Mold Max™ Series

Condensation Cure Silicone Rubber Compounds

PRODUCT REVIEW

Mold Max™ Silicones are tin-cured silicone rubber compounds that have exceptional tear strength and working properties and library life. *Mold Max™* Silicones feature Smooth-On's exclusive "Libra" catalyst for long library life. They cure overnight and feature knotty tear propagation (if the rubber is torn, the tear quickly terminates in a "knot" reducing further mold damage). *Mold Max™* 15T & 27T are translucent clear (no color) and can be used for making molds or creating special effects using Silc Pig silicone pigments.

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, 17T, 20, 27T & 30 Silicones can be thickened with *THI-VEX™ II* additive for brush-on applications.

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).

TECHNICAL REVIEW

	Shore A	Mix Ratio By Weight	Color	Specific Volume	Specific Gravity	Viscosity	Die B Tear Strength	Elongation At Break	Tensile Strength	100% Modulus	Shrinkage
Mold Max 10	10	100A:10B	Light Pink	24.1	1.15	15,000 cps	100 pli	529%	473 psi	35 psi	.001 in./in.
Mold Max 15T	15	100A:10B	Translucent	25.6	1.08	20,000 cps	94 pli	600%	490 psi	35 psi	.002 in./in.
Mold Max 20	20	100A:10B	Light Pink	23.5	1.18	25,000 cps	110 pli	512%	555 psi	49 psi	.001 in./in
Mold Max 27T	27	100A:10B	Translucent	25.0	1.11	30,000 cps	110 pli	400%	575 psi	65 psi	.002 in./in.
Mold Max 30	30	100A:10B	Pink	23.5	1.18	25,000 cps	125 pli	300%	577 psi	110 psi	.002 in./in
Mold Max 40	40	100A:10B	Mint Green	24.3	1.14	45,000 cps	120 pli	250%	550 psi	190 psi	.004 in./in.

PREPARATION TIPS

Applying A Sealer / Release Agent . . . *Mold Max™* 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.

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 [tm] 200 is a proven release agent for making molds with silicone rubber and for releasing new silicone from cured silicone. Mann Ease Release [tm] 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.**

Measuring & Mixing. . . Materials should be stored and used in a warm environment (72° F / 23°C). Store material where temperature does not exceed 75°F / 23°C. Before you begin, pre-mix Part A (base) thoroughly to re-disperse fillers that may have settled. After dispensing required amounts of Parts A and B into mixing container (100 parts A to10 parts B by weight), **mix thoroughly for 3 minutes** making sure that you **scrape the sides and bottom of the mixing container several times**. After mixing parts A and B, vacuum degassing is recommended to eliminate any entrapped air. Vacuum material for 2 -3 minutes (29 inches of mercury), making sure that you leave enough room in container for product expansion.

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 . . . Allow the mold to cure overnight (at least 16 hours) at room temperature (77°F/25°C) before demolding. **Post curing the mold an additional 4 - 5 hours at 125°F (51°C)** will eliminate any residual moisture and alcohol that is a by-product of the condensation reaction. This water and alcohol can inhibit the cure of some urethane 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™* 10, 20 & 30 Silicones with *THI-VEX™* thixotropic additive: For vertical surface application, *Mold Max™* 10, 20 & 30 Silicones can be thickened for brush-on application. Different viscosities can be attained by varying the amount of *THI-VEX™*.

THI-VEX™ is added as a percentage of Part A and must be thoroughly mixed with Parts A and B.

Part A	+	Part B Catalyst (Mix Well)	+	THI-VEX (% of Part A)	=	Consistency
100 Parts		10 Parts		1/2 Part (0.5%) (% of Part A)		Thick
100 Parts		10 Parts		1.0 Parts (1.0%) (% of Part A)		Thicker
100 Parts		10 Parts		2.0 Parts (2 %) (% of Part A)		Thickest

Apply a 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.

FastCat™ silicone rubber catalyst will accelerate the cure time of Mold Max™ silicone rubbers. Used in place of (or in combination with) Mold Max™ regular Part B catalyst, FastCat™ will reduce the demold time from overnight to as little as 30 minutes. **Note:** working time is reduced in proportion to the amount of FastCat™ added. See the technical bulletins for FastCat™ 10, 20 & 30 respectively (available from Smooth-On or your Smooth-On distributor) for exact mix ratios and cure times. Substituting FastCat™ catalyst for original Libra™ catalyst will result in a shorter library life of the cured mold.

Mold Max™ Thinner is a non-reactive silicone fluid that will lower the mixed viscosity of tin cure (condensation) or platinum cure (addition) silicone rubber products. MM 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] MM 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 MM thinner used. A disadvantage is that ultimate tear and tensile are reduced in proportion to the amount of MM thinner added, however knotty tear properties of the Mold Max™ Series rubbers are unaffected. See the Mold Max™ Thinner technical bulletin (available from Smooth-On or your Smooth-On Distributor) for full details.

Tel: (800) 762-0744 Fax: (610) 252-6200 Website: www.smooth-on.com