

**Laboratory** Irumpanam Quality Control Laboratory, Hindustan Petroleum Corporation Ltd., Irumpanam Terminal, Seaport Airport Road, Kochi, Kerala

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

**Discipline** Chemical Testing **Issue Date** 31.05.2014

**Certificate Number** T-1766 **Valid Until** 30.05.2016

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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.	MS/HSD/SKO/FO	Appearance	IPNM/QCL/WI, Rev. No. 01, Rev. Date 26/03/2014	Visual
		Sulfur Total	ASTM D 4294-2010/ ISO 20847-2004	20 mg/kg to 500 mg/kg 16 mg/kg to 500 mg/kg 0.1% to 5.0 %
2.	MS/HSD/SKO	Colour	IPNM/QCL/WI, Rev. No. 01, Rev. Date 26/03/2014	Visual
		Distillation Rec @70°C	IS 1448 (Part-18) 1991, ASTM D 86-2012	30°C to 400°C
		Rec @100°C		10 to 45% vol.
		Rec @150°C		20 to 70% vol.
		Rec @ 200°C		80 to 90% vol.
		Rec @ 360°C		20 to 80% vol.
Residue FBP		92 to 98% vol. 0.5 to 2 ml 160°C to 300°C		
	Copper Strip Corrosion Test	IS 1448 (Part-15) 2004/ ASTM D 130-2012	1a to 4c	
3.	SKO	Colour, Saybolt	IS 1448 (Part-14) 1990, ASTM D 6045-2009	-16 to +30
		Smoke Point	IS 1448 (Part-31) 1968 ASTM D 1322-2012	18 mm to 26 mm

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4.	MS/HSD/SKO/FO/LUBES	Density	IS 1448 (Part-16) 1990, ASTM D 1298-1999, Reapproved 2005 ASTM D 4052-2011	700 kg/m <sup>3</sup> to 1000 kg/m <sup>3</sup> 600 kg/m <sup>3</sup> to 900 kg/m <sup>3</sup>
5.	HSD/SKO	Flash Point Abel	IS 1448 (Part-20) 1998/ IP 170-2009	25 °C to 66 °C
6.	FO	Flash Point PMCC	IS:1448(Part-21) :1998 / ASTM D 93(2013)	66 °C -200 °C
		Kinematic Viscosity @ 50°C	IS 1448 (Part-25) 1976/ ASTM D 445-2012	80 cSt to 400 cSt
		Water Content	IS 1448 (Part-40) 1987 (Reaffirmed 2000)/ ASTM D 95-2013	0.05% to 25.% by Vol
		Sediment by Extraction	ISO 3735-1999/ IP 53-2000, Reaffirmed 2010 IS 1448 (Part-30) 2013/ ASTM D 473-2012	0.001 to 10% by mass
7.	HSD/FO	Pour Point	IS 1448 (Part-10) 1970/ ASTM D 97-2012	+15 °C to -21 °C
8.	MS	Existent Gum (Solvent washed)	IS 1448 (Part-29) 2004 ASTM D 381-2012	0 to 40 g/m <sup>3</sup>
		RON (Research Octane No.)	IS 1448 (Part-27) 2003 ASTM D 2699-2013	65 to 100

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9.	HSD	Kinematic Viscosity @ 40°C	IS 1448 (Part-25) 1976/ ASTM D 445-2012	2.0 cSt to 5.0 cSt
		Cetane Index	ASTM D 4737-10	42 to 58
<b>II. LUBRICANTS</b>				
1.	LUBRICANTS	Density in at 29.5°C	IS 1448(Part-16) 1990 (Reaffirmed 2002)/ ASTM D 1298-1999, Reapproved 2012	750 kg/m <sup>3</sup> to 100.0 kg/m <sup>3</sup>
		Flash Point COC	ASTM D 92-2012 / IS 1448 (Part-69) 1969 (Reaffirmed 2013)	79 °C to 400°C
		Kinematic Viscosity at 100°C	IS 1448 (Part-25) 1976 (Reaffirmed 2002)/ ASTM D 445-2012	0.5 cSt to 100 cSt
		Total Base Number (TBN)	IS 1448 (Part-86) 1977/ ASTM D 2896-2011	0.1 to 100 mgKOH/gm
		Viscosity Index	IS 1448 (Part-56) 1980 (Reaffirmed 2013)/ ASTM D 2270-2010	65 to 165
		Aniline Point,	IS 1448 (Part-3) 1984 Reaffirmed 2007/ ASTM D 611-2012	20°C to 95°C

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