



Platinum Series

Addition Cure Silicone Rubber Compounds

PRODUCT OVERVIEW

Smooth-On Platinum Silicones (*platinum curative*) cure at room temperature with no shrinkage. With different hardness's products to choose from, they offer tremendous versatility and are suitable for making production molds of any configuration, large or small. These silicones exhibit good chemical, abrasion and heat resistance. Materials such as plasters, concrete, wax, low-melt metal alloys or resins (urethane, epoxy or polyester) can then be cast into these silicone rubbers without a release agent.

Smooth-Sil™ Platinum Silicones are used for rapid prototyping, wax casting (foundries and candle makers), architectural restoration and for casting concrete.

Dragon Skin™ is a 1A:1B by volume mix rubber that has tremendous elongation and will rebound to its original shape (good for repetitive motion applications). In addition to being a good mold making material, Dragon Skin is used to create creatures for movie effects (a separate technical bulletin is available for Dragon Skin™ from Smooth-On).

SORTA-Clear™ 40 is a premium water white translucent silicone rubber that is designed for extracting models via cutting (a separate technical bulletin is available for SORTA Clear™ from Smooth-On).

Accessories: A silicone “thinner” is available to lower the mixed viscosity of these products. THI-VEX™ thickener can be added to Smooth-Sil™ 920, 930, 940 & 950 thicken these silicones for brush-on applications.

TECHNICAL OVERVIEW

	Shore A	Mix Ratio Wt. or Vol.	Color	Pot Life	Demold Time	Specific Volume	Specific Gravity	Mixed Viscosity	Die B Tear Strength	Tensile Strength	Shrinkage
Dragon Skin™	10	1:1 pbw, pbv	Translucent	20 Min.	5 Hours	25.8	1.07	23,000 cps	102 pli	475 psi	Negligible
Dragon Skin Q™	10	1:1 pbw, pbv	Translucent	8 Min.	75 Min.	25.8	1.07	23,000 cps	102 pli	475 psi	Negligible
Smooth-Sil™ 910	10	100:10 pbw	Off-White	30 Min.	6 Hours	25.4	1.09	7,000 cps	40 pli	200 psi	Negligible
Smooth-Sil™ 920	20	1:1 pbw, pbv	Translucent	25 Min.	4 Hours	25.6	1.08	20,000 cps	120 pli	550 psi	Negligible
Smooth-Sil™ 930	30	100:10 pbw	Blue	45 Min.	24 Hours	24.0	1.15	40,000 cps	110 pli	575 psi	Negligible
Smooth-Sil™ 940	40	100:10 pbw	Pink	30 Min.	24 Hours	23.4	1.18	35,000 cps	100 pli	600 psi	Negligible
Smooth-Sil™ 950	50	100:10 pbw	Blue	45 Min.	24 Hours	22.3	1.24	35,000 cps	155 pli	725	Negligible
SORTA Clear™ 40	40	100:10 pbw	Translucent	60 Min.	16 Hours	25.8	1.07	35,000 cps	120 pli	400%	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. Smooth-On's *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 Smooth-On or your Smooth-On distributor. 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 **Smooth-On for technical assistance at (800) 762-0744.**

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. If using a material that is mixed by weight, 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, **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. Do not cure rubber where temperature is less than 65°F /18°C.

Post curing the mold will aid in quickly attaining maximum physical and performance properties. After curing at room temperature, expose the rubber to 80° C for 2 hours and 100° C for one hour. 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 Smooth-On) prior to casting polyurethane, polyester and epoxy resins is recommended to prevent mold degradation. Contact Smooth-On 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 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.

Thickening With Thi-Vex[™] Thickening Agent . . . Adding 0.5% - 1% Thi-vex[™] (% of the total weight of the mixture, A+B) will make rubber brushable for vertical surface application. Due to low viscosity, Thi-Vex[™] will not work with SS910.

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.

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.

Smooth-On offers a complete line of Liquid Rubber, Liquid Plastic and Release Agent products for hundreds of industrial and art related applications. Chances are there is a distributor in your area to offer local support.