

# VOLTRO™ II ELECTRICAL INSULATING OIL



Voltro II meets or exceeds ASTM Type II and Doble Tops transformer oil requirements. Voltro II provides exceptional oxidation stability to help extend the life of a transformer with minimal maintenance.

## PRODUCT FEATURES

Voltro II is an inhibited insulating and cooling oil for power and distribution transformers and other equipment that requires extra oxidation protection.

An added oxidation inhibitor, 2,6-ditert-butyl-p-cresol (DBPC or BHT) minimizes sludge and acid. As a result, components can operate longer and at higher temperatures, extending the transformer's operating life.

## PARAFFINIC ADVANTAGES

Renkert Oil's Voltro II is a highly-refined mineral oil. It is severely hydro treated and inhibited providing a high flash point, and high oxidation stability characteristics. Voltro II has excellent oxidation stability and thermal properties.

Voltro II Electrical Insulating Oil:

- meets or surpasses ASTM D3487
- conforms to corrosive test ASTM D 3487 method B
- passes corrosive sulfur IEC 62535 CIGRE
- is certified PCB free
- is DBDS free
- is passivator free
- is metal deactivator free
- is silicone free
- is a stable, low moisture oil
- has a high flash point

## DISTRIBUTION

- Reliable US and global distribution
- Convenient delivery by ship, truck, rail, drums or flexi bags

## APPLICATIONS

- Power & distribution transformers
- Switchgear & circuit breakers
- Rectifiers

Contact us to request a sample or for additional details on Voltro II for your application. Renkert Oil's expert consultants are also happy to provide troubleshooting or problem solving assistance.

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# VOLTRO II ELECTRICAL INSULATING OIL SPECIFICATION

This electrical insulating oil is produced from a severely hydrotreated oil to meet the specification requirements defined in ASTM D 3487.

RENKERT OIL VOLTRO™	ASTM TEST METHOD	ASTM TYPE II SPEC		VOLTRO™ II TYPICALS
		Minimum	Maximum	
<b>Physical Properties</b>				
Viscosity @ 100 °C, cSt	ASTM D 445		3.0	2.31
Viscosity @ 40 °C, cSt	ASTM D 445		12.0	9.63
Pour Point, °C	ASTM D 97		-40.0	-60
Flash Point, COC, °C	ASTM D 92	145		156
Specific Gravity @ 15°C/15°C	ASTM D 1298		0.9100	0.889
Neutralization Number, mg KOH/gm	ASTM D 974		0.03	<0.01
Interfacial Tension @ 25 °C, dynes/cm	ASTM D 971	40		51
Karl Fischer Water, ppm	ASTM D 1533		35.0	15
Inhibitor Content, %	ASTM D 2668	0.15	0.30	0.22
<b>Electrical Properties</b>				
Dielectric Breakdown @ 60 Hz, VDE kV (1-mm) gap	ASTM D 1816	20		44
Dielectric Breakdown @ 60 Hz, VDE, kV (2.03-mm) gap	ASTM D 1816 (a)	35		56
Power Factor, % @ 25 °C	ASTM D 924		0.05	0.001
Power Factor, % @ 100 °C	ASTM D 924		0.30	0.038
Gassing Tendency, µL/min	ASTM D 2300		30	+22
<b>Chemical Properties</b>				
Oxidation Stability	ASTM D 2440			
72 hr: Sludge, % by mass			0.1	0.01
Total Acid Number, mg KOH/g			0.3	<0.01
164 hr: Sludge, % by mass			0.2	0.01
Total Acid Number, mg KOH/g			0.4	<0.01
RBOT, Oxidation Stability, mins	ASTM D 2112	195		280
Corrosive Sulfur	ASTM D 1275B	Non-corrosive		Pass
Corrosive Sulfur CIGRE	IEC 62535	Non-corrosive		Pass
Aniline Point, °C	ASTM D 611	63.0		74
PCB Content, ppm	ASTM D 4059	None detected		ND
Appearance		Clear / No Particulates		Clear