Silicone Polymers for Fabric Finishing
Silicone finishes are widely recognized as the best materials for increasing the softness of fabrics, enhancing their aesthetic feel and imparting an excellent “hand.” They improve several physical properties, such as tear strength, abrasion and wrinkle resistance, stretch recovery, and shrinkage reduction. They can provide either water absorption or water repellency with little to no impact on fabric whiteness. They make fabrics more comfortable and more desirable to touch, purchase and wear.

Dow Corning silicone fabric finishes are available in a wide range of chemistries to meet the broadest and the most specific fabric property needs. Amino- and amidofunctional polymers are among the most popular forms. Other silicone materials typically used in fabric finish formulations include hydroxy, methyl hydrogen and epoxy-polyether functionalities. Silicones can be formulated into customized emulsions or blended with organic polymer emulsions to provide a wide variety of performance properties.

This brochure provides information on major silicone fabric finishing polymers from Dow Corning that are available in Asia. This product family represents a range of proven, high-performance polymer products ideal for a wide range of fabric finishing applications. Additional fabric finishing polymer products may be available in your country. Please contact your local Dow Corning representative for more information.

### Main Features of Silicone Polymers from Dow Corning

- Premium “hand”
- Very good softness
- Excellent fiber-fiber lubrication
- Substantive to fibers
- Good stretch and recovery
- Improved elasticity and resiliency
- Excellent drape
- Good durability
- Excellent sewability
- Exhaustible
- Forms microemulsions readily
- Very low yellowing (depending on type)
- Hydrophobic or hydrophilic (depending on type)

### Product Performance Features

<table>
<thead>
<tr>
<th>Product</th>
<th>Key Features</th>
<th>Hand</th>
<th>Type of Hand</th>
</tr>
</thead>
<tbody>
<tr>
<td>XIAMETER® OFX-8803 Fluid</td>
<td>Modified aminofunctional silicone; excellent high-shear stability and durable press bath compatibility; improved alkaline stability and anionic compatibility&lt;sup&gt;3&lt;/sup&gt;</td>
<td>•••••</td>
<td>Natural, silky</td>
</tr>
<tr>
<td>Dow Corning® AP-8058 Polymer</td>
<td>Bulky, unique hand feel; premium softness and slipperiness; low yellowing</td>
<td>•••••</td>
<td>Natural, bulky</td>
</tr>
<tr>
<td>Dow Corning® OP-7700 Self Emulsifying Softener</td>
<td>Self-emulsifying, very good hydrophilicity; good softness; excellent high-shear stability and pH stability; low impact on fabric whiteness</td>
<td>••••</td>
<td>Natural, silky</td>
</tr>
<tr>
<td>XIAMETER® OFX-8800 Fluid</td>
<td>Premium hydrophilic softener, very low yellowing or non-yellowing</td>
<td>••••</td>
<td>Natural</td>
</tr>
<tr>
<td>Dow Corning® SF 8417 Fluid</td>
<td>Premium softness and wet touch; easy-to-make stable emulsion</td>
<td>•••••</td>
<td>Greasy</td>
</tr>
<tr>
<td>XIAMETER® OFX-8468 Polymer</td>
<td>Premium softness and greasy handle</td>
<td>••••</td>
<td>Greasy</td>
</tr>
<tr>
<td>Dow Corning® Q2-8460 Polymer</td>
<td>Premium softness and greasy handle</td>
<td>••••</td>
<td>Greasy</td>
</tr>
<tr>
<td>XIAMETER® OFX-8630 Fluid</td>
<td>Premium softness with minimal impact on fabric whiteness</td>
<td>••••</td>
<td>Silky, bouncy&lt;sup&gt;4&lt;/sup&gt;</td>
</tr>
<tr>
<td>XIAMETER® OFX-8822 Fluid</td>
<td>Premium softness</td>
<td>••••</td>
<td>Greasy</td>
</tr>
<tr>
<td>Dow Corning® FZ-3785</td>
<td>Premium softness and smoothness; low yellowing; easy-to-make stable emulsion</td>
<td>••••</td>
<td>Smooth and soft</td>
</tr>
<tr>
<td>Dow Corning® FZ-3710</td>
<td>Premium softness, high level of slipperiness; easy-to-make stable emulsion</td>
<td>••••</td>
<td>Greasy</td>
</tr>
<tr>
<td>XIAMETER® OFX-8209 Fluid</td>
<td>General-purpose, cost-effective aminofunctional softener</td>
<td>••••</td>
<td>Greasy</td>
</tr>
<tr>
<td>XIAMETER® OFX-8040A Fluid</td>
<td>Very good softness and cost-effectiveness; lower yellowing than conventional aminofunctional silicones</td>
<td>••••</td>
<td>Silky</td>
</tr>
<tr>
<td>Dow Corning® 8600 Hydrophilic Softener</td>
<td>Very good hydrophilicity, softness and durability; very low impact on fabric whiteness</td>
<td>••••</td>
<td>Natural</td>
</tr>
<tr>
<td>Dow Corning® SFD-12</td>
<td>Hydroxyfunctional silicone used as a base for elastomeric and cost-effective softeners</td>
<td>**</td>
<td>Smooth</td>
</tr>
</tbody>
</table>

<sup>1</sup> All ratings are relative to each other: best = •••••; worst = •.
<sup>2</sup> Results may vary according to the substrate and preferences of the evaluator.
<sup>3</sup> When formulated and used according to Dow Corning suggested procedures.
<sup>4</sup> When crosslinked.
### Product Properties and Application

<table>
<thead>
<tr>
<th>Product</th>
<th>Nitrogen %</th>
<th>Viscosity, cSt</th>
<th>End Capping</th>
<th>Type of Emulsion That Can Be Formulated</th>
<th>Typical Application Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>XIAMETER® OFX-8803 Fluid</td>
<td>0.3</td>
<td>3,000-8,000</td>
<td>RO</td>
<td>Microemulsion</td>
<td>Padding or exhaustion</td>
</tr>
<tr>
<td>Dow Corning® AP-8058 Polymer</td>
<td>0.18</td>
<td>3,000-5,000</td>
<td>OR &amp; OH</td>
<td>Micro- or macroemulsion</td>
<td>Padding or exhaustion</td>
</tr>
<tr>
<td>Dow Corning® OP-7700 Self Emulsifying Softener</td>
<td>0.27</td>
<td>1,500-4,500</td>
<td>Me</td>
<td>Micro- or macroemulsion</td>
<td>Padding or exhaustion</td>
</tr>
<tr>
<td>XIAMETER® OFX-8800 Fluid</td>
<td>N/A</td>
<td>1,500</td>
<td>R</td>
<td>Microemulsion</td>
<td>Padding or exhaustion</td>
</tr>
<tr>
<td>Dow Corning® SF 8417 Fluid</td>
<td>0.9</td>
<td>1,200</td>
<td>Me</td>
<td>Micro- or macroemulsion</td>
<td>Padding or exhaustion</td>
</tr>
<tr>
<td>XIAMETER® OFX-8468 Polymer</td>
<td>0.6</td>
<td>5,000-15,000</td>
<td>Me</td>
<td>Micro- or macroemulsion</td>
<td>Padding or exhaustion</td>
</tr>
<tr>
<td>Dow Corning® Q2-8460 Polymer</td>
<td>0.83</td>
<td>1,500</td>
<td>Me</td>
<td>Micro- or macroemulsion</td>
<td>Padding or exhaustion</td>
</tr>
<tr>
<td>XIAMETER® OFX-8630 Fluid</td>
<td>0.37</td>
<td>1,500</td>
<td>RO</td>
<td>Micro- or macroemulsion</td>
<td>Padding or exhaustion</td>
</tr>
<tr>
<td>XIAMETER® OFX-8822 Fluid</td>
<td>0.65</td>
<td>1,500</td>
<td>RO</td>
<td>Micro- or macroemulsion</td>
<td>Padding or exhaustion</td>
</tr>
<tr>
<td>Dow Corning® FZ-3785</td>
<td>0.25</td>
<td>4,000</td>
<td>Me</td>
<td>Micro- or macroemulsion</td>
<td>Padding or exhaustion</td>
</tr>
<tr>
<td>Dow Corning® FZ-3710</td>
<td>0.9</td>
<td>1,000</td>
<td>Me</td>
<td>Micro- or macroemulsion</td>
<td>Padding or exhaustion</td>
</tr>
<tr>
<td>XIAMETER® OFX-8209 Fluid</td>
<td>0.60</td>
<td>500</td>
<td>RO</td>
<td>Micro- or macroemulsion</td>
<td>Padding or exhaustion</td>
</tr>
<tr>
<td>XIAMETER® OFX-8040A Fluid</td>
<td>0.4</td>
<td>3,500</td>
<td>RO</td>
<td>Micro- or macroemulsion</td>
<td>Padding or exhaustion</td>
</tr>
<tr>
<td>Dow Corning® 8600 Hydrophilic Softener</td>
<td>0.65</td>
<td>2,500</td>
<td>RO</td>
<td>Microemulsion</td>
<td>Padding or exhaustion</td>
</tr>
</tbody>
</table>

1. These values not intended for use in preparing specifications.
2. Polymer can be crosslinked to form an elastomeric finish.

### Product Performance Features

<table>
<thead>
<tr>
<th>Product</th>
<th>Whiteness</th>
<th>Water Absorbency</th>
<th>Durability</th>
<th>Crosslinkable</th>
</tr>
</thead>
<tbody>
<tr>
<td>XIAMETER® OFX-8803 Fluid</td>
<td>•••••</td>
<td>•••••</td>
<td>•••••</td>
<td>Partially</td>
</tr>
<tr>
<td>Dow Corning® AP-8058 Polymer</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>Yes</td>
</tr>
<tr>
<td>Dow Corning® OP-7700 Self Emulsifying Softener</td>
<td>••</td>
<td>••</td>
<td>•</td>
<td>Partially</td>
</tr>
<tr>
<td>XIAMETER® OFX-8800 Fluid</td>
<td>•••••</td>
<td>•••••</td>
<td>•</td>
<td>Partially</td>
</tr>
<tr>
<td>Dow Corning® SF 8417 Fluid</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>Partially</td>
</tr>
<tr>
<td>XIAMETER® OFX-8468 Polymer</td>
<td>••</td>
<td>••</td>
<td>•</td>
<td>Partially</td>
</tr>
<tr>
<td>Dow Corning® Q2-8460 Polymer</td>
<td>••</td>
<td>••</td>
<td>•</td>
<td>Partially</td>
</tr>
<tr>
<td>XIAMETER® OFX-8630 Fluid</td>
<td>••••</td>
<td>•</td>
<td>••</td>
<td>Yes</td>
</tr>
<tr>
<td>XIAMETER® OFX-8822 Fluid</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>Partially</td>
</tr>
<tr>
<td>Dow Corning® FZ-3785</td>
<td>••</td>
<td>•</td>
<td>•</td>
<td>Partially</td>
</tr>
<tr>
<td>Dow Corning® FZ-3710</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>Partially</td>
</tr>
<tr>
<td>XIAMETER® OFX-8209 Fluid</td>
<td>••</td>
<td>••</td>
<td>•</td>
<td>Partially</td>
</tr>
<tr>
<td>Dow Corning® 8600 Hydrophilic Softener</td>
<td>••••</td>
<td>••••</td>
<td>•</td>
<td>Partially</td>
</tr>
</tbody>
</table>

1. All ratings are relative to each other: best = •••••; worst = •.
2. Polymer can be crosslinked to form an elastomeric finish.
Silicone Polymers: Softness vs. Whiteness

- **Softness**
  - Premium
  - Very Good
  - Good
  - Moderate
  - More Yellowing

- **Whiteness**
  - Very Low/Non-yellowing
  - Low Yellowing
  - Immediate

![Diagram showing the relationship between Softness and Whiteness](image1)

1. Results may vary according to the substrate and preferences of the evaluator.
2. Relative to each other.

Silicone Polymers: Softness vs. Water Absorbency/Repellency

- **Softness**
  - Premium
  - Very Good
  - Good
  - Moderate
  - Immediate
  - Less than 10 sec
  - Less than 1 min

- **Water Absorbency**
  - 100
  - 70
  - 50

- **Water Repellency**
  - 100
  - 70
  - 50

![Diagram showing the relationship between Softness and Water Absorbency/Repellency](image2)

1. Water absorbency on 100% cotton woven according to AATCC 79-1995.
2. Spray rating of 100% cotton woven according to AATCC 22-1996.
3. When used with crosslinker and catalyst.

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**Contact Information**

dowcorning.com/ContactUs

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**Silicone Polymers: Softness vs. Water Absorbency/Repellency**

- **Dow Corning® FZ-3710**
- **XIAMETER® OFX-84600 Polymer**
- **Dow Corning® OP-7700 Self Emulsifying Softener**
- **XIAMETER® OFX-8040A Fluid**
- **Dow Corning® OP-7708 Self Emulsifying Softener**
- **XIAMETER® OFX-8630 Fluid**
- **Dow Corning® AP-8058 Polymer**
- **XIAMETER® OFX-8800 Fluid**
- **Dow Corning® Q2-8460 Polymer**
- **Dow Corning® FZ-3785**
- **XIAMETER® OFX-8803 Fluid**
- **Dow Corning® SF 8417 Fluid**
- **Dow Corning® SF 8417 Polymer**
- **XIAMETER® OFX-8468 Polymer**
- **Dow Corning® 8600 Hydrophilic Softener**
- **Dow Corning® SFD-12**
- **Dow Corning® SF 8417 Fluid**
- **Dow Corning® SF 8417 Polymer**
- **XIAMETER® OFX-8209 Fluid**
- **Dow Corning® SFD-123**
- **Dow Corning® FZ-3710**
- **XIAMETER® OFX-8822 Fluid**
- **XIAMETER® OFX-8468 Polymer**
- **Dow Corning® SF 8417 Fluid**
- **Dow Corning® SF 8417 Polymer**
- **XIAMETER® OFX-8040A Fluid**
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- **Dow Corning® SF 8417 Polymer**
- **XIAMETER® OFX-8209 Fluid**
- **Dow Corning® SFD-123**
- **Dow Corning® FZ-3710**
- **XIAMETER® OFX-8822 Fluid**

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**Front cover photos:** AV11500 (background), AV11509, AV11452, AV11854

**Handling Precautions**

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