

Laboratory **Global Technical Services - (Central Oil Testing Laboratory)-COTL,
CISF Colony, P.O. Agucha, Dist. Bhilwara, Rajasthan**

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

Certificate Number **TC-7151**

Page 1 of 2

Validity **13.04.2018 to 12.04.2020**

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
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CHEMICAL TESTING

I.	LUBRICANTS			
1.	Oils & Greases Engine Oil, Hydraulic Oil, Gear Oil, Transmission Oil	Viscosity at 40 °C	ASTM D 445	2 cSt to 460 cSt
		Viscosity at 100 °C	ASTM D 445	5 cSt to 50 cSt
		Viscosity Index	ASTM D 2270	80 to 180
		Flash Point Open Cup	ASTM D 92	30 °C to 400 °C
		TAN	ASTM D 974	0.1 mg KOH/gm to 5 mg KOH/gm
		Water Content	ASTM D 95	0 to 25 %
		Water Content	ASTM-1744	0 to 1000 mg/l
		Elemental Analysis	ASTM D 5185	
		Alumunium		6 mg/kg to 40 mg/kg
		Barium		0.5 mg/kg to 4 mg/kg
		Boron		4 mg/kg to 30 mg/kg
		Calcium		40 mg/kg to 9000 mg/kg
		Chromium		1 mg/kg to 40 mg/kg
		Copper		2 mg/kg to 160 mg/kg
		Iron		2 mg/kg to 140 mg/kg
		Lead		10 mg/kg to 160 mg/kg
		Magnesium		5 mg/kg to 1700 mg/kg
		Manganees		5 mg/kg to 700 mg/kg
		Molybdenum		5 mg/kg to 200 mg/kg
		Nickel		5 mg/kg to 40 mg/kg
		Phosphorus		10 mg/kg to 1000 mg/kg
		Potassium		40 mg/kg to 1200 mg/kg
		Silicon		8 mg/kg to 50 mg/kg
		Silver		0.5 mg/kg to 50 mg/kg
		Sodium		7 mg/kg to 70 mg/kg
		Sulfur		900 mg/kg to 6000 mg/kg
		Tin		10 mg/kg to 40 mg/kg

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Page 2 of 2

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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
		Titanium		5 mg/kg to 40 mg/kg
		Vanadium		1 mg/kg to 50 mg/kg
		Zinc		60 mg/kg to 1600 mg/kg
II.	PETROLEUM AND PRODUCTS			
1.	Petroleum Products (Diesel)	Density @ 15 °C	IS 1448 (Part 16)	0.800 g/ml to 0 .900 g/ml
		Distillation of Diesel	IS 1448 (Part 18)	0.5 % to 95 % 150 °C to 400 °C
		Sulfur	ASTM D 5185	1 mg/kg to 1000 mg/kg
		Corrosiveness to Copper Strip Test	IS 1448 (Part 15)	1 a to 4 c
		Carbon Residue by Ramsbottom	IS 1448 (Part 8)	0 to 2 % mass
		Cetane Index	ASTM 4737	40 to 200
		Water Content	ISO 12937	0.5 % to 25 %
		Viscosity at 40 °C	ASTM D 445 (Part 25)	2 cSt to 10 cSt