



## 600 Series Method Standards for Waste Water

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## Background Information

The EPA Methods for evaluating municipal and industrial wastewater pollutants are designated in the EPA 600 Series. This Series of methods evolved from the 1976 agreement by the EPA to study and, if necessary, to regulate **65 "priority pollutants"**. Several laboratories within the EPA collaborated on research projects that led to the 600 Series Methods.

Methods 601-612 were first published in 1979, along with a GC/MS method for the measurement of TCDD. AccuStandard followed the expansion of the 600 series methods by formulating analytical standards for additional 600 series methods listed in the EPA book "Methods for the Determination of Nonconventional Pesticides in Municipal and Industrial Wastewater."

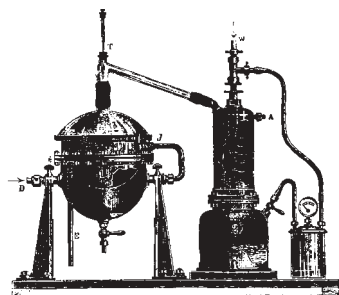
The 600 Series product line contains standards used in the proposed and promulgated methods for the identification and quantification of organic compounds in municipal and industrial waste water. The organic compounds listed in the various methods include volatile organic compounds (VOCs), pesticides and synthetic organic compounds (SOCs).

## Detectors

Analytical techniques used in the identification and quantification of the above compounds include gas chromatography with selective detectors (PID, ELCD, ECD, FID, NPD, FPD), gas chromatography - mass spectrometry and high performance liquid chromatography. The 600 series methods typically utilize packed columns, but chromatographic conditions can be modified (i.e. incorporation of advances in technology like capillary columns) if the modifications do not decrease the accuracy or lessen the precision of the method.

## Comprehensive

Complete analysis of the target compounds by these 600 Series Methods can be accomplished using the series of standards formulated by AccuStandard for each method along with the suggested internal and surrogate standards. Formulations have been developed as easy to use large core mixes containing the target compounds and as high concentration sub-mixes for combination with other formulations to meet laboratory specific analyte detection requirements.



No. 5010  
Vacuum Apparatus



## Method 601 Purgeable Halocarbons by Purge & Trap - GC/MS

### Purgeable Halocarbons

M-601 \$ 50 / set of 4 x 1 mL (0.2 mg/mL in MeOH)  
 M-601-10X \$ 75 / set of 4 x 1 mL (2.0 mg/mL in MeOH)

### Liquids

M-601A \$ 35 / 1 x 1 mL  
 M-601A-PAK **SAVE 20%** \$ 140 / 5 x 1 mL  
 0.2 mg/mL each in MeOH 18 comps.

Carbon tetrachloride	1,2-Dichloropropane
Chlorobenzene	<i>cis</i> -1,3-Dichloropropylene *
1,2-Dichlorobenzene	<i>trans</i> -1,3-Dichloropropylene **
1,3-Dichlorobenzene	Methylene chloride
1,4-Dichlorobenzene	1,1,2,2-Tetrachloroethane
1,1-Dichloroethane	Tetrachloroethylene
1,2-Dichloroethane	1,1,1-Trichloroethane
1,1-Dichloroethylene	1,1,2-Trichloroethane * <i>cis</i> (1.06 x conc.)
<i>trans</i> -1,2-Dichloroethylene	Trichloroethylene ** <i>trans</i> (0.94 x conc.)

### Gases

M-502B (formerly Cat. # M-601B) \$ 25 / 1 x 1 mL  
 M-502B-PAK **SAVE 25%** \$ 90 / 5 x 1 mL  
 0.2 mg/mL each in MeOH 6 comps.

Bromomethane	Dichlorodifluoromethane
Chloromethane	Trichlorofluoromethane
Chloroethane	Vinyl chloride

### Liquid Component

M-601C \$ 10 / 1 x 1 mL  
 M-601C-PAK **SAVE 20%** \$ 40 / 5 x 1 mL  
 0.2 mg/mL in MeOH

2-Chloroethyl vinyl ether

### Trihalomethanes

M-501 \$ 15 / 1 x 1 mL  
 M-501-PAK **SAVE 20%** \$ 60 / 5 x 1 mL  
 0.2 mg/mL each in MeOH 4 comps.

Bromoform	Dichlorobromomethane
Chloroform	Dibromochloromethane

### Purgeable Internal Standards

M-001R \$ 15 / 1 x 1 mL  
 M-001R-PAK **SAVE 20%** \$ 60 / 5 x 1 mL  
 20 mg/ml each in MeOH 3 comps.

Bromochloromethane	2-Bromo-1-chloropropane
1,4-Dichlorobutane	

### Purgeable Halocarbon Mix

M-601-ASL \$ 40 / 1 x 1 mL  
 M-601-ASL-PAK **SAVE 20%** \$ 120 / 5 x 1 mL  
 100 µg/mL each in MeOH 28 comps.

**Alternate Source Line**

Bromodichloromethane	1,2-Dichloroethane
Bromoform	1,1-Dichloroethane
Bromomethane	<i>trans</i> -1,2-Dichloroethane
Carbon tetrachloride	1,2-Dichloropropane
Chlorobenzene	<i>cis</i> -1,3-Dichloropropene
Chloroethane	<i>trans</i> -1,3-Dichloropropene
Chloroform	Dichloromethane
Chloromethane	1,1,2,2-Tetrachloroethane
Dibromochloromethane	Tetrachloroethane
1,2-Dichlorobenzene	1,1,1-Trichloroethane
1,3-Dichlorobenzene	1,1,2-Trichloroethane
1,4-Dichlorobenzene	Trichloroethene
Dichlorodifluoromethane	Trichlorofluoromethane
1,1-Dichloroethane	Vinyl chloride

### Performance Check Solution

S-532-ASL \$ 25 / 1 x 1 mL  
 S-532-ASL-PAK **SAVE 20%** \$ 100 / 5 x 1 mL  
 0.2 mg/mL each in MeOH 8 comps.

**Alternate Source Line**

Benzene	1,1-Dichloroethene
Carbon tetrachloride	1,1,1-Trichloroethane
1,4-Dichlorobenzene	Trichloroethene
1,2-Dichloroethane	Vinyl chloride

### Technical Note

**AccuStandard now offers 2 alternate approaches to perform Method 601 analysis:**

**Option 1** Use of the 4 ampule set (M-601) allows you to differentiate the more volatile analytes (M-601B) or less stable analytes (M-601C) and the THMs from the stable Method 601 liquids, which can then be ordered less frequently to optimize economy.

**Option 2** The M-601-ASL formulation will serve as a convenient single injection standard for all analytes other than 2-Chloroethyl vinyl ether. M-601-ASL can also be used as a Second Source Standard or QC Standard.

## Method 601/602 Purgeable Halocarbons by GC/PID

### Purgeable Halocarbons & Aromatics

<b>M-601/602</b>	<b>\$ 45 / 1 x 1 mL</b>
<b>M-601/602-PAK</b>	<b>SAVE 20% \$ 180 / 5 x 1 mL</b>
0.2 mg/mL each in MeOH	25 comps.
Benzene	<i>trans</i> -1,2-Dichloroethylene
Bromoform	1,2-Dichloropropane
Carbon tetrachloride	<i>cis</i> -1,3-Dichloropropylene *
Chlorobenzene	<i>trans</i> -1,3-Dichloropropylene **
Chloroform	Ethylbenzene
Dibromochloromethane	Methylene chloride
1,2-Dichlorobenzene	1,1,2,2-Tetrachloroethane
1,3-Dichlorobenzene	Tetrachloroethylene
1,4-Dichlorobenzene	Toluene
Dichlorobromomethane	1,1,1-Trichloroethane
1,1-Dichloroethane	1,1,2-Trichloroethane
1,2-Dichloroethane	Trichloroethylene
1,1-Dichloroethylene	

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

### Gases

<b>M-601B</b>	<b>\$ 25 / 1 x 1 mL</b>
<b>M-601B-PAK</b>	<b>SAVE 25% \$ 90 / 5 x 1 mL</b>
0.2 mg/mL each in MeOH	6 comps.
Bromomethane	Dichlorodifluoromethane
Chloromethane	Trichlorofluoromethane
Chloroethane	Vinyl chloride

### Liquids

<b>M-601C</b>	<b>\$ 10 / 1 x 1 mL</b>
<b>M-601C-PAK</b>	<b>SAVE 20% \$ 40 / 5 x 1 mL</b>
0.2 mg/mL in MeOH	
2-Chloroethyl vinyl ether	

### Purgeable Aromatics

<b>M-602</b>	<b>\$ 20 / 1 x 1 mL</b>
<b>M-602-PAK</b>	<b>SAVE 20% \$ 80 / 5 x 1 mL</b>
0.2 mg/mL each in MeOH	7 comps.
Benzene	1,4-Dichlorobenzene
Chlorobenzene	Ethylbenzene
1,2-Dichlorobenzene	Toluene
1,3-Dichlorobenzene	

### Purgeable Aromatics - Gasoline ID

<b>M-602-GAS</b>	<b>\$ 30 / 1 x 1 mL</b>	
<b>M-602-GAS-PAK</b>	<b>SAVE 20% \$ 120 / 5 x 1 mL</b>	
0.2 mg/mL each in MeOH	11 comps.	
Benzene	1,4-Dichlorobenzene	<i>p</i> -Xylene
Chlorobenzene	Ethylbenzene	<i>m</i> -Xylene
1,2-Dichlorobenzene	Toluene	MtBE
1,3-Dichlorobenzene	<i>o</i> -Xylene	

### Surrogate Standard

<b>M-602-SS</b>	<b>\$ 20 / 1 x 1 mL</b>
<b>M-602-SS-PAK</b>	<b>SAVE 20% \$ 80 / 5 x 1 mL</b>
0.2 mg/mL in MeOH	
$\alpha,\alpha,\alpha$ -Trifluorotoluene	

### Combined 601/602 Purgeable Halocarbon & Aromatic Gasoline ID Mixture with MtBE

<b>M-601-CHG</b>	<b>\$ 55 / 1 x 1 mL</b>
<b>M-601-CHG-PAK</b>	<b>SAVE 20% \$ 220 / 5 x 1 mL</b>
100 $\mu$ g/mL each in MeOH	35 comps.
Benzene	1,2-Dichloropropane
Bromodichloromethane	<i>cis</i> -1,3-Dichloropropene *
Bromoform	<i>trans</i> -1,3-Dichloropropene **
Bromomethane	Dichloromethane
Carbon tetrachloride	Ethylbenzene
Chlorobenzene	MtBE
Chloroethane	1,1,2,2-Tetrachloroethane
Chloroform	Tetrachloroethene
Chloromethane	Toluene
Dibromochloromethane	1,1,1-Trichloroethane
1,2-Dichlorobenzene	1,1,2-Trichloroethane
1,3-Dichlorobenzene	Trichloroethene
1,4-Dichlorobenzene	Trichlorofluoromethane
Dichlorodifluoromethane	<i>m</i> -Xylene
1,1-Dichloroethane	<i>o</i> -Xylene
1,2-Dichloroethane	<i>p</i> -Xylene
1,1-Dichloroethene	Vinyl chloride
<i>trans</i> -1,2-Dichloroethene	

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

### Technical Note

AccuStandard designed two sets of formulations for those laboratories analyzing Method 601/602 analytes by PID/HALL in series allowing for simultaneous screening of gasoline contamination:

**M-601/602** The first set of formulations provide the analytical chemist with the method analytes in a core mix of liquids and a separate mix of the more volatile gases. By providing the six gases in a separate solution the chemist can replace the volatile gases on a more frequent basis.

**M-601-CHG** The second formulation has the Method 601/602 analytes plus the oxygenate MtBE in one convenient solution. Since the oxygenate MtBE is added to gasoline, its presence on a chromatogram can provide early detection of gasoline contamination at the monitoring well.

### Gasoline Oxygenate - MtBE

<b>S-078</b>	<b>\$ 10 / 1 x 1 mL</b>
200 $\mu$ g/mL in MeOH	
Methyl t-butyl ether (MtBE)	



## Method 603 Acrolein & Acrylonitrile by GC/FID

**M-603** \$ 12 / 1 x 1 mL  
1.0 mg/mL each in water 2 comps.

Acrolein  
Acrylonitrile

## Method 604 Phenols by GC/FID

**M-604** \$ 25 / 1 x 1 mL  
**M-604-PAK** SAVE 20% \$ 100 / 5 x 1 mL  
0.5 mg/mL each in MeOH 11 comps.

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

### Surrogate Standard

**M-604-SS** \$ 20 / 1 x 1 mL  
**M-604-SS-PAK** SAVE 20% \$ 80 / 5 x 1 mL  
0.2 mg/mL each in MeOH

2,4,6-Tribromophenol

## Phenol as Pentafluorobenzyl derivatives by GC/ECD

**M-604-PFB** \$ 65 / 1 x 1 mL  
**M-604-PFB-PAK** SAVE 20% \$ 260 / 5 x 1 mL  
0.2 mg/mL each in MeOH 11 comps.

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

### Surrogate Standard

**M-604-SS-PFB** \$ 20 / 1 x 1 mL  
**M-604-SS-PFB-PAK** SAVE 20% \$ 80 / 5 x 1 mL  
0.2 mg/mL each in MeOH

2,4,6-Tribromophenol-PFB

## Method 605 Benzidines by HPLC

**M-605-10X** \$ 25 / 1 x 1 mL  
**M-605-10X-PAK** SAVE 20% \$ 100 / 5 x 1 mL  
1.0 mg/mL each in MeOH 2 comps.

Benzidine  
3,3'-Dichlorobenzidine

## Method 606 Phthalate Esters by GC/ECD

**M-606** \$ 20 / 1 x 1 mL  
**M-606-PAK** SAVE 20% \$ 80 / 5 x 1 mL  
0.2 mg/mL each in MeOH 6 comps.

Benzyl butyl phthalate	Di- <i>n</i> -butyl phthalate
Dimethyl phthalate	Di- <i>n</i> -octyl phthalate
Diethyl phthalate	bis(2-Ethylhexyl)phthalate

### Methods of Interest

Also See M-8060, page 172.

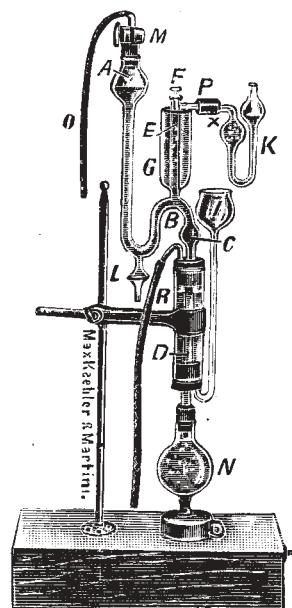
## Method 607 Nitrosamines by GC/NPD

**M-607** \$ 18 / 1 x 1 mL  
**M-607-PAK** SAVE 20% \$ 72 / 5 x 1 mL  
At stated conc. in MeOH 3 comps.

N-Nitrosodimethylamine	(0.2 mg/mL)
N-Nitrosodiphenylamine	(0.4 mg/mL)
N-Nitrosodi- <i>n</i> -propylamine	(0.2 mg/mL)

### Methods of Interest

Also See M-8070, page 172.



No. 128.

No. 128  
"Tenax" Apparatus for determining gases in water (can determine the exact content of free oxygen, nitrogen and carbon dioxide).



## Method 608 Pesticides and PCBs by GC/ECD

### Pesticides and PCBs

**M-608** **\$ 60 / set of 4 x 1 mL**  
(set includes M-001H, M-001J, M-001K, M-001L)

**M-001H** **\$ 40 / 1 x 1 mL**  
At stated conc. in MeOH 16 comps.

Aldrin	(0.1 mg/mL)	Dieldrin	(0.2 mg/mL)
α-BHC	(0.1 mg/mL)	Endosulfan I	(0.2 mg/mL)
β-BHC	(0.1 mg/mL)	Endosulfan II	(0.2 mg/mL)
δ-BHC	(0.1 mg/mL)	Endosulfan sulfate	(0.6 mg/mL)
γ-BHC	(0.1 mg/mL)	Endrin	(0.2 mg/mL)
4,4'-DDD	(0.6 mg/mL)	Endrin aldehyde	(0.6 mg/mL)
4,4'-DDE	(0.2 mg/mL)	Heptachlor	(0.1 mg/mL)
4,4'-DDT	(0.6 mg/mL)	Heptachlor epoxide	(0.1 mg/mL)

**M-001J** **\$ 15 / 1 x 1 mL**  
At stated conc. in MeOH 2 comps.

Chlordane	(0.02 mg/mL)
Toxaphene	(0.20 mg/mL)

**Also see M-8080,  
page 173-178**

**M-001K** **\$ 15 / 1 x 1 mL**  
0.2 mg/mL each in MeOH 4 comps.

Aroclor 1016	Aroclor 1248
Aroclor 1232	Aroclor 1260

**M-001L** **\$ 15 / 1 x 1 mL**  
0.2 mg/mL each in MeOH 3 comps.

Aroclor 1221	Aroclor 1254
Aroclor 1242	

### Performance Check Solution

**M-608-QC** **\$ 50 / 1 x 1 mL**  
**M-608-QC-PAK** **SAVE 20% \$ 200 / 5 x 1 mL**  
At stated conc. in MeOH 17 comps.

Aldrin	(0.02 mg/mL)	Endosulfan I	(0.02 mg/mL)
α-BHC	(0.02 mg/mL)	Endosulfan II	(0.10 mg/mL)
β-BHC	(0.02 mg/mL)	Endosulfan sulfate	(0.10 mg/mL)
δ-BHC	(0.02 mg/mL)	Endrin	(0.10 mg/mL)
γ-BHC	(0.02 mg/mL)	Endrin aldehyde	(0.02 mg/mL)
4,4'-DDD	(0.10 mg/mL)	Heptachlor	(0.02 mg/mL)
4,4'-DDE	(0.02 mg/mL)	Heptachlor epoxide	(0.02 mg/mL)
4,4'-DDT	(0.10 mg/mL)	Methoxychlor	(0.02 mg/mL)
Dieldrin	(0.02 mg/mL)		

### Pesticides

**M-608-ASL** **\$ 50 / 1 x 1 mL**  
**M-608-ASL-PAK** **SAVE 20% \$ 200 / 5 x 1 mL**  
20 µg/mL each in MeOH 16 comps.

*Alternate Source Line*

Aldrin	Dieldrin
α-BHC	Endosulfan I
β-BHC	Endosulfan II
δ-BHC	Endosulfan sulfate
γ-BHC	Endrin
p,p'-DDD	Endrin aldehyde
p,p'-DDE	Heptachlor
p,p'-DDT	Heptachlor epoxide (Isomer B)

### Multi-Component Analytes (Polychlorinated Biphenyls)

Each at 1,000 µg/mL in Hexane

**AccuPAK™ (5 x 1 mL)**  
**SAVE 20%**

Aroclors®#	Cat. No.	1 mL	Cat. No.	PAK
Aroclor 1016	C-216S-H-10X	\$ 15	C-216S-H-10X-PAK	\$ 60
Aroclor 1221	C-221S-H-10X	\$ 15	C-221S-H-10X-PAK	\$ 60
Aroclor 1232	C-232S-H-10X	\$ 15	C-232S-H-10X-PAK	\$ 60
Aroclor 1242	C-242S-H-10X	\$ 15	C-242S-H-10X-PAK	\$ 60
Aroclor 1248	C-248S-H-10X	\$ 15	C-248S-H-10X-PAK	\$ 60
Aroclor 1254	C-254S-H-10X	\$ 15	C-254S-H-10X-PAK	\$ 60
Aroclor 1260	C-260S-H-10X	\$ 15	C-260S-H-10X-PAK	\$ 60
Aroclor 1262	C-262S-H-10X	\$ 15	C-262S-H-10X-PAK	\$ 60
Aroclor 1268	C-268S-H-10X	\$ 15	C-268S-H-10X-PAK	\$ 60

**For Your Proficiency & QC Testing**  
see pages 3-13 for WS-PT  
Samples for Pesticides  
**AccuStandard Your NVLAP**  
Accredited Proficiency Provider



## Method 608.1 Organochlorine Pesticides in Municipal & Industrial Wastewater by GC/ECD

**M-608.1** \$ 30 / 1 x 1 mL  
**M-608.1-PAK** SAVE 20% \$ 140 / 5 x 1 mL  
 100 µg/mL each in Isooctane 7 comps.

Chlorobenzilate	Etridiazole
Chloroneb	PCNB
Chloropropylate	Propachlor
Dibromochloropropane	

## Method 608.2 Organochlorine Pesticides in Municipal & Industrial Wastewater by GC/ECD

**M-608.2** \$ 35 / 1 x 1 mL  
**M-608.2-PAK** SAVE 20% \$ 140 / 5 x 1 mL  
 100 µg/mL each in Isooctane 6 comps.

Chlorothalonil	Methoxychlor
DCPA	cis-Permethrin *
Dichloram	trans-Permethrin *

\* Actual concentrations stated on Certificate of Product Data

## Method 609 Nitroaromatics & Isophorone by GC/ECD/FID

**M-609R** \$ 20 / set of 2 x 1 mL  
 (Set includes M-609A-R and M-609B-R)

**M-609A-R** \$ 15 / 1 x 1 mL  
 1.0 mg/mL each in Hexane 2 comps.

Isophorone	Nitrobenzene
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**M-609B-R** \$ 15 / 1 x 1 mL  
 1.0 mg/mL each in Hexane 2 comps.

2,4-Dinitrotoluene	2,6-Dinitrotoluene
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### Performance Check Solution

**M-609-QC** \$ 20 / 1 x 1 mL  
 At stated conc. in Acetone 4 comps.

Isophorone (100 µg/mL)	2,4-Dinitrotoluene (20 µg/mL)
Nitrobenzene (100 µg/mL)	2,6-Dinitrotoluene (20 µg/mL)

## Method 610 PAHs by GC/FID or HPLC

For additional formulations also see M-8310, page 207

**M-610** \$ 30 / 1 x 1 mL  
 At stated conc. in MeOH : CH<sub>2</sub>Cl<sub>2</sub> (1:1) 16 comps.

**M-610A** \$ 35 / 1 x 1 mL  
 At stated conc. in MeOH : CH<sub>2</sub>Cl<sub>2</sub> (1:1) 16 comps.

**M-610-QC** \$ 35 / 1 x 1 mL  
 At stated conc in AcCN 16 comps.

Compound	M-610 (mg/mL)	M-610A (mg/mL)	M-610-QC (mg/mL)
Acenaphthene	0.1	1.0	0.1
Acenaphthylene	0.1	2.0	0.1
Anthracene	0.1	0.1	0.1
Benzo[a]anthracene	0.1	0.1	0.01
Benzo[a]pyrene	0.1	0.1	0.01
Benzo[b]fluoranthene	0.1	0.2	0.01
Benzo[g,h,i]perylene	0.1	0.2	0.01
Benzo[k]fluoranthene	0.1	0.1	0.005
Chrysene	0.1	0.1	0.01
Dibenz[a,h]anthracene	0.1	0.2	0.01
Fluoranthene	0.1	0.2	0.01
Fluorene	0.1	0.2	0.1
Indeno[1,2,3-cd]pyrene	0.1	0.1	0.01
Naphthalene	0.1	1.0	0.1
Phenanthrene	0.1	0.1	0.1
Pyrene	0.1	0.1	0.01

## Method 611 Haloethers by GC/ECD or ECLD

**M-611** \$ 30 / 1 x 1 mL  
 0.2 mg/mL each in MeOH 5 comps.

bis(2-Chloroethyl)ether	4-Bromophenyl phenyl ether
bis(2-Chloroethoxy)methane	4-Chlorophenyl phenyl ether
bis(2-Chloroisopropyl)ether	

### Methods of Interest

Also See M-8110, page 185.

## Method 612 Chlorinated Hydrocarbons by GC/ECD

**M-612** \$ 25 / 1 x 1 mL  
 At stated conc. in Isooctane 9 comps.

2-Chloronaphthalene (400 µg/mL)	Hexachlorobutadiene (1 µg/mL)
1,2-Dichlorobenzene (200 µg/mL)	Hexachloroethane (1 µg/mL)
1,3-Dichlorobenzene (200 µg/mL)	Hexachlorocyclopentadiene (1 µg/mL)
1,4-Dichlorobenzene (400 µg/mL)	1,2,4-Trichlorobenzene (40 µg/mL)
Hexachlorobenzene (1 µg/mL)	

### Methods of Interest

Also See M-8120-QC, page 186.

## Method 613 2,3,7,8-TCDD by GC/MS

**M-613** \$ 40 / 1 x 1 mL  
**M-613-PAK** SAVE 20% \$ 160 / 5 x 1 mL  
 10 µg/mL in Toluene

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



## Method 614 Organophosphorus Pesticides by GC/NPD

**M-614** \$ 30 / 1 x 1 mL  
1,000 µg/mL each in Acetone : Hexane (1:1) 8 comps.

Azinphos methyl	Ethion
Demeton (mix of O & S isomers)	Malathion
Diazinon	Parathion
Disulfoton	Parathion methyl

## Method 614.1 Organophosphorus Pesticides by GC/NPD

**M-614.1** \$ 30 / 1 x 1 mL  
1,000 µg/mL each in Acetone : Hexane (1:1) 4 comps.

Dioxathion	Ethion
EPN	Terbufos

## Method 615 Chlorinated Herbicides

Compound	Herbicide Acids (in MeOH)	Methyl Derivatives (in Hexane)	1 mL Price
2,4-D (01)	M-8150S-A-01	M-8150-01	\$ 10
2,4-DB (02)	M-8150S-A-02	M-8150-02	10
2,4,5-T (03)	M-8150S-A-03	M-8150-03	10
2,4,5-TP (04)	M-8150S-A-04	M-8150-04	10
Dalapon (05)	M-8150S-A-05	M-8150-05	10
Dicamba (06)	M-8150S-A-06	M-8150-06	10
Dichlorprop (07)	M-8150S-A-07	M-8150-07	10
Dinoseb (08)	M-8150S-A-08	M-8150-08	10
MCPA (09) (2.0 mg/mL)	M-8150S-A-09	M-8150-09	10
MCPP (10) (2.0 mg/mL)	M-8150S-A-10	M-8150-10	10
Set of the above 10 Herbicides 10 x 1 mL	<b>M-8150A-SET</b>	<b>M-8150-SET</b>	\$ 85
<i>Individual analytes at 0.2 mg/mL, except MCPA &amp; MCPP at 2.0 mg/mL</i>			

### Underivatized

**M-8150A** \$ 40 / 1 x 1 mL  
0.1 mg/mL in MeOH, except MCPA and MCPP 10 comps.

2,4-D	Dichlorprop	MCPP (10 mg/mL)
Dalapon	Dinoseb	2,4,5-TP
2,4-DB	MCPA (10 mg/mL)	2,4,5-T
Dicamba		

### Methyl Derivatives

**M-8150** \$ 45 / 1 x 1 mL  
0.1 mg/mL in MeOH, except MCPA and MCPP 10 comps.

2,4-D	Dichlorprop	MCPP (10 mg/mL)
Dalapon	Dinoseb	2,4,5-TP
2,4-DB	MCPA (10 mg/mL)	2,4,5-T
Dicamba		

### Standards of Interest

For additional Herbicide Standards see page 88

## Method 615 Underivatized Chlorinated Herbicides by GC/ECD

### Herbicides *Alternate Source Line*

**M-615A-ASL** \$ 50 / 1 x 1 mL  
**M-615A-ASL-PAK** SAVE 20% \$ 200 / 5 x 1 mL  
At stated conc. in MeOH 10 comps.

### Methyl Derivatives of Chlorinated Herbicides

**M-615-ASL** \$ 55 / 1 x 1 mL  
**M-615-ASL-PAK** SAVE 20% \$ 220 / 5 x 1 mL  
At stated conc. in MeOH 10 comps.

2,4-D ME (100 µg/mL)	Dicamba ME (10 µg/mL)
2,4-DB ME (100 µg/mL)	Dichlorprop ME (100 µg/mL)
2,4,5-T ME (10 µg/mL)	Dinoseb ME (50 µg/mL)
2,4,5-TP ME (10 µg/mL)	MCPA ME (10,000 µg/mL)
Dalapon ME (250 µg/mL)	MCPP ME (10,000 µg/mL)

## Method 617 Chlorinated Pesticides & PCBs by GC/ECD

### Mix #1 - Analytes

**Z-014C-R2** \$ 85 / 1 x 1 mL  
**Z-014C-R2-PAK** SAVE 20% \$ 340 / 5 x 1 mL  
2.0 mg/mL each in Hexane : Toluene (1:1) 18 comps.

Aldrin	4,4'-DDE	Endrin
α-BHC	4,4'-DDT	Endrin ketone
β-BHC	Dieldrin	Endrin aldehyde
γ-BHC	Endosulfan I	Heptachlor
δ-BHC	Endosulfan II	Heptachlor epoxide
4,4'-DDD	Endosulfan sulphate	Methoxychlor

### Mix #2 - Analytes

**M-617-2** \$ 45 / 1 x 1 mL  
2.0 mg/mL each in Hexane : Toluene (1:1) 9 comps.

Captan	Dicofol	PCNB
Carbophenothion	Isodrin	Perthane
Dichloran	Mirex	Trifluralin

### Chlordane

**P-017S-20X** \$ 24 / 1 x 1 mL  
2.0 mg/mL in MeOH

### Toxaphene

**P-093S-40X** \$ 24 / 1 x 1 mL  
4.0 mg/mL in MeOH

## Method 618 Volatile Pesticides by GC/ECD

**M-618** \$ 20 / 1 x 1 mL  
20 mg/mL each in Isooctane 2 comps.

Chloropicrin
Ethylene dibromide

### Internal Standard

**M-618-IS** \$ 10 / 1 x 1 mL  
20 mg/mL in Isooctane

Bromoform
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## Method 619 Triazine Herbicides by GC/NPD

Each individual solution at 0.1 mg/mL in MeOH		1 mL
Component	Cat. No.	Price
Ametryn (01)	M-619-01	\$ 10
Atraton (02)	M-619-02	20
Atrazine (03)	M-619-03	10
Prometon (04)	M-619-04	10
Prometryn (05)	M-619-05	10
Propazine (06)	M-619-06	10
Secbumeton (07)	M-619-07	20
Simetryn (08)	M-619-08	20
Simazine (09)	M-619-09	10
Terbutylazine (10)	M-619-10	10
Terbutryn (11)	M-619-11	10

**M-619-SET** \$ 100 / set of 11 x 1 mL

Each Individual Solution at 0.1 mg/mL in MeOH

Above eleven analytes also available as Mixture

**M-619M** 0.1 mg/mL each in MeOH \$ 85 / 1 x 1 mL

### Standards of Interest

For Triazine Metabolites see page 87.

## Method 620 Diphenylamine by GC/NPD

**M-620** \$ 15 / 1 x 1 mL

1,000 µg/mL in MeOH

Diphenylamine

## Method 622 Organophosphorus Pesticides by GC/NPD

**M-622-SET** \$ 390 / 27 x 1 mL

1,000 µg/mL each in Hexane

Azinphos methyl (01)	EPN (10)	Parathion ethyl (19)
Bolstar (Sulprofos) (02)	Ethoprop (11)	Parathion methyl (20)
Chlorpyrifos (03)	Fensulfothion (12)	Phorate (21)
Coumaphos (04)	Fenthion (13)	Ronnel (22)
Demeton, O & S (05)	Malathion (14)	Stirophos (23)
Diazinon (06)	Merphos (15)	Sulfotep (24)
Dichlorvos (07)	Mevinphos (16)	TEPP (25)
Dimethoate (08)	Monocrotophos (17)	Tokuthion (26)
Disulfoton (09)	Naled (18)	Trichloronate (27)

### Standards of Interest

See Method 8140 & 8141 for individual analytes, page 187.

## Method 622.1 Thiophosphate Pesticides by GC/NPD

**M-622.1** \$ 40 / 1 x 1 mL  
1.0 mg/mL each in MtBE 7 comps.

Aspon	Fonophos
Dichlofenthion	Phosmet
Famphur	Thionazin
Fenitrothion	

## Method 624 Purgeables by GC/MS

**M-624** \$ 30 / 1 x 1 mL  
0.2 mg/mL each in MeOH 31 comps.

Benzene	1,1-Dichloroethene
Bromodichloromethane	trans-1,2-Dichloroethene
Bromoform	1,2-Dichloropropane
Bromomethane	cis-1,3-Dichloropropene *
Carbon tetrachloride	trans-1,3-Dichloropropene **
Chlorobenzene	Ethylbenzene
Chloroethane	Methylene chloride
2-Chloroethylvinyl ether	1,1,2,2-Tetrachloroethane
Chloroform	Tetrachloroethene
Chloromethane	Toluene
Dibromochloromethane	1,1,1-Trichloroethane
1,2-Dichlorobenzene	1,1,2-Trichloroethane
1,3-Dichlorobenzene	Trichloroethene
1,4-Dichlorobenzene	Trichlorofluoromethane
1,1-Dichloroethane	Vinyl chloride * cis (1.06 x conc.)
1,2-Dichloroethane	** trans (0.94 x conc.)

### Surrogates

**M-624-SS-#** (1 through 13) \$ 20 / 1 x 1 mL

Each individual solution 0.2 mg/mL in MeOH

Benzene-d <sub>6</sub> (01)	Ethylbenzene-d <sub>10</sub> (08)
Bromochloromethane (02)	Fluorobenzene (09)
4-Bromofluorobenzene (03)	Pentafluorobenzene (10)
1-Chloro-2-bromopropane (04)	1,2-Dichlorobenzene-d <sub>4</sub> (11)
1,4-Dichlorobutane (05)	2-Bromochlorobenzene (12)
1,2-Dichloroethane-d <sub>4</sub> (06)	4-Chlorofluorobenzene (13)
1,4-Difluorobenzene (07)	

### Surrogate Standard

**M-624-SS-M** \$ 25 / 1 x 1 mL  
**M-624-SS-M-PAK** SAVE 20% \$ 100 / 5 x 1 mL  
20 mg/mL each in MeOH 3 comps.

4-Bromofluorobenzene	Pentafluorobenzene
Fluorobenzene	

### Internal Standard

**M-001R** \$ 15 / 1 x 1 mL  
**M-001R-PAK** SAVE 20% \$ 60 / 5 x 1 mL  
20 mg/mL each in MeOH 3 comps.

Bromochloromethane	2-Bromo-1-chloropropane
1,4-Dichlorobutane	

### Technical Note

#### Internal/Surrogate Standard Evaluation Mixes

AccuStandard has formulated an ISTD/SS evaluation mix containing the popularly suggested analytes. Use of this ISTD/SS evaluation solution can help the chemist modify his current ISTD/SS formulation to improve precision and accuracy. For the Evaluation Mix product listing or additional Surrogate & Internal Standard formulations see page 118.



## Method 625 Semi-Volatiles Analysis by GC/MS

M-625-BN	\$ 55 / 1 x 1 mL	0.1 mg/mL each in CH <sub>2</sub> Cl <sub>2</sub>	46 comps. Solution includes
M-625-BN-PAK	SAVE 20% \$ 220 / 5 x 1 mL		44 Base-Neutrals and 2 Benzidines
M-625-BN-5X	\$ 115 / 1 x 1 mL	0.5 mg/mL each in CH <sub>2</sub> Cl <sub>2</sub>	46 comps.
M-625-BN-5X-PAK	SAVE 20% \$ 460 / 5 x 1 mL		
CLP-HC-BN	\$ 150 / 1 x 1 mL	2.0 mg/mL each in Benzene : CH <sub>2</sub> Cl <sub>2</sub> : AcCN (2:2:1)	46 comps.
CLP-HC-BN-PAK	SAVE 20% \$ 600 / 5 x 1 mL		
CLP-HC-BN-SET	\$ 180 / 2 x 1 mL	set includes CLP-HC-BN-R & Z-014F	Set
CLP-HC-BN-R	\$ 160 / 1 x 1 mL	2.0 mg/mL each in Benzene : CH <sub>2</sub> Cl <sub>2</sub> : AcCN (2:2:1)	44 comps.
Z-014F	\$ 30 / 1 x 1 mL	2.0 mg/mL each in MeOH	2 comps.

### Technical Note

The following composite mixtures were formulated to allow the flexibility of preparing a complete semi-volatile mix to meet your laboratory's specific needs. These Base/Neutral analytes are also available in a two ampule set to extend the useful life of your stock calibration standards.

### Base-Neutral Mixture

CLP-HC-BN-R			44 comps.
Acenaphthene	bis(2-Chloroethoxy)methane	Diethyl phthalate	Hexachloroethane
Acenaphthylene	bis(2-Chloroethyl)ether	Dimethyl phthalate	Indeno[1,2,3-cd]pyrene
Anthracene	bis(2-Chloroisopropyl)ether	2,4-Dinitrotoluene	Isophorone
Azobenzene	2-Chloronaphthalene	2,6-Dinitrotoluene	Naphthalene
Benz[a]anthracene	4-Chlorophenyl phenyl ether	Di- <i>n</i> -octyl phthalate	Nitrobenzene
Benzo[b]fluoranthene	Chrysene	bis(2-Ethylhexyl)phthalate	N-Nitrosodimethylamine
Benzo[k]fluoranthene	Dibenz[a,h]anthracene	Fluoranthene	N-Nitrosodiphenylamine
Benzo[ghi,perylene]	Di- <i>n</i> -butyl phthalate	Fluorene	N-Nitrosodi- <i>n</i> -propylamine
Benzo[a]pyrene	1,2-Dichlorobenzene	Hexachlorobenzene	Phenanthrene
4-Bromophenyl phenyl ether	1,3-Dichlorobenzene	Hexachlorobutadiene	Pyrene
Butyl benzyl phthalate	1,4-Dichlorobenzene	Hexachlorocyclopentadiene	1,2,4-Trichlorobenzene

### Benzidine Mix

Z-014F 2 comps.

Benzidine  
3,3'-Dichlorobenzidine

The following 4 mixtures can be combined for use in Daily QA/QC, as a second source lot or as spikes & duplicates.

M-625-BN-1 \$ 25 / 1 x 1 mL  
M-625-BN-1-PAK SAVE 20% \$ 100 / 5 x 1 mL  
0.5 mg/mL each in CH<sub>2</sub>Cl<sub>2</sub> 12 comps.

Acenaphthylene  
Benzo[b]fluoranthene  
4-Bromophenylphenyl ether  
bis(2-Chloroethyl)ether  
bis(2-Chloroisopropyl)ether  
1,4-Dichlorobenzene  
3,3'-Dichlorobenzidine  
Dimethyl phthalate  
Di-*n*-butyl phthalate  
2,6-Dinitrotoluene  
bis(2-Ethylhexyl)phthalate  
Nitrobenzene

M-625-BN-3 \$ 25 / 1 x 1 mL  
M-625-BN-3-PAK SAVE 20% \$ 100 / 5 x 1 mL  
0.5 mg/mL each in CH<sub>2</sub>Cl<sub>2</sub> 11 comps.

Azobenzene  
Benzyl butyl phthalate  
2-Chloronaphthalene  
Fluoranthene  
Hexachlorocyclopentadiene  
Hexachloroethane  
Isophorone  
N-Nitrosodi-*n*-propylamine  
N-Nitrosodiphenylamine  
Phenanthrene  
1,2,4-Trichlorobenzene

### High Concentration Acid Extractables Phenol Mixture

Z-014H \$ 30 / 1 x 1 mL  
Z-014H-PAK SAVE 20% \$ 120 / 5 x 1 mL  
2.0 mg/mL each in CH<sub>2</sub>Cl<sub>2</sub> 11 comps.

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



M-625-BN-2 \$ 25 / 1 x 1 mL  
M-625-BN-2-PAK SAVE 20% \$ 100 / 5 x 1 mL  
0.5 mg/mL each in CH<sub>2</sub>Cl<sub>2</sub> 15 comps.

Acenaphthene  
Anthracene  
Benzo[a]anthracene  
bis(2-Chloroethoxy)methane  
Chrysene  
Dibenzo[a,h]anthracene  
1,2-Dichlorobenzene  
1,3-Dichlorobenzene  
Diethyl phthalate  
2,4-Dinitrotoluene  
Fluorene  
Hexachlorobenzene  
Hexachlorobutadiene  
Naphthalene  
Pyrene

M-625-BN-4 \$ 25 / 1 x 1 mL  
M-625-BN-4-PAK SAVE 20% \$ 100 / 5 x 1 mL  
0.5 mg/mL each in CH<sub>2</sub>Cl<sub>2</sub> 8 comps.

Benzidine  
Benzo[a]pyrene  
Benzo[ghi,perylene]  
Benzo[k]fluoranthene  
4-Chlorophenylphenyl ether  
Di-*n*-octyl phthalate  
Indeno[1,2,3-cd]pyrene  
N-Nitrosodimethylamine

M-625-MOD \$ 50 / 1 x 1 mL  
M-625-MOD-PAK SAVE 20% \$ 200 / 5 x 1 mL  
2000 µg/mL each in CH<sub>2</sub>Cl<sub>2</sub> 17 comps.

Acetophenone *n*-Dodecane  
Aniline *n*-Eicosane  
Benzoic acid *n*-Hexadecane  
Carbazole 1-Methylphenanthrene  
*p*-Cresol *n*-Octadecane  
*o*-Cresol Pyridine  
2,3-Dichloroaniline *a*-Terpineol  
*n*-Decane *n*-Tetradecane  
*n*-Docosane

### Technical Note

Meet latest 625 Revisions incorporating these new analytes.



## Method 625 Semi-Volatiles Analysis by GC/MS

### Acid Extractables Mixture

**M-625A** \$ 25 / 1 x 1 mL  
**M-625A-PAK** SAVE 20% \$ 100 / 5 x 1 mL  
 20 µg/mL each in MeOH 11 comps.

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

### Single Component Surrogates & Internal Standards

**M-625-# (01) through (20)** \$ 20 / 1 x 1 mL  
 Individual solutions in 0.2 mg/mL in CH<sub>2</sub>Cl<sub>2</sub>

#### Base/Neutrals

Aniline-d <sub>5</sub> (01)	2-Fluorobiphenyl (09)
Anthracene-d <sub>10</sub> (02)	1-Fluoronaphthalene (10)
Benzo(a)anthracene-d <sub>12</sub> (03)	2-Fluoronaphthalene (11)
Decafluorobiphenyl (04)	Naphthalene-d <sub>8</sub> (12)
4,4'-Dibromobiphenyl (05)	Nitrobenzene-d <sub>5</sub> (13)
4,4'-Dibromooctafluorobiphenyl (06)	Phenanthrene-d <sub>10</sub> (14)
2,2'-Difluorobiphenyl (07)	Pyridine-d <sub>5</sub> (15)
4-Fluoroaniline(08)	

#### Acids

2-Fluorophenol (16)	2,4,6-Tribromophenol (19)
Pentafluorophenol (17)	2-Chlorophenol-d <sub>4</sub> (20)
Phenol-d <sub>5</sub> (18)	

### Pesticide Extractables Mixture

**M-625P** \$ 35 / 1 x 1 mL  
**M-625P-PAK** SAVE 20% \$ 140 / 5 x 1 mL  
 20 µg/mL each in MeOH 11 comps.

Aldrin	4,4'-DDE	Endrin aldehyde
β-BHC	4,4'-DDT	Heptachlor
δ-BHC	Dieldrin	Heptachlor epoxide
4,4'-DDD	Endosulfan sulfate	

### GC/MS Calibration Standards

**M-625C** \$ 80 / set of 5 x 1 mL  
 5 solutions each at stated conc. in CH<sub>2</sub>Cl<sub>2</sub>  
**Individual solutions: M-625C-#** \$ 20 / 1 x 1 mL  
 At stated conc. in CH<sub>2</sub>Cl<sub>2</sub>

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

### GC/MS Tuning Standards

**M-625-TS** \$ 40 / 1 x 1 mL  
**M-625-TS-PAK** \$ 160 / 5 x 1 mL  
 50 µg/mL each in CH<sub>2</sub>Cl<sub>2</sub> 4 comps.

Benzidine	DFTPP
p,p'-DDT	Pentachlorophenol

**CLP-TS** \$ 20 / 1 x 1 mL  
**CLP-TS-PAK** \$ 80 / 5 x 1 mL  
 50 µg/mL in CH<sub>2</sub>Cl<sub>2</sub>

Perfluorokerosene

### Multi-Component Analytes (Polychlorinated Biphenyls, Chlordane & Toxaphene)

Each at 1,000 µg/mL in Hexane

**AccuPAK™**  
 (5 x 1 mL)  
 SAVE 20%

Aroclors® #	Cat. No.	1 mL	Cat. No.	PAK
Aroclor 1016	C-216S-H-10X	\$ 15	C-216S-H-10X-PAK	\$ 60
Aroclor 1221	C-221S-H-10X	\$ 15	C-221S-H-10X-PAK	\$ 60
Aroclor 1232	C-232S-H-10X	\$ 15	C-232S-H-10X-PAK	\$ 60
Aroclor 1242	C-242S-H-10X	\$ 15	C-242S-H-10X-PAK	\$ 60
Aroclor 1248	C-248S-H-10X	\$ 15	C-248S-H-10X-PAK	\$ 60
Aroclor 1254	C-254S-H-10X	\$ 15	C-254S-H-10X-PAK	\$ 60
Aroclor 1260	C-260S-H-10X	\$ 15	C-260S-H-10X-PAK	\$ 60
Aroclor 1262	C-262S-H-10X	\$ 15	C-262S-H-10X-PAK	\$ 60
Aroclor 1268	C-268S-H-10X	\$ 15	C-268S-H-10X-PAK	\$ 60

#### Pesticides

Chlordane	P-017S-H-10X	\$ 15	P-017S-H-10X-PAK	\$ 60
Toxaphene	P-093S-H-10X	\$ 15	P-093S-H-10X-PAK	\$ 60

### Chlordane and Toxaphene

**M-001J** \$ 15 / 1 x 1 mL  
**M-001J-PAK** SAVE 20% \$ 60 / 5 x 1 mL  
 At stated conc. in MeOH

Chlordane	(0.02 mg/mL)
Toxaphene	(0.20 mg/mL)

### Polychlorinated Biphenyls

#### Aroclor Mix #1

**M-001K** \$ 15 / 1 x 1 mL  
 0.2 mg/mL each in MeOH 4 comps.

Aroclor 1016	Aroclor 1248
Aroclor 1232	Aroclor 1260

#### Aroclor Mix #2

**M-001L** \$ 15 / 1 x 1 mL  
 0.2 mg/mL each in MeOH 3 comps.

Aroclor 1221	Aroclor 1254
Aroclor 1242	

#### Technical Note

Each Aroclor® is a mixture of numerous components. Considerable overlap in composition occurs between Aroclors. See pages 63-64 for individual Aroclors in both neat and solution form.

### Internal Standard Mixture

**Z-014J** \$ 75 / 1 x 1 mL  
**Z-014J-PAK** \$ 50 each in PAK SAVE 30% \$ 250 / 5 x 1 mL  
 4.0 mg/mL each in CH<sub>2</sub>Cl<sub>2</sub> 6 comps.

Acenaphthene-d <sub>10</sub>	Naphthalene-d <sub>8</sub>
Chrysene-d <sub>12</sub>	Perylene-d <sub>12</sub>
1,4-Dichlorobenzene-d <sub>4</sub>	Phenanthrene-d <sub>10</sub>



# Priority Pollutant Standards

For Calibration of Capillary GC/MS

## Method 625 Priority Pollutant Standards

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

### Base/Neutrals - Mix #1

Z-014A \$ 50 / 1 x 1 mL  
 Z-014A-PAK **SAVE 20% \$ 200 / 5 x 1 mL**  
 2.0 mg/mL each in CH<sub>2</sub>Cl<sub>2</sub> 14 comps.

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

### Base/Neutrals - Mix #2

Z-014B \$ 50 / 1 x 1 mL  
 Z-014B-PAK **SAVE 20% \$ 200 / 5 x 1 mL**  
 2.0 mg/mL each in CH<sub>2</sub>Cl<sub>2</sub> 14 comps.

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

### Phenols Mixture

Z-014H \$ 30 / 1 x 1 mL  
 Z-014H-PAK **SAVE 20% \$ 120 / 5 x 1 mL**  
 2.0 mg/mL each in CH<sub>2</sub>Cl<sub>2</sub> 11 comps.

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

### Toxic Substances - Mix #1

Z-014D \$ 25 / 1 x 1 mL  
 Z-014D-PAK **SAVE 20% \$ 100 / 5 x 1 mL**  
 2.0 mg/mL each in CH<sub>2</sub>Cl<sub>2</sub> 4 comps.

- Benzoic acid
- 2-Methylphenol
- 4-Methylphenol
- 2,4,5-Trichlorophenol

### Polynuclear Aromatic Hydrocarbon Mixture

Z-014G \$ 60 / 1 x 1 mL  
 Z-014G-PAK **SAVE 20% \$ 240 / 5 x 1 mL**  
 2.0 mg/mL each in CH<sub>2</sub>Cl<sub>2</sub>: Benzene (1:1) 16 comps.

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

### Polynuclear Aromatic Hydrocarbon Mixture

Z-014G-R \$ 60 / 1 x 1 mL  
 Z-014G-R-PAK **SAVE 20% \$ 240 / 5 x 1 mL**  
 2.0 mg/mL each in CH<sub>2</sub>Cl<sub>2</sub>: Benzene (1:1) 17 comps.

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

### Toxic Substances - Mix #2

Z-014E \$ 30 / 1 x 1 mL  
 Z-014E-PAK **SAVE 20% \$ 120 / 5 x 1 mL**  
 2.0 mg/mL each in CH<sub>2</sub>Cl<sub>2</sub> 8 comps.

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

### Benzidine Mixture

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

- Benzidine
- 3,3'-Dichlorobenzidine

# Priority Pollutant Standards

For Calibration of Capillary GC/MS

Method 625



(cont'd)

## Method 625 Priority Pollutant Sets

### Complete Priority Pollutant Sets

**Z-014R-SET** \$ 350 / set of 9 x 1 mL

**Set includes:**

**Z-014A** Base/Neutrals - Mix #1  
**Z-014B** Base/Neutrals - Mix #2  
**Z-014C** Pesticides - Mix #1  
**Z-014D** Toxic Substances - Mix #1  
**Z-014E** Toxic Substances - Mix #2  
**Z-014F** Benzidine Mix  
**Z-014G-R** PAH Mix  
**Z-014H** Phenols Mix  
**Z-014J** Internal Standard Mix

**Z-014R-1-SET** \$ 350 / set of 9 x 1 mL

**Set includes:**

**Z-014A** Base/Neutrals - Mix #1  
**Z-014B** Base/Neutrals - Mix #2  
**Z-014C-R** Pesticides - Mix #2  
**Z-014D** Toxic Substances - Mix #1  
**Z-014E** Toxic Substances - Mix #2  
**Z-014F** Benzidine Mix  
**Z-014G-R** PAH Mix  
**Z-014H** Phenols Mix  
**Z-014J** Internal Standard Mix

**Z-014R-2-SET** \$ 230 / set of 7 x 1 mL

**Set includes:**

**Z-014A** Base/Neutrals - Mix #1  
**Z-014B** Base/Neutrals - Mix #2  
**Z-014D** Toxic Substances - Mix #1  
**Z-014E** Toxic Substances - Mix #2  
**Z-014F** Benzidine Mix  
**Z-014G** PAH Mix  
**Z-014H** Phenols Mix

**Z-014R-3-SET** \$ 230 / set of 7 x 1 mL

**Set includes:**

**Z-014A** Base/Neutrals - Mix #1  
**Z-014B** Base/Neutrals - Mix #2  
**Z-014D** Toxic Substances - Mix #1  
**Z-014E** Toxic Substances - Mix #2  
**Z-014F** Benzidine Mix  
**Z-014G-R** PAH Mix  
**Z-014H** Phenols Mix

**Order a complete Set and  
Save 25%**

### Pesticides - Mix #1

**Z-014C** \$ 75 / 1 x 1 mL  
**Z-014C-PAK** **SAVE 20%** \$ 300 / 5 x 1 mL  
 2.0 mg/mL each in Toluene : Hexane (1:1)  
 16 comps.

Aldrin	Dieldrin
α-BHC	Endosulfan I
β-BHC	Endosulfan II
γ-BHC	Endosulfan sulfate
δ-BHC	Endrin
4,4'-DDD	Endrin aldehyde
4,4'-DDE	Heptachlor
4,4'-DDT	Heptachlor epoxide

### Pesticides - Mix #2

**Z-014C-R** \$ 95 / 1 x 1 mL  
**Z-014C-R-PAK** **SAVE 20%** \$ 380 / 5 x 1 mL  
 2.0 mg/mL each in Toluene : Hexane (1:1)  
 20 comps.

Aldrin	Dieldrin
α-BHC	Endosulfan I
β-BHC	Endosulfan II
γ-BHC	Endosulfan sulfate
δ-BHC	Endrin
α-Chlordane	Endrin aldehyde
γ-Chlordane	Endrin ketone
4,4'-DDD	Heptachlor
4,4'-DDE	Heptachlor epoxide
4,4'-DDT	Methoxychlor

### Pesticides - Mix #3

**Z-014C-R2** \$ 85 / 1 x 1 mL  
**Z-014C-R2-PAK** **SAVE 20%** \$ 340 / 5 x 1 mL  
 2.0 mg/mL each in Toluene : Hexane (1:1)  
 18 comps.

Aldrin	Endosulfan I
α-BHC	Endosulfan II
β-BHC	Endosulfan sulfate
γ-BHC	Endrin
δ-BHC	Endrin aldehyde
4,4'-DDD	Endrin ketone
4,4'-DDE	Heptachlor
4,4'-DDT	Heptachlor epoxide
Dieldrin	Methoxychlor

### Tuning Standards for EPA Methods

**M-625-TS** \$ 40 / 1 x 1 mL  
**M-625-TS-PAK** **SAVE 20%** \$ 160 / 5 x 1 mL  
 50 µg/mL each in CH<sub>2</sub>Cl<sub>2</sub> 4 comps.

Benzidine	DFTPP
p,p'-DDT	Pentachlorophenol

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

Perfluorokerosene

### EPA Method 625 GC/MS Calibration Standards

**M-625C** \$ 80 / set of 5 x 1 mL

**Individual Solutions M-625C-#** \$ 20 / each

At stated conc. in CH<sub>2</sub>Cl<sub>2</sub>

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

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Priority Pollutants

## Method 627 Dinitroaniline Pesticides by GC/ECD

**M-627** \$ 30 / 1 x 1 mL  
1.0 mg/mL each in MeOH 4 comps.

Ethalfuralin Tolban (*Profluralin*)  
Paarlan (*Isopropalin*) Trifluralin

**M-627R** \$ 30 / 1 x 1 mL  
1.0 mg/mL each in MeOH 5 comps.

Benfluralin Tolban (*Profluralin*)  
Ethalfuralin Trifluralin  
Paarlan (*Isopropalin*)

## Method 632 Carbamates and Urea Pesticides in Waste Water by HPLC

**M-632** \$ 200 / set of 21 x 1 mL  
Individual Solutions, in 0.1 mg/mL in AcCN

Aminocarb (01)	Fenuron-TCA (08)	Monuron-TCA (15)
Barban (02)	Fluometuron (09)	Neburon (16)
Carbaryl (03)	Linuron (10)	Oxamyl (17)
Carbofuran (04)	Methiocarb (11)	Propham (18)
Chlorpropham (05)	Methomyl (12)	Propoxur (19)
Diuron (06)	Mexacarbate (13)	Siduron (20)
Fenuron (07)	Monuron (14)	Swep (21)

**M-632M** \$ 125 / 1 x 1 mL  
Mixture containing the above 21 analytes @ 0.1 mg/mL each in AcCN

**M-632M-10X** \$ 150 / 1 x 1 mL  
Mixture containing the above 21 analytes @ 1.0 mg/mL each in AcCN

## Method 633 Organonitrogen Pesticides by GC/NPD

**M-633** \$ 30 / 1 x 1 mL  
0.1 mg/mL each in MeOH 6 comps.

Bromacil Metribuzin  
Deet Terbacil  
Hexazinone Triadimefon

## Method 634 Thiocarbamate Pesticides by GC/NPD

**M-634** \$ 45 / 1 x 1 mL  
1.0 mg/mL each in MeOH 6 comps.

Butylate Molinate  
Cycloate Pebulate  
EPTC Vernolate

## Internal Standard

**M-634-IS** \$ 15 / 1 x 1 mL  
1.0 mg/mL in MeOH  
Carbazole

## Method 645 Amino Pesticides and Lethane by GC/NPD

**M-645** \$ 45 / 1 x 1 mL  
1.0 mg/mL each in Hexane 6 comps.

Alachlor Fluridone  
Butachlor Lethane  
Diphenamid Norflurazon

## Method 632.1 Carbamates & Amides in Waste Water by HPLC

**M-632.1** \$ 35 / set of 4 x 1 mL  
0.1 mg/mL in AcCN

	Cat. No.	Price / 1 x 1 mL
Vacor	M-632.1-1	\$ 10
Propanil	M-632.1-2	10
Napropamide	M-632.1-3	10
Carbaryl	M-632.1-4	10

## HPLC 600's Additional Methods for Pesticides in Waste Water by HPLC

Method	Solutions at 0.1 mg/mL in AcCn Component (s)	Cat. No.	1 mL Solution Price	Method	Solutions at 0.1 mg/mL in AcCn Component (s)	Cat. No.	1 mL Solution Price
604.1	Hexachlorophene & Dichlorophene	M-604.1	\$ 20	639	Bendiocarb	M-639	\$ 20
629	Cyanazine	M-629	20	640	Mercaptobenzothiazole	M-640	20
631	Carbendazim	M-631	20	641	Thiabendazole	M-641	20
635	Rotenone	M-635	20	642	Biphenyl & o-Phenylphenol	M-642	20
636	Bensulide	M-636	50	643	Bentazon ( <i>Basagran</i> )	M-643	20
638	Oryzalin	M-638	20	644	Picloram	M-644	20



## Method 680 Determination of Pesticides & PCBs in Water & Soil/Sediment by GC/MS

### Method 680 PCB Isomer Calibration Kit

**M-680** \$ 45 / set of 2 x 1 mL (includes M-680A & M-680B)

#### PCB Isomer Calibration Mix

**M-680A**

At stated conc. in Hexane

2-Chlorobiphenyl (50 µg/mL)	2,2',4,4',5,6'-Hexachlorobiphenyl (100 µg/mL)
2,3-Dichlorobiphenyl (50 µg/mL)	2,2',3,4',5,6,6'-Heptachlorobiphenyl (150 µg/mL)
2,4,5-Trichlorobiphenyl (50 µg/mL)	2,2',3,3',4,5',6,6'-Octachlorobiphenyl (150 µg/mL)
2,2',4,6-Tetrachlorobiphenyl (100 µg/mL)	2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (250 µg/mL)
2,2',3,4,5'-Pentachlorobiphenyl (100 µg/mL)	

**\$ 45 / 1 x 1 mL**  
9 comps.

#### Internal Standard

**M-680B**

250 µg/mL in Toluene

 Chrysene-d<sub>12</sub>
**\$ 15 / 1 x 1 mL**

#### Technical Note

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

Level of Chlorination	Isomer Selected	BZ #	RF Value vs. Chrysene-d <sub>12</sub>	Mean RF Value vs. Chrysene-d <sub>12</sub>
1	2-mono	1	0.899	0.925
2	2,3-di	5	0.651	0.642
3	2,4,5-tri	29	0.411	0.411
4	2,2',4,6-tetra	50	0.305	0.431
5	2,2',3,4,5'-penta	87	0.299	0.287
6	2,2',4,4',5,6'-hexa	154	0.254	0.254
7	2,2',3,4',5,6,6'-hepta	188	0.164	0.160
8	2,2',3,3',4,5',6,6'-octa	200	0.207	0.191
9,10	2,2',3,3',4,4',5,5',6,6'-deca	209	0.144	0.150

#### Pesticide Mixture

**M-680P**
**M-680P-PAK**

At stated conc. in Toluene : Hexane (1:1)

Aldrin (1,000 µg/mL)	Endosulfan I (2,000 µg/mL)
α-BHC (1,000 µg/mL)	Endosulfan II (2,000 µg/mL)
β-BHC (1,000 µg/mL)	Endosulfan sulfate (1,000 µg/mL)
γ-BHC (1,000 µg/mL)	Endrin (1,000 µg/mL)
δ-BHC (1,000 µg/mL)	Endrin aldehyde (1,000 µg/mL)
α-Chlordane (1,000 µg/mL)	Endrin ketone (1,000 µg/mL)
γ-Chlordane (1,000 µg/mL)	Heptachlor (1,000 µg/mL)
4,4'-DDD (1,000 µg/mL)	Heptachlor epoxide (Isomer B) (1,000 µg/mL)
4,4'-DDE (1,000 µg/mL)	Methoxychlor (1,000 µg/mL)
4,4'-DDT (1,000 µg/mL)	cis-Nonachlor (1,000 µg/mL)
Dieldrin (1,000 µg/mL)	trans-Nonachlor (1,000 µg/mL)

**\$ 65 / 1 x 1 mL**
**SAVE 20% \$ 260 / 5 x 1 mL**

22 comps.

#### Pesticide Mid-Level Check

**M-680P-MLC**
**M-680P-MLC-PAK**

At stated conc. Toluene : Hexane (1:1)

Aldrin (1,000 µg/mL)	Endosulfan I (2,000 µg/mL)
α-BHC (1,000 µg/mL)	Endosulfan II (2,000 µg/mL)
β-BHC (1,000 µg/mL)	Endosulfan sulfate (1,000 µg/mL)
γ-BHC (1,000 µg/mL)	Endrin (1,000 µg/mL)
δ-BHC (1,000 µg/mL)	Endrin ketone (1,000 µg/mL)
α-Chlordane (1,000 µg/mL)	Heptachlor (1,000 µg/mL)
γ-Chlordane (1,000 µg/mL)	Heptachlor epoxide (Isomer B) (1,000 µg/mL)
4,4'-DDD (1,000 µg/mL)	Methoxychlor (1,000 µg/mL)
4,4'-DDE (1,000 µg/mL)	cis-Nonachlor (1,000 µg/mL)
4,4'-DDT (1,000 µg/mL)	trans-Nonachlor (1,000 µg/mL)
Dieldrin (1,000 µg/mL)	

**\$ 65 / 1 x 1 mL**
**SAVE 20% \$ 260 / 5 x 1 mL**

21 comps.

#### Technical Note

##### Method 680<sup>1</sup> EPA-PCB Isomer Calibration Kit

The EPA has designated the following isomers for use in quantifying PCB's by GC/MS. Three isomers have been chosen by the EPA as retention time calibration standards: 3,3',4,4'-Tetrachlorobiphenyl (BZ# 77), 2,2',4,6,6'-Pentachlorobiphenyl (BZ# 104), & 2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (BZ# 208). All response factors are calculated using Chrysene-d<sub>12</sub>, which is also included in the kit.

(1) Determination of Pesticides and PCBs in Water and Soil Sediment by GC/MS. Method 680 EMSL/EPA Cincinnati, Ohio by Ann Alford Stevens, Thomas A. Bellar, James W. Eichelberger and William L. Budde.

#### Retention Time Calibration Standard

**M-680-RT**
**M-680-RT-PAK**

100 µg/mL each in Hexane

3,3',4,4'-Tetrachlorobiphenyl	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl
2,2',4,6,6'-Pentachlorobiphenyl	

**\$ 25 / 1 x 1 mL**
**SAVE 20% \$ 100 / 5 x 1 mL**

3 comps.

#### Internal Standard

**M-680-IS**
**M-680-IS-PAK**

75 µg/mL each in Hexane

**M-680-IS-10X**
**M-680-IS-10X-PAK**

 750 µg/mL each in Hexane : CH<sub>2</sub>Cl<sub>2</sub> (1:1)

 Chrysene-d<sub>12</sub>

 Phenanthrene-d<sub>10</sub>
**\$ 15 / 1 x 1 mL**
**SAVE 20% \$ 60 / 5 x 1 mL**

2 comps.

**\$ 25 / 1 x 1 mL**
**SAVE 20% \$ 100 / 5 x 1 mL**

2 comps.

#### Tuning Standard

**M-680-TS**
**M-680-TS-PAK**

 10 µg/mL in CH<sub>2</sub>Cl<sub>2</sub>

Decafluorotriphenylphosphine (DFTPP)

**\$ 10 / 1 x 1 mL**
**SAVE 20% \$ 40 / 5 x 1 mL**

## Custom Standards

AccuStandard offers over 28,000 different standards. If you can't find the specific standard you need, we will prepare a custom formulation. Our custom organic and inorganic standards are a fast, economical way to address your unique requirements.

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### Quality Control Options

Gravimetric/Volumetric Validation: Each standard is measure gravimetrically. Every component in the standard is guaranteed to be within  $\pm 0.5\%$  of the requested value. The solutions are made up to volume using grade A glassware. A certificate comes with each standard and documents the gravimetric values used.

Quantitative Validation: Full QA/QC method includes extended GC analysis using both internal and calibration standards plus statistical analysis. A data package is provided containing analytical and gravimetric data. (Organic customs only)

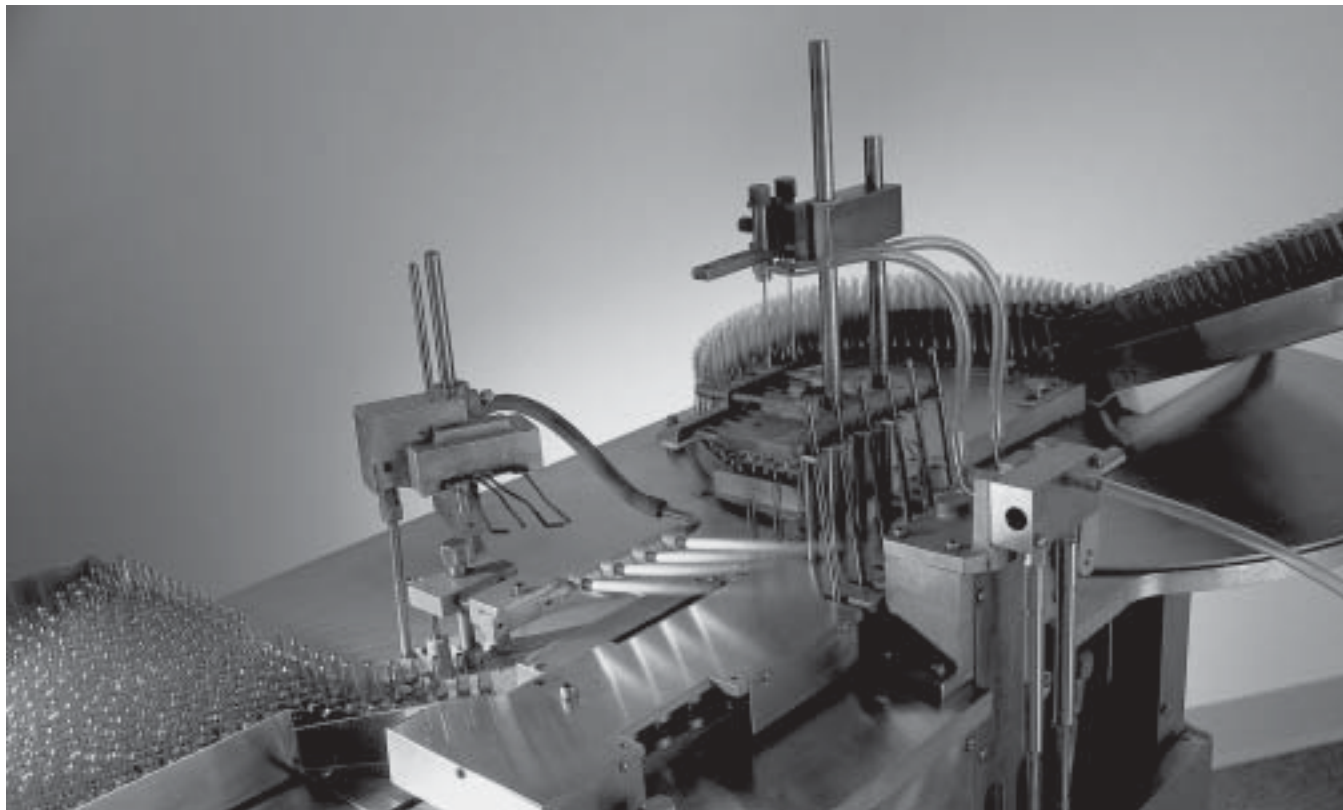
OEM Standards: Private by labeled standards manufactured and tested to your specifications.

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- Quantities from 500 to over 500,000 ampules
- Homogeneity testing
- Amber ampules for added product stability
- Private labeling and packaging



## Full Quality Assurance Department

Multiple methods for identity, such as: GC-MS, GC-ECD, GC-NPD, Melting Point, Elemental Analysis, and 1H-NMR

Multiple methods for purity confirmation, such as: GC-FID, HPLC, GC-MS, TLC, and Karl-Fischer

Other methods as required