



Reference
Standards

Semivolatile Organic Certified Reference Materials

U.S. EPA Method 8270 and Appendix IX Target Compounds

- Prepared in the fewest solutions compatible with maximum shelf life; fewer ampuls to open mean fewer errors in preparation.
- Ready-to-use mixes to meet your lab's complete needs.
- Calibration mixes prepared in two independent lots for assured lot agreement and ordering convenience.
- Produced in our ISO-accredited labs to satisfy requirements for certified reference materials (CRMs).



RESTEK

Pure Chromatography

www.restek.com



**CHROMATOGRAPHIC
SPECIALTIES INC.**

www.chromspec.com

1-800-267-8103 • sales@chromspec.com • tech@chromspec.com





Semivolatile Organic Certified Reference Materials

U.S. EPA Method 8270 and Appendix IX Target Compounds

U.S. Environmental Protection Agency (EPA) Method 8270 outlines the analysis of semivolatile organic pollutants in solid waste, soil, water, and air matrices using gas chromatography–mass spectrometry (GC-MS). Restek chemists have carefully reviewed this method and formulated analytical reference materials to include all of the most commonly calibrated compounds. Restek also offers all the necessary surrogate, internal standard, calibration check, matrix spike, and tuning mixtures. If your list contains compounds not in our comprehensive inventory, we will be happy to provide custom mixtures to meet your specific needs.



Calibration Mixes

8270 MegaMix Standard (76 components)

Acenaphthene (83-32-9)	2,4-Dinitrophenol (51-28-5)
Acenaphthylene (208-96-8)	2,4-Dinitrotoluene (121-14-2)
Aniline (62-53-3)	2,6-Dinitrotoluene (606-20-2)
Anthracene (120-12-7)	Di- <i>n</i> -octyl phthalate (117-84-0)
Azobenzene (103-33-3)*	Diphenylamine (122-39-4)**
Benz(a)anthracene (56-55-3)	Fluoranthene (206-44-0)
Benzo(a)pyrene (50-32-8)	Fluorene (86-73-7)
Benzo(b)fluoranthene (205-99-2)	Hexachlorobenzene (118-74-1)
Benzo(ghi)perylene (191-24-2)	Hexachlorobutadiene (87-68-3)
Benzo(k)fluoranthene (207-08-9)	Hexachlorocyclopentadiene (77-47-4)
Benzyl alcohol (100-51-6)	Hexachloroethane (67-72-1)
Benzyl butyl phthalate (85-68-7)	Indeno(1,2,3- <i>cd</i>)pyrene (193-39-5)
Bis(2-chloroethoxy)methane (111-91-1)	Isophorone (78-59-1)
Bis(2-chloroethyl)ether (111-44-4)	1-Methylnaphthalene (90-12-0)
Bis(2-ethylhexyl)adipate (103-23-1)	2-Methylnaphthalene (91-57-6)
Bis(2-ethylhexyl)phthalate (117-81-7)	2-Methylphenol (<i>o</i> -cresol) (95-48-7)
4-Bromophenyl phenyl ether (101-55-3)	3-Methylphenol (<i>m</i> -cresol) (108-39-4)
Carbazole (86-74-8)	4-Methylphenol (<i>p</i> -cresol) (106-44-5)
4-Chloroaniline (106-47-8)	Naphthalene (91-20-3)
4-Chloro-3-methylphenol (59-50-7)	2-Nitroaniline (88-74-4)
2-Chloronaphthalene (91-58-7)	3-Nitroaniline (99-09-2)
2-Chlorophenol (95-57-8)	4-Nitroaniline (100-01-6)
4-Chlorophenyl phenyl ether (7005-72-3)	Nitrobenzene (98-95-3)
Chrysene (218-01-9)	2-Nitrophenol (88-75-5)
Dibenz(a,h)anthracene (53-70-3)	4-Nitrophenol (100-02-7)
Dibenzofuran (132-64-9)	N-Nitrosodimethylamine (62-75-9)
1,2-Dichlorobenzene (95-50-1)	N-Nitroso-di- <i>n</i> -propylamine (621-64-7)
1,3-Dichlorobenzene (541-73-1)	2,2'-Oxybis(1-chloropropane) (108-60-1)
1,4-Dichlorobenzene (106-46-7)	Pentachlorophenol (87-86-5)
2,4-Dichlorophenol (120-83-2)	Phenanthrene (85-01-8)
Diethylphthalate (84-66-2)	Phenol (108-95-2)
2,4-Dimethylphenol (105-67-9)	Pyrene (129-00-0)
Dimethylphthalate (131-11-3)	Pyridine (110-86-1)
Di- <i>n</i> -butyl phthalate (84-74-2)	2,3,4,6-Tetrachlorophenol (58-90-2)
1,2-Dinitrobenzene (528-29-0)	2,3,5,6-Tetrachlorophenol (935-95-5)
1,3-Dinitrobenzene (99-65-0)	1,2,4-Trichlorobenzene (120-82-1)
1,4-Dinitrobenzene (100-25-4)	2,4,5-Trichlorophenol (95-95-4)
4,6-Dinitro-2-methylphenol (Dinitro- <i>o</i> -cresol) (534-52-1)	2,4,6-Trichlorophenol (88-06-2)

1,000 µg/mL each in methylene chloride
(3-methylphenol and 4-methylphenol at 500 µg/mL), 1 mL/ampul cat.# 31850 (ea.)

*1,2-diphenylhydrazine (8270-listed analyte) decomposes to azobenzene (mix component) in the injector.

**N-nitrosodiphenylamine (8270-listed analyte) decomposes to diphenylamine (mix component) in the injector.

8270 Matrix Spike Mix (76 components)

Same list as 8270 MegaMix (above)

200 µg/mL each in methanol:methylene chloride (80:20) (3-methylphenol and 4-methylphenol at 100 µg/mL), 5 mL/ampul	cat.# 31687 (ea.)
200 µg/mL each in methanol:methylene chloride (80:20) (3-methylphenol and 4-methylphenol at 100 µg/mL), 5 mL/ampul	cat.# 31687.15 (15-pk.)
200 µg/mL each in methanol:methylene chloride (80:20) (3-methylphenol and 4-methylphenol at 100 µg/mL), 10 mL/ampul	cat.# 33073 (ea.)

*1,2-diphenylhydrazine (8270-listed analyte) decomposes to azobenzene (mix component) in the injector.

**N-nitrosodiphenylamine (8270-listed analyte) decomposes to diphenylamine (mix component) in the injector.

605 Benzidines Calibration Mix

(2 components)

Benzidine (92-87-5)	
3,3'-Dichlorobenzidine (91-94-1)	
2,000 µg/mL each in methanol, 1 mL/ampul	cat.# 31030 (ea.)
2,000 µg/mL each in methylene chloride, 1 mL/ampul	cat.# 31834 (ea.)

8270 Benzidines Mix (3 components)

Benzidine (92-87-5)	
3,3'-Dichlorobenzidine (91-94-1)	
3,3'-Dimethylbenzidine (<i>o</i> -tolidine) (119-93-7)	
2,000 µg/mL each in methanol, 1 mL/ampul	cat.# 31688 (ea.)
2,000 µg/mL each in methylene chloride, 1 mL/ampul	cat.# 31852 (ea.)

Benzoic Acid

Benzoic acid (65-85-0)	
2,000 µg/mL in methylene chloride, 1 mL/ampul	cat.# 31879 (ea.)
1,000 µg/mL in methanol, 1 mL/ampul	cat.# 31415 (ea.)

ordering note

Easier calibration!

8270 MegaMix and 8270 matrix spike mix include 3-methylphenol and 4-methylphenol at 1/2 x concentration of other components.

free data

Available on Our Website: Lot Certificates, Data Packs, and SDSs

For complete information detailing manufacturing and testing for Restek inventoried reference standards, just visit our website at www.restek.com

To view lot certificates and/or an SDS, enter the catalog number of the product in the Search feature. For a free data pack, available as a printable pdf file, enter the catalog number and lot number of the product.

Calibration Mixes (cont.)

Appendix IX Mix #1, Revised (17 components)

2-Acetylaminofluorene (53-96-3)	N-Nitrosomethylethylamine (10595-95-6)
4-Aminobiphenyl (92-67-1)	N-Nitrosomorpholine (59-89-2)
p-Dimethylaminoazobenzene (60-11-7)	N-Nitrosopiperidine (100-75-4)
3,3'-Dimethylbenzidine (o-tolidine) (119-93-7)	N-Nitrosopyrrolidine (930-55-2)
α,α -Dimethylphenethylamine (phentermine) (122-09-8)	5-Nitro-o-tolidine (99-55-8)
1-Naphthylamine (1-aminonaphthalene) (134-32-7)	1,4-Phenylenediamine (106-50-3)
2-Naphthylamine (2-aminonaphthalene) (91-59-8)	2-Picoline (109-06-8)
N-Nitrosodibutylamine (924-16-3)	o-Tolidine (95-53-4)
N-Nitrosodiethylamine (55-18-5)	

2,000 µg/mL each in methylene chloride, 1 mL/ampul

cat.# 32459 (ea.)

Methapyrilene Standard

Methapyrilene hydrochloride (135-23-9)

2,000 µg/mL in methylene chloride, 1 mL/ampul

cat.# 32460 (ea.)

Appendix IX Mix #2 (32 components)

Acetophenone (98-86-2)	Hexachloropropene (1888-71-7)
Aramite (140-57-8)	Isodrin (465-73-6)
Atrazine (1912-24-9)	Isosafrole (cis & trans) (120-58-1)
Benzaldehyde (100-52-7)	Kepone (143-50-0)
Biphenyl (92-52-4)	3-Methylcholanthrene (56-49-5)
ϵ -Caprolactam (105-60-2)	Methyl methanesulfonate (66-27-3)
Chlorobenzilate (510-15-6)	1,4-Naphthoquinone (130-15-4)
1-Chloronaphthalene (90-13-1)	4-Nitroquinoline-N-oxide (56-57-5)
Diallate (2303-16-4)	Pentachlorobenzene (608-93-5)
Dibenz(a,j)acridine (224-42-0)	Pentachloroethane (76-01-7)
2,6-Dichlorophenol (87-65-0)	Pentachloronitrobenzene (quintozene) (82-68-8)
7,12-Dimethylbenz(a)anthracene (57-97-6)	Phenacetin (62-44-2)
1,4-Dioxane (123-91-1)	Propylamide (23950-58-5)
Diphenyl ether (101-84-8)	Safrole (94-59-7)
Ethyl methacrylate (97-63-2)	1,2,4,5-Tetrachlorobenzene (95-94-3)
Ethyl methanesulfonate (62-50-0)	1,3,5-Trinitrobenzene (99-35-4)

1,000 µg/mL each in methylene chloride, 1 mL/ampul

cat.# 31806 (ea.)

Organophosphorus Pesticide Mix, 8270/Appendix IX (9 components)

Dimethoate (60-51-5)	Parathion (ethyl parathion) (56-38-2)
Disulfoton (298-04-4)	Phorate (298-02-2)
Famphur (52-85-7)	Sulfotepp (3689-24-5)
Methyl parathion (298-00-0)	Zinophos (thionazine) (297-97-2)
O,O,O-Triethyl phosphorothioate (126-68-1)	

2,000 µg/mL in methylene chloride, 1 mL/ampul

cat.# 32419 (ea.)

Organochlorine Pesticide Mix AB # 3 (20 components)

Aldrin (309-00-2)	Dieldrin (60-57-1)
α -BHC (319-84-6)	Endosulfan I (959-98-8)
β -BHC (319-85-7)	Endosulfan II (33213-65-9)
δ -BHC (319-86-8)	Endosulfan sulfate (1031-07-8)
γ -BHC (Lindane) (58-89-9)	Endrin (72-20-8)
cis-Chlordane (5103-71-9)	Endrin aldehyde (7421-93-4)
trans-Chlordane (5103-74-2)	Endrin ketone (53494-70-5)
4,4'-DDD (72-54-8)	Heptachlor (76-44-8)
4,4'-DDE (72-55-9)	Heptachlor epoxide (isomer B) (1024-57-3)
4,4'-DDT (50-29-3)	Methoxychlor (72-43-5)

2,000 µg/mL each in hexane:toluene (1:1), 1 mL/ampul

cat.# 32415 (ea.)

8270/Appendix IX Kit

Contains 1 mL each of these mixtures.
 31850: 8270 MegaMix Standard
 31834: 605 Benzidines Calibration Mix
 32459: Appendix IX Mix #1, Revised (Methapyrilene is not included in this revised standard.)

Contains 1 mL each of these mixtures.

Quantity discounts not available.

32460: Methapyrilene Standard
 31806: Appendix IX Mix #2

cat.# 31815 (kit)

kit



did you know?

We have more than 4,000 pure, characterized, neat compounds in our inventory! If you do not see the EXACT mixture you need listed here, call us.*

See www.restek.com/solutions for our Custom Reference Materials Request Form.

*Please have CAS# available to ensure correct identification.

kit available

- Simplify your ordering and reduce your cost—get 128 target analytes in just 5 ampuls.
- Two independently produced lots of each CRM are available to fulfill your need for two sources.

QA Mixes

SV Internal Standard Mix (6 components)

Acenaphthene-d10 (15067-26-2)	Naphthalene-d8 (1146-65-2)
Chrysene-d12 (1719-03-5)	Perylene-d12 (1520-96-3)
1,4-Dichlorobenzene-d4 (3855-82-1)	Phenanthrene-d10 (1517-22-2)
2,000 µg/mL each in methylene chloride, 1 mL/ampul	cat.# 31206 (ea.)
2,000 µg/mL each in methylene chloride, 1 mL/ampul	cat.# 31206.15 (15-pk.)
2,000 µg/mL each in methylene chloride, 1 mL/ampul	cat.# 31206.25 (25-pk.)
4,000 µg/mL each in methylene chloride, 1 mL/ampul	cat.# 31006 (ea.)
4,000 µg/mL each in methylene chloride, 1 mL/ampul	cat.# 31006.15 (15-pk.)
4,000 µg/mL each in methylene chloride, 1 mL/ampul	cat.# 31006.25 (25-pk.)

Revised SV Internal Standard Mix (7 components)

Acenaphthene-d10 (15067-26-2)	Naphthalene-d8 (1146-65-2)
Chrysene-d12 (1719-03-5)	Perylene-d12 (1520-96-3)
1,4-Dichlorobenzene-d4 (3855-82-1)	Phenanthrene-d10 (1517-22-2)
1,4-Dioxane-d8 (17647-74-4)	
2,000 µg/mL each in methylene chloride, 1 mL/ampul	cat.# 31885 (ea.)
2,000 µg/mL each in methylene chloride, 1 mL/ampul	cat.# 31885.15 (15-pk.)
2,000 µg/mL each in methylene chloride, 1 mL/ampul	cat.# 31885.25 (25-pk.)
4,000 µg/mL each in methylene chloride, 1 mL/ampul	cat.# 31886 (ea.)

B/N Surrogate Mix (4/89 SOW) (3 components)

2-Fluorobiphenyl (321-60-8)	
Nitrobenzene-d5 (4165-60-0)	
p-Terphenyl-d14 (1718-51-0)	
1,000 µg/mL each in methylene chloride, 1 mL/ampul	cat.# 31024 (ea.)
1,000 µg/mL each in methylene chloride, 1 mL/ampul	cat.# 31024.15 (15-pk.)
1,000 µg/mL each in methylene chloride, 1 mL/ampul	cat.# 31024.25 (25-pk.)
5,000 µg/mL each in methylene chloride, 1 mL/ampul	cat.# 31062 (ea.)
5,000 µg/mL each in methylene chloride, 1 mL/ampul	cat.# 31062.15 (15-pk.)
5,000 µg/mL each in methylene chloride, 5 mL/ampul	cat.# 31086 (ea.)
5,000 µg/mL each in methylene chloride, 10 mL/ampul	cat.# 33028 (ea.)
5,000 µg/mL each in methylene chloride, 10 mL/ampul	cat.# 33028.25 (25-pk.)

Revised B/N Surrogate Mix (4 components)

2-Fluorobiphenyl (321-60-8)	
Nitrobenzene-d5 (4165-60-0)	
p-Terphenyl-d14 (1718-51-0)	
Pyrene-d10 (1718-52-1)	
1,000 µg/mL each in methylene chloride, 1 mL/ampul	cat.# 31887 (ea.)
1,000 µg/mL each in methylene chloride, 1 mL/ampul	cat.# 31887.15 (15-pk.)
5,000 µg/mL each in methylene chloride, 1 mL/ampul	cat.# 31888 (ea.)
5,000 µg/mL each in methylene chloride, 1 mL/ampul	cat.# 31888.15 (15-pk.)
5,000 µg/mL each in methylene chloride, 5 mL/ampul	cat.# 31889 (ea.)

Acid Surrogate Mix (4/89 SOW) (3 components)

2-Fluorophenol (367-12-4)	
Phenol-d6 (13127-88-3)	
2,4,6-Tribromophenol (118-79-6)	
2,000 µg/mL each in methanol, 1 mL/ampul	cat.# 31025 (ea.)
2,000 µg/mL each in methanol, 1 mL/ampul	cat.# 31025.15 (15-pk.)
2,000 µg/mL each in methanol, 1 mL/ampul	cat.# 31025.25 (25-pk.)
10,000 µg/mL each in methanol, 1 mL/ampul	cat.# 31063 (ea.)
10,000 µg/mL each in methanol, 1 mL/ampul	cat.# 31063.15 (15-pk.)
10,000 µg/mL each in methanol, 5 mL/ampul	cat.# 31087 (ea.)
10,000 µg/mL each in methanol, 10 mL/ampul	cat.# 33029 (ea.)
10,000 µg/mL each in methanol, 10 mL/ampul	cat.# 33029.25 (25-pk.)

B/N Matrix Spike Mix (6 components)

Acenaphthene (83-32-9)	N-Nitroso-di-n-propylamine (621-64-7)
1,4-Dichlorobenzene (106-46-7)	Pyrene (129-00-0)
2,4-Dinitrotoluene (121-14-2)	1,2,4-Trichlorobenzene (120-82-1)
1,000 µg/mL each in methanol, 1 mL/ampul	cat.# 31004 (ea.)
1,000 µg/mL each in methanol, 1 mL/ampul	cat.# 31004.15 (15-pk.)
5,000 µg/mL each in methanol, 1 mL/ampul	cat.# 31074 (ea.)
5,000 µg/mL each in methanol, 5 mL/ampul	cat.# 31084 (ea.)

Acid Matrix Spike Mix (5 components)

4-Chloro-3-methylphenol (59-50-7)	Pentachlorophenol (87-86-5)
2-Chlorophenol (95-57-8)	Phenol (108-95-2)
4-Nitrophenol (100-02-7)	
2,000 µg/mL each in methanol, 1 mL/ampul	cat.# 31014 (ea.)
2,000 µg/mL each in methanol, 1 mL/ampul	cat.# 31014.15 (15-pk.)
10,000 µg/mL each in methanol, 1 mL/ampul	cat.# 31061 (ea.)
10,000 µg/mL each in methanol, 1 mL/ampul	cat.# 31061.15 (15-pk.)
10,000 µg/mL each in methanol, 5 mL/ampul	cat.# 31071 (ea.)

GC-MS Tuning Mixture (4 components)

Benzidine (92-87-5)	
4,4'-DDT (50-29-3)	
Decafluorotriphenylphosphine (DFTPP) (5074-71-5)	
Pentachlorophenol (87-86-5)	
1,000 µg/mL each in methylene chloride, 1 mL/ampul	cat.# 31615 (ea.)

SV Tuning Compound (Decafluorotriphenylphosphine (DFTPP))

Decafluorotriphenylphosphine (DFTPP) (5074-71-5)	
2,500 µg/mL in methylene chloride, 1 mL/ampul	cat.# 31001 (ea.)

PFTBA (MS Tuning Compound)

Perfluorotributylamine (PFTBA) (311-89-7)	
Neat, 1 mL/ampul	cat.# 30482 (ea.)
No data pack available. Not a certified reference material.	

8270 B/N Calibration Check Mix (7 components)

Acenaphthene (83-32-9)	Diphenylamine (122-39-4)
Benzo(a)pyrene (50-32-8)	Fluoranthene (206-44-0)
1,4-Dichlorobenzene (106-46-7)	Hexachlorobutadiene (87-68-3)
Di-n-octyl phthalate (117-84-0)	
2,000 µg/mL each in methylene chloride, 1 mL/ampul	cat.# 31616 (ea.)

8270 Acid Calibration Check Mix (6 components)

4-Chloro-3-methylphenol (59-50-7)	Pentachlorophenol (87-86-5)
2,4-Dichlorophenol (120-83-2)	Phenol (108-95-2)
2-Nitrophenol (88-75-5)	2,4,6-Trichlorophenol (88-06-2)
2,000 µg/mL each in methylene chloride, 1 mL/ampul	cat.# 31617 (ea.)

SV System Performance Check Mix (SPCC)

(4 components)	
2,4-Dinitrophenol (51-28-5)	4-Nitrophenol (100-02-7)
Hexachlorocyclopentadiene (77-47-4)	N-Nitroso-di-n-propylamine (621-64-7)
2,000 µg/mL each in methylene chloride, 1 mL/ampul	cat.# 31689 (ea.)

Calibration Mixes by Compound Class



Restek's certified reference standards are formulated with a balance of product stability and user convenience in mind. Short shelf life standards, such as vinyl acetate and acrolein, should be ordered fresh as needed. Explore the cost savings and convenience of standing/blanket orders for all of your custom and catalog reference standards needs.

www.restek.com/blanket

8270 Calibration Mix #1 (19 components)

Benzoic acid (65-85-0)	3-Methylphenol (<i>m</i> -cresol) (108-39-4)
4-Chloro-3-methylphenol (59-50-7)	4-Methylphenol (<i>p</i> -cresol) (106-44-5)
2-Chlorophenol (95-57-8)	2-Nitrophenol (88-75-5)
2,4-Dichlorophenol (120-83-2)	4-Nitrophenol (100-02-7)
2,6-Dichlorophenol (87-65-0)	Pentachlorophenol (87-86-5)
2,4-Dimethylphenol (105-67-9)	Phenol (108-95-2)
4,6-Dinitro-2-methylphenol (Dinitro- <i>o</i> -cresol) (534-52-1)	2,3,4,6-Tetrachlorophenol (58-90-2)
2,4-Dinitrophenol (51-28-5)	2,4,5-Trichlorophenol (95-95-4)
Dinoseb (88-85-7)	2,4,6-Trichlorophenol (88-06-2)
2-Methylphenol (<i>o</i> -cresol) (95-48-7)	
2,000 µg/mL each in methylene chloride, 1 mL/ampul	
cat.# 31618 (ea.)	

8270 Calibration Mix #2 (11 components)

Aniline (62-53-3)	3-Nitroaniline (99-09-2)
Benzidine (92-87-5)	4-Nitroaniline (100-01-6)
4-Chloroaniline (106-47-8)	N-Nitrosodimethylamine (62-75-9)
3,3'-Dichlorobenzidine (91-94-1)	N-Nitrosodi- <i>n</i> -propylamine (621-64-7)
Diphenylamine (122-39-4)*	Pyridine (110-86-1)
2-Nitroaniline (88-74-4)	
2,000 µg/mL each in methylene chloride:methanol (85:15), 1 mL/ampul	
cat.# 31619 (ea.)	

*N-nitrosodiphenylamine (8270-listed analyte) decomposes to diphenylamine (mix component) in the injector.

8270 Calibration Mix #3 (23 components)

Aramite (140-57-8)	Hexachlorobutadiene (87-68-3)
Bis(2-chloroethyl)ether (111-44-4)	Hexachlorocyclopentadiene (77-47-4)
Bis(2-chloroethoxy)methane (111-91-1)	Hexachloroethane (67-72-1)
4-Bromophenyl phenyl ether (101-55-3)	Hexachloropropene (1888-71-7)
Chlorobenzilate (510-15-6)	Isodrin (465-73-6)
2-Chloronaphthalene (91-58-7)	Kepone (143-50-0)
4-Chlorophenyl phenyl ether (7005-72-3)	2,2'-Oxybis(1-chloropropane) (108-60-1)
1,2-Dichlorobenzene (95-50-1)	Pentachlorobenzene (608-93-5)
1,3-Dichlorobenzene (541-73-1)	Pentachloronitrobenzene (quintozone) (82-68-8)
1,4-Dichlorobenzene (106-46-7)	1,2,4,5-Tetrachlorobenzene (95-94-3)
1,3-Dinitrobenzene (99-65-0)	1,2,4-Trichlorobenzene (120-82-1)
Hexachlorobenzene (118-74-1)	
2,000 µg/mL each in methylene chloride, 1 mL/ampul	
cat.# 31620 (ea.)	

8270 Calibration Mix #4 (22 components)

Acetophenone (98-86-2)	2,6-Dinitrotoluene (606-20-2)
Azobenzene (103-33-3)*	Ethyl methanesulfonate (62-50-0)
Benzyl alcohol (100-51-6)	Isophorone (78-59-1)
Bis(2-ethylhexyl)phthalate (117-81-7)	Isosafrole (<i>cis</i> & <i>trans</i>) (120-58-1)
Benzyl butyl phthalate (85-68-7)	Methyl methanesulfonate (66-27-3)
Dibenzofuran (132-64-9)	1,4-Naphthoquinone (130-15-4)
Diethylphthalate (84-66-2)	Nitrobenzene (98-95-3)
Dimethylphthalate (131-11-3)	4-Nitroquinoline-N-oxide (56-57-5)
Di- <i>n</i> -butyl phthalate (84-74-2)	Phenacetin (62-44-2)
Di- <i>n</i> -octyl phthalate (117-84-0)	Safrole (94-59-7)
2,4-Dinitrotoluene (121-14-2)	1,3,5-Trinitrobenzene (99-35-4)
2,000 µg/mL each in methylene chloride, 1 mL/ampul	
cat.# 31621 (ea.)	

*1,2-diphenylhydrazine (8270-listed analyte) decomposes to azobenzene (mix component) in the injector.

8270 Calibration Mix #6 (10 components)

Diallate (<i>cis</i> & <i>trans</i>) (2303-16-4)	Parathion (ethyl parathion) (56-38-2)
Dimethoate (60-51-5)	Phorate (298-02-2)
Disulfoton (298-04-4)	Propyzamide (23950-58-5)
Famphur (52-85-7)	O,O,O-Triethyl phosphorothioate (126-68-1)
Methyl parathion (298-00-0)	Zinophos (Thionazine) (297-97-2)
2,000 µg/mL each in methylene chloride, 1 mL/ampul	
cat.# 31623 (ea.)	

Aramite

Aramite (140-57-8)	
2,000 µg/mL in hexane, 1 mL/ampul	
cat.# 31624 (ea.)	

Calibration Mixes by Compound Class (cont.)

8270 Calibration Kit (2,000 µg/mL)

Contains 1 mL each of these mixtures.

31618: 8270 Calibration Mix #1

31619: 8270 Calibration Mix #2

31620: 8270 Calibration Mix #3

31621: 8270 Calibration Mix #4

31995: 8270 Calibration Mix #5, Revised

31996: 3-Methylcholanthrene Standard

kit

Contains 1 mL each of these mixtures.

cat.# 31626 (kit)

Quantity discounts not available.

Aroclor Solutions

- Aroclor standards may exhibit lot-to-lot variation.

Volume is 1 mL/ampul. Concentration is µg/mL unless otherwise noted.

Compound	CAS #	Solvent	Conc.	cat.#
Aroclor 1016	12674-11-2	H	1,000	32006
Aroclor 1016	12674-11-2	I	200	32064
Aroclor 1016	12674-11-2	TO	500 mg/kg	32076
Aroclor 1221	11104-28-2	H	1,000	32007
Aroclor 1221	11104-28-2	I	200	32065
Aroclor 1232	11141-16-5	H	1,000	32008
Aroclor 1232	11141-16-5	I	200	32066
Aroclor 1242	53469-21-9	H	1,000	32009
Aroclor 1242	53469-21-9	I	200	32067
Aroclor 1242	53469-21-9	TO	50 mg/kg	32081
Aroclor 1242	53469-21-9	TO	500 mg/kg	32082
Aroclor 1248	12672-29-6	H	1,000	32010
Aroclor 1248	12672-29-6	I	200	32068
Aroclor 1254	11097-69-1	H	1,000	32011
Aroclor 1254	11097-69-1	I	200	32069
Aroclor 1254	11097-69-1	TO	50 mg/kg	32085
Aroclor 1254	11097-69-1	TO	500 mg/kg	32086
Aroclor 1260	11096-82-5	H	1,000	32012
Aroclor 1260	11096-82-5	I	200	32070
Aroclor 1260	11096-82-5	TO	50 mg/kg	32087
Aroclor 1260	11096-82-5	TO	500 mg/kg	32088
Aroclor 1262	37324-23-5	H	1,000	32409
Aroclor 1268	11100-14-4	H	1,000	32410
Aroclor 1016/1260		H	1,000	32039
Aroclor 1016/1260		I	200	32299
Aroclor 1016/1260		A	400	32456

A = acetone; H = hexane; I = isooctane; TO = transformer oil (PCB-free)



please note

We test our transformer oil solvent to ensure that it is PCB-free.

To view and download chromatograms on certificates of analysis (CofA) for recently produced lots, visit www.restek.com/documentation and then enter the cat.# and serial #.

Before ordering, contact Restek Customer Service to confirm lot availability.

What are Certified Reference Materials (CRMs)?

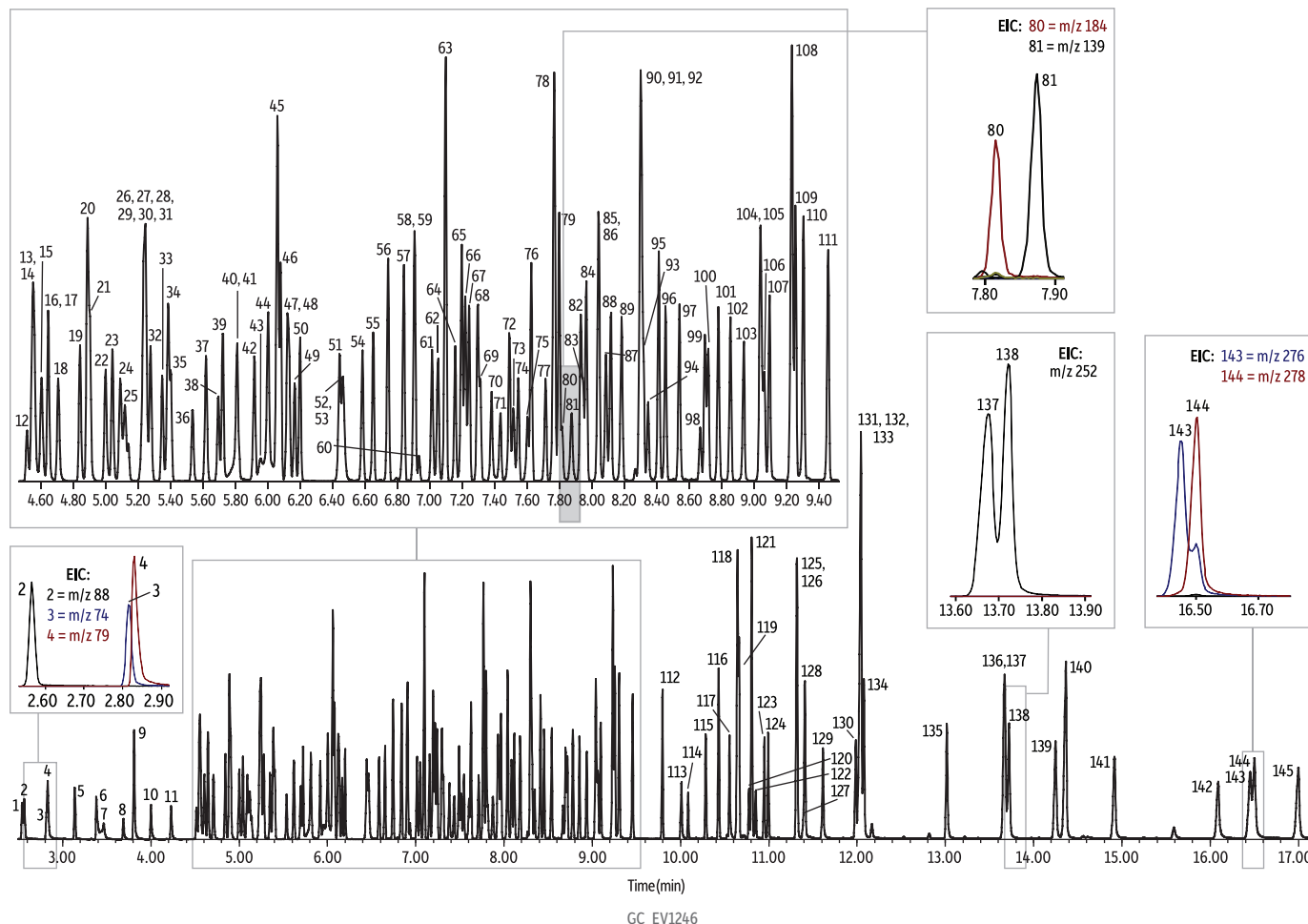
A CRM from Restek is in an exclusive subset of reference standards that meets the following set of strict criteria defined under ISO Guide 34 and ISO/IEC 17025:

- Made of raw materials characterized via qualified methods on qualified instruments.
- Produced in an ISO-accredited lab under documented procedures.
- Falls under the manufacturer's scopes of accreditation.

To learn more about Restek's ISO quality credentials and to view our certificates (including scopes of accreditation), visit www.restek.com/iso



Semivolatile Organics w/Appendix IX on Rxi-5Sil MS by U.S. EPA Method 8270



GC_EV1246

Column
Sample

Rxi-5Sil MS, 30 m, 0.25 mm ID, 0.25 µm (cat.# 13623)
8270 MegaMix (cat.# 31850)
8270 Benzidines mix (cat.# 31852)
Benzoic acid (cat.# 31879)
Revised B/N surrogate mix (cat.# 31888)
Acid surrogate mix (4/89 SOW) (cat.# 31063)
Revised SV internal standard mix (cat.# 31886)
Appendix IX mix #1 (cat.# 31625)
Appendix IX mix #2 (cat.# 31806)
Dichloromethane
10 µg/mL (1,4-Dioxane and IS/SS 20 ug/mL)

Diluent:
Conc.:

Injection
Inj. Vol.:
Liner:
Inj. Temp.:
Pulse Pressure:
Pulse Time:
Purge Flow:
Oven
Oven Temp:

1 µL pulsed splitless (hold 0.59 min)
Premium 4 mm single taper/gooseneck w/wool (cat.# 23303.5)
270 °C
30 psi (206.8kPa)
0.64 min
100 mL/min
40 °C (hold 1 min) to 280 °C at 25 °C/min to
320 °C at 5 °C/min (hold 1 min)

Carrier Gas
Flow Rate:
Linear Velocity:
Detector
Mode:
Transfer Line Temp.:
Analyzer Type:
Source Temp.:
Quad Temp.:
Solvent Delay Time:
Tune Type:
Ionization Mode:
Scan Range:
Scan Rate:
Instrument
Notes

He, constant flow
1.2 mL/min
39.723 cm/sec @ 40 °C
MS
Scan
280 °C
Quadrupole
276 °C
150 °C
2.19 min
DFTPP
EI
35-550 amu
5.36 scans/sec
Agilent 7890A GC & 5975C MSD
7890 Siltek treated EZ Twist Top split/splitless
injection port (cat.# 22178)
Flip Seal™ dual Vespel ring inlet seal (cat.# 23411)

(Continued from page 8.)

Semivolatile Organics w/Appendix IX on Rxi-5Sil MS by U.S. EPA Method 8270

Peaks

- | | | | |
|---------------------------------|---|---|--------------------------------------|
| 1. 1,4-Dioxane-d8 (IS) | 42. 2,4-Dichlorophenol | 83. 2,4-Dinitrotoluene | 124. Chlorobenzilate |
| 2. 1,4-Dioxane | 43. α,α -Dimethylphenethylamine | 84. Dibenzofuran | 125. 3,3'-Dimethylbenzidine |
| 3. N-Nitrosodimethylamine | 44. 1,2,4-Trichlorobenzene | 85. 1-Naphthalamine | 126. Butyl benzyl phthalate |
| 4. Pyridine | 45. Naphthalene-D8 (IS) | 86. 2,3,5,6-Tetrachlorophenol | 127. Kepone |
| 5. Ethyl methacrylate | 46. Naphthalene | 87. 2,3,4,6-Tetrachlorophenol | 128. Bis(2-ethylhexyl) adipate |
| 6. 2-Picoline | 47. 4-Chloroaniline | 88. 2-Naphthalamine | 129. 2-Acetylaminofluorine |
| 7. N-Nitrosomethylethylamine | 48. 2,6-Dichlorophenol | 89. Diethyl phthalate | 130. 3,3'-Dichlorobenzidine |
| 8. Methyl methanesulfonate | 49. Hexachloropropene | 90. 4-Chlorophenyl phenyl ether | 131. Benz[a]anthracene |
| 9. 2-Fluorophenol (SS) | 50. Hexachlorobutadiene | 91. Fluorene | 132. Chrysene-D12 (IS) |
| 10. N-Nitrosodiethylamine | 51. N-Nitrosobutylamine | 92. 2-Methyl-5-nitroaniline | 133. Bis(2-ethylhexyl)phthalate |
| 11. Ethyl methanesulfonate | 52. Caprolactam | 93. 4-Nitroaniline | 134. Chrysene |
| 12. Benzaldehyde | 53. 1,4-Phenylenediamine | 94. 4,6-Dinitro-2-methylphenol | 135. Di-n-octyl phthalate |
| 13. Phenol-d6 (SS) | 54. 4-Chloro-3-methylphenol | 95. N-nitrosodiphenylamine (as Diphenylamine) | 136. 7,12-Dimethylbenzo[a]anthracene |
| 14. Phenol | 55. Isosafrole (isomer) | 96. 1,2-Diphenylhydrazine (as Azobenzene) | 137. Benzo[b]fluoranthene |
| 15. Aniline | 56. 2-Methylnaphthalene | 97. 2,4,6-Tribromophenol (SS) | 138. Benzo[k]fluoranthene |
| 16. Bis(2-chloroethyl) ether | 57. 1-Methylnaphthalene | 98. 1,3,5-Trinitrobenzene | 139. Benzo[a]pyrene |
| 17. Pentachloroethane | 58. Hexachlorocyclopentadiene | 99. Diallate | 140. Perylene-D12 (IS) |
| 18. 2-Chlorophenol | 59. 1,2,4,5-Tetrachlorobenzene | 100. Phenacetin | 141. 3-Methylcholanthrene |
| 19. 1,3-Dichlorobenzene | 60. Isosafrole (isomer) | 101. 4-Bromophenyl phenyl ether | 142. Dibenzo[a,j]acridine |
| 20. 1,4-Dichlorobenzene-D4 (IS) | 61. 2,4,6-Trichlorophenol | 102. Hexachlorobenzene | 143. Indeno[1,2,3-cd]pyrene |
| 21. 1,4-Dichlorobenzene | 62. 2,4,5-Trichlorophenol | 103. Atrazine | 144. Dibenz[a,h]anthracene |
| 22. Benzyl alcohol | 63. 2-Fluorobiphenyl (SS) | 104. 4-Aminobiphenyl | 145. Benzo[ghi]perylene |
| 23. 1,2-Dichlorobenzene | 64. Safrole | 105. Pentachlorophenol | |
| 24. 2-Methylphenol | 65. Biphenyl | 106. Pentachloronitrobenzene | |
| 25. Bis(2-Chloroisopropyl)ether | 66. 2-Chloronaphthalene | 107. Propylamide | |
| 26. N-Nitrosopyrrolidine | 67. 1-Chloronaphthalene | 108. Phenanthrene-D10 (IS) | |
| 27. 3-Methylphenol | 68. Diphenyl ether | 109. Phenanthrene | |
| 28. 4-Methylphenol | 69. 2-Nitroaniline | 110. Anthracene | |
| 29. Acetophenone | 70. 1,4-Naphthoquinone | 111. Carbazole | |
| 30. N-Nitrosodipropylamine | 71. 1,4-Dinitrobenzene | 112. di-n-Butyl phthalate | |
| 31. 4-Nitrosomorpholine | 72. Dimethyl phthalate | 113. 4-Nitroquinoline 1-oxide | |
| 32. o-Toluidine | 73. 1,3-Dinitrobenzene | 114. Methapyriline | |
| 33. Hexachloroethane | 74. 2,6-Dinitrotoluene | 115. Isodrin | |
| 34. Nitrobenzene-D5 (SS) | 75. 1,2-Dinitrobenzene | 116. Fluoranthene | |
| 35. Nitrobenzene | 76. Acenaphthylene | 117. Benzidine | |
| 36. N-Nitrosopiperidine | 77. 3-Nitroaniline | 118. Pyrene-d10 (SS) | |
| 37. Isophorone | 78. Acenaphthene-d10 (IS) | 119. Pyrene | |
| 38. 2-Nitrophenol | 79. Acenaphthene | 120. Aramite (isomer) | |
| 39. 2,4-Dimethylphenol | 80. 2,4-Dinitrophenol | 121. p-Terphenyl-d14 (SS) | |
| 40. Bis(2-chloroethoxy)methane | 81. 4-Nitrophenol | 122. Aramite (isomer) | |
| 41. Benzoic acid | 82. Pentachlorobenzene | 123. Dimethylaminoazobenzene | |

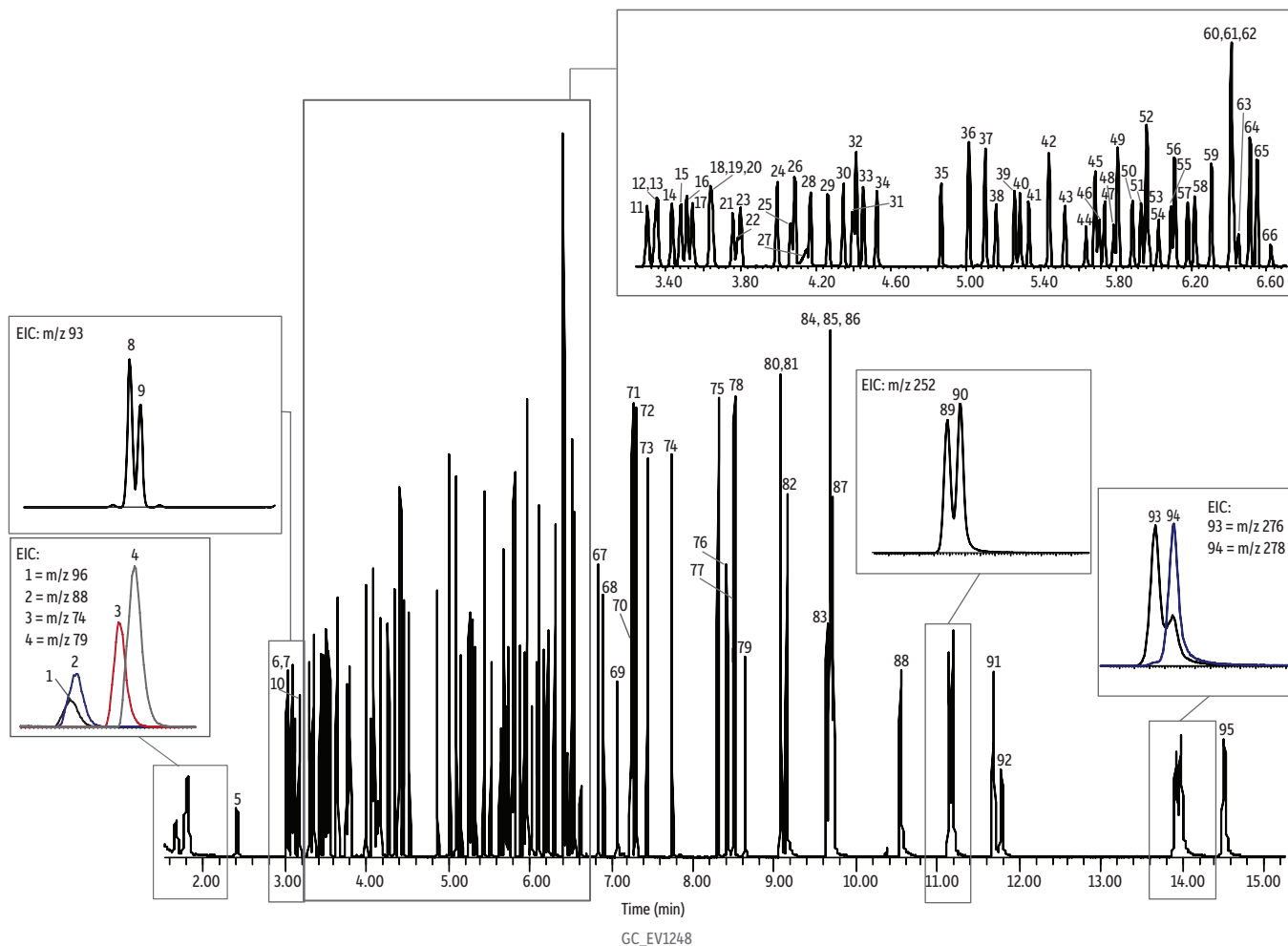


Build a Rock-Solid Analytical Foundation with Restek Reference Standards

Visit us at www.restek.com/standards



Semivolatiles on Rxi-5Sil MS by U.S. EPA Method 8270 (Split Injection)



Column Sample

Rxi-5Sil MS, 30 m, 0.25 mm ID, 0.25 μ m (cat.# 13623)
 8270 MegaMix (cat.# 31850)
 8270 Benzinides mix (cat.# 31852)
 Benzoic acid (cat.# 31879)
 1,4-Dioxane (cat.# 31853)
 Revised B/N surrogate mix (cat.# 31888)
 Acid surrogate mix (4/89 SOW) (cat.# 31063)
 Revised SV internal standard mix (cat.# 31886)
 Methylene chloride
 40 μ g/mL (IS/SS 20 μ g/mL)

Diluent: Conc.: Injection Inj. Vol.: Liner:

1 μ L split (split ratio 10:1)
 Premium 4 mm Precision liner w/wool (cat.# 23305.5)

Inj. Temp.: 270 °C
 Split Vent Flow Rate: 12 mL/min
 Oven
 Oven Temp: 70 °C (hold 1 min) to 285 °C at 28 °C/min to 305 °C at 3 °C/min to 320 °C at 30 °C/min (hold 1 min)

Carrier Gas Flow Rate:

He, constant flow
 1.2 mL/min
Detector
 MS
 Mode: Scan
 Transfer Line Temp.: 280 °C
 Analyzer Type: Quadrupole
 Source Temp.: 270 °C
 Quad Temp.: 150 °C
 Electron Energy: 70 eV
 Solvent Delay Time: 1.3 min
 Tune Type: DFTPP
 Ionization Mode: EI
 Scan Range: 35-550 amu
 Scan Rate: 5.36 scans/sec
Instrument
 Agilent 7890A GC & 5975C MSD

(Continued from page 10.)

Semivolatiles on Rxi-5Sil MS by U.S. EPA Method 8270 (Split Injection)

Peaks

1. 1,4-Dioxane-d8 (IS)	26. 2,4-Dimethylphenol	52. Acenaphthene	78. Pyrene
2. 1,4-Dioxane	27. Benzoic acid	53. 2,4-Dinitrophenol	79. <i>p</i> -Terphenyl-d14 (SS)
3. N-Nitrosodimethylamine	28. Bis(2-chloroethoxy)methane	54. 4-Nitrophenol	80. 3,3'-Dimethylbenzidine
4. Pyridine	29. 2,4-Dichlorophenol	55. 2,4-Dinitrotoluene	81. Butyl benzyl phthalate
5. 2-Fluorophenol (SS)	30. 1,2,4-Trichlorobenzene	56. Dibenzofuran	82. Bis(2-ethylhexyl)adipate
6. Phenol-d6 (SS)	31. Naphthalene-D8 (IS)	57. 2,3,5,6-Tetrachlorophenol	83. 3,3'-Dichlorobenzidine
7. Phenol	32. Naphthalene	58. 2,3,4,6-Tetrachlorophenol	84. Benzo[a]anthracene
8. Aniline	33. 4-Chloroaniline	59. Diethyl phthalate	85. Chrysene-D12 (IS)
9. Bis(2-chloroethyl)ether	34. Hexachlorobutadiene	60. 4-Chlorophenyl phenyl ether	86. Bis(2-ethylhexyl)phthalate
10. 2-Chlorophenol	35. 4-Chloro-3-methylphenol	61. Fluorene	87. Chrysene
11. 1,3-Dichlorobenzene	36. 2-Methylnaphthalene	62. 4-Nitroaniline	88. Di- <i>n</i> -octyl phthalate
12. 1,4-Dichlorobenzene-D4 (IS)	37. 1-Methylnaphthalene	63. 4,6-Dinitro-2-methylphenol	89. Benzo[b]fluoranthene
13. 1,4-Dichlorobenzene	38. Hexachlorocyclopentadiene	64. N-nitrosodiphenylamine	90. Benzo[k]fluoranthene
14. Benzyl alcohol	39. 2,4,6-Trichlorophenol	65. 1,2-Diphenylhydrazine	91. Benzo[a]pyrene
15. 1,2-Dichlorobenzene	40. 2,4,5-Trichlorophenol	66. 2,4,6-Tribromophenol (SS)	92. Perylene-D12 (IS)
16. 2-Methylphenol	41. 2-Fluorobiphenyl (SS)	67. 4-Bromophenyl phenyl ether	93. Indeno[1,2,3- <i>cd</i>]pyrene
17. Bis(2-chloroisopropyl)ether	42. 2-Chloronaphthalene	68. Hexachlorobenzene	94. Dibenz[a,h]anthracene
18. 4-Methylphenol	43. 2-Nitroaniline	69. Pentachlorophenol	95. Benzo[ghi]perylene
19. 3-Methylphenol	44. 1,4-Dinitrobenzene	70. Phenanthrene-D10 (IS)	
20. N-nitroso-di- <i>n</i> -propylamine	45. Dimethyl phthalate	71. Phenanthrene	
21. Hexachloroethane	46. 1,3-Dinitrobenzene	72. Anthracene	
22. Nitrobenzene-D5 (SS)	47. 2,6-Dinitrotoluene	73. Carbazole	
23. Nitrobenzene	48. 1,2-Dinitrobenzene	74. di- <i>n</i> -Butyl phthalate	
24. Isophorone	49. Acenaphthylene	75. Fluoranthene	
25. 2-Nitrophenol	50. 3-Nitroaniline	76. Benzidine	
	51. Acenaphthene-d10 (IS)	77. Pyrene-D10 (SS)	

Consolidate Orders with Restek

Along with both primary- and secondary-source reference standards, you can order all of your GC and LC columns, sample preparation supplies, accessories, and more from Restek!

www.restek.com





Rxi-5Sil MS Columns (fused silica)

low-polarity phase; Crossbond 1,4-bis(dimethylsiloxy)phenylene dimethyl polysiloxane

ID	df	temp. limits	15-Meter cat.#	30-Meter cat.#	60-Meter cat.#
0.25 mm	0.10 μ m	-60 to 320/350 °C	13605	13608	—
	0.25 μ m	-60 to 320/350 °C	13620	13623	13626
	0.50 μ m	-60 to 320/350 °C	13635	13638	—
	1.00 μ m	-60 to 320/350 °C	13650	13653	13697
0.32 mm	0.25 μ m	-60 to 320/350 °C	13621	13624	—
	0.50 μ m	-60 to 320/350 °C	—	13639	—
	1.00 μ m	-60 to 320/350 °C	—	13654	—
0.53 mm	1.50 μ m	-60 to 320/330 °C	—	13670	—

ID	df	temp. limits	10-Meter cat.#	20-Meter cat.#	40-Meter cat.#
0.15 mm	0.15 μ m	-60 to 320/350 °C	43815	43816	—
	2.0 μ m	-60 to 320/350 °C	—	43817	—
0.18 mm	0.10 μ m	-60 to 320/350 °C	—	—	—
	0.18 μ m	-60 to 320/350 °C	—	43602	43605
	0.36 μ m	-60 to 320/350 °C	—	43604	—



Less Waiting and Lower Cost—

visit www.restek.com/solutions to immediately search our stock standards, then order or request a custom quote if needed!

RESTEK
Pure Chromatography

Questions about this or any other Restek product?

Contact us or your local Restek representative (www.restek.com/contact-us).

Restek patents and trademarks are the property of Restek Corporation. (See www.restek.com/Patents-Trademarks for full list.) Other trademarks in Restek literature or on its website are the property of their respective owners. Restek registered trademarks are registered in the U.S. and may also be registered in other countries.

© 2017 Restek Corporation. All rights reserved. Printed in the U.S.A.

www.restek.com



Lit. Cat.# EVSS2545-UNV



**CHROMATOGRAPHIC
SPECIALTIES INC.**
www.chromspec.com

1-800-267-8103 • sales@chromspec.com • tech@chromspec.com