

HyVolt II

Electrical Insulating Oil Marketing Specification

This electrical insulating oil is produced from a severely hydrotreated naphthenic oil to meet the specification requirements defined in ASTM D3487. HyVolt products have very low pour points and excellent oxidation stability.

TEST DESCRIPTION	TEST METHOD	SPECIFICATIONS		TYPICAL VALUES
		MIN	MAX	
Physical Properties				
Viscosity, cSt at 100°C	ASTM D445		3.0	2.4
Viscosity, cSt at 40°C	ASTM D445		12.0	9.4
Viscosity, cSt at 0°C	ASTM D445		76.0	63.7
Specific Gravity, 15°C/15°C	ASTM D4052		0.9100	0.8841
Flash Point, COC, °C	ASTM D92	145		155
Color, ASTM	ASTM D1500		0.5	L0.5
Pour Point, °C	ASTM D5950		-40	-63
Aniline Point, °C	ASTM D611	63		77
Interfacial Tension, 25°C, dynes/cm	ASTM D971	40		48
Visual Examination, 25°C	ASTM D1524	Clear & Bright		Clear & Bright
Electrical Properties				
Dielectric Breakdown at 60 Hz, Disk electrodes, kV	ASTM D877	30		42
Dielectric Breakdown at 60 Hz, VDE, kV (1.0-mm) gap	ASTM D1816	20		25
Dielectric Breakdown at 60 Hz, VDE, kV (2.0-mm) gap	ASTM D1816	35		49
Impulse Breakdown Voltage, kV at 25°C	ASTM D3300	145		>300
Power Factor at 60 Hz, 25°C, %	ASTM D924		0.05	0.011
Power Factor at 60 Hz, 100°C, %	ASTM D924		0.30	0.032
Gassing Tendency, µL/min	ASTM D2300		30	16
Chemical Properties				
Oxidation Stability, 110°C	ASTM D2440			
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
Oxidation Stability (Pressure Vessel), minutes	ASTM D2112	195		267
Oxidation Inhibitor Content, wt%	ASTM D2668	0.15	0.30	0.27
Corrosive Sulfur	ASTM D1275	Noncorrosive		Noncorrosive
Water Content, ppm	ASTM D1533		35	13
Neutralization Number, mg KOH/g	ASTM D974		0.03	<0.01
PCB Content, ppm	ASTM D4059	Not Detected		Not Detected
Furanic Compounds, µg/L	ASTM D5837		25	2
Health and Safety Properties (not an ASTM D3487 requirement)				
Polycyclic Aromatic Compounds, wt%	IP 346		3	<3
Modified Ames Assay, MI	ASTM E1687		1	<1
FDA Regulation	21 CFR 178.3620 (C)	PASS		PASS