Momentive offers silicone material solutions developed for the solar industry.

Momentive’s Silicons and Quartz Division is a global leader in silicones and advanced materials, with a 70+ year heritage of being first to market with products and technologies that support and improve everyday life. Momentive delivers science-based solutions by linking custom technology platforms to opportunities for customers. The strength of Momentive’s silicones technology, technical service and application development comes from a long and prestigious history — and its heritage company GE Silicones. It’s a story about commitment to successful business relationships, global reach and value added process innovations that can help customers reduce costs, improve quality and realize their business objectives.

### Applications

- **Balls and Accessories for Frame Sealing, Rail-Sealing and Junction Box Attaching**: Fast cure, high mechanical strength, permanence.
- **Junction Box Potting**: Fast cure, room temperature adhesive, UL94 HB to UL94 V-0 flame resistance.
- **Solar Cell Encapsulation**: Optically clear, engineered refractive index, allows more electricity per unit area. Long-term air stability.
- **Optical Coupling Materials**: High transparency, precise dimensional stability, high temperature resistance.
- **Thermal Management**: High thermal conductivity, easy processability, permanence, low volatiles.

### Segment Overview

<table>
<thead>
<tr>
<th>Adhesive</th>
<th>PV modules</th>
<th>Optical Applications</th>
<th>Thermal Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSE382</td>
<td>Flexible Thin-film PV modules</td>
<td>Concentrated PV modules</td>
<td>Building Integrated Photovoltaics</td>
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<tr>
<td>TSE3852</td>
<td>Crystalline silicon type</td>
<td>PV modules</td>
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<tr>
<td>XE11-C3009-W</td>
<td>Silicone Material Solutions for the Solar Industry</td>
<td>XE11-B5320</td>
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*SnapSil is a trademark of Momentive Performance Materials Inc.

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**Customer Service Centers**

Worldwide Helpline
info@momentive.com

<table>
<thead>
<tr>
<th>North America</th>
<th>Europe, Middle East, Africa and India</th>
<th>Asia Pacific</th>
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<tbody>
<tr>
<td>Silicones - Fluids, UA, Silanes, Specialty Coatings, RTV and Elastomers</td>
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<tr>
<td>+1 614 986 2495 / T +1 800 295 2392</td>
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**China**

<table>
<thead>
<tr>
<th>City</th>
<th>Address</th>
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<tbody>
<tr>
<td>Beijing</td>
<td>Room 1201, 12/F, Building 1, Beijing International Trade Center, 1 Fuxingmenwai Street, Xicheng District, Beijing, 100004, China</td>
</tr>
<tr>
<td>Shanghai</td>
<td>Room 1403, 14/F, Building 22, Shanghai World Financial Center, 200 Century Avenue, Pudong, Shanghai, 200120, China</td>
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  - T +0120 975 400 / +81 276 20 6182
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  - T +82 2 6201 4600
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  - F +66 2207 3488
- **Thailand**
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  - F +66 2207 3488
- **Malaysia**
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  - F +60 3 9206 1556
- **Korea**
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  - F +82 2 6201 4601
  - T +82 2 6201 4600
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  - F +66 2207 3488
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  - F +52 52 37 5967
- **United States**
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  - F +1 304 746 1655

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<table>
<thead>
<tr>
<th>Property</th>
<th>Frame Sealing, Red Bonding and J-Box Attaching</th>
<th>J-Box Potting</th>
<th>Optical Applications</th>
<th>Thermal Management</th>
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</thead>
<tbody>
<tr>
<td><strong>Material Type</strong></td>
<td>TSE 382</td>
<td>TSE 3852</td>
<td>TSE 3661</td>
<td>TSE 3662</td>
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<tr>
<td><strong>Color</strong></td>
<td>Black</td>
<td>Black</td>
<td>Black</td>
<td>Black</td>
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<tr>
<td><strong>Cure Time</strong></td>
<td>15 min</td>
<td>5 min</td>
<td>24 hrs</td>
<td>24 hrs</td>
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<tr>
<td><strong>Volume Resistance</strong></td>
<td>1.0E+15</td>
<td>1.0E+15</td>
<td>2.0E+15</td>
<td>2.0E+15</td>
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<tr>
<td><strong>Dissipative Factor</strong></td>
<td>0.0040</td>
<td>0.0040</td>
<td>0.0050</td>
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<tr>
<td><strong>Heat Resistance (BLT)</strong></td>
<td>28°C</td>
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<td>30°C</td>
<td>32°C</td>
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<tr>
<td><strong>Hardness (Type A)</strong></td>
<td>28</td>
<td>27</td>
<td>30</td>
<td>32</td>
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<tr>
<td><strong>Special Gravity (25°C)</strong></td>
<td>76</td>
<td>80</td>
<td>88</td>
<td>60</td>
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<tr>
<td><strong>Thermal Conductivity (W/mK)</strong></td>
<td>0.18</td>
<td>-</td>
<td>0.27</td>
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<tr>
<td><strong>CTE (ppm)</strong></td>
<td>-150°C</td>
<td>-50°C</td>
<td>-50°C</td>
<td>-55°C</td>
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<tr>
<td><strong>Adhesion to Substrate</strong></td>
<td>Self adhesive</td>
<td>Self adhesive</td>
<td>Self adhesive</td>
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<td><strong>Mixing Ratio by Weight [A:B]</strong></td>
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<td>100:8.3</td>
<td>100:3</td>
<td>100:2</td>
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<tr>
<td><strong>Typical Data</strong></td>
<td>Average</td>
<td>Average</td>
<td>Average</td>
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</table>

Note: Data are averages. Real results may vary.
(1) May not be suitable for commercial food contact materials. Use at your own risk.
(2) Tested data are available in Product Data Sheet.
(3) Material properties may vary depending on temperature, environment, and application.
(4) Catalyst inhibition is a concern for addition cure grades.
(5) Cure through time @ 25°C.

Silicone Solutions for PV Industry

Representative to learn more.
Contact your local sales or marketing solutions to help solve your specific needs.

Momentive has a broad range of material solutions for PV Industry equipment.

*Cure time may vary dependent on the specimen, temperature, environmental humidity and temperature.
Note: Detailed data are available in Product Data Sheet.
*SnapSil is a trademark of Momentive Performance Materials Inc.
Typical data are average. The actual results may vary.