

Mold-making made simple... The TAP way!



Find or make a container to hold your original part. Container must be leak proof. Construct the container so that the mold walls will be approximately 1/2" thick. Walls thicker than 1/2" make a mold difficult to work with and use more material. Under 1/2" causes the mold to deform when filled with resin.

The container in this picture is made of acrylic and held together with a hot-melt glue gun. This provides watertight seal, yet allows the box to be taken apart once the silicone has cured.

Be sure to glue your master to its base! Some parts will slowly float to the top (usually when you are not looking!) rendering the mold unusable.

Be creative in your choices of containers. Some possibilities include paper or plastic cups, Amac Boxes, clay, and even Lego's custom built to shape.



Measure the catalyst and silicone, 10 parts silicone to 1 part catalyst by volume. THOROUGHLY mix until there are no streaks. Look at the outside and bottom of the transparent mixing cup. If it is white, more mixing is required. This step cannot be over emphasized! Incomplete mixing will yield inferior results.



Mixed silicone will be loaded with bubbles (if it is mixed properly). These bubbles can ruin a mold if they are anywhere near the surface of the part. There are two ways to minimize bubbles. The vacuum chamber, pictured here is one method, and step five describes the other.

If you are using a vacuum chamber, place the mixed silicone in a container at least four times greater volume that the volume of the silicone. Place the container in the chamber and pull a vacuum to 28" hg or greater. The silicone will foam up (thus the need for a large container) and then collapse as the air releases. Keep running the pump for 5-7 minutes to remove even more air.



The de-aired silicone is ready to pour into the mold container. Pour slowly into the corner, never over your part. Allow the silicone to slowly flow around the part, thus pushing air out ahead of it rather than trapping air. Deep undercuts may need to be painted with silicone first to minimize air entrapment.



If you do not have a vacuum chamber, there is another method to minimize air in the mold. Cut a 1/2" diameter hole in the side of a cup right near the bottom. Place tape over the hold. Pour the mixed silicone into this cup.

Place the cup on the edge of a table at least 30" above your mold box on the floor. Remove the tape from the hole and allow the silicone to 'bombs away.' As the silicone comes out of the hole, it narrows to a thin stream. In doing so, any bubbles break before they reach the mold, thus producing virtually bubble free silicone in the box.



As in #4 above, pour into the corner of the mold and allow the silicone to 'squeegee' air out ahead of it, to minimize trapped bubbles.



Depending on working temperature, humidity, and catalyst type, your mold will be ready in between 6 and 24 hours. Higher temperature and humidity accelerate the cure. Even though the mold may be usable right away, it continues to cure for a full week. The best castings will be produced after this full cure time, especially if casting in polyester. Quick-Cast is shown in this picture.