

HyVolt I

Electrical Insulating Oil Marketing Specification

This uninhibited, electrical insulating oil is produced from a severely hydrotreated naphthenic oil to meet the specification requirements defined in IEC 60296, ed. 4, 2012, general specifications.

| TEST DESCRIPTION | TEST METHOD | SPECIFICATIONS | | TYPICAL VALUES |
|---|--------------|----------------------|-------|----------------|
| | | MIN | MAX | |
| Function | | | | |
| Viscosity, mm ² /s at 40°C | ISO 3104 | | 12.0 | 9.6 |
| Viscosity, mm ² /s at -30°C | ISO 3104 | | 1800 | 1033 |
| Pour Point, °C | ASTM D5950 | | -40 | -61 |
| Water Content, mg/kg | IEC 60814 | | 30 | 7 |
| Breakdown Voltage, kV, Before Treatment, 2.5 mm | IEC 60156 | 30 | | 45 |
| Breakdown Voltage, kV, After Treatment, 2.5 mm | IEC 60156 | 70 | | 72 |
| Density at 20°C, g/ml | ISO 12185 | | 0.895 | 0.879 |
| DDF at 90°C | IEC 60247 | | 0.005 | 0.001 |
| | | | | |
| Refining/Stability | | | | |
| Appearance | IEC 60296 | PASS | | PASS |
| Acidity, mg KOH/g | IEC 62021-1 | | 0.01 | <0.01 |
| Interfacial Tension, mN/m | ASTM D971 | 40 | | 47 |
| Corrosive Sulfur | DIN 51353 | Noncorrosive | | Noncorrosive |
| Corrosive Sulfur | ASTM D1275 | Noncorrosive | | Noncorrosive |
| Potentially Corrosive Sulfur | IEC 62535 | Noncorrosive | | Noncorrosive |
| DBDS, mg/kg | IEC 62697-1 | Not detected (<5) | | Not detected |
| Inhibitors, % | IEC 60666 | Not detected (<0.01) | | Not detected |
| Metal Passivator Additives, mg/kg | IEC 60666 | Not detected (<5) | | Not detected |
| Other Additives | IEC 60296 | See ^a | | Not detected |
| Furfural Content, mg/kg | IEC 61198 | Not detected (<0.05) | | Not detected |
| | | | | |
| Performance | | | | |
| Oxidation Stability at 120°C, 164 hours | IEC 61125, C | | | |
| Total Acidity, mg KOH/g | | | 1.2 | 0.6 |
| Sludge, % | | | 0.8 | 0.2 |
| DDF at 90°C | | | 0.500 | 0.037 |
| | | | | |
| Health, Safety and Environment | | | | |
| Flash Point, PMCC, °C | ISO 2719 | 135 | | 143 |
| PCA Content, % | IP 346 | | 3 | <3 |
| PCB Content, mg/kg | IEC 61619 | Not detected (<2) | | Not detected |

HyVolt I is a product of Ergon Refining, Inc.

^a As per IEC 60296, ed. 4, 2012, this product contains no undeclared additives.

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