

# Poly 75 Series RTV Liquid Rubbers

## Economical, Flexible Polyurethane Rubbers for Molds and Parts

**DESCRIPTION:** Poly 75 Series Liquid Rubbers consist of two parts (A & B) that, after mixing, cure at room temperature to flexible rubber. Molds made with Poly 75 Series products are excellent for casting concrete, plaster and wax. In addition, when coated with a proper release agent, Poly 75 Series molds can also be used to cast various resins. Poly 75 Series Liquid Rubbers have been formulated for good economy with high performance and durability.

**MODEL PREPARATION:** 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. Lacquer, paint, PVA, and Pol-Ease® 2350 Release Agent also work well as sealers for many surfaces. Models made of sulfur-containing modeling clay (i.e., Roma Plastilina) should be sealed with shellac. *[CAUTION: When shellac is used as the sealer, it must be thoroughly coated with release agent because polyurethane rubbers bond tenaciously to shellac. In fact, uncoated shellac may be used to bond polyurethanes to certain surfaces.]*

Non-porous models (i.e., metals, plasticene, wax, glazed ceramics, fiberglass, and polyurethanes) and sealed porous models should be coated with a release agent such as Pol-Ease 2300.

If there is any question about the compatibility between the liquid mold rubber and the prepared model surface, perform a test cure on an identical surface to determine that complete curing and good release is obtained.

Porous models must be vented from beneath to prevent trapped air from forming bubbles in the rubber.

**MIXING & CURING:** Before mixing, be sure that both Parts A and B are at room temperature and that all tools and models are ready to go! Some products set fast -- meaning that you must work quickly.

Check mix ratio. Weigh Part B into a clean metal or plastic mixing container and then weigh the appropriate amount of Part A into the same container. Mix thoroughly. Hand mixing with a Poly Paddle is best to avoid mixing air into the rubber. While

### FEATURES

- Easy-to-use formulations
- Flexible, high-strength mold rubbers
- Reproduce finest details
- Make tough, long-lasting, abrasion-resistant molds and parts

mixing, scrape the sides and bottom several times to ensure thorough mixing. Pour the rubber as soon after mixing as possible for best flow and air bubble release.

Vacuum degassing helps to provide bubble-free molds but is usually not necessary.

Allow to cure at room temperature, 77°F (25°C). Final cure properties are obtained in about seven days, but molds may be used with care after curing for 24-48 hours. Heat accelerates the cure - 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 resealed or 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. For 55-gallon drums of Parts A and B, affix Drierite cartridges on the small bung during dispensing to protect product from moist air entering the drum.

**SOFTENING THE RUBBER:** Add Poly 74/75 Part C Softener to 75 Series products for a lower viscosity mix and a softer cured rubber. When using Part C, cure time is longer and there is some loss of strength in the rubber and increased tendency to shrink after repeated castings. The quantity of Part C required varies and should be determined through experimentation.

**ACCELERATING THE CURE:** Add Poly 74/75 Part X to Poly 75 Series rubbers to accelerate the cure. By adding 1% Part X (by weight of total mix) to Poly 75-80, the working time is reduced to

### PHYSICAL PROPERTIES

	<u>75-59</u>	<u>75-60</u>	<u>75-65</u>	<u>75-70</u>	<u>75-75</u>	<u>75-79</u>	<u>75-80</u>	<u>75-90</u>
Mix Ratio, By Weight	1A:1B	1A:1B	1A:1B	1A:1B	2A:1B	2A:1B	2A:1B	2A:1B
Hardness, Shore A	60	60	65	70	75	80	80	90
Pour Time (min)	10	10	35	40	20	20	45	10-15
Cured Color	Amber	Amber	Yellow/Amber	Gray	Amber	Yellow	Yellow/Amber	Tan/Brown
Mixed Viscosity (cP)	2,500	1,200	3,000	3000	4,000	2,000	5,000	6,000
Specific Volume, in <sup>3</sup> /lb	27	27	27	27	26	26	26	26

PACKAGING					
Product	Total Unit Weight	Containers			
		Size		Net Weight (lb)	
		A	B	A	B
<b>Poly 75-59, 75-60, 75-65 &amp; 75-70</b> Mix Ratio 1A:1B	4 lb	1 qt	1 qt	2.0	2.0
	16 lb	1 gal	1 gal	8.0	8.0
	80 lb	5 gal	5 gal	40.0	40.0
	900 lb	55 gal	55 gal	450	450
<b>Poly 75-75, 75-79, 75-80 &amp; 75-90</b> Mix Ratio 2A:1B	6 lb	2x1 qt	1 qt	4.0	2.0
	24 lb	2x1 gal	1 gal	16.0	8.0
	120 lb	2x5 gal	5 gal	80.0	40.0
	1,350 lb	2x55 gal	55 gal	900	450

approximately 10 minutes and demolding is possible in as little as 6 hours. Exercise caution when using Part X since the rapid onset of gelling may trap air bubbles on or near the surface of the model.

**USING THE MOLD:** Usually no release agent is necessary when casting plaster or wax in Poly 75 Series molds. For casting plaster, sponge, dip or spray the mold with Pol-Ease Mold Rinse and then pour plaster on the wet mold to reduce air bubbles in the plaster and aid release. For casting resin, first spray the mold with Pol-Ease 2300 Release Agent. For casting concrete, use an appropriate form release such as Pol-Ease 2650 or 2601. Avoid solvent-containing releases since they can cause mold distortion (i.e., shrinkage or swelling).

After repeated casting with certain resins, plaster and concrete, molds may shrink slightly since these materials extract oils from the mold. The proper selection of release agent and/or barrier coat can minimize this effect. If shrinkage becomes evident, a light application of Pol-Ease Mold Dressing can help to restore the mold to its original dimensions.

Poly 75 Series molds can last many years if stored undistorted on a flat surface in a cool, dry location out of direct sunlight. If occasional outdoor use is required, Poly 75-59, 75-65 and 75-80 perform best and UV resistance can be improved by adding Poly UV Additive. Add 0.5% UV Additive to the total mix weight to reduce the characteristic surface degradation caused by sunlight. Never store Poly 75 Series molds outside as UV exposure will eventually degrade the rubber.

**CLEAN UP:** Tools should be wiped clean before the rubber cures. Denatured ethanol is a good cleaning solvent, but it must be handled with extreme caution owing to its flammability and health hazards. Work surfaces can be waxed or coated with Pol-Ease 2300 Release Agent so cured rubber can be removed.

**SAFETY:** Before use, read product labels and Material Safety Data Sheets. Follow safety precautions and directions. Contact with uncured products may cause eye, skin and respiratory irritation and dermal and/or respiratory sensitization. Avoid contact with skin and eyes. If skin contact occurs, remove with waterless hand cleaner then soap and water. In case of eye contact, flush with water for 15 minutes and call physician. Use only with adequate ventilation. Poly 75 Series products are not to be used where food or body contact may occur. Poly 75 Series products burn readily when ignited.

**STORAGE LIFE:** At least six months in unopened containers stored at room temperature (60-90°F/15-32°C).

**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.

ACCESSORIES
<b>Poly 74/75 Part C Softener</b> 1 pint (1 lb), 1 gal (8 lb), 5 gal (40 lb)
<b>Poly 74/75 Part X Accelerator</b> 1 pint (1 lb), 1 gal (8 lb)
<b>Pol-Ease® 2300 Release Agent</b> 12-oz can, case of 12 cans
<b>Pol-Ease® 2350 Release Agent</b> 1 qt (1.5 lb), 5 gal (26 lb)
<b>Pol-Ease® 2450 Release Agent</b> 1 qt (1.5 lb), 5 gal (30 lb)
<b>Pol-Ease® 2601 Release Agent</b> 1 qt (2 lb), 5 gal (40 lb), 1 drum (450 lb)
<b>Pol-Ease® 2650 Silicone-Free Release Agent</b> 1 qt (1.5 lb), 5 gal (35 lb), 1 drum (375 lb)
<b>Pol-Ease® Mold Dressing</b> 5 gal (40 lb)
<b>Pol-Ease® Mold Rinse</b> 5 gal (40 lb)
<b>Poly PVA Solution (Green or Clear)</b> 1 qt (2 lb), 5 gal (40 lb)
<b>Poly UV Additive</b> 4 oz, 1 pt (1 lb)
<b>Poly Purge™ Aerosol Dry Gas</b> 10-oz can, case of 12 cans