

# Smooth-Cast® 385

## Mineral Filled Urethane Casting Resin



www.smooth-on.com

### PRODUCT OVERVIEW

**Smooth-Cast® 385** is a mineral filled urethane casting resin that is very hard and durable. When Parts A and B are mixed in proper proportion (1A:5B by weight), **Smooth-Cast® 385** cures at room temperature with virtually no shrinkage. This rigid urethane casting resin has high compressive and flexural strength. Fully cured castings are tough, machinable and paintable.

Color effects are possible by adding pigment dispersions. They resist moisture and mild solvents. **Smooth-Cast® 385** is ideal for making industrial production parts, foundry patterns, vacuum forming molds, and some ceramic applications.

### PROCESSING RECOMMENDATIONS

**Preparation** - Store and use at room temperature (73°F/23°C). These products have a limited shelf life and should be used as soon as possible. Environmental humidity should be as low as possible. Good room size ventilation is essential. Wear safety glasses, long sleeves and rubber gloves to minimize contamination risk.

#### TECHNICAL OVERVIEW

Mix Ratio: 1A:5B by weight

Mixed Viscosity, cps: 3,000 (ASTM D-2393)

Specific Gravity, g/cc: 1.60 (ASTM D-1475)

Specific Volume, cu. in. /lb.: 17.3 (ASTM D-1475)

Pot Life: 20 min. (73°F/23°C) (ASTM D-2471)

Demold Time: 2 hours (73°F/23°C)

Color: Beige

Shore D Hardness: 85 (ASTM D-2240)

Ultimate Tensile, psi: 3,100 (ASTM D-638)

Tensile Modulus, psi: 400,000 (ASTM D-638)

Elongation @ Break: 1% (ASTM D-638)

Flexural Strength, psi: 5,900 (ASTM D-790)

Flexural Modulus, psi: 433,000 (ASTM D-790)

Compressive Strength, psi: 8,500 (ASTM D-695)

Heat Deflection Temp: 135°F/57°C (ASTM D-648)

Compressive Modulus, psi: 400,000 (ASTM D-695)

Shrinkage, in./in.: 0.0006 in./in. (ASTM D-2566)

All values measured after 7 days at 73°F / 23°C

**Applying A Release Agent** - A release agent is necessary to facilitate demolding when spraying into or over most surfaces. Use a release agent made specifically for mold making (Universal® Mold Release) 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:** Apply release agent to all surfaces that will contact the rubber. 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 15 minutes.

**Because no two applications are quite the same, a small test application to determine suitability for your project is recommended if performance of this material is in question.**

#### MIXING & MEASURING...

**Mixing - PRE-MIX PART-B BEFORE YOU BEGIN.** After pre-mixing Part-B, dispense required amounts of Parts A and B into mixing container and mix thoroughly. Stir slowly and deliberately, making sure that you scrape the sides and bottom of the mixing container several times. If Vacuum Degassing subject mixture to 29 inches mercury for 3 minutes or until mixture rises and falls.

#### 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** - Warning: Fumes, which may be visible as this product starts to "gel" and cure, will dissipate with adequate ventilation. Castings will be extremely hot immediately following cure and may burn the skin. Let cool to room temperature before handling. SC 385 will cure overnight at room temperature (73°F/23°C). Demold time is directly proportional to mass and mold configuration. Larger castings will cure quicker than smaller or thin walled castings. Cure can be accelerated by adding SO-Cure® cure accelerator (from Smooth-On) or applying mild heat (150°F/65°C).

**IMPORTANT:** Shelf life of product is 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 of unused liquid urethane products.

## 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.

**Part A (Yellow Label)** contains methylene diphenyl diisocyanate. Vapors, which can be significant if 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.

**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.

**Post Curing** - Although not necessary, post curing will increase physical properties and material performance. If using SC 385 as a vacuum form mold, post curing is recommended. After curing at room temperature, expose material in the mold to 150°F/65°C for 4 – 6 hours. Let cool to room temperature before use.

**Performance** - Cured castings of SC 385 are very hard 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 castings, wear dust mask or other apparatus to prevent inhalation of residual particles.

Castings can be displayed outdoors after priming and painting. Unpainted castings will darken after being exposed to UV light. Because no two applications are the same, a small test application to determine suitability is recommended if performance of this material is in question.



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

Toll-free: (800) 762-0744 Fax: (610) 252-6200

The new [www.smooth-on.com](http://www.smooth-on.com) is loaded with information about mold making, casting and more.