Improve Underground Storage Tank Compliance Monitoring with Restek CRMs

• Precisely prepared composite and single source standards.
• Extensive offering for state-specific methods.
• Produced in our ISO-accredited labs to satisfy requirements for certified reference materials (CRMs).
Monitoring underground storage tanks (UST) for leaks is an ongoing process. The deadline to upgrade older tanks to new federal requirements, as specified in 40 CFR 280, has long since passed. However, many tanks in the United States have yet to be upgraded or closed. Consequently, leaking underground storage tanks (LUST) remain an active area of research. Many states continue to modify existing analytical methods, with several states now using risk-based management of the compounds involved. These methods often pose challenges to the analyst and require unique mixtures for calibration and matrix spike samples.

Restek continues to track new developments in UST/LUST monitoring and to respond with calibration mixes to meet these needs. For a complete listing of all of our fuel standards, visit www.restek.com

**Fuel Composite Standards**

**Unleaded Gasoline Composite Standard**
- Unleaded gasoline composite standards are comprised of three separate sources each of 87, 89, and 93 octane blended in equal portions.
- Gasoline standards may exhibit lot-to-lot variation.

Unleaded gasoline composite (80086-61-9)
- 2,500 µg/mL in P&T methanol, 1 mL/ampul cat.# 30081 (ea.)
- 50,000 µg/mL in P&T methanol, 1 mL/ampul cat.# 30205 (ea.)
- 50,000 µg/mL in P&T methanol, 5 mL/ampul cat.# 30206 (ea.)

**Diesel Fuel #2 Composite Standard**
- Diesel Fuel composite standards are comprised of three separate sources blended in equal portions.
- Diesel Fuel standards may exhibit lot-to-lot variation.

Diesel fuel #2 composite (68334-30-5)
- 5,000 µg/mL in methylene chloride, 1 mL/ampul cat.# 31093 (ea.)
- 50,000 µg/mL in methylene chloride, 1 mL/ampul cat.# 31258 (ea.)
- 50,000 µg/mL in methylene chloride, 5 mL/ampul cat.# 31259 (ea.)

**Kerosene Composite Standard**
- Kerosene composite standards are comprised of three separate sources blended in equal portions.
- Kerosene standards may exhibit lot-to-lot variation.

Kerosene composite (84742-81-0)
- 5,000 µg/mL in methylene chloride, 1 mL/ampul cat.# 31094 (ea.)
- 50,000 µg/mL in methylene chloride, 1 mL/ampul cat.# 31256 (ea.)
- 50,000 µg/mL in methylene chloride, 5 mL/ampul cat.# 31257 (ea.)

**Unleaded Gasoline Composite Standard**
- Unleaded gasoline composite standards are comprised of three separate sources each of 87, 89, and 93 octane blended in equal portions.
- Gasoline standards may exhibit lot-to-lot variation.

Unleaded gasoline composite (8006-61-9)
- 2,500 µg/mL in P&T methanol, 1 mL/ampul cat.# 30081 (ea.)
- 50,000 µg/mL in P&T methanol, 1 mL/ampul cat.# 30205 (ea.)
- 50,000 µg/mL in P&T methanol, 5 mL/ampul cat.# 30206 (ea.)

**Motor Oil Composite Standards**

**Motor Oil Composite Standard**
- Prepared from an equal-volume blend of 5W30, 10W30, 10W40, and 20W50 motor oils. After blending, a precisely weighed amount of the composite is added to a volumetric flask to produce the standard.
- Motor Oil standards may exhibit lot-to-lot variation.

Motor oil composite (64742-65-0)
- 5,000 µg/mL in methylene chloride, 1 mL/ampul cat.# 31094 (ea.)
- 50,000 µg/mL in methylene chloride, 1 mL/ampul cat.# 31256 (ea.)
- 50,000 µg/mL in methylene chloride, 5 mL/ampul cat.# 31257 (ea.)

**Used Motor Oil Composite Standard**
- Prepared from an equal-volume blend from five gasoline-powered vehicles (belonging to Restek employees). After blending, a precisely weighed amount of the composite is added to a volumetric flask to produce the standard.
- Motor Oil standards may exhibit lot-to-lot variation.

Used motor oil composite (64742-65-0)
- 50,000 µg/mL in methylene chloride, 1 mL/ampul cat.# 31445 (ea.)

Certified reference materials (CRMs) manufactured and QC-tested in ISO-accredited labs satisfy your ISO requirements.
Single Source Fuels

**Unleaded Gasoline Standard**
Prepared from a single-source (one-refinery) product.
Unleaded gasoline: unweathered (8006-61-9)
5,000 µg/mL in P&T methanol, 1 mL/ampul  cat.# 30096 (ea.)

**Kerosene Standard**
Prepared from a single-source (one-refinery) product.
Kerosene: unweathered (84742-81-0)
5,000 µg/mL in methylene chloride, 1 mL/ampul  cat.# 31229 (ea.)

**Diesel Fuel #2 Standard**
Prepared from a single-source (one-refinery) product.
Diesel fuel #2: unweathered (68334-30-5)
5,000 µg/mL in methylene chloride, 1 mL/ampul  cat.# 31233 (ea.)

**Fuel Oil #4 Standard**
Fuel oil #4 is typically used in limited applications in which the fuel cannot be preheated prior to burning. The fuel is a blend of distillate (fuel oil #2) and residual (fuel oil #6).
Fuel oil #4 (68476-31-3)
5,000 µg/mL in methylene chloride, 1 mL/ampul  cat.# 31216 (ea.)
50,000 µg/mL in methylene chloride, 1 mL/ampul  cat.# 31244 (ea.)

**Fuel Oil #6 Standard**
A high-viscosity residual type of heavy fuel oil requiring preheating to 104–127 °C. This material is also known as residual fuel oil (RFO) or Bunker C.
Fuel oil #6 (68553-00-4)
5,000 µg/mL in methylene chloride, 1 mL/ampul  cat.# 31218 (ea.)
50,000 µg/mL in methylene chloride, 1 mL/ampul  cat.# 31248 (ea.)
50,000 µg/mL in methylene chloride, 5 mL/ampul  cat.# 31249 (ea.)

**Diesel:Biodiesel (80:20) Blend Standard**
The biodiesel component is methyl soyate.
Diesel:biodiesel (80:20) (67784-80-9)
5,000 µg/mL in methylene chloride, 1 mL/ampul  cat.# 31880 (ea.)

**Aviation Gas Standard**
100-octane, low-lead fuel used in piston-type aircraft.
Aviation gas (8006-69-1)
50,000 µg/mL in P&T methanol, 1 mL/ampul  cat.# 30207 (ea.)

**Jet Fuel A Standard**
Jet fuel A (64742-47-8)
5,000 µg/mL in methylene chloride, 1 mL/ampul  cat.# 31215 (ea.)
50,000 µg/mL in methylene chloride, 1 mL/ampul  cat.# 31242 (ea.)
50,000 µg/mL in methylene chloride, 5 mL/ampul  cat.# 31243 (ea.)

**Creosote Oil Standard**
Creosote oil is a coal tar derived distillate.
- For total petroleum hydrocarbon pattern recognition of creosote oil.
- High concentration—50,000 µg/mL in methylene chloride.
Creosote oil (8001-58-9)
50,000 µg/mL in methylene chloride, 1 mL/ampul  cat.# 31838 (ea.)

**Hydraulic Oil Standard**
Hydraulic oil (64741-89-5)
50,000 µg/mL in methylene chloride, 1 mL/ampul  cat.# 31839 (ea.)

**Military Fuels (Jet Propellant)**

**JP-4 Military Fuel Standard**
JP-4 Military fuel (94114-58-6)
5,000 µg/mL in methylene chloride, 1 mL/ampul  cat.# 31219 (ea.)
50,000 µg/mL in methylene chloride, 1 mL/ampul  cat.# 31250 (ea.)
50,000 µg/mL in P&T methanol, 1 mL/ampul  cat.# 30412 (ea.)

**JP-5 Military Fuel Standard**
JP-5 Military fuel (8008-20-6)
50,000 µg/mL in methylene chloride, 1 mL/ampul  cat.# 31252 (ea.)

**JP-8 Military Fuel Standard**
JP-8 Military fuel (94114-58-6)
50,000 µg/mL in methylene chloride, 1 mL/ampul  cat.# 31254 (ea.)

**Fuel Surrogates and Internal Standards**

**Gasoline Surrogates and Internal Standards**
Volume is 1 mL/ampul. Concentration is µg/mL.

<table>
<thead>
<tr>
<th>Compound</th>
<th>CAS #</th>
<th>Solvent</th>
<th>Conc.</th>
<th>cat.#</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Bromo-4-fluorobenzene (BFB)</td>
<td>460-00-4</td>
<td>PTM</td>
<td>2,500</td>
<td>30067</td>
</tr>
<tr>
<td>1-Bromo-4-fluorobenzene (BFB)</td>
<td>460-00-4</td>
<td>PTM</td>
<td>10,000</td>
<td>30082</td>
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<tr>
<td>α,α,α-Trifluorotoluene</td>
<td>98-08-8</td>
<td>PTM</td>
<td>2,500</td>
<td>30068</td>
</tr>
<tr>
<td>α,α,α-Trifluorotoluene</td>
<td>98-08-8</td>
<td>PTM</td>
<td>10,000</td>
<td>30083</td>
</tr>
</tbody>
</table>

**Diesel Surrogates and Internal Standards**
Volume is 1 mL/ampul. Concentration is µg/mL.

<table>
<thead>
<tr>
<th>Compound</th>
<th>CAS #</th>
<th>Solvent</th>
<th>Conc.</th>
<th>cat.#</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Chloro-4-fluorobenzene</td>
<td>352-33-0</td>
<td>PTM</td>
<td>2,500</td>
<td>30066</td>
</tr>
<tr>
<td>1-Chlorooctadecane</td>
<td>3386-33-2</td>
<td>D</td>
<td>10,000</td>
<td>31098</td>
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<tr>
<td>2-Fluorobiphenyl</td>
<td>321-60-8</td>
<td>D</td>
<td>10,000</td>
<td>31096</td>
</tr>
<tr>
<td>o-Terphenyl</td>
<td>84-15-1</td>
<td>D</td>
<td>10,000</td>
<td>31097</td>
</tr>
<tr>
<td>p-Terphenyl</td>
<td>92-94-4</td>
<td>D</td>
<td>10,000</td>
<td>31095</td>
</tr>
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</table>

**Recommended Internal Standard (PID) for EPA GRO Method**
Volume is 1 mL/ampul. Concentration is µg/mL.

<table>
<thead>
<tr>
<th>Compound</th>
<th>CAS #</th>
<th>Solvent</th>
<th>Conc.</th>
<th>cat.#</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Chloro-4-fluorobenzene</td>
<td>352-33-0</td>
<td>PTM</td>
<td>2,500</td>
<td>30066</td>
</tr>
</tbody>
</table>

**Diesel Surrogate and Internal Standards**
Volume is 1 mL/ampul. Concentration is µg/mL.

<table>
<thead>
<tr>
<th>Compound</th>
<th>CAS #</th>
<th>Solvent</th>
<th>Conc.</th>
<th>cat.#</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Chlorooctane</td>
<td>111-85-3</td>
<td>D</td>
<td>10,000</td>
<td>31084</td>
</tr>
<tr>
<td>α,α,α-Trifluorotoluene</td>
<td>98-08-8</td>
<td>PTM</td>
<td>2,500</td>
<td>30068</td>
</tr>
<tr>
<td>α,α,α-Trifluorotoluene</td>
<td>98-08-8</td>
<td>PTM</td>
<td>10,000</td>
<td>30083</td>
</tr>
</tbody>
</table>

**Recommended Internal Standards**
Volume is 1 mL/ampul. Concentration is µg/mL.

<table>
<thead>
<tr>
<th>Compound</th>
<th>CAS #</th>
<th>Solvent</th>
<th>Conc.</th>
<th>cat.#</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-α-Androstane</td>
<td>438-22-2</td>
<td>D</td>
<td>2,000</td>
<td>31065</td>
</tr>
<tr>
<td>o-Terphenyl</td>
<td>318-15-1</td>
<td>A</td>
<td>2,000</td>
<td>31066</td>
</tr>
</tbody>
</table>

**Diesel/Biodiesel Standard**
Diesel:biodiesel (80:20) (67784-80-9)
5,000 µg/mL in methylene chloride, 1 mL/ampul  cat.# 31880 (ea.)

**Creosote Oil Standard**
Creosote oil is a coal tar derived distillate.
- For total petroleum hydrocarbon pattern recognition of creosote oil.
- High concentration—50,000 µg/mL in methylene chloride.
Creosote oil (8001-58-9)
50,000 µg/mL in methylene chloride, 1 mL/ampul  cat.# 31838 (ea.)

**Hydraulic Oil Standard**
Hydraulic oil (64741-89-5)
50,000 µg/mL in methylene chloride, 1 mL/ampul  cat.# 31839 (ea.)

**did you know?**
We have more than 4,000 pure, characterized, neat compounds in our inventory! If you do not see the EXACT mixture you need listed on any of these pages, call us or visit www.restek.com for more information.
Restek carries hydrocarbon standards for these state methods:

- Alaska
- Arizona
- California/Los Angeles
- Connecticut
- Florida
- Massachusetts
- Mississippi
- Northwest (Oregon & Washington)
- Pennsylvania
- Tennessee/Mississippi
- Texas
- Washington
- Wisconsin

Alaska

Alaska Department of Environmental Conservation (ADEC) regulations indicate which products and indicator compounds are to be tested for each petroleum range. The analyst must use the following Alaska Series Methods or appropriate SW-846 method for the indicator compounds. The Alaska UST procedurals manual indicates which products are to be tested for each petroleum range.

AK101 Method for determination of aromatic and aliphatic hydrocarbons in gasoline range organics.

Unleaded Gasoline Composite Standard

Unleaded gasoline composite (8006-61-9)
2,500 µg/mL in P&T methanol, 1 mL/ampul cat.# 30066 (ea.)
50,000 µg/mL in P&T methanol, 1 mL/ampul cat.# 30205 (ea.)
50,000 µg/mL in P&T methanol, 5 mL/ampul cat.# 30206 (ea.)

NOTE: BTEX content of catalog numbers 30081, 30205, and 30206 is not measured. Certified BTEX gasoline standards are available as catalog numbers 30237 and 30485.

1-Chloro-4-fluorobenzene Mix

1-Chloro-4-fluorobenzene (352-33-0)
2,500 µg/mL in P&T methanol, 1 mL/ampul cat.# 30081 (ea.)

1-Bromo-4-fluorobenzene (BFB)

1-Bromo-4-fluorobenzene (BFB) (460-00-4)
2,000 µg/mL in P&T methanol, 1 mL/ampul cat.# 30269 (ea.)
2,500 µg/mL in P&T methanol, 1 mL/ampul cat.# 30307 (ea.)
10,000 µg/mL in P&T methanol, 1 mL/ampul cat.# 30828 (ea.)

α,α,α-Trifluorotoluene

α,α,α-Trifluorotoluene (98-08-8)
2,000 µg/mL in P&T methanol, 1 mL/ampul cat.# 30048 (ea.)
2,500 µg/mL in P&T methanol, 1 mL/ampul cat.# 30068 (ea.)
10,000 µg/mL in P&T methanol, 1 mL/ampul cat.# 30083 (ea.)

AK102 Method for determination of aromatic and aliphatic hydrocarbons in diesel range organics.

DRO Mix (Tennessee/Mississippi) (16 components)

(C10) n-Decane (124-18-5)
(C11) n-Undecane (1120-21-4)
(C12) n-Dodecane (112-40-3)
(C13) n-Tridecane (629-50-5)
(C14) n-Tetradecane (629-59-4)
(C15) n-Pentadecane (629-62-8)
(C16) n-Hexadecane (544-76-3)
(C17) n-Heptadecane (629-78-7)
(C18) n-Octadecane (593-45-3)
(C19) n-Nonadecane (629-94-7)
(C20) n-Eicosane (629-97-0)

(16 components)

Kerosene Composite Standard

Kerosene composite (84742-81-0)
5,000 µg/mL in methylene chloride, 1 mL/ampul cat.# 31094 (ea.)
50,000 µg/mL in methylene chloride, 1 mL/ampul cat.# 31256 (ea.)
50,000 µg/mL in methylene chloride, 5 mL/ampul cat.# 31257 (ea.)

Diesel Fuel #2 Composite Standard

Diesel fuel #2 composite (68334-30-5)
5,000 µg/mL in methylene chloride, 1 mL/ampul cat.# 31093 (ea.)
50,000 µg/mL in methylene chloride, 1 mL/ampul cat.# 31256 (ea.)
50,000 µg/mL in methylene chloride, 5 mL/ampul cat.# 31257 (ea.)

NOTE: A Certified PAH in Diesel standard is available as catalog number 31673.

o-Terphenyl

o-Terphenyl (84-15-1)
2,000 µg/mL in acetone, 1 mL/ampul cat.# 31066 (ea.)
10,000 µg/mL in methylene chloride, 1 mL/ampul cat.# 31097 (ea.)

5-α-Androstone

5-α-Androstone (438-22-2)
2,000 µg/mL in methylene chloride, 1 mL/ampul cat.# 31065 (ea.)

AK103 Method for determination of aromatic and aliphatic hydrocarbons in residual range organics.

Residual Range Calibration Standard (RCS)

(2 components)

SAE30 motor oil:SAE40 motor oil (1:1) (64742-65-0)
50,000 µg/mL in methylene chloride, 1 mL/ampul cat.# 31817 (ea.)

Motor Oil Composite Standard

Motor oil composite (64742-65-0)
50,000 µg/mL in methylene chloride, 1 mL/ampul cat.# 31464 (ea.)

Fuel Oil #6 Standard

A high-viscosity residual type of heavy fuel oil requiring pre-heating to 104–127 °C. This material is also known as residual fuel oil (RFO) or Bunker C.

Fuel oil #6 (68553-00-4)
5,000 µg/mL in methylene chloride, 1 mL/ampul cat.# 31218 (ea.)
50,000 µg/mL in methylene chloride, 1 mL/ampul cat.# 31248 (ea.)
50,000 µg/mL in methylene chloride, 5 mL/ampul cat.# 31249 (ea.)
Arizona

DRO/ORO Calibration Standard (2 components)
10W30 Motor oil (64762-65-0); diesel fuel #2 (68334-30-5) (1:1 blend)
25,000 µg/mL each in methylene chloride, 1 mL/ampul cat.# 31831 (ea.)

α-Terphenyl
α-Terphenyl (84-15-1)
2,000 µg/mL in acetone, 1 mL/ampul cat.# 31066 (ea.)
10,000 µg/mL in methylene chloride, 1 mL/ampul cat.# 31097 (ea.)

California

PVOC Mix (California) (7 components)
Benzene (71-43-2) m-Xylene (108-38-3)
Ethylbenzene (100-41-4) α-Xylene (95-47-6)
Methyl tert-butyl ether (MTBE) (1634-04-4) β-Xylene (106-42-3)
Toluene (108-88-3)
1,000 µg/mL each in P&T methanol, 1 mL/ampul cat.# 30231 (ea.)

California Oxygenates Mix (5 components)
tert-Amyl methyl ether (TAME) (994-05-6), 2,000 µg/mL
tert-Butanol (TBA) (75-65-0), 10,000 µg/mL
Disopropyl ether (DPE) (108-20-3), 2,000 µg/mL
Ethyl-tert-buty ether (ETBE) (637-92-3), 2,000 µg/mL
Methyl tert-butyl ether (MTBE) (1634-04-4), 2,000 µg/mL
In P&T methanol, 1 mL/ampul cat.# 30465 (ea.)

Ethanol
Ethanol (64-17-5)
10,000 µg/mL in DI water, 1 mL/ampul cat.# 30466 (ea.)
2,000 µg/mL in P&T methanol, 1 mL/ampul cat.# 30288 (ea.)

Glycols Standard (2 components)
Ethylene glycol (107-21-1) Propylene glycol (57-55-6)
50,000 µg/mL each in DI water, 1 mL/ampul cat.# 30471 (ea.)

Los Angeles County, CA Well Investigation Program (WIP)*

CA WIP VOA Standard (11 components)
Benzene (71-43-2) Methyl tert-butyl ether (MTBE) (1634-04-4)
Chlorobenzene (108-90-7) Toluene (108-88-3)
1,2-Dichlorobenzene (95-50-1) m-Xylene (108-38-3)
1,3-Dichlorobenzene (54-73-1) α-Xylene (95-47-6)
1,4-Dichlorobenzene (106-46-7) β-Xylene (106-42-3)
Ethylbenzene (100-41-4)
2,000 µg/mL each in P&T methanol, 1 mL/ampul cat.# 30236 (ea.)

* For monitoring samples suspected of gasoline contamination, Los Angeles County requires laboratories to calibrate and report these compounds.

Connecticut

Connecticut ETPH Calibration Mixture (15 components)
(C9) n-Nonane (111-84-2) (C24) n-Tetracosane (646-31-1)
(C10) n-Decane (124-18-5) (C26) n-Hexacosane (630-01-3)
(C12) n-Dodecane (112-40-0) (C28) n-Octacosane (630-02-4)
(C14) n-Tetradecane (629-59-4) (C30) n-Triacontane (638-66-6)
(C16) n-Hexadecane (544-76-3) (C32) n-Dotriacontane (544-85-4)
(C18) n-Octodecane (593-45-3) (C34) n-Tetracontane (14167-59-0)
(C20) n-Eicosane (112-95-8) (C36) n-Hexatriacontane (630-06-6)
(C22) n-Docosane (629-97-0) (C38) n-Octatriacontane (17104-82-6)
(C24) n-Tetracosane (646-31-1)
1,000 µg/mL each in methylene chloride, 1 mL/ampul cat.# 31614 (ea.)

Florida

Florida TRPH Standard (17 components)
(C8) n-Octane (111-65-9) (C26) n-Hexacosane (630-01-3)
(C10) n-Decane (124-18-5) (C28) n-Octacosane (630-02-4)
(C12) n-Dodecane (112-40-3) (C30) n-Triacontane (638-66-6)
(C14) n-Tetradecane (629-59-4) (C32) n-Dotriacontane (544-85-4)
(C16) n-Hexadecane (544-76-3) (C34) n-Tetracontane (14167-59-0)
(C18) n-Octadecane (593-45-3) (C36) n-Hexatriacontane (630-06-8)
(C20) n-Eicosane (112-95-8) (C38) n-Octatriacontane (17104-82-6)
(C22) n-Docosane (629-97-0) (C40) n-Tetratriacontane (4181-95-7)
500 µg/mL each in hexane, 1 mL/ampul cat.# 31266 (ea.)

Florida TRPH Standard (HC) (17 components)
(C8) n-Octane (111-65-9) (C26) n-Hexacosane (630-01-3)
(C10) n-Decane (124-18-5) (C28) n-Octacosane (630-02-4)
(C12) n-Dodecane (112-40-3) (C30) n-Triacontane (638-66-6)
(C14) n-Tetradecane (629-59-4) (C32) n-Dotriacontane (544-85-4)
(C16) n-Hexadecane (544-76-3) (C34) n-Tetracontane (14167-59-0)
(C18) n-Octadecane (593-45-3) (C36) n-Hexatriacontane (630-06-8)
(C20) n-Eicosane (112-95-8) (C38) n-Octatriacontane (17104-82-6)
(C22) n-Docosane (629-97-0) (C40) n-Tetratriacontane (4181-95-7)
2,000 µg/mL each in carbon disulfide, 1 mL/ampul cat.# 31878 (ea.)

Note: Reference standards containing greater than 99% carbon disulfide are classified as UN1131 carbon disulfide 3(6.1), I and are restricted from air transportation. Additional restrictions may apply to lower concentration materials depending on formulations.
Contact standards@restek.com with any questions.

Florida TRPH Surrogate Mix (n-Nonatriacontane)
(C39) n-Nonatriacontane (7194-86-7)
3,000 µg/mL in carbon disulfide, 1 mL/ampul cat.# 31456 (ea.)
3,000 µg/mL in carbon disulfide, 10 mL/ampul cat.# 31877 (ea.)

Note: Reference standards containing greater than 99% carbon disulfide are classified as UN1131 carbon disulfide 3(6.1), I and are restricted from air transportation. Additional restrictions may apply to lower concentration materials depending on formulations.
Contact standards@restek.com with any questions.

free data
Available on Our Website:
Lot Certificates, Data Packs, and SDSs
For complete information detailing manufacturing and testing for Restek inventoried reference standards, just visit our website at www.restek.com

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

www.restek.com 5
### Massachusetts

**MA VPH Surrogate Standard**

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,5-Dibromotoluene</td>
<td>1,000 µg/mL, 1 mL/ampul</td>
<td>P&amp;T methanol, 1 mL/ampul</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>2,000 µg/mL, 1 mL/ampul</td>
<td>in methylene chloride, 1 mL/ampul</td>
</tr>
<tr>
<td>1-Chlorooctadecane</td>
<td>10,000 µg/mL, 1 mL/ampul</td>
<td>in hexane, 1 mL/ampul</td>
</tr>
</tbody>
</table>

**MA VPH Matrix Spike Mix with Surrogate**

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,5-Dibromotoluene</td>
<td>50 µg/mL, 1 mL/ampul</td>
<td>in P&amp;T methanol, 1 mL/ampul</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>1,500 µg/mL, 1 mL/ampul</td>
<td>in methylene chloride, 1 mL/ampul</td>
</tr>
<tr>
<td>1-Chlorooctadecane</td>
<td>100 µg/mL, 1 mL/ampul</td>
<td>in hexane, 1 mL/ampul</td>
</tr>
</tbody>
</table>

**MA Volatile Petroleum Hydrocarbon (VPH) Standard**

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,3-Dimethylpentane</td>
<td>1,000 µg/mL, 1 mL/ampul</td>
<td>in P&amp;T methanol, 1 mL/ampul</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>1,500 µg/mL, 1 mL/ampul</td>
<td>in methylene chloride, 1 mL/ampul</td>
</tr>
<tr>
<td>1-Chlorooctadecane</td>
<td>10,000 µg/mL, 1 mL/ampul</td>
<td>in hexane, 1 mL/ampul</td>
</tr>
</tbody>
</table>

**MA APH Mix**

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td>1.3-Butadiene</td>
<td>2.3-Dimethylpentane</td>
</tr>
<tr>
<td>2-Methylcyclohexane</td>
<td>2-Methylcyclohexane</td>
<td>2-Methylcyclohexane</td>
</tr>
<tr>
<td>n-Decane</td>
<td>n-Decane</td>
<td>n-Octane</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>Ethylbenzene</td>
<td>Ethylbenzene</td>
</tr>
<tr>
<td>2-Methylpentane</td>
<td>2-Methylpentane</td>
<td>2-Methylpentane</td>
</tr>
<tr>
<td>p-Xylene</td>
<td>p-Xylene</td>
<td>p-Xylene</td>
</tr>
</tbody>
</table>

**MA EPH Internal Standard**

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-Cx-Androstane</td>
<td>2,000 µg/mL, 1 mL/ampul</td>
<td>in methylene chloride, 1 mL/ampul</td>
</tr>
<tr>
<td>1-Chloro-2-propanol</td>
<td>4,000 µg/mL, 1 mL/ampul</td>
<td>in methylene chloride, 1 mL/ampul</td>
</tr>
</tbody>
</table>

**MA Fractionation Surrogate Spike Mix**

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Bromonaphthalene</td>
<td>1,000 µg/mL, 1 mL/ampul</td>
<td>in hexane, 1 mL/ampul</td>
</tr>
<tr>
<td>1-Chloro-2-propanol</td>
<td>4,000 µg/mL, 1 mL/ampul</td>
<td>in methylene chloride, 1 mL/ampul</td>
</tr>
</tbody>
</table>

**PAHs**

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acenaphthylene</td>
<td>25 µg/mL, 1 mL/ampul</td>
<td>in hexane, 1 mL/ampul</td>
</tr>
</tbody>
</table>

**MA Fractionation Check Mix**

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chrysene</td>
<td>25 µg/mL, 1 mL/ampul</td>
<td>in hexane, 1 mL/ampul</td>
</tr>
</tbody>
</table>

**MA EPH Aromatic Hydrocarbon Standard**

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzo[a]Anthracene</td>
<td>2,500 µg/mL, 1 mL/ampul</td>
<td>in P&amp;T methanol, 1 mL/ampul</td>
</tr>
<tr>
<td>Chrysene</td>
<td>100 µg/mL, 1 mL/ampul</td>
<td>in hexane, 1 mL/ampul</td>
</tr>
</tbody>
</table>

**MA EPH Aliphatic Hydrocarbon Standard**

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
<th>Solvent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,3-Dimethylpentane</td>
<td>1,000 µg/mL, 1 mL/ampul</td>
<td>in P&amp;T methanol, 1 mL/ampul</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>1,500 µg/mL, 1 mL/ampul</td>
<td>in methylene chloride, 1 mL/ampul</td>
</tr>
<tr>
<td>1-Chlorooctadecane</td>
<td>10,000 µg/mL, 1 mL/ampul</td>
<td>in hexane, 1 mL/ampul</td>
</tr>
</tbody>
</table>
**Mississippi**

**DRO Mix (Tennessee/Mississippi)** (16 components)
- (C10) n-Decane (124-18-5) 2,000 µg/mL each in P&T methanol, 1 mL/ampul cat.# 31214 (ea.)
- (C11) n-Undecane (112-20-1) 2,000 µg/mL each in P&T methanol, 1 mL/ampul cat.# 31214 (ea.)
- (C12) n-Dodecane (112-40-3) 2,000 µg/mL each in P&T methanol, 1 mL/ampul cat.# 31214 (ea.)
- (C13) n-Tridecane (629-50-5) 2,000 µg/mL each in P&T methanol, 1 mL/ampul cat.# 31214 (ea.)
- (C14) n-Tetradecane (629-59-4) 2,000 µg/mL each in P&T methanol, 1 mL/ampul cat.# 31214 (ea.)
- (C15) n-Pentadecane (629-62-9) 2,000 µg/mL each in P&T methanol, 1 mL/ampul cat.# 31214 (ea.)
- (C16) n-Hexadecane (544-78-3) 2,000 µg/mL each in P&T methanol, 1 mL/ampul cat.# 31214 (ea.)
- (C17) n-Heptadecane (629-78-7) 2,000 µg/mL each in P&T methanol, 1 mL/ampul cat.# 31214 (ea.)

**Gasoline Component Standard** (10 components)
- Benzene (71-43-2), 500 µg/mL
- Ethylbenzene (100-41-4), 500 µg/mL
- Heptane (142-82-5), 500 µg/mL
- 2-Methylpentane (107-83-5), 1,500 µg/mL
- Toluene (108-88-3), 1,500 µg/mL
- 1,2,4-Trimethylbenzene (95-63-6), 1,000 µg/mL
- 1,2,4-Trimethylpentane (540-84-1), 1,500 µg/mL
- m-Xylene (108-38-3), 1,000 µg/mL
- o-Xylene (108-43-6), 1,000 µg/mL
- p-Xylene (106-42-3), 1,000 µg/mL

10,000 µg/mL total in P&T methanol, 1 mL/ampul cat.# 30486 (ea.)

**Texas**

**Texas TNRCC Method 1006**

**TNRCC 1006 Retention Time Marker Mix** (9 components)
- (C6) n-Hexane (110-54-3) 2,2,4-Trimethylpentane (isooctane)
- (C7) n-Heptane (144-82-5) m-Xylene (108-38-3)
- (C8) n-Octane (111-65-9) o-Xylene (95-47-6)
- (C10) n-Decane (124-18-5) p-Xylene (106-42-3)
- (C12) n-Dodecane (112-40-3) 2-Methylpentane (629-62-9)

200 µg/mL each in pentane, 1 mL/ampul cat.# 31814 (ea.)

**Texas TNRCC Method 1005**

**TNRCC 1005 Retention Time Markers Mix** (4 components)
- (C6) n-Hexane (110-54-3) 2,2,4-Trimethylpentane (isooctane)
- (C10) n-Decane (124-18-5) m-Xylene (108-38-3)
- (C12) n-Dodecane (112-40-3) o-Xylene (95-47-6)
- (C16) n-Hexadecane (544-76-3) p-Xylene (106-42-3)

200 µg/mL each in pentane, 1 mL/ampul cat.# 31698 (ea.)

**Alternate Boiling Point/Carbon Number Distribution Marker Stock Standard** (9 components)
- (C6) n-Hexane (110-54-3) 2,2,4-Trimethylpentane (isooctane)
- (C8) n-Octane (111-65-9) m-Xylene (108-38-3)
- (C10) n-Decane (124-18-5) o-Xylene (95-47-6)
- (C12) n-Dodecane (112-40-3) p-Xylene (106-42-3)
- (C16) n-Hexadecane (544-76-3) 2-Methylpentane (629-62-9)

200 µg/mL each in pentane, 1 mL/ampul cat.# 31639 (ea.)

**Pennsylvania**

**PA DEP UST Standard** (11 components)
- Benzene (71-43-2)
- 1,2-Dibromoethane (EDB) (106-93-4)
- 1,2-Dichloroethane (107-06-2)
- Ethylbenzene (100-41-4)
- Isopropylbenzene (cumene) (98-82-8)
- Methyl tert-butyl ether (MTBE) (1363-04-4)

200 µg/mL each in P&T methanol, 1 mL/ampul cat.# 30443 (ea.)

**Tennessee/Mississippi**

**DRO Mix (Tennessee/Mississippi)** (16 components)
- (C10) n-Decane (124-18-5) 2,000 µg/mL each in P&T methanol, 1 mL/ampul cat.# 31214 (ea.)
- (C11) n-Undecane (112-20-1) 2,000 µg/mL each in P&T methanol, 1 mL/ampul cat.# 31214 (ea.)
- (C12) n-Dodecane (112-40-3) 2,000 µg/mL each in P&T methanol, 1 mL/ampul cat.# 31214 (ea.)
- (C13) n-Tridecane (629-50-5) 2,000 µg/mL each in P&T methanol, 1 mL/ampul cat.# 31214 (ea.)
- (C14) n-Tetradecane (629-59-4) 2,000 µg/mL each in P&T methanol, 1 mL/ampul cat.# 31214 (ea.)
- (C15) n-Pentadecane (629-62-9) 2,000 µg/mL each in P&T methanol, 1 mL/ampul cat.# 31214 (ea.)
- (C16) n-Hexadecane (544-78-3) 2,000 µg/mL each in P&T methanol, 1 mL/ampul cat.# 31214 (ea.)
- (C17) n-Heptadecane (629-78-7) 2,000 µg/mL each in P&T methanol, 1 mL/ampul cat.# 31214 (ea.)

**Northwest USA Regional Method (Oregon & Washington)**

**Glycols Standard** (2 components)
- Ethylene glycol (107-21-1) 50,000 µg/mL each in DI water, 1 mL/ampul cat.# 30471 (ea.)
- Propylene glycol (57-55-6) 50,000 µg/mL each in DI water, 1 mL/ampul cat.# 30471 (ea.)

**NW TPH-Dx Surrogate Mix Standards**

- Volume is 1 mL/ampul. Concentration is µg/mL.
- 2-Fluorobiphenyl (321-60-8)
- p-Fluorobiphenyl (321-60-8)
- n-Trifluorotoluene (98-08-8)
- m-Trifluorotoluene (98-08-8)
- p-Trifluorotoluene (98-08-8)
- 2-Fluorobiphenyl (321-60-8)
- n-Trifluorotoluene (98-08-8)
- m-Trifluorotoluene (98-08-8)
- p-Trifluorotoluene (98-08-8)
- 2-Fluorobiphenyl (321-60-8)

2,000 µg/mL each in P&T methanol, 1 mL/ampul cat.# 30403 (ea.)
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