



# Global Products & Services Catalog

PREMIER GLOBAL MANUFACTURER OF CERTIFIED REFERENCE STANDARDS  
FOR THE HYDROCARBON, NATURAL GAS, REFINING, CHEMICAL, AND BIOFUELS INDUSTRIES



CERTIFIED  
REFERENCE  
MATERIALS

REGULATORS,  
CYLINDERS, &  
EQUIPMENT

ANALYTICAL &  
EDUCATIONAL  
SERVICES

REGULATORY  
ASSISTANCE &  
GUIDANCE





## About DCG Partnership

Manufacturing chromatographic reference standards for the petroleum, petrochemical, chemical, and natural gas industries since 1988, DCG Partnership I, LTD continues to focus its efforts on the development of high quality products designed to meet the needs of its valued customers.

## Setting High Standards

Celebrating over 25 years of quality service and high quality product offerings, Houston-based DCG Partnership I, LTD. is an international leader in certified reference materials for the hydrocarbon, natural gas, refining, and biofuels industries.

Providing precision-based calibration of analytic instruments, DCG Partnership manufactures calibration standards from the raw product to the meticulous blending of the gases or liquids to final analysis and certification. Our custom-blend standards are quality-checked and guaranteed for accuracy and precision to meet stringent requirements. The success of our high quality portfolio has enabled the expansion of our products and services to the global audience.

We meticulously define our Primary Reference Standards, and sincere effort has been put forth to develop the highest quality standard possible. All of our standards are Primary Reference Standards, < 1% gravimetric uncertainty per component at the 95% confidence interval. They are NIST-Traceable by weight with the gravimetric values verified by one or more analytical techniques.

## Certified in ISO 17025 and ISO GUIDE 34 Accreditation

Offering the highest quality products and services, our analytical laboratory has recently been awarded with ISO 17025 and ISO GUIDE 34 certification requiring sincere dedication to quality assurance in industry practices and standards.

## Global Solutions

Creating a global community for one-stop shopping for calibration and measurement standards.

## Analytical Services and Training

Specialty analytical services are available, such as round robin analyses, regulatory compliance support, and hands-on technical training and education.

# Quality Policy

DCG Partnership I, LTD. strives to create the highest quality reference materials available and consistently produce analytical results of the highest caliber.

The commitment of DCG Partnership I, LTD. remains to satisfy client needs while continuing to improve both product offerings and processes.

The DCG Partnership I, LTD. analytical laboratory is accredited by A2LA standards to ISO 17025 and ISO GUIDE 34.



## Confident Compliance, Custom Products, & Comprehensive Solutions

By providing you with certified reference materials for gases and liquids for the hydrocarbon, natural gas, refining, chemical, and biofuels industries, we take pride in being a dependable source of high quality products, technical expertise, training, and support for confident compliance with analytical and regulated methods, such as those required by the ASTM, GPA, and ISO regulatory agencies.

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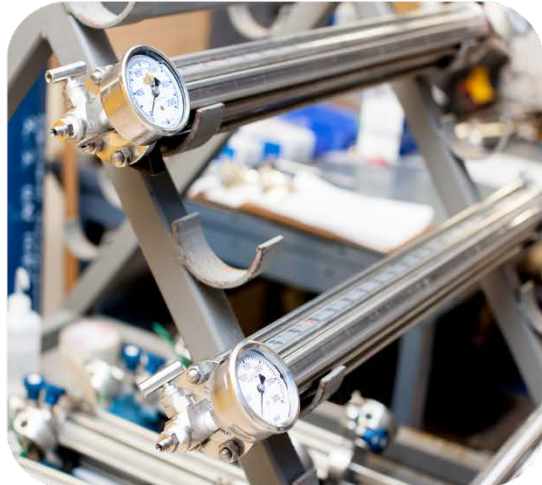
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## Method Conversion Chart

Analysis	ASTM	ISO	IP	DIN	JIS	AFNOR
Aniline Point	D611	2977	2	51775		M07-021
Auto-Freeze Point	D5972		435			
Benzene by GC	D3606		425			
Boiling Range by GC	D2887	3924				
Cloud Point	D2500	3015	219	51597	K2269	T60-105
Cloud Point	D5771		444			
Cloud Point	D5772		445			
Cloud Point	D5773		446			
COC Flash Point	D92	2592	36	51376	K 2265	T60-118
Distillation	D86	3405	123	51751	K 2254	M07-002
Freezing Point	D2386	3013	16	51421	K2276	M07-048
Freezing Point	D5901		434			
Hydrocarbons Automatic	D6379		436			
Hydrocarbons Automatic	D6591		391			
Nitrogen by Chemiluminescence Detection	D4629		379			M07-058
Oxygenates	D5599		408			
PMCC Flash Point	D93	2719	34	51758	K 2265	M07-019
Sulfur by XRF	D2622			51400T6	K 2541	
Sulfur by Oxidative Microcoulometry	D3120	16591				
Sulfur by Oxidative Microcoulometry	D3246		373			M07-052
Sulfur by ED-XRF	D4294	8754	336			M07-053
Tag Flash Point	D56			51411	K 2580	M07-003
Vapor Pressure	D5191		394			M07-079



## High Quality Products and Services

### Liquid and Gas Certified Reference Materials

- GC and GC-MS
- Combustion
- ED-XRF
- Liquefied Petroleum Gases
- Natural Gas and Natural Gas Liquids
- Refinery Gases
- Gas and Liquid Phase Speciated Sulfur and Total Sulfur Standards (ppb, ppm & % levels)
- Nitrogen / Total Nitrogen (ppb, ppm & % levels) in Vapor and Liquid Phase
- Certified Reference Materials
- BTEX
- Oxygenate Blends
- Detailed Hydrocarbon Analysis (DHA)
- Custom Standards (available upon request)

### Regulators, Gas-Handling Equipment, and Accessories

- Single and Dual Stage Regulators
- Switchover Manifold Systems
- Brass or Stainless Steel Regulators
- Superior Accuracy and Reliability

### Heated Products and Cylinders

- Cylinder Heat Blankets
- Heat Trace Tubing
- Sample Cylinder Heat Blankets
- Heated Sample Transfer Lines

### Analytical Services

- Regulatory and Compliance Guidance
- Method Development
- Audit Standards and Round Robin Standards
- Round Robin Programs

### Specialty Analytical Services

Specialized lab services are offered to assist those who require offsite analyses. We ensure our clients receive on-time assistance, top-of-the-line products, and detailed analysis.

### School of Chromatography

The DCG School of Chromatography features hands-on training where students can determine their particular areas of need and receive hands-on training in these areas in an actual laboratory setting by chemists.





## Ordering & Technical Information

### Contact: **ATS Scientific Inc.**

Phone: +1 800.661.6700

Fax: +1 (905) 332-1394

E-Mail: [sales@ats-scientific.com](mailto:sales@ats-scientific.com)

[www.ats-scientific.com](http://www.ats-scientific.com)

### Distributed in Canada by:

ATS Scientific Inc.

4030 Mainway, Burlington Ontario

L7M 4B9

### Shipments

- All products are packaged in accordance with applicable shipper
- Safety and regulatory compliant

## ASTM Methods for Cloud Point of Petroleum Products

### ASTM D2500

#### Cloud Point of Petroleum Products

**Scope of Ranges:** Petroleum products and biodiesel fuels transparent in layers 40 mm in thickness and cloud point < 49 °C.

<i>Product Code</i>	<i>Item</i>	<i>Description</i>
D2500-CP2ST-200mL	200 mL Bottle	Cloud Point Value: -2 Degrees C
D2500-CP5ST-200mL	200 mL Bottle	Cloud Point Value: -5 Degrees C
D2500-CP10ST-200mL	200 mL Bottle	Cloud Point Value: -10 Degrees C
D2500-CP15ST-200mL	200 mL Bottle	Cloud Point Value: -15 Degrees C
D2500-CP20ST-200mL	200 mL Bottle	Cloud Point Value: -20 Degrees C

### ASTM D5772-10

#### Standard Test Method for Cloud Point of Petroleum Products (Linear Cooling Rate Method)

**Scope of Ranges:** Determination of cloud point of petroleum products and biodiesel fuels that are transparent at 40 mm thickness by automatic instrument using a linear cooling rate.

<i>Product Code</i>	<i>Item</i>	<i>Description</i>
D5772-CP2ST-200mL	200 mL Bottle	Cloud Point Value: -2 Degrees C
D5772-CP5ST-200mL	200 mL Bottle	Cloud Point Value: -5 Degrees C
D5772-CP10ST-200mL	200 mL Bottle	Cloud Point Value: -10 Degrees C
D5772-CP15ST-200mL	200 mL Bottle	Cloud Point Value: -15 Degrees C
D5772-CP20ST-200mL	200 mL Bottle	Cloud Point Value: -20 Degrees C

### ASTM D5773 - 10

#### Standard Test Method for Cloud Point of Petroleum Products (Constant Cooling Rate Method)

**Scope of Ranges:** Determination of cloud point of petroleum products and biodiesel fuels that are transparent at 40 mm thickness by automatic instrument using a constant cooling rate.

<i>Product Code</i>	<i>Item</i>	<i>Description</i>
D5773-CP2ST-200mL	200 mL Bottle	Cloud Point Value: -2 Degrees C
D5773-CP5ST-200mL	200 mL Bottle	Cloud Point Value: -5 Degrees C
D5773-CP10ST-200mL	200 mL Bottle	Cloud Point Value: -10 Degrees C
D5773-CP15ST-200mL	200 mL Bottle	Cloud Point Value: -15 Degrees C
D5773-CP20ST-200mL	200 mL Bottle	Cloud Point Value: -20 Degrees C

**ASTM D7397 - 10****Standard Test Method for Cloud Point of Petroleum Products (Miniaturized Optical Method)**

**Scope of Ranges:** Determination of the cloud point of petroleum products and biodiesel fuels that are transparent in layers 4.0 mm in thickness using an automatic instrument. Temperature range is -60 °C - +20 °C with resolution of 0.1 °C.

<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
D7397-CP2ST-200mL	200 mL Bottle	Cloud Point Value: -2 Degrees C	
D7397-CP5ST-200mL	200 mL Bottle	Cloud Point Value: -5 Degrees C	
D7397-CP10ST-200mL	200 mL Bottle	Cloud Point Value: -10 Degrees C	
D7397-CP15ST-200mL	200 mL Bottle	Cloud Point Value: -15 Degrees C	
D7397-CP20ST-200mL	200 mL Bottle	Cloud Point Value: -20 Degrees C	

**ASTM D7683 - 11****Standard Test Method for Cloud Point of Petroleum Products (Small Test Jar Method)**

**Scope of Ranges:** Determination of the cloud point of petroleum products and biodiesel fuels that are transparent in layers 40 mm in thickness using an automatic instrument. Temperature range -65°C -+51°C.

<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
D7683-CP2ST-200mL	200 mL Bottle	Cloud Point Value: -2 Degrees C	
D7683-CP5ST-200mL	200 mL Bottle	Cloud Point Value: -5 Degrees C	
D7683-CP10ST-200mL	200 mL Bottle	Cloud Point Value: -10 Degrees C	
D7683-CP15ST-200mL	200 mL Bottle	Cloud Point Value: -15 Degrees C	
D7683-CP20ST-200mL	200 mL Bottle	Cloud Point Value: -20 Degrees C	

**ASTM D7689 - 11****Standard Test Method for Cloud Point of Petroleum Products (Mini Method)**

**Scope of Ranges:** Determination of cloud point of petroleum products, biodiesel and biodiesel blends transparent in 40 mm layers using an automatic instrument in the range of -50 °C + 6 °C.

<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
D7689-CP2ST-200mL	200 mL Bottle	Cloud Point Value: -2 Degrees C	
D7689-CP5ST-200mL	200 mL Bottle	Cloud Point Value: -5 Degrees C	
D7689-CP10ST-200mL	200 mL Bottle	Cloud Point Value: -10 Degrees C	
D7689-CP15ST-200mL	200 mL Bottle	Cloud Point Value: -15 Degrees C	
D7689-CP20ST-200mL	200 mL Bottle	Cloud Point Value: -20 Degrees C	

## ASTM Methods for Distillation

<b>ASTM D86</b> <b>Distillation of Petroleum Products at Atmospheric Pressure</b> <b>Scope of Ranges:</b> Lab batch atmospheric distillation to quantitate the boiling range characteristics of light and middle distillates.			
<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
D0086-TOL-1x8oz	Standard 8 oz. bottle	<b>Toluene:</b> 99.9% purity as minimum purity certificate and GC analysis (Group 1, 2, 3)	
D0086-DEC-1x8oz	Standard 8 oz. bottle	<b>Decane:</b> 99.9% purity as minimum purity certificate and GC analysis (Group 4)	
D0086-HEX-1x8oz	Standard 8 oz. bottle	<b>Hexadecane:</b> 99.9% purity as minimum purity certificate and GC analysis (Group 4)	

## ASTM Methods for the Determination of Flash Point

<b>ASTM D56</b> <b>Standard Test Method for Flash Point by Tag Closed Cup Tester</b> <b>Scope of Ranges:</b> Determination of flash point of liquids with viscosity below 5.5 mm <sup>2</sup> /s (cSt) at 40°C or below 9.5 m <sup>2</sup> /s (cSt) at 25°C, Flash Point below 93°C.			
<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
D0056-NDECA-1x200mL	Standard 200 mL bottle	<b>n-Decane:</b> 99.9% purity, 50.9°C as minimum purity certificate and GC Analysis	
D0056-UNDEC-1x200mL	Standard 200 mL bottle	<b>n-Undecane:</b> 99.9% purity, 67.1°C as minimum purity certificate and GC Analysis	

<b>ASTM D92-11</b> <b>Standard Method Flash and Fire Points by Cleveland Open Cup Tester</b> <b>Scope of Ranges:</b> Determination of flash point and fire point of petroleum products by manual of automated Cleveland open cup apparatus.			
<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
D0092-NTETRA-1x200mL	Standard 200 mL bottle	<b>n-Tetradecane:</b> 99.9% purity, 115.5°C as minimum purity certificate and GC Analysis	
D0092-NHEXAD-1x200mL	Standard 200 mL bottle	<b>n-Hexadecane:</b> 99.9% purity, 138.8°C as minimum purity certificate and GC Analysis	

**ASTM D93 - 13e1****Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester****Scope of Ranges:** Determination of flash point of petroleum products in temperature range 40°C-360°C.

<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
D0093-60DEGC-1x200mL	Standard 200 mL bottle	60°C flash point	
D0093-65DECC-1x200mL	Standard 200 mL bottle	65°C flash point	
D0093-93DEGC-1x200mL	Standard 200 mL bottle	93°C flash point	
D0093-134DEGC-1x200mL	Standard 200 mL bottle	134°C flash point	

## ASTM Methods for the Determination of Freezing Point

**ASTM D2386 - 06(2012)****Standard Test Method for Freezing Point of Aviation Fuels****Scope of Ranges:** Determination of the temperature below which solid hydrocarbon crystals may form in aviation turbine fuels and aviation gasoline.

<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
D2386-45DEGC-1x200mL	Standard 200 mL bottle	- 45°C Freeze Point	
D2386-50DEGC-1x200mL	Standard 200 mL bottle	- 50°C Freeze Point	

## ASTM Methods for the Determination of Pour Point

<b>ASTM D97 - 12</b>			
<b>Standard Test Method for Pour Point of Petroleum Products</b>			
<b>Scope of Ranges:</b> Determination of pour point of any petroleum product; It is suitable for black specimens, cylinder stock and non-distillate fuel oil.			
<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
D0097-5DEGC-1x200mL	Standard 200 mL bottle	-5°C Pour Point	
D0097-10DEGC-1X200mL	Standard 200 mL bottle	-10°C Pour Point	
D0097-15DEGC-1X200mL	Standard 200 mL bottle	-15°C Pour Point	
D0097-20DEGC-2X200mL	Standard 200 ml bottle	-20°C Pour Point	
D0097-40DEGC-4X200mL	Standard 200 mL bottle	-40°C Pour Point	
D0097-50DEGC-5X200mL	Standard 200 mL bottle	-50°C Pour Point	

## ASTM Methods for Measurement of Chloride

<b>ASTM Kits</b>			
<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
<b>ASTM D4929</b>			
D4929-CHCK-0-100mg/l-6x2mL	Kit 6 x 2 mL	Total Chloride from Chlorobenzene in Isooctane, 0, 50, 10, 25, 50, 100 mg/L	
<b>ASTM D5808</b>			
D5808-CHCK-0-25mg/l-6x2mL	Kit 6 x 2 mL	Total Chloride from TriChloroPhenol in Methanol, 0, 1, 5, 10, 15, 25 mg/L	

<b>Chloride Kits</b>			
<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
D000-CHCK-0-5mg/l-10x2mL	Kit 10 x 2 mL	Blank N-Hexane and 10 x 2 mL of 5 mg/L Total Chloride from Aldrin in n-Hexane	
D000-CHCK-0-1mg/l-4x2mL	Kit 4 x 2 mL	Total Chloride from Aldrin in n-Hexane, 0, 0.1, 0.5, 1 mg/L	

Individual ampoules are available to purchase. Please see your salesperson or contact our customer service team to learn more.

## Chloride Standards

<b>Product Code</b>	<b>Item</b>	<b>Description</b>	
D000-CHST-0&5mg-10x2mL	Standard 10 x 2 mL	Total Chloride from Aldrin in n-Hexane, 0 and 5 Cl/L	
D000-CHST-50mg-5x2mL	Standard 5 x 2 mL	Total Chloride from Aldrin in n-Hexane	
D000-CHST-0mg-5x2mL	Standard 5 x 2 mL	Blank (0) n-Hexane	
D000-CHST-100mg-5x2mL	Standard 5 x 2 mL	Total Chloride from Aldrin in n-Hexane, 100 mg Cl/L	
D000-CIST-5w/w-1x5mL	Standard 1 x 5 mL	Total Chloride from 1-Chloropentane in Isooctane	
D000-CHST-5w/v-5x2mL	Standard 5 x 2 mL	0.5% w/v Total Chloride from Chlorocyclohexane in n-Hexane	
D000-CHST-1w/v-5x2mL	Standard 5 x 2 mL	1.0% w/v Total Chloride from Chlorocyclohexane in n-Hexane	
D000-CHST-3w/v-5x2mL	Standard 5 x 2 mL	3.0% w/v Total Chloride from Chlorocyclohexane in n-Hexane	
D000-CHST-0.1w/v-5x2mL	Standard 5 x 2 mL	0.1% w/v Total Chloride from Chlorocyclohexane in n-Hexane	
D000-CHST-50mg/l-5x2mL	Standard 5 x 2 mL	50 mg/L Total Chloride from Aldrin in n-Hexane	
D000-CHST-100mg/l-5x2mL	Standard 5x 2 mL	100 mg/L of Total Chloride from Aldrin in n-Hexane	
D000-CHST-0-5x2mL	Standard 5 x 2 mL	Blank (0) n-Hexane	
D000-CHST-0.05%-1x2mL	Standard 1 x 2 mL	0.05% w/v Total Chloride from Chlorocyclohexane in n-Hexane	
D000-CHST-10mg/l-5x2mL	Standard 5 x 2 mL	10 mg/L Total Chloride from Aldrin In n-Hexane	

## Methods for Measurement of Total Nitrogen

<b>ASTM D4629</b>			
<b>Trace Nitrogen in Liquid Petroleum Hydrocarbons by Syringe/Inlet Oxidative Combustion and Chemiluminescence.</b>			
Determination of the trace Total nitrogen found in liquid hydrocarbons with a boiling range of 50-400 °C and viscosities between 0.2-10 cSt (mm <sup>2</sup> /s). The method is applicable to naphthas, distillates and oils with trace nitrogen ranging from 0.3-100 mg/kg by either syringe or boat inlet.			
<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
<b>ASTM D4629 Kits</b>			
D4629-NICK-0-20mg/L-6x2mL	Kit 6 x 2 mL	Total Nitrogen from Pyridine in Isooctane: Blank, 1, 2, 5, 10, 20 mg/L	
D4629-NICK-0-1000mg/L-6x2mL	Kit 6 x 2 mL	Total Nitrogen from Pyridine in Isooctane: Blank, 50, 100, 200, 500, 1000 mg/L	
D4629-NICK-0-10000mg/L-6x2mL	Kit 6 x 2 mL	Total Nitrogen from Pyridine in Isooctane: Blank, 500, 1000, 2000, 5000, 10000 mg/L	
D4629-NTCK-0-100mg/L-6x2mL	Kit 6 x 2 mL	Total Nitrogen from Acridine in Toluene: Blank, 1, 5, 10, 50, 100 mg/L	
D4629-NICK-0-5mg/kg-6x2mL	Kit 6 x 2 mL	Total Nitrogen from Pyridine in Isooctane: Blank, 0.25, 0.50, 1.00, 2.50, 5.00 mg/kg	
D4629-NICK-0-100mg/kg-5x2mL	Kit 5 x 2 mL	Total Nitrogen from Pyridine in Isooctane: Blank, 5, 25, 20, 100 mg/kg	
<b>ASTM D4629 Individual Items</b>			
D4629-NIST-10ug/mL-1x1mL	Standard 1 x 1 mL	Total Nitrogen from Pyridine in Isooctane, 10 ug/mL	

<b>ASTM D5762</b>			
<b>Nitrogen in Petroleum and Petroleum Products by Boat-Inlet Chemiluminescence</b>			
Determination of nitrogen in liquid hydrocarbons, including petroleum process streams and lubricating oils with a range of 40 µg/g-10,000 µg/g nitrogen			
<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
<b>ASTM D5762 Kits</b>			
D5762-NXCK-0-1000mg/kg-4x2mL	Kit 4 x 2 mL	Total Nitrogen from Acridine in Xylene: Blank, 100, 500, 1000 mg/kg	
D5762-NXCK-0-100mg/kg-6x2mL	Kit 6 x 2 mL	Total Nitrogen from Acridine in Xylene: Blank, 1, 5, 10, 50 and 100 mg/kg	

Individual ampoules are available to purchase. Please see your salesperson or contact our customer service team to learn more.



## Methods for Measurement of Sulfur

<b>ASTM D2622</b>			
<b>Sulfur in Petroleum Products by Wavelength Dispersive X-ray Fluorescence Spectrometry</b>			
<b>Scope of Ranges:</b> Determination of total sulfur in diesel fuel, jet fuel, kerosene naphtha, oils, unleaded gasoline, gasohol, and biodiesel.			
<b>ASTM D2622 Kits</b>			
<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
<b>D2622-SMCK-0-0.1%w/w-7x2mL</b>	Kit 7 x 2 mL	Total Sulfur from di-n-butylsulfide in Mineral Oil, Blank, 0.002%, 0.005%, 0.010%, 0.030%, 0.060%, 0.100% Weight concentration	
<b>D2622-SMCK-0-0.1%w/w-7x100mL</b>	Kit 7 x 100 mL	Total Sulfur from di-n-butylsulfide in Mineral Oil, Blank, 0.002%, 0.005%, 0.010%, 0.030%, 0.060%, 0.100% Weight concentration	
<b>D2622-SMCK-0-0.1%w/w-7x200mL</b>	Kit 7 x 200 mL	Total Sulfur from di-n-butylsulfide in Mineral Oil, Blank, 0.002%, 0.005%, 0.010%, 0.030%, 0.060%, 0.100% Weight concentration	
<b>D2622-SMCK-0-0.1%w/w-10x2mL</b>	Kit 10 x 2 mL	Total Sulfur from Di-n-butylsulfide in Mineral Oil: Blank, 0.0025%, 0.0050%, 0.0100%, 0.0200%, 0.0400%, 0.0500%, 0.0600%, 0.0800%, 0.100% Weight Concentration	
<b>D2622-SMCK-0-0.1%w/w-10x100mL</b>	Kit 10 x 100 mL	Total Sulfur from Di-n-butylsulfide in Mineral Oil: Blank, 0.0025%, 0.0050%, 0.0100%, 0.0200%, 0.0400%, 0.0500%, 0.0600%, 0.0800%, 0.100% Weight Concentration	
<b>D2622-SMCK-0-0.1%w/w-10x200mL</b>	Kit 10 x 200 mL	Total Sulfur from Di-n-butylsulfide in Mineral Oil: Blank, 0.0025%, 0.0050%, 0.0100%, 0.0200%, 0.0400%, 0.0500%, 0.0600%, 0.0800%, 0.100% Weight Concentration	
<b>D2622-SICK-0-0.3%w/w-13x2mL</b>	Kit 13 x 2 mL	Total Sulfur from di-n-butylsulfide in Isooctane, Blank, 0.0010%, 0.0020%, 0.0030%, 0.0050%, 0.010%, 0.020%, 0.030%, 0.040%, 0.060%, 0.100%, 0.200%, 0.300% Weight concentration	
<b>D2622-SICK-0.03%w/w-13x100mL</b>	Kit 13 x 100 mL	Total Sulfur from di-n-butylsulfide in Isooctane, Blank, 0.0010%, 0.0020%, 0.0030%, 0.0050%, 0.010%, 0.020%, 0.030%, 0.040%, 0.060%, 0.100%, 0.200%, 0.300% Weight concentration	
<b>D2622-SICK-0.03%w/w-13x200mL</b>	Kit 13 x 200 mL	Total Sulfur from di-n-butylsulfide in Isooctane, Blank, 0.0010%, 0.0020%, 0.0030%, 0.0050%, 0.010%, 0.020%, 0.030%, 0.040%, 0.060%, 0.100%, 0.200%, 0.300% Weight concentration	

<b>D2622-SMCK-0-5.0%w/w-6x2mL</b>	Kit 6 x 2 mL	Total Sulfur from Di-n-butylsulfide in Mineral Oil, Blank, 0.100%, 0.500%, 1.000%, 2.500%, 5.000% Weight concentration	
<b>D2622-SMCK-0-5.0%w/w-6x100mL</b>	Kit 6 x 100 mL	Total Sulfur from Di-n-butylsulfide in Mineral Oil, Blank, 0.100%, 0.500%, 1.000%, 2.500%, 5.000% Weight concentration	
<b>D2622-SMCK-0-5.0%w/w-6x200mL</b>	Kit 6 x 200 mL	Total Sulfur from Di-n-butylsulfide in Mineral Oil, Blank, 0.100%, 0.500%, 1.000%, 2.500%, 5.000% Weight concentration	
<b>D2622-SMCK-0-5%w/w-10x2mL</b>	Kit 10 x 2 mL	Total Sulfur from Di-n-butylsulfide in Mineral Oil: Blank, 0.100%, 0.200%, 0.500%, 0.750%, 1.000%, 2.000%, 3.000%, 4.000%, 5.000% Weight concentration	
<b>D2622-SMCK-0-5%w/w-10x100mL</b>	Kit 10 x 100 mL	Total Sulfur from Di-n-butylsulfide in Mineral Oil: Blank, 0.100%, 0.200%, 0.500%, 0.750%, 1.000%, 2.000%, 3.000%, 4.000%, 5.000% Weight concentration	
<b>D2622-SMCK-0-5%w/w-10x200mL</b>	Kit 10 x 200 mL	Total Sulfur from Di-n-butylsulfide in Mineral Oil: Blank, 0.100%, 0.200%, 0.500%, 0.750%, 1.000%, 2.000%, 3.000%, 4.000%, 5.000% Weight concentration	

### ASTM D2622 Individual Items

<b>Product Code</b>	<b>Item</b>	<b>Description</b>	
<b>D2622-SMST-50w/w-1x100mL</b>	Standard 1 x 100 mL	Total Sulfur from Di-n-butylsulfide in Mineral Oil; Weight Concentration: 0.0050%	
<b>D2622-SMST-50w/w-1x200mL</b>	Standard 1 x 200 mL	Total Sulfur from Di-n-butylsulfide in Mineral Oil; Weight Concentration: 0.0050%	
<b>D2622-SMST-50w/w-1x500mL</b>	Standard 1 x 500 mL	Total Sulfur from Di-n-butylsulfide in Mineral Oil; Weight Concentration: 0.0050%	
<b>D2622-SMST-50w/w-1x1L</b>	Standard 1 x 1 Liter	Total Sulfur from Di-n-butylsulfide in Mineral Oil; Weight Concentration: 0.0050%	
<b>D2622-SMST-500w/w-1x200mL</b>	Standard 1 x 200 mL	Total Sulfur from Di-n-butylsulfide in Mineral Oil; Weight Concentration: 0.0500%	
<b>D2622-SMST-500w/w-1x500mL</b>	Standard 1 x 500 mL	Total Sulfur from Di-n-butylsulfide in Mineral Oil; Weight Concentration: 0.0500%	
<b>D2622-SMST-500w/w-1x1L</b>	Standard 1 x 1 Liter	Total Sulfur from Di-n-butylsulfide in Mineral Oil; Weight Concentration: 0.0500%	

## ASTM D3120-08

### Trace Quantities of Sulfur in Light Liquid Petroleum Hydrocarbons by Oxidative Microcoulometry

Determination of sulfur concentration in the range from 3.0-100 mg/kg in light hydrocarbons and fuels with oxygenates boiling from 26 °C – 274 °C

<i>Product Code</i>	<i>Item</i>	<i>Description</i>
<b>ASTM D3120 Kits</b>		
D3120-SNICK-0-5ng/ul-6x2mL	Kit 6 x 2 mL	Total Sulfur from Dibenzothiophene and Total Nitrogen from Pyridine in Isooctane, Blank, 0.25%, 0.50%, 1.00%, 2.50%, 5.00 ng/μL
D3120-SNICK-0-100ng/ul-5x2mL	Kit 5 x 2 mL	Total Sulfur from Dibenzothiophene and Total Nitrogen from Pyridine in Isooctane, Blank, 5, 25, 50, 100 ng/μL
D3120-SNICK-0-1000ng/ul-4x2mL	Kit 4 x 2 mL	Total Sulfur from Dibenzothiophene and Total Nitrogen from Pyridine in Isooctane, Blank, 100, 500, 1000 ng/μL

## ASTM D3246

### Sulfur in Petroleum Gas by Oxidative Microcoulometry

Determination of sulfur in Petroleum Gas within range of 1.5-100 mg/kg (ppm by mass)

<i>Product Code</i>	<i>Item</i>	<i>Description</i>
<b>ASTM D3246 Kits</b>		
D3246-SNICK-0-5ng/ul-6x2mL	Kit 6 x 2 mL	Total Sulfur from Dibenzothiophene and Total Nitrogen from Pyridine in Isooctane: Blank, 0.25, 0.50, 1.00, 2.50, 5.00 ng/μL
D3246-SNICK-0-100ng/ul-5x2mL	Kit 5 x 2 mL	Total Sulfur from Dibenzothiophene and Total Nitrogen from Pyridine in Isooctane: Blank, 5, 25, 50, 100 μg/μL
D3246-SNICK-0-1000ng/ul-4x2mL	Kit 4 x 2 mL	Total Sulfur from Dibenzothiophene and Total Nitrogen from Pyridine in Isooctane: Blank, 100, 500, 1000 ng/μL

**ASTM D4294**  
**Sulfur in Petroleum and Petroleum Products by Energy Dispersive X-ray Fluorescence Spectrometry**  
 Total Sulfur from di-n-butylsulfide in Isooctane

<i>Product Code</i>	<i>Item</i>	<i>Description</i>
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**ASTM D4294 Kits**

<b>D4294-SICK-0-0.3%w/w-13x2mL</b>	Kit 13 x 2 mL	Blank, 0.0010%, 0.0020%, 0.0030%, 0.0050%, 0.010%, 0.020%, 0.030%, 0.040%, 0.060%, 0.100%, 0.200%, 0.300% weight concentration
<b>D4294-SICK0-0.3%w/w-13x100mL</b>	Kit 13 x 100 mL	Blank, 0.0010%, 0.0020%, 0.0030%, 0.0050%, 0.010%, 0.020%, 0.030%, 0.040%, 0.060%, 0.100%, 0.200%, 0.300% weight concentration
<b>D4294-SICK-0-0.3%w/w-13x200mL</b>	Kit 13 x 200 mL	Blank, 0.0010%, 0.0020%, 0.0030%, 0.0050%, 0.010%, 0.020%, 0.030%, 0.040%, 0.060%, 0.100%, 0.200%, 0.300% weight concentration
<b>D4294-SICK-0-0.1%w/w-10x2mL</b>	Kit 10 x 2 mL	Blank, 0.0025%, 0.0050%, 0.0100%, 0.0200%, 0.0400%, 0.0500%, 0.0600%, 0.0800%, 0.1000% weight concentration
<b>D4294-SICK-0-0.1%w/w-10x100mL</b>	Kit 10 x 100 mL	Blank, 0.0025%, 0.0050%, 0.0100%, 0.0200%, 0.0400%, 0.0500%, 0.0600%, 0.0800%, 0.1000% weight concentration
<b>D4294-SICK-0-0.1%w/w-10x200mL</b>	Kit 10 x 200 mL	Blank, 0.0025%, 0.0050%, 0.0100%, 0.0200%, 0.0400%, 0.0500%, 0.0600%, 0.0800%, 0.1000% weight concentration

**ASTM D4294 Individual Items**

<i>Product Code</i>	<i>Item</i>	<i>Description</i>
<b>D4294-SIST-0.0025%w/w-1x100mL</b>	Standard 1 x 100 mL	0.0025% weight concentration
<b>D4294-SIST-0.0025%w/w-1x200mL</b>	Standard 1 x 200 mL	0.0025% weight concentration
<b>D4294-SIST-0.0025%w/w-1x500mL</b>	Standard 1 x 500 mL	0.0025% weight concentration
<b>D4294-SIST-0.0025%w/w-1x1L</b>	Standard 1 x 1 Liter	0.0025% weight concentration
<b>D4294-SIST-0.10%w/w-1x100mL</b>	Standard 1 x 100 mL	0.100% weight concentration
<b>D4294-SIST-0.10%w/w-1x200mL</b>	Standard 1 x 200 mL	0.100% weight concentration
<b>D4294-SIST-0.10%w/w-1x500mL</b>	Standard 1 x 500 mL	0.100% weight concentration
<b>D4294-SIST-0.10%w/w-1x1L</b>	Standard 1 x 1 Liter	0.100% weight concentration

## Total Sulfur from Di-n-butylsulfide in Mineral Oil

Determination of total sulfur in petroleum and petroleum products that are single-phase and either liquid at ambient conditions, liquefiable with moderate heat or soluble in solvents.

<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
<b>ASTM D4294 Kits</b>			
<b>D4294-SMCK-0-0.1%w/w-10x2mL</b>	Kit 10 x 2 mL	Blank, 0.0025%, 0.0050%, 0.0100%, 0.0200%, 0.0400%, 0.0500%, 0.0600%, 0.0800%, 0.1000% weight concentration	
<b>D4294-SMCK-0-0.1%w/w-10x100mL</b>	Kit 10 x 100 mL	Blank, 0.0025%, 0.0050%, 0.0100%, 0.0200%, 0.0400%, 0.0500%, 0.0600%, 0.0800%, 0.1000% weight concentration	
<b>D4294-SMCK-0-0.1%w/w-10x200mL</b>	Kit 10 x 200 mL	Blank, 0.0025%, 0.0050%, 0.0100%, 0.0200%, 0.0400%, 0.0500%, 0.0600%, 0.0800%, 0.1000% weight concentration	
<b>D4294-SMCK-0-0.1%w/w-7x2mL</b>	Kit 7 x 2 mL	Blank, 0.0020%, 0.0050%, 0.0100%, 0.0300%, 0.0600%, 0.100% weight concentration	
<b>D4294-SMCK-0-0.1%w/w-7x100mL</b>	Kit 7 x 100 mL	Blank, 0.0020%, 0.0050%, 0.0100%, 0.0300%, 0.0600%, 0.100% weight concentration	
<b>D4294-SMCK-0-0.1%w/w-7x200mL</b>	Kit 7 x 200 mL	Blank, 0.0020%, 0.0050%, 0.0100%, 0.0300%, 0.0600%, 0.100% weight concentration	
<b>D4294-SMCK-0-5.0%w/w-10x2mL</b>	Kit 10 x 2 mL	Blank, 0.100%, 0.200%, 0.500%, 0.750%, 1.000%, 2.000%, 3.000%, 4.000%, 5.000% weight concentration	
<b>D4292-SMCK-0-5.0%w/w-10x100mL</b>	Kit 10 x 100 mL	Blank, 0.100%, 0.200%, 0.500%, 0.750%, 1.000%, 2.000%, 3.000%, 4.000%, 5.000% weight concentration	
<b>D4294-SMCK-0-5.0%w/w-10x200mL</b>	Kit 10 x 200 mL	Blank, 0.100%, 0.200%, 0.500%, 0.750%, 1.000%, 2.000%, 3.000%, 4.000%, 5.000% weight concentration	
<b>D4294-SMCK-0-5.0%w/w-11x2mL</b>	Kit 11 x 2 mL	Blank, 0.002%, 0.005%, 0.010%, 0.030%, 0.060%, 0.100%, 0.500%, 1.000%, 2.500%, 5.000% weight concentration	
<b>D4294-SMCK-0-5.0%w/w-11x100mL</b>	Kit 11 x 100 mL	Blank, 0.002%, 0.005%, 0.010%, 0.030%, 0.060%, 0.100%, 0.500%, 1.000%, 2.500%, 5.000% weight concentration	
<b>D4294-SMCK-0-5.0%w/w-11x200mL</b>	Kit 11 x 200 mL	Blank, 0.002%, 0.005%, 0.010%, 0.030%, 0.060%, 0.100%, 0.500%, 1.000%, 2.500%, 5.000% weight concentration	

<b>ASTM D4294 Individual Items</b>			
<b>D4294-SMST-0.0025%w/w-1x100mL</b>	Standard 1 x 100 mL	0.0025% weight concentration	
<b>D4294-SMST-0.0025%w/w-1x200mL</b>	Standard 1 x 200 mL	0.0025% weight concentration	
<b>D4294-SMST-0.0025%w/w-1x1L</b>	Standard 1 x 1 Liter	0.0025% weight concentration	
<b>D4294-SMST-0.005%w/w-1x100mL</b>	Standard 1 x 100 mL	0.0050% weight concentration	
<b>D4294-SMST-0.005%w/w-1x200mL</b>	Standard 1 x 200 mL	0.0050% weight concentration	
<b>D4292-SMST-0.005%w/w-1x1L</b>	Standard 1 x 1 Liter	0.0050% weight concentration	
<b>D4294-SMST-0.050%w/w-1x100mL</b>	Standard 1 x 100 mL	0.0050% weight concentration	
<b>D4294-SMST-0.050%w/w-1x200mL</b>	Standard 1 x 200 mL	0.0050% weight concentration	
<b>D4292-SMST-0.050%w/w-1x1L</b>	Standard 1 x 1 Liter	0.0050% weight concentration	
<b>D4294-SMST-1.00%w/w-1x100mL</b>	Standard 1 x 100 mL	1.000% weight concentration	
<b>D4294-SMST-1.00%w/w-1x200mL</b>	Standard 1 x 200 mL	1.000% weight concentration	
<b>D4294-SMST-1.00%w/w-1x1L</b>	Standard 1 x 1 Liter	1.000% weight concentration	
<b>D4294-SMST-3.00%w/w-1x100mL</b>	Standard 1 x 100 mL	3.000% weight concentration	
<b>D4294-SMST-3.00%w/w-1x200mL</b>	Standard 1 x 200 mL	3.000% weight concentration	
<b>D4294-SMST-3.00%w/w-1x1L</b>	Standard 1 x 1 Liter	3.000% weight concentration	

## Total Sulfur from Di-n-butylsulfide in Diesel Fuel

Determination of total sulfur in petroleum and petroleum products that are single-phase and either liquid at ambient conditions, liquefiable with moderate heat or soluble in solvents

<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
<b>ASTM D4294 Kits</b>			
D4294-SDCK-0-5.0%w/w-10x2mL	Kit 10 x 2 mL	Blank, 0.100%, 0.250%, 0.500%, 1.000%, 1.500%, 2.000%, 3.000%, 4.000%, 5.000% weight concentration	
D4294-SDCK-0-5.0%w/w-10x100mL	Kit 10 x 100 mL	Blank, 0.100%, 0.250%, 0.500%, 1.000%, 1.500%, 2.000%, 3.000%, 4.000%, 5.000% weight concentration	
D4294-SDCK-0-5.0%w/w-10x200mL	Kit 10 x 200 mL	Blank, 0.100%, 0.250%, 0.500%, 1.000%, 1.500%, 2.000%, 3.000%, 4.000%, 5.000% weight concentration	
<b>ASTM D4294 Individual Items</b>			
<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
D4294-SDStT-0.025%w/w-1x100mL	Standard 1 x 100 mL	0.025% weight concentration	
D4294-SDST-0.025%w/w-1x2L	Standard 1 x 200 mL	0.025% weight concentration	
D4294-SDST-0.025%w/w-1x1L	Standard 1 x 1 Liter	0.025% weight concentration	
D4294-SDST-0.075%w/w-1x100mL	Standard 1 x 100 mL	0.075% weight concentration	
D4294-SDST-0.075%w/w-1x200mL	Standard 1 x 200 mL	0.075% weight concentration	
D4294-SDST-0.075%w/w-1x1L	Standard 1 x 1 Liter	0.075% weight concentration	
D4294-SDST-1.00%w/w-1x100mL	Standard 1 x 100 mL	1.000% weight concentration	
D4294-SDST-1.00%w/w-1x200mL	Standard 1 x 200 mL	1.000% weight concentration	
D4294-SDST-1.00%w/w-1x1L	Standard 1 x 1 Liter	1.000% weight concentration	
D4294-SDST-3.00%w/w-1x100mL	Standard 1 x 100 mL	3.000% weight concentration	
D4294-SDST-3.00%w/w-1x200mL	Standard 1 x 200 mL	3.000% weight concentration	
D4294-SDST-3.00%w/w-1x1L	Standard 1 x 1 Liter	3.000% weight concentration	

## ASTM D4629

### Trace Nitrogen in Liquid Petroleum Hydrocarbons by Syringe/Inlet Oxidative Combustion and Chemiluminescence.

Determination of the trace Total nitrogen found in liquid hydrocarbons with a boiling range of 50-400°C and viscosities between 0.2-10 cSt (mm<sup>2</sup>/s). The method is applicable to naphthas, distillates and oils with trace nitrogen ranging from 0.3-100 mg/kg by either syringe or boat inlet.

<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
<b>ASTM D4629 Kits (Modified to include Sulfur)</b>			
D4629-SNICK-0-100mg/L-6x2mL	Kit 6 x 2 mL	Total Sulfur from Thiophene and Total Nitrogen from Pyridine in Isooctane, 0, 1, 5, 10, 50, 100 mg/L	
D4629-SNICK-0-5w/w-7x1mL	Kit 7 x 1 mL	Total Sulfur from Thiophene and Total Nitrogen from Pyridine in Isooctane, 0, 0.125, 0.25, 0.50, 1, 2.5, 5 w/w	
D4629-SNICK-0-50w/w-5x1mL	Kit 5 x 1 mL	Total Sulfur from Thiophene and Total Nitrogen from Pyridine in Isooctane, 0, 5, 10, 25, 50 ppm w/w	
D4629-SNICK-0-1000w/w-7x1mL	Kit 7 x 1 mL	Total Sulfur from Thiophene and Total Nitrogen from Pyridine in Isooctane, 0, 50, 75, 100, 250, 500, 1000 ppm w/w	
D4629-SNDCK-0-20w/w-7x20mL	Kit 7 x 20 mL	Total Sulfur from Di-n-butylsulfide and Total Nitrogen from Pyridine in Diesel, 0, 1, 2.5, 5, 10, 15, 20 ppm w/w	
D4629-SNDCK-0-100w/w-7x20mL	Kit 7 x 20 mL	Total Sulfur from Di-n-butylsulfide and Total Nitrogen from Pyridine in Diesel, 0, 50, 75, 100, 250, 500, 1000 ppm w/w	
D4629-SNDCK-0-500w/w-7x20mL	Kit 7 x 20 mL	Total Sulfur from Di-n-butylsulfide and Total Nitrogen from Pyridine in Diesel, 0, 100, 200, 300, 400, 500 ppm w/w	

*Individual ampoules are available to purchase. Please see your salesperson or contact our customer service team to learn more.*



## ASTM D5453

### Determination of Total Sulfur in Light Hydrocarbons, Spark Ignition Engine Fuel, Diesel Engine Fuel, and Engine Oil by Ultraviolet Fluorescence

Total Sulfur from Di-n-butylsulfide in Diesel.

<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
<b>ASTM D5453 Kits</b>			
D5453-SDCK-0-100w/w-6x20mL	Kit 6 x 20 mL	Blank, 20, 35, 50, 75, 100 ppm w/w	
D5453-SDCK-100-500w/w-6x20mL	Kit 6 x 20 mL	Blank, 100, 200, 300, 400, 500 ppm w/w	
D5453-SDCK-0-20w/w-7x20mL	Kit 7 x 20 mL	Blank, 1, 2.5, 5, 10, 15, 20 ppm w/w	
D5453-SNDCK-0-100w/w-7x1mL	Kit 7 x 1 mL	Blank, 50, 75, 100, 250, 500, 1000 ppm w/w	
D5453-SNDCK-0-500w/w-7x1mL	Kit 7 x 1 mL	Blank, 100, 200, 300, 400, 500 ppm w/w	
D5453-SDCH-0-1200w/w-11x1mL	Kit 11 x 1 mL	Blank, 5 ppm, 15 ppm, 30 ppm, 50 ppm, 80 ppm, 100 ppm, 300 ppm, 600 ppm, 900 ppm, 1200 ppm	
<b>ASTM D5453 Individual Items</b>			
D5453-SDST-5w/w-1x1mL	Standard 1 x 1 mL	5 ppm w/w	
D5453-SDST-10w/w-1x2mL	Standard 1 x 2 mL	10 ppm w/w	
D5453-SDST-10w/w-1x100mL	Standard 1 x 100 mL	10 ppm w/w	
D5453-SDST-25w/w-1x1L	Standard 1 x 1 Liter	25 ppm w/w	
D5453-SDST-50w/w-1x1L	Standard 1 x 1 Liter	50 ppm w/w	
D5453-SDCK-500w/w-1x500mL	Standard 1 x 500 mL	500 ppm w/w	

## Total Sulfur from Di-n-Butylsulfide in Isooctane

Determination of Total Sulfur in liquid hydrocarbons with BP 25-400°C, Viscosity 0.2-20 cSt at ambient T

<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
<b>ASTM D5453 Kits</b>			
D5453-SICK-0-10mg/L-6x2mL	Kit 6 x 2 mL	Blank, 1, 2.5, 5, 7.5 10 mg/L	
D5453-SICK-0-200mg/L-6x2mL	Kit 6 x 2 mL	Blank, 5, 25, 50, 100, 200 mg/L	
D5453-SICK-0-1000mg/L-6x2mL	Kit 6 x 2 mL	Blank, 100, 250, 500, 750, 1000 mg/L	
<b>ASTM D5453 Individual Items</b>			
D5453-SIST-0-1x2mL	Standard 1 x 2 mL	Blank Isooctane	
D5453-SIST-1mg/L-1x2mL	Standard 1 x 2 mL	1 mg/L	
D5453-SIST-2.5mg/L-1x2mL	Standard 1 x 2 mL	2.5 mg/L	
D5453-SIST-5mg/L-1x2mL	Standard 1 x 2 mL	5 mg/L	
D5453-SIST-7.5mg/L-1x2mL	Standard 1 x 2 mL	7.5 mg/L	
D5453-SIST-10mg/L-1x2mL	Standard 1 x 2 mL	10 mg/L	
D5453-SIST-25mg/L-1x2mL	Standard 1 x 2 mL	25 mg/L	
D5453-SIST-50mg/L-1x2mL	Standard 1 x 2 mL	50 mg/L	
D5453-SIST-100mg/L-1x2mL	Standard 1 x 2 mL	100 mg/L	
D5453-SIST-200mg/L-1x2mL	Standard 1 x 2 mL	200 mg/L	
D5453-SIST-250mg/L-1x2mL	Standard 1 x 2 mL	250 mg/L	
D5453-SIST-500mg/L-1x2mL	Standard 1 x 2 mL	500 mg/L	
D5453-SIST-750mg/L-1x2mL	Standard 1 x 2 mL	750 mg/L	

D5453-SIST-1000mg/L-1x2mL	Standard 1 x 2 mL	1000 mg/L	
D5453-SIST-10w/w-1x1mL	Standard 1 x 1 mL	10 ppm w/w	
D5453-SIST-10w/w-1x100mL	Standard 1 x 100 mL	10 ppm w/w	
D5453-SIST-25w/w-1x2mL	Standard 1 x 2 mL	25 ppm w/w	
D5453-SIST-25w/w-1x1L	Standard 1 x 1 liter	25 ppm w/w	

## Total Sulfur from Di-N-Butylsulfide in Toluene

Determination of Total Sulfur in liquid hydrocarbons with BP 25-400°C, Viscosity 0.2-20 cSt at ambient T

<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
<b>ASTM D5453 Kits</b>			
D5453-STCK-0-10mg/L-6x2mL	Kit 6 x 2 mL	Blank, 1, 2.5, 5, 7.5, 10 mg/L	
D5453-STCK-0-200mg/L-6x2mL	Kit 6 x 2 mL	Blank, 1, 5, 25, 50, 100, 200 mg/L	
D5453-STCK-0-1000mg/L-6x2mL	Kit 6 x 2 mL	Blank, 100, 250, 500, 750, 1000 mg/L	
<b>ASTM D5453 Individual Items</b>			
D5453-STST-0-1x2mL	Standard 1 x 2 mL	Blank Toluene	
D5453-STST-1mg/L-1x2mL	Standard 1 x 2 mL	1 mg/L	
D5453-STST-2.5mg/L-1x2mL	Standard 1 x 2 mL	2.5 mg/L	
D5453-STST-5mg/L-1x2mL	Standard 1 x 2 mL	5 mg/L	
D5453-STST-7.5mg/L-1x2mL	Standard 1 x 2 mL	7.5 mg/L	
D5453-STST-10mg/L-1x2mL	Standard 1 x 2 mL	10 mg/L	
D5453-STST-25mg/L-1x2mL	Standard 1 x 2 mL	25 mg/L	

D5453-STST-50mg/l-1x2mL	Standard 1 x 2 mL	50 mg/L	
D5453-STST-100mg/l-1x2mL	Standard 1 x 2 mL	100 mg/L	
D5453-STST-200mg/l-1x2mL	Standard 1 x 2 mL	200 mg/L	
D5453-STST-250mg/l-1x2mL	Standard 1 x 2 mL	250 mg/L	
D5453-STST-500mg/l-1x2mL	Standard 1 x 2 mL	500 mg/L	
D5453-STST-750mg/l-1x2mL	Standard 1 x 2 mL	750 mg/L	
D5453-STST-1000mg/l-1x2mL	Standard 1 x 2 mL	1000 mg/L	

## Total Sulfur from Di-n-butylsulfide in Gasoline

Determination of Total Sulfur in liquid hydrocarbons with BP 25-400°C, Viscosity 0.2-20 cSt at ambient T

<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
<b>ASTM D5453 Kits</b>			
D5453-SGCK-0-50w/w-6x5mL	Kit 6 x 5 mL	Blank, 10, 20, 30, 40, 50 ppm w/w	
D5453-SGCK-0-125w/w-6x5mL	Kit 6 x 5 mL	Blank, 50, 65, 80, 95, 110, 125 ppm w/w	
D5453-SGCK-0-500w/w-6x5mL	Kit 6 x 5 mL	Blank, 110, 200, 300, 400, 500 ppm w/w	
<b>ASTM D5453 Individual Items</b>			
D5453-SGST-10w/w-1x1mL	Standard 1 x 1 mL	10 ppm w/w	
D5453-SGST-10w/w-1x2mL	Standard 1 x 2 mL	10 ppm w/w	
D5453-SGST-25w/w-1x100mL	Standard 1 x 100 mL	25 ppm w/w	
D5453-SGST-25w/w-1x1L	Standard 1 x 1 Liter	25 ppm w/w	
D5453-SGST-50w/w-1x1L	Standard 1 x 1 Liter	50 ppm w/w	
D5453-SGST-75w/w-1x1L	Standard 1 x 1 Liter	75 ppm w/w	
D5453-SGST-175w/w-1x1L	Standard 1 x 1 Liter	175 ppm w/w	

## Total Sulfur from Di-n-butylsulfide in Mineral Oil

Determination of Total Sulfur in liquid hydrocarbons with BP 25-400°C, Viscosity 0.2-20 cSt at ambient T

<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
D5453-SMST-100w/w-1x2mL	Standard 1 x 2 mL	100 ppm w/w	
D5453-SMST-200w/w-1x1mL	Standard 1 x 1 mL	200 ppm w/w	
D5453-SMST-200w/w-1x1L	Standard 1 x 1 Liter	200 ppm w/w	
D5453-SMST-4000w/w-1x100mL	Standard 1 x 100 mL	4000 ppm w/w	

## Total Sulfur from Thiophene in Isooctane

Determination of Total Sulfur in liquid hydrocarbons with BP 25-400°C, Viscosity 0.2-20 cSt at ambient T

<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
D5453-SNICK-0-100mg/L-6x2mL	Kit 6 x 2 mL	Blank, 1, 5, 10, 50, 100 mg/L	
D5453-SNICK-0-5w/w-7x1mL	Kit 7 x 1 mL	Blank, 0.125, 0.25, 0.50, 1, 2.5, 5 w/w	

**ASTM D5504****Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by GC and Chemiluminescence**

The determination of speciated volatile sulfur-containing compounds in natural gas, air, digester, landfill and refinery fuel gas in the range 0.01-1,000 mg/m<sup>3</sup>

<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
<b>AL30 w/Stainless Steel CGA 330 Valve</b>			
<b>D5504-3CSST-AL30-1ppm</b>	Standard	1 ppm Hydrogen Sulfide / 1 ppm Carbonyl Sulfide / 1 ppm Methyl Mercaptan/ Balance Methane	
<b>D5504-3CSST-AL30-5ppm</b>	Standard	5 ppm Hydrogen Sulfide / 5 ppm Carbonyl Sulfide / 5 ppm Methyl Mercaptan/ Balance Methane	
<b>D5504-3CSST-AL30-10ppm</b>	Standard	10 ppm Hydrogen Sulfide / 10 ppm Carbonyl Sulfide / 10 ppm Methyl Mercaptan/ Balance Methane	
<b>D5504-7CSST-AL30-1ppm</b>	Standard	1 ppm Hydrogen Sulfide / 1 ppm Carbonyl Sulfide / 1 ppm Methyl Mercaptan/ 1 ppm Ethyl Mercaptan / 1 ppm 1-propanethiol / 1 ppm 2-propanethiol / 1 ppm Dimethyl Sulfide / Balance Methane	
<b>D5504-7CSST-AL30-5ppm</b>	Standard	5 ppm Hydrogen Sulfide / 5 ppm Carbonyl Sulfide / 5 ppm Methyl Mercaptan/ 5 ppm Ethyl Mercaptan / 5 ppm 1-propanethiol / 5 ppm 2-propanethiol / 5 ppm Dimethyl Sulfide / Balance Methane	
<b>D5504-7CSST-AL30-10ppm</b>	Standard	10 ppm Hydrogen Sulfide / 10 ppm Carbonyl Sulfide / 10 ppm Methyl Mercaptan/ 10 ppm Ethyl Mercaptan / 10 ppm 1-propanethiol / 10 ppm 2-propanethiol / 10 ppm Dimethyl Sulfide / Balance Methane	
<b>AL150 w/Stainless Steel CGA 330 Valve</b>			
<b>D5504-3CSST-AL150-1ppm</b>	Standard	1 ppm Hydrogen Sulfide / 1 ppm Carbonyl Sulfide / 1 ppm Methyl Mercaptan/ Balance Methane	
<b>D5504-3CSST-AL150-5ppm</b>	Standard	5 ppm Hydrogen Sulfide / 5 ppm Carbonyl Sulfide / 5 ppm Methyl Mercaptan/ Balance Methane	
<b>D5504-3CSST-AL150-10ppm</b>	Standard	10 ppm Hydrogen Sulfide / 10 ppm Carbonyl Sulfide / 10 ppm Methyl Mercaptan/ Balance Methane	
<b>D5504-7CSST-AL150-1ppm</b>	Standard	1 ppm Hydrogen Sulfide / 1 ppm Carbonyl Sulfide / 1 ppm Methyl Mercaptan/ 1 ppm Ethyl Mercaptan / 1 ppm 1-propanethiol / 1 ppm 2-propanethiol / 1 ppm Dimethyl Sulfide / Balance Methane	
<b>D5504-7CSST-AL150-5ppm</b>	Standard	5 ppm Hydrogen Sulfide / 5 ppm Carbonyl Sulfide / 5 ppm Methyl Mercaptan/ 5 ppm Ethyl Mercaptan / 5 ppm 1-propanethiol / 5 ppm 2-propanethiol / 5 ppm Dimethyl Sulfide / Balance Methane	
<b>D5504-7CSST-AL150-10ppm</b>	Standard	10 ppm Hydrogen Sulfide / 10 ppm Carbonyl Sulfide / 10 ppm Methyl Mercaptan/ 10 ppm Ethyl Mercaptan / 10 ppm 1-propanethiol / 10 ppm 2-propanethiol / 10 ppm Dimethyl Sulfide / Balance Methane	

**ASTM D5623-94(2014)****Standard Test Method for Sulfur Compounds in Light Petroleum Liquids by Gas Chromatography and Sulfur Selective Detection**

0.1 to 100 mg/kg Individual Sulfur Species

<i>Product Code</i>	<i>Item</i>	<i>Description</i>
D5623-SITST-MST1-1x2mL	Standard	Standard: 1 x 2 mL of 100 ppm Ethyl Mercaptan, 20 ppm Carbon Disulfide, 100 ppm Isopropyl Mercaptan, 50 ppm Tert Butyl Mercaptan, 100 ppm n-Propyl Mercaptan, 50 ppm Sec Butyl Mercaptan, 100 ppm Isobutyl Mercaptan, 50 ppm N-Butyl Mercaptan in Isooctane / Toluene (90/10)
D5623-SITST-MST2-1x2mL	Standard	Standard: 1 x 2 mL of 100 ppm Dimethyl Sulfide, 50 ppm Ethyl Methyl Sulfide, 100 ppm Thiophene, 75 ppm Diethyl Sulfide, 20 ppm Dimethyl Disulfide, 75 ppm 2-Methyl Thiophene, 100 ppm 3-Methyl Thiophene, 20 ppm Diethyl Disulfide, 75 ppm Benzothiophene, 100 ppm 3-Methylbenzothiophene, Balance Isooctane / Toluene (90/10)
D5623-SITST-H2S-1x2mL	Standard	Standard: 100 ppm Hydrogen Sulfide in Isooctane / Toluene (90/10) - standard to be used for compound identification purposes only.
D5623-SITST-COS-1x2mL	Standard	Standard: 100 ppm Carbonyl Sulfide in Isooctane / Toluene (90/10) - standard to be used for compound identification purposes only.
D5623-SITST-SO2-1x2mL	Standard	Standard: 100 ppm Sulfur Dioxide in Isooctane / Toluene (90/10) - standard to be used for compound identification purposes only.
D5623-SITST-MM-1x2mL	Standard	Standard: 100 ppm Methyl Mercaptan in Isooctane / Toluene (90/10) - standard to be used for compound identification purposes only.
D5623-SITST-MST1-1x2mL	Standard	Standard: 1 x 2 mL of System Test Mix 1, containing: 0.1 ppm Dimethyl Sulfide / 10 ppm Dimethyl Disulfide / 3-Methylthiophene / 10 ppm Benzothiophene in Isooctane / Toluene (90/10)
D5623-SITST-MST2-1x2mL	Standard	Standard: 1 x 2 mL of System Test Mix 2, Containing: 0.1 ppm n-Propyl Mercaptan in Isooctane / Toluene (90/10)

**ASTM D6334****Sulfur in Gasoline by Wavelength Dispersive W-Ray Fluorescence**

Quantitative determination of total sulfur in gasoline and gasoline-oxygenate blends with a range 15-940 mg/kg.

<i>Product Code</i>	<i>Item</i>	<i>Description</i>
<b>Total Sulfur from Thiophene in 80% Toluene / 20% Isooctane</b>		
D6334-SITCK-0-100mg/kg-5x2mL	Kit 5 x 2 mL	Blank, 5, 10, 50, 100 mg/kg
D6334-SITCK-100-1000mg/kg-4x2mL	Kit 4 x 2 mL	100, 250, 500, 1000 mg/kg
D6334-SITCK-0-100mg/kg-5x100mL	Kit 5 x 100 mL	Blank, 5, 10, 50, 100 mg/kg
D6334-SITCK-0-100mg/kg-5x200mL	Kit 5 x 200 mL	Blank, 5, 10, 50, 100 mg/kg
D6334-SITCK-100-1000mg/kg-4x100mL	Kit 4 x 100 mL	100, 250, 500, 1000 mg/kg
D6334-SITCK-100-1000mg/kg-4x200mL	Kit 4 x 200 mL	100, 250, 500, 1000 mg/kg

**ASTM D6667****Determination of Total Volatile Sulfur in Gaseous Hydrocarbons and LPG by UVF**

Applicable to analysis of natural, processed and final processed materials.

Gaseous 1 mg/kg- 100 mg/kg, LPG 1 mg/kg- 196 mg/kg.

<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
<b>Total Sulfur from Dimethyl Sulfide in N-Butane Balance</b>			
D6667-TSNC4-AL30-BLANK	AL30 cylinder with brass	5 lb. liquid, Concentration: Weight, 200 psi Helium Pressure Pad: Blank	
D6667-TSNC4-AL30-1ppm	AL30 cylinder with stainless steel	5 lb. liquid, concentration: Weight, 200 psi Helium Pressure Pad: 1 ppm	
D6667-TSNC4-AL30-5ppm	AL30 cylinder with stainless steel	5 lb. liquid, concentration: Weight, 200 psi Helium Pressure Pad: 5 ppm	
D6667-TSNC4-AL30-10ppm	AL30 cylinder with stainless steel	5 lb. liquid, concentration: Weight, 200 psi Helium Pressure Pad: 10 ppm	
D6667-TSNC4-AL30-25ppm	AL30 cylinder with stainless steel	5 lb. liquid, concentration: Weight, 200 psi Helium Pressure Pad: 25 ppm	
D6667-TSNC4-AL30-50ppm	AL30 cylinder with stainless steel	5 lb. liquid, concentration: Weight, 200 psi Helium Pressure Pad: 50 ppm	
D6667-TSNC4-AL30-100ppm	AL30 cylinder with stainless steel	5 lb. liquid, concentration: Weight, 200 psi Helium Pressure Pad: 100 ppm	

- CGA 510 repressurizing valve and full length eductor tube

**Total Sulfur from Dimethyl Sulfide in 50% Propane / 50% Propylene Balance**

Applicable to analysis of natural, processed and final processed materials. Gaseous 1 mg/kg- 100 mg/kg, LPG 1 mg/kg- 196 mg/kg

<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
D6667-TSC3C3--AL30-BLANK	AL30 cylinder with brass	5 lb. liquid, Concentration: Weight, 200 psi Helium Pressure Pad: Blank	
D6667-TSC3C3--AL30-1ppm	AL30 cylinder with stainless steel	5 lb. liquid, concentration: Weight, 200 psi Helium Pressure Pad: 1 ppm	
D6667-TSC3C3--AL30-5ppm	AL30 cylinder with stainless steel	5 lb. liquid, concentration: Weight, 200 psi Helium Pressure Pad: 5 ppm	
D6667-TSC3C3--AL30-10ppm	AL30 cylinder with stainless steel	5 lb. liquid, concentration: Weight, 200 psi Helium Pressure Pad: 10 ppm	
D6667-TSC3C3--AL30-25ppm	AL30 cylinder with stainless steel	5 lb. liquid, concentration: Weight, 200 psi Helium Pressure Pad: 25 ppm	
D6667-TSC3C3--AL30-50ppm	AL30 cylinder with stainless steel	5 lb. liquid, concentration: Weight, 200 psi Helium Pressure Pad: 50 ppm	
D6667-TSC3C3--AL30-100ppm	AL30 cylinder with stainless steel	5 lb. liquid, concentration: Weight, 200 psi Helium Pressure Pad: 100 ppm	

- CGA 510 repressurizing valve and full length eductor tube



### Total Sulfur from Dimethyl Sulfide in Isobutane Balance

Applicable to analysis of natural, processed and final processed materials. Gaseous 1 mg/kg- 100 mg/kg, LPG 1 mg/kg- 196 mg/kg

<b>Product Code</b>	<b>Item</b>	<b>Description</b>	
D6667-TSIC4-AL30-BLANK	AL30 cylinder with brass	5 LB. liquid, Concentration: Weight, 200 psi Helium Pressure Pad: Blank	
D6667-TSIC4-AL30-1ppm	AL30 cylinder with stainless steel	5 LB. liquid, concentration: Weight, 200 psi Helium Pressure Pad: 1 ppm	
D6667-TSIC4-AL30-5ppm	AL30 cylinder with stainless steel	5 LB. liquid, concentration: Weight, 200 psi Helium Pressure Pad: 5 ppm	
D6667-TSIC4-AL30-10ppm	AL30 cylinder with stainless steel	5 LB. liquid, concentration: Weight, 200 psi Helium Pressure Pad: 10 ppm	
D6667-TSIC4-AL30-25ppm	AL30 cylinder with stainless steel	5 LB. liquid, concentration: Weight, 200 psi Helium Pressure Pad: 25 ppm	
D6667-TSIC4-AL30-50ppm	AL30 cylinder with stainless steel	5 LB. liquid, concentration: Weight, 200 psi Helium Pressure Pad: 50 ppm	
D6667-TSIC4-AL30-100ppm	AL30 cylinder with stainless steel	5 LB. liquid, concentration: Weight, 200 psi Helium Pressure Pad: 100 ppm	

### Total Sulfur from Dimethyl Sulfide in 50% n-Butane / 50% isobutane Balance

Applicable to analysis of natural, processed and final processed materials. Gaseous 1 mg/kg- 100 mg/kg, LPG 1 mg/kg- 196 mg/kg

<b>Product Code</b>	<b>Item</b>	<b>Description</b>	
D6667-TSNC4IC4-BLANK	AL30 cylinder with brass	5 LB. liquid, Concentration: Weight, 200 psi Helium Pressure Pad: Blank	
D6667-TSNC4IC4-1ppm	AL30 cylinder with stainless steel	5 LB. liquid, concentration: Weight, 200 psi Helium Pressure Pad: 1 ppm	
D6667-TSNC4IC4-5ppm	AL30 cylinder with stainless steel	5 LB. liquid, concentration: Weight, 200 psi Helium Pressure Pad: 5 ppm	
D6667-TSNC4IC4-10ppm	AL30 cylinder with stainless steel	5 LB. liquid, concentration: Weight, 200 psi Helium Pressure Pad: 10 ppm	
D6667-TSNC4IC4-25ppm	AL30 cylinder with stainless steel	5 LB. liquid, concentration: Weight, 200 psi Helium Pressure Pad: 25 ppm	
D6667-TSNC4IC4-50ppm	AL30 cylinder with stainless steel	5 LB. liquid, concentration: Weight, 200 psi Helium Pressure Pad: 50 ppm	
D6667-TSNC4IC4-100ppm	AL30 cylinder with stainless steel	5 LB. liquid, concentration: Weight, 200 psi Helium Pressure Pad: 100 ppm	

- CGA 510 repressurizing valve and full length eductor tube

**ASTM D7011-10a****Determination of Trace Thiophene in Refined Benzene by GC and Sulfur Selective Detection**

Determination of thiophene by GCxAED, GCxPPFD, GCxSCD, 0.02-2.18 mg/kg thiophene/benzene.

<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
<b>D7011-SBCK-0-2w/w-6x2mL</b>	Kit 6 x 2 mL	Thiophene in Benzene: Blank, 0.02, 0.2, 0.5, 1, 2 ppm w/w	
<b>D7011-SBST-0-2w/w-5x2mL</b>	Kit 5 x 2 mL	Thiophene in Benzene: Blank, 0.5, 1.0, 1.5, 2.0 ppm w/w	
<b>D7011-SBST-0.8w/w-7x2mL</b>	Standard 7 x 2 mL	0.8 ppm w/w Thiophene in Benzene	
<b>D7011-SBST-1.5w/w-7x2mL</b>	Standard 7 x 2 mL	1.5 ppm w/w Thiophene in Benzene	

**ASTM D7039****Sulfur in Gasoline, Diesel Fuel, Jet Fuel, Kerosene, Biodiesel, Biodiesel Blends, and Gasoline-Ethanol Blends by Monochromatic Wavelength Dispersive X-ray Fluorescence Spectrometry**

This test method covers the determination of total sulfur by monochromatic wavelength-dispersive X-ray fluorescence (MWDXRF) spectrometry in single-phase gasoline, diesel fuel, refinery process streams used to blend gasoline and diesel, jet fuel, kerosene, biodiesel, biodiesel blends, and gasoline-ethanol blends. The range of this test method is between the pooled limit of quantitation (PLOQ) value (calculated by procedures consistent with Practice D6259) of 3.2 mg/kg total sulfur and the highest level sample in the round robin, 2822 mg/kg total sulfur.

<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
<b>Total Sulfur from Di-n-butylsulfide in Mineral Oil</b>			
<b>D7039-SMCK-0-1000PPM-9x100mL</b>	Kit 9 x 100 mL	Blank, 100, 200, 300, 400, 500, 600, 750, 1000 ppm w/w	
<b>D7039-SMCK-0-100PPM-5x100mL</b>	Kit 5 x 100 mL	Blank, 10, 25, 50, 100 ppm w/w	
<b>D7039-SMCK-0-20PPM-7x100mL</b>	Kit 7 x 100 mL	Blank, 2, 5, 7, 10, 15, 20 ppm w/w	
<b>D7039-SMCK-0-2.5%-8x100mL</b>	Kit 8 x 100 mL	Blank, 0.10%, 0.25%, 0.50%, 1.00%, 1.50%, 2.00%, 2.50% Total Sulfur from Di-n-butylsulfide in Mineral Oil, concentration: weight	
<b>D7039-SMST-11PPM-1x1L</b>	Standard 1 x 1 Liter	11 ppm w/w Total Sulfur from Di-n-butylsulfide in Mineral Oil	
<b>D7039-SMST-15PPM-1x1L</b>	Standard 1 x 1 Liter	15 ppm w/w Total Sulfur from Di-n-butylsulfide in Mineral Oil	
<b>D7039-SMST-30PPM-1x1L</b>	Standard 1 x 1 Liter	30 ppm w/w Total Sulfur from Di-n-butylsulfide in Mineral Oil	
<b>D7039-SMST-0.3%-1x1L</b>	Standard 1 x 1 Liter	0.3% Total Sulfur from Di-n-butylsulfide in Mineral Oil, concentration: Weight	
<b>D7039-SMST-350PPM-1x1L</b>	Standard 1 x 1 Liter	350 ppm w/w Total Sulfur from Di-n-butylsulfide in Mineral Oil	
<b>D7039-SMST-3.70%-1x1L</b>	Standard 1 x 1 Liter	3.70% Total Sulfur from Di-n-butylsulfide in Mineral Oil	
<b>D7039-SICK-0-0.30%-13x2mL</b>	Kit 13 x 2 mL	Blank, 0.0010%, 0.0020%, 0.0030%, 0.0050%, 0.0100%, 0.0200%, 0.0300%, 0.0400%, 0.0600%, 0.1000%, 0.2000%, 0.3000% Total Sulfur from Di-n-butylsulfide in Isooctane, concentration: Weight	
<b>D7039-SICK-0-0.10%-10x2mL</b>	Kit 10 x 2 mL	Kit: 10 x 2 mL of: Blank, 0.0005%, 0.0010%, 0.0030%, 0.0050%, 0.0075%, 0.0100%, 0.0300%, 0.0500%, 0.1000% Total Sulfur from Di-n-butylsulfide in Isooctane, Concentration: Weight	
<b>D7039-SMCK-0-500MG/KG-6x2mL</b>	Kit 6 x 2 mL	Kit: 6 x 2 mL of Blank, 10, 50, 100, 200, 500 mg/kg Total Sulfur from Di-n-butylsulfide in Mineral Oil	
<b>D7039-SMCK-0-150MG/KG-8x2mL</b>	Kit 8 x 2 mL	Kit: 8 x 2 mL of Blank, 5, 10, 30, 50, 70, 100, 150 mg/kg Total Sulfur from Di-n-butylsulfide in Mineral Oil	
<b>D7039-SDCK-0-0.1%-7x2mL</b>	Kit 7 x 2 mL	Kit: 7 x 2 mL of Blank, 0.0200%, 0.0400%, 0.0500%, 0.0600%, 0.0800%, 0.1000% Total Sulfur from Di-n-butylsulfide in Diesel Fuel	

**ASTM D7212****Standard Test Method for Low Sulfur in Automotive Fuels by Energy-Dispersive X-ray Fluorescence Spectrometry Using a Low-Background Proportional Counter**

Scope: This test method specifies an energy-dispersive X-ray fluorescence (EDXRF) method for the determination of the total sulfur content of automotive fuels with a concentration range from 7 mg/kg to 50 mg/kg

<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
<b>Total Sulfur from Di-n-butylsulfide in Mineral Oil</b>			
<b>D7212-SMCK-0-0.1%w/w-10x2mL</b>	Kit 10 x 2 mL	Blank, 0.0025, 0.0050%, 0.0100%, 0.0200%, 0.0400%, 0.0500%, 0.0600%, 0.0800, 0.100%	
<b>Individual Items</b>			
<b>D7212-SMST-0.005%w/w-1x100mL</b>	Standard 1 x 100 mL	0.0050%	
<b>D7212-SMST-0.005%w/w-1x200mL</b>	Standard 1 x 200 mL	0.0050%	
<b>D7212-SMST-0.005%w/w-1x1L</b>	Standard 1 x 1 Liter	0.0050%	
<b>D7212-SMST-0.050%w/w-1x100mL</b>	Standard 1 x 100 mL	0.050%	
<b>D7212-SMST-0.050% w/w-1x200mL</b>	Standard 1 x 200 mL	0.050%	
<b>D7212-SMST-0.050%w/w-1x1L</b>	Standard 1 x 1 Liter	0.050%	

### Total Sulfur from Di-n-butylsulfide in 80% Isooctane / 20% Toluene

This test method specifies an energy-dispersive X-ray fluorescence (EDXRF) method for the determination of the total sulfur content of automotive fuels with a concentration range from 7 mg/kg to 50 mg/kg.

<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
D7212-SITCK-0-0.1%w/w-10x2mL	Kit 10 x 2 mL	Blank, 0.0005%, 0.0010%, 0.0030, 0.0050%, 0.0075%, 0.0100%, 0.0300%, 0.0500%, 0.1000% Weight concentration	
<b>Individual Items</b>			
D7212-STICK-0-0.001%w/w-1x100mL	Standard 1 x 100 mL	0.001%	
D7212-STICK-0-0.001%w/w-1x200mL	Standard 1 x 200 mL	0.001%	
D7212-STICK-0-0.001%w/w-1x1L	Standard 1 x 1 Liter	0.001%	
D7212-STICK-0-0.025%w/w-1x100mL	Standard 1 x 100 mL	0.0250%	
D7212-STICK-0-0.025%w/w-1x200mL	Standard 1 x 200 mL	0.0250%	
D7212-STICK-0-0.025%w/w-1x1L	Standard 1 x 1 Liter	0.0250%	

### ASTM D7220

#### Standard Test Method for Sulfur in Automotive, Heating, and Jet Fuels by Monochromatic Energy Dispersive X-ray Fluorescence Spectrometry

This test method specifies an energy-dispersive X-ray fluorescence (EDXRF) method for the determination of total sulfur in automotive, No. 2 heating, and jet fuels with a concentration range of 3 to 942 mg/kg.

<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
<b>Total Sulfur from Di-n-butylsulfide in Mineral Oil</b>			
D7220-SMCK-0-0.1%w/w-10x2mL	Kit 10 x 2 mL	Blank, 0.0025%, 0.0050%, 0.0100%, 0.0200%, 0.0400%, 0.0500%, 0.0600%, 0.0800%, 0.1000% weight concentration	
D7220-SMST-0.005%w/w-1x1L	Standard 1 x 1 Liter	0.005% Total Sulfur from Di-n-butylsulfide in Mineral Oil, weight concentration	
D7220-SMST-0.005%w/w-1x100mL	1 x 100 mL	0.005% Total Sulfur from Di-n-butylsulfide in Mineral Oil, weight concentration	
D7220-SMST-0.005%w/w-1x200mL	1 x 200 mL	0.005% Total Sulfur from Di-n-butylsulfide in Mineral Oil, weight concentration	
D7220-SMST-0.050%w/w-1x1L	1 x 1 Liter	0.050% Total Sulfur from Di-n-butylsulfide in Mineral Oil, weight concentration	
D7220-SMST-0.050%w/w-1x100mL	Standard 1 x 100 mL	0.050% Total Sulfur from Di-n-butylsulfide in Mineral Oil, weight concentration	
D7220-SMST-0.050%w/w-1x200mL	Standard 1 x 200 mL	0.050% Total Sulfur from Di-n-butylsulfide in Mineral Oil, weight concentration	

## ASTM Methods for Refinery Gas

<b>ASTM D1946</b> <b>Standard Practice for Analysis of Reformed Gas by Gas Chromatography</b> For Gaseous hydrocarbons and typical LPG consisting of the 3 Carbon and 4 Carbon LPGs			
<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
<b>D1946-RFG1-1LP</b>	1-Liter Cylinder	40.74% Hydrogen, 0.50% Argon, 4.00% Nitrogen, 1.00% Carbon Monoxide, 3.00% Carbon Dioxide, 8.50% Methane, 6.00% Ethane, 2.00 Ethylene, 7.00% Propane, 3.00% Propylene, 0.85% Propadiene, 6.00% Isobutane, 4.00% n-Butane, 2.00% Isobutylene, 3.00% 1,3 Butadiene, 2.00% Cis-2-Butene, 2.00% Trans-2-B-Butene, 2.00% Butene-1, 1.00% Isopentane, 1.00% n-Pentane, 0.50% n-Hexane, mole concentration	
<b>D1946-RFG2-1LP</b>	1-Liter Cylinder	12.50% Hydrogen, 1.00% Argon, 37.20% Nitrogen, 1.00% Carbon Monoxide, 3.00% Carbon Dioxide, 5.00% Methane, 4.00% Ethane, 2.00% Ethylene, 1.00% Acetylene, 6.00% Propane, 3.00% Propylene, 1.00% Propadiene, 0.04% Cyclopropane, 5.00% Isobutane, 1.00% Isobutylene, 3.00% 1,3 Butadiene, 2.00% Cis-2-Butene, 3.00% Trans-2-Butene, 2.00% Butene-1, 0.20% 2-Methyl-2-Butene, 1.00% Isopentane, 1.00% n-Pentane, 0.40% Cis-2-Pentene, 0.16% Trans-2-Pentene, 0.40% Pentene-1, 0.10% n-hexane, mole concentration	
<b>D1946-RFG3-1LP</b>	1-Liter Cylinder	0.200% Methane, 90.00% Helium, 0.200% Ethane, 0.20% Ethylene, 0.30% Propane, 0.80% Propylene, 0.80% Isobutane, 0.50% n-Butane, 0.80% Isobutylene, 0.20% 1,3 Butadiene, 0.50% Cis-2-Butene, 0.70% Trans-2-Butene, 0.50% 1-Butene, 0.50% 2-Methyl-1-Butene, 1.00% 2-methyl-2-Butene, 1.20% Isopentane, 0.30% n-pentane, 0.30% Cis-2-Pentene, 0.70% Trans-2-Pentene, 0.30% 1-Pentene, mole concentration	
<b>D1946-RFG5-1LP</b>	1-Liter Cylinder	12.50% Hydrogen, 1.00% Argon, 37.20% Nitrogen, 1.00% Carbon Monoxide, 3.00% Carbon Dioxide, 5.00% Methane, 4.00% Ethane, 2.00% Ethylene, 1.00% Acetylene, 6.00% Propane, 3.00% Propylene, 1.00% Propadiene, 4.00% n-Butane, 5.00% Isobutane, 1.00% Isobutylene, 3.00% 1,3 Butadiene, 2.00% Cis-2-Butene, 3.00% Trans-2-Butene, 2.00% Butene-1, 0.20% 2-Methyl-2-Butene, 1.00% Isopentane, 1.00% n-Pentane, 0.40% Cis-2-Pentene, 0.20% Trans-2-Pentene, 0.40% 1-Pentene, 0.10% Hexanes Plus Ex, mole concentration	
<b>D1946-RFG7-1LP</b>	1-Liter Cylinder	12.57% Hydrogen, 0.30% Argon, 1.00% Nitrogen, 1.00% Carbon Monoxide, 25.40% Carbon Dioxide, 26.70% Methane, 0.60% Helium, 9.41% Ethane, 0.50% Ethylene, 1.00% Acetylene, 6.00% Propane, 1.00% Propylene, 0.74% Propadiene, 3.00% Isobutane, 2.00% n-Butane, 0.50% Isobutylene, 1.48% 1,3 Butadiene, 1.00% Cis-2-butene, 1.50% Trans-2-Butene, 1.00% 1-Butene-2-Butene, 0.20% 2-methyl-2-Butene, 1.00% Isopentane, 1.00% n-Pentane, 0.17% Cis-2-Pentene, 0.43% Trans-2-Pentene, 0.40% 1-Pentene, 0.10% Hexanes Plus EX, mole concentration	

**GPA 2261****Analysis for Natural Gas and Similar Gaseous Mixtures by Gas Chromatography**

<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
<b>G2261-NG1-1LP</b>	1 Liter	1.00% Nitrogen, 0.50% Carbon Dioxide, 94.750% Methane, 2.00% Ethane, 0.75% Propane, 0.30% Isobutane, 0.30% n-Butane, 0.15% Isopentane, 0.15% n-Pentane, 0.10% Hexanes Plus EX, mole concentration	
<b>G2261-NG2-1LP</b>	1 Liter	2.50% Nitrogen, 1.00% Carbon Dioxide, 85.250% Methane, 5.00% Ethane, 3.00% Propane, 1.00% Isobutane, 1.00% n-Butane, 0.50% Isopentane, 0.50% n-Pentane, 0.25% Hexanes Plus EX, mole concentration	
<b>G2261-NG3-1LP</b>	1 Liter	5.00% Nitrogen, 1.50% Carbon Dioxide, 70.00% Methane, 9.00% Ethane, 6.00% Propane, 3.00% Isobutane, 3.00% n-Butane, 1.00% Isopentane, 1.00% n-Pentane, 0.50% Hexanes Plus EX, mole concentration	

***GPA 2261: Suggested Accessory for Above Part Numbers*****Analysis for Natural Gas and Similar Gaseous Mixtures by Gas Chromatography**

<b>7000-1MIBR-170</b>	Mini Brass Regulator	0-15 outlet, 0-300 inlet with CGA 170 fitting	
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**GPA 2261****Analysis for Natural Gas and Similar Gaseous Mixtures by Gas Chromatography**

<i>Product Code</i>	<i>Item</i>	<i>Description</i>	
<b>G2261-10HNC6-LP239</b>	LP239	1.00% Nitrogen, 0.50% Carbon Dioxide, 94.750% Methane, 2.00% Ethane, 0.75% Propane, 0.30% Isobutane, 0.30% n-Butane, 0.15% Isopentane, 0.15% n-Pentane, 0.10% n-Hexane, mole concentration	
<b>G2261-10MEX-LP239</b>	LP239	2.50% N <sub>2</sub> , 1.00% CO <sub>2</sub> , 85.250% Methane, 5.00% C <sub>2</sub> , 3.00% C <sub>3</sub> , 1.00% IC <sub>4</sub> , 1.00% NC <sub>4</sub> , 0.50% IC <sub>5</sub> , 0.50% NC <sub>5</sub> , 0.25% EX, mole concentration	

***GPA 2261: Suggested Accessory for Above Part Numbers*****Analysis for Natural Gas and Similar Gaseous Mixtures by Gas Chromatography**

<b>402-1601-510</b>	Single Stage Brass Regulator	0-15 outlet, 0-300 inlet with CGA 510 fitting	
<b>402-2601-510</b>	Single Stage Brass Regulator	0-50 outlet, 0-300 inlet with CGA 510 fitting	



## Custom Quotation Request Form

From: **Company Contact** \_\_\_\_\_

**Company Name** \_\_\_\_\_

**Phone:** (    ) \_\_\_\_\_ **Ext.** \_\_\_\_\_

**FAX:** (    ) \_\_\_\_\_

**Email:** \_\_\_\_\_

**E-mail:**

sales@ats-scientific.com

### Order Information

<b>Product Code</b>	
<b>Product Description</b>	
<b>Quantity</b>	







**Contact us:**

Monday – Friday, 8:00 AM – 5:30 PM (EST) C

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1 (800)-661-6700

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