Agilent CrossLab
From Insight to Outcome

Drinking Water Standards

Your essential resource for Agilent ULTRA chemical standards









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Agilent Service and Support **39**

About Agilent standards

Agilent is a global leader in chromatography and spectroscopy, as well as an expert in chemical standards manufacturing. Agilent offers certified reference materials, QC standards, reagents, and buffers to complement our extensive line of instruments, columns, sample preparation products, consumables, and services. Our portfolio provides laboratories with full workflow solutions for efficient, accurate results.

Agilent has an extensive list of chemical standards, matched by expertise in designing and formulating custom standards to exacting specifications. Agilent products are available through our global distribution channels, and with our logistics capabilities we offer rapid turnaround time on all orders.

With over 40 years of technical expertise in measurement science, we provide innovative, quality products to address the entire analytical chemistry workflow for laboratories around the world.

Products

- Certified reference materials (CRM)
- Reference materials (RM)
- Calibration standards
- IQ/OQ/PQ standards
- Linearity standards
- Quality check samples
- Buffers and reagents
- Wash solution and diluents

Markets

Environmental

- Petrochemicals
- PCB/PBB
- Halocarbons
- VOC/Semi-VOC
- Pesticides
- Dioxins and furans

Food and Beverages

- Allergens
- Amino and nitroaromatics
- Pharma and vet drugs
- PAHs
- Lipids
- Food authenticity
- Phenols
- Dyes

Life Science

- Pharmaceutical
- Biopharma
- Academic and research
- University
- Governmental

Industrial and Mining

Petrochemical

- Matrix oils
- Metals in biodiesel
- Organometallic

Elemental Analysis

- Single element
- Multi-element

Custom products

Do you need a custom defined reference material or other chemical solution unique to your laboratory or testing procedure? If the product you require is not available as an Agilent product, we can prepare it for you on a custom basis. Custom reference materials are a fast, economical way to meet your specific laboratory needs.

Agilent maintains an expansive compatibility database, integrating 40 years of manufacturing and quality control data to create stable and reliable custom product formulations. Choose from any of our three quality control validation levels (see Page 4).

Visit **www.agilent.com/chem/standards** to request a quote.

Quality control laboratory



Agilent operates an ISO 17025 accredited quality control laboratory and is accredited to ISO Guide 34 as a reference material producer for the manufacture of certified reference materials (CRM).

Rely on the expertise of our applications development group for:

- Method development
- Pre- and postfill analysis
- Stability testing and protocols
- Homogeneity testing

Quality control validation levels

Chemical standards manufactured by Agilent are supplied with a lot-specific certificate of analysis (C of A) that reflects the associated quality control validation level. Certificates of analysis can ship with the product and are available online. All Agilent products, unless otherwise stated, are Level II - ISO Guide 34 reference materials.

		Reported Value	Reported Uncertainty	Former Name	Solutions	Neats	Lead Time (Customs)
Level I	ISO Guide 34 RM	True (calculated)	U_{char}	Gravimetric	Y	Y	5 business days
Level II	ISO Guide 34 RM	True (analytical)	U_{char}	Full validation	Y	Y	7 to 10 business days
Level III	ISO Guide 34	Certified	U_{exp}	ISO Guide 34	Y		15 to 20 business days

Level I solution: A reference material (RM) prepared gravimetrically in accordance with ISO Guide 34 and under the Agilent ISO 9001 registered quality system. The neat materials used for the product are verified by an Agilent ISO 17025 laboratory and under the Agilent ISO Guide 34 accreditation. For each analyte, the true value, with its uncertainty value calculated at 95% confidence level, is reported.

Level I neat: RM prepared in accordance with ISO Guide 34 and under the Agilent ISO 9001 registered quality system. The true value (% purity) is reported.

Level II solution: RM prepared gravimetrically in accordance with ISO Guide 34 and under the Agilent ISO 9001 registered quality system. The neat materials used for the product are verified by an Agilent ISO 17025 laboratory and under the Agilent ISO Guide 34 accreditation. The analyte concentrations are verified by an Agilent ISO 17025 accredited laboratory. For each analyte, the true value, with its uncertainty value calculated at 95% confidence level, is reported.

Level II neat: RM prepared in accordance with ISO Guide 34 and under the Agilent ISO 9001 registered quality system. The materials used for this product are verified by the Agilent ISO 17025 laboratory and under the Agilent ISO Guide 34 accreditation. The true value (% purity), with its uncertainty value calculated at 95% confidence level, is reported.

Level III solution: RM prepared gravimetrically in accordance with ISO Guide 34 and under the Agilent ISO 9001 registered quality system. The neat materials used for this product are verified by the Agilent ISO 17025 laboratory and under the Agilent ISO Guide 34 accreditation. The analyte concentrations are verified by an Agilent ISO 17025 accredited laboratory. For each analyte, the certified value is reported with its uncertainty value calculated as the expanded uncertainty, in accordance with ISO Guide 35.

Triple certification

Agilent is committed to product integrity by offering customers the assurance of triple certification to ISO standards.

Agilent operates under an ISO 9001 registered quality management system, where an accrediting body (TUV) attests to the quality of our methods, procedures, testing, production, and record keeping.

Our quality control laboratory is accredited to ISO 17025 (ANAB) for technical competence to perform testing of organic and inorganic materials and certified reference materials, as defined in our scope, accessible online at **www.agilent.com/chem/17025**

Agilent is further accredited to ISO Guide 34 (ANAB) for technical competence as a reference material producer of certified reference materials. This requires Agilent to identify and document the major components of uncertainty including homogeneity, short- and long-term stability, and uncertainty due to analytical characterization and manufacturing.

The most current Agilent certifications are accessible at **www.agilent.com/quality**

Tips and tools

To view our entire portfolio of over 7,000 standards, all manufactured under ISO 17025 Guide 34, visit **www.agilent.com/chem/standards**

Level 2 reference material Certificate of Analysis

Agilent

Certificate of Analysis
ISO Guide 34

C4-C24 Even Carbon Saturated FAME Mix

Product Number: 5191-4278 **Page:** 1 of 1

Lot Number: CR-5364 **Lot Issue Date:** 17-Nov-2017 **Expiration Date:** 31-Dec-2019

This ISO Guide 34 Reference Material (RM) was manufactured and verified in accordance with Agilent's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
methyl butanoate	000623-42-7	RM04575	1005 ± 5 µg/mL
methyl hexanoate	000106-70-7	NT01630	1005 ± 5 µg/mL
methyl octanoate	000111-11-5	NT01094	1003 ± 5 µg/mL
methyl decanoate	000110-42-9	NT00187	1004 ± 5 µg/mL
methyl laurate	000111-82-0	NT01095	1003 ± 5 µg/mL
methyl tetradecanoate	000124-10-7	NT00188	1003 ± 5 µg/mL
methyl palmitate	000112-39-0	RM07128	1001 ± 5 µg/mL
methyl octadecanoate	000112-61-8	RM12285	1002 ± 5 µg/mL
methyl arachidate	001120-28-1	RM11588	1003 ± 5 µg/mL
methyl docosanoate	000929-77-1	NT01096	1004 ± 5 µg/mL
tetracosanoic acid methyl ester	002442-49-1	NT01097	1004 ± 5 µg/mL

Matrix: hexane

Storage: Store Refrigerated (2° - 8°C).

Agilent uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

Monica Bourgeois
QMS Representative

ANAB ACCREDITED
ISO Guide 34 Cert No. AR-1936

Produced in accordance with TUV USA Inc 56 100 18560026 registered ISO 9001 Quality Management System

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ISO17025 Cert No. AT-1937

250 Smith Street North Kingstown, Rhode Island 02852 **www.agilent.com/quality**

An example of a Certificate of Analysis for an Agilent reference material.

GHS compliance

Agilent is a certified GHS author for SDS and GHS compliant labeling. Chemical products manufactured and distributed by Agilent are compliant with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). Safety Data Sheets (SDS) and labels are prepared in accordance with regulations and in the following languages:

European CLP Regulation
Regulation 1272/2008

- Chinese (standard Mandarin)
- Czech
- Danish
- Dutch
- English
- Estonian
- Finnish
- French
- German
- Italian
- Japanese
- Korean
- Polish
- Portuguese
- Romanian
- Russian
- Spanish
- Swedish

USA GHS-OSHA Regulation
Hazcom 2012

- English
- Spanish
- French

Chinese GHS Regulation
GB/T 17519-2013 and GB/T 16483-2008

- Chinese (standard Mandarin)
- English

Additional languages are available upon request.
As regulations are updated and expanded, Agilent will maintain up-to-date records online at **www.agilent.com**

Tips and tools

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EPA Method 501

Trihalomethanes

Method 501 is a purge-and-trap method for measurement of total trihalomethanes using GC/ECD. These standards may be used for Methods 501.1, 501.2, and 501.3

Recommended Method 501 Trihalomethanes Mixtures

Description	Analytes	Total Vol.	Part No. 100 µg/mL	Part No. 200 µg/mL	Part No. 2,000 µg/mL	Part No. 5,000 µg/mL
4 analytes, in methanol	Bromodichloromethane Bromoform Chloroform Dibromochloromethane	1 x 1 mL	THM-501N-1	THM-511-1	THM-515-1	THM-521-1

Performance Check Mixture

Description	Analyes		Total Vol.	Part No.
8 analyes, at 2,000 µg/mL, in methanol	Benzene Carbon tetrachloride 1,4-Dichlorobenzene 1,2-Dichloroethane	1,1-Dichloroethene 1,1,1-Trichloroethane Trichloroethene Vinyl chloride	1 x 1 mL	EPA 100A-1

Promulgated VOC Mixture

Description	Analyes		Total Vol.	Part No.
12 analytes, at 200 µg/mL, in methanol	Chlorobenzene 1,2-Dichlorobenzene *cis*-1,2-Dichloroethene *trans*-1,2-Dichloroethene 1,2-Dichloropropane Ethylbenzene	*o*-Xylene *m*-Xylene *p*-Xylene Styrene Tetrachloroethene Toluene	1 x 1 mL	DWM-591A-1

Trihalomethanes Kit

Description	Components		Total Vol.	Part No.
Contains 5 ampoules, at 100 µg/mL, in methanol	Bromodichloromethane Bromoform plus Trihalomethanes mixture (THM-501N-1)	Chloroform Dibromochloromethane	1 x 1 mL	THK-501

Recommended Standards

Method 501	Part No.
Calibration standards	THM-501N-1 THM-511-1 THM-521-1

EPA Method 502.2

Volatile organic compounds

EPA Method 502.2 is an enhanced and expanded version of 502.1. It is a purge-and-trap GC method, but uses a capillary column to detect a more efficient separation. Detection is carried out using a photoionization detector, in series with either an electrolytic conductivity or microcoulometric detector, enabling determination of all 60 analytes of interest.

Recommended Method 502.2 VOC Mixtures

Description	Analytes			Total Vol.	Part No. 200 µg/mL	Part No. 2,000 µg/mL
60 analytes, in methanol	Benzene	1,1-Dichloroethane	*o*-Xylene	1 x 1 mL	DWM-588-1	DWM-588-1
	Bromobenzene	1,2-Dichloroethane	*m*-Xylene			
	Bromochloromethane	1,1-Dichloroethene	*p*-Xylene			
	Bromodichloromethane	1,1-Dichloropropene	*sec*-Butylbenzene			
	Bromoform	*cis*-1,2-Dichloroethene	Styrene			
	Bromomethane	*trans*-1,2-Dichloroethene	*tert*-Butylbenzene			
	Carbon tetrachloride	Dichlorodifluoromethane	1,1,1,2-Tetrachloroethane			
	Chlorobenzene	1,2-Dichloropropane	1,1,2,2-Tetrachloroethane			
	Chloroethane	1,3-Dichloropropane	Tetrachloroethene			
	Chloroform	2,2-Dichloropropane	Toluene			
	Chloromethane	*cis*-1,3-Dichloropropene	1,1,1-Trichloroethane			
	2-Chlorotoluene	*trans*-1,3-Dichloropropene	1,2,3-Trichlorobenzene			
	4-Chlorotoluene	Ethylbenzene	1,1,2-Trichloroethane			
	Dibromochloromethane	Hexachlorobutadiene	Trichloroethene			
	1,2-Dibromo-3-chloropropane	Isopropylbenzene	Trichlorofluoromethane			
	Dibromomethane	4-Isopropyltoluene	1,2,3-Trichloropropane			
	1,2-Dibromoethane	Methylene chloride	1,2,4-Trichlorobenzene			
	1,2-Dichlorobenzene	Naphthalene	1,2,4-Trimethylbenzene			
	1,3-Dichlorobenzene	*n*-Butylbenzene	1,3,5-Trimethylbenzene			
	1,4-Dichlorobenzene	*n*-Propylbenzene	Vinyl chloride			

Individual Internal and Surrogate Standards for Method 502

Standards	Concentration	Total Vol.	Part No.
2-Bromo-1-chloropropane	1,000 µg/mL, in methanol	1 x 1 mL	STS-191-1
1,4-Dichlorobutane			STS-201-1
Fluorobenzene			STS-161-1
1-Chloro-2-fluorobenzene			STS-451-1
2-Bromo-1-chloropropane	2,000 µg/mL, in methanol	1 x 1 mL	STS-190-1
1-Chloro-2-fluorobenzene			STS-450-1
1,4-Dichlorobutane			STS-200-1
Fluorobenzene			STS-160-1
Methylene chloride-d_2			IST-510-1

Recommended Method 502.2 Internal Standard Mixture

Description	Analytes	Total Vol.	Part No.
2 analytes, at 2,000 µg/mL, in methanol	2-Bromo-1-chloropropane Fluorobenzene	1 x 1 mL	STM-240N-1

Recommended Standards

Method 502.2	Part No.
Calibration standards	DWM-580-1 DWM-588-1
Internal standard	STM-240N-1

Tips and tools

Find more EPA Method standards online at **www.agilent.com/chem/standards**

EPA Method 503.1

Volatile aromatics and unsaturated organic compounds

Method 503.1 is applicable for the determination of volatile aromatic and unsaturated compounds. It is a purge-and-trap method, using GC with a high-temperature photoionization detector.

Recommended Method 503.1 Aromatics and Alkenes Mixture

Description	Analytes		Total Vol.	Part No.
28 analytes, at 200 µg/mL, in methanol	Benzene Bromobenzene *n*-Butylbenzene *sec*-Butylbenzene *tert*-Butylbenzene Chlorobenzene 2-Chlorotoluene 4-Chlorotoluene 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Ethylbenzene Hexachlorobutadiene Isopropylbenzene	4-Isopropyltoluene Naphthalene *n*-Propylbenzene Styrene Tetrachloroethene Toluene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene Trichloroethene 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene *o*-Xylene *m*-Xylene *p*-Xylene	1 x 1 mL	DWM-503-1

Aromatic Hydrocarbons Mixture

Description	Analyes		Total Vol.	Part No.
16 analytes, at 200 µg/mL, in methanol	Benzene *n*-Butylbenzene *sec*-Butylbenzene *tert*-Butylbenzene Ethylbenzene Isopropylbenzene 4-Isopropyltoluene Naphthalene	*n*-Propylbenzene Styrene Toluene 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene *o*-Xylene *m*-Xylene *p*-Xylene	1 x 1 mL	DWM-550-1

Halocarbons Mixture

Description	Analyes		Total Vol.	Part No.
12 analytes, at 200 µg/mL, in methanol	Bromobenzene Chlorobenzene 2-Chlorotoluene 4-Chlorotoluene 1,2-Dichlorobenzene 1,3-Dichlorobenzene	1,4-Dichlorobenzene Hexachlorobutadiene Tetrachloroethene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene Trichloroethene	1 x 1 mL	DWM-563-1

Recommended Method 503.1 Internal and Surrogate Standards

Description	Standard	Total Vol.	Part No. 200 µg/mL	Part No. 2,000 µg/mL
1 standard, in methanol	α,α,α-Trifluorotoluene	1 x 1 mL	STS-221-1	STS-220N-1

Recommended Standards

Method 503.1	Part No.
Calbration standard	DWM-503-1
Internal standard	STS-220N-1

EPA Method 504, 504.1

EDB, DBCP, and 123-TCP

Method 504 is used to measure low concentrations of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB). It is an extraction method, using GC with a capillary column and electron capture detector. Method 504.1 adds 1,2,3-trichloropropane to the analyte list.

Recommended DBCP/EDB Mixtures

Description	Analytes	Total Vol.	Part No. 200 µg/mL	Part No. 2,000 µg/mL
2 analytes, in methanol	1,2-Dibromo-3-chloropropane 1,2-Dibromoethane	1 x 1 mL 1 x 1 mL	DWM-504N-1	HCM-812-1

Recommended Method 504.1 Mixture

Description	Analytes	Total Vol.	Part No.
3 analytes, at 200 µg/mL, in methanol	1,2-Dibromo-3-chloropropane 1,2-Dibromoethane 1,2,3-Trichloropropane	1 x 1 mL	DWM-514-1

Tips and tools

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EPA Method 505

Organohalide pesticides and Aroclors

Method 505 is used to analyze for organohalide pesticides and commercial PCBs. It is a microextraction method, using GC with a capillary column and electron capture detector.

Recommended Method 505 Organochlorine Pesticides Mixture

Description	Analytes and Concentration				Total Vol.	Part No.
12 analytes, in acetone	Alachlor	50 µg/mL	Heptachlor	20 µg/mL	1 x 1 mL	PPM-505D-1
	Aldrin	20 µg/mL	Heptachlor epoxide (B)	20 µg/mL		
	Atrazine	500 µg/mL	Hexachlorobenzene	10 µg/mL		
	γ-BHC (lindane)	20 µg/mL	Hexachlorocyclopentadiene	20 µg/mL		
	Dieldrin	20 µg/mL	Methoxychlor	200 µg/mL		
	Endrin	20 µg/mL	Simazine	100 µg/mL		

Recommended Method 505 Organochlorine Pesticides Mixture

Description	Analytes and Concentration				Total Vol.	Part No.
16 analytes, in acetone	Alachlor	10 µg/mL	Heptachlor	1 µg/mL	1 x 1 mL	PPM-505E-1
	Aldrin	1 µg/mL	Heptachlor epoxide (B)	1 µg/mL		
	Atrazine	250 µg/mL	Hexachlorobenzene	1 µg/mL		
	γ-BHC (lindane)	1 µg/mL	Hexachlorocyclopentadiene	1 µg/mL		
	α-Chlordane	1 µg/mL	Methoxychlor	5 µg/mL		
	γ-Chlordane	1 µg/mL	*cis*-Nonachlor	1 µg/mL		
	Dieldrin	1 µg/mL	*trans*-Nonachlor	1 µg/mL		
	Endrin	1 µg/mL	Simazine	250 µg/mL		

EPA Method 506

Phthalate and adipate esters

Method 506 is an extraction method, using GC with a capillary column and a photoionization detector.

Recommended Method 506 Phthalates Mixtures

Description	Analytes		Total Vol.	Part No. 1,000 µg/mL in Isooctane	Part No. 200 µg/mL in Methanol
7 analytes	Bis(2-ethylhexyl) adipate Bis(2-ethylhexyl) phthalate Butyl benzyl phthalate Di-*n*-butyl phthalate	Diethyl phthalate Dimethyl phthalate Di-*n*-octyl phthalate	1 x 1 mL	PSM-506-1	PSM-520-1

Phthalates Mixture

Description	Analytes and Concentration				Total Vol.	Part No.
7 analytes, in methanol	Bis(2-ethylhexyl) adipate Bis(2-ethylhexyl) phthalate Butyl benzyl phthalate Di-*n*-butyl phthalate	1,200 µg/mL 250 µg/mL 250 µg/mL 100 µg/mL	Diethyl phthalate Dimethyl phthalate Di-*n*-octyl phthalate	100 µg/mL 100 µg/mL 650 µg/mL	1 x 1 mL	PSM-516-1

Phthalate Mixture

Description	Analytes	Total Vol.	Part No.
2 analytes, at 100 µg/mL, in acetone	Butyl benzyl phthalate Di-*n*-butyl phthalate	1 x 1 mL	PSM-510-1

Phthalates Mixture

Description	Analytes		Total Vol.	Part No.
8 analytes, at 1,000 µg/mL, in isooctane	Bis(2-ethylhexyl) adipate Bis(2-ethylhexyl) phthalate Butyl benzyl phthalate Diethyl phthalate	Diisobutyl phthalate Dimethyl phthalate Di-*n*-butyl phthalate Di-*n*-octyl phthalate	1 x 1 mL	PSM-516-1

Phthalates Mixture

Description	Analytes		Total Vol.	Part No.
8 analytes, at 1,000 µg/mL in isooctane	Bis(2-ethylhexyl) adipate Bis(2-ethylhexyl) phthalate Butyl benzyl phthalate Diethyl phthalate	Diisobutyl phthalate Dimethyl phthalate Di-*n*-butyl phthalate Di-*n*-octyl phthalate	1 x 1 mL	PSM-516-1

Recommended Standard

Method 506	Part No.
Calibration standard	PSM-506-1

EPA Method 507

Nitrogen and phosphorus containing pesticides

Method 507 is used to determine nitrogen and phosphorus containing pesticides. It is an extraction method, using GC with a capillary column and a nitrogen-phosphorus detector.

Recommended Pesticides Mixture

Description	Analytes		Total Vol.	Part No.
6 analytes, at 1,000 µg/mL, in methyl *tert*-butyl ether	Ametryn Cycloate Disulfoton	Fenamiphos Merphos Prometon	1 x 1 mL	NPM-101-1

Recommended Pesticides Mixture

Description	Analytes		Total Vol.	Part No.
9 analytes, at 1,000 µg/mL, in methyl *tert*-butyl ether	Atrazine Diphenamid EPTC Ethoprop Mevinphos	Prometryn Propazine Terbutryn Triadimefon	1 x 1 mL	NPM-102-1

Recommended Pesticides Mixture

Description	Analytes		Total Vol.	Part No.
9 analytes, at 1,000 µg/mL, in methyl *tert*-butyl ether	Butachlor Carboxin Diazinon Metolachlor MGK-264, mixed isomers	Metribuzin Norflurazon Terbufos Vernolate	1 x 1 mL	NPM-103-1

Recommended Method 507 Surrogate Standard Solution

Standard	Concentration	Total Vol.	Part No.
1,3-Dimethyl-2-nitrobenzene	250 µg/mL, in methyl *tert*-butyl ether	1 x 1 mL	PPS-100-1

Recommended Method 507 Internal Standard Solution

Standard	Concentration	Total Vol.	Part No.
Triphenyl phosphate (TPP)	500 µg/mL, in methyl *tert*-butyl ether	1 x 1 mL	PPS-110-1

Tips and tools

Find more EPA Method standards online at
www.agilent.com/chem/standards

EPA Method 508, 508.1

Chlorinated pesticides

Methods 508 and 508.1 are used to determine chlorinated pesticides. They are extraction methods, using GC with a capillary column and electron capture detector.

Recommended Method 508 Organochlorine Pesticides Mixture

Description	Analytes		Total Vol.	Part No.
17 analytes, at 1,000 µg/mL, in methyl *tert*-butyl ether	Aldrin α-BHC (α-HCH) β-BHC (β-HCH) δ-BHC (δ-HCH) γ-BHC (γ-HCH) 4,4´-DDD 4,4´-DDE 4,4´-DDT Dieldrin	Endosulfan I Endosulfan II Endosulfan sulfate Endrin Endrin aldehyde Heptachlor Heptachlor epoxide (B) Methoxychlor	1 x 1 mL	PPM-508B-1

Recommended Method 508 Internal Standard Solution

Standard	Concentration	Total Vol.	Part No.
Pentachloronitrobenzene (PCNB)	100 µg/mL, in methyl *tert*-butyl ether	1 x 1 mL	PPS-130-1

Recommended Method 508 Surrogate Standard Solution

Standard	Concentration	Total Vol.	Part No.
4,4-Dichlorobiphenyl (DCB)	500 µg/mL, in methyl *tert*-butyl ether	1 x 1 mL	PPS-120-1

EPA Method 508A

Polychlorinated biphenyls

Method 508A is used to screen for PCBs. It is an extraction method, using GC with either a packed or a capillary column, and an electron capture detector.

Aroclor 1260 Stock Solutions

Description	Solution	Total Vol.	Part No. 1,000 µg/mL	Part No. 5,000 µg/mL
1 solution, in methanol	Aroclor 1260	1 x 1 mL	PPS-141-1	PPS-140-1

Decachlorobiphenyl Stock Solution

Description	Solution	Total Vol.	Part No.
1 solution, at 1,000 µg/mL, in toluene	Decachlorobiphenyl	1 x 1 mL	PPS-150-1

EPA Method 509

Ethylene Thiourea (ETU)

Method 509 is used to determine ethylene thiourea (ETU). Samples are passed through a column of diatomaceous earth and analyzed using capillary column gas chromatography with a nitrogen-phosphorus detector.

Method 509 Internal Standard

Description	Standard	Total Vol.	Part No.
1 standard, at 1,000 µg/mL, in 0.1% w/v DTT in ethyl acetate	3,4,5,6-Tetrahydro-2-pyrimidinethiol	1 x 1 mL	IST-800-1

Free Radical Scavenger Solution

Description	Solution	Total Vol.	Part No.
1 solution, at 1,000 mg/L, in ethyl acetate	Dithiothreitol	1 x 1 mL	EPA-1390-1

Method 509 Stock Standard

Description	Standard	Total Vol.	Part No. 100 µg/mL	Part No. 1,000 µg/mL
1 standard, in 0.1% w/v DTT in ethyl acetate	Ethylene thiourea	1 x 1 mL	PPS-640-1	PPS-641-1

Instrument Performance Check Solution

Description	Analytes and Concentration		Total Vol.	Part No.
3 analytes, in 0.1% w/v DTT in ethyl acetate	Ethylene thiourea Propylene thiourea 3,4,5,6-Tetrahydro-2-pyrimidinethiol	10 ng/mL 100 ng/mL 1,000 ng/mL	1 x 1 mL	GCM-170-1

Method 509 Surrogate Standard

Description	Standard	Total Vol.	Part No.
1 standard, at 100 µg/mL, in 0.1% w/v DTT in ethyl acetate	Propylene thiourea	1 x 1 mL	PPS-642-1

EPA Method 515.1, 515.2, 515.3, 515.4

Chlorinated acids

Methods 515.1 and 515.2 are used to determine chlorinated acids. These methods involve extraction followed by derivatization, using GC with a capillary column and electron capture detector.

Recommended Method 515.1 Chlorinated Herbicides Mixtures

Description	Analytes and Concentration				Total Vol.	Mixture	Part No.
16 analytes	Acifluorfen	100 µg/mL	3,5-Dichlorobenzoic acid	100 µg/mL	1 x 1 mL	Acids mixture in methyl *tert*-butyl ether	HBM-5155A-1
	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		Methylated mixture in methyl *tert*-butyl ether	HBM-5155M-1
	Dalapon	1,300 µg/mL	Pentachlorophenol	100 µg/mL			
	2,4-DB	800 µg/mL	Picloram	100 µg/mL			
	Dacthal (DCPA)	100 µg/mL	Silvex (2,4,5-TP)	100 µg/mL			
	Dicamba	100 µg/mL	2,4,5-T	100 µg/mL			

Recommended Method 515.1 Surrogate Standard Solutions

Description	Solutions	Total Vol.	Part No.
2 solutions, 100 µg/mL, in methyl *tert*-butyl ether	2,4-Dichlorophenylacetic acid (DCAA)	1 x 1 mL	PPS-160-1
	DCAA methyl ester		PPS-161-1

Recommended Standards

Method 515.1	Part No.
Calibration standard	HBM-5155A-1
Internal standards	PPS-170-1 PPS-169-1
Surrogate standard	PPS-160-1

Method 515.2	Part No.
Calibration standards	HBM-5152A-1 HBM-5153A-1
Internal standard	PPS-172-1
Surrogate standard	PPS-162-1

Method 515.3	Part No.
Calibration standards	HBM-5156A-1 HBM-5156M-1
Internal standards	PPS-174-1 PPS-170-1
Surrogate standards	PPS-167-1 PPS-168-1

Method 515.4	Part No.
Calibration standard	HBM-5157A-1
Internal standard	PPS-174-1
Surrogate standards	PPS-167-1 PPS-168-1

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EPA Method 521

Nitrosamines

Method 521 is used to determine nitrosamines. It uses solid phase extraction and GC/MS.

Nitrosamines Mixture

Description	Analytes	Total Vol.	Part No.
9 analytes, 2,000 µg/mL, in methylene chloride	*N*-Nitrosodi-*n*-butylamine *N*-Nitrosodiethylamine *N*-Nitrosodimethylamine *N*-Nitrosodiphenylamine *N*-Nitrosodi-*n*-propylamine *N*-Nitrosomethylethylamine *N*-Nitrosomorpholine *N*-Nitrosopiperidine *N*-Nitrosopyrrolidine	1 x 1 mL	US-113N-1

Recommended Method 521 Surrogate and Internal Standards

Description	Standards	Total Vol.	Part No. 100 µg/mL	Part No. 1,000 µg/mL
2 standards, in methylene chloride	*N*-Nitrosodimethylamine-d_6	1 x 1 mL		IST-760-1
	N-Nitrosodi-*n*-propylamine-d_{14}	1 x 1 mL	IST-771-1	IST-770-1

EPA Method 523

Triazine pesticides

Method 523 is used to determine triazine pesticides and their degradation products. It is a solid phase extraction method, using GC/MS with a capillary column.

Method 523 Stock Standards

Compound	Concentration	Volume	Part No.
Ametryn	1200 µg/mL, in ethyl acetate	1 x 1 mL	PST-024Y1200
Atrazine	2000 µg/mL, in ethyl acetate		PST-005Y2000
Atrazine-desethyl	1000 µg/mL, in ethyl acetate		PST-4010Y1000
Atrazine-desethyl desisopropyl	100 µg/mL, in ethyl acetate		PST-6935Y100A01
Atrazine-desisopropyl	500 µg/mL, in ethyl acetate		PST-4005Y500
Cyanazine	2000 µg/mL, in ethyl acetate		PST-1360Y2000
Prometon	1200 µg/mL, in ethyl acetate		PST-830Y1200
Prometryn	900 µg/mL, in ethyl acetate		PST-840Y900
Propazine	2000 µg/mL, in ethyl acetate		PST-850Y2000
Simazine	500 µg/mL, in ethyl acetate		PST-1130Y500
Simetryn	840 µg/mL, in ethyl acetate		PST-1805Y840
Terbuthylazine	2000 µg/mL, in ethyl acetate		PST-1705Y2000
Terbuthylazine-desethyl	850 µg/mL, in ethyl acetate		PST-6850Y850

EPA Method 524.2, 524.3, 524.4

Purgeable organic compounds

Method 524.2 is a purge-and-trap GC/MS method allowing determination of all VOCs, using a capillary column.

Recommended Method 524.2 VOC Mixtures

Description	Analytes			Total Vol.	Part No. 200 µg/mL	Part No. 2,000 µg/mL
60 analytes, in methanol	Benzene	1,2-Dichlorobenzene	Naphthalene	1 x 1 mL	DWM-580-1	DWM-588-1
	Bromobenzene	1,3-Dichlorobenzene	*n*-Propylbenzene			
	Bromochloromethane	1,4-Dichlorobenzene	Styrene			
	Bromodichloromethane	Dichlorodifluoromethane	1,1,1,2-Tetrachloroethane			
	Bromoform	1,1-Dichloroethane	1,1,2,2-Tetrachloroethane			
	Bromomethane	1,2-Dichloroethane	Tetrachloroethene			
	n-Butylbenzene	1,1-Dichloroethene	Toluene			
	sec-Butylbenzene	*cis*-1,2-Dichloroethene	1,2,3-Trichlorobenzene			
	tert-Butylbenzene	*trans*-1,2-Dichloroethene	1,2,4-Trichlorobenzene			
	Carbon tetrachloride	1,2-Dichloropropane	1,1,1-Trichloroethane			
	Chlorobenzene	1,3-Dichloropropane	1,1,2-Trichloroethane			
	Chloroethane	2,2-Dichloropropane	Trichloroethene			
	Chloroform	1,1-Dichloropropene	Trichlorofluoromethane			
	Chloromethane	*cis*-1,3-Dichloropropene	1,2,3-Trichloropropane			
	2-Chlorotoluene	*trans*-1,3-Dichloropropene	1,2,4-Trimethylbenzene			
	4-Chlorotoluene	Ethylbenzene	1,3,5-Trimethylbenzene			
	Dibromochloromethane	Hexachlorobutadiene	Vinyl chloride			
	1,2-Dibromo-3-chloropropane	Isopropylbenzene	*o*-Xylene			
	1,2-Dibromoethane	4-Isopropyltoluene	*m*-Xylene			
	Dibromomethane	Methylene chloride	*p*-Xylene			

Recommended Method 524.2 VOC Mixture – Rev. 4.1 Addition

Description	Analytes		Total Vol.	Part No.
24 analytes, at 2,000 µg/mL, in methanol	Acetone	2-Hexanone	1 x 1 mL	DWM-592-1
	Acrylonitrile	Methacrylonitrile		
	Allyl chloride	Methyl acrylate		
	2-Butanone (MEK)	Methyl iodide		
	Carbon disulfide	Methyl methacrylate		
	Chloroacetonitrile	4-Methyl-2-pentanone		
	1-Chlorobutane	Methyl *tert*-butyl ether		
	trans-1,4-Dichloro-2-butene	Nitrobenzene		
	1,1-Dichloro-2-propanone	2-Nitropropane		
	Diethyl ether	Pentachloroethane		
	Ethyl methacrylate	Propionitrile		
	Hexachloroethane	Tetrahydrofuran		

Recommended Method 524.2 Internal and Surrogate Standard Mixtures

Description	Analytes	Total Vol.	Part No. 1,000 µg/mL	Part No. 2,000 µg/mL
3 analytes, in methanol	1,2-Dichlorobenzene-d_4	1 x 1 mL	STM-321-1	STM-320N-1
	4-Bromofluorobenzene			
	Fluorobenzene			



DWM-580-1

Recommended Standards

EPA Method 524.2, 524.3, 524.4	Part No.
Calibration standards	DWM-580-1 DWM-588-1 DWM-592-1
Internal and surrogates standard	STM-320N-1

Safe Drinking Water Act

Phase II, phase V, and phase VIB standards

These standards are ideal for analysis of regulated compounds under the Safe Drinking Water Act (SDWA).

SDWA Volatiles Mixture

Description	Analytes		Total Vol.	Part No.
27 analytes, at 2,000 µg/mL, in methanol	Benzene Bromodichloromethane Bromoform Carbon tetrachloride Chlorobenzene Chloroform Dibromochloromethane 1,2-Dichlorobenzene 1,4-Dichlorobenzene 1,2-Dichloroethane 1,1-Dichloroethene *cis*-1,2-Dichloroethene *trans*-1,2-Dichloroethene 1,2-Dichloropropane	Ethylbenzene Methylene chloride Styrene Tetrachloroethene Toluene 1,2,4-Trichlorobenzene 1,1,1-Trichloroethane 1,1,2-Trichloroethane Trichloroethene Vinyl chloride *o*-Xylene *m*-Xylene *p*-Xylene	1 x 1 mL	DWM-594-1

Regulated VOC Mixture

Description	Analytes		Total Vol.	Part No.
12 analytes, at 2,000 µg/mL, in methanol	Benzene Bromodichloromethane Bromoform Carbon tetrachloride Chloroform Dibromochloromethane	1,4-Dichlorobenzene 1,2-Dichloroethane 1,1-Dichloroethene 1,1,1-Trichloroethane Trichloroethene Vinyl chloride	1 x 1 mL	DWM-590-1

SDWA SOCs Mixture

Description	Analytes		Total Vol.	Part No.
6 analytes, at 500 µg/mL, in acetone	Benzo[*a*]pyrene Bis(2-Ethylhexyl) adipate Bis(2-Ethylhexyl) phthalate	Hexachlorobenzene Hexachlorocyclopentadiene Pentachlorophenol (at 2,000 µg/mL)	1 x 1 mL	SVM-500-1

Phase V Additions VOC Mixture

Description	Analytes	Total Vol.	Part No.
3 analytes, at 2,000 µg/mL, in methanol	Methylene chloride 1,1,2-Trichloroethane 1,2,4-Trichlorobenzene	1 x 1 mL	DWM-593A-1

EPA Method 525.1

Organic compounds

Method 525.1 is used to determine SOCs. It is a liquid-solid extraction method, using GC/MS with a capillary column.

Recommended Method 525.1 PAH Mixtures

Description	Analytes		Total Vol.	Part No. 100 µg/mL	Part No. 500 µg/mL
13 analytes, in acetone	Acenaphthylene Anthracene Benz[*a*]anthracene Benzo[*b*]fluoranthene Benzo[*k*]fluoranthene Benzo[*ghi*]perylene Benzo[*a*]pyrene	Chrysene Dibenz[*a,h*]anthracene Fluorene Indeno[1,2,3-*cd*]pyrene Phenanthrene Pyrene	1 x 1 mL	PM-525A-1	PM-525B-1

Recommended Method 525.1 Organochlorine Pesticides Mixes

Description	Analytes		Total Vol.	Part No. 100 µg/mL	Part No. 500 µg/mL
12 analytes, in acetone	Alachlor Aldrin Atrazine α-Chlordane γ-Chlordane γ-BHC (lindane)	Endrin Heptachlor Heptachlor epoxide (B) Methoxychlor *trans*-Nonachlor Simazine	1 x 1 mL	PPM-525C-1	PPM-525D-1

Recommended Standards

Method 525.1	Part No.
Calibration standards	PM-525A-1 PPM-525C-1 PSM-525-1 RPCM-525-1 EPA-1161-1
Internal and surrogate standard	ISM-310-1

Technical note

Although Method 525 quantifies chlordane using only three of its constituents, regulations often require chlordane to be quantified as total chlordane. For those instances, Agilent also offers standards for technical chlordane.

EPA Method 525.2

Organic compounds

Method 525.2 is used to determine SOCs. It is a liquid-solid extraction method, using GC/MS with a capillary column.

Recommended Method 525.2 Semivolatiles Mixture

Description	Analytes			Total Vol.	Part No.
33 analytes, at 100 µg/mL, in acetone	Acenaphthylene Anthracene Benz[*a*]anthracene Benzo[*b*]fluo anthene Benzo[*k*]fluo anthene Benzo[*ghi*]perylene Benzo[*a*]pyrene Butyl benzyl phthalate 2-Chlorobiphenyl Chrysene Dibenz[*a,h*]anthracene	2,3-Dichlorobiphenyl Bis(2-Ethylhexyl) adipate Bis(2-Ethylhexyl) phthalate Diethyl phthalate Dimethyl phthalate Di-*n*-butyl phthalate 2,4-Dinitrotoluene 2,6-Dinitrotoluene Fluorene Hexachlorobenzene 2,2´,4,4´,5,6´-Hexachlorobiphenyl	2,2´,3,3´,4,4´,6-Heptachlorobiphenyl Hexachlorocyclopentadiene Indeno[1,2,3-*cd*]pyrene Isophorone 2,2´,3,3´,4,5´,6,6´-Octachlorobiphenyl 2,2´,3´,4,6-Pentachlorobiphenyl Pentachlorophenol (at 400 µg/mL) Phenanthrene Pyrene 2,2´,4,4´-Tetrachlorobiphenyl 2,4,5-Trichlorobiphenyl	1 x 1 mL	SVM-525-1

Recommended Method 525.2 Organochlorine Pesticides Mixture

Description	Analytes				Total Vol.	Part No.
29 analytes, at 100 µg/mL, in acetone	Alachlor Aldrin Atrazine α-BHC β-BHC γ-BHC (lindane) δ-BHC	Chlorobenzilate Chlorothalonil Chloroneb Dacthal (DCPA) 4,4´-DDD 4,4´-DDT 4,4´-DDE	Permethrin, mixed isomers (at 200 µg/mL) Dieldrin Endosulfan I Endosulfan II Endosulfan sulfate Endrin Endrin aldehyde Etridiazole	*cis*-Chlordane *trans*-Chlordane Heptachlor Heptachlor epoxide Methoxychlor *trans*-nonachlor Simazine	1 x 1 mL	PPM-525E-1

Recommended Method 525.2 Nitrogen/Phosphorus Pesticide Mixtures

Description	Analytes		Total Vol.	Part No. 100 µg/mL	Part No. 1,000 µg/mL
6 analytes, in acetone	Carboxin Diazinon Disulfoton	Fenamiphos Merphos Terbufos	1 x 1 mL	NPM-525B-1	NPM-526-1

Recommended Method 525.2 Toxaphene Standards

Description	Analyte	Total Vol.	Part No. 1,000 µg/mL in Methanol	Part No. 2,500 µg/mL in Acetone
1 analyte	Toxaphene	1 x 1 mL	EPA-1161-1	PPS-240-1

Recommended Standards

Method 525.2	Part No.
Calibration standards	SVM-525-1 PPM-525E-1 NPM-525C-1 NPM-525B-1 PPS-240-1 NPM-108B-1
Internal and surrogate standards	ISM-510-1 ISM-511X

EPA Method 526

Organic compounds

Method 526 is used to determine SOCs. It is a solid phase extraction method, using GC/MS with a capillary column.

Method 526 Calibration Mixture

Description	Analytes		Total Vol.	Part No.
11 analytes, at 1,000 µg/mL, in methyl acetate	Acetochlor Cyanazine Diazinon 2,4-Dichlorophenol 1,2-Diphenylhydrazine Disulfoton	Fonofos Nitrobenzene Prometon Terbufos 2,4,6-Trichlorophenol	1 x 1 mL	SVM-526-1

Recommended Method 526 Internal Standard Solution

Description	Analytes	Total Vol.	Part No.
3 analytes, at 500 µg/mL, in acetone	Acenaphthene-d_{10} Phenanthrene-d_{10} Chrysene-d_{12}	1 x 1 mL	ISM-520-1

Recommended Method 526 Surrogate Standard

Description	Analytes	Total Vol.	Part No.
2 analytes, at 500 µg/mL in acetone	1,3-Dimethyl-2-nitrobenzene Triphenylphosphate	1 x 1 mL	ISM-690-1

Primary Dilution Standard Mixture

Description	Analytes		Total Vol.	Part No.
11 analytes, at 1,000 µg/mL in ethyl acetate	Acetochlor Cyanazine Diazinon 2,4-Dichlorophenol 1,2-Diphenylhydrazine Disulfoton	Fonofos Nitrobenzene Prometon Terbufos 2,4,6-Trichlorophenol	1 x 1 mL	SVM-526A-1

Calibration Mixture

Description	Analytes		Total Vol.	Part No.
11 analytes, 1,000 µg/mL, in methylene chloride	Acetochlor Azobenzene Cyanazine Diazinon 2,4-Dichlorophenol Disulfoton	Fonofos Nitrobenzene Prometon Terbufos 2,4,6-Trichlorophenol	1 x 1 mL	SVM-527-1

Recommended Standards

Method 526	Part No.
Calibration standard	SVM-526-1
Surrogate standard	ISM-690-1
Internal standard	ISM-520-1

EPA Method 527

Pesticides and flame retardants

Method 527 is used to determine selected pesticides and flame retardants. It is a solid phase extraction method, using GC/MS with a capillary column.

Recommended Method 527 Pesticides Mixture 1

Description	Analytes		Total Vol.	Part No.
16 analytes, at 500 µg/mL, in ethyl acetate	Atrazine Bromacil Asana (esfenvalerate) Hexazinone Mirex Norflurazon Prometryn Thiobencarb (benthiocarb)	Bifenthrin *S*-Bioallethrin (esbiol) Fenvalerate Kepone Nitrofen Oxychlordane Propazine Vinclozolin	1 x 1 mL	PPM-527A-1

Recommended Method 527 Pesticides Mixture 2

Description	Analytes		Total Vol.	Part No.
5 analytes, at 500 µg/mL in ethyl acetate	Chlorpyrifos Dimethoate Malathion	Parathion Terbufos sulfone	1 x 1 mL	PPM-527B-1

Recommended Method 527 Surrogate Standard Mixture

Description	Analytes	Total Vol.	Part No.
3 analytes, at 500 µg/mL, in acetone	1,3-Dimethyl-2-nitrobenzene Perylene-d_{12} Triphenyl phosphate (TPP)	1 x 1 mL	ISM-710-1

Recommended Method 527 Internal Standard Solution

Description	Analytes	Total Vol.	Part No.
3 analytes, at 500 µg/mL, in acetone	Acenaphthene-d_{10} Chrysene-d_{12} Phenanthrene-d_{10}	1 x 1 mL	ISM-520-1

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EPA Method 528

Phenols in drinking water

Method 528 is applicable for the measurement of phenols. This method uses solid phase extraction followed by capillary column GC/MS.

Method 528 Phenols Stock Calibration Standard

Description	Analytes		Total Vol.	Part No.
12 analytes, 2,000 µg/mL, in methylene chloride	2,4,6-Trichlorophenol 2,4-Dichlorophenol 2,4-Dimethylphenol 2,4-Dinitrophenol 2-Chlorophenol 2-Methyl-4,6-dinitrophenol	2-Nitrophenol 4-Chloro-3-methylphenol 4-Nitrophenol *o*-Cresol Pentachlorophenol Phenol	1 x 1 mL	PHM-500-1

Analyte Fortification Solution

Description	Analytes and Concentration		Total Vol.	Part No.
12 analytes, in methylene chloride	2,4,6-Trichlorophenol 2,4-Dichlorophenol 2,4-Dinitrophenol 2,4-Dimethylphenol 2-Chlorophenol 2-Methyl-4,6-dinitrophenol 2-Nitrophenol 4-Chloro-3-methylphenol 4-Nitrophenol *o*-Cresol Pentachlorophenol Phenol	100 µg/mL 100 µg/mL 500 µg/mL 100 µg/mL 100 µg/mL 500 µg/mL 100 µg/mL 100 µg/mL 500 µg/mL 100 µg/mL 500 µg/mL 100 µg/mL	1 x 1 mL	PHM-501-1

Method 528 Internal Standard

Description	Analytes and Concentration		Total Vol.	Part No.
2 analytes, in methylene chloride	2,3,4,5-Tetrachlorophenol 3-Nitro-*o*-xylene	2,000 µg/mL 1,000 µg/mL	1 x 1 mL	PHM-502-1

EPA Method 529

Explosives and related compounds

Method 529 is used to determine explosives and related compounds. It is a solid phase extraction method, using GC/MS with a capillary column.

Recommended Method 529 Calibration Standard

Description	Analytes			Total Vol.	Part No.
14 analytes, at 100 µg/mL, in ethyl acetate	2-Amino-4,6-dinitrotoluene 4-Amino-2,6-dinitrotoluene 3,5-Dinitroaniline *m*-Dinitrobenzene 2,4-Dinitrotoluene	2,6-Dinitrotoluene RDX Nitrobenzene 2-Nitrotoluene 3-Nitrotoluene	4-Nitrotoluene 1,3,5-Trinitrobenzene Tetryl 2,4,6-Trinitrotoluene (TNT)	1 x 1 mL	NAIM-529A-1

Internal Standard Fortification Mixture

Description	Analytes			Total Vol.	Part No.
14 analytes, at 200 µg/mL, in ethyl acetate	2-Nitrotoluene 3,5-Dinitroaniline 1,3-Dinitrobenzene 2-Amino-4,6-dinitrotoluene 4-Amino-2,6-dinitrotoluene	2,4-Dinitrotoluene 2,6-Dinitrotoluene Nitrobenzene 3-Nitrotoluene 4-Nitrotoluene	RDX Tetryl TNT 1,3,5-Trinitrobenzene	1 x 1 mL	NAIM-530-1

Calibration Mixture

Description	Analytes and Concentration				Total Vol.	Part No.
15 analytes, in acetonitrile	2-Amino-4,6-dinitrotoluene 1,3-Dinitrobenzene 2,4-Dinitrotoluene 2,6-Dinitrotoluene 4-Amino-2,6-dinitrotoluene HMX 2-Nitrotoluene 3-Nitrotoluene	100 µg/mL 100 µg/mL 100 µg/mL 100 µg/mL 100 µg/mL 200 µg/mL 200 µg/mL 200 µg/mL	4-Nitroaniline 4-Nitrotoluene Nitrobenzene RDX Tetryl 1,3,5-Trinitrobenzene 2,4,6-Trinitrotoluene (TNT)	200 µg/mL 200 µg/mL 100 µg/mL 200 µg/mL 200 µg/mL 100 µg/mL 100 µg/mL	1 x 1 mL	NAIM-535-1

Recommended Method 529 Internal and Surrogate Standards

Description	Analytes	Concentration	Total Vol.	Part No.
4 analytes	3,4-Dinitrotoluene	1,000 µg/mL, in acetonitrile	1 x 1 mL	IST-701A-1
	1,2,4-Trimethyl-5-nitrobenzene (2-pseudocumene)	2,000 µg/mL, in methanol		IST-706-1
	1,3,5-Trimethyl-2-nitrobenzene (2-nitromesitylene)	1,000 µg/mL, in methanol		IST-705A-1
	Nitrobenzene-d_5	1,000 µg/mL,in dichloromethane		IST-210-1

Recommended Standards

Method 529	Part No.
Calibration standard	NAIM-529A-1
Surrogate standards	IST-705-1 IST-706-1 IST-210-1
Internal standard	IST-704-1

EPA Method 531.1, 531.2

N-methylcarbamoyloximes and *N*-methylcarbamates

Methods 531.1 and 531.2 are used to measure *N*-methylcarbamoyloximes and *N*-methylcarbamates. They use direct injections of the sample on HPLC, with postcolumn derivatization and a fluorescence detector.

Recommended Method 531.1 Carbamate Pesticides Mixture

Description	Analytes		Total Vol.	Part No.
10 analytes, at 100 µg/mL, in methanol	Aldicarb Aldicarb sulfone Aldicarb sulfoxide Carbaryl Carbofuran	3-Hydroxycarbofuran Methiocarb Methomyl Oxamyl Propoxur (baygon)	1 x 1 mL	PPM-530-1

Recommended Method 531.2 Carbamate Pesticides Mixture

Description	Analytes		Total Vol.	Part No.
11 analytes, at 100 µg/mL, in methanol	Aldicarb Aldicarb sulfone Aldicarb sulfoxide Carbaryl Carbofuran 1-Naphthol	3-Hydroxycarbofuran Methiocarb Methomyl Oxamyl Propoxur (baygon)	1 x 1 mL	PPM-530C-1

SDWA Carbamate Pesticides Mixture

Description	Analytes	Total Vol.	Part No.
2 analytes, at 100 µg/mL, in methanol	Carbofuran Oxamyl	1 x 1 mL	PPM-530B-1

Carbamate Pesticides Mixture

Description	Analytes		Total Vol.	Part No.
6 analytes, at 100 µg/mL, in methanol	Aldicarb sulfone Aldicarb sulfoxide Aldicarb	Carbofuran Methomyl Oxamyl	1 x 1 mL	PPM-251-1



PPM-530-1

Internal and Surrogate Standard Solutions (BDMC)

Description	Solutions	Total Vol.	Part No. 100 µg/mL in Methanol	Part No. 100 µg/mL in Acetonitrile	Part No. 1,000 µg/mL in Methanol
2 solutions	4-Bromo-3,5-dimethylphenyl *N*-Methylcarbamate (BDMC)	1 x 1 mL	PPS-180-1	PST-4015A100A01	PST-4015M1000

EPA Method 532

Phenylurea compounds

Method 532 is used to determine phenylurea pesticides. It is a solid phase extraction method, using HPLC with a UV detector.

Pesticides Mixture Concentrate

Description	Analytes		Total Vol.	Part No.
6 analytes, at 5,000 µg/mL, in methanol	Diuron Fluometuron Linuron	Propanil Siduron (mix of isomers) Tebuthiuron	1 x 1 mL	PPM-255-1

Recommended Method 532 Calibration Standard

Description	Analytes		Total Vol.	Part No.
8 analytes, at 200 µg/mL, in methanol/acetone	Diflubenzuron Diuron Fluometuron Linuron	Propanil Siduron Tebuthiuron Thidiazuron	1 x 1 mL	PPM-532-1

Recommended Method 532 Surrogate Standards

Description	Analytes	Total Vol.	Part No. 500 µg/mL in Methanol/Acetonitrile	Part No. 200 µg/mL in Methanol/Acetonitrile	Part No. 500 µg/mL in Methanol	Part No. 5,000 µg/mL in Methanol
2 analytes	Carbazole Monuron	1 x 1 mL	PPM-532A-1	PPM-536-1	PPM-533-1	PPM-534-1

Pesticides Mixture Concentrates

Description	Analytes and Concentration		Total Vol.	Part No. in Methanol	Part No. 200 µg/mL in Acetonitrile/Acetone (9:1)
8 analytes	Diflubenzuron Diuron Fluometuron Linuron Propanil Siduron (mix of isomers) Tebuthiuron Thidiazuron	100 µg/mL 100 µg/mL 100 µg/mL 100 µg/mL 100 µg/mL 200 µg/mL 100 µg/mL 100 µg/mL	1 x 1 mL	PPM-540-1	PPM-541-1

EPA Method 535

Chloroacetanilide and other acetamide herbicide degradates

Method 535 is used to determine the ethanesulfonic acid (ESA) and oxanilic acid (OA) degradates of the chloroacetanilide and other acetamide herbicides. It uses solid phase extraction and GC/MS.

Recommended UCMR Acetanilide Pesticide Degradates Mixture

Description	Analytes and Concentration				Total Vol.	Part No.
6 analytes, in methanol	Acetochlor ESA Acetochlor OA Alachlor ESA	20 µg/mL 40 µg/mL 20 µg/mL	Alachlor OA Metolachlor ESA Metolachlor OA	40 µg/mL 80 µg/mL 10 µg/mL	1 x 1 mL	PPM-535-1

Recommended Method 535 Surrogate and Internal Standards

Description	Analytes	Total Vol.	Part No. 20 µg/mL	Part No. 100 µg/mL
Individual standards, in methanol	Dimethachlor ESA	1 x 1 mL	PPS-440-1	PPS-441-1
	Butachlor ESA	1 x 1 mL	PPS-450-1	PPS-451-1

Metolachlor ESA Solution

Description	Solution	Total Vol.	Part No.
1 solution, at 100 µg/mL, in methanol	Metolachlor ESA sodium salt	1 x 1 mL	PST-1531M100A01

Metolachlor OA Solution

Description	Solution	Total Vol.	Part No.
1 solution, at 100 µg/mL, in methanol	Metolachlor OA	1 x 1 mL	PST-1532M100A01

Acetochlor ESA Solution

Description	Solution	Total Vol.	Part No.
1 solution, at 100 µg/mL, in methanol	Acetochlor ESA sodium salt	1 x 1 mL	PST-1532M100A01

Acetochlor OA Solution

Description	Solution	Total Vol.	Part No.
1 solution, at 100 µg/mL, in methanol	Acetochlor OA	1 x 1 mL	PST-1882M100A01

Alachlor ESA Solution

Description	Solution	Total Vol.	Part No.
1 solution, at 100 µg/mL, in methanol	Alachlor ESA sodium salt	1 x 1 mL	PST-626M100A01

Alachlor OA Solution

Description	Solution	Total Vol.	Part No.
1 solution, 100 µg/mL, in methanol	Alachlor OA	1 x 1 mL	PST-627M100A01

Recommended Standards

Method 535	Part No.
Calibration standard	PPM-535-1
Internal standards	PPS-450-1 PPS-441-1
Surrogate standards	PPS-440-1 PPS-441-1

EPA Method 536

Triazine pesticides

Method 536 is a liquid chromatography, electrospray ionization tandem mass spectrometry (LC/ESI-MS/MS) method used for the determination of triazine pesticides and their degradation products.

Method 536 Analyte Stock Standards

Compound	Concentration	Volume	Part No.
Atrazine	500 µg/mL, in methanol	1 x 1 mL	PST-005M500
Atrazine-desethyl	500 µg/mL, in methanol	1 x 1 mL	PST-4010M500
Atrazine-desisopropyl	500 µg/mL, in methanol	1 x 1 mL	PST-4005M500
Cyanazine	500 µg/mL, in methanol	1 x 1 mL	PST-1360M500
Propazine	500 µg/mL, in methanol	1 x 1 mL	PST-850M500

Compound	Concentration	Volume	Part No.
Atrazine-desethyl desisopropyl	500 µg/mL, in methanol	1 x 1 mL	PST-6935M500
Simazine	100 µg/mL, in methanol	1 x 1 mL	PST-1130M100A01

Method 536 Internal Standards

Compound	Concentration	Mass	Part No.
Atrazine-desethyl-d_7	Neat	1 x 10 mg	PST-6910-10MG
Arazine-desisopropyl-d_5 (ethyl-d_5)	Neat	1 x 10 mg	PST-6915-10MG
Cyanazine-d_5 (*n*-ethyl-d_5)	Neat	1 x 10 mg	PST-6920-10MG
Propazine-d_{14}	Neat	1 x 10 mg	PST-6925-10MG

Compound	Concentration	Mass	Part No.
Simazine-d_{10} (diethyl-d_{10})	Neat	1 x 10 mg	PST-6950-10MG

Tips and tools

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EPA Method 539

Hormones in drinking water

Method 539 is for the determination of hormones. It uses solid phase extraction followed by liquid chromatography with electrospray ionization tandem mass spectrometry (LC/ESI-MS/MS).

Method 539 Mix 1

Description	Analytes	Total Vol.	Part No. 100 µg/mL	Part No. 1,000 µg/mL
7 analytes, in methanol	4-Androstene-3,17-dione β-Estradiol 17α-Ethynylestradiol Equilin Estriol Estrone Testosterone	1 x 1 mL	HMM-100A-L	HMM-100A-H

Method 539 Mix 2

Description	Analytes and Concentration		Total Vol.	Part No.
7 analytes, in methanol	4-Androstene-3,17-dione β-Estradiol 17α-Ethynylestradiol Equilin Estriol Estrone Testosterone	30 µg/mL 40 µg/mL 90 µg/mL 100 µg/mL 80 µg/mL 100 µg/mL 10 µg/mL	1 x 1 mL	HMM-100B-1

Method 539 Surrogate Stock Standards

Compound	Concentration	Mass	Part No.
17α-Ethynylestradiol-2,4,16,16-d_4	Neat	1 x 10 mg	DRG-1185-10MG
Bisphenol-A-d_{16}	Neat	1 x 10 mg	RCC-240-10MG

Method 539 Internal Standards

Compound	Concentration	Mass	Part No.
16α-Hydroxyestradiol-d_2	Neat	1 x 10 mg	DRG-1190-10MG
Testosterone-d_3 neat 1 x 10 mg DRG-1195-10MG	Neat	1 x 10 mg	DRG-1195-10MG

EPA Method 547

Glyphosate

Method 547 is used to determine glyphosate. It uses direct injection of the sample on HPLC, with postcolumn derivatization and a fluorescence detector.

Recommended Method 547 Glyphosate Solution

Description	Solutions	Total Vol.	Part No.
1 solution, at 100 µg/mL, in water	Glyphosate	1 x 1 mL	PPS-190-1

EPA Method 548, 548.1

Endothall

Method 548 is used to determine endothall. It is a derivatization followed by liquid-solid extraction method, using GC with a capillary column and an electron capture detector. Method 548.1 is a GC/MS version of this method.

Recommended Method 548 Endothall Solution

Description	Solution	Total Vol.	Part No.
1 solution, at 50 µg/mL, in water	Endothall	1 x 1 mL	PPS-210-1

Recommended Method 548.1 Endothall Solutions

Description	Solution	Total Vol.	Part No. 50 µg/mL in Methanol	Part No. 1,000 µg/mL in Acetone	Part No. 100 µg/mL in Methanol
1 solution	Endothall	1 x 1 mL	PPS-211-1	PST-1845K1000	PST-1845M100A01

Recommended Method 548 Internal Standard Solutions

Description	Solution	Total Vol.	Part No. 10 µg/mL in Methyl *tert*-butyl ether	Part No. 1,000 µg/mL in Toluene
1 solution	Endosulfan I	1 x 1 mL	PPS-220-1	PST-501T1000

Recommended Method 548.1 Internal Standard Solutions

Description	Solution	Total Vol.	Part No. 500 µg/mL	Part No. 1,000 µg/mL
1 solution, in methanol	Acenaphthene-d_{10}	1 x 1 mL	ATS-111-1	ATS-112-1

Recommended Standards

Method 548	Part No.
Calibration standard	PPS-210-1
Internal standards	PPS-220-1 ATS-112-1
Method 548.1	
Calibration standard	PPS-211-1
Internal standard	ATS-111-1

EPA Method 549.2

Diquat and paraquat

Method 549.2 is used to determine diquat and paraquat. It is a liquid-solid extraction method, using HPLC and a UV detector.

Recommended Method 549.2 Diquat and Paraquat Mixture

Description	Analytes	Total Vol.	Part No.
2 analytes, at 1,000 µg/mL, in water	Diquat (as dibromide) Paraquat (as dichloride) (Concentrations corrected to 1,000 µg/mL of each pesticide)	1 x 1 mL	PPM-549-1

Recommended Standards

Method 549.2	Part No.
Calibration standard	PPM-549-1

EPA Method 550, 550.1

Polycyclic aromatic hydrocarbons

Method 550 is used to determine polycyclic aromatic hydrocarbons. It is a liquid-liquid extraction method, using HPLC and coupled fluorescence and UV detectors. Method 550.1 uses liquid-solid extraction.

Recommended Method 550, 550.1 PAH Fortification Mixture

Description	Analytes and Concentration				Total Vol.	Part No.
16 analytes, in acetonitrile	Acenaphthene	1,000 µg/mL	Chrysene	62.5 µg/mL	1 x 1 mL	PM-551-1
	Acenaphthylene	1,000 µg/mL	Dibenz[*a,h*]anthracene	12.5 µg/mL		
	Anthracene	62.5 µg/mL	Fluoranthene	2.5 µg/mL		
	Benz[*a*]anthracene	1 µg/mL	Fluorene	100 µg/mL		
	Benzo[*b*]fluo anthene	1 µg/mL	Indeno[1,2,3-*cd*]pyrene	12.5 µg/mL		
	Benzo[*k*]fluo anthene	1.25 µg/mL	Naphthalene	1,000 µg/mL		
	Benzo[*ghi*]perylene	5 µg/mL	Phenanthrene	50 µg/mL		
	Benzo[*a*]pyrene	5 µg/mL	Pyrene	62.5 µg/mL		

Recommended Method 550, 550.1 Internal Standard Solutions

Description	Solution	Total Vol.	Part No. 100 µg/mL in Acetonitrile	Part No. 2,000 µg/mL in Acetone
1 solution	4,4-Difluorobiphenyl	1 x 1 mL	PPS-270-1	PPS-271-1

Recommended Standards

EPA Method 550, 550.1	Part No.
Calibration standard	PM-551-1
Internal standards	PPS-270-1 PPS-271-1

EPA Method 551.1

Chlorination disinfection by-products and chlorinated solvents, and halogenated pesticides and herbicides

Method 551.1 is used to determine chlorination disinfection by-products and chlorinated solvents. It is an extraction method, using GC with a capillary column and an electron capture detector.

Recommended Method 551.1 Disinfection By-products and Chlorinated Solvents Mixtures

Description	Analytes		Total Vol.	Part No. 2,000 µg/mL in Acetone	Part No. 100 µg/mL in Methyl *tert*-butyl ether
19 analytes	Bromochloroacetonitrile Bromodichloromethane Bromoform Carbon tetrachloride Chloroform Chloropicrin Dibromoacetonitrile Dibromochloromethane 1,2-Dibromo-3-chloropropane (DBCP) 1,2-Dibromoethane (EDB)	Dichloroacetonitrile 1,1-Dichloro-2-propanone Trichloroacetonitrile Tetrachloroethene 1,1,1-Trichloroethane 1,1,2-Trichloroethane Trichloroethene 1,2,3-Trichloropropane 1,1,1-Trichloro-2-propanone	1 x 1 mL	HCM-551D-1	HCM-550-1

Recommended Method 551.1 Surrogate Standard Solution

Description	Solution	Total Vol.	Part No.
1 solution, 1,000 µg/mL, in acetone	Decafluorobiphenyl	1 x 1 mL	IST-152-1

Recommended Standards

Method 551.1	Part No.
Calibration standards	HCM-551-1 PPM-551B-1 EPA-1244-1 PST-1535M100A01
Internal standards	STS-113-1 STS-115-1
Surrogate standard	IST-152-1

Technical note

Commercial amounts of MTBE extraction solvent often contain observable chlorinated solvent impurities, for example, chloroform, trichloroethene, and carbon tetrachloride. When present, these impurities can normally be removed by double distillation of the MTBE.

EPA Method 552, 552.1, 552.2, 552.3

Haloacetic acids and dalapon

Method 552, 552.1, 552.2 and 552.3 are used to determine halogenated acetic acids. These methods involve ion exchange liquid-solid extraction followed by GC processes, using a capillary column and electron capture detector.

Recommended Method 552 Haloacetic Acids Mixtures

Description	Analytes		Total Vol.	Mixture	Part No.
8 analytes	Chloroacetic acid Dichloroacetic acid Trichloroacetic acid 2,4-Dichlorophenol	Bromoacetic acid Bromochloroacetic acid Dibromoacetic acid 2,4,6-Trichlorophenol	1 x 1 mL	Acids mixture in methyl *tert*-butyl ether, 1,000 µg/mL	PHM-552A
				Methylated mixture in methyl *tert*-butyl ether, 1,000 µg/mL	PHM-552M-1

Note: This mix is available in two forms: as free acids, or as methylated acids.

Recommended Methods 552.2, 552.3 Haloacetic Acids Mixtures, No Surrogate

Description	Analytes and Concentration				Total Vol.	Mixture	Part No.
10 analytes	Chloroacetic acid	600 µg/mL	Bromochloroacetic acid	400 µg/mL	1 x 1 mL	Acids mixture in methyl *tert*-butyl ether	PHM-5524M-1
	Chlorodibromoacetic acid	1,000 µg/mL	Bromodichloroacetic acid	400 µg/mL			
	Dichloroacetic acid	600 µg/mL	Dibromoacetic acid	200 µg/mL			
	Trichloroacetic acid	200 µg/mL	Tribromoacetic acid	2,000 µg/mL		Methylated mixture in methyl *tert*-butyl ether	PHM-5524M-1
	Bromoacetic acid	400 µg/mL	Dalapon	400 µg/mL			

Note: This mix is available in two forms: as free acids, or as methylated acids.

Recommended Internal and Surrogate Standards

Standard	Total Vol.	Part No. 1,000 µg/mL in Methanol	Part No. 1,000 µg/mL in Methyl *tert*-butyl ether	Part No. 2,000 µg/mL in Methyl *tert*-butyl ether
1,2,3-Trichloropropane	1 x 1 mL	PPS-250-1	PPS-251-1	RHH-039B2000

Recommended Standards

Method 552	Part No.
Calibration standard	PHM-552A-1
Internal standard	PPS-250-1
Surrogate standards	PPS-261-1 PPS-290-1

Method 552.1	Part No.
Calibration standard	PHM-5521A-1
Internal standard	PPS-251-1
Surrogate standard	PPS-300-1

Method 552.2	Part No.
Calibration standard	PHM-5523A-1
Internal standard	PHM-5524A-1
Surrogate standards	PPS-251-1 PPS-390-1

Method 552.3	Part No.
Calibration standard	PHM-5524A-1
Internal standard	PPS-251-1
Surrogate standard	PPS-430-1

EPA Method 553

Benzidines and nitrogen-containing pesticides

Method 553 is used for the measurement of benzidines and nitrogen-containing pesticides. It is an extraction method, using particle beam HPLC/MS.

Method 553 Analyte Mix

Description	Analytes		Total Vol.	Part No.
14 analytes, at 5,000 µg/mL, in acetonitrile/water (1:1 v/v)	Benzidine Benzoylprop ethyl Caffeine Carbaryl *o*-Chlorophenyl thiourea 3,3-Dichlorobenzidine 3,3-Dimethoxybenzidine	3,3-Dimethylbenzidine Diuron Ethylene thiourea Linuron Monuron Rotenone Siduron (mix of isomers)	1 x 1 mL	NPM-530-1

Method 553 Analyte Mix

Description	Analytes and Concentration		Total Vol.	Part No.
13 analytes, in acetonitrile/methanol (1:1)	Benzidine Benzoylprop ethyl Caffeine Carbaryl *o*-Chlorophenyl thiourea 3,3-Dichlorobenzidine 3,3-Dimethoxybenzidine 3,3-Dimethylbenzidine Diuron Linuron Monuron Rotenone Siduron mix of isomers	250 µg/mL 350 µg/mL 300 µg/mL 1,000 µg/mL 750 µg/mL 250 µg/mL 750 µg/mL 350 µg/mL 450 µg/mL 1,300 µg/mL 400 µg/mL 3,200 µg/mL 450 µg/mL	1 x 1 mL	NPM-531-1

Method 553 Surrogate Standards

Compound	Concentration	Mass	Part No.
3,3-Dichlorobenzidine-d_6	Neat	1 x 10 mg	RCC-307-10MG
Benzidine-ring-d_8	Neat	1 x 10 mg	RCC-235-10MG
Caffeine-$^{15}N_2$	Neat	1 x 10 mg	DRG-1180-10MG
DFTPPO	Neat	1 x 10 mg	RAH-115-10MG

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EPA Method 554

Carbonyl compounds

Method 554 is used to determine carbonyl compounds. It is a derivatization followed by an HPLC method.

Recommended Method 554 Carbonyl Compounds Mixture

Description	Analytes		Total Vol.	Part No.
12 analytes, at 1,000 µg/mL, in acetonitrile	Acetaldehyde Butanal Cyclohexanone Crotonaldehyde Decanal Formaldehyde	Hexanal Heptanal Nonanal Octanal Propanal Pentanal	1 x 1 mL	ALD-554A-1

Recommended Standard

Method 554	Part No.
Calibration standard	ALD-554-1

EPA Method 555

Chlorinated acids

Method 555 is used to determine chlorinated acids. It is an extraction followed by an HPLC method.

Recommended Method 555 Chlorinated Acids Mixture A

Description	Analytes		Total Vol.	Part No.
8 analytes, 1,000 µg/mL, in acetonitrile	Acifluorfen Bentazon Chloramben 2,4-D	Dicamba Dichlorprop Picloram Silvex (2,4,5-TP)	1 x 1 mL	HBM-555A-1

Recommended Method 555 Chlorinated Acids Mixture B

Description	Analytes		Total Vol.	Part No.
8 analytes, 1,000 µg/mL, in acetonitrile	2,4-DB 3,5-Dichlorobenzoic acid Dinoseb MCPA	MCPP 4-Nitrophenol Pentachlorophenol 2,4,5-T	1 x 1 mL	HBM-555B-1

EPA Method 556, 556.1

Carbonyl compounds

Methods 556 and 556.1 are used to determine carbonyl compounds. They involve derivatization followed by GC/ECD methods.

Recommended Method 556 Aldehydes Mixture

Description	Analytes			Total Vol.	Part No.
14 analytes, at 100 µg/mL, in acetonitrile/water	Acetaldehyde Benzaldehyde Butanal Cyclohexanone Decanal	Formaldehyde Glyoxal Hexanal Heptanal Methyl glyoxal	Nonanal Octanal Pentanal Propanal	1 x 1 mL	ALD-556X

Recommended Method 556 Surrogate Standards

Description	Analyte	Total Vol.	Part No. 20 µg/mL	Part No. 10,000 µg/mL	Part No. 20,000 µg/mL
1 analyte, in acetonitrile	2,4,5-Trifluoroacetophenone	1 x 1 mL	PPS-411-1	PPS-410-1	PPS-412-1

Recommended Method 556 Internal Standard

Description	Analyte	Total Vol	Part No.
1 analyte, 10,000 µg/mL, in hexane	1,2-Dibromopropane	1 x 1 mL	PPS-400-1

Recommended Standards

Method 556, 556.1	Part No.
Calibration standard	ALD-556X
Internal standard	PPS-400-1
Surrogate standard	PPS-410-1

EPA Method 557

Haloacetic acids, bromate, and dalapon in drinking water

Method 557 is a direct inject, ion chromatography, (negative) electrospray ionization mass spectrometry (IC/ESI-MS/MS) method for the determination of haloacetic acids. Bromate and dalapon may also be measured concurrently with the haloacetic acids.

Method 557 Stock Standard Solution

Description	Analytes		Total Vol.	Part No.
10 analytes, at 1,000 µg/mL, in methyl *tert*-butyl ether	Bromoacetic acid Bromochloroacetic acid Bromodichloroacetic acid Chloroacetic acid Chlorodibromoacetic acid	Dalapon Dibromoacetic acid Dichloroacetic acid Tribromoacetic acid Trichloroacetic acid (as Cl)	1 x 1 mL	PHM-557-1

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