

Laboratory	Savita Oil Technologies Limited, Survey No. 140/1, Kuvapada, Silli, P.O. Kilvani, Silvassa, Dadra & Nagar Haveli		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Electrical Testing	Issue Date	11.09.2015
Certificate Number	T-2580	Valid Until	10.09.2017
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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
I.	ELECTRICAL MATERIALS – LIQUID DIE ELECTRIC MATERIALS			
1.	Transformer Oil	Appearance	IS 335: 1993 (RA 2010)	Qualitative
		Density at 29.5 °C Density at 20 °C	IS 1448 (Part 16): 1990 (RA 2007) ISO 3675: 1998	0.800 gm/cm ³ to 0.900 gm/cm ³
		Kinematic Viscosity at 27 °C Viscosity at 40 °C Viscosity at (-) 30 °C Viscosity at 100 °C	IS 1448 (Part 25): 1976 (RA 2007) ISO 3104: 1994 ISO 3104: 1994 ISO 3104: 1994	5 cSt to 30 cSt 5 cSt to 20 cSt 200 cSt to 2000 cSt 0 to 5 cSt
		Interfacial tension at 27 °C Interfacial tension Interfacial tension	IS 6104: 1971 (RA 2006) EN 14210: 2004 ISO 6295	0 to 0.09 N/m, 40 mN/m, 40 mN/m,
		Flash Point, PMCC, °C Flash Point	IS 1448 (Part 21): 1992 (RA 2007) ISO 2719: 1988	90 °C to 370 °C
		Pour Point	IS 1448 (Part 10): 1970 (RA 2008) ISO 3016: 1995	20 °C to (-) 50 °C
		Neutralisation Value Acidity	IS 1448 (Part 2): 2007 (RA 2008) IEC 62021-2: 2007 IEC 62021-1: 2003	0 to 10 mg KOH/gm
		Corrosive sulphur	IS 335: 1993 (RA 2010) Annexure B DIN 51353: 1985 ASTM D 1275B: 2003 IEC 62535: 2008	Qualitative (Corrosive / Non Corrosive)
		Electric strength (Break Down Voltage)	IS 6792: 1992 (RA 2008) IEC 60156: 1995	0 to 100 kV

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	Transformer Oil	Di - electric dissipation factor (tan delta) at 90°C	IS 6262: 1971 (RA 2006) IEC 60247: 2004	0 to 1.000
		Specific resistance (Resistivity) at 27 °C & 90 °C, ohm- cm	IS 6103: 1971 (RA 2006) IEC 60247: 2004	10 ⁶ Ωcm to 10 ¹⁵ Ωcm
		Oxidation stability	IS 335: 1993 Annexure C IS 12422: 1988 IEC 61125: 2004-04 Method C	
		Neutralisation Value	IS 335: 1993 Annexure C IEC 61125: 1992 1.9.4	0 to 10 mg KOH/gm
		Total sludge, % by wt	IS 335: 1993 Annexure C IEC 61125: 1992 1.9.1	0 to 10 %
		Dielectric Dessipation Factor at 90 °C	IEC 61125 1.9.6 Amd. 1 (2004) + IEC 60247	0 to 1.000
		Oxidation stability of Inhibited Mineral Insulating Oil by rotating bomb test	ASTM D 2112 (e): 2001	170 min to 600 min
		Ageing characteristics after accelerated Ageing (open beaker method with copper catalyst)	IS 12177: 1987 (RA 2008)	
		Specific resistance , at 27 °C & 90 °C, Ω cm	IS 6103: 1971 (RA 2006)	10 ⁶ Ωcm to 10 ¹⁵ Ωcm

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	Transformer Oil	Di - electric dissipation factor (tan delta) at 90 °C	IS 6262: 1971 (RA 2006)	0 to 1.000
		Total acidity	IS 1448 (Part 2): 1967 (RA 2003)	0 to 10 mg KOH/gm
		Total sludge	IS 12177 Annexure A	0 to 10 %
		Presence of oxidation inhibitor	IS 13631: 1993 (RA 2008) IEC 60666: 2010	0.01 % to 0.9 %
		Water content	IS 13567: 1992 (RA 2008) IEC 60814: 1997	0.1 mg/kg to 1000 mg/kg
		Method of Test for Carbon Type Analysis of Mineral Oils by Infra-Red	IS 13155: 1991 (RA 2006) IEC 60590: 1977	CA-0 to 15 % CP-20 % to 80 % CN-20 % to 60 %
		PCA Content	BS 2000 (Part 346): 2003	0 to 10 %
		PCB Content	ASTM D 4059: 2003 IEC 61619: 1997	0 to 100 mg/kg

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