

# Certified Reference Materials for Semivolatile Organics Analysis



## High Concentration, High Value

All of our CRMs for semivolatile organics analysis are formulated at concentrations of at least 1000 ppm and many are 4000 ppm and higher. High concentration mixes, when diluted to working level concentrations, produce larger volumes of working standards, reducing your per unit use costs. For instance, only 10 uL of our high concentration internal standard mix (C-394H) is needed to fortify a single sample for a cost per sample as low as \$0.38 based upon 10 pack purchase.

## Maximum Compounds, Minimum Mixtures

Preparing working standards is labor intensive and subject to error. By maximizing the number of compounds in our semivolatile organic, we reduce the number of mixtures required to calibrate for large analyte lists. This saves time, money and reduces errors. Using NSI's semivolatile organics CRMs, a full 133 target analyte working standard can be prepared with just 5 mixtures.

## 8270 BNA Mix (76 Components)

1000 ug/mL in Methylene chloride

1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,2-Dinitrobenzene	1,3-Dichlorobenzene
1,3-Dinitrobenzene	1,4-Dichlorobenzene	1,4-Dinitrobenzene	1-Methylnaphthalene
2,3,4,6-Tetrachlorophenol	2,3,5,6-Tetrachlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol
2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2,4-Dinitrotoluene
2,6-Dinitrotoluene	2-Chloronaphthalene	2-Chlorophenol	2-Methylnaphthalene
2-Nitrophenol	4,6-Dinitro-2-methylphenol	4-Bromophenyl phenyl ether	4-Chloro-3-methylphenol
4-Chloroaniline	4-Chlorophenyl phenyl ether	4-Nitrophenol	Acenaphthene
Acenaphthylene	Aniline	Anthracene	Azobenzene
Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene
Benzo(k)fluoranthene	Benzyl alcohol	bis(2-Chloroethoxy)methane	bis(2-Chloroethyl)ether
bis(2-Chloroisopropyl)ether	bis(2-Ethylhexyl)adipate	bis(2-Ethylhexyl)phthalate	Butyl benzyl phthalate
Carbazole	Chrysene	Di-n-butyl phthalate	Di-n-octyl phthalate
Dibenz(a,h)anthracene	Dibenzofuran	Diethyl phthalate	Dimethyl phthalate
Diphenylamine	Fluoranthene	Fluorene	Hexachlorobenzene
Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Indeno(1,2,3-c,d)pyrene
Isophorone	m-Cresol (500 ug/mL)	m-Nitroaniline	N-Nitrosodi-n-propylamine
N-Nitrosodimethylamine	Naphthalene	Nitrobenzene	o-Cresol
o-Nitroaniline	p-Cresol (500 ug/mL)	p-Nitroaniline	Pentachlorophenol
Phenanthrene	Phenol	Pyrene	Pyridine

C-701	1.5 mL	\$110.00
C-701P	4 x 1.5 mL	\$389.00
C-701TP	10 x 1.5 mL	\$918.00

## Appendix IX SVOC Mix 1

2000 ug/mL in Methylene chloride

2-Acetylaminofluorene	4-Aminobiphenyl	4-Dimethylaminoazobenzene	3,3'-Dimethylbenzidine
1-Naphthylamine	2-Naphthylamine	5-Nitro-o-toluidine	N-Nitrosodiethylamine
N-Nitrosodi-n-butylamine	N-Nitrosomethylethylamine	N-Nitrosomorpholine	N-Nitrosopiperidine
N-Nitrosopyrrolidine	1,4-Phenylenediamine	2-Picoline	o-Toluidine
Phentermine			

C-731	1.5 mL	\$35.00
C-731P	4 x 1.5 mL	\$126.00

## Appendix IX SVOC Mix 2

1000 ug/mL in Methylene chloride

Aramite	Acetophenone	Chlorobenzilate	1-Chloronaphthalene
Diallate (cis and trans)	Dibenz(a,j)acridine	2,6-Dichlorophenol	7,12-Dimethylbenz(a)anthracene
Ethyl methanesulfonate	Hexachloropropene	Isodrin	Isosafrole (cis and trans)
Kepone	3-Methylcholanthrene	1,4-Naphthoquinone	4-Nitroquinoline-N-oxide
Pentachlorobenzene	Methyl methanesulfonate	Pentachloronitrobenzene	Pentachloroethane
Phenacetin	Pronamide	Safrole	1,2,4,5-Tetrachlorobenzene
1,3,5-Trinitrobenzene	Dinoseb	3,5-Dimethylphenol	4-Chlorophenol

C-732	1.5 mL	\$51.00
C-732P	4 x 1.5 mL	\$185.00



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## Benzidines Mix

2000 ug/mL in P&T Methanol

Benzidine 3,3-Dichlorobezidine

C-402 ..... 1.5 mL ..... \$25.00  
C-402P ..... 4 x 1.5 mL ..... \$85.00  
C-402TP ..... 10 x 1.5 mL ..... \$200.00

## Benzidines Mix II

2000 ug/mL in P&T Methanol

Benzidine 3,3'-Dichlorobenzidine

3,3'-Dimethylbenzidine

C-411 ..... 1.5 mL ..... \$30.00  
C-411P ..... 4 x 1.5 mL ..... \$90.00

## 8270C Organophosphorus Pesticides

2000 ug/mL in Hexane/Methylene chloride (40/60)

Dimethoate Disulfoton

Famphur Methyl parathion

Ethyl parathion Phorate

Sulfotepp Thionazin

o,o,o-Triethylphosphorothioate

C-417 ..... 1.5 mL ..... \$60.00  
C-417P ..... 4 x 1.5 mL ..... \$200.00

## Semivolatile Internal Standards

Acenaphthene-d10 Chrysene-d12

1,4-Dichlorobenzene-d4 Naphthalene-d8

Perylene-d12 Phenanthrene-d10

2000 ug/mL in Methylene chloride/Carbon disulfide (75/25)

C-394L ..... 1.5 mL ..... \$45.00  
C-394LP ..... 4 x 1.5 mL ..... \$155.00  
C-394LTP ..... 10 x 1.5 mL ..... \$360.00

4000 ug/mL in Methylene chloride/Carbon disulfide

C-394H ..... 1.5 mL ..... \$78.00  
C-394HP ..... 4 x 1.5 mL ..... \$248.00  
C-394HTP ..... 10 x 1.5 mL ..... \$565.00

## 8270 Tuning Mix

500 ug/mL in Methanol

Benzidine Pentachlorophenol

4,4'-DDT DFTPP

C-491 ..... 1.5 mL ..... \$25.00

## Organic Acids Surrogate

2-Fluorophenol Phenol-d5

2,4,6-Tribromophenol

2000 ug/mL in Methanol

C-131L ..... 1.5 mL ..... \$30.00  
C-131LP ..... 4 x 1.5 mL ..... \$100.00  
C-131LTP ..... 10 x 1.5 mL ..... \$180.00

10000 ug/mL in Methanol

C-131H ..... 1.5 mL ..... \$40.00  
C-131HP ..... 4 x 1.5 mL ..... \$145.00  
C-131HTP ..... 10 x 1.5 mL ..... \$320.00

C-131H5 ..... 5 mL ..... \$90.00  
C-131H5P ..... 4 x 5 mL ..... \$325.00  
C-131H5TP ..... 10 x 5 mL ..... \$720.00

## Base/Neutrals Surrogates

2-Fluorobiphenyl Nitrobenzene-d5

p-Terphenyl-d14

1000 ug/mL in Methylene chloride

C-376L ..... 1.5 mL ..... \$30.00  
C-376LP ..... 4 x 1.5 mL ..... \$100.00  
C-376LTP ..... 10 X 1.5 mL ..... \$180.00

5000 ug/mL in Methylene chloride

C-376H ..... 1.5 mL ..... \$40.00  
C-376HP ..... 4 x 1.5 mL ..... \$145.00  
C-376HTP ..... 10 X 1.5 mL ..... \$320.00

C-376H5 ..... 5 mL ..... \$90.00  
C-376H5P ..... 4 x 5 mL ..... \$325.00  
C-376H5TP ..... 10 X 5 mL ..... \$720.00

## BNA Surrogate Calibration Standard

4000 ug/mL in Methylene chloride

2-Fluorophenol Phenol-d5

2,4,6-Tribromophenol 2-Fluorobiphenyl

Nitrobenzene-d5 p-Terphenyl-d14

C-603 ..... 1.5 mL ..... \$88.00  
C-603P ..... 4 x 1.5 mL ..... \$300.00



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### 8270 BNA Surrogates Solution

2-Fluorophenol	200
Phenol-d5	200
2,4,6-Tribromophenol	200
2-Fluorobiphenyl	100
Nitrobenzene-d5	100
p-Terphenyl-d14	100

At specified concentrations (ug/mL) in Methanol  
 WL-371-50..... 50 mL..... \$102.00  
 WL-371-100..... 100 mL..... \$148.00

### 8270 BNA Surrogates Solution – Color Coded

2-Fluorophenol	200
Phenol-d5	200
2,4,6-Tribromophenol	200
2-Fluorobiphenyl	100
Nitrobenzene-d5	100
p-Terphenyl-d14	100

At specified concentrations (ug/mL) in Methanol  
 WL-371-50C..... 50 mL..... \$105.00  
 WL-371-100C..... 100 mL..... \$153.00

### 8270 Matrix Spike Solution

4-Chloro-3-methylphenol	200
2-Chlorophenol	200
4-Nitrophenol	200
Pentachlorophenol	200
Phenol	200
Acenaphthene	100
1,4-Dichlorobenzene	100
2,4-Dinitrotoluene	100
N-Nitrosodi-n-propylamine	100
Pyrene	100
1,2,4-Trichlorobenzene	100

At specified concentrations (ug/mL) in Methanol  
 WL-365..... 50 mL..... \$81.00  
 WL-365..... 100 mL..... \$134.00

### BNA Surrogates Solution (CLP SOW)

2-Chlorophenol-d4	150
2-Fluorophenol	150
Phenol-d5	150
2,4,6-Tribromophenol	150
1,2-Dichlorobenzene-d4	100
2-Fluorobiphenyl	100
Nitrobenzene-d5	100
p-Terphenyl-d14	100

At specified concentrations (ug/mL) in Methanol  
 WL-316-50..... 50 mL..... \$113.00  
 WL-316-100..... 100 mL..... \$167.00

### BNA Surrogates Solutions (CLP SOW) – Color Coded

2-Chlorophenol-d4	150
2-Fluorophenol	150
Phenol-d5	150
2,4,6-Tribromophenol	150
1,2-Dichlorobenzene-d4	100
2-Fluorobiphenyl	100
Nitrobenzene-d5	100
p-Terphenyl-d14	100

At specified concentrations (ug/mL) in Methanol  
 WL-316-50C..... 50 mL..... \$115.00  
 WL-316-100C..... 100 mL..... \$170.00

### 8270 BNA Surrogates Solution – Indicating Dye

Standard contains a water soluble indicating dye that tints water samples yellow when acidified, red when adjusted to base/neutral pH levels.

2-Fluorophenol	200
Phenol-d5	200
2,4,6-Tribromophenol	200
2-Fluorobiphenyl	100
Nitrobenzene-d5	100
p-Terphenyl-d14	100

At specified concentrations (ug/mL) in Methanol  
 WL-710..... 100 mL..... \$163.00



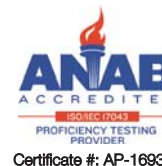
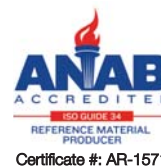
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## Appendix IX LCS Spike Mix\*

1,2,4,5-Tetrachlorobenzene	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3,5-Trinitrobenzene
1,3-Dichlorobenzene	1,3-Dinitrobenzene	1,4-Dichlorobenzene	1,4-Naphthoquinone
1-Chloronaphthalene	1-Methylnaphthalene	1-Naphthylamine	2,3,4,6-Tetrachlorophenol
2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol
2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dichlorophenol	2,6-Dinitrotoluene
2-Acetylaminofluorene	2-Chloronaphthalene	2-Chlorophenol	2-Methylnaphthalene
2-Naphthylamine	2-Nitrophenol	2-Picoline	2-Toluidine
3,3'-Dichlorobenzidine	3,3'-Dimethylbenzidine	3-Methylcholanthrene	4,6-Dinitro-2-methylphenol
4-Aminobiphenyl	4-Bromophenyl phenyl ether	4-Chloro-3-methylphenol	4-Chloroaniline
4-Chlorophenyl phenyl ether	4-Dimethylaminoazobenzene	4-Nitrophenol	4-Nitroquinoline-N-oxide
4-Phenylenediamine	5-Nitro-o-toluidine	7,12-Dimethylbenz(a)anthracene	Acenaphthene
Acenaphthylene	Acetophenone	Aniline	Anthracene
AzobenzeneBenzidine	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene
Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic acid	Benzyl alcohol
bis(2-Chloroethoxy)methane	bis(2-Chloroethyl)ether	bis(2-Chloroisopropyl)ether	bis(2-Ethylhexyl)phthalate
Butyl benzyl phthalate	Carbazole	Chlorobenzilate	Chrysene
Di-n-butyl phthalate	Di-n-octyl phthalate	Diallate (cis and trans)	Dibenz(a,h)anthracene
Dibenz(a,j)acridine	Dibenzofuran	Diethyl phthalate	Dimethyl phthalate
Dinoseb	Diphenylamine	Ethyl methanesulfonate	Fluoranthene
Fluorene	Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclopentadiene
Hexachloroethane	Hexachloropropene	Indeno(1,2,3-c,d)pyrene	Isodrin
Isophorone	Isosafrole (cis and trans)	Kepone	m-Nitroaniline
Methapyrilene	Methyl methanesulfonate	N-Nitrosodi-n-butylamine	N-Nitrosodi-n-propylamine
N-Nitrosodiethylamine	N-Nitrosodimethylamine	N-Nitrosodiphenylamine	N-Nitrosomethylethylamine
N-Nitrosomorpholine	N-Nitrosopiperidine	N-Nitrosopyrrolidine	Naphthalene
Nitrobenzene	o-Cresol	o-Nitroaniline	p-Cresol
p-Nitroaniline	Pentachlorobenzene	Pentachloroethane	Pentachloronitrobenzene
Pentachlorophenol	Phenacetin	Phenanthrene	Phenol
Phentermine	Pronamide	Pyrene	Pyridine
Safrole			

\*Store in freezer. Limited shelf life of 90 days.

50 ug/mL in Acetone

WL-600-10 . . . . . 10 mL . . . . . \$315.00  
 WL-600-25 . . . . . 25 mL . . . . . \$473.00



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ISO/IEC 17043  
 PROFICIENCY TESTING  
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## TCL BNA LCS Spike (83 Components)

1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,2-Dinitrobenzene	1,3-Dichlorobenzene
1,3-Dinitrobenzene	1,4-Dichlorobenzene	1,4-Dinitrobenzene	1-Methylnaphthalene
2,3,4,6-Tetrachlorophenol	2,3,5,6-Tetrachlorophenol	2,3-Dichloroaniline	2,4,5-Trichlorophenol
2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol
2,4-Dinitrotoluene	2,6-Dinitrotoluene	2-Chloronaphthalene	2-Chlorophenol
2-Methylnaphthalene	2-Nitrophenol	3,3'-Dichlorobenzidine	4,6-Dinitro-2-methylphenol
4-Bromophenyl phenyl ether	4-Chloro-3-methylphenol	4-Chloroaniline	4-Chlorophenyl phenyl ether
4-Nitrophenol	a-Terpineol	Acenaphthene	Acenaphthylene
Acetophenone	Aniline	Anthracene	Azobenzene
Benzidine	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene
Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic acid	Benzyl alcohol
bis(2-Chloroethoxy)methane	bis(2-Chloroethyl)ether	bis(2-Chloroisopropyl)ether	bis(2-Ethylhexyl)adipate
bis(2-Ethylhexyl)phthalate	Butyl benzyl phthalate	Carbazole	Chrysene
Di-n-butyl phthalate	Di-n-octyl phthalate	Dibenz(a,h)anthracene	Dibenzofuran
Diethyl phthalate	Dimethyl phthalate	Fluoranthene	Fluorene
Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane
Indeno(1,2,3-c,d)pyrene	Isophorone	m-Nitroaniline	n-Decane
N-Nitrosodi-n-propylamine	N-Nitrosodimethylamine	N-Nitrosodiphenylamine	n-Octadecane
Naphthalene	Nitrobenzene	o-Cresol	o-Nitroaniline
p-Cresol	p-Nitroaniline	Pentachlorophenol	Phenanthrene
Phenol	Pyrene	Pyridine	

100 ug/mL in Methanol

WL-408-10	10 mL	\$184.00
WL-408-25	25 mL	\$315.00
WL-408-50	50 mL	\$578.00

Without Benzidine/3,3'-Dichlorobenzidine

WL-408-10X	10 mL	\$158.00
WL-408-25X	25 mL	\$289.00
WL-408-50X	50 mL	\$550.00

*Tech Note: By separating the Benzidine and 3,3'-Dichlorobenzidine from the main LCS, the stability of both mixtures increases to >18 months.*



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## 625 LCS Spike (63 Analytes)

1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene
2,3-Dichloroaniline	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol
2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dinitrotoluene	2-Chloronaphthalene
2-Chlorophenol	2-Nitrophenol	3,3'-Dichlorobenzidine	4,6-Dinitro-2-methylphenol
4-Bromophenyl phenyl ether	4-Chloro-3-methylphenol	4-Chlorophenyl phenyl ether	4-Nitrophenol
a-Terpineol	Acenaphthene	Acenaphthylene	Acetophenone
Anthracene	Benzidine	Benzo(a)anthracene	Benzo(a)pyrene
Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	bis(2-Chloroethoxy)methane
bis(2-Chloroethyl)ether	bis(2-Chloroisopropyl)ether	bis(2-Ethylhexyl)phthalate	Butyl benzyl phthalate
Carbazole	Chrysene	Di-n-butyl phthalate	Di-n-octyl phthalate
Dibenz(a,h)anthracene	Diethyl phthalate	Dimethyl phthalate	Fluoranthene
Fluorene	Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclopentadiene
Hexachloroethane	Indeno(1,2,3-c,d)pyrene	Isophorone	n-Decane
N-Nitrosodi-n-propylamine	N-Nitrosodimethylamine	N-Nitrosodiphenylamine	n-Octadecane
Naphthalene	Nitrobenzene	Pentachlorophenol	Phenanthrene
Phenol	Pyrene	Pyridine	

100 ug/mL in Methanol

WL-396 ..... 10 mL ..... \$105.00  
 WL-397 ..... 50 mL ..... \$420.00

Without Benzidine/3,3'-Dichlorobenzidine

WL-396X ..... 10 mL ..... \$79.00  
 WL-397X ..... 50 mL ..... \$394.00

*Tech Note: By separating the Benzidine and 3,3'-Dichlorobenzidine from the main LCS, the stability of both mixtures increases to >18 months.*



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