PMC™ 121 Series

Polyurethane Rubber Compounds

PRODUCT OVERVIEW

The PMC-121 Series urethane rubbers feature convenient one-to-one by volume mix ratios. **PMC-121/20** cures with negligible shrinkage to a very soft and pliable rubber, and is especially suited for making molds with deep undercuts and pronounced detail. **PMC-121/30 Dry and PMC-121/30 Wet** are exceptionally strong and abrasion resistant for soft urethane mold rubbers. Pick the one best suited for your application. The *dry* version does not exude an oil and can be used for casting waxes, liquid plastics, gypsum plasters and other materials. The *wet* version contains a built-in release agent to aid in demolding hard plasters and concrete. **PMC-121/40 Dry and PMC-121/40 Wet** are made with a new chemical system that gives improved performance, has lower viscosity and is beige in color. **PMC-121/50** is a "wet-only" mold rubber that is long lasting and durable when used in a variety of applications including reproduction of ornamental plaster, precast concrete and ceramic case molds.

PMC™ 121 Series mold rubbers are easy to mix and pour and are exceptionally strong. They are suited for a variety of applications including making molds to reproduce sculpture and architectural elements, as well as for making special effects, toys and prototypes. These rubbers will meet the stringent demands of production casting of wax, plasters, concrete, resins and epoxies. Vibrant colors can be achieved by adding So-Strong™ Color Tints, available from TCS, Inc.

TECHNICAL OVERVIEW

	Shore A	Mix Ratio	Color	Spec. Vol.	Spec. Grav.	Mixed Viscosity	Tear (C) (pli)	Elong. At Break	Tensile Strength	Compr. Set
PMC-121/20	20	1:1 pbv	Cl. Amber	27.7	1.0 g/cc	1,000 cps	20 pli	>1,000%	>200 psi	33%
PMC-121/30*	30	1:1 pbv	Cl. Amber	27.7	1.04 g/cc	1,800 cps	82 pli	>1,000%	>400 psi	26%
PMC-121/40*	40	1:1 pbv	Beige	27.2	1.02 g/cc	1,500 cps	65 pli	>1,000%	450 psi	17%
PMC-121/50	50	1:1 pbv	Cl. Amber	26.7	1.04 g/cc	1,400 cps	85 pli	500%	350 psi	26%

~ **Pot Life:** 30 Minutes ~ **Cure Time/Demold:** Overnight/16 hours **Shrinkage:** Negligible

*** Available "Dry," or "Wet," which exudes an oil for improved release to aid in demolding hard plasters and concrete.**

Start By Preparing Your Model -

Preparation . . . Good ventilation (room size) is necessary. Room temperature should be at 72°F/23°C. Humidity should be low. Wear long sleeve garments and rubber gloves to minimize skin contact.

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 TCS, Inc) 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 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 TCS, Inc). 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 TCS, Inc) 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 TCS, Inc 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 "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. liquid plastics) is a spray release made specifically for mold making (available from TCS, Inc). Polyester (Fiberglass & Resin) requires use of a mold conditioner/release combination to protect the mold. Permalease SMC and Permalease 650 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 TCS, Inc) 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 TCS, Inc with questions about this material relative to your application.

Safety First! Safety First! Safety First! Safety First!

The Material Safety Data Sheet (MSDS) for this or any other product should be read prior to use and is available at www.SCULPT.com. 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 available at www.SCULPT.com.

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.

Call Us Anytime With Questions About <u>Your</u> Application.

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