

# Product Information

## Moldmaking Rubber

# *Silastic*<sup>®</sup> 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 moldmaking material

### USES

*Silastic*<sup>®</sup> 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.

Method	Test	Unit	Result
<b>As Supplied</b>			
CTM <sup>1</sup> 0176	Appearance, base curing agent		White Dark green
	Base to Curing Agent Mix Ratio, by weight		10:1
<b>As Catalyzed</b>			
CTM 0176	Appearance		Green
CTM 0050	Viscosity <sup>2</sup> at 25°C (77°F)	poise	900
CTM 0092A	Snap Time <sup>3</sup> at 25°C (77°F)	hours	3
CTM 0092A	Cure Time <sup>4</sup> at 25°C (77°F)	hours	24
<b>As Cured 24 hours at 25°C (77°F) – Physical Properties<sup>5</sup></b>			
CTM 0099	Durometer Hardness, Shore A	points	56
CTM 0137A	Tensile Strength	psi	900
CTM 0137A	Elongation, Die C	percent	250
CTM 0159A	Tear Strength, Die B	ppi	90
CTM 0022	Specific Gravity at 25°C (77°F)		1.28
CTM 0157	Linear Shrink		Nil
CTM 0137A	Tensile Strength at 150% Elongation	psi	610

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

<sup>2</sup>Brookfield Viscometer Model HAF, spindle #6 at 5 rpm.

<sup>3</sup>Time required to become nonflowable.

<sup>4</sup>Based on sample mass of one cubic inch.

<sup>5</sup>Based on sample thickness of 125 mils.

**Specification Writers: Please obtain a copy of the Dow Corning Sales Specification for this product and use it as a basis for your specifications. It may be obtained from any Dow Corning Sales Office, or from Dow Corning Customer Service in Midland, MI. Call (517) 496-6000.**

### 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*<sup>®</sup> 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. 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**

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that Dow Corning's products are safe, effective, and fully satisfactory for the intended end use.

Dow Corning's sole warranty is that the product will meet the Dow Corning sales specifications in effect at the time of shipment. Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted. Dow Corning specifically disclaims any other express or implied warranty of fitness for a particular purpose or merchantability. Unless Dow Corning provides you with a specific, duly signed endorsement of fitness for use, Dow Corning disclaims liability for any incidental or consequential damages. Suggestions of use shall not be taken as inducements to infringe any patent.

