AccuStandard has formulated the following 1600 series Pharmaceutical Manufacturing Industry (PMI) standards to meet methods promulgated in 40 CFR part 136. These methods are used to monitor the discharge of pollutants into surface waters of the United States by the Pharmaceutical Manufacturing Industry. The methods can be used to identify and measure purgeable and non-purgeable volatiles, semi-volatiles, and certain organic pollutants specific to PMI in water, soils, and municipal sludges. AccuStandard’s PMI standards are formulated at convenient stock and Ready-to-Use concentrations. Further savings can be achieved by the Analytical Laboratory purchasing the standards in bulk quantities. Contact our Technical Department for a quotation on those standards available in bulk quantities.

### Method 1665

**Semi-Volatile Organic Compounds Specific to the Pharmaceutical Manufacturing Industry (PMI) by Isotope Dilution GC/MS**

<table>
<thead>
<tr>
<th>PMI Semi-Volatile Set</th>
<th>5 x 1 mL</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-1665-SET</td>
<td>Set includes M-1618-GP-SML, M-1653-TS, M-625-07-10X, M-1665, M-1665-LAB</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GPC Calibration Solution</th>
<th>1 x 5 mL</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-1618-GP-SML</td>
<td>At stated conc. in Acetone</td>
</tr>
<tr>
<td>Corn oil</td>
<td>(300.0 µg/mL)</td>
</tr>
<tr>
<td>bis(2-Ethylhexyl)phthalate</td>
<td>(15.0 µg/mL)</td>
</tr>
<tr>
<td>Pentachlorophenol</td>
<td>(1.4 µg/mL)</td>
</tr>
<tr>
<td>Perylene</td>
<td>(0.1 µg/mL)</td>
</tr>
<tr>
<td>Sulfur</td>
<td>(0.5 µg/mL)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Instrument Performance Check Solution</th>
<th>1 x 1 mL</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-1653-TS</td>
<td>50 µg/mL in Acetone</td>
</tr>
<tr>
<td>DFTPP</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PMI Internal Standard</th>
<th>1 x 1 mL</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-625-07-10X-SET</td>
<td>2.0 mg/mL in CHCl₃</td>
</tr>
<tr>
<td>2,2’-Difluorobiphenyl</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PMI Labeled Stock Standard</th>
<th>1 x 1 mL</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-1665-SET</td>
<td>2000 µg/mL each in CHCl₃</td>
</tr>
<tr>
<td>Aniline</td>
<td>Dimethylformamide</td>
</tr>
<tr>
<td>N,N-Dimethylethylamine</td>
<td>2-Picoline</td>
</tr>
<tr>
<td>N,N-Dimethylaniline</td>
<td>Pyridine</td>
</tr>
</tbody>
</table>

### Method 1666A

**Volatile Organic Compounds Specific to the Pharmaceutical Manufacturing Industry (PMI) by Isotope Dilution GC/MS**

<table>
<thead>
<tr>
<th>PMI Purgeable Analytes</th>
<th>5 x 1 mL</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-1666A-SET-R2</td>
<td>Set includes 4 products listed below plus M-1666A-LAB</td>
</tr>
<tr>
<td>M-1666A-SSA</td>
<td>1 x 1 mL</td>
</tr>
<tr>
<td>1000 µg/mL in MeOH</td>
<td></td>
</tr>
<tr>
<td>Isopropyl ether</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PMI Stock Standard A</th>
<th>1 x 1 mL</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-1666A-SSA-R2</td>
<td>At stated conc. in MeOH</td>
</tr>
<tr>
<td>1-Butanol</td>
<td>(2500 µg/mL)</td>
</tr>
<tr>
<td>t-Butanol</td>
<td>(2500 µg/mL)</td>
</tr>
<tr>
<td>2-Furaldehyde</td>
<td>(2500 µg/mL)</td>
</tr>
<tr>
<td>Isobutylaldehyde</td>
<td>(2500 µg/mL)</td>
</tr>
<tr>
<td>Isopropanol</td>
<td>(1000 µg/mL)</td>
</tr>
<tr>
<td>4-Methyl-2-pentanone</td>
<td>(1000 µg/mL)</td>
</tr>
<tr>
<td>1-Pentanol</td>
<td>(2500 µg/mL)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PMI Stock Standard B</th>
<th>1 x 1 mL</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-1666A-SSB</td>
<td>At stated conc. in MeOH</td>
</tr>
<tr>
<td>Cyclohexane</td>
<td>(1000 µg/mL)</td>
</tr>
<tr>
<td>N-Heptane</td>
<td>(1000 µg/mL)</td>
</tr>
<tr>
<td>n-Hexane</td>
<td>(1000 µg/mL)</td>
</tr>
<tr>
<td>Methyl formate</td>
<td>(2500 µg/mL)</td>
</tr>
<tr>
<td>Tetrahydrafuran</td>
<td>(1000 µg/mL)</td>
</tr>
<tr>
<td>Trifluoromethane</td>
<td>(1000 µg/mL)</td>
</tr>
<tr>
<td>m-Xylene</td>
<td>(1000 µg/mL)</td>
</tr>
<tr>
<td>α-Xylene</td>
<td>(1000 µg/mL)</td>
</tr>
<tr>
<td>p-Xylene</td>
<td>(1000 µg/mL)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PMI Stock Standard C</th>
<th>1 x 1 mL</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-1666A-SSC</td>
<td>1000 µg/mL each in MeOH</td>
</tr>
<tr>
<td>Butyl acetate</td>
<td>Isopropyl acetate</td>
</tr>
<tr>
<td>Ethyl acetate</td>
<td>Pentyl acetate</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Instrument Performance Check Solution</th>
<th>1 x 1 mL</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-1666A-DI-10X</td>
<td>250 µg/mL in MeOH</td>
</tr>
<tr>
<td>p-Bromofluorobenzene</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PMI Resolution Standard</th>
<th>1 x 1 mL</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-1666A-RES</td>
<td>1000 µg/mL each in MeOH</td>
</tr>
<tr>
<td>o-Xylene</td>
<td>o-Xylene-d₁₀</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Instrument Performance Check Solution</th>
<th>1 x 1 mL</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-1666A-DI-10X-PAK</td>
<td>5 x 1 mL</td>
</tr>
<tr>
<td>p-Bromofluorobenzene</td>
<td></td>
</tr>
</tbody>
</table>

### Method 1666A DI-1 SET

<table>
<thead>
<tr>
<th>PMI Labeled Standard Direct Injection</th>
<th>1 x 1 mL</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-1666-DI-10X-ADD1</td>
<td>2500 µg/mL in Water</td>
</tr>
<tr>
<td>Methylamine</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PMI Standard Direct Injection</th>
<th>1 x 1 mL</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-1666-DI-R1</td>
<td>At stated conc. in Water</td>
</tr>
<tr>
<td>Acetonitrile</td>
<td>(1000 µg/mL)</td>
</tr>
<tr>
<td>Diethylamine</td>
<td>(2500 µg/mL)</td>
</tr>
<tr>
<td>Dimethylamine</td>
<td>(1000 µg/mL)</td>
</tr>
<tr>
<td>Dimethyl sulfoxide</td>
<td>(1000 µg/mL)</td>
</tr>
<tr>
<td>Ethanol</td>
<td>(1000 µg/mL)</td>
</tr>
<tr>
<td>Ethylene glycol</td>
<td>(2500 µg/mL)</td>
</tr>
<tr>
<td>Methanol</td>
<td>(1000 µg/mL)</td>
</tr>
<tr>
<td>2-Methoxyethanol</td>
<td>(1000 µg/mL)</td>
</tr>
<tr>
<td>1-Propanol</td>
<td>(1000 µg/mL)</td>
</tr>
<tr>
<td>Triethylamine</td>
<td>(2500 µg/mL)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PMI Labeled Standard Direct Injection</th>
<th>1 x 1 mL</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-1666-DI-LAB</td>
<td>1000 µg/mL each in Water</td>
</tr>
<tr>
<td>Acetonitrile-d₁</td>
<td>Methanol-d₁</td>
</tr>
<tr>
<td>Dimethyl sulfoxide-d₁</td>
<td>n-Propanol-1-d</td>
</tr>
<tr>
<td>Ethanol-d₁</td>
<td>Tetrahydrofuran-d₈</td>
</tr>
</tbody>
</table>
### Method 1667A

**Formaldehyde, Isobutyraldehyde & Furfural by Derivatization followed by HPLC for PMI pollutants.**

<table>
<thead>
<tr>
<th>PMI Carbonyl &amp; Carbonyl Derivative</th>
<th>PMI Carbonyl DNPH Set</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PMI Carbonyl Set</strong></td>
<td><strong>PMI Carbonyl DNPH Set</strong></td>
</tr>
<tr>
<td>M-1667A-SET 3 x 1 mL</td>
<td>M-1667A-DNPH-SET 3 x 1 mL</td>
</tr>
<tr>
<td>Set includes 3 individual products listed below</td>
<td>Set includes 3 individual products listed below</td>
</tr>
<tr>
<td>Each at 1.0 mg/mL in AcCN</td>
<td>Each at 1.0 mg/mL in AcCN</td>
</tr>
<tr>
<td>Formaldehyde (M-8315-R3-10-10X)</td>
<td>Formaldehyde-DNPH (M-1667A-01-DNPH)</td>
</tr>
<tr>
<td>2-Furaldehyde (M-1667A-02)</td>
<td>2-Furaldehyde-DNPH (M-1667A-02-DNPH)</td>
</tr>
<tr>
<td>Isobutyraldehyde (M-1667A-03)</td>
<td>Isobutyraldehyde-DNPH (M-1667A-03-DNPH)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PMI QA/QC Carbonyl Mix</th>
<th>PMI QA/QC Carbonyl Deriv. DNPH Mix</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-1667A-M 1 x 1 mL</td>
<td>M-1667A-DNPH 1 x 1 mL</td>
</tr>
<tr>
<td>M-1667A-M-PAK 5 x 1 mL</td>
<td>M-1667A-DNPH-PAK 5 x 1 mL</td>
</tr>
<tr>
<td>250 µg/mL each in AcCN 3 comps.</td>
<td>250 µg/mL each in AcCN 3 comps.</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>Formaldehyde-DNPH</td>
</tr>
<tr>
<td>Isobutyraldehyde</td>
<td>2-Furaldehyde-DNPH</td>
</tr>
<tr>
<td>2-Furaldehyde</td>
<td>Isobutyraldehyde-DNPH</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PMI Derivatization Reagent</th>
<th>Polymethine glycol - 600 by Deriv. &amp; HPLC</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-1667A-DERIV-10ML-PAK 5 x 10 mL</td>
<td><strong>Poly(ethylene glycol)-600</strong></td>
</tr>
<tr>
<td>1.0 mg/mL in Ethanol</td>
<td>1 x 1 mL</td>
</tr>
<tr>
<td>2,4-Dinitrophenylhydrazine (DNPH)</td>
<td>5 x 1 mL</td>
</tr>
</tbody>
</table>

**Bulk / Custom Packaging**

For bulk quantity purchases of this or other Derivatization Reagent(s) contact us. Reduce your sample preparation costs with Ready-to-Use disposable Derivatization Reagents or standards. We can reduce your costs using our Cozzoli Auto Filling/ Sealing Machine to package just the right size product for your application.

---

### Method 1671

**Volatile Organic Compounds Specific to the Pharmaceutical Mfr. Industry by GC/FID**

<table>
<thead>
<tr>
<th>PMI Internal Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-1671A-IS</td>
</tr>
<tr>
<td>M-1671A-IS-PAK 5 x 1 mL</td>
</tr>
<tr>
<td>1.0 mg/mL in Water</td>
</tr>
<tr>
<td>Tetrahydrofuran</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PMI Standard Direct Injection</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-1666A-DI 1 x 1 mL</td>
</tr>
<tr>
<td>At stated conc. in Water</td>
</tr>
<tr>
<td>12 comps.</td>
</tr>
<tr>
<td>Acetonitrile (1000 µg/mL)</td>
</tr>
<tr>
<td>Formamide (5000 µg/mL)</td>
</tr>
<tr>
<td>24500 µg/mL</td>
</tr>
<tr>
<td>Methanol (1000 µg/mL)</td>
</tr>
<tr>
<td>2-Methoxyethanol (1000 µg/mL)</td>
</tr>
<tr>
<td>Dimethylamine (1000 µg/mL)</td>
</tr>
<tr>
<td>Methylene (1000 µg/mL)</td>
</tr>
<tr>
<td>1-Propanol (1000 µg/mL)</td>
</tr>
<tr>
<td>Ethanol (1000 µg/mL)</td>
</tr>
<tr>
<td>Triethylamine (2500 µg/mL)</td>
</tr>
<tr>
<td>Diethylene glycol monohexyl ether</td>
</tr>
</tbody>
</table>

### Method 1673

**Polyethylene glycol - 600 by Deriv. & HPLC**

<table>
<thead>
<tr>
<th>Poly(ethylene glycol)-600</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-1673 1 x 1 mL</td>
</tr>
<tr>
<td>M-1673-PAK 5 x 1 mL</td>
</tr>
<tr>
<td>2.5 mg/mL in Tetrahydrofuran</td>
</tr>
<tr>
<td>Polymethine glycol-600</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Surrogate Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-1673-SS 1 x 1 mL</td>
</tr>
<tr>
<td>M-1673-SS-PAK 5 x 1 mL</td>
</tr>
<tr>
<td>1.0 mg/mL in Tetrahydrofuran</td>
</tr>
<tr>
<td>Diethylene glycol monohexyl ether</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Derivatization Reagent</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-1673-DERIV-5ML 1 x 5 mL</td>
</tr>
<tr>
<td>3,5-Dinitrobenzyl chloride</td>
</tr>
</tbody>
</table>

**Method 1666 & 1667**

Pharmaceutical Waste Discharge Standards
Refrigerants
Chlorofluorohydrocarbons (CFCs) are ozone-depleting substances that were used primarily in air-conditioning and refrigeration systems. Under the Clean Air Act, CFCs were to be totally phased out of production in the U.S. by January 1, 1996. In order to monitor various refrigerants that may be present in the environment, the following single & multi-component mixes are offered to help labs screen for these compounds.

<table>
<thead>
<tr>
<th>Freon #</th>
<th>Description</th>
<th>Cat. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>13b1</td>
<td>Bromotrifluoromethane (01)</td>
<td>M-REF-01</td>
</tr>
<tr>
<td>142b</td>
<td>1-Chloro-1,1-difluoroethane (02)</td>
<td>M-REF-02</td>
</tr>
<tr>
<td>22</td>
<td>Chlorodifluoromethane (03)</td>
<td>M-REF-03</td>
</tr>
<tr>
<td>160</td>
<td>Chloroethane (04)</td>
<td>M-REF-04</td>
</tr>
<tr>
<td>40</td>
<td>Chloromethane (05)</td>
<td>M-REF-05</td>
</tr>
<tr>
<td>115</td>
<td>Chloropentafluoroethane (06)</td>
<td>M-REF-06</td>
</tr>
<tr>
<td>13</td>
<td>Chlorotrifluoromethane (07)</td>
<td>M-REF-07</td>
</tr>
<tr>
<td>12</td>
<td>Dichlorodifluoromethane (08)</td>
<td>M-REF-08</td>
</tr>
<tr>
<td>21</td>
<td>Dichlorofluoromethane (09)</td>
<td>M-REF-09</td>
</tr>
<tr>
<td>114</td>
<td>1,2-Dichloro-1,1,2,2-tetrafluoroethane (10)</td>
<td>M-REF-10</td>
</tr>
<tr>
<td>152a</td>
<td>1,1,1-Trifluoroethane (11)</td>
<td>M-REF-11</td>
</tr>
<tr>
<td>134a</td>
<td>Tetrafluoroethane (12)</td>
<td>M-REF-12</td>
</tr>
<tr>
<td>11</td>
<td>Trichlorofluoromethane (13)</td>
<td>M-REF-13</td>
</tr>
<tr>
<td>113</td>
<td>1,1,2-Trichloro-1,2,2-trifluoroethane (14)</td>
<td>M-REF-14</td>
</tr>
<tr>
<td>23</td>
<td>Trifluoromethane (15)</td>
<td>M-REF-15</td>
</tr>
</tbody>
</table>

Above individual analytes are at 0.2 mg/mL in MeOH

M-REF-SET set of 15 x 1 mL  
Each at 0.2 mg/mL in MeOH (above 15 analytes)

<table>
<thead>
<tr>
<th>Freon #</th>
<th>Description</th>
<th>Cat. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>12B1</td>
<td>Bromochlorodifluoromethane (01)</td>
<td>M-REF-X-01</td>
</tr>
<tr>
<td>124</td>
<td>2-Chloro-1,1,1,2-tetrafluoroethane (02)</td>
<td>M-REF-X-02</td>
</tr>
<tr>
<td>114B2</td>
<td>1,2-Dibromotetrafluoroethane (03)</td>
<td>M-REF-X-03</td>
</tr>
<tr>
<td>141b</td>
<td>1,1-Dichloro-1,1,2-tetrafluoroethane (04)</td>
<td>M-REF-X-04</td>
</tr>
<tr>
<td>123</td>
<td>2,2-Dichloro-1,1,1-trifluoroethane (05)</td>
<td>M-REF-X-05</td>
</tr>
<tr>
<td>125</td>
<td>Pentfluoroethane (06)</td>
<td>M-REF-X-06</td>
</tr>
<tr>
<td>134</td>
<td>1,1,2,2-Tetrafluoroethane (07)</td>
<td>M-REF-X-07</td>
</tr>
<tr>
<td>113a</td>
<td>1,1,1-Trichlorotrifluoroethane</td>
<td>PS-980C-19</td>
</tr>
<tr>
<td>143a</td>
<td>1,1,1-Trifluoroethane (08)</td>
<td>M-REF-X-08</td>
</tr>
</tbody>
</table>

Above individual analytes are at 0.2 mg/mL in MeOH

M-REF-X-SET-R1 set of 9 x 1 mL  
Each at 0.2 mg/mL in MeOH (above 8 analytes)

For Fluorocarbon Refrigerants Kit, see “Chemical Kits” section, Cat. No. PS-980C
### Method 5041: VOCs From Stack Gas Effluents

**VOCs From Stack Gas Effluents of Hazardous Waste Incinerators Using Volatile Organic Sampling Train (VOST) Methodology by Wide-Bore Capillary Column Technique**

<table>
<thead>
<tr>
<th>Compound</th>
<th>Concentration</th>
<th>MeOH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td>258 mg/mL</td>
<td>1 mL</td>
</tr>
<tr>
<td>Acetone</td>
<td>cis-1,3-Dichloropropene</td>
<td>258 mg/mL</td>
</tr>
<tr>
<td>Acrylonitrile</td>
<td>trans-1,3-Dichloropropene</td>
<td>258 mg/mL</td>
</tr>
<tr>
<td>Bromodichloromethane</td>
<td>Toluene</td>
<td>1 mL</td>
</tr>
<tr>
<td>Bromoform</td>
<td>Methylene chloride</td>
<td>1 mL</td>
</tr>
<tr>
<td>Bromomethane</td>
<td>Styrene</td>
<td>1 mL</td>
</tr>
<tr>
<td>Carbon disulfide</td>
<td>1,2,2,2-Tetrachloroethane</td>
<td>1 mL</td>
</tr>
<tr>
<td>Carbon tetrachloride</td>
<td>Tetrachloroethene</td>
<td>1 mL</td>
</tr>
<tr>
<td>Chlorobenzene</td>
<td>Toluene</td>
<td>1 mL</td>
</tr>
<tr>
<td>Chlorodibromomethane</td>
<td>1,1,1-Trichloroethane</td>
<td>1 mL</td>
</tr>
<tr>
<td>Chloroethene</td>
<td>1,1,2-Trichloroethane</td>
<td>1 mL</td>
</tr>
<tr>
<td>Chloroform</td>
<td>Trichloroethene</td>
<td>1 mL</td>
</tr>
<tr>
<td>Chloromethane</td>
<td>Trichlorofluoromethane</td>
<td>1 mL</td>
</tr>
<tr>
<td>Dibromomethane</td>
<td>1,2,3-Trichloropropane</td>
<td>1 mL</td>
</tr>
<tr>
<td>1,1-Dichloroethene</td>
<td>Vinyl chloride</td>
<td>1 mL</td>
</tr>
<tr>
<td>1,2-Dichloroethene</td>
<td>o-Xylenes</td>
<td>1 mL</td>
</tr>
<tr>
<td>1,1-Dichloroethene</td>
<td>M-Xylenes</td>
<td>1 mL</td>
</tr>
<tr>
<td>1,2-Dichloroethene</td>
<td>200 µg/mL</td>
<td>1 mL</td>
</tr>
<tr>
<td>trans-1,2-Dichloroethene</td>
<td>p-Xylenes</td>
<td>1 mL</td>
</tr>
<tr>
<td>trans (0.94 x conc.)</td>
<td><strong>NEW</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Internal/Surrogate Standard**

<table>
<thead>
<tr>
<th>Compound</th>
<th>Concentration</th>
<th>MeOH</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLP-PIPS</td>
<td>1 x 1 mL</td>
<td>1 mL</td>
</tr>
<tr>
<td>CLP-PIPS-PAK</td>
<td>5 x 1 mL</td>
<td>5 mL</td>
</tr>
<tr>
<td>Bromochloromethane</td>
<td>2.5 mg/mL</td>
<td>1 mL</td>
</tr>
<tr>
<td>Chloroform</td>
<td>Chlorobenzene-d_5</td>
<td>2.5 mg/mL</td>
</tr>
<tr>
<td>p-Bromofluorobenzene</td>
<td>1,2-Dichloroethane-d_5</td>
<td>2.5 mg/mL</td>
</tr>
<tr>
<td>Chlorobenzene-d_5</td>
<td>Toluene-d_5</td>
<td>1 mL</td>
</tr>
</tbody>
</table>

**Calibration Check Compounds (CCC)**

<table>
<thead>
<tr>
<th>Compound</th>
<th>Concentration</th>
<th>MeOH</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLP-020-10X</td>
<td>1 x 1 mL</td>
<td>1 mL</td>
</tr>
<tr>
<td>CLP-020-10X-PAK</td>
<td>5 x 1 mL</td>
<td>5 mL</td>
</tr>
<tr>
<td>Chloroform</td>
<td>Ethylbenzene</td>
<td>1 mL</td>
</tr>
<tr>
<td>1,1-Dichloroethene</td>
<td>Toluene</td>
<td>1 mL</td>
</tr>
<tr>
<td>1,2-Dichloropropane</td>
<td>Vinyl chloride</td>
<td>1 mL</td>
</tr>
</tbody>
</table>

**System Performance Check Compounds (SPCC)**

<table>
<thead>
<tr>
<th>Compound</th>
<th>Concentration</th>
<th>MeOH</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLP-021-10X</td>
<td>1 x 1 mL</td>
<td>1 mL</td>
</tr>
<tr>
<td>CLP-021-10X-PAK</td>
<td>5 x 1 mL</td>
<td>5 mL</td>
</tr>
<tr>
<td>Bromoform</td>
<td>1,1-Dichloroethane</td>
<td>1 mL</td>
</tr>
<tr>
<td>Chlorobenzene</td>
<td>1,1,2,2-Tetrachloroethane</td>
<td>1 mL</td>
</tr>
<tr>
<td>Chloromethane</td>
<td>1,1-Dichloroethane</td>
<td>1 mL</td>
</tr>
</tbody>
</table>

**Instrument Performance Check Solution**

<table>
<thead>
<tr>
<th>Compound</th>
<th>Concentration</th>
<th>MeOH</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLP-004-100X</td>
<td>1 x 1 mL</td>
<td>1 mL</td>
</tr>
<tr>
<td>CLP-004-100X-PAK</td>
<td>5 x 1 mL</td>
<td>5 mL</td>
</tr>
<tr>
<td>p-Bromofluorobenzene</td>
<td>2500 µg/mL</td>
<td>1 mL</td>
</tr>
</tbody>
</table>

---

### Method 467: VOCs From Stack Gas Effluents

**USP/National Formulary VOC Mixture**

- **NF-467**: 1 x 1 mL
- **NF-467-PAK**: 5 x 1 mL

<table>
<thead>
<tr>
<th>Compound</th>
<th>Concentration</th>
<th>MeOH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td>200 µg/mL</td>
<td>1 mL</td>
</tr>
<tr>
<td>Chloroform</td>
<td>100 µg/mL</td>
<td>1 mL</td>
</tr>
<tr>
<td>1,4-Dioxane</td>
<td>200 µg/mL</td>
<td>1 mL</td>
</tr>
<tr>
<td>1,2-Dichloroethene</td>
<td>(200 µg/mL)</td>
<td>1 mL</td>
</tr>
<tr>
<td>Ethylene oxide</td>
<td></td>
<td>1 mL</td>
</tr>
</tbody>
</table>

**USP/National Formulary VOC Mixture**

- **NF-467-R**: 1 x 1 mL
- **NF-467-R-PAK**: 5 x 1 mL

<table>
<thead>
<tr>
<th>Compound</th>
<th>Concentration</th>
<th>MeOH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td>2 µg/mL</td>
<td>1 mL</td>
</tr>
<tr>
<td>Chloroform</td>
<td>60 µg/mL</td>
<td>1 mL</td>
</tr>
<tr>
<td>p-Dioxane</td>
<td>380 µg/mL</td>
<td>1 mL</td>
</tr>
<tr>
<td>Dichloromethane</td>
<td></td>
<td>1 mL</td>
</tr>
</tbody>
</table>

**USP/National Formulary VOC Mixture**

- **NF-467-R3**: 1 x 1 mL
- **NF-467-R3-PAK**: 5 x 1 mL

<table>
<thead>
<tr>
<th>Compound</th>
<th>Concentration</th>
<th>MeOH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td>2 µg/mL</td>
<td>1 mL</td>
</tr>
<tr>
<td>Chloroform</td>
<td>100 µg/mL</td>
<td>1 mL</td>
</tr>
<tr>
<td>1,4-Dioxane</td>
<td>200 µg/mL</td>
<td>1 mL</td>
</tr>
<tr>
<td>Ethylene oxide</td>
<td></td>
<td>1 mL</td>
</tr>
</tbody>
</table>

**USP/National Formulary VOC Mixture**

- **NF-467-R4**: 1 x 1 mL
- **NF-467-R4-PAK**: 5 x 1 mL

<table>
<thead>
<tr>
<th>Compound</th>
<th>Concentration</th>
<th>MeOH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td>2 µg/mL</td>
<td>1 mL</td>
</tr>
<tr>
<td>Chloroform</td>
<td>60 µg/mL</td>
<td>1 mL</td>
</tr>
<tr>
<td>p-Dioxane</td>
<td>380 µg/mL</td>
<td>1 mL</td>
</tr>
<tr>
<td>Dichloromethane</td>
<td></td>
<td>1 mL</td>
</tr>
</tbody>
</table>

**Hazardous Substances List**

**Vocals**

- Acetone
- 2-Butanone
- Carbon disulfide
- Chloroform
- Vinyl acetate
- o-Xylene

---

**Method 5041**

- **Method 5041 VOCs From Stack Gas Effluents**
- **Method 467 VOCs From Stack Gas Effluents**
- **Hazardous Substances List**
- **Vocals**

---

**Quality System is Certified to comply with the International ISO 9001 Quality Standard**
The State of Minnesota Dept. of Health mandates analysis of these compounds.

### Method 465-D

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
<th>Concentration</th>
<th>Volume</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-465-D-SET-PAK</td>
<td>5 x (3 x 1 mL)</td>
<td>1,1-Dichloropropene</td>
<td>3 µg/mL</td>
<td>$100 / 5 x (3 x 1 mL)</td>
</tr>
<tr>
<td>M-465-D-ADD-R</td>
<td>1 x 1 mL</td>
<td>1,1-Dichloropropene</td>
<td>1 µg/mL</td>
<td>$30 / 1 x 1 mL</td>
</tr>
</tbody>
</table>

**Liquids**

- **M-465-D-ADD-R**
  - Concentration: 0.2 mg/mL each in MeOH
  - Volume: 7 comps.
  - Price: $75 / 1 x 1 mL

**Gases**

- **M-465-D-ADD-R**
  - Concentration: 0.2 mg/mL each in MeOH
  - Volume: 7 comps.

**Pesticides & Herbicides**

The State of Minnesota Dept. of Agriculture (MDA) mandates analysis of these compounds. AccuStandard has formulated the following two standards for those laboratories participating in the Minnesota Department of Agriculture pesticide monitoring programs operated under EPA FIFRA guidelines. These standards have proven useful to laboratories requested by contractors to perform pesticide incident investigations. AccuStandard can also custom formulate the analytes required by the MDA into a standard to meet your specific method application.

**List 1 - Pesticide Standard**

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
<th>Concentration</th>
<th>Volume</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDA-PEST-01</td>
<td>500 µg/mL each in CHCl₃</td>
<td>1 x 1 mL</td>
<td>21 comps.</td>
<td></td>
</tr>
<tr>
<td>Acetochlor</td>
<td>Ethylfluralin</td>
<td>Prometon</td>
<td>$420 / 5 x 1 mL</td>
<td></td>
</tr>
<tr>
<td>Alachlor</td>
<td>Dyfonate</td>
<td>Propazine</td>
<td>$420 / 5 x 1 mL</td>
<td></td>
</tr>
<tr>
<td>Atrazine</td>
<td>Metolachlor</td>
<td>Simazine</td>
<td>$420 / 5 x 1 mL</td>
<td></td>
</tr>
<tr>
<td>Dursban</td>
<td>Metribuzin</td>
<td>Terbufos</td>
<td>$420 / 5 x 1 mL</td>
<td></td>
</tr>
<tr>
<td>Cyanazine</td>
<td>Pendimethalin</td>
<td>Triallate</td>
<td>$420 / 5 x 1 mL</td>
<td></td>
</tr>
<tr>
<td>Desethyl atrazine</td>
<td>Phorate</td>
<td>Trifluralin</td>
<td>$420 / 5 x 1 mL</td>
<td></td>
</tr>
<tr>
<td>Atrazine - desisopropyl</td>
<td>Propachlor</td>
<td>EPTC</td>
<td>$420 / 5 x 1 mL</td>
<td></td>
</tr>
</tbody>
</table>

**List 2 - Herbicide Acids Standards**

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
<th>Concentration</th>
<th>Volume</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDA-HERB-01</td>
<td>At stated conc. in Acetone</td>
<td>1 x 1 mL</td>
<td>9 comps.</td>
<td></td>
</tr>
<tr>
<td>2,4-D</td>
<td>Triclopyr</td>
<td>(0.1 mg/mL)</td>
<td>$12 / 1 x 1 mL</td>
<td></td>
</tr>
<tr>
<td>2,4-DB</td>
<td>Prometon</td>
<td>(0.1 mg/mL)</td>
<td>$12 / 1 x 1 mL</td>
<td></td>
</tr>
<tr>
<td>2,4-T</td>
<td>Triclopyr</td>
<td>(0.1 mg/mL)</td>
<td>$12 / 1 x 1 mL</td>
<td></td>
</tr>
<tr>
<td>Bentazon</td>
<td>(0.1 mg/mL)</td>
<td>$12 / 1 x 1 mL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Minnesota Method Revision**

AccuStandard introduces a new standard that covers the expanded analyte list for the state of Minnesota Department of Agriculture method (465-D). This product contains all the analytes in one multi-component standard, has the highest concentration in the industry, and eliminates the need to combine more than one standard to cover the complete analyte list.

As an added feature, if you purchase the single component Pesticide Butylate (Cat. # P-088S-10X) for $1 x 1 mL in conjunction with the new MDA 465 formulation you will have all the required analytes for the Wisconsin DATCP pesticide program. Since many of the labs perform work in both Minnesota and Wisconsin, a single calibration curve can be established relatively easily to monitor analytes covered by both methods.

**List 1 - Pesticide Standard**

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
<th>Concentration</th>
<th>Volume</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDA-PEST-01-R1</td>
<td>500 µg/mL each in CHCl₃</td>
<td>1 x 1 mL</td>
<td>22 comps.</td>
<td></td>
</tr>
<tr>
<td>Acetochlor</td>
<td>Dyfonate</td>
<td>Prometon</td>
<td>$420 / 5 x 1 mL</td>
<td></td>
</tr>
<tr>
<td>Alachlor</td>
<td>EPTC</td>
<td>Propazine</td>
<td>$420 / 5 x 1 mL</td>
<td></td>
</tr>
<tr>
<td>Atrazine</td>
<td>Metolachlor</td>
<td>Simazine</td>
<td>$420 / 5 x 1 mL</td>
<td></td>
</tr>
<tr>
<td>Dursban</td>
<td>Metribuzin</td>
<td>Terbufos</td>
<td>$420 / 5 x 1 mL</td>
<td></td>
</tr>
<tr>
<td>Cyanazine</td>
<td>Pendimethalin</td>
<td>Triallate</td>
<td>$420 / 5 x 1 mL</td>
<td></td>
</tr>
<tr>
<td>Desethyl atrazine</td>
<td>Phorate</td>
<td>Trifluralin</td>
<td>$420 / 5 x 1 mL</td>
<td></td>
</tr>
<tr>
<td>Atrazine - desisopropyl</td>
<td>Propachlor</td>
<td>EPTC</td>
<td>$420 / 5 x 1 mL</td>
<td></td>
</tr>
</tbody>
</table>

**NEW**

P-088S-10X

100 µg/mL in MeOH | 1 x 1 mL

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

#### F001 & F002 Solvent List Components

<table>
<thead>
<tr>
<th>FL-0102</th>
<th>1 x 1 mL</th>
<th>2 x mg/mL each in MeOH</th>
<th>10 comps.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon tetrachloride</td>
<td>1,1,2-Trichloroethane</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chlorobenzene</td>
<td>Trichloroethene</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,2-Dichlorobenzene</td>
<td>1,1,2-Trichloro-1,2,2-trifluoroethane</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methylene chloride</td>
<td>Trichlorofluoromethane</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tetrachloroethene</td>
<td>1,1,1-Trichloroethane</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>FL-0003</th>
<th>1 x 1 mL</th>
<th>2 x mg/mL in MeOH</th>
<th>10 comps.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>Methyl isobutyl ketone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>n-Butanol</td>
<td>m-Xylene</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyclohexanone</td>
<td>o-Xylene</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethyl acetate</td>
<td>p-Xylene</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethyl ether</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### F004 List Component Mixes

<table>
<thead>
<tr>
<th>FL-0004-CR</th>
<th>1 x 1 mL</th>
<th>2 x mg/mL in MeOH</th>
<th>3 comps.</th>
</tr>
</thead>
<tbody>
<tr>
<td>m-Cresol</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o-Cresol</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FL-0004-CA</th>
<th>1 x 1 mL</th>
<th>2 x mg/mL in MeOH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cresylic acid</td>
<td>(technical mixture of phenol, cresols &amp; xylenes)</td>
<td></td>
</tr>
</tbody>
</table>

#### F005 List Components (includes Nitrobenzene)

<table>
<thead>
<tr>
<th>FL-0005-NB</th>
<th>1 x 1 mL</th>
<th>2 x mg/mL each in MeOH</th>
<th>9 comps.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td>2-Nitropropane</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbon disulfide</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-Ethoxyethanol</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isobutanol</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methyl ethyl ketone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nitrobenzene</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Additional Alcohol Solvents

<table>
<thead>
<tr>
<th>FL-OADD</th>
<th>1 x 1 mL</th>
<th>2 x mg/mL each in H₂O</th>
<th>3 comps.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isopropanol</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

QC Department

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ISO 9001 Certificate Number: 3/092