SORTA-Clear® 18

Translucent Silicone Mold Rubber

www.smooth-on.com

PRODUCT OVERVIEW

SORTA-Clear® 18 is a premium water white translucent silicone rubber (platinum catalyst) that cures at room temperature with negligible shrinkage. A softer version of our popular SORTA-Clear® 40, this rubber has a Shore hardness of 18A and features exceptional tear and tensile strength.

Rubber clarity is especially useful when extracting models via cutting. SORTA-Clear® rubber is ideal for making prototype, jewelry or other molds of any configuration where model visibility is important (i.e. extracting a model from the mold via cutting). Materials such as urethane, epoxy or polyester resins can then be cast into SORTA-Clear® silicone without application of a release agent. Other materials such as wax and low melt metal alloys can also be cast into SORTA-Clear®. SORTA-Clear® can be pigmented with SILC Pig® silicone pigments.

PROCESSING RECOMMENDATIONS

Cure Inhibition - Store and use materials at room temperature (73° F / 23° C). These products have a limited shelf life and should be used as soon as possible. Wear safety glasses, long sleeves and rubber gloves to minimize contamination risk. 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, etc.) 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.

TECHNICAL OVERVIEW

Mix Ratio: 100A : 10B by weight	
Mixed Viscosity, cps: 21,000	(ASTM D-2393)
Specific Gravity, g/cc: 1.08	(ASTM D-1475)
Specific Volume, cu. in. /lb.: 25.6	(ASTM D-1475)
Pot Life: 60 minutes (73°F / 23°C)	(ASTM D-2471)
Cure time: 24 hrs (73°F / 23°C)	
Color: Water Clear Translucent	
Shore A Hardness: 18	(ASTM D-2240*)
Tensile Strength, psi: 425	(ASTM D-412*)
100% Modulus, psi: 35	(ASTM D-412*)
Elongation @ Break: 545%	(ASTM D-412*)
Die B Tear Strength, pli: 80	(ASTM D-624*)
Shrinkage, in./in.: <.0001	(ASTM D-2566*)

* Value measured after 7 days at 73°F / 23°C

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® 200 will release silicone rubber from silicone rubber and other surfaces. Mann Ease Release® products are available from Smooth-On or your Smooth-On distributor. If casting silicone into silicone, use Ease Release® 200 only.

IMPORTANT: To ensure thorough coverage, lightly brush the release agent with a soft brush over all surfaces of the model. Follow with light mist coating and let 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.

Mixing - Shake or stir both Part A & Part B before using. 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 at least 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.

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.

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 - Allow the material to cure for 24 hours at room temperature (73°F / 23°C) before demolding. Do not cure rubber where temperature is less than 65°F / 18°C.

Time to demold can be reduced with mild heat. **IMPORTANT: Rubber will darken considerably when exposed to heat.**

Temperature	Approximate Cure Time (Hours)
73° F / 23° C	24
86° F / 30° C	7
125° F / 52° C	3

Note: Allow mold to cool to room temperature before handling.

Smooth-On's **Plat Cat®** platinum silicone accelerator can also be used to accelerate Sorta-Clear 18. See the Plat Cat® technical bulletin at www.smooth-on.com.

Post Curing - 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. **IMPORTANT:** Rubber will darken considerably when exposed to heat.

Using The Mold - New 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 Ease Release® 200 (available from Smooth-On) prior to casting polyurethane, polyester and epoxy resins is recommended to maximize mold life. Visit Smooth-On's FAQ section at www.smooth-on.com 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.

SMOOTH-ON SINCE 1895

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.