Product Information

Moldmaking Rubber

DOW CORNING

Silastic® M RTV Silicone Rubber

FEATURES

- High inhibition resistance
- Formulated to work with both rigid and foam polyurethanes
- Good cut-growth resistance
- High durometer hardness
- Low shrink
- Cures at room temperature within 16 hours or heat curable

COMPOSITION

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

Silicone rubber for prototyping, architectural and furniture component applications

USES

Silastic® M RTV Silicone Rubber is designed especially for use with urethane foams and other casting plastics.

TYPICAL PROPERTIES

These values are not intended for use in preparing specifications.

Test	Unit	Result
As Supplied		
Appearance, Base		White
Curing Agent		Regal Blue
Base to Curing Agent Mixing Ratio, by weight		10:1
Base Viscosity at 77°F (25°C)	poise	1300
As Catalyzed		
Appearance		Regal Blue
Viscosity[1] at 77°F (25°C)	poise	900
Cure Time[2] at 77°F (25°C)	hours	16
As Cured[3]		
Durometer Hardness, Shore A	points	59
Tensile Strength	psi	650
Elongation, Die C	percent	250
Tear Strength, Die B	ppi	90
Specfic Gravity at 77°F (25°C)		1.29
Linear Shrink		Nil

[1]Brookfield Viscometer Model HAF, spindle #6 at 5 rpm.
[2]Based on sample mask of 1 cubic inch.
[3]Based on sample thickness of 125 mils, cured 24 hours at 77°F (25°C).

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 M RTV Silicone Rubber is a two-part, flexible moldmaking material designed especially for use with urethane foams and other casting plastics. This high-strength, tear resistant product cures at room or elevated temperatures by an addition reaction.

The special features of *Silastic* M RTV Silicone Rubber help provide a long mold life, highly detailed reproductions and simplified handling.

Silastic M RTV Silicone Rubber base is white, and its curing agent is regal blue to aid inspection for uniform blending. An easy-to-mix ratio of 10:1 base to curing agent helps ensure accurate measuring and blending by hand or machine. The material cures in unlimited thickness, regardless of part configuration or degree of confinement.

HOW TO USE

Pattern Preparation

Certain contaminants used in moldmaking operations can prevent *Silastic* M 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 of 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 3/8-inch clearance on all sides and over the top of the pattern. The patterns 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. Spreading a light coat of release agent on the sides and underside of the top of the frame will facilitate release.

A good pattern release agent can be made by combining 5 percent petroleum jelly and 95 percent solvent. Combine the materials and let stand overnight – then shake by hand to provide a good mix.

Addition of Curing Agent

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

Silastic M 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 the best curing results, use metal cans, clean glassware or unwaxed paper containers for mixing the base and curing agent. Inclusion of air during mixing may cause avoids in the finished mold. Entrapped 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 M RTV Silicone Rubber remains a flowable, pourable material for 1-1/2 hours after the curing agent is added.

Curing

The cure of *Silastic* M 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. A part 1/4-inch thick will set up within 30 minutes if the temperature is maintained at 150°F (65°C). The rate at which thicker sections will set up depends on the size and shape of the piece.

Vulcanization will not be accelerated at the center of the piece until the entire mass has reached the elevated temperature. Average set-up times at various temperatures for 1/4-inch moldings are as follows:

Temperature	Demold Time
77°F (25°C)	16 hours
125°F (52°C)	60 minutes
150°F (65°C)	30 minutes
200°F (93°C)	15 minutes
250°F (121°C)	7 minutes
300°F (149°C)	5 minutes

Inhibition of Cure

Silastic M RTV Silicone Rubber is formulated to have greater resistance to inhibition. However, localized inhibition of cure may be encountered at the interface when *Silastic* M 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* M RTV Silicone Rubber over a localized area of the service to be reproduced. Inhibition has occurred if the rubber is gummy or uncured after the curing period has elapsed.

USE LIMITATIONS

These products are neither tested nor represented as suitable for medical or pharmaceutical uses.

STORAGE AND SHELF LIFE

Silastic M RTV Silicone Rubber base and 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 M RTV Silicone Rubber base is supplied with *Silastic* M 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.

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