

Turn up the heat, *turn down the damage*

Effective ways to
safeguard hair from
heat damage



Highlighted products:

- DOWSIL™ 969 Emulsion
- DOWSIL™ 979 Emulsion
- DOWSIL™ CE-8411 Smooth Plus Emulsion
- DOWSIL™ AP-8087 Fluid
- DOWSIL™ OHX-0080 Fluid
- DOWSIL™ HMW-2220 Non-Ionic Emulsion
- DOWSIL™ PMX-1507 Fluid
- HydroxySHIELD™ Polymer

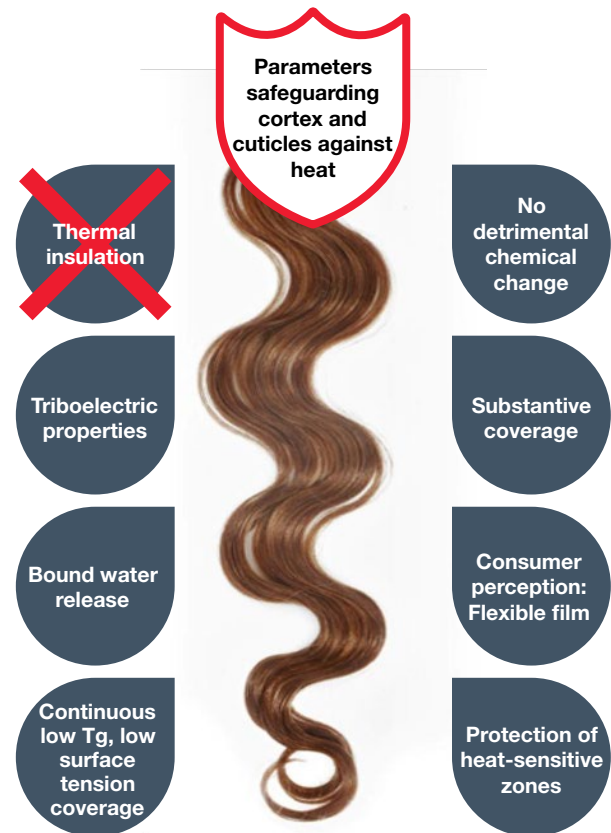
From sizzled to stunning

It often seems like what we do to achieve beautiful hair in the moment — blow drying, curling, straightening — can cause damage, dullness and breakage in the long run.

Fortunately, you don't have to choose between great style and overall hair health. Innovative heat protection solutions from Dow facilitate styling while safeguarding hair from heat damage, taking strands from sizzled to stunning.

Why Dow solutions for heat protection?

- Fundamental understanding of mechanisms of action
- Technical expertise and support
- Ingredient selection made easy: identification of top performing materials, formulation flexibility
- Substantiated claims through multiple test methods
- Global presence



Dow heat protection product properties that ensure healthy look and feel for hair



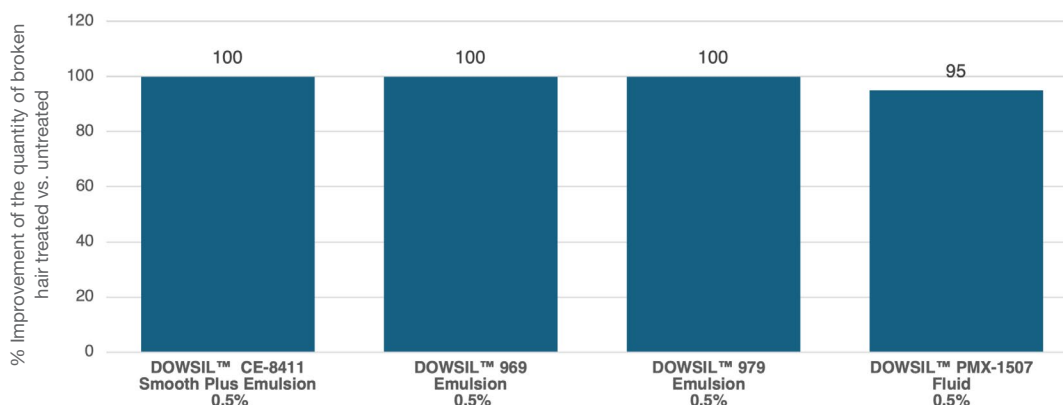
Test the TRESS

Dow developed a consumer regimen focused test method for looking at hair breakage after exposure to temperatures up to 230°C/446°F. We also utilize Differential Scanning Calorimetry (DSC) to review cortex structural integrity through degradation temperature (T_d) and enthalpy (ΔH), and review of cuticle integrity with microscopy.

Solutions for all

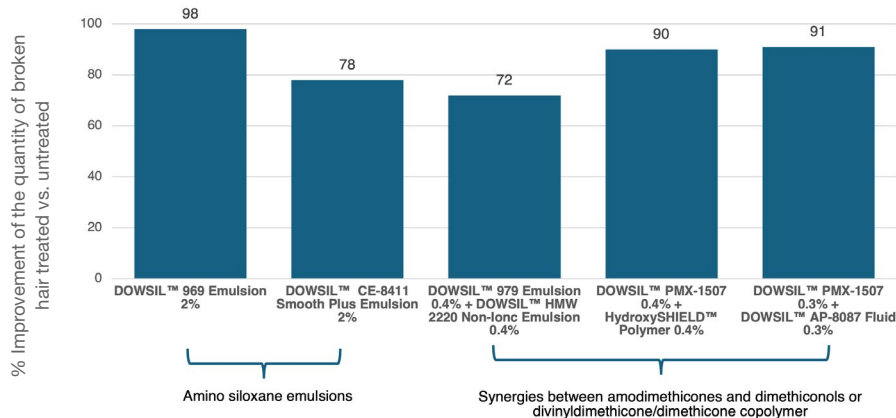
- Virgin Caucasian Hair
- Bleached Caucasian Hair
- Latino curly virgin hair
- Texture Hair Type 3C and 4B
- Delivered from leave in conditioner (LIC) and/or rinse-off conditioner (ROC) formats for more accessibility

Treated Caucasian virgin hair, exposed to heat and washed 10 times



Cuticle heat protection results with 0.5% active of particular silicones

Treated Caucasian bleached hair, exposed to heat and washed 10 times

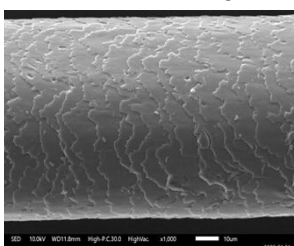


Cuticle heat protection results with 0.8% active or 2% active of particular silicones

Treatment with LIC heat protects Caucasian Bleached hair

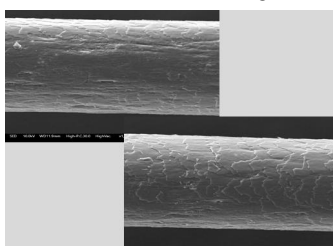
10 washes with a commercial clarifying shampoo

Untreated, undamaged



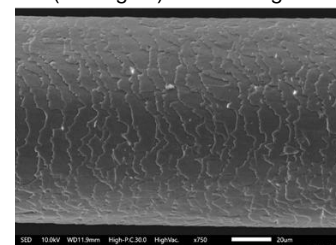
No significant damage

Untreated, heat damaged



Significant amount of damaged zones

HydroxySHIELD™ Polymer 0.4% + DOWSIL™ PMX-1507 Fluid (0.4% gum) heat damaged

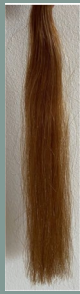


No significant damage

**Bleached Caucasian heat damaged hair
after 10 washes/hand combing cycles**



Untreated



DOWSIL™
PMX-1507 Fluid
0.3% Active
+DOWSIL™
AP-8087 Fluid
(0.3% Active)

**African 3C tresses treated with
"Hair Oil" formulation and exposed to heat**

Untreated

Hair Oil

Benchmark



**Thermablend protect ROC
on virgin hair**

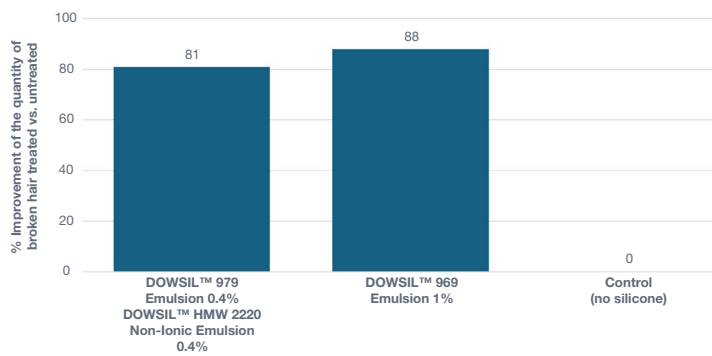


Untreated

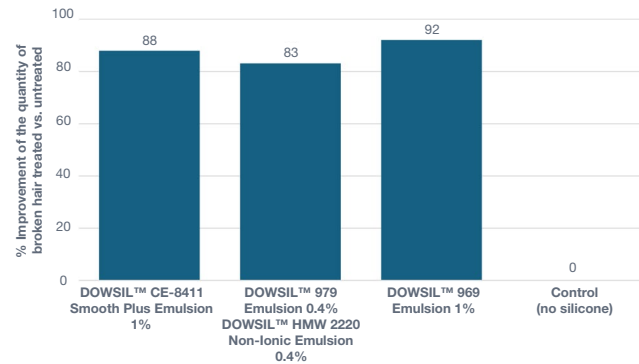


DOWSIL™ 969
Emulsion
1% Active

**Caucasian virgin hair with ROC,
exposed to heat and washed 10 times**



**Caucasian bleached hair with ROC,
exposed to heat and washed 10 times**

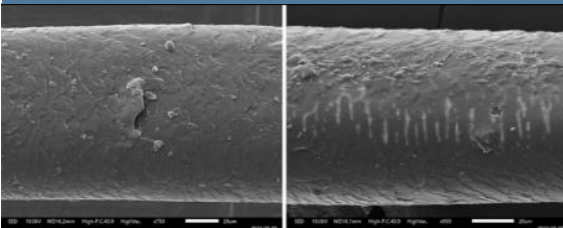


Cuticle protection test results with 0.8% active of 1% active of particular silicones

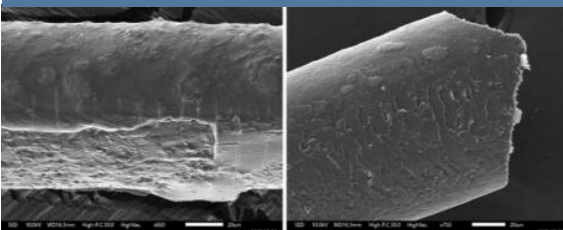
Heat damaged

Control, no DOWSIL™ HMW 2220 Non-ionic Emulsion

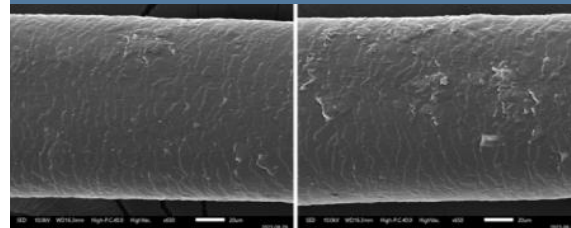
Unbroken fibers



Broken fibers



With DOWSIL™ HMW 2220 Non-ionic Emulsion



Thanks to the addition of 2% active of DOWSIL™ HMW 2220 Non-Ionic Emulsion, Adansonia Goodness Seed Hair Food formulation (CPF 4581) preserves cuticle integrity (SEM images) of relaxed Type IV hair

Recommendations per product format*

LEAVE-IN CONDITIONER (LIC) LIQUID

Low viscosity

Anhydrous

DOWSIL™ OHX-0080 Fluid
DOWSIL™ AP-8087 Fluid
DOWSIL™ PMX-1507 Fluid + HydroxySHIELD™ Polymer
or DOWSIL™ AP-8087 Fluid

Water-based

DOWSIL™ 969 Emulsion
DOWSIL™ CE-8411 Smooth Plus Emulsion
DOWSIL™ HMW-2220 Non-Ionic Emulsion +
DOWSIL™ 979 Emulsion

LIC CREAM

Medium to high viscosity

Water-based

DOWSIL™ 969 Emulsion
DOWSIL™ CE-8411 Smooth Plus Emulsion
DOWSIL™ HMW-2220 Non-Ionic Emulsion +
DOWSIL™ 979 Emulsion

Oil phase

DOWSIL™ OHX-0080 Fluid
DOWSIL™ PMX-1507 Fluid + HydroxySHIELD™ Polymer

LIC SERUM/OIL

Low viscosity

Anhydrous

DOWSIL™ OHX-0080 Fluid
DOWSIL™ AP-8087 Fluid
DOWSIL™ PMX-1507 Fluid +
HydroxySHIELD™ Polymer or
DOWSIL™ AP-8087 Fluid

RINSE-OFF CONDITIONER (ROC)

Anhydrous

DOWSIL™ CE-8411 Smooth
Plus Emulsion
DOWSIL™ HMW-2220 Non-ionic
Emulsion + DOWSIL™ 979 Emulsion

Formulations available on dow.com or by request

*Based on results from testing on caucasian hair

Performance summary

Heat protection solutions	% active silicone			
Caucasian hair	Bleached		Virgin	
Application	LIC	ROC	LIC	ROC
DOWSIL™ CE-8411 Smooth Plus Emulsion Bis-Diisopropanolamino-PG-propyl Dimethicone / Bis-Isobutyl PEG-14 Copolymer (and) Polysorbate 20 (and) Butyloctanol	2%	1%	0.5%	NT
DOWSIL™ 969 Emulsion Amodimethicone (and) Cetrimonium chloride (and) Trideceth-3 (and) Trideceth-15	2%	1%	0.5%	1%
DOWSIL™ AP-8087 Fluid Bis-Hydroxy / Methoxy Amodimethicone	3%	NT	NT	NT
DOWSIL™ OHX-0080 Fluid Dimethiconol	4%	NT	NT	NT
DOWSIL™ PMX-1507 Fluid Dimethicone (and) Dimethiconol	x	x	0.5%	NT
DOWSIL™ 979 Emulsion Amodimethicone (and) C11-15 Alketh-12 (and) C11-15 Alketh-7	x	x	0.5%	NT
DOWSIL™ HMW 2220 Non-Ionic Emulsion + DOWSIL™ 979 Emulsion Divinyldimethicone/Dimethicone Copolymer (and) C12-13 Pareth-23 (and) C12-13 Pareth-3	0.4% each			
DOWSIL™ PMX-1507 Fluid+ HydroxySHIELD™ Polymer Bis-Diisopropanolamino-PG-Propyl Disiloxane / Bis-Vinyl Dimethicone Copolymer	0.4% each	NT	0.4% each	NT
DOWSIL™ PMX-1507 Fluid + DOWSIL™ AP-8087 Fluid	0.3% each	NT	NT	NT

Trend-driven innovation

Consumers want styling flexibility without compromising the health and strength of their hair. To prevent damage and breakage, heat protection is critical prior to subjecting strands to the high temperatures of styling tools.

Let the experts at Dow help you identify the best solutions for your hair care products. Choose from our wide range of innovative heat protection silicones to maximize results for a noticeable difference that consumers can see and feel. For more information, to download the product data sheets, request product samples or talk to an expert, visit [dow.com/personalcare](https://www.dow.com/personalcare).

How can we help you today?

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