

FAST FACTS

At-a-Glance
Product
Information
from Restek

To help laboratories comply with and use these analytical procedures, Restek has been active in following the state 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 set up 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

Florida Dept. of Environmental Regulation

Tank Section

Twin Towers Office Building, Room 403

2600 Blair Stone Road

Tallahassee, FL 32399-2400

Phone: 904-488-3935

Fax: 904-922-4939

Florida's UST & LUST program maintains a web site at

<http://www.dep.state.fl.us/labs/sop/index.htm>



RESTEK

State of Florida UST Monitoring

- ✓ Comprehensive products listing for the latest UST methods used by the State of Florida.
- ✓ Products conveniently organized by method number.
- ✓ Easy method set-up and reorder of consumables, including:
 - Gas chromatography columns and accessories,
 - Analytical reference materials,
 - Sample preparation supplies,
 - Technical service.

The Florida storage tank program is part of the Bureau of Petroleum Storage Systems in the Department of Environmental Protection (FDEP) Division of Waste Management. In 1983 Florida was one of the first states to pass legislation, adopt rules, and develop a program for the regulation of underground and aboveground storage tank systems. To comply with the US Environmental Protection Agency (EPA) UST rules, FDEP developed specific analytical requirements in the early 1990s for the assessment of petroleum contaminations from storage tank systems.

In November 1995, FDEP released the first Florida Petroleum Residual Organic (FL-PRO) method to regulate the procedure for analyzing petroleum hydrocarbons. The method is based on solvent extraction and GC/FID to measure the Total Recoverable Petroleum Hydrocarbons (TRPH) in water and soil in the alkane range of C8-C40. In April 1996 FDEP published the FL-PRO supplement in its Petroleum Cleanup Guidance Document #7.

FDEP also mandates that each sample be analyzed for volatile organic aromatics (VOAs), methyl-tert-butylether (MTBE), and polycyclic aromatic hydrocarbons (PAHs). FDEP references Massachusetts EPH and VPH Protocols and standard EPA Methods 8015, 8021, 8260, 8270 and 8310.



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Product Marketing Manager
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Importers & Manufacturers
www.chromtech.net.au

Website NEW : www.chromalytic.com.au E-mail : info@chromtech.net.au Tel: 03 9762 2034 . . . in AUSTRALIA

Florida Gas Chromatography Columns & Accessories

For these items, see Restek's

Chromatography Products Catalog:

- Syringes
- Autosampler Vials
- Guard Columns
- Ferrules, Septa



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.

ID	Length	Suffix #*
0.25mm	5m	-124
	10m	-127

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

Stainless Steel Inlet Seal for Single-Column Installation*

Size	2-pk.	10-pk.
0.8mm ID	21315	21316

*Equivalent to Agilent Part# 18740-20880.

Inlet Liners

For Agilent GCs

Description	ID/OD & Length (mm)	ea.	5-pk.
Uniliner®*	4.0 ID, 6.3 OD x 78.5	20335	20336
Drilled Uniliner®	4.0 ID, 6.3 OD x 78.5	21054	21055
1mm Split**	1.0 ID, 6.3 OD x 78.5	20972	20973

*Restek design improves performance over the original Agilent Liner.

**Use this liner for increased sensitivity.

Low Volume Injector for Agilent GCs

Description	kit.
Low-Volume Injector for Agilent Split/Splitless GC Inlets	21692

Analytical Reference Materials: FL-PRO, Revision 1 (11-1-1995)

Recommended Surrogate

nonatriacontane (C39), 3000 µg/mL in carbon disulfide, working solution 300µg/mL in acetone.

Florida TRPH Surrogate Mix

n-nonatriacontane (C39)

3,000µg/mL in carbon disulfide, 1mL/ampul*

	Each	5-pk.	10-pk.
	31456	31456-510	
w/data pack	31456-500	31456-520	31556

*Ground transportation shipments only.

o-Terphenyl Standard

10,000µg/mL in methylene chloride, 1mL/ampul

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

2,000µg/mL in acetone, 1mL/ampul

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

Petroleum Hydrocarbon Standard

Florida TRPH Standard

<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

Pattern Recognition Standards (Optional)

Used to identify petroleum product type.

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

Kerosene Fuel Composite Standard

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

	Each	5-pk.	10-pk.
	31094	31094-510	
w/data pack	31094-500	31094-520	31194

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

	Each	5-pk.	10-pk.
	31256	31256-510	
w/data pack	31256-500	31256-520	31356

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

	Each	5-pk.	10-pk.
	31257	31257-510	
w/data pack	31257-500	31257-520	31357

Motor Oil Composite Standard

This composite solution is prepared from an equal volume blend of the following types of motor oil: 5w30, 10w30, 10w40, and 20w50. After blending, a precisely weighed amount of the composite is added to a volumetric flask to produce a mixture of 50,000µg/mL in methylene chloride, 1mL/ampul. 50,000µg/mL in methylene chloride, 1mL/ampul

	Each	5-pk.	10-pk.
	31464	31464-510	
w/data pack	31464-500	31464-520	31564

Used Motor Oil Composite Standard

This composite solution is prepared from an equal volume blend from five different gasoline powered vehicles (belonging to Restek employees). After blending, a precisely weighed amount of the composite is added to a volumetric flask to produce a mixture at 50,000µg/mL in methylene chloride 1mL/ampul.

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

	Each	5-pk.	10-pk.
	31465	31465-510	
w/data pack	31465-500	31465-520	31565

Extractable Petroleum Hydrocarbons:

MA EPH (Jan. 1998)

Internal/surrogate

p-Terphenyl Standard

10,000µg/mL in methylene chloride, 1mL/ampul

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

o-Terphenyl Standard

See FL-PRO, Rev. 1(11-1-1995) for description 31097 31066

5-α-androstane

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

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

MA EPH Surrogate Spike Mix

1-chlorooctadecane o-terphenyl
4,000µg/mL each in acetone, 1mL/ampul

	Each	5-pk.	10-pk.
	31479	31479-510	
w/data pack	31479-500	31479-520	31579

MA Fractionation Surrogate Spike Mix

2-bromonaphthalene 2-fluorobiphenyl
4,000µg/mL each in hexane, 1mL/ampul

	Each	5-pk.	10-pk.
	31480	31480-510	
w/data pack	31480-500	31480-520	31580

Matrix Spike Mixtures

MA EPH Matrix Spike Mix

n-nonane (C9) n-octacosane (C28) naphthalene
n-tetradecane (C14) acenaphthene pyrene
n-nonadecane (C19) anthracene
n-eicosane (C20) chrysene
250µg/mL each in acetone, 1mL/ampul

	Each	5-pk.	10-pk.
	31460	31460-510	
w/data pack	31460-500	31460-520	31560

Calibration Mixtures

MA EPH Aromatic Hydrocarbon Standard

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

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

	Each	5-pk.	10-pk.
	31458	31458-510	
w/data pack	31458-500	31458-520	31558

MA EPH Aliphatic Hydrocarbon Standard

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

1,000µg/mL each in hexane, 1mL/ampul

	Each	5-pk.	10-pk.
	31459	31459-510	
w/data pack	31459-500	31459-520	31559

Fractionation Check Mixtures

MA Fractionation Check Mix

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

25µg/mL each in hexane, 1mL/ampul

	Each	5-pk.	10-pk.
	31481	31481-510	
w/data pack	31481-500	31481-520	31581

Aliphatic and Aromatic Fractions:

EPA Method 8021B and 8260B

Internal/surrogate

MA VPH Surrogate Standard

2,5-dibromotoluene
1,000µg/mL in P&T methanol, 1mL/ampul

	Each	5-pk.	10-pk.
	30435	30435-510	
w/data pack	30435-500	30435-520	30535

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

	Each	5-pk.	10-pk.
	30453	30453-510	
w/data pack	30453-500	30453-520	30553

Matrix Spike Mixtures

MA VPH Matrix Spike Mix with Surrogate

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

2,500µg/mL each in P&T methanol, 1mL/ampul

	Each	5-pk.	10-pk.
	30454	30454-510	
w/data pack	30454-500	30454-520	30554

Calibration Mixtures

California Oxygenates Mix

diisopropyl ether	2,000µg/mL	<i>tert</i> -butyl alcohol	10,000
ethyl- <i>tert</i> -butyl ether	2,000	methyl <i>tert</i> -butyl ether	2,000
<i>tert</i> -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

BTEX Standards

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 *m*-xylene & *p*-xylene, 1mL/ampul

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

MA Volatile Petroleum Hydrocarbon (VPH) Standard

<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	1,500		

In P&T methanol, 1mL/ampul

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

Other Certified Fuel Standards

Perform calibration checks for TPH & aromatics in one analysis.

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
isopropyl benzene	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

Certified Aromatics in Gasoline

Certified for:

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

Certified PAHs in Diesel

Certified PAHs & Typical Certified Conc.* (ppm)

acenaphthene	20	2-methylnaphthalene	180
acenaphthylene	14	naphthalene	90
fluorene d6	32	phenanthrene	47
1-methylnaphthalene	269		

50,000ppm diesel #2 in methylene chloride, PAH conc. listed above, 1mL/ampul

	Each	5-pk.	10-pk.
	31673	31673-510	
w/data pack	31673-500	31673-520	31773

*Varies lot to lot. See Certificate of Analysis for certified concentrations.



Custom Reference Material Request Form

Domestic Customers
FAX#: (814) 355-2895
email: standards@restekcorp.com

International Customers
Contact Your Local
Restek Representative.

Name: _____ **Date:** _____

Company/Location: _____

Phone #: _____ **FAX #:** _____

E-mail: _____

Take these eight steps to create the right solution:

1. Mixture Description: _____
2. Solvent: _____ **3. No. of components:** _____
4. Volume (select): 1mL, 2mL, 5mL, 10mL, or other mL _____
5. Quantity: No. of units _____

6. Select testing and documentation that best meets your requirements:

- Gravimetric Documentation: Lot Sheet with balance printout attached.
- Qualitative Documentation: Certificate of Composition, Chromatogram, and Gravimetric Documentation.
- Quantitative Documentation: Certificate of Analysis and Data Pack.

7. Compound(s): (list or attach sheet)	Concentration:	8. Concentration Units
1.		<input type="radio"/> mg/mL <input type="radio"/> µg/mL <input type="radio"/> ng/mL <input type="radio"/> vol./vol.% <input type="radio"/> wt./wt.% <input type="radio"/> other _____
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		

ALL mixtures are produced in accordance with our ISO 9001 registration. Analytical balances are calibrated daily at seven mass levels using NIST-traceable weights. ALL raw materials used are a minimum of 97% pure unless otherwise specified.

on-line: <http://www.restekcorp.com/stdreq.htm>



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we can make any mixture
to your specifications.

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www.restekcorp.com

For more information,
Call 800-356-1688 or 814-353-1300 or
Contact Your Local Restek Representative

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