

Laboratory	Kolkata Metro Laboratory, Hindustan Petroleum Corporation Ltd., Kolkata Terminal-1, 1 Graham Road, Budge Budge, Kolkata, West Bengal		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	28.02.2014
Certificate Number	T-1395	Valid Until	27.02.2016
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S.No.	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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I. PETROLEUM PRODUCTS

1.	Motor Gasoline / Aviation Turbine Fuel/ Automotive Diesel Fuel/ Hexane/ Kerosene	Appearance	WI NO. KML/13-14/35 Issue No. 02 Issue Date: 20.03.2014	NA
2.	Motor Gasoline/ Automotive Diesel Fuels/ Superior Kerosene Oil / Light Diesel Oil / Aviation Turbine Fuel/ Fuel Oil / Lubricants/ Petroleum Hexane	Density at 15°C /29.5°C	IS 1448 (Part 16): 2007, Rev. 3 ASTM D1298-12b/ ASTM D4052-11	650 kg/m ³ to 990 kg/m ³
3.	Motor Gasoline/ Automotive Diesel Fuels/ Superior Kerosene Oil / Aviation Turbine Fuel	Distillation a) Temperature b) Volume%	IS 1448 (Part 18): 1991 (RA 2011), Rev. 2 ASTM D86 - 12	40°C to 400°C

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4.	Motor Gasoline/ Automotive Diesel Fuels/ Superior Kerosene Oil / Light Diesel Oil / Aviation Turbine Fuel/ Industrial Lubricants / Petroleum Hexane	Copper strip Corrosion	IS 1448 (Part 15)-2004, (RA 2011), Rev. 3 ASTM D130-12	1a to 4c Unit
5.	Motor Gasoline/ Aviation Turbine Fuel	Existent Gum	IS 1448 (Part 29): 2004, (RA 2011), Rev. 3	1 g/m ³ to 100 g/m ³
6.	Motor Gasoline	Color	WI NO. KML/13-14/36 Issue No. 02 Issue Date: 20.03.2014	NA
		Research Octane No. (RON)	IS 1448 (Part 27): 2013, Rev. 1/ ASTM D 2699-13b	60 to 100 Unit
7.	Automotive Diesel Fuels/ Superior Kerosene Oil	Abel Flash Point	IS 1448 (Part 20):1998 (RA 2008), Rev. 2/ IP 170-09	18°C to70°C
8.	Automotive Diesel Fuels/ Light Diesel Oil/ Fuel Oil/High Flash HSD/ Lubricants	PMCC Flash Point	IS 1448 (Part 21): 2012, Rev. 3/ ASTM D 93 -12	40°C to 350°C

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9.	Motor Gasoline/ Automotive Diesel Fuels/ Superior Kerosene Oil /Fuel Oil / Light Diesel Oil / Aviation Turbine Fuel	Sulphur Total	ASTM D 2622 -10	03 to 100 mg/kg 500 to 5000 mg/kg 5000 to 46000 mg/kg
10.	Automotive Diesel Fuels	Cetane Index	ASTM D 4737-10	NA
11.	Automotive Diesel Fuels / Fuel Oil / Light Diesel Oil/ Lubricants	Pour Point	IS 1448 (Part 10/ Sec. 2): 2013, Rev. 2, ASTM D 97-12	-40°C to 10°C
		Water content	IS 1448 (Part 40): 1987, (RA 2011), Rev. 3	0 to 10% by Vol
12.	Automotive Diesel Fuels / Fuel Oil / Light Diesel Oil	Sediment	IS 1448 (Part 30): 2013, Rev. 2	0 to 4% by Mass
13.	Superior Kerosene Oil / Aviation Turbine Fuel/ MTO	Color, Saybolt	IS 1448 (Part 14):1960, (RA 2008) ASTM D 156-12	0 to 30 color Unit

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14.	Superior Kerosene Oil / Aviation Turbine Fuel	Smoke Point	IS 1448 (Part 31): 1968 (RA 2008)	1 mm to 50 mm
15.	Petroleum Hexane	Non Volatile Residue Reaction of Non Volatile Residue	IS 3470:2002, Annexure A IS 3470:2002, Annexure B	0 to 0.305 gm/100 ml Qualitative
16.	Aviation Turbine Fuel/ Lubricants	Aniline point	IS 1448 (Part 3): 2007, Rev. 3 ASTM D 611-12	30°C to 150°C
17.	Aviation Turbine Fuel	Aromatics Content	IS 1448 (Part 23): 2004, (RA 2011) ASTM D 1319-13	0 to 30% by Vol
		Acidity ,Total	IS 1448 (Part 113): 1983, (RA 2011)	0 to 0.1 mgKOH/gm
		Olefin Content	IS 1448 (Part 23): 2004, (RA 2011) ASTM D 1319-13	0.01% to 50% by Vol
		Sulphur mercaptan	IS 1448 (Part 109): 2004, (RA 2011), Rev. 1	0.0003% to 0.01%by mass
		Doctor Test	IS 1448 (Part 19): 1989, (RA 2007), Rev. 1	Positive/Negative
		Freezing Point	IS 1448 (Part 11): 2004, (RA 2011) ASTM D7153 -05	0 to -80°C

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	Aviation Turbine Fuel	Silver strip Corrosion	IP 227-99	0 to 4 Unit
		Water reaction, a) Interface Rating b) Separation Rating	IS 1448 (Part 42): 1977, (RA 2011), Rev. 2 ASTM D1094 -07(2013)	a) 0 to 4 Unit b) 1 to 3
		Electrical Conductivity	IP 274 -09/ ASTM D 2624 -09	1 pS/m to 2000 pS/m
18.	Automotive Diesel Fuels/ Light Diesel Oil / Fuel Oil / Lubricants	Ash Content by% Wt	IS 1448 (Part 4): 2008, Rev. 2	0.001% to 0.180% by mass
19.	Automotive Diesel Fuels/ Lubricants LDO Fuel oil ATF	Kinematic Viscosity @ 40°C, @ 100°C, @ 50°C, @ -20°C	IS 1448 (Part 25): 1976 (RA 2007), Rev. 1 ASTM D445-12	0.5 cSt to 850 cSt 1.5 cSt to 1350 cSt 10 cSt to 380 cst 1 cSt to 15 cSt
II. OIL & LUBRICANTS				
1.	Automotive Lubricants	Apparent Viscosity by Cold Cranking Simulator	ASTM D 5293 -10e1	1000 to 9000 MPas @ -20°C
2.	Base Oil/ Lubricants	Color	ASTM D : 1500-12 / IS 1448 (Part 12): 2013	0 to 8.0 color Unit
3.	Lubricant	COC Flash Point	IS 1448 (Part 69): 2013, Rev. 1 / ASTM D 92-12b	79°C to 400°C

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	Lubricant	Viscosity Index	ASTM D:2270-10e IS 1448 (Part 56) :2013, Rev. 3	40 to 160
		Total base No (TBN)	IS 1448 (Part 86): 1977, (RA 2011) ASTM D2896 -11	2 to 25 mgKOH/gm
		Total Acid No (TAN)	IS 1448 (Part 1/Sec.1): 2002, ASTM D 664-11a / D974-12	0 to 4 mgKOH/gm
		Phosphorus	IS 1448 (Part 101) ASTM D 1091 ASTM D 6481-99 / ASTM D 6443-04 (2010)	0.01% to 0.5% by mass
		Sulphur Content	ASTM D 6481-99 (2010) ASTM D 6443-04 (2010)	0.05% to 1.0% by mass
		Zinc Content	ASTM D 6481-99 (2010) ASTM D 6443-04 (2010)	0.01% to 0.3% by mass
		Calcium Content	ASTM D 6481-99 (2010) ASTM D 6443-04 (2010)	0.02% to 0.7% by mass
		Foaming Characteristics	ASTM D892-13	0 to 800 ml
		Emulsion Characteristics	ASTM D 1401-12	0 to 40 ml; Time: 0 to 30 min

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	Lubricant	Rust Test	ASTM D 665 -12	Pass / Fail
		Saponification value	IS 1448 (Part 55/Sec.1): 2004, (RA 2011), Rev. 1, ASTM D 94 -07 (12)	0 to 50 mgKOH/gm
		Inorganic Acidity	IP-182 /06	0 to 2 mgKOH/gm
		Kinematic Viscosity a) at 40°C b) at 100°C	ASTM D 7042-12a	a) 3.0 cSt to 400 cSt b) 1.0 cSt to 30 cSt
4.	Greases	Drop Point	IS 1448 (Part 52): 1971, (RA 2007), Rev. 1, ASTM D: 566-02 (2009)	24°C to 230 °C
		Consistency of Worked grease by Cone Penetrometer	IS 1448 (Part 60): 1994 (RA 2011), Rev. 2, ASTM D:1403 -10	10 to 390 units of 0.1 mm divisions

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