Mold Max™ Series

Condensation Cure Silicone Rubber Compounds

www.smooth-on.com

PRODUCT OVERVIEW

Mold Max™ Silicones are tin-cured silicone rubber compounds that have exceptional working properties and library life. Mold Max™ Silicones feature Smooth-On's exclusive "Libra™" catalyst for long library life. **Mold Max™ silicones can be pigmented** with **Silc Pig™ silicone colorants**. Pot life for the pourable silicones is 45 minutes and they cure overnight at room temperature.

Mold Max™ Silicones will reproduce the finest detail and are suitable for a variety of industrial and art related applications including making molds for reproducing prototypes, furniture, sculpture and architectural elements. Mold Max™ 10, 20, 25 and 30 silicones can be thickened with **THI-VEX™ additive** for brush-on applications. ***(Note: THI-VEX™ is NOT compatible with Mold Max™ 40 or 60)***. Mold Max™ 60 offers highest heat resistance for casting metal (see separate technical bulletin)

Mold Max™ Silicones can be used to cast a variety of materials including wax, gypsum, low melt alloys/metals and urethane, epoxy or polyester resins (without using a release agent).

Important; you must weigh Part A & B components using a **gram scale** to be successful with Mold Max™ silicones.

Vacuum degassing mixed material using a vacuum pump and chamber to remove entrapped air is recommended.

TECHNICAL OVERVIEW

	A:B Mix Ratio by Weight	Mixed Viscosity (ASTM D-2393)	Specific Gravity (g/cc) (ASTM D-1475)	Specific Volume (cu. in./lb.) (ASTM D-1475)	Color	Shore A Hardness (ASTM D-2240)	Tensile Strength (ASTM D-412)	100% Modulus (ASTM D-412)	Elongation at Break % (ASTM D-412)	Die B Tear Strength (ASTM D-624)	Shrinkage** (ASTM D-2566)
Mold Max™ 10	100A:10B	15,000 cps	1.15	24.1	Light Pink	10A	473 psi	35 psi	529%	100 pli	.001 in./in.
Mold Max™ 20	100A:10B	25,000 cps	1.18	23.5	Light Pink	20A	555 psi	49 psi	512%	110 pli	.001 in./in.
Mold Max™ 25	100A:5B	25,000 cps	1.18	23.5	Purple	25A	577 psi	80 psi	375%	130 pli	.001 in./in.
Mold Max™ 30	100A:10B	25,000 cps	1.18	23.5	Pink	30A	577 psi	110 psi	300%	125 pli	.002 in./in.
Mold Max™ 40	100A:10B	45,000 cps	1.14	24.3	Mint Green	40A	550 psi	190 psi	250%	120 pli	.004 in./in.

Pot Life Mold Max™ 10, 20, 30, 40**:** 45 minutes

Pot Life Mold Max™ 25**:** 60 minutes

Cure Time: 24 hours

Useful Temperature Range: -65°F to 400°F (-53°C to 205°C)

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

**Shrinkage measured after 24 hours

Volume Resistance (ohm) (ASTM D257-14)**:** 8.29E+11

Volume Resistivity (ohm) (ASTM D257-14)**:** 5.83E+13

Dielectric Constant @ 100Hz (ASTM D150-18)**:** 3.29

Dissipation Factor @100Hz (ASTM D150-18)**:** 0.005

Dielectric Strength (V/mil) (ASTM D149-20)**:** 330

PROCESSING RECOMMENDATIONS

PREPARATION...Safety – Use in a properly ventilated area ("room size" ventilation). Wear safety glasses, long sleeves and rubber gloves to minimize contamination risk. Wear vinyl gloves only. Latex gloves will inhibit the cure of the rubber. 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. **Store and use material at room temperature (73°F/23°C).** Storing material at warmer temperatures will also reduce the usable shelf life of unused material. These products have a limited shelf life and should be used as soon as possible.

Applying a Sealer / Release Agent - Mold Max™ rubber may be inhibited by sulfur based 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. 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.

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. Use only with adequate ventilation. Contact with skin and eyes may cause irritation. Flush eyes with water for 15 minutes and seek immediate medical attention. Remove from skin with waterless hand cleaner followed by soap and water.

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.

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.

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 16 hrs) 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.

Thickening Mold Max™ Silicones For Brush-on Application - **THI-VEX™** is made especially for thickening Smooth-On's Mold Max™ 10, 20, 25 and 30 silicones for vertical surface application (making brush-on molds). Different viscosities can be attained by varying the amount of THI-VEX™. ***Note: THI-VEX™ will not work with Mold Max™ 40 or 60.*** Apply a thin coat of rubber. Wait for rubber to become "tacky" before applying next coat. Final mold thickness should be at least 3/8" (1 cm). Allow rubber to cure overnight before applying support shell. See the **THI-VEX™ technical bulletin** (available from Smooth-On or your Smooth-On distributor) for full details.

Accelerating Mold Max™ Silicones - **FastCat™ 30** or **Accel-T™** silicone rubber accelerators will accelerate the cure time of Mold Max™ silicone rubbers. Use in place of (or in combination with) Mold Max™ regular Part B catalyst, FastCat™ 30 for Mold Max 30 will reduce the demold time from overnight to as little as 30 minutes. Accel-T™ can be used with Mold Max™ 10, 20, 25, 30 and 40. Note: working time is reduced in proportion to the amount of FastCat™ or Accel-T™ added. See the technical bulletins for FastCat™ 30 and Accel-T™ respectively (available from Smooth-On or your Smooth-On distributor) for exact mix ratios and cure times. Using these accelerators will result in a shorter library life of the mold.

Thinning Mold Max™ Silicones - **Silicone Thinner™** is a non-reactive silicone fluid that will lower the mixed viscosity of tin cure (condensation) or platinum cure (addition) silicone rubber products. **Silicone Thinner™ offers the following advantages:** [1] A lower mixed viscosity (A+B) means that the rubber will de-air faster when vacuuming; [2] Mixed rubber (A+B) will flow better over intricate model detail; [3] Silicone Thinner™ will lower the ultimate shore hardness (durometer) of cured silicone rubber; [4] Pot life (working time) is increased in proportion to the amount of Silicone Thinner™ used. **A disadvantage** is that ultimate tear and tensile are reduced in proportion to the amount of Silicone Thinner™ added, however knotty tear properties of the Mold Max™ Series rubbers are unaffected. ***It is not recommended to exceed 10% by weight of total system (A+B).*** See the **Silicone Thinner™ technical bulletin** (available from Smooth-On or your Smooth-On distributor) for full details.

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.

SMOOTH-ON SINCE 1895

Call Us Anytime With Questions About Your Application.

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

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