

Laboratory	Insulating Oil Testing Laboratory (Powergrid Corporation Of India Limited), Village: Parulia, P.O.: Dhabani, Durgapur, West Bengal		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Electrical Testing	Issue Date	06.07.2014
Certificate Number	T-2279	Valid Until	05.07.2016
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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. LIQUID DIELECTRIC MATERIALS

1. Electrical Insulating Oil	Dissolved Gas Analysis	ASTM D 3612-2009/ IEC 60567-2011/ IS 9434-1992 (RA 2013)	0.1 µl/L to 10 ⁶ µl/L
	C ₂ H ₂		0.1 µl/L to 10 ⁶ µl/L
	C ₂ H ₄		1 µl/L to 10 ⁶ µl/L
	C ₂ H ₆		1 µl/L to 10 ⁶ µl/L
	CH ₄		1 µl/L to 10 ⁶ µl/L
	CO		1 µl/L to 10 ⁶ µl/L
	CO ₂		10 µl/L to 10 ⁶ µl/L
	H ₂		1 µl/L to 10 ⁶ µl/L
	O ₂		50µl/L to 10 ⁶ µl/L
	N ₂		250µl/L to 10 ⁶ µl/L
	Break Down Voltage	IEC 60156 (Edition 2: 1995)/ IS 6792-1992 A1:2006 + A2:2007 (RA 2013)	10 kV to 100 kV
	Water Content	IS 13567-1992 (RA 2013)/ ASTM D 1533:2012/ IEC 60814:1997	1 mg/kg to 1500 mg/kg

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	Electrical Insulating Oil	Inter Facial Tension @ 27°C	IS 6104-1971+A1: 1985 (RA 2011)	1 mN/m to 100 mN/m
		Flash Point	ASTM D 93-2013/ IS 1448 (Part-21)- 2012	40°C to 250°C
		Tan Delta	IS 6262-1971 (RA 2011)	0.00001 to 2.0
		Resistivity	IS 6103-1971 + A1: 1987 (RA 2011)	1 X 10 ⁹ to 10 ¹⁷ Ωcm
		Total Acidity	ASTM D 664-2011/ IS 1448 (Part -1/Sec.1): 2002 (RA 2007)	0.00001 to 1 mg of KOH/gm
		Density @ 29.5°C	ASTM D 4052-2011	0.0001 to 1.1 gm/cm ³
		Sludge Content	IS 1866-2000 + A1: 2006 (RA 2010)	0.001 to 1%
		Pour Point	ASTM D 5950-2012 & ASTM D 97-2012	Ambient to -100°C
		Kinematic Viscosity	ASTM D 7042-2012	1 cst to 100 cst

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