

Test Certificate For Uninhibited Transformer Oil (Shell)

Number :	Date: 1402.05.17	Batch No:	B.L. NO:
Test Method : IEC 60296			
<u>Property</u>	<u>Test method</u>	<u>Limits</u>	<u>RESULT</u>
1 – Function			
Viscosity at 40° C	ISO 3104	Max. 12 mm ² /s	11.45
Pour point	ISO 3016	Max. -40° C	-48
Water content	IEC 60814	Max.30 mg/kg ^a / 40 mg/kg ^b	15
Breakdown voltage	IEC 60156	Min. 30 kV / 70 kV ^c	63
Density at 20° C	ISO 3675 or ISO 12185	Max. 0,895 g/ml	0.881
DDFat 90 °C	IEC60247 or IEC 61620	Max. 0,005	0.0017
Interfacial tension	EN14210 or ASTM D971	---	min 41 mN/m
2 – Refining/stability			
Appearance	--	Clear, free from sediment and suspended matter	OK
Acidity	IEC 62021	Max. 0,01 mg KOH/g	0.008
Corrosive sulfur	DIN 51353	Not corrosive	Not corrosive
Antioxidant additive	IEC 60666	uninhibited oil: not detectable	Not detectable
3 – Performance			
Oxidation stability	IEC 61125(method C) Uninhibited oil: 164 h		
- Total acidity		Max. 1.2 mg KOH/g	0.81
- Sludge		Max. 0,8 %	0.48
DDFat 90 °C	IEC 60247	Max. 0,500	0.22
4 - Health, safety and environment (HSE)			
Flash point	ISO 2719	Min. 135°C	146
PCB content	IEC 61619	Not detectable	Not detectable

PREPARED BY :

APPROVED BY :