

## The EPA 500 Methods

### Analysis of Finished Drinking Water and Raw Source Water

The EPA 500 methods are designed to identify and quantify organic compounds in municipal drinking water. This series consists of methods for the detection of volatile organic compounds (VOCs), pesticides, and synthetic organic compounds (SOCs). These methods are cited under the Safe Drinking Water Act (SWDA). The 500 series methods may be obtained from ULTRA Scientific in the publication *Methods for the Determination of Organic Compounds in Drinking Water*, as well as its supplements (see page 140), and are also available on our website.

ULTRA has prepared a series of reference standards for the 500 series methods, as well as the necessary surrogate and internal standards. Each component in a reference standard is pre-analyzed, with most analytes being >99% pure, and the solvents are of the highest quality available. All solutions are gravimetrically prepared to a precision of  $\pm 0.5\%$ . A certificate showing the actual weight of each analyte is supplied with each standard.

**View and download the EPA 500 Methods at [www.ultrasci.com](http://www.ultrasci.com)**

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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 Standards

Calibration Standards: THM-501N  
THM-511  
THM-521

### Recommended Method 501 Trihalomethanes Mixtures

#### 4 Analytes

bromodichloromethane  
bromoform  
chloroform  
dibromochloromethane

#### @ 100 µg/mL in Methanol

**THM-501N** 4 x 1 mL \*\*\*  
**THM-501N-1** 1 x 1 mL \*\*\*

#### @ 200 µg/mL in Methanol

**THM-511** 4 x 1 mL \*\*\*  
**THM-511-1** 1 x 1 mL \*\*\*

#### @ 5000 µg/mL in Methanol

**THM-521** 4 x 1 mL \*\*\*  
**THM-521-1** 1 x 1 mL \*\*\*

### Trihalomethanes Kit

#### Kit - contains five ampules

1 x 1 mL of each individual component  
@ 100 µg/mL in Methanol

bromodichloromethane  
bromoform  
chloroform  
dibromochloromethane  
plus  
Trihalomethanes Mixture (THM-501N-1)

**THK-501** Kit \*\*\*



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## Custom Standards

Do you require a standard not cataloged by ULTRA? We catalog over 5500 different standards, but if you can't find the specific standard you need, we will be happy to prepare it for you on a custom basis. Our custom organic and inorganic standards are a fast, economical way to address your unique applications. Simply fax us a copy of the form found on page 399, or log on to [www.ultrasci.com](http://www.ultrasci.com) and use our convenient quotation request web page. You will receive a quote within 24 hours.

### Validation choices available:

**Gravimetric Validation:** All standards are manufactured under ULTRA's ISO 9001 registered quality system. Each analyte is guaranteed to be within the tolerance limits of  $\pm 0.2\%$  nominal for inorganic analytes and  $\pm 0.5\%$  nominal for organic analytes. A Certificate of Analysis accompanies each custom standard.

**Quantitative Validation:** The method employed is identical to that used for all ULTRA cataloged standards and involves extensive instrumental analysis. All quantitative customs are provided with a DATApak® and Certificate of Analysis.



## 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 effect a more efficient separation. Detection is carried out using a photoionization detector in series with either an electrolytic conductivity or microcoulometric detector, allowing determination of all sixty analytes of interest.

To read the complete method, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

### Recommended Standards

Calibration Standards: DWM-580  
DWM-588

Internal Standard: STM-240N

### Recommended Method 502.2 VOC Mixtures

#### 60 Analytes

benzene	1,2-dichlorobenzene	naphthalene
bromobenzene	1,3-dichlorobenzene	<i>n</i> -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
<i>n</i> -butylbenzene	1,1-dichloroethene	toluene
<i>sec</i> -butylbenzene	<i>cis</i> -1,2-dichloroethene	1,2,3-trichlorobenzene
<i>tert</i> -butylbenzene	<i>trans</i> -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	<i>cis</i> -1,3-dichloropropene	1,2,3-trichloropropane
2-chlorotoluene	<i>trans</i> -1,3-dichloropropene	1,2,4-trimethylbenzene
4-chlorotoluene	ethylbenzene	1,3,5-trimethylbenzene
dibromochloromethane	hexachlorobutadiene	vinyl chloride
1,2-dibromo-3-chloropropane	isopropylbenzene	<i>o</i> -xylene
1,2-dibromoethane	4-isopropyltoluene	<i>m</i> -xylene
dibromomethane	methylene chloride	<i>p</i> -xylene

@ 200 µg/mL in Methanol

DWM-580	4 x 1 mL ULTRApak®	***
DWM-580-1	1 x 1 mL	***

@ 2000 µg/mL in Methanol

DWM-588	4 x 1 mL ULTRApak®	***
DWM-588-1	1 x 1 mL	***



### Recommended Method 502.2 Internal Standard Mixture

#### 2 Analytes

2-bromo-1-chloropropane  
fluorobenzene

@ 2000 µg/mL in Methanol

STM-240N	4 x 1 mL	***
STM-240N-1	1 x 1 mL	***

## VOC Mixtures (No Gases)

### 54 Analytes

benzene	1,3-dichlorobenzene
bromobenzene	1,4-dichlorobenzene
bromochloromethane	1,1-dichloroethane
bromodichloromethane	1,2-dichloroethane
bromoform	1,1-dichloroethene
<i>n</i> -butylbenzene	<i>cis</i> -1,2-dichloroethene
<i>sec</i> -butylbenzene	<i>trans</i> -1,2-dichloroethene
<i>tert</i> -butylbenzene	1,2-dichloropropane
carbon tetrachloride	1,3-dichloropropane
chlorobenzene	2,2-dichloropropane
chloroform	1,1-dichloropropene
2-chlorotoluene	<i>cis</i> -1,3-dichloropropene
4-chlorotoluene	<i>trans</i> -1,3-dichloropropene
dibromochloromethane	ethylbenzene
1,2-dibromo-3-chloropropane	hexachlorobutadiene
1,2-dibromoethane	isopropylbenzene
dibromomethane	4-isopropyltoluene
1,2-dichlorobenzene	methylene chloride

### @ 200 µg/mL in Methanol

<b>DWM-583</b>	<b>4 x 1 mL ULTRApak®</b>	***
<b>DWM-583-1</b>	<b>1 x 1 mL</b>	***

### @ 2000 µg/mL in Methanol

<b>DWM-589N</b>	<b>4 x 1 mL ULTRApak®</b>	***
<b>DWM-589N-1</b>	<b>1 x 1 mL</b>	***

## VOC Gas Mixtures

### 6 Analytes

bromomethane
chloroethane
chloromethane
dichlorodifluoromethane
trichlorofluoromethane
vinyl chloride

### @ 200 µg/mL in Methanol

<b>DWM-584</b>	<b>4 x 1 mL</b>	***
<b>DWM-584-1</b>	<b>1 x 1 mL</b>	***

### @ 2000 µg/mL in Methanol

<b>DWM-544</b>	<b>4 x 1 mL</b>	***
<b>DWM-544-1</b>	<b>1 x 1 mL</b>	***

## Internal Standard Mixture

### 2 Analytes

2-bromo-1-chloropropane
1-chloro-2-fluorobenzene

### @ 2000 µg/mL in Methanol

<b>STM-460</b>	<b>4 x 1 mL</b>	***
<b>STM-460-1</b>	<b>1 x 1 mL</b>	***



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## Individual Internal & Surrogate Standards for Method 502

	4 x 1 mL ULTRApaks®		1 x 1 mL Ampules		20 or More Ampules	
<i>All @ 2000 µg/mL in Methanol</i>						
<b>2-bromo-1-chloropropane</b>	STS-190	***	STS-190-1	***		
<b>1-chloro-2-fluorobenzene</b>	STS-450	***	STS-450-1	***		
<b>1,4-dichlorobutane</b>	STS-200	***	STS-200-1	***		
<b>fluorobenzene</b>	STS-160	***	STS-160-1	***		

## VOC Mixture with MTBE

55 Analytes

benzene	1,3-dichlorobenzene	<i>n</i> -propylbenzene
bromobenzene	1,4-dichlorobenzene	styrene
bromochloromethane	1,1-dichloroethane	1,1,1,2-tetrachloroethane
bromodichloromethane	1,2-dichloroethane	1,1,2,2-tetrachloroethane
bromoform	1,1-dichloroethene	tetrachloroethene
<i>n</i> -butylbenzene	<i>cis</i> -1,2-dichloroethene	toluene
<i>sec</i> -butylbenzene	<i>trans</i> -1,2-dichloroethene	1,2,3-trichlorobenzene
<i>tert</i> -butylbenzene	1,2-dichloropropane	1,2,4-trichlorobenzene
<i>tert</i> -butyl methyl ether	1,3-dichloropropane	1,1,1-trichloroethane
carbon tetrachloride	2,2-dichloropropane	1,1,2-trichloroethane
chlorobenzene	1,1-dichloropropene	trichloroethene
chloroform	<i>cis</i> -1,3-dichloropropene	1,2,3-trichloropropane
2-chlorotoluene	<i>trans</i> -1,3-dichloropropene	1,2,4-trimethylbenzene
4-chlorotoluene	ethylbenzene	1,3,5-trimethylbenzene
dibromochloromethane	hexachlorobutadiene	<i>o</i> -xylene
1,2-dibromo-3-chloropropane	isopropylbenzene	<i>m</i> -xylene
1,2-dibromoethane	4-isopropyltoluene	<i>p</i> -xylene
dibromomethane	methylene chloride	
1,2-dichlorobenzene	naphthalene	

@ 2000 µg/mL in Methanol

<b>DWM-596</b>	<b>4 x 1 mL ULTRApak®</b>	<b>***</b>
<b>DWM-596-1</b>	<b>1 x 1 mL</b>	<b>***</b>



## Haloalkanes Mixture

35 Analytes

bromochloromethane
bromodichloromethane
bromoform
bromomethane
carbon tetrachloride
chloroethane
chloroform
chloromethane
dibromochloromethane
1,2-dibromo-3-chloropropane
1,2-dibromoethane
dibromomethane
dichlorodifluoromethane
1,1-dichloroethane
1,2-dichloroethane
1,1-dichloroethene
<i>cis</i> -1,2-dichloroethene
<i>trans</i> -1,2-dichloroethene
1,2-dichloropropane
1,3-dichloropropane
2,2-dichloropropane
1,1-dichloropropene
<i>cis</i> -1,3-dichloropropene
<i>trans</i> -1,3-dichloropropene
hexachlorobutadiene
methylene chloride
1,1,1,2-tetrachloroethane
1,1,2,2-tetrachloroethane
tetrachloroethene
1,1,1-trichloroethane
1,1,2-trichloroethane
trichloroethene
trichlorofluoromethane
1,2,3-trichloropropane
vinyl chloride

@ 200 µg/mL in Methanol

<b>DWM-540</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>DWM-540-1</b>	<b>1 x 1 mL</b>	<b>***</b>

**Halomethanes Mixture**

12 Analytes

bromochloromethane  
 bromodichloromethane  
 bromoform  
 bromomethane  
 carbon tetrachloride  
 chloroform  
 chloromethane  
 dibromochloromethane  
 dibromomethane  
 dichlorodifluoromethane  
 methylene chloride  
 trichlorofluoromethane

@ 200 µg/mL in Methanol

**DWM-510** 4 x 1 mL \*\*\*  
**DWM-510-1** 1 x 1 mL \*\*\*

**Haloethanes Mixture**

14 Analytes

chloroethane  
 1,2-dibromoethane  
 1,1-dichloroethane  
 1,2-dichloroethane  
 1,1-dichloroethene  
*cis*-1,2-dichloroethene  
*trans*-1,2-dichloroethene  
 1,1,1,2-tetrachloroethane  
 1,1,2,2-tetrachloroethane  
 tetrachloroethene  
 1,1,1-trichloroethane  
 1,1,2-trichloroethane  
 trichloroethene  
 vinyl chloride

@ 200 µg/mL in Methanol

**DWM-520** 4 x 1 mL \*\*\*  
**DWM-520-1** 1 x 1 mL \*\*\*

**Halopropanes Mixture**

9 Analytes

1,2-dibromo-3-chloropropane  
 1,2-dichloropropane  
 1,3-dichloropropane  
 2,2-dichloropropane  
 1,1-dichloropropene  
*cis*-1,3-dichloropropene  
*trans*-1,3-dichloropropene  
 hexachlorobutadiene  
 1,2,3-trichloropropane

@ 200 µg/mL in Methanol

**DWM-530** 4 x 1 mL \*\*\*  
**DWM-530-1** 1 x 1 mL \*\*\*

**Aromatics Mixture**

25 Analytes

benzene  
 bromobenzene  
*n*-butylbenzene  
*sec*-butylbenzene  
*tert*-butylbenzene  
 chlorobenzene  
 2-chlorotoluene  
 4-chlorotoluene  
 1,2-dichlorobenzene  
 1,3-dichlorobenzene  
 1,4-dichlorobenzene  
 ethylbenzene  
 isopropylbenzene  
 4-isopropyltoluene  
 naphthalene  
*n*-propylbenzene  
 styrene  
 toluene  
 1,2,3-trichlorobenzene  
 1,2,4-trichlorobenzene  
 1,2,4-trimethylbenzene  
 1,3,5-trimethylbenzene  
*o*-xylene  
*m*-xylene  
*p*-xylene

@ 200 µg/mL in Methanol

**DWM-570** 4 x 1 mL \*\*\*  
**DWM-570-1** 1 x 1 mL \*\*\*

**Aromatic Hydrocarbons Mixture**

16 Analytes

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

@ 200 µg/mL in Methanol

**DWM-550** 4 x 1 mL \*\*\*  
**DWM-550-1** 1 x 1 mL \*\*\*

**Aromatic Halocarbons Mixture**

9 Analytes

bromobenzene  
 chlorobenzene  
 2-chlorotoluene  
 4-chlorotoluene  
 1,2-dichlorobenzene  
 1,3-dichlorobenzene  
 1,4-dichlorobenzene  
 1,2,3-trichlorobenzene  
 1,2,4-trichlorobenzene

@ 200 µg/mL in Methanol

**DWM-560** 4 x 1 mL \*\*\*  
**DWM-560-1** 1 x 1 mL \*\*\*



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## 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.

To read the complete method, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

### Recommended Standards

Calibration Standard: DWM-503

Internal Standard: STS-220N

### Halocarbons Mixture

#### 12 Analytes

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

@ 200 µg/mL in Methanol

<b>DWM-563</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>DWM-563-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### Recommended Method 503.1 Aromatics & Alkenes Mixture

#### 28 Analytes

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

@ 200 µg/mL in Methanol

<b>DWM-503</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>DWM-503-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### Recommended Method 503.1 Internal and Surrogate Standard

$\alpha,\alpha,\alpha$ -trifluorotoluene

@ 200 µg/mL in Methanol

<b>STS-221</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>STS-221-1</b>	<b>1 x 1 mL</b>	<b>***</b>

@ 2000 µg/mL in Methanol

<b>STS-220N</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>STS-220N-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### Aromatic Hydrocarbons Mixture

#### 16 Analytes

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

@ 200 µg/mL in Methanol

<b>DWM-550</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>DWM-550-1</b>	<b>1 x 1 mL</b>	<b>***</b>

## EPA Methods 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.

To read the complete method, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

### Recommended Standards

#### Method 504

Calibration Standards: DWM-504N  
HCM-812

#### Method 504.1

Calibration Standard: DWM-514

### Recommended Method 504 Mixtures

#### 2 Analytes

1,2-dibromo-3-chloropropane  
1,2-dibromoethane

#### @ 200 µg/mL in Methanol

**DWM-504N** 4 x 1 mL \*\*\*  
**DWM-504N-1** 1 x 1 mL \*\*\*

#### @ 2000 µg/mL in Methanol

**HCM-812** 4 x 1 mL \*\*\*  
**HCM-812-1** 1 x 1 mL \*\*\*

### Recommended Method 504.1 Mixture

#### 3 Analytes

1,2-dibromo-3-chloropropane  
1,2-dibromoethane  
1,2,3-trichloropropane

#### @ 200 µg/mL in Methanol

**DWM-514** 4 x 1 mL \*\*\*  
**DWM-514-1** 1 x 1 mL \*\*\*

### Technical Note

Chlorinated drinking water may contain the disinfection by-product dibromochloromethane (DBCM). High levels of DBCM may mask very low levels of EDB.



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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.

To read the complete method, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

### Recommended Standards

Calibration Standards: PPM-505D  
PPM-505E

#### Recommended Method 505 Organochlorine Pesticides Mixture

<i>12 Analytes</i>		
alachlor	50 µg/mL	
aldrin	20 µg/mL	
atrazine	500 µg/mL	
γ-BHC ( <i>lindane</i> )	20 µg/mL	
dieldrin	20 µg/mL	
endrin	20 µg/mL	
heptachlor	20 µg/mL	
heptachlor epoxide (B)	20 µg/mL	
hexachlorobenzene	10 µg/mL	
hexachlorocyclopentadiene	20 µg/mL	
methoxychlor	200 µg/mL	
simazine	100 µg/mL	

#### *in Acetone*

<b>PPM-505D</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>PPM-505D-1</b>	<b>1 x 1 mL</b>	<b>***</b>

#### Recommended Method 505 Organochlorine Pesticides Mixture

<i>16 Analytes</i>	
alachlor	10 µg/mL
aldrin	1 µg/mL
atrazine	250 µg/mL
γ-BHC ( <i>lindane</i> )	1 µg/mL
α-chlordane	1 µg/mL
γ-chlordane	1 µg/mL
dieldrin	1 µg/mL
endrin	1 µg/mL
heptachlor	1 µg/mL
heptachlor epoxide (B)	1 µg/mL
hexachlorobenzene	1 µg/mL
hexachlorocyclopentadiene	1 µg/mL
methoxychlor	5 µg/mL
<i>cis</i> -nonachlor	1 µg/mL
<i>trans</i> -nonachlor	1 µg/mL
simazine	250 µg/mL

#### *in Acetone*

<b>PPM-505E</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>PPM-505E-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### Recommended Method 505 Chlordane, Toxaphene, and PCB Standards

	4 x 1 mL ULTRApaks®		1 x 1 mL Ampules		20 or More Ampules
<i>All @ 100 µg/mL in Methanol</i>					
<b>chlordane</b>	PP-150	***	PP-150-1	***	
<b>toxaphene</b>	PP-270	***	PP-270-1	***	
<b>Aroclor 1016</b>	PP-280	***	PP-280-1	***	
<b>Aroclor 1221</b>	PP-290	***	PP-290-1	***	
<b>Aroclor 1232</b>	PP-300	***	PP-300-1	***	
<b>Aroclor 1242</b>	PP-310	***	PP-310-1	***	
<b>Aroclor 1248</b>	PP-340	***	PP-340-1	***	
<b>Aroclor 1254</b>	PP-350	***	PP-350-1	***	
<b>Aroclor 1260</b>	PP-360	***	PP-360-1	***	

See pages 296-297 for additional Aroclor solutions

## EPA Method 506

### Phthalate and Adipate Esters

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

To read the complete method, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

### Recommended Standards

Calibration Standard: PSM-506

### Recommended Method 506 Phthalates Mixture

#### 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

#### @ 1000 µg/mL in Isooctane

PSM-506	4 x 1 mL	***
PSM-506-1	1 x 1 mL	***

### Phthalates Mixture

#### 7 Analytes

bis(2-ethylhexyl) adipate	1200 µg/mL
bis(2-ethylhexyl) phthalate	250 µg/mL
butyl benzyl phthalate	250 µg/mL
di- <i>n</i> -butyl phthalate	100 µg/mL
diethyl phthalate	100 µg/mL
dimethyl phthalate	100 µg/mL
di- <i>n</i> -octyl phthalate	650 µg/mL

#### in Methanol

PSM-516	4 x 1 mL	***
PSM-516-1	1 x 1 mL	***

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## 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.

To read the complete method, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

### Recommended Standards

Calibration Standards: NPM-101  
NPM-102  
NPM-103  
NPM-104A  
NPM-105  
NPM-109

Internal Standard: PPS-110

Surrogate Standard: PPS-100

### Recommended Pesticides Mixture

#### 6 Analytes

ametryn	fenamiphos
cycloate	merphos
disulfoton	prometon

#### @ 1000 µg/mL in Methyl tert-Butyl Ether

<b>NPM-101</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>NPM-101-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### Recommended Pesticides Mixture

#### 9 Analytes

atrazine	prometryn
diphenamid	propazine
EPTC	terbutryn
ethoprop	triadimefon
mevinphos	

#### @ 1000 µg/mL in Methyl tert-Butyl Ether

<b>NPM-102</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>NPM-102-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### Recommended Pesticides Mixture

#### 9 Analytes

butachlor	metribuzin
carboxin	norflurazon
diazinon	terbufos
metolachlor	vernolate
MGK-264, mixed isomers	

#### @ 1000 µg/mL in Methyl tert-Butyl Ether

<b>NPM-103</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>NPM-103-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### Recommended Pesticides Mixture

#### 10 Analytes

alachlor	hexazinone
atraton	molinate
bromacil	pronamide
butylate	stirofos
chlorpropham	tricyclazole

#### @ 1000 µg/mL in Acetone

<b>NPM-104A</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>NPM-104A-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### Recommended Pesticides Mixture

#### 8 Analytes

dichlorvos	pebulate
fenarimol	simetryn
fluridone	tebuthiuron
napropamide	terbacil

#### @ 1000 µg/mL in Methyl tert-Butyl Ether

<b>NPM-105</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>NPM-105-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### Recommended Pesticides Mixture

#### 2 Analytes

simazine
methyl paraoxon

#### @ 1000 µg/mL in Acetone

<b>NPM-109</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>NPM-109-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### Recommended Method 507 Surrogate Standard Solution

1,3-dimethyl-2-nitrobenzene

@ 250 µg/mL in Methyl tert-Butyl Ether

<b>PPS-100</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>PPS-100-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### Recommended Method 507 Internal Standard Solution

triphenyl phosphate (TPP)

@ 500 µg/mL in Methyl tert-Butyl Ether

<b>PPS-110</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>PPS-110-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### Method 507 Laboratory Performance Check Solution

6 Analytes

atrazine	150 ng/mL
bromacil	5000 ng/mL
prometon	300 ng/mL
vernolate	50 ng/mL
1,3-dimethyl-2-nitrobenzene	2500 ng/mL
triphenyl phosphate (TPP)	2500 ng/mL

in Methyl tert-Butyl Ether

<b>NPM-507</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>NPM-507-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### Pesticides Mixture

8 Analytes

benefin	pendimethalin
isopropalin	profluralin
oxadiazon	propachlor
oxyfluorfen	trifluralin

@ 1000 µg/mL in Methyl tert-Butyl Ether

<b>NPM-106</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>NPM-106-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### DEF Standard

DEF

@ 1000 µg/mL in Methyl tert-Butyl Ether

<b>NPM-108</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>NPM-108-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### Simazine Standard

simazine

@ 1000 µg/mL in Acetone

<b>NPM-107A</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>NPM-107A-1</b>	<b>1 x 1 mL</b>	<b>***</b>



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## EPA Methods 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.

To read the complete method, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

### Recommended Standards

#### Method 508

Calibration Standards: PPM-508B  
PPM-508D

Internal Standard: PPS-130

Surrogate Standard: PPS-120

#### Method 508.1

Calibration Standards: PPM-508F  
PPM-508G

Internal Standard: PPS-132

Surrogate Standard: PPS-420

### Recommended Method 508 Organochlorine Pesticides Mixture

#### 17 Analytes

aldrin  
α-BHC  
β-BHC  
δ-BHC  
γ-BHC  
4,4'-DDD  
4,4'-DDE  
4,4'-DDT  
dieldrin  
endosulfan I  
endosulfan II  
endosulfan sulfate  
endrin  
endrin aldehyde  
heptachlor  
heptachlor epoxide (B)  
methoxychlor

#### @ 1000 µg/mL in Methyl tert-Butyl Ether

**PPM-508B** 4 x 1 mL \*\*\*  
**PPM-508B-1** 1 x 1 mL \*\*\*

### Recommended Method 508 Organochlorine Pesticides Mixture

#### 12 Analytes

α-chlordane  
γ-chlordane  
chlorobenzilate  
chloroneb  
chlorothalonil  
chlorpyrifos  
DCPA  
etridiazole  
hexachlorobenzene  
permethrin, mixed isomers (@ 2000 µg/mL)  
propachlor  
trifluralin

#### @ 1000 µg/mL in Methyl tert-Butyl Ether

**PPM-508D** 4 x 1 mL \*\*\*  
**PPM-508D-1** 1 x 1 mL \*\*\*

### Recommended Method 508 Internal Standard Solution

pentachloronitrobenzene (PCNB)

#### @ 100 µg/mL in Methyl tert-Butyl Ether

**PPS-130** 4 x 1 mL \*\*\*  
**PPS-130-1** 1 x 1 mL \*\*\*

### Recommended Method 508 Surrogate Standard Solution

4,4'-dichlorobiphenyl (DCB)

#### @ 500 µg/mL in Methyl tert-Butyl Ether

**PPS-120** 4 x 1 mL \*\*\*  
**PPS-120-1** 1 x 1 mL \*\*\*

### Method 508 Laboratory Performance Check Solution

#### 4 Analytes

chlorothalonil 50 ng/mL  
chlorpyrifos 2 ng/mL  
DCPA 50 ng/mL  
δ-BHC (delta-HCH) 40 ng/mL

#### in Methyl tert-Butyl Ether

**PPM-508** 4 x 1 mL \*\*\*  
**PPM-508-1** 1 x 1 mL \*\*\*

### Toxaphene Standard

toxaphene

#### @ 2500 µg/mL in Acetone

**PPS-240** 4 x 1 mL \*\*\*  
**PPS-240-1** 1 x 1 mL \*\*\*

### Cyanazine Standard

cyanazine

#### @ 1000 µg/mL in Methanol

**EPA-1165** 1 x 1 mL \*\*\*

### Recommended Method 508.1 Organochlorine Pesticides Mixture

#### 17 Analytes

aldrin  
 $\alpha$ -BHC ( $\alpha$ -HCH)  
 $\beta$ -BHC ( $\beta$ -HCH)  
 $\delta$ -BHC ( $\delta$ -HCH)  
 $\gamma$ -BHC ( $\gamma$ -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

@ 100  $\mu$ g/mL in Ethyl Acetate

**PPM-508F** 4 x 1 mL \*\*\*  
**PPM-508F-1** 1 x 1 mL \*\*\*

### Recommended Method 508.1 Organochlorine Pesticides Mixture

#### 19 Analytes

alachlor  
 atrazine  
 butachlor  
 $\alpha$ -chlordane  
 $\gamma$ -chlordane  
 chlorobenzilate  
 chloroneb  
 chlorothalonil  
 cyanazine  
 DCPA  
 etridiazole  
 hexachlorobenzene  
 hexachlorocyclopentadiene  
 metolachlor  
 metribuzin  
 permethrin, mixed isomers (@ 200  $\mu$ g/mL)  
 propachlor  
 simazine  
 trifluralin

@ 100  $\mu$ g/mL in Ethyl Acetate

**PPM-508G** 4 x 1 mL \*\*\*  
**PPM-508G-1** 1 x 1 mL \*\*\*

### Recommended Method 508.1 Internal Standard Solution

pentachloronitrobenzene (PCNB)

@ 1000  $\mu$ g/mL in Ethyl Acetate

**PPS-132** 4 x 1 mL \*\*\*  
**PPS-132-1** 1 x 1 mL \*\*\*

### Recommended Method 508.1 Surrogate Standard Solution

4,4'-dibromobiphenyl

@ 1000  $\mu$ g/mL in Ethyl Acetate

**PPS-420** 4 x 1 mL \*\*\*  
**PPS-420-1** 1 x 1 mL \*\*\*

### Method 508.1 Degradation Check Solution

2 Analytes

4,4'-DDT  
 endrin

@ 1  $\mu$ g/mL in Ethyl Acetate

**ISM-451** 4 x 1 mL \*\*\*  
**ISM-451-1** 1 x 1 mL \*\*\*



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## 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.

To read the complete method, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

### Aroclor 1260 Stock Solution

Aroclor 1260

@ 1000  $\mu$ g/mL in Methanol

**PPS-141** 4 x 1 mL \*\*\*  
**PPS-141-1** 1 x 1 mL \*\*\*

@ 5000  $\mu$ g/mL in Methanol

**PPS-140** 4 x 1 mL \*\*\*  
**PPS-140-1** 1 x 1 mL \*\*\*

### Decachlorobiphenyl Stock Solution

decachlorobiphenyl

@ 1000  $\mu$ g/mL in Toluene

**PPS-150** 4 x 1 mL \*\*\*  
**PPS-150-1** 1 x 1 mL \*\*\*



## EPA Methods 515.1, 515.2

### Chlorinated Acids

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

To read the complete method, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

### Recommended Standards

#### Method 515.1

Calibration Standard: HBM-5155A

Internal Standard: PPS-170

Surrogate Standard: PPS-160

#### Method 515.2

Calibration Standards: HBM-5152A  
HBM-5153A

Internal Standard: PPS-172

Surrogate Standard: PPS-162

### SDWA Herbicides Mixture

#### 6 Analytes

2,4-D	200 µg/mL
dalapon	1300 µg/mL
dinoseb	200 µg/mL
silvex (2,4,5-TP)	100 µg/mL
pentachlorophenol	100 µg/mL
picloram	100 µg/mL

#### Acids Mixture

##### in Methanol

HBM-5154A	4 x 1 mL	***
HBM-5154A-1	1 x 1 mL	***

#### Methylated Mixture

##### in Methanol

HBM-5154M	4 x 1 mL	***
HBM-5154M-1	1 x 1 mL	***

### Recommended Method 515.1 Chlorinated Herbicides Mixtures

#### 16 Analytes

acifluorfen	100 µg/mL
bentazon	200 µg/mL
chloramben	100 µg/mL
2,4-D	200 µg/mL
dalapon	1300 µg/mL
2,4-DB	800 µg/mL
dacthal (DCPA)	100 µg/mL
dicamba	100 µg/mL
3,5-dichlorobenzoic acid	100 µg/mL
dichlorprop	300 µg/mL
dinoseb	200 µg/mL
4-nitrophenol	100 µg/mL
pentachlorophenol	100 µg/mL
picloram	100 µg/mL
silvex (2,4,5-TP)	100 µg/mL
2,4,5-T	100 µg/mL

#### Acids Mixture

##### in Methyl tert-Butyl Ether

HBM-5155A	4 x 1 mL	***
HBM-5155A-1	1 x 1 mL	***

#### Methylated Mixture

##### in Methyl tert-Butyl Ether

HBM-5155M	4 x 1 mL	***
HBM-5155M-1	1 x 1 mL	***

### Recommended Method 515.1 Surrogate Standard Solutions

2,4-dichlorophenylacetic acid (DCAA)

@ 100 µg/mL in Methyl tert-Butyl Ether

PPS-160	4 x 1 mL	***
PPS-160-1	1 x 1 mL	***

DCAA methyl ester

@ 100 µg/mL in Methyl tert-Butyl Ether

PPS-161	4 x 1 mL	***
PPS-161-1	1 x 1 mL	***

### Recommended Method 515.1 Internal Standard Solution

4,4'-dibromooctafluorobiphenyl (DBOB)

@ 100 µg/mL in Methyl tert-Butyl Ether

PPS-170	4 x 1 mL	***
PPS-170-1	1 x 1 mL	***



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### Recommended Method 515.2 Chlorinated Herbicides Mixtures

#### 6 Analytes

dacthal (DCPA)	100 µg/mL
3,5-dichlorobenzoic acid	500 µg/mL
dichlorprop	100 µg/mL
dinoseb	200 µg/mL
pentachlorophenol	100 µg/mL
2,4,5-T	100 µg/mL

#### Acids Mixture A

##### in Methanol

HBM-5152A	4 x 1 mL	***
HBM-5152A-1	1 x 1 mL	***

#### Methylated Mixture A

##### in Methanol

HBM-5152M	4 x 1 mL	***
HBM-5152M-1	1 x 1 mL	***

### Recommended Method 515.2 Surrogate Standard Solutions

2,4-dichlorophenylacetic acid (DCAA)

#### @ 5000 µg/mL in Methanol

PPS-162	4 x 1 mL	***
PPS-162-1	1 x 1 mL	***

DCAA methyl ester

#### @ 5000 µg/mL in Methanol

PPS-163	4 x 1 mL	***
PPS-163-1	1 x 1 mL	***

### Recommended Method 515.2 Chlorinated Herbicides Mixtures

#### 7 Analytes

acifluorfen	200 µg/mL
bentazon	1000 µg/mL
2,4-D	100 µg/mL
2,4-DB	1000 µg/mL
dicamba	300 µg/mL
picloram	300 µg/mL
silvex (2,4,5-TP)	100 µg/mL

#### Acids Mixture B

##### in Methanol

HBM-5153A	4 x 1 mL	***
HBM-5153A-1	1 x 1 mL	***

#### Methylated Mixture B

##### in Methanol

HBM-5153M	4 x 1 mL	***
HBM-5153M-1	1 x 1 mL	***

### Recommended Method 515.2 Internal Standard Solution

4,4'-dibromooctafluorobiphenyl (DBOB)

#### @ 5000 µg/mL in Methanol

PPS-172	4 x 1 mL	***
PPS-172-1	1 x 1 mL	***

### Laboratory Performance Check Solutions for Methods 515.1, 515.2

#### Acid Solution

##### 5 Analytes

3,5-dichlorobenzoic acid	6000 ng/mL
dinoseb	40 ng/mL
4-nitrophenol	16,000 ng/mL
DCAA	5000 ng/mL
DBOB	2500 ng/mL

#### Acid LPC Solution

##### in Methyl tert-Butyl Ether/Methanol

PPM-515A	4 x 1 mL	***
PPM-515A-1	1 x 1 mL	***

#### Methylated Solution

##### 5 Analytes

3,5-dichlorobenzoic acid	600 ng/mL
dinoseb	4 ng/mL
4-nitrophenol	1,600 ng/mL
DCAA	500 ng/mL
DBOB	250 ng/mL

#### Methylated LPC Solution

##### in Methyl tert-Butyl Ether/Methanol

PPM-515M	4 x 1 mL	***
PPM-515M-1	1 x 1 mL	***

## EPA Method 515.3

### Chlorinated Acids

Method 515.3 is used to determine chlorinated acids. It is an extraction followed by derivatization method, using GC with a capillary column and electron capture detector.

To read the complete method, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

### Recommended Standards

Calibration Standards: HBM-5156A  
HBM-5156M

Internal Standard: PPS-174

Surrogate Standard: PPS-167  
PPS-168

### Recommended Method 515.3 Chlorinated Acids Mixtures

*16 Analytes*

acifluorfen	5 µg/mL
bentazon	10 µg/mL
chloramben	5 µg/mL
2,4-D	10 µg/mL
dalapon	10 µg/mL
2,4-DB	10 µg/mL
dacthal acid metabolites	5 µg/mL
dicamba	5 µg/mL
3,5-dichlorobenzoic acid	5 µg/mL
dichlorprop	10 µg/mL
dinoseb	10 µg/mL
4-nitrophenol	10 µg/mL
pentachlorophenol	1 µg/mL
picloram	10 µg/mL
silvex (2,4,5-TP)	2.5 µg/mL
2,4,5-T	2.5 µg/mL

### Acids Mixture

*in Acetone*

<b>HBM-5156A</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>HBM-5156A-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### Methylated Mixture

*in Acetone*

<b>HBM-5156M</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>HBM-5156M-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### Recommended Method 515.3 Surrogate Standard Solutions

2,4-dichlorophenylacetic acid (DCAA)

@ 1000 µg/mL in Acetone

<b>PPS-167</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>PPS-167-1</b>	<b>1 x 1 mL</b>	<b>***</b>

---

DCAA methyl ester

@ 1000 µg/mL in Acetone

<b>PPS-168</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>PPS-168-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### Recommended Method 515.3 Internal Standard Solution

4,4'-dibromooctafluorobiphenyl (DBOB)

@ 2000 µg/mL in Methyl tert-Butyl Ether

<b>PPS-174</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>PPS-174-1</b>	<b>1 x 1 mL</b>	<b>***</b>



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## EPA Method 515.4

### Chlorinated Acids

Method 515.4 is used to determine chlorinated acids. It is an extraction followed by derivatization method, using fast GC with a capillary column and electron capture detector.

To read the complete method, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

### Recommended Standards

Calibration Standard: HBM-5157A

Internal Standard: PPS-174

Surrogate Standards: PPS-167  
PPS-168

### Recommended Method 515.4 Chlorinated Acids Mixtures

#### 16 Analytes

acifluorfen	5 µg/mL
bentazon	10 µg/mL
chloramben	5 µg/mL
2,4-D	10 µg/mL
dalapon	10 µg/mL
2,4-DB	10 µg/mL
dacthal acid metabolites	5 µg/mL
dicamba	5 µg/mL
3,5-dichlorobenzoic acid	5 µg/mL
dichlorprop	10 µg/mL
dinoseb	10 µg/mL
pentachlorophenol	1 µg/mL
picloram	5 µg/mL
silvex (2,4,5-TP)	2.5 µg/mL
2,4,5-T	2.5 µg/mL
quinclorac	5 µg/mL

#### Acids Mixture

##### in Acetone

<b>HBM-5157A</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>HBM-5157A-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### Recommended Method 515.4 Surrogate Standard Solutions

#### 2,4-dichlorophenylacetic acid (DCAA)

##### @ 1000 µg/mL in Acetone

<b>PPS-167</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>PPS-167-1</b>	<b>1 x 1 mL</b>	<b>***</b>

#### DCAA methyl ester

##### @ 1000 µg/mL in Acetone

<b>PPS-168</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>PPS-168-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### Recommended Method 515.4 Internal Standard Solution

#### 4,4'-dibromooctafluorobiphenyl (DBOB)

##### @ 2000 µg/mL in Methyl tert-Butyl Ether

<b>PPS-174</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>PPS-174-1</b>	<b>1 x 1 mL</b>	<b>***</b>

## EPA Method 521

### Nitrosamines

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

To read the complete method, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

### Recommended Standards

Calibration Standard: US-113N

Internal Standard: IST-770

Surrogate Standard: IST-760

### Recommended Method 521 Nitrosamines Mixture

#### 9 Analytes

N-nitrosodi- <i>n</i> -butylamine
N-nitrosodiethylamine
N-nitrosodimethylamine
N-nitrosodiphenylamine
N-nitrosodi- <i>n</i> -propylamine
N-nitrosomethylethylamine
N-nitrosomorpholine
N-nitrosopiperidine
N-nitrosopyrrolidine

##### @ 2000 µg/mL in Methylene Chloride

<b>US-113N-4</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>US-113N</b>	<b>1 x 1 mL</b>	<b>***</b>

### Recommended Method 521 Surrogate & Internal Standards

#### N-nitrosodimethylamine-d<sub>6</sub>

##### @ 1000 µg/mL in Methylene Chloride

<b>IST-760</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>IST-760-1</b>	<b>1 x 1 mL</b>	<b>***</b>

#### N-nitrosodi-*n*-propylamine-d<sub>14</sub>

##### @ 1000 µg/mL in Methylene Chloride

<b>IST-770</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>IST-770-1</b>	<b>1 x 1 mL</b>	<b>***</b>

## EPA Method 524.2

### Purgeable Organic Compounds

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

To read the complete method, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

### Recommended Standards

Calibration Standards: DWM-580  
DWM-588  
DWM-592

Internal &  
Surrogate Standard: STM-320N

### Recommended Method 524.2 VOC Mixture - Rev. 4.1 Additions

#### 24 Analytes

acetone  
acrylonitrile  
allyl chloride  
2-butanone (MEK)  
carbon disulfide  
chloroacetonitrile  
1-chlorobutane  
*trans*-1,4-dichloro-2-butene  
1,1-dichloro-2-propanone  
diethyl ether  
ethyl methacrylate  
hexachloroethane  
2-hexanone  
methacrylonitrile  
methyl acrylate  
methyl iodide  
methyl methacrylate  
4-methyl-2-pentanone  
methyl *tert*-butyl ether  
nitrobenzene  
2-nitropropane  
pentachloroethane  
propionitrile  
tetrahydrofuran

@ 2000 µg/mL in Methanol

DWM-592 4 x 1 mL \*\*\*  
DWM-592-1 1 x 1 mL \*\*\*

### Recommended Method 524.2 VOC Mixtures

#### 60 Analytes

benzene	1,2-dichlorobenzene	naphthalene
bromobenzene	1,3-dichlorobenzene	<i>n</i> -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
<i>n</i> -butylbenzene	1,1-dichloroethene	toluene
<i>sec</i> -butylbenzene	<i>cis</i> -1,2-dichloroethene	1,2,3-trichlorobenzene
<i>tert</i> -butylbenzene	<i>trans</i> -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	<i>cis</i> -1,3-dichloropropene	1,2,3-trichloropropane
2-chlorotoluene	<i>trans</i> -1,3-dichloropropene	1,2,4-trimethylbenzene
4-chlorotoluene	ethylbenzene	1,3,5-trimethylbenzene
dibromochloromethane	hexachlorobutadiene	vinyl chloride
1,2-dibromo-3-chloropropane	isopropylbenzene	<i>o</i> -xylene
1,2-dibromoethane	4-isopropyltoluene	<i>m</i> -xylene
dibromomethane	methylene chloride	<i>p</i> -xylene

@ 200 µg/mL in Methanol

DWM-580 4 x 1 mL ULTRApak® \*\*\*  
DWM-580-1 1 x 1 mL \*\*\*

@ 2000 µg/mL in Methanol

DWM-588 4 x 1 mL ULTRApak® \*\*\*  
DWM-588-1 1 x 1 mL \*\*\*

### Recommended Method 524.2 Internal & Surrogate Standard Mixture

#### 3 Analytes

4-bromofluorobenzene  
1,2-dichlorobenzene-*d*<sub>4</sub>  
fluorobenzene

@ 2000 µg/mL in Methanol

STM-320N 4 x 1 mL \*\*\*  
STM-320N-1 1 x 1 mL \*\*\*

### GC/MS Calibration Standard (BFB)

4-bromofluorobenzene (BFB)

@ 2000 µg/mL in Methanol

STS-110N 4 x 1 mL \*\*\*  
STS-110N-1 1 x 1 mL \*\*\*

**VOC Mixtures (No Gases)***54 Analytes*

benzene	1,3-dichlorobenzene	naphthalene
bromobenzene	1,4-dichlorobenzene	<i>n</i> -propylbenzene
bromochloromethane	1,1-dichloroethane	styrene
bromodichloromethane	1,2-dichloroethane	1,1,1,2-tetrachloroethane
bromoform	1,1-dichloroethene	1,1,2,2-tetrachloroethane
<i>n</i> -butylbenzene	<i>cis</i> -1,2-dichloroethene	tetrachloroethene
<i>sec</i> -butylbenzene	<i>trans</i> -1,2-dichloroethene	toluene
<i>tert</i> -butylbenzene	1,2-dichloropropane	1,2,3-trichlorobenzene
carbon tetrachloride	1,3-dichloropropane	1,2,4-trichlorobenzene
chlorobenzene	2,2-dichloropropane	1,1,1-trichloroethane
chloroform	1,1-dichloropropene	1,1,2-trichloroethane
2-chlorotoluene	<i>cis</i> -1,3-dichloropropene	trichloroethene
4-chlorotoluene	<i>trans</i> -1,3-dichloropropene	1,2,3-trichloropropane
dibromochloromethane	ethylbenzene	1,2,4-trimethylbenzene
1,2-dibromo-3-chloropropane	hexachlorobutadiene	1,3,5-trimethylbenzene
1,2-dibromoethane	isopropylbenzene	<i>o</i> -xylene
dibromomethane	4-isopropyltoluene	<i>m</i> -xylene
1,2-dichlorobenzene	methylene chloride	<i>p</i> -xylene

*@ 200 µg/mL in Methanol*

<b>DWM-583</b>	<b>4 x 1 mL ULTRApak®</b>	***
<b>DWM-583-1</b>	<b>1 x 1 mL</b>	***

*@ 2000 µg/mL in Methanol*

<b>DWM-589N</b>	<b>4 x 1 mL ULTRApak®</b>	***
<b>DWM-589N-1</b>	<b>1 x 1 mL</b>	***

**VOC Gas Mixtures***6 Analytes*

bromomethane
chloroethane
chloromethane
dichlorodifluoromethane
trichlorofluoromethane
vinyl chloride

*@ 200 µg/mL in Methanol*

<b>DWM-584</b>	<b>4 x 1 mL</b>	***
<b>DWM-584-1</b>	<b>1 x 1 mL</b>	***

*@ 2000 µg/mL in Methanol*

<b>DWM-544</b>	<b>4 x 1 mL</b>	***
<b>DWM-544-1</b>	<b>1 x 1 mL</b>	***

**Individual Internal & Surrogate Standards**1,2-dichlorobenzene-d<sub>4</sub>*@ 2000 µg/mL in Methanol*

<b>STS-210</b>	<b>4 x 1 mL</b>	***
<b>STS-210-1</b>	<b>1 x 1 mL</b>	***

fluorobenzene

*@ 2000 µg/mL in Methanol*

<b>STS-160</b>	<b>4 x 1 mL</b>	***
<b>STS-160-1</b>	<b>1 x 1 mL</b>	***

**Surrogate Standard Mixture***2 Analytes*4-bromofluorobenzene  
1,2-dichlorobenzene-d<sub>4</sub>*@ 2000 µg/mL in Methanol*

<b>STM-590</b>	<b>4 x 1 mL</b>	***
<b>STM-590-1</b>	<b>1 x 1 mL</b>	***

**Internal & Surrogate Standard Mixture***2 Analytes*1,2-dichlorobenzene-d<sub>4</sub>  
fluorobenzene*@ 2000 µg/mL in Methanol*

<b>STM-250N</b>	<b>4 x 1 mL</b>	***
<b>STM-250N-1</b>	<b>1 x 1 mL</b>	***



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### Volatile Organic Contaminants Mix 1 (VOC-1)

#### 9 Analytes

bromobenzene  
4-chlorotoluene  
1,2-dibromo-3-chloropropane  
1,2-dibromoethane  
dibromomethane  
2,2-dichloropropane  
1,1-dichloropropene  
styrene  
*p*-xylene

@ 50 µg/mL in Methanol

EPA-2044N	4 x 1 mL	***
EPA-2044N-1	1 x 1 mL	***

### Volatile Organic Contaminants Mix 2 (VOC-2)

#### 7 Analytes

bromochloromethane  
2-chlorotoluene  
*cis*-1,2-dichloroethene  
1,3-dichloropropane  
1,1,1,2-tetrachloroethane  
1,2,3-trichloropropane  
*o*-xylene

@ 50 µg/mL in Methanol

EPA-2045N	4 x 1 mL	***
EPA-2045N-1	1 x 1 mL	***

### Discretionary Aromatic Volatiles Mix (VOB)

#### 12 Analytes

*n*-butylbenzene  
*sec*-butylbenzene  
*tert*-butylbenzene  
hexachlorobutadiene  
isopropylbenzene  
4-isopropyltoluene  
naphthalene  
*n*-propylbenzene  
1,2,3-trichlorobenzene  
1,2,4-trichlorobenzene  
1,2,4-trimethylbenzene  
1,3,5-trimethylbenzene

@ 50 µg/mL in Methanol

EPA-2043N	4 x 1 mL	***
EPA-2043N-1	1 x 1 mL	***

### VOC Mixture with MTBE

#### 55 Analytes

benzene	1,3-dichlorobenzene	<i>n</i> -propylbenzene
bromobenzene	1,4-dichlorobenzene	styrene
bromochloromethane	1,1-dichloroethane	1,1,1,2-tetrachloroethane
bromodichloromethane	1,2-dichloroethane	1,1,2,2-tetrachloroethane
bromoform	1,1-dichloroethene	tetrachloroethene
<i>n</i> -butylbenzene	<i>cis</i> -1,2-dichloroethene	toluene
<i>sec</i> -butylbenzene	<i>trans</i> -1,2-dichloroethene	1,2,3-trichlorobenzene
<i>tert</i> -butylbenzene	1,2-dichloropropane	1,2,4-trichlorobenzene
<i>tert</i> -butyl methyl ether	1,3-dichloropropane	1,1,1-trichloroethane
carbon tetrachloride	2,2-dichloropropane	1,1,2-trichloroethane
chlorobenzene	1,1-dichloropropene	trichloroethene
chloroform	<i>cis</i> -1,3-dichloropropene	1,2,3-trichloropropane
2-chlorotoluene	<i>trans</i> -1,3-dichloropropene	1,2,4-trimethylbenzene
4-chlorotoluene	ethylbenzene	1,3,5-trimethylbenzene
dibromochloromethane	hexachlorobutadiene	<i>o</i> -xylene
1,2-dibromo-3-chloropropane	isopropylbenzene	<i>m</i> -xylene
1,2-dibromoethane	4-isopropyltoluene	<i>p</i> -xylene
dibromomethane	methylene chloride	
1,2-dichlorobenzene	naphthalene	

@ 2000 µg/mL in Methanol

DWM-596	4 x 1 mL ULTRApak®	***
DWM-596-1	1 x 1 mL	***

### Haloalkanes Mixture

#### 35 Analytes

bromochloromethane	dichlorodifluoromethane	hexachlorobutadiene
bromodichloromethane	1,1-dichloroethane	methylene chloride
bromoform	1,2-dichloroethane	1,1,1,2-tetrachloroethane
bromomethane	1,1-dichloroethene	1,1,2,2-tetrachloroethane
carbon tetrachloride	<i>cis</i> -1,2-dichloroethene	tetrachloroethene
chloroethane	<i>trans</i> -1,2-dichloroethene	1,1,1-trichloroethane
chloroform	1,2-dichloropropane	1,1,2-trichloroethane
chloromethane	1,3-dichloropropane	trichloroethene
dibromochloromethane	2,2-dichloropropane	trichlorofluoromethane
1,2-dibromo-3-chloropropane	1,1-dichloropropene	1,2,3-trichloropropane
1,2-dibromoethane	<i>cis</i> -1,3-dichloropropene	vinyl chloride
dibromomethane	<i>trans</i> -1,3-dichloropropene	

@ 200 µg/mL in Methanol

DWM-540	4 x 1 mL	***
DWM-540-1	1 x 1 mL	***

## Aromatics Mixture

25 Analytes

benzene  
 bromobenzene  
*n*-butylbenzene  
*sec*-butylbenzene  
*tert*-butylbenzene  
 chlorobenzene  
 2-chlorotoluene  
 4-chlorotoluene  
 1,2-dichlorobenzene  
 1,3-dichlorobenzene  
 1,4-dichlorobenzene  
 ethylbenzene  
 isopropylbenzene  
 4-isopropyltoluene  
 naphthalene  
*n*-propylbenzene  
 styrene  
 toluene  
 1,2,3-trichlorobenzene  
 1,2,4-trichlorobenzene  
 1,2,4-trimethylbenzene  
 1,3,5-trimethylbenzene  
*o*-xylene  
*m*-xylene  
*p*-xylene

@ 200 µg/mL in Methanol

<b>DWM-570</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>DWM-570-1</b>	<b>1 x 1 mL</b>	<b>***</b>

## Aromatic Hydrocarbons Mixture

16 Analytes

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

@ 200 µg/mL in Methanol

<b>DWM-550</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>DWM-550-1</b>	<b>1 x 1 mL</b>	<b>***</b>

## Aromatic Halocarbons Mixture

9 Analytes

bromobenzene  
 chlorobenzene  
 2-chlorotoluene  
 4-chlorotoluene  
 1,2-dichlorobenzene  
 1,3-dichlorobenzene  
 1,4-dichlorobenzene  
 1,2,3-trichlorobenzene  
 1,2,4-trichlorobenzene

@ 200 µg/mL in Methanol

<b>DWM-560</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>DWM-560-1</b>	<b>1 x 1 mL</b>	<b>***</b>



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## Halomethanes Mixture

12 Analytes

bromochloromethane  
 bromodichloromethane  
 bromoform  
 bromomethane  
 carbon tetrachloride  
 chloroform  
 chloromethane  
 dibromochloromethane  
 dibromomethane  
 dichlorodifluoromethane  
 methylene chloride  
 trichlorofluoromethane

@ 200 µg/mL in Methanol

<b>DWM-510</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>DWM-510-1</b>	<b>1 x 1 mL</b>	<b>***</b>

## Haloethanes Mixture

14 Analytes

chloroethane  
 1,2-dibromoethane  
 1,1-dichloroethane  
 1,2-dichloroethane  
 1,1-dichloroethene  
*cis*-1,2-dichloroethene  
*trans*-1,2-dichloroethene  
 1,1,1,2-tetrachloroethane  
 1,1,2,2-tetrachloroethane  
 tetrachloroethene  
 1,1,1-trichloroethane  
 1,1,2-trichloroethane  
 trichloroethene  
 vinyl chloride

@ 200 µg/mL in Methanol

<b>DWM-520</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>DWM-520-1</b>	<b>1 x 1 mL</b>	<b>***</b>

## Halopropanes Mixture

9 Analytes

1,2-dibromo-3-chloropropane  
 1,2-dichloropropane  
 1,3-dichloropropane  
 2,2-dichloropropane  
 1,1-dichloropropene  
*cis*-1,3-dichloropropene  
*trans*-1,3-dichloropropene  
 hexachlorobutadiene  
 1,2,3-trichloropropane

@ 200 µg/mL in Methanol

<b>DWM-530</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>DWM-530-1</b>	<b>1 x 1 mL</b>	<b>***</b>

## Safe Drinking Water Act

### Phase II and Phase VIB Standards

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

#### Phase VIB Mixture

7 Analytes

acrylonitrile  
bromomethane  
*cis*-1,3-dichloropropene  
*trans*-1,3-dichloropropene  
hexachlorobutadiene  
1,1,1,2-tetrachloroethane  
1,2,3-trichloropropane

@ 2000 µg/mL in Methanol

<b>DWM-595</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>DWM-595-1</b>	<b>1 x 1 mL</b>	<b>***</b>

#### SDWA Volatiles Mixture

27 Analytes

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

@ 2000 µg/mL in Methanol

<b>DWM-594</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>DWM-594-1</b>	<b>1 x 1 mL</b>	<b>***</b>

#### Regulated VOC Mixture

12 Analytes

benzene  
bromodichloromethane  
bromoform  
carbon tetrachloride  
chloroform  
dibromochloromethane  
1,4-dichlorobenzene  
1,2-dichloroethane  
1,1-dichloroethene  
1,1,1-trichloroethane  
trichloroethene  
vinyl chloride

@ 2000 µg/mL in Methanol

<b>DWM-590</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>DWM-590-1</b>	<b>1 x 1 mL</b>	<b>***</b>

#### Promulgated VOC Mixture

12 Analytes

chlorobenzene  
1,2-dichlorobenzene  
*cis*-1,2-dichloroethene  
*trans*-1,2-dichloroethene  
1,2-dichloropropane  
ethylbenzene  
styrene  
tetrachloroethene  
toluene  
*o*-xylene  
*m*-xylene  
*p*-xylene

@ 2000 µg/mL in Methanol

<b>DWM-591</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>DWM-591-1</b>	<b>1 x 1 mL</b>	<b>***</b>



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**SDWA Herbicides Mixture***6 Analytes*

2,4-D	200 µg/mL
dalapon	1300 µg/mL
dinoseb	200 µg/mL
silvex (2,4,5-TP)	100 µg/mL
pentachlorophenol	100 µg/mL
picloram	100 µg/mL

**Acids Mixture***in Methanol*

<b>HBM-5154A</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>HBM-5154A-1</b>	<b>1 x 1 mL</b>	<b>***</b>

**Methylated Mixture***in Methanol*

<b>HBM-5154M</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>HBM-5154M-1</b>	<b>1 x 1 mL</b>	<b>***</b>

**SDWA SOCs Mixture***6 Analytes*

benzo[a]pyrene
bis(2-ethylhexyl) adipate
bis(2-ethylhexyl) phthalate
hexachlorobenzene
hexachlorocyclopentadiene
pentachlorophenol (@ 2000 µg/mL)

*@ 500 µg/mL in Acetone*

<b>SVM-500</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>SVM-500-1</b>	<b>1 x 1 mL</b>	<b>***</b>

**SDWA Carbamate Pesticides Mixture***2 Analytes*

carbofuran
oxamyl

*@ 100 µg/mL in Methanol*

<b>PPM-530B</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>PPM-530B-1</b>	<b>1 x 1 mL</b>	<b>***</b>

**Drinking Water Pesticides Mixture***14 Analytes*

alachlor
aldrin
atrazine
dieldrin
endrin
heptachlor
heptachlor epoxide - isomer B
hexachlorobenzene
hexachlorocyclopentadiene
lindane ( $\gamma$ -BHC)
methoxychlor
propachlor
simazine
trifluralin

*@ 100 µg/mL in Acetone*

<b>PPM-525F</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>PPM-525F-1</b>	<b>1 x 1 mL</b>	<b>***</b>



## EPA Method 525.1

### Organic Compounds

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

To read the complete method, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

### Recommended Standards

Calibration Standards: PM-525A  
PPM-525C  
PSM-525  
RPCM-525  
EPA-1161

Internal &  
Surrogate Standard: ISM-310

### Recommended Method 525.1 PAH Mixtures

#### 13 Analytes

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

#### @ 100 µg/mL in Acetone

**PM-525A** 4 x 1 mL \*\*\*  
**PM-525A-1** 1 x 1 mL \*\*\*

#### @ 500 µg/mL in Acetone

**PM-525B** 4 x 1 mL \*\*\*  
**PM-525B-1** 1 x 1 mL \*\*\*

### Recommended Method 525.1 Organochlorine Pesticides Mixes

#### 12 Analytes

alachlor  
aldrin  
atrazine  
α-chlordane  
γ-chlordane  
γ-BHC (*lindane*)  
endrin  
heptachlor  
heptachlor epoxide (B)  
methoxychlor  
*trans*-nonachlor  
simazine

#### @ 100 µg/mL in Acetone

**PPM-525C** 4 x 1 mL \*\*\*  
**PPM-525C-1** 1 x 1 mL \*\*\*

#### @ 500 µg/mL in Acetone

**PPM-525D** 4 x 1 mL \*\*\*  
**PPM-525D-1** 1 x 1 mL \*\*\*

### Drinking Water Pesticides Mixture

#### 14 Analytes

alachlor  
aldrin  
atrazine  
dieldrin  
endrin  
heptachlor  
heptachlor epoxide - isomer B  
hexachlorobenzene  
hexachlorocyclopentadiene  
*lindane* (*γ*-BHC)  
methoxychlor  
propachlor  
simazine  
trifluralin

#### @ 100 µg/mL in Acetone

**PPM-525F** 4 x 1 mL \*\*\*  
**PPM-525F-1** 1 x 1 mL \*\*\*

### Recommended Method 525.1 Extractables Mixtures

#### 9 Analytes

bis(2-ethylhexyl) adipate  
bis(2-ethylhexyl) phthalate  
butyl benzyl phthalate  
di-*n*-butyl phthalate  
diethyl phthalate  
dimethyl phthalate  
hexachlorobenzene  
hexachlorocyclopentadiene  
pentachlorophenol †

(† = @ 400 µg/mL in PSM-525)

(† = @ 2000 µg/mL in PSM-525A)

#### @ 100 µg/mL in Acetone

**PSM-525** 4 x 1 mL \*\*\*  
**PSM-525-1** 1 x 1 mL \*\*\*

#### @ 500 µg/mL in Acetone

**PSM-525A** 4 x 1 mL \*\*\*  
**PSM-525A-1** 1 x 1 mL \*\*\*

### Recommended Method 525.1 PCB Mixtures

#### 8 Analytes

2-chlorobiphenyl  
2,3-dichlorobiphenyl  
2,4,5-trichlorobiphenyl  
2,2',4,4'-tetrachlorobiphenyl  
2,2',3',4,6-pentachlorobiphenyl  
2,2',4,4',5,6'-hexachlorobiphenyl  
2,2',3,3',4,4',6-heptachlorobiphenyl  
2,2',3,3',4,5',6,6'-octachlorobiphenyl

#### @ 100 µg/mL in Acetone

**RPCM-525** 4 x 1 mL \*\*\*  
**RPCM-525-1** 1 x 1 mL \*\*\*

#### @ 500 µg/mL in Acetone

**RPCM-525A** 4 x 1 mL \*\*\*  
**RPCM-525A-1** 1 x 1 mL \*\*\*

## Recommended Method 525.1 Toxaphene Solutions

toxaphene

@ 1000 µg/mL in Methanol

**EPA-1161** 1 x 1 mL \*\*\*

@ 2500 µg/mL in Acetone

**PPS-240** 4 x 1 mL \*\*\*

**PPS-240-1** 1 x 1 mL \*\*\*

## Semi-Volatiles GC/MS Calibration Standard

decafluorotriphenylphosphine (DFTPP)

@ 100 µg/mL in Methylene Chloride

**IST-341** 4 x 1 mL \*\*\*

**IST-341-1** 1 x 1 mL \*\*\*

@ 1000 µg/mL in Acetone

**47995N** 4 x 1 mL \*\*\*

**47995N-1** 1 x 1 mL \*\*\*

## Recommended Method 525.1 Internal and Surrogate Standard Fortification Solutions

4 Analytes

acenaphthene-d<sub>10</sub>

chrysene-d<sub>12</sub>

phenanthrene-d<sub>10</sub>

perylene-d<sub>12</sub>

@ 500 µg/mL in Acetone

**ISM-310** 4 x 1 mL \*\*\*

**ISM-310-1** 1 x 1 mL \*\*\*

pyrene-d<sub>10</sub>

@ 500 µg/mL in Acetone

**IST-370** 4 x 1 mL \*\*\*

**IST-370-1** 1 x 1 mL \*\*\*

*p*-terphenyl-d<sub>14</sub>

@ 500 µg/mL in Methylene Chloride

**ATS-161** 4 x 1 mL \*\*\*

**ATS-161-1** 1 x 1 mL \*\*\*

## Technical Note

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

## Chlordane Solutions

chlordanes

@ 100 µg/mL in Methanol

**PP-150** 4 x 1 mL \*\*\*

**PP-150-1** 1 x 1 mL \*\*\*

@ 5000 µg/mL in Methanol

**EPA-1086** 1 x 1 mL \*\*\*

## EPA Method 525.1 Kit

Kit - contains six ampules:

1 x 1 mL of each of the following standards

PAH Mixture (PM-525A-1)

Extractables Mixture (PSM-525-1)

PCB Mixture (RPCM-525-1)

Pesticides Mixture (PPM-525C-1)

Toxaphene Solution (EPA-1161)

Internal & Surrogate Std (ISM-310-1)

**DWM-525K-C** Kit \*\*\*

## SDWA SOCs Mixture

6 Analytes

benzo[a]pyrene

bis(2-ethylhexyl) adipate

bis(2-ethylhexyl) phthalate

hexachlorobenzene

hexachlorocyclopentadiene

pentachlorophenol (@ 2000 µg/mL)

@ 500 µg/mL in Acetone

**SVM-500** 4 x 1 mL \*\*\*

**SVM-500-1** 1 x 1 mL \*\*\*

## EPA Method 525.1 w/ Chlordane Kit

Kit - contains seven ampules:

1 x 1 mL of each of the following standards

PAH Mixture (PM-525A-1)

Extractables Mixture (PSM-525-1)

PCB Mixture (RPCM-525-1)

Pesticides Mixture (PPM-525C-1)

Toxaphene Solution (EPA-1161)

Chlordane Solution (EPA-1086)

Internal & Surrogate Std (ISM-310-1)

**DWM-525K-D** Kit \*\*\*



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## EPA Method 525.2

### Organic Compounds

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

To read the complete method, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

### Recommended Standards

Calibration Standards: SVM-525  
PPM-525E  
NPM-525C  
NPM-525B  
PPS-240  
NPM-108B

Internal &  
Surrogate Standards: ISM-510  
ISM-511X

### Technical Notes

Merphos is partially converted to DEF in the GC injector. The conversion is not reproducible. Therefore, merphos cannot be quantitated, and can only be identified by the presence of DEF in the sample.

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

### Recommended Method 525.2 Nitrogen/Phosphorus Pesticide Mixture

6 Analytes

carboxin	fenamiphos
diazinon	merphos
disulfoton	terbufos

@ 100 µg/mL in Acetone

<b>NPM-525B</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>NPM-525B-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### Recommended Method 525.2 Semi-Volatiles Mixture

33 Analytes

acenaphthylene  
anthracene  
benz[a]anthracene  
benzo[b]fluoranthene  
benzo[k]fluoranthene  
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 (@ 400 µg/mL)  
phenanthrene  
pyrene  
2,2',4,4'-tetrachlorobiphenyl  
2,4,5-trichlorobiphenyl

@ 100 µg/mL in Acetone

<b>SVM-525</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>SVM-525-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### Recommended Method 525.2 Toxaphene Standards

toxaphene

@ 1000 µg/mL in Methanol

<b>EPA-1161</b>	<b>1 x 1 mL</b>	<b>***</b>
-----------------	-----------------	------------

@ 2500 µg/mL in Acetone

<b>PPS-240</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>PPS-240-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### Recommended Method 525.2 Organochlorine Pesticides Mixture

29 Analytes

alachlor	dieldrin
aldrin	endosulfan I
atrazine	endosulfan II
α-BHC	endosulfan sulfate
β-BHC	endrin
γ-BHC (lindane)	endrin aldehyde
δ-BHC	etridiazole
chlorobenzilate	α-chlordane
chlorothalonil	γ-chlordane
chloroneb	heptachlor
dacthal (DCPA)	heptachlor epoxide
4,4'-DDD	methoxychlor
4,4'-DDT	<i>trans</i> -nonachlor
4,4'-DDE	simazine
permethrin, mixed isomers (@ 200 µg/mL)	

@ 100 µg/mL in Acetone

<b>PPM-525E</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>PPM-525E-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### Recommended Method 525.2 Nitrogen/Phosphorus Pesticides Mixture

40 Analytes

alachlor	mevinphos
ametryn	MGK-264 (mix)
atraton	molinate
atrazine	napropamide
bromacil	norflurazon
butachlor	pebulate
butylate	prometon
chlorpropham	prometryn
chlorpyrifos	pronamide
cycloate	propachlor
cyanazine	propazine
dichlorvos	simetryn
diphenamid	stirofos
EPTC	tebuthiuron
ethoprop	terbacil
fenarimol	terbutryn
fluridone	triadimefon
hexazinone	tricyclazole
methyl paraoxon	trifluralin
metolachlor	vernolate

@ 100 µg/mL in Acetone

<b>NPM-525C</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>NPM-525C-1</b>	<b>1 x 1 mL</b>	<b>***</b>

## Recommended Method 525.2 Internal and Surrogate Standard Fortification Solution

### 7 Analytes

acenaphthene-d<sub>10</sub>  
phenanthrene-d<sub>10</sub>  
chrysene-d<sub>12</sub>  
1,3-dimethyl-2-nitrobenzene  
perylene-d<sub>12</sub>  
triphenylphosphate  
pyrene-d<sub>10</sub>

@ 500 µg/mL in Acetone

**ISM-510**      4 x 1 mL      \*\*\*  
**ISM-510-1**    1 x 1 mL      \*\*\*

## Surrogate Standard Fortification Solution

### 4 Analytes

1,3-dimethyl-2-nitrobenzene  
perylene-d<sub>12</sub>  
triphenylphosphate  
pyrene-d<sub>10</sub>

@ 500 µg/mL in Acetone

**ISM-530**      4 x 1 mL      \*\*\*  
**ISM-530-1**    1 x 1 mL      \*\*\*

## Internal Standard Fortification Solution

### 3 Analytes

acenaphthene-d<sub>10</sub>  
phenanthrene-d<sub>10</sub>  
chrysene-d<sub>12</sub>

@ 500 µg/mL in Acetone

**ISM-520**      4 x 1 mL      \*\*\*  
**ISM-520-1**    1 x 1 mL      \*\*\*

## GC/MS Performance Check Solution

### 3 Analytes

decafluorotriphenylphosphine (DFTPP)  
endrin  
4,4'-DDT

@ 1000 µg/mL in Acetone

**GCM-160A**    4 x 1 mL      \*\*\*  
**GCM-160A-1** 1 x 1 mL      \*\*\*

## EPA Method 525.2 Kit

### Kit - contains eight ampules:

1 x 1 mL of each of the following standards

Semi-Volatiles Mixture (SVM-525-1)  
Pesticides Mixture (PPM-525E-1)  
Pesticides Mixture (NPM-525C-1)  
Pesticides Mixture (NPM-525B-1)  
Toxaphene Solution (PPS-240-1)  
DEF Solution (NPM-108B-1)  
Internal & Surrogate Std. (ISM-510-1)  
Performance Check Soln. (GCM-160A-1)

**DWK-5252**      Kit      \*\*\*

## EPA Method 525.2 w/ Chlordane Kit

### Kit - contains nine ampules:

1 x 1 mL of each of the following standards

Semi-Volatiles Mixture (SVM-525-1)  
Pesticides Mixture (PPM-525E-1)  
Pesticides Mixture (NPM-525C-1)  
Pesticides Mixture (NPM-525B-1)  
Toxaphene Solution (PPS-240-1)  
Chlordane Solution (EPA-1086)  
DEF Solution (NPM-108B-1)  
Internal & Surrogate Std. (ISM-510-1)  
Performance Check Soln. (GCM-160A-1)

**DWK-5253**      Kit      \*\*\*

## Semi-Volatiles GC/MS Calibration Standard

decafluorotriphenylphosphine (DFTPP)

@ 100 µg/mL in Methylene Chloride

**IST-341**      4 x 1 mL      \*\*\*  
**IST-341-1**    1 x 1 mL      \*\*\*

@ 1000 µg/mL in Acetone

**47995N**      4 x 1 mL      \*\*\*  
**47995N-1**    1 x 1 mL      \*\*\*

## Chlordane Standards

chlordane

@ 100 µg/mL in Methanol

**PP-150**      4 x 1 mL      \*\*\*  
**PP-150-1**    1 x 1 mL      \*\*\*

@ 5000 µg/mL in Methanol

**EPA-1086**    1 x 1 mL      \*\*\*

## DEF Standard

DEF

@ 500 µg/mL in Acetone

**NPM-108B**    4 x 1 mL      \*\*\*  
**NPM-108B-1** 1 x 1 mL      \*\*\*

## Shooters® – Open and Shoot Spiking Standards

### No Dilution Required

Shooters® are ready-to-shoot spiking solutions at the working concentrations specified by the EPA methods. Just open the bottle and spike the sample.

Since these working level solutions are packaged in convenient bottles rather than ampules, follow the EPA protocols for storage and stability checking of working standards. Refer to the EPA method you are using for the specific protocol.

## Recommended Method 525.2 Internal and Surrogate Standard Fortification Shooters®

### 7 Analytes

acenaphthene-d<sub>10</sub>  
phenanthrene-d<sub>10</sub>  
chrysene-d<sub>12</sub>  
1,3-dimethyl-2-nitrobenzene  
perylene-d<sub>12</sub>  
triphenylphosphate  
pyrene-d<sub>10</sub>

@ 50 µg/mL in Acetone

**ISM-511X**      25 mL      \*\*\*

## 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.

To read the complete method, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

### Recommended Standards

Calibration Standard: SVM-526

Surrogate Standard: ISM-690

Internal Standard: ISM-520

### Recommended Method 526 Calibration Standard

#### 11 Analytes

acetochlor  
cyanazine  
diazinon  
2,4-dichlorophenol  
1,2-diphenylhydrazine  
disulfoton  
fonofos  
nitrobenzene  
prometon  
terbufos  
2,4,6-trichlorophenol

@ 200 µg/mL in Ethyl Acetate

<b>SVM-526</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>SVM-526-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### Recommended Method 526 Surrogate Standard

#### 2 Analytes

1,3-dimethyl-2-nitrobenzene  
triphenylphosphate

@ 500 µg/mL in Acetone

<b>ISM-690</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>ISM-690-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### Recommended Method 526 Internal Standard Solution

#### 3 Analytes

acenaphthene-d<sub>10</sub>  
phenanthrene-d<sub>10</sub>  
chrysene-d<sub>12</sub>

@ 500 µg/mL in Acetone

<b>ISM-520</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>ISM-520-1</b>	<b>1 x 1 mL</b>	<b>***</b>

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## 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.

To read the complete method, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

### Recommended Standards

Calibration Standards:	PPM-527A
	PPM-527B
	PPM-527C
Surrogate Standard:	ISM-710
Internal Standard:	ISM-520

### Recommended Method 527 Pesticides Mixture #1

#### 16 Analytes

atrazine  
bifenthrin  
bromacil  
S-bioallethrin (*esbiol*)  
asana (esfenvalerate)  
fenvalerate  
hexazinone  
kepone  
mirex  
nitrofen  
norflurazon  
oxychlordane  
prometryn  
propazine  
thiobencarb (*benthiocarb*)  
vinclozolin

#### @ 500 µg/mL in Ethyl Acetate

<b>PPM-527A-1</b>	<b>1 x 1 mL</b>	<b>***</b>
<b>PPM-527A</b>	<b>4 x 1 mL</b>	<b>***</b>

### Recommended Method 527 Pesticides Mixture #2

#### 5 Analytes

chlorpyrifos  
dimethoate  
malathion  
parathion  
terbufos sulfone

#### @ 500 µg/mL in Ethyl Acetate

<b>PPM-527B-1</b>	<b>1 x 1 mL</b>	<b>***</b>
<b>PPM-527B</b>	<b>4 x 1 mL</b>	<b>***</b>

### Recommended Method 527 PDBE Mixture

#### 5 Analytes

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

#### @ 500 µg/mL in Ethyl Acetate

<b>PPM-527C-1</b>	<b>1 x 1 mL</b>	<b>***</b>
<b>PPM-527C</b>	<b>4 x 1 mL</b>	<b>***</b>

### Recommended Method 527 Surrogate Standard Mixture

#### 3 Analytes

1,3-dimethyl-2-nitrobenzene  
perylene-d<sub>12</sub>  
triphenyl phosphate (*TPP*)

#### @ 500 µg/mL in Acetone

<b>ISM-710-1</b>	<b>1 x 1 mL</b>	<b>***</b>
<b>ISM-710</b>	<b>4 x 1 mL</b>	<b>***</b>

### Recommended Method 527 Internal Standard Solution

#### 3 Analytes

acenaphthene-d<sub>10</sub>  
phenanthrene-d<sub>10</sub>  
chrysene-d<sub>12</sub>

#### @ 500 µg/mL in Acetone

<b>ISM-520</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>ISM-520-1</b>	<b>1 x 1 mL</b>	<b>***</b>



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## 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.

To read the complete method, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

### Recommended Standards

Calibration Standard: NAIM-529A

Surrogate Standards: IST-705  
IST-706  
IST-210

Internal Standard: IST-704

### Recommended Method 529 Calibration Standard

#### 14 Analytes

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*)

#### @ 100 µg/mL in Ethyl Acetate

**NAIM-529A** 4 x 1 mL \*\*\*  
**NAIM-529A-1** 1 x 1 mL \*\*\*

### Recommended Method 529 Internal and Surrogate Standards

	4 x 1 mL ULTRApaks®		1 x 1 mL Ampules	20 or More Ampules
<i>@ 2000 µg/mL in Ethyl Acetate</i>				
<b>3,4-dinitrotoluene</b>	IST-704	***	IST-704-1	***
<i>All @ 1000 µg/mL in Methanol</i>				
<b>1,3,5-trimethyl-2-nitrobenzene (2-nitromesitylene)</b>	IST-705	***	IST-705-1	***
<b>1,2,4-trimethyl-5-nitrobenzene (2-pseudocumene)</b>	IST-706	***	IST-706-1	***
<i>@ 1000 µg/mL in Methylene Chloride</i>				
<b>nitrobenzene-d<sub>5</sub></b>	IST-210	***	IST-210-1	***

## EPA Methods 531.1, 531.2

### N-Methylcarbamoyloximes and N-Methylcarbamates

Methods 531.1 and 531.2 are used to measure N-methylcarbamoyloximes and N-methylcarbamates. It uses direct injection of the sample on HPLC, with post-column derivatization and a fluorescence detector.

To read the complete method, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

#### Recommended Method 531.1 Carbamate Pesticides Mixture

##### 10 Analytes

aldicarb  
aldicarb sulfone  
aldicarb sulfoxide  
carbaryl  
carbofuran  
3-hydroxycarbofuran  
methiocarb  
methomyl  
oxamyl  
propoxur (*baygon*)

##### @ 100 µg/mL in Methanol

<b>PPM-530</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>PPM-530-1</b>	<b>1 x 1 mL</b>	<b>***</b>

#### Recommended Method 531.2 Carbamate Pesticides Mixture

##### 11 Analytes

aldicarb  
aldicarb sulfone  
aldicarb sulfoxide  
carbaryl  
carbofuran  
1-naphthol  
3-hydroxycarbofuran  
methiocarb  
methomyl  
oxamyl  
propoxur (*baygon*)

##### @ 100 µg/mL in Methanol

<b>PPM-530C</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>PPM-530C-1</b>	<b>1 x 1 mL</b>	<b>***</b>

#### SDWA Carbamate Pesticides Mixture

##### 2 Analytes

carbofuran  
oxamyl

##### @ 100 µg/mL in Methanol

<b>PPM-530B</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>PPM-530B-1</b>	<b>1 x 1 mL</b>	<b>***</b>

#### Internal & Surrogate Standard Solution (BDMC)

4-bromo-3,5-dimethylphenyl  
N-methylcarbamate (*BDMC*)

##### @ 100 µg/mL in Methanol

<b>PPS-180</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>PPS-180-1</b>	<b>1 x 1 mL</b>	<b>***</b>

#### Laboratory Performance Check Solution

##### 4 Analytes

aldicarb sulfoxide	100 µg/mL
3-hydroxycarbofuran	2 µg/mL
methiocarb	20 µg/mL
BDMC	10 µg/mL

##### in Methanol

<b>PPM-531</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>PPM-531-1</b>	<b>1 x 1 mL</b>	<b>***</b>



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## 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

To read the complete method, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

#### Recommended Standards

Calibration Standard PPM-532

Surrogate Standard PPM-532A

#### Recommended Method 532 Calibration Standard

##### 8 Analytes

diflubenzuron  
diuron  
fluometuron  
linuron  
propanil  
siduron  
tebuthiuron  
thidiazuron

@ 200 µg/mL in Methanol / Acetone

**PPM-532** 4 x 1 mL \*\*\*  
**PPM-532-1** 1 x 1 mL \*\*\*

#### Recommended Method 532 Surrogate Standard

##### 2 Analytes

carbazole  
monuron

@ 500 µg/mL in Methanol / Acetonitrile

**PPM-532A** 4 x 1 mL \*\*\*  
**PPM-532A-1** 1 x 1 mL \*\*\*



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## 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.

To read the complete method, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

#### Recommended Standards

Calibration Standard: PPM-535

Internal Standard: PPS-450

Surrogate Standard: PPS-440

#### Recommended UCMR Acetanilide Pesticide Degradates Mixture

##### 6 Analytes

acetochlor ESA 20 µg/mL  
acetochlor OA 40 µg/mL  
alachlor ESA 20 µg/mL  
alachlor OA 40 µg/mL  
metolachlor ESA 80 µg/mL  
metolachlor OA 10 µg/mL

in Methanol

**PPM-535** 4 x 1 mL \*\*\*  
**PPM-535-1** 1 x 1 mL \*\*\*

#### Recommended Method 535 Surrogate & Internal Standards

dimethachlor ESA

@ 20 µg/mL in Methanol

**PPS-440** 4 x 1 mL \*\*\*  
**PPS-440-1** 1 x 1 mL \*\*\*

butachlor ESA

@ 20 µg/mL in Methanol

**PPS-450** 4 x 1 mL \*\*\*  
**PPS-450-1** 1 x 1 mL \*\*\*



## EPA Method 547

### Glyphosate

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

#### Recommended Method 547 Glyphosate Solution

glyphosate

@ 100 µg/mL in Water

PPS-190	4 x 1 mL	***
PPS-190-1	1 x 1 mL	***

## EPA Methods 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 the method.

To read the complete method, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

#### Recommended Method 548 Endothall Solution

endothall

@ 50 µg/mL in Water

PPS-210	4 x 1 mL	***
PPS-210-1	1 x 1 mL	***

#### Recommended Method 548.1 Endothall Solution

endothall

@ 50 µg/mL in Methanol

PPS-211	4 x 1 mL	***
PPS-211-1	1 x 1 mL	***

### Recommended Standards

#### Method 548

Calibration Standard PPS-210

Internal Standard PPS-220

#### Method 548.1

Calibration Standard PPS-211

Internal Standard ATS-111

#### Recommended Method 548 Internal Standard Solution

endosulfan I

@ 10 µg/mL in Methyl tert-Butyl Ether

PPS-220	4 x 1 mL	***
PPS-220-1	1 x 1 mL	***

#### Recommended Method 548.1 Internal Standard Solution

acenaphthene-d<sub>10</sub>

@ 500 µg/mL in Methanol

ATS-111	4 x 1 mL	***
ATS-111-1	1 x 1 mL	***

#### Calibration Standard Solution

endothall-PPFH

@ 100 µg/mL in Methyl tert-Butyl Ether

PPS-231	4 x 1 mL	***
PPS-231-1	1 x 1 mL	***

#### Calibration Standard Solution

dimethyl endothall

@ 50 µg/mL in Methanol

PPS-280	4 x 1 mL	***
PPS-280-1	1 x 1 mL	***

## 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.

To read the complete method, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

### Recommended Standards

Calibration Standard: PPM-549

### Recommended Method 549.2 Diquat and Paraquat Mixture

#### 2 Analytes

diquat (as dibromide)  
paraquat (as dichloride)

(Concentrations corrected to  
1000 µg/mL of each pesticide.)

#### @ 1000 µg/mL in Water

<b>PPM-549</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>PPM-549-1</b>	<b>1 x 1 mL</b>	<b>***</b>



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## EPA Methods 550, 550.1

### Polycyclic Aromatic Hydrocarbons

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

To read the complete method, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

### Recommended Standards

Calibration Standard: PM-551

Internal Standards: PPS-270  
PPS-271

### Recommended Method 550, 550.1 PAH Fortification Mixture

#### 16 Analytes

acenaphthene	1000 µg/mL
acenaphthylene	1000 µg/mL
anthracene	62.5 µg/mL
benz[a]anthracene	1 µg/mL
benzo[b]fluoranthene	1 µg/mL
benzo[k]fluoranthene	1.25 µg/mL
benzo[ghi]perylene	5 µg/mL
benzo[a]pyrene	5 µg/mL
chrysene	62.5 µg/mL
dibenz[a,h]anthracene	12.5 µg/mL
fluoranthene	2.5 µg/mL
fluorene	100 µg/mL
indeno[1,2,3-cd]pyrene	12.5 µg/mL
naphthalene	1000 µg/mL
phenanthrene	50 µg/mL
pyrene	62.5 µg/mL

#### in Acetonitrile

<b>PM-551</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>PM-551-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### Recommended Method 550, 550.1 Internal Standard Solutions

4,4'-difluorobiphenyl

#### @ 100 µg/mL in Acetonitrile

<b>PPS-270</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>PPS-270-1</b>	<b>1 x 1 mL</b>	<b>***</b>

#### @ 2000 µg/mL in Acetone

<b>PPS-271</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>PPS-271-1</b>	<b>1 x 1 mL</b>	<b>***</b>

## 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.

To read the complete method, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

### Recommended Standards

Calibration Standards: HCM-551D  
PPM-551B  
EPA-1244  
PST-1535S

Internal Standard: STS-113

Surrogate Standard: IST-152

### Technical Notes

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

### Additional Compounds

chloral hydrate

@ 1000 µg/mL in Methanol

**EPA-1244** 1 x 1 mL \*\*\*

metribuzin

@ 100 µg/mL in Methanol

**PST-1535M100A01** 1 x 1 mL \*\*\*

### Recommended Method 551.1 Disinfection By-products and Chlorinated Solvents Mixture

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

@ 2000 µg/mL in Acetone

**HCM-551D** 4 x 1 mL \*\*\*  
**HCM-551D-1** 1 x 1 mL \*\*\*

### Recommended Method 551.1 Pesticides Mixture

16 Analytes

alachlor  
atrazine  
γ-BHC (lindane)  
bromacil  
cyanazine  
endrin  
endrin aldehyde  
endrin ketone  
heptachlor  
heptachlor epoxide (B)  
hexachlorobenzene  
hexachlorocyclopentadiene  
methoxychlor  
metolachlor  
simazine  
trifluralin

@ 100 µg/mL in Acetone

**PPM-551B** 4 x 1 mL \*\*\*  
**PPM-551B-1** 1 x 1 mL \*\*\*

### Disinfection By-products Mixture

7 Analytes

bromochloroacetonitrile  
chloropicrin  
dibromoacetonitrile  
dichloroacetonitrile  
1,1-dichloro-2-propanone  
trichloroacetonitrile  
1,1,1-trichloro-2-propanone

@ 5000 µg/mL in Acetone

**HCM-551B** 4 x 1 mL \*\*\*  
**HCM-551B-1** 1 x 1 mL \*\*\*

### Recommended Method 551.1 Surrogate Standard Solution

decafluorobiphenyl

@ 1000 µg/mL in Acetone

**IST-152** 4 x 1 mL \*\*\*  
**IST-152-1** 1 x 1 mL \*\*\*

### Recommended Method 551.1 Internal Standard Solution

4-bromofluorobenzene (BFB)

@ 1000 µg/mL in Acetone

**STS-113** 4 x 1 mL \*\*\*  
**STS-113-1** 1 x 1 mL \*\*\*

### Method 551.1 Laboratory Performance Check Solution

7 Analytes

alachlor 83 µg/mL  
γ-BHC (lindane) 0.2 µg/mL  
bromacil 83 µg/mL  
bromodichloromethane 30 µg/mL  
endrin 30 µg/mL  
hexachlorocyclopentadiene 20 µg/mL  
trichloroethene 30 µg/mL

in Acetone

**HCM-551E** 4 x 1 mL \*\*\*  
**HCM-551E-1** 1 x 1 mL \*\*\*

## EPA Methods 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. They are ion exchange liquid-solid extraction followed by GC methods, using a capillary column and electron capture detector.

To read the complete methods, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

### Recommended Standards

#### Method 552

Calibration Standard: PHM-552A

Internal Standard: PPS-250

Surrogate Standards: PPS-261  
PPS-290

#### Method 552.1

Calibration Standard: PHM-5521A

Internal Standard: PPS-251

Surrogate Standard: PPS-300

#### Method 552.2

Calibration Standards: PHM-5523A  
PHM-5524A

Internal Standard: PPS-251

Surrogate Standard: PPS-390

#### Method 552.3

Calibration Standard: PHM-5524A

Internal Standard: PPS-251

Surrogate Standard: PPS-430

### Recommended Method 552 Haloacetic Acids Mixtures

#### 8 Analytes

chloroacetic acid  
dichloroacetic acid  
trichloroacetic acid  
2,4-dichlorophenol  
bromoacetic acid  
bromochloroacetic acid  
dibromoacetic acid  
2,4,6-trichlorophenol

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

#### Acids Mixture

@ 1000 µg/mL in Methyl tert-Butyl Ether

PHM-552A-4 4 x 1 mL \*\*\*

PHM-552A 1 x 1 mL \*\*\*

#### Methylated Mixture

@ 1000 µg/mL in Methyl tert-Butyl Ether

PHM-552M-4 4 x 1 mL \*\*\*

PHM-552M 1 x 1 mL \*\*\*

### ICR Haloacetic Acids Mixtures

#### 11 Analytes

chloroacetic acid	3000 µg/mL
chlorodibromoacetic acid	2000 µg/mL
dichloroacetic acid	3000 µg/mL
trichloroacetic acid	1000 µg/mL
bromoacetic acid	2000 µg/mL
bromochloroacetic acid	2000 µg/mL
bromodichloroacetic acid	2000 µg/mL
dibromoacetic acid	1000 µg/mL
tribromoacetic acid	1000 µg/mL
dalapon	2000 µg/mL
2-bromopropionic acid	1000 µg/mL

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

#### Acids Mixture

in Methyl tert-Butyl Ether

PHM-5522A 4 x 1 mL \*\*\*

PHM-5522A-1 1 x 1 mL \*\*\*

#### Methylated Mixture

in Methyl tert-Butyl Ether

PHM-5522M 4 x 1 mL \*\*\*

PHM-5522M-1 1 x 1 mL \*\*\*



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### Recommended Method 552.1 Haloacetic Acids Mixtures

#### 7 Analytes

chloroacetic acid	3000 µg/mL
dichloroacetic acid	3000 µg/mL
trichloroacetic acid	1000 µg/mL
bromoacetic acid	2000 µg/mL
bromochloroacetic acid	2000 µg/mL
dibromoacetic acid	1000 µg/mL
dalapon	2000 µg/mL

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

#### Acids Mixture

*in Methyl tert-Butyl Ether*

PHM-5521A	4 x 1 mL	***
PHM-5521A-1	1 x 1 mL	***

#### Methylated Mixture

*in Methyl tert-Butyl Ether*

PHM-5521M	4 x 1 mL	***
PHM-5521M-1	1 x 1 mL	***

### Recommended Method 552.2 Haloacetic Acids Mixture

#### 11 Analytes

chloroacetic acid	600 µg/mL
chlorodibromoacetic acid	1000 µg/mL
dichloroacetic acid	600 µg/mL
trichloroacetic acid	200 µg/mL
bromoacetic acid	400 µg/mL
bromochloroacetic acid	400 µg/mL
bromodichloroacetic acid	400 µg/mL
dibromoacetic acid	200 µg/mL
tribromoacetic acid	2000 µg/mL
dalapon	400 µg/mL
2,3-dibromopropionic acid	1000 µg/mL

#### Acids Mixture

*in Methyl tert-Butyl Ether*

PHM-5523A	4 x 1 mL	***
PHM-5523A-1	1 x 1 mL	***

### Recommended Methods 552.2, 552.3 Haloacetic Acids Mixtures, No Surrogate

#### 10 Analytes

chloroacetic acid	600 µg/mL
chlorodibromoacetic acid	1000 µg/mL
dichloroacetic acid	600 µg/mL
trichloroacetic acid	200 µg/mL
bromoacetic acid	400 µg/mL
bromochloroacetic acid	400 µg/mL
bromodichloroacetic acid	400 µg/mL
dibromoacetic acid	200 µg/mL
tribromoacetic acid	2000 µg/mL
dalapon	400 µg/mL

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

#### Acids Mixture

*in Methyl tert-Butyl Ether*

PHM-5524A	4 x 1 mL	***
PHM-5524A-1	1 x 1 mL	***

#### Methylated Mixture

*in Methyl tert-Butyl Ether*

PHM-5524M	4 x 1 mL	***
PHM-5524M-1	1 x 1 mL	***

### Recommended Method 552, 552.1, 552.2, & 552.3 Internal and Surrogate Standards

		4 x 1 mL ULTRApaks®		1 x 1 mL Ampules		20 or More Ampules	
<i>All @ 1000 µg/mL in Methyl tert-Butyl Ether</i>							
552	3,5-dichlorobenzoic acid	PPS-261	***	PPS-261-1	***		
552	methyl-3,5-dichlorobenzoate	PPS-262	***	PPS-262-1	***		
552	2,3-dichloropropanoic acid	PPS-290	***	PPS-290-1	***		
552.1	2-bromopropionic acid	PPS-300	***	PPS-300-1	***		
552.1	methyl 2-bromopropionate	PPS-301	***	PPS-301-1	***		
552.2	2,3-dibromopropionic acid	PPS-390	***	PPS-390-1	***		
552.3	2-bromobutanoic acid	PPS-430	***	PPS-430-1	***		
552.1, 552.2	1,2,3-trichloropropane	PPS-251	***	PPS-251-1	***		
<i>@ 1000 µg/mL in Methanol</i>							
552, 552.3	1,2,3-trichloropropane	PPS-250	***	PPS-250-1	***		

## EPA Method 554

### Carbonyl Compounds

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

To read the complete method, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

### Recommended Standards

Calibration Standard: ALD-554

### Recommended Method 554 Carbonyl Compounds Mixture

#### 12 Analytes

formaldehyde  
acetaldehyde  
propanal  
butanal  
pentanal  
hexanal  
heptanal  
octanal  
nonanal  
decanal  
cyclohexanone  
crotonaldehyde

@ 1000 µg/mL in Methanol

<b>ALD-554</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>ALD-554-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### Derivatized Carbonyl Compounds Mixture

#### 12 Analytes

formaldehyde-DNPH  
acetaldehyde-DNPH  
propanal-DNPH  
butanal-DNPH  
pentanal-DNPH  
hexanal-DNPH  
heptanal-DNPH  
octanal-DNPH  
nonanal-DNPH  
decanal-DNPH  
cyclohexanone-DNPH  
crotonaldehyde-DNPH

@ 1000 µg/mL in Methanol/Acetonitrile (9:1)

<b>ALD-554D</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>ALD-554D-1</b>	<b>1 x 1 mL</b>	<b>***</b>

## EPA Method 555

### Chlorinated Acids

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

To read the complete method, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

### Recommended Standards

Calibration Standards: HBM-555A  
HBM-555B

### Recommended Method 555 Chlorinated Acids Mixture A

#### 8 Analytes

acifluorfen  
bentazon  
chloramben  
2,4-D  
dicamba  
dichlorprop  
picloram  
silvex (2,4,5-TP)

@ 1000 µg/mL in Acetonitrile

<b>HBM-555A</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>HBM-555A-1</b>	<b>1 x 1 mL</b>	<b>***</b>

### Recommended Method 555 Chlorinated Acids Mixture B

#### 8 Analytes

2,4-DB  
3,5-dichlorobenzoic acid  
4-nitrophenol  
dinoseb  
MCPA  
MCPD  
pentachlorophenol  
2,4,5-T

@ 1000 µg/mL in Acetonitrile

<b>HBM-555B</b>	<b>4 x 1 mL</b>	<b>***</b>
<b>HBM-555B-1</b>	<b>1 x 1 mL</b>	<b>***</b>

## EPA Methods 556, 556.1

### Carbonyl Compounds

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

To read the complete method, log onto our website at [www.ultrasci.com](http://www.ultrasci.com).

### Recommended Standards

Calibration Standard: ALD-556X

Internal Standard: PPS-400

Surrogate Standard: PPS-410

### Recommended Method 556 Aldehydes Mixture

#### 14 Analytes

formaldehyde  
acetaldehyde  
propanal  
butanal  
pentanal  
hexanal  
heptanal  
octanal  
nonanal  
decanal  
cyclohexanone  
benzaldehyde  
glyoxal  
methyl glyoxal

@ 100 µg/mL in Acetonitrile / Water

**ALD-556X**    1 x 2 mL    \*\*\*

### Recommended Method 556 Internal and Surrogate Standards

1,2-dibromopropane

@ 10,000 µg/mL in Hexane

**PPS-400**    4 x 1 mL    \*\*\*

**PPS-400-1**    1 x 1 mL    \*\*\*

2',4',5'-trifluoroacetophenone

@ 10,000 µg/mL in Acetonitrile

**PPS-410**    4 x 1 mL    \*\*\*

**PPS-410-1**    1 x 1 mL    \*\*\*



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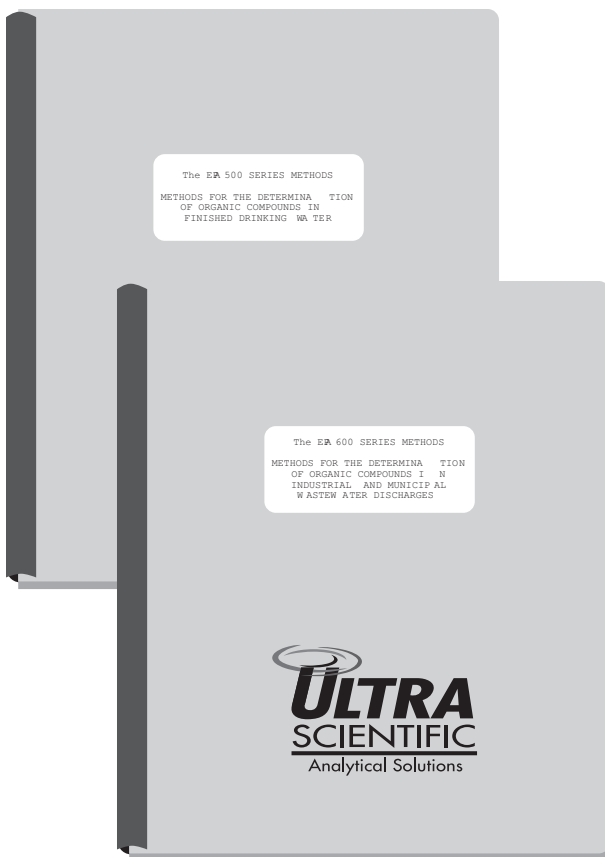
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**The EPA 600 Series Methods**

***Methods for the Determination of Organic Compounds in Industrial and Municipal Wastewater Discharges***

The US EPA 600 series methods are compiled in this manual. Methods included are 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 624, and 625. Each method includes sections on scope and application, summary of method, apparatus and materials, calibration, sample collection, method procedures, and calculations. 210 pp., 1984.

**HSS-600**                      **each**                      **\*\*\***

**The EPA 500 Series Methods and Supplements**

***Methods for the Determination of Organic Compounds in Finished Drinking Water***

The complete US EPA 500 series methods are compiled in this manual. Methods included are 502.1, 502.2, 503.1, 504, 505, 507, 508, 508A, 515.1, 524.1, 524.2, 525.1, and 531.1. Each method includes sections on scope and application, summary of method, apparatus and equipment, sample collection, calibration and standardization, quality control, method procedures, and calculations. 382 pp., Revised 1991.

**HSS-501A**                      **each**                      **\*\*\***

***Methods for the Determination of Organic Compounds in Finished Drinking Water, Supplement I***

The first group of supplemental US EPA 500 series methods are compiled in this manual. Methods included are 506, 513, 547, 548, 549, 550, 550.1, 551, 552. Each method includes sections on scope and application, apparatus and equipment, sample collection, calibration and standardization, quality control, method procedures, and calculations. 232 pp., 1990.

**HSS-502**                      **each**                      **\*\*\***

***Methods for the Determination of Organic Compounds in Finished Drinking Water, Supplement I***

The second group of supplemental US EPA 500 series methods are compiled in this manual. Methods included are 524.2, 515.2, 548.1, 549.1, 552.1, 553, 554, and 555. Each method includes sections on scope and application, apparatus and equipment, sample collection, calibration and standardization, quality control, method procedures, and calculations. 261 pp., 1992.

**HSS-503**                      **each**                      **\*\*\***

***Methods for the Determination of Organic Compounds in Finished Drinking Water, Supplement III***

The third group of supplemental US EPA 500 series methods and revisions are compiled in this manual. New methods include 504.1, 508.1, 509, 525.2, 551.1, and 552.2. Revised methods include 502.2, 505, 506, 507, 508, 515.1, 515.2, 524.2, and 531.1. Each method includes sections on scope and application, apparatus and equipment, sample collection, calibration and standardization, quality control, method procedures, and calculations. 564 pp., 1995.

**HSS-506**                      **each**                      **\*\*\***