

Product Name

PlatSil® Silicone Gels

Product Description

PlatSil Gels are 1A:1B (by weight or volume) platinum silicones with a 5-6 minute or 40-45 working times depending on the grade selected. The faster grades cure in 30-60 minutes and can provide a wide range of hardness. Use PlatSil Gels as a mould rubber, for prosthetic appliances, life-casting and creature skins or masks.

Features include:

- A range of hardness
- Add Deadener to create ultra-realistic prosthetic appliances
- Fast demould with 5-6 minute working times, or 40-45 minute work times for those large applications.
- PlatSil 71R Retarder slows the cure
- PlatSil 71/73X Accelerator speeds the cure
- PlatThix thickens the mix to a brushable paste
- PlatSil Hardener to vary the standard hardness of each grade

Deadened PlatSil Gels can be made to look, feel and move like all types of living tissue. Unlike silicone fluid, PlatSil Deadener's do not leach from the cured rubber, so bonding and use are far easier.

Physical Properties

		GEL-OO20	GEL-OO30	GEL-OO	GEL-10	GEL-25
Mix ratio	by weight	1A:1B	1A:1B	1A : 1B	1A : 1B	1A : 1B
Hardness	Shore	00-20	00-30	00-30	A-10	A-25
Appearance	colour	Milky White	Milky White	Milky White	Milky White	Milky White
Pour time	@ 25°C minutes	40	45	6	6	5
Demould time	@ 25°C minutes	120	240	30	30	60
Total Cure Time	@ 25°C hours	24	24	24	24	24
Mixed Viscosity	Mixed, cP	3 900	6 200	15 000	15 000	6 000
Specific Gravity	@ 25°C	1.05	1.05	1.10	1.10	1.12
Tensile Strength	psi (mPa)	122 (0.84)	118 (0.81)	154 (1.06)	228 (1.57)	434 (2.99)
Elongation	%	964	848	1275	970	385
Tear Strength	pli (kN/m)	24.8 (4.34)	36.6 (6.41)	56 (9.8)	80 (14.01)	146 (25.5)
Shrinkage		Nil	Nil	Nil	Nil	Nil

Making Theatrical Prosthetic Appliances

For the purpose of prosthetic and simulated tissue/skin applications, use PlatSil Gels with the PlatSil additives to achieve varied hardness or gel-like properties. If a soft 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. The stickiness can be eliminated with powder or by painting a thin barrier coat of straight PlatSil Gel over the sticky surface. PlatSil Gel applied as a barrier perfectly mimics the surface tension of skin. Once powdered, the stickiness cannot be brought back. **(adding Deadener to Gel-OO20 and Gel-OO30 is not recommended)**

PlatSil Gels can be stippled lightly onto a mould surface and then layered with deadened PlatSil Gels. The Deadened mix can also be injected by syringe into the mould cavity, this can create ultra-thin edges that are easily blended when applied to the subject.

The sticky back surface of the prosthetic appliance permits direct, adhesive free application to the subject. This appliance can be carefully removed, covered with clear, clean plastic wrap and reused when needed. These prosthetics can also be adhered to the skin by applying a thin layer of PlatSil Gels directly to the back of the appliance.

Deadener and Deadener LV

To soften without leaching, use PlatSil Deadener or Deadener LV. Add deadener to Part A prior to mixing with Part B. As much as 300% by weight Deadener can be added to the total mixed weight of PlatSil Gels to create a super-gel. Less Deadener is required when using Gel-00 or Gel-25. Deadener LV is a lower-viscosity version of the standard deadener so careful control of the rubbers flow characteristics can be achieved depending on the Deadener used. A test should always be performed to determine to proper amount of Deadener to add for individual applications. **(adding Deadener to Gel-0020 and Gel-0030 is not recommended)**

This table shows the effects of Deadener LV on PlatSil Gel-25

EFFECTS OF DEADENER LV ON GEL-25					
Mix ratio	1A:1B:0D	1A:1B:0.25D	1A:1B:0.5D	1A:1B:1D	1A:1B:2D
Pour Time	5	7	8	10	10
Demould Time	60 min	30 min	30 min	30 min	30 min
Hardness	A25	A15	A4 00-45	00-20 000-60	000-30
Tack	No	No	No	Yes	Very

Hardener

PlatSil Hardener can be used to increase the hardness for any of the Gels. It also increases the working and demould times. Using the ratio of 1A:1B:1H will result in the following changes, Gel-00 – yields a A10 rubber, Gel-10 – yields a A20 rubber, Gel-25 yields a A40 rubber with a 7 minute work time and a two hour cure.

Accelerating Cure Speed

Mix PlatSil 71/73X into Part B before adding Part A to accelerate gel and cure times. Adding 4 to 5% 71/73X to the total mix weight reduces working time to 3 minutes with a ~ 10 minute demould for Gel-10. Experiment to determine the best level of 71/73X for the application.

Retarding Cure Speed

Add PlatSil 71R to Part A prior to mixing with Part B to slow the cure, yielding longer working and demould times. Add 1% retarder to the total mix (A+B) to almost double the working time. Add 2% to nearly triple the working time. Add 5% to yield a 60-minute working time with a fast, 120 minute demould time. Never use more than 5%, as the system might not cure at all.

Thickening for Brush On

Thicken PlatSil Gel-10 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% for a thicker mix.

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Disclaimer

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