STO-50 Silicone Transformer Oil

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

STO-50 Silicone Transformer Oil is a 100% linear Polydimethylsiloxane fluid (CAS# 63148-62-9) with a viscosity of 50cSt (centistoke) @ 25°C. STO-50 is formulated specifically for use as a dielectric fluid and dielectric coolant in electrical transformers. Unlike conventional polydimethylsiloxane 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 *. 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 askarel as the dielectric coolant for liquid-filled transformers. Its high thermal stability makes it a good choice for transformers that are located indoors or next to buildings where a thermally stable fluid is more critical.

Features and Benefits
- High dielectric strength fluid
- Excellent dielectric coolant
- 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 and bioaccumulation
- VOC Exempt
- Compatible with most existing transformer insulation systems
- Environmentally superior alternative to PCB’s as transformer fluid
- Longer service life than conventional transformer oils

I.EC & 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.

Applications:
Clearco STO-50 may be considered for use in all types of transformer applications, where safety, toxicity, and environmental hazards are of primary concern. Applications include power distribution transformers installed indoors or in close proximity to buildings, railroad and electrostatic precipitator transformers, pulse transformer, TV fly-back transformers, capacitors and many other high-reliability TV and radar circuit components. STO-50 fluid may also be considered for use in systems where heat transfer properties are as necessary as good dielectric behavior.

Packaging
5-gallon pail (18.9 liters) .................... 18kg / 40 lbs net wt.
55-gallon drum (208 liters) .............. 200kg / 440 lbs net wt.
F.O.B. Phila, PA USA

For More Info, Contact:
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Web: www.clearcoproducts.com
### Requirements of Silicone Type T-1 in IEC 836

<table>
<thead>
<tr>
<th>Property</th>
<th>Test method</th>
<th>Permissible value</th>
<th>Typical value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>8</td>
<td>Max 35</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>8</td>
<td>Clear</td>
<td>Clear, no suspended matter</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>9</td>
<td>0.995 to 0.970</td>
<td>0.96</td>
</tr>
<tr>
<td>Viscosity @ 25°C</td>
<td>10</td>
<td></td>
<td>50cSt</td>
</tr>
<tr>
<td>Flashpoint (close cup)</td>
<td>11</td>
<td>Min 240°C</td>
<td>260°C</td>
</tr>
<tr>
<td>Fire Point (open cup)</td>
<td>12</td>
<td>Min 330°C</td>
<td>370°C</td>
</tr>
<tr>
<td>Refractive Index</td>
<td>13</td>
<td>1.404 ±0.002</td>
<td>1.404</td>
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<tr>
<td>Pour Point, °C</td>
<td>15</td>
<td>Max -50°C</td>
<td>-55°C</td>
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<tr>
<td><strong>Chemical</strong></td>
<td></td>
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<tr>
<td>Water content, ppm</td>
<td>16</td>
<td>Max 50</td>
<td>&lt;50ppm</td>
</tr>
<tr>
<td>Neutralization value (mg KOH/g)</td>
<td>17</td>
<td>Max 0.02</td>
<td>0.008</td>
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<tr>
<td><strong>Electrical</strong></td>
<td></td>
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<tr>
<td>Breakdown voltage (kV)</td>
<td>19</td>
<td>Min 40</td>
<td>50</td>
</tr>
<tr>
<td>Dissipation factor (tg) @ 90°C, 50Hz</td>
<td>20</td>
<td>Max 0.001</td>
<td>0.0005</td>
</tr>
<tr>
<td>Permittivity @ 90°C</td>
<td>20</td>
<td>2.5 ±0.05</td>
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</tr>
<tr>
<td>d.c. resistivity @ 90°C (g ohm.m)</td>
<td>20</td>
<td>Min 100</td>
<td>1,000</td>
</tr>
</tbody>
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