

PERSONAL CARE

Specialty elastomers from Dow



DOW

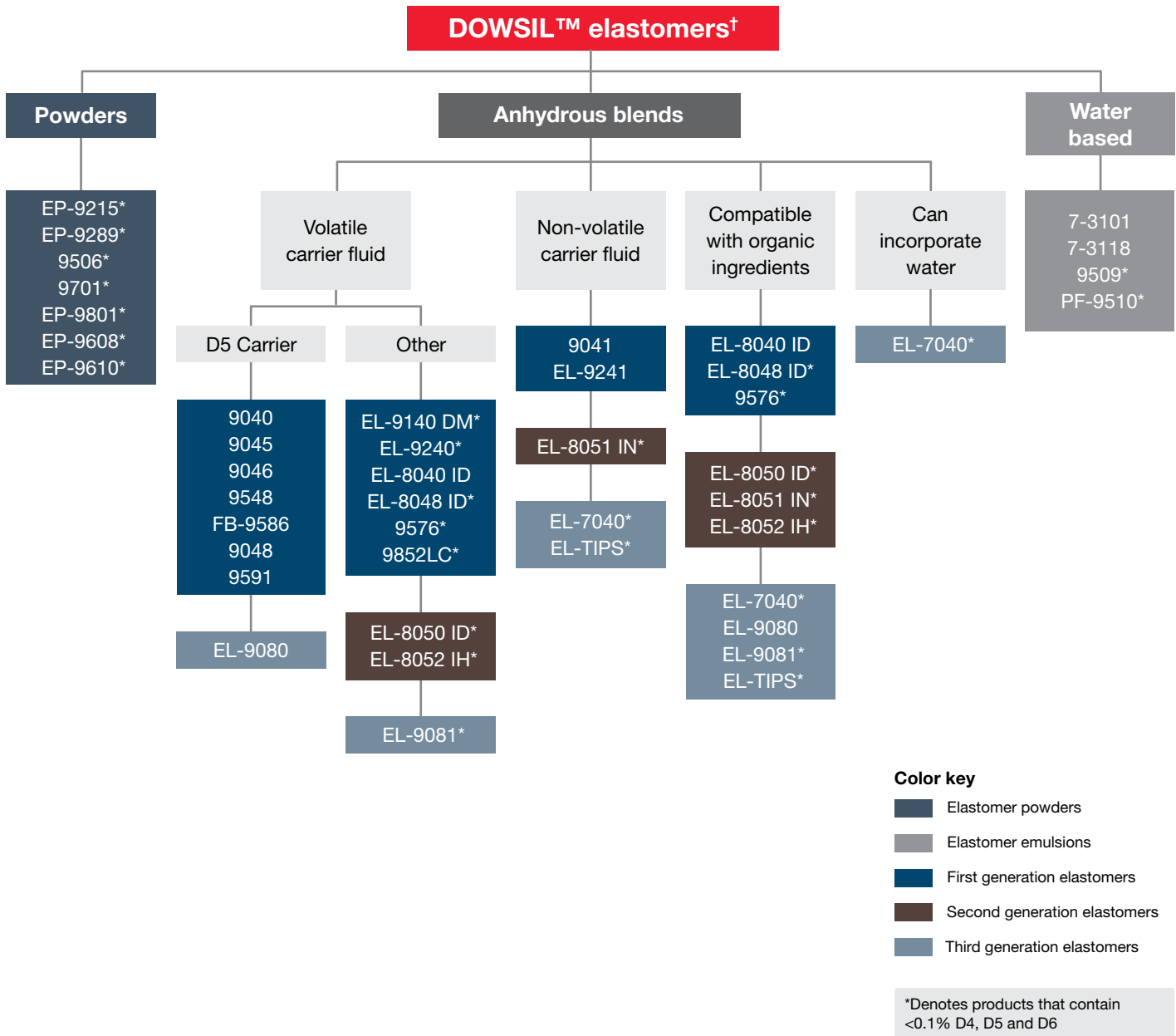


Table of contents

| | | | |
|--|---|--|---|
| DOWSIL™ Elastomer offerings at a glance | 2 | Silicone elastomer powders | 6 |
| Silicone elastomer suspensions | 3 | Organic compatibility | 7 |
| Silicone elastomer gels/blends | 4 | Paired comparison | 7 |
| Silicone Organic Elastomer Blends (SOEB) | 5 | Potential silicone diluents for elastomer gels | 8 |
| Hydrophilic elastomer blend | 6 | | |

DOWSIL™ Elastomer offerings at a glance

DOWSIL™ Elastomers are specialty silicone products that offer multifunctional benefits to formulations, including a unique silky powdery feel, sebum absorption, wrinkle masking, delivery of actives, film formation and active suspension.



† See tables on pages 3-9 for full product names.

Silicone elastomer suspensions: pre-emulsified water dispersible elastomers

| Trade name | INCI name | Preservative system | Typical elastomer content | D4 | D5 | D6 | Features |
|---|--|--|---------------------------|-------|-------|-------|---|
| DOWSIL™ 7-3101 Elastomer Blend HIP Emulsion | Cyclopentasiloxane (and) Dimethicone Crosspolymer (and) Dimethicone (and) Laureth-23 (and) Laureth-4 | Phenoxyethanol + Paraben | 15% | <1% | NA | NA | <ul style="list-style-type: none"> • High internal phase (85% active) emulsion • Easily diluted with water • Enables cold blending and low shear processing • Simple aesthetic modification |
| DOWSIL™ 7-3118 EBAP HIP Emulsion | Cyclopentasiloxane (and) Dimethicone Crosspolymer (and) Dimethicone (and) Laureth-23 (and) Laureth-4 | Phenoxyethanol + Potassium Sorbate | 15% | <1% | NA | NA | <ul style="list-style-type: none"> • High internal phase (85% active) emulsion • Easily diluted with water • Enables cold blending and low shear processing • Simple aesthetic modification |
| DOWSIL™ 9509 Silicone Elastomer Suspension | Dimethicone/Vinyl Dimethicone Crosspolymer (and) C12-14 Pareth-12 | Hydroxybenzoate + Chlorophenesin + Phenoxyethanol + Benzoic Acid | 63% | <0.1% | <0.1% | <0.1% | <ul style="list-style-type: none"> • High oil and sebum absorption • Reduces greasiness • Mattifying |
| DOWSIL™ PF-9510 Silicone Elastomer Suspension | Dimethicone/Vinyl Dimethicone Crosspolymer (and) C12-14 Pareth-12 | Chlorophenesin + Phenoxyethanol | 63% | <0.1% | <0.1% | <0.1% | <ul style="list-style-type: none"> • Alternative preservative version of DOWSIL™ 9509 Silicone Elastomer Suspension |

Blank fields indicate property does not adhere to description

NT: Not tested or identified

Silicone elastomer gels/blends: Oil dispersible elastomer gels

| Trade name | INCI name | Carrier fluid | Carrier volatility | Viscosity | NVC | D4 | D5 | D6 | Features |
|--|---|---------------------------------|--------------------|-----------------------|------------------|-------|-------|-------|---|
| DOWSIL™ 9040 Elastomer Blend | Cyclopentasiloxane (and) Dimethicone Crosspolymer | Cyclopentasiloxane | Volatile | 250,000 to 580,000 cP | 12% to 12.75% | <1% | NA | NA | <ul style="list-style-type: none"> • Smooth powdery feel • Fragrance delivery • Oil phase thickener • Actives delivery |
| DOWSIL™ 9045 Silicone Elastomer Blend | Cyclopentasiloxane (and) Dimethicone Crosspolymer | Cyclopentasiloxane | Volatile | 350,000 to 550,000 cP | 12% to 12.75% | <1% | NA | NA | <ul style="list-style-type: none"> • Smooth powdery feel • Fragrance retention • Oil phase thickener |
| DOWSIL™ EL-9048 Silicone Elastomer Blend | Cyclopentasiloxane (and) Dimethicone Crosspolymer | Cyclopentasiloxane | Volatile | 350,000 to 550,000 cP | 12% to 12.75% | <0.1% | NA | NA | <ul style="list-style-type: none"> • Smooth powdery feel • Oil phase thickener |
| DOWSIL™ EL-9080 Silicone Elastomer Blend | Cyclopentasiloxane (and) Dimethicone/ Vinyl Dimethicone Crosspolymer | Cyclopentasiloxane | Volatile | 250,000 to 550,000 cP | 12.55% to 14.05% | <0.1% | NA | NA | <ul style="list-style-type: none"> • Smooth, powdery skin feel • Matte appearance to skin • Non-balling • Shear thinning oil phase thickener • High transparency • Ideal for fragrance free formulation |
| DOWSIL™ 9548 Silicone Elastomer Blend | Cyclopentasiloxane (and) Dimethicone Crosspolymer (and) Dimethicone/ Vinyl dimethicone Crosspolymer (and) Dimethiconol | Cyclopentasiloxane | Volatile | 250,000 to 450,000 cP | 15% to 16% | <0.1% | NA | NA | <ul style="list-style-type: none"> • Provides dry smoothness and light, silky, non-greasy skin feel • Oil phase thickener • Fragrance retention • Increased suspension of antiperspirant salts |
| DOWSIL™ 9591 Cosmetic Powder Dispersion | Cyclopentasiloxane (and) Polysilicone-11 | Cyclopentasiloxane | Volatile | 30,000 to 70,000 cP | 21% to 26% | <0.1% | NA | NA | <ul style="list-style-type: none"> • Dry smoothness and light, silky, non-greasy skin feel • Soft focus, masks imperfections • Sebum absorption |
| DOWSIL™ FB-9586 Silicone Elastomer Blend | Cyclopentasiloxane (and) Dimethicone/ Vinyl dimethicone Crosspolymer (and) Dimethicone | Cyclopentasiloxane, Dimethicone | Volatile | 30,000 to 70,000 cPs | 40% to 50% | <0.1% | NA | NA | <ul style="list-style-type: none"> • Smooth, slippery, powdery skin feel • Non-greasy, non-tacky • Matte appearance |
| DOWSIL™ EL-9140 DM Silicone Elastomer Blend | Dimethicone (and) Dimethicone Crosspolymer | Dimethicone (1.5 cSt) | Volatile | 350,000 to 575,000 cP | 13.25% to 14.75% | <0.1% | <0.1% | <0.1% | <ul style="list-style-type: none"> • Oil phase thickener • Smooth, powdery feel |
| DOWSIL™ 9576 Smooth Away Elastomer | Dimethicone (and) Dimethicone Crosspolymer (and) Dimethicone/ Vinyl Dimethicone Crosspolymer (and) Beeswax (and) Silica (and) Silica Silylate | Dimethicone (1.5 cSt) | Volatile | 150,000 to 300,000 cP | 15% to 17% | <0.1% | <0.1% | <0.1% | <ul style="list-style-type: none"> • Optimized for soft focus and imperfection masking • Smooth, powdery feel |

Blank fields indicate property does not adhere to description

NT: Not tested or identified

| Trade name | INCI name | Carrier fluid | Carrier volatility | Viscosity | NVC | D4 | D5 | D6 | Features |
|--|--|------------------------|--------------------|-----------------------------|------------------------|-------|-------|-------|--|
| DOWSIL™ EL-9240 Silicone Elastomer Blend | Dimethicone (and) Dimethicone Crosspolymer | Dimethicone (2 cSt) | Volatile | 350,000 to 575,000 cP | 13% to 14.5% | <0.1% | <0.1% | <0.1% | <ul style="list-style-type: none"> Oil phase thickener Smooth, powdery feel |
| DOWSIL™ 9852LC Silicone Gel | Dimethicone (and) Dimethicone/ Vinyl Dimethicone Crosspolymer | Dimethicone (2 cSt) | Volatile | 18,000 to 50,000 cP | 24% to 28% | <0.1% | <0.1% | <0.1% | <ul style="list-style-type: none"> Dry smoothness and a light, silky, non-greasy skin feel Soft focus, imperfections masking Sebum absorption |
| DOWSIL™ EL-9081 Silicone Elastomer Blend | Dimethicone (and) Dimethicone/ Vinyl Dimethicone Crosspolymer | Dimethicone (2 cSt) | Volatile | 250,000 to 500,000 cP | 13% to 14.5% | <0.1% | <0.1% | <0.1% | <ul style="list-style-type: none"> Smooth feel Improved organic compatibility Non-balling Viscosity builder with lower use dosage Low color and odor High transparency |
| DOWSIL™ 9041 Silicone Elastomer Blend | Dimethicone (and) Dimethicone Crosspolymer | Dimethicone (5 cSt) | Non-volatile | 300,000 to 500,000 cP | N/A | <1% | <1% | <1% | <ul style="list-style-type: none"> Long lasting skin feel Typical elastomer content 14% Oil phase thickener |
| DOWSIL™ EL-9241 DM Silicone Elastomer Blend | Dimethicone (and) Dimethicone Crosspolymer | Dimethicone (5 cSt) | Non-volatile | 300,000 to 500,000 cP | N/A | <0.1% | <0.1% | <1% | <ul style="list-style-type: none"> Long lasting skin feel Typical elastomer content 15-16% Oil phase thickener |
| DOWSIL™ EL-8040 ID Silicone Organic Blend | Isododecane (and) Dimethicone Crosspolymer | Isododecane | Volatile | 300,000 to 550,000 cP | 15.25% to 16.75% | <1% | <1% | <1% | <ul style="list-style-type: none"> Elastomer feel with organic carrier Low transfer in color cosmetic formulations |
| DOWSIL™ EL-8048 ID Silicone Organic Blend | Isododecane (and) Dimethicone Crosspolymer | Isododecane | Volatile | 200,000 to 400,000 cP | 13.50% to 16.50% | <0.1% | <0.1% | <0.1% | <ul style="list-style-type: none"> Elastomer feel with organic carrier Low transfer in color cosmetic formulations |
| DOWSIL™ EL-TIPS Silicone Elastomer Blend | C13-15 Alkane (and) Dimethicone/ Vinyl Dimethicone Crosspolymer | C13-15 Alkane | Non-volatile | 250,000 to 550,000 cP | N/A | <0.1% | <0.1% | <0.1% | <ul style="list-style-type: none"> Smooth feel in formulation Typical elastomer content is ~26.5% Blurring effect on skin Carrier origin sugar cane source (Biofermentation) 0.7 natural origin index per ISO-16128-2 High transparency Ideal for high natural content formulations |

Blank fields indicate property does not adhere to description

NT: Not tested or identified

Silicone Organic Elastomer Blends (SOEB): Oil dispersible gels with enhanced organic compatibility

| Trade name | INCI name | Carrier fluid | Carrier volatility | Viscosity | NVC | D4 | D5 | D6 | Features |
|--|---|---------------------------|--------------------|--------------------------|------------------------|-------|-------|-------|--|
| DOWSIL™ EL-8050 ID Silicone Organic Elastomer Blend (SOEB) | Isododecane (and) Dimethicone/ Bis-Isobutyl PPG-20 Crosspolymer | Isododecane | Volatile | 350,000 to 575,000 cP | 14.25% to 15.75% | <0.1% | <0.1% | <0.1% | <ul style="list-style-type: none"> Organic compatibility Ability to create clear anhydrous systems Oil phase thickener Sensory threshold: 5% for both O/W and W/O Transfer resistance Mattifying |
| DOWSIL™ EL-8051 IN Silicone Organic Elastomer Blend (SOEB) | Isodecyl Neopentanoate (and) Dimethicone/ Bis-Isobutyl PPG-20 Crosspolymer | Isodecyl Neopentanoate | Non-volatile | 350,000 to 575,000 cP | N/A | <0.1% | <0.1% | <0.1% | <ul style="list-style-type: none"> Organic compatibility Typical elastomer content is 15% Ability to create clear anhydrous systems Oil phase thickener Sensory threshold: 8% for O/W and 5% for W/O Improves color intensity in color cosmetics Mattifying |
| DOWSIL™ EL-8052 IH Silicone Organic Elastomer Blend (SOEB) | Isohexadecane (and) Dimethicone/ Bis-Isobutyl PPG-20 Crosspolymer | Isohexadecane | Volatile | 350,000 to 575,000 cP | 16% to 17.5% | <0.1% | <0.1% | <0.1% | <ul style="list-style-type: none"> Organic compatibility Provides dry smoothness and light, silky, lubricated skin feel Ability to create clear anhydrous systems Oil phase thickener Mattifying |

Blank fields indicate property does not adhere to description

NT: Not tested or identified



Hydrophilic elastomer blend

| Trade name | INCI name | Carrier fluid | Carrier volatility | Viscosity | NVC | D4 | D5 | D6 | Features |
|---|--|-----------------------|--------------------|--------------------------|----------------------|-------|-------|-------|---|
| DOWSIL™ EL-7040 Hydro Elastomer Blend | Caprylyl Methicone (and) PEG-12 Dimethicone/ PPG-20 Crosspolymer | Caprylyl Methicone | Volatile | 275,000 to 995,000 cP | 17.5% to 19.5% | <0.1% | <0.1% | <0.1% | <ul style="list-style-type: none"> • Ability to incorporate water and polar materials • Compatibility with polar and organic materials • Smooth, spreadable, non-tacky skin feel • Ability to create fast breaking emulsions that deliver refreshing burst of water to skin • Cold processing • Can incorporate both hydrophilic and lipophilic actives • Ability to create clear systems • Oil phase thickener |



Silicone elastomer powders: dry, oil-dispersible powders

| Trade name | INCI name | Particle size | D4 | D5 | D6 | Features |
|---------------------------------------|---|---------------|-------|-------|-------|--|
| DOWSIL™ EP-9215 Cosmetic Powder | Dimethicone/Vinyl Dimethicone Crosspolymer | 2-7 microns | <0.1% | <0.1% | <0.1% | <ul style="list-style-type: none"> Oil and sebum absorption Mattifying Powder hardness = 60 |
| DOWSIL™ EP-9289 LL Cosmetic Powder | Dimethicone/Vinyl Dimethicone Crosspolymer (and) Lauroyl Lysine | NT | <0.1% | <0.1% | <0.1% | <ul style="list-style-type: none"> Powder compaction Sebum absorption |
| DOWSIL™ 9506 Powder | Dimethicone/Vinyl Dimethicone Crosspolymer | 1-6 microns | <0.1% | <0.1% | <0.1% | <ul style="list-style-type: none"> Oil and sebum absorption Oil phase thickener Powder hardness = 30 |
| DOWSIL™ EP-9608 Cosmetic Powder | Dimethicone Crosspolymer (and) Dimethicone | 1-8 microns | <0.1% | <0.1% | <0.1% | <ul style="list-style-type: none"> Oil-loaded crosslinked polymer provides rich sensory with low agglomeration Hides pores and provides excellent affinity to skin Lower particle hardness (7) than other e-powders |
| DOWSIL™ EP-9610 Cosmetic Powder | Dimethicone Crosspolymer | 1-8 microns | <0.1% | <0.1% | <0.1% | <ul style="list-style-type: none"> Provides unique smooth, bouncy and silky feel Oil/sebum absorption Optical mattifying effect Lower particle hardness (10) than other e-powders |
| DOWSIL™ 9701 Cosmetic Powder | Dimethicone/Vinyl Dimethicone Crosspolymer (and) Silica | 1-10 microns | <0.1% | <0.1% | <0.1% | <ul style="list-style-type: none"> Wrinkle masking Sebum absorption Ease of use: free-flowing, low agglomeration Oil phase thickener |
| DOWSIL™ EP-9801 Hydro Cosmetic Powder | Dimethicone/Vinyl Dimethicone Crosspolymer (and) Butylene Glycol (and) Silica | 3-10 microns | <0.1% | <0.1% | <0.1% | <ul style="list-style-type: none"> Water dispersible Wrinkle masking Sebum Absorption Ease of use: free-flowing, low agglomeration |

Organic compatibility

| Test material | DOWSIL™ 9045 Silicone Elastomer Blend | DOWSIL™ 9081 Silicone Elastomer Blend | DOWSIL™ EL-8050 ID Silicone Organic Elastomer Blend | DOWSIL™ EL-7040 Hydro Elastomer Blend |
|-----------------------------------|--|--|---|--|
| Ethylhexylmethoxy Cinnamate (OMC) | 4 | NC | 9 | 10 |
| Ethylhexyl Salicylate (OS) | 9 | 8 | 9 | 10 |
| C12-15 Alkyl Benzoate | NC | 7 | 9 | 10 |
| Caprylic/Capric Triglyceride | NC | 3 | 9 | 10 |
| Sunflower oil | 2 | NC | 3 | 3 |
| Squalane | 2 | 7 | 2 | NC |
| PPG-15 Stearyl Ether | 2 | NC | 7 | 8 |
| Mineral oil | 3 | 7 | 3 | NC |
| Ethanol | 1 | NC | 9 | 10 |

Clarity – color coding

| |
|----------------|
| Clear |
| Slight haze |
| Hazy |
| Cloudy |
| Opaque |
| Not compatible |

Viscosity – number scale

1 = Liquid ~245 Fluid

3 = Pourable ~10M cst PDMS

5 = Pourable ~60M cst PDMS

9 = Barely pourable when inverted ~300M cst PDMS

10 = Does not flow when inverted

NC = Not compatible; Viscosity not measured

Compatibility evaluated using 75/25 blend of elastomer/solvent



Paired comparison to DOWSIL™ 9045 Silicone Elastomer Blend

| Dow product name | | DOWSIL™ 9040 Silicone Elastomer Blend | DOWSIL™ EL-9048 Silicone Elastomer Blend | DOWSIL™ 9041 Silicone Elastomer Blend | DOWSIL™ FB-9586 Silicone Elastomer Blend | DOWSIL™ EL-8040 ID Silicone Organic Blend | DOWSIL™ 9546 Silicone Elastomer Blend | DOWSIL™ EL-9080 Silicone Elastomer Blend | DOWSIL™ EL-9140 DM Silicone Elastomer Blend | DOWSIL™ EL-9240 Silicone Elastomer Blend | DOWSIL™ EL-8050 ID SOEB | DOWSIL™ EL-8051 IN SOEB | DOWSIL™ EL-8052 IH SOEB | DOWSIL™ EL-7040 Hydro Elastomer Blend |
|-------------------|---------------|---------------------------------------|--|---------------------------------------|--|---|---------------------------------------|--|---|--|-------------------------|-------------------------|-------------------------|---------------------------------------|
| Before absorption | Wetness | - | | | + | | | | | | | | | |
| | Spreadability | | | | + | | | | | + | | | | |
| | Tackiness | - | | | - | - | | + | NT | - | | | | |
| | Absorbency | + | | | + | | | | NT | | | | | |
| After absorption | Gloss | | | + | | | | | | | | | + | |
| | Film residue | - | | + | | | | | + | | | + | | |
| | Greasiness | - | | + | - | | + | | | | | + | | + |
| | Tackiness | - | | | - | | | | - | | | | | |
| | Smoothness | + | | - | + | - | + | - | | + | | | | |
| | Slipperiness | + | | | + | - | | | + | + | + | | | + |
| | Powdery feel | + | | - | | - | | | - | + | | | | |

NT: Not tested or identified

| | |
|------------------|--------------------|
| No difference | Different at 95% |
| Different at 99% | Different at 99.9% |

Example: DOWSIL™ 9040 Silicone Elastomer Blend is less tacky (different at 99.9%) than DOWSIL™ 9045 Silicone Elastomer Blend.



Potential silicone diluents for elastomer gels

| Product | INCI name | Viscosity (cP) | Specific gravity | Refractive index | Flash point (°C) |
|---|--------------------|----------------|------------------|------------------|------------------|
| XIAMETER™ PMX-0245 Cyclopentasiloxane | Cyclopentasiloxane | 4 | 0.95 | 1.397 | 77 |
| XIAMETER™ PMX-200 Silicone Fluid 1.5 cSt | Dimethicone | 1.5 | 0.85 | 1.387 | 57 |
| XIAMETER™ PMX-200 Silicone Fluid 2 cSt | Dimethicone | 2 | 0.87 | 1.39 | 87 |
| XIAMETER™ PMX-200 Silicone Fluid 5 cSt | Dimethicone | 5 | 0.91 | 1.397 | 124 |
| DOWSIL™ FZ-3196 Fluid | Caprylyl Methicone | 2-4 | 0.83 | 1.4105-1.4145 | 110 |



Need more information?

Dow has extensive experience with beauty and personal care solutions. Leverage our expertise to help you determine which materials are best suited to your application. Simply visit dow.com/personalcare to learn how we can help you bring performance and processability to your products.

From North America

Toll-free + 800 447 4369
Toll call + 989 832 1542
Fax + 989 832 1465

From Europe, India, Africa and the Middle East

Toll-free* + 800 3 694 6367
Toll call + 32 3 450 2240
Toll-free for Italy + 800 783 825
Toll-free for South Africa + 800 99 5078
Fax + 32 3 450 2815

From Asia Pacific

Toll-free** + 800 7776 7776
Toll call + 60 3 7965 5392
Toll-free fax** + 800 7779 7779
Toll fax + 60 3 7958 5598

From Latin America

Toll call + 55 11 5188 9000
Fax + 55 11 5188 9887

dow.com/personalcare

* Toll-free from Austria, Belgium, Denmark, Finland (prefix 990), France, Germany, Hungary, Ireland, The Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom

** Toll-free from Korea, Japan, China, Taiwan, Hong Kong, Thailand, Malaysia, Singapore, Philippines, Australia, and New Zealand

Images: AdobeStock_178558694, dow_54211067121

NOTICE: No freedom from infringement of any patent owned by Dow or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other government enactments. The product shown in this literature may not be available for sale and/or available in all geographies where Dow is represented. The claims made may not have been approved for use in all countries. Dow assumes no obligation or liability for the information in this document. References to "Dow" or the "Company" mean the Dow legal entity selling the products to Customer unless otherwise expressly noted. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.

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

© 2022 The Dow Chemical Company. All rights reserved.

2000019942

Form No. 27-1413-01-0722 S2D