Silastic® J RTV Silicone Rubber

FEATURES

- Good cut-growth resistance
- High durometer hardness
- Low shrinkage
- Easy release
- Room temperature cure within 24 hours
- Heat-accelerable cure

BENEFITS

- Long mold life
- Highly detailed reproductions
- Simplified handling

COMPOSITION

- Two-part silicone rubber supplied as a pourable fluid that cures to a firm, flexible elastomer

Flexible potting, encapsulating and molding material

USES

Silastic® J RTV Silicone Rubber is primarily intended for molds used to reproduce art objects, novelties and furniture components in urethane and other plastics.

TYPICAL PROPERTIES

These values are not intended for use in preparing specifications.

<table>
<thead>
<tr>
<th>Method</th>
<th>Test</th>
<th>Unit</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>As Supplied</td>
<td>Appearance, base curing agent</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Base to Curing Agent Mix Ratio, by weight</td>
<td></td>
<td>10:1</td>
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<tr>
<td>As Catalyzed</td>
<td>Appearance</td>
<td></td>
<td>Green</td>
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<tr>
<td></td>
<td>Viscosity at 25°C (77°F) poise</td>
<td></td>
<td>900</td>
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<tr>
<td></td>
<td>Snap Time at 25°C (77°F) hours</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Cure Time at 25°C (77°F) hours</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>As Cured 24 hours at 25°C (77°F) – Physical Properties</td>
<td>Durometer Hardness, Shore A ponts</td>
<td></td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>Tensile Strength psi</td>
<td></td>
<td>900</td>
</tr>
<tr>
<td></td>
<td>Elongation, Die C percent</td>
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<td>250</td>
</tr>
<tr>
<td></td>
<td>Tear Strength, Die B ppi</td>
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<td>90</td>
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<tr>
<td></td>
<td>Specific Gravity at 25°C (77°F)</td>
<td></td>
<td>1.28</td>
</tr>
<tr>
<td></td>
<td>Linear Shrink</td>
<td></td>
<td>Nil</td>
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<tr>
<td></td>
<td>Tensile Strength at 150% Elongation psi</td>
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<td>610</td>
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</tbody>
</table>

1CTMs (Corporate Test Methods) correspond to standard ASTM tests in most instances. Copies of CTMs are available upon request.

2Brookfield Viscometer Model HAF, spindle #6 at 5 rpm.

3Time required to become nonflowable.

4Based on sample mass of one cubic inch.

5Based on sample thickness of 125 mils.

DESCRIPTION

Silastic J RTV Silicone Rubber is a two-component, room-temperature, addition-cure silicone rubber. This product is part of an entire family of Silastic® brand Silicone Moldmaking Rubbers.

Silastic J RTV Silicone Rubber base is white and its curing agent is green to aid inspection for uniform blending. A ratio of ten parts base to one part curing agent is provided for easy mixing.

HOW TO USE

Pattern Preparation

Certain contaminants sometimes used in moldmaking operations can prevent Silastic J RTV Silicone Rubber from curing properly. Before using this material, the pattern should be thoroughly cleaned to remove any contaminants that may interfere with the curing process. This includes removing any dust, oil, or other foreign substances that could act as barriers to the curing reaction.

Once the pattern is clean, the Silastic J RTV Silicone Rubber can be applied to the mold cavity. It is recommended to apply the material in thin layers, allowing each layer to cure before applying the next. This helps ensure a uniform cure and prevents any air bubbles or trapped materials from forming within the mold.

When the mold has fully cured, it can be demolded by carefully lifting it off the pattern. The cured rubber will adhere securely to the pattern, allowing for easy replication of the mold. It is important to ensure that the mold is properly supported during this process to prevent any deformation or damage to the cured rubber.
Rubber from curing. Patterns to be molded should be thoroughly cleaned to remove grease, oil and other surface contaminants. Care should also be taken to ensure that corners, crevices and draws are free from dirt or particles of foreign matter. A light “blow over” with compressed air is advised when the pattern has convoluted draws or undercuts. Then the original model or pattern should be placed in a light frame of cardboard, foil, wood or other material. There should be approximately 1/4-inch clearances on all sides and over the top of the pattern. The pattern should be attached securely to the bottom of the frame so it does not float.

A pattern release agent should then be wiped or sprayed on the pattern. A light coat of release agent on the sides and underside of the top of the frame will facilitate release.

**Addition of Curing Agent**

Automatic mixing equipment handles Silastic J RTV Silicone Rubber efficiently. The product is deaired before shipment when packaged in drums.

Silastic J RTV Silicone Rubber curing agent should be mixed into the base material just before use (with either manual or mechanical stirring) in the amounts of 10 parts base to one part curing agent by weight. For best curing results, use metal cans, clean glassware or unwaxed paper containers when mixing the base and curing agent. Inclusion of air may be removed by applying a vacuum of 28 to 29 inches of mercury. Under such a vacuum, the material will expand to three to four times its original volume. As the froth collapses, the mixture will recede to its original volume. The vacuum should be held one or two minutes longer before releasing.

Pressure casting may be substituted with equal success.

**Working Time**

Silastic J RTV Silicone Rubber remains a flowable, pourable material for two hours after the curing agent is added.

**Curing**

The cure of Silastic J RTV Silicone Rubber occurs by a reaction between the base polymer and the curing agent. Polymerization requires 24 hours after the addition of the curing agent at room temperature. This material will not revert or depolymerize, even under conditions of elevated temperature and confinement. Vulcanization can be accelerated by heating the catalyzed material. However, this will increase the shrinkage from nil to 0.3 percent.

Vulcanization will not be accelerated at the center of the piece until the entire mass has reached the elevated temperature.

**Inhibition of Cure**

Silastic J RTV Silicone Rubber is formulated to have greater resistance to inhibition. However, localized inhibition of cure may be encountered at the interface when Silastic J RTV Silicone Rubber comes in contact with certain contaminants during the curing process. Among materials found to cause inhibition are sulfur-containing and organometallic salt-containing compounds (such as organic rubbers), and condensation cure RTV silicones.
Surfaces previously in contact with any of the above materials may also cause inhibition. If in doubt, test for compatibility by brushing a small amount of catalyzed Silastic J RTV Silicone Rubber over a localized area of the surface to be reproduced. Inhibition has occurred if the rubber is gummy or uncured after the curing period has elapsed.

**USE LIMITATIONS**

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

**STORAGE AND SHELF LIFE**

Silastic J RTV Silicone Rubber and its curing agent should be stored in closed containers at or below room temperature. The materials have a shelf life of 12 months from date of manufacture. Refer to product packaging for “Use By” date.

**PACKAGING**

Silastic J RTV Silicone Rubber is supplied with Silastic J RTV Silicone Rubber curing agent in matched-lot 1.1-, 9.9-, 49.5- and 495-lb (0.5-, 4.4-, 22- and 224-kg) kits. All weights, net.

**SAFE HANDLING INFORMATION**

**PRODUCT SAFETY INFORMATION**

REQUIRED FOR SAFE USE IS NOT INCLUDED. BEFORE HANDLING, READ PRODUCT AND MATERIAL SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE MATERIAL SAFETY DATA SHEET IS AVAILABLE FROM YOUR DOW CORNING REPRESENTATIVE, OR DISTRIBUTOR, OR BY WRITING TO DOW CORNING CUSTOMER SERVICE, OR BY CALLING (517) 496-6000.

**WARRANTY INFORMATION - PLEASE READ CAREFULLY**

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