

# Poly GlassRub Liquid Rubber

## Clear Polyurethane Rubber for Transparent Molds or Parts

Poly GlassRub 50 RTV Liquid Rubber consists of two parts (A & B) that, after mixing, cure at room temperature to a flexible, clear rubber. The transparency of Poly GlassRub 50, allows the mold maker to see if air bubbles are trapped against the master or forming in the casting. Additionally, clear rubber castings or objects encapsulated in the clear rubber make interesting displays or original art. Cured GlassRub may yellow slightly over time or following UV exposure. PolyColors can be added to the liquid rubber to make a tinted or colored, yet still clear, rubber. The smallest addition of a PolyColor virtually eliminates post-cure yellowing.

**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 seals 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 Pol-Ease 2300 ReleaseAgent.

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

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

### PHYSICAL PROPERTIES

Mix Ratio, By Weight or Volume	1A:1B
Hardness, Shore A	45-50
Pour Time, 1-lb. mix (min)	45
Demold Time (hr)	16
Specific Gravity	1.0
Color, Cured	Glass Like/Blue-Clear*
Viscosity, 2.5 min after mix (cP)	1000
Specific Volume (in <sup>3</sup> /lb)	27.5

\* Upon exposure to UV light (i.e., fluorescent light or sunlight), cured rubber may yellow with age.

### FEATURES

- Glass-like appearance (pale blue clear)
- Reproduces fine detail
- Easy-to-use formulation -- 1A to 1B mix ratio
- Low viscosity mix with excellent bubble-release
- Long working time

**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! The mix ratio is 1A:1B by weight or volume. Measure or weigh Part B into a clean mixing container. Measure or weigh an equal amount of Part A into the same container. Mix thoroughly -- scrape the sides and bottom several times to ensure thorough mixing. Hand mixing with a Poly Paddle is best to avoid mixing air into the rubber. Pour the rubber as soon after mixing as possible for best flow and air bubble release.

Vacuum degassing and pressure casting the mixed liquid rubber helps to provide bubble-free molds or parts, but is usually not necessary. Pressure casting may be useful for the most complex parts that cannot be vented. Once Parts A and B containers are opened and the liquids are exposed to atmospheric moisture, however, small bubbles may remain in the clear rubber unless it is vacuum degassed or pressure cast.

Allow to cure at room temperature, 77°F (25°C). Final cure properties are obtained in about seven days, but molds or castings may be used with care after curing for 24 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.

**USING A GLASSRUB MOLD:** Usually no release agent is necessary when casting plaster or wax in GlassRub. To reduce air bubble marks on a plaster casting surfaces, sponge, dip or spray the mold with Pol-Ease Mold Rinse and then pour plaster on the wet mold. Before casting resin, apply Pol-Ease 2300 Release Agent to the mold. After repeated casting with certain materials, molds may shrink slightly since oils can be extracted from the mold rubber. Use of solvent-containing release agents can cause the mold to swell upon repeated exposure. The proper selection of release agent and/or barrier coat can minimize these effects.

**CASTING WITH GLASSRUB:** GlassRub 50 can be successfully cast into polyurethane rubber molds made of GlassRub 50 or Poly 74-Series products. Release agent (e.g., Pol-Ease 2300) must be properly applied to polyurethane molds before GlassRub is poured. Molds made of PlatSil products also work well and do not require release agent. Do not pour GlassRub into tin silicone molds as slight surface inhibition can produce a tacky, partially cured surface on the GlassRub part.

**FILLERS:** Various fillers can be added to GlassRub 50 to create many different looks (e.g., marble powder). All fillers must be completely dry before use. Residual moisture in a filler can create small, undesirable air bubbles in the cured rubber.

**ENCAPSULATING OBJECTS:** When encapsulating an object in GlassRub, it is important that the object be free of air pockets, which may outgas after the rubber is poured. Porous objects should be sealed with a coat of clear Krylon spray to prevent pin-hole bubbles from forming on the surface of the object being encapsulated. Objects that sink can be suspended using ultra-fine fishing line. Objects that float can be submerged using thin wire, which can be removed when the rubber begins to gel.

**COLORS:** Add PolyColors to mixed GlassRub 50 or to Part B before mixing with Part A to create clear rubber objects of any color. Experiment with PolyColors on a small scale to determine suitability. Pigments can also be added to GlassRub 50, but the resulting rubber will not be transparent. Test pigments on a small scale first to determine their compatibility and final appearance.

**EXTERIOR USE:** GlassRub 50 is not recommended for exterior use. Poly UV Additive can be evaluated at 0.5 to 1% total weight to reduce the onset of yellowing upon UV exposure.

**SOFTENING:** Add Poly 74-Series Part C Softener to soften GlassRub rubber. Adding 25% Part C to the total mixed weight of GlassRub 50 reduces the hardness to ~A30. Adding 50% reduces the hardness to ~A25. Make small test mixes to determine the best amount for the application. Adding 74-Series Part C will slow hardness build of GlassRub 50, so several days should be allowed for a complete cure. The softened rubbers can be demolded overnight, but will be fragile.

**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. GlassRub 50 is not to be used where food or body contact may occur. GlassRub 50 burns readily when ignited.

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

<b>GlassRub 50 Liquid Rubber Packaging</b> 1A:1B Mix Ratio				
Unit Weight	Weight		Volume	
	A (lb)	B (lb)	A	B
4 lb	2	2	1 qt	1 qt
16 lb	8	8	1 gal	1 gal
80 lb	40	40	5 gal	5 gal
900 lb	450	450	55 gal	55 gal

<b>ACCESSORIES</b>	
<b>Pol-Ease® 2300 Release Agent</b>	12-oz can, case of 12 cans
<b>Poly PVA Solution (Green or Clear)</b>	1 qt (2 lb), 5 gal (40 lb)
<b>Poly Purge™</b>	12-oz can, case of 12 cans
<b>PolyColors</b>	
<b>Black, Blue, Brown, Green, Red, White &amp; Yellow</b>	4-oz bottle (0.25 lb), 1.0 pint (1.0 lb)
<b>Poly 74-Series Part C Softener</b>	1 qt (2 lb), 1 gal (8 lb)

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