

# TASK<sup>®</sup> 2 & TASK<sup>®</sup> 3

Very Low Viscosity, High Performance Liquid Plastics



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## PRODUCT OVERVIEW

TASK<sup>®</sup> 2 & TASK<sup>®</sup> 3 low viscosity, high performance casting resins offer superior physical and performance properties compared to our popular Smooth-Cast<sup>®</sup> Series of general purpose casting resins. Vacuum degassing is not necessary and they offer the convenience of a 1A:1B by volume (120A:100B by weight) mix ratio. The difference between TASK<sup>®</sup> 2 & TASK<sup>®</sup> 3 is the pot life and demold time.

TASK<sup>®</sup> 2 & TASK<sup>®</sup> 3 are white. They have high tensile and flexural strength, as well as high flexural modulus. These plastics were formulated for a variety of industrial applications including pattern making and making prototype models. These resins are designed for casting in thicknesses up to ½" (1.27 cm). TASK<sup>®</sup> Plastics are moderately priced and are available in trial kits, one-gallon, five-gallon, 55-gallon drum and totes.

## 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)
TASK <sup>®</sup> 2	7 min.	60 min.	6,650 psi	290,000 psi	6 %	9,500 psi	288,000 psi	8,300 psi	78,000 psi	0.005
TASK <sup>®</sup> 3	20 min.	90 min.	6,650 psi	290,000 psi	6 %	9,500 psi	288,000 psi	8,300 psi	78,000 psi	0.0025

\*\* Depending On Mass

Mix Ratio; 1A:1B by volume or 120A:100B by weight

Mixed Viscosity, cps; 150 (ASTM D-2393)

Specific Gravity, g/cc; 1.12 (ASTM D-1475)

Specific Volume, cu. in/lb; 24.7 (ASTM D-1475)

Color; White

Shore D Hardness; 80 (ASTM D-2240)

Heat Deflection Temp; 134°F / 57°C (ASTM D-648)

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

## PROCESSING RECOMMENDATIONS

**PREPARATION...** 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 is recommended if performance of this material is in question.**

**Applying A Release Agent** - If you are unsure about surface compatibility, a trial casting on a surface finish similar to the final mold or model should be made to avoid damage to the working surface. Polyurethane, latex or metal molds should be dry and require a coat of suitable release agent. **Universal Mold Release** (available from Smooth-On) is ideal for this purpose. A liberal coat of release agent should be applied onto all surfaces that will contact the plastic. 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.

**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 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. 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.

## MEASURING & MIXING...

**Measuring** - The proper mixing ratio is 1A:1B by volume or 100A:83B by weight. Dispense the required amount of Part A into a mixing container. Dispense the appropriate amount of Part B and combine with Part A.

**Mixing** - Materials should be stored and used in a warm environment (73° F / 23° C). **Shake Part A & Part B before using.** Add Part A to Part B and 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 container. Remember, product sets up quickly. The higher the mass concentration, the faster the material gels and cures. Do not delay between mixing and pouring.

## POURING, CURING & PERFORMANCE...

**Vacuuming** - TASK® products are low in viscosity and do not require vacuum degassing. If you choose to vacuum the material, subject mixture to 29 h.i.g. mercury in a vacuum chamber until mixture rises, breaks and falls. Allow for 3 to 4 times volume expansion in mixing container. Be aware of pot life so that material does not set up in mixing container.

**Pouring** - Pour mixture in a single spot at the lowest point of the mold. Let the mixture seek its level. A uniform flow will help minimize entrapped air.

**For Best Results** . . . Best results are obtained using a pressure casting technique. After pouring the mixed compound, the entire casting assembly (mold, dam structure, etc.) is placed in a pressure chamber and subjected to 60 PSI (4.2 kg/cm<sup>2</sup>) air pressure for the full cure time of the material.

**Curing** - For most applications, material can be handled after room temperature curing at (73°F/23°C) for 60 minutes/90 minutes. Low mass or thin castings will take longer to cure.

**Post Curing** - Castings will reach "full cure" faster and achieve maximum physical properties and heat resistance if TASK® 2 or 3 is post cured. Castings should be post cured in a mold or support structure. Allow the material to cure for full cure time at room temperature followed by 4 - 8 hours at 150 - 160°F (65 - 72°C). The casting or part should be allowed to cool to room temperature before handling.

**Warning:** Fumes, which may be visible as this product starts to "gel" and cure, will dissipate with adequate ventilation. Only use this product with room size ventilation and do not inhale/breathe fumes. Castings will be extremely hot immediately following cure and may burn the skin. Let cool 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 TASK® plastics, wear dust mask or other apparatus to prevent inhalation of residual particles. Castings can be displayed outdoors after priming and painting.

**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**

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