

**XIAMETER™ PMX-0345 Cyclosiloxane Blend**

INCI NAME: Cyclopentasiloxane (and) Cyclohexasiloxane

**Features & Benefits**

- Volatile carrier
- Compatible with a wide range of cosmetic ingredients
- Low surface tension
- Excellent spreading
- Leaves no residue or build up
- Detackification

**Applications**

- A base fluid in a number of personal care products, with excellent spreading, easy rub-out and lubrication properties and unique volatility characteristics.
- Antiperspirants, deodorants, hair sprays, cleansing creams, skin creams, lotions, bath oils, suntan and shaving products, make-up, and nail polishes.
- Can also be used as an additive to powder make-up, colognes and pre-shaves.
- In sticks, it has the right balance between volatility and spreading.

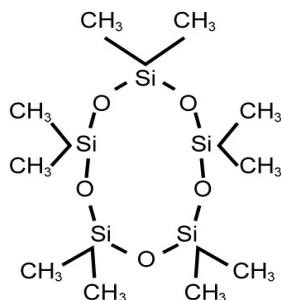
**Typical Properties**

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

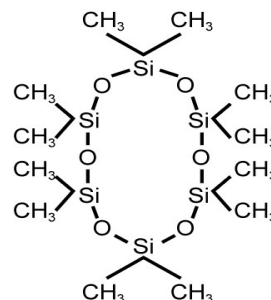
Property	Unit	Result
Appearance		Colorless liquid
Specific gravity at 25°C (77°F)		0.957
Viscosity at 25°C (77°F)	mm <sup>2</sup> .s <sup>-1</sup>	6
Refractive index at 25°C (77°F)		1.398
Surface tension at 25°C (77°F)	mN/m	20.8
Flash point – closed cup	°C (°F)	77 (171)
Freeze point	°C (°F)	< -50 (< -58)
Boiling point at 760 mm Hg	°C (°F)	217 (423)
Water content	ppm	250
Cyclotetrasiloxane (D4) content	%	< 0.1

## Description

XIAMETER™ PMX-0345 Cyclosiloxane Blend is a blend of volatile polydimethylcyclosiloxane composed of cyclohexasiloxane and cyclopentasiloxane. The product is clear, tasteless, essentially odorless, non-greasy and non-stinging.



**Figure 1:** Cyclopentasiloxane (D5)



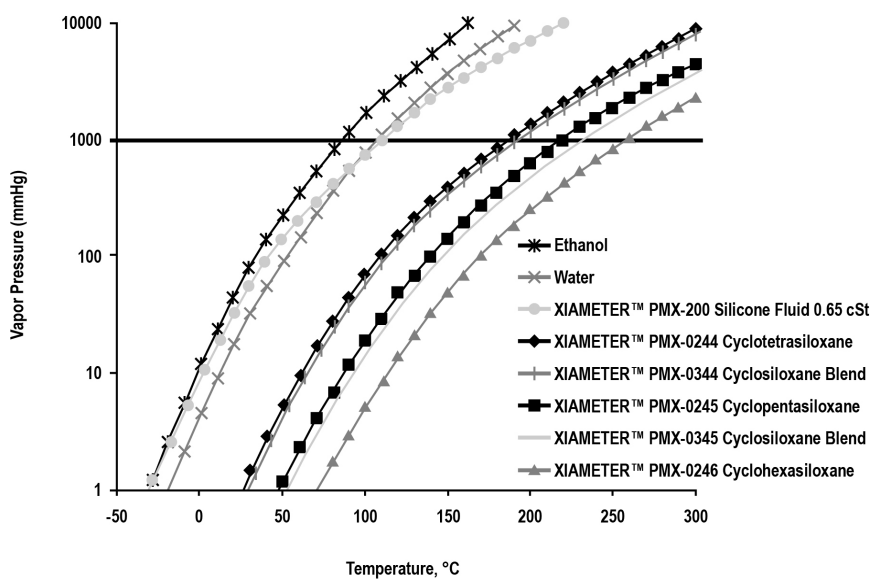
**Figure 2:** Cyclohexasiloxane (D6)

## How to Use

XIAMETER™ PMX-0345 Cyclosiloxane Blend 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 cosmetic solvents. XIAMETER™ PMX-0345 Cyclosiloxane Blend is a volatile fluid with appreciable vapor pressure at ambient temperature.

Figure 3 gives typical vapor pressure vs temperature data for fluids along with those for water and ethanol. The data given should be helpful in determining volatility range and in calculating the partial pressure of the silicone in a formulated system.



**Figure 3:** Vapor pressure vs temperature of volatile Silicone fluids (and several common fluids).

Note that the pentamer component (D5) evaporates at a faster rate than the hexamer component (D6).

## How to Use (Cont.)

By using blends of cyclomethicones this difference in volatility can be used to vary the residence time of the silicone on the skin.

Unlike other volatile carriers used in the personal care industry, volatile silicone fluids do not cool the skin when they evaporate. This is a consequence of their unusually low heat of vaporization.

Table 1 gives the heat required to vaporize one gram of each of the indicated materials.

**Table 1: Heat of Vaporization**

Fluid	Heat of vaporization (25°C/77°F) (kJ/kg)
XIAMETER™ PMX-0244 Cyclotetrasiloxane	172
XIAMETER™ PMX-0245 Cyclopentasiloxane	157
XIAMETER™ PMX-0246 Cyclohexasiloxane	147
XIAMETER™ PMX-0344 Cyclosiloxane Blend	168
XIAMETER™ PMX-0345 Cyclosiloxane Blend	155
Water	2257
Ethanol	840
XIAMETER™ PMX-200 Silicone fluid 0.65 cSt	192

## Handling Precautions

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](http://WWW.CONSUMER.DOW.COM), OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.

## Usable Life and Storage

Product should be stored at or below 25°C (77°F) in the original unopened containers.

Care should be taken when handling volatile fluids at temperatures 10°C below the quoted flash point.

As with any flammable material, containers should be kept tightly closed and away from heat, sparks, open flames, and other sources of ignition.

## 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](http://www.consumer.dow.com) or consult your local Dow representative.

## Compatibility

Results from heating the ingredients to approximately 80°C (176°F) (care has to be taken as silicone fluid is above its flash point). All other results obtained at 25°C (77°F).

<b>Type of Material</b>	
Water	I <sup>1</sup>
Ethanol (200 proof)	C
Glycerine	I
Octyl methoxy cinnamate	C
<b>Waxes</b>	
Stearyl alcohol	C
Beeswax	C
Paraffin wax	C
Myristyl myristate	C
Stearic acid	C
<b>Hydrocarbons</b>	
Mineral oil	C
Petrolatum	C
Isododecane	C
Isopar H	C
Polydecene	C
<b>Oils</b>	
Almond oil	C
Castor oil	I
Jobba oil	C
Soybean oil	C
Sunflower oil	C
<b>Esters</b>	
Isopropyl myristate	C
Isopropyl palmitate	C
Octyl palmitate	C
C12-C15 Alcohol benzoate	C
Capric/caprylic triglycerides	C
Octyldodecanol	C
Oleyl alcohol	C
<b>Silicones</b>	
Dimethicone, 350 mm <sup>2</sup> s <sup>1</sup>	C
Pheyl trimethicone	C
Stearyl dimethicone	C
Cetyl dimethicone	C

<sup>1</sup>C: compatible all ratios; I: Incompatible all ratios.

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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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