Our Liquid Silicone Rubber Injection Molding Offers You Tight Dimensional Tolerances, Lower Component and Tooling Costs, and Fast Design-to-Production Cycles

We have expanded and improved our Liquid Silicone Rubber Molding capabilities by adding Cryogenic De-Flash. Our new liquid nitrogen cryogenic de-flashing system removes parting line flash quickly – providing clean parting lines to ensure consistent sealing and aesthetics.

Our new Liquid Silicone Rubber Injection Molding capabilities offer you the opportunity to take advantage of faster cure cycles, lower tooling costs, and consistent quality. This is of particular importance for low durometer (10 to 40 shore A) and very thin cross-section seals for plastic covers and housings where tight tolerances for installation during assembly and sealing are critical.

Liquid silicone rubber’s ability to flow readily simplifies tooling design, resulting in lower tooling costs. A relatively short cure cycle contributes to reduced component cost.

By thin cross-section seals we mean down to .030” in cross-section diameter, or other fine cross sections such as rectangular or two “O” ring configurations side by side.

Another important capability of liquid silicone rubber is that even when the perimeter of the seal has a number of turns and radii, liquid silicone rubber can still fill the cavity.

This is a familiar need where the seal has to run around closure screws. A standard round “O” ring may be unable to follow such turns. Seals molded to match the turns in the sealing groove aid in assembly and sealing reliability.

Liquid silicone rubbers have some of the same unique characteristics as gum silicones:

- Low Temperature Flex
- High Temperature Stability
- Excellent Weatherability
- UV Resistance

Given the many performance and cost advantages of the liquid injection molding process for liquid silicone rubbers, it’s not surprising that applications have expanded beyond seals to include diaphragms, valves, bellows, bumpers, isolators, and grommets.
Typical Component Functions

- Environmental Gasketing
- Heat Sealing/Non-Stick Surface
- Cushioning
- Electro-Static Discharge
- Vibration Damping
- Fire and Smoke Blocking

These points are the most common functional and performance considerations of silicone rubber, and are offered as guidelines only. If your new product calls for other performance factors not shown here, just tell us about your concerns, and let us know how your component will be used. Together, we will determine the best suited materials, and manufacturing processes to provide cost effective components for your product design.

Typically Specified Liquid Silicone Rubber (LSR) Compounds Available* from Stockwell Elastomerics

<table>
<thead>
<tr>
<th>Stockwell LSR Compound</th>
<th>Durometer Shore A</th>
<th>Tensile Strength, PSI</th>
<th>Elongation at Break, %</th>
<th>Tear Strength, PPI of Width</th>
<th>Compression Set, % (22 hrs @ 158° F)</th>
<th>General Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE2010</td>
<td>10</td>
<td>400</td>
<td>500</td>
<td>30</td>
<td>&lt; 10</td>
<td>Very soft, for low pressure gaskets with minimal closure force.</td>
</tr>
<tr>
<td>SE2020</td>
<td>20</td>
<td>725</td>
<td>900</td>
<td>55</td>
<td>&lt; 5</td>
<td>Soft, for seals with minimal closure force.</td>
</tr>
<tr>
<td>SE2030</td>
<td>30</td>
<td>1085</td>
<td>800</td>
<td>85</td>
<td>&lt; 5</td>
<td>Mechanical Grade</td>
</tr>
<tr>
<td>SE2040</td>
<td>40</td>
<td>1230</td>
<td>850</td>
<td>140</td>
<td>&lt; 5</td>
<td>Mechanical Grade, meets UL94HB</td>
</tr>
<tr>
<td>SE2050</td>
<td>50</td>
<td>1230</td>
<td>700</td>
<td>170</td>
<td>&lt; 5</td>
<td>Mechanical Grade, meets UL94HB</td>
</tr>
<tr>
<td>SE2060</td>
<td>60</td>
<td>1300</td>
<td>500</td>
<td>170</td>
<td>&lt; 5</td>
<td>Mechanical Grade</td>
</tr>
<tr>
<td>SE2070</td>
<td>70</td>
<td>1230</td>
<td>400</td>
<td>170</td>
<td>&lt; 5</td>
<td>Mechanical Grade</td>
</tr>
</tbody>
</table>

Notes: Durometer Shore A is measured per ASTM D2240. Tensile Strength and Elongation % are measured per ASTM D412. Compression Set is measured per ASTM D395, after 22 hrs @ 158° F. (Most sealing requirements for our LSR molded components need to perform in a range of -20° F to 158° F. Let us know if you require test data beyond this temperature range. Data taken from non-postcured silicone.)

* Other Compounds also Available, Call for Details.

We Can Help You!

By quickly and expertly producing the silicone rubber components for your existing product designs, and also by helping you develop the best component design for new applications.

Our In-House Silicone Manufacturing Capabilities Include:

- Custom Rubber Molding of Silicone and Other Specialty Elastomers.
- Die Cutting of Gaskets, Cushioning Pads, and Insulators
- Application of a Broad Selection of Pressure Sensitive Adhesives
- Custom Laminations of Films and Solid Silicone onto Sponge.
- Slitting to Width of Roll Materials into Tape and Strip Gasketing.

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