

TASK[®] 12

Impact Resistant Tooling Resin



www.smooth-on.com

PRODUCT OVERVIEW

TASK[®] 12 is part of the TASK[®] series of high performance casting resins. It is a semi-rigid urethane resin that offers extraordinary handling strength and impact resistance. Castings are tough and durable. TASK[®] 12 can be color pigmented or filled and is used for a variety of industrial applications including making prototype models, high impact parts and tools.

CAUTION: NOT FOR HOME USE. THIS PRODUCT IS FOR INDUSTRIAL USE ONLY. Proper ventilation, a NIOSH Approved Respirator and Protective Clothing are required to minimize the risk of inhalation and dermal sensitization. If breathing is affected or a dermal rash develops, immediately cease using this product and seek medical attention. Read MSDS before using.

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.

TECHNICAL OVERVIEW

Mix Ratio; 100A : 44B by weight	
Mixed Viscosity cps.; 2,400	(ASTM D-2393)
Specific Gravity, g/cc; 1.08	(ASTM D-1475)
Specific Volume, cu. in./lb.; 26	(ASTM D-1475)
Pot Life; 20 minutes @ 73°F / 23°C**	(ASTM D-2471)
Cure time; 16 hours @73°F / 23°C**	
Color; Clear Amber	
Shore D Hardness; 60	(ASTM D-2240)
Ultimate Tensile, psi; 2,700	(ASTM D-638)
Elongation @ Break; 300%	(ASTM D-638)
Shrinkage, in./in.; 0.001	(ASTM D-2566)

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

** Depending on Mass

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.

MEASURING & MIXING...

Measuring - The proper mixing ratio is 100 Parts of Part A to 44 Parts of Part B by weight. You must use an accurate scale (gram scale or triple beam balance scale) to weigh the Part A and Part B components properly. Dispense the required amount of Part A into a mixing container. Weigh out the appropriate amount of Part B and combine with Part A.

Mixing - Part B (blue label) must be stirred well before use to re-disperse ingredients that have settled. Mix thoroughly for 90 seconds. Stir slowly and deliberately making sure that you scrape the sides and bottom of the mixing container several times.

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 diphenyldiisocyanate. 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 a copyright or patent. User shall determine suitability of the product for the intended application and assume all associated risks and liability.

VACUUMING, 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/cm²) 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. Low mass or thin castings will take longer to cure.

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.

Post Curing - Castings will reach "full cure" faster and achieve maximum physical properties and heat resistance if TASK® 12 is post cured. Castings should be post cured in a mold or support structure. Allow the material to cure for 16 hours 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.

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.

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Call Us Anytime With Questions About Your Application.

Toll-free: (800) 381-1733

Fax: (610) 252-6200

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