Technical Data Sheet

DOWSIL™ 2501 Cosmetic Wax

INCI NAME: Bis-PEG-18 Methyl Ether Dimethyl Silane

Features & Benefits

- Easy formulation and application of aqueous formulations
- Humectant
- Melts on contact with skin
- Moisturizes
- Reduces tackiness
- Foam booster
- Increases foam density
- Non-comedogenic
- Non-acnegenic

Applications

- Skincare products: moisturizing benefits to the skin through humectancy properties.
- Detackification of formulation containing tacky ingredients such as deodorant sticks.
- Improves foam quality (creamier, more dense foam) and volume in cleanser and shampoo formulations.

Typical Properties

Specification Writers: These values are not intended for use in preparing specifications.

Property	Unit	Result
Color (APHA), as liquid		250 max
Melt range	°C	36–42
Flash point	°C	> 100
Appearance		White to slightly yellow
Cyclotetrasiloxane (D4) content	%	< 0.1
Cyclopentasiloxane (D5) content	%	< 0.1

Description

DOWSIL™ 2501 Cosmetic Wax is a water dispersible silicone glycol copolymer wax. It has a low melting point.

How to Use

DOWSIL™ 2501 Cosmetic Wax is easy to formulate into aqueous systems. It is best to melt the material prior to use in the formulation.

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Form No. 22-1510-01 G

Foaming Properties

DOWSIL™ 2501 Cosmetic Wax has been shown to boost foaming of surfactant systems. A foam test of a mild facial cleanser with and without DOWSIL™ 2501 Cosmetic Wax was conducted using a modified Ross Miles foam volume test. A 500 ml graduated cylinder was fitted with a Waring blender agitator, 50 ml of a 5% solution of the test facial cleanser was added to the graduate and mixed at high speed for 10 seconds. The resultant foam height was measured.

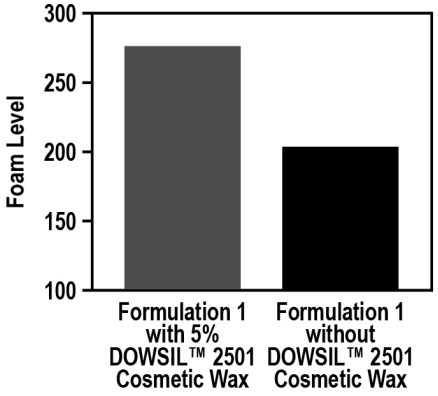

Figure 1: Ross Miles foam volume test

This represents a 40% increase in foam volume.

The facial cleanser listed in the Formulation Sheet (Form number 22-1520) with and without this product was tested in a 14 person, two week, take-home panel (1 week per product). Results (Figure 2) showed the formula containing DOWSIL™ 2501 Cosmetic Wax to be better than the control for ease of foaming, more dense foam and better foam feel.

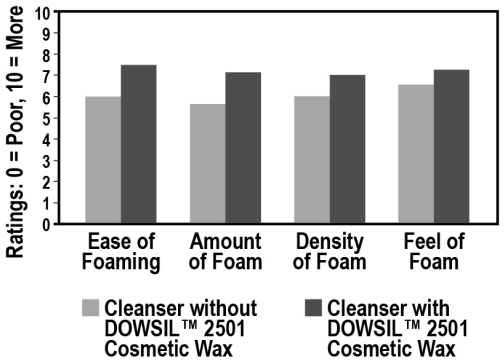

Figure 2: Sensory Evaluation – Facial cleanser

Impact on Formulations

DOWSIL™ 2501 Cosmetic Wax detackifies common cosmetic components and modifies the aesthetic properties of others. Sensory evaluation by 20 expert panelists were made on various cosmetic ingredients with and without DOWSIL™ 2501 Cosmetic Wax.

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Impact on Formulations (Cont.)

Figures 3 to 8 show the modified aesthetic properties when DOWSIL™ 2501 Cosmetic Wax is added at a 1:3 ratio to other cosmetic ingredients. Other sensory profiles may be obtained at different ratios of ingredients and in other formulations.

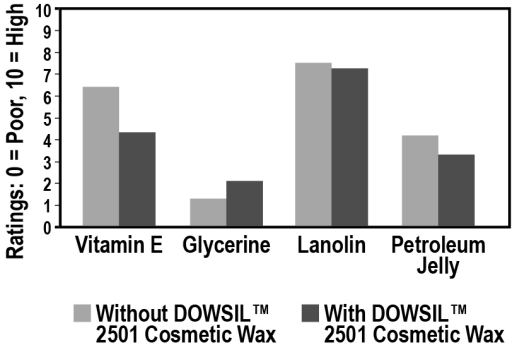

Figure 3: Tackiness – 1 part DOWSIL™ 2501 Cosmetic Wax to 3 parts test material.

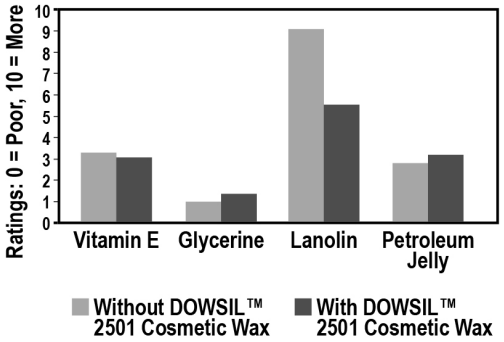

Figure 4: Waxiness – 1 part DOWSIL™ 2501 Cosmetic Wax to 3 parts test material.

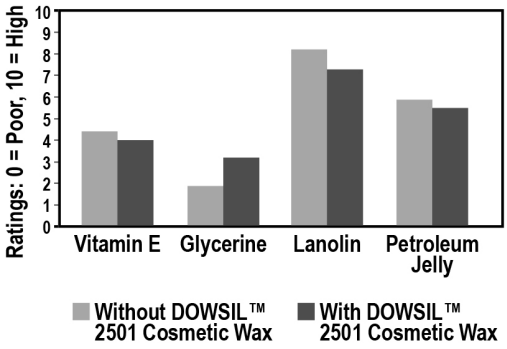

Figure 5: Lotion Stickiness – 1 part DOWSIL™ 2501 Cosmetic Wax to 3 parts test material.

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Impact on Formulations (Cont.)

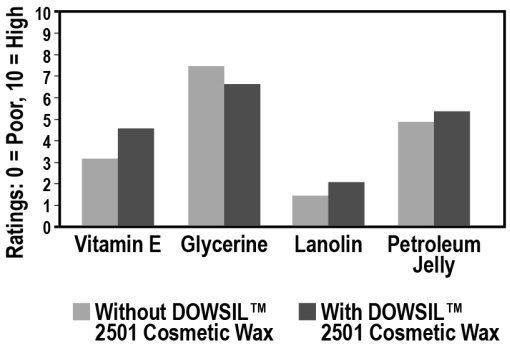

Figure 6: Spreadability – 1 part DOWSIL™ 2501 Cosmetic Wax to 3 parts test material.

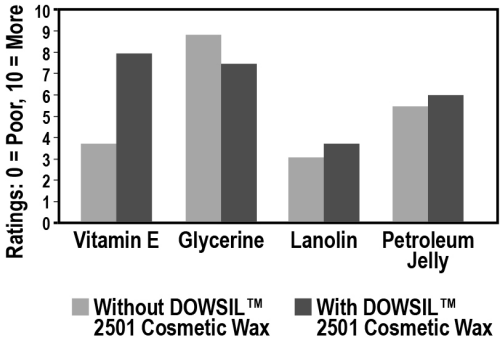

Figure 7: Slipperiness – 1 part DOWSIL™ 2501 Cosmetic Wax to 3 parts test material.

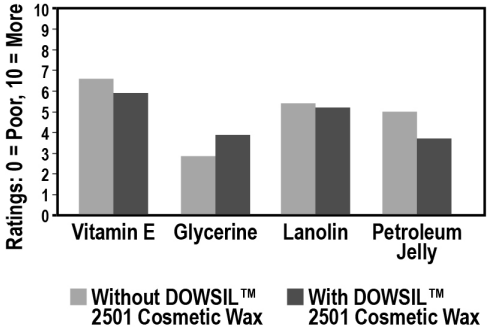

Figure 8: Greasiness – 1 part DOWSIL™ 2501 Cosmetic Wax to 3 parts test material.

Sensory Evaluation Profile

A sensory profile has been developed on DOWSIL™ 2501 Cosmetic Wax to aid you in your formulation effort. Figure 9 can direct you to the aesthetics you desire for your formulation.

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Figure 9: Sensory evaluation profile of DOWSIL™ 2501 Cosmetic Wax.

Observations		0	1	2	3	4	5	6	7	8	9	10	
Lotion Stickiness	Not sticky	Baby Oil	**0.5**									Lanolin	Sticky
Wetness	Dry	Baby Powder				**4.9**						Water	Wet
Spreadability	Hard	Lanolin						**6.5**				Baby Oil	Easy
Absorbency	Low	Lanolin		**2.2**								Protein	High
Gloss	Dull	Denture adhesive								**8.6**		Baby Oil	Shiny
Slipperiness	Draggy	Lanolin							**7.1**			Baby Oil	Slippery
Residue	No residue	Untreated skin								**7.5**		Zinc oxide ointment	Lot of residue
Smoothness	Rough	Denture adhesive								**7.7**		Glass	Smooth
Tackiness	Not tacky	Untreated skin		**2.1**								Lanolin	Very tacky
Oiliness	Not oily	Untreated skin			**2.8**							Baby Oil	Very oily
Greasiness	Not greasy	Untreated skin			**3.0**							Petroleum jelly	Very greasy
Waxiness	Not waxy	Untreated skin		**2.7**								Lanolin	Very waxy

Sensory Evaluation Profile (Cont.)

The Sensory Evaluation Program follows the guidelines recommended by the ASTM Committee E18.03.01 on Sensory Evaluation.

The program utilizes a 20 member trained panel to evaluate the skin feel properties of raw materials as well as formulated products using a description analysis method that quantifies several sensory attributes.

Table 1: Compatibility

Type of Material	
Water	C
Ethyl alcohol	C
Propylene glycol	C
Cyclomethicone	I
Dimethicone	I
Isopropyl myristate	I
Stearyl alcohol	I

C = Compatible at all ratios, I = Incompatible at all ratios

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Handling Precautions

DOWSIL™ 2501 Cosmetic Wax is stable at both low and high temperatures in an inert environment. Under certain conditions in aqueous formulations, DOWSIL™ 2501 Cosmetic Wax hydrolyses into a mixture of silanol functional moiety and an organic polyether.

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.

Usable Life and Storage

When stored at or below 25°C in the original unopened containers, this product has a usable life of 12 months from the date of production.

Packaging Information

This product is available in 16 kg pails and 160 kg drums.

Samples are available in 454 g packs.

Limitations

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

Health and Environmental Information

To support customers in their product safety needs, Dow has an extensive Product Stewardship organization and a team of product safety and regulatory compliance specialists available in each area.

For further information, please see our website, dow.com or consult your local Dow representative.

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