

POLY 74-SERIES

Technical Data Sheet

1. DESCRIPTION

Poly 74-Series Liquid Rubbers consist of two parts (A and B), which, after mixing, cure at room temperature to flexible, high-strength, mold rubbers. **Poly 74-Series** Rubbers make durable, easy-releasing molds for casting plasters and waxes without release agents. When **Poly 74-Series** molds are properly prepared, they are also excellent for casting concrete and various resins, such as epoxy, polyester, polyurethane and acrylic.

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 a 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. Several **Poly 74-Series** Part Bs require stirring before use (i.e., **74-20**, **74-29**, **74-30** and **74-40**). 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 **74-Series** products for a lower viscosity mix and a softer cured rubber. When Part C is used, cure time is longer and there is some loss of strength in the rubber and increased tendency to shrink after repeated castings. To soften **Poly 74-30** to Shore A15, mix 1A:1B:1C by weight. The quantity of Part C required to soften other products varies and should be determined 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. Part X is most useful when making brush-on molds to decrease the time needed between coats. By adding 3% Part X (by weight of the total mix) to **74-30** or **74-29**, the working time is reduced to approximately 8 minutes – in the time it takes to mix the next batch, the previous layer gels enough to apply the next coat. Demolding is possible in as little as 4 hours after the final layer is applied. Rapid curing with Part X allows a shell or mother mold to be made in the same day. Exercise caution when using Part X for poured molds since the rapid onset of gelling may trap air bubbles on or near the surface of the master. Heat also accelerates the cure. It is recommended not to exceed 60°C (140°F).

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6. PHYSICAL PROPERTIES

	Mix ratio by weight	Shore hardness	Pour time (min)	Cured color	Mixed viscosity (cP)	Specific volume (in3 /lb)
Poly 74 Serie	Flexible polyurethane rubber - soft to mid-soft rubbers, shore A 20 - A 55					
Poly 74-20	1A:2B	Shore A 20	20 min.	Yellow	800 cP	27.5
Poly 74-24	1A:1B	Shore A 25	20 min.	Amber	2000 cP	27.5
Poly 74-29	1A:1B	Shore A 30	30 min.	Black	2800 cP	27.5
Poly 74-30	1A:1B	Shore A 30	25-30 min.	Varies	2000 cP	27.5
Poly 74-40	2A:1B	Shore A 40	20 min.	Varies	3400 cP	27.5
Poly 74-41	1A:1B	Shore A 40	20 min.	Varies	2000 cP	27.5
Poly 74-44	2A:1B	Shore A 45	20 min.	Grey	3500 cP	27.5
Poly 74-45	1A:1B	Shore A 45	30 min.	Yellow	2000 cP	27.5
Poly 74-55	4A:1B	Shore A 55	15 min.	Amber	4000 cP	27.5

7. THICKENING FOR BRUSH-ON

Add a thickener [CAB-O-SIL](#) to the mixed Parts A and B to thicken the liquid mix to a gel for application by brush or trowel.

8. USING THE MOLD

Typically, no release agent is necessary when casting plaster or wax in [Poly 74-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 74-Series](#) molds last many years if stored undistorted on a flat, nonporous surface in a cool, dry location out of direct sunlight. If occasional outdoor use is required, add 0.5% [UV Additive](#) to the total mix weight to reduce the characteristic surface degradation caused by sunlight. Never store [Poly 74-Series](#) molds outside as UV exposure will eventually degrade the rubber.

9. 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 that cured rubber can be easily removed.

10. 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 a physician. [Poly 74-Series](#) products are not to be used where food or body contact may occur. [Poly 74-Series](#) rubbers burn readily when ignited.

11. 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.

12. 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.