



# REACH Statement

In an effort to ensure that all chemicals are tested and used in safe ways, the European Union has adopted a plan (REACH - Registration, Evaluation, Authorization and Restriction of Chemicals), which went into effect on June 1, 2007. This plan originated out of the desire to replace the patchwork of existing regulations in Europe with a more comprehensive law that encompasses all chemicals, including those placed on the market prior to 1981 when the industry did not have to provide documented health and safety information.

Listed below are the important dates outlined in the REACH directive.

- June 1, 2007**            The REACH Directive takes effect
- June 1, 2008**            Pre-registration for existing substances and Registration for new substances begins
- November 30, 2008**    Pre-registration for existing substances ends
- December 1, 2008**    Registration for existing substances that have not been pre-registered begins
- January 1, 2009**        List of pre-registered substances is published
- June 1, 2009**            First recommendation of priority substances to be considered for authorization published
- December 1, 2010**    PHASE 1 - The following pre-registered 'phase-in' substances should have been registered when supplied at:
  - ≥ 1000 tons per year or;
  - ≥ 100 tons per year and classified under CHIP as very toxic to aquatic organisms or;
  - ≥ 1 ton per year and classified under CHIP as Category 1 or 2 carcinogens, mutagens or reproductive toxicants
- June 1, 2013**            PHASE 2 - Deadline for registration of substances supplied at ≥ 100 tons per year
- June 1, 2018**            PHASE 3 - Deadline for registration of substances supplied at ≥ 1 ton per year

AccuStandard fully supports the efforts and objectives of the REACH Directive and will continue to monitor any changes in the scope of this regulation. Changes may include newly banned substances, expiring exemptions or lowered maximum concentration levels. We will take the necessary actions to continue to sell our products in the European markets.



EUROPEAN COMMISSION  
JOINT RESEARCH CENTRE  
Institute for Reference Materials and Measurements  
Reference Materials Unit

Geel, November 2008  
D02 HE/mt D2008/28987

"...In short, the consequences for reference material producers seem to be:

- No registration of reference materials is required for materials produced at less than 1 ton per year, regardless of the nature of the substance and/or certified parameters."

As a leading manufacturer of chemical reference standards in the world, AccuStandard will take all necessary actions under REACH in order to continue to expand the supply of our products in Europe. For other guidance on REACH, please go to the ECHA-website ([www.echa.europa.eu](http://www.echa.europa.eu)).



## Standards for International Testing Protocols

AccuStandard has researched and developed standard solutions that meet the requirements of various governmental bodies around the world. If you do not locate a solution that meets your requirements, please contact our Technical Department, and we will quickly develop a formulation that meets your requirements.

<b>Canada</b>	<b>256-258</b>
PCB Congener Standards	256
Dioxin Calibration & Window Defining Standards	256
PAH & Brownfield Regulation Mixtures	257
MISA Standards	258
<b>Europe</b>	<b>259-267</b>
Allergens (see Application section)	113-118
PCB Congeners	259
Volatiles	260
Chlorinated Organic Volatiles	260
Nitroaromatic Compounds	260
Explosives	260
PAHs	261
PBDEs	261
Aliphatic, Aromatic Amines and Derivatives	262
Halo Acetic Acids	262
European Food Safety Authority (EFSA) for ITX	262
Pesticides	263-266
Phenols and Derivatives	266
Hydrocarbon in Oil	267
Automotive Engine Exhaust	267
Carbonyl Compounds by HPLC	267
Dyes & Aryl Amines (see Dye section)	119-120
<b>Japan</b>	<b>268</b>
Ministry of Health & Welfare Standards	268
Environmental Agency Methods	268
<b>Korea</b>	<b>268</b>
Drinking Water Standards	268
<b>USA</b>	<b>269-340</b>
California	269
Florida	269
Minnesota	270
Wisconsin	270
State Specific LUFT/LUST	326-340
<b>Methods other than EPA</b>	<b>271-272</b>
ASTM 7065, USP 467, F-List	271-272

**For additional mixtures, see Persistent Organic Pollutants (POPs) in the Table of Contents.**

### Available at [www.AccuStandard.com](http://www.AccuStandard.com)

Cross References are available at the AccuStandard web site for analytical standards for many general categories that cross chemical groups.

Endocrine Disruptors (EU and US)	Allergens RoHS	Dyes Oeko-Tex Labeling
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The text of methods from various governmental agencies and non-governmental agencies can be downloaded from the AccuStandard web site or from the agency sites.

EU Directives	EPA Methods
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Also, new product listings can be found on the AccuStandard website as soon as they are available. Please visit the website often for the latest updates.



# Regional Standards

## Canadian Methodologies

### PCB Congeners

#### Toxicity and Abundance based PCB Congener Formulations

These formulations have been selected by the Institute for Biological Sciences of Canada. The concentration level for these formulations is selected so that 1 mL of standard diluted into 100 mL will show equal response by ECD.

#### PCB Congener Set

C-CAN-SET

4 x 1 mL (C-CAN-01, C-CAN-02, C-CAN-03, C-CAN-04)

#### PCB Congener Mix #1

C-CAN-01	1 x 1 mL
<i>At stated conc. in Isooctane</i>	14 comps.
(Congener No.)	µg/mL
2,2',5-Trichlorobiphenyl (18)	11.8
2,4',5-Trichlorobiphenyl (31)	6.6
2,2',3,3'-Tetrachlorobiphenyl (40)	4.9
2,2',3,5'-Tetrachlorobiphenyl (44)	5.9
2,2',4,5'-Tetrachlorobiphenyl (49)	7.6
2,2',6,6'-Tetrachlorobiphenyl (54)	16.6
3,3',4,4'-Tetrachlorobiphenyl (77)	5.5
2,2',3,4,5-Pentachlorobiphenyl (86)	2.9
2,2',3,4,5'-Pentachlorobiphenyl (87)	3.8
2,3',4,5',6-Pentachlorobiphenyl (121)	3.1
2,2',4,4',5,5'-Hexachlorobiphenyl (153)	2.1
2,3,3',4,4',5-Hexachlorobiphenyl (156)	1.5
2,3,3',4,5,5'-Hexachlorobiphenyl (159)	1.2
Decachlorobiphenyl (209)	1.7

#### PCB Congener Mix #3

C-CAN-03	1 x 1 mL
<i>At stated conc. in Isooctane</i>	15 comps.
(Congener No.)	µg/mL
4,4'-Dichlorobiphenyl (15)	138.1
2,3,4,4',5-Pentachlorobiphenyl (114)	6.3
2,2',3,3',4,5-Hexachlorobiphenyl (129)	8.3
2,2',3,4,4',5-Hexachlorobiphenyl (137)	7.4
2,2',4,4',5,5'-Hexachlorobiphenyl (153)	7.3
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)	5.2
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)	6.6
2,2',3,4,4,5,5',6-Heptachlorobiphenyl (185)	3.5
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)	4.7
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)	5
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)	4.8
2,2',3,3',4,5,5',6'-Octachlorobiphenyl (199)	7
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)	5.1
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (206)	6.7
Decachlorobiphenyl (209)	5.1

#### PCB Congener Mix #2

C-CAN-02	1 x 1 mL
<i>At stated conc. in Isooctane</i>	15 comps.
(Congener No.)	µg/mL
4,4'-Dichlorobiphenyl (15)	91.9
2,2',5,5'-Tetrachlorobiphenyl (52)	15.2
2,3,4,4'-Tetrachlorobiphenyl (60)	3.9
2,2',4,5',6-Pentachlorobiphenyl (103)	10.8
2,3,3',4,4'-Pentachlorobiphenyl (105)	4
2,2',3,3',4,4'-Hexachlorobiphenyl (128)	4.9
2,2',3,4,5,6'-Hexachlorobiphenyl (143)	5.7
2,2',4,4',5,6'-Hexachlorobiphenyl (154)	6.2
2,2',3,3',4,5,6-Heptachlorobiphenyl (173)	2.3
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)	3.8
2,2',3,3',5,5',6,6'-Octachlorobiphenyl (202)	3.6
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)	3.2
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (207)	3.8
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (208)	2.4
Decachlorobiphenyl (209)	2.8

#### PCB Congener Mix #4

C-CAN-04	1 x 1 mL
<i>At stated conc. in Isooctane</i>	15 comps.
(Congener No.)	µg/mL
4,4'-Dichlorobiphenyl (14)	76.7
2,2',4,5,5'-Pentachlorobiphenyl (101)	8.9
2,3',4,4',5-Pentachlorobiphenyl (118)	3.9
2,2',3,4,4',5'-Hexachlorobiphenyl (138)	4.2
2,2',3,4,5,5'-Hexachlorobiphenyl (141)	2.8
2,2',3,5,5',6-Hexachlorobiphenyl (151)	5
2,2',4,4',5,5'-Hexachlorobiphenyl (153)	3.3
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)	3
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)	2.8
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)	3.2
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)	2.4
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)	2.6
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)	3.3
2,2',3,3',4,5,5',6'-Octachlorobiphenyl (199)	3.6
Decachlorobiphenyl (209)	2.7

### PCB Congener Formulation Quebec Ministry of Environment

#### PCB Congener Mix

C-QME-01	1 x 1 mL
<i>At stated conc. in Isooctane</i>	41 comps.
(Congener No.)	ng/mL
2,2',4-Trichlorobiphenyl (17)	500
2,2',5-Trichlorobiphenyl (18)	2000
2,4,4'-Trichlorobiphenyl (28)	2000
2,4',5-Trichlorobiphenyl (31)	1500
2',3,4-Trichlorobiphenyl (33)	2000
2,2',3,5'-Tetrachlorobiphenyl (44)	2000
2,2',4,5'-Tetrachlorobiphenyl (49)	2000
2,2',5,5'-Tetrachlorobiphenyl (52)	2000
2,3',4',5-Tetrachlorobiphenyl (74)	2000
2,2',3,3',4-Pentachlorobiphenyl (82)	500
2,2',3,4,5'-Pentachlorobiphenyl (87)	2000
2,2',3,5',6-Pentachlorobiphenyl (95)	1000
2,2',4,4',5-Pentachlorobiphenyl (99)	2000
2,2',4,5,5'-Pentachlorobiphenyl (101)	2000
2,3,3',4,5-Pentachlorobiphenyl (105)	500
2,3,3',4',6-Pentachlorobiphenyl (110)	2000
2,3',4,4',5-Pentachlorobiphenyl (118)	2000
2,2',3,3',4,4'-Hexachlorobiphenyl (128)	2000
2,2',3,3',4,6'-Hexachlorobiphenyl (132)	1000
2,2',3,4,4',5'-Hexachlorobiphenyl (138)	2000
2,2',3,4',5',6-Hexachlorobiphenyl (149)	2000
2,2',3,5,5',6-Hexachlorobiphenyl (151)	2000
2,2',4,4',5,5'-Hexachlorobiphenyl (153)	2000
2,3,3',4,4',5-Hexachlorobiphenyl (156)	2000
2,3,3',4,4',6-Hexachlorobiphenyl (158)	500
3,3',4,4',5,5'-Hexachlorobiphenyl (169)	2000
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)	2000
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)	2000
2,2',3,3',4,5,6-Heptachlorobiphenyl (177)	2000
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)	2000
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)	2000
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)	2000
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)	2000
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)	2000
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)	2000
2,2',3,3',4,5,5',6'-Octachlorobiphenyl (199)	1500
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)	2000
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (206)	2000
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (208)	2000
Decachlorobiphenyl (209)	2000

### Dioxins: Calibration & Window Defining Mixtures (Canadian Environmental Methods)

#### Custom Window Defining Mixture

D-WD	1 x 1 mL
<i>20,000 ng/mL in Toluene</i>	
<b>D-WD-2.5X</b>	<b>1 x 1 mL</b>
<i>50,000 ng/mL in Toluene</i>	7 comps.
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo- <i>p</i> -dioxin (Isomer pair)	
1,2,3,8,9-Pentachlorodibenzo- <i>p</i> -dioxin	
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo- <i>p</i> -dioxin (Isomer pair)	
1,2,3,4,6,7-Hexachlorodibenzo- <i>p</i> -dioxin	
1,2,3,4,6,7,8-Heptachlorodibenzo- <i>p</i> -dioxin	
1,2,3,4,6,7,9-Heptachlorodibenzo- <i>p</i> -dioxin	
Octachlorodibenzo- <i>p</i> -dioxin	

#### Custom Calibration Mixture

D-CAL	1 x 1 mL
<i>20,000 ng/mL in Toluene</i>	
<b>D-CAL-2.5X</b>	<b>1 x 1 mL</b>
<i>50,000 ng/mL in Toluene</i>	6 comps.
1,2,3,7,8-Pentachlorodibenzo- <i>p</i> -dioxin	
1,2,3,4,7,8-Hexachlorodibenzo- <i>p</i> -dioxin	
1,2,3,6,7,8-Hexachlorodibenzo- <i>p</i> -dioxin	
1,2,3,7,8,9-Hexachlorodibenzo- <i>p</i> -dioxin	
1,2,3,4,6,7,8-Heptachlorodibenzo- <i>p</i> -dioxin	
Octachlorodibenzo- <i>p</i> -dioxin	

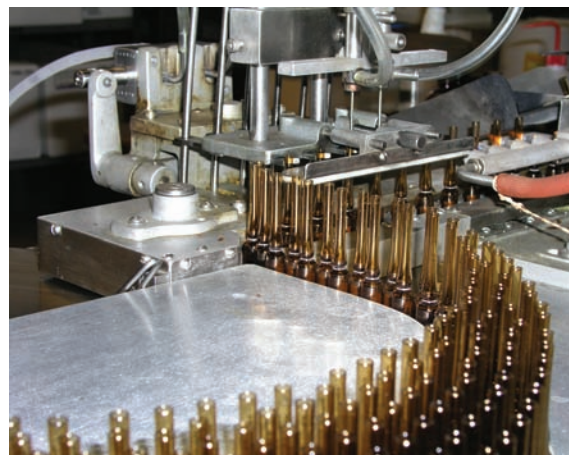


### PAH Mixture Quebec Ministry of Environment

#### PAH Standard

**H-QME-01** 1 x 1 mL  
500 µg/mL each in CH<sub>2</sub>Cl<sub>2</sub>:Benzene (1:1)  
24 comps

Acenaphthene  
Acenaphthylene  
Anthracene  
Benz[a]anthracene  
Benzo[b]fluoranthene  
Benzo[j]fluoranthene  
Benzo[k]fluoranthene  
Benzo[g,h,i]perylene  
Benzo[c]phenanthrene  
Benzo[a]pyrene  
Benzo[e]pyrene  
Chrysene  
Dibenz[a,h]anthracene  
Dibenzo[a,h]pyrene  
Dibenzo[a,i]pyrene  
Dibenzo[a,l]pyrene  
7,12-Dimethylbenz[a]anthracene  
Fluoranthene  
Fluorene  
Indeno[1,2,3-cd]pyrene  
3-Methylcholanthrene  
Naphthalene  
Phenanthrene  
Pyrene



### Petroleum Brownfield Regulation

The Brownfield Regulation has been approved by the Canadian Ministry of the Environment as of October 1, 2004.

#### Light Petroleum Fraction

**CCME-LPF-SET** 5 x 1 mL  
At stated conc. (µg/mL) in MeOH 8 comps.

Compound	0.05X	0.1X	0.2X	0.5X	1X
n-Decane	12.5	25	50	125	250
n-Hexane	12.5	25	50	125	250
Toluene	12.5	25	50	125	250
Benzene	12.5	25	50	125	250
o-Xylene	12.5	25	50	125	250
m-Xylene	6.25	12.5	25	62.5	125
p-Xylene	6.25	12.5	25	62.5	125
Ethylbenzene	12.5	25	50	125	250

#### Medium & Heavy Petroleum Fraction

**CCME-MHPF-SET** 3 x 1 mL  
At stated conc. (µg/mL) in n-Hexane 3 comps.

Compound	0.1X	0.5X	1X
n-Decane	40	200	400
n-Hexadecane	40	200	400
n-Tetraatriacontane	40	200	400

#### Performance Check Standard

**CCME-QC** 1 x 1 mL  
**CCME-QC-PAK** 5 x 1 mL  
40 µg/mL each in n-Hexane:Cyclohexane (1:1)  
2 comps.  
  
n-Pentacontane  
n-Tetracontane

#### Spike Standard

**CCME-SPIKE** 1 x 1 mL  
2500 µg/mL each in n-Hexane 2 comps.  
  
SAE 30W Motor Oil - Non-Detergent Formula  
#2 Diesel Fuel - 50% Weathered

### Canadian Drinking Water Brownfield Regulation

#### Phenoxyacid Herbicides Mix

**CCME-CDW-PHERB** 1 x 1 mL  
1000 µg/mL each in Acetone 11 comps.

Bromoxynil	Pentachlorophenol
2,4-D	Picloram
Dicamba	2,4,5-T
2,4-Dichlorophenol	2,3,4,6-Tetrachlorophenol
Diclofop methyl	2,4,6-Trichlorophenol
Dinoseb	

#### Carbamates Mix

**CCME-CDW-CARB** 1 x 1 mL  
100 µg/mL each in AcCN 5 comps.

Aldicarb	Carbofuran
Bendiocarb	Triallate
Carbaryl	

#### Chlorinated Pesticide Mix

**CCME-CDW-CPEST** 1 x 1 mL  
200 µg/mL each in Hexane:Toluene (1:1)  
14 comps.

Aldrin	4,4'-DDT
g-BHC	Dieldrin
a-Chlordane	Heptachlor
g-Chlordane	Heptachlor epoxide (Isomer B)
2,4'-DDE	Methoxychlor
4,4'-DDE	Oxychlordane Isomer
2,4'-DDT	Trifluralin



# Regional Standards

## Municipal & Industrial Strategy for Abatement (MISA) - Canadian

### MISA Analytical Test Groups

**Set** MISA-VH-1/VH-2-SET 2 x 1 mL (MISA-VH-1, MISA-VH-2)

#### Group 16: Volatiles, Halogenated

<b>MISA-VH-1</b> <b>MISA-VH-1-PAK</b> 0.5 mg/mL each in MeOH	1 x 1 mL <b>SAVE</b>	5 x 1 mL 22 comps.
Bromoform	<i>trans</i> -1,2-Dichloroethene	
Carbon tetrachloride	1,1-Dichloroethene	
Chlorobenzene	1,2-Dichloropropane	
Chloroform	<i>cis</i> -1,3-Dichloropropene*	
Dibromochloromethane	<i>trans</i> -1,3-Dichloropropene**	
1,2-Dibromoethane	Methylene chloride	
1,2-Dichlorobenzene	1,1,2,2-Tetrachloroethane	
1,3-Dichlorobenzene	Tetrachloroethene	
1,4-Dichlorobenzene	1,1,1-Trichloroethane	
1,2-Dichloroethane	1,1,2-Trichloroethane	* <i>cis</i> (1.06 x conc.)
1,1-Dichloroethane	Trichloroethene	** <i>trans</i> (0.94 x conc.)

<b>MISA-VH-2</b> <b>MISA-VH-2-PAK</b> 0.5 mg/mL each in MeOH	<b>SAVE</b>	1 x 1 mL 5 x 1 mL 5 comps.
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Bromomethane	Trichlorofluoromethane
Chloroethane	Vinyl chloride
Chloromethane	

#### Group 17: Volatiles, Non-Halogenated

<b>MISA-VNH</b> <b>MISA-VNH-PAK</b> 0.5 mg/mL each in MeOH	1 x 1 mL <b>SAVE</b>	5 x 1 mL 7 comps.
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Benzene	<i>o</i> -Xylene
Ethylbenzene	<i>m</i> -Xylene
Styrene	<i>p</i> -Xylene
Toluene	

#### Group 18: Volatiles, Water Soluble

<b>MISA-VWS</b> 2.0 mg/mL each in Water	1 x 1 mL	2 comps.
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Acrolein	Acrylonitrile
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#### Group 19: Extractables, Base-Neutral

<b>Z-014G</b> <b>Z-014G-PAK</b> 2.0 mg/mL each in CH <sub>2</sub> Cl <sub>2</sub> ; Benzene (1:1)	<b>SAVE</b>	1 x 1 mL 5 x 1 mL 16 comps.
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Acenaphthene	Chrysene
Acenaphthylene	Dibenz[a,h]anthracene
Anthracene	Fluoranthene
Benz[a]anthracene	Fluorene
Benzo[a]pyrene	Indeno[1,2,3-cd]pyrene
Benzo[b]fluoranthene	Naphthalene
Benzo[ghi]perylene	Phenanthrene
Benzo[k]fluoranthene	Pyrene

<b>MISA-BN-1</b> 2.0 mg/mL each in CH <sub>2</sub> Cl <sub>2</sub>	1 x 1 mL	8 comps.
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Biphenyl	1-Methylnaphthalene
Camphene	2-Methylnaphthalene
1-Chloronaphthalene	5-Nitroacenaphthene
2-Chloronaphthalene	Perylene

<b>MISA-BN-2</b> 2.0 mg/mL each in CH <sub>2</sub> Cl <sub>2</sub>	1 x 1 mL	8 comps.
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Benzylbutylphthalate	4-Chlorophenyl phenyl ether
4-Bromophenyl phenyl ether	Di- <i>n</i> -butyl phthalate
bis(2-Chloroethyl)ether	Di- <i>n</i> -octyl phthalate
bis(2-Chloroisopropyl)ether	bis(2-Ethylhexyl)phthalate

<b>MISA-BN-3</b> 2.0 mg/mL each in CH <sub>2</sub> Cl <sub>2</sub>	1 x 1 mL	8 comps.
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bis(2-Chloroethoxy)methane	Diphenylether
2,4-Dinitrotoluene	Indole
2,6-Dinitrotoluene	N-Nitroso-diphenylamine
Diphenylamine	N-Nitroso-di- <i>n</i> -propyl amine

#### Group 20: Extractables, Acid (Phenolics)

<b>MISA-A</b> <b>MISA-A-PAK</b> 2.0 mg/mL each in CH <sub>2</sub> Cl <sub>2</sub>	<b>SAVE</b>	1 x 1 mL 5 x 1 mL 20 comps.
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4-Chloro-3-methylphenol	4-Nitrophenol
2-Chlorophenol	Pentachlorophenol
2-Cresol	Phenol
3-Cresol	2,3,4,5-Tetrachlorophenol
4-Cresol	2,3,4,6-Tetrachlorophenol
2,4-Dichlorophenol	2,3,5,6-Tetrachlorophenol
2,6-Dichlorophenol	2,3,4-Trichlorophenol
2,4-Dimethylphenol	2,3,5-Trichlorophenol
4,6-Dinitro-2-cresol	2,4,5-Trichlorophenol
2,4-Dinitrophenol	2,4,6-Trichlorophenol

#### Group 22: Organochlorine Pesticides

<b>MISA-PEST</b> <b>MISA-PEST-PAK</b> 2.0 mg/mL each in Acetone	<b>SAVE</b>	1 x 1 mL 5 x 1 mL 18 comps.
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Aldrin	Endosulfan I
$\alpha$ -BHC	Endosulfan II
$\beta$ -BHC	Endosulfan sulfate
$\gamma$ -BHC	Endrin
$\delta$ -BHC	Endrin aldehyde
4,4'-DDD	Endrin ketone
4,4'-DDE	Heptachlor
4,4'-DDT	Heptachlor epoxide isomer B
Dieldrin	Methoxychlor

#### Group 23: Extractables, Chlorinated Neutrals

<b>MISA-NC</b> 2.0 mg/mL each in CH <sub>2</sub> Cl <sub>2</sub>	1 x 1 mL	12 comps.
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Hexachlorobenzene	1,2,3,4-Tetrachlorobenzene
Hexachlorobutadiene	1,2,3,5-Tetrachlorobenzene
Hexachlorocyclopentadiene	1,2,4,5-Tetrachlorobenzene
Hexachloroethane	1,2,3-Trichlorobenzene
Octachlorostyrene	1,2,4-Trichlorobenzene
Pentachlorobenzene	2,4,5-Trichlorotoluene

#### Group 27: Polychlorinated Biphenyls

##### Solutions and Sets

Each at 35 $\mu$ g/mL	Isooctane	MeOH	1 mL
Aroclor 1016	C-216S	C-216S-M	
Aroclor 1221	C-221S	C-221S-M	
Aroclor 1232	C-232S	C-232S-M	
Aroclor 1242	C-242S	C-242S-M	
Aroclor 1248	C-248S	C-248S-M	
Aroclor 1254	C-254S	C-254S-M	
Aroclor 1260	C-260S	C-260S-M	
Aroclor 1262	C-262S	C-262S-M	
Aroclor 1268	C-268S	C-268S-M	
<b>Set of 9 above</b>	<b>Z-008S-SET</b>	<b>Z-008S-M-SET</b>	

##### Neat Set

<b>Z-008-SET</b>	<b>Set of 9 vials</b>
Aroclor 1016)	100 mg
Aroclor 1221	100 mg
Aroclor 1232	10 mg
Aroclor 1242	100 mg
Aroclor 1248	10 mg
Aroclor 1254	100 mg
Aroclor 1260	10 mg
Aroclor 1262	10 mg
Aroclor 1268	10 mg

### PCB Congener Standards

#### PCB Congener Mixture

<b>PCB-W22</b>	1 x 1 mL
10 µg/mL each in Isooctane	15 comps.
<b>PCB-W22-PAK</b> <b>SAVE</b>	5 x 1 mL
<b>PCB-W22-SET</b>	15 x 1 mL
100 µg/mL in Isooctane (Set of Individual Solutions)	

<b>No.</b>	
18	2,2',5'-Trichlorobiphenyl (01)
20	2,3,3'-Trichlorobiphenyl (02)
28	2,4,4'-Trichlorobiphenyl (03)
31	2,4',5'-Trichlorobiphenyl (04)
44	2,2',3,5'-Tetrachlorobiphenyl (05)
52	2,2',5,5'-Tetrachlorobiphenyl (06)
101	2,2',4,5,5'-Pentachlorobiphenyl (07)
105	2,3,3',4,4'-Pentachlorobiphenyl (08)
118	2,3',4,4',5'-Pentachlorobiphenyl (09)
138	2,2',3,4,4',5'-Hexachlorobiphenyl (10)
149	2,2',3,4',5',6'-Hexachlorobiphenyl (11)
153	2,2',4,4',5,5'-Hexachlorobiphenyl (12)
170	2,2',3,3',4,4',5'-Heptachlorobiphenyl (13)
180	2,2',3,4,4',5,5'-Heptachlorobiphenyl (14)
194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl (15)

#### Internal Standard

<b>C-EU-IS-10ML</b>	1 x 10 mL
At stated conc. in Isooctane	2 comps.

2,4,6-Trichlorobiphenyl  
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl

#### ISO 6468 PCB Standard

<b>ISO6468-PCB</b>	1 x 1 mL
10 µg/mL each in Hexane	7 comps.

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

#### PCB Congener Content Evaluation Mix #1

<b>AE-00059</b>	1 x 1 mL
<b>AE-00059-10ML</b>	1 x 10 mL
10 µg/mL each in Isooctane	6 comps.

<b>No.</b>	
28	2,4,4'-Trichlorobiphenyl
52	2,2',5,5'-Tetrachlorobiphenyl
101	2,2',4,5,5'-Pentachlorobiphenyl
138	2,2',3,4,4',5'-Hexachlorobiphenyl
153	2,2',4,4',5,5'-Hexachlorobiphenyl
180	2,2',3,4,4',5,5'-Heptachlorobiphenyl

#### PCB Congener Content Evaluation Mix #2

<b>AE-00060</b>	1 x 1 mL
<b>AE-00060-10ML</b>	1 x 10 mL
10 µg/mL each in Isooctane	3 comps.

<b>No.</b>	
77	3,3',4,4'-Tetrachlorobiphenyl
126	3,3',4,4',5'-Pentachlorobiphenyl
169	3,3',4,4',5,5'-Hexachlorobiphenyl

#### Congener Calibration Mix #27

<b>AE-00081-10ML</b>	1 x 1 mL
100 µg/mL each in Isooctane	10 comps.

2,4,4'-Trichlorobiphenyl  
2,2',5,5'-Tetrachlorobiphenyl  
2,2',4,5,5'-Pentachlorobiphenyl  
2,3,3',4,4'-Pentachlorobiphenyl  
2,3',4,4',5'-Pentachlorobiphenyl  
2,2',3,4,4',5'-Hexachlorobiphenyl  
2,2',4,4',5,5'-Hexachlorobiphenyl  
2,3,3',4,4',5'-Hexachlorobiphenyl  
2,2',3,4,4',5,5'-Heptachlorobiphenyl  
Decachlorobiphenyl

#### Congener Calibration Mix

<b>AE-00061</b>	1 x 1 mL
<b>AE-00061-10ML</b>	1 x 10 mL
10 µg/mL each in Isooctane	14 comps.

<b>No.</b>	
18	2,2',5'-Trichlorobiphenyl
28	2,4,4'-Trichlorobiphenyl
31	2,4',5'-Trichlorobiphenyl
44	2,2',3,5'-Tetrachlorobiphenyl
52	2,2',5,5'-Tetrachlorobiphenyl
101	2,2',4,5,5'-Pentachlorobiphenyl
118	2,3',4,4',5'-Pentachlorobiphenyl
138	2,2',3,4,4',5'-Hexachlorobiphenyl
149	2,2',3,4',5',6'-Hexachlorobiphenyl
153	2,2',4,4',5,5'-Hexachlorobiphenyl
170	2,2',3,3',4,4',5'-Heptachlorobiphenyl
180	2,2',3,4,4',5,5'-Heptachlorobiphenyl
194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl
209	Decachlorobiphenyl

#### Internal Standards

Each in 100 µg/mL in Isooctane

<b>C-030S-TP</b>	1 x 1 mL
2,4,6-Trichlorobiphenyl	
<b>C-209S-TP</b>	1 x 1 mL
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl	

#### Technical Note

These Congener Content Evaluation Mixes have proven useful for European Laboratories estimating the PCB content of a sample when following EU guideline 96/59/EU for cleanup of PCBs.

## Custom Standards

When you have a need for unique Analytical Standards, let the experts at AccuStandard assist in designing your formulation. Our technical group, with over 80 years of combined analytical experience, will review your request, suggest the most economical and stable formulation, and provide pricing all within 24 hours.



### Volatiles

#### DIN 38407-2 Benzene Standard

Determination of water, waste water and sludge for low volatile halogenated hydrocarbons by GC.

**DIN38407-2-BENZ** 1 x 1 mL  
10 µg/mL each in *n*-Hexane 5 comps.

Hexachlorobenzene  
Pentachlorobenzene  
Pentachloronitrobenzene  
1,2,4,5-Tetrachlorobenzene  
1,2,4-Trichlorobenzene

#### DIN 38407-9 Benzene Mix

Determination of Benzene and Benzene derivatives in water, wastewater and sludge by GC.

**DIN38407-9-BENZ** 1 x 1 mL  
100 µg/mL each in MeOH 8 comps.

Benzene 1,4-Dichlorobenzene  
Toluene *o*-Xylene  
Ethylbenzene *m*-Xylene  
Chlorobenzene *p*-Xylene

#### DIN EN ISO 10301 - Halogenated VOCs

Determination of water, waste water and sludge for low volatile halogenated hydrocarbons by GC.

**DINENISO-10301** 1 x 1 mL  
1 µg/mL each in MeOH 17 comps.

Dichloromethane 1,2-Dichloropropane  
Trichloromethane 1,3-Dichloropropane  
Carbon tetrachloride 1,3-Dichloropropene  
1,1-Dichloroethane Dibromomethane  
1,2-Dichloroethane Tribromoethene  
1,1,1-Trichloroethane Bromochloromethane  
1,1,2-Trichloroethane Bromodichloromethane  
Trichloroethene Dibromochloromethane  
Tetrachloroethene

#### Volatile Standard

**AE-00048** 1 x 1 mL  
100 µg/mL each in MeOH 5 comps.

1,1,1-Trichloroethane Dichloromethane  
Trichloroethene Tetrachloromethane  
Tetrachloroethene

#### Calibration Solution

Set of 5 ampules with a conc. each in MeOH of 1 µg/mL, 5 µg/mL, 10 µg/mL, 50 µg/mL and 100 µg/mL

Compound	Cat. No.	Unit
1,1,1-Trichloroethane	AE-00034-CAL-SET	5 x 1 mL
Trichloroethene	AE-00035-CAL-SET	5 x 1 mL
Tetrachloroethene	AE-00036-CAL-SET	5 x 1 mL
Dichloromethane	AE-00037-CAL-SET	5 x 1 mL
Carbon tetrachloride	AE-00038-CAL-SET	5 x 1 mL

#### Volatiles Calibration Curve Mix 1

**AE-00039-CAL-SET** 5 x 1 mL  
1 µg/mL, 5 µg/mL, 10 µg/mL, 50 µg/mL,  
100 µg/mL each comp. in MeOH 5 comps.

Dichloromethane 1,1,1-Trichloroethane  
Tetrachloroethene Trichloroethene  
Tetrachloromethane

#### Volatiles Calibration Curve Mix 2

**AE-00040-CAL-SET** 5 x 1 mL  
1 µg/mL, 5 µg/mL, 10 µg/mL, 50 µg/mL,  
100 µg/mL each comp. in MeOH 6 comps.

Chloroform Tetrachloromethane  
Dichloromethane 1,1,1-Trichloroethane  
Trichloroethene Trichloroethene

### Chlorinated Organic Volatile

#### Calibration Standards

Appendix 2, Drinking Water Regulation of May 22, 1986.

Compound	Cat. No.	Unit
1,1,1-Trichloroethane	APP-9-202	1 mL
Trichloroethene	APP-9-204	
Tetrachloroethene	APP-9-194	
Dichloromethane	APP-9-074	
Carbon tetrachloride	APP-9-036	

### Nitroaromatic Compounds

#### DIN-38407-17 Nitroaromatic Compounds

Examination of water, wastewater, and sludge for the determination of selected nitroaromatic compounds by Gas-Liquid Chromatography

**DIN38407-17** 1 x 1 mL  
500 µg/mL each in MeOH 12 comps.

Nitrobenzene 3,4-Dinitrotoluene  
2-Nitrotoluene 2-Amino-6-nitrotoluene  
4-Nitrotoluene 4-Amino-2-nitrotoluene  
1,3-Dinitrobenzene 4-Amino-2,6-dinitrotoluene  
2,6-Dinitrotoluene 2-Amino-4,6-dinitrotoluene  
2,4-Dinitrotoluene 2,4,6-Trinitrotoluene

### Explosives

#### DIN 38407-21 Explosives

Examination of water, wastewater, and sludge for determination of selected explosives and related compounds by HPLC with UV detection

**DIN38407-21-A** 1 x 1 mL  
10 µg/mL each in MeOH 12 comps.

Picric acid Nitroglycerin  
HMX TNT  
RDX 2-Nitrotoluene  
Tetryl PETN  
EGDN 4-Nitrotoluene  
DEGDN 3-Nitrotoluene

#### DIN 38407-21 Related Compounds

Examination of water, wastewater, and sludge for determination of selected explosives and related compounds by HPLC with UV detection

**DIN38407-21-B** 1 x 1 mL  
10 µg/mL each in MeOH:AcCN (98:2) 8 comps.

1,3,5-Trinitrobenzene  
1,3-Dinitrobenzene  
4-Amino-2,6-dinitrotoluene  
2,2',4,4',6,6'-Hexanitrodiphenylamine  
2-Amino-4,6-dinitrotoluene  
2,6-Dinitrotoluene  
2,4-Dinitrotoluene  
Diphenylamine

### PAHs

#### DIN 38407-8 PAH Mix (WHO 6 List)

Determination of PAH in water, wastewater and sludge by HPLC.

##### DIN38407-8-PAH

2 µg/mL each in Acetonitrile

1 x 1 mL  
6 comps.

Fluoranthene	Benzo(a)pyrene
Benzo(b)fluoranthene	Benzo(k)fluoranthene
Benzo(g,h,i)perylene	Indeno(1,2,3-cd)pyrene

#### DIN 38407-18 PAH Solution

Examination of water, wastewater, and sludge for the determination of 15 polycyclic aromatic hydrocarbons (PAH) by HPLC with fluorescence detection.

##### DIN38407-18

10 µg/mL each in Acetonitrile

1 x 1 mL  
15 comps.

Naphthalene	Benzo(k)fluoranthene
Acenaphthene	Benzo(a)pyrene (Ames grade)
Fluorene	Dibenz(a,h)anthracene
Phenanthrene	Benzo(g,h,i)perylene
Anthracene	Pyrene
Fluoranthene	Benz(a)anthracene
Chrysene	Indeno(1,2,3-cd)pyrene
Benzo(b)fluoranthene	

#### DIN 38414-23 PAHs

Determination of 15 PAHs in water, waste water and sludge by HPLC and Fluorescence detection.

##### DIN38414-23

10 µg/mL each in Acetonitrile

1 x 1 mL  
15 comps.

Naphthalene	Benzo(k)fluoranthene
Acenaphthene	Benzo(a)pyrene (Ames grade)
Fluorene	Dibenz(a,h)anthracene
Phenanthrene	Benzo(g,h,i)perylene
Anthracene	Pyrene
Fluoranthene	Benz(a)anthracene
Chrysene	Indeno(1,2,3-cd)pyrene
Benzo(b)fluoranthene	

#### PAH Standard Kits and Solutions

The following mixtures and kits have been prepared to meet the needs of laboratories utilizing European and USEPA methodologies. Minimum purity 99%, except where indicated.

#### PAH Mix #1

Regulations for drinking water analysis, (E-DIN 38407-F-18, E-DIN 38414-F-21). Regulations for sediment and sludge

##### AE-00025

1 x 1 mL

##### AE-00025-10ML

1 x 10 mL

At stated conc. in Acetonitrile

16 comps.

Acenaphthene (25 µg/mL)	Chrysene (20 µg/mL)
Acenaphthylene (25 µg/mL)	Dibenz[a,h]anthracene (40 µg/mL)
Anthracene (25 µg/mL)	Fluoranthene (40 µg/mL)
Benz[a]anthracene (10 µg/mL)	Fluorene (40 µg/mL)
Benzo[b]fluoranthene (25 µg/mL)	Indeno[1,2,3-cd]pyrene (25 µg/mL)
Benzo[k]fluoranthene (10 µg/mL)	Naphthalene (50 µg/mL)
Benzo[g,h,i]perylene (25 µg/mL)	Phenanthrene (98%) (30 µg/mL)
Benzo[a]pyrene (20 µg/mL)	Pyrene (40 µg/mL)

#### PAH Mix #2

For European methods according to customer requests.

##### AE-00045

1 x 1 mL

##### AE-00045-10ML

1 x 10 mL

At stated conc. in Acetonitrile

7 comps.

Benzo[b]fluoranthene (2 µg/mL)	Fluoranthene (10 µg/mL)
Benzo[k]fluoranthene (2 µg/mL)	Indeno[1,2,3-cd]pyrene (2 µg/mL)
Benzo[g,h,i]perylene (2 µg/mL)	Perylene (10 µg/mL)
Benzo[a]pyrene (2 µg/mL)	

#### PAH Mix #3

German method for drinking water analysis.

##### AE-00032

1 x 1 mL

##### AE-00032-10ML

1 x 10 mL

10 µg/mL each in Acetonitrile

7 comps.

Benzo[b]fluoranthene	Fluoranthene
Benzo[k]fluoranthene	Indeno[1,2,3-cd]pyrene
Benzo[g,h,i]perylene	Perylene
Benzo[a]pyrene	

#### PAH Mix #4

For European methods according to customer requests.

##### AE-00033

1 x 1 mL

##### AE-00033-10ML

1 x 10 mL

In Acetonitrile

7 comps.

Benzo[b]fluoranthene (20 µg/mL)	Fluoranthene (50 µg/mL)
Benzo[k]fluoranthene (20 µg/mL)	Indeno[1,2,3-cd]pyrene (40 µg/mL)
Benzo[g,h,i]perylene (20 µg/mL)	Perylene (20 µg/mL)
Benzo[a]pyrene (20 µg/mL)	

### ISO/DIS 22032 PBDEs in Sediment & Sludge

#### DRAFT INTERNATIONAL STANDARD

#### ISO/DIS 22032 Calibration Curve Set

##### ISO/DIS-22032-SET

At stated conc. (ng/mL) in Isooctane

7 x 1 mL

8 comps. each

(Congener No.)	01	02	03	04	05	06	07
ISO/DIS-22032							
2,2',4,4'-Tetrabromodiphenyl ether (#47)	5	12.5	25	50	100	150	250
2,2',4,4',5-Pentabromodiphenyl ether (#99)	5	12.5	25	50	100	150	250
2,2',4,4',6-Pentabromodiphenyl ether (#100)	5	12.5	25	50	100	150	250
2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)	5	12.5	25	50	100	150	250
2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)	5	12.5	25	50	100	150	250
2,2',3,4,4',5,6'-Heptabromodiphenyl ether (#183)	5	12.5	25	50	100	150	250
2,3,3',4,4',5,5',6-Octabromodiphenyl ether (#205)	5	12.5	25	50	100	150	250
2,2',3,3',4,4',5,5',6,6'-Decabromodiphenyl ether (#209)	25	50	100	200	500	700	1000

#### Internal Standard for

#### BDE# 47, 99 and 100

ISO22032-IS-1-5ML 1 x 5 mL

ISO22032-IS-1-10ML 1 x 10 mL

100 ng/mL each in Isooctane

3,3',4,4'-Tetrabromodiphenyl ether

#### Internal Standard for

#### BDE# 153, 154 and 183

ISO22032-IS-2-5ML 1 x 5 mL

ISO22032-IS-2-10ML 1 x 10 mL

100 ng/mL each in Isooctane

2,2',3,4,4',5,6-Heptabromodiphenyl ether

### Aliphatic, Aromatic Amines and Derivatives

#### Aryl Amine Multi-Component Solution

<b>AE-00049-SET</b>		<b>2 x 1 mL</b>
10 µg/mL each in Ethyl acetate	24 comps. (Includes AE-00049-R1 plus RAC-08)	
<b>AE-00049-R1</b>		<b>1 mL</b>
10 µg/mL each in Ethyl acetate	23 comps.	

o-Aminoazotoluene	3,3'-Dimethyl-4,4'-diaminodiphenylmethane
4-Aminobiphenyl	4,4'-Methylenebis(2-chloroaniline)
2-Amino-4-nitrotoluene	2-Naphthylamine
Benzidine	4,4'-Oxydianiline
4-Chloroaniline	4,4'-Thiodianiline
4-Chloro-o-toluidine	o-Toluidine
p-Cresidine	2,4,5-Trimethylaniline
4,4'-Diaminodiphenylmethane	p-Aminoazobenzene
2,4-Diaminotoluene	2-Aminobiphenyl
3,3'-Dichlorobenzidine	o-Anisidine
3,3'-Dimethoxybenzidine	3-Chloro-o-toluidine
3,3'-Dimethylbenzidine	

<b>RAC-08</b>		<b>1 mL</b>
100 µg/mL each in Pyridine		

2,4-Diaminoanisole

### Halo Acetic Acids

#### DIN 38407-25 Selected Halo Acetic Acids

<b>DIN38407-25</b>	<b>1 x 1 mL</b>
10 µg/mL in MtBE	7 comps.

Bromochloroacetic acid  
Dalapon  
Dibromoacetic acid  
Dichloroacetic acid  
Bromoacetic acid  
Chloroacetic acid  
Trichloroacetic acid

### EFSA for Isopropylthioxanthone (ITX)

Responding to the hazard found in Italy, France, Spain, and Portugal, we have formulated Isopropylthioxanth-9-one (a photographic chemical) found in baby milk in Italy. The 2-isomer as well as the technical mixture also contains the 4-isomer.

#### 2-Isopropylthioxanthone (ITX)

<b>EFSA-ITX-01</b>	<b>1 x 1 mL</b>
1.0 mg/mL in Isooctane	
2-Isopropylthioxanth-9-one	

#### Isopropylthioxanthone (ITX)

<b>Mixed Isomers</b>	
<b>EFSA-ITX-02</b>	<b>1 x 1 mL</b>
1.0 mg/mL in Isooctane	
2- and 4- Isopropylthioxanth-9-one	

### Pesticide Standards

The following Pesticide Standards are for German Regulations - For residue thresholds. Swiss Regulations - For components and contaminants in food. DFG collected methods.

#### Pesticide / Congener Mix #1

**AE-00010** 1 x 1 mL  
**AE-00010-10ML** 1 x 10 mL  
 At stated conc. (µg/mL) in Toluene 31 comps.

2,4,4'-Trichlorobiphenyl	1
2,2',5,5'-Tetrachlorobiphenyl	1
2,2',4,5,5'-Pentachlorobiphenyl	1
2,2',3,4,4',5'-Hexachlorobiphenyl	1
2,2',4,4',5,5'-Hexachlorobiphenyl	1
2,2',3,4,4',5,5'-Heptachlorobiphenyl	1
Aldrine	10
cis-Chlordane	10
trans-Chlordane	10
oxy-Chlordane	10
o,p'-DDD	10
p,p'-DDD	10
o,p'-DDE	10
p,p'-DDE	10
o,p'-DDT	10
p,p'-DDT	10
Dieldrine	10
Endosulfan I	10
Endosulfan II	10
Endrine	10
α-HCH	10
β-HCH	10
γ-HCH	10
δ-HCH	10
Heptachlor	10
cis-Heptachlorepoxyde	10
trans-Heptachlorepoxyde	10
Hexachlorbenzene	10
Isodrin	10
Methoxychlor	10
Mirex	10

#### Pesticide Mix #2

**AE-00011** 1 x 1 mL  
**AE-00011-10ML** 1 x 10 mL  
 10 µg/mL each in Toluene 22 comps.

Anilazine	Tecnacene
Captan	Tetradifon
Chlorthalonil	Tetrasul
Clorfenson	Tridiamefon
Dichlofluanid	Tridiamenol
Dicofol	Trifluarin
Endosulfane-sulfate	Pentachloroaniline
Fenson	Procymidon
Folpet	Propyzamid
Imazalil	Quintozen
Iprodion	Vinclozolin

#### Pesticide Mix #3

**AE-00012** 1 x 1 mL  
**AE-00012-10ML** 1 x 10 mL  
 At stated conc. (µg/mL) in Toluene 10 comps.

Captafol	200
Captan	100
Demethon-S-methyl	500
Demethon-S-methyl-sulfone	500
Dicofol	200
Pentachlorophenol	100
Tetrachlorvinphos	10
Trichlorfon	100
Tolyfluanid	100
Vamidithion	200

#### Pesticide Mix #4

**AE-00013** 1 x 1 mL  
**AE-00013-10ML** 1 x 10 mL  
 At stated conc. (µg/mL) in Toluene 5 comps.

Cyproconazole	500
Hexaconazole	500
Penconazole	500
Tebuconazole	500
Tetrachlorvinphos	10

#### Pesticide Mix #5

**AE-00014** 1 x 1 mL  
**AE-00014-10ML** 1 x 10 mL  
 At stated conc. (µg/mL) in Ethyl acetate 8 comps.

Atrazine	200
Cyanazine	200
Desmertryn	500
Metribuzin	500
Prometryne	500
Simazine	200
Terbutryn	500
Tetrachlorvinphos	10

#### Tetrachlorvinphos Surrogate / Internal Standard

**AE-00047** 1 x 1 mL  
 1000 µg/mL in Acetonitrile

Tetrachlorvinphos
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#### Pesticide Mix #6

**AE-00015** 1 x 1 mL  
**AE-00015-10ML** 1 x 10 mL  
 At stated conc. (µg/mL) in Toluene 8 comps.

Chlorpyrifos-methyl	100
Diazinon	100
Ethion	100
Etrimfos	50
Iodofenphos	200
Malathion	100
Phosphamidon	200
Tetrachlorvinphos	10

#### Pesticide Mix #7

**AE-00016** 1 x 1 mL  
**AE-00016-10ML** 1 x 10 mL  
 At stated conc. (µg/mL) in Toluene 8 comps.

Bromophos-methyl	100
Bromophos-ethyl	150
Fenitrothion	200
Methacryfos	150
Omethoate	150
Phosalone	100
Tetrachlorvinfos	10
Tolclofos-methyl	100

#### Pesticide Mix #8

**AE-00017** 1 x 1 mL  
**AE-00017-10ML** 1 x 10 mL  
 At stated conc. (µg/mL) in Toluene:Acetone:Hexane (18:1:1) 6 comps.

Chlorbufam	500
Chlorpropham	500
Dichlobenil	200
Imazalil	500
Pyrazon	500
2,3,5,6-Tetrachloronitrobenzene	100

#### Pesticide Mix #9

**AE-00018** 1 x 1 mL  
**AE-00018-10ML** 1 x 10 mL  
 At stated conc. (µg/mL) in Toluene 9 comps.

Azinophos-ethyl	100
Fenchlorvos	100
Fonophos	150
Methidathion	100
Mevinphos	200
Parathion-ethyl	150
Parathion-methyl	100
Pirimiphos-methyl	100
Tetrachlorvinphos	10

#### Pesticide Mix #10

**AE-00019** 1 x 1 mL  
**AE-00019-10ML** 1 x 10 mL  
 At stated conc. (µg/mL) in Toluene 7 comps.

Benalaxyl	500
Carbaryl	500
Oxadixyl	500
Terbutylazine	250
Tetrachlorvinphos	10
Triadimefon	500
Triadimenol	500

Pesticide Standards continued on next page

## Pesticide Standards

The following Pesticide Standards are for German Regulations - For residue thresholds. Swiss Regulations - For components and contaminants in food. DFG collected methods.

## Pesticide Mix #11

AE-00020 1 x 1 mL  
AE-00020-10ML 1 x 10 mL  
10 µg/mL each in Toluene 19 comps.

Aldrin	β-HCH
Chloridazon	γ-HCH
o,p'-DDD	δ-HCH
p,p'-DDD	Heptachlor
o,p'-DDE	cis-Heptachlorepoxyde
p,p'-DDE	trans-Heptachlorepoxyde
o,p'-DDT	Hexachlorobenzene
p,p'-DDT	Tecnacene
Endrin	Tetrachlorvinphos
α-HCH	

## Pesticide Mix #12

AE-00021 1 x 1 mL  
AE-00021-10ML 1 x 10 mL  
At stated conc. (µg/mL) in Toluene 9 comps.

Carbophenothion	100
Disulfoton	150
Fenthion	100
Methamidophos	100
Phorate	150
Phorate-sulfatone	100
Phorate-sulfone	150
Tetrachlorvinphos	10
Thiomethon	100

## Pesticide Mix #13

AE-00022 1 x 1 mL  
AE-00022-10ML 1 x 10 mL  
At stated conc. (µg/mL) in Toluene 8 comps.

Chlorfenvinphos (CFVP)	100
Chlorpyrifos	100
Dichlorvos	100
Dimethoate	100
Heptenophos	100
Quinalphos	100
Tetrachlorvinphos	10
Triazophos	100

## Pesticide Mix #14

AE-00023 1 x 1 mL  
AE-00023-10ML 1 x 10 mL  
At stated conc. (µg/mL) in Toluene 10 comps.

Cyfluthrin	500
λ-Cyhalothrin	500
Cypermethrin	500
Deltamethrin	500
Dichloran	100
Fenvalerate	500
Pendimethalin	100
Permethrin	500
Tefluthrin	100
Tetrachlorvinphos	10

Regulations for drinking water and water used in food manufacturing, May 27, 1986, BGBl, I, S. 760.

## Pesticide Mix #15

AE-00024 1 x 1 mL  
AE-00024-10ML 1 x 10 mL  
0.02 µg/mL each in Ethyl acetate 33 comps.

Atrazine	Linuron
Bifenox	Pencycuron
Bromacil	Pendimethalin
Carbetamide	Prometryne
Chloridazo	Propazine
Chloroxuron	Metamitron
Chlorpropham	Metazachlor
Chlortoluron	Methabenzthiazuron
Crimidine	Methoprotryne
Cyanazine	Metobromuron
Desethylatrazine	Metolachlor
Desisopropylatrazine	Monolinuron
Desethylterbutylazine	Sebutylazin
Dimefuron	Simazine
Diuron	Terbutryn
Isoproturon	Terbutylazine
Karbutilate	

Regulations for drinking water analysis, (E-DIN 38407-F-18, E-DIN 38414-F-21)  
Regulations for sediment and sludge.

## Pesticide Mix #16

AE-00030 1 x 1 mL  
AE-00030-10ML 1 x 10 mL  
10 µg/mL each in Ethyl acetate 20 comps.

Aldicarb	Lindane
Atrazine	MCPA *
Bentazone *	Mecoprop *
Chlortofuron	Metazachlor
Cyanazine	Metobromuron
2,4-D *	Metoxuron
Dichlorprop *	Sebutylazin
1,3-Dichloropropene	Simazine
Endosulfan I	Terbutylazine
Endosulfan II	
Isoproturon	* Underivatized

Regulations - Test methods for organochlorine and organophosphorus compounds and pyrethroide  
Current Science and Technology, German Book of Medicine (1996).

## Pesticide Mix #17

AE-00027 1 x 1 mL  
AE-0027-10ML 1 x 10 mL  
10 µg/mL each in Toluene 14 comps.

Alachlor	Methyl pentachlorophenyl sulfide
Bromopropylate	Pentachloraniline
Carbophenothion	cis-Permethrin
Cypermethrin	trans-Permethrin
Deltamethrin	Piperonyl butoxide
Endosulfane sulfate	Pyrethrins
Fenvalerate	Quintozene

## Pesticide Mix #18

AE-00028 1 x 1 mL  
AE-00028-10ML 1 x 10 mL  
10 µg/mL each in Toluene 16 comps.

Azinphos-methyl	Ethyl parathion
Carbophenothion	Fenitrothion
Chlorfenvinphos	Fonofos
Chlorpyrifos-ethyl	Methyl parathion
Chlorpyrifos-methyl	Malathion
Diazinon	Methidathion
Dichlorphos	Phosalone
Ethion	Pirimiphos-methyl

## Pesticide Mix #19

AE-00029 1 x 1 mL  
AE-00029-10ML 1 x 10 mL  
10 µg/mL each in Toluene 13 comps.

Chlorpyrifos-methyl	Fenitrothion
p,p'-DDT	Lindane
Deltamethrin	Methyl parathion
Dichlorvos	Phosalone
Dieldrin	Quintozene
Endosulfan sulfate	Tecnacene
Ethion	

### Pesticide Standards

#### Pesticide Mix #20

**AE-00050** 1 x 1 mL  
**AE-00050-10ML** 1 x 10 mL  
 10 µg/mL each in Ethyl acetate 20 comps.

Aldicarb	Isoproturon
Atrazine	γ-BHC
Bentazon	MCPA
Chlortoluron	MCPP acid
Cyanazine	Metazachlor
2,4-D	Metobromuron
Dichlorprop	Metoxuron
1,1-Dichloropropene	Sebutylazin
Endosulfan I	Simazine
Endosulfan II	Terbutylazine

#### Pesticide Mix #20

Regulation DIN V 38407 Part 12 Method F12  
**AE-00031** 1 x 1 mL  
**AE-00031-10ML** 1 x 10 mL  
 10 µg/mL each in Ethyl acetate 17 comps.

Atrazine	Methabenzthiazuron
Chlortoluron	Metobromuron
Cyanazine	Metolachlor
Desethyl atrazine	Metoxuron
Hexazinone	Monolinuron
Isoproturon	Sebutylazin
Karmex	Simazine
Linuron	Terbutylazine
Metazachlor	

#### Pesticide Mix #21

**AE-00051** 1 x 1 mL  
 10 µg/mL each in Cyclohexane 16 comps.

Aldrin	Endrin
p,p'-DDD	Heptachlor
p,p'-DDE	Heptachlor epoxide (isomer B)
o,p'-DDT	Hexachlorobenzene
p,p'-DDT	α-BHC
Dieldrin	β-BHC
Endosulfan I	γ-BHC
Endosulfan II	Methoxychlor

#### Pesticide Mix #22

**AE-00052** 1 x 1 mL  
**AE-00052-10ML** 1 x 10 mL  
 10 µg/mL each in Acetonitrile 8 comps.

Atrazine	Metoxuron
Desethyl atrazine	Propazine
Bromacil	Simazine
Chloridazon	Terbutylazine

#### Pesticide Mix #23

**AE-00053** 1 x 1 mL  
**AE-00053-10ML** 1 x 10 mL  
 10 µg/mL each in Acetonitrile 6 comps.

2,4-D	MCPA
2,4-DB	MCPB
Dichlorprop	MCPP acid

#### Pesticide Mix #24

**AE-00054** 1 x 1 mL  
**AE-00054-10ML** 1 x 10 mL  
 At stated conc. (µg/mL) in Cyclohexane 6 comps.

Aldrin	0.2	α-BHC	0.15
p,p'-DDT	0.4	γ-BHC	0.15
Dieldrin	0.3	Heptachlor	0.2

#### Pesticide Mix #25

**AE-00055** 1 x 1 mL  
**AE-00055-10ML** 1 x 10 mL  
 10 µg/mL each in Cyclohexane 4 comps.

α-BHC	γ-BHC
β-BHC	δ-BHC

#### Pesticide Mix #26

**AE-00056** 1 x 1 mL  
**AE-00056-10ML** 1 x 10 mL  
 1.0 µg/mL each in Cyclohexane 5 comps.

α-BHC	δ-BHC
β-BHC	ε-BHC
γ-BHC	

#### Pesticide Mix #27

**AE-00057** 1 x 1 mL  
**AE-00057-10ML** 1 x 10 mL  
 1.0 µg/mL each in Isooctane 13 comps.

α-BHC	p,p'-DDE
β-BHC	Dieldrin
γ-BHC	Endrin
δ-BHC	Heptachlor epoxide (isomer B)
o,p'-DDD	Methoxychlor
p,p'-DDD	Mirex
o,p'-DDE	

### Pesticide Standards

#### ISO 6468 Pesticide Standard

Water quality determination of certain organochlorine insecticides, polychlorine biphenyls and chlorobenzenes by GC after liquid-liquid extraction.

**ISO6468-PEST** **1 x 1 mL**  
10 µg/mL each in *n*-Hexane 19 comps.

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

#### EN ISO 10695 Pesticide Mix

Water quality determination of selected organic nitrogen and phosphorous compound by GC.

**ENISO10695-PEST** **1 x 1 mL**  
10 µg/mL each in Acetone 12 comps.

Atrazine	Propazine
Cyanazine	Sebuthylazin
Metazachlor	Simazine
Parathion	Terbuthylazine
Methyl parathion	Trifluralin
Pendimethalin	Vinclozolin

#### DIN 38407-2 Pesticide Standard

Determination of water, waste water and sludge for low volatile halogenated hydrocarbons by GC.

**DIN38407-2-PEST** **1 x 1 mL**  
10 µg/mL each in *n*-Hexane 17 comps.

Aldrin	Endrin
p,p'-DDD	Heptachlor
o,p'-DDE	Heptachlor epoxide (Isomer A)
p,p'-DDE	Heptachlor epoxide (Isomer B)
o,p'-DDT	α-BHC
p,p'-DDT	β-BHC
Dieldrin	γ-BHC
Endosulfan I	Methoxychlor
Endosulfan II	

#### EN ISO 11369 Pesticide Mix 20

Regulation DIN V 38407 Part 12 Method F12

**AE-00031** **1 x 1 mL**  
**AE-00031-10ML** **1 x 10 mL**  
10 µg/mL each in Ethyl acetate 17 comps.

Atrazine	Methabenzthiazuron
Chlortoluron	Metobromuron
Cyanazine	Metolachlor
Desethyl atrazine	Metoxuron
Hexazinone	Monolinuron
Isoproturon	Sebuthylazin
Karmex (Diuron)	Simazine
Linuron	Terbuthylazine
Metazachlor	

#### DIN V 38407-11 Pesticide Mix

Scope: Determination of plant protection agents in water, wastewater and sludge.

**DINV38407-11-PST** **1 x 1 mL**  
**DINV38407-11-PST-PAK** **5 x 1 mL**  
5 µg/mL each in Acetonitrile 21 comps.

Alachlor	Monuron
Atrazine	Parathion
Chlorfenvinphos	Pendimethalin
Chlortoluron	Propazine
Cyanazine	Sebuthylazin
2,4-D	Simazine
MCPA acid	2,4,5-T
Metazachlor	Terbuthylazine
Metobromuron	Trifluralin
Metolachlor	Vinclozolin
Metoxuron	

#### DIN 38407-14 Methyl Esters Mix

Examination of water, wastewater and sludge for phenoxyalkyl carbonic acids by GC and MS detection after solid-liquid extraction and derivatization.

**DIN38407-14-ME** **1 x 1 mL**  
500 µg/mL each in *n*-Hexane 8 comps.

Mecoprop methyl ester
MCPA methyl ester
Dichlorprop methyl ester
2,4-D methyl ester
Fenoprop methyl ester
MCPB methyl ester
2,4,5-T methyl ester
2,4-DB methyl ester

#### DIN 38407-22 Glyphosate & AMPA

Examination of water, wastewater, and sludge for Glyphosate and Aminomethyl phosphonic acid (AMPA)

**DIN38407-22** **1 x 1 mL**  
100 µg/mL each in Water 2 comps.

Glyphosate
Aminomethylphosphonic acid

#### Pesticide Mix 16

Regulations for drinking water analysis, (E-DIN 38407-F-18, E-DIN 38414-F-21) Regulations for sediment and sludge.

**AE-00030** **1 x 1 mL**  
**AE-00030-10ML** **1 x 10 mL**  
10 µg/mL each in Ethyl acetate 20 comps.

Aldicarb	Lindane
Atrazine	MCPA *
Bentazone *	Mecoprop *
Chlortoluron	Metazachlor
Cyanazine	Metobromuron
2,4-D *	Metoxuron
Dichlorprop *	Sebuthylazine
1,3-Dichlorpropene	Simazine
Endosulfan I	Terbuthylazine
Endosulfan II	
Isoproturon	* Underivatized

#### DIN 38407-14 Acid Mix

Examination of water, wastewater and sludge for phenoxyalkyl carbonic acids by GC and MS detection after solid-liquid extraction and derivatization.

**DIN38407-14-ACID** **1 x 1 mL**  
500 µg/mL each in *n*-Hexane 8 comps.

Mecoprop acid
MCPA acid
Dichlorprop acid
2,4-D acid
Fenoprop acid
MCPB acid
2,4,5-T acid
2,4-DB acid

### Phenols & Derivatives

#### DIN EN 12673 Chlorophenols

Scope: Determination of selected chlorophenols in water by GC

**DINEN-12673**

At stated conc. (µg/mL) in Ethanol

**1 x 1 mL**  
19 comps.

2-Chlorophenol	30	2,3,5-Trichlorophenol	3
3-Chlorophenol	30	2,3,6-Trichlorophenol	3
4-Chlorophenol	30	2,4,5-Trichlorophenol	3
2,3-Dichlorophenol	4	2,4,6-Trichlorophenol	3
2,4-Dichlorophenol	4	3,4,5-Trichlorophenol	3
2,5-Dichlorophenol	4	2,3,4,5-Tetrachlorophenol	2
2,6-Dichlorophenol	4	2,3,4,6-Tetrachlorophenol	2
3,4-Dichlorophenol	4	2,3,5,6-Tetrachlorophenol	2
3,5-Dichlorophenol	4	Pentachlorophenol	1
2,3,4-Trichlorophenol	3		

#### DIN EN ISO 17495 Nitrophenols

Scope: determination of selected nitrophenols by solid-phase extraction and gas chromatography with mass spectrometric detection.

**DINENISO-17495** **1 x 1 mL**  
500 µg/mL each in Acetone 14 comps.

2,4-Dinitrophenol	2-Nitrophenol
2,5-Dinitrophenol	3-Nitrophenol
2,6-Dinitrophenol	4-Nitrophenol
2-Methyl-4,6-dinitrophenol	4-Methyl-2-nitrophenol
2,6-Dimethyl-4-nitrophenol	3-Methyl-4-nitrophenol
2,4-Dichlor-6-nitrophenol	5-Methyl-2-nitrophenol
2,6-Dichlor-4-nitrophenol	3-Methyl-2-nitrophenol

### ENISO 9377 Hydrocarbon in Oil

#### Diesel #2/Mineral Oil Standard

**ENISO9377-2-1** 1 x 1 mL  
10000 µg/mL total hydrocarbons in Hexane  
2 comps.

#2 Diesel Fuel (5000 µg/mL)  
Mineral Oil (5000 µg/mL)

#### Quality Control Standard Mix

**ISO/DIS9377-4-1** 1 x 1 mL  
1000 µg/mL total hydrocarbons in Acetone  
2 comps.

#2 Diesel Fuel (500 µg/mL)  
Mineral Oil (500 µg/mL)

#### Extraction Solvent Stock Solution

**ENISO9377-2-3** 1 x 5 mL  
At stated conc. in Hexane 2 comps.

n-Decane (20 µl/L)  
n-Tetracontane (20 mg/L)

#### System Performance Standard of n-alkanes

**ENISO9377-2-2** 1 x 1 mL  
50 µg/mL each in Hexane 16 comps.

n-Decane	n-Hexacosane
n-Dodecane	n-Octacosane
n-Tetradecane	n-Triacontane
n-Hexadecane	n-Dotriacontane
n-Octadecane	n-Tetracontane
n-Eicosane	n-Hexatriacontane
n-Docosane	n-Octatriacontane
n-Tetracosane	n-Tetracontane

#### Stearyl Stearate Test Solution

**ISO/DIS9377-4-2** 1 x 10 mL  
2000 µg/mL in Cyclohexane

Stearyl stearate

#### ISO/DIS 9377-4 Standard Mix Stock Solution

**TPH-006-10X** 1 x 1 mL  
**TPH-006-10X-PAK SAVE** 5 x 1 mL  
5000 µg/mL each in Cyclohexane 2 comps.

#2 Diesel fuel  
Mineral oil

#### Florasil Cartridge QC Standard Mix

**ENISO9377-2-4** 1 x 10 mL  
2000 µg/mL total hydrocarbons in Hexane 2 comps.

#2 Diesel Fuel (1000 µg/mL)  
Mineral Oil (1000 µg/mL)

### European Equivalents of Alcohol Oxidation Products in Automotive Engine Exhaust by HPLC of DNPH Derivatives

#### Carbonyl-DNPH Mix #1

**AE-00043** 1 x 1 mL  
20 µg/mL each in Acetonitrile 13 comps.

Acetaldehyde-DNPH	Formaldehyde-DNPH (40 µg/mL)
Acetone-DNPH	Hexanal-DNPH
Acrolein-DNPH	Methacrolein-DNPH
Benzaldehyde-DNPH	Propionaldehyde-DNPH
Butanonal-DNPH	p-Tolualdehyde-DNPH
Methyl ethyl ketone-DNPH	Valeraldehyde-DNPH
Crotonaldehyde-DNPH	

#### Carbonyl-DNPH Mix #2

**AE-00044** 1 x 1 mL  
2 µg/mL each in Acetonitrile 14 comps.

Acetaldehyde-DNPH	Cyclohexanone-DNPH (5 µg/mL)
Acetone-DNPH	Formaldehyde-DNPH (4 µg/mL)
Acrolein-DNPH	Hexanal-DNPH
Benzaldehyde-DNPH	Methacrolein-DNPH
Butanone-DNPH	Propionaldehyde-DNPH
n-Butyraldehyde-DNPH	p-Tolualdehyde-DNPH
Crotonaldehyde-DNPH	Valeraldehyde-DNPH

#### Cyclohexanone

**AE-00046** 1 x 1 mL  
500 µg/mL in Acetonitrile

Cyclohexanone-DNPH



# Regional Standards

## Pacific Rim Methodologies

### Japan Ministry of Health and Welfare Standards

#### Volatile Organic Solution

**JMHW-001**  
**JMHW-001-PAK** **SAVE**  
 1000 µg/mL each in MeOH

1 x 1 mL  
 5 x 1 mL  
 23 comps.

- Benzene
- Bromodichloromethane
- Bromoform
- Carbon tetrachloride
- Chloroform
- Dibromochloromethane
- 1,4-Dichlorobenzene
- 1,2-Dichloroethane
- 1,1-Dichloroethene
- cis-1,2-Dichloroethene
- trans-1,2-Dichloroethene
- Dichloromethane
- 1,2-Dichloropropane
- cis-1,3-Dichloropropene
- trans-1,3-Dichloropropene
- Tetrachloroethene
- Toluene
- 1,1,1-Trichloroethane
- 1,1,2-Trichloroethane
- Trichloroethene
- m-Xylene
- o-Xylene
- p-Xylene

#### Volatile Organic Solution

**JMHW-002**  
**JMHW-002-PAK** **SAVE**  
 2000 µg/mL each in MeOH

1 x 1 mL  
 5 x 1 mL  
 16 comps.

- Benzene
- Bromodichloromethane
- Bromoform
- Carbon tetrachloride
- Chloroform
- Dibromochloromethane
- 1,2-Dichloroethane
- 1,1-Dichloroethene
- cis-1,2-Dichloroethene
- Dichloromethane
- cis-1,3-Dichloropropene
- trans-1,3-Dichloropropene
- Tetrachloroethene
- 1,1,1-Trichloroethane
- 1,1,2-Trichloroethane
- Trichloroethene

#### Volatile Organic Solution B

**JMHW-003**  
**JMHW-003-PAK** **SAVE**  
 2000 µg/mL each in MeOH

1 x 1 mL  
 5 x 1 mL  
 7 comps.

- 1,4-Dichlorobenzene
- trans-1,2-Dichloroethene
- 1,2-Dichloropropane
- Toluene
- m-Xylene
- o-Xylene
- p-Xylene

#### Tuning Solution/Surrogate Standard Mixture

**CLP-004-100X**  
**CLP-004-100X-PAK** **SAVE**  
 2.5 mg/mL in MeOH

1 x 1 mL  
 5 x 1 mL

- p-Bromofluorobenzene

#### Method of Interests

**Japanese Methods JIS-K0311 and JIS-K0312**  
 See EPA Method 1613 Dioxins & Furans which can be used for EPA Method 23, 8280, 8290 and EU Method EN-1948

### Japan Environmental Agency Standards

#### Volatile Organic Solution

**JEAM-001**  
**JEAM-001-PAK** **SAVE**  
 1000 µg/mL each in MeOH

1 x 1 mL  
 5 x 1 mL  
 12 comps.

- Benzene
- Carbon Tetrachloride
- 1,1-Dichloroethene
- cis-1,2-Dichloroethene
- Dichloromethane
- 1,2-Dichloroethane
- cis-1,3-Dichloropropene
- trans-1,3-Dichloropropene
- Tetrachloroethene
- 1,1,1-Trichloroethane
- 1,1,2-Trichloroethane
- Trichloroethene

#### Method Aldehydes as DNPH Derivatives

**JEAM-002**  
**JEAM-002-PAK** **SAVE**  
 100 µg/mL each in Ethyl acetate

1 x 1 mL  
 5 x 1 mL  
 6 comps.

- Acetaldehyde-DNPH
- Butyraldehyde-DNPH
- Isobutyraldehyde-DNPH
- Isovaleraldehyde-DNPH
- Propionaldehyde-DNPH
- Pentanal-DNPH

#### Internal Standard

**M-524-IS**  
**M-524-IS-PAK** **SAVE**  
 2.0 mg/mL each in MeOH

1 x 1 mL  
 5 x 1 mL  
 2 comps.

- 1,2-Dichlorobenzene-d<sub>4</sub>
- Fluorobenzene

#### Drinking Water Odor Standard

**ODOR-JDWOS**  
 100 µg/mL each in MeOH

1 x 1 mL  
 2 comps.

- (+/-) Geosmin
- 2-methylisoborneol

### Korean Drinking Water Regulations Standards

#### VOC Mix A

**KDWR-001**  
**KDWR-001-PAK** **SAVE**  
 100 µg/mL each in MeOH

1 x 1 mL  
 5 x 1 mL  
 15 comps.

- Benzene
- Bromodichloromethane
- Bromoform
- Chloroform
- Dibromochloromethane
- Ethylbenzene
- Dichloromethane
- Phenol
- Tetrachloroethene
- Toluene
- 1,1,1-Trichloroethane
- Trichloroethene
- m-Xylene
- p-Xylene
- o-Xylene

#### VOC Mix B

**KDWR-002**  
**KDWR-002-PAK** **SAVE**  
 100 µg/mL each in MeOH

1 x 1 mL  
 5 x 1 mL  
 8 comps.

- Bromodichloromethane
- Bromoform
- Chloroform
- Dibromochloromethane
- Dichloromethane
- Tetrachloroethene
- 1,1,1-Trichloroethane
- Trichloroethene

#### Pesticide Mix

**KDWR-003**  
**KDWR-003-PAK** **SAVE**  
 1000 µg/mL each in MeOH

1 x 1 mL  
 5 x 1 mL  
 5 comps.

- Carbaryl
- Diazinon
- Fenitrothion
- Malathion
- Parathion

### California Methods

#### California Air Resources Board Method 1004 Carbonyl Compounds as DNPH derivatives by HPLC

**M-1004** 1 x 1 mL  
 At stated conc. in AcCN 13 comps.  
**M-1004-10X** 1 x 1 mL  
 At 10 times the stated conc. in AcCN 13 comps.

Carbonyl Compound	DNPH Derivative
Acetaldehyde	3.0 µg/mL
Acetone	3.0 µg/mL
Acrolein	3.0 µg/mL
Benzaldehyde	3.0 µg/mL
2-Butanone (MEK)	3.0 µg/mL
n-Butyraldehyde	3.0 µg/mL
Crotonaldehyde	3.0 µg/mL
Formaldehyde	3.0 µg/mL
Hexanal	3.0 µg/mL
Methacrolein	3.0 µg/mL
Propionaldehyde	3.0 µg/mL
m-Tolualdehyde	3.0 µg/mL
Valeraldehyde	3.0 µg/mL

**CAR-DNPH** 1 x 1 mL  
 At stated conc. in AcCN as DNPH derivatives 7 comps.

Acetaldehyde-DNPH	1000 µg/mL	Butyraldehyde-DNPH	500 µg/mL
Acetone-DNPH	500 µg/mL	Formaldehyde-DNPH	1500 µg/mL
Acrolein-DNPH	500 µg/mL	Propionaldehyde-DNPH	500 µg/mL
Benzaldehyde-DNPH	500 µg/mL		

#### Reference Gas Oil Sample

**RGS-001** 1 x 1 mL  
 Hydrocarbon Mixture (boiling point range 250-850°F)

#### California Method 750-M Standard

**BDE-CALEWS** 1 x 1 mL  
 10 µg/mL each in Isooctane 13 comps.

2,2',4'-Tribromodiphenyl ether (#17)  
 2,4,4'-Tribromodiphenyl ether (#28)  
 2,2',4,4'-Tetrabromodiphenyl ether (#47)  
 2,3',4,4'-Tetrabromodiphenyl ether (#66)  
 2,3',4',6'-Tetrabromodiphenyl ether (#71)  
 2,2',4,4',5'-Pentabromodiphenyl ether (#99)  
 2,2',4,4',6'-Pentabromodiphenyl ether (#100)  
 2,2',3,4,4',5'-Hexabromodiphenyl ether (#138)  
 2,2',4,4',5,5'-Hexabromodiphenyl ether (#153)  
 2,2',4,4',5,6'-Hexabromodiphenyl ether (#154)  
 2,2',3,4,4',5',6'-Heptabromodiphenyl ether (#183)  
 2,2',3,3',4,4',5,5',6,6'-Decabromodiphenyl ether (#209)  
 2,2',6,6'-Tetrabromobisphenol A

### Florida Methods PAH by HPLC

**Z-014G-FL** 1 x 1 mL  
 2.0 mg/mL each in CH<sub>2</sub>Cl<sub>2</sub>:Benzene 18 comps.

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

#### Polynuclear Aromatic Hydrocarbons (HPLC)

**M-8310-FL** 1 x 1 mL  
**M-8310-FL-PAK** SAVE 5 x 1 mL  
 0.5 mg/mL each in AcCN 18 comps.  
**M-8310-FL-SET** 18 x 1 mL

Acenaphthene	M-8310-FL-01
Acenaphthylene	M-8310-FL-02
Anthracene	M-8310-FL-03
Benzo[a]anthracene	M-8310-FL-04
Benzo[a]pyrene	M-8310-FL-05
Benzo[b]fluoranthene	M-8310-FL-06
Benzo[g,h,i]perylene	M-8310-FL-07
Benzo[k]fluoranthene	M-8310-FL-08
Chrysene	M-8310-FL-09
Dibenz[a,h]anthracene	M-8310-FL-10
Fluoranthene	M-8310-FL-11
Fluorene	M-8310-FL-12
Indeno[1,2,3-cd]pyrene	M-8310-FL-13
1-Methylnaphthalene	M-8310-FL-14
2-Methylnaphthalene	M-8310-FL-15
Naphthalene	M-8310-FL-16
Phenanthrene	M-8310-FL-17
Pyrene	M-8310-FL-18

#### Performance Check Solution

**M-610-QC-FL** 1 x 1 mL  
**M-610-QC-FL-PAK** SAVE 5 x 1 mL  
 At stated conc. in AcCN 18 comps.

Acenaphthene (0.1 mg/mL)	Dibenz[a,h]anthracene (0.01 mg/mL)
Acenaphthylene (0.1 mg/mL)	Fluoranthene (0.01 mg/mL)
Anthracene (0.1 mg/mL)	Fluorene (0.1 mg/mL)
Benz[a]anthracene (0.01 mg/mL)	Indeno[1,2,3-cd]pyrene (0.01 mg/mL)
Benzo[a]pyrene (0.01 mg/mL)	1-Methyl naphthalene (0.1 mg/mL)
Benzo[b]fluoranthene (0.01 mg/mL)	2-Methyl naphthalene (0.1 mg/mL)
Benzo[g,h,i]perylene (0.01 mg/mL)	Naphthalene (0.1 mg/mL)
Benzo[k]fluoranthene (0.005 mg/mL)	Phenanthrene (0.1 mg/mL)
Chrysene (0.01 mg/mL)	Pyrene (0.01 mg/mL)

#### Polynuclear Aromatic Hydrocarbons (HPLC)

**M-8310-QC-ATI** 1 x 1 mL  
**M-8310-QC-ATI-PAK** SAVE 5 x 1 mL  
 At stated conc. in AcCN 18 comps.

Acenaphthene (1000 µg/mL)	Dibenz[a,h]anthracene (200 µg/mL)
Acenaphthylene (2000 µg/mL)	Fluoranthene (200 µg/mL)
Anthracene (100 µg/mL)	Fluorene (200 µg/mL)
Benz[a]anthracene (100 µg/mL)	Indeno[1,2,3-cd]pyrene (100 µg/mL)
Benzo[a]pyrene (100 µg/mL)	1-Methylnaphthalene (1000 µg/mL)
Benzo[b]fluoranthene (200 µg/mL)	2-Methylnaphthalene (1000 µg/mL)
Benzo[g,h,i]perylene (200 µg/mL)	Naphthalene (1000 µg/mL)
Benzo[k]fluoranthene (100 µg/mL)	Phenanthrene (100 µg/mL)
Chrysene (100 µg/mL)	Pyrene (100 µg/mL)

#### Matrix Spiking Solution

**M-610-MS** 1 x 1 mL  
**M-610-MS-PAK** SAVE 5 x 1 mL  
 At stated conc. in AcCN 6 comps.

Benz[a]pyrene (0.5 mg/mL)	2-Methylnaphthalene (5.0 mg/mL)
Chrysene (0.5 mg/mL)	Phenanthrene (0.5 mg/mL)
1-Methylnaphthalene (5.0 mg/mL)	Pyrene (0.5 mg/mL)

#### PAH Mix Additions

**H-001S/002S-M-20X** 1 x 1 mL  
 1.0 mg/mL each in MeOH 2 comps.

1-Methyl naphthalene      2-Methyl naphthalene

## Minnesota Method 465-D

## List of Volatiles

## Liquids

M-502A-R

M-502A-R-PAK

0.2 mg/mL each in MeOH

Benzene (01)  
Bromobenzene (02)  
Bromochloromethane (03)  
Bromodichloromethane (04)  
Bromoform (05)  
*n*-Butylbenzene (07)  
*sec*-Butylbenzene (08)  
*tert*-Butylbenzene (09)  
Carbon tetrachloride (10)  
Chlorobenzene (11)  
Chloroform (13)  
2-Chlorotoluene (15)  
4-Chlorotoluene (16)  
Dibromochloromethane (17)  
1,2-Dibromo-3-chloropropane (18)  
1,2-Dibromoethane (19)  
Dibromomethane (20)  
1,2-Dichlorobenzene (21)  
1,3-Dichlorobenzene (22)  
1,4-Dichlorobenzene (23)  
1,1-Dichloroethane (25)  
1,2-Dichloroethane (26)  
1,1-Dichloroethene (27)  
*cis*-1,2-Dichloroethene (28)  
*trans*-1,2-Dichloroethene (29)  
1,2-Dichloropropane (30)  
1,3-Dichloropropane (31)

2,2-Dichloropropane (32)  
1,1-Dichloropropene (33)  
*cis*-1,3-Dichloropropene (34A) \*  
*trans*-1,3-Dichloropropene (34B) \*\*  
Ethylbenzene (35)  
Hexachlorobutadiene (36)  
Isopropylbenzene (*Cumene*) (37)  
*p*-Isopropyltoluene (*p-Cymene*) (38)  
Methylene chloride (39)  
Naphthalene (40)  
*n*-Propylbenzene (41)  
Styrene (42)  
1,1,1,2-Tetrachloroethane (43)  
1,1,2,2-Tetrachloroethane (44)  
Tetrachloroethene (45)  
Toluene (46)  
1,2,3-Trichlorobenzene (47)  
1,2,4-Trichlorobenzene (48)  
1,1,1-Trichloroethane (49)  
1,1,2-Trichloroethane (50)  
Trichloroethene (51)  
1,2,3-Trichloropropane (53)  
1,2,4-Trimethylbenzene (54)  
1,3,5-Trimethylbenzene (55)  
*o*-Xylene (57) \* *cis* (1.06 x conc.) (34A)  
*m*-Xylene (58) \*\* *trans* (0.94 x conc.) (34B)  
*p*-Xylene (59)

SAVE

1 x 1 mL  
5 x 1 mL  
54 comps.

## Gases

M-465B-10X

M-465B-10X-PAK

0.2 mg/mL each in MeOH

Bromomethane  
Chloroethane  
Chloromethane  
Dichlorodifluoromethane

Dichlorofluoromethane  
Trichlorofluoromethane  
Vinyl chloride

SAVE

1 x 1 mL  
5 x 1 mL  
7 comps.

M-465D-ADD-R ‡

0.2 mg/mL each in MeOH

Acetone  
Allyl chloride  
Ethyl ether  
Methyl ethyl ketone

Methyl isobutyl ketone  
Methyl-*t*-butyl ether  
Tetrahydrofuran  
Trichlorotrifluoroethane

1 x 1 mL  
8 comps.

‡ To delay premature breakdown of thermally labile products in transit we suggest shipping with a "Cold Pack"

## Method 465-D Volatiles Set

M-465D-SET

3 x 1 mL

(M-502A-R, M-465B-10X, M-465D-ADD-R)

M-465D-SET-PAK

SAVE

5 x (3 x 1 mL)

## List 1 - Pesticide Standard

MDA-PEST-01-R1

MDA-PEST-01-R1-PAK

500 µg/mL each in CH<sub>2</sub>Cl<sub>2</sub>

Acetochlor	Dimethenamid	Metribuzin	Propazine
Alachlor	Dursban	Pendimethalin	Simazine
Atrazine	Dyfonate	Phorate	Terbufos
Atrazine-desisopropyl	EPTC	Propachlor	Triallate
Cyanazine	Ethalfuralin	Prometon	Trifluralin
Desethyl atrazine	Metolachlor		

SAVE

1 x 1 mL  
5 x 1 mL  
22 comps.

P-088S-10X

100 µg/mL in MeOH

1 x 1 mL

Butylate

## Pesticides &amp; Herbicides

## List 2 - Herbicide Acids Standards

MDA-HERB-01

At stated conc. in Acetone

2,4-D	(0.1 mg/mL)	Dicamba	(0.1 mg/mL)
2,4-DB	(0.1 mg/mL)	MCPA	(10 mg/mL)
2,4,5-T	(0.1 mg/mL)	Picloram	(0.1 mg/mL)
Silvex	(0.1 mg/mL)	Triclopyr	(0.1 mg/mL)
Bentazon	(0.1 mg/mL)		

1 x 1 mL  
9 comps.

## Technical Note

This expanded analyte list for Method 465-D contains all the analytes in one multi-component standard, at a high concentration. This eliminates the need to combine more than one standard to cover the complete analyte list. The "Butylate" pesticide in conjunction with the MDA Method 465 formulation has all the required analytes for the Wisconsin DATCP pesticide program. Since many labs perform work in both Minnesota and Wisconsin, a single calibration curve can be used to monitor analytes covered by both methods.

## Wisconsin DNR VOC Mixture

S-989

2.0 mg/mL each in MeOH

1 x 1 mL

52 comps.

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

# Methods Other Than EPA

## ASTM D7065-06 4-tert-Octylphenol, 4-Nonylphenol and their Tech Equivalents, Mono and Multi-Ethoxylates

Nonylphenol ethoxylates and alkylphenol ethoxylates have been produced in large quantities in the U.S and around the world. They are used in many different applications: oil-soluble detergents, emulsifiers, wetting agents, lubricants, and antistatic agents. Breakdown products have been shown to be possible endocrine disruptors.



In January of 2004, the US EPA proposed ambient water quality criteria for nonylphenol. The EPA is working with ASTM to develop and validate a method for nonylphenol and alkylphenol ethoxylates.

### Nonylphenol Calibration Standard Solution

<b>M-1626</b>		<b>1 x 1 mL</b>
<i>At stated conc. in CH<sub>2</sub>Cl<sub>2</sub></i>		
Nonylphenol	(160 µg/mL)	
Nonylphenol monoethoxylate	(320 µg/mL)	
Nonylphenol diethoxylate	(640 µg/mL)	
4-tert-Octylphenol	(32 µg/mL)	
Bisphenol A (BPA)	(32 µg/mL)	
4-Nonylphenol	(32 µg/mL)	
4-Nonylphenol monoethoxylate	(32 µg/mL)	
		<b>7 comps.</b>

### Nonylphenol Internal Standard

<b>M-1626-IS</b>		<b>1 x 1 mL</b>
<i>2000 µg/mL each in CH<sub>2</sub>Cl<sub>2</sub></i>		
Acenaphthene-d <sub>10</sub>	Phenanthrene-d <sub>10</sub>	
		<b>2 comps.</b>

### Nonylphenol Target Component Spike Standard

<b>M-1626-S</b>		<b>1 x 1 mL</b>
<i>At stated conc. in MeOH</i>		
Nonylphenol	(160 µg/mL)	
Nonylphenol monoethoxylate	(320 µg/mL)	
Nonylphenol diethoxylate	(640 µg/mL)	
4-tert-Octylphenol	(32 µg/mL)	
Bisphenol A	(32 µg/mL)	
		<b>5 comps.</b>

### Nonylphenol Surrogate Component Spike Standard

<b>M-1626-SS</b>		<b>1 x 1 mL</b>
<i>32 µg/mL each in MeOH</i>		
4-Nonylphenol	4-Nonylphenol monoethoxylate	
		<b>2 comps.</b>

<b>M-1626-01S</b>		<b>1 x 1 mL</b>
<i>1000 µg/mL in MeOH</i>		
Bisphenol A (BPA)		

## Method USP 467 VOCs from Stack Gas Effluents

### USP/National Formulary VOC Mixtures

<b>NF-467</b>			<b>1 x 1 mL</b>
<b>NF-467-PAK</b>			<b>5 x 1 mL</b>
<i>At stated conc. in MeOH</i>			
Benzene	(200 µg/mL)	Methylene chloride	(200 µg/mL)
Chloroform	(100 µg/mL)	Trichloroethene	(200 µg/mL)
1,4-Dioxane	(200 µg/mL)		
			<b>5 comps.</b>

SAVE

<b>NF-467-R</b>			<b>1 x 1 mL</b>
<b>NF-467-R-PAK</b>			<b>5 x 1 mL</b>
<i>At stated conc. in DMSO</i>			
Benzene	(200 µg/mL)	Ethylene oxide	(20 µg/mL)
Chloroform	(100 µg/mL)	Methylene chloride	(200 µg/mL)
1,4-Dioxane	(200 µg/mL)	Trichloroethene	(200 µg/mL)
			<b>6 comps.</b>

SAVE

<b>NF-467-R3</b>			<b>1 x 1 mL</b>
<b>NF-467-R3-PAK</b>			<b>5 x 1 mL</b>
<i>At stated conc. in MeOH</i>			
Benzene	(2 µg/mL)	Dichloromethane	(600 µg/mL)
Chloroform	(60 µg/mL)	Trichloroethene	(80 µg/mL)
p-Dioxane	(380 µg/mL)		
			<b>5 comps.</b>

SAVE

<b>NF-467-R4</b>			<b>1 x 1 mL</b>
<b>NF-467-R4-PAK</b>			<b>5 x 1 mL</b>
<i>At stated conc. in Dimethyl sulfoxide</i>			
Benzene	(2 µg/mL)	Dichlorometane	(600 µg/mL)
Chloroform	(60 µg/mL)	Trichloroethene	(80 µg/mL)
p-Dioxane	(380 µg/mL)		
			<b>5 comps.</b>

SAVE

<b>NF-467-R6</b>			<b>1 x 1 mL</b>
<b>NF-467-R6-PAK</b>			<b>5 x 1 mL</b>
<i>At stated conc. in Dimethyl sulfoxide</i>			
Benzene	(100 µg/mL)	Dichlorometane	(500 µg/mL)
Chloroform	(50 µg/mL)	Trichloroethene	(100 µg/mL)
p-Dioxane	(100 µg/mL)		
			<b>5 comps.</b>

SAVE



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Phenols, USP 467

# Methods Other Than EPA

## F-List Hazardous Waste

### F-List Hazardous Waste from Non-Specific Sources

#### F001 & F002 Solvent List Components

<b>FL-0102</b> 2.0 mg/mL each in MeOH		<b>1 x 1 mL</b> 10 comps.
Carbon tetrachloride	Tetrachloroethene	Trichloroethene
Chlorobenzene	1,1,1-Trichloroethane	1,1,2-Trichloro-1,2,2-trifluoroethane
1,2-Dichlorobenzene	1,1,2-Trichloroethane	Trichlorofluoromethane
Methylene chloride		

#### F003 List Components (excluding MeOH as analyte)

<b>FL-0003</b> 2.0 mg/mL in MeOH		<b>1 x 1 mL</b> 10 comps.
Acetone	Ethylbenzene	<i>m</i> -Xylene
<i>n</i> -Butanol	Ethyl ether	<i>o</i> -Xylene
Cyclohexanone	Methyl isobutyl ketone	<i>p</i> -Xylene
Ethyl acetate		

#### Additional Alcohol Solvents

<b>FL-OADD</b> 2.0 mg/mL each in H <sub>2</sub> O		<b>1 x 1 mL</b> 3 comps.
Ethanol	Isopropanol	Methanol

#### F004 List Component Mixes

<b>FL-0004-CR</b> 2.0 mg/mL in MeOH		<b>1 x 1 mL</b> 3 comps.
<i>m</i> -Cresol	<i>p</i> -Cresol	
<i>o</i> -Cresol		

<b>FL-0004-CA</b> 2.0 mg/mL in MeOH		<b>1 x 1 mL</b>
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Cresylic acid (technical mixture of phenol, cresols & xylenes)

#### F005 List Components (includes Nitrobenzene)

<b>FL-0005-NB</b> 2.0 mg/mL each in MeOH		<b>1 x 1 mL</b> 9 comps.
Benzene	Nitrobenzene	
Carbon disulfide	2-Nitropropane	
2-Ethoxyethanol	Pyridine	
Isobutanol	Toluene	
Methyl ethyl ketone		

