# Mold Star® 15, 16 and 30

## 1A:1B Mix By Volume Platinum Silicone Rubbers

SMOOTH-ON SINCE 1895

www.smooth-on.com

## PRODUCT OVERVIEW

**Mold Star®** rubbers are easy to use platinum silicones which are mixed 1A:1B by volume (no weighing scale necessary). **Mold Star®** silicones feature relatively low viscosities and vacuum degassing is not required for most applications. The pot life of **Mold Star® 15 SLOW** is 50 minutes and cure time is 4 hours at room temperature. **Mold Star® 16 FAST** is a faster material with a 6 minute pot life and 30 minute cure time. **Mold Star® 30** is a harder material, with a 30A Shore hardness

**Mold Star®** silicones cure to soft, strong rubbers which are tear resistant and exhibit very low long term shrinkage. Molds made with **Mold Star®** will last a long time in your mold library and are good for casting wax, gypsum, resins, concrete and other materials. Cured **Mold Star®** rubber is heat resistant up to 450°F (232°C) and is suitable for casting low-temperature melt metal alloys. ***Note: Mold Star® rubbers are not intended for brush-on moldmaking.***

**Note: This product *will not* cure against surfaces containing sulfur, even when sealed.**

## TECHNICAL OVERVIEW

| | Mixed Viscosity (ASTM D-2393) | Specific Gravity (g/cc) (ASTM D-1475) | Specific Volume (cu. in./lb.) (ASTM D-1475) | Pot Life (ASTM D-2471) | Cure Time | 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) | Color |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Mold Star® 15 SLOW** | 12,500 cps | 1.18 | 23.5 | 50 min. | 4 hours | 15A | 400 psi | 55 psi | 440% | 88 pli | Green |
| **Mold Star® 16 FAST** | 12,500 cps | 1.18 | 23.5 | 6 min. | 30 min. | 16A | 400 psi | 55 psi | 440% | 88 pli | Blue-Green |
| **Mold Star® 30** | 12,500 cps | 1.12 | 24.7 | 45 min. | 6 hours | 30A | 420 psi | 96 psi | 339% | 88 pli | Blue |

***Mix Ratio:*** 1A:1B by volume

***Shrinkage*** *(in./in.) (ASTM D-2566):* < .001 in./in.

***Useful Temperature Range:*** -65°F to 450°F (-53°C to 232°C)

*All values measured after 7 days at 73°F/23°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).** Warmer temperatures will drastically reduce working time and cure time. 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.

***Cure Inhibition*** - Addition cured silicone rubber may be inhibited by certain contaminants in or on the pattern to be molded resulting in tackiness at the pattern interface or a total lack of cure throughout the mold. Latex, sulfur clays, certain wood surfaces, newly cast polyester, epoxy or urethane rubber my cause inhibition. 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, one or more coatings of a clear acrylic lacquer applied to the model surface is usually effective. Allow any sealer to thoroughly dry before applying rubber.

**Even with a sealer, Mold Star® silicones *will not* cure against surfaces containing sulfur. If you are not sure if your clay contains sulfur, do a small compatibility test before using for an important project.**

***Applying A Release Agent -*** Although not usually necessary, a release agent will make demolding easier when casting into most surfaces. Ease Release® 200 is a proven release agent for releasing silicone from silicone or other surfaces. 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*** **-** 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.

## MEASURING & MIXING...

***Measuring & Mixing*** - Before you begin, pre-mix Part A and Part B separately. After dispensing required amounts of Parts A and B into mixing container (1A:1B by volume), **mix thoroughly** making sure that you **scrape the sides and bottom of the mixing container several times.** The rubber should be a uniform green color with no streaks.

***Optional... Vacuum Degassing*** **-** Although not necessary, vacuum degassing helps eliminate any entrapped air in pourable silicone rubber. After mixing parts A and B, vacuum material for 2-3 minutes at 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 own level. **A uniform flow will help minimize entrapped air.** If using as a mold material, the liquid rubber should level off at least 1/2" (1.3 cm) over the highest point of the model surface.

***Curing*** **-** Allow **Mold Star® 15 SLOW** silicone rubber to cure for **4 hours** at room temperature (73°F/23°C) before demolding. **Mold Star® 16 FAST** silicone rubber can be demolded after **30 minutes** at room temperature (73°F/23°C). **Mold Star® 30** must be allowed to cure for **6 hours** at room temperature (73°F/23°C) before demolding.

***Heat Curing*** **-** Time to demold can be reduced by applying mild heat. **Example:** After pouring **Mold Star® 16** rubber at room temperature, place the mold in a hot box or industrial oven at 140°F (60°C). This will reduce the time to demold of a 1/2" (1.3 cm) thick section to about 10 minutes. **Note**: Time will vary depending on mold thickness.

Adding an appropriate amount of **Plat-Cat®** cure accelerator will also reduce demold time (See **Plat-Cat®** technical bulletin available at www.smooth-on.com for details). The pot life and cure times can be extended using **Slo-Jo®** cure retarder (see **Slo-Jo®** technical bulletin available at www.smooth-on.com for details). Do not cure rubber where temperature is less than 65°F/18°C.

***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** is loaded with information about mold making, casting and more.