



“YOU SUPPLY THE TALENT... WE’LL SUPPLY THE REST!”

THE COMPLEAT SCULPTOR

TASK Plastic Series Technical Overview

TASK Plastics is a new generation of performance urethane casting resins that offer superior physical properties compared to our popular Smooth-Cast line of general purpose casting resins.

TASK Plastics feature convenient mix ratios by volume (pbv) or weight (pbw), low viscosities, high tensile and flexural strength, as well as high flexural modulus. These plastics were formulated for a variety of industrial applications including pattern making, making prototype models and making high impact solid or rotational castings (TASK 15). These resins are designed for casting in thicknesses up to ½” (1.27 cm).

| | TASK 2 | TASK 3 | TASK 4 Fmr. C-151 | TASK 5 Fmr. C-1504 | TASK 6 Fmr. C-1506 | TASK 9 | TASK 12** | TASK 15 | TASK21 |
|---|-----------|-----------|----------------------|-----------------------|-----------------------|-------------|--------------|--------------|--------|
| Color | White | White | Ivory | Tan | Tan | Clear Amber | Opaque Amber | Opaque White | White |
| Mix Ratio | | | | | | | | | |
| By volume | 1A:1B | 1A:1B | ----- | 1A:1B | 1A:1B | 1A:1B | ----- | ----- | 2A:1B |
| By weight | 120A:100B | 120A:100B | 1A:1B | 1A:1B | 1A:1B | 115A:100B | 100A:44B | 75A:100B | 2A:1B |
| Mixed | | | | | | | | | |
| Viscosity, cps | 150 | 150 | 250 | 600 | 800 | 300 | 2400 | 600 | 500 |
| Specific Gravity, g/cc | 1.12 | 1.12 | 1.16 | 1.13 | 1.07 | 1.14 | 1.08 | 1.12 | 1.07 |
| Specific Volume, cu. in./lb. | 24.7 | 24.7 | 24.0 | 24.5 | 26.0 | 24.9 | 26.0 | 24.7 | 25.8 |
| Pot Life, minutes | 7 | 20 | 20 | 3 | 7 | 7 | 20 | 6 | 6 |
| Demold Time, min. | 60 | 90 | 16 hrs. | 15 | 75 | 60 | 16 hrs. | 60 | 60 |
| Hardness, Shore D ASTM D-2240 | 80 | 80 | 83 | 80 | 80 | 85 | 60 | 75 | 75 |
| Tensile Strength, psi ASTM D-638 | 6650 | 6650 | 6650 | 3900 | 5200 | 7800 | 2700 | 2720 | 5500 |
| Elongation, % ASTM D-638 | 6 | 6 | 4 | 1.3 | 4.0 | 6 | 300 | 20 | 7.5 |
| Modulus of Elasticity, ksi ASTM D-638 | 290 | 290 | 260 | 125 | 146 | 370 | n/a | 126 | 270 |
| Compressive Strength, psi ASTM D-695 | 8300 | 8300 | 7400 | 4700 | 5500 | 11,000 | n/a | 5450 | 7100 |
| Compressive Modulus, ksi ASTM D-695 | 78 | 78 | 75 | n/a | n/a | 98 | n/a | 60 | 78.5 |
| Flexural Strength, psi ASTM D-790 | 9500 | 9500 | 9000 | n/a | n/a | 11,850 | n/a | 5620 | 7100 |
| Flexural Modulus, ksi ASTM D-790 | 288 | 288 | 204 | 125 | n/a | 350 | n/a | 170 | 250 |
| Deflection Temp. °F/°C ASTM D-648, 264 psi | 134/57 | 134/57 | 110/45 | n/a | n/a | 131/55 | n/a | 117/47 | 144/62 |
| Shrinkage (in/in) ASTM D-2566 | .0012 | .0006 | .00035 | .007 | .003 | .0085 | .001 | .0042 | .0058 |

** See separate Technical Bulletin for TASK 12

Preparation . . . Store and use urethanes at room temperature (72°F / 22°C). 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. Wearing eye protection, latex gloves and long sleeve garments to minimize contact is strongly recommended.

IMPORTANT: Shelf life of product is drastically 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** will significantly prolong the shelf life (up to 4 times longer) of unused liquid urethane products.

Release Agent . . . Silicone rubber molds (Mold Max Silicones) do not require a release agent. Applying a release agent, however, will prolong the life of the mold. A release agent is necessary to facilitate de-molding when casting into urethane rubber molds. Use a release agent made specifically for mold making (Universal Mold Release[™] or Mann’s Ease Release 200) and follow directions carefully.

Mixing . . . Shake or stir both Part A & Part B before using. After dispensing required amounts of Parts A and B into mixing container, **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.

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.

Pressure Casting . . . Best results are obtained using a **pressure casting technique**. After pouring the mixed resin into the mold, the entire mold is placed in a pressure chamber and subjected to 60 PSI (4.2 kg/cm²) air pressure for 15 minutes.

Pouring . . . For best results, pour your mixture in a single spot at the lowest point of the mold and let the mixture seek its level. This will help minimize air entrapment. **Casting thickness should not exceed ½” (1.27 cm).**

Curing . . . TASK products will de-mold in 60-90 minutes depending on product, mass and mold configuration. Castings will cure faster and achieve maximum physical properties and higher heat resistance if TASK plastics are post cured. After casting has cured at room temperature for 60 minutes, subject casting to 150°F / 65°C for 4 hours. Let cool to room temperature.

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.

Safety First! Safety First! 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.

Be careful. Part A (Yellow Label) contains methylene diphenyldiisocyanate. Vapors, which can be significant if prepolymer is 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 TASK™ Plastics, wear dust mask or other apparatus to prevent dust inhalation.

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.

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