

Product Information

Moldmaking Rubber

Silastic[®] S Silicone Moldmaking Rubber

FEATURES

- Fast RTV cure, very fast cure with even, low heat
- Very low viscosity for easy mixing and deairing
- Fast, RTV cure
- High inhibition resistance
- Very low shrinkage
- High tear strength and elasticity
- Low durometer hardness

COMPOSITION

- Liquid, two-component material consisting of a base and a curing agent, which when mixed, cure at room or elevated temperatures by an addition reaction

High-strength silicone moldmaking rubber

USES

Silastic[®] S Silicone Moldmaking Rubber is a high-strength silicone moldmaking rubber for detailed reproduction of surfaces and objects for prototype design and production tooling, as well as artistic and renovation applications. Its low durometer also makes it ideal for pad print applications.

TYPICAL PROPERTIES

These values are not intended for use in preparing specifications.

Test	Unit	Result
As Supplied		
Base Color		Off-white
Viscosity	cp	28,000
Curing Agent Color		Green
Viscosity	cp	140
As Mixed – 100 parts Base to 10 parts Curing Agent by Weight		
Viscosity	cp	12,800
Specific Gravity		1.12
As Cured – 24 hours at 77°F (25°C)		
Durometer Hardness, Shore A	points	26
Tensile Strength	psi	1000
Elongation	percent	900
Tear Strength, Die B	ppi	140
Linear Shrink	percent	<0.1

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.

HOW TO USE

Preparation

The surface of the original should be clean and free of loose material. When correctly mixed with the curing agent, *Silastic* S Silicone Moldmaking Rubber releases well from most substrates after cure. With porous substrates, a release agent or barrier coat may be needed to seal the surface before casting the silicone. Release coatings such as petroleum jelly or others can be used. In all cases, check before casting the silicone to ensure that no discoloration or adhesion has occurred between the *Silastic* S

Silicone Moldmaking Rubber and the master mold or frame.

Application

Thoroughly shake/stir the curing agent before use. Weigh out 100 parts of *Silastic* S Silicone Moldmaking Rubber base and 10 parts of curing agent in a clean container. Accurate weighing is essential, as inaccuracies can cause a significant decrease in the performance of the cured rubber (the base to curing agent ratio must be between 100:9.5 and 100:10.5). Mix until the curing agent is completely dispersed in the base and a uniform color is obtained.

Heat generated by mixing should be minimized. Mix suitably small quantities to ensure adequate working time. (See Table I.)

Entrapped air should be removed in a vacuum chamber, allowing the mixture to completely expand and then collapse. After three additional minutes of vacuum, the mix should be inspected and can be used if free from air bubbles. A volume increase of two to three times will occur on vacuum deairing of the mixture, so a suitably large container should be chosen.

Pour the mixed basic and curing agent onto the master, avoiding air entrapment. The catalyzed mixture will typically cure to a flexible rubber within six to eight hours at room temperature (see Table I), and the part can be demolded. Heat accelerating the cure is possible, but this will produce some apparent shrinkage of the mold due to differences in the volume contraction on cooling between the silicone rubber and the original. The higher the curing temperature, the greater the likelihood of differences in dimensions.

Inhibition of Cure

All addition-cure silicone elastomers are susceptible to cure inhibition when in contact with certain materials and chemicals. Mixing containers, mold construction materials, masters and release agents should be checked for any inhibition effect before use by properly mixing base and curing agent and applying a small amount against the surfaces. Inhibition has occurred if the elastomer is only partially cured after 16 hours, or has a sticky surface in contact with another material. Amines and sulfur-containing materials are strong inhibitors, as are organotin salts used in condensation-cure silicones. Wet or moist surfaces can

Table I: Special Use Considerations Regarding Working and Cure Times

Temperature		Typical Working Time, minutes	Typical Time to Demold
°F	°C		
50	10	280	20 hours
68	20	105	10 hours
77	25	45	7 hours
86	30	30	4 hours
104	40	<10	40 minutes
122	50	<5	20 minutes

cause gas bubbles to form during cure in the silicone adjacent to the substrate surface.

USE LIMITATIONS

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

STORAGE AND SHELF LIFE

When stored at or below 90°F (32°C) in original unopened containers, *Silastic S* Silicone Moldmaking Rubber has a shelf life of 12 months from date of manufacture. Refer to product packaging for "Use By" date.

Both base and curing agent can be sensitive to moisture and contamination. Ensure containers are tightly closed after use.

PACKAGING

Silastic S Silicone Moldmaking Rubber base is available in 9-, 45- and 440-lb (4.1-, 20.5- and 200-kg) containers. *Silastic S* Silicone Moldmaking Rubber curing agent is available in 0.9-, 4.5- and 44-lb (0.4-, 2.1- and 20-kg) containers.

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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