DOWSIL™ EL-8050 ID Silicone Organic Elastomer Blend

Description

INCI Name: Isododecane (and) Dimethicone/Bis-Isobutyl PPG-20 Crosspolymer

DOWSIL™ EL-8050 ID Silicone Organic Elastomer Blend is a mixture of high molecular weight polyglycol modified silicone elastomer in isododecane.

Uses / Applications

- Color cosmetics
- Skin and body care
- Face care
- Sun care

Benefits

Color cosmetics

- Volatile carrier
- Sensory enhancer (powdery feel)
- Texture enhancer
- Compatible with organic ingredients
- Sensory enhancer (smooth feel)

Face care

- Volatile carrier
- Sensory enhancer (powdery feel)
- Supports clear systems
- Compatible with organic ingredients
- Sensory enhancer (smooth feel)
- Thickener/rheology modifier

Sun care

- Volatile carrier
- Compatible with sunscreens
- Sensory enhancer (smooth feel)
- Thickener/rheology modifier
- Compatible with organic ingredients
- Sensory enhancer (powdery feel)
- Supports clear systems
- Dispersion aid

Physical Properties

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

Reference	Property	Result	Unit	Comments
CTM0176	Appearance	Clear to translucent, Colorless to amber/tan/yellow, Gel, May contain sediment/particulate		CTM: Corporate Test Method, copies of CTM's are available on request.
CTM0050	Viscosity @ 25°C (77°F)	350,000– 575,000	cSt	HELIPATH RV TD, Spindle 94 @ 2.5 RPM
	Flash point (closed)	≥ 47°C	°C	
CTM0208	Non-Volatile Content (NVC)	15.25 - 15.75	%	2g/105C/3h/Al Cup, forced draft
	D4	< 0.1	%	
	D5	< 0.1	%	

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Processing and Application Guidelines

Disperse the oil phase into DOWSIL™ EL-8050 ID Silicone Organic Elastomer Blend using simple mixing. There is no need for postshearing. This product offers isododecane which has already been thickened and can offer a novel form of delivery for other formulation components. Thickening of formulations can be achieved using a cold process.

Formulation Tips

DOWSIL™ EL-8050 ID Silicone Organic Elastomer Blend may be formulated into oil-inwater 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 possible to post-add to emulsions provided the emulsion is viscous enough for the elastomer blend to be dispersed.
- For ease of use, its viscosity may be reduced by blending with a compatible organic solvent (see Table 1).
- 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 dispersable in a variety of liquid oils.
- DOWSIL™ EL-8050 ID Silicone Organic 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 isododecane from volatilizing; the vessel should be inerted at temperatures over 40°C (104°F).

Processing

DOWSIL™ EL-8050 ID Silicone Organic Elastomer 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-8050 ID Silicone Organic Elastomer Blend out of a drum.

Pump Recommendation

GRACO BULLDOG 10:1 Pump with follower plate. For more information, contact GRACO at graco.com. Note: GRACO offers various 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 elastomer 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 elastomer blend from a 208 liter (55 gallon) drum into a vessel.
2. Material viscosity in cP (mPa·s) at the application temperature DOWSIL™ EL-8050 ID Silicone Organic Elastomer 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.

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Clean-up
Non-polar organic or silicone solvents are recommended for soaking or cleaning equipment.

Table 1

Compatibility with Common Cosmetic Ingredients at Several Ratios

Cosmetic Ingredients (INCI)	DOWSIL™ EL-8050 ID Silicone Organic Elastomer Blend		DOWSIL™ EL-8051 ID Silicone Organic Elastomer Blend		DOWSIL™ EL-8052 IH Silicone Organic Elastomer Blend		DOWSIL™ 9045 Silicone Elastomer Blend	
Weight Percent Cosmetic Ingredient:	10%	25%	10%	25%	10%	25%	10%	25%
Esters:								
C12-15 Alkyl Benzoate	H	H	C	H	C	C	C	O
Caprylic/Capric Triglyceride	C	C	C	H	C	C	C	O
Diisopropyl Adipate	C	H	C	C	C	C	H	H
Isopropyl Myristate	C	C	C	H	C	C	C	NC
Octylpalmitate	C	C	C	NC	C	H	H	NC
Isodecyl Neopentanoate	C	C	C	C	C	C	O	O
Fatty Alcohols/Acids:								
Lauryl Alcohol	C	C	C	H	C	NC	C	O
Octyldodecanol	C	H	C	NC	C	H	C	NC
Oleyl Alcohol	C	H	C	NC	C	H	O	NC
Hydrocarbons:								
Isododecane	C	C	C	C	C	C	H	H
Isohexadecane	C	C	C	C	C	H	H	H
Isopar L	C	C	C	C	C	C	H	H
Mineral Oil	C	NC	C	NC	C	NC	H	H
Hydrophilics:								
Water	NC	NC	NC	NC	NC	NC	NC	NC
Ethanol	C	C	C	H	C	C	H	NC
Propylene Glycol	H	NC	H	NC	H	NC	NC	NC
Sunscreen Actives:								
Ethylhexyl Methoxycinnamate	C	C	C	H	C	C	H	NC
Ethylhexyl Salicylate	C	C	C	H	C	C	H	H
Homosalate	C	C	C	H	C	C	H	O

C = Clear; H = Hazy; O = Cloudy to Opaque; NC = Not Compatible

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Table 1 (Cont.)

Cosmetic Ingredients (INCI)	DOWSIL™ EL-8050 ID Silicone Organic Elastomer Blend		DOWSIL™ EL-8051 ID Silicone Organic Elastomer Blend		DOWSIL™ EL-8052 IH Silicone Organic Elastomer Blend		DOWSIL™ 9045 Silicone Elastomer Blend	
Weight Percent Cosmetic Ingredient:	10%	25%	10%	25%	10%	25%	10%	25%
Vegetable Oils:								
Almond Oil	C	NC	H	NC	C	NC	O	NC
Avocado Oil	C	NC	H	NC	H	NC	O	NC
Castor Oil	O	NC	O	O	O	O	O	NC
Jojoba Oil	C	NC	H	NC	H	NC	H	NC
Sesame Oil	C	H	H	NC	H	H	O	O
Sunflower Oil	C	NC	H	NC	C	H	O	NC
XIAMETER™ Materials:								
XIAMETER™ PMX-200 Silicone Fluid 1.5 cSt	C	H	C	C	C	C	H	H
XIAMETER™ PMX-200 Silicone Fluid 100 cSt	NC	NC	H	NC	NC	NC	H	H
XIAMETER™ PMX-0245 Cyclopentasiloxane	C	C	C	C	C	C	H	H
XIAMETER™ PMX-1501 Fluid	H	H	H	H	C	H	H	H
XIAMETER™ PMX-1503 Fluid	H	H	H	H	C	H	H	H
DOWSIL™ Materials:								
DOWSIL™ 2502 Cosmetic Fluid	H	NC	H	NC	NC	NC	O	NC
DOWSIL™ 2503 Cosmetic Wax	H	NC	H	O	NC	NC	O	O
DOWSIL™ 556 Cosmetic Grade Fluid	C	C	C	H	C	C	H	H
DOWSIL™ 593 Fluid	H	NC	H	NC	C	NC	H	H
DOWSIL™ 5562 Carbinol Fluid	C	H	C	C	C	C	H	C
DOWSIL™ FZ-3196 Fluid	C	C	C	C	C	C	H	H

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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 DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE

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.

Disposal Considerations

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.
It is the user's responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your Dow Technical Representative for more information.

Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

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