



Smooth-Sil™ 945

Addition Cure Silicone Rubber Compound

PRODUCT OVERVIEW Smooth-Sil™ 945 (formerly Silicone 70-82P) is a new silicone rubber (*platinum curative*) that cures at room temperature with no shrinkage to a Shore A hardness of 45.

This rubber is suitable for making production molds of any configuration, large or small. Materials such as urethane, urethane foams, epoxies, polyester resins, wax and low-melt metal alloys (tin, pewter) can be cast into Smooth-Sil™ 945 without application of release agent.

TECHNICAL OVERVIEW

Key Values: ~**Mixing Ratio:** 100A to 10 B by weight ~**Shore A Hardness:** 45
~**Pot Life:** 30 minutes ~**Cure Time/Demold:** 24 hrs. at room temperature ~**Color:** Pink

Properties	Viscosity	G/CC	Cu. In./Lb.	Tensile Strength	Mix Ratio
Part A	-	-	-	-	100 pbw
Part B	-	-	-	-	10 pbw
Mixed	35,000 cps	1.18	23.4	600 psi	-

Elongation At Break . . . 300% 100 % Modulus . . . 80
Die C Tear Strength . . . 100 pli Shrinkage Negligible

Preparation

Cure Inhibition - Addition cured silicone rubber may be inhibited by certain contaminants in or on the pattern to be molded (such as sulfur based clays, polyesters, certain wood surfaces) 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.

Silicones will stick to some porous surfaces. **SuperSeal™** is an unobtrusive, low viscosity soap/wax blend that will not harm a model’s surface and can be washed off with warm water.

To prevent inhibition against sulfur-based clays, a “barrier coat” of clear acrylic spray to the model surface is usually effective. Allow to thoroughly dry.

Applying A Release Agent? Although not usually necessary, a release agent will make demolding easier when casting into or over most surfaces. Ease Release 800™ does not contain silicone oil and is ideal for making molds with silicone rubber. Mann Ease Release™ products are available from TCS, Inc. If casting silicone into silicone, use Ease Release 800™ only. ~**IMPORTANT:** To ensure thorough coverage, lightly brush the release agent with a soft brush over all surfaces of the model. Follow with a light mist coating and let the release agent dry for 30 minutes.

If there is any question about the effectiveness of a sealer/release agent combination, a small scale test should be made on an identical surface for trial. Also, you can call **TCS, Inc for technical assistance at (212) 367-7561.**

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. You must use an accurate scale (gram scale) to weigh Parts A and B. Before you begin, pre-mix Part B (base) thoroughly. After dispensing required amounts of Parts A and B into mixing container (100 parts A to 10 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 volume expansion.

Pouring Curing Mold Performance

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. Full physical properties are attained after 48 hour cure at room temperature. Cure time can be reduced with mild heat (125°F / 51°C for 2 -4 hours). Do not cure rubber where temperature is less than 65°F /18°C. Allow mold to cool to room temperature before using.

Using The Mold . . . When first cast, silicone rubber molds exhibit natural release characteristics. Depending on what is being cast into the mold, mold lubricity may be depleted over time and parts will begin to stick. No release agent is necessary when casting wax or gypsum. Applying a release agent such as Universal Mold Release or Ease Release 200 (available from TCS, Inc) prior to casting polyurethane, polyester and epoxy resins is recommended to prevent mold degradation. If casting urethane foam, use Ease Release 2831. Contact TCS, Inc for information on a powder coating technique that will yield a dry matte finish to cured castings.

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.

Safety First

The Material Safety Data Sheet (MSDS) for this or any other product should be read prior to use and is available at www.SCULPT.com. All Smooth-On products are safe to use if directions are read and followed carefully.

Be careful. Use only with adequate ventilation. Contact with skin and eyes may cause irritation. Flush eyes with soap and 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.

Call Us Anytime With Questions About Your Application.

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