

# Silicone solutions for scar and stretch marks

Formulate effective patient-preferred treatments with proven silicone technology

Silicone-based technologies, formulation expertise and regulatory support from DuPont can help you accelerate the development of innovative scar and stretch mark management products for the consumer healthcare market.

Scars and stretch marks can have a significant impact on self-esteem. With today's increasing emphasis on well-being, there is a growing market for effective, comfortable, easy-to-use, over-the-counter remedies that can help patients manage or reduce scars and stretch marks without resorting to risky or invasive techniques.

Silicone gel, which has a long history of efficacy in scar and stretch mark<sup>1</sup> management, is well-suited for these types of treatments.

- Human health studies have shown benefit in the treatment of hypertrophic scars and the prevention of keloid scar formation.<sup>2</sup>
- Silicone gel sheeting has been used successfully for more than 30 years in scar management.

Plus, the comfortable feel and ease of use of silicone-based formulations can greatly improve patient compliance.

See how silicones from DuPont can help you improve patient compliance and the efficacy of your formulations for scar and stretch mark management.

## Why several DuPont silicone materials are used in product formulations for first-line therapy in scar and stretch mark management

### Functional benefits

- Biocompatible properties
  - Non-cytotoxic
  - Non-irritating
  - Non-sensitizing
- Ability to form uniform, durable films
- Breathability
  - Oxygen
  - Moisture vapor
  - Carbon dioxide
- Excellent sensory profile
  - Comfortable feel
  - Skin-like mechanical properties
  - Camouflaging appearance
- Ease of use





# Make DuPont your innovation partner

With more than 60 years of experience in silicone-based solutions for healthcare, you can rely on DuPont for:

- Reputable silicone-based topical ingredients, excipients and soft skin adhesives
- Proven aesthetics and functional film characteristics, such as breathability and substantivity
- A complete information package aligned with the requirements of the consumer healthcare market
- Extensive formulation expertise and product development support
- Products manufactured at defined manufacturing sites with the appropriate healthcare oversight and audits

To energize your innovation efforts, we have designed a series of formulations for scar and stretch mark management, which employ many silicone technologies from DuPont.

Explore our thought-starting formulations

## For stretch mark management<sup>1</sup>

		Description	Performance	Patient benefit
<b>Cream</b>	<b>Centi-Cream 1990</b>	Comfortable water-in-silicone emulsion containing Centella asiatica extract	<ul style="list-style-type: none"> <li>• Non-occlusive</li> <li>• Good substantivity</li> <li>• Improved skin hydration</li> </ul>	<ul style="list-style-type: none"> <li>• Smoother feel</li> <li>• Improved slipperiness</li> <li>• Reduced tackiness</li> </ul>
<b>Oil</b>	<b>Stretch Mark Oil 1988</b>	Silicone oil with a substantive film on the skin	<ul style="list-style-type: none"> <li>• Good substantivity</li> <li>• Non-occlusive</li> </ul>	<ul style="list-style-type: none"> <li>• Smoother feel</li> <li>• Improved slipperiness</li> </ul>
<b>Spray</b>	<b>Stretch Mark Spray 1989</b>	Silicone spray with a comfortable feel on the skin	<ul style="list-style-type: none"> <li>• Good substantivity</li> <li>• Non-occlusive</li> </ul>	<ul style="list-style-type: none"> <li>• Smoother feel</li> <li>• Improved slipperiness</li> <li>• Reduced film presence</li> </ul>

## For scar management

		Description	Performance	Patient benefit
<b>Semi-Solid Gel</b>	<b>Substantive Scar Gel 1544</b>	Anhydrous gel with an excellent sensory profile	<ul style="list-style-type: none"> <li>• Semi-occlusive</li> <li>• Good substantivity</li> <li>• Good wash resistance</li> </ul>	<ul style="list-style-type: none"> <li>• Easier to spread and more slippery</li> <li>• Smoother feel</li> <li>• Reduced tackiness and gloss</li> </ul>
	<b>Protective Scar Gel 1688</b>	Comfortable and protective <sup>3</sup> anhydrous gel	<ul style="list-style-type: none"> <li>• Semi-occlusive</li> <li>• Good substantivity</li> <li>• Medium wash resistance</li> </ul>	<ul style="list-style-type: none"> <li>• Easier to spread</li> <li>• Smoother feel</li> <li>• Reduced tackiness</li> </ul>
	<b>SiCAR Camouflage 2083</b>	Pigmented anhydrous gel with good coverage via a comfortable film	<ul style="list-style-type: none"> <li>• Occlusive</li> </ul>	<ul style="list-style-type: none"> <li>• Easier to spread</li> <li>• Smoother feel</li> <li>• Improved color uniformity</li> <li>• Reduced tackiness</li> <li>• Coverage</li> </ul>
	<b>SiCAR Serum 2082</b>	Anhydrous skin-protectant <sup>3</sup> gel based on pharmaceutical excipient; matt effect and comfortable feel	<ul style="list-style-type: none"> <li>• Non-occlusive</li> <li>• Good substantivity</li> </ul>	<ul style="list-style-type: none"> <li>• Mattifying effect</li> <li>• Smoother feel</li> <li>• Reduced tackiness</li> <li>• Easy to spread</li> </ul>
<b>Semi-Solid Sun Gel</b>	<b>Non-Tacky UV Scar Gel – EU 2063</b>	Anhydrous gel containing sun filters, formulated for use in Europe	<ul style="list-style-type: none"> <li>• Semi-occlusive</li> <li>• SPF 50+ (in vitro)</li> <li>• UVA protection</li> </ul>	<ul style="list-style-type: none"> <li>• Smoother feel</li> <li>• Reduced gloss</li> <li>• Reduced tackiness</li> </ul>
	<b>Non-Tacky UV Scar Gel – US 2064</b>	Anhydrous gel containing sun filters, formulated for use in the United States	<ul style="list-style-type: none"> <li>• Semi-occlusive</li> <li>• SPF 50+ (in vitro)</li> </ul>	<ul style="list-style-type: none"> <li>• Smoother feel</li> <li>• Reduced gloss</li> <li>• Reduced tackiness</li> </ul>
<b>Ointment</b>	<b>SiCAR Ointment 2081</b>	Anhydrous balm with a matt finish; leaves a non-tacky and comfortable feel on the skin	<ul style="list-style-type: none"> <li>• Occlusive</li> </ul>	<ul style="list-style-type: none"> <li>• Increased smoothness</li> <li>• Reduced tackiness</li> <li>• Matt finish</li> </ul>
<b>Cream</b>	<b>SiCAR Cream 2030</b>	Comfortable water-in-silicone emulsion containing Centella asiatica extract	<ul style="list-style-type: none"> <li>• Non-occlusive</li> <li>• Good substantivity</li> <li>• Hydrates the skin</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced tackiness</li> <li>• Reduced greasiness</li> <li>• Reduced film presence</li> </ul>

## DuPont silicones that can be used to formulate scar and stretch mark solutions

Product	Function	Benefits
<b>Topical Ingredients</b>		
Dow Corning™ TI-2021 AMS Specialty Fluid	Carrier/Solvent	<ul style="list-style-type: none"> <li>• Compatibilizer</li> <li>• Spreading agent</li> <li>• Smooth and dry feel</li> </ul>
Dow Corning™ TI-3011 Gum Blend	Emollient	<ul style="list-style-type: none"> <li>• Film-forming</li> <li>• Long-lasting agent</li> <li>• Comfortable film</li> </ul>
Dow Corning™ TI-3021 Silicone Elastomer Blend	Emollient	<ul style="list-style-type: none"> <li>• Silky smooth feel</li> <li>• Long-lasting skin feel</li> <li>• Texture modifier</li> </ul>
Dow Corning™ TI-6021 W/O Formulation Aid	Emulsifier	<ul style="list-style-type: none"> <li>• Easy solution for emulsifying fluid in W/Si and W/Si+O</li> </ul>
Dow Corning™ TI-7012 Flake Resin	Film-Former	<ul style="list-style-type: none"> <li>• Film-forming behavior</li> <li>• Long-lasting film</li> <li>• Wash-off resistance</li> </ul>
Dow Corning™ TI-7021 Silicone Resin Blend	Film-Former	<ul style="list-style-type: none"> <li>• Film-forming behavior</li> <li>• Long-lasting film</li> <li>• Wash-off resistance</li> </ul>
Dow Corning™ TI-1050 Fluid, 1.5 cSt and 5 cSt	Carrier/Solvent	<ul style="list-style-type: none"> <li>• Spreading agent</li> <li>• Lubricant</li> </ul>
Dow Corning™ TI-1050 Fluid, 30,000 cSt and 100,000 cSt	Carrier	<ul style="list-style-type: none"> <li>• Substantive</li> <li>• Emollient</li> <li>• Lubricant</li> </ul>

Product	Function	Benefits
<b>Topical Pharmaceutical Excipients</b>		
Dow Corning™ ST-Elastomer 10	Emollient	<ul style="list-style-type: none"> <li>• Smooth feel</li> <li>• Texture modifier</li> </ul>
Dow Corning™ Dimethiconol Blend 20	Emollient	<ul style="list-style-type: none"> <li>• Film forming</li> <li>• Long-lasting agent</li> <li>• Comfortable film</li> </ul>
Dow Corning™ Q7-9120 Silicone Fluid, 350 cSt and 12,500 cSt	Carrier/Solvent	<ul style="list-style-type: none"> <li>• Emollient</li> <li>• Spreading agent</li> <li>• Lubricant</li> <li>• Skin protectant<sup>4</sup></li> </ul>

### Silicone Sheeting Components

Dow Corning™ 7-4107 Silicone Elastomer Membrane	Backing Substrate	<ul style="list-style-type: none"> <li>• Translucent membrane material</li> <li>• Flexible film (made from Silastic™ 50 Shore A durometer biomedical-grade liquid silicone rubber)</li> <li>• Thin film (approximately 75 µm)</li> </ul>
Dow Corning™ MG 7-9900 Soft Skin Adhesive, Parts A&B	Adhesive	<ul style="list-style-type: none"> <li>• Gentle skin adhesion</li> <li>• Conformable and repositionable</li> </ul>

#### Footnotes:

<sup>1</sup>Based on literature research, market data and silicone properties.

<sup>2</sup>Human Health Study References:

- Sandhofer, Matthias; Schauer, Patrick. The safety, efficacy, and tolerability of a novel silicone gel dressing following dermatological surgery. *Skinmed*, 10: S1-7, 2012.
- Sakuraba, Motoki; Takahashi, Nobumasa; Akahoshi, Taku; et al. Use of silicone gel sheets for prevention of keloid scars after median sternotomy. *Surgery Today*, 41: 496-9, 2011.
- Mustoe, Thomas A. Evolution of silicone therapy and mechanism of action in scar management. *Aesthetic Plastic Surgery*, 32: 82-92, 2008.
- Mustoe, Thomas A.; Cooter, Rodney D.; Gold, Michael H.; et al. International clinical recommendations on scar management. *Plastic and Reconstructive Surgery*, 110: 560-571, 2002.

<sup>3</sup>Contains Dow Corning™ Q7-9120 Silicone Fluid (Dimethicone NF), which meets the requirements as skin protectant for over-the-counter human drug products (FDA monograph 21 CFR, Part 347.10).

<sup>4</sup>Dow Corning™ Q7-9120 Silicone Fluid (Dimethicone NF) meets the requirements as skin protectant for over-the-counter human drug products (FDA monograph 21 CFR, Part 347.10).



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