

Product Information

XIAMETER[®] PMX-200 Silicone Fluid, 5-20 cSt

Polydimethylsiloxane base fluid

FEATURES

- 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
- Volatile carrier
- Compatible with a wide range of cosmetic ingredients

BENEFITS

For personal care:

- Soft feel and subtle skin lubricity
- Excellent spreading
- Leaves no residue or buildup
- Transient effect
- Nongreasy 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
 $(\text{CH}_3)_3\text{SiO}[\text{SiO}(\text{CH}_3)_2]_n\text{Si}(\text{CH}_3)_3$

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

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 and unique volatility characteristics. It is clear, tasteless, essentially odorless and nongreasy. Unlike other volatile carriers used in the personal care industry, this volatile silicone fluid does not cool the skin when it evaporates, a consequence of its unusually low heat of vaporization.

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 features good solubility in most anhydrous alcohols and in many solvents used in cosmetics.

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.

XIAMETER PMX-200 Silicone Fluids with viscosities below 5 cSt are flammable. Keep away from heat, sparks, open flames and other sources of ignition. Keep container tightly closed.

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 XIAMETER WEBSITE AT XIAMETER.COM, OR FROM YOUR XIAMETER REPRESENTATIVE OR DISTRIBUTOR, OR BY CALLING

TYPICAL PROPERTIES

| Test | 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 |

¹The 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.

²Due to different rates of cooling, this test method may yield pour points lower than the temperature at which these fluids would melt.

³Fedors Method: R.F. Fedors, *Polymer Engineering and Science*, Feb. 1974.

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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 Corning has an extensive Product Stewardship organ-

ization and a team of Product Safety and Regulatory Compliance (PS&RC) specialists available in each area.

For further information, please see our website, xiameter.com, or consult your local XIAMETER representative.

LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that *Dow Corning*® and XIAMETER® products are safe, effective, and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

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