

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 - These products have a limited shelf life and should be used as soon as possible. Materials should be stored and used in a warm environment (73°F/23°C). All liquid urethanes will react with moisture in the air, causing bubbles. Use in a low humidity environment (below 50% RH). Mixing containers should have straight sides and a flat bottom. Mixing sticks should be flat and stiff with defined edges for scraping the sides and bottom of your mixing container. **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.**

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.

MIXING & MEASURING...

Mixing - Shake Part A and stir Part B thoroughly before dispensing. After dispensing required 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. If vacuum degassing, Your vacuum pump must pull a minimum of 29 inches of mercury (or 1 Bar / 100 KPa). Leave enough room in container for material expansion. Vacuum material until it rises, breaks and falls. Vacuum for 1 minute after material 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 - **Important:** Use this product with at least room size ventilation or in proximity to a forced outlet air vent and do not inhale/breathe fumes. Fumes, which may be visible with a significant mass concentration, will quickly dissipate with adequate ventilation.

Castings with significant mass may be hot to the touch and irritate skin immediately following cure. Let casting cool to room temperature before handling. Smooth-Cast™ 385 is ready for demold in about two hours depending on mass and mold configuration.

Demold time of the finished casting depends on mass and mold configuration. Low mass or thin-walled castings will take longer to cure than castings with higher mass concentration.

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 Smooth-Cast™ 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 Smooth-Cast™ 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) 381-1733 Fax: (610) 252-6200

www.smooth-on.com is loaded with information about mold making, casting and more.