



# SMOOTH-CAST™ 300 Series

Bright White, Ultra-Low Viscosity Liquid Plastics

## PRODUCT OVERVIEW

The Smooth Cast 300 Series of liquid plastics are ultra-low viscosity casting resins that yield castings that are **bright white and virtually bubble free**. Vacuum degassing is not necessary. They offer the convenience of a one to one mix ratio (one part A to one part B by volume). The differences between them are pot life and demold time.

These resins readily accept fillers (such as URE-FIL 3 from Smooth-On) and can be pigmented (Smooth-Cast 325 accepts pigments better than the SC 300 series). Fully cured castings are tough, durable, machinable and paintable. They resist moisture and mild solvents. Applications for Smooth-Cast Liquid Plastics include reproducing small to medium size sculptures, cold cast bronze castings, making prototype models, roto cast pieces, special effect props and decorative jewelry.

## TECHNICAL OVERVIEW

**Key Values:** ~*Mixing Ratio:* One to One by volume. ~*Color:* White ~*Durometer:* Shore 70D

	<u>Pot Life</u>	<u>Demold Time</u> (depending on mass)	<u>Shrinkage</u>
Smooth-Cast 300Q	30 seconds	4 - 5 minutes	.01 in./in.
Smooth-Cast 300	3 minutes	10 minutes	.005 in./in.
Smooth-Cast 305	7 minutes	30 minutes	.0035 in./in.
Smooth-Cast 310	15 - 20 minutes	2 - 4 hours	.00025 in./in.

COMPONENTS	COLOR	VISCOSITY	S.G. g/cm3	S.V. cu. in./lb.
Mixed Part A + B	White	80 cps	1.05	26.6
Shore D Hardness: 70		Ultimate Tensile Strength: 3,000 PSI		

## Applying A Release Agent

## Mixing

**Preparation . . .** All liquid urethanes are **moisture sensitive** and will absorb atmospheric moisture. Materials should be stored and used in a warm environment (72° F / 23° C). Mixing tools and containers should be clean and made of metal, glass or plastic. Mixing should be done in a well-ventilated area. Wearing eye protection, latex gloves and long sleeve garments to minimize skin contact is strongly recommended.

**Applying A Release Agent . . .** A release agent is necessary to facilitate demolding when casting into or over most surfaces. Use a release agent made specifically for mold making (Universal Mold Release or Mann's Ease Release 2251 available from Smooth-On or your Smooth-On distributor). A liberal coat of release agent should be applied onto all surfaces that will contact the plastic. ~**IMPORTANT:** To ensure thorough coverage, lightly brush the release agent with a soft brush over all surfaces. Follow with a light mist coating and let the release agent dry for 30 minutes.

Most silicone rubber molds usually do not require a release agent unless casting silicone into the mold. Applying a release agent, however, will prolong the life of the mold.

**Mixing . . .** Stir or shake both Part A & Part B thoroughly before dispensing. After dispensing equal amounts of Parts A and B into mixing container, **mix thoroughly**. Stir slowly and deliberately making sure that you scrape the sides and bottom of the mixing container several times. Be careful not to splash low viscosity material out of the container.

**Remember, SC300Q, SC 300 and SC 305 set up quickly.** Do not delay between mixing and pouring.

## *Pouring*

## *Curing*

## *Performance*

**IMPORTANT:** Shelf life of product is drastically reduced after opening. Remaining product should be used as soon as possible. Immediately replacing the lids on both containers after dispensing product will help prolong the shelf life of the unused product. **XTEND-IT Dry Gas Blanket** (available from Smooth-On) will significantly prolong the shelf life (up to 4 times longer) of unused liquid urethane products.

***Pouring . . .*** For best results, pour your mixture in a single spot at the lowest point of the containment field and let the mixture seek its level. This will help minimize air entrapment.

***Curing . . .*** SC 300 will cure in 7 - 10 minutes (SC 305 in 30 – 40 minutes and SC 310 in 2 - 4 hours) depending on mass and mold configuration. Non-hazardous fumes, which may be visible as this product starts to “gel” and cure, will dissipate with adequate (room size) ventilation. Post curing (heating your casting to 150°F/65°C) for 4 – 6 hours increases physical properties and performance.

***Performance . . .*** Cured castings are rigid and durable. They resist moisture, moderate heat, solvents, dilute acids and can be machined, primed/painted or bonded to other surfaces (any release agent must be removed). If machining cured material, wear dust mask or other apparatus to prevent inhalation of residual particles. Castings can be displayed outdoors after priming and painting. Unpainted castings will yellow over time - more quickly when exposed to ultra-violet light. Because no two applications are quite the same, a small test application to determine suitability is recommended if performance of this material is in question.

## *Safety First!*

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The material safety data sheet (MSDS) for this or any Smooth-On product should be read before using and is available on request. All Smooth-On products are safe to use if directions are read and followed carefully.

***Be careful.*** Part A (Yellow Label) contains methylene diphenyl diisocyanate. Vapors, which can be significant if prepolymer is heated or sprayed, may cause lung damage and sensitization. Use only with adequate ventilation. Contact with skin and eyes may cause severe irritation. Flush eyes with water for 15 minutes and get immediate medical attention. Remove from skin with soap and water. Part B (Blue Label) is irritating to the eyes and skin. Avoid prolonged or repeated skin contact. If contaminated, flush eyes with water for 15 minutes and get immediate medical attention. Remove from skin with soap and water. When mixing with Part A, follow precautions for handling isocyanates. If machining cured castings, wear dust mask or other apparatus to prevent inhalation of residual particles.

***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 a copyright or patent. User shall determine suitability of the product for the intended application and assume all associated risks and liability.

***Call Us Anytime With Questions About Your Application.***

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