



# SMOOTH-CAST 70D

Rigid Urethane Casting Resin

## PRODUCT OVERVIEW

Smooth Cast 70D is an ultra-low viscosity casting resin that offers the user tremendous versatility and design capability. Easy to mix and pour, Smooth-Cast 70D offers the convenience of a one to one (by volume) mix ratio and cures in about 3 minutes to a hard plastic which can be demolded in about 15 minutes.

**Low Cost, Convenience, Versatility!** The unique feature of Smooth-Cast 70D is that our “URE-FIL 3” casting resin filler can be added in different proportions to achieve a variety of working properties and effects. This system gives you the capability of doubling or tripling volume by adding filler, thereby saving you money (see mixing instructions below for more details). With enough filler added, Smooth-Cast 70D can be used as a lightweight mother mold material.

Fully cured castings made from Smooth-Cast 70D are tough, durable, machinable and paintable. They resist moisture and mild solvents. Vibrant colors and color effects are easily achieved by adding pigment dispersions. Applications for Smooth-Cast 70D include making prototype and architectural models, special effects props, industrial parts, decorative jewelry and miniatures.

## TECHNICAL OVERVIEW

**Key Values:** ~**Mixing Ratio:** One to One by volume. ~**Color:** Tan ~**Durometer:** Shore 70D  
~ **Pot Life:** 4 - 6 minutes ~**Demold Time:** 15 minutes (depending on mass).

COMPONENTS	COLOR	VISCOSITY	S.G. g/cm <sup>3</sup>	S.V. cu. in./lb.
Mixed Part A + B	Tan	400 cps	1.07	25.9

Elongation At Break: 6.0%      Ultimate Tensile Strength: 3,600 PSI      Shrinkage: .0075 in/in

## Applying A Release Agent

## Mixing

**Preparation . . .** 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 TCS, Inc). 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 . . . Shake or stir Part A & Part B before using.** After dispensing equal amounts of Parts A and B into mixing container, **mix thoroughly** for 60 seconds. 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, this product cures quickly.** Do not delay between mixing and pouring.

**Adding URE-FIL 3 Filler . . .** URE-FIL 3 must be thoroughly dispersed in Part B to a uniform consistency before adding Part A. A mixture of one part A, one part B and two parts filler (1:1:2) yields a castable resin that cures at room temperature in about one hour. A mix ratio of one part A, one part B and four parts filler (1:1:4) yields a resin that has a paste-like consistency.

**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 TCS, Inc) will significantly prolong the shelf life (up to 4 times longer) of unused liquid urethane products.

**Pouring**

**Curing**

**Performance**

***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 70D will cure in 15 minutes 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 of SC-70D 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 SC-70D, 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 other product should be read before using and is available at [www.SCULPT.com](http://www.SCULPT.com). All Smooth-On products are safe to use if directions are read and followed carefully.

***Be careful.*** SC-70D Part A (Yellow Label) contains methylene diphenyldiisocyanate. 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 SC-70D, 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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