

Specializing in the following EPA Methods:

524.2 Revision 4.0

624/8240/8260

625/8270

# **ENVIRONMENTAL CONSULTING & SUPPLIES**

**a Division of SPEX CertiPrep**

**SPEX CertiPrep** 

Your Science is Our Passion.®

## **2017 Catalog of High Quality Analytical Standards for GC/MS**



**Effective: January 1, 2017**

# Standards the ECS Way...

Here are some of the unique benefits this product line offers:

## **Most of our ampulized volatile standards are sold at 1.5 mL portions.**

The reason is simple: the shelf life of a volatile mix is greater if it is transferred into a vial with minimal headspace.

## **All ampulized standards come with pre-labeled transfer/storage vials or labels.**

We want to make the transfer of ampulized standards as easy as possible and as such we provide a pre-labeled transfer/storage vial (or just the label if you prefer). The label includes the ECS catalog number, lot number, product description and expiration date.

## **We offer cost-effective 5.5 mL bottles for Semivolatile mixes.**

Many of our customers find it more cost-effective and convenient to purchase their analytical standards in bottles rather than in 1.8 mL vials. This packaging alternative provides greater volume at a lower price per mL.

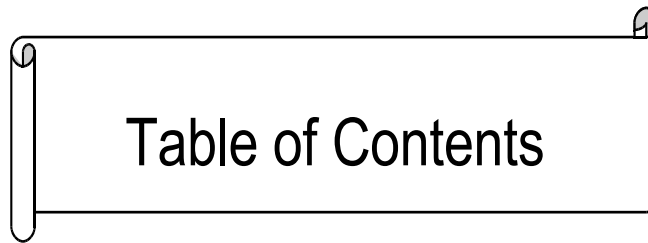
## **The concentrations of our mixes are optimized.**

Virtually all mixes are sold at concentrations of 1000 ppm or higher, with most at 2000 ppm.

## **Our service and commitment to helping our customers remains unmatched.**

**ECS** is unique from other suppliers. We have provided extensive on-site GC/MS consulting and our improvements come directly from practical experience with EPA methods. Part of this commitment to our customers comes from the fact that good ECS customers receive free technical support via e-mail.

**Please note that shipping fees, loyal customer discounts, terms and conditions of sale for the ECS line will now be the same as for the SPEX CertiPrep Organics line.**



# Table of Contents

Page 2:	Standards the ECS Way
Page 4:	Mixes for EPA Methods 624/8240
Page 6:	Mixes for EPA Method 8260
Page 10:	Mixes for EPA Method 524.2
Page 12:	Mixes for EPA Methods 625/8270
Page 16:	Second Source Lot Standards
Page 17:	Price List
Page 19:	Custom Mixes and Individual Components

## VOLATILE MIXES FOR GC/MS EPA METHODS 624/8240

### VOLATILE ISTD MIX

**3 component mix**  
**2000 ppm each in Methanol**

Bromochloromethane  
 Chlorobenzene-d5  
 1,4-Difluorobenzene

<b>ECS-A-010</b>	1.5 mL ampule	<b>\$42</b>
<b>ECS-B-010</b>	3Pack/ 1.5 mL ampules	<b>\$105</b>

### VOLATILE SURROGATES MIX

**3 component mix**  
**2000 ppm each in Methanol**

4-Bromofluorobenzene  
 1,2-Dichloroethane-d4  
 Toluene-d8

<b>ECS-A-011</b>	1.5 mL ampule	<b>\$42</b>
<b>ECS-B-011</b>	3Pack/ 1.5 mL ampules	<b>\$105</b>
<b>ECS-Z-011</b>	15 mL bottle	<b>\$229</b>

### EPA METHOD 624/8240 MAIN MIX 1

**26 component mix**  
**2000 ppm each in Methanol**

Benzene  
 Bromodichloromethane  
 Bromoform  
 Carbon tetrachloride  
 Chlorobenzene  
 Chloroform  
 Dibromochloromethane  
 1,2-Dichlorobenzene  
 1,3-Dichlorobenzene  
 1,4-Dichlorobenzene  
 1,1-Dichloroethane  
 1,2-Dichloroethane  
 1,1-Dichloroethene  
 cis-1,2,-Dichloroethene  
 trans 1,2-Dichloroethene  
 1,2-Dichloropropane  
 cis-1,3-Dichloropropene  
 trans-1,3-Dichloropropene  
 Ethylbenzene  
 Methylene Chloride  
 Tetrachloroethene  
 1,1,2,2-Tetrachloroethane  
 Trichloroethene  
 1,1,1-Trichloroethane  
 1,1,2-Trichloroethane  
 Toluene

**Note: Order 2-Chloroethyl vinyl ether separately**

<b>ECS-A-015</b>	1.5 mL ampule	<b>\$94</b>
<b>ECS-B-015</b>	3 Pack/ 1.5 mL ampules	<b>\$261</b>

### 2-CHLOROETHYL VINYL ETHER

**1 component mix**  
**2000 ppm in Methanol**

2-Chloroethyl vinyl ether

**Note: Add this to EPA Method 624/8240 Main Mix 1**

<b>ECS-A-040</b>	1.5 mL ampule	<b>\$21</b>
<b>ECS-B-040</b>	3Pack/ 1.5 mL ampules	<b>\$53</b>

### VOLATILE GASES MIX FOR EPA METHODS 624/8240

**6 component mix**  
**2000 ppm each in Methanol**

Bromomethane  
 Chloroethane  
 Chloromethane  
 Dichlorodifluoromethane  
 Trichlorofluoromethane  
 Vinyl chloride

**Note: This mix replaces the gases mix we offered at 1000 ppm (ECS-A-013)**

<b>ECS-A-053</b>	1.1 mL ampule	<b>\$47</b>
<b>ECS-B-053</b>	3Pack/ 1.1 mL ampules	<b>\$136</b>

### BFB TUNE CHECK

**50 ppm in Methanol**

4-Bromofluorobenzene

<b>ECS-A-017</b>	1.5 mL ampule	<b>\$21</b>
<b>ECS-B-017</b>	3Pack/ 1.5 mL ampules	<b>\$58</b>

### **UNDERGROUND STORAGE TANK VOLATILE ADD-ONS**

**3 component mix  
each in Methanol at specified concentrations**

Methyl tert-Butyl ether at 2000 ppm

Di-isopropyl ether at 2000 ppm

tert-Butyl Alcohol at 20,000 ppm

**ECS-A-039            1.5 mL ampule            \$37**

**ECS-B-039            3 Pack/ 1.5 mL ampules            \$99**

### **ACROLEIN/ACRYLONITRILE MIX**

**2 component mix  
10,000 ppm each in Methanol**

Acrolein

Acrylonitrile

**Note: Mix has a shelf life of 90 days**

**ECS-A-038            1.5 mL ampule            \$53**

**ECS-B-038            3Pack/ 1.5 mL ampules            \$146**

## **FREE TECHNICAL SUPPORT AVAILABLE TO ECS CUSTOMERS**

ECS provides free technical support to our customers. We can assist you with passing tune, obtaining linear curves, preparing standards, meeting QA/QC criteria, as well as just about any other applications problem that could arise in a GC/MS department performing EPA Methods: 624/8240/8260/625/8270 or 524.2.

**If you have a technical question please contact  
Mark Ferry via e-mail at MFerry@SPEX.com**

**All ampulized standards come with a pre-labeled transfer/storage vial.**

We want to make the transfer of ampulized standards as easy as possible and as such we provide a pre-labeled transfer/storage vial. The label includes the ECS catalog number, lot number, product description and expiration date. If you prefer to use your own vials, we can provide just the vial label instead.

### **We can stock custom mixes!**

ECS will gladly quote on custom mixes.

**Call 800-327-9559 for details.**

Furthermore, custom mixes can be stocked for immediate shipment if your lab orders the custom mixes with predictable regularity.

**Ask one of our customer representatives about this program.**

## VOLATILE MIXES FOR GC/MS EPA METHOD 8260

### EPA METHOD 8260/524.2 VOLATILES MAIN MIX (NON-GASES)

**54 component mix  
2000 ppm each in Methanol**

Benzene	Bromobenzene	Bromochloromethane
Bromodichloromethane	Bromoform	n-butylbenzene
sec-butylbenzene	tert-butylbenzene	Carbon tetrachloride
Chlorobenzene	Chloroform	2-chlorotoluene
4-chlorotoluene	Dibromochloromethane	1,2-dibromo-3-chloropropane
1,2-dibromoethane	Dibromomethane	1,2-dichlorobenzene
1,3-dichlorobenzene	1,4-dichlorobenzene	1,1-dichloroethane
1,2-dichloroethane	1,1-dichloroethene	cis-1,2-dichloroethene
trans-1,2-dichloroethene	1,2-dichloropropane	1,3-dichloropropane
2,2-dichloropropane	1,1-dichloropropene	cis-1,3-dichloropropene
trans-1,3-dichloropropene	Ethylbenzene	Hexachlorobutadiene
Isopropylbenzene	4-isopropyltoluene	Methylene chloride
Naphthalene	n-propylbenzene	Styrene
1,1,1,2-tetrachloroethane	1,1,2,2-tetrachloroethane	Tetrachloroethene
Toluene	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene
1,1,1-trichloroethane	1,1,2-trichloroethane	Trichloroethene
1,2,3-trichloropropane	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene
o-xylene	m-xylene	p-xylene

**ECS-A-033      1.5 mL ampule      \$157**  
**ECS-B-033      3Pack/ 1.5 mL ampules      \$437**

### EPA METHOD 8260 ISTD MIX

**4 component mix  
2000 ppm in Methanol**

Chlorobenzene-d5  
1,4-Dichlorobenzene-d4  
1,4-Difluorobenzene  
Pentafluorobenzene

**ECS-A-041      1.5 mL ampule      \$42**  
**ECS-B-041      3Pack/ 1.5 mL ampules      \$105**  
**ECS-Z-041      15 mL bottle      \$229**

### EPA METHOD 8260 SURROGATE MIX

**3 component mix  
2000 ppm each in Methanol**

4-Bromofluorobenzene  
1,2-Dichloroethane-d4  
Toluene-d8

**Note: Recommended for use with EPA Method 8260 and 8260B.**

**ECS-A-011      1.5 mL ampule      \$42**  
**ECS-B-011      3Pack/ 1.5 mL ampules      \$105**  
**ECS-Z-011      15 mL bottle      \$229**

### EPA METHOD 8260 KETONES MIX

4 component mix  
2000 ppm in Methanol

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

ECS-A-043 1.5 mL ampule \$32  
ECS-B-043 3Pack/ 1.5 mL ampules \$84

### VOLATILE GASES MIX FOR EPA METHODS 8260

6 component mix  
2000 ppm each in Methanol

Bromomethane  
Chloroethane  
Chloromethane  
Dichlorodifluoromethane  
Trichlorofluoromethane  
Vinyl chloride

Note: This mix replaces the gases mix we offered at 1000 ppm (ECS-A-013)

ECS-A-053 1.1 mL ampule \$47  
ECS-B-053 3Pack/ 1.1 mL ampules \$136

### EPA METHOD 8260 ADD-ONS MIX #1

4 component mix  
2000 ppm in Methanol

Carbon Disulfide  
Iodomethane  
Methyl tert butyl ether (MTBE)  
Vinyl Acetate

ECS-A-044 1.5 mL ampule \$42  
ECS-B-044 3Pack/ 1.5 mL ampules \$115

### EPA METHOD 8260 ADD-ONS MIX #2

(without Pentachloroethane)

11 component mix  
each in Methanol at specified concentrations

Acetonitrile at 20,000 ppm  
Allyl chloride at 2,000 ppm  
cis-1,4-dichloro-2-butene at 2,000 ppm  
trans-1,4-dichloro-2-butene at 2,000 ppm  
1,4-dioxane at 40,000 ppm  
Ethanol at 40,000 ppm  
Ethyl methacrylate at 2,000 ppm  
Isobutyl alcohol at 40,000 ppm  
Methacrylonitrile at 20,000 ppm  
Methyl methacrylate at 2,000 ppm  
Propionitrile at 20,000 ppm

ECS-A-045XP 1.5 mL ampule \$73  
ECS-B-045XP 3Pack/ 1.5 mL ampules \$198

### EPA METHOD 8260 ADD-ONS MIX #3

4 component mix  
2000 ppm in Methanol

1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)  
Methyl Acetate  
Cyclohexane  
Methyl Cyclohexane

ECS-A-049 1.5 mL ampule \$63  
ECS-B-049 3Pack/ 1.5 mL ampules \$157

### 2-CHLOROETHYL VINYL ETHER

1 component mix  
2000 ppm in Methanol

2-Chloroethyl vinyl ether

ECS-A-040 1.5 mL ampule \$21  
ECS-B-040 3Pack/ 1.5 mL ampules \$53

### BFB TUNE CHECK

50 ppm in Methanol  
4-Bromofluorobenzene

ECS-A-017 1.5 mL ampule \$21  
ECS-B-017 3Pack/ 1.5 mL ampules \$58

## Technical Note regarding Pentachloroethane:

Stability studies over the past few years indicate that in the presence of certain halocarbons, such as those found in ECS-A-033, Pentachloroethane (PCE) breaks down to Tetrachloroethene in significant amounts.

When running your PE/PT analyses, we strongly advise that you prepare your calibration standards the day you run the PE/PT samples, or, if allowed by your regulatory agency **exclude** the PCE from your calibration. If you need to include PCE we offer it as a single analyte mix.

ECS technical support will gladly assist you in reformulating should you wish to do so.

**Please call (800) 327-9559 if you need assistance.**

### PENTACHLOROETHANE MIX

**1 component mix  
2000 ppm in Methanol**

Pentachloroethane

<b>ECS-A-PCE</b>	<b>1.5 mL ampule</b>	<b>\$21</b>
<b>ECS-B-PCE</b>	<b>3Pack/ 1.5 mL ampules</b>	<b>\$53</b>

### ACROLEIN/ACRYLONITRILE MIX

**2 component mix  
10,000 ppm each in Methanol**

Acrolein  
Acrylonitrile

**Note: Mix has a shelf life of 90 days.**

<b>ECS-A-038</b>	<b>1.5 mL ampule</b>	<b>\$53</b>
<b>ECS-B-038</b>	<b>3Pack/ 1.5 mL ampules</b>	<b>\$146</b>

### ACROLEIN MIX

**1 component mix  
10,000 ppm in Methanol**

Acrolein

**Note: Mix has a shelf life of 90 days.  
Please allow 5 days to prepare.**

<b>ECS-A-ACN</b>	<b>1.5 mL ampule</b>	<b>\$84</b>
<b>ECS-B-ACN</b>	<b>3Pack/ 1.5 mL ampules</b>	<b>\$208</b>



### 1,4-DIOXANE MIX

1 component mix

10,000 ppm in Methanol

1,4-Dioxane

<b>ECS-A-DIOX</b>	<b>1.5 mL ampule</b>	<b>\$32</b>
<b>ECS-B-DIOX</b>	<b>3Pack/ 1.5 mL ampules</b>	<b>\$84</b>

### TETRAHYDROFURAN MIX

1 component mix

2000 ppm in Methanol

Tetrahydrofuran

**Note: This mix is made fresh each time it is ordered. Please allow 5 business days to prepare. Recommended for use with EPA Methods 624/8240 and 8260.**

<b>ECS-B-047</b>	<b>3Pack/ 1.5 mL ampules</b>	<b>\$84</b>
------------------	------------------------------	-------------

### OXYGENATES MIX

4 component mix

each in Methanol at specified concentrations

Tert-amyl methyl ether (TAME) 2000 ppm

Di-isopropyl ether (DIPE) 2000 ppm

Ethyl ter-butyl ether (ETBE) 2000 ppm

Tert-butyl Alcohol (TBA) 20,000 ppm

<b>ECS-A-NHOX</b>	<b>1.5 mL ampule</b>	<b>\$63</b>
<b>ECS-B-NHOX</b>	<b>3 Pack/ 1.5 mL ampules</b>	<b>\$157</b>

### EPA METHOD 8260B ISTD MIX

3 component mix

2000 ppm in Methanol

Chlorobenzene-d5

1,4-Dichlorobenzene-d4

Fluorobenzene

**Note: Recommended for use with EPA Method 8260B.**

<b>ECS-A-051</b>	<b>1.5 mL ampule</b>	<b>\$42</b>
<b>ECS-B-051</b>	<b>3Pack/ 1.5 mL ampules</b>	<b>\$105</b>

# VOLATILE MIXES FOR GC/MS EPA METHOD 524.2

## EPA METHOD 8260/524.2 VOLATILES MAIN MIX (NON-GASES)

**54 component mix**  
**2000 ppm each in Methanol**

Benzene	Bromobenzene	Bromochloromethane
Bromodichloromethane	Bromoform	n-butylbenzene
sec-butylbenzene	tert-butylbenzene	Carbon tetrachloride
Chlorobenzene	Chloroform	2-chlorotoluene
4-chlorotoluene	Dibromochloromethane	1,2-dibromo-3-chloropropane
1,2-dibromoethane	Dibromomethane	1,2-dichlorobenzene
1,3-dichlorobenzene	1,4-dichlorobenzene	1,1-dichloroethane
1,2-dichloroethane	1,1-dichloroethene	cis-1,2-dichloroethene
trans-1,2-dichloroethene	1,2-dichloropropane	1,3-dichloropropane
2,2-dichloropropane	1,1-dichloropropene	cis-1,3-dichloropropene
trans-1,3-dichloropropene	Ethylbenzene	Hexachlorobutadiene
Isopropylbenzene	4-isopropyltoluene	Methylene chloride
Naphthalene	n-propylbenzene	Styrene
1,1,1,2-tetrachloroethane	1,1,2,2-tetrachloroethane	Tetrachloroethene
Toluene	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene
1,1,1-trichloroethane	1,1,2-trichloroethane	Trichloroethene
1,2,3-trichloropropane	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene
o-xylene	m-xylene	p-xylene

**ECS-A-033**      **1.5 mL ampule**      **\$157**  
**ECS-B-033**      **3 Pack/ 1.5 mL ampules**      **\$437**

## VOLATILE GASES MIX FOR EPA METHOD 524.2

**6 component mix**  
**2000 ppm each in Methanol**

Bromomethane  
 Chloroethane  
 Chloromethane  
 Dichlorodifluoromethane  
 Trichlorofluoromethane  
 Vinyl chloride

**ECS-A-053**      **1.1 mL ampule**      **\$47**  
**ECS-B-053**      **3Pack/ 1.1 mL ampules**      **\$136**

**Note: This mix replaces the gases mix we offered at 1000 ppm (ECS-A-013)**

## BFB TUNE CHECK

**50 ppm in Methanol**

4-Bromofluorobenzene

**ECS-A-017**      **1.5 mL ampule**      **\$21**  
**ECS-B-017**      **3Pack/ 1.5 mL ampules**      **\$58**

## EPA METHOD 524.2 ISTD/SURROGATE MIX

**3 component mix**  
**2000 ppm each in Methanol**

4-Bromofluorobenzene  
 1,2-Dichlorobenzene-d4  
 Fluorobenzene

**ECS-A-034**      **1.5 mL ampule**      **\$42**  
**ECS-B-034**      **3 Pack/ 1.5 mL ampules**      **\$105**

**REVISION 4.0 ADD-ONS FOR EPA METHOD 524.2 (without Pentachloroethane)**

**19 component mix each in Methanol at specified concentrations**

- Hexachloroethane- 2000 ppm
- Diethyl ether- 2000 ppm
- Nitrobenzene- 20,000 ppm
- Chloroacetonitrile- 40,000 ppm
- 1-Chlorobutane- 2000 ppm
- 2-Nitropropane- 4000 ppm
- Tetrahydrofuran- 4000 ppm
- Methylacrylate- 2000 ppm
- Acrylonitrile- 4000 ppm
- Allyl Chloride- 2000 ppm
- Carbon Disulfide- 2000 ppm
- trans-1,4-dichloro-2-butene- 4000 ppm
- 1,1-Dichloropropanone- 10,000 ppm
- Ethyl methacrylate- 2000 ppm
- Methacrylonitrile- 2000 ppm
- Iodomethane- 2000 ppm
- Methyl methacrylate- 4000 ppm
- Methyl tert butyl ether (MTBE) -2000 ppm
- Propionitrile- 20,000 ppm

**Note: Recommended for use with EPA Method 524.2 Revision 4.0.**

<b>ECS-A-046XP</b>	<b>1.5 mL ampule</b>	<b>\$73</b>
<b>ECS-B-046XP</b>	<b>3Pack/ 1.5 mL ampules</b>	<b>\$198</b>

**EPA METHOD 524.2 KETONES MIX**

**4 component mix  
2000 ppm in Methanol**

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

<b>ECS-A-043</b>	<b>1.5 mL ampule</b>	<b>\$32</b>
<b>ECS-B-043</b>	<b>3Pack/ 1.5 mL ampules</b>	<b>\$84</b>

**EPA METHOD 524.2 KETONES MIX**

**(High Concentration)  
4 component mix  
10,000 ppm in Methanol**

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

**Note: Recommended for use with EPA Method 524.2 Revision 4.0. Please allow 5 days to prepare.**

<b>ECS-A-043H</b>	<b>1.5 mL ampule</b>	<b>\$94</b>
<b>ECS-B-043H</b>	<b>3Pack/ 1.5 mL ampules</b>	<b>\$209</b>

**Technical Note regarding Pentachloroethane:**

Stability studies over the past few years indicate that in the presence of certain halocarbons, such as those found in ECS-A-033, Pentachloroethane (PCE) breaks down to Tetrachloroethene in significant amounts.

When running your PE/PT analyses, we strongly advise that you prepare your calibration standards the day you run the PE/PT samples, or, if allowed by your regulatory agency **exclude** the PCE from your calibration. If you need to include PCE we offer it as a single analyte mix.

ECS technical support will gladly assist you in reformulating should you wish to do so.

**Please call (800) 327-9559 if you need assistance.**

**PENTACHLOROETHANE MIX**

**1 component mix  
2000 ppm in Methanol**

- Pentachloroethane

<b>ECS-A-PCE</b>	<b>1.5 mL ampule</b>	<b>\$21</b>
<b>ECS-B-PCE</b>	<b>3Pack/ 1.5 mL ampules</b>	<b>\$53</b>

## SEMIVOLATILE MIXES FOR GC/MS EPA METHODS 625/8270

### 3 COMPONENT BASE/NEUTRAL SURROGATE MIX

**3 component mix  
1000 ppm each in Methylene Chloride**

2-Fluorobiphenyl  
Nitrobenzene-d5  
p-Terphenyl-d14

**ECS-N-002      5.5 mL bottle      \$47**  
**ECS-Z-002      11.5 mL bottle      \$89**

### 3 COMPONENT ACID EXTRACTABLES SURROGATE MIX

**3 component mix  
2000 ppm each in Methylene Chloride**

2-Fluorophenol  
Phenol-d6  
2,4,6-Tribromophenol

**ECS-N-003      5.5 mL bottle      \$47**  
**ECS-Z-003      11.5 mL bottle      \$89**

### 4 COMPONENT BASE/NEUTRAL SURROGATE MIX

**4 component mix  
1000 ppm each in Methylene Chloride**

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

**ECS-N-022      5.5 mL bottle      \$58**  
**ECS-Z-022      10.5 mL bottle      \$105**

### 4 COMPONENT ACID EXTRACTABLES SURROGATE MIX

**4 component mix  
2000 ppm each in Methylene Chloride**

2-Chlorophenol-3,4,5,6-d4  
2-Fluorophenol  
Phenol-d6  
2,4,6-Tribromophenol

**ECS-N-023      5.5 mL bottle      \$89**  
**ECS-Z-023      10.5 mL bottle      \$167**

### SEMIVOLATILE SURROGATES MIX

**6 component mix in Methylene Chloride**

1000 ppm each:  
2-Fluorobiphenyl  
Nitrobenzene-d5  
p-Terphenyl-d14  
2000 ppm each:  
2-Fluorophenol  
Phenol-d6  
2,4,6-Tribromophenol

**ECS-N-027      5.5 mL bottle      \$80**

### MONEY SAVING TIP:

**Buy cost-effective  
5.5 mL bottles for Semivolatile  
Internal Standards Mixes,  
Calibration Mixes and  
Spiking Mixes.**

**TO PLACE AN ORDER  
OR REQUEST INFORMATION  
PLEASE CALL: (800) 327-9559**

### SEMIVOLATILE INTERNAL STANDARDS MIX

This 6 component mix is available in either 2000 ppm or 4000 ppm in Methylene Chloride

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

#### 4000 ppm each in Methylene Chloride:

ECS-A-001	1.8 mL vial	\$125
ECS-B-001	3Pack/ 1.8 mL vials	\$313
ECS-N-001	5.5 mL bottle	\$271

#### 2000 ppm each in Methylene Chloride:

ECS-A-201	1.8 mL vial	\$ 63
ECS-B-201	3Pack/ 1.8 mL vials	\$157
ECS-N-201	5.5 mL bottle	\$136

### 4-COMPONENT TUNE CHECK KIT

Contains the following 4 vial set.  
Each vial is 1.8 mL in Methylene Chloride

Decafluorotriphenylphosphine (DFTPP)- 1000 ppm  
Benzidine-1000 ppm  
Pentachlorophenol-1000 ppm  
4,4'-DDT- 1000 ppm

#### Technical Note:

Under certain state regulations, some labs are required to run the 4 components listed above as part of Method 625/8270 to evaluate for DFTPP and tailing factors. The problem is that the analytes will break down after about 40 days when mixed together. Our solution is to create a kit with all 4 components packaged separately.

Once a month you dilute all 4 components together (typically 50 to 100 uL into 1 mL) in Methylene Chloride and you have a fresh tuning mix ready for injection.

ECS-K-TUNE      Kit of 1.8 mL vials    \$157

### BASE/NEUTRAL SPIKING MIX

7 component mix  
1000 ppm each in Methylene Chloride

Acenaphthene  
Di-n-butyl phthalate  
1,4-Dichlorobenzene  
2,4-Dinitrotoluene  
n-Nitroso-di-n-propylamine  
1,2,4-Trichlorobenzene  
Pyrene

ECS-N-005      5.5 mL bottle      \$58

### ACID EXTRACTABLES SPIKING MIX

5 component mix  
2000 ppm each in Methylene Chloride

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

ECS-N-004      5.5 mL bottle      \$58

### DFTPP TUNE CHECK

50 ppm in Methylene Chloride

Decafluorotriphenylphosphine (DFTPP)

ECS-N-008      5.5 mL bottle      \$32

**EPA METHOD 625/8270  
BASE/NEUTRALS MIX 1**

**30 component mix  
2000 ppm each in Methylene Chloride**

Azobenzene  
4-Bromophenyl-phenyl ether  
Butylbenzylphthalate  
Carbazole  
bis(2-Chloroethoxy)methane  
bis(2-Chloroethyl)Ether  
bis(2-chloroisopropyl)ether  
2-Chloronaphthalene  
4-Chlorophenyl-phenyl ether  
1,2-Dichlorobenzene  
1,3-Dichlorobenzene  
1,4-Dichlorobenzene  
Diethyl phthalate  
Dimethyl phthalate  
Di-n-butyl phthalate  
Di-n-octyl phthalate  
2,4-Dinitrotoluene  
2,6-Dinitrotoluene  
bis (2-Ethylhexyl)phthalate  
Hexachlorobenzene  
Hexachlorobutadiene  
Hexachlorocyclopentadiene  
Hexachloroethane  
Isophorone  
Nitrobenzene  
N-nitroso-dimethylamine  
N-Nitroso-Di-n-propylamine  
N-Nitrosodiphenylamine  
Pyridine  
1,2,4-Trichlorobenzene

**ECS-A-030      1.8 mL vial      \$146**  
**ECS-B-030      3Pack/ 1.8 mL vials      \$406**  
**ECS-N-030      5.5 mL bottle      \$375**

**BENZIDINES MIX**

**2 component mix  
2000 ppm each in Methylene Chloride**

Benzidine  
3,3'-Dichlorobenzidine

**ECS-A-007      1.8 mL vial      \$32**  
**ECS-B-007      3Pack/ 1.8 mL vials      \$84**  
**ECS-N-007      5.5 mL bottle      \$73**

**PHENOLS MIX**

**11 component mix  
2000 ppm each in Methylene Chloride**

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

**ECS-A-006      1.8 mL vial      \$53**  
**ECS-B-006      3Pack/ 1.8 mL vials      \$136**  
**ECS-N-006      5.5 mL bottle      \$105**

**POLYNUCLEAR AROMATIC  
HYDROCARBONS MIX (PAH MIX)**

**16 component mix  
2000 ppm each in Methylene Chloride/Benzene  
(1:1)**

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

**ECS-A-032      1.8 mL vial      \$105**  
**ECS-B-032      3Pack/ 1.8 mL vials      \$271**  
**ECS-N-032      5.5 mL bottle      \$229**

**EPA METHOD 8270 ADD-ONS MIX****12 component mix  
2000 ppm each in Methylene Chloride**

Aniline  
 Benzoic Acid  
 Benzyl Alcohol  
 4-Chloroaniline  
 Dibenzofuran  
 2-Methylnaphthalene  
 2-Methylphenol  
 4-Methylphenol  
 2-Nitroaniline  
 3-Nitroaniline  
 4-Nitroaniline  
 2,4,5-Trichlorophenol

**ECS-A-031**      **1.8 mL vial**      **\$53**  
**ECS-B-031**      **3Pack/ 1.8 mL vials**      **\$125**  
**ECS-N-031**      **5.5 mL bottle**      **\$105**

**SEMIVOLATILE TCLP  
CALIBRATION/SPIKING MIX****15 component mix  
2000 ppm each in Methylene Chloride**

bis (2-Chloroethyl) Ether  
 m-Cresol  
 o-Cresol  
 p-Cresol  
 1,4-Dichlorobenzene  
 2,4-Dinitrotoluene  
 Hexachloroethane  
 Phenol  
 Hexachlorobenzene  
 Hexachlorobutadiene  
 Nitrobenzene  
 2,4,5-Trichlorophenol  
 2,4,6-Trichlorophenol  
 Pentachlorophenol  
 Pyridine

**ECS-A-018**      **1.8 mL vial**      **\$84**  
**ECS-B-018**      **3Pack/ 1.8 mL vials**      **\$240**  
**ECS-N-018**      **5.5 mL bottle**      **\$209**

**SEMIVOLATILES CALIBRATION  
KIT FOR EPA METHODS 625/8270 (bottles)****This kit contains the following:**

Base/Neutrals Mix 1	ECS-N-030
Semivolatile Add-Ons	ECS-N-031
PAH Mix	ECS-N-032
Phenols Mix	ECS-N-006
Benzidines Mix	ECS-N-007

**Primary Source Lot for this kit:**  
**ECS-KN-050**      **5 Pack/5.5 mL bottles**      **\$885**

**Second Source Lot for this kit:**  
 You must specify the catalog number and the lot that you  
 DO NOT want. Please see page 16 for details.

**SEMIVOLATILES CALIBRATION  
KIT FOR EPA METHODS 625/8270 (vials)****This kit contains the following:**

Base/Neutrals Mix 1	ECS-A-030
Semivolatile Add-Ons	ECS-A-031
PAH Mix	ECS-A-032
Phenols Mix	ECS-A-006
Benzidines Mix	ECS-A-007

**Primary Source Lot for this kit:**  
**ECS-K-050**      **5 Pack/ 1.8 mL vials**      **\$354**

**Second Source Lot for this kit:**  
 You must specify the catalog number and the lot that you  
 DO NOT want. Please see page 16 for details.

**EPA METHOD 8270 ADD-ONS MIX #2  
6 component mix  
2000 ppm each in Methylene Chloride**

Benzaldehyde  
 Caprolactam  
 Atrazine  
 Acetophenone  
 1,1-Biphenyl  
 1,2,4,5-Tetrachlorobenzene

**ECS-A-061**      **1.8 mL vial**      **\$63**  
**ECS-B-061**      **3Pack/ 1.8 mL vials**      **\$177**

**EPA METHOD 8270 ADD-ONS MIX #3**

2,3,4,6-Tetrachlorophenol at 1,000 ppm in Methylene Chloride

**ECS-N-062**      **5.5 mL bottle**      **\$73**

## SECOND SOURCE LOT STANDARDS

### ECS offers second source lots for all calibration mixes.

We are phasing out the suffix “SS” which in prior years had designated a lot as a second source lot.

Instead, when labs want a second source lot, they will need to specify the ECS catalog number and the lot **that they don't want**. Specifying the lot that you don't want triggers the sale of a different lot, and that different lot serves as the second source lot.

#### Example 1

You wish to purchase a second source lot of the ECS Phenols Mix. You currently use lot PHN026 as your “primary lot”. You would order as follows: catalog number ECS-A-006 and a lot **other than** PHN026. You would then receive a lot **other than** PHN026 which can serve as your second source lot for this item.

Your GC/MS analysts will need to monitor which lot they consider the primary lot so that when they order second source lots they know which lot they **don't want**. Lots are clearly marked on the Certificate of Analysis and on the products themselves.

#### Example 2

You wish to purchase BOTH primary AND second source lot of the ECS Phenols Mix.

You would order as follows: catalog number ECS-A-006 and ECS-A-006 (**two different lots needed**).

You would then receive two different lots of the Phenols Mix.

### NOTE for ECS-K-050 and ECS-KN-050 CALIBRATION KITS

In prior years, labs would order second source lots for these kits by ordering ECS-K-050-SS or ECS-KN-050-SS.

Now, instead of ordering those part numbers, you **MUST** order the 5 individual mixes that comprise these calibration kits and specify which lot you do not want. Specifying the lot that you don't want triggers the sale of a different lot, and that different lot serves as the second source lot.

#### Example 3

Here is what you would order instead of ECS-K-050-SS:

ECS-A-006, lot other than [specify the lot you don't want- which is typically your primary lot]  
ECS-A-007, lot other than [specify the lot you don't want- which is typically your primary lot]  
ECS-A-030, lot other than [specify the lot you don't want- which is typically your primary lot]  
ECS-A-031, lot other than [specify the lot you don't want- which is typically your primary lot]  
ECS-A-032, lot other than [specify the lot you don't want- which is typically your primary lot]



## ECS GC/MS PRICE LIST

<u>Catalog No.</u>	<u>Description</u>	<u>Amount</u>	<u>Cost (\$)</u>
ECS-A-001	Semivolatile ISTD Mix (4000 ppm)	1.8 mL	125
ECS-A-006	Phenols Mix	1.8 mL	53
ECS-A-007	Benzidines Mix	1.8 mL	32
ECS-A-010	Volatile ISTD Mix	1.5 mL	42
ECS-A-011	Volatile Surrogates Mix for 624/8240/8260	1.5 mL	42
ECS-A-015	EPA Method 624/8240 Volatile Main Mix 1	1.5 mL	94
ECS-A-017	BFB tune check	1.5 mL	21
ECS-A-018	Semivolatile TCLP Mix	1.8 mL	84
ECS-A-030	EPA Method 625/8270 Base /Neutrals Mix 1	1.8 mL	146
ECS-A-031	EPA Method 625/8270 Semivolatile Add-ons	1.8 mL	53
ECS-A-032	Polynuclear Aromatic Hydrocarbons Mix (PAH Mix)	1.8 mL	105
ECS-A-033	EPA Method 524.2/8260 Volatiles Main Mix (non-gases)	1.5 mL	157
ECS-A-034	EPA Method 524.2 ISTD/Surrogate Mix	1.5 mL	42
ECS-A-038	Acrolein/Acrylonitrile Mix	1.5 mL	53
ECS-A-039	Underground Storage Tank Volatile Add-ons	1.5 mL	37
ECS-A-040	2-Chloroethyl vinyl ether	1.5 mL	21
ECS-A-041	EPA Method 8260 Volatile ISTD Mix	1.5 mL	42
ECS-A-043	EPA Method 8260 Ketones Mix (2000 ppm)	1.5 mL	32
ECS-A-043H	EPA Method 8260 Ketones Mix (10,000 ppm)	1.5 mL	94
ECS-A-044	EPA Method 8260 Add-ons #1	1.5 mL	42
ECS-A-045XP	EPA Method 8260 Add-ons #2 w/o Pentachloroethane	1.5 mL	73
ECS-A-046XP	EPA Method 524.2 Rev. 4 Add-Ons w/o Pentachloroethane	1.5 mL	73
ECS-A-049	EPA Method 8260 Add-ons #3	1.5 mL	63
ECS-A-051	EPA Method 8260B Volatile ISTD Mix	1.5 mL	42
ECS-A-053	Volatile Gases Mix -2000 ppm	1.1 mL	47
ECS-A-061	EPA Method 625/8270 Semivolatile Add-ons #2	1.8 mL	63
ECS-A-201	Semivolatile ISTD Mix (2000 ppm)	1.8 mL	63
ECS-A-ACN	Acrolein Mix	1.5 mL	84
ECS-A-DIOX	1,4-Dioxane Mix	1.5 mL	32
ECS-A-NHOX	Oxygenates Mix	1.5 mL	63
ECS-A-PCE	Pentachloroethane Mix	1.5 mL	21
ECS-B-001	Semivolatile ISTD Mix (4000 ppm)	3 x 1.8 mL	313
ECS-B-006	Phenols Mix	3 x 1.8 mL	136
ECS-B-007	Benzidines Mix	3 x 1.8 mL	84
ECS-B-010	Volatile ISTD Mix	3 x 1.5 mL	105
ECS-B-011	Volatile Surrogates Mix	3 x 1.5 mL	105

<b>Catalog No.</b>	<b>Description</b>	<b>Amount</b>	<b>Cost(\$)</b>
ECS-B-015	EPA Method 624/8240 Volatile Main Mix 1	3 x 1.5 mL	261
ECS-B-017	BFB tune check	3 x 1.5 mL	58
ECS-B-018	Semivolatile TCLP Mix	3 x 1.8 mL	240
ECS-B-030	EPA Method 625/8270 Base/Neutrals Mix 1	3 x 1.8 mL	406
ECS-B-031	EPA Method 625/8270 Semivolatile Add-ons	3 x 1.8 mL	125
ECS-B-032	Polynuclear Aromatic Hydrocarbons Mix (PAH Mix)	3 x 1.8 mL	271
ECS-B-033	EPA Method 524.2/8260 Volatiles Main Mix (non-gases)	3 x 1.5 mL	437
ECS-B-034	EPA Method 524.2 ISTD/Surrogate Mix	3 x 1.5 mL	105
ECS-B-038	Acrolein/Acrylonitrile Mix	3 x 1.5 mL	146
ECS-B-039	Underground Storage Tank Volatile Add-ons	3 x 1.5 mL	99
ECS-B-040	2-Chloroethyl vinyl ether	3 x 1.5 mL	53
ECS-B-041	EPA Method 8260 Volatile ISTD Mix	3 x 1.5 mL	105
ECS-B-043	EPA Method 8260 Ketones Mix (2000 ppm)	3 x 1.5 mL	84
ECS-B-043H	EPA Method 8260 Ketones Mix (10,000 ppm)	3 x 1.5 mL	209
ECS-B-044	EPA Method 8260 Add-ons #1	3 x 1.5 mL	115
ECS-B-045XP	EPA Method 8260 Add-ons #2 w/o Pentachloroethane	3 x 1.5 mL	198
ECS-B-046XP	EPA Method 524.2 Rev. 4 Add-Ons w/o Pentachloroethane	3 x 1.5 mL	198
ECS-B-047	Tetrahydrofuran Mix	3 x 1.5 mL	84
ECS-B-049	EPA Method 8260 Add-ons #3	3 x 1.5 mL	157
ECS-B-051	EPA Method 8260B Volatile ISTD Mix	3 x 1.5 mL	105
ECS-B-053	Volatile Gases Mix -2000 ppm	3 x 1.1 mL	136
ECS-B-061	EPA Method 625/8270 Semivolatile Add-ons #2	3 x 1.8 mL	177
ECS-B-201	Semivolatile ISTD Mix (2000 ppm)	3 x 1.8 mL	157
ECS-B-ACN	Acrolein Mix	3 x 1.5 mL	208
ECS-B-DIOX	1,4-Dioxane Mix	3 x 1.5 mL	84
ECS-B-NHOX	Oxygenates Mix	3 x 1.5 mL	157
ECS-B-PCE	Pentachloroethane Mix	3 x 1.5 mL	53
ECS-K-050	Semivolatiles Calibration Kit for EPA Methods 625/8270	Kit of vials	354
ECS-KN-050	Semivolatiles Calibration Kit for EPA Methods 625/8270	Kit of bottles	885
ECS-K-TUNE	Semivolatiles Tuning Kit for EPA Methods 625/8270	Kit of vials	157
ECS-N-001	Semivolatile ISTD Mix (4000 ppm)	5.5 mL	271
ECS-N-002	Base/Neutral Surrogate Mix: 3 component	5.5 mL	47
ECS-N-003	Acid Extractables Surrogate Mix: 3 component	5.5 mL	47
ECS-N-004	Acid Extractables Spiking Mix	5.5 mL	58
ECS-N-005	Base/Neutral Spiking Mix	5.5 mL	58
ECS-N-006	Phenols Mix	5.5 mL	105
ECS-N-007	Benzidines Mix	5.5 mL	73
ECS-N-008	DFTPP tune check	5.5 mL	32
ECS-N-018	Semivolatile TCLP Mix	5.5 mL	209
ECS-N-022	Base/Neutral Surrogate Mix: 4 component	5.5 mL	58
ECS-N-023	Acid Extractables Surrogate Mix: 4 component	5.5 mL	89

<b>Catalog No.</b>	<b>Description</b>	<b>Amount</b>	<b>Cost(\$)</b>
ECS-N-027	Semivolatile Surrogate Mix: 6 components	5.5 mL	80
ECS-N-030	EPA Method 625/8270 Base/Neutrals Mix 1	5.5 mL	375
ECS-N-031	EPA Method 625/8270 Semivolatile Add-ons	5.5 mL	105
ECS-N-032	Polynuclear Aromatic Hydrocarbons Mix (PAH Mix)	5.5 mL	229
ECS-N-062	EPA Method 625/8270 Semivolatile Add-ons #3	5.5 mL	73
ECS-N-201	Semivolatile ISTD Mix (2000 ppm)	5.5 mL	136
ECS-Z-002	Base/Neutral Surrogate Mix: 3 component	11.5 mL	89
ECS-Z-003	Acid Extractables Surrogate Mix: 3 component	11.5 mL	89
ECS-Z-011	Volatile Surrogates Mix for 624/8240/8260	15.0 mL	229
ECS-Z-022	Base/Neutral Surrogate Mix: 4 component	10.5 mL	105
ECS-Z-023	Acid Extractables Surrogate Mix: 4 component	10.5 mL	167
ECS-Z-041	EPA Method 8260 Volatile ISTD Mix	15.0 mL	229

### **ECS Procedure for Custom Mix Requests and Individual Analyte Mixes**

**ECS welcomes the opportunity to quote on custom mixes. Individual analyte mixes are considered custom mixes. Since ECS stocks all the individual components that comprise our mix lists, we can usually prepare an individual analyte mix within 5 days.**

Custom mixes are often necessary to supplement our stock mixes to be sure every compound that the laboratory calibrates is included. Because of the varying state requirements regarding compound lists, as well as the unique requirements of each lab's clientele, the need for custom mixes is very common. We will gladly quote on custom mixes. For fastest service call us at 800-327-9559.

Please be ready with the following information:

- Lab name and/or SPEX account number.**
- Contact person requesting the quote.**
- List of analytes and the concentration of each. Special precautions apply when the concentration is outside the 1000-2000 ppm range so if that's the case we will discuss it with you.**
- Solvent desired. Methanol is the solvent of choice for all Volatiles mixes and Methylene Chloride is the solvent of choice for all Semivolatiles mixes unless solubility/stability reasons dictate otherwise.**
- Packaging (ampules for Volatiles; vials or bottles for Semivolatiles).**

**Note: The minimum order for custom mixes is generally one 3 pack of ampules/vials or one 5 mL bottle for Semivolatiles.**

Upon receipt of this information we will e-mail or fax the quotation (including turnaround time) to you within 48 hours. The Standard QA/QC documentation for Custom Mixes includes the Certificate of Analysis. Total Ion Chromatogram and Mass Spectral Data Information can also be provided. This is especially helpful when doing method development or adding new compounds to your target list because we will provide Retention Time and Ion Qualifier information for you to expedite the setting up of your compound list. **If your lab will be ordering the same custom mixes from us on a regular basis we can even stock your custom mix for immediate delivery. Ask one of our customer representatives for details of this program.**