

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, derived from paraffinic crude. It is severely hydro treated and inhibited providing a high flash point, high viscosity index and high oxidation stability characteristics. Paraffinic oils have 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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Renkert Oil, LLC

+1 (800) 423 6457 • +1 (610) 901 0025

www.RenkertOil.com



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 | |
| Physical Properties | | | | |
| Viscosity @ 100 °C, cSt | ASTM D 445 | | 3.0 | 2.6 |
| Viscosity @ 40 °C, cSt | ASTM D 445 | | 12.0 | 10.4 |
| Pour Point, °C | ASTM D 97 | | -40.0 | -50 |
| Flash Point, COC, °C | ASTM D 92 | 145 | | 166 |
| Specific Gravity @ 15°C/15°C | ASTM D 1298 | | 0.9100 | 0.86 |
| Neutralization Number, mg KOH/gm | ASTM D 974 | | 0.03 | <.01 |
| Interfacial Tension @ 25 °C, dynes/cm | ASTM D 971 | 40 | | 51 |
| Karl Fischer Water, ppm | ASTM D 1533 | | 35.0 | 10 |
| Inhibitor Content, % | ASTM D 2668 | 0.15 | 0.30 | 0.19 |
| Electrical Properties | | | | |
| Dielectric Breakdown @ 60 Hz, VDE kV (1-mm) gap | ASTM D 1816 | 20 | | 28 |
| Dielectric Breakdown @ 60 Hz, VDE, kV (2.03-mm) gap | ASTM D 1816 (a) | 35 | | 53 |
| Power Factor, % @ 25 °C | ASTM D 924 | | 0.05 | 0.002 |
| Power Factor, % @ 100 °C | ASTM D 924 | | 0.30 | 0.04 |
| Gassing Tendency, µL/min | ASTM D 2300 | | 30 | 9 |
| Chemical Properties | | | | |
| Oxidation Stability | ASTM D 2440 | | | |
| 72 hr: Sludge, % by mass | | | 0.1 | <.01 |
| Total Acid Number, mg KOH/g | | | 0.3 | <.01 |
| 164 hr: Sludge, % by mass | | | 0.2 | <.01 |
| Total Acid Number, mg KOH/g | | | 0.4 | <.01 |
| RBOT, Oxidation Stability, mins | ASTM D 2112 | 195 | | 446 |
| Corrosive Sulfur | ASTM D 1275B | Non-corrosive | | Pass |
| Corrosive Sulfur CIGRE | IEC 62535 | Non-corrosive | | Pass |
| Aniline Point, °C | ASTM D 611 | 63.0 | | 90 |
| PCB Content, ppm | ASTM D 4059 | None detected | | ND |
| Appearance | | Clear / No Particulates | | Clear |