

# Poly PT Series Liquid Rubbers

## Pourable Polyurethane Casting Rubbers for Prototypes

**DESCRIPTION:** Poly PT Series Liquid Rubbers are flexible, fast-curing rubbers, which have been developed specifically for prototyping and model making applications. They are excellent for casting decorative objects, production parts, tools, models, patterns, duplicate masters and more. With the addition of Poly Color Dyes, PT Flex products can be used to cast parts of any color.

**MOLD PREPARATION:** Poly PT products reproduce minute detail from molds or patterns, but may stick or foam when poured on improperly prepared surfaces. To avoid damaging a valuable mold, perform a trial casting on a similar surface. Polyethylene and platinum silicone rubber (i.e., PlatSil®) molds do not require release agents. Latex, polyurethane rubber or metal molds must be dry and coated with a suitable release agent, such as Pol-Ease® 2300 or 2500 Release Agents.

**MIXING:** Prior to mixing, be sure that all molds, equipment and PT Series liquids are ready and at room temperature (i.e., >60°F). Shake or stir Parts A and B if directed by product label. Over time, sediment may accumulate on the container bottom of Poly PT Flex 20 Part B. Normally, gentle mixing is all that is required to disperse the sediment. Use metal or plastic mixing vessels and spatulas to avoid introducing moisture (i.e., with paper or wood tools). Measure or weigh Parts A and B into a mixing container, such as a polyethylene pail. Mix immediately, thoroughly scraping sides and bottom for one minute. Pour mix into cavity as quickly as possible. Once the containers of Parts A and B are opened, they should be used or resealed tightly since atmospheric moisture contamination may cause foaming. Poly Purge™, a dry-

### FEATURES

- Reproduces fine detail
- Low shrinkage upon cure
- Rapid demold times
- Castable in large masses

gas product, can be sprayed into opened containers to displace moist air before resealing containers to extend shelf life.

**CURING:** Castings should be allowed to remain in the mold until thoroughly cured. Parts demolded too soon may be subject to deformation. Use of pre-warmed molds will hasten curing. Low temperatures will slow curing and extend demold time. Full cure is achieved within 7 days at room temperature or post cured at 140°F (60°C) for 16 hours.

**ADDITIVES:** Part 74/75X Accelerator can be added to increase the speed of curing, but working time may be reduced dramatically. Heat curing also greatly speeds demold. Part 74C Softener can be added to reduce the hardness of the cured Poly PT Flex Rubbers. Perform small-scale experiments to determine the best amount of Part 74/75X or Part 74C to use.

**FINISHING:** Poly PT Series Rubbers yellow and chalk when exposed to sunlight and are intended for interior use only. Poly PT Series Rubbers can be colored by the addition of up to 1% PolyColor dyes available from Polytek.

### PHYSICAL PROPERTIES

	PT Flex 20	PT Flex 50	PT Flex 60	PT Flex 70
Mix Ratio (By Weight)	1A:1B	1A:1B	1A:1B	1A:1B
Hardness, Shore	A20	A50	A60	A70
Pour Time, 1-lb mix (min)	5	8	5	5
Demold Time (hr) at 78°F	1½	1	1	1
Demold Time (min) at 70°C	30	30	30	30
Specific Gravity	1.00	1.03	1.03	1.05
Color, Cured	Tan	Yellow/Amber	Yellow/Amber	Yellow/Amber
Initial Mixed Viscosity (cP)	520	550	625	680
Specific Volume, in³/lb	27.5	26.9	26.9	26.4
Shrinkage Upon Cure (in/in)	0.0050*	0.0020*	0.0026*	0.0041*
Tensile Strength (psi)	250	250	345	730
Elastic Modulus (psi)	85	160	190	915
Elongation (%)	770	200	235	175
Tear Strength (pli)	50	50	70	130

\*Shrinkage is primarily caused by gelling while hot then cooling. Parts that cure with minimal temperature rise exhibit minimal shrinkage. Cure schedule for the above physical properties is 16 hours at 140°F (60°C).

PACKAGING			
Product	Unit Weight (lb)	Component Containers	
		Size	Net Weight
<b>Poly PT Flex 20, 50, 60 and 70</b> Mix Ratio 1A:1B (By Weight)	4.0	1 qt A: 1 qt B	2.0 lb A: 2.0 lb B
	16.0	1 gal A: 1 gal B	8.0 lb A: 8.0 lb B
	80.0	5 gal A: 5 gal B	40.0 lb A: 40.0 lb B
	900	55 gal A: 55 gal B	450 lb A: 450 lb B

**CLEAN UP:** Tools should be scraped clean before the rubber cures. Denatured ethanol is a good cleaning solvent, but 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 or alcohol then soap and water. In case of eye contact, flush with water for 15 minutes and call physician. Use only with adequate ventilation. Do not use Poly PT Rubbers where food or body contact may occur. Poly PT Flex Rubbers burn readily when ignited. Care should be taken with sanding dust and other easily ignitable forms of these products.

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

**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>PolyColors</b> Red, Blue, Green, Yellow, Brown & Black. 4 oz (0.25 lb), 1 pt (1.0 lb)
<b>Part 15X Catalyst</b> 1 oz, 1 pt (1.0 lb), 1 gal (8.0 lb), 5 gal (40 lb)
<b>Pol-Ease® 2300 Release Agent</b> 12-oz can, case of 12 cans
<b>Pol-Ease® 2500 Release Agent</b> 12-oz can, case of 12 cans
<b>Poly Purge™</b> 10-oz can, case of 12 cans