



PERSONAL CARE

DOWSIL™ 1686 Resin

Be your brightest star



Consumers desire healthy-appearing skin and hair while online and in person. More products are launched every year with radiance and illuminating benefits as consumers seek products with these claims. Look to DOWSIL™ 1686 Resin to use in formulations to make products that may enable consumers to look their best and be their brightest star.

DOWSIL™ 1686 Resin is a liquid phenyl silicone resin that imparts shine and radiance, contributes to color value, provides moderate wear and controls frizz. DOWSIL™ 1686 Resin can be easily formulated into various product formats. Dow has several technologies across the portfolio that showcase exceptional results in color cosmetics/makeup, skincare and hairstyling, making DOWSIL™ 1686 Resin an innovative product to use in various personal care applications.

Typical properties

INCI name	Polyphenylsilsesquioxane
Appearance	Clear colorless liquid
Active content %	100%
Refractive Index, 25°C	1.495-1.5100
Viscosity	1000-6000 cPs
D4/D5/D6 level	<0.1%/<0.1%/<0.1%
Shelf life	16 months
Preservative	None
Recommended use level	1-20%
China regulatory status	Approved – listed in the Catalog of Cosmetic Ingredients

Features and benefits:

- Very high refractive index product that imparts radiance and shine to skin and hair
- Contributes to color value
- Provides medium and comfortable wear
- Provides good frizz control for various hair types
- Less product required to achieve consistent, uniform coverage and color over six hours

Applications

- Skincare
- Color cosmetics
- Hair care

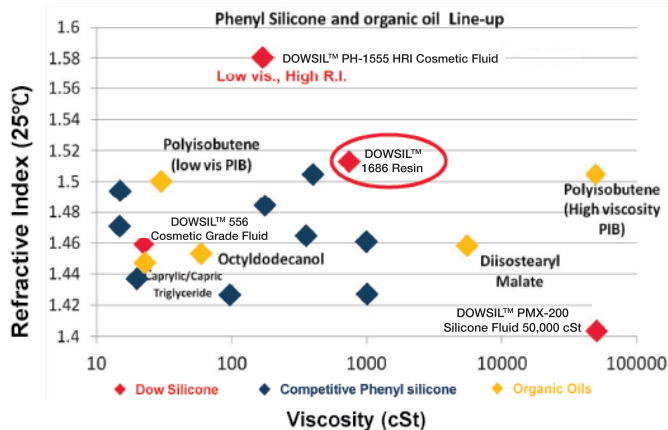
Sustainability benefits

- Non-GMO
- Non-animal origin (potentially suited for vegans)
- Low carbon footprint when formulating (no heat, no cooling)

Unique properties of DOWSIL™ 1686 Resin

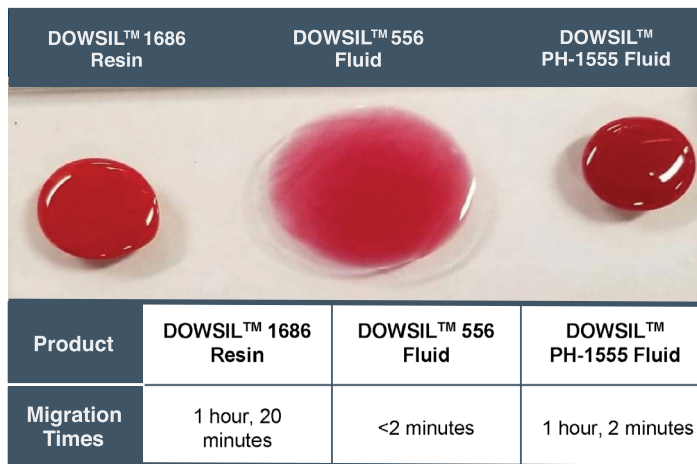
DOWSIL™ 1686 has intermediate viscosity with a high refractive index

Product mapping - Phenyl silicone and organic oils



DOWSIL™ 1686 Resin Migration test

(0.2 ml applied/90 degree vertical/plexiglass sheet)



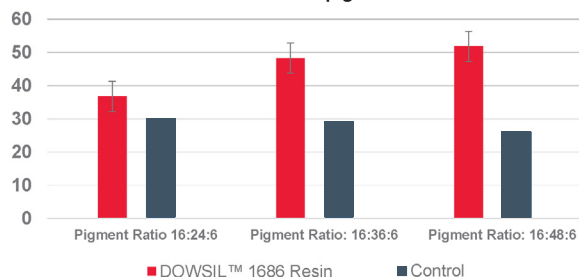
DOWSIL™ 1686 Resin improves chroma/gloss with Si-coated pigment



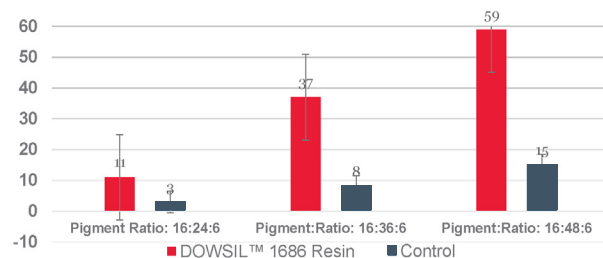
Solvent is a blend of Isododecane/C12-C15 Alkyl Benzoate (3/1)

- Chroma/gloss improves with Si-coated pigment
- The lower concentration percentage of DOWSIL™ 1686 indicates better performance and the need to be well dispersed.

Chroma value with silicone-coated pigment



Gloss with silicone-coated pigment



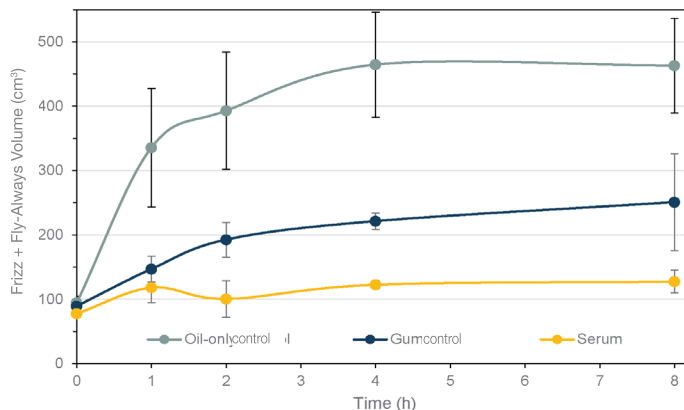
Anhydrous Hair Serum

Frizz control

Hair treatment protocol

- Wash 4 grams frizzy tress with 0.8 grams of 9% SLES, rinse with abundant water
- Dry overnight
- Apply 0.35 grams of the formulation, rub with fingers and comb through 5 times
- Let dry for at least six hours at 50% RH
- Place in humidity chamber at 25°C and 80% RH
- Measure frizz and fly-aways with BNV Bolero



Note: All conditions tested in duplicate
0.75 gram/tress



- Anhydrous serums featuring DOWSIL™ PMX-1505 and DOWSIL™ 1686 Resin have frizz control benefits
- The addition of DOWSIL™ 1686 Resin further delivers statistically-significant frizz reduction vs. the gum-only control

Consumer wear study

Summary

DOWSIL™ 1686 Resin Natural Light		DOWSIL™ 1686 Resin <ul style="list-style-type: none">• Maintains color uniformity on eyes, cheeks and forehead• Eye shadow, foundation stick and multi-stick provide even coverage and continue to have a dewy, radiant appearance over time• Provides more contrast and shine under natural light	
DOWSIL™ 556 Fluid Natural Light			
	Time zero	After two hours	After four hours

About Dow

Dow Personal Care offers unique, innovative ingredients that enable customers around the world to create products with exceptional performance and exciting benefits that consumers can trust and believe in. Whether they seek the confidence of a healthy appearance or the comforts of a clean home, consumers can see and feel the difference in our products through their lustrous hair, radiant skin, shiny surfaces and fabrics that look and smell fresh. We leverage our understanding of customer needs, deep market knowledge and technical expertise—combined with one of the broadest portfolios of technologies—to deliver home and personal care solutions with outstanding performance that are safe for people and the planet. We foster these innovations on global and local levels to meet the needs of diverse consumers through business centers, research and development (R&D), manufacturing plants and customer application centers around the world. Please visit www.dow.com/personalcare for more information.

US

Toll Free 800 441 4DOW
989 832 1542

International

Europe / Middle East + 800 36 94 63 67
Italy + 800 783 825
Asia / Pacific + 800 77 76 77 76
+ 60 37 958 3392
South Africa + 800 99 5078

dow.com

Images: 245281497, 269772365, 56767257491

NOTICE: No freedom from infringement of any patent owned by Dow or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other government enactments. The product shown in this literature may not be available for sale and/or available in all geographies where Dow is represented. The claims made may not have been approved for use in all countries. Dow assumes no obligation or liability for the information in this document. References to "Dow" or the "Company" mean the Dow legal entity selling the products to Customer unless otherwise expressly noted. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.

®™ Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

© 2022 The Dow Chemical Company. All rights reserved.

Form No. 27-3377-0422 BBI