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Technical Data Sheet

XIAMETER™ PMX-200 Silicone Fluid, 5-20 cSt

Polydimethylsiloxane base fluid

Features & Benefits

- Good dielectric properties
- High water repellency
- High shearability without breakdown
- High compressibility
- High spreadability
- Low surface tension
- Low fire hazard and reactivity
- Low vapor pressure
- Good heat stability
- Good leveling and easy rubout
- Essentially odorless and nontoxic
- Soluble in a wide range of solvents
- Non volatile carrier

For personal care:

- Soft feel and subtle skin lubricity
- Excellent spreading
- Leaves no residue or buildup
- Non-greasy feel

For industrial applications:

- Little change in physical properties over a wide temperature span – a relatively flat viscosity-temperature slope, and serviceability from -40°C up to 200°C
- Low surface tension – readily wets clean surfaces to impart water repellency and release characteristics

Composition

- Polydimethylsiloxane fluid
- Chemical composition $(CH_3)_3SiO[SiO(CH_3)_2]_nSi(CH_3)_3$

Applications

- Personal care products such as antiperspirants, deodorants, hair sprays, cleansing creams, skin creams, lotions, bath oils, suntan products, nail polishes
- Industrial applications such as glass vial and lens coatings, household product ingredients, mechanical fluids, penetrating oil ingredients, surface active agents, coatings, electrical insulating fluids and polish ingredients

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Typical Properties

Specification Writers: These values are not intended for use in preparing specifications.

Property	Unit	Result		
		5.0 cSt	10.0 cSt	20.0 cSt
Appearance		Crystal clear	Crystal clear	Crystal clear
INCI Name		Dimethicone	Dimethicone	Dimethicone
Specific Gravity at 25°C (77°F)		0.913	0.935	0.949
Refractive Index at 25°C (77°F)		1.3960	1.3989	1.4009
Color, APHA		5	5	5
Flash Point, Closed Cup	°C (°F)	134 (272)	211 (411)	246 (474)
Acid Number, BCP		trace	trace	trace
Melt Point	°C (°F)[1,2]	-70 (-94)	-60 (-76)	-52 (-62)
Pour Point	°C (°F)	-100 (-148)	-100 (-148)	-84 (-119)
Surface Tension at 25°C (77°F)	dynes/cm	19.7	20.1	20.6
Volatile Content at 150°C (302°F)	percent			4.5
Viscosity Temperature Coefficient		0.55	0.56	0.59
Coefficient of Expansion	cc/cc/°C	0.00105	0.00108	0.00107
Thermal Conductivity at 50°C (122°F)	g cal/cm·sec·°C		0.00032	0.00034
Solubility Parameter[3]		7.1	7.2	7.3
Solubility in Typical Solvents				
Chlorinated Solvents		High	High	High
Aromatic Solvents		High	High	High
Aliphatic Solvents		High	High	High
Dry Alcohols		Good	Good	Good
Water		Poor	Poor	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.

Description

XIAMETER™ PMX-200 Silicone Fluid is a polydimethylsiloxane fluid commonly used as a base fluid in personal care products due to its excellent spreading characteristics. It is clear, tasteless, essentially odorless and non-greasy.

Commercial bulk-polymerized dimethyl silicone fluids, such as XIAMETER PMX-200 Silicone Fluids, typically contain trace amounts of impurities.

How To Use

XIAMETER PMX-200 Silicone Fluid may be used alone or blended with other cosmetic fluids to provide a fluid base for a variety of cosmetic ingredients. It feature good solubility in most anhydrous alcohols and in many solvents used in cosmetics.

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Handling Precautions

XIAMETER PMX-200 Silicone Fluid may cause temporary eye discomfort.

Use caution when handling volatile fluids at temperatures with 10°C of the quoted flash point.

At elevated temperatures, XIAMETER PMX-200 Silicone Fluids are sensitive to contamination by strong acids, bases, some metallic compounds and oxidizing agents. These contaminants may cause an accelerated rate of volatile byproduct formation. Oxidizing agents can also cause an increase in fluid viscosity. When these conditions may exist, it is recommended that the flash point of the fluids be checked periodically to monitor operational safety. Also, ignitable conditions may exist if the fluid is giving off smoke.

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. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT WWW.CONSUMER.DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.

Usable Life And Storage

When stored at or below 25°C (77°F) in the original unopened containers, this product has a usable life ranging from 30 to 60 months from the date of production depending on viscosity.

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, Dow has an extensive Product Stewardship organization and a team of product safety and regulatory compliance specialists available in each area.

For further information, please see our website, www.consumer.dow.com or consult your local Dow representative.

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