

Laboratory Central Laboratory, Indian Oil Corporation Limited (MD), K Oil Installation, Sewree Terminal II, Sewree (East), Mumbai, Maharashtra

Accreditation Standard ISO/IEC 17025: 2005

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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
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CHEMICAL TESTING

I. PETROLEUM PRODUCTS				
1.	AVIATION TURBINE FUEL (JETA-1)	Acidity Total in ATF	IS 1448 (Part 113): 2010 IP 354: 2012 ASTM D3242: 2012	0.001 to 0.100mg KOH/g
	HIGH FLASH JET FUEL (JP-5)	Doctor Test	IS 1448 P: 19-2007 IP 30-2012 D 4952-2012	Positive/Negative
		Mercaptan Sulphur	IS 1448 P: 109-2010 IP 342-2012 D 3227-2012	0.0001% to 0.01 %m/m
		Silver Strip Corrosion	IP 227-1997	0 to 4
		Micro Biological Test (MBT)	IP 385-2012	1 to 10 no.
		Particulate Contamination (Millipore)	D 216-2012	0.1 Mg/L to 1.0 Mg/L
2.	HIGH SPEED DIESEL (HSD) LOW SULPHUR HIGH FLASH DIESEL FUEL (LSHFHSD)	Acidity Total	IS 1448 (Part 2): 2007 IP 1: 2012 ASTM 664: 2012	0.001 to 0.100mg KOH/g
3.	HIGH SPEED DIESEL (HSD), SUPERIOR KEROSENE OIL (SKO) LIGHT DIESEL OIL (LDO), FURNACE OIL (FO)	Acidity Inorganic	IS 1448 P: 2-2007 IP: 182-2012	0.001 mgKOH/gm to 0.01 mgKOH/gm

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4.	AVIATION TURBINE FUEL (JETA-1), HIGH FLASH JET FUEL (JP-5), AVIATION GASOLINE 100LL (AV GAS 100 LL), HIGH SPEED DIESEL (HSD)	Aniline Point	IS 1448 P: 3-2007 IP: 2-2012 D: 611-2012	57°C to 72°C
5.	AVIATION TURBINE FUEL (JETA-1), HIGH FLASH JET FUEL (JP-5), NAPHTHA, MINERAL TURPENTINE OIL (MTO)	Aromatics Olefins	IS 1448 (Part 23): 2004 IP 156: 1997	5% to 35% 0.3% to 55%
6.	HIGH SPEED DIESEL (HSD), LIGHT DIESEL OIL (LDO), FURNACE OIL (FO)	Ash Content	IS 1448 P: 4-2007 IP: 4-2012 D: 482-2012	0.001% to 0.18% m/m
		Carbon Residue (RaMOTOR GASOLINE (MS)bottom)	IS 1448 P: 8-2012 IP: 14-2012 D: 524-2012	0.01 to 30 %m
		MCR	D: 4530-2012	0.1% to 30 %m/m
7.	AVIATION TURBINE FUEL (JETA-1), HIGH FLASH JET FUEL (JP-5), AVIATION GASOLINE 100LL (AV GAS 100 LL), MOTOR GASOLINE (MS), SUPERIOR KEROSENE OIL	Cetane Index (Calculated)	IS 1448 P: 9-2013 IP: 380-2012 D: 4734-2012	40 to 65

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	(SKO), HIGH SPEED DIESEL (HSD), LIGHT DIESEL OIL (LDO), MINERAL TURPENTINE OIL (MTO), HIGH FLASH JET FUEL (JP 5)	Copper Strip Corrosion Test	IS 1448 P: 15-2004 IP: 154-2012 D: 130-2012	1a to 4c
8.	HIGH SPEED DIESEL (HSD), SUPERIOR KEROSENE OIL (SKO), LUBE	Colour (ASTM)	IP-196-2012 D:1500-2012	0.5 to 8.0
9.	SUPERIOR KEROSENE OIL (SKO), AVIATION TURBINE FUEL (JET A1), NAPHTHA	Colour-Saybolt	IS 1448 P: 14-2008 D: 156-2012	-16 to +30
10.	FURNACE OIL (FO), LIGHT DIESEL OIL (LDO), HIGH SPEED DIESEL (HSD), MOTOR GASOLINE (MS), NAPHTHA	Calorific Value (Calculated)	IS 1448 P: 7-2010 IS 1448 (Part 7): 2010	10300 cal/g to 11510 cal/g
11.	AVIATION GASOLINE 100LL (AV GAS 100LL), MOTOR GASOLINE (MS), NAPHTHA SUPERIOR KEROSENE OIL	Density by Hydrometer	IS 1448 P: 16-2007 IP: 160-2012 D: 1298-2012	0.700 g/ml to 0.750 g/ml 0.750 g/ml to 0.800 g/ml 0.800 g/ml to 0.900 g/ml 0.900 g/ml to 1.000 g/ml

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	(SKO) & AVIATION TURBINE FUEL (JETA-1) /HIGH FLASH JET FUEL (JP-5) SUPERIOR KEROSENE OIL (SKO),HIGH SPEED DIESEL (HSD),LIGHT DIESEL OIL (LDO), MINERAL TURPENTINE OIL (MTO) FURNACE OIL (FO), LOW SUPHUR HEAVY STOCK (LSHS)			
12.	AVIATION TURBINE FUEL (JETA-1) , HIGH FLASH JET FUEL (JP-5), AVIATION GASOLINE 100LL (AV GAS100LL) ,MOTOR GASOLINE (MS), NAPHTHA, SUPERIOR KEROSENE OIL (SKO), HIGH SPEED DIESEL (HSD), MINERAL TURPENTINE OIL (MTO)	Density by Density Meter (Auto)	IP: 365-2012 D: 4052-2012	0.0001 g/ml to 0.900 g/ml

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13.	AVIATION TURBINE FUEL (JETA-1),HIGH FLASH JET FUEL (JP-5), AVIATION GASOLINE 100LL (AV GAS 100 LL), MOTOR GASOLINE (MS), SUPERIOR KEROSENE OIL (SKO), NAHPHTHA, MINERAL TURPENTINE OIL (MTO) HIGH SPEED DIESEL (HSD), LOW SULPHUR HIGH FLASH DIESEL FUEL (LSHFHSD), HFHDS	Distillation (Auto / Manual)	IS 1448 P: 18-2006 IP: 123-2012 D: 86-2012 IS 1448 P: 18-2010 IP: 123-2012 D: 86-2012	Ambient to 300 °C Ambient to 400 °C
14.	AVIATION TURBINE FUEL (JETA-1),HIGH FLASH JET FUEL (JP-5), AVIATION GASOLINE 100 LL (AV GAS 100LL), MOTOR GASOLINE (MS), NAPHTHA, MINERAL TURPENTINE OIL (MTO)	Existent Gum	IS 1448 P: 29-2010 IP: 131-2012 D: 381-2012	0.1 mg/100ml to 7 mg/100ml

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15.	AVIATION TURBINE FUEL (JETA-1)	Electrical Conductivity	IS 1448 P: 148-2002 IP: 274-2012 D: 2624-2012	10 ps/m to 800 ps/m
		Naphthalene in ATF	IS 1448 P: 118-2007 D: 1840-2012	0.1% to 3 % W / V
		Water Detecting Capsule (WDC)	IS 1448 P: DGCA Approved method- IP: DGCA Approved method- D: DGCA Approved method-	10 ppm to 30 ppm
16.	AVIATION TURBINE FUEL (JETA-1), HIGH FLASH JET FUEL (JP-5), SUPERIOR KEROSENE OIL (SKO), HIGH SPEED DIESEL (HSD), MINERAL TURPENTINE OIL (MTO)	Flash Point (Abel)	IS 1448 P: 20-2008 IP: 170-2012	(-) ⁵ °C to 66.5° C
17.	LIGHT DIESEL OIL (LDO), HIGH SPEED DIESEL (HSD), FURNACE OIL (FO), LOW SUPHUR HEAVY STOCK (LSHS), MINERAL TURPENTINE OIL (MTO), HIGH FLASH JE FUEL (JP 5)	Flash Point (PMCC)	IS 1448 P: 21-2012 IP: 34-2012 D: 93-2012	50°C to 370 °C

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18.	AVIATION TURBINE FUEL (JETA-1), HIGH FLASH JET FUEL (JP-5) HIGH SPEED DIESEL (HSD), LOW SUPHUR HEAVY STOCK (LSHS), LIGHT DIESEL OIL (LDO), FURNACE OIL (FO), Lube Oil	Kinematic Viscosity	IS 1448 P: 25-2007 IP: 71-2012 D: 445-2012 IS 1448 P: 25-2007 D: 7042-2012	2.0 Cst to 9.0 Cst @ (- 20)°C 1.0 Cst to 5.0 Cst @ 40° C 2 Cst to 4.5 Cst @ 40°C 2.5 Cst to 15.7 Cst / 10 CST -180 Cst @ 50°C 5 to 150 @ 40 °C & 5 to 25 @ 100° C
19.	HIGH SPEED DIESEL (HSD), LSHF, LIGHT DIESEL OIL (LDO), FURNACE OIL (FO), LOW SUPHUR HEAVY STOCK (LSHS)	Pour Point	IS 1448 P: 10-2013 IP: 15-2012 D: 97-2012	-18 °C to 45 °C
20.	MOTOR GASOLINE (MS)	Research Octane Number (RON)	IS 1448 P: 27-2013 D: 2699-2012	70 to 100
21.	HIGH SPEED DIESEL (HSD), LSHF, LIGHT DIESEL OIL (LDO), FURNACE OIL (FO)	Sediments by Extraction	IS 1448 P: 30-2013 IP: 53-2012 D: 473-2012	0.1% to 1.0%
		Water Content by Dean & Starke	IS 1448 P: 40-2010 IP: 74-2012 D: 95-2012	0.05 % up to 10 % V / V
22.	AVIATION TURBINE FUEL (JETA-1), HIGH FLASH JET FUEL (JP-5), SUPERIOR KEROSENE OIL (SKO)	Smoke Point	IS 1448 P: 31-2008 IP: 57-2012 D: 1322-2012	15 mm to 30 mm

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23.	AVIATION TURBINE FUEL (JETA-1),HIGH FLASH JET FUEL (JP-5),SUPERIOR KEROSENE OIL (SKO), MOTOR GASOLINE (MS), HIGH SPEED DIESEL (HSD), LIGHT DIESEL OIL (LDO), FURNACE OIL (FO), MINERAL TURPENTINE OIL (MTO), NAPHTHA, LSHF	Sulphur By XRF	IS 1448 P: 34-2007 IP: 336-2012 D: 4294-2012	0.0001 % to 5.0 % m
24.	AVIATION TURBINE FUEL (JETA-1),HIGH FLASH JET FUEL (JP-5), AVIATION GASOLINE 100 LL (AVG 100LL), RUSSIAN TURBINE FUEL (K-60)	Specific Energy	IS 1448 P: 6-2007 D: 3338-2012	40 MJ/kg to 43 MJ/kg
		Water Reaction of Aviation Fuel	IS 1448 P: 42-2010 IP: 289-2012 D: 1094-2012	1 to 3
		Freezing Point	IS 1448 P: 11-2010 IP: 435-2012 D: 5972-2012	(-) 70°C to 0°C
25.	MOTOR GASOLINE (MS), AVIATION GASOLINE 100 LL (AVG 100LL)	Vapour Pressure Manual Method	IS 1448 P: 39-2012 D: 5191-2012	20 kpa to 70 kpa
26.	FURNACE OIL (FO)	Asphaltene	IP: 143-2012 D: 6560-2012	0.5 % to 30 %

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II.	LUBRICANTS			
1.	LUBE	Ash Content (Sulphated)	IS 1448 P: 4-2007 D: 874-2012	0.005% to 0.02 %m/m
		Flash Point (COC)	IS 1448 P: 69-2003 IP: 36-2012 D: 92-2012	50°C to 400°C

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