

Laboratory **Specialised Testing Laboratory, Power Grid Corporation of India Limited, 400/220 kV Sub-Station, Alwar Bye Pass Road, Post-Khijuriwas, Bhiwadi, District Alwar, Rajasthan**

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

Certificate Number **TC-7842 (in lieu of T-4175)**

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Validity **29.09.2018 to 28.09.2020**

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
<u>ELECTRICAL TESTING</u>				
I.	INSULATING MATERIALS & INSULATORS			
1.	Electrical Materials Liquid Dielectric Materials	Dielectric Strength Breakdown Voltage	IS 1866: 2017 IS 335:1993 (RA 2015) IS 12463:1988 (RA 2013) IS 6792:2017 IEC 60156:1995	Upto 100 kV _{ac}
		Water Content	IS 1866: 2017 IS 335:1993 (RA 2015) IS 12463:1988 (RA 2013) IS 13567:1992 (RA 2013) IEC 60814:1997	1 mg/kg to 2000 mg/kg
		Dielectric Dissipation Factor Tan Delta	IS 1866: 2017 IS 335:1993 (RA 2015) IS 12463:1988 (RA 2013) IS 6262:1971 (RA 2016) IEC 60247:2004	0 to 1
		Specific Resistance Resistivity	IS 1866: 2017 IS 335:1993 (RA 2015) IS 12463:1988 (RA 2013) IS 6103:1971 (RA 2016) IEC 60247:2004	10 ⁹ Ω-cm to 10 ¹⁵ Ω-cm
		Interfacial Tension	IS 1866: 2017 IS 335:1993 (RA 2015) IS 12463:1988 (RA 2013) IS 6104:1971 (RA 2016) ASTMD 971 12	Upto 100 mN/m
		Neutralization Value Total Acidity	IS 1866: 2017 IS 335:1993 (RA 2015) IS 12463:1988 (RA 2013) IS 1448:(Part 2):2007	Upto 3 mg KOH/gm

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			(RA 2013) IEC 62021 1:2003 IEC 62021 2:2007	
		Dissolved Gases - Hydrogen (H ₂) - Methane (CH ₄) - Ethylene (C ₂ H ₄) - Ethane (C ₂ H ₆) - Acetylene (C ₂ H ₂) - Carbon Monoxide (CO) - Carbon Dioxide (CO ₂) - Oxygen (O ₂) - Nitrogen (N ₂)	IEC 60567:2011 ASTMD 3612 02 (RA 2009)	5 µl/l to 20000 µl/l 1 µl/l to 20000 µl/l 1 µl/l to 20000 µl/l 1 µl/l to 20000 µl/l 1 µl/l to 20000 µl/l 25 µl/l to 25000 µl/l 25 µl/l to 50000 µl/l 500 µl/l to 50000 µl/l 2000 µl/l to 200000 µl/l
		Furans - 2 Furfuraldehyde (2 FAL) - 2acetyl furan (2 ACF) - 2-furfuryl alcohol (2 FOL) - 5-methyl-2-furfural (5 MEF) - 5-hydroxymethyl-2-furfural (5 HMF)	IEC 61198:1993 ASTMD 5837 12	0.05 mg/kg to 25 mg/kg 0.05 mg/kg to 25 mg/kg 0.05 mg/kg to 25 mg/kg 0.05 mg/kg to 25 mg/kg 0.05 mg/kg to 25 mg/kg
		Flash Point	ASTMD 93 13 ISO 2719:2002	40 °C to 210 °C
		Carbon Type Analysis	IS 13155:1991 (RA 2016)	Ca: 0 to 30% Cp: 0 to 80% Cn: 0 to 80%
		Inhibitor Content	ASTMD 2668 07 (RA 2013)	0 to 1%