Petrochem
SUPER INTELLIGENT LUBRICANTS

TECHNICAL DATA

Rev.10/26

SI-DIELECTRIC 30

SYNTHETIC ESTER TRANSFORMER INSULATING FLUID

SI-DIELECTRIC 30 is a high-performance dielectric insulating fluid formulated with advanced synthetic polyolester base oil technology for use in electrical power transformers. Designed as an alternative to conventional mineral-oil-based and silicone dielectric fluids, **SI-DELECTRIC 30** combines electrical insulation performance, thermal stability, and fire-resistant characteristics to support reliable transformer operation in demanding power distribution environments, including data centers and other mission-critical facilities.

Engineered for use in sealed and breathing-type transformers, **SI-DIELECTRIC 30** is suitable for indoor, outdoor, and underground installations, subject to transformer manufacturer specifications and application requirements. Its high fire point makes it a candidate for installations where reduced fire risk is an important design consideration, while its biodegradable synthetic ester chemistry offers an environmental benefit in applications where fluid leakage may present a concern.

Formulated from high-purity synthetic polyolesters and a specialized additive package, **SI-DIELECTRIC 30** is designed to support fluid stability and long-term transformer performance. Compared with conventional mineral insulating oils, synthetic ester fluids generally offer greater water tolerance and enhanced compatibility with cellulose-based transformer insulation, helping support the performance and service life of the transformer insulation system.

Recommended applications requiring compliance with the following specifications:

- UBA rated as non-hazardous to water
- UL standard EOUV: Classed 4 to 5 less hazardous than Petroluem Oil in Respect to fire hazard according to UL 340
- FM 6933: Factory Mutual Approved as a Less Flammable Transformer Fluid
- IEC 61099: T1 Synthetic Ester Insulating Liquids
- OECD 301B Readily Biodegradable
- IEC 61039: K3 classification, Fire Point >300°C

PHYSICAL PROPERTIES:

Property	Test Method	Typical Value
Appearance, 16 hours at -25°C	Visual ISO 61099	Clear, No Crystals
Kinematic Viscosity at -20°C, cST	ASTM D7042 ISO 3104	1345
Kinematic Viscosity at 20°C, cST	ASTM D7042 ISO 3104	67
Kinematic Viscosity at 40°C, cST	ASTM D7042 ISO 3104	30
Kinematic Viscosity	ASTM D7042	5.1

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at 100°C, cST	ISO 3104	
Fire Point, °C (COC) (°F)	ASTM D92 ISO 2592	312°C (~594°F)
Flash Point, ºC (PMCC) (°F)	ASTM D93 ISO 2719	257°C (~495°F)
Pour Point	ASTM D97 ISO 3016	-53°C (~64°F)
Acid No., mg KOH/g	ASTM D974 IEC 61021	<0.1
Color	ISO 2211 HAZEN	<100
Density at 15°C	ASTM D1298 ISO 3675	0.967
Water Content, mg/kg	ASTM D6304 IEC 60814	<199

PERFORMANCE PROPETIES:

Property	Test Method	Typical Value
Oxidation Stability	IEC 61125, Method C	Pass
Dielectric Breakdown Voltage, KV (VDE electrode)	IEC 60156	>74
Dielectric Breakdown Voltage, KV (Disk electrodes)	ASTM D877	>56
D.C. resistivity at 90°C (GΩxm)	IEC 60247	>22
Dielectric dissipation factor, tan δ at 90 °C and 50 Hz	IEC 60247	>0.04
Heat of Combustion or Net Calorific Value, MJ/kg	ASTM D240	31.3



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