

HyVolt NE

Bio-Based Dielectric Fluid Marketing Specification

HyVolt NE is a renewable and readily biodegradable natural vegetable ester fluid with high fire point developed for use as a dielectric and cooling medium in new and existing power and distribution electrical apparatuses such as transformers and other equipment.

TEST DESCRIPTION	TEST METHODS		SPECIFICATIONS		TYPICAL VALUES
	IEC/ISO	ASTM	IEC 62770	ASTM D6871	
Physical Properties					
Viscosity, cSt at 100°C	ISO 3104	ASTM D445	15 Max	15 Max	7.6-8.3
Viscosity, cSt at 40°C	ISO 3104	ASTM D445	50 Max	50 Max	31-34
Viscosity, cSt at 0°C	ISO 3104	ASTM D445		500 Max	187-190
Specific Gravity, 15°C/15°C		ASTM D4052		0.96 Max	0.92
Density at 20°C, kg/dm ³	ISO 3675/ISO 12185		1 Max		0.92
Flash Point, °C		ASTM D92		275 Min	320-330
Color, ASTM		ASTM D6045		1 Max	0.5
Pour Point, °C	ISO 3016	ASTM D5950	-10 Max	-10 Max	-18 to -21
Visual Examination, 25°C	IEC 62270	ASTM D1524	Clear & Bright		Clear & Bright
Fire Point, °C	ISO 2592	ASTM D92	300 Min	300 Min	350-360
Biodegradation	OECD 301B	OECD 301B	Readily Biodegradable		Readily Biodegradable
Electrical Properties					
Dielectric Breakdown at 60 Hz, Disk Electrodes, kV		ASTM D877		30 Min	>45
Dielectric Breakdown at 60 Hz, VDE, kV (1.0-mm) gap		ASTM D1816		20 Min	>25
Dielectric Breakdown at 60 Hz, VDE, kV (2.0-mm) gap		ASTM D1816		35 Min	>50
Dielectric Breakdown, kV (2.5-mm) gap	IEC 60156		35 Min		>55
Impulse Breakdown Voltage, kV at 25°C		ASTM D3300		130 Min	140
Power Factor at 60 Hz, 25°C, %		ASTM D924		0.2 Max	0.010-0.15
Dissipation Factor, tan delta at 90°C	IEC 60247		0.05 Max		0.01-0.03
Power Factor at 60 Hz, 100°C, %		ASTM D924		4 Max	1.00-3.85
Gassing Tendency, µL/min		ASTM D2300		0 Max	<-65
Chemical Properties					
Corrosive Sulfur	IEC 62535	ASTM D1275	Noncorrosive	Noncorrosive	Noncorrosive
Water Content, ppm	IEC 60814	ASTM D1533	200 Max	200 Max	4-50
Neutralization Number, mg KOH/g	IEC 62021-3	ASTM D974	0.06 Max	0.06 Max	0.01-0.05
PCB Content, ppm		ASTM D4059		Not Detected	Not Detected
DBDS	IEC 62697-1		Not Detected		Not Detected
Total Additives	IEC 60666		5% Weight Fraction Max		<2%
Oxidation Stability	IEC 61125/IEC 62770				
Total Acidity	IEC 61125		0.6 Max		0.1-0.3
Viscosity at 40°C	ISO 3104		30% Max Increase		15%-21% Increase
DDF (tan delta) at 90°C	IEC 60247		0.5 Max		0.1