Technical Data Sheet

DOWSIL™ EL-9140 DM Silicone Elastomer Blend

INCI NAME: Dimethicone (and) Dimethicone Crosspolymer

Features & Benefits

- Clear to slightly translucent cross-linked silicone elastomer gel delivered in volatile dimethicone
- Easy to formulate
- Provides dry smoothness and a light, silky, non-greasy skin feel
- Quick absorption
- Cold processing
- Acts as a thickening agent for water-in-oil and water-in-silicone formulations and silicone fluids

Composition

- Approximately 14 weight percent dimethicone crosspolymer in volatile, low viscosity (1.5 cSt) dimethicone

Applications

- Can be used in a wide range of personal care products such as skin care, color cosmetics, sun care, and hair care.
- Rheology and texture modifier in oil-in-water and water-in-oil emulsions and anhydrous gels.

Typical Properties

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

CTM[1]	Property	Unit	Result
0176	Appearance		Crystal clear to slightly translucent gel. May have slight amber color. Free of particulate matter.
0540	Specific gravity		0.90
0021	Flash point	°C	92
0050	Viscosity	mm^2/s	350,000–575,000
0208	Non-volatile content	%	13.25–14.75
	Cyclotetrasiloxane (D4) content	%	< 0.1
	Cyclopentasiloxane (D5) content	%	< 0.1

1. CTM: Corporate Test Method, copies of CTMs are available upon request.

Description

DOWSIL™ EL-9140 DM Silicone Elastomer Blend is a mixture of high molecular weight silicone elastomer in volatile, low viscosity (1.5 cSt) dimethicone.

How to Use

To incorporate DOWSIL™ EL 9140 DM Silicone Elastomer Blend into a formula, it should be combined with the oil or silicone phase. It is important for the elastomer blend to be uniformly dispersed in the oil/silicone phase before proceeding.

The viscosity of DOWSIL™ EL 9140 DM Silicone Elastomer Blend decreases as it is diluted with other oils. Figure 1 illustrates this effect when XIAMETER™ PMX-200 Silicone Fluid 1.5 cSt is used as the diluent.

Formulation Tips

DOWSIL™ EL-9140 DM Silicone Elastomer Blend may be formulated into oil-in-water emulsions, water-in-silicone emulsions, water-in-oil emulsions and anhydrous products.

- It may be added to the oil phase or silicone phase in an emulsion formulation.
- For ease of use, its viscosity may be reduced by blending with dimethicone.
- It may be incorporated in formulation with the use of mixers and may be subjected to high shear devices such as homogenizers and sonolators.
- It is dispersible in a variety of liquid oils, as referenced in the compatibility chart in Table 1.
- Because the elastomer is stable, DOWSIL™ EL-9140 DM Silicone Elastomer Blend may be subjected to heat for a short duration. When heat is used, the material should be processed in an enclosed vessel to prevent the dimethicone from volatilizing; the vessel should be inerted at temperatures over 60°C (140°F).

Processing

DOWSIL™ EL-9140 DM Silicone Elastomer Blend is a high viscosity material, but like DOWSIL™ 9040 Silicone Elastomer Blend, this product is strongly shear thinning and can be pumped using suitable equipment. Information regarding suitable equipment may be found in the product information sheet for DOWSIL™ 9040 Silicone Elastomer Blend.

Table 1: Compatibility with Common Cosmetic Ingredients at Several Ratios

Wt% DOWSIL™ EL-9140 DM Silicone Elastomer Blend:	10	50	90
Material			
Water	NC	NC	NC
Triglycerides	NC	C	C
Solvents			
Ethanol	NC	NC	C
Propylene glycol	NC	NC	C
Isopropyl alcohol	NC	NC	C
Acetone	NC	NC	C

NC: Not Compatible; C: Compatible

How to Use (Cont.)

Table 1: Compatibility with Common Cosmetic Ingredients at Several Ratios (Cont.)

Wt% DOWSIL™ EL-9140 DM Silicone Elastomer Blend:	10	50	90
Fatty Esters			
Isopropyl myristate	C	C	C
Octyl palmitate	NC	NC	C
Hydrocarbons			
Mineral oil	NC	NC	C
Isododecane	C	C	C
Silicones			
XIAMETER™ PMX-0245 Cyclopentasiloxane	C	C	C
XIAMETER™ PMX-200 Silicone Fluid 5–30000 cSt	C	C	C
DOWSIL™ 556 Cosmetic Grade Fluid	C	C	C

The elastomer in DOWSIL™ EL-9140 DM Silicone Elastomer Blend is generally dispersible in non-polar oils and solvents, and the resulting dispersions are stable if above a certain viscosity. At lower viscosities, dispersions often will separate over time to produce an elastomer-rich phase and a solvent-rich phase. In most cases, the elastomer-rich phase is the denser phase and appears at the bottom of the container. Mixing DOWSIL™ EL-9140 DM Silicone Elastomer Blend with polar solvents can lead to a collapse of the elastomer network and the elastomer may appear as a white precipitate, or flock. In the above table, a notation of “compatible” indicates a homogeneous system immediately after mixing.

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 INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT CONSUMER.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 40°C (104°F) in the original unopened containers, this product has a usable life of 24 months from the date of production.

Packaging Information

This product is available in 15 kg pails and 165 kg drums.

Samples are available in 0.3 kg cans.

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

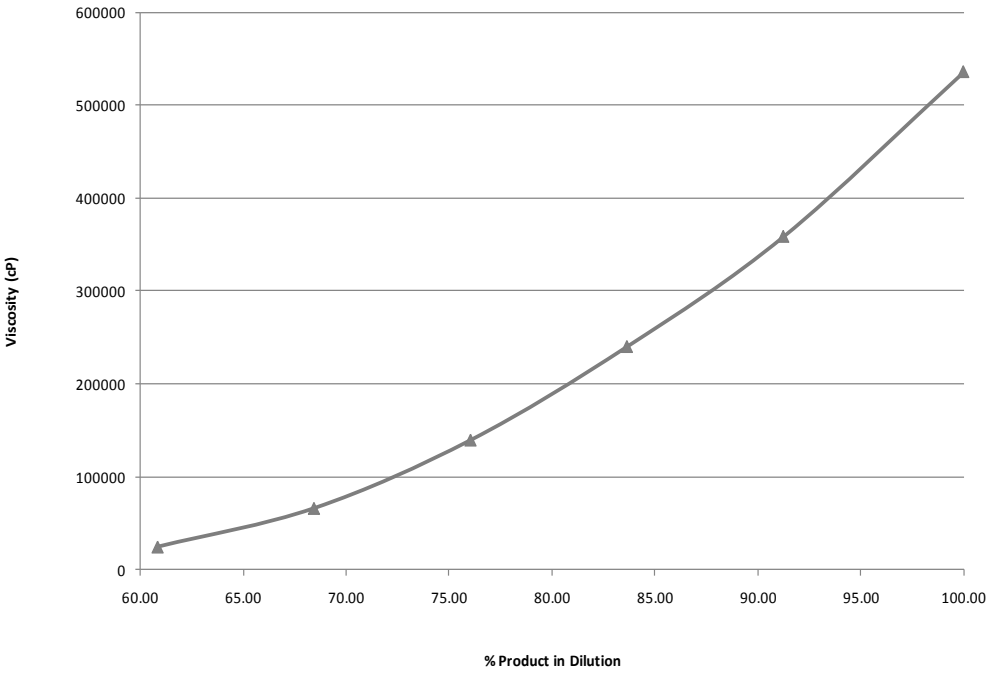

Figure 1: Dilution curve of DOWSIL™ EL-9140 DM Silicone Elastomer Blend, diluted with XIAMETER™ PMX-200 Silicone Fluid 1.5 cSt at various ratios.

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