Consumer Solutions

Protective Solutions for Today’s Hair Care Market

Featured Products

Color Protection
- DOWSIL™ 5-713 Silicone Quat Microemulsion
  INCI: Silicone Quaternium-16 (and) Undeceth-11 (and) Butyloctanol (and) Undeceth-5
- DOWSIL™ 8500 Conditioning Agent
  INCI: Bis(C13-15 Alkoxy) PG-Amodimethicone

Heat Protection
- DOWSIL™ AP-8087 Fluid
  INCI: Bis-Hydroxy/Methoxy Amodimethicone (and) Cyclotetrasiloxane
- DOWSIL™ 969 Emulsion
  INCI: Amodimethicone (and) Cetrimonium Chloride (and) Trideceth-3 (and) Trideceth-15

Color and Heat Protection
- DOWSIL™ CE-8411 Smooth Plus Emulsion
  INCI: Bis-Diisopropanolamino-PG-Propyl Dimethicone/Bis-Isobutyl PEG-14 Copolymer (and) Polysorbate 20 (and) Butyloctanol (and) Aqua

Adding Value to Life

In today’s fast-paced and competitive personal care market, consumers are sophisticated and demanding when it comes to hair care. They value strong, full-bodied, shiny hair as a sign of beauty and good health, and depend on evolving, high-performance technology to improve hair vitality and appearance.

To meet these demands, the hair care industry must develop increasingly creative solutions that go above the ordinary. Dow silicone solutions can help you create hair care products that protect hair from color loss, heat associated with daily routine, and even the effects of combing and styling.

Color Protection

With Dow silicone solutions, you can further differentiate your hair care products by providing color protection benefits and shine for consumers who want beautiful, intensely colored hair. Testing shows that silicones from Dow can help maintain color depth, prevent yellowing, and guard against loss of redness.

Products that Maintain Color
- DOWSIL™ 8500 Conditioning Agent
- DOWSIL™ 2-8566 Amino Fluid
- DOWSIL™ AP-8087 Fluid
- DOWSIL™ CE-8170 AF Microemulsion
- DOWSIL™ 5-7113 Silicone Quat Microemulsion
- DOWSIL™ CE-8411 Smooth Plus Emulsion
- DOWSIL™ CE-7081 Smart Style
Sensory Evaluation (Paired Comparison)
Which tress has more color?

8411* = 7113** = 8500***/> Control
8411* = 7113** = 8500***/> Commercial Benchmark
* DOWSIL™ CE-8411 Smooth Plus Emulsion
** DOWSIL™ 5-7113 Silicone Quat Microemulsion
*** DOWSIL™ 8500 Conditioning Agent
Tested using colorimeter at 2% silicone active in shampoo and 2% active in rinse-off conditioner colored hair; significant difference at 99% confidence level

Heat Protection
The use of heat-based styling appliances is very common, but the high temperatures that come with blow drying and curling or straightening with irons can damage hair. Consumers need products that can condition damaged hair and provide the thermal protection that gives hair a healthy look and feel. Silicone materials from Dow can help you create leave-in conditioners that protect against heat damage and prevent moisture loss.

Products that Protect from Heat
DOWSIL™ AP-8087 Fluid
DOWSIL™ 969 Emulsion
DOWSIL™ CE-8411 Smooth Plus Emulsion
Preserve Hair Resistance to Breakage

**Figure 3**
Heat Protection: Leave-In Conditioner (3% active) Slightly bleached Caucasian hair

![Bar chart showing the improvement in resistance to breakage for treated and untreated hair.](chart)

Test Method:
Apply 100 μl/g hair of leave-in conditioner (3% active silicone) and dry tresses in oven at 70°C for 20 minutes.
Hang dried tresses in the oven for 2 minutes at 230°C.
Wet tresses, detangle and collect broken hair.
Calculate % improvement (resistance to breakage) versus untreated hair.

Facilitate Styling

**Figure 4**
Fewer Broken Hairs with Silicone

![Images of heat-damaged hair and preserved hair.](images)

**Figure 5**
Reduction of Straightening Iron Passes
Reduction in number of passes versus untreated hair (%)

![Chart showing the reduction in passes for treated hair.](chart)

- Untreated tress, straightened 5× is ranked within a range of silicone treated tresses that are straightened 1–10 times
- Hair with poor manageability can be straightened when treated with DOWSIL™ AP-8087 Fluid, DOWSIL™ CE-8411 Smooth Plus Emulsion, and DOWSIL™ 969 Emulsion
- Hair treated with these silicones are up to 50% faster to straighten than untreated hair*

* significantly different to untreated with a confidence level of 99% - Student T test

**Figure 6**
Caucasian Frizzy Type B Virgin Hair
10 passes of straightening iron; 3% active

![Images showing the improvement in straightening time.](images)

* DOWSIL™ CE-8411 Smooth Plus Emulsion
** DOWSIL™ 969 Emulsion
*** DOWSIL™ AP-8087 Fluid
## Product Selection Guide for Hair Protection

<table>
<thead>
<tr>
<th>Product</th>
<th>Key Benefits</th>
<th>Additional Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOWSIL™ 5-7113 Silicone Quat Microemulsion</td>
<td>Color protection</td>
<td>Volume, reduced hair breakage, shine, reduced drying time, reduced static</td>
</tr>
<tr>
<td>DOWSIL™ 8500 Conditioning Agent</td>
<td>Color protection</td>
<td>Reduced hair breakage, shine, volume, reduced static</td>
</tr>
<tr>
<td>DOWSIL™ AP-8087 Fluid</td>
<td>Heat protection</td>
<td>Shine, reduced static, ease of styling</td>
</tr>
<tr>
<td>DOWSIL™ 969 Emulsion</td>
<td>Heat protection</td>
<td>Ease of styling, long lasting styling, hair alignment</td>
</tr>
<tr>
<td>DOWSIL™ CE-8411 Smooth Plus Emulsion</td>
<td>Color protection</td>
<td>Moisturized feel, reduced drying time, shine, reduced hair breakage, hair alignment, ease of styling</td>
</tr>
</tbody>
</table>

### 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](https://consumer.dow.com/personalcare). Or contact your local Dow sales representative at [consumer.dow.com/contactus](https://consumer.dow.com/contactus).