

PT FLEX SERIES "NEW & IMPROVED"

Technical Data Sheet

WHY CHOOSE PT FLEX LIQUID RUBBERS?

Fast-Curing, Pourable Polyurethane Casting Rubbers

- Easy 1A:1B mix formulations
- Low viscosity
- Reproduces fine detail
- Low shrinkage on cure
- Rapid demold time
- Castable in large masses

DESCRIPTION:

PT Flex Liquid Rubbers are flexible, fast-curing rubbers, for use in 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 [PolyColor Dyes](#), PT Flex products can be used to cast parts of any color.

MODEL PREPARATION:

Porous models, such as wood, plaster, stone, pottery or masonry must be sealed. Multiple coats of paste wax dried and buff ed 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. Before use, be sure that Parts A and B are at roomtemperature 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.

ATTENTION:

Do not mix with previous versions of PT Flex Liquid Rubber; the product name must include "New & Improved." PT Flex Liquid Rubbers - New & Improved Technical Bulletin. Check mix ratio. Shake or stir Part B if directed by the product label. 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. Allow rubber to cure at room temperature, 25°C (77°F). Carefully demold after the listed "demold time". Final cure properties are obtained in about seven days. 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.

SOFTENING THE RUBBER:

Add [Poly 74/75 Part C Softener](#) to PT Flex 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. Perform smallscale experiments to determine the best amount of Part C to use.

ACCELERATING THE CURE:

[Poly 74/75 Part X Accelerator](#) can be added to increase the speed of curing, but working time may be reduced dramatically. Heat also accelerates the cure. It is recommended not to exceed 60°C (140°F). Perform small-scale experiments to determine the best amount of Part X to use.

THICKENING FOR BRUSH-ON:

Add [PolyFiber II](#) or [Fumed Silica](#) to mixed Parts A and B to thicken the liquid mix to a gel for application by brush or trowel.

USING THE MOLD:

Typically, no release agent is necessary when casting plaster or wax in PT Flex 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

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PHYSICAL PROPERTIES

	Mix Ratio By Weight	Shore Hardness	Pour Time, 1-lb mix (min)	Demold Time at 78°F (hr)	Demold Time at 70°C (min)	Specific Gravity	Cured Color	Initial Mixed Viscosity (cP)	Specific Volume (in ³ /lb)	Shrinkage Upon Cure (in/in)	Tensile Strength (psi)	Elastic Modulus (psi)	Elongation (%)	Tear Strength (pli)
PT Flex														
PT Flex 20	1A:1B	A20	4	2	30	1.00	Tan	520	27.5	0.0050*	250	85	770	50
PT Flex 50	1A:1B	A50	5	2	30	1.03	Yellow/Amber	450	26.9	0.0020*	250	160	200	50
PT Flex 60	1A:1B	A60	5	2	30	1.03	Yellow/Amber	600	26.9	0.0025*	345	190	235	70
PT Flex 70	1A:1B	A70	4	2	30	1.05	Yellow/Amber	700	26.4	0.0046*	730	915	175	130
PT Flex 85	1A:1B	A85	5	2	30	1.06	Yellow/Amber	750	26.2	0.0016*	1064	2700	250	190
PT Flex D60	2A:1B	D60	10	16	ND	1.03	Amber	3,000	26.9	0.0024*	3140	52,020	130	790

*Shrinkage is primarily caused by gelling while hot then cooling. Parts that cure with minimal temperature rise exhibit minimal strength.

To obtain the physical properties reported above, cure schedule is 16 hours at 140°F (60°C).

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. PT Flex 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, add 0.5% [UV Additive](#) to the total mix weight to reduce the characteristic surface degradation caused by sunlight. Never store PT Flex molds outside as UV exposure will eventually degrade the rubber.

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.

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. PT Flex products are not to be used where food or body contact may occur. PT Flex rubbers burn readily when ignited.

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.

DISCLAIMER:

The information in this bulletin and otherwise provided by [Schouten Syntec](#) 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.