

SILICONE CAST™ 45

Semi-flexible,
platinum-cure
silicone, molding
resin

MIXING RATIO
1A : 1B
by weight

CHARACTERISTICS

Shore A45 hardness

Compliant with FDA
regulation 21 CFR 177.2600

Non-toxic and odorless

Easy demolding procedure

Excellent flow leveling for
copying the finest details and
patterns



Contact

POLYMÈRES TECHNOLOGIES

for more information:

support@polymerestechologies.com

DESCRIPTION

SILICONE CAST™ 45 is a two-component silicone, low viscosity, platinum-curing system which vulcanizes at room or heated temperature. This versatile silicone system is suitable for the molding of a variety of products such as arts and crafts, prototyping, architectural elements, jewelry, candles, soaps, chocolate, and a myriad of industrial applications including vacuum bagging, wind turbine blades, rock climbing holds, and more.

SILICONE CAST™ 45 can be used for a long period of time within a temperature range of 50°C to 200°C without losing its physical properties.

BASIC INFORMATION ON THIS PRODUCT

Platinum-cured silicone molds are known for their great durability. These molds are resistant to extreme temperatures and heavy use, making them a reliable choice for a wide range of applications. They also provide better surface quality for casting clear resins.

INSTRUCTIONS

MODEL PREPARATION BEFORE POURING THE SILICONE

Clean the model well before pouring the silicone. The model can be decontaminated by cleaning it with isopropyl alcohol (99.0%) or with treated, demineralized water. Allow it to dry completely before pouring the silicone.

IMPLEMENTATION PROCEDURES

The curing process starts as soon as the catalyst (part B) is incorporated and homogeneously mixed with the resin (part A). Under normal conditions, at a temperature of 22°C and relative humidity of 50%, the reaction will lead to the achievement of the listed physical characteristics.

Any variation from these conditions can modify, accelerate, or decelerate the curing time. For better results, parts A and B must have the same batch number.

In addition, we recommend a minimum curing time of 48 hours before any resin is poured to allow the complete evaporation of any material that may react as a curing inhibitor.

This section continues on the next page.



A/B kits available in sizes of 2kg, 10kg,
and 20 kg

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INSTRUCTIONS (continued)

IMPLEMENTATION PROCEDURES (continued)

It is also possible to post-fire the mold to accelerate its use, as follows:

- 3 hours after the silicone is poured, place the mold on its form in an oven for a period of 6 to 8 hours at 50°C;
- After this period, turn off the oven and leave the part in the oven until it returns to 22°C to avoid thermal shock, which will lead to a higher percentage of shrinkage.

AUTOCLAVE/VACUUM PUMP

Using an autoclave or vacuum pump is recommended to completely eliminate bubbles created during mixing or if your mold has pronounced undercuts or positive angles. Do not leave the mold in the autoclave or vacuum pump for more than 10 minutes as that will activate the polymerization reaction.

For molds with fine details, we recommend applying a first coat of silicone with a brush to completely fill the fine details. Pour afterward.

MIXING OF PARTS A & B

Mix in equal parts **by weight**, measured with an **electronic scale**, one part of A for one part of B. Caution: Adding too much catalyst will decrease pot life.

Use a clean plastic or metal container. Mix the catalyst well before adding it to the resin.

Mix parts A and B homogeneously with a metal spatula for a minimum of 10 minutes, making sure to scrape the bottom and sides of the mixing container.

It is important not to use contaminated spatulas or containers with silicone as this may inhibit its curing process.

When using a vacuum chamber, use a container that has a capacity of 3 to 4 times the volume of the mixture to avoid overflowing.



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TYPICAL PROPERTIES (AT 22 °C)	PART A	PART B	MIXTURE
VISCOSITY (Brookfield (cps))	6800		
DENSITY (g/cm ³)	1.02		
MIXING RATIO BY WEIGHT	1	1	1/1
COLOR	Neutral	Pink	Pink
POT LIFE	50 minutes		
DEMOLDING TIME	12 to 18 hours depending on mass and design of the mold/piece		
FULL CURE	24 hours		

PHYSICAL PROPERTIES (SOLID STATE AFTER 7 DAYS AT 22 °C)

TESTS	METHOD	RESULTS	
HARDNESS	ASTM D 2240	Shore A	45+/-2
TENSILE STRENGTH	ASTM D 638 Type IV	psi	1160
ELONGATION	ASTM D 638	%	315
TEAR STRENGTH (B MOLD)	ASTM D 624	psi	3395
LINEAR SHRINKAGE	ASTM D 2566	%	0.1
OPERATING TEMPERATURE		Up to 200 °C	



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PRECAUTIONS

- Consult material safety data sheet prior to use.
- Normal health and safety measures should be observed when handling this product.
- Ensure good ventilation.
- Wear gloves, safety glasses, and protective clothing.
- Do not use part A without its part B, and vice versa. Shake well parts A and B separately before use.
- Once the container is opened, POLYMÈRES TECHNOLOGIES can no longer be held responsible for this product.
- Shelf life of this product in original containers is one (1) year from the date of purchase, under recommended storage conditions.
- Keep from freezing.



It is recommended to follow provincial and federal safety regulations. In case of eye contact, rinse well with water. In case of skin contact, rinse with soap and water. Keep away from children.

ASSUMPTION OF RISK

The customer assumes all risk and liability for the results obtained by the use of any POLYMÈRES TECHNOLOGIES product, including, without limiting the generality of the foregoing, the use of the CHILL EPOXY™ line of products, and the use of any process, whether in terms of general effectiveness, success, or failure, and regardless of any oral or written statement made by way of technical advice or otherwise, related to the use of any POLYMÈRES TECHNOLOGIES product.

sales@polymerestechologies.com

6330 Boulevard Laurier O, Saint-Hyacinthe, QC J2S 9A7

+1 (450) 250-3058