

Polyurethane RTV Liquid Mold Rubbers

Polytek offers several Polyurethane RTV Liquid Mold Rubbers each formulated to meet various customer applications. Polytek's polyurethane mold rubbers consist of a Part A and a Part B that, after mixing, cure at room temperature to flexible, high-strength, mold rubbers. Polyurethane rubbers make durable, easy releasing molds for casting plasters and waxes without release agents, but when used with proper release agents are also excellent for casting cement, epoxy, polyester, urethane and acrylic.

For many Polytek polyurethane mold rubbers, the last two digits in the product name indicate the approximate Shore A hardness of the cured rubber. Polytek polyurethane mold rubbers range in hardness from a very soft A20 to a very firm D45.

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 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 (i.e., plaster).]*

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 (see p. 12).

MIXING AND CURING

Before mixing rubber, be sure that both Parts A and B are at room temperature and that all tools and models are ready to go! Check product labels or technical bulletins to determine working time for the product -- some products set fast -- meaning that you must work quickly.

Many Polyurethane Part Bs require stirring before use. If there is a "Stir Before Use" label on the container -- be sure to do so.

Mix Ratios Vary! Check the mix ratios for the specific product you are using. For polyurethane rubbers, most mix ratios are expressed by weight. **Carefully weigh Parts A and B in proper ratio.** [Note: Polygel products can be mixed 1:1 by weight or volume. See p. 36.]

Weigh Part B (usually the lower viscosity component) into a

POLYURETHANE MOLD RUBBERS: AT A GLANCE

Poly 74 & 75 Series - Flexible, high-strength mold rubbers for making tough, durable molds. *Polytek's easiest-to-use and bestselling mold rubbers!*

Polygel® Series - Thicken immediately upon mixing components making these products exceptional for making brush-on or sprayed blanket molds.

Poly 77 Series - High elongation mold rubber for maximum mold life in high volume applications.

Poly 81 Series - Firm rubber for making durable molds or industrial parts or for use in electrical encapsulation applications.

Poly 72-40 Series - Flexible rubber that performs well for casting wax and plaster.

clean metal or plastic mixing container. Then weigh the appropriate amount of Part A into the same container. Mix thoroughly. Hand mixing with a Poly Paddle (see p. 62) is best to avoid mixing air into the rubber. While mixing, scrape the sides and bottom several times to insure thorough mixing. Pour the rubber as soon after mixing as possible for best flow and air bubble release.

Vacuum degassing or pressure curing helps to provide bubble free molds, but is usually not necessary.

Allow the rubber to cure at room temperature, 77°F (25°C). Heat accelerates the cure - low temperatures slow the cure. Avoid curing in areas where the temperature is below 60°F (15°C).

Check product labels or technical bulletins to determine appropriate cure times. For most polyurethane products, final cure properties are obtained in about seven days, but most molds may be used with care after curing for 24 to 48 hours.

USING THE MOLD

Usually no release agent is necessary when casting plaster or molten wax in polyurethane molds. When casting with 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. When casting resin, spray the mold with Pol-Ease 2300 Release Agent. For casting concrete, use an appropriate form release such as Pol-Ease 2650 or 2601 Release Agent. Exposure to solvent-containing form releases should be kept to a minimum to reduce likelihood of mold distortion due to shrinkage or swelling.

After repeated casting with certain resins, plaster and cement, 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. For more information on the use of Pol-Ease Mold Dressing, call Polytek Customer Service.

ADDITIVES

Polytek offers various additives that can be used to vary the properties of the cured and uncured polyurethanes.

- **Softener** - For the Poly 74, 75 and 77 Series RTV Liquid Mold Rubbers, add Poly 74/75 Part C Softener for a lower viscosity mix and a softer cured rubber. Poly 74/75 Part C Softener may be added to most other Polytek polyurethane mold rubbers except Poly 72-40.
- **Accelerator** - For Poly 74, 75 and 77 Series RTV Liquid Mold Rubbers, Poly 74/75 Part X can be added to accelerate the cure. Poly 74/75 Part X may accelerate other Polytek polyurethane mold rubbers. Test on a small scale first.
- **Thickener** - Cab-O-Sil® Fumed Silica is both a thickener and thixotropic agent that can be added to mixed Parts A and B in order to form a gel appropriate for application by brush or trowel. Cab-O-Sil is only appropriate for use with certain liquid mold rubber products.
- **UV Stabilizer** - Poly UV Additive can be added to mixed Parts A and B to improve UV resistance of cured Polytek mold rubbers. At 0.5% of the total weight of the liquid mix, UV Additive reduces characteristic surface degradation caused by sunlight and other UV sources.
- **Colors** - Polyurethanes can be tinted to various colors by adding small amounts of PolyColors (see p. 61).

To learn more about additives, refer to product technical bulletins or call Polytek Customer Service. Additives and accessories for polyurethane mold rubbers are listed in the box to the right.

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/or 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 then soap and water. In case of eye contact, flush with water for 15 minutes and call a physician. Use only with adequate ventilation. Do not use polyurethane products where food or body contact may occur. Polyurethanes burn readily when ignited.

STORAGE LIFE

At least six months in unopened containers stored at room temperature (60-90°F). Parts A and B react with atmospheric mois-



Molds and castings made from Polytek polyurethane products.

Polyurethane
Mold Rubber

ADDITIVES & ACCESSORIES

Poly 74 Part C Softener

1 pint (1 lb), 1 gal (8 lb), 5 gal (40 lb)

Poly 74/75 Part X Accelerator

1 pint (1 lb), 1 gal (8 lb)

Pol-Ease® 2300 Release Agent

12-oz. can, case of 12 cans

Pol-Ease® 2601 Release Agent

1 qt (2 lb), 5 gal (40 lb), Drum (450 lb)

Pol-Ease® 2650 Release Agent

1 qt (1.5 lb), 5 gal (35 lb), Drum (375 lb)

Pol-Ease® Mold Rinse

5 gal (40 lb)

Poly PVA Solution (Green or Clear)

1 qt (2 lb), 5 gal (40 lb)

Poly Purge™ Aerosol Dry Gas

10-oz can, Case of 12 cans

Cab-O-Sil®

5 gal, 1 bag (10 lb)

Poly Fiber

1 bag (2 lb)

ture and, therefore, should be used up as soon as possible after opening. After opening, spray Poly Purge™ Dry Gas Blanket into containers before resealing to displace moist air and extend storage life.

Polyurethane rubber molds can last many years if stored in their proper shape in a cool, dry location out of direct sunlight.

Poly 74 and 75 Series RTV Liquid Rubbers

DESCRIPTION: Poly 74 and 75 Series Liquid Rubbers consist of Part A and Part B that, after mixing, cure overnight at room temperature to flexible, high-strength, mold rubbers. Poly 74 and 75 Series Rubbers make durable, easy releasing molds for casting plasters and waxes without release agents, but when used with proper release agents are also excellent for casting cement, epoxy, polyester, urethane and acrylic.

MODEL PREPARATION: See p. 32.

MIXING AND CURING: See p. 32.

USING THE MOLD: See p. 32.

ADDITIVES: For general guidelines see p. 33.

Softener - For the Poly 74 and 75 Series RTV Liquid Mold Rubbers, Poly 74/75 Part C Softener can be added to the uncured 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 a 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.

Accelerator - For the Poly 74 and 75 Series RTV Liquid Mold Rubbers, Poly 74/75 Part X can be added to accelerate the cure. Part X is most useful when making brush-on molds with 74-Series rubbers to decrease the time needed between coats. By

FEATURES

- Easy-to-use formulations
- Flexible, strong mold rubbers
- Reproduce fine details
- Make tough, long-lasting molds

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 brushed 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 firm, yet flexible shell or mother mold to be made in the same day. For example, by adding 1% 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 for poured molds since the rapid onset of gelling may trap air bubbles on or near the surface of the master.

Poly 74/75 Part X affects each product differently. Before use, testing to determine the best amount of Part X to use is advised.

CLEAN UP: See p. 33.

SAFETY: See p. 33.

POLY 74 SERIES PHYSICAL PROPERTIES

	<u>74-20</u>	<u>74-29</u> (74-29 White)	<u>74-30</u> (74-30 Clear)	<u>74-40</u>	<u>74-44</u>	<u>74-45</u>	<u>74-55</u>
Mix Ratio, By Weight	1A:2B	1A:1B	1A:1B	2A:1B	2A:1B	1A:1B	4A:1B
Hardness, Shore A	20	30	30	40	45	45	55
Pour Time (min)	30	30	30	20	20	30	15
Cured Color*	Yellow	Black (White)	Varies (Clear/Amber)	Varies	Gray	Yellow	Clr Yellow
Mixed Viscosity (cP)	800	2,800	2,000	3,400	3,500	2,500	4,000
Specific Volume (in ³ /lb)	27.5	27.5	27.5	27.5	27.5	27.5	27.5
Shrinkage Upon Cure	Nil	Nil	Nil	Nil	Nil	Nil	Nil

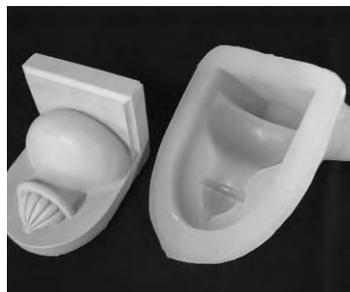
POLY 75 SERIES PHYSICAL PROPERTIES

	<u>75-59</u>	<u>75-60</u>	<u>75-70</u>	<u>75-75</u>	<u>75-79</u>	<u>75-80</u>
Mix Ratio, By Weight	1A:1B	1A:1B	1A:1B	2A:1B	2A:1B	2A:1B
Hardness, Shore A	60	60	70	75	80	80
Pour Time (min)	10	10	40	20	20	45
Cured Color*	Amber	Amber	Gray	Amber	Yellow/Amber	Yellow/Amber
Mixed Viscosity (cP)	2,500	1,200	3,000	4,000	2,000	5,000
Specific Volume, in ³ /lb	27	27	27	26	26	26
Shrinkage Upon Cure	Nil	Nil	Nil	Nil	Nil	Nil

* Some Part Bs darken with age, but cured rubber properties are not affected.



Poly 74-20 offers the most remarkable combination of tear strength and softness. With tear strength similar to harder rubbers, Poly 74-20 pulls away from detail and undercuts with no trouble at all. Poly 74-20 is great for casting concrete, plaster wax and resins.



Poly 74-40 was used to make a poured blanket mold of this shelf bracket. The bracket was rotocast using Poly 15-3X polyurethane to make a hollow part that was then backfilled with Poly 15-6 and Part 15F Foamer to give it strength while keeping it lightweight and low cost.

Moldmaker Chan Oeur (looking at camera) demolds a Poly 74-30 brushed mold from one of six panels created by artist Kate Burke for the Minnesota Veteran's Home. They sprayed the model with Pol-Ease® 2300 Release Agent, so the separation was perfectly clean and trouble-free.



A satisfied seminar attendee displays her cold cast bronze pot demolded from a two-piece, poured block mold made from Poly 74-20. The keys, which register the top and bottom halves of the mold, worked perfectly to create a thin, uniform wall thickness on the cast part.



Polyurethane Mold Rubber

PACKAGING					
Product	Unit Weight (lb)	Containers			
		Size		Net Weight (lb)	
		A	B	A	B
Poly 74-20 Mix Ratio :1A:2B	6	1 qt	2x1 qt	2.0	4.0
	24	1 gal	2x1 gal	8.0	16.0
	120	5 gal	2x5 gal	40.0	80.0
	1,350	55 gal	22x5 gal	450	900
Poly 74-29, 74-30, 74-30 Clear, 74-45 Poly 75-59, 75-60, 75-70 Mix Ratio: 1A:1B	4	1 qt	1 qt	2.0	2.0
	16	1 gal	1 gal	8.0	8.0
	80	5 gal	5 gal	40.0	40.0
	900	55 gal	55 gal/11x5 gal	450	450
Poly 74-40, Poly 74-44 Poly 75-75, 75-79, 75-80 Mix Ratio: 2A:1B	6	2x1 qt	1 qt	4.0	2.0
	24	2x1 gal	1 gal	16.0	8.0
	120	2x5 gal	5 gal	80.0	40.0
	675	55 gal	6x5 gal	450	225
	1,350	2x55 gal	55 gal	900	450
Poly 74-55 Mix Ratio: 4A:1B	5	2x1 qt	1 pt	4.0	1.0
	20	2x1 gal	2x1 qt	16.0	4.0
	40	5 gal	1 gal	32.0	8.0
	100	2x5 gal	5 gal	80.0	20.0
	562.5	55 gal	3x5 gal	450	112.5

Polygel® Brushable/Sprayable Mold Rubber

U.S. Patent # 5,128,433

USES: Polygel® Mold Rubbers are without equal for brushed or sprayed blanket molds. Polygel Plastics produce strong, light-weight mold shells (see p. 46). Polygel products are ideal for molds and shells built up with a brush or spatula on vertical or overhead surfaces. Evaluate Polygel Mold Rubbers for casting plaster, cement and waxes, as well as for limited casting with polyester, epoxy and polyurethane resins. Sprayable Polygel products are ideal for large surface area applications where brushing may be impractical. Polygel products bond well to many surfaces and should be evaluated as adhesives and sealants.

DESCRIPTION: Polygel products consist of liquid Parts A and B, that after mixing 1:1 by weight or volume, immediately self-thicken to a brushable or trowellable consistency. As the liquid components of Polygel Mold Rubbers are mixed together, the product changes color and thickens to a buttery, non-sag paste with a working time of 1 to 20 minutes (depending on the specific Polygel product used). A mold can be built up in 2 to 3 coats, applied about 1 hour apart. Polygel Spray 35, Spray 50 and Quick Spray 50 can be sprayed continuously until the desired mold thickness is achieved. Polygel rubbers cure overnight at room temperature to flexible, tough rubbers. Polygel Spray 35 and Quick Spray 50 cure in 4-6 hours.

MODEL PREPARATION: See p. 32.

MIXING AND CURING: See p. 32.

Polygel Product Options

Polygel® 35 - Softest, most elastic, brushable Polygel rubber. Cures to Shore A35 hardness in 4-6 hours.

Polygel® Spray 35 - Sprayable version of Polygel 35 designed for use with meter-mix spray equipment.

Polygel® 40 - The lowest viscosity mix for best air bubble release and easiest brushing. Cures to a Shore A40 hardness.

Polygel® 50 - A thicker mix that cures to a tough Shore A50 hardness. Polygel 50 is a great adhesive for repairing polyurethane molds and bonding molds to backing material such as plywood.

Polygel® Spray 50 - Designed for spray mold applications using meter-mix spray equipment.

Polygel® Quick Spray 50 - A fast, sprayable mold rubber with a 1-minute working time and a 4 to 6-hour cure.

Polygel® Plastic-75 - See p. 55.

Polygel® Shell - See p. 55.

FEATURES

- Easy -- 1:1 mix by weight or volume
- Excellent for brush-on and spray applications
- Fast -- one-day molds
- Tough and strong
- Color-coded mix indication
- Molds have long library life
- Good flow into fine detail
- Good dimensional stability

BRUSH-ON MOLDS WITH POLYGEL RUBBER: When brushing Polygel rubber, allow the first coat to gel enough so that the second coat will not disturb it (usually about 1 hour is adequate, 30 minutes for Polygel 35), then apply a second coat being careful to cover any thin spots in the first coat. Do not allow prior layers to cure completely before applying subsequent coats. Sprayed molds should be made in one continuous application without the need for individual layers. Ideally, a blanket mold should be at least 1/8-inch thick but not more than 3/8-inch, since too thick a layer of rubber causes difficulty turning a mold back on itself during demolding. Allow to cure at room temperature prior to demolding or building the mold shell. Strength continues to develop for several days.

REINFORCING BRUSH-ON MOLDS: Rubber molds can be reinforced with Tietex® Fabric (see p. 61), which is strong and wets out better than other fabrics. Tietex can be laminated at the top of a seam or strips can be laid around the perimeter of a mold to prevent tearing. The fabric may be embedded in the second or third coat of rubber while tacky and covered with a subsequent



Polygel® Mold Rubbers are specifically designed for brush-on and spray application. After Parts A+B are mixed, they form a thixotropic gel that clings to vertical and overhang surfaces after application.



Polygel® Spray 50 is applied to a monumental sculpture with the VS-3000 Polygel Sprayer (see p. 64). Using the sprayer, the entire mold was made in a continuous sprayed piece. The gel emitting from the sprayer is non-sag and, therefore, stays where it is applied, but can be moved around with a brush if necessary.



A large, flexible rubber dome mold was made quickly using Polygel® Spray 50 for the restoration of the St. Joseph County Courthouse in Southbend, IN.



Using Polygel® Spray 50 a mold was made of this this large cornice bracket.

coat, which should be as fluid as possible for best penetration of the cloth. The fabric should not be too close to the model surface or the weave pattern may show through to the face of the mold.

NOTE ON LAYERING DIFFERENT POLYGEL RUBBERS:

Typically, brush-on molds should be completed with one rubber. For example, if the face coat is brushed with Polygel 40, then all subsequent coats should be with Polygel 40. In some cases, the initial coat can be brushed with lower viscosity Polygel 35 or 40 for better detail and the second (usually final) coat with thicker Polygel 50 to speed the mold making process. This technique is acceptable for molds that do not require long-term storage or use. When layering different products, oils can transfer from one rubber to another causing warping or curling of the mold. In extreme cases, a mold can distort enough that it will not fit properly into its shell.

THICKER MIXES FOR FILLING UNDERCUTS: Polygel Mold Rubbers can be made even thicker by stirring Cab-O-Sil® into the mixed Parts A and B.

USING THE MOLD: See p. 32. If a Polygel rubber mold is to be turned inside out like a sock, the outside surface must be lubricated with soapy water or petroleum jelly so that it slides over itself easily. The shell or mother mold can be made of Polygel Plastics, plaster, polyester resin and fiberglass, or Poly 15-6 or 1512X resin filled with Poly Fiber or fiberglass (see p. 61). If the shell is built with Polygel Plastics or other resin, the rubber must be thoroughly coated with paste wax then Pol-Ease 2300 Release Agent to prevent the plastic from sticking to the rubber. A plaster shell must be sealed with potter's soap, shellac, lacquer or wax to prevent mold distortion during storage or use.

CLEAN UP: See p. 33.

SAFETY: See p. 33. When spraying Polygel products, use adequate ventilation and personal protective equipment (i.e., respirators, gloves, coveralls).



This Polygel® mold was used to rotocast hollow plaster columns used routinely for home and office decor.

POLYGEL MOLD RUBBER PACKAGING	
Products	Unit Weight (A+B)
Polygel 35 and Polygel Spray 35*	4 lb
Polygel 40	16 lb
Polygel 50, Polygel Spray 50* and Polygel Quick Spray 50*	80 lb
	900 lb
* Denotes products sold in 80-lb and 900-lb units only.	

Polyurethane
Mold Rubber

Poly 77 Series RTV Liquid Rubbers

DESCRIPTION: Poly 77 Series RTV Liquid Rubbers consist of a liquid Part A and Part B that, after mixing, cure at room temperature to economical, flexible mold rubbers. Consider these products for casting plasters, cements and waxes. Resins can also be cast with proper release agents. The Poly 77 Series has been formulated to provide excellent abrasion and tear resistance for maximum mold life and performance. The high elongation characteristic of these rubbers enables easier demolding and reduces mold damage when used in demanding casting applications.

MODEL PREPARATION: See p. 32.

MIXING AND CURING: See p. 32.

USING THE MOLD: See p. 32.

CLEAN UP & SAFETY: See p. 33.

PHYSICAL PROPERTIES		
	<u>77-50</u>	<u>77-65</u>
Mix Ratio, By Weight	1A:1B	1A:1B
Hardness, Shore A	50	65
Pour Time(min)	15	15
Color	Tan	Tan
Mixed Viscosity (cP)	1,200	1,600
Specific Volume (in ³ /lb)	27.5	27.5

FEATURES

- High-performance, high-elongation rubbers
- Hardnesses ranging from Shore A50 to A65
- Easy-to-use formulations with 1:1 mix ratios
- Easy demolding without damaging molds
- Make tough, long-lasting molds

PACKAGING				
Poly 77-50 and Poly 77-65				
Mix Ratio: 1A:1B (By Weight)				
Unit Weight (lb)	Containers		Net Weight (lb)	
	Size		A	B
4	A	B	A	B
	1 qt	1 qt	2.0	2.0
16	1 gal	1 gal	8.0	8.0
80	5 gal	5 gal	40.0	40.0
900	55 gal	55 gal	450	450

Poly 81 Series RTV Liquid Rubbers

DESCRIPTION: Use Poly 81 Series rubbers to make firm molds, mold facings, stamping tools, industrial parts, rollers, gaskets, mold shells, bumpers or pads. Poly 81 Series rubbers consist of liquid Part A and Part B that, after mixing, cure at room temperature to tough, durable rubbers. They offer low sensitivity to moisture, and low viscosity for easy vacuuming, if necessary.

MODEL PREPARATION: See p. 32.

MIXING AND CURING: See p. 32. Parts A and B are clear liquids. The color of Part B may vary, but it has no effect on cured rubber properties.

PHYSICAL PROPERTIES		
	<u>81-90</u>	<u>81-D45</u>
Mix Ratio, By Weight	100A:40B	100A:20B
Hardness (Shore A/D)	A90	D45
Pour Time (min)	23	19
Demold Time (hr)	16	16
Color	Yellow	Varies
Mixed Viscosity (cP)	2,000	1,600
Specific Volume (in ³ /lb)	26.6	26.4

FEATURES

- Firm rubbers ranging from Shore A90 to D45
- Easy-to-use formulations
- Reproduce fine details
- Make tough, long-lasting molds, tools and parts

USING THE MOLD: See p. 32.

CLEAN UP & SAFETY: See p. 33.

PACKAGING			
Product	Unit Weight (lb)	Net Weight (lb)	
		A	B
Poly 81-90 (100A:40B)	11.2	8.0	3.2
	56.0	40.0	16.0
	280.0	200.0	80.0
Poly 81-D45 (100A:20B)	630	450	180
	9.6	8.0	1.6
	48.0	40.0	8.0
	192.0	160.0	32.0
	540	450	90

Poly 72-40 Series RTV Liquid 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 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: See page 32.

CAUTION: Poly 72-40 systems may be subject to cure inhibition by certain 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, perform a test cure on an identical surface to see that satisfactory results are obtained.

Poly 72-40 rubber softens some plastics (i.e., styrene) and coatings (i.e., lacquer). These surfaces must be coated with a barrier like Poly PVA Solution before applying Poly 72-40.

MIXING AND CURING: See page 32.

The proper mix ratio is 1A: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 in a soft, poorly cured rubber. Demold Poly-Fast 72-40 after 8 hours at room temperature, 77°F (25°C) and Poly 72-40 MF after 16 hours. Final cured properties are obtained 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).

FLOW CONTROL: Cab-O-Sil can be added to produce varying viscosities in the mixed uncured rubber. Consistencies can range from that of a thin latex paint to a grease-like putty that can be buttered onto a vertical surface. Up to 4 parts Cab-O-Sil can be added to 100 parts of mixed Poly 72-40 Liquid Rubber.

Part D Liquid Thickener is available for use with Poly 72-40 systems. When using Part D, add 1 part D to 100 parts B for a light cream consistency and 2 parts D to 100 parts B for a grease-like consistency. Thoroughly stir Part D into Part B before adding Part A. One extra part A must be added for each part D that is used. When using Part D accurate weighing is essential and careful handling is required since it is corrosive.

USING THE MOLD: See page 32.

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 concrete 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 since it minimizes contact with solvents.

SOFTER MOLDS: Liquid softeners, Poly-Fast 72 Part C and Poly 72 MF Part C, can be added to create rubbers as soft as Shore A6. 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 C added to 100 parts A+B lowers the hardness by approximately 10 to 15 Shore A points.

CLEAN UP & SAFETY: See p. 33.

STORAGE: Poly 72-40 rubber remains usable for at least 6 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 excessive humidity will cause rapid deterioration of the rubber.

Polyurethane
Mold Rubber

POLY 72-40 ACCESSORIES

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)

0.5 gal each A + D (9.0 lb)

5 gal each A + D (90 lb)

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

PACKAGING

Poly-Fast 72-40 and Poly 72-40 MF

Mix Ratio 1A:10B (By Weight)

Unit Weight (lb)	Containers			
	Size		Net Weight (lb)	
	A	B	A	B
9.9	1 pt	1 gal	0.9	9.0
49.5	1/2 gal	5 gal	4.5	45.0
495	5 gal	55 gal	45.0	450