



DOWSIL™ EL-8040 ID Silicone Organic Blend

INCI NAME: Isododecane (and) Dimethicone Crosspolymer

Features & Benefits

- Clear to slightly translucent crosslinked silicone elastomer gel
- Easy to formulate
- Compatible with a variety of organic ingredients
- Provides dry smoothness and a light, silky, non-greasy skin feel
- Quick absorption
- Low transfer in anhydrous color cosmetic formulations
- Cold processing

Composition

- Approximately 16 weight percent Dimethicone Crosspolymer in Isododecane

Applications

- Color cosmetics
- Skin care
- Sunscreens

Typical Properties

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

Property	Unit	Result
Appearance		Crystal clear to slightly translucent gel. May have slight amber color. Free of particulate matter.
Viscosity	mm ² /s	300,000–550,000
Non-volatile content	%	15.25–16.75
Cyclopentasiloxane content	%	< 1
Cyclotetrasiloxane content	%	< 1

Description

DOWSIL™ EL-8040 ID Silicone Organic Blend is a mixture of high molecular weight silicone elastomer in isododecane.

How to Use

Disperse the oil phase into DOWSIL™ EL-8040 ID Silicone Organic Blend using simple mixing. There is no need for post-shearing. This product provides isododecane which has already been thickened and can provide a novel form of delivery for other formulation components. Thickening of formulations can be achieved using a cold process.

Isododecane may cause skin irritation upon repeated and prolonged exposures. Proper dilution of this product into consumer personal care end products is recommended.

Formulation Tips

DOWSIL™ EL-8040 ID Silicone Organic 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.
- It may be post-added to emulsions provided the emulsion is viscous enough for the DOWSIL™ EL-8040 ID Silicone Organic Blend to be dispersed.
- For ease of use, its viscosity may be reduced by blending with a compatible organic solvent.
- It may be formulated with organic oils and silicon-based materials 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.
- Because the elastomer is stable, DOWSIL™ EL-8040 ID Silicone Organic 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 isododecane from volatilizing; the vessel should be inerted at temperatures over 40°C (104°F).

Processing

DOWSIL™ EL-8040 ID Silicone Organic Blend is a viscous product that exhibits shear thinning behavior. The following information will aid in the selection of the proper equipment to use when processing DOWSIL™ EL-8040 ID Silicone Organic Blend out of a drum.

Pump Recommendation

GRACO BULLDOG 10:1 Pump with follower plate. For more information, contact GRACO at www.graco.com.

Note: GRACO offers various BULLDOG models, and other pump manufacturers may offer similar equipment equally capable of processing the material efficiently. Users should work directly with the pump manufacturer to determine the best design for their needs.

Customer-specific Pump Design Considerations

1. Pressure and flow requirements
 - a. Air supply pressure: Will depend on plant's air supply capabilities.
 - b. Discharge pressure: Will depend on total pressure required to move the silicone organic blend from point A to point B. Pressure drops due to elevation, frictional losses within the piping, fittings, valves, filters, etc., will need to be considered.
 - c. Flow requirements: Will depend on how quickly the user wishes to transfer the silicone organic blend from a 208 liter (55 gallon) drum into a vessel.

How to Use (Cont.)

2. Material viscosity in cP at the application temperature
DOWSIL™ EL-8040 ID Silicone Organic Blend is shear thinning. It is the responsibility of the user to determine the effective viscosity based on the user's application. Once the material is pushed through the pump by the follower plate and processed in the pump, the product will shear thin and process as a lower viscosity fluid.
3. Construction material for wetted parts
Stainless steel is recommended but carbon steel may also be used.
4. Construction material for seals and gaskets
VITON or TEFLON materials are recommended. Please contact Dow for alternatives.

Clean-up

Isododecane which dilutes the viscosity of DOWSIL™ EL-8040 ID Silicone Organic Blend to water-thin, is recommended for soaking or cleaning equipment. Other non-polar solvents may work as well.

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 12.5 kg pails and 150 kg drums.

Samples are available in 0.35 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.

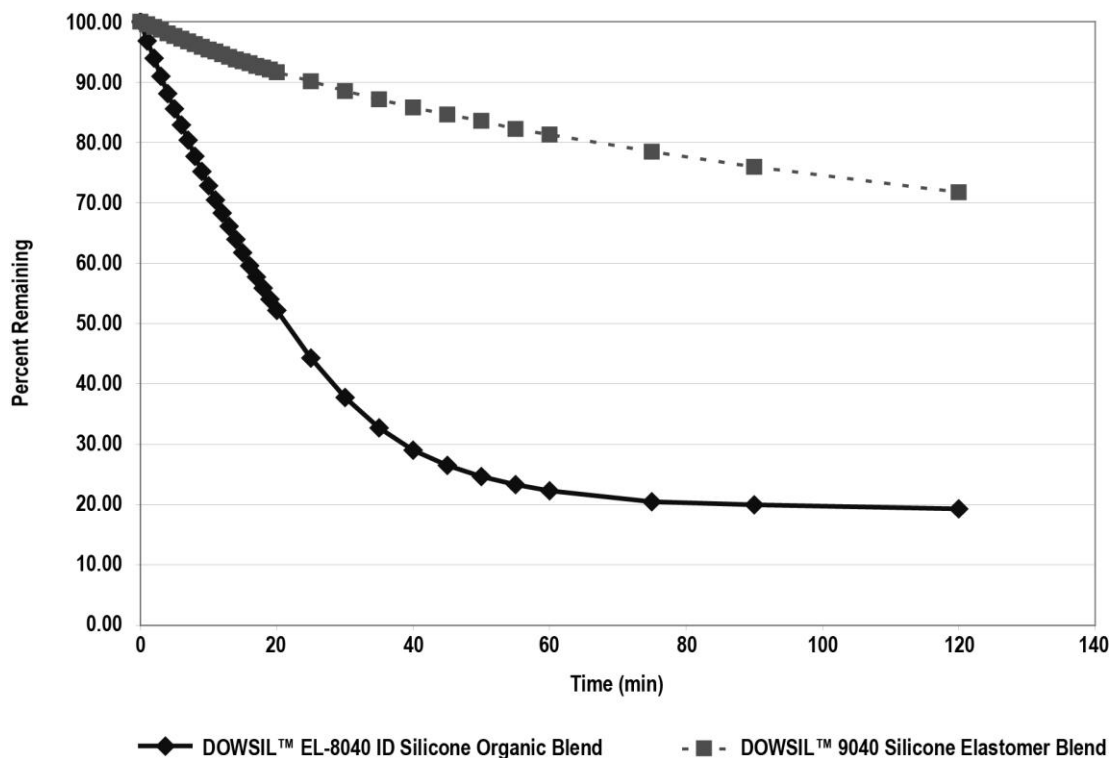


Figure 1: Volatility at ambient conditions

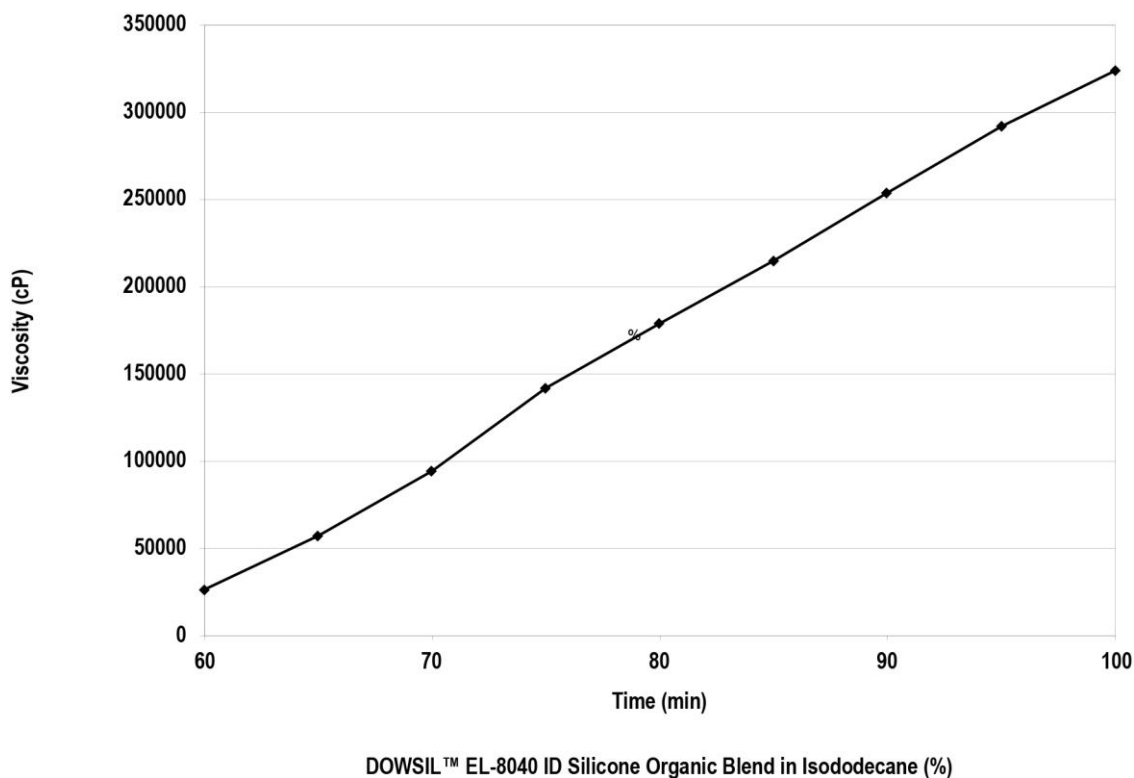


Figure 2: Dilution Curve for DOWSIL™ EL-8040 ID Silicone Organic Blend in Isododecane

Table 1: Compatibility with selected fluids

Material	Weight percent DOWSIL™ EL-8040 ID Silicone Organic Blend					
	70%	75%	80%	85%	90%	95%
Ethylhexyl Methoxycinnamate (Octinoxate)	Very Hazy	Very Hazy	Very Hazy	Slightly Hazy	Clear	Clear
Octocrylene (Octocrilene)	Not Tested	Not Tested	Not Compatible	Cloudy	Hazy	Slightly Hazy
Ethylhexyl Salicylate (Octisalate)	Hazy	Slightly Hazy	Clear	Clear	Clear	Clear
C12-15 Alkyl Benzoate	Not Tested	Not Tested	Hazy	Slightly Hazy	Slightly Hazy	Clear
Caprylic/Capric Triglyceride	Not Tested	Hazy	Slightly Hazy	Clear	Clear	Clear

Table 2: Additional Compatibility Information

Material	Weight percent DOWSIL™ EL-8040 ID Silicone Organic Blend			
	10%	50%	75%	90%
Isopropyl Palmitate	NC	NC	Not Tested	C
Lauryl Alcohol	NC	NC	Not Tested	C
Oleyl Alcohol	NC	NC	Not Tested	Hazy
Mineral Oil	NC	NC	Hazy	C
Sunflower Oil	NC	NC	NC	Hazy
PPG-3 Myristyl Ether	NC	NC	Not Tested	C
PPG-15 Stearyl Ether	Not Tested	Not Tested	NC	Not Tested
Squalane	Not Tested	Not Tested	Hazy	Not Tested
Ethanol	Not Tested	Not Tested	NC	Not Tested
XIAMETER™ PMX-200 Silicone Fluid 350 cSt	Not Tested	Not Tested	NC	Not Tested

NC: Not Compatible; C: Compatible

Table 3: Water-in-Oil Sun Care Cream Prototype Formulation 1167

Part A		Weight %
Lauryl PEG/PPG-18/18 Methicone	DOWSIL™ 5200 Formulation Aid	3.0
Cyclohexasiloxane	XIAMETER™ PMX-0246 Cyclohexasiloxane	3.0
Isododecane and Dimethicone Crosspolymer	DOWSIL™ EL-8040 ID Silicone Organic Blend	11.0
Dimethicone	XIAMETER™ PMX-200 Silicone Fluid 100 cSt	3
Titanium Dioxide (and) Dimethicone		2
Ethylhexyl Methoxycinnamate		7.5
Ethylhexyl Salicylate		5.0
Part B		
Deionized Water		60.4
Propylene Glycol		3.0
Sodium Chloride		2.0
Preservative		0.1

Procedure:

1. Premix Dimethicone and Titanium Dioxide (and) Dimethicone.
2. In the main mixing vessel, add the ingredients of Phase A and mix.
3. In a separate mixing vessel, add the ingredients of Phase B and mix.
4. Add Phase B to Phase A very slowly with turbulent mixing at approximately 1300 rpm.

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