

How to Cast Chocolate Parts Using a Two-Part Silicone Mold

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Abstract

This guide will show you how to cast chocolate parts using a two-part silicone mold. You will use a hot plate and a water bath to melt the chocolate or candy of your choice, then pour it into your prepared silicone mold and let it cool until solid.

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- 2 x Acrylic rectangles
- 2 x Rubber bands
- 1 x Heat-resistant container for chocolate (class works well)
- 1 x Stirrer
- Chocolate or Candy Melts

2. Preparing the mold

Clean out the mold with warm water and soap. Dry it off as well as you can. There should be absolutely no water in your mold when you add chocolate, so it should also be dried with pressurized air. The fume hood in 706 (Limalab) has air that can be used for this purpose. Simply rotate the orange knob labeled “Air”.

Once the mold is clean, it can be assembled (see Figure 2). Close the mold, and place your two pieces of plastic around the mold. Use two rubber bands at the top and the bottom to apply pressure to mold, sealing it. The plastic is important to distribute the force from the rubber bands along the entire surface.

Introduction

At this point, your silicone mold should be completed, and looking something like Figure 1:



Figure 1. Your silicone mold.

The next step is to actually make your original object out of chocolate. The molding materials you have used so far are all food safe, so as long as you're clean and careful, the final product will be edible.

1. Materials

- 1 x Two-part silicone mold

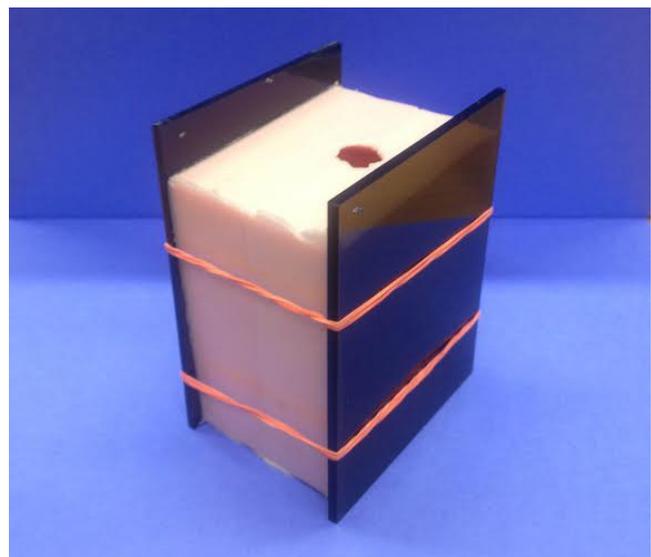


Figure 2. The mold assembly.

3. Melting

The next step is to melt the chocolate for pouring. This chocolate should be melted in your glass container. You have the option of melting real chocolate, or using “mold chocolate”. Mold chocolate is easy to work with, and can be melted easily in the microwave, but is not technically really chocolate. It can be found in bags at places like K-mart, in the baking aisle. One sample brand is shown in Figure 4. NOTE: There is a



Figure 3. “Light Cocoa”

wrong way to melt chocolate. Heating it up too quickly, or to a very high temperature will create a phenomenon known as “seizing”. Seized chocolate becomes chunky and grainy, which makes it extremely difficult to pour. Heat slowly, and mix often. All water should be kept out of the chocolate. Very small amounts can ruin your chocolate. WEAR GLOVES, THINGS GET HOT.

If using a microwave, set the power to medium, and only heat it in very short bursts. Anything over 30 seconds is far too much. Stir well between each burst. Continue microwaving until the chocolate is smooth enough to pour.

If using a hot plate or a stove, a double boiler method works best (see Figure ??). For this method, a large container filled with water is placed directly onto the stove or hot plate. The container with chocolate is then placed inside the water. Care must be taken such that no water gets into the chocolate. This method keeps the chocolate from overheating, as the water cannot surpass its boiling point. Furthermore, the heat is more distributed, as the water surrounds the chocolate. As the chocolate melts, continue stirring it until it is smooth enough to pour.

4. Pouring

Be careful when handling the chocolate container, as it will be very hot. Heat resistant gloves can be found in the lab. Bring your mold near your heating area. Slowly pour from the container into the hole of your mold. Use your stirrer



Figure 4. Hot plate double boiler setup.

to help if necessary. After filling for a few seconds, place the container down. You should now slightly hit the mold against a table a few times. This helps get bubbles out of your chocolate. Shaking the mold will also help. Continue pouring and shaking until the entire mold is filled.

5. Cooling

The cooling period should be around 30 minutes. If your mold has large, thick features, let it cool for longer. Do not cool the chocolate in a freezer or refrigerator, as you want the cooling to be slow.

6. Finishing

Enjoy your chocolate!



Figure 5. Success.