

# Mold Max<sup>®</sup> 14NV and 29NV

Low Viscosity Tin Cure Silicone Rubber Compounds



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## PRODUCT OVERVIEW

Mold Max<sup>®</sup> 14NV and 29NV are tin-catalyzed silicone rubbers that offer low viscosity, fast cure and long library life. **Mold Max<sup>®</sup> 14NV and 29NV do not require vacuum degassing.** Mix ratio is 100A:10B by weight. Pot life is 40 minutes. Cure time of 14NV is 4 hours at room temperature, cure time of 29NV is 6 hours at room temperature.

Mold Max<sup>®</sup> 14NV and 29NV 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. Cure time can be reduced with Accel-T<sup>®</sup> cure accelerator. Mold Max<sup>®</sup> 14NV and 29NV can be used to cast a variety of materials including concrete, wax, gypsum, low melt alloys/metals and urethane, epoxy or polyester resins.

**Important;** you must weigh Part A & B components using a **gram scale** to be successful with Mold Max<sup>®</sup> 14NV and 29NV.

## TECHNICAL OVERVIEW

	A:B Mix Ratio (parts by weight)	Mixed Viscosity (ASTM D-23932)	Specific Gravity (g/cc) (ASTM D-1475)	Specific Volume (cu. in./lb.)	Color	Shore A Hardness (ASTM D-2240)	Tensile Strength (psi) (ASTM D-412)	100% Modulus (psi) (ASTM D-412)	Elongation at Break % (ASTM D-412)	Die B Tear Strength (pli) ASTM D-624)	Shrinkage (in./in.) (ASTM D-2566)
Mold Max <sup>®</sup> 14NV	100A:10B	7,500 cps	1.12	24.7	White	14A	490 psi	35 psi	600%	87 pli	.002 in./in.
Mold Max <sup>®</sup> 29NV	100A:10B	10,000 cps	1.17	23.7	Yellow	29A	417 psi	54 psi	361%	96 pli	.002 in./in.

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

**Pot Life** (ASTM D-2471): 40 minutes

**Cure Times:** 14NV: 4 hours 29NV: 6 hours

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

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

## 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<sup>®</sup> 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<sup>®</sup> 200** is a proven release agent for making molds with silicone rubber and for releasing new silicone from cured silicone. Mann Ease Release<sup>®</sup> 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...

Before you begin, pre-mix Part B thoroughly to re-disperse pigments that may have settled. **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.

## 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.

## 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 fully (at least 6 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.

**Accelerating Mold Max® 14NV and 29NV** - Accel-T® tin cure silicone rubber accelerator will accelerate the cure time of Mold Max® 14NV and 29NV. Note: working time is reduced in proportion to the amount of Accel-T® added.

**Thinning Mold Max® 14NV and 29NV** - 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.

**Making Brush-On Rubber Molds** - Due to low viscosity, **Mold Max® 14NV and 29NV are not recommended** for making brush-on rubber molds. If you want to make a brush-on rubber mold, **Mold Max® Stroke®** was developed especially for this purpose.

**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**

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