



SF18-350

Food Grade Polydimethylsiloxane Fluid

PRODUCT DESCRIPTION

SF18 polydimethylsiloxane fluid is a clear, water-white, oily fluid. This polydimethylsiloxane fluid meets the requirements of the Federal Food, Drug and Cosmetic Act for use as a component of antifoam agents contributing no more than 10 ppm of the fluid to food.

KEY PERFORMANCE PROPERTIES

- Food Grade Fluid
- Low Viscosity-Temperature Change
- Wide Temperature Range
- Thermal Stability
- Oxidation Stability
- Chemical Inertness
- Low Flammability
- Low Surface Tension
- Shear Stability
- Thermal Conductivity
- Non-Corrosive

TYPICAL PRODUCT DATA

	SF18-350
Nominal Viscosity cstks @25C (77F)	350
Approximate Molecular Weight	13,700
Viscosity Temp Coefficient	0.60
Specific Gravity 25/25C(77/77F)	0.973
Refractive Index@ 25C(77F)	1.4030
Pour Point F ⁽¹⁾	-58
Flash-Point ⁽¹⁾ (Pensky-Martens Open Cup)	637
Surface Tension dynes/cm @25C(77F)	21.1
Thermal Expansion cc/cc/C, 0-150C(302F)	0.000925
Thermal Conductivity Btu/hr ft F (150)(2)	0.092
Maximum Volatility, % Wt Loss, 24 hrs at 150C (302F)	0.5
Specific Heat Btu/lb F	0.36
Electrical Properties	
25C(77F)102-106 Cycles	
Dielectric Strength kV	35.0

SPECIFICATIONS

Typical property data values should not be used as specifications. Assistance and specifications are available by contacting GE Silicones at 800-255-8886.

SOLUBILITY

Silicone fluids are non-polar and insoluble in water or the lower alcohols. They are completely miscible in typical aliphatic and aromatic solvents, including the halogenated solvents, but are only partially miscible with the intermediate petroleum fractions such as the naphthenes. These materials can dissolve enough silicone, particularly of the lower viscosity grades, to be sufficient for many purposes. Silicones are insoluble in the higher hydrocarbons, lube oils, waxes, fatty acids, vegetable oils and animal oils.

SOLUBILITY OF METHYL FLUIDS IN VARIOUS COMMON SOLVENTS

SOLVENT	SOLUBILITY
Aliphatic Hydrocarbons (naptha, Stoddard, hexane, heptane)	Infinitely Soluble
Aromatic Hydrocarbons (toluene, xylene, benzene)	Infinitely Soluble
Chlorinated Hydrocarbons (carbon tetrachloride, perchloroethylene, trichloroethylene)	Infinitely Soluble
Higher Alcohols (2 ethylhexanal, lauryl alcohol)	Infinitely Soluble
Higher Ketones (methyl ethyl ketone, methyl isobutyl ketone)	Infinitely Soluble
Ethers (ethyl ether, isopropyl ether)	Infinitely Soluble
Water	Insoluble
Lower Alcohols (methanol, ethanol, isopropanol)	Insoluble
Higher Hydrocarbons (lube oils, white oils, petroleums, waxes, vegetable oils, fatty acids)	Insoluble
Glycols (ethylene glycol, propylene glycol, glycerine)	Insoluble

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APPLICATIONS

LUBRICATION

- rubber & plastic
- base fluid for grease

CHEMICAL SPECIALTIES

- cosmetics & toiletries (Refer to GE bulletin CDS#5054)

MOLD RELEASE

- food packaging

ANTIFOAMS

- food applications

PLASTIC ADDITIVES

- extruded film

FOOD USE STATUS

Under FDA regulations, SF18-350 can be used directly in foods up to a maximum of 10 ppm silicone. For additional information, see GE bulletin CDS#4256. Consult FDA regulations for conditions and limitations of use.

INSTRUCTIONS FOR USE

PLASTIC ADDITIVES

A number of approaches for obtaining good dispersion are possible. Generally, silicone additives are incorporated in the polymer system by mechanical addition. As a result, the additives must be partly compatible with the polymer, at least at room temperature, and must extrude to some extent at the melt temperature in order to be available at the interface, where adhesion has to be prevented or where lubrication is desired.

Blend these liquids additives by adding to powder or pellets in a ribbon blender, high-intensity blender, or a drum on a tumbler. A master batch with powder made in a high-intensity mixer may be let down with additional powder in a conventional mixer. The final pellets should have 0.01 to 0.5% by weight of silicone additive.

Silicone fluids can also be added directly to injection molding or extrusion equipment using a small metering pump. Fluid addition levels of more than 0.5% may require the concentrate approach described above.

Product	% Concentration	Remarks
SF18-350	0.05-2%	Non-lubricating mold release-opaque parts only

The above viscosity grades have been most widely used. However, it is suggested that samples of various silicone fluids be obtained for laboratory evaluation.

Of course, specific application evaluation must be obtained through actual plant trials. Results of evaluation, combined with fluid cost figures, will provide the best method of determining the most efficient and economical silicone fluid to meet your specific requirements.

HANDLING AND SAFETY

Material Safety Data Sheets are available upon request from GE Silicones. Similar information for solvents and other chemicals used with GE products should be obtained from your suppliers. When solvents are used, proper safety precautions must be observed.

STORAGE WARRANTY PERIOD

The warranty period is 12 months from date of shipment if stored in the original unopened container at 27C (80F) or below.

AVAILABILITY

SF18-350 fluid may be ordered from GE Silicones, Waterford, New York 12188, the GE Silicones Sales office nearest you or an authorized GE silicone product distributor.

GOVERNMENT REQUIREMENT

Prior to considering use of a GE Silicones product in fulfilling any Government requirement, please contact the Government and Trade Compliance office at 413-448-4624.

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LIMITED WARRANTY

GE Silicones warrants that its products will conform to GE Silicones' internal specifications at the time of application or use, provided that the product is stored in accordance with GE Silicones' recommendations and used or applied before the earliest of (1) any "Use Before Date" indicated on the product package, (2) one year from date of shipment by GE Silicones, or (3) expiration of such other period or recommended storage time stated in GE Silicones' product literature for such product. If notified in writing of a claim within six months of a product's use or application, GE Silicones will, at its option, replace, or refund the purchase price of, any GE Silicones product which does not satisfy the foregoing warranty.

THE FOREGOING SHALL CONSTITUTE THE SOLE AND EXCLUSIVE REMEDY FOR DEFECTS IN, OR FAILURE OF, ANY PRODUCT, AND THE SOLE AND EXCLUSIVE LIABILITY OF GENERAL ELECTRIC COMPANY THEREFOR. THE WARRANTY STATED ABOVE IS IN LIEU OF ALL OTHER WARRANTIES, WRITTEN OR ORAL, STATUTORY, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

LIMITATION OF LIABILITY: GE Silicones shall in no event, whether the claim is based on warranty, contract, tort, strict liability, negligence or otherwise, be liable for incidental or consequential damages, or for any other damages in excess of the amount of the purchase price.

NOTE: For many products, GE Silicones may be able to offer a more extensive, application specific warranty. For further information, contact your GE Silicones field representative.



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