



FUEL ANALYSIS REFERENCE MATERIALS

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LGC Quality | ISO 17034 | ISO/IEC 17025 | ISO 17043 | ISO 9001

Industrial
VHG | ARMI | MBH
Paragon Scientific

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INTRODUCTION

Fuel Analysis Reference Materials

Fuel testing laboratories support fuel quality control, process optimization, regulatory reporting and innovation for refineries, pipelines, storage terminals, end-use markets, and other industries. Detection of even the most minor impurities, precise process control and accurate material characterization are all critical to the safety and profitability of operations throughout the petroleum supply chain.

Whether you are testing according to ASTM, ISO, or other industry standards, our extensive range of in-matrix and general calibration standards for fuel analysis are the tools you need in the pursuit of the highest accuracy and precision possible in your data.

LGC Standards has been a trusted partner to industry leaders and has supported fuel analysis for over 30 years. Standards in our fuel analysis portfolio are produced under our ISO 17034 accreditations and analyzed on our ISO/IEC 17025 laboratories.

You've trusted us for decades to create superior reference materials and innovative measurement tools that support the quality of your analyses.

Leveraging the synergies of the LGC Industrials product lines, we are joining together — VHG, ARMI, MBH, and Paragon Scientific — under a single brand: Industrial.

Building on our collective expertise, Industrial fosters the innovation and the agility necessary to create the measurement tools you rely on when developing, using, and transforming materials to achieve your mission.

Industrial – The Material Difference.



Section 1

Sulfur Standards

Sulfur in Crude Oil Standards

Suitable for use with ASTM D2622, D4294, and others.

Concentrations		Matrix: Crude Oil Volume: 100 mL
($\mu\text{g/g}$)	(wt%)	Product No.
Blank	Matrix Blank	VHG-CRUDE-100
1,000	0.1	VHG-SCRD-1000-100
2,500	0.25	VHG-SCRD-2500-100
5,000	0.5	VHG-SCRD-5000-100
10,000	1	VHG-SCRD-1P-100
20,000	2	VHG-SCRD-2P-100
30,000	3	VHG-SCRD-3P-100
40,000	4	VHG-SCRD-4P-100
50,000	5	VHG-SCRD-5P-100

Sulfur in Residual Oil Standards

Suitable for use with ASTM D2622, D4294, and others.

Concentrations		Matrix: Residual Oil Volume: 100 mL
($\mu\text{g/g}$)	(wt%)	Product No.
2,500	0.25	VHG-SRES-2500-100
5,000	0.5	VHG-SRES-5000-100
10,000	1	VHG-SRES-1P-100
20,000	2	VHG-SRES-2P-100
30,000	3	VHG-SRES-3P-100
40,000	4	VHG-SRES-4P-100
50,000	5	VHG-SRES-5P-100

Section 1: Sulfur Standards

Sulfur (nDBS) in Mineral Oil

Suitable for use with ASTM Methods D2622, D4294, D5453, D7039, D7212, D7220 and others.

Concentrations		Matrix: 20 cSt Oil Volume: 100 mL	Matrix: 75 cSt Oil Volume: 100 mL
(µg/g)	(wt%)	Product No.	Product No.
Blank	Blank	VHG-S20MIN-BLK-100	VHG-SMIN-BLK-100
5	0.0005	VHG-S20MIN-5-100	VHG-SMIN-5-100
10	0.001	VHG-S20MIN-10-100	VHG-SMIN-10-100
15	0.0015	VHG-S20MIN-15-100	VHG-SMIN-15-100
20	0.002	VHG-S20MIN-20-100	VHG-SMIN-20-100
25	0.0025	VHG-S20MIN-25-100	VHG-SMIN-25-100
50	0.005	VHG-S20MIN-50-100	VHG-SMIN-50-100
75	0.0075	VHG-S20MIN-75-100	VHG-SMIN-75-100
100	0.01	VHG-S20MIN-100-100	VHG-SMIN-100-100
200	0.02	VHG-S20MIN-200-100	VHG-SMIN-200-100
300	0.03	VHG-S20MIN-300-100	VHG-SMIN-300-100
400	0.04	VHG-S20MIN-400-100	VHG-SMIN-400-100
500	0.05	VHG-S20MIN-500-100	VHG-SMIN-500-100
750	0.075	VHG-S20MIN-750-100	VHG-SMIN-750-100
1000	0.1	VHG-S20MIN-1000-100	VHG-SMIN-1000-100
1500	0.15	VHG-S20MIN-1500-100	VHG-SMIN-1500-100
3000	0.3	VHG-S20MIN-3000-100	VHG-SMIN-3000-100
5000	0.5	VHG-S20MIN-5000-100	VHG-SMIN-5000-100
7500	0.75	VHG-S20MIN-7500-100	VHG-SMIN-7500-100
10000	1	VHG-S20MIN-1P-100	VHG-SMIN-1P-100
20000	2	VHG-S20MIN-2P-100	VHG-SMIN-2P-100
30000	3	VHG-S20MIN-3P-100	VHG-SMIN-3P-100
40000	4	VHG-S20MIN-4P-100	VHG-SMIN-4P-100
50000	5	VHG-S20MIN-5P-100	VHG-SMIN-5P-100



Section 1: Sulfur Standards

Sulfur (Polysulfide) in Mineral Oil

Full range of Sulfur Standards for XRF. Suitable for use with ASTM Methods D2622, D4294, D5453, D7039, D7212, D7220 and others.

Concentrations		Matrix: 13 cSt Oil Volume: 100 mL
(µg/g)	(wt%)	Product No.
Blank	Blank	VHG-PS13M-BLK-100+
5	0.0005	VHG-PS13M-5-100+
10	0.001	VHG-PS13M-10-100+
15	0.0015	VHG-PS13M-15-100+
20	0.002	VHG-PS13M-20-100
25	0.0025	VHG-PS13M-25-100
50	0.005	VHG-PS13M-50-100+
75	0.0075	VHG-PS13M-75-100
100	0.01	VHG-PS13M-100-100+
200	0.02	VHG-PS13M-200-100
300	0.03	VHG-PS13M-300-100
400	0.04	VHG-PS13M-400-100
500	0.05	VHG-PS13M-500-100
750	0.075	VHG-PS13M-750-100
1000	0.1	VHG-PS13M-1000-100+
1500	0.15	VHG-PS13M-1500-100
3000	0.3	VHG-PS13M-3000-100
5000	0.5	VHG-PS13M-5000-100
10000	1	VHG-PS13M-1P-100+
20000	2	VHG-PS13M-2P-100+
30000	3	VHG-PS13M-3P-100
40000	4	VHG-PS13M-4P-100
50000	5	VHG-PS13M-5P-100+

Sulfur in Kerosene/Jet A-1 Standards

Suitable for use with ASTM D2622, D3120, D4045, D4294, D5453, and others.

Concentrations		Matrix: Kerosene Volume: 100 mL
(µg/g)	(wt%)	Product No.
Blank	Blank	VHG-SKERO-BLK-100
10	0.001	VHG-SKERO-10-100
50	0.005	VHG-SKERO-50-100
100	0.01	VHG-SKERO-100-100
300	0.03	VHG-SKERO-300-100
500	0.05	VHG-SKERO-500-100
750	0.075	VHG-SKERO-750-100
1,000	0.1	VHG-SKERO-1000-100

Section 1: Sulfur Standards

Sulfur in Isooctane

Suitable for use with ASTM D2622, D3120, D4045, D4294, D5453, D6334, D7039, D7212, D7220 and others.

Concentrations		Matrix: Isooctane Volume: 100 mL
(µg/g)	(wt%)	Product No.
Blank	Matrix blank	VHG-SISO-BLK-100
5	0.0005	VHG-SISO-5-100
10	0.001	VHG-SISO-10-100
15	0.0015	VHG-SISO-15-100
20	0.002	VHG-SISO-20-100
25	0.0025	VHG-SISO-25-100
50	0.005	VHG-SISO-50-100
75	0.0075	VHG-SISO-75-100
100	0.01	VHG-SISO-100-100
200	0.02	VHG-SISO-200-100
300	0.03	VHG-SISO-300-100
400	0.04	VHG-SISO-400-100
500	0.05	VHG-SISO-500-100
750	0.075	VHG-SISO-750-100
1000	0.1	VHG-SISO-1000-100
3000	0.3	VHG-SISO-3000-100

Sulfur in Isooctane (70%) / Toluene (30%)

Suitable for use with ASTM D2622, D3120, D4045, D4294, D5453, D6334, D7039, D7212, D7220 and others.

Concentrations		Matrix: 70% Isooctane/30% Toluene Volume: 100 mL
(µg/g)	(wt%)	Product No.
Blank	Matrix Blank	VHG-SISO70TOL30-BLK-100
5	0.0005	VHG-SISO70TOL30-5-100
10	0.001	VHG-SISO70TOL30-10-100
15	0.0015	VHG-SISO70TOL30-15-100
20	0.002	VHG-SISO70TOL30-20-100
25	0.0025	VHG-SISO70TOL30-25-100
50	0.005	VHG-SISO70TOL30-50-100
75	0.0075	VHG-SISO70TOL30-75-100
100	0.01	VHG-SISO70TOL30-100-100
500	0.05	VHG-SISO70TOL30-500-100
1000	0.1	VHG-SISO70TOL30-1000-100

Section 1: Sulfur Standards

Sulfur in Isooctane (75%) / Toluene (25%)

Suitable for use with ASTM D2622, D3120, D4045, D4294, D5453, D6334, D7039, D7212, D7220 and others.

Concentrations		Matrix: 75% Isooctane/25% Toluene Volume: 100 mL
(µg/g)	(wt%)	Product No.
Blank	Matrix Blank	VHG-SISO75TOL25-BLK-100
5	0.0005	VHG-SISO75TOL25-5-100
10	0.001	VHG-SISO75TOL25-10-100
15	0.0015	VHG-SISO75TOL25-15-100
20	0.002	VHG-SISO75TOL25-20-100
25	0.0025	VHG-SISO75TOL25-25-100
50	0.005	VHG-SISO75TOL25-50-100
100	0.01	VHG-SISO75TOL25-100-100

Sulfur in Isooctane (80%) / Toluene (20%)

Suitable for use with ASTM D2622, D3120, D4045, D4294, D5453, D6334, D7039, D7212, D7220 and others.

Concentrations		Matrix: 80% Isooctane/20% Toluene Volume: 100 mL
(µg/g)	(wt%)	Product No.
Blank	Matrix Blank	VHG-SISO80TOL20-BLK-100
5	0.0005	VHG-SISO80TOL20-5-100
10	0.001	VHG-SISO80TOL20-10-100
15	0.0015	VHG-SISO80TOL20-15-100
20	0.002	VHG-SISO80TOL20-20-100
25	0.0025	VHG-SISO80TOL20-25-100
50	0.005	VHG-SISO80TOL20-50-100
75	0.0075	VHG-SISO80TOL20-75-100
100	0.01	VHG-SISO80TOL20-100-100
250	0.025	VHG-SISO80TOL20-250-100
500	0.05	VHG-SISO80TOL20-500-100
1000	0.1	VHG-SISO80TOL20-1000-100

Section 1: Sulfur Standards

Sulfur in #2 Diesel Fuel Standards

Suitable for XRF use with ASTM D2622, D4294, D5453, D7039, D7212, D7220 and others.

Concentrations		Matrix: #2 Diesel Fuel Volume: 100 mL
(µg/g)	(wt%)	Product No.
Blank	Blank	VHG-SDSL-BLK-100
5	0.0005	VHG-SDSL-5-100
10	0.001	VHG-SDSL-10-100
15	0.0015	VHG-SDSL-15-100
20	0.002	VHG-SDSL-20-100
25	0.0025	VHG-SDSL-25-100
50	0.005	VHG-SDSL-50-100
75	0.0075	VHG-SDSL-75-100
100	0.01	VHG-SDSL-100-100
200	0.02	VHG-SDSL-200-100
300	0.03	VHG-SDSL-300-100
400	0.04	VHG-SDSL-400-100
500	0.05	VHG-SDSL-500-100
750	0.075	VHG-SDSL-750-100
1,000	0.1	VHG-SDSL-1000-100
1,500	0.15	VHG-SDSL-1500-100
3,000	0.3	VHG-SDSL-3000-100
5,000	0.5	VHG-SDSL-5000-100
7,500	0.75	VHG-SDSL-7500-100
10,000	1	VHG-SDSL-1P-100
20,000	2	VHG-SDSL-2P-100
30,000	3	VHG-SDSL-3P-100
40,000	4	VHG-SDSL-4P-100
50,000	5	VHG-SDSL-5P-100

Sulfur in Biodiesel

Suitable for use with ASTM D2622, D4294, D5453

Description	Size	Product No.
Sulfur Standard: S @ 5 µg/g in B100 Biodiesel	100 mL	VHG-SB100-5-100
Sulfur Standard: S @ 10 µg/g in B100 Biodiesel	100 mL	VHG-SB100-10-100
Sulfur Standard: S @ 15 µg/g in B100 Biodiesel	100 mL	VHG-SB100-15-100
Sulfur Standard: S @ 20 µg/g in B100 Biodiesel	100 mL	VHG-SB100-20-100
Sulfur Standard: S @ 25 µg/g in B100 Biodiesel	100 mL	VHG-SB100-25-100
Sulfur Standard: S @ 50 µg/g in B100 Biodiesel	100 mL	VHG-SB100-50-100
Sulfur Standard: S @ 100 µg/g in B100 Biodiesel	100 mL	VHG-SB100-100-100
Sulfur Standard: S @ 500 µg/g in B100 Biodiesel	100 mL	VHG-SB100-500-100

Section 2

Standards for Crude Oil and Residual Oil Analysis

Sulfur in Crude and Residual Oil Standards

Sulfur in Crude Oil and Sulfur in Residual Oil Standards that are suitable for use with ASTM D2622, D4294, and others. Matrix: See Below. Volume: 100 mL

Concentrations		Crude Oil Volume: 100 mL	Residual Oil Volume: 100 mL
(µg/g)	(wt%)	Product No.	Product No.
Blank	Matrix Blank	VHG-CRUDE-100	-
1,000	0.1	VHG-SCRD-1000-100	-
2,500	0.25	VHG-SCRD-2500-100	VHG-SRES-2500-100
5,000	0.5	VHG-SCRD-5000-100	VHG-SRES-5000-100
10,000	1	VHG-SCRD-1P-100	VHG-SRES-1P-100
20,000	2	VHG-SCRD-2P-100	VHG-SRES-2P-100
30,000	3	VHG-SCRD-3P-100	VHG-SRES-3P-100
40,000	4	VHG-SCRD-4P-100	VHG-SRES-4P-100
50,000	5	VHG-SCRD-5P-100	VHG-SRES-5P-100

Sulfur and Metals in Oil

Suitable for sulfur and metals in crude and residual oils.

Elemental Concentrations

Sulfur (wt%)	Iron (µg/g)	Nickel (µg/g)	Vanadium (µg/g)	Product No.
0	0	0	0	VHG-SMOIL1-100
3	400	100	250	VHG-SMOIL2-100
1	300	10	500	VHG-SMOIL3-100
1	0	80	350	VHG-SMOIL4-100
5	250	60	100	VHG-SMOIL5-100
4	350	30	200	VHG-SMOIL6-100
4	200	50	0	VHG-SMOIL7-100
6	50	40	400	VHG-SMOIL8-100
2	450	20	300	VHG-SMOIL9-100
2	500	5	150	VHG-SMOIL10-100
3	150	70	25	VHG-SMOIL11-100
5	100	0	50	VHG-SMOIL12-100

Available as a set: VHG-SMOILSET-12X100



Section 3

Standards for Jet Aviation Fuel and Kerosene Analysis

Standards for Jet Aviation Fuel Analysis

Application	Description	Size	Product No.
ASTM D86, IP 123 and EN ISO 3405	Certified Reference Material Distillation Standard, Jet Aviation Fuel (nominal values from 158.7 to 268.2°C)	250 mL	ALK-CRMU-DIKR
ASTM D4052, IP 365, ISO 12185	Certified Reference Material Density Standard, Jet Aviation Fuel (nominal value 0.79684 g/mL @ 15°C)	250 mL	ALK-CRMU-DEKR
IP 170	Certified Reference Material Abel Flash point, Jet Aviation Fuel (nominal value: 40.3°C)	250 mL	ALK-CRMU-ABKR
ASTM D56	Certified Reference Material TAG Flash Point, Jet Aviation Fuel (nominal value: 40.4°C)	250 mL	ALK-CRMU-TAKR
ASTM D2386, IP 16, ISO 3013	Certified Reference Material Freezing Point, Jet Aviation Fuel (nominal value: -53.7°C)	250 mL	ALK-CRMU-FRKR
ASTM D3242	Certified Reference Material Acidity (Jet), Jet Aviation Fuel (nominal value: 0.0067 mg KOH/g)	250 mL	ALK-CRMU-ADKR
ASTM D611	Certified Reference Material Aniline Point, Jet Aviation Fuel (nominal value: 58.48°C)	250 mL	ALK-CRMU-APKR
ASTM D1322 / IP 57	Certified Reference Smoke Point - Automatic Certified Reference Material, Jet Aviation Fuel (nominal value: 23.76 mm)	250 mL	ALK-CRMU-SPKR
ASTM D3227, IP 342, ISO 3012	Mercaptan Sulphur in Hydrocarbons, Jet Aviation Fuel (nominal value 15.2 mg/kg)	250 mL	ALK-CRMU-SUKR

Standards for ASTM D1319

Description	Size	Product No.
ASTM D1319, FIA Dyed Gel	40 g	ALK-PS-250-DG
ASTM D1319, FIA Silica Gel	50 g	ALK-PS-214477-50G
ASTM D1319, FIA Silica Gel	250 g	ALK-PS-214477-250G
ASTM D1319, FIA Silica Gel	1 Kg	ALK-PS-214477-1KG
Certified Reference Material FIA Aromatics, Jet Aviation Fuel (nominal value: 17.17%)	250 mL	ALK-CRMU-FIKR

Section 3: Jet Aviation Fuel and Kerosene Analysis Standards

Smoke Point Reference Fuel Blends Suitable for use with ASTM D1322, IP598

Description	Size	Product No.
Smoke Point Reference Fuel Blend 1 for 14.7 mm (40/60 %v/v)	100 mL	ALK-SPRF-1
Smoke Point Reference Fuel Blend 2 for 20.2 mm (25/75 %v/v)	100 mL	ALK-SPRF-2
Smoke Point Reference Fuel Blend 3 for 22.7 mm (20/80 %v/v)	100 mL	ALK-SPRF-3
Smoke Point Reference Fuel Blend 4 for 25.8 mm (15/85 %v/v)	100 mL	ALK-SPRF-4
Smoke Point Reference Fuel Blend 5 for 30.2 mm (10/90 %v/v)	100 mL	ALK-SPRF-5
Smoke Point Reference Fuel Blend 6 for 35.4 mm (5/95 %v/v)	100 mL	ALK-SPRF-6
Smoke Point Reference Fuel Blend 7 for 42.8 mm (0/100 %v/v)	100 mL	ALK-SPRF-7
Smoke Point Reference Fuel Blend Kit, (Blends 1 – 7: 14.7 mm, 20.2 mm, 22.7 mm, 25.8 mm, 30.2 mm, 35.4 mm and 42.8 mm)	7 X 100 mL	ALK-SPRF-KIT-7

Sulfur in Kerosene/Jet A-1 Standards Suitable for use with ASTM D2622, D3120, D4045, D4294, D5453, and others.

Concentrations		Matrix: Kerosene Volume: 100 mL
(µg/g)	(wt%)	Product No.
Blank	Blank	VHG-SKERO-BLK-100
10	0.001	VHG-SKERO-10-100
50	0.005	VHG-SKERO-50-100
100	0.01	VHG-SKERO-100-100
300	0.03	VHG-SKERO-300-100
500	0.05	VHG-SKERO-500-100
750	0.075	VHG-SKERO-750-100
1,000	0.1	VHG-SKERO-1000-100



Section 4

Standards for Gasoline Analysis

Standards for Gasoline Analysis			
Application	Description	Size	Product No.
ASTM D86, IP 123 and EN ISO 3405	Distillation Standard, Gasoline (nominal values from 32.8 to 173.3°C)	250 mL	ALK-CRMU-DIGA
ASTM D4052, IP 365, ISO 12185	Density Standard, Gasoline (nominal value 0.72587 g/mL @ 15°C)	250 mL	ALK-CRMU-DEGA
ASTM D2700	Motor Octane Number, Gasoline (nominal value: 85.9)	1 L	ALK-CRM-OMGA
ASTM D2699	Research Octane Number, Gasoline (nominal value: 97.2)	1 L	ALK-CRM-ORGA
ASTM D1319, ASTM D5580, ISO 22854	Aromatics Content, Gasoline (nominal value: 27.1%)	250 mL	ALK-CRM-ACGA
ASTM D4053, ISO 22854	Benzene Content (nominal value 0.62% Volume)	250 mL	ALK-CRM-BEGA
ASTM D5191	Reid Vapour Pressure Standard, Gasoline (nominal value: 58.9 kPa)	250 mL	ALK-CRM-VPGA

Sulfur in Isooctane		
Suitable for use with ASTM D2622, D3120, D4045, D4294, D5453, D6334, D7039, D7212, D7220 and others.		
Concentrations		Matrix: Isooctane Volume: 100 mL
(µg/g)	(wt%)	Product No.
Matrix blank	Blank	VHG-SISO-BLK-100
5	0.0005	VHG-SISO-5-100
10	0.001	VHG-SISO-10-100
15	0.0015	VHG-SISO-15-100
20	0.002	VHG-SISO-20-100
25	0.0025	VHG-SISO-25-100
50	0.005	VHG-SISO-50-100
75	0.0075	VHG-SISO-75-100
100	0.01	VHG-SISO-100-100
200	0.02	VHG-SISO-200-100
300	0.03	VHG-SISO-300-100
400	0.04	VHG-SISO-400-100
500	0.05	VHG-SISO-500-100
750	0.075	VHG-SISO-750-100
1000	0.1	VHG-SISO-1000-100
3000	0.3	VHG-SISO-3000-100

Section 4: Gasoline Analysis Standards

Sulfur in Isooctane (70%) / Toluene (30%)

Suitable for use with ASTM D2622, D3120, D4045, D4294, D5453, D6334, D7039, D7212, D7220 and others.

Concentrations		Matrix: 70% Isooctane/30% Toluene Volume: 100 mL
($\mu\text{g/g}$)	(wt%)	Product No.
Matrix Blank	Blank	VHG-SISO70TOL30-BLK-100
5	0.0005	VHG-SISO70TOL30-5-100
10	0.001	VHG-SISO70TOL30-10-100
15	0.0015	VHG-SISO70TOL30-15-100
20	0.002	VHG-SISO70TOL30-20-100
25	0.0025	VHG-SISO70TOL30-25-100
50	0.005	VHG-SISO70TOL30-50-100
75	0.0075	VHG-SISO70TOL30-75-100
100	0.01	VHG-SISO70TOL30-100-100
500	0.05	VHG-SISO70TOL30-500-100
1000	0.1	VHG-SISO70TOL30-1000-100

Sulfur in Isooctane (75%) / Toluene (25%)

Suitable for use with ASTM D2622, D3120, D4045, D4294, D5453, D6334, D7039, D7212, D7220 and others.

Concentrations		Matrix: 75% Isooctane/25% Toluene Volume: 100 mL
($\mu\text{g/g}$)	(wt%)	Product No.
Matrix Blank	Blank	VHG-SISO75TOL25-BLK-100
5	0.0005	VHG-SISO75TOL25-5-100
10	0.001	VHG-SISO75TOL25-10-100
15	0.0015	VHG-SISO75TOL25-15-100
20	0.002	VHG-SISO75TOL25-20-100
25	0.0025	VHG-SISO75TOL25-25-100
50	0.005	VHG-SISO75TOL25-50-100
100	0.01	VHG-SISO75TOL25-100-100

Section 4: Gasoline Analysis Standards

Sulfur in Isooctane (80%) / Toluene (20%)

Suitable for use with ASTM D2622, D3120, D4045, D4294, D5453, D6334, D7039, D7212, D7220 and others.

Concentrations		Matrix: 80% Isooctane/20% Toluene Volume: 100 mL
($\mu\text{g/g}$)	(wt%)	Product No.
Matrix Blank	Blank	VHG-SISO80TOL20-BLK-100
5	0.0005	VHG-SISO80TOL20-5-100
10	0.001	VHG-SISO80TOL20-10-100
15	0.0015	VHG-SISO80TOL20-15-100
20	0.002	VHG-SISO80TOL20-20-100
25	0.0025	VHG-SISO80TOL20-25-100
50	0.005	VHG-SISO80TOL20-50-100
75	0.0075	VHG-SISO80TOL20-75-100
100	0.01	VHG-SISO80TOL20-100-100
250	0.025	VHG-SISO80TOL20-250-100
500	0.05	VHG-SISO80TOL20-500-100
1000	0.1	VHG-SISO80TOL20-1000-100

Sulfur Compounds by Selective Detection (100 $\mu\text{g/g}$)

Calibration Standard for ASTM D5623 - Sulfur compounds in Light Hydrocarbon Liquids by Selective Detection. Matrix: Multi-component mixture that contains fourteen (14) sulfur species in base fuel (40% LV isooctane/40% LV hexane/20% LV toluene). Sulfur species include: methanethiol, ethanethiol, dimethylsulfide, 2-propanethiol, 2-methylpropane-2-thiol, 1-propanethiol, thiophene, diethylsulfide, 1-butanethiol, diethyl disulfide, thiophenol, benzothiophene, bromothiophene (as internal standard), and phenyl sulfide. Offered as a single 2 mL ampule.

Concentration (ng/ μL)	Matrix	Size	Product No.
100 $\mu\text{g/g}$ (as Sulfur)	Base Fuel	2 mL	VHG-MSX14-2

Bismuth internal standard for lead in gasoline analysis

Matrix: 75 cSt Mineral Oil

Application	Conc. (Bismuth)	Size (grams)	Product No.
ASTM D5059 Pt. A and C	0.793 g/L	100	VHG-BIIS-100G
ASTM D5059 Pt. A and C	0.793 g/L	400	VHG-BIIS-400G

Section 4: Gasoline Analysis Standards

Standards for Lead in Gasoline Suitable for use with ASTM D5059

Description	Size	Part No.
Lead Standard: Pb @ 0.001 g/gal in Isooctane	100mL	VHG-PBISO-0.001-100
Lead Standard: Pb @ 0.005 g/gal in Isooctane	100mL	VHG-PBISO-0.005-100
Lead Standard: Pb @ 0.010 g/gal in Isooctane	100mL	VHG-PBISO-0.010-100
Lead Standard: Pb @ 0.050 g/gal in Isooctane	100mL	VHG-PBISO-0.050-100
Lead Standard: Pb @ 0.1 g/gal in Isooctane	100mL	VHG-PBISO-0.1-100
Lead Standard: Pb @ 0.100 g/gal in Isooctane	100mL	VHG-PBISO-0.100-100
Lead Standard: Pb @ 0.300 g/gal in Isooctane	100mL	VHG-PBISO-0.300-100
Lead Standard: Pb @ 1.0 g/gal in Isooctane	100mL	VHG-PBISO-1-100
Lead Standard: Pb @ 2.0 g/gal in Isooctane	100mL	VHG-PBISO-2-100
Lead Standard: Pb @ 3.0 g/gal in Isooctane	100mL	VHG-PBISO-3-100
Lead Standard: Pb @ 4.0 g/gal in Isooctane	100mL	VHG-PBISO-4-100
Lead Standard: Pb @ 5.0 g/gal in Isooctane	100mL	VHG-PBISO-5-100
Lead Standard: Pb @ 0.000 g/gal in Isooctane	100mL	VHG-PBISO-BLK-100
Lead in Isooctane Set for ASTM D5059 Pt. A (contains one of each of PBISO-BLK, PBISO-0.1, PBISO-1, PBISO-2, PBISO-3, PBISO-4, PBISO-5)	7x100mL	VHG-PBISOSETA-7X100
Lead in Isooctane Set for ASTM D5059 Pt. C (contains one of each of PBISO-BLK, PBISO-0.001, PBISO-0.005, PBISO-0.010, PBISO-0.050, PBISO-0.100, PBISO-0.300)	7x100mL	VHG-PBISOSETC-7X100





Section 5

Standards for Diesel & Biodiesel Analysis

Standards for Diesel Analysis

Application	Description	Size	Product No.
ASTM D86, IP 123 and EN ISO 3405	Distillation Standard, Diesel (nominal values from 160.8 to 355°C)	250 mL	ALK-CRMU-DIGO
ASTM D613	Cetane Number, Diesel (nominal value: 52.6)	1 L	ALK-CRM-CNGO
ASTM D4052, IP 365, ISO 12185	Density Standard, Diesel (nominal value 0.83418 g/mL @ 15°C)	250 mL	ALK-CRMU-DEGO
ASTM D93 Proc A	Flash Point Standard Pensky Martens, Diesel (nominal value: 66.1°C)	250 mL	ALK-CRMU-PMGO
ASTM D97, IP 15, ISO 3016	Pour Point Standard, Diesel (nominal value: -34.0°C)	250 mL	ALK-CRMU-PPGO
ASTM D6371, EN 116 / IP 309	Cold Filter Plugging Point, Diesel (nominal: -21.7°C)	250 mL	ALK-CRMU-CFGO
ASTM D6371, EN 116 / IP 309	Cold Filter Plugging Point, Diesel (nominal: -10.8°C)	250 mL	ALK-CRMU-CFGO1
ASTM D2500 / ISO 3015, IP 219	Cloud Point Standard, Diesel (nominal: -7.7°C)	250 mL	ALK-CRMU-CPGO

Multi-Parameter Standard for Diesel Analysis

Product No.: ALK-CRMU-MPGO

Size: 500 mL

Parameter	Description
ASTM D2162	Kinematic Viscosity @ 40 °C (nominal: 2.835 cSt)
ASTM D2162	Dynamic Viscosity @ 40 °C (nominal: 2.322 cP)
ASTM D4052	Density @ 15 °C (nominal: 0.83660 g/mL)
IP 219	Cloud Point (nominal: -6.2 °C)
IP 309	Cold Filter plugging Point (CFPP) (nominal: -24.4 °C)
ASTM D86	Distillation (nominal: 157.6 °C)
ASTM D93, Procedure A	Flash Point, PMCC, Procedure A (nominal: 60.7 °C)

Section 5: Diesel & Biodiesel Analysis Standards

Sulfur in #2 Diesel Fuel Standards

Suitable for XRF use with ASTM D2622, D4294, D5453, D7039, D7212, D7220 and others.

Concentrations		Matrix: #2 Diesel Fuel Volume: 100 mL
($\mu\text{g/g}$)	(wt%)	Product No.
Blank	Blank	VHG-SDSL-BLK-100
5	0.0005	VHG-SDSL-5-100
10	0.001	VHG-SDSL-10-100
15	0.0015	VHG-SDSL-15-100
20	0.002	VHG-SDSL-20-100
25	0.0025	VHG-SDSL-25-100
50	0.005	VHG-SDSL-50-100
75	0.0075	VHG-SDSL-75-100
100	0.01	VHG-SDSL-100-100
200	0.02	VHG-SDSL-200-100
300	0.03	VHG-SDSL-300-100
400	0.04	VHG-SDSL-400-100
500	0.05	VHG-SDSL-500-100
750	0.075	VHG-SDSL-750-100
1,000	0.1	VHG-SDSL-1000-100
1,500	0.15	VHG-SDSL-1500-100
3,000	0.3	VHG-SDSL-3000-100
5,000	0.5	VHG-SDSL-5000-100
7,500	0.75	VHG-SDSL-7500-100
10,000	1	VHG-SDSL-1P-100
20,000	2	VHG-SDSL-2P-100
30,000	3	VHG-SDSL-3P-100
40,000	4	VHG-SDSL-4P-100
50,000	5	VHG-SDSL-5P-100

Section 5: Diesel & Biodiesel Analysis Standards

Standards for the analysis of sulfur in #2 Diesel Fuel and other matrices

Full range of Sulfur Standards for XRF. Suitable for use with ASTM Methods D2622, D4294, D5453, D7039, D7212, D7220 and others. Matrix: See below

Concentrations		NDBS in 20 cSt Oil Volume: 100 mL	Polysulfides in 13 cSt Oil Volume: 100 mL	NDBS in 75 cSt Oil Volume: 100 mL
(µg/g)	(wt%)	Product No.	Product No.	Product No.
Blank	Blank	VHG-S20MIN-BLK-100	VHG-PSI3M-BLK-100+	VHG-SMIN-BLK-100
5	0.0005	VHG-S20MIN-5-100	VHG-PSI3M-5-100+	VHG-SMIN-5-100
10	0.001	VHG-S20MIN-10-100	VHG-PSI3M-10-100+	VHG-SMIN-10-100
15	0.0015	VHG-S20MIN-15-100	VHG-PSI3M-15-100+	VHG-SMIN-15-100
20	0.002	VHG-S20MIN-20-100	VHG-PSI3M-20-100	VHG-SMIN-20-100
25	0.0025	VHG-S20MIN-25-100	VHG-PSI3M-25-100	VHG-SMIN-25-100
50	0.005	VHG-S20MIN-50-100	VHG-PSI3M-50-100+	VHG-SMIN-50-100
75	0.0075	VHG-S20MIN-75-100	VHG-PSI3M-75-100	VHG-SMIN-75-100
100	0.01	VHG-S20MIN-100-100	VHG-PSI3M-100-100+	VHG-SMIN-100-100
200	0.02	VHG-S20MIN-200-100	VHG-PSI3M-200-100	VHG-SMIN-200-100
300	0.03	VHG-S20MIN-300-100	VHG-PSI3M-300-100	VHG-SMIN-300-100
400	0.04	VHG-S20MIN-400-100	VHG-PSI3M-400-100	VHG-SMIN-400-100
500	0.05	VHG-S20MIN-500-100	VHG-PSI3M-500-100	VHG-SMIN-500-100
750	0.075	VHG-S20MIN-750-100	VHG-PSI3M-750-100	VHG-SMIN-750-100
1,000	0.1	VHG-S20MIN-1000-100	VHG-PSI3M-1000-100+	VHG-SMIN-1000-100
1,500	0.15	VHG-S20MIN-1500-100	VHG-PSI3M-1500-100	VHG-SMIN-1500-100
3,000	0.3	VHG-S20MIN-3000-100	VHG-PSI3M-3000-100	VHG-SMIN-3000-100
5,000	0.5	VHG-S20MIN-5000-100	VHG-PSI3M-5000-100	VHG-SMIN-5000-100
7,500	0.75	VHG-S20MIN-7500-100	-	VHG-SMIN-7500-100
10,000	1	VHG-S20MIN-1P-100	VHG-PSI3M-1P-100+	VHG-SMIN-1P-100
20,000	2	VHG-S20MIN-2P-100	VHG-PSI3M-2P-100+	VHG-SMIN-2P-100
30,000	3	VHG-S20MIN-3P-100	VHG-PSI3M-3P-100	VHG-SMIN-3P-100
40,000	4	VHG-S20MIN-4P-100	VHG-PSI3M-4P-100	VHG-SMIN-4P-100
50,000	5	VHG-S20MIN-5P-100	VHG-PSI3M-5P-100+	VHG-SMIN-5P-100

Biodiesel Matrix Blanks

Description	Size	Product No.
Biodiesel Blank	50mL	VHG-B100-BLK-50
Biodiesel Blank	100mL	VHG-B100-BLK-100
Biodiesel Blank	500mL	VHG-B100-BLK-500

Section 5: Diesel & Biodiesel Analysis Standards

Sulfur in Biodiesel

Suitable for use with ASTM D2622, D4294, D5453

Description	Size	Product No.
Sulfur Standard: S @ 5 µg/g in B100 Biodiesel	100mL	VHG-SB100-5-100
Sulfur Standard: S @ 10 µg/g in B100 Biodiesel	100mL	VHG-SB100-10-100
Sulfur Standard: S @ 15 µg/g in B100 Biodiesel	100mL	VHG-SB100-15-100
Sulfur Standard: S @ 20 µg/g in B100 Biodiesel	100mL	VHG-SB100-20-100
Sulfur Standard: S @ 25 µg/g in B100 Biodiesel	100mL	VHG-SB100-25-100
Sulfur Standard: S @ 50 µg/g in B100 Biodiesel	100mL	VHG-SB100-50-100
Sulfur Standard: S @ 100 µg/g in B100 Biodiesel	100mL	VHG-SB100-100-100
Sulfur Standard: S @ 500 µg/g in B100 Biodiesel	100mL	VHG-SB100-500-100

Biodiesel / Diesel Fuel Blends

Suitable for use with ASTM D7371, EN 14078

Description	Size	Product No.
2% Biodiesel/98% High Cetane Diesel Fuel, v/v	20 mL	VHG-BDBLEND-2P-20
5% Biodiesel/95% High Cetane Diesel Fuel, v/v	20 mL	VHG-BDBLEND-5P-20
10% Biodiesel/90% High Cetane Diesel Fuel, v/v	20 mL	VHG-BDBLEND-10P-20
15% Biodiesel/85% High Cetane Diesel Fuel, v/v	20 mL	VHG-BDBLEND-15P-20
20% Biodiesel/80% High Cetane Diesel Fuel, v/v	20 mL	VHG-BDBLEND-20P-20
25% Biodiesel/75% High Cetane Diesel Fuel, v/v	20 mL	VHG-BDBLEND-25P-20
30% Biodiesel/70% High Cetane Diesel Fuel, v/v	20 mL	VHG-BDBLEND-30P-20
100% Biodiesel	20 mL	VHG-BDBLEND-100P-20

*Available in additional sizes, including 100mL and 500mL

Metals in Biodiesel

Suitable for use with ASTM D6751, EN 14107, EN 14108, EN 14109, EN 14214, EN 14538

Description	Size	Product No.
Ca, K, Mg, Na, P @ 5 µg/g in B100 Biodiesel	100g	VHG-B100M5-5-100G
Ca, K, Mg, Na, P @ 10 µg/g in B100 Biodiesel	100g	VHG-B100M5-10-100G
Ca, K, Mg, Na, P @ 20 µg/g in B100 Biodiesel	100g	VHG-B100M5-20-100G

Section 6

Standards for Lubricant Analysis

Standards for Lubricant Analysis			
Application	Description	Size	Product No.
ASTM D4052, IP 365, ISO 12185	Density Standard, Lubricant, (nominal value 0.86709 g/mL @ 15°C)	250 mL	ALK-CRMU-DELU
ASTM D93 Proc B	Flash Point Standard - PMCC Procedure B, Lubricant (nominal value: 190.5°C)	250 mL	ALK-CRMU-PMLU
ASTM D93 Proc B	Flash Point Standard - PMCC Procedure B, Lubricant (nominal value: 100.7°C)	250 mL	ALK-CRMU-PMLUB
ASTM D92	Flash Point Standard - Cleveland, Lubricant (nominal value: 257.5°C)	250 mL	ALK-CRMU-FCLU
ASTM D97, IP 15, ISO 3016	Pour Point Standard, Lubricant (nominal value: -11.2°C)	250 mL	ALK-CRMU-PPLU
ASTM D97, IP 15, ISO 3016	Pour Point Standard, Lubricant (nominal value: -26.1°C)	250 mL	ALK-CRMU-PPLU1
ASTM D97, IP 15, ISO 3016	Pour Point Standard, Lubricant (nominal value: -38.4°C)	250 mL	ALK-CRMU-PPLU2

Multi-Parameter Standard for Lubricant Analysis	
Product No.: ALK-CRMU-MPLU	
Size: 500 mL	
Parameter	Description
ASTM D1480	Density @ 15 °C (nominal: 0.8665 g/mL)
ASTM D1480	Density @ 40 °C (nominal: 0.8507 g/mL)
ASTM D1480	Density @ 100 °C (nominal: 0.8133 g/mL)
ASTM D2162	Kinematic Viscosity @ 40 °C (nominal: 97.87 cSt)
ASTM D2162	Kinematic Viscosity @ 100 °C (nominal: 14.20 cSt)
ASTM D664	Acid Number (nominal: 2.42 mg KOH/g)
ASTM D2896	Base Number (nominal: 10.16 mg KOH/g)
ASTM D5185	Zinc (nominal: 833 mg/kg)
ASTM D5185	Calcium (nominal: 1364 mg/kg)
ASTM D5185	Phosphorous (nominal: 766 mg/kg)
ASTM D5185	Magnesium (nominal: 984 mg/kg)
ASTM D92	Flash Point, COC (nominal: 233.0 °C)
ASTM D93, Procedure A	Flash Point, PMCC, Procedure A (nominal: 209.3 °C)
IP 15	Pour Point (nominal: -39.3 °C)

Section 6: Lubricant Analysis Standards

Lubricating Oil for Calibration Set

Suitable for ASTM D4927. Matrix: Lubricating Oil. Volume per bottle: 50 mL

Product No. VHG-LUBESET-23X50

Elemental Concentrations (ug/g)

	Barium	Calcium	Chlorine	Magnesium	Molybdenum	Phosphorus	Sulfur	Silicon	Zinc
Bottle 1	10	10	1,000	400	250	2,000	5,000	400	50
Bottle 2	200	5,000	0	350	100	1	10,000	380	250
Bottle 3	30	0	400	100	0	1,750	0	25	750
Bottle 4	0	4,500	2,000	0	200	1,500	500	340	1,250
Bottle 5	50	0	200	300	250	20	1,250	0	1,750
Bottle 6	30	0	1,800	0	30	100	500	0	2,250
Bottle 7	100	3,500	0	250	150	1	12,500	300	10
Bottle 8	140	20	10	800	0	1,250	0	450	20
Bottle 9	300	3,000	60	120	500	3	0	210	0
Bottle 10	0	2,000	1,600	20	300	1,000	15,000	400	50
Bottle 11	0	2,500	10	50	20	1,750	22,500	225	0
Bottle 12	180	500	100	0	10	0	17,500	220	100
Bottle 13	400	2,000	600	30	150	750	0	180	0
Bottle 14	220	2	800	0	50	0	10,000	140	2
Bottle 15	340	1,500	100	2	0	10	1,250	100	1,200
Bottle 16	260	4,000	4	700	0	500	0	250	120
Bottle 17	0	1,000	1,800	0	350	50	20,000	25	2,500
Bottle 18	380	500	2	400	5	250	0	10	2,000
Bottle 19	300	50	1,000	0	400	2,250	2,500	0	1,500
Bottle 20	0	250	1,000	500	0	1,250	17,500	0	1,000
Bottle 21	0	100	1,200	600	0	2,500	25,000	0	500
Bottle 22	340	1	1,400	10	450	10	22,500	0	125
Bottle 23	0	0	0	0	0	0	0	0	0

Section 6: Lubricant Analysis Standards

Lubricating Oil Standards

Suitable for ASTM D4927, D6481, D6443. Matrix: Lubricating Oil. Volume: 100 mL

Elemental Concentrations

Sulfur (wt%)	Calcium (wt%)	Phosphorus (wt%)	Zinc (wt%)	Product No.
0	0	0	0	VHG-LOIL1-100
0.05	0.6	0.005	0.08	VHG-LOIL2-100
0.3	0	0.02	0.175	VHG-LOIL3-100
0.15	0.5	0.03	0.07	VHG-LOIL4-100
0.1	0.3	0.06	0.13	VHG-LOIL5-100
0.175	0.4	0.2	0.05	VHG-LOIL6-100
0.075	0.2	0.08	0.12	VHG-LOIL7-100
0.125	0.25	0.05	0	VHG-LOIL8-100
0.4	0.35	0.04	0.11	VHG-LOIL9-100
0.5	0.075	0.225	0.15	VHG-LOIL10-100
0.2	0.05	0.15	0.2	VHG-LOIL11-100
0.55	0.005	0	0.14	VHG-LOIL12-100
0.45	0.1	0.01	0.25	VHG-LOIL13-100
0.6	0.01	0.125	0.06	VHG-LOIL14-100
0.25	0.15	0.1	0.09	VHG-LOIL15-100
0.35	0.025	0.175	0.1	VHG-LOIL16-100

Available as a set: VHG-LOILSET-16x100

Metal Additives Standard MA3

Ca @ 5000 µg/g; P, Zn @ 1600 µg/g combined in 75 cSt hydrocarbon oil

Size (grams)	Product No.
100	VHG-MA3-100G
200	VHG-MA3-200G
400	VHG-MA3-400G

Metal Additives Standard MA4

Ca @ 5000 µg/g; Mg, P, Zn @ 1600 µg/g combined in 75 cSt hydrocarbon oil

Size (grams)	Product No.
100	VHG-MA4-100G
200	VHG-MA4-200G
400	VHG-MA4-400G

Section 6: Lubricant Analysis Standards

Metal Additives Standard MA5

Ba, Ca, Mg, P, Zn combined in 75 cSt hydrocarbon

Conc. (µg/g)	Size (grams)	Product No.
900	100	VHG-MA5-900-100G
	200	VHG-MA5-900-200G
	400	VHG-MA5-900-400G
1,000	100	VHG-MA5-1000-100G
	200	VHG-MA5-1000-200G
	400	VHG-MA5-1000-400G
3,000	100	VHG-MA5-3000-100G
	200	VHG-MA5-3000-200G
	400	VHG-MA5-3000-400G
5,000	100	VHG-MA5-5000-100G
	200	VHG-MA5-5000-200G

Metal Additives Standard MA6

B, Ba, Ca, Mg, P, Zn combined in 75 cSt hydrocarbon oil

Conc. (µg/g)	Size (grams)	Product No.
900	100	VHG-MA6-900-100G
	200	VHG-MA6-900-200G
	400	VHG-MA6-900-400G



Section 6: Lubricant Analysis Standards

V-Series Standards			V21+K Standards	V23 Standards	V26 Standards
Ag, Al, B, Ba, Ca, Cd, Cr, Cu, Fe, Mg, Mn, Mo, Na, Ni, P, Pb, Si, Sn, Ti, V, Zn combined 75 cSt hydrocarbon oil			All of the elements included in V21 plus K	All of the elements included in V21 plus K and Sb	All of the elements included in V23 plus Bi, In, and Li
Conc (µg/g)	Size (grams)	Product No.	Product No.	Product No.	Product No.
10	100	VHG-V21-10-100G	VHG-V21+K-10-100G	VHG-V23-10-100G	VHG-V26-10-100G
	200	VHG-V21-10-200G	VHG-V21+K-10-200G	VHG-V23-10-200G	VHG-V26-10-200G
	400	VHG-V21-10-400G	VHG-V21+K-10-400G	VHG-V23-10-400G	VHG-V26-10-400G
30	100	VHG-V21-30-100G	VHG-V21+K-30-100G	VHG-V23-30-100G	VHG-V26-30-100G
	200	VHG-V21-30-200G	VHG-V21+K-30-200G	VHG-V23-30-200G	VHG-V26-30-200G
	400	VHG-V21-30-400G	VHG-V21+K-30-400G	VHG-V23-30-400G	VHG-V26-30-400G
50	100	VHG-V21-50-100G	VHG-V21+K-50-100G	VHG-V23-50-100G	VHG-V26-50-100G
	200	VHG-V21-50-200G	VHG-V21+K-50-200G	VHG-V23-50-200G	VHG-V26-50-200G
	400	VHG-V21-50-400G	VHG-V21+K-50-400G	VHG-V23-50-400G	VHG-V26-50-400G
100	100	VHG-V21-100-100G	VHG-V21+K-100-100G	VHG-V23-100-100G	VHG-V26-100-100G
	200	VHG-V21-100-200G	VHG-V21+K-100-200G	VHG-V23-100-200G	VHG-V26-100-200G
	400	VHG-V21-100-400G	VHG-V21+K-100-400G	VHG-V23-100-400G	VHG-V26-100-400G
300	100	VHG-V21-300-100G	VHG-V21+K-300-100G	VHG-V23-300-100G	VHG-V26-300-100G
	200	VHG-V21-300-200G	VHG-V21+K-300-200G	VHG-V23-300-200G	VHG-V26-300-200G
	400	VHG-V21-300-400G	VHG-V21+K-300-400G	VHG-V23-300-400G	VHG-V26-300-400G
500	100	VHG-V21-500-100G	VHG-V21+K-500-100G	VHG-V23-500-100G	VHG-V26-500-100G
	200	VHG-V21-500-200G	VHG-V21+K-500-200G	VHG-V23-500-200G	VHG-V26-500-200G
	400	VHG-V21-500-400G	VHG-V21+K-500-400G	VHG-V23-500-400G	VHG-V26-500-400G
900	100	VHG-V21-900-100G	VHG-V21+K-900-100G	VHG-V23-900-100G	VHG-V26-900-100G
	200	VHG-V21-900-200G	VHG-V21+K-900-200G	VHG-V23-900-200G	VHG-V26-900-200G
	400	VHG-V21-900-400G	VHG-V21+K-900-400G	VHG-V23-900-400G	VHG-V26-900-400G



Section 7 General Fuel Analysis Standards

Simulated Distillation Related Standards

For use with ASTM D86, IP 123 & EN ISO 3405 or D2887

Description	Size	Product No.
Certified Reference Material Distillation Standard, Diesel (nominal values from 160.8 to 355°C)+A6:A11	250 mL	ALK-CRMU-DIGO
Certified Reference Material Distillation Standard, Gasoline (nominal values from 32.8 to 173.3°C)	250 mL	ALK-CRMU-DIGA
Certified Reference Material Distillation Standard, Jet Aviation Fuel (nominal values from 158.7 to 268.2°C)	250 mL	ALK-CRMU-DIKR
Simulated Distillation Reference Material for C5-C120, 1mL	1 mL	VHG-POLYW-1000-1ML
Simulated Distillation Reference Material for C32-C60, 1mL	1 mL	VHG-POLYW-655-1ML
Reference Gas Oil No. 2 for ASTM D2887	10x1 mL	VHG-RGO-10X1

V-Solv™ ICP Solvent

High-purity solvents supplied with a Certificate of Analysis that includes trace metal concentrations.

Description	Size	Product No.
V-Solv™ ICP Solvent	1 gal.	VHG-V-SOLV-1GAL
V-Solv™ ICP Solvent	5 gal.	VHG-V-SOLV-5GAL
V-Solv™ ICP Solvent	55 gal.	VHG-V-SOLV-55GAL
V-Solv™ ICP Solvent + Cobalt	1 gal.	VHG-V-SOLV+CO-1GAL
V-Solv™ ICP Solvent + Cobalt	5 gal.	VHG-V-SOLV+CO-5GAL
V-Solv™ ICP Solvent + Cobalt	55 gal.	VHG-V-SOLV+CO-55GAL

Section 7: General Fuel Analysis Standards

Matrix Oils and Solvents

High-purity Matrix Oils and Solvents (<1ppm Sulfur) for the preparation of working standards for petroleum analysis. Supplied with a Certificate of Analysis that includes trace sulfur and metal concentrations.

Description	Size	Product No.
20 cSt Mineral Oil	500 mL	VHG-OIL-20-500
20 cSt Mineral Oil	0.5 gal.	VHG-OIL-20-1/2GAL
75 cSt Mineral Oil	500 mL	VHG-OIL-75-500
75 cSt Mineral Oil	1 gal.	VHG-OIL-75-1GAL
#2 Diesel Fuel	500 mL	VHG-ULSDSL-500
#2 Diesel Fuel	0.5 gal.	VHG-ULSDSL-1/2GAL
Isooctane	500 mL	VHG-ISO-500
Isooctane	0.5 gal.	VHG-ISO-1/2GAL
Kerosene, low odor	500 mL	VHG-KERO-500
Kerosene, low odor	0.5 gal.	VHG-KERO-1/2GAL
13 cSt Mineral Oil	1 L	VHG-OIL-13-1L

Internal Standards

Element	Concentration	Matrix	Size	Product No.
Cerium (Ce)	5000 µg/g	75 cSt Hydrocarbon Oil	200 g	VHG-OCE-5000-200G
Cobalt (Co)	6 wt%	Mineral Spirits	100 g	VHG-OCO-6PIS-100G
Cobalt (Co)	6 wt%	Mineral Spirits	200 g	VHG-OCO-6PIS-200G
Cobalt (Co)	6 wt%	Mineral Spirits	400 g	VHG-OCO-6PIS-400G
Cobalt (Co)	5000 µg/g	75 cSt Hydrocarbon Oil	200 g	VHG-OCODN-5000-200G
Cobalt (Co)	5000 µg/g	75 cSt Hydrocarbon Oil	800 g	VHG-OCODN-5000-800G
Lanthanum (La)	5000 µg/g	75 cSt Hydrocarbon Oil	200 g	VHG-OLA-5000-200G
Yttrium (Y)	5000 µg/g	75 cSt Hydrocarbon Oil	400 g	VHG-OY-5000-A-400G
Yttrium (Y)	2 wt%	75 cSt Hydrocarbon Oil	100 g	VHG-OYDN-2P-100G
Yttrium (Y)	2 wt%	75 cSt Hydrocarbon Oil	200 g	VHG-OYDN-2P-200G

Section 7: General Fuel Analysis Standards

Flash Point Standards

For use with ASTM D92, ASTM D93 and ASTM D56

Description	Size	Product No.
Flash Point Standard Pensky Martens, Diesel (nominal value: 66.1°C)	250 mL	ALK-CRMU-PMGO
Flash Point Standard - PMCC Procedure B, Lubricant (nominal value: 100.7°C)	250 mL	ALK-CRMU-PMLUB
Flash Point Standard - PMCC Procedure B, Lubricant (nominal value: 190.5°C)	250 mL	ALK-CRMU-PMLU
Certified Reference Material, Pensky Martens Flash Point (Nominal value: 76.5 °C)	3 x 80 mL	ALK-CRMU-PMCC-LOW
Certified Reference Material, Pensky Martens Flash Point (Nominal value: 135.4 °C)	3 x 80 mL	ALK-CRMU-PMCC-MID
Certified Reference Material, Pensky Martens Flash Point (Nominal value: 210.5 °C)	3 x 80 mL	ALK-CRMU-PMCC-HIGH
Flash Point Reference Standard, Pensky Martens (Nominal value: 55.0 °C)	3 x 80 mL	ALK-FP-PMCC-1
Flash Point Reference Standard, Pensky Martens (Nominal value: 75.5 °C)	3 x 80 mL	ALK-FP-PMCC-2
Flash Point Reference Standard, Pensky Martens (Nominal value: 109.0 °C)	3 x 80 mL	ALK-FP-PMCC-3
Flash Point Reference Standard, Pensky Martens (Nominal value: 137.5 °C)	3 x 80 mL	ALK-FP-PMCC-4
Flash Point Reference Standard, Pensky Martens (Nominal value: 175.0 °C)	3 x 80 mL	ALK-FP-PMCC-5
Flash Point Reference Standard, Pensky Martens (Nominal value: 219.5 °C)	3 x 80 mL	ALK-FP-PMCC-6
Certified Reference Material, Cleveland Open Cup Flash Point (Nominal value: 111.0 °C)	3 x 80 mL	ALK-CRMU-COC-LOW
Certified Reference Material, Cleveland Open Cup Flash Point (Nominal value: 161.4 °C)	3 x 80 mL	ALK-CRMU-COC-MID
Certified Reference Material, Cleveland Open Cup Flash Point (Nominal value: 262.0 °C)	3 x 80 mL	ALK-CRMU-COC-HIGH
Flash Point Reference Standard, Cleveland Open Cup (Nominal value: 84 °C)	3 x 80 mL	ALK-FP-COC-1
Flash Point Reference Standard, Cleveland Open Cup (Nominal value: 164 °C)	3 x 80 mL	ALK-FP-COC-3
Flash Point Reference Standard, Cleveland Open Cup (Nominal value: 205 °C)	3 x 80 mL	ALK-FP-COC-4
Flash Point Reference Standard, Cleveland Open Cup (Nominal value: 259 °C)	3 x 80 mL	ALK-FP-COC-5
Flash Point Reference Standard, Cleveland Open Cup (Nominal value: 118 °C)	3 x 80 mL	ALK-FP-COC-6

Acid Number in Oil*

For the determination of Acid Number in petroleum products by potentiometric titration (ASTM D664) or color-indicator titration (ASTM D974)

Conc. (mg KOH/g)	Matrix	Size	Product No.
0.1	75 cSt Mineral Oil	50 g	VHG-AN-0.1-50G
0.5	75 cSt Mineral Oil	100 g	VHG-AN-0.5-100G
1	75 cSt Mineral Oil	50 g	VHG-AN-1-50G
1.5	75 cSt Mineral Oil	100 g	VHG-AN-1.5-100G
2	75 cSt Mineral Oil	50 g	VHG-AN-2-50G

*Available in sizes up to 800 g

Section 7: General Fuel Analysis Standards

Viscosity Standards				
Standard Type	Description	Nominal value	Size	Product No.
General Purpose	Type D10	10.37 mPa.s at 25 °C	500 mL	ALK-D10
	Type D1000	990.9 mPa.s at 25 °C	500 mL	ALK-D1000
	Type D5	4.745 mPa.s at 25 °C	500 mL	ALK-D5
	Type D500	494 mPa.s at 25 °C	500 mL	ALK-D500
	Type D5000	5738 mPa.s at 25 °C	500 mL	ALK-D5000
	Type D7500	7657 mPa.s at 25 °C	500 mL	ALK-D7500
	Type N.4	0.2950 mPa.s at 25 °C	500 mL	ALK-N.4
	Type N.8	0.5204 mPa.s at 25 °C	500 mL	ALK-N.8
	Type N1.0	0.9525 mPa.s at 25 °C	500 mL	ALK-N1.0
	Type N10	14.42 mPa.s at 25 °C	500 mL	ALK-N10
	Type N14	20.4 mPa.s at 25 °C	500 mL	ALK-N14
	Type N100	202.6 mPa.s at 25 °C	500 mL	ALK-N100
	Type N10200	30991 mPa.s at 25 °C	500 mL	ALK-N10200
	Type N140	258 mPa.s at 25 °C	500 mL	ALK-N140
	Type N1000	2610 mPa.s at 25 °C	500 mL	ALK-N1000
	Type N1400	3481 mPa.s at 25 °C	500 mL	ALK-N1400
	Type N15000	40049 mPa.s at 25 °C	500 mL	ALK-N15000
	Type N18000	54900 mPa.s at 25 °C	500 mL	ALK-N18000
	Type N2	2.144 mPa.s at 25 °C	500 mL	ALK-N2
	Type N250	488.1 mPa.s at 25 °C	500 mL	ALK-N250
	Type N2500	6618 mPa.s at 25 °C	500 mL	ALK-N2500
	Type N26	48.59 mPa.s at 25 °C	500 mL	ALK-N26
	Type N35	55.36 mPa.s at 25 °C	500 mL	ALK-N35
	Type N350	717.4 mPa.s at 25 °C	500 mL	ALK-N350
	Type N44	71.11 mPa.s at 25 °C	500 mL	ALK-N44
	Type N415	796.5 mPa.s at 25 °C	500 mL	ALK-N415
	Type N4000	10030 mPa.s at 25 °C	500 mL	ALK-N4000
	Type N5100	15406 mPa.s at 25 °C	500 mL	ALK-N5100
	Type N7.5	8.559 mPa.s at 25 °C	500 mL	ALK-N7.5
	Type N75	124.9 mPa.s at 25 °C	500 mL	ALK-N75
	Type N750	1690 mPa.s at 25 °C	500 mL	ALK-N750
	Type S20	29.04 mPa.s at 25 °C	500 mL	ALK-S20
	Type S200	392 mPa.s at 25 °C	500 mL	ALK-S200
	Type S2000	4599 mPa.s at 25 °C	500 mL	ALK-S2000
	Type S3	3.219 mPa.s at 25 °C	500 mL	ALK-S3
	Type S30000	72328 mPa.s at 25 °C	500 mL	ALK-S30000
Type S6	7.442 mPa.s at 25 °C	500 mL	ALK-S6	
Type S60	100.7 mPa.s at 25 °C	500 mL	ALK-S60	
Type S600	1273 mPa.s at 25 °C	500 mL	ALK-S600	
Type S8000	19588 mPa.s at 25 °C	500 mL	ALK-S8000	

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Type				
Low Temperature	Type J10	912 cSt at -40°C	500 mL	ALK-J10
	Type JF1-H Certified @ -20°C & -40°C	13.00 cSt at -40°C	500 mL	ALK-JF1-H
	Type JF1-L Certified @ -20°C & -40°C	6.664 cSt at -40°C	500 mL	ALK-JF1-L
	Type N105B	63815 cSt at -25°C	500 mL	ALK-N105B
	Type N115B	168320 cSt at -20°C	500 mL	ALK-N115B
	Type N120B	172601 cSt at -40°C	500 mL	ALK-N120B
	Type N1400B	156250 cSt at -12°C	500 mL	ALK-N1400B
	Type N14B	19605 cSt at -40°C	500 mL	ALK-N14B
	Type N27B	24522 cSt at -40°C	500 mL	ALK-N27B
	Type N2B	9.095 cSt at -20°C	500 mL	ALK-N2B
	Type N400B	68176 cSt at -25°C	500 mL	ALK-N400B
	Type N480B	149373 cSt at -25°C	500 mL	ALK-N480B
High Temperature	Type S3S	1.605 mPa.s at 60°C	500 mL	ALK-S3S
	Type S6S	2.935 mPa.s at 60°C	500 mL	ALK-S6S
	Type S20S	7.806 mPa.s at 60°C	500 mL	ALK-S20S
	Type S60S	20.05 mPa.s at 60°C	500 mL	ALK-S60S
	Type N100S	34.33 mPa.s at 60°C	500 mL	ALK-N100S
	Type S200S	57.98 mPa.s at 60°C	500 mL	ALK-S200S
	Type S600S	149.2 mPa.s at 60°C	500 mL	ALK-S600S
	Type S2000S	431.7 mPa.s at 60°C	500 mL	ALK-S2000S
	Type S8000S	1533 mPa.s at 60°C	500 mL	ALK-S8000S
	Type N30000S	4897 mPa.s at 60°C	500 mL	ALK-S30000S
	Type N600	149.2 mPa.s at 60°C	500 mL	ALK-N600
	Type N2000	431.7 mPa.s at 60°C	500 mL	ALK-N2000
	Type N100HT, Temperature Ranges of 100 to 150 °C	11.57 mPa.s at 100°C	500 mL	ALK-N100HT
	Type S200HT, Temperature Ranges of 100 to 150 °C	17.43 mPa.s at 100°C	500 mL	ALK-S200HT
Type S600HT, Temperature Ranges of 100 to 150 °C	36.15 mPa.s at 100°C	500 mL	ALK-S600HT	
Certified Viscosity Check Oil	5W30, Kinematic Viscosity, CCS Dynamic Viscosity & Density	65.90 cSt at 40°C	500 mL	ALK-CVCO5W30
	5W30, Kinematic Viscosity, CCS Dynamic Viscosity & Density	65.90 cSt at 40°C	5 L	ALK-CVCO5W30-5L
	10W30, Kinematic Viscosity, CCS Dynamic Viscosity & Density	67.27 cSt at 40°C	500 mL	ALK-CVCO10W30
	10W30, Kinematic Viscosity, CCS Dynamic Viscosity & Density	67.27 cSt at 40°C	5 L	ALK-CVCO10W30-5L
	15W40, Kinematic Viscosity, CCS Dynamic Viscosity & Density	103.1 cSt at 40°C	500 mL	ALK-CVCO15W40
	15W40, Kinematic Viscosity, CCS Dynamic Viscosity & Density	103.1 cSt at 40°C	5 L	ALK-CVCO15W40-5L

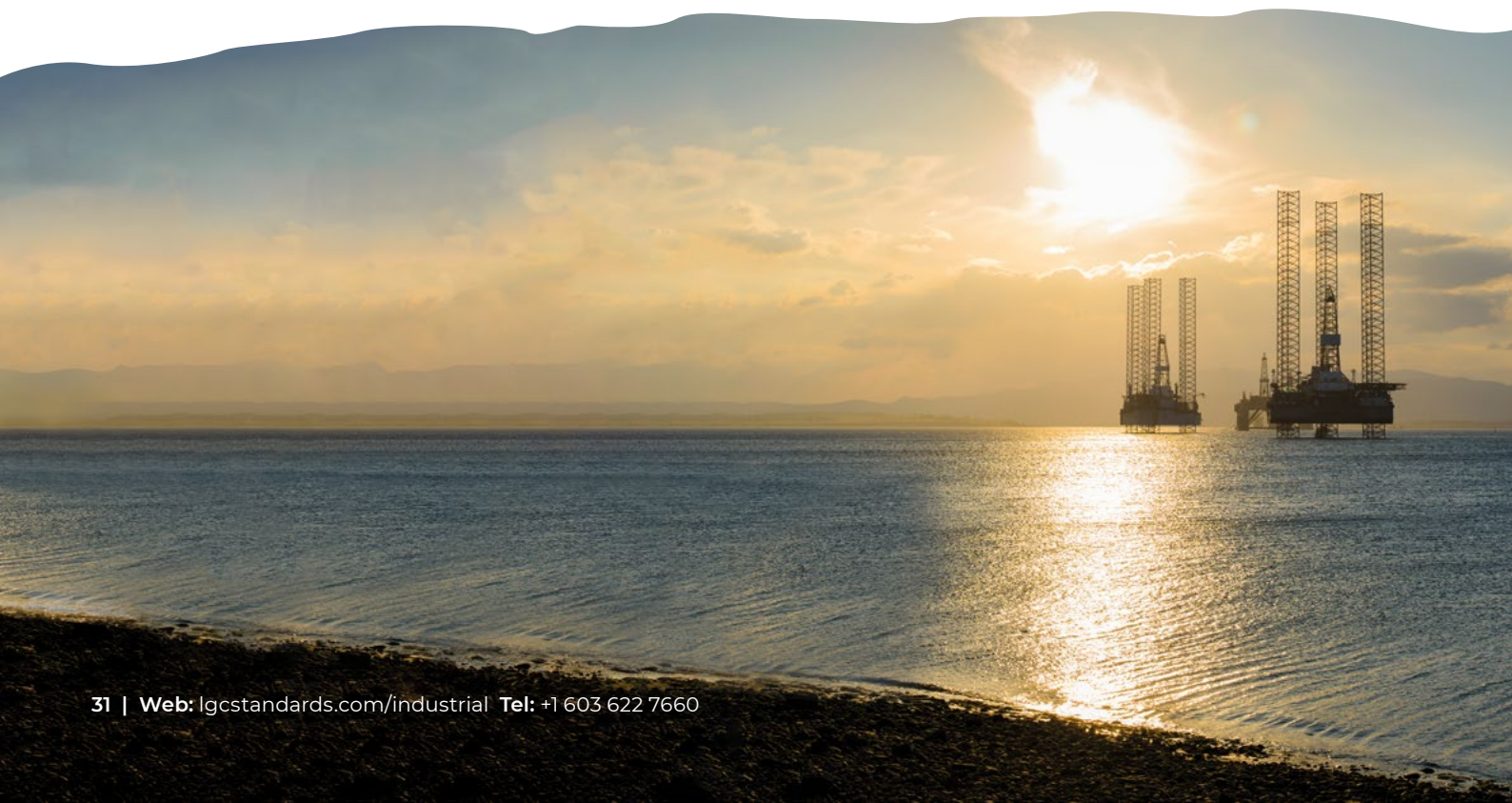
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Type				
Small Sample Viscosity Reference Standard, certified value (cSt) @ 40°C & 100°C	Type HVS01	2.882 cSt at 40°C	60 mL	ALK-HVS01
	Type HVS02	5.781 cSt at 40°C	60 mL	ALK-HVS02
	Type HVS03	10.01 cSt at 40°C	60 mL	ALK-HVS03
	Type HVS04	32.42 cSt at 40°C	60 mL	ALK-HVS04
	Type HVS05	54.29 cSt at 40°C	60 mL	ALK-HVS05
	Type HVS06	100.2 cSt at 40°C	60 mL	ALK-HVS06
	Type HVS07	183.0 cSt at 40°C	60 mL	ALK-HVS07
	Type HVS08	306.9 cSt at 40°C	60 mL	ALK-HVS08
	Type HVS09	528.1 cSt at 40°C	60 mL	ALK-HVS09
	Type HVS10	1003 cSt at 40°C	60 mL	ALK-HVS10
	Type HVS11	1706 cSt at 40°C	60 mL	ALK-HVS11
	Type HVS12	2100 cSt at 40°C	60 mL	ALK-HVS12
	Type HVS13	3420 cSt at 40°C	60 mL	ALK-HVS13
	Type HVS14	6846 cSt at 40°C	60 mL	ALK-HVS14
	Type HVS15	13014 cSt at 40°C	60 mL	ALK-HVS15
	Type HVS16	23192 cSt at 40°C	60 mL	ALK-HVS16
Flow Cup Viscosity Standards	Flow Cup Viscosity Standard type C10	17.78 mPa.s at 20 °C	500 mL	ALK-C10
	Flow Cup Viscosity Standard type C100	281.4 mPa.s at 20 °C	500 mL	ALK-C100
	Flow Cup Viscosity Standard type C20	37.22 mPa.s at 20 °C	500 mL	ALK-C20
	Flow Cup Viscosity Standard type C200	557.7 mPa.s at 20 °C	500 mL	ALK-C200
	Flow Cup Viscosity Standard type C35	72.9 mPa.s at 20 °C	500 mL	ALK-C35
	Flow Cup Viscosity Standard type C350	1044 mPa.s at 20 °C	500 mL	ALK-C350
	Flow Cup Viscosity Standard type C6	8.945 mPa.s at 20 °C	500 mL	ALK-C6
	Flow Cup Viscosity Standard type C60	135.9 mPa.s at 20 °C	500 mL	ALK-C60
	Flow Cup Viscosity Standard type C600	1882 mPa.s at 20 °C	500 mL	ALK-C600

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Type				
Silicone Rotational Viscosity Standards	Rotational Type RT10	10.12 mPa.s at 25 °C	600 mL	ALK-VIS-RT10-600
	Rotational Type RT10,000	9970 mPa.s at 25 °C	600 mL	ALK-VIS-RT10K-600
	Rotational Type RT100	100.7 mPa.s at 25 °C	600 mL	ALK-VIS-RT100-600
	Rotational Type RT100,000	100075 mPa.s at 25 °C	600 mL	ALK-VIS-RT100K-600
	Rotational Type RT1000	1003 mPa.s at 25 °C	600 mL	ALK-VIS-RT1K-600
	Rotational Type RT12500	12423 mPa.s at 25 °C	600 mL	ALK-VIS-RT12K-600
	Rotational Type RT250	251.5 mPa.s at 25 °C	600 mL	ALK-VIS-RT250-600
	Rotational Type RT30000	30036 mPa.s at 25 °C	600 mL	ALK-VIS-RT30K-600
	Rotational Type RT350	357.0 mPa.s at 25 °C	600 mL	ALK-VIS-RT350-600
	Rotational Type RT5	4.988 mPa.s at 25 °C	600 mL	ALK-VIS-RT5-600
	Rotational Type RT50	50.49 mPa.s at 25 °C	600 mL	ALK-VIS-RT50-600
	Rotational Type RT500	503.9 mPa.s at 25 °C	600 mL	ALK-VIS-RT500-600
	Rotational Type RT5000	5034 mPa.s at 25 °C	600 mL	ALK-VIS-RT5K-600
	Rotational Type RT60000	60139 mPa.s at 25 °C	600 mL	ALK-VIS-RT60K-600
	Rotational Type RT75	75.53 mPa.s at 25 °C	600 mL	ALK-VIS-RT75-600

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Type				
Mineral Oil Rotational Viscosity Standards	Mineral Oil Rotational Viscosity Standard RTM1	0.3051 mPa.s at 25 °C	500 mL	ALK-RTM1
	Mineral Oil Rotational Viscosity Standard RTM2	0.5204 mPa.s at 25 °C	500 mL	ALK-RTM2
	Mineral Oil Rotational Viscosity Standard RTM3	0.9525 mPa.s at 25 °C	500 mL	ALK-RTM3
	Mineral Oil Rotational Viscosity Standard RTM4	2.144 mPa.s at 25 °C	500 mL	ALK-RTM4
	Mineral Oil Rotational Viscosity Standard RTM5	3.329 mPa.s at 25 °C	500 mL	ALK-RTM5
	Mineral Oil Rotational Viscosity Standard RTM6	4.745 mPa.s at 25 °C	500 mL	ALK-RTM6
	Mineral Oil Rotational Viscosity Standard RTM7	7.520 mPa.s at 25 °C	500 mL	ALK-RTM7
	Mineral Oil Rotational Viscosity Standard RTM8	10.37 mPa.s at 25 °C	500 mL	ALK-RTM8
	Mineral Oil Rotational Viscosity Standard RTM9	14.50 mPa.s at 25 °C	500 mL	ALK-RTM9
	Mineral Oil Rotational Viscosity Standard RTM10	20.40 mPa.s at 25 °C	500 mL	ALK-RTM10
	Mineral Oil Rotational Viscosity Standard RTM11	29.04 mPa.s at 25 °C	500 mL	ALK-RTM11
	Mineral Oil Rotational Viscosity Standard RTM12	55.68 mPa.s at 25 °C	500 mL	ALK-RTM12
	Mineral Oil Rotational Viscosity Standard RTM13	75.19 mPa.s at 25 °C	500 mL	ALK-RTM13
	Mineral Oil Rotational Viscosity Standard RTM14	101.4 mPa.s at 25 °C	500 mL	ALK-RTM14
	Mineral Oil Rotational Viscosity Standard RTM15	150.0 mPa.s at 25 °C	500 mL	ALK-RTM15
	Mineral Oil Rotational Viscosity Standard RTM16	203.1 mPa.s at 25 °C	500 mL	ALK-RTM16
	Mineral Oil Rotational Viscosity Standard RTM17	250.0 mPa.s at 25 °C	500 mL	ALK-RTM17
	Mineral Oil Rotational Viscosity Standard RTM18	300.8 mPa.s at 25 °C	500 mL	ALK-RTM18
	Mineral Oil Rotational Viscosity Standard RTM19	351.1 mPa.s at 25 °C	500 mL	ALK-RTM19
	Mineral Oil Rotational Viscosity Standard RTM20	389.1 mPa.s at 25 °C	500 mL	ALK-RTM20
	Mineral Oil Rotational Viscosity Standard RTM21	494.0 mPa.s at 25 °C	500 mL	ALK-RTM21
	Mineral Oil Rotational Viscosity Standard RTM22	719.7 mPa.s at 25 °C	500 mL	ALK-RTM22
	Mineral Oil Rotational Viscosity Standard RTM23	796.5 mPa.s at 25 °C	500 mL	ALK-RTM23
	Mineral Oil Rotational Viscosity Standard RTM24	1008 mPa.s at 25 °C	500 mL	ALK-RTM24
	Mineral Oil Rotational Viscosity Standard RTM25	1260 mPa.s at 25 °C	500 mL	ALK-RTM25

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Type				
Mineral Oil Rotational Viscosity Standards cont.	Mineral Oil Rotational Viscosity Standard RTM26	1517 mPa.s at 25 °C	500 mL	ALK-RTM26
	Mineral Oil Rotational Viscosity Standard RTM27	2013 mPa.s at 25 °C	500 mL	ALK-RTM27
	Mineral Oil Rotational Viscosity Standard RTM28	2556 mPa.s at 25 °C	500 mL	ALK-RTM28
	Mineral Oil Rotational Viscosity Standard RTM29	4024 mPa.s at 25 °C	500 mL	ALK-RTM29
	Mineral Oil Rotational Viscosity Standard RTM30	4588 mPa.s at 25 °C	500 mL	ALK-RTM30
	Mineral Oil Rotational Viscosity Standard RTM31	5738 mPa.s at 25 °C	500 mL	ALK-RTM31
	Mineral Oil Rotational Viscosity Standard RTM32	6055 mPa.s at 25 °C	500 mL	ALK-RTM32
	Mineral Oil Rotational Viscosity Standard RTM33	7657 mPa.s at 25 °C	500 mL	ALK-RTM33
	Mineral Oil Rotational Viscosity Standard RTM34	8081 mPa.s at 25 °C	500 mL	ALK-RTM34
	Mineral Oil Rotational Viscosity Standard RTM35	10030 mPa.s at 25 °C	500 mL	ALK-RTM35
	Mineral Oil Rotational Viscosity Standard RTM36	15166 mPa.s at 25 °C	500 mL	ALK-RTM36
	Mineral Oil Rotational Viscosity Standard RTM37	19588 mPa.s at 25 °C	500 mL	ALK-RTM37
	Mineral Oil Rotational Viscosity Standard RTM38	40049 mPa.s at 25 °C	500 mL	ALK-RTM38
	Mineral Oil Rotational Viscosity Standard RTM39	72328 mPa.s at 25 °C	500 mL	ALK-RTM39

Viscosity Bath Media

Description	Size	Product No.
White Oil for use 40°C to 80°C	20 L	ALK-BM1-20L
White Oil for use 40°C to 80°C	5 L	ALK-BM1-5L
White Oil for use 80°C to 120°C	20 L	ALK-BM2-20L
White Oil for use 80°C to 120°C	5 L	ALK-BM2-5L
Silicone Fluid 26 cSt @ 25°C for use 120 to 150°C	20 L	ALK-BM5-20L
Silicone Fluid 26 cSt @ 25°C for use 120 to 150°C	5 L	ALK-BM5-5L
Silicone Fluid 20 cSt @ 25°C for use 90 to 135°C	20 L	ALK-BM6-20L
Silicone Fluid 20 cSt @ 25°C for use 90 to 135°C	5 L	ALK-BM6-5L
Silicone Fluid 10 cSt @ 25°C for use 50 to 100°C	20 L	ALK-BM7-20L
Silicone Fluid 10 cSt @ 25°C for use 50 to 100°C	5 L	ALK-BM7-5L
Silicone Fluid 5 cSt @ 25°C for use 20 to 60°C	20 L	ALK-BM8-20L
Silicone Fluid 5 cSt @ 25°C for use 20 to 60°C	5 L	ALK-BM8-5L

Section 7: General Fuel Analysis Standards

Density Standards

For use with ASTM D4052, IP 365, ISO 12185

Description	Size	Product No.
Density Standard, Diesel (nominal value 0.83418 g/mL @ 15°C)	250 mL	ALK-CRMU-DEGO
Density Standard, Gasoline (nominal value 0.72587 g/mL @ 15°C)	250 mL	ALK-CRMU-DEGA
Density Standard, Jet Aviation Fuel (nominal value 0.79684 g/mL @ 15°C)	250 mL	ALK-CRMU-DEKR
Density Standard, Lubricant, (nominal value 0.86709 g/mL @ 15°C)	250 mL	ALK-CRMU-DELU
Density Standard 15 °C, (Nominal density value 0.6654 at 15 °C)	60 mL	ALK-DEN15-01
Density Standard 15 °C, (Nominal density value 0.7183 at 15 °C)	60 mL	ALK-DEN15-02
Density Standard 15 °C, (Nominal density value 0.7807 at 15 °C)	60 mL	ALK-DEN15-03
Density Standard 15 °C, (Nominal density value 0.8111 at 15 °C)	60 mL	ALK-DEN15-04
Density Standard 15 °C, (Nominal density value 0.8494 at 15 °C)	60 mL	ALK-DEN15-05
Density Standard 15 °C, (Nominal density value 0.8648 at 15 °C)	60 mL	ALK-DEN15-06
Density Standard 15 °C, (Nominal density value 0.8811 at 15 °C)	60 mL	ALK-DEN15-07
Density Standard 15 °C, (Nominal density value 0.9413 at 15 °C)	60 mL	ALK-DEN15-08
Density Standard 15 °C, (Nominal density value 0.9823 at 15 °C)	60 mL	ALK-DEN15-09
Density Standard 15 °C, (Nominal density value 1.0248 at 15 °C)	60 mL	ALK-DEN15-10
Density Standard 15 °C, (Nominal density value 1.0687 at 15 °C)	60 mL	ALK-DEN15-11
Density Standard 15 °C, (Nominal density value 1.1280 at 15 °C)	60 mL	ALK-DEN15-12
Density Standard 15 °C, (Nominal density value 1.1962 at 15 °C)	60 mL	ALK-DEN15-13
Density Standard 15 °C, (Nominal density value 1.2829 at 15 °C)	60 mL	ALK-DEN15-14
Density Standard 15 °C, (Nominal density value 1.6300 at 15 °C)	60 mL	ALK-DEN15-15
Density Standard 20 °C, (Nominal density value 0.6609 at 20 °C)	60 mL	ALK-DEN20-01
Density Standard 20 °C, (Nominal density value 0.7142 at 20 °C)	60 mL	ALK-DEN20-02
Density Standard 20 °C, (Nominal density value 0.7769 at 20 °C)	60 mL	ALK-DEN20-03
Density Standard 20 °C, (Nominal density value 0.8386 at 20 °C)	60 mL	ALK-DEN20-04
Density Standard 20 °C, (Nominal density value 0.8452 at 20 °C)	60 mL	ALK-DEN20-05
Density Standard 20 °C, (Nominal density value 0.8723 at 20 °C)	60 mL	ALK-DEN20-06
Density Standard 20 °C, (Nominal density value 0.9378 at 20 °C)	60 mL	ALK-DEN20-07
Density Standard 20 °C, (Nominal density value 0.9811 at 20 °C)	60 mL	ALK-DEN20-08
Density Standard 20 °C, (Nominal density value 1.0236 at 20 °C)	60 mL	ALK-DEN20-09
Density Standard 20 °C, (Nominal density value 1.0669 at 20 °C)	60 mL	ALK-DEN20-10
Density Standard 20 °C, (Nominal density value 1.1256 at 20 °C)	60 mL	ALK-DEN20-11
Density Standard 20 °C, (Nominal density value 1.1915 at 20 °C)	60 mL	ALK-DEN20-12
Density Standard 20 °C, (Nominal density value 1.2800 at 20 °C)	60 mL	ALK-DEN20-13
Density Standard 20 °C, (Nominal density value 1.6218 at 20 °C)	60 mL	ALK-DEN20-14
Density Standard 25 °C, (Nominal density value 0.6564 at 25 °C)	60 mL	ALK-DEN25-01
Density Standard 25 °C, (Nominal density value 0.7101 at 25 °C)	60 mL	ALK-DEN25-02
Density Standard 25 °C, (Nominal density value 0.7730 at 25 °C)	60 mL	ALK-DEN25-03
Density Standard 25 °C, (Nominal density value 0.8352 at 25 °C)	60 mL	ALK-DEN25-04
Density Standard 25 °C, (Nominal density value 0.8693 at 25 °C)	60 mL	ALK-DEN25-05
Density Standard 25 °C, (Nominal density value 0.9342 at 25 °C)	60 mL	ALK-DEN25-06
Density Standard 25 °C, (Nominal density value 0.9797 at 25 °C)	60 mL	ALK-DEN25-07
Density Standard 25 °C, (Nominal density value 1.0222 at 25 °C)	60 mL	ALK-DEN25-08
Density Standard 25 °C, (Nominal density value 1.0650 at 25 °C)	60 mL	ALK-DEN25-09

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Section 7: General Fuel Analysis Standards

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Description	Size	Product No.
Density Standard 25 °C, (Nominal density value 1.1231 at 25 °C)	60 mL	ALK-DEN25-10
Density Standard 25 °C, (Nominal density value 1.1868 at 25 °C)	60 mL	ALK-DEN25-11
Density Standard 25 °C, (Nominal density value 1.2771 at 25 °C)	60 mL	ALK-DEN25-12
Density Standard 25 °C, (Nominal density value 1.6136 at 25 °C)	60 mL	ALK-DEN25-13
Density Standard 40 °C, (Nominal density value 0.6426 at 40 °C)	60 mL	ALK-DEN40-01
Density Standard 40 °C, (Nominal density value 0.6977 at 40 °C)	60 mL	ALK-DEN40-02
Density Standard 40 °C, (Nominal density value 0.7934 at 40 °C)	60 mL	ALK-DEN40-03
Density Standard 40 °C, (Nominal density value 0.8250 at 40 °C)	60 mL	ALK-DEN40-04
Density Standard 40 °C, (Nominal density value 0.8716 at 40 °C)	60 mL	ALK-DEN40-05
Density Standard 50 °C, (Nominal density value 0.7864 at 50 °C)	60 mL	ALK-DEN50-01
Density Standard 50 °C, (Nominal density value 0.8102 at 50 °C)	60 mL	ALK-DEN50-02
Density Standard 50 °C, (Nominal density value 0.8659 at 50 °C)	60 mL	ALK-DEN50-03
Density Standard 60 °C, (Nominal density value 0.7924 at 60 °C)	60 mL	ALK-DEN60-01
Density Standard 60 °C, (Nominal density value 0.8201 at 60 °C)	60 mL	ALK-DEN60-02
Density Standard 60 °C, (Nominal density value 0.8688 at 60 °C)	60 mL	ALK-DEN60-03
Density Standard 80 °C, (Nominal density value 0.7785 at 80 °C)	60 mL	ALK-DEN80-01
Density Standard 80 °C, (Nominal density value 0.8246 at 80 °C)	60 mL	ALK-DEN80-02
Density Standard 80 °C, (Nominal density value 0.8578 at 80 °C)	60 mL	ALK-DEN80-03
Density Standard 100 °C, (Nominal density value 0.7645 at 100 °C)	60 mL	ALK-DEN100-01
Density Standard 100 °C, (Nominal density value 0.8124 at 100 °C)	60 mL	ALK-DEN100-02
Density Standard 100 °C, (Nominal density value 0.8550 at 100 °C)	60 mL	ALK-DEN100-03
Density Standard 150 °C, (Nominal density value 0.7288 at 150 °C)	60 mL	ALK-DEN150-01
Density Standard 150 °C, (Nominal density value 0.7816 at 150 °C)	60 mL	ALK-DEN150-02
Density Standard 150 °C, (Nominal density value 0.8287 at 150 °C)	60 mL	ALK-DEN150-03

Section 7: General Fuel Analysis Standards

Color Standards

For use with ASTM D6045, ASTM D1500, ASTM D156, ASTM D1544, ASTM D6166

Description	Size	Product No.
Colour Reference Standard ASTM <0.5 Colour	500 mL	ALK-134290.00
Colour Reference Standard ASTM 1 Colour	500 mL	ALK-134000
Colour Reference Standard ASTM 3 Colour	500 mL	ALK-134010
Colour Reference Standard ASTM 5 Colour	500 mL	ALK-134020
Colour Reference Standard ASTM 7 Colour	500 mL	ALK-134030
Colour Reference Standard Saybolt Colour -10	500 mL	ALK-134040.00
Colour Reference Standard Saybolt Colour 0	500 mL	ALK-134050
Colour Reference Standard Saybolt Colour +12	500 mL	ALK-134060
Colour Reference Standard Saybolt Colour +25	500 mL	ALK-134070
Colour Reference Standard Gardner Colour Value 2	500 mL	ALK-134200
Colour Reference Standard Gardner Colour Value 5	500 mL	ALK-134210
Colour Reference Standard Gardner Colour Value 8	500 mL	ALK-134220
Colour Reference Standard Lovibond RYBN Colour 0.8R 2.0Y 0.1N (5¼")	500 mL	ALK-134080.00
Colour Reference Standard Lovibond RYBN Colour 1.4R 4.0Y 0.5N (5¼")	500 mL	ALK-134090
Colour Reference Standard Lovibond RYBN Colour 2.0R 7.0Y 0.5N (5¼")	500 mL	ALK-134100
Colour Reference Standard Lovibond RYBN Colour 2.1R 11.0Y 0.5N (5¼")	500 mL	ALK-134110
Colour Reference Standard Lovibond RYBN Colour 2.5R 14.0Y 0.7N (5¼")	500 mL	ALK-134120
Colour Reference Standard Lovibond RYBN Colour 3.1R 22.0Y 0.85N (5¼")	500 mL	ALK-134130
Colour Reference Standard Lovibond RYBN Colour 3.4R 30.0Y 0.9N (5¼")	500 mL	ALK-134230.00
Colour Reference Standard Pt-Co/Hazen/APHA Colour, Nominal Certified Value 0	500 mL	ALK-133991
Colour Reference Standard Pt-Co/Hazen/APHA Colour, Nominal Certified Value 5	500 mL	ALK-134140
Colour Reference Standard Pt-Co/Hazen/APHA Colour, Nominal Certified Value 10	500 mL	ALK-134150
Colour Reference Standard Pt-Co/Hazen/APHA Colour, Nominal Certified Value 15	500 mL	ALK-134160
Colour Reference Standard Pt-Co/Hazen/APHA Colour, Nominal Certified Value 30	500 mL	ALK-134170
Colour Reference Standard Pt-Co/Hazen/APHA Colour, Nominal Certified Value 50	500 mL	ALK-134180
Colour Reference Standard Pt-Co/Hazen/APHA Colour, Nominal Certified Value 100	500 mL	ALK-134190
Colour Reference Standard AOCS-Tintometer Colour 0.4R 2.0Y (5¼")	500 mL	ALK-134240
Colour Reference Standard AOCS-Tintometer Colour 1.6R 9.0Y (5¼")	500 mL	ALK-134250
Colour Reference Standard AOCS-Tintometer Colour 1.9R 12Y (5¼")	500 mL	ALK-134260
Colour Reference Standard AOCS-Tintometer Colour 2.5R 20Y (5¼")	500 mL	ALK-134270
Colour Reference Standard AOCS-Tintometer Colour 3.0R 28Y (5¼")	500 mL	ALK-134280.00



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