SILITECH AG
Worbstrasse 173
CH-3073 Gümligen
+41 (0) 31 398 50 70
info@silitech.ch
www.silitech.ch

SILISIL Silicone Oil 5000 cSt for Cables & Insulation – Technical Datasheet

Description

SILISIL Silicone Oil 5000 cSt for Cables & Insulation is a high-purity, linear polydimethylsiloxane (PDMS) fluid with a nominal kinematic viscosity of 5000 mm²/s at 25 °C.

The product is specifically suited for electrical insulation and impregnation applications where flow requires high viscosity or damping properties, thermal stability, dielectric performance, and long-term reliability are required.
Its molecular structure provides excellent resistance to thermal ageing and oxidation, combined with stable dielectric properties across a wide temperature range, making it ideal for demanding cable and electrical system environments.

The product is PCB-free, halogen-free and compliant with REACH and RoHS regulations.

Key Benefits

- Excellent dielectric strength and insulation performance
- Very low dielectric losses (low dissipation factor)
- Outstanding thermal stability for continuous high-temperature operation
- High resistance to oxidation and ageing
- Stable viscosity over a wide temperature range
- Low pour point – suitable for low-temperature conditions
- Chemically inert and non-reactive with common cable materials
- Good shear stability under mechanical and thermal stress
- Hydrophobic – insoluble in water
- Compatible with aromatic, aliphatic, and chlorinated solvents

Typical Properties *(Not for specification use)*

Property	**Value**
Appearance	Crystal Clear liquid
Viscosity at 25°C	4500 - 5500 cSt
Specific Gravity at 25°C	0.970 g/cm³
Refractive Index at 25°C	1.404
Flash Point (Open Cup)	>300°C
Fire point	>350°C
Pour Point	–45°C
Water	< 50 ppm
Neutralisation value	0.01 mg KOH/g
Breakdown Voltage @ 20°C (IEC60156)	> 40 kV/2.5mm
Dissipation Factor (IEC60247 90°C/50Hz)	$< 1.0 \times 10^{-4}$
Permittivity (IEC60247 90°C/50Hz)	2.50 – 2.60
DC resistivity (IEC60247 90°C/50Hz)	1×10^{13} Ohm·cm

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Applications

- Electrical insulation fluid for high-voltage and specialty cables
- Impregnation fluid for cable insulation systems
- Filling and damping fluid in electrical and electromechanical components
- Dielectric medium for testing, development, and qualification of cable systems
- Thermally stable insulating fluid for environments with fluctuating temperatures

Processing & Use Guidelines

- Suitable for vacuum impregnation and filling processes
- Compatible with common polymeric insulation materials (compatibility to be verified by user)
- Can be blended with other silicone fluids to adjust viscosity if required
- Recommended to perform application-specific validation tests under real operating conditions

Storage & Handling

- Store in sealed original containers below 60°C
- Avoid eye contact. Refer to SDS for safety details

Disclaimer

The above information is based on current knowledge and experience. It is provided for guidance only and does not constitute a legally binding warranty. Compatibility and suitability for the intended use must be verified by the user through preliminary tests.