ISOL – LK – SIL 100T Dimethyl Silicone Fluids  
TECHNICAL GRADE

INTRODUCTION
ISOL offers a wide range of silicone fluids in various viscosities that have a combination of properties that give superior performance in a wide variety of applications.

APPLICATIONS
Silicone fluids have numerous applications in almost every industry:
- Cosmetics and Pharmaceuticals (Creams/lotions/haircare/Contraceptives)
- Polishes (High gloss for automobile and furniture)
- Release agent (Plastic/rubber/non-ferrous die casting)
- Liquid Springs and Shock Absorbers
- Heat Transfer
- Power Transmission
- Rust Prevention
- Hydraulic Fluids
- Dielectric Fluids
- Damping
- Water Repellency for aerated cement slabs/bricks
- Paint and Coating Additives
- Lubricants
- Textile Finishing
- Spinneret Cleaner

STORAGE & HANDLING
It is recommended that normal safety precautions (hand gloves & safety goggles) be taken while handling the product. The material should be stored in original containers in a cool place and protected from direct exposure to sunlight.

UNIQUE COMBINATION OF PROPERTIES
The unique chemical structure permits silicone fluids to perform in applications where other fluids are not suitable. Some of the outstanding properties of silicone fluids are:
1. LOW VISCOSITY / TEMPERATURE COEFFICIENT:
   They exhibit a smaller degree of change over a wider temperature range than petroleum oils (over 50 times more constant)
2. THERMAL STABILITY:
   Silicone fluids show excellent stability when exposed to high temperatures. They are stable from -57°C to 200°C for extended periods and can exceed this for short periods.
3. OXIDATION STABILITY:
   The oxidation stability of these fluids is excellent up to 200°C where sludging is eliminated that occurs with mineral oils above 150°C.
4. CHEMICAL INERTNESS:
   They are chemically inert to most common materials.
5. LOW FLAMMABILITY:
   Flash point is in the range of 250°C to 300°C and auto ignition temperature is ranging from 438°C to 460°C.
6. LOW SURFACE TENSION:
   Silicone fluids have unusually low surface tensions that provide easy and efficient spreading, high surface activity and low internal cohesive energies.
7. SHEAR STABILITY
   The shear stability of such fluids can be as much as twenty times that of quality petroleum oils.
8. DIELECTRIC PROPERTIES:
   Electrical grade silicone fluids offer excellent dielectric properties that are maintained for prolonged periods, even under adverse operating conditions.
9. NON-CORROSIVE:
   Silicone fluids contain no acid producing chemicals to cause staining or corrosion.
10. HIGH COMPRESSABILITY
    Silicone fluids are highly compressible and thus more suitable for hydraulic purposes in comparison to hydrocarbon systems.

DESCRIPTION

[Chemical structure of Polydimethylsiloxane]

[Diagram of Polydimethylsiloxane]

[Chemical structure image]
LK-SIL 100Ts are clear, white, inert and odourless dimethyl polysiloxane fluids. The actual viscosity is controlled within ± 5% of the desired viscosity. These fluids are manufactured in the viscosity range from 20 cps to 300000 cps. ISOL also has B.P. Grade Dimethicone in the viscosity range of 50 cps to 1000 cps. Intermediate viscosity grades are also available upon request.

In chemical structure Dimethyl silicone fluids are quite different from other fluids having a backbone of silicon-oxygen linkage. The advantage of this is a linkage much stronger than a typical carbon-carbon chain and is more resistant to attack by temperature extremes, oxidation, shear stresses and chemicals than other similar organic fluids and also show good dielectric properties. LK-SIL 100T Silicone fluids are soluble in hydrocarbon solvents, chlorinated hydrocarbon solvents and low molecular weight aromatic solvents. They have limited solubility in alcohols, ethers, acetone and glycols (Solubility here depending on viscosity).

**PACKING**

General packing is in 1000 kgs HDPE Totes and 200 kgs epoxy coated MS drums. Smaller quantities of 30 kg and 50 kg are available upon request in HDPE carboys.

**LIMITATIONS**

These products are neither tested nor represented as suitable for medical or pharmaceutical uses.

**SHELF LIFE**

24 months in the original container.

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**PRODUCT CHART**

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Colourless, Clear and Odourless Fluid</th>
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</thead>
<tbody>
<tr>
<td>Appearance, Clarity and Odour</td>
<td></td>
</tr>
<tr>
<td>Nominal Viscosity at 25°C (cps)</td>
<td>20</td>
</tr>
<tr>
<td>Volatile Weight loss for 20 min. at 200°C (%)</td>
<td>&lt;5</td>
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<tr>
<td>Acid Number</td>
<td>&lt;0.20</td>
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<tr>
<td>Specific Gravity at 25°C</td>
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<tr>
<td>Refractive Index at 25°C</td>
<td>1.405</td>
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<tr>
<td>Flash Point Open Cup (°C)</td>
<td>≥190</td>
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<tr>
<td>Surface Tension at 5°C (dynes/cm)</td>
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<tr>
<td>Thermal Expansion (cc/cc °C)</td>
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<tr>
<td>Viscosity Temperature Co-eff</td>
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<tr>
<td>Specific Heat (kcal/kg-m)</td>
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<tr>
<td>Dielectric Strength (kV/mm)</td>
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<tr>
<td>Dielectric Constant</td>
<td>2.7</td>
</tr>
</tbody>
</table>

1 Typical Values – Should not be considered as specifications.

**LIMITATIONS**

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The information herein is believed to be reliable, but it is the user's responsibility to determine suitability of use, since we cannot know conditions of use. We make no warranties and assume no liability concerning use of the information. Nothing herein should be taken as inducement to infringe any patent.

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