

TASK® 8

Heat Resistant Polyurethane Resin



www.smooth-on.com

PRODUCT OVERVIEW

TASK® 8 is a heat resistant polyurethane resin system made specifically for prototyping / casting applications which require thermal resistance of up to 263°F / 129°C.

TASK® 8 offers the convenience of a 1A:1B mix ratio and has a very low viscosity, so it is easy to mix and pour. Plastic cures quickly to a Shore 80D and exhibits good physical and performance properties. Heat curing this material is necessary to attain optimal heat resistance. See "Heat Curing" section for curing schedule details.

TECHNICAL OVERVIEW

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

Mixed Viscosity, cps: 100 (ASTM D-2393)

Specific Gravity, g/cc: 1.09 (ASTM D-1475)

Specific Volume, cu. in. /lb.: 25.4 (ASTM D-1475)

Pot Life: 2.5 minutes @ 73°F / 23°C (ASTM D-2471)

Cure Time: 10-15 minutes @ 73°F / 23°C **

Color: Off-White

Shore D Hardness: 80 (ASTM D-2240)

Ultimate Tensile, psi: 5,840 (ASTM D-638)

Tensile Modulus, psi: 246,000 (ASTM D-638)

Elongation @ Break: 4% (ASTM D-638)

Flexural Strength, psi: 8,280 (ASTM D-790)

Flexural Modulus, psi: 271,000 (ASTM D-790)

Compressive Strength, psi: 8,760 (ASTM D-695)

Heat Deflection Temperatures: (ASTM D-648)
After 1 Week At 73°F/23°C - **194°F/90°C**
After Heat Curing† - **263°F/129°C**

Compressive Modulus, psi: 77,400 (ASTM D-695)

Shrinkage: 0.01in/in (ASTM D-2566)

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

** Depending on mass

† See "Heat Curing" Section for details

Applications include making machine housings, thermo-forming and general prototyping / casting.

PROCESSING RECOMMENDATIONS

PREPARATION... Materials should be stored and used in a warm environment (73° F / 23° C). This product has 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 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, 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.

Most silicone rubber molds usually do not require a release agent unless casting silicone into the mold. Applying a release agent, however, will prolong the life of the mold.

MEASURING & MIXING...

Shake or stir both Part A & Part B before dispensing. After dispensing equal 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. Be careful not to splash low viscosity material out of the container.

Remember, **TASK® 8 will set up quickly. Do not delay between mixing and pouring.**

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.

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.

POURING, CURING & PERFORMANCE

Pouring - 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.

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 - TASK® 8 will cure in 10-15 minutes depending on mass and mold configuration. Non-hazardous fumes, which may be visible as this product starts to "gel" and cure, will dissipate with adequate (room size) ventilation.

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.

Heat Curing - For maximum physical properties and higher heat resistance, TASK® 8 should be heat cured according to the following cure schedule:

Temperature	Duration
Room Temp. (72°F / 23°C)	1 hour
150°F / 65°C	2 hours
212°F / 100°C	2 hours
265°F / 130°C	2 hours

Performance - Cured plastic is rigid and durable. It resists moisture, moderate heat, solvents, dilute acids and can be sanded, machined; primed/painted or bonded to other surfaces (any release agent must be removed). If sanding or machining, wear dust mask or other apparatus to prevent inhalation of residual particles. Plastic can be displayed outdoors after priming and painting. Unpainted castings will yellow when exposed to ultra-violet light.



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.