)	10
Na (Sodium)	10
Ni (Nickel)	10
Pb (Lead)	10
Rb (Rubidium)	10
Se (Selenium)	100
Sr (Strontium)	10
Ti (Thallium)	10
U (Uranium)	10
V (Vanadium)	10
Zn (Zinc)	100

MES-06-TE
 Te (Tellurium) 10
 Supplied separately for better stability in 10% HCl

ICP Multi-Element Standard Solution VIII

MES-08-1-SET \$ 190 / 2x100 mL
MES-08-5-SET \$ 371 / 2x500 mL
 100 µg/mL each in 1 mol/L HNO₃ 24 comps.

MES-08	
Al (Aluminum)	K (Potassium)
B (Boron)	Li (Lithium)
Ba (Barium)	Mg (Magnesium)
Be (Beryllium)	Mn (Manganese)
Bi (Bismuth)	Na (Sodium)
Ca (Calcium)	Ni (Nickel)
Cd (Cadmium)	Pb (Lead)
Co (Cobalt)	Se (Selenium)
Cr (Chromium)	Sr (Strontium)
Cu (Copper)	Tl (Thallium)
Fe (Iron)	Zn (Zinc)
Ga (Gallium)	

MES-08-TE
 10% HCl
 Te (Tellurium)
 Supplied separately for better stability

ICP Multi-Element Standard Solution IX

MES-09-1-SET \$ 102 / 2x100 mL
MES-09-5-SET \$ 199 / 2x500 mL
 100 µg/mL each in 1 mol/L HNO₃ 8 comps.

MES-09	
As (Arsenic)	Ni (Nickel)
Be (Beryllium)	Se (Selenium)
Pb (Lead)	Tl (Thallium)
Cr (Chromium)	

MES-09-HG
 Hg (Mercury)
 Supplied separately for better stability.

ICP Multi-Element Standard Solution X

MES-10-1 \$ 200 / 100 mL
MES-10-5 \$ 390 / 500 mL
 At stated conc. (µg/mL) in 1 mol/L HNO₃ 23 comps.

Ca (Calcium)	3500
Mg (Magnesium)	1500
Na (Sodium)	800
K (Potassium)	300
B (Boron)	10
Fe (Iron)	10
Mo (Molybdenum)	10
Sr (Strontium)	10
As (Arsenic)	5
Ba (Barium)	5
Ni (Nickel)	5
V (Vanadium)	5
Zn (Zinc)	5
Mn (Manganese)	3
Co (Cobalt)	2.5
Pb (Lead)	2.5
Be (Beryllium)	2
Cd (Cadmium)	2
Cr (Chromium)	2
Cu (Copper)	2
Bi (Bismuth)	1
Se (Selenium)	1
Tl (Thallium)	1

Supplied at a 1:10 dilution for better long-term stability.

ICP Multi-Element Standard Solution XI

MES-11-1-SET \$ 114 / 2x100 mL
MES-11-5-SET \$ 222 / 2x500 mL
 At stated conc. (µg/mL) in 1 mol/L HNO₃ 6 comps.

MES-11	
Cd (Cadmium)	10
Cr (Chromium)	900
Cu (Copper)	800
Ni (Nickel)	200
Pb (Lead)	900
Zn (Zinc)	2500

MES-11-HG
 Hg (Mercury) 8
 Supplied separately for better product stability

▼ Hazardous fee not required.



ICP Alternate Source

Merck

AccuStandard equivalent of Merck Multi-Element Standards

ICP Multi-Element

Standard Solution XII

MES-12-1-SET \$ 131 / 2x100 mL

MES-12-5-SET \$ 255 / 2x500 mL

1000 µg/mL each in 5% HCl tr.

HNO₃ 7 comps.

MES-12-R1

As (Arsenic) Si (Silicon)
Mo (Molybdenum) W (Tungsten)
P (Phosphorus) V (Vanadium)
S (Sulfur)

MES-12-ZR

Zr (Zirconium)
Supplied separately for better
product stability

ICP Multi-Element

Standard Solution XIII

MES-13-1-SET \$ 135 / 2x100 mL

MES-13-5-SET \$ 264 / 2x500 mL

At stated conc. (µg/mL) in 5% HNO₃

15 comps.

MES-13

Al (Aluminum) 500
As (Arsenic) 100
Be (Beryllium) 100
Cd (Cadmium) 25
Co (Cobalt) 100
Cr (Chromium) 100
Cu (Copper) 100
Fe (Iron) 100
Mn (Manganese) 100
Ni (Nickel) 100
Pb (Lead) 100
Se (Selenium) 25
V (Vanadium) 250
Zn (Zinc) 100

MES-13-HG

Hg (Mercury) 5
Supplied separately for better
stability

ICP Multi-Element

Standard Solution XIV

MES-14-1 \$ 104 / 100 mL

MES-14-5 \$ 202 / 500 mL

At stated conc. (µg/mL) in 2% HCl
tr. HNO₃ 11 comps.

P (Phosphorus) 100
S (Sulfur) 100
K (Potassium) 100
As (Arsenic) 20
La (Lanthanum) 20
Li (Lithium) 20
Mo (Molybdenum) 20
Mn (Manganese) 20
Ni (Nickel) 20
Sc (Scandium) 20
Na (Sodium) 20

ICP Multi-Element

Standard Solution XV

MES-15-1 \$ 76 / 100 mL

MES-15-5 \$ 148 / 500 mL

At stated conc. (µg/mL) in 2% HNO₃

8 comps.

Element

Ba (Barium) 1
Ca (Calcium) 1
K (Potassium) 50
La (Lanthanum) 10
Li (Lithium) 10
Mn (Manganese) 10
Na (Sodium) 10
Sr (Strontium) 10

ICP Multi-Element

Standard Solution XVI

MES-16-1 \$ 190 / 100 mL

MES-16-5 \$ 370 / 500 mL

100 µg/mL each in 5% HNO₃ tr. HF

21 comps.

Sb (Antimony) Mg (Magnesium)
As (Arsenic) Mn (Manganese)
Be (Beryllium) Mo (Molybdenum)
Cd (Cadmium) Ni (Nickel)
Ca (Calcium) Se (Selenium)
Cr (Chromium) Sr (Strontium)
Co (Cobalt) Ti (Thallium)
Cu (Copper) Ti (Titanium)
Fe (Iron) V (Vanadium)
Pb (Lead) Zn (Zinc)
Li (Lithium)

ICP Multi-Element

Standard Solution XVII

MES-17-1 \$ 102 / 100 mL

MES-17-5 \$ 199 / 500 mL

100 µg/mL each in 15% HCl tr.
HNO₃ 7 comps.

Hf (Hafnium) Ta (Tantalum)
Ir (Iridium) Ti (Titanium)
Sb (Antimony) Zr (Zirconium)
Sn (Tin)

ICP Multi-Element

GF AAS

Standard Solution XVIII

MES-18-R1-1 \$ 135 / 100 mL

MES-18-R1-5 \$ 263 / 500 mL

At stated conc. (µg/mL) in 5%
HNO₃ 16 comps.

Ag (Silver) 10
Al (Aluminum) 100
As (Arsenic) 100
Ba (Barium) 50
Be (Beryllium) 5
Cd (Cadmium) 5
Co (Cobalt) 50
Cr (Chromium) 20
Cu (Copper) 50
Fe (Iron) 20
Mn (Manganese) 20
Ni (Nickel) 50
Pb (Lead) 100
Sb (Antimony) 100
Se (Selenium) 100
Ti (Thallium) 100

ICP Multi-Element

Standard Solution XIX

for MS

MES-19-1 \$ 86 / 100 mL

MES-19-5 \$ 168 / 500 mL

1 µg/mL each in 1% HNO₃

5 comps.

Be (Beryllium) Ti (Thallium)
Co (Cobalt) U (Uranium)
In (Indium)

Supplied as a 10X concentrate for
better stability.

ICP Multi-Element

Standard Solution XX

for MS

MES-20-1 \$ 95 / 100 mL

MES-20-5 \$ 185 / 500 mL

1 µg/mL each in 1% HNO₃ tr. HCl

11 comps.

Mg (Magnesium) Ti (Thallium)
Cu (Copper) Ce (Cerium)
Cd (Cadmium) Ge (Germanium)
Pb (Lead) Tb (Terbium)
Sc (Scandium) Ba (Barium)
Rh (Rhodium)

Supplied as a 10X concentrate for
better stability.

ICP Multi-Element

Standard Solution XXI

for MS

MES-21-1-SET \$ 180 / 2x100 mL

MES-21-5-SET \$ 350 / 2x500 mL

10 µg/mL each in 5% HNO₃

30 comps.

MES-21 In (Indium)
Ag (Silver) K (Potassium)
Al (Aluminum) Li (Lithium)
As (Arsenic) Mg (Magnesium)
Ba (Barium) Mn (Manganese)
Be (Beryllium) Na (Sodium)
Bi (Bismuth) Ni (Nickel)
Ca (Calcium) Pb (Lead)
Cd (Cadmium) Rb (Rubidium)
Co (Cobalt) Se (Selenium)
Cr (Chromium) Sr (Strontium)
Cs (Cesium) Ti (Thallium)
Cu (Copper) V (Vanadium)
Fe (Iron) U (Uranium)
Ga (Gallium) Zn (Zinc)

MES-21-HG

Hg (Mercury) 10
Supplied separately for better
product stability

ICP Multi-Element

Standard Solution XXII

for MS

MES-22-1 \$ 70 / 100 mL

MES-22-5 \$ 137 / 500 mL

2 µg/mL each in 2% HNO₃ tr. HCl

5 comps.

Cd (Cadmium) Pb (Lead)
Cu (Copper) Rh (Rhodium)
Mg (Magnesium)

Supplied as a 10X concentrate for
better stability.

ICP Multi-Element

Standard Solution XXIII

for MS

MES-23-1 \$ 135 / 100 mL

MES-23-5 \$ 264 / 500 mL

1 µg/mL each in 5% HNO₃

15 comps.

Ba (Barium) Lu (Lutetium)
B (Boron) Na (Sodium)
Co (Cobalt) Rh (Rhodium)
Fe (Iron) Sc (Scandium)
Ga (Gallium) Ti (Thallium)
In (Indium) U (Uranium)
K (Potassium) Y (Yttrium)
Li (Lithium)

ICP Multi-Element

Standard Solution XXIV

MES-24-1 \$ 135 / 100 mL

MES-24-5 \$ 264 / 500 mL

At stated conc. (µg/mL) in 1%
HNO₃ 15 comps.

Al (Aluminum) 50
As (Arsenic) 50
Ba (Barium) 50
Cd (Cadmium) 50
Co (Cobalt) 50
Cr (Chromium) 50
Cu (Copper) 50
K (Potassium) 500
Mn (Manganese) 50
Mo (Molybdenum) 50
Ni (Nickel) 50
Pb (Lead) 50
Se (Selenium) 50
Sr (Strontium) 50
Zn (Zinc) 50

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with the companies and brands
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reference with the corresponding
AccuStandard products.



AccuStandard offers calibration and testing standards for individual instruments. The Alternate Source Line (ASL) formulations match product from:

■ Agilent

■ Horiba/Jobin Yvon

■ Perkin Elmer

■ Teledyne

All of these products have been carefully formulated to be used for specific instrument setup and verification.

Save up
to 50%

AccuStandard equivalent of Agilent Solutions

ICP-OES Wavelength Calibration Solution

AG-WAVECAL-ASL-1	\$ 135 / 100 mL
AG-WAVECAL-ASL-5	\$ 264 / 500 mL
AG-WAVECAL-ASL-10X-1	\$ 135 / 100 mL
AG-WAVECAL-ASL-10X-5	\$ 264 / 500 mL

At stated conc. (µg/mL) in 1% HNO₃ 15 comps.

	CAL	CAL-10X
Al (Aluminum)	5	50
As (Arsenic)	5	50
Ba (Barium)	5	50
Cd (Cadmium)	5	50
Co (Cobalt)	5	50
Cr (Chromium)	5	50
Cu (Copper)	5	50
Mn (Manganese)	5	50
Mo (Molybdenum)	5	50
Ni (Nickel)	5	50
Pb (Lead)	5	50
Se (Selenium)	5	50
Sr (Strontium)	5	50
Zn (Zinc)	5	50
K (Potassium)	50	500

ICP/MS Stock Tuning Solution

AG-TUNSTOCK-ASL-1	\$ 105 / 100 mL
AG-TUNSTOCK-ASL-5	\$ 204 / 500 mL

10 µg/mL in 2% HNO₃ 5 comps.

Li (Lithium)	Tl (Thallium)
Y (Yttrium)	Co (Cobalt)
Ce (Cerium)	

ICP/MS Stock Tuning Solution

AG-TUNSTOCK1-ASL-1	\$ 115 / 100 mL
AG-TUNSTOCK1-ASL-5	\$ 225 / 500 mL

10 µg/mL in 2% HNO₃ 6 comps.

Li (Lithium)	Ce (Cerium)
Mg (Magnesium)	Tl (Thallium)
Y (Yttrium)	Co (Cobalt)

Internal Standard Mix for ICP/MS

AG-INTSTD-ASL-1	\$ 155 / 100 mL
AG-INTSTD-ASL-5	\$ 298 / 500 mL

100 µg/mL in 10% HNO₃, tr. HCl 8 comps.

Li-6 (Lithium-6)	In (Indium)
Sc (Scandium)	Tb (Terbium)
Ge (Germanium)	Lu (Lutetium)
Rh (Rhodium)	Bi (Bismuth)

7500 Series PA Tuning 1

AG-TUN1-ASL-1	\$ 205 / 100 mL
AG-TUN1-ASL-5	\$ 398 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 26 comps.

Zn (Zinc)	20	Ba (Barium)	5
Be (Beryllium)	20	Co (Cobalt)	5
Cd (Cadmium)	20	Sr (Strontium)	5
As (Arsenic)	20	V (Vanadium)	5
Ni (Nickel)	10	Cr (Chromium)	5
Pb (Lead)	10	Mn (Manganese)	5
Mg (Magnesium)	10	Li-6 (Lithium-6)	5
Tl (Thallium)	5	Sc (Scandium)	5
Na (Sodium)	5	In (Indium)	5
Al (Aluminum)	5	Lu (Lutetium)	5
U (Uranium)	5	Bi (Bismuth)	5
Cu (Copper)	5	Y (Yttrium)	2.5
Th (Thorium)	5	Yb (Ytterbium)	2.5

7500 Series PA Tuning 2

AG-TUN2-ASL-1	\$ 95 / 100 mL
AG-TUN2-ASL-5	\$ 185 / 500 mL

At stated conc. (µg/mL) in 10% HCl, 1% HNO₃ tr. HF 8 comps.

Mo (Molybdenum)	10	Ru (Ruthenium)	10
Sb (Antimony)	10	Pd (Palladium)	10
Sn (Tin)	10	Ti (Titanium)	5
Ge (Germanium)	10	Ir (Iridium)	5

PA Tuning Solution Sets

AG-TUN-ASL-1-SET	\$ 270 / 2 x 100 mL
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AG-TUN1-ASL-1	AG-TUN2-ASL-1
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AG-TUN-ASL-5-SET	\$ 525 / 2 x 500 mL
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AG-TUN1-ASL-5	AG-TUN2-ASL-5
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ICP/MS Tuning Solution

VAR-TUN-ASL-1	\$ 105 / 100 mL
VAR-TUN-ASL-5	\$ 204 / 500 mL

10 µg/mL each in 2-5% HNO₃ 8 comps.

Be (Beryllium)	Pb (Lead)
Mg (Magnesium)	Th (Thorium)
Co (Cobalt)	Ba (Barium)
In (Indium)	Ce (Cerium)

Environmental Spike Mix

AG-SPIKE-ASL-R1-1	\$ 308 / 100 mL
AG-SPIKE-ASL-R1-5	\$ 598 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ tr. HF 24 comps.

Ca (Calcium)	1000	Cr (Chromium)	100
Fe (Iron)	1000	Cu (Copper)	100
K (Potassium)	1000	Mn (Manganese)	100
Mg (Magnesium)	1000	Mo (Molybdenum)	100
Na (Sodium)	1000	Ni (Nickel)	100
Ag (Silver)	100	Pb (Lead)	100
Al (Aluminum)	100	Sb (Antimony)	100
As (Arsenic)	100	Se (Selenium)	100
Ba (Barium)	100	Tl (Thallium)	100
Be (Beryllium)	100	U (Uranium)	100
Cd (Cadmium)	100	V (Vanadium)	100
Co (Cobalt)	100	Zn (Zinc)	100

Environmental Initial Calibration Verification

AG-VER1-ASL-R1-1	\$ 328 / 100 mL
AG-VER1-ASL-R1-5	\$ 636 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 26 comps.

Ca (Calcium)	1000	Cr (Chromium)	10
Fe (Iron)	1000	Cu (Copper)	10
K (Potassium)	1000	Mn (Manganese)	10
Mg (Magnesium)	1000	Mo (Molybdenum)	10
Na (Sodium)	1000	Ni (Nickel)	10
Sr (Strontium)	100	Pb (Lead)	10
Ag (Silver)	10	Sb (Antimony)	10
Al (Aluminum)	10	Se (Selenium)	10
As (Arsenic)	10	Tl (Thallium)	10
Ba (Barium)	10	U (Uranium)	10
Be (Beryllium)	10	V (Vanadium)	10
Cd (Cadmium)	10	Zn (Zinc)	10
Co (Cobalt)	10	Th (Thorium)	10

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INTF-A Quality Control Standard

AG-INTFA-ASL-1	\$ 115 / 100 mL
AG-INTFA-ASL-5	\$ 225 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 4 comps.

Al (Aluminum)	5000
Ca (Calcium)	5000
Mg (Magnesium)	5000
Fe (Iron)	2000

QCSTD-27 Quality Control Standard

AG-QCSTD-ASL-1	\$ 225 / 100 mL
AG-QCSTD-ASL-5	\$ 436 / 500 mL

100 µg/mL in 5% HNO₃ 27 comps.

Al (Aluminum)	Co (Cobalt)	Se (Selenium)
Sb (Antimony)	Cu (Copper)	Si (Silicon)
As (Arsenic)	Fe (Iron)	Ag (Silver)
Ba (Barium)	Pb (Lead)	Sr (Strontium)
Be (Beryllium)	Mg (Magnesium)	Na (Sodium)
B (Boron)	Mn (Manganese)	Tl (Thallium)
Cd (Cadmium)	Mo (Molybdenum)	Ti (Titanium)
Ca (Calcium)	Ni (Nickel)	V (Vanadium)
Cr (Chromium)	K (Potassium)	Zn (Zinc)



ICP Alternate Source

Agilent

AccuStandard equivalent of Agilent

ICV-7 Quality Control Standard

AG-ICV7-ASL-1 \$ 292 / 100 mL

AG-ICV7-ASL-5 \$ 585 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 22 comps.

Ca (Calcium)	5000	Cu (Copper)	25
Mg (Magnesium)	5000	Zn (Zinc)	20
K (Potassium)	5000	Mn (Manganese)	15
Na (Sodium)	5000	As (Arsenic)	10
Al (Aluminum)	200	Cr (Chromium)	10
Ba (Barium)	200	Ag (Silver)	10
Fe (Iron)	100	Tl (Thallium)	10
Sb (Antimony)	60	Be (Beryllium)	5
Co (Cobalt)	50	Cd (Cadmium)	5
V (Vanadium)	50	Pb (Lead)	5
Ni (Nickel)	40	Se (Selenium)	5

ANALT-B Quality Control Standard

AG-ANALTB-ASL-1 \$ 125 / 100 mL

AG-ANALTB-ASL-5 \$ 242 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 12 comps.

Ca (Calcium)	100	Be (Beryllium)	50
Ni (Nickel)	100	Co (Cobalt)	50
Pb (Lead)	100	Cr (Chromium)	50
Ag (Silver)	100	Cu (Copper)	50
Zn (Zinc)	100	Mn (Manganese)	50
Ba (Barium)	50	V (Vanadium)	50

Environmental Calibration Standard

AG-CAL-ASL-1 \$ 308 / 100 mL

AG-CAL-ASL-5 \$ 598 / 500 mL

At stated conc. (µg/mL) in 10% HNO₃ 25 comps.

Ca (Calcium)	1000	Cu (Copper)	10
Fe (Iron)	1000	Mn (Manganese)	10
K (Potassium)	1000	Mo (Molybdenum)	10
Mg (Magnesium)	1000	Ni (Nickel)	10
Na (Sodium)	1000	Pb (Lead)	10
Ag (Silver)	10	Sb (Antimony)	10
Al (Aluminum)	10	Se (Selenium)	10
As (Arsenic)	10	Tl (Thallium)	10
Ba (Barium)	10	U (Uranium)	10
Be (Beryllium)	10	V (Vanadium)	10
Cd (Cadmium)	10	Zn (Zinc)	10
Co (Cobalt)	10	Th (Thorium)	10
Cr (Chromium)	10		

Calibration Mix 1 AA & ICP-OES

AG-CAL1-ASL-1 \$ 95 / 100 mL

AG-CAL1-ASL-5 \$ 185 / 500 mL

100 µg/mL each in 2% HNO₃ tr.HF 4 comps.

Sb (Antimony)	Sn (Tin)
Mo (Molybdenum)	Tl (Thallium)

Calibration Mix 2 AA & ICP-OES

AG-CAL2-ASL-1 \$ 205 / 100 mL

AG-CAL2-ASL-5 \$ 398 / 500 mL

100 µg/mL each in 5% HNO₃ 18 comps.

Ag (Silver)	Mn (Manganese)
Al (Aluminum)	Ni (Nickel)
As (Arsenic)	Pb (Lead)
Ba (Barium)	Se (Selenium)
Be (Beryllium)	Tl (Thallium)
Cd (Cadmium)	Th (Thorium)
Co (Cobalt)	U (Uranium)
Cr (Chromium)	V (Vanadium)
Cu (Copper)	Zn (Zinc)

Calibration Mix Majors For AA & ICP-OES

AG-CALMAJOR-ASL-1 \$ 105 / 100 mL

AG-CALMAJOR-ASL-5 \$ 204 / 500 mL

500 µg/mL each in 5% HNO₃ 5 comps.

Ca (Calcium)	Mg (Magnesium)
Fe (Iron)	Na (Sodium)
K (Potassium)	

6020 Interference Check Soln A

AG-INTFR-6020-ASL-1 \$ 385 / 100 mL

AG-INTFR-6020-ASL-5 \$ 747 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ tr. HF 12 comps.

Cl (Chloride)	20,000	Mg (Magnesium)	1000
Ca (Calcium)	3000	P (Phosphorus)	1000
Fe (Iron)	2500	K (Potassium)	1000
Na (Sodium)	2500	S (Sulfur)	1000
C (Carbon)	2000	Mo (Molybdenum)	20
Al (Aluminum)	1000	Ti (Titanium)	20

6020 Interference Check Soln B

AG-INTFR2-6020-ASL-1 \$ 143 / 100 mL

AG-INTFR2-6020-ASL-5 \$ 276 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 11 comps.

Cr (Chromium)	20	As (Arsenic)	10
Co (Cobalt)	20	Cd (Cadmium)	10
Cu (Copper)	20	Se (Selenium)	10
Mn (Manganese)	20	Zn (Zinc)	10
Ni (Nickel)	20	Ag (Silver)	5
V (Vanadium)	20		

Internal Standard Mix

AG-INT-ASL-1 \$ 132 / 100 mL

AG-INT-ASL-5 \$ 256 / 500 mL

10 µg/mL each in 5% HNO₃ 7 comps.

Bi (Bismuth)	Sc (Scandium)
Ge (Germanium)	Tb (Terbium)
In (Indium)	Y (Yttrium)
Li-6 (Lithium-6)	

ICP Internal Standard

AG-INT2-ASL-1 \$ 125 / 100 mL

AG-INT2-ASL-5 \$ 242 / 500 mL

100 µg/mL each in 5% HNO₃ 6 comps.

Li-6 (Lithium-6)	In (Indium)
Sc (Scandium)	Tb (Terbium)
Y (Yttrium)	Bi (Bismuth)

Multi-Element Calibration Std. 1

AG-MECAL1-ASL-1 \$ 165 / 100 mL

AG-MECAL1-ASL-5 \$ 320 / 500 mL

10 µg/mL each in 5% HNO₃ 17 comps.

Ce (Cerium)	Pr (Praseodymium)
Dy (Dysprosium)	Sc (Scandium)
Er (Erbium)	Sm (Samarium)
Eu (Europium)	Tb (Terbium)
Gd (Gadolinium)	Th (Thorium)
Ho (Holmium)	Tm (Thulium)
La (Lanthanum)	Y (Yttrium)
Lu (Lutetium)	Yb (Ytterbium)
Nd (Neodymium)	

Multi-Element Calibration Std. 2A

AG-MECAL2A-ASL-1 \$ 225 / 100 mL

AG-MECAL2A-ASL-5 \$ 436 / 500 mL

10 µg/mL each in 5% HNO₃ 27 comps.

Ag (Silver)	Li (Lithium)
Al (Aluminum)	Mg (Magnesium)
As (Arsenic)	Mn (Manganese)
Ba (Barium)	Na (Sodium)
Be (Beryllium)	Ni (Nickel)
Ca (Calcium)	Pb (Lead)
Cd (Cadmium)	Rb (Rubidium)
Co (Cobalt)	Se (Selenium)
Cr (Chromium)	Sr (Strontium)
Cs (Cesium)	Tl (Thallium)
Cu (Copper)	U (Uranium)
Fe (Iron)	V (Vanadium)
Ga (Gallium)	Zn (Zinc)
K (Potassium)	

Multi-Element Calibration Std. 3

AG-MECAL3-ASL-1 \$ 132 / 100 mL

AG-MECAL3-ASL-5 \$ 256 / 500 mL

10 µg/mL each in 10% HCl 10 comps.

Au (Gold)	Rh (Rhodium)
Hf (Hafnium)	Ru (Ruthenium)
Ir (Iridium)	Sb (Antimony)
Pd (Palladium)	Sn (Tin)
Pt (Platinum)	Te (Tellurium)

Multi-Element Calibration Std. 4

AG-MECAL4-ASL-1 ▼ \$ 142 / 100 mL

AG-MECAL4-ASL-5 ▼ \$ 275 / 500 mL

10 µg/mL each in Water, tr. HF 12 comps.

B (Boron)	S (Sulfur)
Ge (Germanium)	Si (Silicon)
Mo (Molybdenum)	Ta (Tantalum)
Nb (Niobium)	Ti (Titanium)
P (Phosphorus)	W (Tungsten)
Re (Rhenium)	Zr (Zirconium)

▼ Hazardous fee not required.



AccuStandard equivalent of Horiba/Jobin Yvon

Instrument Calibration Standard Heavy Metals

JY-CALHM-ASL-R1-1 \$ 106 / 100 mL
JY-CALHM-ASL-R1-5 \$ 206 / 500 mL
 At stated conc. (µg/mL) in 2-5% HNO₃ 5 comps.

As (Arsenic)	100
Tl (Thallium)	100
Cd (Cadmium)	50
Se (Selenium)	50
Pb (Lead)	50

Instrument Calibration Standard

JY-CAL-ASL-1 \$ 138 / 100 mL
JY-CAL-ASL-5 \$ 397 / 500 mL
 5000 µg/mL each in 2-5% HNO₃ 4 comps.

Ca (Calcium)	K (Potassium)
Mg (Magnesium)	Na (Sodium)

Instrument Check Standard

JY-CHK-ASL-1 \$ 119 / 100 mL
JY-CHK-ASL-5 \$ 230 / 500 mL
 50 µg/mL each in 2-5% HNO₃ 9 comps.

Al (Aluminum)	K (Potassium)
As (Arsenic)	Na (Sodium)
Co (Cobalt)	P (Phosphorus)
Cr (Chromium)	Pb (Lead)
Cu (Copper)	

Instrument Check Standard 1

JY-CHK1-ASL-1 \$ 106 / 100 mL
JY-CHK1-ASL-5 \$ 206 / 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 5 comps.

K (Potassium)	1500
Pb (Lead)	1000
Al (Aluminum)	500
Mg (Magnesium)	500
Cd (Cadmium)	100

Quality Control Standard 7

JY-QC7-ASL-1 \$ 106 / 100 mL
JY-QC7-ASL-5 \$ 206 / 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 7 comps.

K (Potassium)	1000
Si (Silicon)	500
Al (Aluminum)	100
B (Boron)	100
Ba (Barium)	100
Na (Sodium)	100
Ag (Silver)	50

Quality Control Standard 21

JY-QC21-ASL-1 \$ 238 / 100 mL
JY-QC21-ASL-5 \$ 461 / 500 mL
 100 µg/mL each in 2-5% HNO₃ tr. HF 21 comps.

As (Arsenic)	Mo (Molybdenum)
Be (Beryllium)	Ni (Nickel)
Ca (Calcium)	Pb (Lead)
Cd (Cadmium)	Sb (Antimony)
Co (Cobalt)	Se (Selenium)
Cr (Chromium)	Sr (Strontium)
Cu (Copper)	Ti (Titanium)
Fe (Iron)	Tl (Thallium)
Li (Lithium)	V (Vanadium)
Mg (Magnesium)	Zn (Zinc)
Mn (Manganese)	

Quality Control Standard 23

JY-QC23-ASL-1 \$ 284 / 100 mL
JY-QC23-ASL-5 \$ 550 / 500 mL
 1000 µg/mL each in 2-5% HNO₃ 23 comps.

Ag (Silver)	In (Indium)
Al (Aluminum)	K (Potassium)
B (Boron)	Li (Lithium)
Ba (Barium)	Mg (Magnesium)
Bi (Bismuth)	Mn (Manganese)
Cd (Cadmium)	Na (Sodium)
Ca (Calcium)	Ni (Nickel)
Cr (Chromium)	Pb (Lead)
Co (Cobalt)	Sr (Strontium)
Cu (Copper)	Tl (Thallium)
Fe (Iron)	Zn (Zinc)
Ga (Gallium)	

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ICP Alternate Source

Perkin Elmer

AccuStandard equivalent of Perkin Elmer

Alternate Interferents A

PE-ALTINTA-ASL-1 \$ 125 / 100 mL
PE-ALTINTA-ASL-5 \$ 242 / 500 mL
 1000 µg/mL each in 5% HNO₃ tr. HF 6 comps.

Cr (Chromium)	Ni (Nickel)
Cu (Copper)	Ti (Titanium)
Mn (Manganese)	V (Vanadium)

Analytes B

PE-ANAB-ASL-1 \$ 144 / 100 mL
PE-ANAB-ASL-5 \$ 282 / 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ tr. HF, tr.
 Tartaric acid 14 comps.

Cd (Cadmium)	100
Ni (Nickel)	100
Zn (Zinc)	100
Sb (Antimony)	60
Ba (Barium)	50
Be (Beryllium)	50
Co (Cobalt)	50
Cr (Chromium)	50
Cu (Copper)	50
Mn (Manganese)	50
V (Vanadium)	50
Ag (Silver)	20
As (Arsenic)	10
Tl (Thallium)	10

Alternate Analytes B

PE-ALTB-ASL-1 \$ 149 / 100 mL
PE-ALTB-ASL-5 \$ 289 / 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ tr. HF, tr.
 Tartaric acid 12 comps.

Al (Aluminum)	100
As (Arsenic)	100
B (Boron)	100
Mo (Molybdenum)	100
Na (Sodium)	100
Sb (Antimony)	100
Se (Selenium)	100
Tl (Thallium)	100
Ca (Calcium)	10
Fe (Iron)	10
Mg (Magnesium)	10
Si (Silicon)	10

Instrument Calibration Std. 1

PE-CAL1-ASL-1 \$ 245 / 100 mL
PE-CAL1-ASL-5 \$ 476 / 500 mL
 20 µg/mL each in 2% HNO₃ tr. Tartaric acid
 20 comps.

Ag (Silver)	Mo (Molybdenum)
Al (Aluminum)	Ni (Nickel)
As (Arsenic)	Pb (Lead)
Ba (Barium)	Sb (Antimony)
Be (Beryllium)	Se (Selenium)
Cd (Cadmium)	Th (Thorium)
Co (Cobalt)	Tl (Thallium)
Cr (Chromium)	U (Uranium)
Cu (Copper)	V (Vanadium)
Mn (Manganese)	Zn (Zinc)

Instrument Calibration Std. 2

PE-CAL2-ASL-1 \$ 222 / 100 mL
PE-CAL2-ASL-5 \$ 431 / 500 mL
 100 µg/mL each in 5% HNO₃ tr. HF, tr. Tartaric acid
 26 comps.

Ag (Silver)	Mn (Manganese)
Al (Aluminum)	Mo (Molybdenum)
As (Arsenic)	Na (Sodium)
Ba (Barium)	Ni (Nickel)
Be (Beryllium)	Pb (Lead)
Ca (Calcium)	Sb (Antimony)
Cd (Cadmium)	Se (Selenium)
Co (Cobalt)	Sn (Tin)
Cr (Chromium)	Sr (Strontium)
Cu (Copper)	Ti (Titanium)
Fe (Iron)	Tl (Thallium)
K (Potassium)	V (Vanadium)
Mg (Magnesium)	Zn (Zinc)

Instrument Calibration Std. 3

PE-CAL3-ASL-1 \$ 94 / 100 mL
PE-CAL3-ASL-5 \$ 181 / 500 mL
 1000 µg/mL each in 5% HNO₃ 5 comps.

Fe (Iron)	Na (Sodium)
K (Potassium)	Mg (Magnesium)
Ca (Calcium)	

Instrument Calibration Std. 1

PE-CAL4-ASL-1 \$ 132 / 100 mL
PE-CAL4-ASL-5 \$ 385 / 500 mL
 5000 µg/mL each in 5% HNO₃ 4 comps.

Ca (Calcium)	Na (Sodium)
K (Potassium)	
Mg (Magnesium)	

Instrument Calibration Std. 2

PE-CAL5-ASL-1 \$ 89 / 100 mL
PE-CAL5-ASL-5 \$ 172 / 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 5 comps.

Ni (Nickel)	400
Zn (Zinc)	200
Mn (Manganese)	150
Ag (Silver)	100
Cr (Chromium)	100

Instrument Calibration Std. 3

PE-CAL6-ASL-1 \$ 114 / 100 mL
PE-CAL6-ASL-5 \$ 221 / 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 7 comps.

Al (Aluminum)	2000
Ba (Barium)	2000
Fe (Iron)	1000
Co (Cobalt)	500
V (Vanadium)	500
Cu (Copper)	250
Be (Beryllium)	50

Instrument Calibration Std. 4

PE-CAL7-ASL-1 \$ 79 / 100 mL
PE-CAL7-ASL-5 \$ 152 / 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 5 comps.

As (Arsenic)	100
Tl (Thallium)	100
Cd (Cadmium)	50
Se (Selenium)	50
Pb (Lead)	50

Initial Calibration Verification Std.

PE-CRDL1-ASL-1 \$ 262 / 100 mL
PE-CRDL1-ASL-5 \$ 508 / 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ tr. Tartaric acid
 21 comps.

Ca (Calcium)	5000
Mg (Magnesium)	5000
K (Potassium)	5000
Na (Sodium)	5000
Ba (Barium)	200
Al (Aluminum)	200
Fe (Iron)	100
Sb (Antimony)	60
Co (Cobalt)	50
V (Vanadium)	50
Ni (Nickel)	40
Cu (Copper)	25
Zn (Zinc)	20
Mn (Manganese)	15
As (Arsenic)	10
Cr (Chromium)	10
Ag (Silver)	10
Tl (Thallium)	10
Cd (Cadmium)	5
Se (Selenium)	5
Pb (Lead)	3

Supplied as a 10X concentrate for better stability.

Detection Limit

PE-CRDL2-ASL-1 \$ 157 / 100 mL
PE-CRDL2-ASL-5 \$ 305 / 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ tr. HF tr.
 Tartaric acid 15 comps.

Sb (Antimony)	120
Co (Cobalt)	100
V (Vanadium)	100
Ni (Nickel)	80
Cu (Copper)	50
Zn (Zinc)	40
Mn (Manganese)	30
Ag (Silver)	20
As (Arsenic)	20
Cr (Chromium)	20
Tl (Thallium)	20
Be (Beryllium)	10
Cd (Cadmium)	10
Se (Selenium)	10
Pb (Lead)	6

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Detection Limit Standard for use with the ELAN 5000

PE-CRDL3-ASL-1 \$ 85 / 100 mL
PE-CRDL3-ASL-5 \$ 165 / 500 mL
 1 µg/mL each in 1% HNO₃ 5 comps.

Be (Beryllium)	Tl (Thallium)
Co (Cobalt)	U (Uranium)
In (Indium)	

Supplied as a 100X concentrate for better stability.

ELAN 6100 Detection Limit Solution

PE-CRDL4-ASL-1 \$ 85 / 100 mL
PE-CRDL4-ASL-5 \$ 165 / 500 mL
 10 µg/mL each in 1% HNO₃ 4 comps.

Be (Beryllium)	In (Indium)
Co (Cobalt)	U (Uranium)

Supplied as a 1000X concentrate for better stability.



AccuStandard equivalent of Perkin Elmer

Instrument Check Standard 1

PE-CHK1-ASL-1 \$ 196 / 100 mL
PE-CHK1-ASL-5 \$ 379 / 500 mL
 10 µg/mL each in 2% HNO₃ tr. HF, tr. Tartaric acid
 17 comps.

Ag (Silver)	Mn (Manganese)
Al (Aluminum)	Ni (Nickel)
As (Arsenic)	Pb (Lead)
Ba (Barium)	Sb (Antimony)
Be (Beryllium)	Se (Selenium)
Cd (Cadmium)	Tl (Thallium)
Co (Cobalt)	V (Vanadium)
Cr (Chromium)	Zn (Zinc)
Cu (Copper)	

Instrument Check Standard 3

PE-CHK3-ASL-1 \$ 114 / 100 mL
PE-CHK3-ASL-5 \$ 222 / 500 mL
 200 µg/mL each in 2% HNO₃ 5 comps.
 Ca (Calcium) Mg (Magnesium)
 Fe (Iron) Na (Sodium)
 K (Potassium)

Instrument Check Standard 4

PE-CHK4-ASL-1 \$ 84 / 100 mL
PE-CHK4-ASL-5 \$ 162 / 500 mL
 10 µg/mL each in 2% HNO₃ 3 comps.
 Mo (Molybdenum) U (Uranium)
 Th (Thorium)

Instrument Check Standard 5

PE-CHK5-ASL-1 \$ 94 / 100 mL
PE-CHK5-ASL-5 \$ 181 / 500 mL
 10 µg/mL each in 2% HNO₃ tr. HF 4 comps.
 Mo (Molybdenum) Sr (Strontium)
 Sn (Tin) Ti (Titanium)

Multi-Element Solution 1

PE-MES1-ASL-1 \$ 105 / 100 mL
PE-MES1-ASL-5 \$ 204 / 500 mL
 1000 µg/mL each in 5% HNO₃ 4 comps.
 Al (Aluminum) Fe (Iron)
 Ca (Calcium) Mg (Magnesium)

Multi-Element Solution 2

PE-MES2-ASL-1 \$ 94 / 100 mL
PE-MES2-ASL-5 \$ 181 / 500 mL
 1000 µg/mL each in 5% HNO₃ 3 comps.
 K (Potassium) P (Phosphorus)
 Na (Sodium)

Multi-Element Solution 3

PE-MES3-ASL-1 ▼ \$ 110 / 100 mL
PE-MES3-ASL-5 ▼ \$ 215 / 500 mL
 1000 µg/mL each in Water tr. HF 5 comps.
 Mo (Molybdenum) W (Tungsten)
 Sb (Antimony) Zr (Zirconium)
 Sn (Tin)

Multi-Element Solution 4

PE-MES4-ASL-1 \$ 170 / 100 mL
PE-MES4-ASL-5 \$ 422 / 500 mL
 1000 µg/mL each in 5% HNO₃ 17 comps.
 As (Arsenic) Li (Lithium)
 Ba (Barium) Mn (Manganese)
 Be (Beryllium) Ni (Nickel)
 Cd (Cadmium) Sc (Scandium)
 Cr (Chromium) Sr (Strontium)
 Co (Cobalt) V (Vanadium)
 Cu (Copper) Y (Yttrium)
 La (Lanthanum) Zn (Zinc)
 Pb (Lead)

Interference Check Standard 5

PE-ICSS-ASL-1 \$ 155 / 100 mL
PE-ICSS-ASL-5 \$ 310 / 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 5 comps.

Ca (Calcium)	6000
Fe (Iron)	5000
Mg (Magnesium)	3000
Al (Aluminum)	1200
Na (Sodium)	1000

Interference Check Standard 18

PE-ICS18-ASL-1-SET \$ 275 / 2 x 100 mL
PE-ICS18-ASL-5-SET \$ 534 / 2 x 500 mL

PE-ICS18-ASL
 At stated conc. (µg/mL) in 5% HNO₃ 16 comps.

K (Potassium)	20000
As (Arsenic)	1000
Pb (Lead)	1000
Tl (Thallium)	1000
Se (Selenium)	500
Ag (Silver)	300
Ba (Barium)	300
Cd (Cadmium)	300
Co (Cobalt)	300
Cr (Chromium)	300
Cu (Copper)	300
Ni (Nickel)	300
V (Vanadium)	300
Zn (Zinc)	300
Mn (Manganese)	200
Be (Beryllium)	100

PE-ICS18-HG-ASL

100 µg/mL in 5% HNO₃

Hg (Mercury)

Supplied separately for better product stability.

Internal Standard Mix

PE-INT-ASL-1 \$ 127 / 100 mL
PE-INT-ASL-5 \$ 246 / 500 mL
 10 µg/mL each in 5% HNO₃ 7 comps.

Li6 (Lithium)	In (Indium)
Sc (Scandium)	Tb (Terbium)
Ge (Germanium)	Bi (Bismuth)
Y (Yttrium)	

Interferents A

PE-INTA-ASL-1 \$ 199 / 100 mL
PE-INTA-ASL-5 \$ 385 / 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 4 comps.

Al (Aluminum)	5000
Ca (Calcium)	5000
Mg (Magnesium)	5000
Fe (Iron)	2000

Interferents Check Solution 1

PE-INTFR1-ASL-1 \$ 255 / 100 mL
PE-INTFR1-ASL-5 \$ 510 / 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 12 comps.

Cl (Chloride)	10000
C (Carbon)	2000
Al (Aluminum)	100
Ca (Calcium)	100
Fe (Iron)	100
K (Potassium)	100
Mg (Magnesium)	100
Na (Sodium)	100
P (Phosphorus)	100
S (Sulfur)	100
Mo (Molybdenum)	20
Ti (Titanium)	20

Interference Check Solution 2

PE-INTFR2-ASL-1 \$ 104 / 100 mL
PE-INTFR2-ASL-5 \$ 202 / 500 mL
 10 µg/mL each in 2% HNO₃ 9 comps.

Ag (Silver)	Cu (Copper)
As (Arsenic)	Mn (Manganese)
Cd (Cadmium)	Ni (Nickel)
Co (Cobalt)	Zn (Zinc)
Cr (Chromium)	

Interference Check Standard A

PE-INTFRA-ASL-1 \$ 335 / 100 mL
PE-INTFRA-ASL-5 \$ 665 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ tr. HF
 12 comps.

Cl (Chloride)	21215
Ca (Calcium)	3000
Na (Sodium)	2500
Fe (Iron)	2500
C (Carbon)	2000
Al (Aluminum)	1000
K (Potassium)	1000
Mg (Magnesium)	1000
P (Phosphorus)	1000
S (Sulfur)	1000
Mo (Molybdenum)	20
Ti (Titanium)	20

Interference Check Standard B

PE-INTFRB-ASL-1 \$ 145 / 100 mL
PE-INTFRB-ASL-5 \$ 281 / 500 mL

At stated conc. (µg/mL) in 2% HNO₃ 11 comps.

Co (Cobalt)	20
Cr (Chromium)	20
Cu (Copper)	20
Mn (Manganese)	20
Ni (Nickel)	20
V (Vanadium)	20
As (Arsenic)	10
Cd (Cadmium)	10
Se (Selenium)	10
Zn (Zinc)	10
Ag (Silver)	5

Interference Check Standard C

PE-INTFRC-ASL-1-SET \$ 185 / 2 x 100 mL
PE-INTFRC-ASL-5-SET \$ 359 / 2 x 500 mL

2 µg/mL each in 2% HNO₃ tr. HF tr. Tartaric acid
 16 comps.

Sb (Antimony)	Pb (Lead)
As (Arsenic)	Mn (Manganese)
Ba (Barium)	Ni (Nickel)
Be (Beryllium)	Se (Selenium)
Cd (Cadmium)	Ag (Silver)
Cr (Chromium)	Tl (Thallium)
Co (Cobalt)	V (Vanadium)
Cu (Copper)	Zn (Zinc)

PE-INTFRC-HG-ASL

2 µg/mL in 5% HNO₃

Hg (Mercury)

Supplied separately for better product stability.

▼ Hazardous fee not required.



ICP Alternate Source

Perkin Elmer

AccuStandard equivalent of Perkin Elmer

Mixed Calibration Standard

PE-MCS-ASL-1 \$ 125 / 100 mL
PE-MCS-ASL-5 \$ 242 / 500 mL
 At stated conc. (µg/mL) in 2% HNO₃ 10 comps.

As (Arsenic)	50
K (Potassium)	50
La (Lanthanum)	10
Li (Lithium)	10
Mn (Manganese)	10
Ni (Nickel)	10
Sr (Strontium)	10
Zn (Zinc)	10
Ba (Barium)	1
Mg (Magnesium)	1

Mixed Calibration Standard 1

PE-MCS1-ASL-1 \$ 104 / 100 mL
PE-MCS1-ASL-5 \$ 202 / 500 mL
 At stated conc. (µg/mL) in 2% HNO₃ 6 comps.

Pb (Lead)	500
Se (Selenium)	200
Cd (Cadmium)	150
Zn (Zinc)	150
Mn (Manganese)	100
Be (Beryllium)	50

Mixed Calibration Standard 2

PE-MCS2-ASL-1 \$ 94 / 100 mL
PE-MCS2-ASL-5 \$ 181 / 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 5 comps.

Fe (Iron)	10000
Ba (Barium)	100
Co (Cobalt)	100
Cu (Copper)	100
V (Vanadium)	100

Mixed Calibration Standard 3

PE-MCS3-ASL-1 \$ 78 / 100 mL
PE-MCS3-ASL-5 \$ 151 / 500 mL
 at stated conc. (µg/mL) in 2% HNO₃ tr. HF 3 comps.

As (Arsenic)	500
Mo (Molybdenum)	100
Si (Silicon)	100

Mixed Calibration Standard 4

PE-MCS4-ASL-1 \$ 106 / 100 mL
PE-MCS4-ASL-5 \$ 205 / 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 6 comps.

Ca (Calcium)	1000
K (Potassium)	400
Al (Aluminum)	200
Na (Sodium)	200
Cr (Chromium)	20
Ni (Nickel)	20

Mixed Calibration Standard 5

PE-MCS5-ASL-1 \$ 89 / 100 mL
PE-MCS5-ASL-5 \$ 173 / 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ tr. HF tr. Tartaric acid 5 comps.

Mg (Magnesium)	1000
Sb (Antimony)	200
Tl (Thallium)	200
B (Boron)	100
Ag (Silver)	50

Multi-Element Calibration Standard 1

PE-MECAL1-ASL-1 \$ 93 / 100 mL
PE-MECAL1-ASL-5 \$ 180 / 500 mL
 10 µg/mL each in 2% HNO₃ 9 comps.

Be (Beryllium)	Mg (Magnesium)
Bi (Bismuth)	Ni (Nickel)
Ce (Cerium)	Pb (Lead)
Co (Cobalt)	U (Uranium)
In (Indium)	

Multi-Element Calibration Standard 2

PE-MECAL2-ASL-1 \$ 142 / 100 mL
PE-MECAL2-ASL-5 \$ 275 / 500 mL
 10 µg/mL each in 5% HNO₃ 17 comps.

Ce (Cerium)	Pr (Praseodymium)
Dy (Dysprosium)	Sm (Samarium)
Er (Erbium)	Sc (Scandium)
Eu (Europium)	Tb (Terbium)
Gd (Gadolinium)	Th (Thorium)
Ho (Holmium)	Tm (Thulium)
La (Lanthanum)	Yb (Ytterbium)
Lu (Lutetium)	Y (Yttrium)
Nd (Neodymium)	

Multi-Element Calibration Standard 3

PE-MECAL3-ASL-1-SET \$ 225 / 2 x 100 mL
PE-MECAL3-ASL-5-SET \$ 436 / 2 x 500 mL
PE-MECAL3-ASL

10 µg/mL each in 5% HNO₃ 29 comps.

Ag (Silver)	K (Potassium)
Al (Aluminum)	Li (Lithium)
As (Arsenic)	Mg (Magnesium)
Ba (Barium)	Mn (Manganese)
Be (Beryllium)	Na (Sodium)
Bi (Bismuth)	Ni (Nickel)
Ca (Calcium)	Pb (Lead)
Cd (Cadmium)	Rb (Rubidium)
Co (Cobalt)	Se (Selenium)
Cr (Chromium)	Sr (Strontium)
Cs (Cesium)	Tl (Thallium)
Cu (Copper)	U (Uranium)
Fe (Iron)	V (Vanadium)
Ga (Gallium)	Zn (Zinc)
In (Indium)	

PE-MECAL3-HG-ASL

10 µg/mL in 5% HNO₃

Hg (Mercury)

Supplied separately for better product stability.

Multi-Element Calibration Standard 4

PE-MECAL4-ASL-1 \$ 90 / 100 mL
PE-MECAL4-ASL-5 \$ 174 / 500 mL
 10 µg/mL each in 10% HCl 10 comps.

Au (Gold)	Rh (Rhodium)
Hf (Hafnium)	Ru (Ruthenium)
Ir (Iridium)	Sb (Antimony)
Pd (Palladium)	Sn (Tin)
Pt (Platinum)	Te (Tellurium)

Multi-Element Calibration Standard 5

PE-MECAL5-ASL-1 ▼ \$ 112 / 100 mL
PE-MECAL5-ASL-5 ▼ \$ 217 / 500 mL
 10 µg/mL each in Water, tr. HF 12 comps.

B (Boron)	S (Sulfur)
Ge (Germanium)	Si (Silicon)
Mo (Molybdenum)	Ta (Tantalum)
Nb (Niobium)	Ti (Titanium)
P (Phosphorus)	W (Tungsten)
Re (Rhenium)	Zr (Zirconium)

Multi-Element Internal Standard

PE-MEINT-ASL-1 \$ 115 / 100 mL
PE-MEINT-ASL-5 \$ 222 / 500 mL
 10 µg/mL each in 2% HNO₃ 7 comps.

Bi (Bismuth)	Sc (Scandium)
Ho (Holmium)	Tb (Terbium)
In (Indium)	Y (Yttrium)
Li6 (Lithium)	

Memory Test 1

PE-MEM1-ASL-1 \$ 262 / 100 mL
PE-MEM1-ASL-5 \$ 508 / 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 21 comps.

Al (Aluminum)	1000
Ca (Calcium)	1000
Fe (Iron)	1000
K (Potassium)	1000
Mg (Magnesium)	1000
Na (Sodium)	1000
Ag (Silver)	20
As (Arsenic)	20
Ba (Barium)	20
Be (Beryllium)	20
Cd (Cadmium)	20
Co (Cobalt)	20
Cr (Chromium)	20
Cu (Copper)	20
Mn (Manganese)	20
Ni (Nickel)	20
Pb (Lead)	20
Se (Selenium)	20
Tl (Thallium)	20
V (Vanadium)	20
Zn (Zinc)	20

Memory Test 2

PE-MEM2-ASL-1 ▼ \$ 248 / 100 mL
PE-MEM2-ASL-5 ▼ \$ 481 / 500 mL
 At stated conc. (µg/mL) in Water, tr. HF 7 comps.

Cl (Chloride)	7200
C (Carbon)	2000
P (Phosphorus)	1000
S (Sulfur)	1000
Mo (Molybdenum)	20
Sb (Antimony)	20
Ti (Titanium)	20

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▼ Hazardous fee not required



AccuStandard equivalent of Perkin Elmer

QC Standard 7 Elements

PE-QC7-ASL-1 \$ 89 / 100 mL
PE-QC7-ASL-5 \$ 174 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ tr. HF
 7 comps.

K (Potassium)	1000
Si (Silicon)	500
Al (Aluminum)	100
B (Boron)	100
Ba (Barium)	100
Na (Sodium)	100
Ag (Silver)	50

QC Standard 21 Elements

PE-QC21-ASL-1 \$ 195 / 100 mL
PE-QC21-ASL-5 \$ 377 / 500 mL

100 µg/mL each in 5% HNO₃ tr. HF, tr. Tartaric acid
 21 comps.

As (Arsenic)	Mo (Molybdenum)
Be (Beryllium)	Ni (Nickel)
Ca (Calcium)	Pb (Lead)
Cd (Cadmium)	Sb (Antimony)
Co (Cobalt)	Se (Selenium)
Cr (Chromium)	Sr (Strontium)
Cu (Copper)	Ti (Titanium)
Fe (Iron)	Tl (Thallium)
Li (Lithium)	V (Vanadium)
Mg (Magnesium)	Zn (Zinc)
Mn (Manganese)	

Primary Drinking Water Metals

PE-SDWA1-ASL-1-SET \$ 104 / 2 x 100 mL
PE-SDWA1-ASL-5-SET \$ 202 / 2 x 500 mL

PE-SDWA1-ASL

At stated conc. (µg/mL) in 2% HNO₃ 7 comps.

Ba (Barium)	100
Ag (Silver)	10
As (Arsenic)	10
Cr (Chromium)	10
Pb (Lead)	10
Cd (Cadmium)	5
Se (Selenium)	5

PE-SDWA1-HG-ASL

10 µg/mL in 2% HNO₃

Hg (Mercury)

Supplied separately for better product stability.

Secondary Drinking Water Metals

PE-SDWA2-ASL-1 \$ 82 / 100 mL
PE-SDWA2-ASL-5 \$ 159 / 500 mL

At stated conc. (µg/mL) in 2% HNO₃ 4 comps.

Zn (Zinc)	500
Cu (Copper)	100
Fe (Iron)	30
Mn (Manganese)	5

ELAN 6100 DRC Sensitivity/ Detection Limit Solution

PE-SENS-ASL-1 \$ 125 / 100 mL
PE-SENS-ASL-5 \$ 242 / 500 mL

1 µg/mL each in 2% HNO₃ tr. HCl 13 comps.

Ba (Barium)	Pb (Lead)
Be (Beryllium)	Mg (Magnesium)
Ca (Calcium)	K (Potassium)
Ce (Cerium)	Rh (Rhodium)
Co (Cobalt)	Na (Sodium)
In (Indium)	U (Uranium)
Fe (Iron)	

Supplied as a 1000X concentrate for better stability.

ELAN 9000/6X00 Dual Detector Calibration Solution

PE-SETUP1-ASL-1 \$ 85 / 100 mL
PE-SETUP1-ASL-5 \$ 165 / 500 mL

2 µg/mL each in 2% HNO₃ tr. HCl 5 comps.

Cd (Cadmium)	Mg (Magnesium)
Cu (Copper)	Rh (Rhodium)
Pb (Lead)	

Supplied as a 10X concentrate for better stability.

ELAN 6000/5000 Plasma Setup Solution

PE-SETUP2-ASL-1 \$ 95 / 100 mL
PE-SETUP2-ASL-5 \$ 185 / 500 mL

1 µg/mL each in 1% HNO₃ tr. HCl 11 comps.

Ba (Barium)	Mg (Magnesium)
Cd (Cadmium)	Rh (Rhodium)
Ce (Cerium)	Sc (Scandium)
Cu (Copper)	Tb (Terbium)
Ge (Germanium)	Tl (Thallium)
Pb (Lead)	

Supplied as a 100X concentrate for better stability.

SmartTune Solution for ELAN/DRC-e

PE-SMTUNE-ASL-1 \$ 95 / 100 mL
PE-SMTUNE-ASL-5 \$ 185 / 500 mL

1 µg/mL each in 2% HNO₃ tr. HCl 9 comps.

Ba (Barium)	Pb (Lead)
Be (Beryllium)	Mg (Magnesium)
Ce (Cerium)	Rh (Rhodium)
Co (Cobalt)	U (Uranium)
In (Indium)	

Supplied as a 100X concentrate for better stability.

SmartTune Solution for DRC/ DRC^{Plus}/DRC II

PE-SMTUNE2-ASL-1 \$ 105 / 100 mL
PE-SMTUNE2-ASL-5 \$ 204 / 500 mL

At stated conc. (µg/mL) in 0.5% HNO₃ 10 comps.

Ba (Barium)	10
Be (Beryllium)	1
Ce (Cerium)	1
Co (Cobalt)	1
In (Indium)	1
Fe (Iron)	1
Pb (Lead)	1
Mg (Magnesium)	1
Th (Thorium)	1
U (Uranium)	1

Supplied as a 1000X concentrate for better stability.

Spike Sample Analysis

PE-SPIKE-ASL-1 \$ 195 / 100 mL
PE-SPIKE-ASL-5 \$ 378 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ tr. HF, tr. Tartaric acid 18 comps.

Al (Aluminum)	200
As (Arsenic)	200
Ba (Barium)	200
Se (Selenium)	200
Tl (Thallium)	200
Fe (Iron)	100
Co (Cobalt)	50
Mn (Manganese)	50
Ni (Nickel)	50
Pb (Lead)	50
Sb (Antimony)	50
V (Vanadium)	50
Zn (Zinc)	50
Cu (Copper)	25
Cr (Chromium)	20
Ag (Silver)	5
Be (Beryllium)	5
Cd (Cadmium)	5

Spike Sample Standard I (Water)

PE-SPIKE1-ASL-1 \$ 175 / 100 mL
PE-SPIKE1-ASL-5 \$ 339 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ tr. HF, tr. Tartaric acid 17 comps.

Fe (Iron)	500
Ba (Barium)	250
Zn (Zinc)	250
Co (Cobalt)	100
Cr (Chromium)	100
Cu (Copper)	100
Mn (Manganese)	100
Ni (Nickel)	100
Sb (Antimony)	100
V (Vanadium)	100
As (Arsenic)	50
Pb (Lead)	50
Ag (Silver)	25
Be (Beryllium)	25
Cd (Cadmium)	25
Se (Selenium)	25
Tl (Thallium)	25

Spike Sample Standard II (Soil)

PE-SPIKE2-ASL-1 \$ 140 / 100 mL
PE-SPIKE2-ASL-5 \$ 271 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ tr. HF, tr. Tartaric acid 15 comps.

Ba (Barium)	250
Cr (Chromium)	250
Cu (Copper)	250
Zn (Zinc)	250
V (Vanadium)	150
Ni (Nickel)	125
Co (Cobalt)	100
Pb (Lead)	100
Sb (Antimony)	100
As (Arsenic)	50
Cd (Cadmium)	50
Ag (Silver)	25
Be (Beryllium)	25
Se (Selenium)	25
Tl (Thallium)	25

Spike Sample Standard III (for ILM 05.2)

PE-SPIKE3-ASL-1 \$ 167 / 100 mL
PE-SPIKE3-ASL-5 \$ 324 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ tr. HF, tr. Tartaric acid 17 comps.

Al (Aluminum)	200
Ba (Barium)	200
Co (Cobalt)	50
Mn (Manganese)	50
Ni (Nickel)	50
V (Vanadium)	50
Zn (Zinc)	50
Cu (Copper)	25
Cr (Chromium)	20
Sb (Antimony)	10
Be (Beryllium)	5
Cd (Cadmium)	5
Ag (Silver)	5
Tl (Thallium)	5
As (Arsenic)	4
Pb (Lead)	2
Se (Selenium)	1



ICP Alternate Source

Perkin Elmer

AccuStandard equivalent of Perkin Elmer

ELAN 9000/6100 Setup/Stab/ Masscal Solution

PE-STAB-ASL-1	\$ 95 / 100 mL
PE-STAB-ASL-5	\$ 185 / 500 mL
1 µg/mL each in 1% HNO ₃ tr. HCl 9 comps.	

Ba (Barium)	Pb (Lead)
Cd (Cadmium)	Mg (Magnesium)
Ce (Cerium)	Rh (Rhodium)
Cu (Copper)	U (Uranium)
In (Indium)	

Supplied as a 100X concentrate for better stability.

Tuning Solution I

PE-TUNSOL-ASL-1	\$ 145 / 100 mL
PE-TUNSOL-ASL-5	\$ 281 / 500 mL
10 µg/mL each in 2% HNO ₃ tr. HCl 12 comps.	

Ba (Barium)	Mg (Magnesium)
Be (Beryllium)	Pb (Lead)
Ce (Cerium)	Rh (Rhodium)
Co (Cobalt)	Tl (Thallium)
In (Indium)	U (Uranium)
Li (Lithium)	Y (Yttrium)

Low UV Standard

PE-UV-ASL-1	\$ 77 / 100 mL
PE-UV-ASL-5	\$ 149 / 500 mL
10 µg/mL each in 2% HNO ₃ 3 comps.	

Al (Aluminum)	S (Sulfur)
P (Phosphorus)	

Save up
to 50%



AccuStandard is not affiliated with the companies and brands on these pages. The brands and company names appear for the purpose of cross reference with the corresponding AccuStandard products.

VIS Wavecal Solution

PE-VISWAVE-ASL-1	\$ 76 / 100 mL
PE-VISWAVE-ASL-5	\$ 148 / 500 mL
At stated conc. (µg/mL) in 2% HNO ₃ 8 comps.	

K (Potassium)	50
La (Lanthanum)	10
Li (Lithium)	10
Mn (Manganese)	10
Na (Sodium)	10
Sr (Strontium)	10
Ba (Barium)	1
Ca (Calcium)	1

UV Wavecal Solution

PE-UVWAVE-ASL-R1-1	\$ 115 / 100 mL
PE-UVWAVE-ASL-R1-5	\$ 225 / 500 mL
At stated conc. (µg/mL) in 5% HCl 12 comps.	

K (Potassium)	100
P (Phosphorus)	100
S (Sulfur)	100
As (Arsenic)	20
La (Lanthanum)	20
Li (Lithium)	20
Mn (Manganese)	20
Mo (Molybdenum)	20
Na (Sodium)	20
Ni (Nickel)	20
Sc (Scandium)	20
Ca (Calcium)	1

Initial Calibration Verification Standard 1

PE-VER1-ASL-1	\$ 272 / 100 mL
PE-VER1-ASL-5	\$ 528 / 500 mL
At stated conc. (µg/mL) in 5% HNO ₃ tr. Tartaric acid 26 comps.	

Fe (Iron)	1000
K (Potassium)	1000
Ca (Calcium)	1000
Na (Sodium)	1000
Mg (Magnesium)	1000
Sr (Strontium)	1000
Ag (Silver)	10
Al (Aluminum)	10
As (Arsenic)	10
Ba (Barium)	10
Be (Beryllium)	10
Cd (Cadmium)	10
Co (Cobalt)	10
Cr (Chromium)	10
Cu (Copper)	10
Mn (Manganese)	10
Mo (Molybdenum)	10
Ni (Nickel)	10
Pb (Lead)	10
Sb (Antimony)	10
Se (Selenium)	10
Tl (Thallium)	10
V (Vanadium)	10
Zn (Zinc)	10
Th (Thorium)	10
U (Uranium)	10

Initial Calibration Verification Standard 2

PE-VER2-ASL-R1-1	\$ 73 / 100 mL
PE-VER2-ASL-R1-5	\$ 142 / 500 mL
10 µg/mL each in 2% HNO ₃ tr. HF 2 comps.	

Sn (Tin)	Ti (Titanium)
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Trace Metals I

PE-WPTM1-ASL-1-SET	\$ 137 / 2 x 100 mL
PE-WPTM1-ASL-5-SET	\$ 266 / 2 x 500 mL

PE-WPTM1-ASL

At stated conc. (µg/mL) in 5% HNO₃ 14 comps.

Al (Aluminum)	500
V (Vanadium)	250
As (Arsenic)	100
Be (Beryllium)	100
Co (Cobalt)	100
Cr (Chromium)	100
Cu (Copper)	100
Fe (Iron)	100
Mn (Manganese)	100
Ni (Nickel)	100
Pb (Lead)	100
Zn (Zinc)	100
Cd (Cadmium)	25
Se (Selenium)	25

PE-WPTM1-HG-ASL

10 µg/mL in 5% HNO₃

Hg (Mercury)

Supplied separately for better product stability.

Trace Metals II

PE-WPTM2-ASL-1	\$ 68 / 100 mL
PE-WPTM2-ASL-5	\$ 131 / 500 mL

At stated conc. (µg/mL) in 2% HNO₃ 3 comps.

Sb (Antimony)	20
Tl (Thallium)	20
Ag (Silver)	10

Trace Metals III

PE-WPTM3-ASL-1	\$ 104 / 100 mL
PE-WPTM3-ASL-5	\$ 202 / 500 mL

At stated conc. (µg/mL) in 2% HNO₃ 6 comps.

Ba (Barium)	500
Ca (Calcium)	500
Mo (Molybdenum)	500
Na (Sodium)	500
K (Potassium)	100
Mg (Magnesium)	100

Alternate Metals 1

PE-WPAM1-ASL-1	\$ 129 / 100 mL
PE-WPAM1-ASL-5	\$ 250 / 500 mL

At stated conc. (µg/mL) in 2% HNO₃ 11 comps.

Al (Aluminum)	20
Fe (Iron)	20
V (Vanadium)	20
Co (Cobalt)	10
Cu (Copper)	10
Mn (Manganese)	10
Ni (Nickel)	10
Zn (Zinc)	10
Be (Beryllium)	5
Sb (Antimony)	5
Tl (Thallium)	5

Alternate Metals 3

PE-WPAM3-ASL-1	\$ 79 / 100 mL
PE-WPAM3-ASL-5	\$ 152 / 500 mL

At stated conc. (µg/mL) in 2% HNO₃ 4 comps.

Ca (Calcium)	500
Na (Sodium)	500
K (Potassium)	100
Mg (Magnesium)	100



AccuStandard equivalent of Teledyne

Check Mate 1

TELE-CHK1-ASL-1-SET \$ 205 / 2 x 100 mL
TELE-CHK1-ASL-5-SET \$ 398 / 2 x 500 mL

TELE-CHK1-ASL

At stated conc. (µg/mL) in 5% HCl, 1% HNO₃
 24 comps.

Ca (Calcium)	100
K (Potassium)	100
Mg (Magnesium)	100
Na (Sodium)	100
Al (Aluminum)	10
As (Arsenic)	10
B (Boron)	10
Ba (Barium)	10
Be (Beryllium)	10
Cd (Cadmium)	10
Co (Cobalt)	10
Cr (Chromium)	10
Cu (Copper)	10
Fe (Iron)	10
Mn (Manganese)	10
Mo (Molybdenum)	10
Ni (Nickel)	10
Pb (Lead)	10
Sb (Antimony)	10
Se (Selenium)	10
Si (Silicon)	10
Tl (Thallium)	10
V (Vanadium)	10
Zn (Zinc)	10

TELE-CHK1-AG-ASL

1000 µg/mL in 2% HNO₃

Ag (Silver)

Supplied separately for better product stability.

Check Mate 2

TELE-CHK2-ASL-1-SET \$ 140 / 2 x 100 mL
TELE-CHK2-ASL-5-SET \$ 272 / 2 x 500 mL

TELE-CHK2-ASL

At stated conc. (µg/mL) in 5% HCl, 1% HNO₃
 17 comps.

Ca (Calcium)	100
K (Potassium)	100
Mg (Magnesium)	100
Na (Sodium)	100
Al (Aluminum)	10
Ba (Barium)	10
Be (Beryllium)	10
Cd (Cadmium)	10
Co (Cobalt)	10
Cr (Chromium)	10
Cu (Copper)	10
Fe (Iron)	10
Mn (Manganese)	10
Ni (Nickel)	10
Sb (Antimony)	10
V (Vanadium)	10
Zn (Zinc)	10

TELE-CHK2-AG-ASL

1000 µg/mL in 2% HNO₃

Ag (Silver)

Supplied separately for better product stability.

Check Mate 3

TELE-CHK3-ASL-1-SET \$ 140 / 2 x 100 mL
TELE-CHK3-ASL-5-SET \$ 271 / 2 x 500 mL

TELE-CHK3-ASL

At stated conc. (µg/mL) in 5% HCl, 1% HNO₃
 17 comps.

Ca (Calcium)	10
K (Potassium)	10
Mg (Magnesium)	10
Na (Sodium)	10
Al (Aluminum)	1
Ba (Barium)	1
Be (Beryllium)	1
Cd (Cadmium)	1
Co (Cobalt)	1
Cr (Chromium)	1
Cu (Copper)	1
Fe (Iron)	1
Mn (Manganese)	1
Ni (Nickel)	1
Sb (Antimony)	1
V (Vanadium)	1
Zn (Zinc)	1

TELE-CHK3-AG-ASL

1000 µg/mL in 2% HNO₃

Ag (Silver)

Supplied separately for better product stability.

Check Mate 4

TELE-CHK4-ASL-1 \$ 225 / 100 mL
TELE-CHK4-ASL-5 \$ 436 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 22 comps.

Ca (Calcium)	5000
K (Potassium)	5000
Mg (Magnesium)	5000
Na (Sodium)	5000
Ba (Barium)	200
Fe (Iron)	100
Al (Aluminum)	60
Sb (Antimony)	60
Co (Cobalt)	50
V (Vanadium)	50
Ni (Nickel)	40
Cu (Copper)	25
Zn (Zinc)	20
Mn (Manganese)	15
Ag (Silver)	10
As (Arsenic)	10
Cr (Chromium)	10
Tl (Thallium)	10
Be (Beryllium)	5
Cd (Cadmium)	5
Pb (Lead)	5
Se (Selenium)	5

Check Mate 5

TELE-CHK5-ASL-1 \$ 179 / 100 mL
TELE-CHK5-ASL-5 \$ 346 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 16 comps.

Ca (Calcium)	2000
K (Potassium)	2000
Mg (Magnesium)	2000
Na (Sodium)	2000
Al (Aluminum)	1000
Ba (Barium)	1000
Fe (Iron)	1000
Co (Cobalt)	500
Ni (Nickel)	500
V (Vanadium)	500
Cr (Chromium)	200
Cu (Copper)	200
Ag (Silver)	100
Be (Beryllium)	100
Mn (Manganese)	100
Zn (Zinc)	100

Check Mate 6

TELE-CHK6-ASL-1 \$ 91 / 100 mL
TELE-CHK6-ASL-5 \$ 176 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 5 comps.

As (Arsenic)	500
Pb (Lead)	500
Se (Selenium)	500
Tl (Thallium)	500
Cd (Cadmium)	100

Check Mate 7

TELE-CHK7-ASL-1 \$ 140 / 100 mL
TELE-CHK7-ASL-5 \$ 272 / 500 mL

At stated conc. (µg/mL) in 5% HCl, 1% HNO₃
 17 comps.

Ca (Calcium)	50
K (Potassium)	50
Mg (Magnesium)	50
Na (Sodium)	50
Al (Aluminum)	5
Ba (Barium)	5
Be (Beryllium)	5
Cd (Cadmium)	5
Co (Cobalt)	5
Cr (Chromium)	5
Cu (Copper)	5
Fe (Iron)	5
Mn (Manganese)	5
Ni (Nickel)	5
Sb (Antimony)	5
V (Vanadium)	5
Zn (Zinc)	5

Check Mate 8

TELE-CHK8-ASL-0.1X-1 \$ 195 / 100 mL
TELE-CHK8-ASL-0.1X-5 \$ 378 / 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 22 comps.

Ca (Calcium)	500
K (Potassium)	500
Na (Sodium)	500
Mg (Magnesium)	500
Al (Aluminum)	200
Ba (Barium)	200
Fe (Iron)	100
Sb (Antimony)	60
Co (Cobalt)	50
V (Vanadium)	50
Ni (Nickel)	40
Cu (Copper)	25
Zn (Zinc)	20
Mn (Manganese)	15
Ag (Silver)	10
As (Arsenic)	10
Cr (Chromium)	10
Tl (Thallium)	10
Be (Beryllium)	5
Cd (Cadmium)	5
Pb (Lead)	5
Se (Selenium)	5

Supplied at a 1:10 dilution for
 better long-term stability.



ICP

Miscellaneous Applications

EU Formulation

Scope: For the determination of 32 elements by ICP (Inductively Coupled Plasma)

DIN EN ISO 11885 - 32 Element

ICP Standard Set

DINENISO-11885-1-SET \$ 245 / 2 x 100 mL
DINENISO-11885-5-SET \$480 / 2 x 500 mL

Part 1

DINENISO-11885A-1 100 mL

DINENISO-11885A-5 500 mL

At stated conc. (µg/mL) in 2-5% HNO₃ tr. HF
24 comps.

Ag (Silver)	20
Al (Aluminum)	40
As (Arsenic)	80
Ba (Barium)	2
Be (Beryllium)	2
Bi (Bismuth)	40
Ca (Calcium)	2
Cd (Cadmium)	10
Co (Cobalt)	10
Cr (Chromium)	10
Cu (Copper)	10
Fe (Iron)	20
K (Potassium)	50
Li (Lithium)	2
Mg (Magnesium)	1
Mn (Manganese)	2
Na (Sodium)	20
Ni (Nickel)	50
Pb (Lead)	50
Sb (Antimony)	50
Se (Selenium)	50
Sr (Strontium)	0.5
V (Vanadium)	10
Zn (Zinc)	5

Part 2

DINENISO-11885B-1 100 mL

DINENISO-11885B-5 500 mL

At stated conc. (µg/mL) in 2-5% HNO₃ tr. HF
8 comps.

B (Boron)	5
Mo (Molybdenum)	30
P (Phosphorus)	50
S (Sulfur)	50
Si (Silicon)	20
Sn (Tin)	50
Ti (Titanium)	5
Zr (Zirconium)	10

ASTM D5184 Aluminum and Silicon in Fuel Oils by Ashing, Fusion, ICP-AES Spectrometry & AA Spectrometry

Tartaric Acid / Hydrochloric Acid Solution

D-5184-91-TA-5 \$ 20 / 1 x 500 mL

Tartaric acid @ 0.5% w/v in 4% HCl

Silicon Standard Solution

D-5184-91-SI-1 ▼ \$ 34 / 1 x 100 mL

D-5184-91-SI-5 ▼ \$ 67 / 1 x 500 mL

Silicon @ 1000 µg/mL in water tr. NaOH

Aluminum Standard Solution

D-5184-91-AL-1 \$ 34 / 1 x 100 mL

D-5184-91-AL-5 \$ 67 / 1 x 500 mL

Aluminum @ 1000 µg/mL in 5 % HCl

Technical Note

Contact our Technical Service Department for **Ready-to-Aspirate** working level calibration curves designed for your laboratories' specific calibration ranges.

ASTM D5600 Trace Metals in Petroleum Coke by ICP-AES

Multi-Element Calibration Standard

D-5600-01-1 \$ 225 / 1 x 100 mL

500 µg/mL each in 2-5% HNO₃ tr. HF 12 comps.

Aluminum	Nickel
Barium	Silicon
Calcium	Sodium
Iron	Titanium
Magnesium	Vanadium
Manganese	Zinc

Hydrochloric Acid Diluent

D-5600-BLH-5 \$ 50 / 1 x 500 mL

D-5600-BLH-L-VAP \$ 65 / L (2 x 500 mL)

20% HCl in ASTM Type I water

Lithium Borate Diluent

D-5600-LIB-1 \$ 125 / 1 x 100 mL

D-5600-LIB-5 \$ 180 / 1 x 500 mL

2.0% Lithium Borate in 10% HCl

Technical Note

D5600 Ready-to-Aspirate Standards

We have formulated the following stock standards for ASTM Method D5600. We have prepared numerous **Ready-to-Aspirate** ICP multi-element solutions. Should your company want to eliminate the preparation process for Inorganic standards, contact our Inorganic Technical Department for a quote on a **Ready-to-Aspirate** working level Inorganic standards.

▼ Hazardous fee not required.

ICP/MS

Multi-Element Standards



■ Ultra Pure Matrix ■ Special Packaging ■ Traceability to National Reference Materials

AccuStandard's ICP/MS Standards are formulated to meet the needs of this very special instrument. As matrix effect is of utmost concern, each standard is formulated in specially purified 18 megohm de-ionized water and ultra pure acids. After both wet chemical and instrumental analysis, the standards are packaged in acid leached FLPE containers to provide required protection.

Calibration Standards

These five standards encompass the entire range of elements all at 10 ppm.

Calibration Standard 1

ICP-MS-CAL1-1 \$ 110 / 100 mL
10 µg/mL each in 5% HNO₃ 17 comps.

Element	Isotope
Ce (Cerium)	140
Dy (Dysprosium)	164
Er (Erbium)	166
Eu (Europium)	153
Gd (Gadolinium)	158
Ho (Holmium)	165
La (Lanthanum)	139
Lu (Lutetium)	175
Nd (Neodymium)	143
Pr (Praseodymium)	141
Sm (Samarium)	152
Sc (Scandium)	45
Tb (Terbium)	159
Th (Thorium)	232
Tm (Thulium)	169
Yb (Ytterbium)	174
Y (Yttrium)	89

Calibration Standard 2

ICP-MS-CAL2-1 \$ 180 / 100 mL
10 µg/mL each in 5% HNO₃ 29 comps.

Element	Isotope
Al (Aluminum)	27
As (Arsenic)	75
Ba (Barium)	138
Be (Beryllium)	9
Bi (Bismuth)	209
Cd (Cadmium)	114
Ca (Calcium)	40
Cs (Cesium)	133
Cr (Chromium)	52
Co (Cobalt)	59
Cu (Copper)	63
Ga (Gallium)	69
In (Indium)	115
Fe (Iron)	56
Pb (Lead)	208
Li (Lithium)	7
Mg (Magnesium)	24
Mn (Manganese)	55
Ni (Nickel)	58
K (Potassium)	39
Rb (Rubidium)	85
Se (Selenium)	80
Ag (Silver)	107
Na (Sodium)	23
Sr (Strontium)	88
Tl (Thallium)	205
U (Uranium)	238
V (Vanadium)	51
Zn (Zinc)	64

Calibration Standard 3

ICP-MS-CAL3-1 \$ 80 / 100 mL
10 µg/mL each in 10% HCl 10 comps.

Element	Isotope
Sb (Antimony)	121
Au (Gold)	197
Hf (Hafnium)	180
Ir (Iridium)	193
Pd (Palladium)	106
Pt (Platinum)	195
Rh (Rhodium)	103
Ru (Ruthenium)	102
Te (Tellurium)	130
Sn (Tin)	120

Calibration Standard 5

ICP-MS-CAL5-1 \$ 30 / 100 mL
10 µg/mL in 5% HNO₃

Element	Isotope
Hg (Mercury)	202

Calibration Standard 4

ICP-MS-CAL4-1 ▼ \$ 95 / 100 mL
10 µg/mL each in H₂O tr. HF 12 comps.

Element	Isotope
B (Boron)	11
Ge (Germanium)	74
Mo (Molybdenum)	98
Nb (Niobium)	93
P (Phosphorous)	31
Re (Rhenium)	187
Si (Silicon)	28
S (Sulphur)	32
Ta (Tantalum)	181
Ti (Titanium)	48
W (Tungsten)	184
Zr (Zirconium)	90

Calibration Standard Set

ICP-MS-CAL1-SET \$ 390 / 5 x 100 mL

ICP-MS-CAL1-1	ICP-MS-CAL4-1
ICP-MS-CAL2-1	ICP-MS-CAL5-1
ICP-MS-CAL3-1	



Matrix Blanks

Nitric Acid Blank

ICP-MS-BLN-1 \$ 30 / 100 mL
ICP-MS-BLN-5 \$ 45 / 500 mL

5% HNO₃ in 18 Megohm ASTM Type I deionized Water

These blanks are prepared from the same water source and acids as your standards and therefore provide a consistent matrix. They are excellent as a blank, preparing a standard curve, or as a diluent for standards and samples.

Hydrochloric Acid Blank

ICP-MS-BLH-1 \$ 30 / 100 mL
ICP-MS-BLH-5 \$ 45 / 500 mL

5% HCl in 18 Megohm ASTM Type I deionized Water

Water Blank

ICP-MS-BLW-1 ▼ \$ 30 / 100 mL
ICP-MS-BLW-5 ▼ \$ 40 / 500 mL

18 Megohm ASTM Type I deionized Water

▼ Hazardous fee not required.



ICP/MS

Multi-Element Standards

Tuning Solutions

We offer two tuning solutions, both range from 7-238 mass units. Choose the one which best suits your needs.

ICP-MS-TUNSOL1-1 \$ 100 / 100 mL
100 µg/mL each in 2% HNO₃ 8 comps.

Element	Most Abundant Isotope
Ba (Barium)	138
Be (Beryllium)	9
Cu (Copper)	63
In (Indium)	115
Li (Lithium)	7
Mg (Magnesium)	24
Tl (Thallium)	205
U (Uranium)	238

ICP-MS-TUNSOL2-1 \$ 165 / 100 mL
100 µg/mL each in 2% HNO₃ 13 comps.

Element	Most Abundant Isotope
Ba (Barium)	138
Be (Beryllium)	9
Bi (Bismuth)	209
Ce (Cerium)	140
Cu (Copper)	63
Ho (Holmium)	165
In (Indium)	115
Pb (Lead)	208
Li (Lithium)	7
Mg (Magnesium)	24
Tl (Thallium)	205
U (Uranium)	238
Y (Yttrium)	89

Interference Check Standards

Solution A

ICP-MS-INTA-1 \$ 310 / 100 mL
At stated conc. (µg/mL) in 1% HNO₃ 12 comps.

Element	µg/mL	Most Abundant Isotope
Al (Aluminum)	1000	27
C (Carbon)	2000	12
Ca (Calcium)	3000	40
Cl (Chloride)	18000	35
Fe (Iron)	2500	56
Mg (Magnesium)	1000	24
Mo (Molybdenum)	20	98
P (Phosphorous)	1000	31
K (Potassium)	1000	39
Na (Sodium)	2500	23
S (Sulphur)	1000	32
Ti (Titanium)	20	48

Solution B

ICP-MS-INTB-1 \$ 95 / 100 mL
At stated conc. (µg/mL) in 2% HNO₃ 11 comps.

Element	µg/mL	Most Abundant Isotope
As (Arsenic)	10	75
Cd (Cadmium)	10	114
C (Carbon)	20	12
Cr (Chromium)	20	52
Cu (Copper)	20	63
Mn (Manganese)	20	55
Ni (Nickel)	20	58
Se (Selenium)	10	80
Ag (Silver)	20	107
V (Vanadium)	20	51
Zn (Zinc)	10	64

Interference Check Standard Set

ICP-MS-INT-1-SET \$ 350 / 2 x 100 mL

ICP-MS-INTA-1 ICP-MS-INTB-1

Memory Check Solution

Memory Check Solution Sets

ICP-MS-MEMCHKA-R1-SET \$ 215 / 2 x 100 mL

ICP-MS-MEMCHKA1-R1
ICP-MS-MEMCHKA2-R1

ICP-MS-MEMCHK-R1-SET \$ 250 / 3 x 100 mL

ICP-MS-MEMCHKA1-R1
ICP-MS-MEMCHKA2-R1
ICP-MS-MEMCHKB-R1

Solution A

ICP-MS-MEMCHKA1-R1 100 mL
At stated conc. (µg/mL) in 2% HNO₃ 24 comps.

Element	µg/mL	Most Abundant Isotope
Al (Aluminum)	1000	27
Sb (Antimony)	20	121
As (Arsenic)	20	75
Ba (Barium)	20	138
Be (Beryllium)	20	9
Cd (Cadmium)	20	114
Ca (Calcium)	1000	40
C (Carbon)	2000	12
Cr (Chromium)	20	52
Co (Cobalt)	20	59
Cu (Copper)	20	63
Fe (Iron)	1000	56
Pb (Lead)	20	208
Mg (Magnesium)	1000	24
Mo (Molybdenum)	20	98
K (Potassium)	1000	39
Ti (Titanium)	20	48
Mn (Manganese)	20	55
Ni (Nickel)	20	58
Se (Selenium)	20	80
Na (Sodium)	1000	23
Tl (Thallium)	20	205
V (Vanadium)	20	51
Zn (Zinc)	20	64

ICP-MS-MEMCHKA2-R1 100 mL
20 µg/mL In 2% HNO₃

Element	Most Abundant Isotope
Ag (Silver)	107

Solution B

ICP-MS-MEMCHKB-R1 ▼ \$ 60 / 100 mL
At stated conc. (µg/mL) in H₂O 3 comps.

Element	µg/mL	Most Abundant Isotope
Cl (Chloride)	7200	35
P (Phosphorous)	1000	31
S (Sulphur)	1000	32

Technical Note

These memory check solutions are not designed to be used as standards. The solutions should be mixed together right before aspiration. Precipitate will form over time - this is normal and will not affect the performance of the solution. The mixture is used only to determine the memory or "carry-over" that occurs after running a "concentrated" solution.

▼ Hazardous fee not required.

ICP/MS

Multi-Element Standards



Spiking Standards

Spiking Standard for Water

ICP-MS-SPIKE-W-1 \$ 130 / 100 mL

At stated conc. (µg/mL) in 5% HNO₃ 17 comps.

Most Abundant

Element	µg/mL	Isotope
Sb (Antimony)	100	121
As (Arsenic)	50	75
Ba (Barium)	250	138
Be (Beryllium)	25	9
Cd (Cadmium)	25	114
Cr (Chromium)	100	52
Co (Cobalt)	100	59
Cu (Copper)	100	63
Fe (Iron)	500	56
Pb (Lead)	50	208
Mn (Manganese)	100	55
Ni (Nickel)	100	58
Se (Selenium)	25	80
Ag (Silver)	25	107
Tl (Thallium)	25	205
V (Vanadium)	100	51
Zn (Zinc)	250	64

Spiking Standard for Soil

ICP-MS-SPIKE-S-1 \$ 100 / 100 mL

At stated conc. (µg/mL) in 5% HNO₃ 15 comps.

Most Abundant

Element	µg/mL	Isotope
Sb (Antimony)	100	121
As (Arsenic)	50	75
Ba (Barium)	250	138
Be (Beryllium)	25	9
Cd (Cadmium)	50	114
Cr (Chromium)	250	52
Co (Cobalt)	100	59
Cu (Copper)	250	63
Pb (Lead)	100	208
Ni (Nickel)	125	58
Se (Selenium)	25	80
Ag (Silver)	25	107
Tl (Thallium)	25	205
V (Vanadium)	150	51
Zn (Zinc)	250	90

Spiking Standard Set

ICP-MS-SPIKE-1-SET \$ 165 / 2 x 100 mL

ICP-MS-SPIKE-W-1 ICP-MS-SPIKE-S-1

Quality Control

Sample 1

ICP-MS-QC1-1

\$ 63 / 100 mL

10 µg/mL each in 2% HNO₃

9 comps.

Most Abundant

Element	Isotope
Be (Beryllium)	9
Bi (Bismuth)	209
Ce (Cerium)	140
Co (Cobalt)	59
In (Indium)	115
Pb (Lead)	208
Mg (Magnesium)	24
Ni (Nickel)	58
U (Uranium)	238

Sample 2

ICP-MS-QC2-1

\$ 170 / 100 mL

10 µg/mL each in 5% HNO₃

25 comps

Most Abundant

Element	Isotope
Al (Aluminum)	27
Sb (Antimony)	121
As (Arsenic)	75
Ba (Barium)	138
Be (Beryllium)	9
Cd (Cadmium)	114
Ca (Calcium)	40
Cr (Chromium)	52
Co (Cobalt)	59
Cu (Copper)	63
Fe (Iron)	56
Pb (Lead)	208
Mg (Magnesium)	24
Mn (Manganese)	55
Mo (Molybdenum)	98
Ni (Nickel)	58
K (Potassium)	39
Se (Selenium)	80
Ag (Silver)	107
Na (Sodium)	23
Tl (Thallium)	205
Th (Thorium)	232
U (Uranium)	238
V (Vanadium)	51
Zn (Zinc)	64

Sample 3

ICP-MS-QC3-1

\$ 250 / 100 mL

10 µg/mL each in 5% HNO₃ tr. HF

21 comps.

Most Abundant

Element	Isotope
Sb (Antimony)	121
As (Arsenic)	75
Be (Beryllium)	9
Cd (Cadmium)	114
Ca (Calcium)	40
Cr (Chromium)	52
Co (Cobalt)	59
Cu (Copper)	63
Fe (Iron)	56
Pb (Lead)	208
Li (Lithium)	7
Mg (Magnesium)	24
Mn (Manganese)	55
Mo (Molybdenum)	98
Ni (Nickel)	58
Se (Selenium)	80
Sr (Strontium)	88
Tl (Thallium)	205
Ti (Titanium)	48
V (Vanadium)	51
Zn (Zinc)	64

Internal Standards

Single Internal Standards

For your convenience we offer two concentrations.

Element	Matrix	Unit	10 µg/mL	Price	100 µg/mL	Price
Bismuth	2-5% HNO	100 mL	ICP-MS-IS-BI-1	\$ 30	ICP-MS-IS-BI-10X-1	\$ 35
Holmium	2-5% HNO	100 mL	ICP-MS-IS-HO-1	NEW 30	ICP-MS-IS-HO-10X-1	NEW 42
Indium	2-5% HNO ₃	100 mL	ICP-MS-IS-IN-1	30	ICP-MS-IS-IN-10X-1	42
Lutetium	2-5% HNO ₃	100 mL	ICP-MS-IS-LU-1	NEW 65	ICP-MS-IS-LU-10X-1	NEW 121
Lithium-6	2-5% HNO ₃	100 mL	ICP-MS-IS-LI6-1	NEW 85	ICP-MS-IS-LI6-10X-1	NEW 90
Rhodium	10% HCl	100 mL	ICP-MS-IS-RH-1	95	ICP-MS-IS-RH-10X-1	220
Scandium	2-5% HNO ₃	100 mL	ICP-MS-IS-SC-1	55	ICP-MS-IS-SC-10X-1	78
Terbium	2-5% HNO ₃	100 mL	ICP-MS-IS-TB-1	30	ICP-MS-IS-TB-10X-1	42
Yttrium	2-5% HNO ₃	100 mL	ICP-MS-IS-Y-1	30	ICP-MS-IS-Y-10X-1	35

Internal Standard Mix

These internal standards have been chosen because they all have nearly 100% abundance of a single isotope and they are not commonly found in routine samples.

ICP-MS-IS-MIX1-1 \$ 70 / 100 mL
10 µg/mL each in 2% HNO₃ 7 comps.

Most Abundant

Element	Isotope
Bi (Bismuth)	209
Ho (Holmium)	165
In (Indium)	115
6-Li (Lithium-6)	6
Sc (Scandium)	45
Tb (Terbium)	159
Y (Yttrium)	89



ICP/MS

EPA Method 200.8 & 6020

Method 200.8 Determination of Trace Elements in Water and Waste by ICP/MS

Calibration Standards

Calibration Standard #1 (1991 Version)

ICP-MS-200.8-CAL1-1 \$ 120 / 100 mL
10 µg/mL each in 5% HNO₃ tr. HF 18 comps.

Element	Isotope
Al (Aluminum)	27
Sb (Antimony)	121
As (Arsenic)	75
Be (Beryllium)	9
Cd (Cadmium)	114
Cr (Chromium)	52
Co (Cobalt)	59
Cu (Copper)	63
Pb (Lead)	208
Mn (Manganese)	55
Mo (Molybdenum)	98
Ni (Nickel)	58
Se (Selenium)	80
Tl (Thallium)	205
Th (Thorium)	232
U (Uranium)	238
V (Vanadium)	51
Zn (Zinc)	64

Calibration Standard #2

ICP-MS-200.8-CAL2-1 \$ 75 / 100 mL
10 µg/mL each in 2% HNO₃ 2 comps.

Element	Isotope
Ba (Barium)	138
Ag (Silver)	67

Calibration Standard #1R (1994 Version)

ICP-MS-200.8-CAL1R-1 \$ 120 / 100 mL
At stated conc. (µg/mL) in 2% HNO₃ tr. HF 18 comps.

Element	µg/mL	Isotope
Al (Aluminum)	10	27
Sb (Antimony)	10	121
As (Arsenic)	10	75
Be (Beryllium)	10	9
Cd (Cadmium)	10	114
Cr (Chromium)	10	52
Co (Cobalt)	10	59
Cu (Copper)	10	63
Pb (Lead)	10	208
Mn (Manganese)	10	55
Mo (Molybdenum)	10	98
Ni (Nickel)	10	58
Se (Selenium)	50	80
Tl (Thallium)	10	205
Th (Thorium)	10	232
U (Uranium)	10	238
V (Vanadium)	10	51
Zn (Zinc)	10	64

Calibration Standard #3

ICP-MS-200.8-CAL3-1 \$ 30 / 100 mL
1 component in 5% HNO₃

Element	µg/mL	Isotope
Hg (Mercury)	5	202

Internal Standards

Internal Standard #1

ICP-MS-200.8-IS-1 \$ 135 / 100 mL
100 µg/mL each in 2% HNO₃ 5 comps.

Element	Isotope
Sc (Scandium)	45
Y (Yttrium)	89
In (Indium)	115
Tb (Terbium)	159
Bi (Bismuth)	209

Internal Standard #2

ICP-MS-200.8-IS2-1 \$ 75 / 100 mL
100 µg/mL in 2% HNO₃

Element	Isotope
Au (Gold)	197

see previous pg for
single element internal standards

Tuning Standard

ICP-MS-200.8-TUN-1 \$ 70 / 100 mL
10 µg/mL each in 2% HNO₃ 5 comps.

Element	Isotope
Be (Beryllium)	75
Mg (Magnesium)	24
Co (Cobalt)	59
In (Indium)	115
Pb (Lead)	208

Method 6020 Standards for Inductively Coupled Mass Spectrometry

Calibration Standard

ICP-MS-6020-CAL-R-1 \$ 175 / 100 mL
10 µg/mL each in 2% HNO₃ 22 comps.

Element	Isotope
Al (Aluminum)	27
Sb (Antimony)	121
As (Arsenic)	75
Ba (Barium)	138
Be (Beryllium)	9
Cd (Cadmium)	114
Ca (Calcium)	40
Cr (Chromium)	52
Co (Cobalt)	59
Cu (Copper)	63
Fe (Iron)	56
Pb (Lead)	208
Mg (Magnesium)	24
Mn (Manganese)	55
Ni (Nickel)	58
K (Potassium)	39
Se (Selenium)	80
Ag (Silver)	107
Na (Sodium)	23
Tl (Thallium)	205
V (Vanadium)	51
Zn (Zinc)	64

Calibration Standard

ICP-MS-6020-CAL-1 \$ 125 / 100 mL
10 µg/mL each in 2% HNO₃ 15 comps.

Element	Isotope
Al (Aluminum)	27
Sb (Antimony)	121
As (Arsenic)	75
Ba (Barium)	138
Be (Beryllium)	9
Cd (Cadmium)	114
Cr (Chromium)	52
Co (Cobalt)	59
Cu (Copper)	63
Pb (Lead)	208
Mn (Manganese)	55
Ni (Nickel)	58
Ag (Silver)	107
Tl (Thallium)	205
Zn (Zinc)	64

Interference Check Standard #1

ICP-MS-6020-INT1-1 \$ 310 / 100 mL
At stated conc. (µg/mL) in 2% HNO₃ 12 comps.

Element	µg/mL	Isotope
Al (Aluminum)	1000	27
Cl (Chloride)	10000	35
Ca (Calcium)	1000	40
C (Carbon)	2000	12
Fe (Iron)	1000	56
Mg (Magnesium)	1000	24
Mo (Molybdenum)	20	98
P (Phosphorous)	1000	31
K (Potassium)	1000	39
Na (Sodium)	1000	23
S (Sulfur)	1000	32
Ti (Titanium)	20	48

Interference Check Standard #2

ICP-MS-6020-INT2-1 \$ 75 / 100 mL
2 µg/mL each in 5% HNO₃ tr. HF 9 comps.

Element	Isotope
As (Arsenic)	75
Cd (Cadmium)	114
Cr (Chromium)	52
Co (Cobalt)	59
Cu (Copper)	63
Mn (Manganese)	55
Ni (Nickel)	58
Ag (Silver)	107
Zn (Zinc)	64

Tuning Standard

ICP-MS-6020-TUN-1 \$ 75 / 100 mL
10 µg/mL each in 2% HNO₃ 4 comps.

Element	Isotope
Co (Cobalt)	59
In (Indium)	115
Li (Lithium)	7
Tl (Thallium)	205

Organometallic Standards

AA, ICP, DCP & XRF Analysis



These Standards were formulated for the analysis of metals in oils and other organic matrices. These Standards and curves provide a convenient way to analyze for metals (wear metals, additives and contaminants) in lubricating oils, gasolines, residual oils, crude oils, turbine fuels and environmental samples. All standards undergo rigorous quality assurance checks. Major constituents in the final Standard are typically analyzed by both plasma emission and rotrode techniques. Organometallic Standards listed on this page may contain sulfur which can be introduced by possible sulfonate starting materials used to formulate the actual organometallic standard. We developed a Premium Organometallic line for chemists preferring to have organometallic standards with <1 ppm sulfur or phosphorous (see Table of Contents).

- Single & Multi Element Standards
- Formulated from Ultra High Purity Organometallic starting materials & matrices
- Prepared Calibration Curves
- Certificate of Analysis

Single Element Organometallic

Element	1000 µg/g in 75 cSt base oil		5000 µg/g in 75 cSt base oil	
	Cat. No. (50 g)	Price	Cat. No. (50 g)	Price
Al (Aluminum)	WM-75CST-01	\$ 38	WM-75CST-01-5X	\$ 48
Sb (Antimony)	WM-75CST-02	38	WM-75CST-02-5X	48
As (Arsenic)	WM-75CST-03	44	-----	----
Ba (Barium)	WM-75CST-04	38	WM-75CST-04-5X	48
Be (Beryllium)	WM-75CST-05	41	-----	----
Bi (Bismuth)	WM-75CST-06	38	WM-75CST-06-5X	221
B (Boron)	WM-75CST-07	38	WM-75CST-07-5X	48
Cd (Cadmium)	WM-75CST-08	38	WM-75CST-08-5X	48
Ca (Calcium)	WM-75CST-09	38	WM-75CST-09-5X	48
Cr (Chromium)	WM-75CST-13	38	WM-75CST-13-5X	48
Co (Cobalt)	WM-75CST-14	38	WM-75CST-14-5X	48
Cu (Copper)	WM-75CST-15	38	WM-75CST-15-5X	48
Fe (Iron)	WM-75CST-27	38	WM-75CST-27-5X	48
La (Lanthanum)	WM-75CST-28	84	-----	----
Pb (Lead)	WM-75CST-29	38	WM-75CST-29-5X	48
Li (Lithium)	WM-75CST-30	38	WM-75CST-30-5X	48
Mg (Magnesium)	WM-75CST-32	38	WM-75CST-32-5X	48
Mn (Manganese)	WM-75CST-33	38	WM-75CST-33-5X	48
Hg (Mercury)	WM-75CST-34	44	-----	----
Mo (Molybdenum)	WM-75CST-35	38	WM-75CST-35-5X	48
Ni (Nickel)	WM-75CST-37	38	WM-75CST-37-5X	48
P (Phosphorous)	WM-75CST-41	38	WM-75CST-41-5X	48
K (Potassium)	WM-75CST-43	38	WM-75CST-43-5X	48
Sc (Scandium)	WM-75CST-50	65	-----	----
Se (Selenium)	WM-75CST-51	44	-----	----
Si (Silicon)	WM-75CST-52	38	WM-75CST-52-5X	48
Ag (Silver)	WM-75CST-53	38	WM-75CST-53-5X	48
Na (Sodium)	WM-75CST-54	38	WM-75CST-54-5X	48
Sr (Strontium)	WM-75CST-55	38	-----	----
S (Sulfur)	WM-75CST-56	38	WM-75CST-56-5X	48
Tl (Thallium)	WM-75CST-60	44	-----	----
Sn (Tin)	WM-75CST-63	38	WM-75CST-63-5X	48
Ti (Titanium)	WM-75CST-64	38	WM-75CST-64-5X	48
V (Vanadium)	WM-75CST-67	38	WM-75CST-67-5X	48
Y (Yttrium)	WM-75CST-69	44	WM-75CST-69-5X	106
Zn (Zinc)	WM-75CST-70	38	WM-75CST-70-5X	48
Zr (Zirconium)	WM-75CST-71	38	WM-75CST-71-5X	48

Matrix Oil and Stabilizer

75 cSt Oil

MOSOL-75 \$ 23 / 500 mL

Stabilizer

WM-STAB \$ 95 / 1 x 50 g

Technical Note

Used to improve the stability of Organo-metallic Standards when diluting into solvents such as Kerosene. Add 0.6% by weight.

Metals Additives

MA-900-100G \$ 114 / 100 g
MA-900-200G \$ 165 / 200 g
 900 µg/g each in Hydrocarbon oil

MA-1000-100G \$ 149 / 100 g
MA-1000-200G \$ 251 / 200 g
 1000 µg/g each in Hydrocarbon oil

MA-3000-100G \$ 295 / 100 g
MA-3000-200G \$ 471 / 200 g
 3000 µg/g each in Hydrocarbon oil

MA-5000-100G \$ 424 / 100 g
MA-5000-200G \$ 685 / 200 g
 5000 µg/g each in Hydrocarbon oil 5 comps.

Ba (Barium) P (Phosphorous)
 Ca (Calcium) Zn (Zinc)
 Mg (Magnesium)

See Petrochemical Section for
Metals in Biofuels.





Organometallic Standards

AA, ICP, DCP & XRF Analysis

21 Wear Metal Multi-Element

Conc.	Unit	Cat. No.	Price
10 µg/g	100 g	WM-21-1X-100G	\$ 95
	200 g	WM-21-1X-200G	100
30 µg/g	100 g	WM-21-3X-100G	95
	200 g	WM-21-3X-200G	100
50 µg/g	100 g	WM-21-5X-100G	100
	200 g	WM-21-5X-200G	105
100 µg/g	100 g	WM-21-10X-100G	105
	200 g	WM-21-10X-200G	160
300 µg/g	100 g	WM-21-30X-100G	170
	200 g	WM-21-30X-200G	310
500 µg/g	100 g	WM-21-50X-100G	245
	200 g	WM-21-50X-200G	445
900 µg/g	100 g	WM-21-90X-100G	380
	200 g	WM-21-90X-200G	675

WM-21-100G-SET \$ 1050
set of above 7 x 100 g

WM-21-200G-SET \$ 1700
set of above 7 x 200 g

21 Wear Metals in hydrocarbon oil at the stated conc.

Ag (Silver)	Cu (Copper)	P (Phosphorus)
Al (Aluminum)	Fe (Iron)	Pb (Lead)
B (Boron)	Mg (Magnesium)	Si (Silicon)
Ba (Barium)	Mn (Manganese)	Sn (Tin)
Ca (Calcium)	Mo (Molybdenum)	Ti (Titanium)
Cd (Cadmium)	Na (Sodium)	V (Vanadium)
Cr (Chromium)	Ni (Nickel)	Zn (Zinc)

22 Wear Metal Multi-Element

Conc.	Unit	Cat. No.	Price
10 µg/g	100 g	WM-22-1X-100G	\$ 115
	200 g	WM-22-1X-200G	120
30 µg/g	100 g	WM-22-3X-100G	115
	200 g	WM-22-3X-200G	120
50 µg/g	100 g	WM-22-5X-100G	120
	200 g	WM-22-5X-200G	125
100 µg/g	100 g	WM-22-10X-100G	125
	200 g	WM-22-10X-200G	145
300 µg/g	100 g	WM-22-30X-100G	190
	200 g	WM-22-30X-200G	340
500 µg/g	100 g	WM-22-50X-100G	275
	200 g	WM-22-50X-200G	485
900 µg/g	100 g	WM-22-90X-100G	420
	200 g	WM-22-90X-200G	725

100 gram Set WM-22-100G-SET \$ 1225
set of above 7 x 100 g

200 gram Set WM-22-200G-SET \$ 1850
set of above 7 x 200 g

21 Wear Metals plus K in hydrocarbon oil at the stated conc.

Ag (Silver)	Fe (Iron)	Pb (Lead)
Al (Aluminum)	K (Potassium)	Si (Silicon)
B (Boron)	Mg (Magnesium)	Sn (Tin)
Ba (Barium)	Mn (Manganese)	Ti (Titanium)
Ca (Calcium)	Mo (Molybdenum)	V (Vanadium)
Cd (Cadmium)	Na (Sodium)	Zn (Zinc)
Cr (Chromium)	Ni (Nickel)	
Cu (Copper)	P (Phosphorus)	

23 Wear Metal Multi-Element

Conc.	Unit	Cat. No.	Price
10 µg/g	100 g	WM-23-1X-100G	\$ 135
	200 g	WM-23-1X-200G	140
30 µg/g	100 g	WM-23-3X-100G	135
	200 g	WM-23-3X-200G	140
50 µg/g	100 g	WM-23-5X-100G	140
	200 g	WM-23-5X-200G	145
100 µg/g	100 g	WM-23-10X-100G	145
	200 g	WM-23-10X-200G	165
300 µg/g	100 g	WM-23-30X-100G	210
	200 g	WM-23-30X-200G	395
500 µg/g	100 g	WM-23-50X-100G	305
	200 g	WM-23-50X-200G	525
900 µg/g	100 g	WM-23-90X-100G	495
	200 g	WM-23-90X-200G	765

100 gram Set WM-23-100G-SET \$ 1400
set of above 7 x 100 g

200 gram Set WM-23-200G-SET \$ 2025
set of above 7 x 200 g

21 Wear Metals plus K and Sb in hydrocarbon oil at the stated conc.

Ag (Silver)	Fe (Iron)	Pb (Lead)
Al (Aluminum)	K (Potassium)	Sb (Antimony)
B (Boron)	Mg (Magnesium)	Si (Silicon)
Ba (Barium)	Mn (Manganese)	Sn (Tin)
Ca (Calcium)	Mo (Molybdenum)	Ti (Titanium)
Cd (Cadmium)	Na (Sodium)	V (Vanadium)
Cr (Chromium)	Ni (Nickel)	Zn (Zinc)
Cu (Copper)	P (Phosphorus)	



Organometallic Standards

Premium Sulfur-Free



Organometallic Single Element Stock Standards

Element	1000 µg/g Cat. No.	Price 50 mL	5000 µg/g Cat. No.	Price 50 mL
Al (Aluminum)	WM-NMS-01	\$ 55	WM-NMS-01-5X	\$ 72
Sb (Antimony)	WM-NMS-02	55	WM-NMS-02-5X	72
As (Arsenic)	WM-NMS-03	55	WM-NMS-03-5X	72
Ba (Barium)	WM-NMS-04	55	WM-NMS-04-5X	72
Be (Beryllium)	WM-NMS-05	69	WM-NMS-05-5X	118
Cd (Cadmium)	WM-NMS-08	55	WM-NMS-08-5X	72
Ca (Calcium)	WM-NMS-09	55	WM-NMS-09-5X	72
Ce (Cerium)	WM-NMS-11	55	WM-NMS-11-5X	72
Cr (Chromium)	WM-NMS-13	44	WM-NMS-13-5X	58
Co (Cobalt)	WM-NMS-14	44	WM-NMS-14-5X	58
Cu (Copper)	WM-NMS-15	44	WM-NMS-15-5X	58
Ga (Gallium)	WM-NMS-20	72	WM-NMS-20-5X	142
Au (Gold)	WM-NMS-22	111	-----	-----
Fe (Iron)	WM-NMS-27	55	WM-NMS-27-5X	72
Pb (Lead)	WM-NMS-29	55	WM-NMS-29-5X	72
Li (Lithium)	WM-NMS-30	72	WM-NMS-30-5X	124
Mg (Magnesium)	WM-NMS-32	55	WM-NMS-32-5X	72
Mn (Manganese)	WM-NMS-33	55	WM-NMS-33-5X	72

Element	1000 µg/g Cat. No.	Price 50 mL	5000 µg/g Cat. No.	Price 50 mL
Hg (Mercury)	WM-NMS-34	62	WM-NMS-34-5X	110
Mo (Molybdenum)	WM-NMS-35	62	WM-NMS-35-5X	110
Ni (Nickel)	WM-NMS-37	55	WM-NMS-37-5X	72
P (Phosphorus)	WM-NMS-41	55	WM-NMS-41-5X	72
K (Potassium)	WM-NMS-43	55	WM-NMS-43-5X	72
Se (Selenium)	WM-NMS-51	55	WM-NMS-51-5X	72
Si (Silicon)	WM-NMS-52	72	WM-NMS-52-5X	124
Ag (Silver)	WM-NMS-53	72	WM-NMS-53-5X	124
Na (Sodium)	WM-NMS-54	55	WM-NMS-54-5X	72
Sr (Strontium)	WM-NMS-55	55	WM-NMS-55-5X	72
Tl (Thallium)	WM-NMS-60	55	WM-NMS-60-5X	72
Sn (Tin)	WM-NMS-63	55	WM-NMS-63-5X	72
Ti (Titanium)	WM-NMS-64	55	WM-NMS-64-5X	72
V (Vanadium)	WM-NMS-67	55	WM-NMS-67-5X	72
Y (Yttrium)	WM-NMS-69	60	WM-NMS-69-5X	105
Zn (Zinc)	WM-NMS-70	55	WM-NMS-70-5X	72
Zr (Zirconium)	WM-NMS-71	55	WM-NMS-71-5X	72

Premium Sulfur-Free

Sulfur below detection
limits for most elements

No Metallic Sulfonates

- Stabilized
- Ready for Use

Technical Note

Sulfur below detection limits for most elements. Sulfur content otherwise noted on certificate. For use with X-ray fluorescence (XRF), plasma emission (ICP or DCP), rotating disk (RDE), or atomic absorption (AA) spectroscopy. May be blended together to prepare multi-element standards. Solutions are stabilized with proprietary chelation and stabilization solution and are ready for use. Additional stabilizers may be required in some cases. Contact Technical Service for additional information.

Organometallic Single Element Concentrates

Element	Conc. (Wt. %)	Cat. No.	Price / 25 grams	Cat. No.	Price / 50 grams
Al (Aluminum)	3	WM-NMS-01-30X-25G	\$ 178	WM-NMS-01-30X-50G	\$ 261
Sb (Antimony)	2	WM-NMS-02-20X-25G	122	WM-NMS-02-20X-50G	183
Ba (Barium)	12.5	WM-NMS-04-125X-25G	540	WM-NMS-04-125X-50G	780
Cd (Cadmium)	10	WM-NMS-08-100X-25G	510	WM-NMS-08-100X-50G	710
Ca (Calcium)	5	WM-NMS-09-50X-25G	272	WM-NMS-09-50X-50G	422
Ce (Cerium)	5	WM-NMS-11-50X-25G	272	WM-NMS-11-50X-50G	422
Cr (Chromium)	3.5	WM-NMS-13-35X-25G	194	WM-NMS-13-35X-50G	299
Co (Cobalt)	7.5	WM-NMS-14-75X-25G	422	WM-NMS-14-75X-50G	577
Cu (Copper)	6	WM-NMS-15-60X-25G	344	WM-NMS-15-60X-50G	516
Fe (Iron)	4	WM-NMS-27-40X-25G	239	WM-NMS-27-40X-50G	361
Pb (Lead)	20	WM-NMS-29-200X-25G	900	WM-NMS-29-200X-50G	1260
Li (Lithium)	1.5	WM-NMS-30-15X-25G	155	WM-NMS-30-15X-50G	239
Mg (Magnesium)	3	WM-NMS-32-30X-25G	180	WM-NMS-32-30X-50G	278
Mn (Manganese)	6	WM-NMS-33-60X-25G	333	WM-NMS-33-60X-50G	505
Mo (Molybdenum)	5	WM-NMS-35-50X-25G	272	WM-NMS-35-50X-50G	422
Ni (Nickel)	5	WM-NMS-37-50X-25G	272	WM-NMS-37-50X-50G	422
P (Phosphorus)	5	WM-NMS-41-50X-25G	272	WM-NMS-41-50X-50G	422
K (Potassium)	7.5	WM-NMS-43-75X-25G	422	WM-NMS-43-75X-50G	577
Pr (Praseodymium)	3	WM-NMS-44-30X-25G	175	WM-NMS-44-30X-50G	240
Se (Selenium)	3.5	WM-NMS-51-35X-25G	200	WM-NMS-51-35X-50G	270
Si (Silicon)	7.5	WM-NMS-52-75X-25G	383	WM-NMS-52-75X-50G	528
Na (Sodium)	2.5	WM-NMS-54-25X-25G	180	WM-NMS-54-25X-50G	278
Sr (Strontium)	10	WM-NMS-55-100X-25G	510	WM-NMS-55-100X-50G	710
Tl (Thallium)	5	WM-NMS-60-50X-25G	272	WM-NMS-60-50X-50G	422
Sn (Tin)	7.5	WM-NMS-63-75X-25G	422	WM-NMS-63-75X-50G	577
Ti (Titanium)	5	WM-NMS-64-50X-25G	272	WM-NMS-64-50X-50G	422
V (Vanadium)	4	WM-NMS-67-40X-25G	239	WM-NMS-67-40X-50G	361
Y (Yttrium)	2.5	WM-NMS-69-25X-25G	180	WM-NMS-69-25X-50G	278
Zn (Zinc)	6	WM-NMS-70-60X-25G	306	WM-NMS-70-60X-50G	461
Zr (Zirconium)	5	WM-NMS-71-50X-25G	272	WM-NMS-71-50X-50G	422

Technical Note

Sulfur below detection limits for most elements. Sulfur content otherwise noted on certificate. Made from ultrapure starting materials which have been certified against NIST SRMs whenever available. Concentrates can be used to formulate sets of standards for the analysis of additive elements in lubricating oils; iron, nickel and vanadium in residual oil; and wear metal in oils for X-Ray Fluorescence Spectroscopy (XRF). Can also be used to prepare single element or multi-element standards for plasma emission (ICP or DCP), rotating disk (RDE), or atomic absorption (AA) spectroscopy. Solutions are stabilized with proprietary chelation and stabilization solution but often require additional stabilizers when diluting with kerosene or mineral oil. Contact Technical Service for additional information.

Stabilization Solutions

The solutions were specifically designed for chelating & solubilizing our line of Sulfur-Free Organometallic Standards.

Stabilizer Solution A

ASTM-P-0122-0.5 \$ 80 / 50 mL
ASTM-P-0122-1 \$ 120 / 100 mL

Stabilizer Solution B

ASTM-P-0123-0.5 \$ 80 / 50 mL
ASTM-P-0123-1 \$ 120 / 100 mL

Stabilizer Solution C

ASTM-P-0124-0.5 \$ 80 / 50 mL
ASTM-P-0124-1 \$ 120 / 100 mL

Stabilizer Solution D

ASTM-P-0125-0.5 \$ 80 / 50 mL
ASTM-P-0125-1 \$ 120 / 100 mL

Premium Sulfur-Free

Sulfur below detection
limits for most elements

No Metallic Sulfonates

Organometallic standards do not
require a hazardous shipping fee
except where noted.



Organometallic Standards

Premium Sulfur-Free

11 Wear Metal Multi-Element

Conc.	Unit	Cat. No.	Price
10 µg/g	100 mL	WM-11-NMS-1X-1	\$ 130
30 µg/g	100 mL	WM-11-NMS-3X-1	130
50 µg/g	100 mL	WM-11-NMS-5X-1	130
100 µg/g	100 mL	WM-11-NMS-10X-1	140
300 µg/g	100 mL	WM-11-NMS-30X-1	165
500 µg/g	100 mL	WM-11-NMS-50X-1	245
900 µg/g	100 mL	WM-11-NMS-90X-1	325

WM-11-NMS-1-SET \$ 1100
set of above 7 x 100 mL

11 Wear Metals in Mineral oil at the stated concentration.

Al (Aluminum)	Mg (Magnesium)	Si (Silicon)
Cr (Chromium)	Na (Sodium)	Sn (Tin)
Cu (Copper)	Ni (Nickel)	Ti (Titanium)
Fe (Iron)	Pb (Lead)	

12 Wear Metal Multi-Element

Conc.	Unit	Cat. No.	Price
10 µg/g	100 mL	WM-12-NMS-1X-1	\$ 135
30 µg/g	100 mL	WM-12-NMS-3X-1	135
50 µg/g	100 mL	WM-12-NMS-5X-1	135
100 µg/g	100 mL	WM-12-NMS-10X-1	145
300 µg/g	100 mL	WM-12-NMS-30X-1	170
500 µg/g	100 mL	WM-12-NMS-50X-1	250
900 µg/g	100 mL	WM-12-NMS-90X-1	375

WM-12-NMS-1-SET \$ 1175
set of above 7 x 100 mL

12 Wear Metals in Mineral oil at the stated concentration.

Ag (Silver)	Fe (Iron)	Pb (Lead)
Al (Aluminum)	Mg (Magnesium)	Si (Silicon)
Cr (Chromium)	Na (Sodium)	Sn (Tin)
Cu (Copper)	Ni (Nickel)	Ti (Titanium)

Suitable for ASTM
D4628, D4927, D4951,
D5056, D5185, D6443,
D6481

Premium Sulfur-Free

Sulfur below detection
limits for most elements

No Metallic Sulfonates

20 Wear Metal Multi-Element

Conc.	Unit	Cat. No.	Price
10 µg/g	100 mL	WM-20-NMS-1X-1	\$ 150
30 µg/g	100 mL	WM-20-NMS-3X-1	150
50 µg/g	100 mL	WM-20-NMS-5X-1	150
100 µg/g	100 mL	WM-20-NMS-10X-1	170
300 µg/g	100 mL	WM-20-NMS-30X-1	230
500 µg/g	100 mL	WM-20-NMS-50X-1	350
900 µg/g	100 mL	WM-20-NMS-90X-1	500

WM-20-NMS-1-SET \$ 1450
set of above 7 x 100 mL

20 Wear Metals in Mineral oil at the stated concentration.

Al (Aluminum)	Fe (Iron)	Pb (Lead)
B (Boron)	Mg (Magnesium)	Si (Silicon)
Ba (Barium)	Mn (Manganese)	Sn (Tin)
Ca (Calcium)	Mo (Molybdenum)	Ti (Titanium)
Cd (Cadmium)	Na (Sodium)	V (Vanadium)
Cr (Chromium)	Ni (Nickel)	Zn (Zinc)
Cu (Copper)	P (Phosphorus)	

21 Wear Metal Multi-Element

Conc.	Unit	Cat. No.	Price
10 µg/g	100 mL	WM-21-NMS-1X-1	\$ 160
30 µg/g	100 mL	WM-21-NMS-3X-1	160
50 µg/g	100 mL	WM-21-NMS-5X-1	160
100 µg/g	100 mL	WM-21-NMS-10X-1	180
300 µg/g	100 mL	WM-21-NMS-30X-1	240
500 µg/g	100 mL	WM-21-NMS-50X-1	350
900 µg/g	100 mL	WM-21-NMS-90X-1	550

100 mL Set WM-21-NMS-1-SET \$ 1550
set of above 7 x 100 mL

21 Wear Metal in Mineral oil at the stated concentration.

Ag (Silver)	Cu (Copper)	P (Phosphorus)
Al (Aluminum)	Fe (Iron)	Pb (Lead)
B (Boron)	Mg (Magnesium)	Si (Silicon)
Ba (Barium)	Mn (Manganese)	Sn (Tin)
Ca (Calcium)	Mo (Molybdenum)	Ti (Titanium)
Cd (Cadmium)	Na (Sodium)	V (Vanadium)
Cr (Chromium)	Ni (Nickel)	Zn (Zinc)

Technical Note

For analysis by XRF, AA, ICP or AE for applications for which sulfur interference is undesirable. Prepared with Sulfur-free organometallics that do not contain metallic sulfonates. Solutions are stabilized with proprietary chelation and stabilization solution and are ready for use. Additional stabilizers may be required in some cases. Contact Technical Service for additional information.

Recommended Internal Standard

Organometallic (Internal Standard) Sulfur free

	Conc.	Cat. No.	Price / 50 mL
Cobalt	1000 µg/g	WM-NMS-14	\$ 44
	5000 µg/g	WM-NMS-14-5X	\$ 58



Sulfur and Metals in Oil

Sulfur and Metals in Mineral Oil

ASTM-P-0100-SET \$ 1675 / 12 x 100 mL				
Cat. No.	Sulfur (Wt. %)	Nickel (µg/g)	Vanadium (µg/g)	100 mL Price
ASTM-P-0100-01	0	0	0	\$ 235
ASTM-P-0100-02	0.50	10	500	235
ASTM-P-0100-03	1	100	25	235
ASTM-P-0100-04	1.50	80	250	235
ASTM-P-0100-05	2	40	100	235
ASTM-P-0100-06	2.50	5	400	235
ASTM-P-0100-07	3	60	300	235
ASTM-P-0100-08	3.50	0	200	235
ASTM-P-0100-09	4	100	0	235
ASTM-P-0100-10	4.50	50	250	235
ASTM-P-0100-11	5	20	500	235
ASTM-P-0100-12	5.50	100	50	235

Sulfur and Metals in Residual Fuel Oil

ASTM-P-0101-SET \$ 1965 / 12 x 100 mL				
Cat. No.	Sulfur (Wt. %)	Nickel (µg/g)	Vanadium (µg/g)	100 mL Price
ASTM-P-0101-01	0	0	0	\$ 235
ASTM-P-0101-02	0.50	10	500	235
ASTM-P-0101-03	1	100	25	235
ASTM-P-0101-04	1.50	80	250	235
ASTM-P-0101-05	2	40	100	235
ASTM-P-0101-06	2.50	5	400	235
ASTM-P-0101-07	3	60	300	235
ASTM-P-0101-08	3.50	0	200	235
ASTM-P-0101-09	4	100	0	235
ASTM-P-0101-10	4.50	50	250	235
ASTM-P-0101-11	5	20	500	235
ASTM-P-0101-12	5.50	100	50	235

Test Method A - ICP with an Organic Solvent Specimen Solution

Sulfur and Metals in Mineral Oil

ASTM-P-0102-SET \$ 1960 / 12 x 100 mL				
Cat. No.	Sulfur (Wt. %)	Iron (µg/g)	Nickel (µg/g)	Vanadium (µg/g) 100 mL Price
ASTM-P-0102-01	0	0	0	\$ 265
ASTM-P-0102-02	0.50	300	10	265
ASTM-P-0102-03	1	500	100	265
ASTM-P-0102-04	-----	100	80	265
ASTM-P-0102-05	2	200	40	265
ASTM-P-0102-06	2.50	400	5	265
ASTM-P-0102-07	3	0	60	265
ASTM-P-0102-08	3.50	500	0	265
ASTM-P-0102-09	-----	100	100	265
ASTM-P-0102-10	4.50	300	50	265
ASTM-P-0102-11	5	200	20	265
ASTM-P-0102-12	5.50	50	100	265

Designed for ASTM D5708

Sulfur and Metals in Residual Fuel Oil

ASTM-P-0103-SET \$ 2220 / 12 x 100 mL				
Cat. No.	Sulfur (Wt. %)	Iron (µg/g)	Nickel (µg/g)	Vanadium (µg/g) 100 mL Price
ASTM-P-0103-01	0	0	0	\$ 280
ASTM-P-0103-02	0.50	300	10	280
ASTM-P-0103-03	1	500	100	280
ASTM-P-0103-04	-----	100	80	280
ASTM-P-0103-05	2	200	40	280
ASTM-P-0103-06	2.50	400	5	280
ASTM-P-0103-07	3	0	60	280
ASTM-P-0103-08	3.50	500	0	280
ASTM-P-0103-09	-----	100	100	280
ASTM-P-0103-10	4.50	300	50	280
ASTM-P-0103-11	5	200	20	280
ASTM-P-0103-12	5.50	50	100	280

Designed for ASTM D5708

Stock Multi-Element in Mineral Oil

D-5708-A-10X \$ 150 / 100 mL
100 µg/g in 20 cSt mineral oil 3 comps.
Iron Vanadium
Nickel

After Acid Decomposition of Sample

Working Level Multi-Element Aqueous Standard

D-5708-B-5 ▲ \$ 105 / 500 mL
10 µg/mL each in 2-5% HNO₃ 3 comps.
Iron Vanadium
Nickel

Stock Multi-Element Standard in Mineral Oil

D-5863-95B-10X-1 \$ 225 / 1 x 100 mL
At stated conc. (µg/g) in 20 cst Mineral Oil 3 comps.
Sodium 50 Vanadium 150
Nickel 200

Nitric Acid Blank

CLP-BLN-5 ▲ \$ 30 / 500 mL
CLP-BLN-L-VAP ▲ \$ 45 / 1 L (2 x 500 mL)
5% HNO₃ in ASTM Type I Water

Stock Multi-Element Aqueous Standard

D-5708-B-10X-1 ▲ \$ 60 / 100 mL
D-5708-B-10X-5 ▲ \$ 115 / 500 mL
100 µg/mL each in 2-5% HNO₃ 3 comps.
Iron Vanadium
Nickel

Stock Multi-Element Standard in Mineral Oil

D-5863-00A-10X-1 \$ 285 / 1 x 100 mL
At stated conc. (µg/g) in 20 cst Mineral Oil 3 comps.
Nickel 100 Iron 10
Vanadium 500 Sodium 20

▲ Hazardous fee required.

ISO/CD 14597 Vanadium and Nickel Standards with Manganese (Internal Standard)

Vanadium Standards - Low Range for ISO/CD 14597 with 0.05% Manganese Internal Standard in Xylene-Mineral Oil

ASTM-P-0104-SET \$ 1050 / 9 x 100 mL		
Cat. No.	Vanadium Conc. (Wt.%)	Price 100 mL
ASTM-P-0104-01	005	\$ 165
ASTM-P-0104-02	025	165
ASTM-P-0104-03	050	165
ASTM-P-0104-04	075	165
ASTM-P-0104-05	0.0100	165
ASTM-P-0104-06	0.0125	165
ASTM-P-0104-07	0.0150	165
ASTM-P-0104-08	0.0175	165
ASTM-P-0104-09	0.0200	165

Vanadium Standards - High Range for ISO/CD 14597 with 0.05% Manganese Internal Standard in Xylene-Mineral Oil

ASTM-P-0105-SET \$ 825 / 7 x 100 mL		
Cat. No.	Vanadium Conc. (Wt.%)	Price 100 mL
ASTM-P-0105-01	000	\$ 135
ASTM-P-0105-02	0.0300	135
ASTM-P-0105-03	0.0400	135
ASTM-P-0105-04	0.0500	135
ASTM-P-0105-05	0.0600	135
ASTM-P-0105-06	0.0800	135
ASTM-P-0105-07	0.1000	135

Nickel Standards for ISO/CD 14597 with 0.05% Manganese Internal Standard in Xylene-Mineral Oil

ASTM-P-0106-SET \$ 825 / 7 x 100 mL		
Cat. No.	Nickel Conc. (Wt.%)	Price 100 mL
ASTM-P-0106-01	000	\$ 135
ASTM-P-0106-02	005	135
ASTM-P-0106-03	010	135
ASTM-P-0106-04	025	135
ASTM-P-0106-05	050	135
ASTM-P-0106-06	075	135
ASTM-P-0106-07	0.0100	135

Internal Standard

ASTM-P-0107-5 \$ 235 / 500 mL

Manganese @ 0.05 Wt. % in Xylene-Mineral Oil



Organometallic Standards

AA, ICP, DCP & XRF Analysis

Lubricating Oil Standards

ASTM-P-0108-SET

\$ 2080 / 17 x 100 mL

Designed for ASTM D6481

Cat. No.	Ca	P	S	Zn
Nominal Value	(Wt.%)	(Wt.%)	(Wt.%)	(Wt.%)
ASTM-P-0108-01	0.600	05	0.175	0.060
ASTM-P-0108-02	0.500	0.200	0.050	0.080
ASTM-P-0108-03	0.400	0.150	0.300	0.180
ASTM-P-0108-04	0.260	0.250	0.150	0.120
ASTM-P-0108-05	05	05	0.450	0.070
ASTM-P-0108-06	0.400	0.025	0.350	0.100
ASTM-P-0108-07	0.300	0.060	0.250	0.120
ASTM-P-0108-08	0.200	0.100	0.450	0.100
ASTM-P-0108-09	0.060	0.080	0.300	0.130
ASTM-P-0108-10	0.060	0.050	0.200	0.050
ASTM-P-0108-11	0.050	0.120	0.100	0.075
ASTM-P-0108-12	0.025	0.150	0.200	0.130
ASTM-P-0108-13	05	0.200	0.400	0.150
ASTM-P-0108-14	0.170	0.250	0.550	0.110
ASTM-P-0108-15	0.100	0.100	0.200	0.200
ASTM-P-0108-16	0.010	0.010	0.600	0.250
ASTM-P-0108-17	00	00	00	00

ASTM-P-0109-SET

\$ 2450 / 17 x 100 mL

Cat. No.	Ca	Cl	P	S	Zn
Nominal Value	(Wt.%)	(Wt.%)	(Wt.%)	(Wt.%)	(Wt.%)
ASTM-P-0109-01	0.600	0.100	05	0.175	0.060
ASTM-P-0109-02	0.500	00	0.200	0.050	0.080
ASTM-P-0109-03	0.400	0.010	0.150	0.300	0.180
ASTM-P-0109-04	0.260	0.500	0.250	0.150	0.120
ASTM-P-0109-05	05	10	05	0.450	0.070
ASTM-P-0109-06	0.400	0.400	0.025	0.350	0.100
ASTM-P-0109-07	0.300	0.100	0.060	0.250	0.120
ASTM-P-0109-08	0.200	0.010	0.100	0.450	0.100
ASTM-P-0109-09	0.060	0.050	0.080	0.300	0.130
ASTM-P-0109-10	0.060	0.200	0.050	0.200	0.050
ASTM-P-0109-11	0.050	0.500	0.120	0.100	0.075
ASTM-P-0109-12	0.025	0.800	0.150	0.200	0.130
ASTM-P-0109-13	05	10	0.200	0.400	0.150
ASTM-P-0109-14	0.170	0.600	0.250	0.550	0.110
ASTM-P-0109-15	0.100	0.200	0.100	0.200	0.200
ASTM-P-0109-16	0.010	0.400	0.010	0.600	0.250
ASTM-P-0109-17	00	00	00	00	00

ASTM-P-0110-SET

\$ 2485 / 17 x 100 mL

Designed for ASTM D4927

Cat. No.	Ba	Ca	P	S	Zn
Nominal Value	(Wt.%)	(Wt.%)	(Wt.%)	(Wt.%)	(Wt.%)
ASTM-P-0110-01	0.100	0.600	05	0.175	0.060
ASTM-P-0110-02	0.175	0.500	0.200	0.050	0.080
ASTM-P-0110-03	00	0.400	0.150	0.300	0.180
ASTM-P-0110-04	0.025	0.260	0.250	0.150	0.120
ASTM-P-0110-05	0.150	05	05	0.450	0.070
ASTM-P-0110-06	00	0.400	0.025	0.350	0.100
ASTM-P-0110-07	0.200	0.300	0.060	0.250	0.120
ASTM-P-0110-08	00	0.200	0.100	0.450	0.100
ASTM-P-0110-09	0.100	0.060	0.080	0.300	0.130
ASTM-P-0110-10	0.050	0.060	0.050	0.200	0.050
ASTM-P-0110-11	0.075	0.050	0.120	0.100	0.075
ASTM-P-0110-12	0.010	0.025	0.150	0.200	0.130
ASTM-P-0110-13	05	05	0.200	0.400	0.150
ASTM-P-0110-14	00	0.170	0.250	0.550	0.110
ASTM-P-0110-15	00	0.100	0.100	0.200	0.200
ASTM-P-0110-16	05	0.010	0.010	0.600	0.250
ASTM-P-0110-17	00	00	00	00	00

ASTM-P-0111-SET

\$ 2650 / 17 x 100 mL

Designed for ASTM D4927

Cat. No.	Ba	Ca	Cl	P	S	Zn
Nominal Value	(Wt.%)	(Wt.%)	(Wt.%)	(Wt.%)	(Wt.%)	(Wt.%)
ASTM-P-0111-01	0.100	0.600	0.100	05	0.175	0.060
ASTM-P-0111-02	0.175	0.500	00	0.200	0.050	0.080
ASTM-P-0111-03	00	0.400	0.010	0.150	0.300	0.180
ASTM-P-0111-04	0.025	0.260	0.500	0.250	0.150	0.120
ASTM-P-0111-05	0.150	05	10	05	0.450	0.070
ASTM-P-0111-06	00	0.400	0.400	0.025	0.350	0.100
ASTM-P-0111-07	0.200	0.300	0.100	0.060	0.250	0.120
ASTM-P-0111-08	00	0.200	0.010	0.100	0.450	0.100
ASTM-P-0111-09	0.100	0.060	0.050	0.080	0.300	0.130
ASTM-P-0111-10	0.050	0.060	0.200	0.050	0.200	0.050
ASTM-P-0111-11	0.075	0.050	0.500	0.120	0.100	0.075
ASTM-P-0111-12	0.010	0.025	0.800	0.150	0.200	0.130
ASTM-P-0111-13	05	05	10	0.200	0.400	0.150
ASTM-P-0111-14	00	0.170	0.600	0.250	0.550	0.110
ASTM-P-0111-15	00	0.100	0.200	0.100	0.200	0.200
ASTM-P-0111-16	05	0.010	0.400	0.010	0.600	0.250
ASTM-P-0111-17	00	00	00	00	00	00

ASTM-P-0112-SET

\$ 2485 / 17 x 100 mL

Cat. No.	Ca	Mg	P	S	Zn
Nominal Value	(Wt.%)	(Wt.%)	(Wt.%)	(Wt.%)	(Wt.%)
ASTM-P-0112-01	0.600	0.100	05	0.175	0.060
ASTM-P-0112-02	0.500	0.150	0.200	0.050	0.080
ASTM-P-0112-03	0.400	0.350	0.150	0.300	0.180
ASTM-P-0112-04	0.260	0.225	0.250	0.150	0.120
ASTM-P-0112-05	05	0.450	05	0.450	0.070
ASTM-P-0112-06	0.400	0.500	0.025	0.350	0.100
ASTM-P-0112-07	0.300	0.325	0.060	0.250	0.120
ASTM-P-0112-08	0.200	0.250	0.100	0.450	0.100
ASTM-P-0112-09	0.060	0.100	0.080	0.300	0.130
ASTM-P-0112-10	0.060	0.400	0.050	0.200	0.050
ASTM-P-0112-11	0.050	0.300	0.120	0.100	0.075
ASTM-P-0112-12	0.025	0.200	0.150	0.200	0.130
ASTM-P-0112-13	05	0.375	0.200	0.400	0.150
ASTM-P-0112-14	0.170	0.175	0.250	0.550	0.110
ASTM-P-0112-15	0.100	0.425	0.100	0.200	0.200
ASTM-P-0112-16	0.010	0.275	0.010	0.600	0.250
ASTM-P-0112-17	00	00	00	00	00

ASTM-P-0113-SET

\$ 2650 / 17 x 100 mL

Designed for ASTM D4628 & D4927

Cat. No.	Ba	Ca	Mg	P	S	Zn
Nominal Value	(Wt.%)	(Wt.%)	(Wt.%)	(Wt.%)	(Wt.%)	(Wt.%)
ASTM-P-0113-01	0.025	0.600	0.100	05	0.175	0.060
ASTM-P-0113-02	00	0.500	0.150	0.200	0.050	0.080
ASTM-P-0113-03	0.100	0.400	0.350	0.150	0.300	0.180
ASTM-P-0113-04	0.175	0.260	0.225	0.250	0.150	0.120
ASTM-P-0113-05	0.150	05	0.450	05	0.450	0.070
ASTM-P-0113-06	00	0.400	0.500	0.025	0.350	0.100
ASTM-P-0113-07	0.100	0.300	0.325	0.060	0.250	0.120
ASTM-P-0113-08	0.200	0.200	0.250	0.100	0.450	0.100
ASTM-P-0113-09	0.050	0.060	0.100	0.080	0.300	0.130
ASTM-P-0113-10	0.075	0.060	0.400	0.050	0.200	0.050
ASTM-P-0113-11	0.010	0.050	0.300	0.120	0.100	0.075
ASTM-P-0113-12	00	0.025	0.200	0.150	0.200	0.130
ASTM-P-0113-13	0.175	05	0.375	0.200	0.400	0.150
ASTM-P-0113-14	05	0.170	0.175	0.250	0.550	0.110
ASTM-P-0113-15	00	0.100	0.425	0.100	0.200	0.200
ASTM-P-0113-16	05	0.010	0.275	0.010	0.600	0.250
ASTM-P-0113-17	00	00	00	00	00	00

Organometallic Standards

AA, ICP, DCP & XRF Analysis



Lubricating Oil Standards (Continued)

ASTM-P-0114-SET

\$ 2080 / 17 x 100 mL

EDXRF ASTM Method

Designed for ASTM D6481

Cat. No.	Ca (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)
Nominal Value				
ASTM-P-0114-01	05	05	0.050	0.050
ASTM-P-0114-02	0.600	00	00	00
ASTM-P-0114-03	00	0.300	00	00
ASTM-P-0114-04	10	00	10	00
ASTM-P-0114-05	00	00	00	0.300
ASTM-P-0114-06	05	0.250	0.800	0.300
ASTM-P-0114-07	0.500	0.150	0.500	0.150
ASTM-P-0114-08	0.010	0.200	0.100	0.250
ASTM-P-0114-09	0.050	0.010	0.400	0.075
ASTM-P-0114-10	0.100	0.150	0.200	0.200
ASTM-P-0114-11	0.200	0.200	0.800	0.100
ASTM-P-0114-12	0.400	05	0.800	0.300
ASTM-P-0114-13	0.600	0.100	0.500	0.050
ASTM-P-0114-14	0.800	0.010	0.050	0.100
ASTM-P-0114-15	10	0.300	10	0.150
ASTM-P-0114-16	0.400	0.050	0.600	0.250
ASTM-P-0114-17	00	00	00	00

ASTM-P-0115-SET

\$ 2485 / 17 x 100 mL

Cat. No.	Ca (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)	Mg (Wt.%)
Nominal Value					
ASTM-P-0115-01	05	05	0.050	0.050	0.100
ASTM-P-0115-02	0.600	00	00	00	0.150
ASTM-P-0115-03	00	0.300	00	00	0.350
ASTM-P-0115-04	10	00	10	00	0.225
ASTM-P-0115-05	00	00	00	0.300	0.450
ASTM-P-0115-06	05	0.250	0.800	0.300	0.500
ASTM-P-0115-07	0.500	0.150	0.500	0.150	0.325
ASTM-P-0115-08	0.010	0.200	0.100	0.250	0.250
ASTM-P-0115-09	0.050	0.010	0.400	0.075	0.050
ASTM-P-0115-10	0.100	0.150	0.200	0.200	0.400
ASTM-P-0115-11	0.200	0.200	0.800	0.100	0.300
ASTM-P-0115-12	0.400	05	0.800	0.300	0.200
ASTM-P-0115-13	0.600	0.100	0.500	0.050	0.375
ASTM-P-0115-14	0.800	0.010	0.050	0.100	0.175
ASTM-P-0115-15	10	0.300	10	0.150	0.425
ASTM-P-0115-16	0.400	0.050	0.600	0.250	0.275
ASTM-P-0115-17	00	00	00	00	00

ASTM-P-0116-SET

\$ 2600 / 11 x 100 mL

Additives

Designed for ASTM D6481

Cat. No.	Ca (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)
Nominal Value				
ASTM-P-0116-01	0.500	10	0.500	0.500
ASTM-P-0116-02	30	10	30	20
ASTM-P-0116-03	20	1.250	10	1.500
ASTM-P-0116-04	50	1.500	0.500	1.200
ASTM-P-0116-05	40	0.500	1.500	0.750
ASTM-P-0116-06	2.500	0.750	40	10
ASTM-P-0116-07	40	0.500	20	1.250
ASTM-P-0116-08	0.500	20	50	10
ASTM-P-0116-09	10	0.750	20	1.500
ASTM-P-0116-10	2.500	1.200	30	0.500
ASTM-P-0116-11	00	00	00	00

ASTM-P-0117-SET

\$ 2250 / 10 x 100 mL

WLXRF ASTM Method

Designed for ASTM D6443

Cat. No.	Ca (Wt.%)	Cl (Wt.%)	Cu (Wt.%)	Mg (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)
Nominal Value							
ASTM-P-0117-01	0.020	0.030	0.010	0.200	0.250	10	0.020
ASTM-P-0117-02	0.020	0.020	0.050	0.200	0.020	0.020	0.250
ASTM-P-0117-03	0.020	0.200	0.010	0.040	0.250	0.150	0.250
ASTM-P-0117-04	0.020	0.200	0.050	0.040	0.020	10	0.020
ASTM-P-0117-05	0.400	0.020	0.010	0.040	0.020	10	0.250
ASTM-P-0117-06	0.400	0.020	0.050	0.040	0.250	0.020	0.020
ASTM-P-0117-07	0.400	0.200	0.010	0.200	0.020	0.020	0.050
ASTM-P-0117-08	0.400	0.200	0.050	0.200	0.250	10	0.250
ASTM-P-0117-09	0.200	0.100	0.025	0.080	0.150	0.500	0.100
ASTM-P-0117-10	00	00	00	00	00	00	00

ASTM-P-0118-SET

\$ 2540 / 10 x 100 mL

WLXRF ASTM Method

Designed for ASTM D4628, D4927, D4951, D6443

Cat. No.	Ba (Wt.%)	Ca (Wt.%)	Cl (Wt.%)	Cu (Wt.%)	Mg (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)
Nominal Value								
ASTM-P-0118-01	0.020	0.020	0.030	0.010	0.200	0.250	10	0.020
ASTM-P-0118-02	0.250	0.020	0.020	0.050	0.200	0.020	0.020	0.250
ASTM-P-0118-03	0.020	0.020	0.200	0.010	0.040	0.250	0.150	0.250
ASTM-P-0118-04	0.250	0.020	0.200	0.050	0.040	0.020	10	0.020
ASTM-P-0118-05	0.020	0.400	0.020	0.010	0.040	0.020	10	0.250
ASTM-P-0118-06	0.250	0.400	0.020	0.050	0.040	0.250	0.020	0.020
ASTM-P-0118-07	0.020	0.400	0.200	0.010	0.200	0.020	0.020	0.050
ASTM-P-0118-08	0.250	0.400	0.200	0.050	0.200	0.250	10	0.250
ASTM-P-0118-09	0.130	0.200	0.100	0.025	0.080	0.150	0.500	0.100
ASTM-P-0118-10	00	00	00	00	00	00	00	00



Organometallic Standards

AA, ICP, DCP & XRF Analysis

Lubricating Oil Standards (Continued)

ASTM-P-0119-SET

\$ 3100 / 22 x 100 mL

Designed for ASTM D4628, D4927, D4951, D6443

Cat. No.	Ca	Cl	Cu	Mg	P	S	Zn
Nominal Value	(Wt.%)	(Wt.%)	(Wt.%)	(Wt.%)	(Wt.%)	(Wt.%)	(Wt.%)
ASTM-P-0119-01	0.300	0.080	0.030	0.060	0.060	0.275	0.060
ASTM-P-0119-02	0.250	0.100	00	0.010	0.150	00	0.150
ASTM-P-0119-03	0.500	00	0.035	0.160	0.150	00	0.020
ASTM-P-0119-04	0.350	0.010	00	0.120	0.080	0.200	00
ASTM-P-0119-05	0.110	00	0.015	0.100	0.100	0.300	0.050
ASTM-P-0119-06	0.200	0.100	00	0.200	0.050	0.250	0.150
ASTM-P-0119-07	00	0.050	0.025	00	00	0.450	0.020
ASTM-P-0119-08	0.150	0.030	00	0.100	0.030	0.400	0.040
ASTM-P-0119-09	0.250	0.150	0.010	0.160	00	0.350	0.080
ASTM-P-0119-10	0.110	0.150	0.040	05	0.030	0.750	0.150
ASTM-P-0119-11	0.260	0.050	00	00	00	0.750	00
ASTM-P-0119-12	0.200	00	05	0.140	0.080	0.500	0.080
ASTM-P-0119-13	00	00	05	0.020	0.020	0.200	0.020
ASTM-P-0119-14	0.070	0.150	0.020	0.080	0.140	0.650	0.150
ASTM-P-0119-15	0.050	00	00	00	0.150	00	00
ASTM-P-0119-16	0.400	00	01	0.080	00	0.500	0.020
ASTM-P-0119-17	0.180	0.020	0.020	00	0.020	0.600	0.060
ASTM-P-0119-18	0.400	0.010	01	0.010	0.020	00	00
ASTM-P-0119-19	0.010	0.020	0.040	0.010	0.020	0.200	0.100
ASTM-P-0119-20	0.050	05	0.050	00	08	00	0.120
ASTM-P-0119-21	0.200	0.050	0.020	0.080	0.050	0.275	0.050
ASTM-P-0119-22	00	00	00	00	00	00	00

Standards of Interest

Concentrations for the sets on pages 380-382 are targets. Actual production lots may vary.

ASTM-P-0120-SET

\$ 3350 / 23 x 100 mL

Cat. No.	Ba	Ca	Cl	Cu	Mg	P	S	Zn
Nominal Value	(Wt.%)	(Wt.%)	(Wt.%)	(Wt.%)	(Wt.%)	(Wt.%)	(Wt.%)	(Wt.%)
ASTM-P-0120-01	0.100	0.300	0.080	0.030	0.060	0.060	0.275	0.060
ASTM-P-0120-02	0.175	0.250	0.100	00	0.010	0.150	00	0.150
ASTM-P-0120-03	0.040	0.500	00	0.035	0.160	0.150	00	0.020
ASTM-P-0120-04	0.020	0.350	0.010	00	0.120	0.080	0.200	00
ASTM-P-0120-05	0.150	0.110	00	0.015	0.100	0.100	0.300	0.050
ASTM-P-0120-06	00	0.200	0.100	00	0.200	0.050	0.250	0.150
ASTM-P-0120-07	0.200	00	0.050	0.025	00	00	0.450	0.020
ASTM-P-0120-08	00	0.150	0.030	00	0.100	0.030	0.400	0.040
ASTM-P-0120-09	00	0.250	0.150	0.010	0.160	00	0.350	0.080
ASTM-P-0120-10	00	0.110	0.150	0.040	05	0.030	0.750	0.150
ASTM-P-0120-11	0.100	0.260	0.050	00	00	00	0.750	00
ASTM-P-0120-12	0.050	0.200	00	05	0.140	0.080	0.500	0.080
ASTM-P-0120-13	00	00	00	05	0.020	0.020	0.200	0.020
ASTM-P-0120-14	0.080	0.070	0.150	0.020	0.080	0.140	0.650	0.150
ASTM-P-0120-15	0.010	0.050	00	00	00	0.150	00	00
ASTM-P-0120-16	00	0.400	00	01	0.080	00	0.500	0.020
ASTM-P-0120-17	00	0.180	0.020	0.020	00	0.020	0.600	0.060
ASTM-P-0120-18	00	0.400	0.010	01	0.010	0.020	00	00
ASTM-P-0120-19	0.150	0.010	0.020	0.040	0.010	0.020	0.200	0.100
ASTM-P-0120-20	05	0.050	05	0.050	00	08	00	0.120
ASTM-P-0120-21	0.100	0.200	0.050	0.020	0.080	0.050	0.275	0.050
ASTM-P-0120-22	0.120	0.200	00	00	00	00	0.750	00
ASTM-P-0120-23	00	00	00	00	00	00	00	00

Metal Working Fluids

ASTM-P-0121-SET

\$ 1560 / 13 x 100 mL

Cat. No.	Cl	P	S
Nominal Value	(Wt.%)	(Wt.%)	(Wt.%)
ASTM-P-0121-01	00	00	00
ASTM-P-0121-02	0.750	0.025	0.500
ASTM-P-0121-03	0.050	0.100	30
ASTM-P-0121-04	10	0.500	2.500
ASTM-P-0121-05	0.100	05	20
ASTM-P-0121-06	1.500	0.200	10
ASTM-P-0121-07	20	05	30
ASTM-P-0121-08	10	0.050	0.100
ASTM-P-0121-09	0.500	0.400	00
ASTM-P-0121-10	20	0.200	1.500
ASTM-P-0121-11	00	0.500	1.500
ASTM-P-0121-12	1.250	0.010	0.050
ASTM-P-0121-13	0.050	0.300	0.050

Stabilization Solutions

The solutions were specifically designed for chelating & solubilizing our line of Sulfur-Free Organometallic Standards. Contact Tech Service for additional information.

Stabilizer Solution A

ASTM-P-0122-0.5 \$ 80 / 50 mL
ASTM-P-0122-1 \$ 120 / 100 mL

Stabilizer Solution C

ASTM-P-0124-0.5 \$ 80 / 50 mL
ASTM-P-0124-1 \$ 120 / 100 mL

Stabilizer Solution B

ASTM-P-0123-0.5 \$ 80 / 50 mL
ASTM-P-0123-1 \$ 120 / 100 mL

Stabilizer Solution D

ASTM-P-0125-0.5 \$ 80 / 50 mL
ASTM-P-0125-1 \$ 120 / 100 mL



ASTM D3230 Determination of Salts in Crude Oil

Mixed Salt Solution

D-3230-89-1 ▲

\$ 80 / 100 mL

D-3230-89-5 ▲

\$ 160 / 500 mL

At stated conc. in Alcohol Solution (1-butanol : MeOH) (ratio 63:37) tr. H₂O 3 comps.

Calcium chloride 10 µg/mL
Magnesium chloride 20 µg/mL

Sodium chloride 70 µg/mL

ASTM D3237 Lead in Gasoline by AA Spectroscopy

Lead Standard Calibration Curve

D-3237-CAL-SET ▲

\$ 210 / 4 x 100 mL

Set includes the following Catalog Numbers:

Description	Cat. No.	Price / 100 mL
Blank 1% Aliquat 336/MIBK	D-3237-01 ▲	\$ 20
0.02 g Pb / gal (5.3 mg Pb/ L) in 1% Aliquat 336 / MIBK	D-3237-02 ▲	\$ 80
0.05 g Pb / gal (13.2 mg Pb/ L) in 1% Aliquat 336 / MIBK	D-3237-03 ▲	\$ 80
0.10 g Pb / gal (26.4 mg Pb/ L) in 1% Aliquat 336 / MIBK	D-3237-04 ▲	\$ 80



ASTM D3605 Trace Metals in Gas Turbine Fuels by AA & Flame Emission & Spectroscopy

Trace Metals Standard

D-3605-91-R1-1

\$ 245 / 1 x 100 mL

At stated conc. in 75 cSt Hydrocarbon oil

4 comps.

Na (Sodium) (250 µg/mL) Ca (Calcium) (250 µg/mL)
Pb (Lead) (250 µg/mL) V (Vanadium) (250 µg/mL)

Standards of Interest

See Table of Contents for a complete listing of Wear Metal Standards.

ASTM D3831 Manganese in Gasoline by AA Spectroscopy

Manganese Stock Solution

D-3831-1 ▲

\$ 65 / 1 x 100 mL

Manganese @ 1.0 g Mn / gal (264.2 mg Mn / L) in Methyl isobutyl ketone

▲ Hazardous fee required.



Thousands of Standards, just a click away
AccuStandard.com



Solid Matrix Standards

AccuStandard offers a broad range of trace element standards in Solid Matrices to meet the requirements for “real world” solid waste reference materials. All Standards are furnished with a Certificate of Analysis, with the certified values, standard deviations, confidence intervals and performance intervals. A list of additional elements/analytes, instructions and other pertinent information is also included.

Solid Matrix Standards

Description	Cat. No.	Price / Unit
Metals in Ashes		
Trace Metals in Fly Ash 1	CRM001-100G	\$ 145 / 100 g
Trace Metals - Fly Ash 2	CRM012-100G	145 / 100 g
Trace Metals - Fly Ash 3	CRM019-50G	145 / 50 g
TCLP Metals - Ash 1	CRM205-225G	165 / 225 g
Metals in Particulates & Water Treatment Media		
Trace Metals - Activated Charcoal	CRM002-100G	145 / 100 g
Trace Metals - Diatomaceous Earth	CRM004-100G	145 / 100 g
Trace Metals - Sewage Amended Soil	CRM005-50G	165 / 50 g
Trace Metals - Baghouse Dust	CRM014-50G	150 / 50 g
Metals in Paint		
Trace Metals - Paint Sludge 1	CRM006-50G	145 / 50 g
Trace Metals - Paint Chips	CRM013-50G	150 / 50 g
Trace Metals - Powdered Paint 1 NEW	CRM017-20G	120 / 20 g
Lead-Free Paint - Powdered NEW	CRM050-20G	120 / 20 g
Metals in Sludges		
Trace Metals - Paint Sludge 1	CRM006-50G	145 / 50 g
Trace Metals - Electroplating Sludge 1	CRM009-100G	130 / 100 g
Trace Metals - Electroplating Sludge 2	CRM010-100G	135 / 100 g
Trace Metals - Electroplating Sludge 3	CRM011-100G	145 / 100 g
Trace Metals - Wet Sewage Sludge	CRM018-50G	170 / 50 g
Trace Metals - Sewage Sludge 2 NEW	CRM029-50G	165 / 50 g
Trace Metals - Sewage Sludge 3 NEW	CRM031-40G	170 / 40 g
Trace Metals - Sewage Sludge 4	CRM055-50G	170 / 50 g
TCLP Metals		
TCLP Metals - Sandy Loam 1	CRM202-225G	165 / 225 g
TCLP Metals - Sandy Loam 2	CRM204-225G	170 / 225 g
TCLP Metals - Ash 1	CRM205-225G	165 / 225 g
TCLP Metals - Sandy Loam 3	CRM206-225G	170 / 225 g
TCLP Metals - Loamy Sand 3	CRM207-225G	170 / 225 g
TCLP Metals - Sandy Loam 4	CRM208-225G	170 / 225 g
TCLP Metals - Sandy Loam 11 NEW	CRM209-225G	170 / 225 g
TCLP Metals - Sandy Loam 12 NEW	CRM210-225G	170 / 225 g
TCLP Metals - Sandy Loam 13 NEW	CRM211-225G	170 / 225 g
TCLP Metals - Loamy Sand 1 NEW	CRM212-225G	170 / 225 g
TCLP Metals - Loamy Sand 2 NEW	CRM213-225G	170 / 225 g
TCLP Metals - Sandy Loam 6 NEW	CRM215-225G	170 / 225 g
TCLP Metals - Loam 1 NEW	CRM218-225G	170 / 225 g
Metals in Soil		
Trace Metals - Fresh Water Sediment 2	CRM015-50G	170 / 50 g
Trace Metals - Fresh Water Sediment 3	CRM016-50G	165 / 50 g
Trace Metals - Sandy Loam 2	CRM020-50G	165 / 50 g
Trace Metals - Sandy Loam 3	CRM021-100G	165 / 100 g
Trace Metals/Cyan - Loam 5	CRM022-20G	155 / 20 g
Trace Metals - Sandy Loam 7	CRM023-50G	165 / 50 g
Trace Metals - Loamy Sand 1	CRM024-50G	165 / 50 g
Trace Metals - Sandy Loam 8	CRM025-50G	165 / 50 g
Trace Metals - Sandy Loam 9	CRM026-50G	165 / 50 g
Trace Metals - Sandy Loam 10	CRM027-50G	165 / 50 g
Trace Metals - Sandy Loam 11 NEW	CRM028-50G	165 / 50 g
Trace Metals - Sandy Loam 2 NEW	CRM030-50G	165 / 50 g
Trace Metals - Loamy Sand 10 NEW	CRM033-50G	165 / 50 g
Trace Metals - Loamy Sand 3 NEW	CRM034-50G	165 / 50 g
Trace Metals - Loamy Sand 4 NEW	CRM036-50G	165 / 50 g
Chromium VI - Soil NEW	CRM041-30G	120 / 30 g
Trace Metals - Loam 3 NEW	CRM042-50G	165 / 50 g
Trace Metals - Sandy Loam 6 NEW	CRM043-50G	165 / 50 g
Trace Metals - Silt Loam 1 NEW	CRM044-50G	165 / 50 g
Trace Metals - Silty Clay 1 NEW	CRM045-50G	165 / 50 g
Trace Metals - Clay 1 NEW	CRM046-50G	165 / 50 g
Trace Metals - Sand 1 NEW	CRM048-50G	165 / 50 g
Trace Metals - Sandy Clay 1 NEW	CRM049-50G	165 / 50 g
Trace Metals - Clay 2 NEW	CRM051-50G	165 / 50 g
Trace Metals - Loamy Clay 1 NEW	CRM052-50G	175 / 50 g
Trace Metals - Loamy Clay 2 NEW	CRM059-50G	165 / 50 g

- Ideal for AA and ICP Analysis
- Certified by EPA Methods and Protocols
- NATURAL Matrix, Not spiked or fortified
- US EPA SW-846, Method 3050B
- Method 1311
- Lead Abatement Program Material

Solid waste standards do not require a hazardous shipping fee.



Solid Matrix Standards (continued)

Description	Cat. No.	Price / Unit
Metals in Soil (continued)		
Chromium VI - Clay NEW	CRM060-30G	120 / 30 g
Chromium VI - Sandy Loam NEW	CRM061-30G	120 / 30 g
Nutrients - Clay Soil NEW	CRM090-100G	170 / 100 g
Nutrients - Sandy Loam NEW	CRM091-100G	170 / 100 g
Nutrients - Sand NEW	CRM092-100G	170 / 100 g
Trace Metals - Taiwan Clay 1 NEW	CRM2003-50G	170 / 50 g
PH - Sandy Clay NEW	CRM497-100G	125 / 100 g
PH/Conductivity - Clay Soil NEW	CRM498-100G	125 / 100 g
PH - Loamy Sand NEW	CRM499-100G	125 / 100 g
Anions - Sandy Loam 1 NEW	CRM700-50G	160 / 50 g
Anions - Clay 1 NEW	CRM701-50G	160 / 50 g
Anions - Loamy Sand 1 NEW	CRM702-50G	160 / 50 g
Cyanide - Sediment NEW	CRM750-30G	125 / 30 g
Cyanide - Clay NEW	CRM751-30G	125 / 30 g
Cyanide - Sandy Loam NEW	CRM752-30G	125 / 30 g
Sulfide - Sediment NEW	CRM775-30G	125 / 30 g
Sulfide - Clay NEW	CRM776-30G	125 / 30 g
Sulfide - Sandy Loam NEW	CRM777-30G	125 / 30 g

**Real World samples.
Concentration on
actual lots may vary.**

Certificate of Analysis

CERTIFIED REFERENCE MATERIAL

Trace Metals - Industrial Incinerator Ash

Number **CRM012-100G**

Lot **AR12**

Solvent (Matrix) **Incinerator Ash**

Hazard **Irritant**

Storage & Handling **Store in a cool dry environment.**

Expiration Date **See Sample Label**

Certification Date: **August 31, 2011**

Certified By:  Christopher Rucinski - QA Director

ISO Guide 34
Cert# AR-1470

ISO/IEC 17025
Cert# AT-1467

Analyte	Units	Certified ^{1,4} Value	K ⁵	Standard ² Deviation	Confidence Interval	Prediction Interval
Aluminum, Al Traceable to: NIST SRM 3101a Lot 992003	mg/Kg	2160 ± 30.8	2.00	91.0	2070 - 2250	1640 - 2680
Barium, Ba Traceable to: NIST SRM 3104a Lot 070222	mg/Kg	18.7 ± 0.372	2.00	1.10	17.6 - 19.8	13.1 - 24.3
Cadmium, Cd Traceable to: NIST SRM 3108 Lot 060531	mg/Kg	362 ± 5.92	2.00	17.5	344 - 379	375 - 448
Calcium, Ca Traceable to: NIST SRM 3109a Lot 050825	mg/Kg	2110 ± 34.2	2.00	101	2010 - 2210	1620 - 2600
Chromium, Cr (total) Traceable to: NIST SRM 3112a Lot 990607	mg/Kg	162000 ± 2044	2.00	6040	155000 - 168000	129000 - 194000
Copper, Cu Traceable to: NIST SRM 3114 Lot 891811	mg/Kg	3020 ± 46.7	2.00	138	2880 - 3150	2320 - 3710
Iron, Fe Traceable to: NIST SRM 3126a Lot 051031	mg/Kg	28700 ± 423	2.00	1250	27400 - 29900	22200 - 35200
Lead, Pb Traceable to: NIST SRM 3128 Lot 030721	mg/Kg	120 ± 6.26	2.00	18.5	102 - 139	18.8 - 222
Magnesium, Mg Traceable to: NIST SRM 3131a Lot 050302	mg/Kg	1510 ± 30.5	2.00	90.0	1420 - 1590	1080 - 1930
Manganese, Mn Traceable to: NIST SRM 3132 Lot 050429	mg/Kg	202 ± 2.71	2.00	8.00	194 - 210	158 - 247
Nickel, Ni Traceable to: NIST SRM 3136 Lot 000612	mg/Kg	13300 ± 150	2.00	442	12800 - 13700	10900 - 15700
Potassium, K Traceable to: NIST SRM 3141a Lot 051220	mg/Kg	73300 ± 866	2.00	2560	70800 - 75900	61000 - 85600
Silver, Ag Traceable to: NIST SRM 3151 Lot 992212	mg/Kg	54.8 ± 1.47	2.00	4.35	50.4 - 59.1	33.5 - 76.1
Sodium, Na Traceable to: NIST SRM 3152a Lot 010728	mg/Kg	29200 ± 382	2.00	1130	28100 - 30300	23800 - 34600
Zinc, Zn Traceable to: NIST SRM 3168a Lot 001402	mg/Kg	635 ± 9.48	2.00	28.0	607 - 663	495 - 774

Additional Information

Informational Values (Non-certified)

Trace Metal Acid Digestion by USEPA 3050B

Cobalt, Co - 22.4mg/Kg

Vanadium, V - 51.8mg/Kg

Description

A total sample size of 100 g is provided.

The sample has been heat sterilized.

This sample should be digested using USEPA method 3050, 3051 or equivalent methods.

This material was collected from a hazardous waste incinerator located in Western United States. The material is a natural matrix (not fortified) and the only processing was homogenization.

Organic 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

Abbreviations

AA	Atomic Absorption	ICP	Inductively Coupled Plasma
ACS	American Chemical Society	IR	Infrared
ANSI	American National Standards Institute	KF	Karl Fischer
AOAC	Association of Official Analytical Chemists	meq	Milliequivalent
APHA	American Public Health Association	NF	National Formulary
ASTM	American Society for Testing Materials	NIST	National Institute of Standards and Technology
BSI	British Standards Institute	OSHA	Occupational Safety and Health Administration
CAS	Chemical Abstracts Service	RFA	Renewable Fuel Association
CI	Color Index	SPE	Solid Phase Extraction
EPA	U.S. Environmental Protection Agency	TLC	Thin Layer Chromatography
GLC	Gas Liquid Chromatography	USDA	U.S. Department of Agriculture
GR	Guaranteed Reagent	USP	U.S. Pharmacopoeia

Instrumentation for Analysis

GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectroscopy
GC/FID	Gas Chromatography/Flame Ionization Detector
GC/PID	Gas Chromatography/Photoionization Detector
GC/ECD	Gas Chromatography/Electron Capture Detector
GC/ELCD	Gas Chromatography/Electrolytic Conductivity Detector
GC/NPD	Gas Chromatography/Nitrogen Phosphorus Detector
HPLC	High Performance Liquid Chromatography
NPD/TEA	Nitrogen-Phosphorus Detector/Thermal Energy Analyzer with the reductive Hall detector
TCD/FID	Thermal Conductivity Detector/Flame Ionization Detector
NPD/AFD/TSD	Nitrogen-Phosphorus Detector/Alkali-Flame Detector/Thermionic Specific Detector
NPA/ELCD/FPD	Nitrogen-Phosphorus Detector/Electrolytic Conductivity Detector/Flame Photometric Detector
HRGC/LRMS	High Resolution Gas Chromatography/Low Resolution Mass Spectrometry
FTIR	Fourier Transform Infrared

General Constants

Universal Gas Constant	R = 0.0821 (Atm)(L)/(K)(mole)
Acceleration Due to Gravity	g = 32.17 ft/sec ² , 9.8 m/sec ²
Avogadro's Constant	N = 6.023 x 10 ²³ molecules/mole
Speed of Light	c = 186,282 miles/sec, 3 x 10 ¹⁰ cm/sec
Heat of Fusion (water 1 atm, 0°C)	ΔH _{fus} = 79.7 cal/g
Heat of Vaporization (water 1 atm, 100°C)	ΔH _{vap} = 540 cal/g
Volume of Perfect Gas	22.4L/mol at 0°C, 760 torr
Faraday's Constant	F = 96485.31 C/mol
Planck's Constant	h = 6.626 x 10 ⁻²⁷ erg/sec
Bragg's Law	2d nλ = 2d sin(θ)
Absolute Zero	-273.15 °C
Temp. of Liquid Nitrogen	-195.8 °C

Unit Conversions

Temperature

°Fahrenheit	°Celsius	(°F - 32) x 5/9
°Celsius	°Fahrenheit	(°C x 9/5) + 32
°Celsius	°Kelvin	°C + 273

Mass

1 ounce	= 28.4 grams
0.03527 ounces	= 1 gram

Liquid Volume

	Multiply by
Ounces (US)	Milliliters 29.57
Pints (US)	Liters 0.47
Quarts (US)	Liters 0.95
Gallons (US)	Liters 3.8
Milliliters	Ounces (US) 0.034
Liters	Pints (US) 2.1
Liters	Quarts (US) 1.06
Liters	Gallons (US) 0.26
Cubic Feet	Cubic meters 0.03
Cubic Yards	Cubic meters 0.76

1 ppm = 1 µg/mL (wt. /vol.) and
 1 ppm = 1 µg/g (wt./wt.)
 1% = 10,000 ppm (parts per million)
 1 ppm = 1,000 ppb (parts per billion)
 1 ppb = 1,000 ppt (parts per trillion)

1 g = 1,000 mg (milligram)
 1 mg = 1,000 µg (microgram)
 1 µg = 1,000 ng (nanogram)

1 L = 1,000 mL (milliLiter)
 1 mL = 1,000 µL (microLiter)
 1 µL = 1,000 nL (nanoLiter)

Labels, Safety, Storage and Packaging

All organic solutions are in 2 mL Ampules, filled to approximately 1.2 mL to ensure 1 mL can be transferred.

2-Part Label System

Smudgeproof, tear and solvent resistant * (Organic products in ampules)

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



Usage, Handling and Storage

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.

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.

GHS Symbols



GHS-06

- Acute Toxicity (fatal or toxic)



GHS-02

- Flammables
- Self Reactives
- Pyrophorics
- Self-Heating
- Emits Flammable Gas
- Organic Peroxides



GHS-05

- Corrosives
- Skin corrosion/burns
- Eye Damage
- Corrosive to Metals



GHS-07

- Irritant
- Skin Sensitizer
- Acute toxicity (harmful)
- Narcotic Effects
- Respiratory Tract Irritant



GHS-03

- Oxidizers



GHS-08

- Carcinogen
- Respiratory Sensitizer
- Reproductive Toxicity
- Mutagenicity
- Aspiration Toxicity

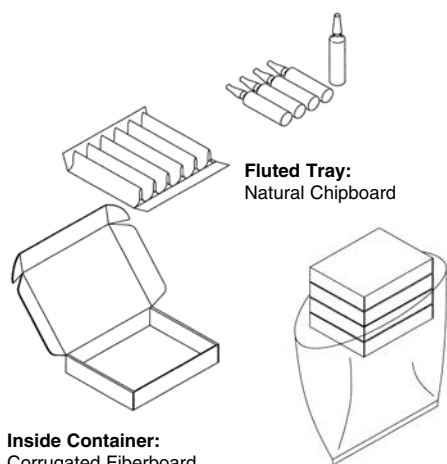


GHS-09

- Aquatic Toxicity

AccuStandard uses recyclable and biogradable material

Package compliant with DOT and International regulations.

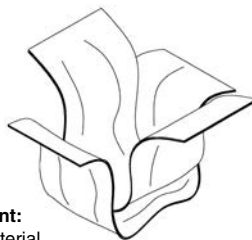


Fluted Tray:
Natural Chipboard

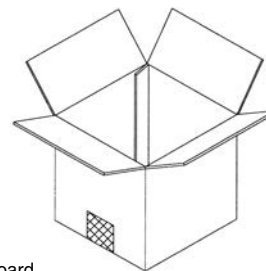
Inside Container:
Corrugated Fiberboard



Cushioning/Absorbent:
Natural Kraft Fiber Material



Shipping Container:
Natural Kraft Corrugated Fiberboard



CAS Number Index

50-00-0	72, 119, 100	75-12-7	72	84-64-0	80	94-75-7	50, 116, 196	103-41-3	98, 102	112-61-8	94
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Solvent / Matrix _____

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2 _____	_____	_____	☐ µg/mL
3 _____	_____	_____	☐ mg/mL
4 _____	_____	_____	☐ wt. %
5 _____	_____	_____	☐ vol. %
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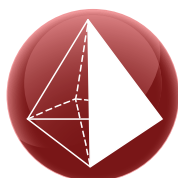


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