



DOWSIL™ FA 4012 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.

Property	Unit	Result
Appearance		Clear to slightly hazy
Viscosity at 25°C	mm ² /s	< 300
Refractive index		1.43
Non-volatile content, 1g/150°C /3 hours	%	40
Flash point - open cup	°C	40
Cyclotetrasiloxane (D4) content	%	< 0.1
Cyclopentasiloxane (D5) content	%	< 0.1

Description

DOWSIL™ FA 4012 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).

Table 1: Compatibilities with common cosmetic ingredients.

Ratio of DOWSIL™ FA 4012 ID Silicone Acrylate: other material	1/9	5/5	9/1
Esters			
C12-15 alkyl benzoate	C	C ¹	C
Caprylic/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

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

Table 1 (Cont.): Compatibilities with common cosmetic ingredients.

Ratio of DOWSIL™ FA 4012 ID Silicone Acrylate: other material	1/9	5/5	9/1
Sunscreen agents			
Ethylhexyl Dimethyl PABA	M	M	C
Ethylhexyl methoxycinnamate	C	C	C
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

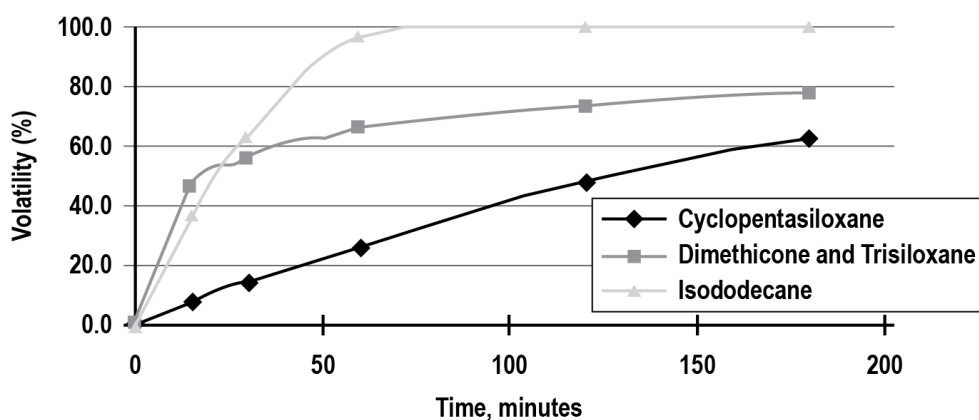


Figure 1: Evaporation profile of solvents - cyclopentasiloxane and isododecane.

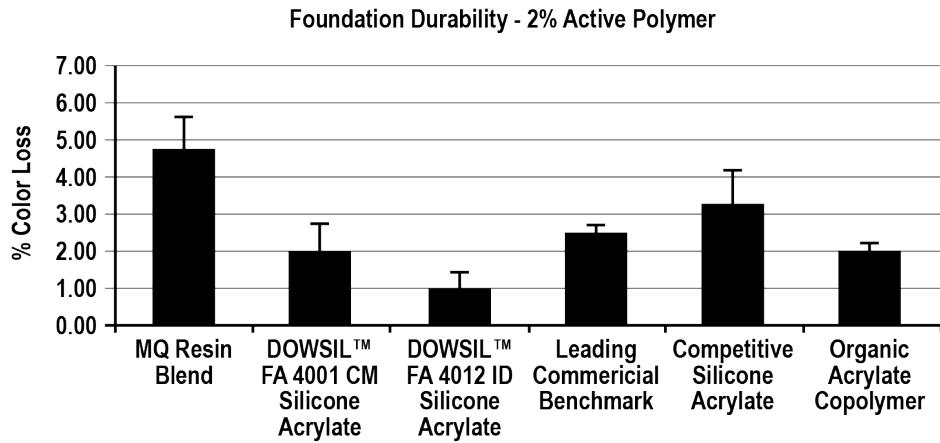


Figure 2: Foundation durability to evidence resistance of silicone acrylate copolymer compared to an MQ resin blend and a leading commercial product.

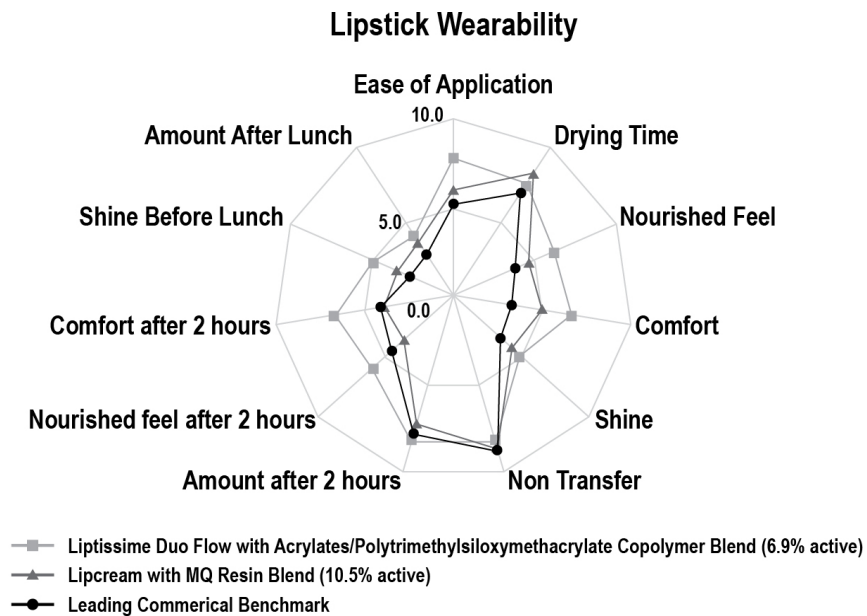


Figure 3: Lipstick wear ability to evidence long lasting and comfort properties of silicone acrylate copolymer compared to an MQ resin blend and a leading commercial product.

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

consumer.dow.com

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