POLY 75-SERIES

Technical Data Sheet

1. DESCRIPTION

Poly 75-Series Liquid Rubbers consist of two parts (A and B), which, 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, Poly 75-Series molds can be used to cast various resins and foams when properly prepared. Poly 75-Series Liquid Rubbers are formulated for good economy with high performance and durability.

2. MODEL PREPARATION

Porous models, such as wood, plaster, stone, pottery or masonry must be sealed. 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. The properly-sealed model should then be coated with a release agent (e.g., Pol-Ease 2300 Release Agent). Alternatively, PolyCoat, a sealer and semi-permanent release agent, can be used on most porous or non-porous models. Porous models must be vented from beneath to prevent trapped air from forming bubbles in the rubber. Models made of sulfur-containing modeling clay (e.g., 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.]** Non-porous models (e.g., metals, plasticine, wax, glazed ceramics, fiberglass and polyurethanes) should be coated with release agent such as Pol-Ease 2300 Release Agent or PolyCoat. 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 are obtained.

3. MIXING AND CURING

Before use, be sure that Parts A and B are at room temperature and that all tools are ready. Surface and air temperatures should be above 15°C (60°F) during application and for the entire curing period. 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 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 rubber to cure at room temperature, 25°C (77°F). Carefully demold after approximately 16 hours. 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 15°C (60°F). 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 204 kg drums of Parts A and B, affix Drierite cartridges on the small bung during dispensing to protect product from moist air entering the drum.

4. 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. Determine the quantity of Part C required through experimentation.

5. ACCELERATING THE CURE

Cure time can be shortened with the addition of an Accelerator, such as Poly 74/75 Part X, or by adding heat. By adding 1% Poly 74/75 Part X (by weight of total mix) to Poly 75-80, the working time is reduced to 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. Heat also accelerates the cure. It is recommended not to exceed 60°C (140°F).

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6. PHYSICAL PROPERTIES

Poly 75-series	Mix ratio by weight	Shore hardness	Pour time (min)	Cured color	Mixed viscosity (cP)	Specific volume (in3 /lb)
Poly 75-59	1A:1B	A60	10	Amber	2,500	27
Poly 75-60	1A:1B	A60	10	Amber	1,200	27
Poly 75-65	1A:1B	A65	35	Amber	3,000	27
Poly 75-70	1A:1B	A70	40	Gray	3,000	27
Poly 75-75	2A:1B	A75	20	Amber	4,000	26
Poly 75-79	2A:1B	A80	20	Yellow	2,000	26
Poly 75-80	2A:1B	A80	45	Yellow	5,000	26
Poly 75-90	2A:1B	A90	10-15	Tan	6,000	26

7. USING THE MOLD

Typically, 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 or PolyCoat. For casting concrete, use a 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 last many years if stored undistorted on a flat, non-porous 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.

8. CLEAN UP

Wipe tools clean before the rubber cures. Denatured ethanol is a good cleaning solvent, but is highly flammable and must be handled with caution. Coat work surfaces with wax, Pol-Ease 2300 Release Agent or PolyCoat so cured rubber can be removed.

9. SAFETY

Before use, read product labels and Safety Data Sheets. Follow safety precautions and directions. Use only with adequate ventilation. 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 or alcohol, and then soap and water. In case of eye contact, flush with water for 15 minutes and call physician. Poly 75-Series products are not to be used where food or body contact may occur. Poly 75-Series rubbers burn readily when ignited.

10. SHELF LIFE

For best results, store products in unopened containers at room temperature (15-32°C /60-90°F). Use products within six months. Part Bs darken with age, but product performance is not affected.

11. DISCLAIMER

The information in this bulletin and otherwise provided by Schouten Group 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.

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