

PlatSil® Silicone Gels

DESCRIPTION: PlatSil® Gels are 1A:1B (by weight or volume) platinum-cured silicone systems that can be used as mold rubbers, to create prosthetic appliances, and for life casting. Polytek offers an array of accessory products that can be used independently or in concert to increase working time, accelerate cure time, thicken the mix for brushing/layering, thin the mix for easier pouring, or soften or harden the rubber. Smith's Theatrical Prosthetic Deadener and PlatSil® Deadener LV can be added to soften and eliminate the snappy, synthetic look and feel of ordinary silicone rubbers. "Deadened" PlatSil Gels can be made to look, feel and move like living tissue. Unlike silicone fluid, Deadener does not leach from the cured rubber/appliance, so bonding and use are far easier.

BEFORE USE: Thoroughly read Safety Data Sheets, product labels and the "SAFETY" section in this Technical Bulletin.

MIXING AND CURING: Before use, be sure that Parts A and B are at room temperature and that all tools are ready. Surface and air temperatures should be above 60°F during application and for the entire curing period.

Carefully measure or weigh Part B and then Part A in proper ratio into a clean mixing container. Mix thoroughly, scraping sides and bottom of the container. The mix should be quickly placed over the model or in the mold. If more working time is needed, PlatSil® 71/73 Part R Retarder can be used so vacuuming, pressure casting, or larger mixes can be accomplished.

MOLD MAKING - INDUSTRIAL APPLICATIONS: Seal porous models (e.g., 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-

PRODUCT LINE FEATURES

- Add "Deadener" to create ultra-realistic prosthetic appliances with varying skin effects and levels of adhesion/tack
- Add PlatSil Part H Hardener to increase the Shore hardness up to A40
- Fast-setting options (30-minute demold times) available
 - PlatSil® 71/73 Part R Retarder slows the cure
 - PlatSil® 71/73 Part X Accelerator speeds the cure
 - PlatThix thickens to a brushable mix
- Dry versions (Gel-OO-D and Gel-10-D) have less extractable oils than standard versions of Gel-OO and Gel-10

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 will inhibit curing. Contamination with soaps, amines, sulfur, tin compounds, polyester resins and some silicone rubbers can inhibit surface cure. PlatSil rubber may bond to cured silicone rubber unless a parting agent (i.e., Pol-Ease 2350 or 2500 Release Agent) is used. If in doubt, perform a test cure on a similar surface to ensure proper cure and release.

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

For best results, the PlatSil Gel mold should be allowed to cure for the specified demold time before it is put into use. No release agent is necessary for casting most materials in properly-cured PlatSil Gels. For

Product	PHYSICAL PROPERTIES				
	Gel-OO	Gel-OO-D (Dry)	Gel-10	Gel-10-D (Dry)	Gel-25
Mix Ratio by Weight or Volume	1A:1B	1A:1B	1A:1B	1A:1B	1A:1B
Shore Hardness	OO30	OO40	A10	A10	A25
Pour Time	6 min.	8 min.	6 min.	8 min.	5 min.
Demold Time @ 73°F	30 min.	30 min.	30 min.	30 min.	60 min.
Cured Color	Milky White	Milky White	Milky White	Milky White	Milky White
Mixed Viscosity (cP)	22,000	9,000	15,000	10,000	3,500
Specific Volume (in³/lb)	25	25	25	25	25
Specific Gravity	1.1	1.1	1.1	1.1	1.1
Elongation (%)	1,275	925	970	800	385
Tensile Strength (psi)	154	165 (1.14)	228	300 (2.07)	434
Die B Tear Strength (pli)	56	45 (7.68)	80	90 (15.76)	146
Die T Tear Strength (pli)	19	17 (2.98)	27	30 (5.25)	28

longer mold life when casting epoxy, polyurethane or polyester resins, a barrier coat or release agent is recommended.

MOLD MAKING - LIFE CASTING: PlatSil Gels can be used to make molds of hands, feet, faces and other body parts. Avoid PlatSil Gel contact with eyes, nose, mouth or mucous membranes. Perform small-scale patch testing on the subject prior to starting the project to determine that the subject is not unusually sensitive or allergic to any of the components. PlatSil Gels can be mixed with PlatThix (or more concentrated TinThix) and Part X Accelerator to achieve a brushable mix with a suitable demold time. Vaseline or baby oil can be used to help prevent sticking to hair.

MAKING THEATRICAL PROSTHETIC APPLIANCES: For prosthetic and simulated tissue/skin applications, use PlatSil Gels with PlatSil additives to achieve varied hardness or gel-like properties. If a softer rubber is desired, small additions of Deadener will reduce hardness without tack. Increasing the levels of Deadener will result in a tacky to sticky cured gel. Refer to the Deadener & Hardener for PlatSil® Gels Technical Bulletin for instructions on what percentages of Deadener to add to the various PlatSil® Gel products. The stickiness of deadened silicone can be eliminated with powder (once powdered, the stickiness cannot be brought back), or by painting a thin barrier coat of straight PlatSil Gel over the sticky surface. PlatSil Gel applied as a barrier mimics the surface tension of skin. PlatSil Gels can be stippled lightly onto a prepared mold surface (i.e., released with Pol-Ease 2350 allowed to dry, or Pol-Ease 2500), and then layered with deadened PlatSil Gel. The deadened mix can also be injected by syringe into a mold cavity. Using injection, one can create ultra-thin edges that are easily feathered away when applied to the subject.

The sticky back surface of the prosthetic appliance permits direct, adhesive-free application to the subject. The appliance can be carefully removed, covered with clear, clean plastic wrap or wax paper and reused. These prosthetics can also be adhered to the skin using uncured PlatSil Gel as a glue (e.g., apply directly to the skin or back of the prosthetic).

Use additives such as Silicone Color pigments and flocking to make PlatSil Gels look more tissue-like.

ACCELERATING CURE SPEED: Mix PlatSil Part X into Part B before adding Part A to accelerate gel and cure times. Adding 4 to 5% Part X to the total mix weight reduces working time to 3 minutes with a ~10-minute demold time for PlatSil Gel-10. Experiment to determine the best level of Part X for the application.

RETARDING CURE SPEED: Add PlatSil Part R to Part A prior to mixing with Part B to slow the cure, yielding longer working time and longer demold time. Add Part R at 1% of the weight of the total mix (A+B) to almost double the working time. Add 2% to nearly triple the working time. Add 5% to Gel-10 to yield a 60-minute working time with a fast, 120-minute demold time. Never use more than 5%, as this may cause the system to not cure at all.

THICKENING FOR BRUSH-ON: Thicken PlatSil Gel by adding PlatThix liquid thickener to the mixed Parts A and B. Add 1% PlatThix to the total mix (by weight) for a light-bodied, non-sag gel. Add up to 5% PlatThix for a thicker mix. Very small quantities of TinThix can be added for thickening but be careful not to over thicken with TinThix.

THINNING AND SOFTENING: Add 50 cSt Silicone Fluid to the mixed rubber to thin the mix. Use the fluid sparingly since it leads to some loss of strength, hardness and cure speed. More than 10% fluid addition may exude from the cured rubber. To soften without oil leaching, see below.

DEADENER: To soften without oil leaching, use Smith's Theatrical Prosthetic Deadener or PlatSil Deadener LV. Refer to the Deadener & Hardener for PlatSil® Gels Technical Bulletin for instructions on using Deadener.

HARDENER: PlatSil Part H Hardener can be used to increase the Shore hardness for any of the PlatSil Gels. It also increases working and demold time. Refer to the Deadener & Hardener for PlatSil® Gels Technical Bulletin for instructions on using Hardener.

COLORING: Silicone Colors can be added separately or in combination to achieve any desired color. SiliColors are available in Fleshstone, Black, Blue, Green, Red, White and Yellow.

BONDING TO PLASTICS: PlatSil Gels bond to clean, cured Poly 15-Series Plastics that are less than 24-hours old. Poly 15-Series Plastics bond to PlatSil Gels if poured into the PlatSil Gel while it is still tacky (less than 30-minutes old). Each bonding procedure should be tested to the user's satisfaction prior to actual use in production scale. Remember, release agents on any surface may interfere with good bond development.

SAFETY: Before use, thoroughly read Safety Data Sheets and product labels. Follow safety precautions and directions.

Part A: Keep out of reach of children. Use with adequate general or local exhaust ventilation to minimize exposure levels. If needed, a NIOSH-approved respirator with organic vapor cartridge may be used. If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. Wear impervious gloves, such as butyl rubber or nitrile rubber. Wash skin thoroughly with soap and water after handling. Wear eye protection, such as chemical safety glasses/goggles. If in eyes, rinse cautiously with water for several minutes, removing contact lenses if present and easy to do.

Part B: Keep out of reach of children. Use with adequate general or local exhaust ventilation to minimize exposure levels. If needed, a NIOSH-approved respirator with organic vapor cartridge may be used. If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. Wear impervious gloves, such as butyl rubber or nitrile rubber. Wash skin thoroughly with soap and water after handling. Wear eye protection, such as chemical safety glasses/goggles. If in eyes, rinse cautiously with water for several minutes, removing contact lenses if present and easy to do.

SHELF LIFE: For best results, store products in unopened containers at room temperature (60-90°F/15-32°C). Use products within six months.

DISCLAIMER: The information in this bulletin and otherwise provided by Polytek® Development Corp. 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

Accelerators & Retarders

PlatSil® 71/73 Part X Accelerator
PlatSil® 71/73 Part R Retarder

Sealers & Release Agents

Pol-Ease® 2300 Release Agent
Pol-Ease® 2350 Release Agent
Pol-Ease® 2500 Release Agent
PolyCoat Sealer & Release Agent
Poly PVA Solution

Colors

Silicone Colors
Black, Blue, Fleshtone, Green, Red,
White, Yellow

Deadeners

Smith's Theatrical Prosthetic
Deadener
PlatSil® Deadener LV

Hardener

PlatSil® Part H Hardener

Thickeners

Fumed Silica
PlatThix
TinThix

Thinner

Silicone Fluid 50 cSt