



## Technical Data Sheet

### DOWSIL™ EL-8052 IH Silicone Organic Elastomer Blend

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

#### Features & Benefits

- Clear to slightly translucent crosslinked silicone-organic elastomer gel delivered in a non-volatile organic carrier fluid
- Compatible with a wide range of organic ingredients
- Provides dry smoothness and a silky, lubricious skin feel
- Improved organic compatibility versus traditional silicone elastomer gels
- Ability to create clear systems with organic components
- Enhances aesthetics of anhydrous formulations
- Provides thickening benefits in alcohol-based systems
- Cold processing

#### Composition

- Approximately 16.5% Dimethicone/ Bis-Isobutyl PPG-20 Crosspolymer in Isohexadecane

#### Applications

- Imparts light, silky, lubricious skin feel
- Delivery aid for lipophilic actives, including sunscreens
- Rheology modifier in oil-in-water and water-in-oil emulsions and anhydrous gels
- Can be used in a wide range of personal care products such as skin care, color cosmetics, and sun care

#### Typical Properties

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

| Property                        | Unit               | Result                                                                                    |
|---------------------------------|--------------------|-------------------------------------------------------------------------------------------|
| Viscosity at 25°C (77°F)        | mm <sup>2</sup> /s | 350,000–575,000                                                                           |
| Non-volatile content            | %                  | 16.00–17.50                                                                               |
| Flash point                     | °C                 | > 100                                                                                     |
| Appearance                      |                    | Crystal clear to slightly translucent gel. Light amber color. Free of particulate matter. |
| Cyclotetrasiloxane (D4) content | %                  | < 0.1                                                                                     |
| Cyclopentasiloxane (D5) content | %                  | < 0.1                                                                                     |

## Description

DOWSIL™ EL-8052 IH Silicone Organic Elastomer Blend is a mixture of high molecular weight polyglycol-modified silicone elastomer in isohexadecane.

## How to Use

Disperse the oil phase into DOWSIL™ EL-8052 IH Silicone Organic Elastomer Blend using simple mixing. There is no need for post-shearing. This elastomer material contains isohexadecane which provides compatibility and a novel form of delivery of other formulation components. Thickening of formulations can be achieved using a cold process.

### Formulation Tips

DOWSIL™ EL-8052 IH Silicone Organic 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.
- 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.
- 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.
- DOWSIL™ EL-8052 IH Silicone Organic Elastomer Blend may be subjected to heat for a short duration.

### Processing

DOWSIL™ EL-8052 IH 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-8052 IH 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](http://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.

UNRESTRICTED – May be shared with anyone

©™ Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

DOWSIL™ EL-8052 IH Silicone Organic Elastomer Blend

© 2017–2019 The Dow Chemical Company. All rights reserved.

## How to Use

### 2. Material Viscosity in cP (mPa•s) at the Application Temperature

DOWSIL™ EL-8052 IH 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.

## Clean-up

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

## 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 14 kg pails and 155 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](http://consumer.dow.com) or consult your local Dow representative.

**Table 1:** Compatibility with Common Cosmetic Ingredients at Several Ratios

| Cosmetic Ingredients (INCI)  | DOWSIL™<br>EL-8050 ID<br>Silicone Organic<br>Elastomer Blend |     | DOWSIL™<br>EL-8051 ID<br>Silicone Organic<br>Elastomer Blend |     | DOWSIL™<br>EL-8052 IH<br>Silicone Organic<br>Elastomer Blend |     | DOWSIL™<br>9045 Silicone<br>Elastomer Blend |     |
|------------------------------|--------------------------------------------------------------|-----|--------------------------------------------------------------|-----|--------------------------------------------------------------|-----|---------------------------------------------|-----|
|                              | 10%                                                          | 25% | 10%                                                          | 25% | 10%                                                          | 25% | 10%                                         | 25% |
| <b>ESTERS:</b>               |                                                              |     |                                                              |     |                                                              |     |                                             |     |
| 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   |
| <b>FATTY ALCOHOLS/ACIDS:</b> |                                                              |     |                                                              |     |                                                              |     |                                             |     |
| 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  |
| <b>HYDROCARBONS:</b>         |                                                              |     |                                                              |     |                                                              |     |                                             |     |
| 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   |
| <b>HYDROPHILICS:</b>         |                                                              |     |                                                              |     |                                                              |     |                                             |     |
| 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  |
| <b>SUNSCREEN ACTIVES:</b>    |                                                              |     |                                                              |     |                                                              |     |                                             |     |
| 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   |
| <b>VEGETABLE OILS:</b>       |                                                              |     |                                                              |     |                                                              |     |                                             |     |
| 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  |
| Jobba 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  |

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

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

| Cosmetic Ingredients (INCI)              | DOWSIL™<br>EL-8050 ID<br>Silicone Organic<br>Elastomer Blend |     | DOWSIL™<br>EL-8051 ID<br>Silicone Organic<br>Elastomer Blend |     | DOWSIL™<br>EL-8052 IH<br>Silicone Organic<br>Elastomer Blend |     | DOWSIL™<br>9045 Silicone<br>Elastomer Blend |     |
|------------------------------------------|--------------------------------------------------------------|-----|--------------------------------------------------------------|-----|--------------------------------------------------------------|-----|---------------------------------------------|-----|
|                                          | 10%                                                          | 25% | 10%                                                          | 25% | 10%                                                          | 25% | 10%                                         | 25% |
| <b>XIAMETER™ MATERIALS:</b>              |                                                              |     |                                                              |     |                                                              |     |                                             |     |
| 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   |
| <b>DOWSIL™ MATERIALS:</b>                |                                                              |     |                                                              |     |                                                              |     |                                             |     |
| 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   |

consumer.dow.com

**LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY**

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.

Dow's sole warranty is that our products will meet the sales specifications in effect at the time of shipment.

Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

**TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, DOW SPECIFICALLY DISCLAIMS ANY OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY.**

**DOW DISCLAIMS LIABILITY FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.**

