

DESCRIPTION

SILICONE CAST™ 45-C 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, soap, chocolate, and a myriad of industrial applications including vacuum bagging, wind turbine blades, rock climbing holds, and more. This silicone system with a 30 shore A hardness can be used for a long period within the temperature range of 50° to 200°C without losing its physical properties.

CHARACTERISTICS

- **Easy mixing ratio of 1A/1B by weight**
- Low viscosity
- Low hardness of 45 shore A
- Low shrinkage
- High heat resistance
- Anti-deformation
- Excellent flow leveling which will copy the finest details and patterns
- Durable with excellent tensile and tear strength
- Easy demolding procedures
- Food-safe (FDA grade)
- Self-leveling
- Compatible with epoxy, polyurethane, polyester, plaster, concrete, stone, and wax

APPLICATION INSTRUCTIONS

Suitable for molding parts for many industrial and artistic applications including aerospace, prototyping, composites, military, sets and film, food, and more.

PREPARATION OF THE MODEL 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 a 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 best results, SILICONE CAST™ 45-C PART A and PART B must have the same batch numbers.**

In addition, we recommend a minimum curing time of 48 hours before any resin is poured to allow for the complete evaporation of any materials that may react as a curing inhibitor. 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 6-8 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 a thermal shock leading 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 AND B

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

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

Mix parts A and B homogeneously with a metal spatula (available from our customer service department) 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 3-4 times the volume of the mixture to avoid overflowing.

Contact **POLYMÈRES TECHNOLOGIES** for more information:

support@polymerestechologies.com

TYPICAL PROPERTIES (at 22°C / 72°F)

		PART A	PART B	MIXTURE
Viscosity (cps)	Brookfield (cps)	6 800		
Color		Translucent	Translucent	Translucent
Density	g/cm ³	1.02		
Mixing ratio	Weight	1	1	1/1
Pot life		25-30 minutes		
Demolding time	Depending on mass and design of the mold/piece	12 – 18 hours		
Full cure		24 hours		

PHYSICAL PROPERTIES (solid state) after 7 days at 22°C / 72°F

TEST	METHOD	RESULT	
Hardness	ASTM D 2240	Shore A	45+/-2
Tensile strength	ASTM D 638 Type IV	psi	1 160
Elongation	ASTM D 638	%	315
Tear strength (B mold)	ASTM D 624	psi	3 395
Linear shrinkage	ASTM D 2566	%	0.1
Operating temperature		Up to 200°C	

PRECAUTIONS

- Consult the material safety datasheet before using this product
- 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 OUT OF REACH 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.