



Technical Data Sheet

DOWSIL™ 2502 Cosmetic Fluid

FEATURES

- Compatible with many organic cosmetic ingredients

BENEFITS

- Substantive to skin
- Provides controlled moisturization
- Enhances the SPF of organic and inorganic sunscreens
- Improves shine
- Non-comedogenic
- Reduced whitening in antiperspirant

INCI NAME: Cetyl Dimethicone

APPLICATIONS

- DOWSIL™ 2502 Cosmetic Fluid has been specifically developed for use in skin care, color cosmetics and hair care applications.

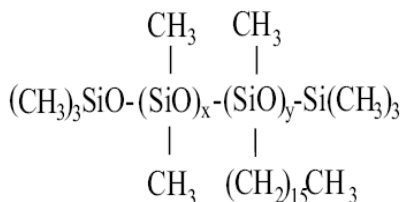
TYPICAL PROPERTIES

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

Property	Unit	Result
Appearance at 37°C		Clear to hazy Liquid
Color	APHA	40
Specific gravity		0.86
Refractive index at 25°C		1.448
Viscosity at 25°C	mm ^{2/s}	45
Flash point - closed cup	°C	>93
Softening point	°C	18
Cyclotetrasiloxane (D4) content	%	<0.1
Cyclopentasiloxane (D5) content	%	<0.1

DESCRIPTION

DOWSIL 2502 Cosmetic Fluid consists of a linear polysiloxane whose alkyl chains are randomly distributed. It conforms to the following structure:



HOW TO USE

DOWSIL 2502 Cosmetic Fluid can easily be incorporated into many typical formulations. Before adding, homogeneity of the liquid should be ensured by heating it to 40°C (104°F) and mixing. It can then be added directly to the oil phase of a cosmetic formulation.

DOWSIL 2502 Cosmetic Fluid can be used to replace mineral oil or petroleum jelly (in part or in whole) in most formulations. Emulsion-based formulations can be successfully formulated with up to 5% by weight of DOWSIL 2502 Cosmetic Fluid.

In hair care formulations, DOWSIL 2502 Cosmetic Fluid has demonstrated to be a very good hair shine enhancer, and in leave-on and rinse-off formulations it performs as good as Phenyltrimethicone.

For its conditioning benefits, DOWSIL 2502 Cosmetic Fluid may be incorporated in a multitude of formulations such as gloss enhancer leave-on and rinse-off, and more intensive treatments such as non-oily hot oils, turning clear at 37°C (99°F). See formulations 1 to 3.

Suggested use levels are normally between 1% and 5% by weight of personal care formulations.

**HANDLING
PRECAUTIONS
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
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USABLE LIFE AND STORAGE

This product will become a wax if cooled below 18°C, but will return to a liquid state if heated to 25°C. When stored at or below 25°C in the original unopened containers, this product has a usable life of 24 months from the date of production.

PACKAGING INFORMATION

Samples are available in 500 ml bottles.

Commercial packaging is available in 16 kg pails and 160 kg drums.

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, www.consumer.dow.com or consult your local Dow representative.

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The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that our products are safe, effective, and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

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DOWSIL™ 2502 Cosmetic Fluid

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Form No. 22-1516-01 E

Table 1: Compatibility of DOWSIL 2502 Cosmetic Fluid.

Organic cosmetic materials	1:9	5:5	9:1
Esters:			
C12-15 Alkyl benzoate	C	C	C
Caprylic/capric triglyceride	C	C	C
Isopropyl isostearate	C	NC	NC
Isopropyl laurate	C	NC	NC
Isopropyl myristate	C	C	C
Isopropyl palmitate	C	C	C
Fatty alcohols / acids:			
Stearyl alcohol	C	C	C
Octyldodecanol	C	C	C
Oleyl alcohol	NC	NC	NC
Glycerides:			
Glyceryl trioctanate	C	C	C
Polyglyceryl-3 diisostearate	NC	NC	NC
Hydrocarbons:			
Mineral oil (light)	C	C	C
Petroleum jelly	C	C	C
Isododecane	C	C	C
Isopar H	C	C	C
Polydecene	C	C	C
Hydrophilics:			
Ethanol 200 proof	NC	NC	NC
Propylene glycol	NC	NC	NC
Water NC NC NC			
Sunscreen actives:			
Octyl methoxycinnamate	C	C	C

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Table 1: Compatibility of DOWSIL 2502 Cosmetic Fluid (continued)

Organic cosmetic materials	1:9	5:5	9:1
Waxes:			
Beeswax	C	C	C
Ozokerite	C	C	C
Beeswax	C	C	C
Candelilla	C	C	C
Vegatable oils:			
Almond oil	NC	NC	NC
Castor oil	NC	NC	NC
Corn oil	NC	C	C
Jobba oil	C	C	C
Lanolin oil	C	C	C
Palm oil	NC	NC	NC
Sesame oil	NC	C	C
Soybean oil	NC	NC	NC
Sunflower oil	C	C	C
Coconut oil	NC	C	C
Dow materials:			
Dimethicone	NC	NC	NC
Cyclomethicone	C	C	C
Phenyl trimethicone	C	C	C

NB: DOWSIL 2502 Cosmetic Fluid being a hazy liquid, slight heating could be necessary to obtain a clear solution.

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SPF ENHANCEMENT

DOWSIL 2502 Cosmetic Fluid shows a 246% increase in the SPF of an oil-in-water cream containing 7.5% micronized Titanium Dioxide compared to the control and a 133% increase in the SPF of an oil-in-water cream containing 6% organic UVB sunscreens compared to a control.

Oil-in-water system containing 7.5% micronized titanium dioxide

	In-vitro SPF	SPF / % UVB ratio
DOWSIL 2502 Cosmetic Fluid (2%)	22.4	3
Control Cream	9.1	1.2

Oil-in-Water formulation containing 6% organic UVB sunscreens

	In-vitro SPF	SPF / % UVB ratio
DOWSIL 2502 Cosmetic Fluid (4%)	20	3.3
Control Cream	15	2.5

Formulation 1: Leave-on conditioner

Dimethicone (and) trisiloxane	86	XIAMETER™ PMX-1184 Silicone Fluid
Isopropyl myristate	5	
Cetyl dimethicone	5	DOWSIL 2502 Cosmetic Fluid
Ethylhexyl methoxycinnamate	4	Parsol® MCX / Roche

Formulation 2: Rinse-off conditioner:

Hydroxyethylcellulose (Natrosol® 250 HHR, Aqualon)	1.5%
Cetrimoniu chloride 29% (Arquad® 16-29, Akzo)	0.3%
PEG 100 Stearate & Glyceryl Stearate (Arlacel® 165, ICI)	1.0%
Cetyl Alcohol	1.0%
DOWSIL 2502 Cosmetic Fluid	5.0%
Preservative	q.s
Distilled water	up to 100.0%

Formulation 3: Hot oil treatment

Dimethicone (and) trisiloxane	90	XIAMETER™ PMX-1184 Silicone Fluid
Cetyl dimethicone	10	DOWSIL 2502 Cosmetic Fluid

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Figure 1: Substantively data.

Measurement by Fourier transform infra-red spectroscopy (FTIR) shows that 42% of DOWSIL 2502 Cosmetic Fluid remains on the skin after 3 washes with soap and water.

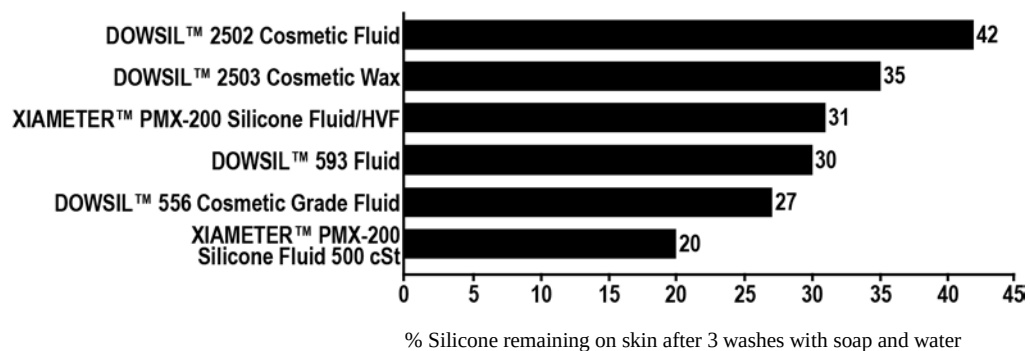


Figure 2: Moisturization data.

Transepidermal water loss (TEWL) measurements after 2 hours show that DOWSIL 2502 Cosmetic Fluid demonstrates an improved moisturization efficacy over mineral oil.

