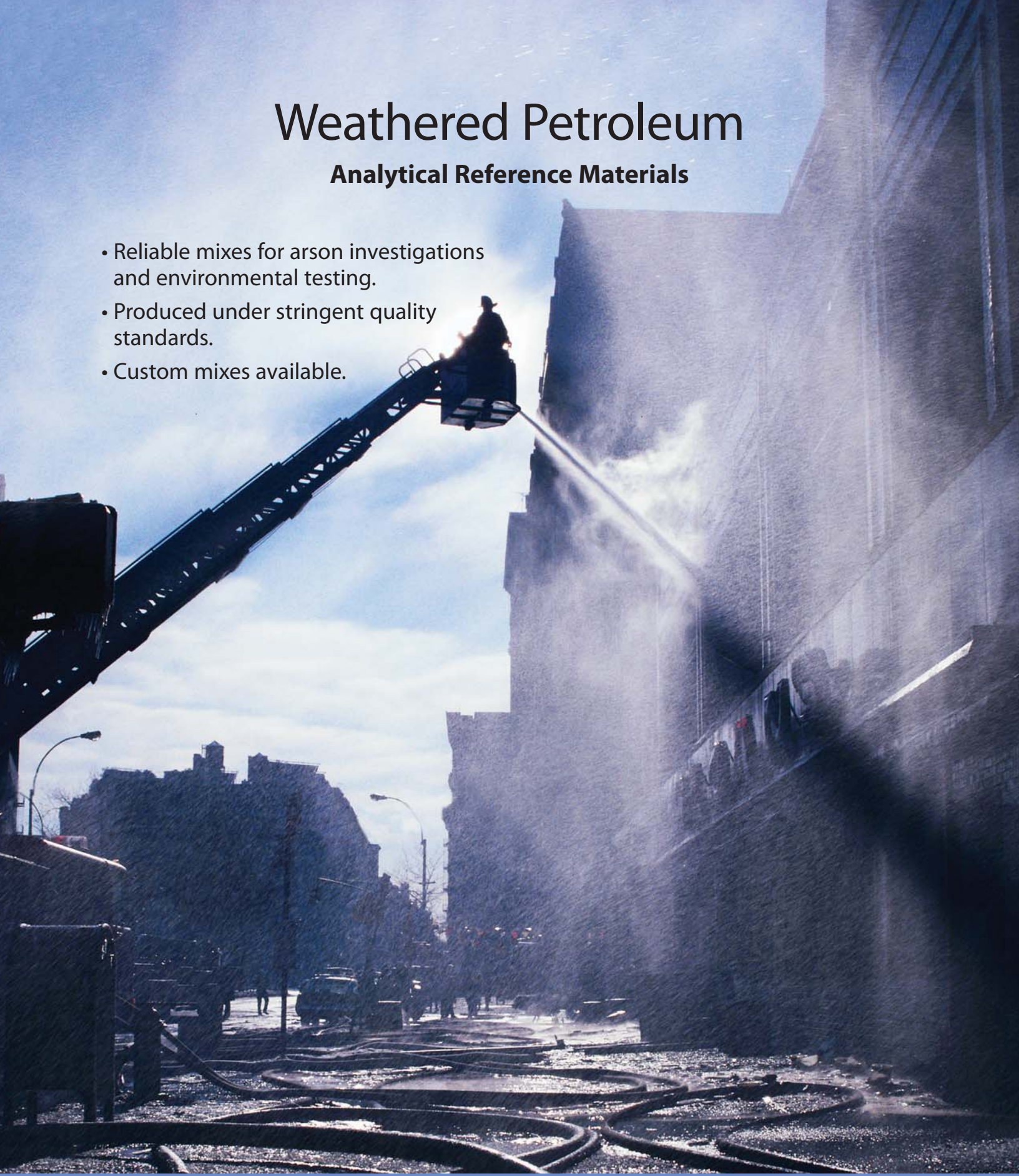

Weathered Petroleum

Analytical Reference Materials

- Reliable mixes for arson investigations and environmental testing.
- Produced under stringent quality standards.
- Custom mixes available.

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Weathered Petroleum Analytical Reference Materials

- Arson investigations (ASTM Fire Debris Analysis)
- Environmental Analysis (Underground Storage Tank Monitoring)

These products are designed to identify weathered petroleum products in environmental samples and arson investigation samples. Weathering by evaporation, biological decomposition, or ecological action can dramatically change the fingerprint of petroleum products—using our weathered petroleum reference materials for pattern recognition will help you identify the type of petroleum product in your sample.

Restek weathered petroleum products are prepared by controlled evaporation in a laboratory environment under strict quality control standards. We thoroughly document our procedures in compliance with our ISO 9001:2000 registration and include those records in our free data packs.

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.

See **www.restek.com/solutions** for our Custom Reference Materials Request Form.

free data

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

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 MSDS, enter the catalog number of the product in the Search feature. For a free data pack, enter the catalog number and lot number of the product, to obtain a printable pdf file.

ASTM E1387 and E1618 Fire Debris Analysis

E1387 Column Resolution Check Mix

(13 components)

n-hexane (C6)	*n*-eicosane (C20)
n-octane (C8)	2-ethyltoluene
n-decane (C10)	3-ethyltoluene
n-dodecane (C12)	toluene
n-tetradecane (C14)	1,2,4-trimethylbenzene
n-hexadecane (C16)	*p*-xylene
n-octadecane (C18)	

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

cat. # 31224

E1618 Test Mix (13 components)

Components in this mix (0.5µL/mL or 0.05% volume/volume each) are at 10X the concentration of the final test solution specified in ASTM 1618 and ASTM 1387.

n-hexane (C6)	*n*-eicosane (C20)
n-octane (C8)	2-ethyltoluene
n-decane (C10)	3-ethyltoluene
n-dodecane (C12)	toluene
n-tetradecane (C14)	1,2,4-trimethylbenzene
n-hexadecane (C16)	*p*-xylene
n-octadecane (C18)	

0.05% volume/volume each in methylene chloride, 1mL/ampul

cat. # 31613

Kerosene

Prepared from a single source (one refinery) product. The weathered materials indicate the percent weight loss from the original material.

Kerosene (ASTM Class 4 Accelerant)

Concentration is µg/mL. Volume is 1mL/ampul.

Compound	Solvent	Conc.	cat.#
unweathered	D	5,000	31229
25% weathered	D	5,000	31230
50% weathered	D	5,000	31231
75% weathered	D	5,000	31232

D = methylene chloride

Weathered Kerosene Kit

kit

31229: Kerosene Standard
31230: Kerosene Standard: 25% Weathered
31231: Kerosene Standard: 50% Weathered
31232: Kerosene Standard: 75% Weathered

Contains 1mL each of these mixtures.

cat. # 31238

Unleaded Gasoline

Prepared from a single source (one refinery) product. Samples of regular and premium grade unleaded gasoline were collected, then blended in equal volumes. The weathered materials indicate the percent weight loss from the original material.

Unleaded Gasoline (ASTM Class 2 Accelerant)

Concentration is µg/mL. Volume is 1mL/ampul.

Compound	Solvent	Conc.	cat.#
unweathered	PTM	5,000	30096
25% weathered	PTM	5,000	30097
50% weathered	PTM	5,000	30098
75% weathered	PTM	5,000	30099
99% weathered	PTM	5,000	30436

PTM = P&T methanol

Weathered Gasoline Kit

kit

30096: Unleaded Gasoline Standard
30097: Unleaded Gas Standard: 25% Weathered
30098: Unleaded Gas Standard: 50% Weathered
30099: Unleaded Gas Standard: 75% Weathered

Contains 1mL each of these mixtures.

cat. # 30100

Weathered Gasoline Kit #2

kit

30096: Unleaded Gasoline Standard
30097: Unleaded Gas Standard: 25% Weathered
30098: Unleaded Gas Standard: 50% Weathered
30099: Unleaded Gas Standard: 75% Weathered
30436: Unleaded Gas Standard: 99% Weathered

Contains 1mL each of these mixtures.

cat. # 30437

Diesel Fuel #2

Prepared from a single source (one refinery) product. The weathered materials indicate the percent weight loss from the original material.

Diesel Fuel #2 (ASTM Class 5 Accelerant)

Concentration is µg/mL. Volume is 1mL/ampul.

Compound	Solvent	Conc.	cat.#
unweathered	D	5,000	31233
25% weathered	D	5,000	31234
50% weathered	D	5,000	31235
75% weathered	D	5,000	31236

D = methylene chloride

Weathered Diesel Fuel #2 Kit

kit

31233: Diesel Fuel #2 Standard
31234: Diesel Fuel #2 Standard: 25% Weathered
31235: Diesel Fuel #2 Standard: 50% Weathered
31236: Diesel Fuel #2 Standard: 75% Weathered

Contains 1mL each of these mixtures.
cat. # 31239

Mineral Spirits

There are four general types of mineral spirits, classified according to boiling point range (BPR):

- Type I (Stoddard solvent) BPR 149–182°C
- Type II (high flash point) BPR 177–196°C
- Type III (odorless) BPR 149–196°C
- Type IV (low dry point) BPR 149–174°C

We prepare our mineral spirit solutions from an equal volume blend of Type I, II, and III mineral spirits.

Mineral Spirits

Concentration is µg/mL. Volume is 1mL/ampul unless otherwise noted.

Compound	Solvent	Conc.	cat.#
unweathered	D	5,000	31225
unweathered	D	50,000	31260
unweathered (5mL)	D	50,000	31261
25% weathered	D	5,000	31226
50% weathered	D	5,000	31227
75% weathered	D	5,000	31228

D = methylene chloride

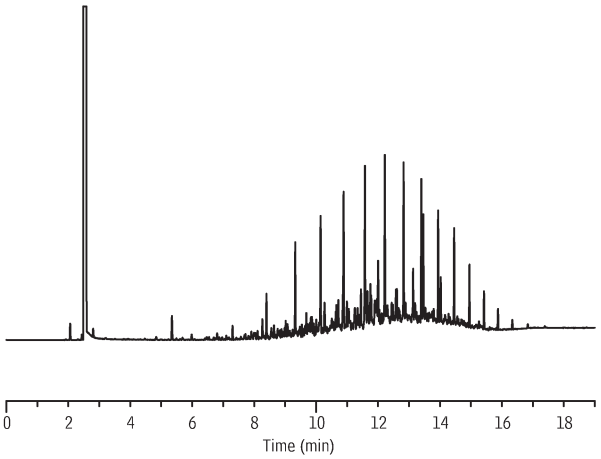
Weathered Mineral Spirits Kit

kit

31225: Mineral Spirits Standard
31226: Mineral Spirits Standard: 25% Weathered
31227: Mineral Spirits Standard: 50% Weathered
31228: Mineral Spirits Standard: 75% Weathered

Contains 1mL each of these mixtures.
cat. # 31237

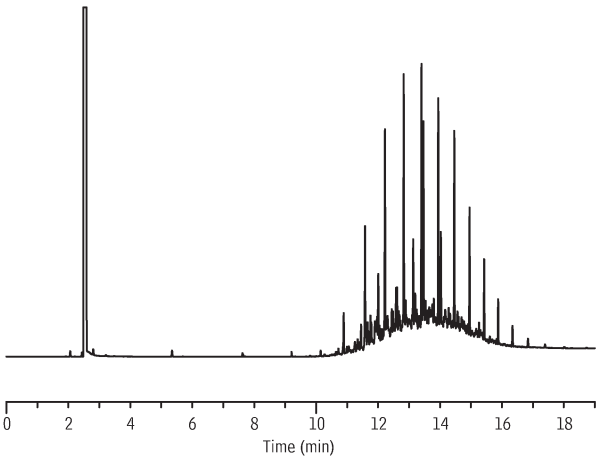
Unweathered Diesel Fuel #2 on Rxi™-1ms



GC_PC00922

Column:	Rxi™-1ms 30m, 0.25mm ID, 0.50µm (cat.# 13338)
Sample:	5000µg/mL diesel fuel #2, unweathered (cat.# 31233) in methylene chloride
Inj.:	1.0µL split (split ratio 20:1), 4mm single gooseneck w/wool inlet liner (cat.# 22405)
Inj. temp.:	250°C
Carrier gas:	helium, constant flow
Linear velocity:	28cm/sec. @ 50°C
Oven temp.:	50°C (hold 2 min.) to 75°C @ 10°C/min., 300°C @ 20°C/min. (hold 5 min.)
Det.:	FID @ 300°C

50% Weathered Diesel Fuel #2 on Rxi™-1ms



GC_PC00921

Column:	Rxi™-1ms 30m, 0.25mm ID, 0.50µm (cat.# 13338)
Sample:	5000µg/mL diesel fuel #2, 50% weathered (cat.# 31235) in methylene chloride
Inj.:	1.0µL split (split ratio 20:1), 4mm single gooseneck w/wool inlet liner (cat.# 22405)
Inj. temp.:	250°C
Carrier gas:	helium, constant flow
Linear velocity:	28cm/sec. @ 50°C
Oven temp.:	50°C (hold 2 min.) to 75°C @ 10°C/min., 300°C @ 20°C/min. (hold 5 min.)
Det.:	FID @ 300°C

Rxi™-1ms (nonpolar phase, Crossbond® 100% dimethyl polysiloxane)

- Low bleed at 350°C allows for easier integration.
- Excellent column coating efficiency for better resolution between peaks.
- Reproducible chromatographic performance from column to column, allowing new columns to be installed without additional method optimization.

Rxi™-1ms Columns (fused silica)

(Crossbond® 100% dimethyl polysiloxane)

similar **phases**

DB-1, DB-1ms, HP-1, HP-1ms, Ultra-1, SPB-1, Equity-1

ID	df (µm)	temp. limits	15-Meter	30-Meter	60-Meter	
0.25mm	0.25	-60 to 330/350°C	13320	13323	13326	
	0.50	-60 to 330/350°C	13335	13338	13341	
	1.00	-60 to 330/350°C	13350	13353	13356	
0.32mm	0.25	-60 to 330/350°C	13321	13324	13327	
	0.50	-60 to 330/350°C	13336	13339	13342	
	1.00	-60 to 330/350°C	13351	13354	13357	
	4.00	-60 to 330/350°C		13396		
0.53mm	0.50	-60 to 330/350°C	13337	13340		
	1.00	-60 to 330/350°C	13352	13355		
	1.50	-60 to 330/350°C	13367	13370	13373	
ID	**df (µm)**	**temp. limits**	**12-Meter**	**20-Meter**	**25-Meter**	**50-Meter**
0.18mm	0.18	-60 to 330/350°C		13302		
0.20mm	0.33	-60 to 330/350°C	13397		13398	13399

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* Availability of raw materials and final product testing requested may affect delivery of some mixtures.

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