

SILISIL Silicone Oil 100'000-1'000'000 cSt.

Silicone fluid for foam control agent and additive applications

Technical Datasheet

Key Features

- High-viscosity, cost-effective dimethicone conditioning agent
- High compressibility and shearability without breakdown
- High flash point
- High damping action
- High oxidation resistance
- Low fire hazard
- Low reactivity and vapor pressure
- Low surface energy
- Low pour point
- Good heat stability
- Non-greasy, non-occlusive and non-stinging on skin
- Essentially inert and non-toxic
- Excellent water repellent, release, dielectric and antifoam properties
- Soluble in a wide range of solvents

For industrial applications:

- Effective foam control at low addition levels

For personal care applications:

- Provides easy combing and detangling for wet or dry hair
- Provides lubricious, smooth feel to the hair
- Adds gloss and softness

Composition:

- High-viscosity dimethicone fluid
- Linear polydimethylsiloxane polymers typically have the following typical chemical composition: $(\text{CH}_3)_3\text{SiO}[\text{SiO}(\text{CH}_3)_2]_n\text{Si}(\text{CH}_3)_3$

Applications:

- For foam control in petroleum production and refinery operations
- Conditioning agent for hair care products, particularly conditioning shampoos and rinse-off conditioners

Typical Properties (*Specification Writers: These values are not intended for use in preparing specifications*)

Property	Unit	Result				
		100,000 cSt	300,000 cSt	500,000 cSt	600,000 cSt	1,000,000 cSt
Appearance		Crystal clear	Crystal clear	Crystal clear	Crystal clear	Crystal clear
Specific Gravity at 25°C (77°F)		0.977	0.977	0.977	0.978	0.978
Refractive Index at 25°C (77°F)		1.4037	1.4037	1.4037	1.4037	1.4037
Color, APHA		5	5	5	5	5
Flash Point, Open Cup	°C (°F)	> 326 (> 620)	> 321 (> 609.8)	> 321 (> 609.8)	> 321 (> 609.8)	> 321 (> 609.8)
Acid Number, BCP		trace	trace	trace	trace	trace
Melt Point ^{1,2}	°C (°F)	-23 (-9)	N/A	N/A	N/A	N/A
Pour Point	°C (°F)	-33 (-27)			-25 (-13)	-25 (-13)
Surface Tension at 25°C (77°F)	dynes/cm	—			21.6	21.6
Volatile Content, at 150°C (302°F)	percent	0.30	0.30	0.30	0.30	0.30
Viscosity Stability, at 25°C (77°F), after 16 hr exposure at 150°C (302°F)	percent change	-2.4				
Viscosity Temperature Coefficient		0.61	0.61	0.61	0.61	0.61
Coefficient of Expansion	cc/cc/°C	0.00096	0.00096	0.00096	0.00096	0.00096
Thermal Conductivity at 50°C (122°F)	g cal/cm•sec•°C	0.00038	0.00038	0.00038	0.00038	0.00038
Solubility Parameter ³		7.4				
Solubility in Typical Solvents						
Chlorinated Solvents		High				
Aromatic Solvents		High				
Aliphatic Solvents		High				
Dry Alcohols		Poor				
Water		Poor				

1. The melt point temperature is a typical value and may vary somewhat due to molecular distribution. If the melting point is critical to your application, then several lots should be thoroughly evaluated.
2. Due to different rates of cooling, this test method may yield pour points lower than the temperature at which these fluids would melt.
3. Fedors Method: R.F. Fedors, *Polymer Engineering and Science*, Feb. 1974.
N/A = Not applicable

Description

SILISIL Silicone Oil, 100,000–1,000,000 cSt is a high-viscosity polydimethylsiloxane polymer primarily used for foam control in nonaqueous processes. In petroleum processing, it provides effective foam control at extremely small addition levels. **SILISIL Silicone Oil** is also suitable for use in personal care applications. The high-molecular-weight dimethicone provides easy combing and detangling for wet or dry hair, and adds softness, smoothness and gloss.

How To Use

As an Antifoam

The starting level of active material recommended is 10 ppm; in many cases, the optimal usage level may be approximately 1 ppm. **SILISIL Silicone Oil** is typically prediluted in a hydrocarbon solvent, such as white spirits, toluene, xylene, diesel, naphtha or another low-molecular-weight petroleum fraction, and added continuously by metering pump.

The viscosity of the **SILISIL Silicone Oil** should be selected to suit the application, with primary selection criteria including insolubility in the foaming system, working temperature and ease of handling.

As a Conditioning Additive

For personal care applications, **SILISIL Silicone Oil** should be pre-emulsified to the desired particle size, incorporated into a shampoo base and post-stabilized. Alternatively, it can be directly emulsified into a hair care formulation.

Handling Precautions

SILISIL Silicone Oil may cause temporary eye discomfort.

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION.

Usable Life and Storage

When stored at or below 40°C (104°F) in the original unopened containers, this product has a usable life of 36 months from the date of production.

Limitations

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

Not intended for human injection. Not intended for food use.

Health And Environmental Information

To support customers in their product safety needs, Silitech AG has an extensive Product Stewardship organization and a team of product safety and regulatory compliance specialists available in each area.

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.