



SCOPE OF ACCREDITATION TO ISO GUIDE 34:2009

DCG PARTNERSHIP 1, LTD.
4170 A South Main
Pearland, TX 77581
Louis D'Agostaro
Phone: 281-648-1894 Ext. 201

REFERENCE MATERIAL PRODUCER

Valid To: November 30, 2018

Certificate Number: 3487.02

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this Reference Material Producer for the production of certified reference materials and reference materials of the following categories:

Category and Sub-Category of Certified Reference Material ²	Test, Analysis, Measurement (Including Ranges and Relative Percent Uncertainties ^{1,3})	Method	Measurement Technique (Where Appropriate)
Category A7.1 Analyzed Gases:			
<i>Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence</i>			
Hydrogen Sulfide	0.01-1000 mg/m ³ ± 13.80 %	ASTM D5504	Gravimetric GCxSCD,UVF
Carbonyl Sulfide	0.01-1000 mg/m ³ ± 13.80 %	ASTM D5504	Gravimetric GCxSCD,UVF
Sulfur Dioxide	0.01-1000 mg/m ³ ± 13.80 %	ASTM D5504	Gravimetric GCxSCD,UVF
Methanethiol	0.01-1000 mg/m ³ ± 13.80 %	ASTM D5504	Gravimetric GCxSCD,UVF
Ethanethiol	0.01-1000 mg/m ³ ± 13.80 %	ASTM D5504	Gravimetric GCxSCD,UVF
Dimethylsulfide	0.01-1000 mg/m ³ ± 13.80 %	ASTM D5504	Gravimetric GCxSCD,UVF
Carbon Disulfide	0.01-1000 mg/m ³ ± 13.80 %	ASTM D5504	Gravimetric GCxSCD,UVF
Methylethylsulfide	0.01-1000 mg/m ³ ± 13.80 %	ASTM D5504	Gravimetric GCxSCD,UVF

Category and Sub-Category of Certified Reference Material ²	Test, Analysis, Measurement (Including Ranges and Relative Percent Uncertainties ^{1,3})	Method	Measurement Technique (Where Appropriate)
2-Propanethiol	0.01-1000 mg/m ³ ± 13.80 %	ASTM D5504	Gravimetric GCxSCD,UVF
t-Butanethiol	0.01-1000 mg/m ³ ± 13.80 %	ASTM D5504	Gravimetric GCxSCD,UVF
1-Propanethiol	0.01-1000 mg/m ³ ± 13.80 %	ASTM D5504	Gravimetric GCxSCD,UVF
Thiophene	0.01-1000 mg/m ³ ± 13.80 %	ASTM D5504	Gravimetric GCxSCD,UVF
s-Butanethiol	0.01-1000 mg/m ³ ± 13.80 %	ASTM D5504	Gravimetric GCxSCD,UVF
i-Butanethiol	0.01-1000 mg/m ³ ± 13.80 %	ASTM D5504	Gravimetric GCxSCD,UVF
Diethylsulfide	0.01-1000 mg/m ³ ± 13.80 %	ASTM D5504	Gravimetric GCxSCD,UVF
n-Butanethiol	0.01-1000 mg/m ³ ± 13.80 %	ASTM D5504	Gravimetric GCxSCD,UVF
Dimethyldisulfide	0.01-1000 mg/m ³ ± 13.80 %	ASTM D5504	Gravimetric GCxSCD,UVF
Diethyldisulfide	0.01-1000 mg/m ³ ± 13.80 %	ASTM D5504	Gravimetric GCxSCD,UVF
<i>Analysis of Natural Gas Liquid Mixtures Containing Nitrogen and Carbon Dioxide by GC</i>			
Nitrogen	0.01-5.0 mol % ± 52.59 %	GPA Standard 2177	Gravimetric GCxTCD
Carbon Dioxide	0.01-5.0 mol % ± 4.26 %	GPA Standard 2177	Gravimetric GCxTCD
Methane	0.01-5.0 mol % ± 2.07 %	GPA Standard 2177	Gravimetric GCxTCD
Ethane	0.01-95.0 mol % ± 0.22 %	GPA Standard 2177	Gravimetric GCxTCD
Propane	0.01-100.0 mol % ± 0.41 %	GPA Standard 2177	Gravimetric GCxTCD
Isobutane	0.01-100.0 mol % ± 5.70 %	GPA Standard 2177	Gravimetric GCxTCD
n-Butane and 2,2 Dimethylpropane	0.01-100.0 mol % ± 2.13 %	GPA Standard 2177	Gravimetric GCxTCD

Category and Sub-Category of Certified Reference Material ²	Test, Analysis, Measurement (Including Ranges and Relative Percent Uncertainties ^{1,3})	Method	Measurement Technique (Where Appropriate)
Isopentane	0.01-15.0 mol % ± 5.44 %	GPA Standard 2177	Gravimetric GCxTCD
n-Pentane	0.01-15.0 mol % ± 1.69 %	GPA Standard 2177	Gravimetric GCxTCD
Hexanes Plus	0.01-20.0 mol % ± 1.79 %	GPA Standard 2177	Gravimetric GCxTCD
<i>Method for the Extended Analysis of Hydrocarbon Liquid Mixtures Containing Nitrogen and Carbon Dioxide by Temperature Programmed Gas Chromatography</i>			
Nitrogen	0.01-5.0 wt % ± 52.59 %	GPA Standard 2186	Gravimetric GCxTCD GCxFID
Carbon Dioxide	0.01-5.0 wt % ± 4.26 %	GPA Standard 2186	Gravimetric GCxTCD GCxFID
Methane	0.01-5.0 wt % ± 2.07 %	GPA Standard 2186	Gravimetric GCxTCD GCxFID
Ethane	0.01-95.0 wt % ± 0.22 %	GPA Standard 2186	Gravimetric GCxTCD GCxFID
Propane	0.01-100.0 wt % ± 0.41 %	GPA Standard 2186	Gravimetric GCxTCD GCxFID
Isobutane	0.01-100.0 wt % ± 5.70 %	GPA Standard 2186	Gravimetric GCxTCD GCxFID
n-Butane and 2,2 Dimethylpropane	0.01-100.0 wt % ± 2.13 %	GPA Standard 2186	Gravimetric GCxTCD GCxFID
Isopentane	0.01-15.0 wt % ± 5.44 %	GPA Standard 2186	Gravimetric GCxTCD GCxFID

Category and Sub-Category of Certified Reference Material ²	Test, Analysis, Measurement (Including Ranges and Relative Percent Uncertainties ^{1,3})	Method	Measurement Technique (Where Appropriate)
n-Pentane	0.01-15.0 wt % ± 1.69 %	GPA Standard 2186	Gravimetric GCxTCD GCxFID
Hexanes Plus	0.01-20.0 wt % ± 1.79 %	GPA Standard 2186	Gravimetric GCxTCD GCxFID
<i>Analysis for Natural Gas and Similar Gaseous Mixtures by Gas Chromatography</i>			
Nitrogen	0.01-30.0 mol % ± 1.74 %	GPA Standard 2261	Gravimetric GCxTCD
Carbon Dioxide	0.01-30.0 mol % ± 1.30 %	GPA Standard 2261	Gravimetric GCxTCD
Methane	0.01-100.0 mol % ± 0.10 %	GPA Standard 2261	Gravimetric GCxTCD
Ethane	0.01-10.0 mol % ± 0.87 %	GPA Standard 2261	Gravimetric GCxTCD
Propane	0.01-10.0 mol % ± 0.50 %	GPA Standard 2261	Gravimetric GCxTCD
Isobutane	0.01-4.0 mol % ± 2.21 %	GPA Standard 2261	Gravimetric GCxTCD
n-Butane	0.01-4.0 mol % ± 0.93 %	GPA Standard 2261	Gravimetric GCxTCD
2,2 Dimethylpropane	0.01-4.0 mol % ± 0.93 %	GPA Standard 2261	Gravimetric GCxTCD
Isopentane	0.01-1.5 mol % ± 1.51 %	GPA Standard 2261	Gravimetric GCxTCD
n-Pentane	0.01-1.5 mol % ± 5.29 %	GPA Standard 2261	Gravimetric GCxTCD
Hexanes Plus	0.01-1.5 mol % ± 13.20 %	GPA Standard 2261	Gravimetric GCxTCD
<i>Method of Extended Analysis for Natural Gas and Similar Gaseous Mixtures by Temperature Programmed Gas Chromatography</i>			
Nitrogen	0.01-30.0 mol % ± 1.74 %	GPA Standard 2286	Gravimetric GCxTCD GCxFID

Category and Sub-Category of Certified Reference Material ²	Test, Analysis, Measurement (Including Ranges and Relative Percent Uncertainties ^{1,3})	Method	Measurement Technique (Where Appropriate)
Methane	0.01-100.0 mol % ± 0.10 %	GPA Standard 2286	Gravimetric GCxTCD GCxFID
Carbon Dioxide	0.01-30. mol % ± 1.30 %	GPA Standard 2286	Gravimetric GCxTCD GCxFID
Ethane	0.01-10.0 mol % ± 0.87 %	GPA Standard 2286	Gravimetric GCxTCD GCxFID
Propane	0.01-10.0 mol % ± 0.50 %	GPA Standard 2286	Gravimetric GCxTCD GCxFID
Isobutane	0.01-4.0 mol % ± 2.21 %	GPA Standard 2286	Gravimetric GCxTCD GCxFID
n-Butane	0.01-4.0 mol % ± 0.93 %	GPA Standard 2286	Gravimetric GCxTCD GCxFID
2,2 Dimethylpropane	0.01-4.0 mol % ± 1.86 %	GPA Standard 2286	Gravimetric GCxTCD GCxFID
Isopentane	0.01-1.5 mol % ± 1.51 %	GPA Standard 2286	Gravimetric GCxTCD GCxFID
n-Pentane	0.01-1.5 mol % ± 5.29 %	GPA Standard 2286	Gravimetric GCxTCD GCxFID
Hexanes Plus	0.01-1.5 mol % ± 13.20 %	GPA Standard 2286	Gravimetric GCxTCD GCxFID
Category A3.1 Pure organic compounds; Chromatography Standards			
<i>Sulfur Compounds in Light Petroleum Liquids by Gas Chromatography and Sulfur Selective Detection</i>			
Hydrogen Sulfide	0.1-100.0 mg/kg ± 13.80 %	ASTM D5623	Gravimetric GCxSCD,UVF
Carbonyl Sulfide	0.1-100.0 mg/kg ± 13.80 %	ASTM D5623	Gravimetric GCxSCD,UVF

Category and Sub-Category of Certified Reference Material²	Test, Analysis, Measurement (Including Ranges and Relative Percent Uncertainties^{1,3})	Method	Measurement Technique (Where Appropriate)
Sulfur Dioxide	0.1-100.0 mg/kg ± 13.80 %	ASTM D5623	Gravimetric GCxSCD,UVF
Methanethiol	0.1-100.0 mg/kg ± 13.80 %	ASTM D5623	Gravimetric GCxSCD,UVF
Ethanethiol	0.1-100.0 mg/kg ± 13.80 %	ASTM D5623	Gravimetric GCxSCD,UVF
Dimethyl Sulfide	0.1-100.0 mg/kg ± 13.80 %	ASTM D5623	Gravimetric GCxSCD,UVF
Carbon Disulfide	0.1-100.0 mg/kg ± 13.80 %	ASTM D5623	Gravimetric GCxSCD,UVF
2-Propanethiol	0.1-100.0 mg/kg ± 13.80 %	ASTM D5623	Gravimetric GCxSCD,UVF
2-Methyl-2-Propanethiol	0.1-100.0 mg/kg ± 13.80 %	ASTM D5623	Gravimetric GCxSCD,UVF
1-Propanethiol	0.1-100.0 mg/kg ± 13.80 %	ASTM D5623	Gravimetric GCxSCD,UVF
Ethylmethyl sulfide	0.1-100.0 mg/kg ± 13.80 %	ASTM D5623	Gravimetric GCxSCD,UVF
2-Butanethiol	0.1-100.0 mg/kg ± 13.80 %	ASTM D5623	Gravimetric GCxSCD,UVF
Thiophene	0.1-100.0 mg/kg ± 13.80 %	ASTM D5623	Gravimetric GCxSCD,UVF
2-Methyl-1-Propanethiol	0.1-100.0 mg/kg ± 13.80 %	ASTM D5623	Gravimetric GCxSCD,UVF
Diethyl Sulfide	0.1-100.0 mg/kg ± 13.80 %	ASTM D5623	Gravimetric GCxSCD,UVF
1-Butanethiol	0.1-100.0 mg/kg ± 13.80 %	ASTM D5623	Gravimetric GCxSCD,UVF
Dimethyl Disulfide	0.1-100.0 mg/kg ± 13.80 %	ASTM D5623	Gravimetric GCxSCD,UVF
2-Methylthiophene	0.1-100.0 mg/kg ± 13.80 %	ASTM D5623	Gravimetric GCxSCD,UVF
3-Methylthiophene	0.1-100.0 mg/kg ± 13.80 %	ASTM D5623	Gravimetric GCxSCD,UVF
Diethyl Disulfide	0.1-100.0 mg/kg ± 13.80 %	ASTM D5623	Gravimetric GCxSCD,UVF
Methylbenzothiophene	0.1-100.0 mg/kg ± 13.80 %	ASTM D5623	Gravimetric GCxSCD,UVF
Diphenyl Sulfide	0.1-100.0 mg/kg ± 13.80 %	ASTM D5623	Gravimetric GCxSCD,UVF
3,4 Dibenzothiophene	0.1-100.0 mg/kg ± 13.80 %	ASTM D5623	Gravimetric GCxSCD,UVF

Category and Sub-Category of Certified Reference Material ²	Test, Analysis, Measurement (Including Ranges and Relative Percent Uncertainties ^{1,3})	Method	Measurement Technique (Where Appropriate)
Benzothiophene	0.1-100.0 mg/kg ± 13.80 %	ASTM D5623	Gravimetric GCxSCD,UVF
Ethylbenzothiophene	0.1-100.0 mg/kg ± 13.80 %	ASTM D5623	Gravimetric GCxSCD,UVF
Category A3.1 Pure organic compounds; Compounds for elemental analysis			
<i>Total Sulfur in Light Hydrocarbons, Spark Ignition Engine Fuel, Diesel Engine Fuel, and Engine Oil by Ultraviolet Fluorescence</i>			
Sulfur in Ethanol	1.0-15.0 mg/kg ± 7.12 %	ASTM D5453	Gravimetric UVF
Sulfur in Diesel	0.50-1000 mg/kg ± 7.12 %	ASTM D5453	Gravimetric UVF
Sulfur in Isooctane	0.125-1000 mg/kg ± 7.12 %	ASTM D5453	Gravimetric UVF
Category C: Physical Properties			
<i>Acid Number of Petroleum Products by Potentiometric Titration</i>			
Acid Number of Petroleum Products by Potentiometric Titration in Mineral Oil	0.1-150 mg/g KOH ± 17.62 %	ASTM D664	Gravimetric Titration
<i>Flash Point by Pensky Martens Closed Cup Tester</i>			
Procedure A – Distillate Fuels, New and In Use Lubricating Oils and Other Homogeneous Petroleum Liquids	40-360 °C ± 2.55 %	ASTM D93	Pensky-Martens Closed Cup

¹ This reference material producer is approved to produce Certified Reference Materials (CRM) for all items listed on the scope of accreditation.

² The listed uncertainty represents expanded uncertainties expressed at approximately the 95 % level of confidence, using a coverage factor of $k = 2$.

³ Uncertainties for the certified values are available on the Reference Material Producer's issued certificates for certified reference materials.



Accredited Reference Material Producer

A2LA has accredited

DCG PARTNERSHIP 1, LTD.

Pearland, TX

This accreditation covers the specific materials listed on the agreed upon Scope of Accreditation.

This producer meets the requirements of ISO Guide 34:2009 *General Requirements for the Competence of Reference Material Producers*. This accreditation demonstrates technical competence for a defined scope and the operation of a quality management system.

Presented this 26th day of May 2017.

President and CEO
For the Accreditation Council
Certificate Number 3487.02
Valid to November 30, 2018



For reference materials to which this accreditation applies, please refer to the reference material producer's Scope of Accreditation.