



EPA Method 500 Series

Method 502

Method 502.2 Volatile Organic Compounds by PID/ELCD

The following solutions represent a breakdown of Method 502 components into groups containing liquid and gaseous components:

54 Liquid Components

Benzene (01)	1,2-Dibromo-3-chloropropane (18)	1,1-Dichloropropene (33)	Toluene (46)
Bromobenzene (02)	1,2-Dibromoethane (19)	<i>cis</i> -1,3-Dichloropropene (34A) *	1,2,3-Trichlorobenzene (47)
Bromochloromethane (03)	Dibromomethane (20)	<i>trans</i> -1,3-Dichloropropene (34B) **	1,2,4-Trichlorobenzene (48)
Bromodichloromethane (04)	1,2-Dichlorobenzene (21)	Ethylbenzene (35)	1,1,1-Trichloroethane (49)
Bromoform (05)	1,3-Dichlorobenzene (22)	Hexachlorobutadiene (36)	1,1,2-Trichloroethane (50)
<i>n</i> -Butylbenzene (07)	1,4-Dichlorobenzene (23)	Isopropylbenzene (<i>Cumene</i>) (37)	Trichloroethene (51)
<i>sec</i> -Butylbenzene (08)	1,1-Dichloroethane (25)	<i>p</i> -Isopropyltoluene (<i>p-Cymene</i>) (38)	1,2,3-Trichloropropane (53)
<i>tert</i> -Butylbenzene (09)	1,2-Dichloroethane (26)	Methylene chloride (39)	1,2,4-Trimethylbenzene (54)
Carbon tetrachloride (10)	1,1-Dichloroethene (27)	Naphthalene (40)	1,3,5-Trimethylbenzene (55)
Chlorobenzene (11)	<i>cis</i> -1,2-Dichloroethene (28)	<i>n</i> -Propylbenzene (41)	<i>o</i> -Xylene (57)
Chloroform (13)	<i>trans</i> -1,2-Dichloroethene (29)	Styrene (42)	<i>m</i> -Xylene (58)
2-Chlorotoluene (15)	1,2-Dichloropropane (30)	1,1,1,2-Tetrachloroethane (43)	<i>p</i> -Xylene (59)
4-Chlorotoluene (16)	1,3-Dichloropropane (31)	1,1,2,2-Tetrachloroethane (44)	
Dibromochloromethane (17)	2,2-Dichloropropane (32)	Tetrachloroethene (45)	

6 Gas Components

Bromomethane (06)	Dichlorodifluoromethane (24)
Chloroethane (12)	Trichlorofluoromethane (52)
Chloromethane (14)	Vinyl chloride (56)

54 Liquid Components

M-502A-R	0.2 mg/mL each in MeOH	\$ 60 / 1 x 1 mL
M-502A-R-PAK	0.2 mg/mL each in MeOH	SAVE 20% \$ 240 / 5 x 1 mL
M-502A-R-10X	2.0 mg/mL each in MeOH	\$ 80 / 1 x 1 mL
M-502A-R-10X-PAK	2.0 mg/mL each in MeOH	SAVE 20% \$ 320 / 5 x 1 mL

6 Gas Components

M-502B	0.2 mg/mL each in MeOH	\$ 25 / 1 x 1 mL
M-502B-PAK	0.2 mg/mL each in MeOH	SAVE 20% \$ 100 / 5 x 1 mL
M-502B-10X	2.0 mg/mL each in MeOH	\$ 35 / 1 x 1 mL
M-502B-10X-PAK	2.0 mg/mL each in MeOH	SAVE 20% \$ 140 / 5 x 1 mL

54 Liquid and 6 Gas Component Sets

M-502A-R/B-SET	\$ 80 / 2 x 1 mL
0.2 mg/mL each in MeOH	(M-502A-R, M-502B)
M-502A-R/B-10X-SET	\$ 105 / 2 x 1 mL
2.0 mg/mL each in MeOH	(M-502A-R-10X, M-502B-10X)

Internal & Surrogate Standard

M-502-IS/SS	\$ 20 / 1 x 1 mL
M-502-IS/SS-PAK	SAVE 20% \$ 80 / 5 x 1 mL
2.0 mg/mL each in MeOH	4 comps.

1-Chloro-3-fluorobenzene	Fluorobenzene
2-Chloropropane	α,α,α -Trifluorotoluene

Technical Note

M-502-IS/SS is useful for DB-624/VRX analysis by GC/ELCD/PID. 2-Chloropropane has been included in the standard to be used as an early eluting Internal Standard. The use of this Internal Standard aids in quantitating the gaseous components in purgeable volatiles.

Internal/Surrogate Standard

M-502-IS-ASL	\$ 20 / 1 x 1 mL
M-502-IS-ASL-PAK	SAVE 20% \$ 80 / 5 x 1 mL
2.0 mg/mL each in MeOH	2 comps.

2-Bromo-1-chloropropane	1-Chloro-2-fluorobenzene
-------------------------	--------------------------

o,m,p-Xylenes Mix

M-502-60	0.2 mg/mL in MeOH	\$ 10 / 1 x 1 mL
M-502-60-10X	2.0 mg/mL in MeOH	\$ 14 / 1 x 1 mL
		3 comps.
<i>o</i> -Xylene (57)	<i>p</i> -Xylene (59)	
<i>m</i> -Xylene (58)		

Technical Note

Solutions containing volatile components (such as gases) should be chilled before opening to ensure gases are in the solution and not the headspace.

All 60 liquid & gas components in One Solution

Liquids (54 comps.) and Gases (6 comps.)	
M-502	\$ 75 / 1 x 1 mL
M-502-PAK	SAVE 20% \$ 300 / 5 x 1 mL
0.2 mg/mL each in MeOH	60 comps.
M-502-10X	\$ 100 / 1 x 1 mL
M-502-10X-PAK	SAVE 20% \$ 400 / 5 x 1 mL
2.0 mg/mL each in MeOH	60 comps.
Liquids (54 comps.) & Gases (6 comps.) plus <i>p</i>-Isopropyltoluene	
M-502-R1 NEW	\$ 75 / 1 x 1 mL (liquid and gases)
M-502-R1-PAK NEW	SAVE 20% \$ 300 / 5 x 1 mL (liquid and gases)
0.2 mg/mL each in MeOH	61 comps.
Liquids (54 comps.) plus MtBE	
M-502A-R3 NEW	\$ 60 / 1 x 1 mL
0.2 mg/mL each in MeOH	
M-502A-R3-10X NEW	\$ 80 / 1 x 1 mL
2.0 mg/mL each in MeOH	55 comps.

59 Component Set

As a complete set of each component in individual ampules.		
M-502-SET	0.2 mg/mL in MeOH	\$ 300 / 59 x 1 mL
M-502-10X-SET	2.0 mg/mL in MeOH	\$ 350 / 59 x 1 mL

Individual Component Solutions

To order, specify identity (#) and conc. (0.2 or 2.0 mg/mL)		
M-502-#	0.2 mg/mL in MeOH	\$ 10 / 1 x 1 mL
M-502-#-10X	2.0 mg/mL in MeOH	\$ 14 / 1 x 1 mL
M-502-34A & M-502-34B only available as mixture: M-502-34R		
M-502-34-R		\$ 10 / 1 x 1 mL
0.4 mg/mL each in MeOH		
M-502-34-R-10X		\$ 15 / 1 x 1 mL
4.0 mg/mL each in MeOH		2 comps.

<i>cis</i> -1,3-Dichloropropene	<i>trans</i> -1,3-Dichloropropene
---------------------------------	-----------------------------------

Individual Component Neats

To order, specify identity		
M-502-#N		\$ 20 / 1 x 1 gram
except,		
\$ 40 / 1 x 1 gram	\$ 60 / 1 x 1 gram	
M-502-04N	M-502-31N	M-502-49N
M-502-08N	M-502-32N	
M-502-17N	M-502-34N	
M-502-18N	M-502-43N	
M-502-28N	M-502-44N	
M-502-29N		



Method 502.2 (Continued) VOCs by PID/ELCD

The following solutions represent an alternate source formulation of Method 502/524 components based on similar volatility groups.

M-502-K1-SET \$ 150 / 6 x 1 mL
 (M-502B-10X, M-502C-02, M-502C-03, M-502C-04, M-502C-05, M-502C-06)

M-502B-10X \$ 35 / 1 x 1 mL
M-502B-10X-PAK SAVE 20% \$ 140 / 5 x 1 mL
 2.0 mg/mL each in MeOH 6 comps.

Bromomethane	Dichlorodifluoromethane
Chloroethane	Trichlorofluoromethane
Chloromethane	Vinyl chloride

M-502C-02 \$ 35 / 1 x 1 mL
M-502C-02-PAK SAVE 20% \$ 140 / 5 x 1 mL
 2.0 mg/mL each in MeOH 6 comps.

Bromodichloromethane	<i>cis</i> -1,2-Dichloroethylene
Dibromochloromethane	<i>trans</i> -1,2-Dichloroethylene
1,1,-Dichloroethylene	Methylene chloride

M-502C-03 \$ 35 / 1 x 1 mL
M-502C-03-PAK SAVE 20% \$ 140 / 5 x 1 mL
 2.0 mg/mL each in MeOH 9 comps.

Bromochloromethane	1,1-Dichloroethane
Bromoform	2,2-Dichloropropane
Carbon tetrachloride	Tetrachloroethylene
Chloroform	1,1,1-Trichloroethane
Dibromomethane	

M-502C-04 \$ 35 / 1 x 1 mL
M-502C-04-PAK SAVE 20% \$ 140 / 5 x 1 mL
 2.0 mg/mL each in MeOH 14 comps.

1,2-Dibromo-3-chloropropane	Hexachlorobutadiene
1,2-Dibromoethane	1,1,1,2-Tetrachloroethane
1,2-Dichloroethane	1,1,2,2-Tetrachloroethane
1,2-Dichloropropane	1,1,2-Trichloroethane
1,3-Dichloropropane	Trichloroethylene
1,1-Dichloropropylene	1,2,3-Trichloropropane
<i>cis</i> -1,3-Dichloropropene *	* <i>cis</i> (1.06 x conc.)
<i>trans</i> -1,3-Dichloropropene **	** <i>trans</i> (0.94 x conc.)

M-502C-05 \$ 35 / 1 x 1 mL
M-502C-05-PAK SAVE 20% \$ 140 / 5 x 1 mL
 2.0 mg/mL each in MeOH 13 comps.

Benzene	Toluene
Bromobenzene	1,2,3-Trichlorobenzene
<i>n</i> -Butylbenzene	1,2,4-Trichlorobenzene
Ethylbenzene	1,2,4-Trimethylbenzene
<i>p</i> -Isopropyltoluene	1,3,5-Trimethylbenzene
Naphthalene	<i>m</i> -Xylene
Styrene	

M-502C-06 \$ 35 / 1 x 1 mL
M-502C-06-PAK SAVE 20% \$ 140 / 5 x 1 mL
 2.0 mg/mL each in MeOH 12 comps.

<i>sec</i> -Butylbenzene	1,3-Dichlorobenzene
<i>tert</i> -Butylbenzene	1,4-Dichlorobenzene
Chlorobenzene	Isopropylbenzene
2-Chlorotoluene	<i>n</i> -Propylbenzene
4-Chlorotoluene	<i>o</i> -Xylene
1,2-Dichlorobenzene	<i>p</i> -Xylene

Method 502.2 Volatile Organic Mixtures

Custom Unregulated VOC's

M-502C-09 \$ 60 / 1 x 1 mL
 2.0 mg/mL each in MeOH 39 comps.

Bromobenzene	1,1-Dichloropropene
Bromochloromethane	<i>cis</i> -1,3-Dichloropropene *
Bromodichloromethane	<i>trans</i> -1,3-Dichloropropene **
Bromoform	Hexachlorobutadiene
Bromomethane	Isopropylbenzene (<i>Cumene</i>)
<i>n</i> -Butylbenzene	<i>p</i> -Isopropyltoluene (<i>p</i> - <i>Cymene</i>)
<i>sec</i> -Butylbenzene	Dichloromethane (<i>Methylene chloride</i>)
<i>tert</i> -Butylbenzene	Naphthalene
Chloroethane	<i>n</i> -Propylbenzene
Chloroform	1,1,1,2-Tetrachloroethane
Chloromethane	1,1,2,2-Tetrachloroethane
2-Chlorotoluene	1,2,3-Trichlorobenzene
4-Chlorotoluene	1,2,4-Trichlorobenzene
Dibromochloromethane	1,1,2-Trichloroethane
Dibromomethane	Trichlorofluoromethane
1,3-Dichlorobenzene	1,2,3-Trichloropropane
Dichlorodifluoromethane	1,2,4-Trimethylbenzene
1,1-Dichloroethane	1,3,5-Trimethylbenzene (<i>Mesitylene</i>)
1,2-Dichloropropane	
1,3-Dichloropropane	
2,2-Dichloropropane	

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

Wisconsin DNR VOC Mixture

S-989 \$ 100 / 1 x 1 mL
 2.0 mg/mL each in MeOH 52 comps.

Benzene	1,3-Dichloropropane
Bromobenzene	2,2-Dichloropropane
Bromodichloromethane	Diisopropyl ether
<i>n</i> -Butylbenzene	Ethylbenzene
<i>sec</i> -Butylbenzene	Hexachlorobutadiene
<i>tert</i> -Butylbenzene	Isopropylbenzene
Carbon tetrachloride	<i>p</i> -Isopropyltoluene
Chlorobenzene	Methylene chloride
Chlorodibromomethane	Methyl <i>tert</i> -butyl ether
Chloroethane	Naphthalene
Chloroform	<i>n</i> -Propylbenzene
Chloromethane	1,1,2,2-Tetrachloroethane
2-Chlorotoluene	Tetrachloroethane
4-Chlorotoluene	Toluene
1,2-Dibromo-3-chloropropane	1,2,3-Trichlorobenzene
1,2-Dibromoethane	1,2,4-Trichlorobenzene
1,2-Dichlorobenzene	1,1,1-Trichloroethane
1,3-Dichlorobenzene	1,1,2-Trichloroethane
1,4-Dichlorobenzene	Trichloroethane
Dichlorodifluoromethane	Trichlorofluoromethane
1,1-Dichloroethane	1,2,4-Trimethylbenzene
1,2-Dichloroethane	1,3,5-Trimethylbenzene
1,1-Dichloroethane	Vinyl chloride
<i>cis</i> -1,2-Dichloroethane	<i>o</i> -Xylene
<i>trans</i> -1,2-Dichloroethane	<i>m</i> -Xylene
1,2-Dichloropropane	<i>p</i> -Xylene

Technical Note

Each ampule contains at least 120% of the stated volume of a solution, allowing easy transfer. Transfer the required amount using a clean calibration syringe. Excess solution can be stored in a tightly capped vial, but this is not recommended. AccuStandard cannot guarantee the integrity of the solution once the ampule has been opened. See the EPA method protocol for storage instructions.

Alternate Source = Matches Competitive Product

AccuStandard enhances your laboratory's analytical results while streamlining your purchasing efforts through the Alternate Source Line (ASL) of Analytical Standards. Use ASLs for Independent lots to other Standard suppliers' formulations.

We compiled a list of most requested CLP, and EPA 500, 600, 8000 series analytical Standard formulations currently offered in the marketplace. See our complete list of ASL products in QC section of this catalog.