

FAST FACTS

At-a-Glance
Product
Information
from Restek



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For *complete lists* of standards, columns and current prices, visit our website at:

www.restekcorp.com

To help laboratories comply with and use these analytical procedures, Restek has been active in following federal guidance. Based on our good knowledge of the methods, our experienced chemists have developed a list of the appropriate technical service tools and analytical products to achieve success with these methods. We offer quality chromatographic columns, analytical reference materials, and sample preparation products.

In this comprehensive product listing, you will find everything you need to quickly setup or reorder consumables for these methods. Please refer to our latest product catalog or call 800-356-1688 or 814-353-1300, ext. 3, for more information. Also, we will be happy to provide a quote on any custom consumable you may need!

Regulatory and Analytical Methodology Contact Information

U.S. EPA/OSWER/OUST

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Washington, DC 20460

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U.S. EPA/OSWER/OUST maintains a web site at

<http://www.epa.gov/swerst1>

EPA Office Of Underground Storage Tanks (OUST) Recommended Methods

- ✓ Comprehensive products listing for the latest EPA methods for UST applications.
- ✓ Products conveniently organized by method number.
- ✓ Easy method set-up and reorder of consumables, including:
 - Chromatography columns and accessories
 - Analytical reference materials
 - Sample preparation supplies

In the late 1980s the US Environmental Protection Agency (EPA) established the Office of Underground Storage Tanks (OUST) to enforce federal laws on environmental petroleum contamination. Underground storage tank (UST) systems installed before December 22, 1988 had no protection against spills and overfills, or were likely to corrode and leak. OUST mandated that all UST systems must not be contaminating nearby groundwater and soil by December 22, 1998. Existing UST systems must be either protected from spills, overfills, and corrosion or replaced with new systems that have spill, overfill, and corrosion protection.

The 1998 deadline has passed and many of the unprotected USTs have been properly treated. However, the need for monitoring USTs persists. OUST has been actively enforcing the federal UST regulations.

OUST has recommended specific EPA methods for UST applications (Table 1). Although many states have developed state-specific methods for UST analysis over the years, a majority of the states still use these EPA methods.

Table 1. OUST-recommended EPA Methods for UST applications.

EPA Method	Chemical of Concern	Technique
EPA 8015B	Aliphatic and aromatic hydrocarbons GRO (C6-C10) and DRO (C10-C28)	GRO: purge and trap GC/FID; DRO: solvent extraction GC/FID
EPA 8021B	Aromatic VOCs	Purge and trap GC/PID/HECD
EPA 8310	PAHs	Solvent extraction HPLC/UV
EPA 8100	PAHs	Solvent extraction GC/FID
EPA 8260B	VOCs	Purge and trap GC/MS
EPA 8270C†	SVOCs	Solvent extraction GC/MS
EPA 418.1/413.1†	TRPH in sediment, soil and sludge	IR
EPA 1664†	TPH	Solvent extraction IR

†Reference materials not listed here; please inquire.



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EPA 8015B

revision 2, (Dec. 1996)

Petroleum Reference/Pattern Recognition Mixtures

Unleaded Gasoline Composite Standard

2,500µg/mL in P&T methanol, 1mL/ampul

	Each	5-pk.	10-pk.
	30081	30081-510	—
w/data pack	30081-500	30081-520	30181

50,000µg/mL in P&T methanol, 1mL/ampul

	Each	5-pk.	10-pk.
	30205	30205-510	—
w/data pack	30205-500	30205-520	30305

50,000µg/mL in P&T methanol, 5mL/ampul

	Each	5-pk.	10-pk.
	30206	30206-510	—
w/data pack	30206-500	30206-520	30306

Diesel Fuel #2 Composite Standard

5,000µg/mL in methylene chloride, 1mL/ampul

	Each	5-pk.	10-pk.
	31093	31093-510	—
w/data pack	31093-500	31093-520	31193

50,000µg/mL in methylene chloride, 1mL/ampul

	Each	5-pk.	10-pk.
	31258	31258-510	—
w/data pack	31258-500	31258-520	31358

50,000µg/mL in methylene chloride, 5mL/ampul

	Each	5-pk.	10-pk.
	31259	31259-510	—
w/data pack	31259-500	31259-520	31359

Connecticut ETPH Calibration Mixture (15 components)

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

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

	Each	5-pk.	10-pk.
	31614	31614-510	—
w/data pack	31614-500	31614-520	31714

Florida TRPH Standard (17 components)

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

500µg/mL each in hexane, 1mL/ampul

	Each	5-pk.	10-pk.
	31266	31266-510	—
w/data pack	31266-500	31266-520	31366

Retention Time Marker

n-hexane (C6) *n*-decane (C10) *n*-dodecane (C12)
1,000µg/mL each in P&T methanol, 1mL/ampul

	Each	5-pk.	10-pk.
	30483	30483-510	—
w/data pack	30483-500	30483-520	30583

Internal/Surrogate Standards

See reverse side for descriptions.

α , α , α -Androstane	31065
<i>o</i> -Terphenyl	31066, 31097

EPA 8021B

revision 2, (Dec. 1996)

Calibration Mixtures

Gasoline Component Standard (10 components)

benzene	500µg/mL	1,2,4-trimethylbenzene	1000
ethylbenzene	500	2,2,4-trimethylpentane	1500
<i>n</i> -heptane (C7)	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

	Each	5-pk.	10-pk.
	30486	30486-510	—
w/data pack	30486-500	30486-520	30586

Michigan GRO Mix (14 components)

benzene	2-methylnaphthalene	1,3,5-trimethylbenzene
1,2-dibromoethane	methyl <i>tert</i> -butyl-ether	<i>m</i> -xylene
1,2-dichloroethane	naphthalene	<i>o</i> -xylene
ethylbenzene	toluene	<i>p</i> -xylene
isopropylbenzene	1,2,4-trimethylbenzene	

2,000µg/mL each in P&T methanol, 1mL/ampul

	Each	5-pk.	10-pk.
	30468	30468-510	—
w/data pack	30468-500	30468-520	30568

MA Volatile Petroleum Hydrocarbons (VPH)

(13 components)

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

In P&T methanol, 1mL/ampul

	Each	5-pk.	10-pk.
	30434	30434-510	—
w/data pack	30434-500	30434-520	30534

Certified Aromatics in Gasoline (16 components)

Certified for:

benzene	methyl <i>tert</i> -butyl ether	1,3,5-trimethylbenzene
ethylbenzene	naphthalene	<i>m</i> -xylene
<i>m</i> -ethyltoluene	<i>n</i> -propylbenzene	<i>o</i> -xylene
<i>o</i> -ethyltoluene	toluene	<i>p</i> -xylene
<i>p</i> -ethyltoluene	1,2,3-trimethylbenzene	
isopropylbenzene	1,2,4-trimethylbenzene	

5,500ppm gasoline in P&T methanol, 1mL/ampul

	Each	5-pk.	10-pk.
	30485	30485-510	—
w/data pack	30485-500	30485-520	30585

BTEX Standard

benzene	toluene	<i>o</i> -xylene
ethylbenzene	<i>m</i> -xylene	<i>p</i> -xylene

200µg/mL each in P&T methanol, 1mL/ampul

	Each	5-pk.	10-pk.
	30051	30051-510	—
w/data pack	30051-500	30051-520	30151

2,000µg/mL each in P&T methanol, 1mL/ampul

	Each	5-pk.	10-pk.
	30213	30213-510	—
w/data pack	30213-500	30213-520	30313

2,000µg/mL each in P&T methanol, *1,000µg/mL, 1mL/ampul

benzene	toluene	<i>o</i> -xylene
ethylbenzene	<i>m</i> -xylene*	<i>p</i> -xylene*

	Each	5-pk.	10-pk.
	30488	30488-510	—
w/data pack	30488-500	30488-520	30588

PVOC Mix (California) (7 components)

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

1,000µg/mL each in P&T methanol, 1mL/ampul

	Each	5-pk.	10-pk.
	30231	30231-510	—
w/data pack	30231-500	30231-520	30331

CA WIP VOA Standard (11 components)

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

2,000µg/mL each in P&T methanol, 1mL/ampul

	Each	5-pk.	10-pk.
	30236	30236-510	—
w/data pack	30236-500	30236-520	30336

Unleaded Gasoline Composite Standard

See EPA 8015B for description. 30081 30205 30206

Retention Time Marker

See EPA 8015B for description. 30483

Certified BTEX in Unleaded Gas Composite Standard

Certified for:

benzene	methyl <i>tert</i> -butyl ether	<i>m</i> -xylene
ethylbenzene	naphthalene	<i>o</i> -xylene
isopropylbenzene	toluene	<i>p</i> -xylene

5,500ppm gasoline in P&T methanol, 1mL/ampul

	Each	5-pk.	10-pk.
	30237	30237-510	—
w/data pack	30237-500	30237-520	30337

Internal/Surrogate Standards

See reverse side for descriptions.

1-Chloro-4-fluorobenzene	30066
4-Bromofluorobenzene	30067, 30082
α,α,α-Trifluorotoluene	30068, 30083
1-Chlorooctane	30084

EPA 8310

revision 0, (Sept. 1986)

Calibration Mixtures

SV Calibration Mix #5 (16 components)

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

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

	Each	5-pk.	10-pk.
	31011	31011-510	—
w/data pack	31011-500	31011-520	31111

610 PAH Calibration Mixes (16 components)

	MIX A	MIX B		MIX A	MIX B
acenaphthene	1000µg/mL	1000	chrysene	500	100
acenaphthylene	1000	2000	dibenzo(a,h)anthracene	500	200
anthracene	1000	100	fluoranthene	500	200
benzo(a)anthracene	500	100	fluorene	1000	200
benzo(a)pyrene	500	100	indeno(1,2,3-cd)pyrene	500	100
benzo(b)fluoranthene	500	200	naphthalene	1000	1000
benzo(k)fluoranthene	500	100	phenanthrene	500	100
benzo(ghi)perylene	500	200	pyrene	500	100

A- In methylene chloride, 1mL/ampul

B- In methylene chloride:methanol (1:1), 1mL/ampul

Mix A	Each	5-pk.	10-pk.
	31264	31264-510	—
w/data pack	31264-500	31264-520	31364

Mix B	Each	5-pk.	10-pk.
	31455	31455-510	—
w/data pack	31455-500	31455-520	31555

Internal/Surrogate Standards

See reverse side for description.

Decafluorobiphenyl	31041
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EPA 8100

Calibration Mixtures

8270 Calibration Mix #5 (19 components)

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

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

	Each	5-pk.	10-pk.
	31622	31622-510	—
w/data pack	31622-500	31622-520	31722

SV Calibration Mix #5 (16 components)

See EPA 8310 for description. 31011

Internal/Surrogate Standards

See reverse side for description.

2-Fluorobiphenyl 31091

1-Fluoronaphthalene 31092

EPA 8260B

revision 2, (Dec. 1996)

Calibration Mixtures

California Oxygenates Mix

diisopropyl ether	2,000µg/mL	tert-butyl alcohol	10,000
ethyl-tert-butyl ether	2,000	methyl tert-butyl ether	2,000
tert-amyl methyl ether	2,000		

In P&T methanol, 1mL/ampul

	Each	5-pk.	10-pk.
	30465	30465-510	—
w/data pack	30465-500	30465-520	30565

Ethanol Mix

10,000µg/mL in DI water, 1mL/ampul

	Each	5-pk.	10-pk.
	30466	30466-510	—
w/data pack	30466-500	30466-520	30566

BTEX Standard

See EPA 8021B for description. 30051 30213

Certified BTEX in Unleaded Gas Composite Standard

See EPA 8021B for description. 30237

Certified Aromatics in Gasoline

See EPA 8021B for description. 30485

PVOC Mix (California)

See EPA 8021B for description. 30231

CA WIP VOA Standard (11 components)

See EPA 8021B for description. 30236

MA Volatile Petroleum Hydrocarbon (VPH)

See EPA 8021B for description. 30434

PA DEP UST Standard (11 components)

benzene	isopropyl benzene	m-xylene
1,2-dibromoethane	methyl tert-butyl ether	o-xylene
1,2-dichloroethane	naphthalene	p-xylene
ethylbenzene	toluene	

2,000µg/mL each in P&T methanol, 1mL/ampul

	Each	5-pk.	10-pk.
	30433	30433-510	—
w/data pack	30433-500	30433-520	30533

WA VPH Standard (15 components)

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

1,000µg/mL each in P&T methanol, 1mL/ampul

	Each	5-pk.	10-pk.
	30451	30451-510	—
w/data pack	30451-500	30451-520	30551

PVOC/GRO Mix (Wisconsin) (10 components)

benzene	toluene	o-xylene
ethylbenzene	1,2,4-trimethylbenzene	p-xylene
methyl tert-butyl ether	1,3,5-trimethylbenzene	
naphthalene	m-xylene	

1,000µg/mL each in P&T methanol, 1mL/ampul

	Each	5-pk.	10-pk.
	30095	30095-510	—
w/data pack	30095-500	30095-520	30195

Gasoline Component Standard (10 components)

See EPA 8021B for description. 30486

Internal/Surrogate Standards

See reverse side for descriptions.

1-Chloro-4-fluorobenzene 30066

4-Bromofluorobenzene 30067, 30082

α,α,α-Trifluorotoluene 30068, 30083

1-Chlorooctane 30084

Internal / Surrogate Standards

5- α -Androstane

2,000 μ g/mL in methylene chloride, 1mL/ampul

	Each	5-pk.	10-pk.
	31065	31065-510	—
w/data pack	31065-500	31065-520	31165

4-Bromofluorobenzene

2,500 μ g/mL in P&T methanol, 1mL/ampul

	Each	5-pk.	10-pk.
	30067	30067-510	—
w/data pack	30067-500	30067-520	30167

10,000 μ g/mL in P&T methanol, 1mL/ampul

	Each	5-pk.	10-pk.
	30082	30082-510	—
w/data pack	30082-500	30082-520	30182

1-Chloro-4-fluorobenzene

2,500 μ g/mL in P&T methanol, 1mL/ampul

	Each	5-pk.	10-pk.
	30066	30066-510	—
w/data pack	30066-500	30066-520	30166

1-Chlorooctadecane

10,000 μ g/mL in methylene chloride, 1mL/ampul

	Each	5-pk.	10-pk.
	31098	31098-510	—
w/data pack	31098-500	31098-520	31198

1-Chlorooctane

10,000 μ g/mL in P&T methanol, 1mL/ampul

	Each	5-pk.	10-pk.
	30084	30084-510	—
w/data pack	30084-500	30084-520	30184

Decafluorobiphenyl

2,000 μ g/mL in methylene chloride, 1mL/ampul

	Each	5-pk.	10-pk.
	31041	31041-510	—
w/data pack	31041-500	31041-520	31141

Fluorobenzene

2,000 μ g/mL in P&T methanol, 1mL/ampul

	Each	5-pk.	10-pk.
	30030	30030-510	—
w/data pack	30030-500	30030-520	30130

2-Fluorobiphenyl

10,000 μ g/mL in methylene chloride, 1mL/ampul

	Each	5-pk.	10-pk.
	31096	31096-510	—
w/data pack	31096-500	31096-520	31196

1-Fluoronaphthalene

2,000 μ g/mL in methylene chloride, 1mL/ampul

	Each	5-pk.	10-pk.
	31092	31092-510	—
w/data pack	31092-500	31092-520	31192

o-Terphenyl

2,000 μ g/mL in acetone, 1mL/ampul

	Each	5-pk.	10-pk.
	31066	31066-510	—
w/data pack	31066-500	31066-520	31166

10,000 μ g/mL in methylene chloride, 1mL/ampul

	Each	5-pk.	10-pk.
	31097	31097-510	—
w/data pack	31097-500	31097-520	31197

p-Terphenyl

10,000 μ g/mL in methylene chloride, 1mL/ampul

	Each	5-pk.	10-pk.
	31095	31095-510	—
w/data pack	31095-500	31095-520	31195

α, α, α -Trifluorotoluene

2,500 μ g/mL in P&T methanol, 1mL/ampul

	Each	5-pk.	10-pk.
	30068	30068-510	—
w/data pack	30068-500	30068-520	30168

10,000 μ g/mL in P&T methanol, 1mL/ampul

	Each	5-pk.	10-pk.
	30083	30083-510	—
w/data pack	30083-500	30083-520	30183

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Can't locate the
 exact mixture
 you need?

With **thousands** of compounds in our inventory,
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Chromatography Columns & Accessories

Recommended Gas Chromatography Columns

Rtx®-5, 30m x 0.25mm

Film Thickness	temp. limits	Cat. #
0.25µm	-60 to 330/350°C	10223
0.50µm	-60 to 330/350°C	10238
1.00µm	-60 to 320/340°C	10253

Integra-Guard Columns

Guard and analytical column in one connectionless length.

*Add the appropriate suffix number to analytical column catalog number.

5m: add -124; 10m: add -127.

Recommended HPLC Column

Description	Size	Cat. #
Pinnacle™ PAH	250 x 4.6mm	9170575

Syringes

Standard Micro-Liter Syringes for Agilent 7673 and 7683 Autosamplers

Size	Needle Gauge	6-pk.
10µL	23s	20169
10µL	23s-26s	24600

Autosampler Vials

Crimp Top Vial Snap Seal™ Style (12 x 32mm, 11mm Crimp)

Description*	1,000-pk.
2.0mL Clear Glass Vial w/White Graduated Marking Spot	24384
2.0mL Amber Glass Vial w/White Graduated Marking Spot	24386

*Marking spots are available on request in blue, green, rust or yellow.

Aluminum Crimp Seals w/Septa

Description	1,000-pk.
Silver Seal, PTFE/Natural Rubber Septa	21175
Silver Seal, PTFE/Silicone Septa*	24360

*PTFE/Silicone/PTFE available on request.

Thermolite® Septa

Size	temp. limits	25-pk.	50-pk.	100-pk.
11mm (7/16")	to 340°C	20363	20364	20365

Replacement Inlet Seals, Inlet Liners Low Volume Injectors for Agilent GCs, Ferrules, Septa...

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For more information,
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