



Consumer Solutions

DOWSIL™ Specialty Silicones for Age-Defying Hair Repair

Trend-driven Innovation for Shampoos and Conditioners

Healthy feel

- Slipperiness
- Root-to-tip smoothness
- Reduction of dryness

Healthy look

- Shine
- Alignment

Hair protection

- Color retention
- Resistance to breakage
- Ease of dry combing



Adding Value to Life

Restore Youthful Beauty to Damaged Hair

When your hair looks and feels healthy, you feel healthier, more beautiful and more confident.

Unfortunately, chemical treatments, heat styling, aging and the environment lead to damaged and weakened hair, leaving it rough, dry, harder to comb and more prone to breakage and color fading.

Defy the Inevitable

Hair damage is inevitable, but you can defy the inevitable with hair repair.

With Dow's range of specialty silicone ingredients for age-defying hair repair,

we can help you formulate hair care products that:

- Erase the signs of damage
- Restore smoothness, shine and alignment
- Prolong hair color
- Protect hair from breakage

Explore the benefits.

Formulate Shampoos and Conditioners that Dare to Repair

Hair repair is one of the top performance needs in hair care products today. Globally, more than 30 percent of new shampoo and conditioner launches claim hair repair benefits. DOWSIL™ products can help you deliver those benefits to achieve greater success in the marketplace.

DOWSIL™ specialty silicones have demonstrated their ability to repair colored, gray and heat-damaged hair by restoring moisturized feel, shine and alignment and protecting hair from further damage and color loss. Create hair care products that give hair the healthy look and feel consumers crave so they can look and feel their best at any age.

DOWSIL™ Specialty Silicones with Hair Repair Benefits

| Application/Product | | Healthy Feel | | | | Healthy Look | | Protection | | |
|---------------------------------|--|--------------|------------|----------------------|------------|--------------|-------|------------|------------------------|---------------------|
| | | Hair Shaft | | | Tips | Alignment | Shine | Color | Resistance to Breakage | Ease of Dry Combing |
| | | Slipperiness | Smoothness | Reduction of Dryness | Smoothness | | | | | |
| Shampoo | DOWSIL™ CE-8411 Smooth Plus Emulsion | | | •• | | | •• | | | •• |
| | DOWSIL™ 5-7113 Silicone Quat Microemulsion | • | | •• | | | •• | | | |
| | DOWSIL™ HMW 2220 Non-Ionic Emulsion | | • | • | | ••• | | | | |
| Shampoo + Rinse-off Conditioner | DOWSIL™ CE-8411 Smooth Plus Emulsion | •• | •• | •• | •• | •• | ••• | ••• | •• | •• |
| | DOWSIL™ 5-7113 Silicone Quat Microemulsion | ••• | ••• | •• | ••• | •• | •• | ••• | ••• | ••• |
| | DOWSIL™ 8500 Conditioning Agent | • | •• | ••• | | ••• | | ••• | •• | • |
| Leave-in Conditioner | DOWSIL™ HMW 2220 Non-Ionic Emulsion | •• | • | •• | | ••• | | | ••• | •• |
| | DOWSIL™ CE-7080 Smart Style | ••• | ••• | •• | | •• | | | •• | |
| | DOWSIL™ 5-7113 Silicone Quat Microemulsion | •• | •• | • | | | | | | |

At 2% active silicone: ••• Excellent fit •• Very good fit • Good fit
 No value = not tested or no significant difference

A Difference Consumers Can See, Feel and Appreciate

Erase the Signs of Damage and Protect Hair Color



Restore the Surface of Heat-damaged Hair to a Healthy State

Healthy Hair



Water droplet on healthy hair remains intact, indicating hydrophobic nature and natural protection.

Heat-damaged Hair – No Repair



Damaged hair becomes hydrophilic, indicating loss of protection. After shampoo and rinse-off conditioner without silicone, water droplet spreads instantaneously, showing no repair.

Heat-damaged Hair – Repaired



Shampoo + rinse-off conditioner containing a DOWSIL™ silicone helps restore the hair's hydrophobicity and natural protection capability.

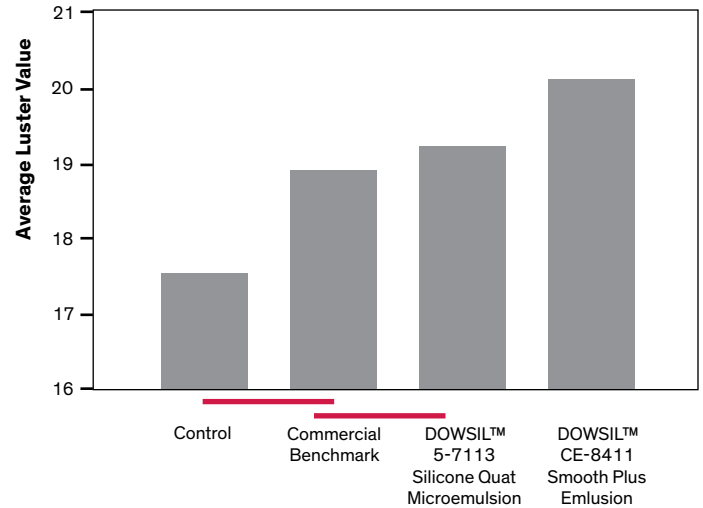
Test Results for Leave-in Conditioners

A comprehensive guide to DOWSIL™ hair repair solutions for leave-in conditioners is available at: consumer.dow.com.

Shine/Luster on Color-treated Hair

Hair shine is measured using a light-scattering image analysis system.

Shine Testing – Shampoo + Rinse-off Conditioner¹



Control

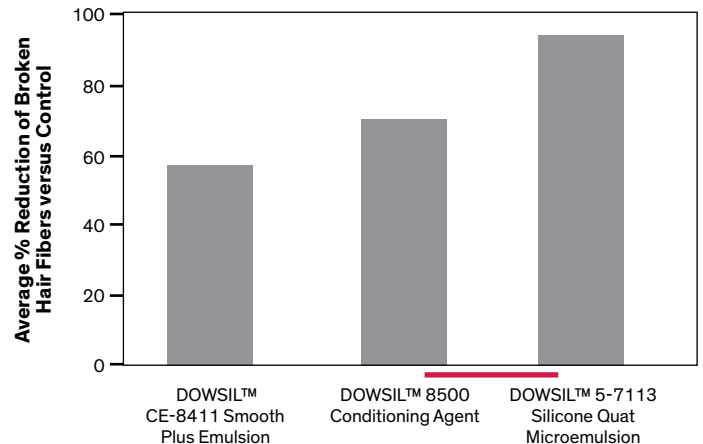


DOWSIL™ CE-8411 Smooth Plus Emulsion

Resistance to Breakage on Heat-Damaged Hair

Hair strength/resistance to breakage is measured by the number of broken fibers after 10,000 strokes.

Repeated Combing Test – Rinse-off Conditioner¹



¹2% silicone active in formulations; control = no silicone
Significant difference at 99% confidence level
— = no significant difference

Product Descriptions – DOWSIL™ Specialty Silicones for Age-defying Hair Repair

| Product | INCI Name | Additional Benefits for Hair Care |
|--|--|--|
| DOWSIL™ CE-8411 Smooth Plus Emulsion | Bis-Diisopropanolamino-PG-Propyl Dimethicone/Bis-Isobutyl PEG-14 Copolymer (and) Polysorbate 20 (and) Butyloctanol | <ul style="list-style-type: none"> • Moisturization • Volumizing • Maintain volume on repeated use |
| DOWSIL™ 5-7113 Silicone Quat Microemulsion | Silicone Quaternium-16 (and) Undeceth-11 (and) Butyloctanol (and) Undeceth-5 | <ul style="list-style-type: none"> • Volumizing • Hair strengthening |
| DOWSIL™ 8500 Conditioning Agent | Bis (C13-15 Alkoxy) PG Amodimethicone | <ul style="list-style-type: none"> • Volumizing • Clear and opaque shampoos • Enriched foam lather |
| DOWSIL™ CE-7080 Smart Style | Silicone Quaternium-16/Glycidoxy Dimethicone Crosspolymer (and) Undeceth-11 (and) Undeceth-5 | <ul style="list-style-type: none"> • Defined curls • Flexible hold • Frizz control |
| DOWSIL™ HMW 2220 Non-Ionic Emulsion | Divinyldimethicone/Dimethicone Copolymer (and) C12-13 Pareth-23 (and) C12-13 Pareth-3 | <ul style="list-style-type: none"> • Maintain volume on repeated use • Enriched foam lather • Fragrance retention |

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.

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 or contact your local Dow sales representative.

Images: dow_40647431791, dow_43698289985

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