

PlatSil® 73-Series

High-Strength, Flexible, RTV Liquid Silicone Rubbers

DESCRIPTION: PlatSil® 73-Series RTV Silicone Rubbers are two-component, high-strength, flexible, mold compounds. Molds made with 73-Series Silicones are excellent for casting many materials including polyester, epoxy and polyurethane resins and foams. The 73-Series Silicones are addition-cure, platinum-catalyzed systems, and offer advantages over tin-catalyzed systems in certain applications, because on curing they don't shrink, they don't produce alcohol (which can inhibit urethane castings), and their cure can be heat accelerated.

MODEL PREPARATION: Seal porous models (i.e., wood or plaster) with wax, petroleum jelly, PVA, 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 addition, modeling clays containing sulfur may inhibit curing.* PlatSil rubbers usually bond to cured silicone rubbers unless a parting agent is used. If there is any question about the compatibility between the rubber and the prepared model surface, a test cure should be made on an identical surface to determine that complete curing and good release are obtained.

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

MIXING & CURING: Weigh Part B and Part A in proper ratio into a clean mixing container. *Accurate weighing is essential to obtain optimum physical properties from the cured rubber.* Mix thoroughly, scraping sides and bottom of the container.

Why Choose PlatSil® 73-Series Rubbers?

- Low viscosity for excellent reproduction of details and easy degassing.
- Easy mix ratios -- can use with dispensing machines
- Cure at room temperature or accelerate with heat
- 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 better dimensional reproduction
- Range of hardness from A15 to A60

To ensure a bubble-free mold, it may be necessary to deaerate the liquid rubber under vacuum at 28-29 inches mercury. PlatSil 73-45 and 73-60 work best with vacuum. Other 73-Series rubbers (especially 73-15 and 73-25) do not necessarily need vacuuming since they are low viscosity. Evaluate the need for vacuum on a case-by-case basis. If vacuum is used, use a mixing container 3 to 4 times larger than the volume of rubber and deaerate until the mass of rubber rises and then collapses and continue for an additional 2 minutes. Pour the rubber as soon as possible after mixing/vacuuming for best flow and air bubble release.

If reinforcement of the rubber is needed (i.e., in 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.

PHYSICAL PROPERTIES

	73-15	73-20	73-25	73-29	73-40	73-45	73-60
Mix Ratio, By Weight	1A:1B	1A:1B	1A:1B	1A:10B	1A:10B	1A:10B	1A:10B
Hardness, Shore A	15	22	25	30	40	45	60
Pour Time (min)	20	5	15	45	45	60	45
Demold Time (hr) @ 77 °F	4-5	<1	4-5	16	16	16	16
Color	White Translucent	Blue Translucent	Green	White	Yellow	Green	Blue
Mixed Viscosity (cP)	2,500	3,000	6,000	15,000	15,000	35,000	40,000
Specific Volume (in ³ /lb)	25.0	25.0	24.3	25.0	22.0	21.3	21.3
Specific Gravity	1.10	1.10	1.14	1.10	1.26	1.30	1.30

PlatSil 73-Series rubbers cure faster at higher temperatures. To reach full hardness in the specified demold time, temperature should be above 77°F (25°C). At lower temperatures, more time may be needed to reach full hardness. Curing below 65°F (18°C) is not recommended.

CURE INHIBITION: *CAUTION! Contamination from amines, sulfur, tin compounds, 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 73-Series molds; but, for longer mold life with epoxy, polyurethane or polyester resins, a barrier coat or release agent (i.e., Pol-Ease 2300 or 2500) is recommended. Properly cured 73-Series molds last for years without deterioration. PlatSil 73-Series molds are recommended for casting polyurethane foam, such as Polytek's PolyFoam systems. Refer to the PolyFoam Technical Bulletin for more information.

ACCELERATING CURE SPEED: PlatSil 73X can be used to accelerate gel and cure times. Weigh and add 73X to Part B and mix. Then weigh and add Part A to the Part B/73X mixture and mix thoroughly. Pour over a prepared model as soon after mixing as possible. Demold when tack free. Experiment to determine the proper amount of 73X for the application. For 73-29, the addition of one part 73X per 100 parts of Part B decreases the gel time from 45 min to ~35 min. The addition of two parts decreases the gel time to ~30 min. The addition of three parts decreases the gel time to ~25 min. Adding 73X softens the cured rubber slightly.

Remember, heat accelerates the cure; low temperatures slow the cure.

THICKENING FOR BRUSH ON: PlatSil 73-Series rubbers can be thickened with PlatThix liquid thickener or with Fumed Silica for brushing on a blanket mold.

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. If more than 10% fluid is added to the mix, then fluid might exude from the cured rubber.

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. Avoid contact with mucous membranes and eyes. Best method of cleanup is by wiping with paper towels and washing with waterless hand cleaner, then soap and water. If solvents must be used, denatured ethyl alcohol is best, but should be handled with respect for health and flammability hazards.

PACKAGING

Product	Kit Size	Part A (lb)	Part B (lb)
PlatSil® 73-15, 73-20, & 73-25	2.0 lb	1.0	1.0
	16.0 lb	8.0	8.0
Mix Ratio 1A:1B (By Weight)	80 lb	40	40
PlatSil® 73-29, 73-40, 73-45, & 73-60	1.0 lb	0.1	0.9
	9.0 lb	0.9	8.1
	44 lb	4.0	40
Mix Ratio 1A:10B (By Weight)	495 lb*	45*	450*
* Applies to 73-29 and 73-40 only.	550	50	500

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.

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