

Laboratory **Quality Control Laboratory, Gujarat Refinery, Indian Oil Corporation Limited, P.O. Jawahar Nagar, Vadodara, Gujarat**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-6416 (in lieu of T-0211)**

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Validity **24.11.2017 to 23.11.2019**

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
CHEMICAL TESTING				
I.	PETROLEUM			
1.	NAPHTHA	Appearance	ASTM D4176 A	Qualitative
		Density@ 15°C	ASTM D1298/ IS 1448 (Part 16)	0.600 g/ml to 0.900 g/ml
		Distillation	ASTM D86/ IS 1448 (Part 18)/ IP 123	30°C to 200 °C Upto 100 ml
		Residue on Evaporation	ASTM D381 IS 1448 (Part 29)	Upto 5 mg/dcl
		Reid Vapour Pressure @38°C	ASTM D323/ IS 1448 (Part 39)	0.3 kg/cm ² to 1.0 kg/cm ²
		Aromatics Content	ASTM D6730	1.0% to 12.0 % vol.
		Olefins Content	ASTM D6730	0.3% to 2.0 % vol.
		Paraffin Content	ASTM D6730	50% to 80 % vol.
		Chloride Content	ASTM D4929	Upto 5.0 mg/l
		Gross Calorific Value	ASTM D4868/ IS 1448 (Part 7)	10000 Kcal/kg to 12000 Kcal/kg
		Sulphur	IP336/ASTM D4294	17 mg/kg to 500 mg/kg
2.	ATF	Appearance	ASTM D-4176A	Qualitative
		Colour	ASTM D156	Upto +30
		Particulate Contamination (during manufacturing)	ASTM D5452 / IP423	Upto 5 mg/l
		Particulate at point of manufacture, cumulative channel particle counts	IP 565	Upto 60000 µm(c)
		Total Acidity	IS 1448 (Part 113) / ASTM D3242/ IP 354	Upto 0.10 mgKOH/gm
		Aromatics	IS 1448 (Part 23) / ASTM D1319	Aromatics: 0.2% to 30 % vol.

Rini Narayan
Convenor

N. Venkateswaran
Program Director

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		Total Sulphur	ASTM D4294/ IP 336	0.002% to 1.0 % by Mass
		Sulphur Mercaptan	IS 1448 (Part 109) / IP 342	0.001% to 0.010 % by Mass
		Doctor Test	IS 1448 (Part 19) / ASTM D 4952	Qualitative (Pass/Fail)
		Distillation IBP to FBP Residue & Loss	IS 1448 (Part 18)/ ASTM D86/ IP 123	Upto 300 °C Upto 100 % vol.
		Flash Point (Abel)	IS 1448 (Part 20) / IP 170	19 to 50 °C
		Density @ 15°C	ASTM D1298/ IS 1448 (Part 16)	600.0 kg/m ³ to 900.0 kg/m ³
		Freezing Point	IS 1448 (Part 11)/ASTM D 2386/ IP 16	-80°C to +20 °C
		Kinematic Viscosity at-20°C	IS 1448 (Part 25)/ASTM D445	1 cSt to 8 cSt
		Kinematic Viscosity at -20°C	ASTM D7042 e3	1 cSt to 8 cSt
		Specific Energy	ASTM D 3338	40.19 MJ/Kg to 44.73 MJ/Kg
		Smoke Point	IS 1448 (Part 31)/ ASTM D1322e1/ ISO 3014/IP598	10 mm to 40 mm
		Naphthalene	IS 1448(Part 118)/ ASTM D1840	Upto 3.0%v
		Copper Strip Corrosion for 2 hrs. at 100°C	ASTM D130/ IS 1448 (Part 15)	1a to 4b
		Silver Strip Corrosion 4hrs. @ 50 °C	IP 227	Qualitative (0 to 4)
		JFTOT	ISO 6249/ IS 1448 (Part 97)/ ASTM D3241	Qualitative (Filter pressure differential-0 to 30 mmHg Tube rating-0 to 4)
		Existent Gum	IS 1448 (Part 29) / ASTM D381/ IP 540	0.2 mg/100ml to 20 mg/100ml

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		Water Reaction: Interface Rating	IS 1448 (Part 42)/ ASTM D1094	Qualitative (1 to 4)
		Micro separation test	IS 1448 (Part 142)/ ASTM D 3948	Qualitative (50 to 100)
		Electrical Conductivity	ISO 6297/ ASTM D2624	Upto 1000 pS/m
		Lubricity	ASTM D5001	0.5 mm to 0.90 mm

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