

Laboratory **B.R. Industrial Services, Transformer Oil Testing Laboratory- Permanent & Mobile Facilities, Chitvan, Plot No. 2 & 4, Road No. 5, Sector-11, New Panvel, Raigad, Maharashtra**

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

Certificate Number **TC-6697**

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Validity **03.01.2018 to 02.01.2020**

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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ELECTRICAL TESTING

AT LABORATORY				
I.	LIQUID DIELECTRIC MATERIAL			
1.	Transformer Oil	Break Down Voltage	IS 6792	0 to 75 kV
		Dielectric Dissipation Factor at 90 °C	IS 6262	0.0001 to 2.000
		Resistivity at 90 °C	IS 6103	1x10 ⁹ Ωcm to 1x10 ¹⁸ Ωcm
		Appearance	IS 335	Qualitative (Visual)
		Density at 29.5 °C	IS1448 (Part 16)	0.800 g/cm ³ to 0.900 g/cm ³
		Kinematic Viscosity at 27 °C	IS 1448(Part 25)	7 cSt to 28 cSt
		Inter Facial Tension	IS 6104	1 mN/m to 90 mN/m
		Flash Point	IS 1448 (Part 21)	27 °C to 180 °C
		Pour Point	IS 1448 (Part 10)	(-) 20 °C to (+) 49 °C
		Neutralization Value	IS 1448 (Part 2)	0.001 mg KOH/g to 2.0 mg KOH/g
		Water Content	IS 13567	4 mg/kg to 9999 mg/kg
		Sediment and Sludge	IS 1866:2000, Annex "A"	0.1 g to 125 g
		Dissolved Gas Analysis	IS 9434	
		Carbon Monoxide (CO)		25 µl/L to 1000000 µl/L
		Methane (CH ₄)		1 µl/L to 1000000 µl/L
		Carbon dioxide (CO ₂)		25 µl/L to 1000000 µl/L
	Ethylene (C ₂ H ₄)		1 µl/L to 1000000 µl/L	
	Ethane (C ₂ H ₆)		1 µl/L to 1000000 µl/L	
	Acetylene (C ₂ H ₂)		1 µl/L to 1000000 µl/L	
	Hydrogen (H ₂)		5 µl/L to 1000000 µl/L	

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ELECTRICAL TESTING

AT MOBILE LABORATORY				
I.	LIQUID DIELECTRIC MATERIAL			
1.	Transformer Oil	Break Down Voltage	IS 6792	0 to 75 kV
		Dielectric Dissipation Factor at 90 °C	IS 6262	0.0001 to 2.000
		Resistivity at 90 °C	IS 6103	1x10 ⁹ Ωcm to 1x10 ¹⁸ Ωcm
		Appearance	IS 335	Qualitative(Visual)
		Density at 29.5 °C	IS 1448 (Part 16)	0.800 g/cm ³ to 0.900 g/cm ³
		Inter Facial Tension	IS 6104	1 mN/m to 90 mN/m
		Flash Point	IS 1448 (Part 21)	27 °C to 180 °C
		Neutralization Value	IS 1448 (Part 2)	0.001 mg KOH/g to 2.0 mg KOH/g
		Water Content	IS 13567	4 mg/Kg to 9999 mg/kg
		Dissolved Gas Analysis	IS 9434	
		Carbon Monoxide (CO)		25 µl/L to 1000000 µl/L
		Methane (CH ₄)		1 µl/L to 1000000 µl/L
		Carbon dioxide (CO ₂)		25 µl/L to 1000000 µl/L
		Ethylene (C ₂ H ₄)		1 µl/L to 1000000 µl/L
		Ethane (C ₂ H ₆)		1 µl/L to 1000000 µl/L
	Acetylene (C ₂ H ₂)		1 µl/L to 1000000 µl/L	
	Hydrogen (H ₂)		5 µl/L to 1000000 µl/L	