

# TASK™ 16

## Tough 80A/30D Urethane



www.smooth-on.com

### PRODUCT OVERVIEW

TASK™ 16 is a low odor, fast-setting Shore 80A/30D urethane that offers very high tear strength, impact resistance and wear resistance. TASK™ 16 is phthalate free, mercury free and MOCA free. Mixed one part A to two parts B by weight, TASK™ 16 pours easily. Working time is 6 minutes and handling time is 90 minutes at room temperature. Cured rubber has exceptional performance characteristics and dimensional stability. TASK™ 16 can be colored with SO-Strong™ or Ignite™ colorants.

TASK™ 16 is suitable for making fast mechanical parts, gaskets, wheels and pulleys, impact resistant props, and archival master models. It is also used to make fast, wear resistant rubber molds for casting concrete or concrete stamping pads. TASK™ 16 is also an excellent choice for rotocasting to create hollow semi-rigid castings.

**IMPORTANT:** Cured TASK™ 16 will inhibit the cure of liquid platinum silicone. You can not pour platinum silicone into cured TASK™ 16. Tin silicone must be used if you intend to pour silicone against cured TASK™ 16.

### TECHNICAL OVERVIEW

Mix Ratio: 1A : 2B by weight (gram scale required)

Mixed Viscosity (cps): 1,400 (ASTM D-2393)

Specific Gravity (g/cc): 1.08 (ASTM D-1475)

Specific Volume (cu. in. /lb.): 25.64

Pot Life: 6 minutes (73°F/23°C) (ASTM D-2471)

Full Cure: 24 hours (73°F/23°C)

Color: Light Yellow

Shore Hardness: 80A/30D (ASTM D-2240)

Tensile Strength (psi): 2264 (ASTM D-412)

100% Modulus (psi): 855 (ASTM D-412)

Elongation @ Break: 233% (ASTM D-412)

Die C Tear Strength (pli): 197 (ASTM D-624)

Shrinkage: .0025 in./in. (ASTM D-2566)

Dielectric Constant (1 MHz): 4.59 (ASTM D150-87)

Dissipation Factor (1 MHz): 0.064 (ASTM D150-87)

Technical Details Extra Info

### PROCESSING RECOMMENDATIONS

#### PREPARATION...

These products have a limited shelf life and should be used as soon as possible. This material should be stored and used at room temperature (73°F/23°C). This material is moisture sensitive, so relative humidity should be below 50%. Mixing containers should have straight sides and a flat bottom. Wear safety glasses, long sleeves and rubber gloves to minimize contamination risk. Room size ventilation is necessary.

**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.

**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.**

#### MEASURING & MIXING...

**Measuring** - Stir Part A and Part B thoroughly before dispensing. The proper mixing ratio is 1 Parts A to 2 Parts B by weight. You must use an accurate digital gram scale to weigh Parts A and B properly. Do not use an analog scale or attempt to measure components by volume. 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** - Materials should be stored and used in a warm environment (73°F 23°C). 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.

If tinting or pigmenting TASK™ 16, add the tint or pigment dispersion to Part B and mix thoroughly before adding Part. A.

## Safety First!

The Material Safety Data Sheet (MSDS) for this or any Smooth-On product should be read prior to use and is available upon request from Smooth-On. All Smooth-On products are safe to use if directions are read and followed carefully.

### Be careful

Part A is an MDI prepolymer. Vapors, which can be significant if material is heated or sprayed, 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 seek immediate medical attention. Remove from skin with waterless hand cleaner followed by soap and water. Prepolymers contain trace amounts of MDI which, if ingested, must be considered a potential carcinogen. Refer to MSDS .

**Part B** is irritating to the eyes and skin. If contaminated, flush eyes with water for 15 minutes and seek 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 upon a patent. User shall determine the suitability of the product for the intended application and assume all risk and liability whatsoever in connection therewith.

## POURING, CURING, & PERFORMANCE...

**Pouring** - If casting TASK™ 16 into a rubber mold, pour mixture in a single spot at the lowest point of the mold. If encapsulating an object, do not pour the mixture directly over the object. Let the mixture seek its level. A uniform flow will help minimize entrapped air.

**Vacuum Degassing** - mixed resin is low in viscosity and does 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.

**Curing** - Allow the mold or casting to cure (at least 90 minutes) at room temperature (73°F/23°C) before demolding. Do not cure rubber in temperatures less than 65°F/18°C. Cure time can be reduced with mild heat or by adding Smooth-On Kick-It™ Cure Accelerator. This material will reach full cure in 24 hours at 73°F/23°C.

Kick-It™ Added by Weight To Part 'B'	Approximate Pot Life	Approximate Demold Time
0.5%	3 minutes	30 minutes
1%	2 minutes	20 minutes
2%	1.5 minutes	15 minutes

**Pressure Casting** - Although not necessary for most applications, best results for eliminating air/bubbles are obtained using a pressure casting technique. After pouring the resin into a rubber mold (that has also been made using pressure), place mold into a safety-rated pressure chamber and subject the mixture to 60 PSI (4.2 kg/cm<sup>2</sup>) until the material cures. After material cures, wait 30 minutes before releasing pressure and removing mold / casting from the pressure chamber.

**Post Curing Option** - Castings will reach "full cure" faster and achieve maximum physical properties / heat resistance if TASK™ 16 is heat post cured in a dedicated shop oven. Post curing is recommended if castings are thin or of low mass concentration. Castings should be post cured in a mold or support structure. Allow the material to cure for 3 hours at room temperature followed by 4 hours at 150°F (65°C). Casting should be allowed to cool to room temperature before handling.

**Demold** - Demold time of the finished casting depends on mass and mold configuration. Make sure casting has reached handling strength before demolding. If casting has a flat back, it can be removed from mold and allowed to cure outside the mold on a flat, level surface to attain full working properties. Allow material to cure for 24 hours at room temperature before putting into service.

**Performance** - Cured castings of TASK™ 16 are semi-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). 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**

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