Silicone Solutions for Powder Applications

Surface treatment, dispersant and carrier fluid

Dow Corning silicone solutions for powder applications enhance performance of sunscreen and color cosmetic products by improving the texture, water repellency and dispersibility of cosmetic powders.

**Surface Treatment Agent**
- Make inorganic powders hydrophobic
- Water and sebum resistance
- Provide smooth powdery feel
- Improve stability and dispersibility in formulations

**Dispersing Agent**
- Disperse evenly
- Intensify color
- Improve SPF value
- Reduce white residue

**Carrier Fluid**
- Improve spreading on the skin
- Reduce tackiness
- Smooth and light sensory performance

**Improved performance to meet consumer demands**

Increasing urbanization of the world and almost universal use of social networking have helped trends in color cosmetics move beyond borders. Women are busy in multiple roles, so they are looking to shorten makeup time and demanding all-in-one cosmetics such as BB cream.

*Dow Corning®* brand silicone solutions can help you formulate the high-performance sunscreen and color cosmetic products the market needs. Our silicones for powder applications improve dispersibility, water repellency and texture in cosmetic powders — and contribute to higher performance, particularly in multi-function products such as sunscreens and color cosmetics.
**Surface Treatment Agent**

Silicone surface treatment makes inorganic powders hydrophobic, improving cosmetics by providing water and sebum resistance. It also improves texture, stability, and ease of dispersion in the formulations, as well as sensory performance.

**Dow Corning® AM-3100 Hydrogen Fluid**

INCI name: *Hydrogen Dimethicone*

Reduces the hydrogen gas generation during the treatment process (Figure 2). It provides high water repellency and powdery feel, and improves dispersion in fluids.

**XIAMETER® OFS-6341 Silane**

INCI name: *Triethoxycaprylylsilane*

Improves water repellency (Figure 3) and dispersion in fluids, resulting in formulations that provide a creamy texture and uniform coverage on the skin.
Dispersing Agent

Silicone products from Dow Corning help disperse pigments and other fine particles evenly without clumping or sedimentation. This helps improve color intensity, vividness and SPF value while reducing white residue on the skin.

**Dow Corning® ES-5612 Formulation Aid**

INCI name: PEG-10 Dimethicone

This PEG-modified dimethicone (branched) is able to disperse micronized TiO\(_2\) or ZnO evenly into silicone fluids.

**Dow Corning® ES-5300 Formulation Aid**

INCI name: Lauryl PEG-10 Tris(trimethylsiloxy)silylhexyl Dimethicone

A PEG-, alkyl- and Si-dendron-modified dimethicone (branched) that helps disperse a variety of powders and pigments into a wide range of fluids — from silicones to hydrocarbons to vegetable oils — stable even with low viscosity.

**Dow Corning® ES-5600 Silicone Glycerol Emulsifier**

INCI name: Cetyl Diglycerol Tris(trimethylsiloxy)silylhexyl Dimethicone

A Di-glycerine-, alkyl- and Si-dendron-modified dimethicone (branched). Its diglycerine OH complex contributes to higher dispersion stability, and is suitable for formulations without PEG functionalities.

**Dow Corning® FZ-2233**

INCI name: Bis-Isobutyl PEG/PPG-10/7/Dimethicone Copolymer*

This PEG/PPG-modified dimethicone (ABn Block copolymer) is a dispersing agent with a unique morphology as well as configuration at the surface of the dispersed particle.

*Previous INCI name was Polysilicone-13

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**Carrier Fluid**

Silicone fluids spread easily on the skin and reduce tackiness.

**XIAMETER® PMX-0245 Cyclopentasiloxane**

**XIAMETER® PMX-0246 Cyclohexasiloxane**

**XIAMETER® PMX-200 Silicone Fluid 2cs**

INCI names:

- Cyclopentasiloxane — PMX-0245
- Cyclohexasiloxane and Cyclopentasiloxane — PMX-0246
- Dimethicone — PMX-200 Silicone Fluid 2cs

These volatile silicone carriers provide a dry and smooth feel while reducing greasiness and tackiness. They can be selected or blended depending on the volatility needed for the application.

**Dow Corning® FZ-3196**

INCI name: Caprylyl Methicone

Caprylyl(C8)-modified trisiloxane(L3) has low viscosity and moderate volatility, giving it a smooth and dry feel. It has very good spreadability and compatibility with organic oils and makes a good dispersing media for hydrophobic pigment.

**Dow Corning® 5562 Carbinol Fluid**

INCI name: Bis(Hydroxyethoxypropyl)Dimethicone

This carbinol-modified dimethicone (ABA Type) offers higher compatibility with more polar organic oils. It is a good dispersing media for powders and pigments.

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**FIGURE 4:** Viscosity of dispersion in different combinations of fluid and dispersant

**FIGURE 5:** Appearance of micronized TiO\(_2\) dispersion

**FIGURE 6:** Volatility of silicone fluids (0.1g in Al cup, 31°C)
Beauty care that does more
Dow Corning is creating specialty silicone solutions that help differentiate products — and bring beauty to life in a way that has a lasting effect on your business and on the lives of consumers everywhere.

How can we help you today?
Whether you need industry-leading innovation or greater cost efficiency, Dow Corning can help. Dow Corning® brand solutions are dedicated to meeting your needs for specialty materials, collaborative problem solving and innovation support. Learn how we can help you bring BEAUTY WITH IMPACT to your products, at dowcorning.com/personalcare. If you simply need to buy standard silicone materials at market-driven prices, we can help you achieve that through our XIAMETER® brand product line. Learn more at xiameter.com. Or contact your local Dow Corning sales representative at dowcorning.com/ContactUs.