

Development Corp.

Poly 72-40 Series RTV Liquid Rubbers

Flexible, Polyurethane Mold Rubbers

DESCRIPTION: Poly 72-40 systems consist of liquid Part A and Part B that, after mixing in correct ratio, cure at room temperature to versatile mold rubbers. They may be poured or thickened and applied by trowel or brush, to make high quality, flexible molds. These molds are especially useful for making wax or plaster casts and with release agents are suitable for casting resins and concrete as well.

MODEL PREPARATION: Poly 72-40 systems may be subject to cure inhibition by certain surface contaminants and may stick to some surfaces. In every case where there is any question about the compatibility between the rubber and the prepared surface, a test cure should be made on an identical surface to see that satisfactory results are obtained. Porous models such as wood, plaster, stone, pottery or masonry must be sealed, then coated with a release agent. Multiple coats of paste wax dried and buffed will seal most surfaces. Potters soap can be used as a sealer for plaster. Models made of Roma Plastalina should be sealed with shellac. Shellac is a good sealer because other sealers such as lacquer and paints may be softened by Poly 72-40 systems. A release agent must be applied to shellac-coated surfaces because **Poly 72-40 bonds tenaciously to shellac.** In fact, uncoated shellac may be used to bond Poly 72-40 systems to certain surfaces (i.e., plaster). Porous models must be vented from beneath to prevent trapped air from forming bubbles in the rubber. Non-porous surfaces and models sealed as above should be coated with a release agent such as Pol-Ease® 2300 Release Agent. This includes surfaces such as metals, plasticene, wax, ceramics, fiberglass and cured Poly rubbers. Some plastics, such as styrene and coatings such as lacquer may be softened by Poly 72-40 systems and must be coated with a barrier such as Poly PVA Solution.

MIXING AND CURING: All materials should be at room temperature. Stir individual components before use. The proper mix ratio is 1A to 10B, by weight, and must be carefully followed. An error of 5% in the weight of either component can affect the physical properties of the cured rubber and an error of 15% can result

PHYSICAL PROPERTIES

| | |
|---------------------------------------|--------|
| Mix Ratio, By Weight | 1A:10B |
| Hardness, Shore A | 40 |
| Pour Time (min) | 30 |
| Cured Color | Ivory |
| Mixed Viscosity (cP) | 4,000 |
| Specific Volume (in ³ /lb) | 20 |
| Shrinkage Upon Cure | Nil |

FEATURES

- Low viscosity
- Pour or brush-on
- Odor free
- Non-staining
- Economical
- Long work time
- Variable hardness
- Good flow and bubble release

in a soft, poorly cured compound. Weigh Part B into a clean container, then weigh the appropriate amount of Part A on top of the B. As sold, kits are preweighed so that Part A can simply be emptied into the Part B container, if the whole kit is used at once. While mixing, scrape down the sides of the mixing container several times to ensure thorough mixing. Vacuum degassing helps to provide bubble free molds, but is usually not necessary. Allow Poly-Fast 72-40 to cure 8 hours at room temperature, 77°F (25°C), before demolding. Allow Poly 72-40 MF to cure 16 hours before demolding. Ultimate properties are reached in 3 days. Curing in a warm location, up to 150°F (65°C), accelerates the cure while low temperatures slow the cure. Avoid curing in areas where the temperature is below 60°F (15°C).

Both Parts A and B react with atmospheric moisture and, therefore, should be used up as soon as possible after opening. Before resealing, Poly Purge™, a heavier-than-air dry gas, can be sprayed into open containers to displace moist air and extend storage life.

FLOW CONTROL: Poly Fiber II, fine polyethylene fiber, or Cab-O-Sil®, fumed silica, can be added to mixed, uncured 72-40 to produce varying viscosities. Consistencies can range from that of a thin latex paint to a grease-like putty that can be spread onto a vertical surface. Up to 4 parts Cab-O-Sil can be added to 100 parts of mixed Poly 72-40 Liquid Rubber. No extra Part A is required when Poly Fiber II or Cab-O-Sil is used as a thickener. A liquid thickener, Part D, is also available for use with Poly 72-40 systems. If using Part D, one part D added to 100 parts B results in a light-cream consistency and two parts D results in a grease-like consistency. Part D must be stirred into Part B thoroughly before Part A is added. One extra part of A must be added for each part of D that is used. Use of Part D requires careful weighing and must be handled with caution since it is corrosive.

MOLD RELEASE: Mold release agents are usually not necessary for wax or gypsum casts in 72-40 molds. When casting

epoxy, urethane and polyester resins, a release agent must be used and with some resins a barrier coat, like Poly PVA Solution (top coated with a release agent) may be necessary. Portland cement castings erode the rubber slightly with each casting, sometimes leaving a white haze on the cement. Some mold releases or barrier coats may reduce mold erosion and whitening of cement castings. Repeated contact of the rubber with solvents and oils should be kept to a minimum as these materials will cause mold swelling or shrinkage. Spray application of release is best as it reduces contact with solvents.

COLORS: Poly 72-40 Liquid Rubber can be tinted to pastel shades by adding small amounts of Poly Colors (see Polytek's Mold Making & Casting Manual & Catalog).

SOFTER MOLDS: Liquid softeners (i.e., Poly-Fast 72 Part C and Poly 72 MF Part C) can be added to create rubbers as soft as Shore A-6. Part C should be weighed and thoroughly mixed with the proper amount of 72-40 Part B prior to combining with Part A. Each 20 parts of Part C added to 100 parts total A and B lowers the hardness by approximately 10 to 15 Shore A points.

STORAGE: Poly 72-40 rubber remains useable for at least six months from the date of shipment in unopened containers, stored in a cool, dry location. Cured molds slowly soften with age. Adequate mixing of components in the proper mix ratio contributes to long mold life as will storage of molds in a dark, cool, dry area. With proper care, Poly 72-40 molds should not soften appreciably for 2-4 years. Molds should be discarded before they become too soft to handle. Do not store molds outdoors, as exposure to sunlight and standing water or ground moisture will cause rapid deterioration of the rubber.

DISCLAIMER: The information in this bulletin and otherwise provided by Polytek® is considered accurate. However, no warranty is expressed or implied regarding the accuracy of the data, the results to be obtained by the use thereof, or that any such use will not infringe any patent. Before using, the user shall determine the suitability of the product for the intended use and user assumes all risk and liability whatsoever in connection therewith.

| PACKAGING | | | | |
|--|------------|--------|-----------------|------|
| Poly-Fast 72-40 and Poly 72-40 MF | | | | |
| Mix Ratio 1A:10B (By Weight) | | | | |
| Total Unit Weight | Containers | | | |
| | Size | | Net Weight (lb) | |
| | A | B | A | B |
| 9.9 lb | 1 pt | 1 gal | 0.9 | 9.0 |
| 49.5 lb | ½ gal | 5 gal | 4.5 | 45.0 |
| 495 lb | 5 gal | 55 gal | 45.0 | 450 |

| ACCESSORIES |
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| Cab-O-Sil® 5 gal, 1 bag (10 lb) |
| Pol-Ease® 2300 Release Agent 12 oz can, case of 12 cans |
| Pol-Ease® 2350 Release Agent 1 qt (1.5 lb), 5 gal (26 lb) |
| Pol-Ease® 2500 Release Agent 13 oz can, case of 12 cans |
| Pol-Ease® 2601 Release Agent 1 qt (2 lb), 5 gal (40 lb), 1 drum (450 lb) |
| Pol-Ease® 2650 Silicone-Free Release Agent 1 qt (1.5 lb), 5 gal (35 lb), 1 drum (375 lb) |
| Poly Purge™ Aerosol Dry Gas 10-oz can, case of 12 cans |
| Poly-Fast 72 Part C, Poly 72 MF Part C Softeners 1 pt (1.0 lb), 1 gal (9.0 lb), 5 gal (45.0 lb) |
| Poly-Fast 72 Part D and Poly 72 MF Part D Thickeners (Includes extra Part A) 1 pt each A + D (2.0 lb) |
| Poly Fiber II 5-gal pail (3 lb) |
| Poly PVA Solution (Green or Clear) 1 qt (2 lb), 5 gal (40 lb) |