



# C - 1508

## Rigid Urethane Casting Compound

### PRODUCT OVERVIEW

**C-1508** is a relatively low viscosity aluminum filled urethane casting resin that was developed specifically for making short run vacuum forming molds. When Parts A and B are mixed in proper proportion, C-1508 cures overnight at room temperature with negligible shrinkage to a very hard plastic that has a very high compressive and flexural strength. Cured C-1508 can be polished, machined, drilled, painted, etc.

**C-1508** is also used to make industrial production parts, prototype parts and tracing patterns.

### TECHNICAL OVERVIEW

**Key Values:** ~**Mixing Ratio:** 26 Parts A to 100 Parts B by weight. ~**Ultimate Shore Hardness:** 88D  
~**Pot Life:** 15 minutes. ~**Gel Time:** 30 minutes depending on mass. ~**Color:** Metal Gray

Properties	Viscosity	G/CC	Cu. In./Lb.	Flexural Strength	Flexural Modulus	Shrinkage
A+B Mixed	4,400 cps	1.57	17.6	10,700 psi	86,000 psi	.0006 in./in.

**Tensile Strength:** 6,200 psi      **Heat Distortion Temp.:** 65 C (95C with postcure)

#### Preparation

#### Applying A Release Agent

#### Measuring

**Preparation . . .** Materials should be stored and used in a warm environment (72° F / 23° C). All liquid urethanes are **moisture sensitive** and will absorb atmospheric moisture. Mixing tools and containers should be clean, dry and made of metal, plastic or glass. Mixing should be done in a well ventilated area. Wearing latex gloves and long sleeve garments will help minimize skin contact. (Refer to safety information on reverse side of this technical bulletin.)

**Applying A Release Agent . . .** C-1508 is suitable for casting over a variety of mold and pattern surfaces, but may adhere if the surface is not properly prepared. **Polyurethane molds** (PMC-744 or PMC-746 flexible mold compounds from Smooth-On) should be dry and require a coat of a suitable release agent such as Mann Ease Release 2251 (available from your Smooth-On distributor). Silicone molds require no release agent, however using a release agent every few castings will prolong mold life.

**~IMPORTANT:** To break surface tension, minimize bubbles and ensure thorough coverage, apply release agent and lightly brush with a soft brush over all surfaces of the model or mold. Apply another thin mist coating of release agent and let stand for 20 minutes before casting.

**Measuring . . .** The proper mixing ratio is 26 Parts A to 100 Parts B by weight. You must use an accurate scale (gram scale or triple beam balance scale) to weigh these 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.

**IMPORTANT:** Shelf life of product is drastically reduced after opening. Immediately replace container lids after dispensing. Use remaining product as soon as possible. Purging opened containers with **XTEND-IT dry gas blanket** (available from Smooth-On or your distributor) before re-sealing will significantly extend shelf life of unused product.

03/01

## **Mixing & Pouring**

**Mix SLOWLY** for 90 seconds making sure that you scrape the sides and bottom of your container several times. If coloring or filling C-1508, add filler or pigment dispersion to Part B and mix thoroughly before adding Part A.

If **vacuum degassing** prior to pouring, subject mixture to 29 h.i.g. mercury in a suitable vacuum chamber for 2 - 3 minutes or until mixture rises, breaks and falls. Allow for 3 to 4 times volume expansion in mixing container.

**Pouring . . .** If casting C-1508 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.

**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 at least two hours.

## **Curing**

## **Post Curing**

**For most applications**, room temperature curing (70 F/ 22 C) for 24 - 48 hours is adequate. Castings will reach ultimate physical properties at room temperature in 5 - 7 days.

**Post Curing . . .** Castings will cure faster and achieve maximum physical properties and higher heat resistance if C-1508 is post cured. Post curing is necessary if using C-1508 as a vacuum forming mold/die. Post curing is recommended if castings are thin or low mass concentration. Castings should be post cured in a mold or support structure.

**Post Cure Schedule:** Allow the material to cure for 16 hours at room temperature followed by 2 hours at 60C (140 F) and 2 hours at 100C (220 F). Allow casting or part to cool to room temperature before demolding.

## **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.** C-1508 Part A 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 seek immediate medical attention. Remove from skin with waterless hand cleaner followed by soap and water. Refer to MSDS. Part B is irritating to the eyes and skin. Avoid prolonged or repeated skin contact.. Remove from skin with soap and water. If contaminated, flush eyes with water for 15 minutes and seek immediate medical attention. Use only with adequate ventilation

**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 therein.

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