



# PMC – 744

Polyurethane Rubber Compound

## PRODUCT OVERVIEW

PMC-744 has been used for years by mold making professionals to cast plaster, concrete, resins, etc. It is excellent for making molds that are strong, durable and dimensionally stable. Low viscosity ensures fine detail reproduction.

PMC-744 is ideal for making ceramic case molds and plaster block molds, reproducing ornamental plaster, making molds for casting concrete, casting a variety of Smooth-On urethane resins, casting wax and making a variety of mechanical rubber parts.

## TECHNICAL OVERVIEW

**Key Values:** ~*Mixing Ratio:* 2A : 1B by weight or volume. ~*Shore A Hardness:* 44  
 ~ *Pot Life:* 15 minutes ~*Cure Time/Demold:* Overnight/16 hrs. ~*Color:* Clear Amber

Properties	Viscosity	G/CC	Cu. In./Lb.	Tensile Strength	Mix Ratio
Part A	-	-	-	-	2 Parts (by weight or volume)
Part B	-	-	-	-	1
Mixed	3,400 cps	1.01	27.5	300 psi	-
Elongation At Break . . .	400%			Die C Tear Strength . . .	90 pli
Ultimate Tensile Strength . . .	300 psi			Shrinkage . . . . .	negligible

## Start By Preparing Your Model -

**Some Materials Must Be Sealed . . .** To prevent adhesion between the rubber and model surface, models made of porous materials (gypsum plasters, concrete, wood, stone, etc.) must be sealed prior to applying a release agent. *SuperSeal™* (available from Smooth-On) is a fast drying sealer suitable for sealing porous surfaces without interfering with surface detail. Shellac is suitable for rough contours.

Modeling clays that contain sulfur or water must be sealed with Smooth-On *SuperSeal™* or shellac. Thermoplastics (polystyrene) must also be sealed with shellac or PVA. **In all cases**, the sealing agent should be applied and allowed to completely dry prior to applying a release agent.

**Non-Porous Surfaces** – metal, glass, hard plastics, sulfur free clays, etc. require only a release agent.

**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 available from Smooth-On). A liberal coat of release agent should be applied onto all surfaces that will contact the rubber. ~**IMPORTANT:** To ensure thorough coverage, lightly brush the release agent with a soft brush over all surfaces of the model. Follow with a light mist coating and let the release agent dry for 30 minutes.

**If there is any question** about the effectiveness of a sealer/release agent combination, a small scale test should be made on an identical surface for trial.

## *Measuring & Mixing . . .*

Liquid urethanes are **moisture sensitive** and will absorb atmospheric moisture. Mixing tools and containers should be clean and made of metal, glass or plastic. Materials should be stored and used in a warm environment (72° F / 23° C). **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 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.

**Important: Pre-Mix the Part B before using.** After dispensing equal amounts of Parts A and B into mixing container, mix thoroughly for at least 3 minutes making sure that you scrape the sides and bottom of the mixing container several times. **If Mixing Large Quantities** (16 lbs./7 kgs. or more) at one time, use a mechanical mixer (i.e. Squirrel Mixer or equal) for 3 minutes followed by careful hand mixing for one minute as directed above. Then, pour entire quantity into a new, clean mixing container and do it all over again. Although this product is formulated to minimize air bubbles in your the cured rubber, vacuum degassing will further reduce entrapped air. A pressure casting technique using a pressure chamber can yield totally bubble free castings. Contact Smooth-On or your distributor for further information about vacuum degassing or pressure casting.

### *Pouring*

### *Curing*

### *Performance*

For best results, pour your mixture in a single spot at the lowest point of the containment field. Let the rubber seek its level up and over the model. **A uniform flow will help minimize entrapped air.** The liquid rubber should level off at least 1/2" (1.3 cm) over the highest point of the model surface.

**Curing . . .** Allow rubber to cure overnight (at least 16 hours) at room temperature (77 F/25 C) before demolding. Cure time can be reduced with mild heat or by adding Smooth-On "Kick-It" Cure Accelerator. Do not cure rubber where temperature is less than 65 F / 18 C.

**Post Curing** – After rubber has cured at room temperature, heating the rubber to 150° F (65° C) for 4 to 8 hours will increase physical properties and performance.

**Using The Mold . . .** If using as a mold material, a release agent should be applied to the mold before each casting. The type of release agent to use depends on the material being cast. The proper release agent for **wax, liquid rubber or thermosetting materials** (i.e. Smooth-On liquid plastics) is Universal Mold Release (available from Smooth-On or your distributor). Polyester (Fiberglass & Resin) requires use of a mold conditioner/release combination to protect the mold. Permaseal SMC and Permaseal 650 (from Smooth-On) are suitable for this application. Prior to casting **gypsum plaster materials**, sponge the mold with a soap solution for better plaster flow and easy release. **In & Out Water Based Release Concentrate** (available from Smooth-On) is recommended for releasing abrasive materials like **concrete**.

**Performance & Storage** - Fully cured rubber is tough, durable and will perform if properly used and stored. The physical life of the rubber depends on how you use it. Contact Smooth-On directly with questions about this material relative to your application.

### ***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 a TDI 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 TDI 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.