

STO-50 Silicone Transformer Oil / Dielectric Fluid

100% Polydimethylsiloxane...contains < 50ppm water content...High Dielectric Strength & High Flash Point



STO-50 is a 100% PDMS Silicone formulated for use in liquid filled transformers and for laboratory baths that require high dielectric strength and high thermal stability

STO-50 Silicone Transformer Oil is a 100% linear Polydimethylsiloxane fluid (CAS# 63148-62-9) with a viscosity of 50cSt (centistoke) @ 25°C. It is formulated specifically for use as a dielectric fluid and dielectric coolant in electrical transformers. Unlike conventional PDMS Silicone fluids, STO-50 is formulated to contain < 50ppm water content to ensure the highest degree of dielectric strength and stability.

STO-50 Silicone Transformer Oil is characterized by its high dielectric strength, wide service temperature range, high flash point, low vapor pressure, low viscosity change at extremely high and low temperatures, and inertness to virtually all substrates *.

STO-50 is recommended for service temperature of -40°C to 150°C (open system) and -40°C to 230°C (closed system).

It contains no additives (such as thermal stabilizers). Ultimately, STO-50 will prolong the service life of the transformer and reduce maintenance.

STO-50 is an environmentally safe replacement for PCB containing askarels as the dielectric coolant for liquid-filled transformers. Its high thermal stability makes it a good choice for

Features and Benefits

- High dielectric strength fluid
- Excellent dielectric coolant
- Wide Service Temperature Range
- High flash point > 300°C...minimal flammability and high temp stability
- Low Viscosity change, low volatility,
- High thermal oxidation resistance
- Self-extinguishing
- Chemically inert
- Low toxicity
- Environmentally superior alternative to PCB's as transformer fluid
- Longer service life than conventional transformer oils

IEC & ASTM Specifications:

STO-50 Silicone Transformer Oil meets both **International Electrotechnical Commission IEC 836** "Specifications for silicone liquid for electrical purposes" (Silicone Fluid Type T-1) and **ASTM D 4652** "Silicone Fluids for Electrical Insulation" specifications for repair or top-off of existing liquid-filled units. These standards cover both the physical and electrical properties of fluid suitable for dielectric applications.

STO-50 has a fire point exceeding the requirements of these documents and is within the IEC 1100 class with lowest heat of combustion. Silicone Transformer Oil presents a much lower fire hazard than other transformer fluids. It is difficult to ignite, but if ignited, it will produce less heat and smoke. It will virtually extinguish itself when external heat source is removed.

Typical Properties:

Parameter	Unit	Value
Appearance		Crystal clear fluid
Density @ 25°C	kg/dm ³	0.96
Viscosity @ 25°C	mm ² sec	50 (cSt)
Water content	ppm	50
Refractive Index		1.404

Electrical Properties:

Parameter	Unit	Value
Dielectric Breakdown voltage	KV	50
Permittivity @ 25°C, 50Hz		2.7
Dissipation factor @ 25°C, 50Hz		0.0001
Volume resistivity @ 25°C	ohm.cm	1.0 x 10 ¹⁴

Thermal Properties:

Flash point (open cup)		>300°C >572°F
Fire point (open cup)		>370°C >698°F
Specific heat	KJ/kg.K	1.51
Specific heat	cal/gm °C	3.7 x 10 ⁻⁴
Thermal conductivity	W (m.K)	0.151
Oxygen index	TDLOI	21.4
Coefficient of Expansion	cc/cc/°C	10.55 x 10 ⁻⁴

Applications:

- Liquid Filled Transformers
- Laboratory Baths that require high dielectric strength and high thermal stability
- Circulating Systems that require a low viscosity at high temp
- Heat Transfer Systems that require high dielectric properties
- Instruments, gauges, sensors and devices that require high dielectric strength and will be exposed to both high temperatures and high pressures

Pricing

1-gallon (3.6kg net wt.).....\$175.00 per gallon
4 x 1-gallons.....\$125.00 per gallon

5-gallon pail (18kg net wt.).....\$125.00 per gallon
4 x 5-gallon pail.....\$95.00 per gallon

F.O.B. Phila, PA USA

For More Info, Contact:

Clearco Products Co., Inc.

15 York Road
Willow Grove, PA 19090
U.S.A.

Tel: (215) 366-7860

Fax: (215) 366-7862

Email: info@clearcoproducts.com

Web: www.clearcoproducts.com

