

DOW CORNING® 345 Fluid

FEATURES

- Volatile carrier
- Compatible with a wide range of cosmetic ingredients
- Low surface tension

BENEFITS

- Imparts soft silky feel to the skin
- Excellent spreading
- Leaves no oily residue or build-up
- Detackification
- Non-greasy

INCI Name: Cyclopentasiloxane (and) Cyclohexasiloxane

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.
- Can also be used as an additive to powder make-up, perfumes, 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. Please contact your local Dow Corning sales representative prior to writing specifications on this product.

Parameter	Unit	Value
Appearance		Colorless liquid
Specific gravity at 25°C (77°F)		0.957
Viscosity at 25°C (77°F)	mm ² .s ⁻¹	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	77
	°F	171
Freeze point	°C	<-50
	°F	<-58
Boiling point at 760mm Hg	°C	217
	°F	423
Water content	ppm	250
Cyclotetrasiloxane (D4) content	%	<1.0

DESCRIPTION

DOW CORNING 345 Fluid is a blend of polydimethylcyclosiloxane composed mainly of cyclopentasiloxane and cyclohexasiloxane.

DOW CORNING 345 Fluid is clear, tasteless, essentially odorless, non-greasy and non-stinging.

Figure 1:
Cyclopentasiloxane (D5).

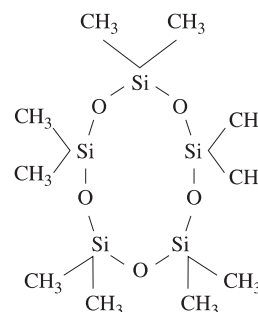
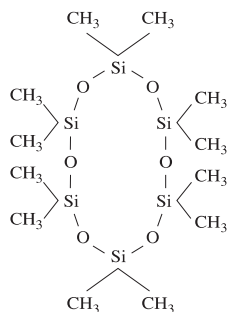


Figure 2:
Cyclohexasiloxane (D6).



HOW TO USE

DOW CORNING 345 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 cosmetic solvents.

DOW CORNING 345 Fluid is a volatile fluid with appreciable vapor pressure at ambient temperature.

Figure 3. 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.

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

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 gramme of each of the indicated materials.

Table 1: Heat of Vaporization

Fluid	Heat of Vaporization 25°C (77°F)
	(kJ/kg)
DOW CORNING® 244 Fluid	172
DOW CORNING® 245 Fluid	157
DOW CORNING® 246 Fluid	147
DOW CORNING® 344 Fluid (EU)	168
DOW CORNING 345 Fluid	155
Water	2257
Ethanol	840
DOW CORNING 200® Fluid (0.65cst)	192

HANDLING PRECAUTIONS

Care should be taken when handling volatile fluids at temperatures 10°C (50°F) below the quoted flash point.

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

Product safety information required for safe use is not included.

Before handling, read product and safety data sheets and container labels for safe use, physical and health hazard information. The material safety data sheet is available on the Dow Corning website at www.dowcorning.com.

You can also obtain a copy from your local Dow Corning sales representative or Distributor or by calling your local Dow Corning Global Connection.

USABLE LIFE AND STORAGE

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

DOW CORNING 345 Fluid should be stored at 5°C (41°F) above its freezing point. If the material does freeze on no account should a naked flame be used to melt the product.

PACKAGING

This product is available in 25kg pails, 195kg drums and 950kg road tankers.

Samples are available in 250g packs.

LIMITATIONS

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

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.dowcorning.com or consult your local Dow Corning 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 customers' tests to ensure that Dow Corning's 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.

Dow Corning's sole warranty is that the product will meet the Dow Corning sales specifications in effect at the time of shipment.

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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COMPATIBILITY

Type of material	DOW CORNING 345 Fluid ¹
Water	I
Ethanol 200 proof	C
Glycerine	I
Octyl methoxy cinnamate	C
Waxes²	
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
Jobba 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, 350mm ² s ⁻¹	C
Phenyl trimethicone	C
Stearyl dimethicone	C
Cetyl dimethicone	C

1. C = Compatible, I = Incompatible.

2. Results form heating the ingredients to approximately 80°C/176°F, (care has to be taken as silicone fluid is close to its flash point), all other results obtained at 25°C/77°F.

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

