



**National Accreditation Board for
Testing and Calibration Laboratories**
(A Constituent Board of Quality Council of India)



CERTIFICATE OF ACCREDITATION

GLOBAL ELECTRICAL LABORATORY

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2005

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

302, Sun Enclave, Manjalpur, Vadodara, Gujarat

in the field of

TESTING

Certificate Number TC-5546 (in lieu of T-4294)

Issue Date 24/04/2017

Valid Until 08/12/2018



This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.

(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Signed for and on behalf of NABL

N. Venkateswaran
Program Director

Anil Relia
Chief Executive Officer



National Accreditation Board for Testing and Calibration Laboratories

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SCOPE OF ACCREDITATION

Laboratory Global Electrical Laboratory, 302, Sun Enclave, Manjalpur, Vadodara, Gujarat

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-5546 (in lieu of T-4294) **Page 1 of 3**

Validity 24.04.2017 to 08.12.2018 **Last Amended on** 03.01.2018

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. ELECTRICAL MATERIALS- LIQUID DIELECTRIC				
1.	Insulating Oil (Transformer oil)	Appearance	IS 335:1993, Cl.9.1 t IS 1866:2000, Cl. 7.1 IS 12463:1988, Table 1.i IEC 60422:2013, Cl. 5.2	Qualitative
		Density	IS 1448 (P-16) : 2014 IS 335: 1993, Cl. 9.1 ii IS 1866: 2000, Cl. 7.11 IEC 60422-2013, Cl. 5.14	0.800 gm/cm ³ to 0.900 gm/cm ³
		Kinematic viscosity	IS 1448 (P-25) : 1976 IS 335: 1993, Cl. 9.1.iii IS 1866: 2000, Cl. 7.12 IS 12463:1988, Table 1,ii IEC 60422-2013, Cl. 5.15	1 cSt to 100 cSt
		Flash Point	IS 1448 (P-21): 2012 IS 335: 1993, Cl. 9.1.v IS 1866: 2000, Cl. 7.9 IS 12463:1988, Table 1,v IEC 60422-2013, Cl. 5.11	Ambient to 250°C
		Pour point	IS 1448 (P-10): 2012 IS 335: 1993, Cl. 9.1.vi IS 1866: 2000, Cl. 7.10 IS 12463:1988, Table 1,vi IEC 60422-2013, Cl. 5.13	Ambient to (-) 30°C
		Neutralisation Value	IEC 62021-2:2007 IS 1448 (P-2): 2007 IS 335: 1993, Cl. 9.1.vii IS 1866: 2000, Cl. 7.4 ISO 6619:1988 IS 12463:1988, Table 1,vii IEC 60422-2013, Cl. 5.5	0.001 mg KOH/g of oil to 10 mg KOH/g of oil/

Neeraj Verma
Convenor

N. Venkateswaran
Program Director



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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Water Content	IS 13567: 1992 IS 335: 1993, Cl. 9.1.xv IS 1866: 2000, Cl. 7.3 IS 12463:1988, Table 1,x IEC 60422-2013, Cl. 5.4	1 mg/kg (ppm) to 2000 mg/kg (ppm)
		Inter Facial Tension	IS 6104: 1971 IS 335: 1993, Cl. 9.1.iv IS 1866: 2000, Cl. 7.7 IS 12463:1988, Table 1,iv IEC 60422-2013, Cl. 5.9	1 mN/m to 90 mN/m
		Dielectric Dissipation Factor	IS 6262:1971 IS 335: 1993, Cl. 9.1.x IS 1866: 2000, Cl. 7.6.1 IS 12463:1988, Table 1,x IEC 60422-2013, Cl. 5.6	10 ⁻⁶ to 10
		Specific Resistance (Resistivity)	IS 6103: 1971 IS 335: 1993, Cl. 9.1.xi IS 1866: 2000, Cl. 7.6.2 IS 12463:1988, Table 1,xi IEC 60422-2013, Cl. 5.6	10 ⁹ Ω-cm to 10 ¹⁵ Ω-cm
		Electric strength (Break Down Voltage)	IS 6792: 1992 IS 335: 1993, Cl. 9.1ix IS 1866: 2000, Cl. 7.2 IS 12463:1988, Table 1,ix IEC 60422-2013, Cl. 5.3	Upto 100 kV
		Sediment and Sludge	IS 1866: 2000, Cl. 7.5 IS-335:1993 IEC 60422-2013, Cl. 5.8	0.001 % to 5%
		Dissolved Gas Analysis H ₂ , CH ₄ , C ₂ H ₄ , C ₂ H ₆ , C ₂ H ₂ , CO ₂ , CO	IS 9434: 1992 IS 10593: 2006 IS 1866: 2000 IEC 60599:1999 IEC 60567 :2005	1 µl/l to 10 ⁶ µl/l

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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Furan content	IS 15668:2006 ASTM D 5837-1999 IEC 61198-1993	0.01ppm to 50 ppm
		Degree of Polymerisation (DP)	IEC 60450-2004 ASTM D 4243-1999	10 to 2000

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