

<b>Laboratory</b>	<b>Indian Oil Corporation Ltd. (M.D.), Vasco Laboratory, Vasco Terminal, Vasco-da-Gama, Goa</b>		
<b>Accreditation Standard</b>	<b>ISO/IEC 17025: 2005</b>		
<b>Discipline</b>	<b>Chemical Testing</b>	<b>Issue Date</b>	<b>24.10.2016</b>
<b>Certificate Number</b>	<b>T-0802</b>	<b>Valid Until</b>	<b>23.10.2018</b>
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<b>S. No.</b>	<b>Product / Material of Test</b>	<b>Specific Test Performed</b>	<b>Test Method Specification against which tests are performed</b>	<b>Range of Testing / Limits of Detection</b>
<b>I.</b>	<b>PETROLEUM AND PRODUCTS</b>			
1.	<b>MS,LAN,AVGAS SKO,ATF&amp; HSD,</b>	Appearance	Visual	Qualitative
2.	<b>SKO,HSD,LDO, ATF &amp; FO</b>	Acidity Inorganic	IS 1448 (Part 2): 2003	0 mg KOH/g to 0.1 mg KOH/g
3.	<b>HSD</b>	Acidity Total	IS 1448 (Part 2): 2007	0 mg KOH/g to 0.5 mg KOH/g
4.	<b>ATF</b>	Acidity Total in JetA-1	IS 1448 (Part 113): 2010	0 mg KOH/g to 0.1 mg KOH/g
5.	<b>AVGAS</b>	Aniline Point	IS 1448 (Part 3): 2007	25 °C to 80°C
6.	<b>HSD,LDO &amp; FO</b>	Ash Content	IS 1448 (Part 4): 2008	0.01 % m/m to 0.18 % m/m
7.	<b>LAN &amp; ATF</b>	Aromatics & Olefins (FIA)	IS 1448 (Part 23): 2004	A: 5 % to 30 % O:0.3 % to 10 %
8.	<b>LDO &amp; FO</b>	Carbon Residue by Conradson	IS 1448 (Part 122): 2013	0.01 % m/m to 30 % m/m
9.	<b>SKO &amp; ATF HSD</b>	Colour (Saybolt) Colour (ASTM)	IS 1448 (Part 14): 2013 ASTM D 1500: 2007	(+)30 scale to (-)16 scale Qualitative (Rating 1 to Rating 4)
10.	<b>MS, AVGAS SKO, ATF &amp; HSD</b>	Copper Strip Corrosion Test	IS 1448 (Part 15): 2010	N/A
11.	<b>LAN &amp; FO</b>	Calorific Value (By Calculation)	IS 1448 (Part 7): 2010	9700 Cal/g to 11550 Cal/g

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12.	<b>HSD</b>	Cetane Index (By Calculation)	ASTM D-4737: 2009	32.5 to 56.5
13.	<b>AVGAS,LAN,MS, SKO, ATF,HSD, LDO &amp; FO</b>	Density by Hydrometer	IS 1448 (Part 16): 2002	0.6000 g/ml to 0.8600 g/ml & 0.8600 g/ml to 0.9800 g/ml
14.	<b>AVGAS,LAN,MS, SKO,HSD &amp; ATF</b>	Distillation	IS 1448 (Part 18): 2010 IS 1448 (Part 18): 2010	40 °C to 300 °C 150 °C to 400 °C
15.	<b>ATF</b>	Doctor Test	IS 1448 (Part 19): 2013	(Quantitative) Presence of H <sub>2</sub> S & RSH
16.	<b>AVGAS,MS &amp; ATF</b>	Existent Gum (ROE)	IS 1448 (Part 29): 2010	0.5 mg/100 ml to 15 mg/100 ml
17.	<b>ATF</b>	Electrical Conductivity	ASTM D 2624: 2009	18 pS/m to 1000 pS/m
18.	<b>ATF</b>	Freezing Point	IS 1448 (Part 11): 2010	(-)80.0 °C to (-)40°C
19.	<b>HSD, SKO &amp; ATF</b>	Flash Point (Abel)	IS 1448 (Part 20): 2013	25 °C to 60 °C
20.	<b>HSD,LDO &amp; FO</b>	Flash Point (PMCC)		30 °C to 110 °C
21	<b>LUBE OIL</b>	Flash Point (COC)	IS 1448 (Part 21): 2013 IS 1448 (Part 69): 2013	50 °C to 350 °C
22.	<b>HSD,LDO,FO</b>	Kinematic Viscosity @ 40 °C & 50°C	IS 1448 (Part 25): 2013	1.5 cSt to 200 cSt
	<b>ATF &amp; LUBE OIL</b>	Kinematic Viscosity @ 100°C & -20°C	IS 1448 (Part 25): 2013	1.5 cSt to 200 cSt

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23.	ATF	Mercaptan Sulphur (Autotitrator)	IS 1448 (Part 109): 2004	0.0003 % m/m to 0.01 % m/m
24.	ATF	Naphthalene Content	IS 1448 (Part 118): 2007	0.1 % vol. to 3% vol.
25	HSD,LDO & FO	Pour Point	IS 1448 (Part 10): 2012	(-)15 °C to 21°C
26.	HSD,LDO & FO	Sediments By Extraction	IS 1448 (Part 30): 2013	0.01 % wt & 0.30 % wt.
27.	ATF	Silver Strip Corrosion	IP 227: 2005	0 to 4
28.	SKO & ATF	Smoke Point	IS 1448 (Part 31): 2013	10 mm to 30 mm
29	MS, AVGAS, ATF, SKO, HSD, LDO & FO	Sulphur by XRF	ISO 20847 IP 336: 2007 ASTM D4294: 2009	0.003 % to 0.05 % 0.03 % to 5.0 % 0.0017 % to 4.6 %
30.	LUBE OIL	Sulphated Ash	BIS/IP/ASTM IS 1448 (Part 4): 2008	0.0025 % m/m to 5.0 % m/m
31.	ATF	Specific Energy	ASTM D3338: 2007	35 to 50
32	LAN,AVGAS & MS	Vapour Pressure by Reid	IS 1448 (Part 39): 2012	30 kPa to 100 kPa
33	LUBE OIL	Viscosity Index	ASTM DS 39B: 2009	80 to 200
34.	ATF & AVGAS	Water Reaction of Aviation Fuels	IS 1448 (Part 42): 2010	1 to 4
35	HSD, LDO & FO	Water Content by Dean & stark	IS 1448 (Part 40): 2010	0.05 % v/v to 5 % v/v

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