

Laboratory

**Quality Assurance Laboratory, GAIL (India) Limited, Vijaipur,
Distt: Guna, Madhya Pradesh
Location 1: QA Laboratory, Base Laboratory, GAIL Vijaipur, Distt: Guna,
Madhya Pradesh
Location 2: Field Testing Laboratory, NFL, GAIL, Vijaipur Distt: Guna,
Madhya Pradesh**

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6945 (in lieu of T-0748)

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Validity 22.04.2018 to 21.04.2020

Last Amended on --

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
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CHEMICAL TESTING

LOCATION 1				
I.	PETROLEUM			
A.	Fuels-Gaseous, Liquid & Solid			
1.	Natural Gas (Rich)	Methane	IS 15130 (Part 5): 2002 (RA 2007)	75 Mole % to 100 Mole %
		Ethane		0.001 Mole % to 10 Mole %
		Propane		0.001 Mole % to 10 Mole %
		Butane		0.001 Mole % to 5.0 Mole %
		Pentane		0.001 Mole % to 2.0 Mole %
		Hexane +		0.001 Mole % to 0.5 Mole %
		Carbon dioxide		0.01 Mole % to 10 Mole %
		Nitrogen		0.001 Mole % to 15 Mole %
		Specific Gravity	ISI 6976:2016 (By Calculation)	0.60 Mole % to 0.75 Mole %
		Calorific Value	ISI 6976:2016 (By Calculation)	6000 kcal/Sm ³ to 12000 kcal/Sm ³

**Anita Rani
Convenor**

**N. Venkateswaran
Program Director**

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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
2.	Natural Gas (Lean)	Methane	IS 15130 (Part 5): 2002 (RA 2007)	75 Mole % to 100 Mole %
		Ethane		0.001 Mole % to 10 Mole %
		Propane		0.001 Mole % to 5.0 Mole %
		Butane		0.001 Mole % to 1.0 Mole %
		Pentane		0.001 Mole % to 0.5 Mole %
		Hexane +		0.001 Mole % to 0.5 Mole %
		Carbon dioxide		0.01 Mole % to 10 Mole %
		Nitrogen		0.001 Mole % to 15 Mole %
		Specific Gravity	ISI 6976:2016 (By Calculation)	0.60 Mole % to 0.75 Mole %
		Calorific Value	ISI 6976:2016 (By Calculation)	6000 kcal/Sm ³ to 12000 kcal/Sm ³
3.	LPG	Density @ 15 °C	ISO 8973: 1997 (By calculation)	0.5000 g/ml to 0.5500 g/ml
		Vapor Pressure @ 40 °C	ISO 8973: 1997 (By calculation)	700 kg/cm ² to 1200 kg/cm ²
		Mercaptan	EN 50270: 2015	0 to 40 ppm
		Components	ASTM D 2163: 2014	0.1 Mole % to 10 Mole %
		Ethane		40 Mole % to 80 Mole %
		Propane		30 Mole % to 60 Mole %
Butane	0.01 Mole % to 10 Mole %			
Pentane				

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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Total Volatile Sulphur	ASTM: D-3246:2015	5 ppm to 250 ppm
		Copper Strip Corrosion at 38 ^o C for 1 hr.	ASTM: D-1838:2016	ASTM No. 1 to 4
		Hydrogen Sulphide	ASTM: D-2420:2013	Qualitative (Pass / Fail)
		Free Water Content	IS: 4576:1999 (RA 2009)	Qualitative (Pass / Fail)
4.	Propane	Density @ 15 °C	ISO 8973: 1997 (By calculation)	0.5000 g/ml to 0.5500 g/ml
		Vapor Pressure @ 40 °C	ISO 8973: 1997 (By calculation)	800 kPa(g) to 1650 kPa(g)
		Mercaptan Components	EN-50270:2015	0 to 40 ppm
		Ethane	ASTM: D-2163:2014	0.1 Mole % to 10 Mole %
		Propane		80 Mole % to 100 Mole %
		Butane		0.1 Mole % to 10 Mole %
		Pentane		0.01 Mole % to 2.0 Mole %
		Total Volatile Sulphur	ASTM: D-3246:2015	5 ppm to 250 ppm
		Copper Strip Corrosion at 38 ^o C for 1 hr.	ASTM: D-1838:2016	ASTM No. 1 to 4
		Hydrogen Sulphide	ASTM: D-2420:2013	Qualitative (Pass / Fail)
		Free Water content	IS: 4576:1999 (RA 2009)	Qualitative (Pass / Fail)

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CHEMICAL TESTING

LOCATION 2				
I.	PETROLEUM			
1.	Natural Gas (Lean)	Methane	IS 15130 (Part 4): 2002 (RA 2007)	75 Mole % to 100 Mole %
		Ethane		0.001 Mole % to 10 Mole %
		Propane		0.001 Mole % to 10.0 Mole %
		Butane		0.001 Mole % to 5.0 Mole %
		Pentane		0.001 Mole % to 0.5 Mole %
		Hexane +		0.001 Mole % to 1.0 Mole %
		Carbon dioxide		0.01 Mole % to 8.5 Mole %
		Nitrogen		0.001 Mole % to 15 Mole %
		Specific Gravity	ISO 6976:2016 (By Calculation)	0.60 Mole % to 0.75 Mole %
		Calorific Value	ISO 6976:2016 (By Calculation)	6000 kcal/Sm ³ to 12000 kcal/Sm ³

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