

# Mold Max® 10T, 15T & 27T

**Translucent Condensation Cure Silicone Rubber Compounds**



www.smooth-on.com

## PRODUCT OVERVIEW

Mold Max® 10T, 15T and 27T silicone are water white translucent tin cured silicone rubber compounds that have exceptional tear strength and working properties. They feature Smooth-On's "Libra®" catalyst for long library life. Mixed 100A:10B by weight, vacuum degassing is recommended for de-airing. Rubber cures overnight at room temperature.

Similar in appearance to Smooth-On's premium Dragon Skin® platinum silicones, Mold Max® 'T' silicones are a less costly alternative for creating animatronic skin effects. Mold Max® 'T' silicones can be thickened with THI-VEX® II thickener for brush-on application and effects. An infinite number of color effects can be achieved by adding Silc Pig® silicone pigments or Cast Magic® effects powders.

Mold Max® 'T' series silicones are also good for making molds used for casting plaster and wax.

## TECHNICAL OVERVIEW

|                      | <b>A:B Mix Ratio</b><br>(parts by weight) | <b>Mixed Viscosity</b><br>(ASTM D-23932) | <b>Specific Gravity</b><br>(g/cc) (ASTM D-1475) | <b>Specific Volume</b><br>(cu. in./lb.) | <b>Color</b> | <b>Shore A Hardness</b><br>(ASTM D-2240) | <b>Tensile Strength</b><br>(psi) (ASTM D-412) | <b>100% Modulus</b><br>(psi) (ASTM D-412) | <b>Elongation at Break %</b><br>(ASTM D-412) | <b>Die B Tear Strength</b><br>(pli) (ASTM D-624) | <b>Shrinkage</b> (in./in.)<br>(ASTM D-2566) |
|----------------------|---|--|---|---|--------------|--|---|---|--|--|---|
| <b>Mold Max® 10T</b> | 100A:10B                                  | 14,000 cps                               | 1.09  | 25.4                                    | Translucent  | 10A                                      | 405 psi                                       | 29 psi                                    | 586%   | 87 pli   | .0025 in./in.                               |
| <b>Mold Max® 15T</b> | 100A:10B                                  | 20,000 cps                               | 1.08  | 25.6                                    | Translucent  | 15A                                      | 490 psi                                       | 35 psi                                    | 600%   | 94 pli   | .002 in./in.                                |
| <b>Mold Max® 27T</b> | 100A:10B                                  | 30,000 cps                               | 1.11  | 25.0                                    | Translucent  | 27A                                      | 575 psi                                       | 65 psi                                    | 400%   | 110 pli  | .002 in./in.                                |

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

### **Pot Life** (ASTM D-2471):

**Mold Max® 10T:** 105 minutes

**Mold Max® 15T & 27T:** 45-55 minutes

**Cure Time:** 24 hrs (optional: follow with post cure)

**Dielectric Strength** (V/mil) (ASTM D-147-97a): >500

**Useful Temperature Range:** -65°F to 400°F (-19°C to 205°C)

## 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.

**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 pouring 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...

Before you begin, pre-mix Part B thoroughly to re-disperse pigments that may have settled. After dispensing required amounts of Parts A and B into mixing container, **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 in pourable Mold Max® rubber. Vacuum material for 2-3 minutes (29 inches of mercury), making sure that you leave enough room in container for product expansion.

## 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 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® Silicones For Brush-on Application** - THI-VEX® II is made especially for thickening Smooth-On's Mold Max® 10T, 15T, and 27T silicones for vertical surface application (making brush-on molds). Different viscosities can be attained by varying the amount of THI-VEX® II. 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® II technical bulletin** (available from Smooth-On or your Smooth-On distributor) for full details.

**Accelerating Mold Max® Silicones** - Accel-T® Silicone Rubber Accelerator will accelerate the cure time of Mold Max® silicone rubbers. Accel-T® can be used with Mold Max® 10T, 15T and 27T. Note: working time is reduced in proportion to the

amount of Accel-T® added. See the technical bulletin for Accel-T® (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.



**Call Us Anytime With Questions About Your Application.**

**Toll-free: (800) 762-0744 Fax: (610) 252-6200**

The new [www.smooth-on.com](http://www.smooth-on.com) is loaded with information about mold making, casting and more.