

### IPOL TRANSFORMER OILS

#### Description:

Transformer oil or insulating oil is usually a highly refined mineral oil that is stable and has excellent electrical insulating properties. These are used in oil filled transformer to insulate, suppress corona and arcing, and to serve as a coolant.

#### Salient Features:

- IPOL Transformer oils are marketed to meet different National and International specifications.
- IPOL Transformer oil is meeting IS 335-1993 specification.

#### Application:

- The selection of the IPOL Transformer Oils, with different specifications as mentioned above, is based on the recommendations of the Transformer manufacturer and the type of application desired by the user.
- In general they can be used in oil-filled transformers, some types of high voltage capacitors, fluorescent-lamp ballasts and a few type of high voltage switches, Circuit breaker etc.

#### Benefits:

- Helps cool the transformer.
- Serves as a part of the electrical insulation between internal live parts.
- Very stable at high temperature and high voltage.

## Product Data

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Sr. No.	Characteristics	Test Method	Specification	
			Minimum	Maximum
1	Appearance	A representative sample of the oil shall be examined in a 100-mm thick layer @27°C	The oil shall be clear and transparent and free from suspended matter or sediment	
2	Density @ 29.5°C g/m <sup>3</sup>	IS 1448 (P:16) 1977	-	0.89
3	Viscosity, Kinematic CST 27°C	IS 1448 (P:25) 1976	-	27
4	Flash Point Pensky-Marten (closed), °C	IS 1448 (P:21) 1970	140	
5	Pour Point, °C	IS 1448 (P:10) 1970	-	(-) 6
6	Interfacial Tension N/m @ 27°C	IS 6104-1971	0.04	-
7	Neutralization Value a) Total Acidity, mg KOH/gm b) Inorganic Acidity/alkalinity	IS 1448 (P:2) 1967		0.03 Nil
8	Corrosive Sulphur Copper Strip, 19hrs @ 140°C	Annex.- B	Non corrosive	
9	Electric strength (Breakdown voltage), KV (rms)	IS:6792-1972		
	(a) New ( unfiltered oil)		30	-
	(b) After filtration		60	-
10	Dielectric dissipation factor (tan Delta) @90°C	IS 6262-1971	-	0.002
11	Specific resistance (resistivity ohm-cm)	IS 6103-1971		
	a) At 90°C b) At 27°C		35 X 10 <sup>12</sup> 1500 X 10 <sup>12</sup>	-
12	Oxidation Stability	Annex - C		
	(a) Neutralization value, after oxidation for 164 hrs @ 100°C.mg KOH/gm		-	0.40
	(b) Total Sludge, after oxidation for 164 hrs @ 100°C. wt%		-	0.10

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Sr. No.	Characteristics	Test Method	Specification	
			Minimum	Maximum
13.	Accelerated ageing test (open beaker method with copper catalyst) 96 hrs @ 115°C	IS:12177-1987 Method A		
	a) Specific resistance (resistivity) ohm-cm@27°C	IS:6103-1971	2.5 X 10 <sup>12</sup>	-
	b) Specific resistance (resistivity) ohm-cm@90°C	IS:6103-1971	0.2 X 10 <sup>12</sup>	-
	c) Dielectric dissipation factor (tan Delta) @90°C	IS:6262-1971	-	0.20
	d) Total acidity, mg, KOH/gm	IS:1448 (P-2)-1967	-	0.05
	e) Total sludge value	Annex A of 12177	-	0.05
14.	Presence of Oxidation inhibitor	IS:13631-1992	The oil shall not contain antioxidant additives	
15.	Water Content, ppm	IS:13567-1992	-	50
16.	SK Value % WV.	IS:335-Annex D	-	4

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