

# SoloMix Calibration Standards for Semivolatile Compounds

## Product Specification

Supelco has developed a selection of chemical standards that reduce the number of mixes you need for complying with environmental methodology. With these method-specific SoloMix™ calibration standards, you will need fewer solutions to combine, saving you time and reducing the chance for error.

Each SoloMix standard contains all of the stable components, while the less stable components have been removed. The *high concentration* of stable components allows you to add *project-specific components* and less stable components to the mix, and still have a mix in the *calibration concentration* range for the method.

Our semivolatile mixes support US Environmental Protection Agency (US EPA) methods 525, 625, CLP, Appendix IX, and 8270. Labeling of these standards complies with requirements for distribution

in the United States and internationally. Formulations are 1.2mL in 2mL amber snap-top ampuls, and are packaged under nitrogen.

Each mixture includes a Certificate of Analysis denoting the gravimetric and quantitative characteristics. Free data packets are available, providing detailed information about product preparation and testing, as well as purity and identification information about the neat starting material.

### Using This Publication

The table below lists the SoloMix standard available for each US EPA method, followed by the complementary mix(es) needed to complete the analyte list for method compliance. The following pages are arranged in the same sequence, and describe each mix in detail including a list of components.

### SoloMix Calibration Standards and Complementary Standards

US EPA Method	Name of Mix	Description (for components, see Ordering Information)	Cat. No.
525/525.1/525.2	EPA 525 Semivolatiles Calibration Mix	25 component mix – 1000µg/mL	506540 <sup>▲</sup>
	EPA 525/525.1 PCB Mix	8 component mix – 500µg/mL	48246
625	625 Semivolatile Calibration Mix	55 component mix – 1000µg/mL	506559 <sup>▲</sup>
	TCL Benzidines Mix	2 benzidines – 2000µg/mL	48906
	N-Nitrosodiphenylamine	5000µg/mL	40060
CLP	EPA CLP Semivolatiles Calibration Kit	1 each: 506508, 48906, 40060	500968
	CLP Semivolatile Calibration Mix	64 component mix – 1000µg/mL	506508 <sup>▲</sup>
	TCL Benzidines Mix	2 benzidines – 2000µg/mL	48906
	N-Nitrosodiphenylamine	5000µg/mL	40060
Appendix IX	CLP Semivolatile Calibration Mix	64 component mix – 1000µg/mL	506508 <sup>▲</sup>
	EPA 8270/Appendix IX Semivolatile Calibration Mix	39 component mix – 1000µg/mL	506567 <sup>▲</sup>
	EPA 8270 Benzidines Mix	3 component mix – 2000µg/mL	48467
	N-Nitrosodiphenylamine	5000µg/mL	40060
	Hexachlorophene	5000µg/mL	40323
	1,4-Naphthoquinone	200µg/mL	48381
	1,4-Phenylenediamine	2000µg/mL	48298
8270A	CLP Semivolatile Calibration Mix	64 component mix – 1000µg/mL	506508 <sup>▲</sup>
	EPA 8270/Appendix IX Semivolatile Calibration Mix	39 component mix – 1000µg/mL	506567 <sup>▲</sup>
	EPA 8270 Benzidines Mix	3 component mix – 2000µg/mL	48467
	N-Nitrosodiphenylamine	5000µg/mL	40060
	Benzoic acid	200µg/mL	48323
	1,4-Naphthoquinone	200µg/mL	48381
	1,4-Phenylenediamine	2000µg/mL	48298
	Hexachlorophene	5000µg/mL	40323

<sup>▲</sup>SoloMix standard.

## Ordering Information:

### Method 525, 525.1, 525.2 – Method 625 – Semivolatile Organics

#### EPA 525 Semivolatiles Calibration Mix

Without pesticides.  
1000µg/mL each component, except where noted, in acetone.  
**25 components.**

Acenaphthylene	Diethyl phthalate
Anthracene	Dimethyl phthalate
Benzo(a)anthracene	2,4-Dinitrotoluene*
Benzo(b)fluoranthene	2,6-Dinitrotoluene*
Benzo(k)fluoranthene	Fluorene
Benzo(a)pyrene	Hexachlorobenzene
Benzo(ghi)perylene	Hexachlorocyclopentadiene
Bis(2-ethylhexyl)adipate	Indeno(1,2,3-cd)pyrene
Bis(2-ethylhexyl)phthalate	Isophorone
Butyl benzyl phthalate	Pentachlorophenol (4000µg/mL)
Chrysene	Phenanthrene
Dibenzo(a,h)anthracene	Pyrene
Di-n-butylphthalate	

1mL **Cat. No. 506540**

#### EPA 525/525.1 PCB Mix

500µg/mL each component in hexane.  
**8 components.**

2-Chlorobiphenyl
2,3-Dichlorobiphenyl
2,4,5-Trichlorobiphenyl
2,2',4,4'-Tetrachlorobiphenyl
2,2',3',4,6-Pentachlorobiphenyl
2,2',4,4',5,6'-Hexachlorobiphenyl
2,2',3,3',4,4',6-Heptachlorobiphenyl
2,2',3,3',4,5',6,6'-Octachlorobiphenyl

1mL **Cat. No. 48246**

\*525.2 only

### Method 625 – Acids (Phenols), Base/Neutrals, Organochlorine Pesticides & PCBs

#### 625 Semivolatile Calibration Mix

1000µg/mL each component in methylene chloride:benzene (3:1). **55 compounds.**

Acenaphthene	Dimethyl phthalate
Acenaphthylene	2,4-Dinitrophenol
Anthracene	2,4-Dinitrotoluene
Azobenzene <sup>▲</sup>	2,6-Dinitrotoluene
Benzo(a)anthracene	Di-n-butyl phthalate
Benzo(b)fluoranthene	Di-n-octyl phthalate
Benzo(k)fluoranthene	Fluoranthene
Benzo(g,h,i)perylene	Fluorene
Benzo(a)pyrene	Hexachlorobenzene
Bis(2-chloroethoxy)methane	Hexachlorobutadiene
Bis(2-chloroethyl)ether	Hexachlorocyclopentadiene
Bis(2-chloroisopropyl)ether	Hexachloroethane
Bis(2-ethylhexyl)phthalate	Indeno(1,2,3-cd)pyrene
4-Bromophenyl phenyl ether	Isophorone
Butyl benzyl phthalate	2-Methyl-4,6-dinitrophenol
Carbazole	Naphthalene
4-Chloro-3-methylphenol	Nitrobenzene
2-Chloronaphthalene	2-Nitrophenol
2-Chlorophenol	4-Nitrophenol
4-Chlorophenylphenyl ether	4-Nitrophenol
Chrysene	N-Nitrosodimethyl amine
Dibenzo(a,h)anthracene	N-Nitrosodi-n-propylamine
1,2-Dichlorobenzene	Pentachlorophenol
1,3-Dichlorobenzene	Phenanthrene
1,4-Dichlorobenzene	Phenol
4-Chlorophenol	Pyrene
Diethyl phthalate	1,2,4-Trichlorobenzene
2,4-Dimethylphenol	2,4,6-Trichlorophenol

1mL **Cat. No. 506559**

#### TCL Benzidines Mix

2000µg/mL each component in methanol.  
Benzidine  
3,3'-Dichlorobenzidine

1mL **Cat. No. 48906**

#### N-Nitrosodiphenylamine

5000µg/mL in methanol.

1mL **Cat. No. 40060**

## CLP

#### CLP Semivolatile Calibration Mix

1000µg/mL each component in methylene chloride:benzene (3:1). **64 components.**

Acenaphthene	2,4-Dinitrophenol
Acenaphthylene	Dimethyl phthalate
Anthracene	2,4-Dinitrotoluene
Azobenzene <sup>▲</sup>	2,6-Dinitrotoluene
Benzo(a)anthracene	Di-n-octyl phthalate
Benzo(a)pyrene	Fluoranthene
Benzo(b)fluoranthene	Fluorene
Benzo(ghi)perylene	Hexachlorobenzene
Benzo(k)fluoranthene	Hexachlorobutadiene
Butyl benzyl phthalate	Hexachlorocyclopentadiene
Bis(2-chloroethoxy)methane	Hexachloroethane
Bis(2-chloroethyl) ether	Indeno(1,2,3-cd)pyrene
Bis(2-chloroisopropyl) ether	Isophorone
Bis(2-ethylhexyl) phthalate	2-Methylnaphthalene
4-Bromophenylphenyl ether	2-Methylphenol
Carbazole	4-Methylphenol
4-Chloroaniline	Naphthalene
2-Chloronaphthalene	2-Nitroaniline
4-Chloro-3-methylphenol	3-Nitroaniline
2-Chlorophenol	4-Nitroaniline
4-Chlorophenylphenyl ether	Nitrobenzene
Chrysene	2-Nitrophenol
Dibenzo(a,h)anthracene	4-Nitrophenol
Dibenzofuran	N-Nitrosodimethylamine
Di-n-butyl phthalate	N-Nitrosodi-n-propylamine
1,2-Dichlorobenzene	Pentachlorophenol
1,3-Dichlorobenzene	Phenanthrene
1,4-Dichlorobenzene	Phenol
2,4-Dichlorophenol	Pyrene
Diethyl phthalate	1,2,4-Trichlorobenzene
2,4-Dimethylphenol	2,4,5-Trichlorophenol
4,6-Dinitro-2-methylphenol	2,4,6-Trichlorophenol

1mL **Cat. No. 506508**

#### TCL Benzidines Mix

2000µg/mL each component in methanol.  
Benzidine  
3,3'-Dichlorobenzidine

1mL **Cat. No. 48906**

#### N-Nitrosodiphenylamine

5000µg/mL in methanol.

1mL **Cat. No. 40060**

#### Benzoic Acid<sup>♦</sup>

200µg/mL in methylene chloride.

1mL **Cat. No. 48323**

#### Benzyl Alcohol<sup>♦</sup>

200µg/mL in methylene chloride.

1mL **Cat. No. 48365**

#### EPA CLP Semivolatiles Calibration Kit

1mL of each of the following products.

CLP Semivolatile Calibration Mix (506508)  
TCL Benzidines Mix (48906)  
N-Nitrosodiphenylamine Solution (40060)

Kit **Cat. No. 500968**

<sup>♦</sup> Only in Feb. '88 Statement of Work

<sup>▲</sup> In a GC system, 1,2-diphenylhydrazine decomposes to azobenzene. Our standards contain azobenzene, not 1,2-diphenylhydrazine. For additional information, please refer to US EPA Method 625.

## Appendix IX Semivolatiles

### CLP Semivolatile Calibration Mix

1000µg/mL each component in methylene chloride:benzene (3:1).

#### 64 components.

Acenaphthene	2,4-Dinitrophenol
Acenaphthylene	Dimethyl phthalate
Anthracene	2,4-Dinitrotoluene
Azobenzene <sup>▲</sup>	2,6-Dinitrotoluene
Benzo(a)anthracene	Di-n-octyl phthalate
Benzo(a)pyrene	Fluoranthene
Benzo(b)fluoranthene	Fluorene
Benzo(ghi)perylene	Hexachlorobenzene
Benzo(k)fluoranthene	Hexachlorobutadiene
Butyl benzyl phthalate	Hexachlorocyclopentadiene
Bis(2-chloroethoxy)methane	Hexachloroethane
Bis(2-chloroethyl) ether	Indeno(1,2,3-cd)pyrene
Bis(2-Chloroisopropyl) ether	Isophorone
Bis(2-ethylhexyl) phthalate	2-Methylnaphthalene
4-Bromophenylphenylether	2-Methylphenol
Carbazole	4-Methylphenol
4-Chloroaniline	Naphthalene
2-Chloronaphthalene	2-Nitroaniline
4-Chloro-3-methylphenol	3-Nitroaniline
2-Chlorophenol	4-Nitroaniline
4-Chlorophenylphenylether	Nitrobenzene
Chrysene	2-Nitrophenol
Dibenzo(a,h)anthracene	4-Nitrophenol
Dibenzofuran	N-Nitrosodimethylamine
Di-n-butylphthalate	N-Nitrosodi-n-propylamine
1,2-Dichlorobenzene	Pentachlorophenol
1,3-Dichlorobenzene	Phenanthrene
1,4-Dichlorobenzene	Phenol
2,4-Dichlorophenol	Pyrene
Diethyl phthalate	1,2,4-Trichlorobenzene
2,4-Dimethylphenol	2,4,5-Trichlorophenol
4,6-Dinitro-2-methylphenol	2,4,6-Trichlorophenol

1 mL

Cat. No. 506508

### EPA 8270/Appendix IX Semivolatile Calibration Mix

1000µg/mL each component in methylene chloride. 39 components.

Aniline	2-Methylpyridine
Acetophenone	(2-Picoline)
2-Acetylaminofluorene	1-Naphthylamine
4-Aminobiphenyl	2-Naphthylamine
Benzyl alcohol	4-Nitroquinoline-1-oxide
2-sec-Butyl-4,6-dinitrophenol (Dinoseb)	N-Nitrosodi-n-butylamine
2,6-Dichlorophenol	N-Nitrosodimethylamine
p-Dimethylaminoazobenzene	N-Nitrosomethyl ethylamine
7,12-Dimethylbenz(a)-anthracene	N-Nitrosomorpholine
1,3-Dinitrobenzene	N-Nitrosopiperidine
Diphenylamine	N-Nitrosopyrrolidine
Ethyl methanesulfonate	5-Nitro-o-toluidine
Hexachloropropene	Pentachlorobenzene
Isosafrole	Pentachloronitrobenzene
Naphthalene (HCl)	Pentachloroethane
2-Methyl aniline (o-Toluidine)	Phenacetin
3-Methylcholanthrene	Pyridine
Methyl methanesulfonate	Safrole
3-Methylphenol	1,2,4,5-Tetrachlorobenzene
	2,3,4,6-Tetrachlorophenol
	1,3,5-Trinitrobenzene

1 mL

Cat. No. 506567

### EPA 8270 Benzidines Mix

2000µg/mL each component in methanol.

Benzidine
3,3'-Dichlorobenzidine
3,3'-Dimethylbenzidine

1 mL

Cat. No. 48467

### N-Nitrosodiphenylamine

5000µg/mL in methanol.

1 mL Cat. No. 40060

### Hexachlorophene

5000µg/mL in methanol.

1 mL Cat. No. 40323

### 1,4-Naphthoquinone

200µg/mL in methylene chloride.

1 mL Cat. No. 48381

### 1,4-Phenylenediamine

2000µg/mL in methylene chloride.

1 mL Cat. No. 48298

## Method 8270 – Semivolatile Organic Compounds

### CLP Semivolatile Calibration Mix

1000µg/mL each component in methylene chloride:benzene (3:1). 64 components.

Acenaphthene	2,4-Dinitrophenol
Acenaphthylene	Dimethyl phthalate
Anthracene	2,4-Dinitrotoluene
Azobenzene <sup>▲</sup>	2,6-Dinitrotoluene
Benzo(a)anthracene	Di-n-octyl phthalate
Benzo(a)pyrene	Fluoranthene
Benzo(b)fluoranthene	Fluorene
Benzo(ghi)perylene	Hexachlorobenzene
Benzo(k)fluoranthene	Hexachlorobutadiene
Butyl benzyl phthalate	Hexachlorocyclopentadiene
Bis(2-chloroethoxy)methane	Hexachloroethane
Bis(2-chloroethyl) ether	Indeno(1,2,3-cd)pyrene
Bis(2-Chloroisopropyl) ether	Isophorone
Bis(2-ethylhexyl) phthalate	2-Methylnaphthalene
4-Bromophenylphenylether	2-Methylphenol
Carbazole <sup>■</sup>	4-Methylphenol
4-Chloroaniline	Naphthalene
2-Chloronaphthalene	2-Nitroaniline
4-Chloro-3-methylphenol	3-Nitroaniline
2-Chlorophenol	4-Nitroaniline
4-Chlorophenylphenylether	Nitrobenzene
Chrysene	2-Nitrophenol
Dibenzo(a,h)anthracene	4-Nitrophenol
Dibenzofuran	N-Nitrosodimethylamine
Di-n-butylphthalate	N-Nitrosodi-n-propylamine
1,2-Dichlorobenzene	Pentachlorophenol
1,3-Dichlorobenzene	Phenanthrene
1,4-Dichlorobenzene	Phenol
2,4-Dichlorophenol	Pyrene
Diethyl phthalate	1,2,4-Trichlorobenzene
2,4-Dimethylphenol	2,4,5-Trichlorophenol
4,6-Dinitro-2-methylphenol	2,4,6-Trichlorophenol

1 mL

Cat. No. 506508

### EPA 8270/Appendix IX Semivolatile Calibration Mix

1000µg/mL each component in methylene chloride. 39 components.

Aniline	2-Methylpyridine
Acetophenone	(2-Picoline)
2-Acetylaminofluorene	1-Naphthylamine
4-Aminobiphenyl	2-Naphthylamine
Benzyl alcohol	4-Nitroquinoline-1-oxide
2-sec-Butyl-4,6-dinitrophenol (Dinoseb)	N-Nitrosodi-n-butylamine
2,6-Dichlorophenol	N-Nitrosodimethylamine
p-Dimethylaminoazobenzene	N-Nitrosomethyl ethylamine
7,12-Dimethylbenz(a)-anthracene	N-Nitrosomorpholine
1,3-Dinitrobenzene	N-Nitrosopiperidine
Diphenylamine	N-Nitrosopyrrolidine
Ethyl methanesulfonate	5-Nitro-o-toluidine
Hexachloropropene	Pentachlorobenzene
Isosafrole	Pentachloronitrobenzene
Naphthalene (HCl)	Pentachloroethane <sup>■</sup>
2-Methyl aniline (o-Toluidine)	Phenacetin
3-Methylcholanthrene	Pyridine
Methyl methanesulfonate	Safrole
3-Methylphenol	1,2,4,5-Tetrachlorobenzene
	2,3,4,6-Tetrachlorophenol
	1,3,5-Trinitrobenzene

1 mL

Cat. No. 506567

### EPA 8270 Benzidines Mix

2000µg/mL each component in methanol.

Benzidine
3,3'-Dichlorobenzidine
3,3'-Dimethylbenzidine

1 mL

Cat. No. 48467

### N-Nitrosodiphenylamine

5000µg/mL in methanol.

1 mL Cat. No. 40060

### Benzoic Acid

200µg/mL in methylene chloride.

1 mL Cat. No. 48323

### 1,4-Naphthoquinone

200µg/mL in methylene chloride.

1 mL Cat. No. 48381

### 1,4-Phenylenediamine

2000µg/mL in methylene chloride.

1 mL Cat. No. 48298

### Hexachlorophene

5000µg/mL in methanol.

1 mL Cat. No. 40323

■ Not a component in Method 8270. Listed in Appendix IX and CLP.

▲ In a GC system, 1,2-diphenylhydrazine decomposes to azobenzene. Our standards contain azobenzene, not 1,2-diphenylhydrazine. For additional information, please refer to US EPA Method 625.

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