Technical Data Sheet

DOWSIL™ FA 4002 ID Silicone Acrylate

INCI NAME: Isododecane (and) Acrylates/Polytrimethylsiloxymethacrylate Copolymer

Features & Benefits

- Film former
- Compatibility with organic sunscreens, pigments and cosmetic ingredients
- Additive in color cosmetics
- Durable foundation with comfort to wear
- Lipstick with long lasting, non-transfer and comfort properties
- Wash off resistance
- Sebum resistance and reduction
- Non-occlusive
- Flexible hold with bounce

Composition

- 40% polymer in isododecane

Applications

- Personal care applications including color cosmetic, sun care and hair care

Typical Properties

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

Test[1]	Property	Unit	Result
CTM 0176	Appearance		Clear to slightly hazy
CTM 004A	Viscosity at 25°C	mm^2/s	150
CTM 0002	Refractive index		1.43
CTM 0208	Non-volatile content, 1g/150°C /3 hours	%	40
CTM 0006	Flash point - open cup	°C	40
	Cyclotetrasiloxane (D4) content	%	< 0.1
	Cyclopentasiloxane (D5) content	%	< 0.1

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

Description

DOWSIL™ FA 4002 ID Silicone Acrylate is a blend of approximately 40% of acrylates/polytrimethylsiloxy- methacrylate copolymer in isododecane. After evaporation of the isododecane, the high molecular weight silicone acrylate copolymer forms a film on the skin.

How to Use

This is a low viscosity fluid that is easily incorporated into a variety of personal care formulations.

Formulation Tips
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).

Handling Precautions

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

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.

Usable Life and Storage

When stored at or below 32°C 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 150 kg drums and 15 kg pails.

Samples are available in 500 g bottles.

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

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

Table 1:

Compatibilities with common cosmetic ingredients.

Ratio of DOWSIL™ FA 4002 ID Silicone Acrylate: other material	1/9	5/5	9/1
Esters			
C12-15 alkyl benzoate	C	C[1]	C
Caprilic/capric triglycerides	M[2]	C	C
Coco-caprylate/caprate	M	C	C
Isopropyl isostearate	C	C	C
Isopropyl myristate	C	C	C
Isopropyl palmitate	C	C	C
Octylpalmitate	M	C	C
Octylstearate	M	C	C
Fatty alcohols/acids			
Octyldodecanol	M	M	C
Oleyl alcohol	M	M	C
Candelilla wax	NC[3]	NC	C
Glycerides			
Glyceryl trioctanoate	C	C	C
Hydrocarbons			
Mineral oil	M	C	C
Synthetic polymer			
Polyethylene	C	C	C
Hydrophilics			
Ethanol absolute 98%	NC	C	C
Propylene glycol	M	C	C
Sunscreen agents			
Ethylhexyl dimethyl PABA	M	M	C
Ethylhexyl methoxycinnamate	C	C	C

1. C = Compatible
2. M = Miscible
3. NC = Not compatible

Table 1 (Cont.)

Ratio of DOWSIL™ FA 4002 ID Silicone Acrylate: other material	1/9	5/5	9/1
Vegetable oils			
Castor oil	C	C	C
Jojoba oil	C	M	C
Lanolin oil	C	C	C
Sunflower oil	C	C	C
DOWSIL™ Materials			
DOWSIL™ 556 Cosmetic Grade Fluid	C	C	C
DOWSIL™ 593 Fluid	NC	M	NC
DOWSIL™ 2502 Cosmetic Fluid	NC	NC	C
DOWSIL™ 9040 Silicone	C	C	C
XIAMETER™ Materials			
XIAMETER™ PMX-200/10 Silicone cSt	M	M	C
XIAMETER™ PMX-200/350 Silicone cSt.	M	M	M
XIAMETER™ PMX-1401 Fluid	M	M	M
XIAMETER™ PMX-1413 Fluid	M	M	M
XIAMETER™ PMX-1501 Fluid	M	M	M
XIAMETER™ PMX-1503 Fluid	M	M	M

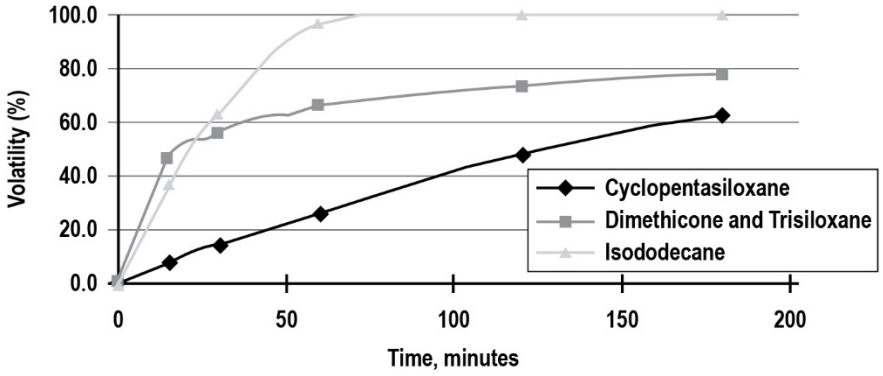

Figure 1: Evaporation profile of solvents - cyclopentasiloxane and isododecane.

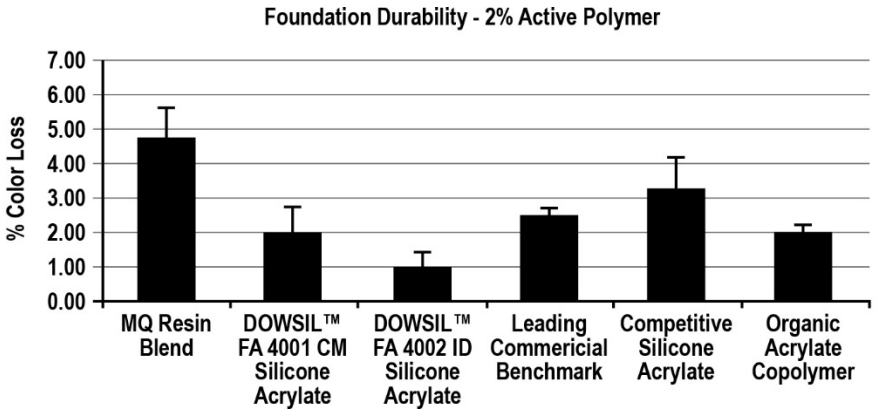

Figure 2: Foundation durability to evidence resistance of silicone acrylate copolymer compared to an MQ resin blend and a leading commercial product.

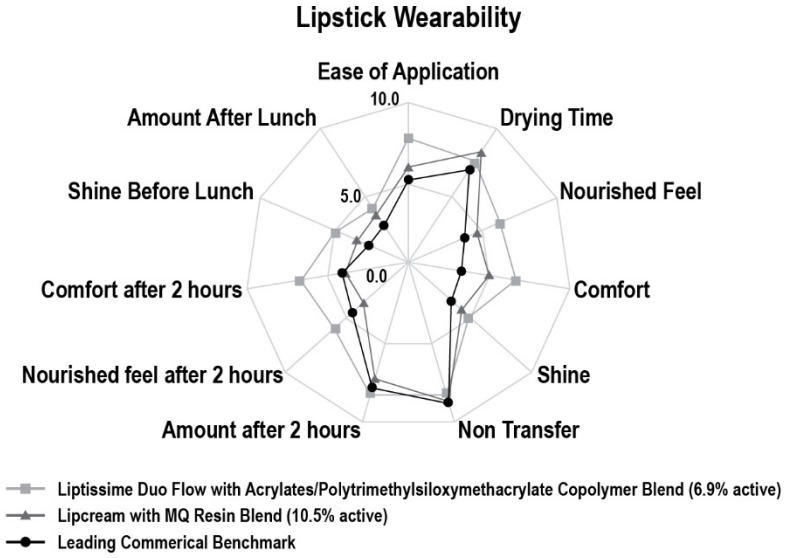

Figure 3: Lipstick wear ability to evidence long lasting and comfort properties of silicone acrylate copolymer compared to an MQ resin blend and a leading commercial product.

dow.com