Consumer Solutions

DOWSIL™ Specialty Silicones for Soft Focus

What is soft focus?

“Soft focus” is an optical effect that makes a skin imperfection appear blurred.

The intensity of this blurring effect depends on the amount of light scattered or reflected from the interface where the product is applied.

The higher the blurring effect, the stronger the imperfection-masking ability of the product.

Recommended solutions for soft focus

DOWSIL™ 9701 Cosmetic Powder
INCI name: Dimethicone/Vinyl Dimethicone Crosspolymer (and) Silica

DOWSIL™ EP-9801 Hydro Cosmetic Powder
INCI name: Dimethicone/Vinyl Dimethicone Crosspolymer (and) Silica (and) Butylene Glycol

DOWSIL™ VM-2270 Aerogel Fine Particles
INCI name: Silica Silylate

DOWSIL™ 9509 Silicone Elastomer Suspension
INCI name: Dimethicone/Vinyl Dimethicone Crosspolymer (and) C12-14 Pareth-12

DOWSIL™ SW-8005 C30 Resin Wax
INCI name: C30-45 Alkyldimethylsilyl Polypropylsilsesquioxane

Adding Value to Life

Blur the lines with silicone

Consumers are looking for products with an immediate and lasting optical effect – products that give them confidence in their ability to look their best at any age.

We can help you develop formulations that deliver those benefits with advanced silicone technologies and soft-focus testing and formulation expertise from Dow.

Select DOWSIL™ specialty silicones have demonstrated their ability to add soft-focus (blurring-effect) benefits to oil-in-water, water-in-oil and water-in-silicone skin care formulations – benefits consumers will immediately notice and appreciate.

Delivering soft focus through science

Soft focus can be achieved through the use of silicone particulates or specially engineered silicone films.

DOWSIL™ EP-9801 Hydro Cosmetic Powder (1-10 μ)

DOWSIL™ SW-8005 C30 Resin Wax + DOWSIL™ VM-2270 Aerogel Fine Particles
Soft-focus testing capabilities

The soft-focus benefits of formulations containing Dow specialty silicones have been demonstrated in both in-vitro and in-vivo testing with good correlation between test method results.

In Vitro

Visual Resolution – A cosmetic formulation was coated onto a glass slide covering an ISO Test chart N02. Visual assessment performed by a trained operator: The lower the number of lines that could be perceived as not merging, the higher the blur.

UV-Visible Spectrometry – A UV-visible spectrophotometer with an integrating sphere was used to measure the optical properties required to achieve the soft-focus effect, and target percentage values were established.

**Maximum** Total Transmission (TT): Natural skin tone

**Maximum** Diffused Transmission (DT) and Diffused Reflection (DR): Hides/blurs imperfections

**Minimum** Total Reflection: (TR) Minimizes shine

**Targets:** DT/TT > 50%; DR/TR > 80%; TT > 75%; TR < 20%

With the exception of TR (which is an indicator of shine), the higher the value, the greater the blurring effect.

In Vivo

**Image Analysis** – Testing was conducted using a computerized image analysis system (VISIA-CR or VisioFace). Five pictures were taken before the application of the formulation (neat skin), immediately after application and at subsequent intervals. The images were then ranked by a minimum of 12 evaluators by order of fine-wrinkle intensity on a scale of 1 to 5 (1 = low and 5 = high).
Test results and analysis

Oil-in-water Cream: Wrinkle-Masking (CPF 2094)
Formulation containing 1.6% DOWSIL™ VM-2270 Aerogel Fine Particles and 4% DOWSIL™ SW-8005 C30 Resin Wax

Visual Resolution

Control formulation (no silicone)

Formulation containing 4% DOWSIL™ SW-8005 C30 Resin Wax and 1.6% DOWSIL™ VM-2270 Aerogel Fine Particles

Results
Significantly reduced the ability to perceive fine lines

UV-Visible Spectrometry

Results
Substantial improvement in blur/soft focus

Image Analysis

Image analysis conducted using a VISIA-CR facial imaging system manufactured by Canfield Imaging Systems, Fairfield, NJ, USA

Results
Perceived effect was observed immediately/instantly and for up to six hours

HD Oil-in-water Skin Cream: Wrinkle-Masking and Pore-Masking (CPF 2093)
Formulation containing 2% DOWSIL™ VM-2270 Aerogel Fine Particles and 10% DOWSIL™ 9509 Silicone Elastomer Suspension (6.3% silicone active level); applied to Caucasian skin type

Image Analysis

Neat Skin

Time 0 min

Table: Timetable Number of Pores

<table>
<thead>
<tr>
<th>Timetable</th>
<th>Number of Pores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neat Skin</td>
<td>351</td>
</tr>
<tr>
<td>Time 0 min</td>
<td>229</td>
</tr>
<tr>
<td>Time 15 min</td>
<td>238</td>
</tr>
<tr>
<td>Time 1 hr</td>
<td>235</td>
</tr>
<tr>
<td>Time 3 hr</td>
<td>246</td>
</tr>
<tr>
<td>Time 6 hr</td>
<td>261</td>
</tr>
</tbody>
</table>

Results
Immediate 35% reduction in number of visible pores; 31% average reduction

Image analysis conducted using a VISIA-CR facial imaging system manufactured by Canfield Imaging Systems, Fairfield, NJ, USA
DOWSIL™ specialty silicones for soft focus

Benefits for Consumers

- Visual reduction of skin imperfections
- Immediate optical effect perceived, “showing” that the product works
- Long-term optical effect is possible (up to six hours)
- Ability to achieve wrinkle-masking, pore reduction and mattifying performance with a single product, depending on the formulation

Benefits for Formulators

- Soft focus can be developed in the three main formulation types (oil-in-water, water-in-oil and water-in-silicone)
- Fast “indication” of formulation performance through in-vitro testing
- Ability to combine wrinkle-masking with pore reduction and mattifying performance
- Availability of soft-focus formulating expertise from Dow

Beauty Care That Does More

Dow is creating differentiating specialty silicone solutions that bring beauty to life in a way that has a lasting effect on your business and on the lives of consumers everywhere.

For Samples and Formulations

To request product samples and to review product data sheets and sample formulations, visit consumer.dow.com/personalcare.

How can we help you today?

When you need industry-leading innovation, Dow can help. DOWSIL™ 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 consumer.dow.com/personalcare. Or contact your local Dow sales representative at consumer.dow.com/ContactUs.

<table>
<thead>
<tr>
<th>Product</th>
<th>INCI Name</th>
<th>Additional Benefits for Skin Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOWSIL™ 9701 Cosmetic Powder</td>
<td>Dimethicone/Vinyl Dimethicone Crosspolymer (and) Silica</td>
<td>• Sebum absorption</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Powdery feel</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Enhance viscosity of water-in-silicone</td>
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<tr>
<td></td>
<td></td>
<td>• High oil absorption</td>
</tr>
<tr>
<td>DOWSIL™ EP-9801 Hydro Cosmetic Powder</td>
<td>Dimethicone/Vinyl Dimethicone Crosspolymer (and) Silica (and) Butylene Glycol</td>
<td>• Water-dispersible</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Powdery feel</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Mattifying</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Sebum absorption</td>
</tr>
<tr>
<td>DOWSIL™ VM-2270 Aerogel Fine Particles</td>
<td>Silica Silylate</td>
<td>• Sebum absorption</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Thickener of oil phases (polar to nonpolar oils)</td>
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<tr>
<td>DOWSIL™ 9509 Silicone Elastomer Suspension</td>
<td>Dimethicone/Vinyl Dimethicone Crosspolymer (and) C12-14 Pareth-12</td>
<td>• Sebum absorption</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Smooth, silky feel</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Mattifying</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Increase viscosity of water-in-silicone</td>
</tr>
<tr>
<td>DOWSIL™ SW-8005 C30 Resin Wax</td>
<td>C30-45 Alkyldimethylsilyle Polypropyleneisquioxane</td>
<td>• Rheology modifier</td>
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<tr>
<td></td>
<td></td>
<td>• Good compatibility with organic oils</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• SPF boosting in water-in-oil</td>
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*These products are listed in the Catalogue of Cosmetic Ingredients Used in China.

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