



Technical Data Sheet

DOWSIL™ 9701 Cosmetic Powder

INCI NAME: Dimethicone/Vinyl Dimethicone Crosspolymer (and) Silica

Features & Benefits

- No agglomeration
- Free flowing fine particles
- Ease of use in various media
- Silky-powdery skin feel
- Wrinkle masking
- Superior dispersion quality
- Sebum absorption
- Absorption of various fluids and oils
- Enhanced viscosity in W/Si systems

Composition

- Silicone elastomer powder with silica treated coating

Applications

- Face and body creams, lotions and gels
- Color cosmetic liquid foundations
- Color cosmetic loose-, pressed- and compact-powders (eye shadow, make-up)
- Sun care
- Many other potential applications (example: lip sticks, bronzing products, hair care)

Typical Properties

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

| CTM ¹ | Property | Unit | Result |
|------------------|---------------------------------|------|--------------|
| 0176 B | Appearance | | White powder |
| 1151 B | Average particle size | µm | 1–10 |
| 1289 A | Bulk density | | 0.3–0.4 |
| | Cyclotetrasiloxane (D4) content | % | < 0.1 |
| | Cyclopentasiloxane (D5) content | % | < 0.1 |

1. CTM: Corporate Test Method, copies of CTMs are available on request.

Description

DOWSIL™ 9701 Cosmetic Powder is a silicone powder with silica treated coating. The unique composition enables the powder to flow freely without agglomeration, thus providing superior handling and processing ease. Easy dispersion in different media - even in the presence of pigments - makes it possible to introduce the product into a wide variety of skin care, sun care and color cosmetic formulations (including hydrogels) without using sophisticated processes or equipment. The design of the powder also provides wrinkle masking benefits as well as superior skin feel and fluid/oil/sebum absorption capabilities.

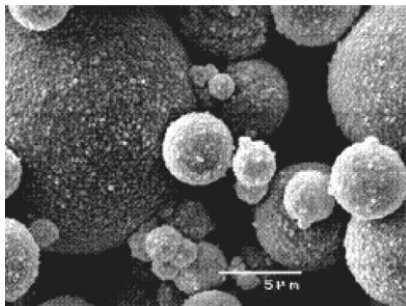


Figure 1: S.E.M. picture of DOWSIL™ 9701 Cosmetic Powder.

Small Silica particles (white appearance) attached to the surface of larger silicone elastomer powder particles. Under the participated of LVMH labs.

Threshold values for sensory perception in different systems:

- For studied water-in-silicone emulsion: 4%.
- For studied hydrogel formulation: 3%.
- For studied silicone- in-water emulsion: 3% when using an organic co-emulsifier, and 2% when using a silicone co-emulsifier.

How to Use

DOWSIL™ 9701 Cosmetic Powder is easy to use. The powder can be added directly to the oil phase ingredients without doing a premix in another fluid. For powdery type formulations, DOWSIL™ 9701 Cosmetic Powder can be grinded directly with other powders. See formulation examples.

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 CONSUMER.DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.

WARNING: DOWSIL™ 9701 Cosmetic Powder is a fine powder and needs to be handled with certain precautions. Avoid dust accumulation. Eliminate sources of ignition. Product can build up static electricity which may be discharged as a spark. If this product is added to a solvent, precautionary measures need to be taken to eliminate sparks.

Usable Life and Storage

When stored at or below 30°C (86°F) in the original unopened containers, this product has a usable life of 27 months from the date of production.

Packaging Information

The product is available in 10 kg bags.

Samples are available in 500 gr in carton boxes.

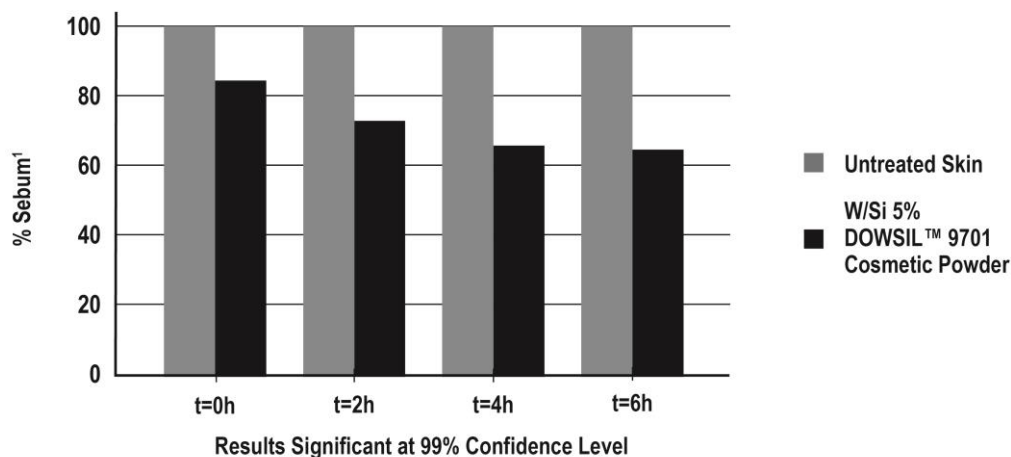
Limitations

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

Health And Environmental Information

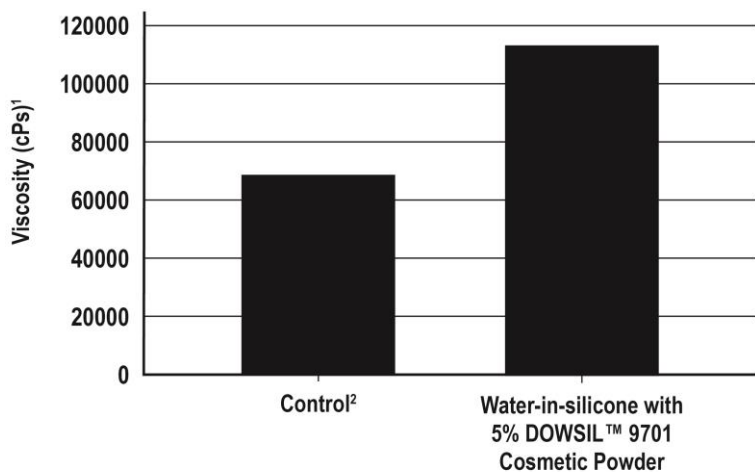
To support customers in their product safety needs, Dow has an extensive Product Stewardship organization and a team of product safety and regulatory compliance specialists available in each area.

For further information, please see our website, consumer.dow.com or consult your local Dow representative.



1. Sebumeter SM810

Figure 2: Sebum absorption of 5% DOWSIL™ 9701 Cosmetic Powder in water-in-silicone cream



1. Brookfield DV II Spindle RV-07 at 5 rpm
2. Same Formulation Without DOWSIL™ 9701 Cosmetic Powder

Figure 3: Viscosity of water-in-silicone cream

Wrinkle Masking Effect study results (Experimental Protocol Bio-HC Ref.EFL of 03/03/2003):

Product 1: Water-in-silicone cream with 4% of DOWSIL™ 9701 Cosmetic Powder (see table 1). The evaluation of the smoothing effect on volunteers Crow's foot wrinkles showed an improvement of wrinkles up to 84% and for 75% of subjects with a significant total mean decrease of 28% (p< 0.01) for 21 panelists.

Product 2: Water-in-silicone cream with 10% of DOWSIL™ 9701 Cosmetic Powder. The evaluation of the smoothing effect on volunteers Crow's foot wrinkles showed an improvement of wrinkles up to 72% and for 75% of subjects with a significant total mean decrease of 16% (p< 0.01) for 21 panelists.

Formulations:

Table 1: Wrinkle masking water-in-silicone cream CPF 00653.

| | Ingredient | Wt. % | Trade name/supplier |
|----------------|--|-----------|---------------------------------------|
| Phase A | | | |
| 1. | Dimethicone/Vinyl Dimethicone Crosspolymer and Silica | 4 | DOWSIL™ 9701 Cosmetic Powder |
| 2. | Cyclopentasiloxane and PEG/PPG-18/18 Dimethicone | 10 | DOWSIL™ 5225C Formulation Aid |
| 3. | Cyclopentasiloxane | 16 | XIAMETER™ PMX-0245 Cyclopentasiloxane |
| 4. | PPG-3 Myristyl ether | 0.5 | Promyristyl PM-3/Croda, Inc. |
| Phase B | | | |
| 5. | Distilled water | Up to 100 | |
| 6. | Glycerine | 5 | |
| 7. | Sodium chloride | 2 | Sodium chloride |
| 8. | Propylene Glycol, Diazolidinyl Urea, Methylparaben and Propylparaben | 0.5 | Germaben II/ISP |

Procedure

1. Mix phase A ingredients together.
2. Mix Phase B ingredients together.
3. Add slowly phase B to phase A under strong mixing.
4. Homogenize using a high shear mixer (Ultraturrax or Silverson type).

Table 2: Shimmer Soft Powder Perfume CPF 00651.

| | Ingredient | Wt. % | Trade name/supplier |
|----|---|-------|---|
| 1. | Dimethicone/Vinyl Dimethicone Crosspolymer and Silica | 88 | DOWSIL™ 9701 Cosmetic Powder |
| 2. | Fragrance | 10 | CelineCe/Symrise |
| 3. | Calcium Sodium Borosilicate and Titanium Dioxide | 2 | Reflects Pinpoints of Pearl/Engelhard Corporation |

Procedure

Mix ingredients at room temperature with an appropriate blender.

Table 3: Powdery light silicone-in-water cream CPF 00652.

| Ingredient | Wt. % | Trade name/supplier |
|--|-------|---------------------------------------|
| Phase A | | |
| 1. Cyclopentasiloxane | 17 | XIAMETER™ PMX-0245 Cyclopentasiloxane |
| 2. PEG-12 Dimethicone | 4 | DOWSIL™ OFX-5329 Fluid |
| 3. Dimethicone/Vinyl Dimethicone Crosspolymer and Silica | 4 | DOWSIL™ 9701 Cosmetic Powder |
| 4. Lauryl PEG/PPG-18/18 Methicone | 0.5 | DOWSIL™ 5200 Formulation Aid |
| Phase B | | |
| 5. Deionised water | 72.5 | |
| Phase C | | |
| 6. Polyacrylamide, C13-14 Isoparaffin and Laureth-7 | 2 | Sepigel 305/Seppic S.A. |

Procedure

1. Mix phase A ingredients together.
2. Add phase A to phase B with high speed stirring (2-3 minutes Silverson).
3. Add phase C with mixing.

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