

XIAMETER[®] PMX-200 Silicone Fluid, 5,000-60,000 cSt

INCI Name: Dimethicone

Silicone fluid for foam control and additive applications

FEATURES

- Ease of application, rubout and buffing
- Enhances color
- Reduced surface tension
- Fungi- and bacteria-resistant
- Thermally stable
- Essentially inert
- Soluble in a wide range of solvents
- High compressibility
- High shearability without breakdown
- High gloss intensity
- High damping action
- Low environmental hazard and fire hazard
- Low reactivity
- Low surface energy
- Low vapor pressure
- Low pour point
- Allows skin transpiration
- Essentially colorless, odorless, tasteless and nontoxic
- Good abrasion resistance
- Water repellent

BENEFITS

For personal care applications

- Skin protection
- Imparts soft, velvety skin feel
- Spreads easily on both skin and hair
- De-soaping (prevents foaming during rubout)

For industrial applications

- Oxidation-, chemical- and weather-resistant
- Excellent release, dielectric and antifoam properties

COMPOSITION

- Linear polydimethylsiloxane polymers
- $(\text{CH}_3)_3\text{SiO}[\text{SiO}(\text{CH}_3)_2]_n\text{Si}(\text{CH}_3)_3$

APPLICATIONS

- Active ingredient in a variety of automotive, furniture, metal, and specialty polishes
- Ingredient in protective creams, aerosol shave lathers, antiperspirants, and other personal care products
- Foam control for petroleum production and refinery operations
- Other applications including coatings additive, damping fluid, elastomer and plastics lubricant, electrical insulating fluid, mechanical fluid, mold release agent, plastics additive, specialty chemical products ingredient, leather finishing, surface active agent

DESCRIPTION

XIAMETER[®] PMX-200 Silicone Fluid is a high-viscosity polydimethylsiloxane polymer manufactured to yield essentially linear polymers in a wide range of viscosities.

The viscosities generally used in formulating polishes are between 100 and 30,000 cSt. To obtain optimum results, in terms of ease of application and depth of gloss, it is preferable to use a blend of a low-viscosity fluid and a high-viscosity fluid (e.g. 3 parts XIAMETER[®] PMX-200 Silicone Fluid 100 cSt and 1 part XIAMETER[®] PMX-200 Silicone Fluid 12,500 cSt). The low-viscosity silicone fluid acts as a lubricant to make polish application and rubout easier, whereas the high-viscosity silicone fluid produces a greater depth of gloss. Since these polymers are inherently water-repellent, they will cause water to bead up on a treated surface rather than penetrate the polish film.

HOW TO USE

XIAMETER[®] PMX-200 Silicone Fluid is insoluble in water and many organic products. It is highly soluble in organic solvents such as aliphatic and aromatic hydrocarbons, and the halo-carbon propellants used in aerosols. The fluid is easily emulsified in water with standard emulsifiers and normal emulsification techniques.

As an Antifoam

The starting level of active material in nonaqueous foam control is 10 ppm. In many cases, the optimal usage level may be 1~100ppm. XIAMETER[®] PMX-200 Silicone Fluid is typically prediluted in a hydro-carbon solvent, such as white spirits, toluene, xylene, diesel, naphtha or another low molecular weight petroleum fraction, and added continuously by metering pump.

As a Conditioning Additive

Additive quantities as low as 0.1% may suffice where XIAMETER[®] PMX-200 Silicone Fluid is to be used as a surface treatment or for de-soaping creams and lotions. However, 1-10% is needed for applications such as hand creams and lotions to form a more uniform film and effective barrier.

TYPICAL PROPERTIES

Specification Writers: These values are not intended for use in preparing specifications. Please contact your local XIAMETER[®] sales representative prior to writing specifications on this product.

Test	Unit	Result				
		5,000 cSt	10,000 cSt	12,500 cSt	30,000 cSt	60,000 cSt
As Supplied						
Appearance		Crystal clear	Crystal clear			
Specific Gravity at 25 °C (77 °F)		0.975	0.975	0.974	0.971	0.976
Refractive Index at 25 °C (77 °F)		1.403	1.4036	1.4036	1.4037	1.4036
Color, APHA		–	5	5	5	5
Flash Point, Open Cup	°C (°F)	>321 (>610)	>326 (>620)	>326 (>620)	>326 (>620)	>326 (>620)
Acid Number, BCP		–	trace	trace	trace	trace
Melt Point	°C (°F) ^{1,2}	–	-24 (-11)	-24 (-11)	-23 (-9)	-23 (-9)
Pour Point	°C (°F)	-50 (-58)	–	-46 (-51)	-43 (-45)	-41 (-42)
Surface Tension at 25 °C (77 °F)	dynes/cm	21.4	21.5	21.5	21.5	21.5
Volatile Content at 150 °C (302 °F)	percent	–	0.27	0.23	0.29	0.23
Viscosity Stability at 25 °C (77 °F), after 16 hr exposure at 150 °C (302 °F)	percent change	–	-0.7	-1.6	-2.0	-1.6
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	–	0.00037	–	–
Solubility Parameter ³		–	7.4	7.4	7.4	7.4
Solubility in Typical Solvents						
Chlorinated Solvents		–	High	High	High	High
Aromatic Solvents		–	High	High	High	High
Aliphatic Solvents		–	High	High	High	High
Dry Alcohols		–	Poor	Poor	Poor	Poor
Water		–	Poor	Poor	Poor	Poor

¹The melt point temperature is a typical value and may vary somewhat due to molecular distribution (especially 50 cSt or less). 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.

PRODUCT SAFETY INFORMATION

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

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND MATERIAL SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL, ENVIRONMENTAL, AND HEALTH HAZARD INFORMATION. THE MATERIAL SAFETY DATA SHEET IS AVAILABLE ON THE XIAMETER WEBSITE AT WWW.XIAMETER.COM.

USABLE LIFE AND STORAGE

When stored at or below 60 °C (140 °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, Dow Corning has an extensive Product Stewardship organization and a team of Product Safety and Regulatory Compliance (PS&RC) specialists available in each area.

For further information, please see our website, www.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 our 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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Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

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