



# Underground Storage Tanks

Compliance Monitoring with Restek Analytical Reference Materials

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## Underground Storage Tanks Compliance Monitoring with Restek Analytical Reference Materials

The Resource Conservation and Recovery Act (RCRA) establishes the authority to regulate underground storage tanks (UST). A UST system is defined as a tank and any underground piping connected to the tank that has at least 10% of its combined volume underground. This definition includes the tank, connected underground piping, any underground equipment, such as valves and pumps, and containment systems.

### Petroleum Hydrocarbons Standards for Underground Storage Tank Monitoring

Monitoring underground storage tanks 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. 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 monitoring and respond with calibration mixes to meet these needs. For a complete listing of all of our fuel standards, please see our catalog or website, or call and consult with the experts in our Analytical Reference Materials Department.

## Get More!

For a complete list of Restek's  
fuel standards, visit:  
[www.restek.com](http://www.restek.com)

## Fuel Composite Standards

### Unleaded Gasoline Composite Standard

2,500µg/mL in P&T methanol, 1mL/ampul  
cat. # 30081

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50,000µg/mL in P&T methanol, 1mL/ampul  
cat. # 30205

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50,000µg/mL in P&T methanol, 5mL/ampul  
cat. # 30206

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### Diesel Fuel #2 Composite Standard

5,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31093

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50,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31258

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50,000µg/mL in methylene chloride, 5mL/ampul  
cat. # 31259

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### Kerosene Composite Standard

5,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31094

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50,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31256

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50,000µg/mL in methylene chloride, 5mL/ampul  
cat. # 31257

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## 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.

50,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31464

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### 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.

50,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31465

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## Single Source Fuels

### Unleaded Gasoline Standard

Prepared from a single source (one refinery) product.

5,000µg/mL in P&T methanol, 1mL/ampul  
cat. # 30096

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### Kerosene Standard

Prepared from a single source (one refinery) product.

5,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31229

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### Diesel Fuel #2 Standard

Prepared from a single source (one refinery) product.

5,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31233

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## Single Source Fuels *cont'd*

### 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) to meet ASTM viscosity specifications. Fuel oil #4 used to prepare this mixture has a kinematic viscosity of 21.9 at 38°C (100°F), measured using ASTM D-445.

5,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31216

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50,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31244

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### Fuel Oil #5 Standard

Fuel oil #5 is typically used in applications in which there is little or no preheating of the fuel prior to burning. A blend of distillate (fuel oil #2) and residual (fuel oil #6), the fuel oil #5 used to prepare this mixture has a kinematic viscosity of 106.5 at 38°C (100°F), measured using ASTM D-445.

5,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31217

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50,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31246

---

### Fuel Oil #6 Standard

This fuel, sometimes called bunker C or residual, is a black viscous oil. Applications in which it may be used require the ability to preheat the fuel prior to pumping and burning.

5,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31218

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50,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31248

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50,000µg/mL in methylene chloride, 5mL/ampul  
cat. # 31249

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### Diesel/Biodiesel 80:20 Blend Standard

The biodiesel component is methyl soyate.  
diesel/biodiesel 80:20

5,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31880

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### Aviation Gas Standard

100-octane low-lead fuel currently used in piston-type aircraft.

2,500µg/mL in P&T methanol, 1mL/ampul  
cat. # 30094

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50,000µg/mL in P&T methanol, 1mL/ampul  
cat. # 30207

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50,000µg/mL in P&T methanol, 5mL/ampul  
cat. # 30208

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### Jet Fuel A Standard

Commercial jet fuel A.

5,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31215

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50,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31242

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50,000µg/mL in methylene chloride, 5mL/ampul  
cat. # 31243

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## free data

### Available on Our Website: Lot Certificates, Data Packs, and MSDSs

For complete information detailing manufacturing and testing for Restek inventoried reference standards, visit our website at [www.restek.com](http://www.restek.com). To view lot certificates and/or an MSDS, enter the catalog number of the product in the Search feature. For a free data pack (Adobe® PDF file), enter the catalog number and lot number of the product.

## also available

Other fuels, oils and lubricant oils available on request as custom products.

## Single Source Fuels *cont'd*

### Creosote Oil Standard

Creosote oil, a widely used wood preservative produced by distilling coal tar, contains chemicals that are classified as carcinogens (e.g., benzo(a)pyrene). We offer this high concentration standard.

50,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31838

### Hydraulic Oil Standard

50,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31839

## Military Fuels (Jet Propellant)

### JP-4 Military Fuel Standard

5,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31219

50,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31250

50,000µg/mL in P&T methanol, 1mL/ampul  
cat. # 30472

### JP-5 Military Fuel Standard

5,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31220

50,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31252

50,000µg/mL in methylene chloride, 5mL/ampul  
cat. # 31253

### JP-8 Military Fuel Standard

5,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31262

50,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31254

## did you know?

We have more than 2,000 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](http://www.restek.com) for more information.

## Fuel Surrogates and Internal Standards

### Gasoline Surrogate and Internal Standards

Compound	Solvent	µg/mL	cat.#
4-bromofluorobenzene	PTM	2,500	30067
4-bromofluorobenzene	PTM	10,000	30082
1-chlorooctane	PTM	10,000	30084
1-chloro-4-fluorobenzene	PTM	2,500	30066
α,α,α-trifluorotoluene	PTM	2,500	30068
α,α,α-trifluorotoluene	PTM	10,000	30083

### Recommended Internal Standard (PID) for EPA GRO Method

Compound	Solvent	µg/mL	cat.#
1-chloro-4-fluorobenzene	PTM	2,500	30066

PTM = Purge & trap grade methanol

### Diesel Surrogate and Internal Standards

Compound	Solvent	µg/mL	cat.#
1-chlorooctadecane	D	10,000	31098
2-fluorobiphenyl	D	10,000	31096
o-terphenyl	D	10,000	31097
p-terphenyl	D	10,000	31095

### Recommended Internal Standards

Compound	Solvent	µg/mL	cat.#
5-α-androstane	D	2,000	31065
o-terphenyl	A	2,000	31066

D = methylene chloride; A = acetone

## Diesel/Biodiesel Standard

### Diesel/Biodiesel 80:20 Blend Standard

The biodiesel component is methyl soyate. diesel/biodiesel 80:20  
5,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31880

## Underground Storage Tank Monitoring (UST): State Specific Methods

### 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 procedural 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.

### Retention Time Marker - Alaska

*n*-hexane (C6)                      *n*-pentacosane (C25)  
*n*-decane (C10)                    *n*-hexatriacontane (C36)  
1,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31819

### Unleaded Gasoline Composite Standard

2,500µg/mL in P&T methanol, 1mL/ampul  
cat. # 30081  
50,000µg/mL in P&T methanol, 1mL/ampul  
cat. # 30205  
50,000µg/mL in P&T methanol, 5mL/ampul  
cat. # 30206

### 1-Chloro-4-fluorobenzene Mix

2,500µg/mL in P&T methanol, 1mL/ampul  
cat. # 30066

### AK101 *cont'd*

### 4-Bromofluorobenzene Mix

2,000µg/mL in P&T methanol, 1mL/ampul  
cat. # 30026

### α,α,α-Trifluorotoluene

2,000µg/mL in P&T methanol, 1mL/ampul  
cat. # 30048  
10,000µg/mL in P&T methanol, 1mL/ampul  
cat. # 30083

## for more info

### State of Alaska

Method and regulatory information is available from:

Alaska Department of Environmental Conservation  
410 Willoughby Avenue  
Juneau, AK 99801-1795  
Phone: (907)465-5203 • Fax: (907)465-5218

[www.dec.state.ak.us/regulations/index.htm](http://www.dec.state.ak.us/regulations/index.htm)

State	Compound Class
Alaska . . . . .	Hydrocarbons
Arizona . . . . .	Hydrocarbons
California/ Los Angeles . . . . .	Hydrocarbons
Connecticut . . . . .	Hydrocarbons
Florida . . . . .	Hydrocarbons
Massachusetts . . . . .	Hydrocarbons
Mississippi . . . . .	Hydrocarbons
Northwest (Oregon & Washington) . . . . .	Hydrocarbons
Pennsylvania . . . . .	Hydrocarbons
Tennessee/ Mississippi . . . . .	Hydrocarbons
Texas . . . . .	Hydrocarbons
Washington . . . . .	Hydrocarbons
Wisconsin . . . . .	Hydrocarbons

## Alaska *cont'd*

### AK102

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

#### DRO Mix (Tennessee/Mississippi) (16 components)

<i>n</i> -decane (C10)	<i>n</i> -octadecane (C18)
<i>n</i> -undecane (C11)	<i>n</i> -nonadecane (C19)
<i>n</i> -dodecane (C12)	<i>n</i> -eicosane (C20)
<i>n</i> -tridecane (C13)	<i>n</i> -heneicosane (C21)
<i>n</i> -tetradecane (C14)	<i>n</i> -docosane (C22)
<i>n</i> -pentadecane (C15)	<i>n</i> -tricosane (C23)
<i>n</i> -hexadecane (C16)	<i>n</i> -tetracosane (C24)
<i>n</i> -heptadecane (C17)	<i>n</i> -pentacosane (C25)

1,000µg/mL each in methylene chloride, 1mL/ampul  
cat. # 31214

#### Kerosene Composite Standard

50,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31256

#### Diesel Fuel #2 Composite Standard

5,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31093

50,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31258

50,000µg/mL in methylene chloride, 5mL/ampul  
cat. # 31259

#### *o*-Terphenyl

2,000µg/mL in acetone, 1mL/ampul  
cat. # 31066

10,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31097

#### 5- $\alpha$ -androstane

2,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31065

### AK103

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

#### Residual Range Calibration Standard (RCS)

SAE30 motor oil:SAE40 motor oil (1:1)

50,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31817

#### Motor Oil Composite Standard

50,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31464

#### Fuel Oil #6 Standard

This fuel, sometimes called bunker C or residual, is a black viscous oil. Applications in which it may be used require the ability to preheat the fuel prior to pumping and burning.

50,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31248

## Arizona

#### DRO/ORO Calibration Standard

10W30 motor oil:diesel fuel #2 (1:1 blend)  
25,000µg/mL each in methylene chloride, 1mL/ampul  
cat. # 31831

#### *o*-Terphenyl

2,000µg/mL in acetone, 1mL/ampul  
cat. # 31066

10,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31097

## California

#### PVOC Mix (California) (7 components)

benzene	<i>m</i> -xylene
ethylbenzene	<i>o</i> -xylene
methyl <i>tert</i> -butyl ether (MTBE)	<i>p</i> -xylene
toluene	

1,000µg/mL each in P&T methanol, 1mL/ampul  
cat. # 30231

#### California Oxygenates Mix

diisopropyl ether (DIPE)	2,000µg/mL
ethyl- <i>tert</i> -butyl ether (ETBE)	2,000
<i>tert</i> -amyl methyl ether (TAME)	2,000
<i>tert</i> -butyl alcohol	10,000
methyl <i>tert</i> -butyl ether (MTBE)	2,000

In P&T methanol, 1mL/ampul  
cat. # 30465

#### Ethanol

10,000µg/mL in DI Water, 1mL/ampul  
cat. # 30466

#### Glycols Standard

ethylene glycol	propylene glycol
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50,000µg/mL each in DI water, 1mL/ampul  
cat. # 30471

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

#### CA WIP VOA Standard (11 components)

benzene	methyl <i>tert</i> -butyl ether (MTBE)
chlorobenzene	toluene
1,2-dichlorobenzene	<i>m</i> -xylene
1,3-dichlorobenzene	<i>o</i> -xylene
1,4-dichlorobenzene	<i>p</i> -xylene
ethylbenzene	

2,000µg/mL each in P&T methanol, 1mL/ampul  
cat. # 30236

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

## Connecticut

#### Connecticut ETPH Calibration Mixture

(15 components)

<i>n</i> -nonane (C9)	<i>n</i> -tetracosane (C24)
<i>n</i> -decane (C10)	<i>n</i> -hexacosane (C26)
<i>n</i> -dodecane (C12)	<i>n</i> -octacosane (C28)
<i>n</i> -tetradecane (C14)	<i>n</i> -triacontane (C30)
<i>n</i> -hexadecane (C16)	<i>n</i> -dotriacontane (C32)
<i>n</i> -octadecane (C18)	<i>n</i> -tetracontane (C34)
<i>n</i> -eicosane (C20)	<i>n</i> -hexatriacontane (C36)
<i>n</i> -docosane (C22)	

1,000µg/mL each in methylene chloride, 1mL/ampul  
cat. # 31614

## free data

#### Available on Our Website: Lot Certificates, Data Packs, and MSDSs

For complete information detailing manufacturing and testing for Restek inventoried reference standards, visit our website at [www.restek.com](http://www.restek.com). To view lot certificates and/or an MSDS, enter the catalog number of the product in the Search feature. For a free data pack (Adobe® PDF file), enter the catalog number and lot number of the product.

## free literature

#### California UST Monitoring

Download your free copy from [www.restek.com](http://www.restek.com).

Fast Facts  
lit. cat.# 59433

#### Alaska UST Monitoring

Download your free copy from [www.restek.com](http://www.restek.com).

Fast Facts  
lit. cat.# 59503





free literature

#### Florida UST Monitoring

Download your free copy from [www.restek.com](http://www.restek.com).

Fast Facts  
lit. cat.# 59395



#### Spectra Gas 7621 High-Purity VOC Regulator

0–30psig outlet pressure gauge  
cat.# 21572 (ea.)

0–100psig outlet pressure gauge  
cat.# 21572-R100 (ea.)

free literature

#### Massachusetts UST Monitoring

Download your free copy from [www.restek.com](http://www.restek.com).

Fast Facts  
lit. cat.# 59391

## Florida

### Florida TRPH Standard (17 components)

<i>n</i> -octane (C8)	<i>n</i> -hexacosane (C26)
<i>n</i> -decane (C10)	<i>n</i> -octacosane (C28)
<i>n</i> -dodecane (C12)	<i>n</i> -triacontane (C30)
<i>n</i> -tetradecane (C14)	<i>n</i> -dotriacontane (C32)
<i>n</i> -hexadecane (C16)	<i>n</i> -tetraatriacontane (C34)
<i>n</i> -octadecane (C18)	<i>n</i> -hexatriacontane (C36)
<i>n</i> -eicosane (C20)	<i>n</i> -octatriacontane (C38)
<i>n</i> -docosane (C22)	<i>n</i> -tetracontane (C40)
<i>n</i> -tetracosane (C24)	

500µg/mL each in hexane, 1mL/ampul  
cat. # 31266

2,000µg/mL each in carbon disulfide, 1mL/ampul\*  
cat. # 31878

\*Ground transportation shipments only.

### Florida TRPH Surrogate Mix

*n*-nonatriacontane (C39)  
3,000µg/mL in carbon disulfide, 1mL/ampul\*  
cat. # 31456

3,000µg/mL in carbon disulfide, 10mL/ampul\*  
cat. # 31877

\*Ground transportation shipments only.

## Massachusetts

### MA VPH Standard with Surrogate Rev. 1.1 (July 2004) (16 components)

benzene	<i>n</i> -pentane (C5)
<i>n</i> -butylcyclohexane	toluene
<i>n</i> -decane (C10)	1,2,4-trimethylbenzene
2,5-dibromotoluene (SUR)	2,2,4-trimethylpentane (isooctane)
ethylbenzene	<i>m</i> -xylene
2-methylpentane	<i>o</i> -xylene
methyl <i>tert</i> -butyl ether (MTBE)	<i>p</i> -xylene
naphthalene	
<i>n</i> -nonane (C9)	

10,000µg/mL in P&T methanol, 1mL/ampul  
cat. # 30604

### MA VPH Matrix Spike Mix with Surrogate Rev. 1.1 (July 2004) (16 components)

benzene	<i>n</i> -pentane (C5)
<i>n</i> -butylcyclohexane	toluene
<i>n</i> -decane (C10)	1,2,4-trimethylbenzene
2,5-dibromotoluene (SUR)	2,2,4-trimethylpentane (isooctane)
ethylbenzene	<i>m</i> -xylene
2-methylpentane	<i>o</i> -xylene
methyl <i>tert</i> -butyl ether (MTBE)	<i>p</i> -xylene
naphthalene	
<i>n</i> -nonane (C9)	

50µg/mL in P&T methanol, 1mL/ampul  
cat. # 30605

### MA Volatile Petroleum Hydrocarbon (VPH) Standard (13 components)

<i>n</i> -pentane (C5)	1,000µg/mL	naphthalene	1,000
<i>n</i> -nonane (C9)	1,000	toluene	1,500
benzene	500	1,2,4-trimethylbenzene	1,000
ethylbenzene	500	<i>m</i> -xylene	1,000
isooctane	1,500	<i>o</i> -xylene	1,000
2-methylpentane	1,500	<i>p</i> -xylene	1,000
methyl <i>tert</i> -butyl ether (MTBE)	1,500		

In P&T methanol, 1mL/ampul  
cat. # 30434

### MA VPH Surrogate Standard

2,5-dibromotoluene  
10,000µg/mL in P&T methanol, 1mL/ampul  
cat. # 30453

## Massachusetts cont'd

### Massachusetts APH Mix (26 components)

Cylinder Construction: aluminum  
Cylinder Fitting: CGA-180 outlet

benzene	<i>p</i> -isopropyltoluene
1,3-butadiene	methyl <i>tert</i> -butyl ether
butylcyclohexane	1-methyl-3-ethylbenzene
cyclohexane	<i>n</i> -nonane
<i>n</i> -decane	<i>n</i> -octane
2,3-dimethylheptane	toluene
2,3-dimethylpentane	toluene-d8 (IS)
<i>n</i> -dodecane	1,2,3-trimethylbenzene
ethylbenzene	1,3,5-trimethylbenzene
<i>n</i> -heptane	<i>n</i> -undecane
<i>n</i> -hexane	<i>m</i> -xylene
isopentane	<i>o</i> -xylene
isopropylbenzene	<i>p</i> -xylene

1ppm in nitrogen, 104 liters @ 1,800psi  
cat. # 34540

1ppm in nitrogen, 21 liters @ 350psi (Pi-marked Cylinder)  
cat. # 34540-PI

Requires a high-purity VOC single-stage regulator.  
Datapack not available.

### MA EPH Aromatic Hydrocarbon Standard (17 components)

acenaphthene	dibenzo(a,h)anthracene
acenaphthylene	fluoranthene
anthracene	fluorene
benzo(a)anthracene	indeno(1,2,3-cd)pyrene
benzo(a)pyrene	2-methylnaphthalene
benzo(b)fluoranthene	naphthalene
benzo(k)fluoranthene	phenanthrene
benzo(ghi)perylene	pyrene
chrysene	

1,000µg/mL each in methylene chloride, 1mL/ampul  
cat. # 31458

### MA EPH Aliphatic Hydrocarbon Standard (14 components)

<i>n</i> -nonane (C9)	<i>n</i> -eicosane (C20)
<i>n</i> -decane (C10)	<i>n</i> -docosane (C22)
<i>n</i> -dodecane (C12)	<i>n</i> -tetracosane (C24)
<i>n</i> -tetradecane (C14)	<i>n</i> -hexacosane (C26)
<i>n</i> -hexadecane (C16)	<i>n</i> -octacosane (C28)
<i>n</i> -octadecane (C18)	<i>n</i> -triacontane (C30)
<i>n</i> -nonadecane (C19)	<i>n</i> -hexatriacontane (C36)

1,000µg/mL each in hexane, 1mL/ampul  
cat. # 31459

### MA EPH Internal Standard

5- $\alpha$ -androstane  
2,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31065

### MA EPH Surrogate Spike Mix

1-chlorooctadecane *o*-terphenyl  
4,000µg/mL each in acetone, 1mL/ampul  
cat. # 31479

### 1-Chlorooctadecane Mix

1-chlorooctadecane  
10,000µg/mL in methylene chloride, 1mL/ampul  
cat. # 31098

### MA Fractionation Surrogate Spike Mix

2-bromonaphthalene 2-fluorobiphenyl  
4,000µg/mL each in hexane, 1mL/ampul  
cat. # 31480

## Massachusetts *cont'd*

### MA Fractionation Check Mix (31 components)

PAHs:	Hydrocarbons:
acenaphthene	<i>n</i> -nonane (C9)
acenaphthylene	<i>n</i> -decane (C10)
anthracene	<i>n</i> -dodecane (C12)
benzo(a)anthracene	<i>n</i> -tetradecane (C14)
benzo(a)pyrene	<i>n</i> -hexadecane (C16)
benzo(b)fluoranthene	<i>n</i> -octadecane (C18)
benzo(k)fluoranthene	<i>n</i> -nonadecane (C19)
benzo(ghi)perylene	<i>n</i> -eicosane (C20)
chrysene	<i>n</i> -docosane (C22)
dibenzo(a,h)anthracene	<i>n</i> -tetracosane (C24)
fluoranthene	<i>n</i> -hexacosane (C26)
fluorene	<i>n</i> -octacosane (C28)
indeno(1,2,3-cd)pyrene	<i>n</i> -triacontane (C30)
2-methylnaphthalene	<i>n</i> -hexatriacontane (C36)
naphthalene	
phenanthrene	
pyrene	

25µg/mL each in hexane, 1mL/ampul  
cat. # 31481

## Mississippi

### DRO Mix (Tennessee/Mississippi) (16 components)

<i>n</i> -decane (C10)	<i>n</i> -octadecane (C18)
<i>n</i> -undecane (C11)	<i>n</i> -nonadecane (C19)
<i>n</i> -dodecane (C12)	<i>n</i> -eicosane (C20)
<i>n</i> -tridecane (C13)	<i>n</i> -heneicosane (C21)
<i>n</i> -tetradecane (C14)	<i>n</i> -docosane (C22)
<i>n</i> -pentadecane (C15)	<i>n</i> -tricosane (C23)
<i>n</i> -hexadecane (C16)	<i>n</i> -tetracosane (C24)
<i>n</i> -heptadecane (C17)	<i>n</i> -pentacosane (C25)

1,000µg/mL each in methylene chloride, 1mL/ampul  
cat. # 31214

### Gasoline Component Standard (10 components)

benzene	500µg/mL	1,2,4-trimethylbenzene	1000
ethylbenzene	500	2,2,4-trimethylpentane	1500
heptane	500	<i>m</i> -xylene	1000
2-methylpentane	1500	<i>o</i> -xylene	1000
toluene	1500	<i>p</i> -xylene	1000

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

## Northwest USA Regional Method (Oregon & Washington)

### Glycols Standard

ethylene glycol	propylene glycol
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50,000µg/mL each in DI water, 1mL/ampul  
cat. # 30471

### NW TPH-Dx Surrogate Mix Standards

1mL/ampul

Compound	Solvent	µg/mL	cat.#
2-fluorobiphenyl	D	10,000	31096
<i>o</i> -terphenyl	D	10,000	31097
<i>p</i> -terphenyl	D	10,000	31095
pentacosane (C25)	D	10,000	31487

D = methylene chloride

## Pennsylvania

### PA DEP UST Standard (11 components)

benzene	naphthalene
1,2-dibromoethane	toluene
1,2-dichloroethane	<i>m</i> -xylene
ethylbenzene	<i>o</i> -xylene
isopropyl benzene	<i>p</i> -xylene
methyl <i>tert</i> -butyl ether (MTBE)	

2,000µg/mL each in P&T methanol, 1mL/ampul  
cat. # 30433

## Tennessee/Mississippi

### DRO Mix (Tennessee/Mississippi) (16 components)

<i>n</i> -decane (C10)	<i>n</i> -octadecane (C18)
<i>n</i> -undecane (C11)	<i>n</i> -nonadecane (C19)
<i>n</i> -dodecane (C12)	<i>n</i> -eicosane (C20)
<i>n</i> -tridecane (C13)	<i>n</i> -heneicosane (C21)
<i>n</i> -tetradecane (C14)	<i>n</i> -docosane (C22)
<i>n</i> -pentadecane (C15)	<i>n</i> -tricosane (C23)
<i>n</i> -hexadecane (C16)	<i>n</i> -tetracosane (C24)
<i>n</i> -heptadecane (C17)	<i>n</i> -pentacosane (C25)

1,000µg/mL each in methylene chloride, 1mL/ampul  
cat. # 31214

### Gasoline Component Standard (10 components)

benzene	500µg/mL	1,2,4-trimethylbenzene	1000
ethylbenzene	500	2,2,4-trimethylpentane	1500
heptane	500	<i>m</i> -xylene	1000
2-methylpentane	1500	<i>o</i> -xylene	1000
toluene	1500	<i>p</i> -xylene	1000

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

## Texas

### Texas TNRCC Method 1006

#### TNRCC 1006 Retention Time Marker Mix

(9 components)

<i>n</i> -hexane (C6)	<i>n</i> -hexadecane (C16)
<i>n</i> -heptane (C7)	<i>n</i> -heneicosane (C21)
<i>n</i> -octane (C8)	<i>n</i> -octacosane (C28)
<i>n</i> -decane (C10)	<i>n</i> -pentatriacontane (C35)
<i>n</i> -dodecane (C12)	

200µg/mL in pentane, 1mL/ampul  
cat. # 31814

### Texas TNRCC Method 1005

#### TNRCC 1005 Retention Time Markers Mix

<i>n</i> -hexane (C6)	<i>n</i> -octacosane (C28)
<i>n</i> -dodecane (C12)	<i>n</i> -pentatriacontane (C35)

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

### TX TPH Calibration Mix

diesel fuel #2 composite	unleaded gasoline composite
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10,000µg/mL each in pentane, 1mL/ampul  
cat. # 31483

### TX TPH Matrix Spike Mix

diesel fuel #2 composite	unleaded gasoline composite
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10,000µg/mL each in P&T methanol, 1mL/ampul  
cat. # 31484

### Alternate Boiling Point/Carbon Number

#### Distribution Marker Stock Standard (9 components)

<i>n</i> -hexane (C6)	<i>n</i> -heneicosane (C21)
<i>n</i> -octane (C8)	<i>n</i> -octacosane (C28)
<i>n</i> -decane (C10)	<i>n</i> -pentatriacontane (C35)
<i>n</i> -dodecane (C12)	<i>n</i> -hexatriacontane (C36)
<i>n</i> -hexadecane (C16)	

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

## Texas *cont'd* on page 8

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lit. cat.# 59394

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Fast Facts

lit. cat.# 59396



## Texas cont'd

### $\alpha,\alpha,\alpha$ -Trifluorotoluene

2,000 $\mu$ g/mL in P&T methanol, 1mL/ampul  
cat. # 30048

2,500 $\mu$ g/mL in P&T methanol, 1mL/ampul  
cat. # 30068

10,000 $\mu$ g/mL in P&T methanol, 1mL/ampul  
cat. # 30083

### 1-Chlorooctane

10,000 $\mu$ g/mL in P&T methanol, 1mL/ampul  
cat. # 30084

### 1-Chlorooctadecane Mix

10,000 $\mu$ g/mL in methylene chloride, 1mL/ampul  
cat. # 31098

## Washington

### WA VPH Standard (15 components)

<i>n</i> -pentane (C5)	methyl <i>tert</i> -butyl ether (MTBE)
<i>n</i> -hexane (C6)	naphthalene
<i>n</i> -octane (C8)	toluene
<i>n</i> -decane (C10)	1,2,3-trimethylbenzene
<i>n</i> -dodecane (C12)	<i>m</i> -xylene
benzene	<i>o</i> -xylene
ethylbenzene	<i>p</i> -xylene
1-methylnaphthalene	

1,000 $\mu$ g/mL each in P&T methanol, 1mL/ampul  
cat. # 30451

### WA EPH Aliphatic Hydrocarbon Mix

<i>n</i> -octane (C8)	<i>n</i> -hexadecane (C16)
<i>n</i> -decane (C10)	<i>n</i> -heneicosane (C21)
<i>n</i> -dodecane (C12)	<i>n</i> -tetratriacontane (C34)

1,000 $\mu$ g/mL each in hexane, 1mL/ampul  
cat. # 31489

### WA EPH Fractionation Check Mix (22 components)

<i>n</i> -octane (C8)	benzo(b)fluoranthene
<i>n</i> -decane (C10)	benzo(k)fluoranthene
<i>n</i> -dodecane (C12)	benzo(ghi)perylene
<i>n</i> -hexadecane (C16)	chrysene
<i>n</i> -heneicosane (C21)	dibenzo(a,h)anthracene
<i>n</i> -tetratriacontane (C34)	fluoranthene
acenaphthene	fluorene
acenaphthylene	indeno(1,2,3-cd)pyrene
anthracene	naphthalene
benzo(a)anthracene	phenanthrene
benzo(a)pyrene	pyrene

25 $\mu$ g/mL each in hexane, 1mL/ampul  
cat. # 31491

## Wisconsin

### PVOC/GRO Mix (Wisconsin) (10 components)

benzene	1,2,4-trimethylbenzene
ethylbenzene	1,3,5-trimethylbenzene
methyl <i>tert</i> -butyl ether (MTBE)	<i>m</i> -xylene
naphthalene	<i>o</i> -xylene
toluene	<i>p</i> -xylene

1,000 $\mu$ g/mL each in P&T methanol, 1mL/ampul  
cat. # 30095

### DRO Mix (EPA/Wisconsin) (10 components)

<i>n</i> -decane (C10)	<i>n</i> -eicosane (C20)
<i>n</i> -dodecane (C12)	<i>n</i> -docosane (C22)
<i>n</i> -tetradecane (C14)	<i>n</i> -tetracosane (C24)
<i>n</i> -hexadecane (C16)	<i>n</i> -hexacosane (C26)
<i>n</i> -octadecane (C18)	<i>n</i> -octacosane (C28)

2,000 $\mu$ g/mL each in methylene chloride, 1mL/ampul  
cat. # 31064

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