



Discover skin tightening with comfort



Featuring:

To tighten skin:

- DOWSIL™ MQ-1640 Flake Resin; INCI: Trimethylsiloxysilicate (and) Polypropylsilsesquioxane
- DOWSIL™ FA 4002 ID Silicone Acrylate; INCI: Isododecane (and) Acrylates/ Polytrimethylsiloxymethacrylate Copolymer

To enhance sensory perception:

- DOWSIL™ EP-9801 Hydro Cosmetic Powder; INCI: Dimethicone/Vinyl Dimethicone Crosspolymer (and) Silica (and) Butylene Glycol
- DOWSIL™ EL-8040 ID Silicone Organic Blend; INCI: Isododecane (and) Dimethicone Crosspolymer
- DOWSIL™ HMW 2220 Non-Ionic Emulsion; INCI: Divinyldimethicone/Dimethicone Copolymer (and) C12-13 Pareth-23 (and) C12-13 Pareth-3

To form water-in-silicone or water-in-oil emulsions for light tightening:

- DOWSIL™ 5200 Formulation Aid; INCI: Lauryl PEG/ PPG-18/18 Methicone

Silicone film-formers can help meet global demand for products designed for skin perfection. The difference is easy for consumers to see, bringing new confidence of attractiveness at any age.

- Instantaneous tightening and comfort
- Documented skin firmness
- Diminished appearance of wrinkles
- Results demonstrated in applications and validated by recognized testing laboratory

A new approach to skin perfection

Tight, moisturized skin communicates youth and health, and the desire for skin perfection is a global beauty objective among consumers. That's especially true given the world's aging population.

In a new application for proven silicone materials, Dow has developed skin-tightening formulations that lift and firm the face. Now you can create anti-aging skin care products that not only provide an instantaneous tightening sensation, but also ensure comfort on the skin. The result is a new level of performance – tested and validated – with lasting effects and a skin feel that's easy to wear.

Affirming sensations

Dow's broad product offering for skin tightening has been evaluated primarily through in vivo performance testing and sensory tests. Tests conducted in Dow's laboratories also were validated by a recognized independent testing laboratory.

Sensory panels assessed the instant tightening sensation of hydrogels and emulsions. Collagen-shrinking tests served as an initial in vitro method for screening the potential tightening properties on skin. Skin firmness was tested with a Cutometer¹ and ballistometer,² while immediate wrinkle attenuation was observed in vivo and digitally photographed using a VISIA-CR imaging device.³ In vivo fringe projection tests to evaluate changes in cutaneous topography were conducted by an independent laboratory.

Adding
value
to life

A sensory panel evaluated DOWSIL™ MQ-1640 Flake Resin and DOWSIL™ FA 4002 ID Silicone Acrylate at 3% use levels in hydrogel formulations. A paired comparison test was used to assess each silicone. In both cases, the control offered instant tightening, but no lasting tightening sensation. In their respective formulations, the silicone materials provided instant as well as lasting tightening. Panelists also noted low tackiness and residue for silicone acrylate solution, along with an invisible film on the skin.

The addition of a small amount of DOWSIL™ HMW 2220 Non-Ionic Emulsion significantly improved the sensory profile with no impact on the skin tightening performance in combination with both silicone acrylates and resin film-formers.⁴ (Figure 1)

¹ The Cutometer is a product of Courage + Khazaka electronic GmbH, Cologne, Germany.

² The Torsional Ballistometer is a product of Dia-Stron Ltd., UK.

³ VISIA-CR clinical imaging device, Canfield Scientific Inc., Fairfield, NJ, USA.

⁴ Numbers in parentheses represent levels of confidence. The examples illustrated throughout are representative of various evaluations conducted on the materials described in the text. For additional details, please contact a Dow representative.

The tightening effect noted in sensory evaluations was confirmed with a Cutometer.

In Figure 2, the combination of silicone acrylate or silicone flake resin with the high molecular weight non-ionic emulsion shows a decrease in R0, which reflects an increase in skin firmness, then a tightening benefit.

Based on DOWSIL™ MQ-1640 Flake Resin and DOWSIL™ EP-9801 Hydro Cosmetic Powder in a hydrogel, a 12-person panel evaluated results from the VISIA-CR device. Figure 3 shows the visual attenuation of fine and deep wrinkles.

As a complement to the series of laboratory tests, an in-use test was carried out with the help of 57 Dow employees who served as panelists. The female and male participants ranged in age from 20 to 70 and had typical Caucasian skin types. Two hydrogels were tested: one containing DOWSIL™ MQ-1640 Flake Resin (3%) and DOWSIL™ EP-9801 Hydro Cosmetic Powder (3%), and the second containing DOWSIL™ FA 4002 ID Silicone Acrylate (3%) and DOWSIL™ HMW 2220 Non-Ionic Emulsion (0.3%).

For both hydrogels, panelists confirmed the following findings of the earlier evaluations:

- They provided instant and lasting tightening.
- The formulations were comfortable to wear, with a tightening sensation on skin.
- There was a positive impact on wrinkle attenuation.
- The products left an invisible film on skin.

Figure 1: Hydrogel formulation with silicone resin for skin tightening and emulsion of high molecular weight silicone for sensory enhancement.

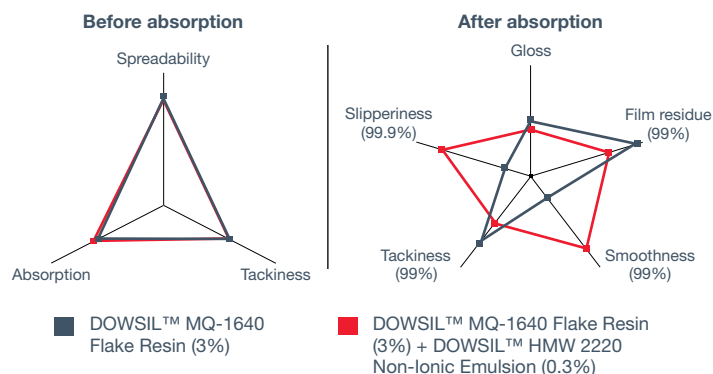


Figure 2: Cutometer results from hydrogel formulations.

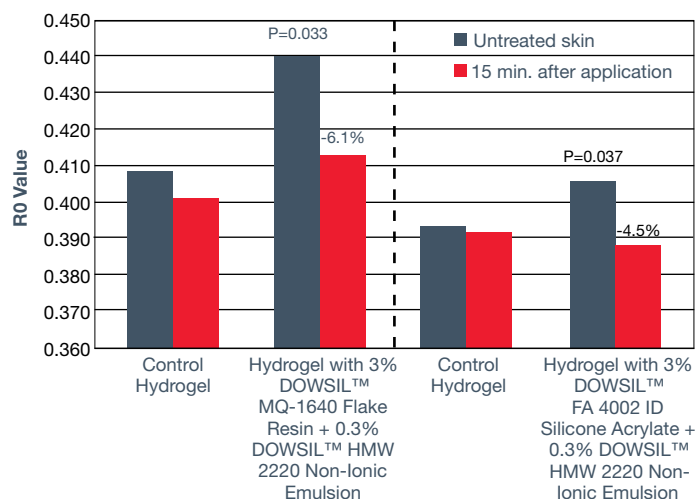
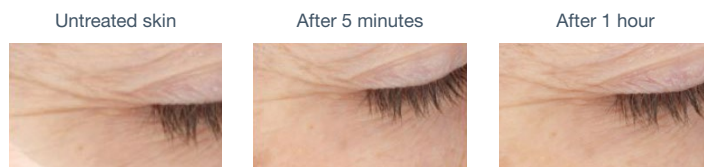


Figure 3: Visual attenuation of fine lines and deep wrinkles after treatment with silicone hydrogel containing DOWSIL™ MQ-1640 Flake Resin and DOWSIL™ EP-9801 Hydro Cosmetic Powder.



Effect on crow's feet area can be seen at least up to 1 hour.

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 [dow.com](https://www.dow.com) or contact your local Dow sales representative.

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