

Mold Max™ 60

High Heat Resistant Silicone Rubber Compound



www.smooth-on.com

PRODUCT OVERVIEW

Mold Max™ 60 is a Shore 60A tin catalyzed silicone rubber formulated for applications requiring high heat resistance (up to 560°F/294°C). It features a low mixed viscosity and cured rubber exhibits very low linear shrinkage. Parts A & B are mixed 100A & 3B by weight. Pot life is 40 minutes and cure time is 24 hours. Applications include making foundry patterns, flat pattern reproductions and casting low-melt metal alloys such as tin and pewter.

PLEASE NOTE: THI-VEX™ Silicone Thickener is NOT recommended for use with Mold Max™ 60.

Important: you must weigh Part A & B components using a gram scale to be successful with Mold Max™ 60

TECHNICAL OVERVIEW

Mix Ratio: 100A : 3B by weight

Mixed Viscosity, cps: 20,000 cps (ASTM D-2393)

Specific Gravity, g/cc: 1.45 (ASTM D-1475)

Specific Volume, cu. in./lb.: 19.1

Pot Life: 40 minutes (73° F / 23°C) (ASTM D-2471)

Cure time: 24 hrs (73° F / 23°C)

Color: Red

Shore A Hardness: 60 (ASTM D-2240)

Tensile Strength, psi: 398 (ASTM D-412)

100% Modulus, psi: 331 (ASTM D-412)

Elongation @ Break: 132% (ASTM D-412)

Die B Tear Strength, pli: 63 (ASTM D-624)

Shrinkage, in./in.: 0.0015 (ASTM D-2566)

Useful Temp. Range: -65°F to 560°F (-53°C to 294°C)

Dielectric Strength, volts/mil: >500

Dielectric Constant, 100 Hz: 3.4

Dissipation Factor, 100 Hz: 0.02

Volume Resistivity, ohms-cm: 9 x 10¹⁴

Thermal Conductivity: 0.347 W/M*K

All values measured after 7 days at 73°F/23°C

PROCESSING RECOMMENDATIONS

PREPARATION

Preparation - Materials should be stored and used in at room temperature (73°F/23°C). These products have a limited shelf life and should be used as soon as possible. Wear safety glasses, long sleeves and rubber gloves to minimize contamination risk. Rubber may be inhibited by sulfur base clays resulting in tackiness at the pattern interface or a total lack of cure throughout the mold. If compatibility between the rubber and the surface is a concern, a small-scale test is recommended. Apply a small amount of rubber onto a non-critical area of the pattern. Inhibition has occurred if the rubber is gummy or uncured after the recommended cure time has passed. Mixing containers should have straight sides and a flat bottom. Mixing sticks should be flat and stiff with defined edges for scraping the sides and bottom of your mixing container.

Applying A Sealer / Release Agent - To prevent inhibition, a "barrier coat" of clear acrylic lacquer sprayed directly onto the pattern is usually effective. Allow to thoroughly dry. Although not usually necessary, a release agent will make demolding easier when casting into or over most surfaces. Ease Release™ 200 is a proven release agent for making molds with silicone rubber and for releasing new silicone from cured silicone. Mann Ease Release™ products are available from Smooth-On or your Smooth-On distributor. **Because no two applications are quite the same, a small test application to determine suitability for your project is recommended if performance of this material is in question.**

IMPORTANT: To ensure thorough coverage, lightly brush the release agent with a soft brush over all surfaces of the model. Follow with light mist coating and let dry for 30 minutes.

If there is any question about the effectiveness of a sealer/release agent combination, a small scale test should be made on an identical surface for trial. Also, you can call Smooth-On for technical assistance at (800) 762-0744.

MEASURING & MIXING...

Stir Part A and shake Part B thoroughly before dispensing. **Using a gram scale**, dispense required amounts of parts A and B into a mixing container and mix for 3 minutes. Scrape the sides and bottom of the container several times. After mixing parts A and B, vacuum degassing is recommended to eliminate any entrapped air in liquid rubber. Your vacuum pump must pull a minimum of 29 inches of mercury (or 1 Bar / 100 KPa). Leave enough room in container for material expansion. Vacuum material until it rises, breaks and falls. Vacuum for 1 minute after material falls.

Safety First!

The Material Safety Data Sheet (MSDS) for this or any Smooth-On product should be read prior to use and is available upon request from Smooth-On. All Smooth-On products are safe to use if directions are read and followed carefully.

Keep Out of Reach of Children

BE CAREFUL - Avoid contact with eyes. Silicone polymers are generally non-irritating to the eyes however a slight transient irritation is possible. Flush eyes with water for 15 minutes and seek medical attention. Remove from skin with waterless hand cleaner followed by soap and water. Children should not use this product without adult supervision.

IMPORTANT - The information contained in this bulletin is considered accurate. However, no warranty is expressed or implied regarding the accuracy of the data, the results to be obtained from the use thereof, or that any such use will not infringe upon a patent. User shall determine the suitability of the product for the intended application and assume all risk and liability whatsoever in connection therewith.

POURING, CURING & PERFORMANCE...

Pouring - For best results, pour your mixture in a single spot at the lowest point of the containment field. Let the rubber seek its level up and over the model. **A uniform flow will help minimize entrapped air.** The liquid rubber should level off at least 1/2" (1.3 cm) over the highest point of the model surface.

Curing / Post Curing - Allow the mold to cure overnight (at least 24 hours) at room temperature (73°F/23°C) before demolding. Post curing the mold an additional 4 hours at 150°F (65°C) will eliminate any residual moisture and alcohol that is a by-product of the condensation reaction that can inhibit the cure of some resins and rubbers. Allow mold to cool to room temperature before using. Do not cure rubber where temperature is less than 65°F/18°C.

Decreasing demold time with Accel-T™ Silicone Cure Accelerator-

Important: Thoroughly Pre-mix Accel-T™ with Part B before adding Part A. Be aware that the working time is drastically reduced with the addition of Accel-T™. Also, library life of cured rubber is reduced in proportion to the amount of Accel-T™ added.

| Accel-T™ added by weight To Part "B" | Pot Life in minutes | Demold time in hours |
|--------------------------------------|---------------------|----------------------|
| 0.2% | 20 | 3 |
| 0.6% | 5 | 2 |
| 1.0% | 3 | 1 |

Using The Mold - New silicone rubber molds exhibit natural release characteristics. Depending on what is being cast into the mold, mold lubricity may be depleted over time and parts will begin to stick. No release agent is necessary when casting wax or gypsum. Applying a release agent such as Ease Release™ 200 (available from Smooth-On) prior to casting polyurethane, polyester and epoxy resins is recommended to maximize mold life. Visit Smooth-On's FAQ section at www.smooth-on.com for information on a powder coating technique that will yield a dry matte finish to cured castings. Surface finish of low melt metal castings can be improved by dusting the mold cavity with talcum powder and brushing onto all surfaces. Remove excess powder before casting. Wear suitable breathing protection when using talc (i.e. dust mask).

Mold Performance & Storage - The physical life of the mold depends on how you use it (materials cast, frequency, etc.). Casting abrasive materials such as concrete can quickly erode mold detail, while casting non-abrasive materials (wax) will not

affect mold detail. Before storing, the mold should be cleaned with a soap solution and wiped fully dry. Two part (or more) molds should be assembled. Molds should be stored on a level surface in a cool, dry environment.



Call Us Anytime With Questions About Your Application.

Toll-free: (800) 381-1733 Fax: (610) 252-6200

www.smooth-on.com is loaded with information about mold making, casting and more.