

PYROS GLASS STUDIO

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PYROS TECH NOTE #8

Making Glove-Type Molds with Pyros Platinum Brush-On Silicone

Glove-type silicone molds are made by coating a model with between 3 and 5 coats of silicone, allowing each to cure before painting the next one. The mold is then peeled off of the model. Such molds are strong and flexible, and may be turned inside-out (like a glove) to fill or remove pieces. Although they require more labor than a block-type mold, much less material is used, making them quite economical. Models with substantial undercuts can be handled since the molds stretch for removal. With care, silicone molds can be used many times.

About Brush-On Platinum Silicone

Silicone rubber is a man-made material, which comes in a wide variety of chemistries, colors, viscosities, hardnesses and setting times. The common feature in all silicones is a molecular backbone made of Silicon-Oxygen pairs, which can be thousands of atoms long. When these chains are linked together by side groups, they form a tough and pliable rubber. Several types are available to the artist.

Platinum-cure silicones have an A part and a B part that, when mixed, cure by chemical reaction with a platinum catalyst. Pyros Silicones all have a simple 1 to 1 mix by volume, making them easy to measure. Platinum-cure silicones shrink very little and can have a library life of many years.

Silicone cure can be inhibited by certain materials, notably those containing sulfur. Silicone should be stored tightly closed in a cool, dry place. Excessive heat and humidity will destroy the product. Even stored properly, silicones have a shelf life that is measured in months, not years, so buy only what you need and use it promptly. Silicones should be used at room temperature (65-75 degrees F), as low temperatures may also keep silicone from setting. Allow your silicone to warm up to room temperature before using.

Making a flexible mold with Brush-On Silicone

You will need:

- A model
- Pyros Platinum Brush-On Silicone
- Non-sulfurated clay or wax
- Disposable paint brushes
- Disposable cups for mixing and measuring
- A flat non-porous work surface, such as a piece of window glass or melamine board

Safety first!

Silicone products are generally safe, but may cause skin irritation in some people. Wear non-latex gloves when using silicone and wash with soap and water when finished.

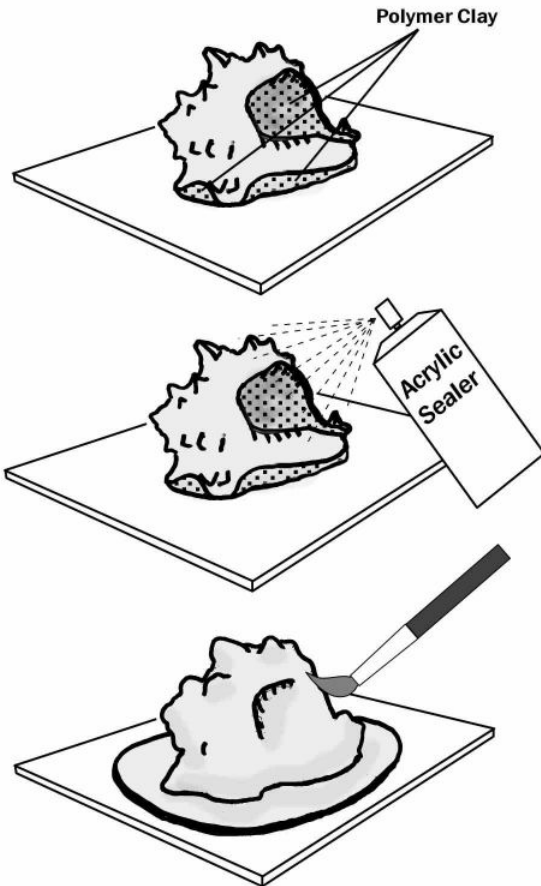
1. Prepare your model

Your model can be made of wax, polymer clay, or any non-porous material. Silicone will release from most surfaces. If in doubt, test a small amount on a hidden area of your model before using.

Porous surfaces such as wood, shell, clay, plaster, etc should be sealed with a coat of spray acrylic. Do NOT seal with shellac, which may stick to the silicone. Most oil-based modeling clay contains sulfur, which inhibits the cure of silicone. Do NOT use brush-on silicone with sulfurated modeling clay. Chavant NSP (www.chavant.com) and Klean Klay (www.kleanklay.com) are two excellent non-sulfurated modeling clays.

Your model must have at least one flat side that can rest against the work surface. Using clay, wax or hot glue, stick this side to a non-porous work surface such as a sheet of window glass or melamine board. The part of your model that is against the surface will become the opening in the mold. Remember, you'll have to be able to remove the model in one piece by stretching the mold around it. If your model is irregular, you can elevate it on a pad of wax or clay and fill in severe undercuts.

If there are very deep indentations or holes in your model that would trap the silicone, fill these to within 1/8" of the surface with polymer clay or non-sulfurated modeling clay. If you are trying to make a mold of something very thin, such as a leaf, press it onto a 1/8" sheet of clay or soft wax, and then trim around it with a sharp hobby knife.



2. Prepare the silicone

By volume, measure equal parts A and B, and mix thoroughly until there are no streaks. Only prepare enough silicone at one time to apply a single coat! For small items, this may only take a tiny amount of Parts A and B, so mix in small containers. Disposable portion cups, such as those sold at restaurant supply stores, are excellent for this purpose.

4. Brush on the first coat of silicone

Paint a thin "detail" coat of silicone over the entire surface of your model. "Brush-on" silicone is much thicker than regular paint or latex, and is best applied with short daubing strokes. Be sure to paint carefully into any details or depressions. Also paint a 1" flange on the work surface around the base of your model. This will give you something to hold onto later when you are removing and filling the mold.

When you are done, wipe your brush and set it aside. It may be possible to use the same brush to apply more than one coat, but don't count on it. Dollar stores sell packs of plastic craft brushes which are very economical for this purpose.

5. Brush on additional coats

Let each coat cure until it is hard to the touch. This usually takes about an hour, but you can speed things up by placing the model in a kiln or oven at 150 degrees for 10-15 minutes. Apply a fresh coat of silicone as soon as the previous one is cured. Paint into any depressions and remember to paint the flange each time. Silicone will tend to flow off of the high points of your model, so keep brushing it back until it begins to set up. Apply 4 to 5 coats of silicone. Larger models may take more.

6. Demold

Starting at one edge of the flange, peel the mold and model from the work surface. Gently peel the mold off of the model. The mold is now ready for use.

7. Clean up and store your mold

Trim the flange of your mold with scissors. Silicone molds should be stored in a cool, dry place out of direct sunlight.