

<b>Laboratory</b>	<b>Electrical Research and Development Association, Plot No. 1410, HSIIDC Industrial Estate, Rai, Sonapat, Haryana</b>		
<b>Accreditation Standard</b>	<b>ISO/IEC 17025: 2005</b>		
<b>Discipline</b>	<b>Electrical Testing</b>	<b>Issue Date</b>	<b>24.05.2015</b>
<b>Certificate Number</b>	<b>T-3420</b>	<b>Valid Until</b>	<b>23.05.2017</b>
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<b>S.No.</b>	<b>Product / Material of Test</b>	<b>Specific Test Performed</b>	<b>Test Method Specification against which tests are performed</b>	<b>Range of Testing / limits of Detection</b>
<b>I</b>	<b>ELECTRICAL MATERIALS-LIQUID DIELECTRIC MATERIALS</b>			
<b>1.</b>	<b>Transformer Oil</b>	Electric Strength	IS 6792: 1992 Amd. 1 & 2 IS 1866: 2000 Amd. 1	1 kV to 100 kV AC/ (±)1 kV
		Dielectric Dissipation Factor	IS 6262: 1971 IS 1866: 2000 Amd. 1	0.2 x 10 <sup>-5</sup> to 999.8 x 10 <sup>-2</sup> / 0.0001
		Flash Point	IS 1448 (Part 21): 2012 IS 1866: 2000	Ambient to 370°C/2.0°C
		Neutralization Value	IS1448 (Part 2): 2007 IS 1866: 2000 Amd. 1	(0.0001 mg KOH to 10 mg KOH)/g of oil , 0.0001 mg of KOH/ 1g of Oil
		Interfacial Tension	IS 6104: 1971 Amd. 1 IS 1866: 2000 Amd. 1	1 mN/m to 90 mN/m, 1 mN/m
		Sediments & Sludge	IS 1866: 2000 Amd. 1	0.02 & above % by wt.
		Water Content	IS 13567: 1992 IS 1866: 2000 Amd. 1	1 mg/kg to 1200 mg/kg, 0.1 mg/kg
		Density	IS 1448 (Part 16): 1990 IS 1866: 2000 Amd. 1	800 kg/m <sup>3</sup> to 900 kg/m <sup>3</sup> , 2 kg/m <sup>3</sup>
		Specific Resistance (Resistivity)	IS 6103: 1971 Amd. 1 IS 1866: 2000 Amd. 1	1 x 10 <sup>9</sup> Ωcm to 10 <sup>15</sup> Ωcm, (±)3 %

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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
	<b>Transformer Oil</b>	Dissolved Gas Analysis	IS 9434: 1992, IEC 60567: 2005	Range:1 µl/l to 10 <sup>6</sup> µl/l 5 µl/l
		H <sub>2</sub>	IS 10593: 2006,	50 µl/l
		O <sub>2</sub>	IS 1866: 2000 Amd. 1	50 µl/l
		N <sub>2</sub>	IEC 60599: 1999	1 µl/l
		CH <sub>4</sub>		1 µl/l
		C <sub>2</sub> H <sub>4</sub>		1 µl/l
		C <sub>2</sub> H <sub>6</sub>		1 µl/l
		C <sub>2</sub> H <sub>2</sub>		1 µl/l
		C <sub>3</sub> H <sub>6</sub> + C <sub>3</sub> H <sub>8</sub>		1 µl/l
		CO <sub>2</sub>		25 µl/l
		CO		25 µl/l

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