



Technical Data Sheet

XIAMETER™ PMX-0245 Cyclopentasiloxane

INCI NAME: Cyclopentasiloxane

Features & Benefits

- Volatile carrier
- Compatible with a wide range of cosmetic ingredients
- Low surface tension
- Imparts soft silky feel to the skin
- Excellent spreading
- Leaves no oily residue or build up
- Detackification
- Non-greasy

Applications

- A base fluid in a number of personal care products, with excellent spreading, easy rub-out and lubrication properties together with unique volatility characteristics.
- Antiperspirants, deodorants, hair sprays, cleansing creams, skin creams, lotions and stick products, bath oils, suntan and shaving products, make-up, nail polishes.
- 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)		0.95
Viscosity at 25°C (77°F)	mm ² ·s ⁻¹	4.0
Refractive index at 25°C (77°F)		1.397
Surface tension at 25°C (77°F)	mN/m	18.0
Flash point – closed cup	°C (°F)	77 (171)
Freeze point	°C (°F)	< -50 (< -58)
Boiling point at 760 mm Hg		205 (401)
Water content	ppm	250
Cyclotetrasiloxane (D4) content	%	< 0.1

Description

XIAMETER™ PMX-0245 Cyclopentasiloxane is a volatile polydimethylcyclosiloxane composed mainly of cyclopentasiloxane.

The product is clear, tasteless, essentially odorless, non-greasy and non-stinging.

UNRESTRICTED – May be shared with anyone

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XIAMETER™ PMX-0245 Cyclopentasiloxane

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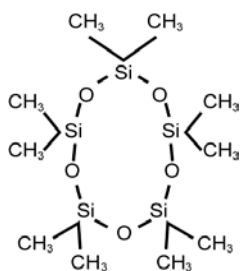


Figure 1: Cyclopentasiloxane (D5)

How To Use

XIAMETER PMX-0245 Cyclopentasiloxane 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-0245 Cyclopentasiloxane is a volatile fluid with appreciable vapor pressure at ambient temperature.

Figure 2 gives typical vapor pressure vs temperature data for the 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. By using blends of cyclomethicones this difference in volatility can be used to vary the residence time of the silicone on the skin.

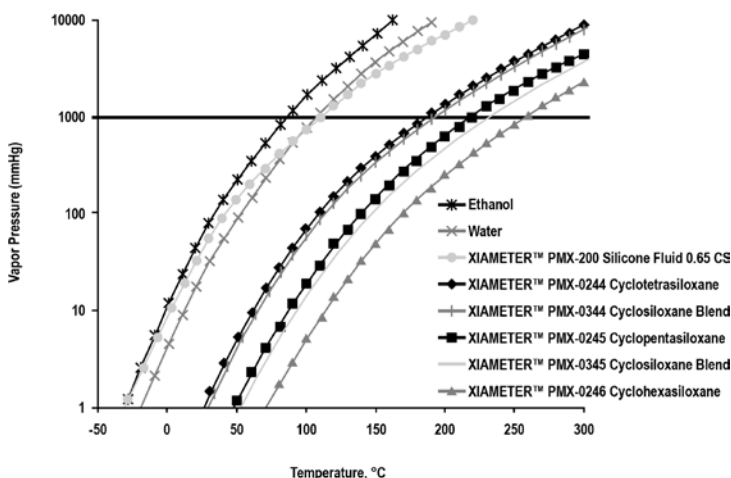


Figure 2: Vapor pressure vs temperature of volatile Silicone fluids (and several common fluids).

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	Unit	Heat of Vaporization (25°C / 77°F)
XIAMETER™ PMX-0244 Cyclotetrasiloxane	kJ/kg	172
XIAMETER™ PMX-0245 Cyclopentasiloxane	kJ/kg	157
XIAMETER™ PMX-0246 Cyclohexasiloxane	kJ/kg	147
XIAMETER™ PMX-0344 Cyclosiloxane blend	kJ/kg	168
XIAMETER™ PMX-0345 Cyclosiloxane blend	kJ/kg	155
Water	kJ/kg	2257
Ethanol	kJ/kg	840
XIAMETER™ PMX-200 Silicone fluid 0.65 cSt	kJ/kg	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, 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 or consult your local Dow representative.

Table 2 Compatibility

Type of material	
Water	I ¹
Ethanol (200 proof)	C
Glycerine	I
Octyl methoxy cinnamate	C
Waxes	
Stearyl alcohol	C
Beeswax	C
Paraffin wax	C
Myristyl myristate	C
Stearic acid	C
Hydrocarbons	
Mineral oil	C
Petrolatum	C
Isododecane	C
Isopar H	C
Polydecene	C
Oils	
Almond oil	C
Castor oil	I
Jojoba oil	C
Soybean oil	C
Sunflower oil	C
Esters	
Isopropyl myristate	C
Isopropyl palmitate	C
Octyl palmitate	C
C12-C15 Alcohol benzoate	C
Capric/caprylic triglycerides	C
Octyldodecanol	C
Oleyl alcohol	C
Silicones	
Dimethicone, 350 mm2s1 C	C
Pheyl trimethicone C	C
Stearyl dimethicone C	C
Cetyl dimethicone C	C

1. C: compatible all ratios; I: Incompatible all ratios.

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).

<http://www.xiameter.com>

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