



ClearGuard LLC
The Next-Generation in Dielectric Oils



TransGuard PRO - Electrical Insulating Oil - Specification

Transguard PRO™ electrical insulating oil is a TVBI that is refined using Hydrodec's patented hydrogenation process to produce an inhibited oil product with a high resistance to oxidation that meets the most stringent industry standards for corrosive sulfur. Transguard PRO™ transformer oil meets or exceeds the performance requirements of IEC 60296 (2020) IEC Type B (uninhibited and inhibited standard grade oils).

Test Description	Test Method	Requirements for	Typical Values
1-FUNCTION			
Viscosity at 40°C	ISO 3104	≤ 12 mm ² /s	8.99
Viscosity at -30°C	IEC 61868	≤ 1800 mm ² /s	940
Pour Point	ISO 3016	≤ -40°C	-51
Water Content	IEC 60814	< 30 mg/kg	13
Dielectric Breakdown (as received)	IEC 60156	≥ 30 kV	86
Dielectric Breakdown (after filtering)	IEC 60156	≥ 70 kV	97
Density at 20°C	ISO 3675	≤ 0.895 g/mL	0.88
Dissipation Factor at 90°C	IEC 60247	≤ 0.005 absolute	0.0004

2-REFINING/STABILITY			
Appearance	IEC 60296	Clear & bright	Clear & bright
Acidity	IEC 62021-1	≤ 0.01 mg KOH/g	< 0.01
Interfacial Tension	ASTM D 971	>40 (mN/m)	49.0
Total Sulfur content	ISO 14596	No requirement (mg/kg)	155
Corrosive Sulfur	DIN 51353	Non-corrosive	Non-corrosive
Potentially corrosive sulfur	IEC 62535	Non-corrosive	Non-corrosive
DBDS	IEC 62697-1	Non-detectable (<5 mg/kg)	Non-detectable
Inhibitors	IEC 60666	0.33	
		(I) Inhibited: (0.08 – 0.40%)	
Metal passivator additives	IEC 60666	Non-detectable mg/kg	BTA: <1
Other additives			Irgamet 39: <1
2-Furfural & related compounds	IEC 61198	Non-detectable	Non-detectable
Stray Gassing	IEC 60296 Clause A.4		
Hydrogen ul/l	Non-Stray gassing (<50)		Non-Stray gassing (<50)
Methane ul/l	Non-Stray gassing (<50)		Non-Stray gassing (<50)
Ethane ul/l	Non-Stray gassing (<50)		Non-Stray gassing (<50)

Performance			
Oxidation Stability @ 120°C, 500 Hours	IEC 61125:2018 Method C		
Total Acidity, Mg KOH/g		1.2	0.08
Sludge, %		0.8	<0.01
DDF @90°C		0.5	0.021

Health, Safety and Environmental			
Flash Point, PMCC, °C	ISO 2719	135	137
PCA Content, %	IP 346	3	<3
PCB Content, mg/kg	IEC 61619	<2 Non detectable	<2