# Smooth-Cast™ 325 EU, 326 EU & 327 EU

## *Ultra Low Viscosity Liquid Plastics*

www.smooth-on.com

## PRODUCT OVERVIEW

The **Smooth-Cast™ 325 EU, 326 EU & 327 EU** plastics are are phthalate free urethane resins that were developed specifically for adding color pigments and fillers to achieve true color representation or filler effect. The **Smooth-Cast™ 325 EU, 326 EU & 327 EU** plastics are formulated "color neutral". Small amounts of pigment will yield accurate, vivid colors from cured castings using So-Strong™, UVO™ or Ignite™ colorants. The **Smooth-Cast™ 325 EU, 326 EU & 327 EU** plastics offer the convenience of a 1A: 1B mix ratio by volume and have a very low viscosity. Demold times range from about 10 minutes to 2-4 hours (depending on product, mass and mold configuration). **Note: Large mass castings will get very hot and shrink more, depending on mold configuration.**

The **Smooth-Cast™ 325 EU, 326 EU & 327 EU** plastics also readily accept fillers (such as URE-FIL™ 3 from Smooth-On). Because of its neutral color, **Smooth-Cast™ 325** is ideal for creating marble and wood grain casting effects, or duplicating the look of real metal by adding bronze, brass or other metal powder. Applications for the **Smooth-Cast™ 325 EU, 326 EU & 327 EU** plastics include making pigmented prototype models or figures, special effect props, reproducing small to medium size sculptures, decorative jewelry, etc.

## TECHNICAL OVERVIEW

| | **Pot Life** @ 73°F / 23°C (ASTM D-2471) | **Cure Time **** @ 73° F / 23°C | **Tensile Strength** (ASTM D-638) | **Tensile Modulus** (ASTM D-638) | **Elongation at Break %** (ASTM D-638) | **Flexural Strength** (ASTM D-790) | **Flexural Modulus** (ASTM D-790) | **Compressive Strength** (ASTM D-695) | **Compressive Modulus** (ASTM D-695) | **Shrinkage** in./in. (ASTM D-2566) |
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| **Smooth-Cast™ 325 EU** | 2.5 Minutes | 10 Minutes | 3170 psi | 140,000 psi | 10% | 3,690 psi | 101,000 psi | 3,500 psi | 36,500 psi | 0.01 |
| **Smooth-Cast™ 326 EU** | 7-9 Minutes | 60 Minutes | 3170 psi | 140,000 psi | 10% | 3,100 psi | 95,700 psi | 3,080 psi | 32,200 psi | 0.0075 |
| **Smooth-Cast™ 327 EU** | 10-20 Min. | 2 - 4 Hours | 3170 psi | 140,000 psi | 10% | 3,100 psi | 95,700 psi | 3,080 psi | 32,200 psi | 0.0075 |

**Mix Ratio;** 1A:1B by volume or 115A:100B by weight

**Mixed Viscosity,** cps; 100 (ASTM D-2393)

**Specific Gravity,** g/cc; 1.07 (ASTM D-1475)

**Specific Volume,** cu. in./lb.; 25.9 (ASTM D-1475)

**Color;** Clear Amber

**Shore D Hardness;** 72 (ASTM D-2240)

**Heat Deflection Temp;** 120°F/50°C (ASTM D-648)

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

* * Depending on Mass

## PROCESSING RECOMMENDATIONS

### PREPARATION...

***Safety -*** Materials should be stored and used in a warm environment (73°F/23°C). These products have a limited shelf life and should be used as soon as possible. All liquid urethanes are **moisture sensitive and will absorb atmospheric moisture**. Mixing tools and containers should be clean and made of metal, glass or plastic. Mixing should be done in a well-ventilated area. Wear safety glasses, long sleeves and rubber gloves to minimize contamination risk. **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.**

***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™ 200 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, apply release and brush with a soft brush over all surfaces. Follow with a light mist coating and let the release agent dry for 30 minutes. Smooth-On silicone rubber molds usually do not require a release agent unless casting silicone into the mold. Applying a release agent will prolong the life of the mold.

***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 before using and is available on request. All Smooth-On products are safe to use if directions are read and followed carefully.

***Keep Out of Reach Of Children.***

***Be Careful*** - **Part A** (Yellow Label) contains methylene diphenyldiisocyante. 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. 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.

## PIGMENTING, MEASURING & MIXING...

***Pigmenting*** - Pre-Mix Pigment Or Fillers With Part B - For consistent results, pigment or fillers should be added by weight each time. Some "test" castings may have to be made until desired affect is achieved. Add desired amount of pigment or filler to Part B and blend thoroughly to a uniform consistency before adding Part A.

**NOTE: When adding SO-Strong™ RED tint to Smooth-Cast™ 326 EU or 327 EU, the color will darken and change. For a better match when using SO-Strong™ RED, use Smooth-Cast™ 325 EU as your casting resin. This is only an issue with SO-Strong™ RED, all other SO-Strong™ colors will behave normally.**

**How Much Pigment or Filler? Pigment Example:** Generally, 0.5% - 1% Smooth-On pigment added by weight of Part B will yield rich, vibrant color. For translucent effect, add 0.1% pigment. **Metal Cold Casting:** Ask for our Technical Bulletin On Metal Cold Casting. Because end-user requirements vary for desired finished effect, we can not offer all pigment or filler loading percentage possibilities. Again, "test" castings may have to be made until desired effect is achieved.

***Measuring & Mixing*** - Liquid urethanes are moisture sensitive and will absorb atmospheric moisture. Mixing tools and containers should be clean and made of metal, glass or plastic. Materials should be stored and used in a warm environment (73°F/23°C). **Stir or shake both Part A & Part B thoroughly before dispensing.** After dispensing equal volumes of Parts A and B into mixing container (115A:100B by weight) and mix **thoroughly**. Stir 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.

## 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.

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. Smooth-Cast™ 325 EU will cure in 7-10 minutes, Smooth-Cast™ 326 EU in 60 minutes and Smooth-Cast™ 327 EU in 2-4 hours depending on mass and mold configuration. Castings made with Smooth-Cast™ 325 EU, 326 EU & 327 EU liquid plastics will remain semi-rigid longer that other Smooth-Cast™ resins depending on mass.

***Post Curing*** - Castings will reach "full cure" faster and achieve maximum physical properties if post cured. Allow material to cure for recommended cure time at room temperature followed by 4-6 hours at 150°F/65°C. Allow casting to come to room temperature before handling.

***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.**

***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.