PlatSil® 71-Series RTV Silicone Rubbers

DESCRIPTION: PlatSil® 71-Series RTV Silicone Rubbers are two-component, addition-cure, platinum-catalyzed, flexible, mold compounds. The 71-Series products exhibit a tough, knotty tear, making them especially valuable to the mold making industry. They are excellent mold materials for casting polyester, epoxy and polyurethane resins, as well as for waxes and many other materials. PlatSil 71-Series products offer advantages over tin-catalyzed systems in certain applications because on curing they don't shrink and don't produce alcohol (like tin-catalyzed silicones), which can inhibit urethane castings.

MODEL PREPARATION: Seal porous models (i.e., wood or plaster) with wax, petroleum jelly, lacquer or paint to prevent penetration of the rubber into the pores of the material. The model and other surfaces that contact the liquid rubber should be coated lightly with Pol-Ease® 2350 Release Agent or sprayed with Pol-Ease 2500 Release Agent. Pol-Ease 2350 is both a sealer and release agent and must be allowed to dry before applying liquid rubber. Pol-Ease 2500 is an aerosol spray and does not need to dry before applying liquid rubber. *Do not use silicone-based release agents (i.e., Pol-Ease 2300) on surfaces that contact liquid PlatSil rubbers since inhibition and/or adhesion may occur.* In every case where there is any question about the compatibility between the rubber and the prepared model surface, perform a test cure on an identical surface to determine that complete curing and good release are obtained.

PlatSil 71-Series rubbers may bond to cured silicone rubbers unless a parting agent is used.

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

MIXING & CURING: Carefully weigh Part B then Part A in proper ratio into a clean mixing container. *Accurate weighing is essential to obtain the optimum physical properties from the cured rubber*. Mix thoroughly, scraping sides and bottom of the container. To assure a bubble-free mold, deaerate the liquid rubber under vacuum at 28-29 inches mercury, until the mass of rubber rises and then collapses. Deaerate for additional two minutes. When vacuuming, use a mixing container three to four times larger than the volume of rubber. Do not attempt to vacuum fast setting 71-10. (Note: PlatSil 71-10 Part B and 71-20 Parts A and B require stirring before use.)

If reinforcement of the rubber is needed (i.e., thin blanket molds), place stretchy, open mesh nylon or dacron cloth into the uncured rubber. Be sure that the fabric is not too close to the mold surface or the weave of the cloth may show through to the face of the mold.

PlatSil 71-Series rubbers cure faster at higher temperatures. To reach full hardness in the specified demold time, temperature should be above 77°F. At lower temperatures, more time may be needed to reach full hardness. Curing below 65°F is not recommended.

Note on SiliGlass: Demold Siliglass within one-half to one hour after mixing to prevent crumbling upon demolding. As curing progresses, Siliglass becomes harder and more brittle and the likelihood of breaking increases.

Why Choose PlatSil® 71-Series Rubbers?

- Easy mix ratios; some 1:1 mixes available
- Easy release properties -- save on release agents
- High tear strength -- fewer prematurely torn molds
- Good chemical resistance for longer mold life
- Low/zero shrinkage for dimensional reproduction
- Range of hardnesses from A10 to A40

PHYSICAL PROPERTIES

	71-10	71-11	71-20	71-30	71-35	71-40	SiliGlass
Mix Ratio, By Weight	1A:10B	1A:1B	1A:1B	1A:10B	1A:10B	1A:5B	1A:1B
Hardness, Shore A	10	10	20	30	35	40	40
Pour Time (min)	5	20	25	60	60	60	5
Demold Time (hr) @ 77°F	0.5	4	4	24	24	24	0.5-1
Color	Pink	Blue Green	Lt. Purple	Lt. Green	Blue	Translucent	Clear
Mixed Viscosity (cP)	3,500	6,000	12,000	25,000	25,000	25,000	200
Specific Volume (in^3/lb)	26	24.7	24.7	24.7	24.7	25	28
Specific Gravity	1.06	1.12	1.12	1.12	1.12	1.10	0.97

CURE INHIBITION: *CAUTION! Contamination from amines, sulfur, tin compounds, cured polyester resins, or some RTV silicone rubbers may inhibit surface cure*. If in doubt, test compatibility by pouring a small quantity of catalyzed material on the surface to be reproduced, allow to cure and observe for proper cure and release.

USING THE MOLD: No release agent is necessary for casting most materials in PlatSil 71-Series molds, but for longer mold life with epoxy, polyurethane or polyester resins, a barrier coat or release agent (i.e., Pol-Ease 2300) is recommended. Properly cured PlatSil 71-Series molds last for years without deterioration.

ACCELERATING CURE SPEED: Accelerate the cure with heat or the addition of PlatSil 71/73X. Mix 71/73X with Part B prior to adding Part A. Weigh and add Part A to the accelerated Part B mixture and mix thoroughly. Pour over a properly prepared model as soon after mixing as possible. The addition of one part 71/73X per 100 parts of Part B decreases the gel time to ~1/3 the normal gel time. The addition of two parts decreases the normal gel time to ~1/4. The addition of three parts decreases the normal gel time to ~1/6. Experiment on a small scale before making a larger mix. Remember, heat accelerates the cure; low temperatures slow the cure.

RETARDING CURE SPEED: PlatSil 71R added to PlatSil Part A prior to mixing with Part B slows the cure yielding longer working time and longer demold time. Adding ~1% of 71R to the total mixed weight of PlatSil A+B roughly doubles the working time. Adding ~2% of 71R triples working time. Do not use more than 4% as the system may not cure at all.

THICKENING FOR BRUSH ON: For brushing on a blanket mold, thicken PlatSil 71-Series rubbers with PlatThix liquid thickener or with Fumed Silica. When brushing PlatSil 71-11 or 71-20, apply subsequent coats to the previous layer within one hour to obtain best adhesion. Silicone Colors can be used to vary colors of brushed layers to help ensure uniform coverage.

THINNING AND SOFTENING WITH SILICONE FLUID: The very low viscosity 50 cSt Silicone Fluid can be added sparingly to the mixed rubber to thin the mix with some loss of strength, hardness and cure speed. More than 10% fluid addition may exude from the cured rubber. A 5% addition to PlatSil 71-30 will reduce hardness to approximately Shore A25.

BARRIER COAT: A barrier coat is a fast drying, lacquer-like primer, such as spray paint, that is sprayed into a silicone mold and allowed to dry prior to pouring liquid plastic or foam. Upon removing the cured plastic casting from the mold, the barrier coat comes out on the casting resulting in a primed part. Using a barrier coat can extend mold life.

SAFETY: Before use, read product labels and Safety Data Sheets. Follow safety precautions and directions. Contact with uncured products may cause severe eye and skin irritation. Avoid contact. If skin contact occurs, remove by wiping with paper towels, then wash with soap and water. In case of eye contact, flush with water for 15 minutes and call a physician. Use with adequate ventilation. If solvents must be used for cleanup, denatured ethyl alcohol is best, but should be handled with respect for health and flammability hazards.

PACKAGING

Product	Kit Size (lb)	Part A (lb)	Part B (lb)
PlatSil® 71-11, 71-20, & SiliGlass	2.0	1.0	1.0
	16.0	8.0	8.0
Mix Ratio 1A:1B	80	40	40
(By Weight)			
PlatSil® 71-10, 71-30, & 71-35	1.0	0.1	0.9
	9.0	0.9	8.1
Mix Ratio 1A:10B	44	4.0	40
(By Weight)	495	45	450
PlatSil® 71-40	9.8	1.7	8.1
Mix Ratio 1A:5B	48	8.0	40
(By Weight)	528	88	440

ACCESSORIES

Polytek offers additives that can be used to vary the properties of the cured and uncured silicone rubber. Accessories help make the products easier to use.

Accelerators & Retarders

PlatSil® 71/73X Accelerator - 4 oz, 1 lb, or 8 lb
PlatSil® 71/73R Retarder- 4 oz, 1 lb, or 8 lb

Sealers & Release Agents

Poly PVA Solution (Green or Clear) - 2 lb or 35 lb
PolyCoat (Mold Life Extender) - 1.5 lb or 6 lb
Pol-Ease® 2300 Release Agent - 12-oz aerosol can
Pol-Ease® 2350 Release Agent - 1.5 lb or 26 lb
Pol-Ease® 2500 Release Agent - 12-oz aerosol can

Colors

Silicone Colors Pigments - 4 oz or 1 lb
(Black, Blue, Fleshtone, Green, Red, White, Yellow)

Thickeners

Fumed Silica - 5-gal pail or 10-lb bag
PlatThix - 4 oz or 1 lb

Thinner

Silicone Fluid 50 cSt - 2 lb or 8 lb

STORAGE LIFE: For best results, store products in unopened containers at room temperature (60-90°F). Use products within six months. Tightly reseal containers after use.

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.

55 Hilton Street, Easton, PA 18042 • (800) 858-5990 or (610) 559-8620 • fax (610) 559-8626 • www.polytek.com • sales@polytek.com