PMC - 724

LIQUID RUBBER COMPOUND

PRODUCT OVERVIEW

Used by artists and industry the world over for a variety of design, casting and special effects applications, PMC-724 is by far the most versatile liquid rubber compound available on the market today. It is inexpensive, mixes and pours easily, and will cure to a durable rubber with negligible shrinkage. Low viscosity ensures flawless pick-up of even the finest detail with minimal bubble entrapment.

PMC-724 PUTS YOU IN CONTROL! Using optional 'Part D', you can thicken PMC-724 to a paste-like consistency for vertical surface brush-on applications or for getting into those hard-to-reach undercuts. If you like to work with a more flexible rubber, optional 'Part C' is available to soften PMC-724 all the way down to a Shore A6. Typical applications include reproducing sculpture (lost wax process), creating special effects, making fiberglass panel & part molds, on-site architectural restoration and new construction molds. A variety of colors and special effects can be achieved by adding pigments, and for added project dimension, you can foam PMC-724.

Important: This rubber will last and perform in production, often for hundreds of castings (depending on what you are casting into the mold). It also exhibits good physical properties and chemical resistance. But **PMC-724 does not have a long "library life".** Molds will soften and revert to a liquid within 2 – 5 years, depending on exposure to moisture. Smooth-On makes many different mold rubbers that offer a very long library life (25 years and more depending on application). Contact Smooth-On for information about its complete line of Silicone, Polyurethane and Polysulfide mold rubbers.

TECHNICAL OVERVIEW

Key Values: *~ Mixing Ratio:* 10 parts A to 100 parts B by weight. *~ Shore A Hardness:* 40
~Color: Off-White *~Pot Life:* 20 minutes *~Demold Time:* 16 hours

*PROPERTIES**	*COLOR*	*VISCOSITY***	*S.G. g/cm3*	*SPECIFIC VOLUME*	*MIX RATIO*
PART A	Brown	100 cps	1.10	-	10
PART B	White	9,000 cps	1.40	-	100
Mixed	Off-White	4,000 cps	1.38	20.5 cu. in./lb.	-

Ultimate Tensile Strength . . . . . 600 PSI.
Elongation At Break . . . . . >700%.
Shore A Hardness . . . . . 40 down to 6***
Compression Set 5%

100% Modulus . . . . . 80 PSI.
Tear Strength . . . .(Die C) 90 PLI.
Shrinkage . . . . . Negligible.

*These are neither minimum or maximum, but average values.
**Will vary depending on percentage of Part D thixotropic agent added.
***Will vary depending on percentage of Part C flexibilizer added.

START BY PREPARING YOUR MODEL -

Apply a Sealer… Models should be clean and dry. Polyurethane rubbers are adhesive and will bond to many surfaces if not properly prepared. Models made of porous materials (such as plaster, concrete, wood, etc.) require a sealing agent followed by a release agent. Suitable sealers include shellac, paste wax, and mold soap. ***Superseal*** (available from Smooth-On) will seal porous surfaces WITHOUT INTERFERING WITH SURFACE DETAIL. Liberally apply sealing agent to model and surrounding forms (if porous) and let completely dry. Follow with application of release agent.

Apply a Release Agent… A release agent is necessary to release the cured rubber from your model. Use a release agent specifically made for mold making/casting. Smooth-On's **Universal Mold Release Agent** is ideal for most applications (available from Smooth-On). **~IMPORTANT:** Spray a light mist coating of release agent onto all surfaces that will contact the rubber, and onto the table and surrounding forms. To break surface tension and ensure thorough coating, lightly brush the release agent with a soft brush over the entire surface of the model, into undercuts and areas of intricate detail to ensure thorough coating. Follow with a second light mist coating. Let stand for 30 minutes before applying mold rubber. **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.**

Modeling Clays that are water based or contain sulfur (such as Roma Plastalina) will inhibit the cure of polyurethanes. To prevent this, a sealing agent must be applied. Spray shellac is a good sealer and is easy to apply. Apply sealing agent and follow with application of release agent as described on page 1. Sulfur-free clays (Classic Clay or Chavant Clay) require only a release agent. ***Polystyrene*** - Laquered surfaces and thermoplastics, such as polystyrene, must be sealed using PVA followed by proper application of release agent. ***Non-Porous Models*** such as metal and most plastics should be coated with a release agent which should be allowed to dry before pouring the rubber. If compatibility between the rubber and the prepared model surface is in question, a small scale test should be made on an identical surface to make sure that the rubber cures completely and releases properly.

MIXING PMC-724

Proper mixing of this product is critical to achieving best results.

Your 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 / 22° C). To minimize the introduction of harmful moisture to your mix or unused product, do not use wooden utensils or paper containers. Also, immediately replace the lids on both containers after dispensing product. Note: PMC-724 is usable for one year from date of shipment in unopened containers stored in a cool dry place. **XTEND-IT** ™ moisture eliminating spray can be applied to the unused portion of PMC-724 to extend the shelf life of the product after opening (available from Smooth-On). This product has a limited shelf life and should be used as soon as possible.

YOU MUST MIX 'PART B' THOROUGHLY BEFORE YOU BEGIN. **You must use an accurate scale to weigh the components of PMC-724. Use only a triple beam balance or gram scale.** Other types of scales (such as diet or postage scale) will not weigh accurately enough to be successful with this product, and the rubber will not cure. Mixing should be done in a well-ventilated area. Wear safety glasses, long sleeves and rubber gloves to minimize contamination risk.

The mix ratio for this product is one part A to 10 parts B. **Important: Pre-Mix the Part B before using.** After dispensing the required 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 PMC-724 is formulated to minimize air bubbles in the cured mold, vacuum degassing will further reduce entrapped air. This is usually not necessary.

YOU'RE READY TO POUR . . . *. . . other important information*

For best results, pour the mixture in a single spot at the lowest point of the mold. Let the rubber seek its level, filling the detail and undercuts of your model. A uniform flow will help minimize entrapped air.

Curing . . . Allow the mold to cure overnight (at least 16 hours) at room temperature (77 F/25 C) before demolding. The mold will cure faster at higher temperatures and will cure slower at lower temperatures. Do not cure the mold where the temperature is less than 65 F/18C. Note: *Kick-It* Cure Accelerator is available to reduce the cure time to as little as a few hours (available from Smooth-On).

Casting Into The Mold . . . If casting plaster into the mold, sponging the mold with U-10 Mold Rinse prior to casting reduces air bubbles in the plaster and aids separation. Thermosetting materials such as epoxies or Smooth-On liquid plastics can be cast into PMC-724 molds with the use of a proper release agent. Apply a light mist coating, brush with a soft brush over the mold surface, follow with a light mist coating and let stand for 30 minutes before casting. The number of castings that can be cast from a PMC-724 mold depends on the configuration of the mold, type of material being cast into it and choice of release agent. **PMC-724 is not suitable for production casting of concrete.** We recommend Brush-On 50 or other rubber that has superior abrasion resistance.

Mold Performance and Storage . . . Fully cured molds made of PMC-724 are tough, durable and will perform in production if properly used and stored. The physical life of the mold depends on how you use it (materials cast, frequency, etc.). Casting abrasive materials such as concrete will quickly erode detail from the mold's working surface. Other Smooth-On mold rubbers should be used if casting concrete (PMC-746 or Brush-On 50). You will enjoy much longer mold life if casting non-abrasive materials such as wax. Before storing, the mold should be cleaned with a soap solution and wiped fully dry. Two-part (or more) molds should be assembled. Molds should be stored on a clean and level surface, indoors in a dark, cool and dry environment. Do not expose the mold to moisture or sunlight (ultraviolet light sources). Do not stack molds on top of each other as warpage could result.

Mold Life . . . **PMC-724 IS NOT A PERMANENT MOLD MATERIAL AND HAS LIMITED LIBRARY LIFE**. Cured rubber will last and perform in production, often for hundreds of castings (depending on what you are casting into the mold). However, rubber will soften with age due to ambient moisture in the air and should be discarded before becoming too soft to handle. With proper care, PMC-724 rubber should not soften appreciably for 2-4 years. However, use of 'Part C' to soften the rubber may shorten mold life. Smooth-On offers an extensive line of silicone and urethane mold rubbers that offer many years of library life (depending on application and usage).

Softing PMC-724 Using "Part C" (SO-FLEX)

You can achieve varying degrees of hardness (all the way down to Shore A6) by adding different percentages of Part C. Part C should be weighed and must be thoroughly mixed with the appropriate amount of Part B before combining with Part A. The following table indicates the effect of different percentages of Part C on the Shore A hardness of the cured rubber. (Important: Use of 'Part C' to soften the rubber may shorten mold life.)

PARTS BY WEIGHT				SHORE A
PART B	+ PART C	+ PART A	=	HARDNESS *
100	0	10		40
100	20	10		25
100	40	10		15
100	60	10		10
100	80	10		6

*Shore A Hardness after 72 hours at 77 F / 25 C.

If you like to work with a harder rubber, PMC-726 has all of the versatility and moldmaking properties of PMC-724 and cures to a Shore A durometer of 60.

Thickening PMC-724 For Brush-On Applications Using "Part D"

Smooth-On Offers An Inexpensive Video That Shows How To Make a Brush-On Mold Using PMC-724.

For vertical surface brush-on applications, you can attain different viscosities in the mixed uncured rubber by varying the percentage of Part D. Consistencies can range from that of thin latex paint to a greaselike putty which can be applied to your piece using a brush or a spatula.

Part D may be added in amounts up to 2 parts by weight per 100 parts of Part B. It must be thoroughly mixed into Part B before combining with Part A. Also, for each 1 part of Part D used, one extra part of Part A must be added as follows:

PARTS BY WEIGHT

PART B	+ PART D (Mix parts B and D thoroughly)	+ PART A (Mix Again)	= CONSISTENCY
100	1	11	Latex Paint
100	2	12	Grease-Like

The rubber will be applied in successive layers. After applying a layer of rubber to the model, wait 30 – 40 minutes for the rubber to become "tacky" before applying the next layer. "Tacky" means sticky to the touch, but will not come off on your gloved hand. Apply a minimum of 4 layers (3/8" – 1 CM). The pot life of mixed PMC-724 with Part D added may be slightly shorter than without Part D. The cured rubber containing Part D is slightly harder than without Part D.

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 upon request. All Smooth-On products are safe to use if directions are read and followed carefully.

Important - PMC-724 Part A contains methylene diphenyl diisocyanate (MDI). At room temperature and with adequate ventilation, vapor concentration is not significant. However, heating or spraying can generate a vapor level sufficient to cause lung damage and sensitization by inhalation. MDI is a skin and eye irritant. Flush eyes immediately with water for 15 minutes and seek medical attention. Remove from skin with soap and water.

PMC-724 components can be irritating to the eyes and skin. Avoid prolonged or repeated skin contact. Flush eyes immediately with water for 15 minutes and seek medical attention. Remove from skin with soap and water.

The information contained in this bulletin is considered accurate. However, no warranty is expressed or implied regarding this accuracy, the results to be obtained from the use thereof, or that any such use will not infringe a patent. User shall determine beforehand the suitability of this product for the intended application and assume all risk and liability in connection therewith.

Mold Making Accessories:

~*Kick-It* Cure Accelerator **~Part 'C' Softener**
~ *SUPERSEAL*™ Sealing Agent **~Part 'D' Thickener**
~*UNIVERSAL* Mold Release™ **~PLASTI-PASTE™ Mother Mold Material**
~XTEND-IT™ Urethane Life Extender **~Color Pigments**

CALL SMOOTH-ON OR YOUR LOCAL DISTRIBUTOR - WE'RE HERE TO HELP!

Whether your project is large or small, conventional or developmental, CALL OR FAX US!
We have qualified technicians on staff ready to discuss your application and the best way to proceed.

Toll-free Technical Assistance . . . . . (800) 766-6841 or (800) 762-0744
Our FAX Number (24 Hours A Day) . . . . . (610) 252-6200

Miniatures *There's So Much More You Can Do* - *Ask About other SMOOTH-ON Urethane, Polysulfide and Silicone Rubbers. Also, Liquid Plastics, Mold Making Accessories & "How To" Information!*

Smooth-On makes many different liquid rubbers and liquid plastics used worldwide for many different Smooth-On's Smooth-Sil™ Silicone Rubbers have superior release properties. Smooth-On liquid plastics mix and pour easily. Low viscosity ensures flawless pick up of even the finest detail. They cure at room temperature to form tough, solid or semi-rigid plastics. The applications for both are almost endless::

~Prototype Parts ~Production Parts ~Durable Models ~Ultra thin-wall castings
~Special Effects ~Vacuum Forming Molds ~Foundry Patterns ~Artistic Creations
~Durable Miniatures ~Architectural Models ~High Impact Tooling ~Die Facings

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