

HyVolt SE

Synthetic Ester Dielectric Fluid Marketing Specification

HyVolt SE is a high-performance synthetic ester fluid developed for use as a dielectric and cooling medium in new and existing power and distribution electrical apparatuses such as transformers and other equipment. HyVolt SE is a biodegradable high fire point fluid exceeding the requirements defined in IEC 61099 and ASTM D8240 standards.

TEST DESCRIPTION	TEST METHODS		SPECIFICATIONS		TYPICAL VALUES
Physical Properties	IEC 61099	ASTM D8240	MIN	MAX	
Viscosity, cSt at 100°C		ASTM D445		10	5.4
Viscosity, cSt at 40°C	ISO 3104	ASTM D445		35	28.8
Viscosity, cSt at -20°C	ISO 3104	ASTM D445		3000	1376
Density at 20°C, kg/dm ³	ISO 12185/ ISO 3675			1	0.97
Flash Point, °C	ISO 2719		250		258
Flash Point, °C		ASTM D92	250		280
Fire Point, °C	ISO 2592	ASTM D92	300		314
Color	ISO 2211	ASTM D2129		200 Hazen	33
Pour Point, °C	ISO 3016	ASTM D5950		-45	-56
Appearance	Visual	ASTM D1524	Clear & Bright		Clear & Bright
Biodegradability	OECD 301	OECD 301	Biodegradable		Biodegradable
Crystallization	IEC 61099 (2010 Annex A)		No Crystals		No Crystals
Specific Gravity, 15°C/15°C		ASTM D1298		1	0.97
Electrical Properties					
Dielectric Breakdown at 60 Hz, kV	IEC 60156		45		72
Power Factor at 50 Hz, 90°C	IEC 60247			0.03	0.007
Power Factor at 60 Hz, 25°C, %		ASTM D924		0.10	0.02
Power Factor at 60 Hz, 100°C, %		ASTM D924		3.00	1.5
DC Resistivity at 90°C, GΩ.m	IEC 60247		2		24
Dielectric Breakdown at 60 Hz, VDE, kV, 1.0 mm gap		ASTM D1816	20		28
Dielectric Breakdown at 60 Hz, VDE, kV, 2.0 mm gap		ASTM D1816	35		54
Impulse Breakdown Voltage, kV @ 25°C		ASTM D3300	110		142
Chemical Properties					
Water Content, ppm	IEC 60814	ASTM D1533		200	52
Neutralization Number, mg KOH/g	IEC 62021-1/ IEC 62021-2	ASTM D974		0.03	0.01
Oxidation Stability at 120°C, 164 hours	IEC 61125, C				
Total Acid Number, mg KOH/g				0.30	0.06
Sludge, %				0.01	0.00
*Oxidation Stability at 120°C, 500 hours	IEC 61125, C				
Total Acid Number, mg KOH/g					0.07
Sludge, %					0.00
Corrosive Sulfur		ASTM D1275	Noncorrosive		Noncorrosive
PCB Content, mg/kg		ASTM D4059	Not Detected		Not Detected

*As per IEC 61099, ed.2, 2010, this is an optional extra test. There is no requirement in the standard.
July 28, 2025