

# Polydimethylsiloxane Fluid (Dimethylsilicone Fluid)

# TSF451-1000

## PRODUCT DESCRIPTION

TSF451-1000 is a transparent dimethyl silicone fluid with nominal viscosity of 1000 centistokes (mm<sup>2</sup>/s) at 25°C. TSF451-1000 is a clear, inert, colorless, water-white, oily fluid. It has excellent wide temperature range stability that can be used from -50 to +180°C. TSF451-1000 also exhibits excellent non-metallic lubricating and release properties in wide temperature range.

## KEY PERFORMANCE PROPERTIES

- ◆ Wide temperature range service capability
- ◆ Low viscosity-temperature change
- ◆ Thermal stability
- ◆ Chemical inertness
- ◆ Low flammability
- ◆ Low surface tension
- ◆ Shear stability
- ◆ Non corrosive

## APPLICATION

- ◆ Mechanical; damping, heat transfer, rubber & plastic lubrication
- ◆ Chemical specialties; polishes, household cleaners
- ◆ Plastics; tires mold release, rubbers & plastics mold release, wire & cable manufacturing
- ◆ Antifoams; formulations of aqueous defoaming products
- ◆ Textiles; fiber & thread lubricants, softeners, modifiers
- ◆ Paint and ink additives; flow control, gloss

## TYPICAL PROPERTY DATA

PROPERTIES		TSF451-1000
Appearance		Colorless, Transparent
Viscosity (25°C)	mm <sup>2</sup> /s {cSt}	1,000 {1,000}
VTC*		0.60
Specific gravity (25°C)		0.971
Refractive index (n <sub>D</sub> <sup>25</sup> )		1.404
Pour point	°C	-50 max
Flash point	°C	320
Weight loss (150°C,24h)	%	0.3
Surface tension (25°C)	mN/m {dyne/cm}	21.1 {21.1}
Specific heat (100°C)	J/(kg·K)	1.55×10 <sup>3</sup>
Thermal conductivity	W/(m·K)	0.16
Coefficient of volume expansion (25-150°C)	1/K	9.4×10 <sup>-4</sup>

\*VTC (Viscosity Temperature Coefficient) = 1 – Viscosity at 98.9°C / Viscosity at 37.8°C

*Typical property data values should not be used as specifications. Assistance and specifications are available by contacting GE Toshiba Silicones Commercial Office.*

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## SOLUBILITY OF TSF451 IN VARIOUS SOLVENTS

SOLVENT	SOLUBILITY
Aliphatic hydrocarbons (hexane, heptane, naphtha)	Soluble
Aromatic hydrocarbons (toluene, xylene)	Soluble
Higher alcohol (octanol, lauryl alcohol)	Soluble
Higher ketones (methyl ethyl ketone etc.,)	Soluble
Ethers (ethyl ether, isopropyl ether)	Soluble
Lower alcohol (methanol, ethanol, isopropanol)	Insoluble
Higher hydrocarbons (waxes, fatty acids, lube oils)	Insoluble
Glycols (ethylene glycol, propylene glycol)	Insoluble
Water	Insoluble

## HANDLING AND SAFETY (AND STORAGE)

- ◆ Wear eye protection, protective gloves at all times when working with this product.
- ◆ Keep out of the reach of the children.
- ◆ Store the product in a dark, cool place after closing the lid tightly.

## PACKAGING

- ◆ 1kg can available in case of 10
- ◆ 18kg can available by the can
- ◆ 200kg drum

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### **FOR INDUSTRIAL USE ONLY**

*It is the responsibility of the user to determine the suitability of any GE Toshiba Silicones product for any intended application. NEVER USE ANY GE TOSHIBA SILICONES PRODUCT FOR IMPLANTATION OR INJECTION INTO THE HUMAN BODY. Specifications are available by contacting GE Toshiba Silicones. Typical property data values should not be used as specifications. Inasmuch as GE Toshiba Silicones Company, Ltd. has no control over the use to which others may put the material, it does not guarantee that the same results as those described herein will be obtained. Each user of the material should make his own tests to determine the suitability of the material for his own particular use. Statements concerning possible or suggested uses of the materials described herein are not to be construed as constituting a license under any GE Toshiba Silicones patent covering use or as recommendations for use of such materials in the infringement of any patent. Material Safety Data Sheets are available upon request from GE Toshiba Silicones. The contents of this catalog are subject to change without notice. No part of this data may be reproduced without the prior approval of GE Toshiba Silicones.*



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