

Laboratory **Excel Electrical Equipment Testing Laboratory, Koonamthai,  
Changampuzha Nagar P.O., Kochi, Kerala**

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

Certificate Number **TC-7256**

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Validity **18.05.2018 to 17.05.2020**

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**

I.	<b>ELECTRICAL MATERIALS – LIQUID DIELECTRIC MATERIALS</b>			
1.	<b>Mineral Insulating oil/Transformer oil</b>	Electric Strength (Break Down Voltage-BDV)	IS 6792	2 kV to 100 kV
		Dielectric Dissipation Factor (Tan $\delta$ )	IS:6262	0.001 to 10
		Specific Resistance (Resistivity)	IS 6103	10 <sup>9</sup> to 10 <sup>18</sup> $\Omega$ cm
		Neutralization value	IS 1448(P-2)	0.025 mg KOH/ g to 1 mg KOH/ g
		Water Content	IS 13567	5 $\mu$ g/g to 1000 $\mu$ g/g
		Inter Facial Tension	IS 6104	0.001 N/m to 0.06 N/m
		Density at 29.5 °C	IS 1448 (P-16)	0.8 g/cm <sup>3</sup> to 0.9 g/cm <sup>3</sup>
		Kinematic Viscosity at 27°C	IS 1448 (P-25)	5 cSt to 50 cSt
		Flash Point	IS1448(P-21)	100 °C to 200 °C
		SK Value	IS 335	0.1 ml to 10 ml
		Sediments & Sludge	IS1866 Ann A	0.1% to 2 %
		Dissolved Gas Analysis	IS 9434:1992, RA:2013 & IS 10593:2011	100 to 15000 $\mu$ l/l
		1.Hydrogen		1 $\mu$ l/l to 2500 $\mu$ l/l
		2.Hydrocarbons		1 $\mu$ l/l to 2500 $\mu$ l/l
		Methane		1 $\mu$ l/l to 2500 $\mu$ l/l
		Ethane		1 $\mu$ l/l to 2500 $\mu$ l/l
		Ethylene		1 $\mu$ l/l to 2500 $\mu$ l/l
		Acetylene		1 $\mu$ l/l to 2500 $\mu$ l/l

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		3.Oxides Carbon dioxide Carbon monoxide 4. Atmospheric gases Nitrogen Oxygen		1 µ/l to 10000 µ/l 1 µ/l to 1500 µ/l 100 µ/l to 800000 µ/l 100 µ/l to 200000 µ/l

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