

Divyol

Transformer Oil



DIVYOL® TRANSFORMER OIL AS PER IS-335:1993 & INHIBITED TRANSFORMER OIL AS PER IS-12463:1998

Sr. No.	Description of Test	Test Method	Typical Values as per IS-335/1993	Typical Values as per IS-12463/RDSO
1.	Appearance	Visual	Bright & Clear	Bright & Clear
2.	Colour (ASTM / Visual)	ASTM	< 0.5	< 0.5
3.	Density @ 29.5 °C gm/cm ³	IS:1448, P-16	0.810 - 0.850	0.820 to 0.880
4.	Flash Point (PMCC)	IS:1448, P-21	> 150 °C	140 °C Min.
5.	Pour Point	IS:1448, P-10	< - 6 °C	< - 6 °C
6.	Kin. Viscosity @ 27 °C	IS:1448, P-25	15 - 25 CST.	15 - 25 CST.
7.	I.F.T. at 27 °C (N/m.)	IS:6104	0.040 min.	0.040 N/M, min
8.	Neutralisation Value KOH/gm a) Total Acidity b) Inorganic Acidity	IS:1448, P-2	0.020 max. NIL	0.020 max. NIL
9.	Corrosive Sulphur @ 140 °C for 19 hrs.	IS:335 Annex.-B	Non-corrosive	Non-corrosive
10.	Water Content	IS:13567	30 ppm. max.	30 ppm. max.
11.	Electric Strength BDV (In KV.) a) New Un filtered Oil b) After Filtration	IS:6792	60 KV min. 70 KV min.	60 KV min. 70 KV min.
12.	Specific Resistance (Resistivity) a) at 90 °C b) at 27 °C	IS:6103	100 x 10 ¹² min. 2500 x 10 ¹² min.	100 x 10 ¹² min. 3000 x 10 ¹² min.
13.	Dielectric Dissipation Factor Tan Delta @ 90 °C	IS:6262	0.001 max.	0.001 max.
14.	Oxidation Stability @ 100 °C/ 164 hrs. a) Neutralisation Value Acidity (Mg.KOH/gm) b) Total Strige Sludge (% by wt.)	IS:335, Annex.-C	0.20 max 0.02% max	0.20 max 0.02% max
15.	Characteristics after accelerated Ageing Test @ 115 °C/ 96 hrs. a) Tan Delta @ 90 °C b) Resistivity @ 90 °C c) Resistivity @ 27 °C d) Acidity (Mg.KOH/gm) e) Total Sludge (% wt.)	IS:6262 IS:6103 IS:6103 IS:1448, P-2 IS:12177 Annex.	0.15 max 2.25 x 10 ¹² min. 10.0 x 10 ¹² min. 0.025 max 0.015 max	0.1 max 5.0 x 10 ¹² min. 25 x 10 ¹² min. 0.02 max 0.01 max
16.	Presence of Oxidation Inhibitor (% by weight)	IS:13631	Absent	0.30 max
17.	Oxidation Stability (Rotating bomb test) Minutes, Min.	Under preparation	N-A	200 min.
18.	S.K. Value	IS:335, Annex.-C	4 % max.	4 % max.



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The Healthy Bloodline of your Transformer

- Manufactured from Carefully selected **New Generation Right Base Oil** emphasizing **Product Purity** at every stage of refining
- Type Tested at Independent Laboratories of **ERDA/CPRI**
- Excellent efficiency of Cooling with appropriate **Low viscosity**
- **Longer Life** with better test results of Accelerated Aging, critically tested

SPECIFICATION OF DIVYOL TRANSFORMER OIL AS PER IEC: 296 I&II, BS: 148 & IEC: 60296

Sr. No.	Description of Test	Test Method	Typical Values (As per IEC: 296 Class I & II)	Typical Values (As per BS: 148 Class I)	Typical Values (As per IEC: 60296)
1.	Appearance	IEC: 296	Clear, Transparent & free from sediment	Clear, Transparent & free from sediment	Clear, Transparent & free from sediment
2.	Density @ 20 °C Kg/m ³	ISO: 3675 IEC: 12185	0.820 - 0.88	0.820 - 0.88	0.86 - 0.89
3.	Interfacial Tension at 25 °C, N/M	ISO: 6295	0.040 Min.	0.040 Min.	No Gen. Requirement
4.	Kinematic Viscosity, Max. mm ² /s.	ISO: 3104	16.0 / 11.0 @ 40°C 800 @ -15°C 1800 @ -30°C	16.0 @ 40°C 800 @ -15°C	12.0 @ 40°C 1800 @ -30°C
5.	Flash Point (PMCC) °C	ISO: 2719	145 / 135 min.	145 min.	135 min.
6.	Water Content Mg/Kg. (PPM)	IEC: 733/ BS: 6470 IEC: 60814	25 Max.	35 Max.	25 Max.
7.	Pour Point °C	ISO: 3016	< -30 / -46 Max.	< -30 Max.	< -40 Max.
8.	Electrical Strength (BDV) as delivered after treatment KV rms	IEC: 156/ BS: 5874 IEC: 60156	40 min.	40 min. 60 min.	40 min. 60 min.
9.	Specific Resistance, Min. 'Ω-cm (resistivity)	IEC: 247	150 @ 90°C 2500 @ 20°C	150 @ 90°C 2500 @ 20°C	150 @ 90°C 2500 @ 20°C
10.	Dielectric Dissipation Factor (tan delta) at 50 Hz, Max.	IEC: 247 BS: 5737 IEC: 60247	0.0003 @ 27°C 0.002 @ 90°C	- 0.002 @ 90°C	0.0003 @ 27°C 0.002 @ 90°C
11.	Neutralization Value (Total Acidity) Mg KOH/g	IEC: 296 / 60021-1 BS2000 P-1 D/N/51353	0.01 Max.	0.01 Max.	0.01 Max.
12.	Corrosive Sulphur	ISO: 5662	Non-corrosive	Non-corrosive	Non-corrosive
13.	Aromatic Content %	IEC: 590	8 % Max.	8 % Max.	8 % Max.
14.	Oxidation Stability for 164 hrs. @ 120 °C a) Neutralisation Value (Mg KOH/g) b) Total Sludge (by mass %) c) DDF @ 90 °C	IEC: 1125 Method -A	0.75 Max. 0.2 Max. -	0.75 Max. 0.3 Max. -	0.75 Max. 0.8 Max. 0.500
15.	Gassing Tendency at 50 Hz. after 120 minutes, Max. mm ² /minute	IEC: 628 A BS: 5797	No Gen. Requirement	+5	No Gen. Requirement
16.	Anti Oxidant	IEC : 60666	Not Detectable	Not Detectable	Not Detectable
17.	PCA Content %	BS-2000	-	-	3 Max
18.	PCB Content (mg/kg/gm)	IEC : 61619	Not Detectable	Not Detectable	Not Detectable
19.	Furfural Content	IEC : 61198	NIL	NIL	NIL

- **Better Insulation & lowered Temperature Rise** as a result of crucial Electrical Characteristics values Viz. Tand (Tan Delta) and Specific Resistance
- Corrosive Sulphur and Aromatic Contents are reduced with **Highly optimised Refining** assuring lower S. K. Value
- **Meet Extreme Climatic Conditions** with **Special Low Pour Point** International Grades of T. Oil offered from wide spectrum of "**Divyol**" Speciality Oils of Gandhar Oil refinery India Ltd.

What started off as a small venture with an oil refinery in Mumbai in 1993, is today a multi-product, multi-location, multi-billion group of companies in diverse activities such as oils & petroleum specialities, coals & mines, shipping & logistics, and infrastructure & projects.

Gandhar Oil Refinery India Ltd. has today established itself as one of the world's leading manufacturers of rubber process oils, industrial & automotive lubricants as well as greases, mineral oils, transformer oils, petroleum jelly, liquid paraffin and a variety of specialities for providing customized and international quality products under the brand name 'Divyol'.

Divyol range of products are widely used in diversified industries such as electrical and power generator, rubber (tyres & non-tyres), automobiles, general engineering, pharma, cosmetics, electrical & power generation, textiles, steel, etc.

Gandhar Oil Refinery India Ltd. is the flagship company of the group with two state-of-the-art plants, one at Taloja in Maharashtra and the other at Silvassa, bordering Gujarat. It has a combined production capacity of 150,000 MT per annum and most modern R&D Centre which not only keep a tab on the quality but are also credited for innovation and customised formulations. Gandhar products are made to international quality and approved by CPRI, ERDA, Six Sigma Compliance.

The key to Gandhar Oil's success has been 'consistent quality', batch after batch, and 'on-time' delivery... every time.

The Company's passion for quality and innovation has made **Divyol** the preferred choice among discerning customers.

