LiquaGlass Liquid Molding Rubber

Instructional Datasheet

Note: Molds made of CASTALDO® LiquaGlass® liquid molding rubber will last many years if stored properly. Exposure to moisture and humidity will tend to soften the molds and make them unusable. For best results store finished molds in airtight containers such as the kind sold for food storage. Adding a small packet of silica pellets or desiccant, widely available from industrial supply houses and via the Internet, will extend their life even longer. Do not store CASTALDO® LiquaGlass® molds in contact with molds made of other types of rubbers.

CASTALDO® LiquaGlass® liquid molding rubber is NOT a silicone rubber. Procedures may be different than those you may be accustomed to using. Please read and observe the following instructions carefully.

Note: Contains plasticizers that can soften resin surfaces, producing soft sticky castings.

1. Mix 1 part A and 1 part B by WEIGHT.. (See mixing chart & weighing instructions). Components MUST BE WEIGHED CAREFULLY AND NOT ESTIMATED, as is often the case with liquid silicone rubbers. Use an accurate scale. DO NOT MEASURE BY VOLUME. DO NOT ESTIMATE OR GUESS!

Unlike silicone rubbers, the recommended mix ratio for CASTALDO® LiquaGlass® liquid molding rubber CANNOT BE VARIED without spoiling the mold.

2. Stir both parts before use.

3. Pour the required amounts of both parts A & B into a mixing container - do not use the original container the rubber is supplied in. A rubber mixing bowl of the type commonly used to mix jewelry investment is ideal. DO NOT mix in paper cups or use wooden mixing tools - they may contain moisture that can ruin a mold.

4. Mix thoroughly by hand for 3 to 4 minutes until no traces of the catalyst can be seen. Take care to scrape the sides of the mixing bowl into the center several times during mixing. Do not use wood, paper or cardboard mixing tools and containers as they can introduce moisture and spoil the rubber.

5. Make sure the bowl is big enough to allow for temporary expansion of the rubber during vacuuming of 300% to 400% without overflowing.

6. Vacuum the liquid rubber for approximately 5 minutes, making sure that it boils and bubbles vigorously. Vacuuming is complete once the rubber rises and collapses. Do not wait for the rubber to stop bubbling completely - it will not stop bubbling no matter how long you vacuum it. Over-vacuuming may break down the rubber. Wide mouth containers allow more air to escape than narrow mouth containers.

7. Pour the liquid rubber into the mold frame, taking care to avoid entrapping air. Optional: vacuum again for 5 minutes. Do not over-vacuum. Make sure to allow extra room at the top of the frame for the rubber to expand during vacuuming.

8. Working time before cure begins is approximately 45 to 60 minutes at room temperature.

Typical Mold Sizes & Mixing Proportions
The following is only a guide — the mass of your model will increase or decrease the amount of rubber needed.
Sizes given are for typical 1 7/8 inch x 2 7/8 inch
(4.8 cm x 7.3 cm) molds.

Mold Size	Part A	Part B	Total
0.75"/ 19 mm	60 g	60 g	120 g
1.00"/ 25 mm	77 g	77 g	154 g
1.25"/ 32 mm	105 g	105 g	210 g
1.50"/ 38 mm	113 g	113 g	226 g

9. Put the mold aside to cure at room temperature (77°F / 25°C) for 24 hours or longer. Always remember that longer cure times will improve the mold and will not hurt it, while shorter mold times will result in soft and deformed molds. Avoid curing in areas where the temperature is below 65°F /18°C.

Avoid moving the mold during the curing process. Avoid temperature changes during curing, such as lower temperatures at night, open windows, etc.

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Cure at the same warm temperature that all your materials were when they were mixed. Temperatures below 65°F/ 18°C will lengthen the time required for proper curing and may spoil the mold.

10. If you need the mold to be finished faster, it can be cured in 90-120 minutes by warming it to 37°-48°C /100°-120°F as it cures. Typical devices for this warming process include the tops of vulcanizers, food warming trays, empty slow cookers, empty rice cookers, radiators, empty wax injectors, etc. Avoid higher temperatures, which might damage the mold. Do not use a warm water bath.

11. Cleanliness is especially important with this product! If the outside or inside of your mold becomes dirty it will be difficult to see through the rubber.

WEIGHING INSTRUCTIONS

For best results, measure equal quantities BY WEIGHT of Part A and Part B in a round-bottomed mixing bowl after zeroing your scale — adjusting it to read "000.0" with the bowl on it.

Measure Part A & Part B TO THE GRAM! If possible, measure to the 1/10th gram. An easy way to do this is illustrated in the drawings below.

Step 1: Place a round-bottomed mixing bowl on a scale and adjust the scale to read "000.0". Assume that you want a final mix of 400 grams of rubber. With a disposable plastic spoon in one hand, use the other hand to pour a thin stream of Part A into the mixing bowl. Reduce the stream as the scale reads close to 200 grams. Stop the flow with the spoon at exactly 200.0 grams.

If you have poured too much into the bowl you can easily correct this by dipping the spoon into the bowl and withdrawing tiny amounts until the correct weight is achieved.

Step 2: Pour 200 grams of Part B into the SAME BOWL WITHOUT REMOVING IT FROM THE SCALE in order to avoid mistakes. Using the same technique as previously with a 2nd disposable plastic spoon, pour a thin stream of Part B into the bowl until the scale reads exactly 400.0 grams. Once again, if you pour too much you can remove the excess by dipping the spoon into the rubber. Part B will remain on top of Part A, making this step easy.

If the proportions of Part A & Part B are not mixed very precisely, the rubber may become hard and brittle and will break and tear easily or will not cure at all and remain liquid.
NOTES

MIXING AND CURING: Both Part A and B tend to absorb atmospheric moisture, and thus should be used as soon as possible after opening the container. All materials should be at room temperature. Stir individual components before use.

CASTALDO® LiquaGlass® should be weighed into a clean metal, glass, rubber or plastic container (but not styrene or polystyrene foam, such as cold drink cups) Do not use wood, paper or cardboard mixing tools and containers as they can introduce moisture and spoil the rubber.

Curing in a warm location, up to 150°F/ 65°C, will greatly accelerate the curing speed while low temperatures will slow down the cure.

STORAGE: Avoid exposure to moisture and humidity. Keep containers tightly closed. Store and use at normal room temperatures.

Part A & Part B will remain usable for at least six months from the date of shipment in unopened containers, if stored in a cool, dry location.

Do not allow molds of one type of rubber, such as Gold Label®, White Label® or No Shrink Pink® to remain in contact with LiquaGlass® molds as migration of oils or plasticizers from one to another can cause swelling, shrinkage, or distortion.
If the mold is left in a distorted shape for any length of time it can take a permanent set and may never recover to its original shape.

Cured LiquaGlass® molds may slowly soften with age due to ambient moisture in the air. Proper mixing of components in the correct mix ratio contributes to longer mold life. Storage of molds in a dark, cool, dry area will prolong life, as will reducing contact with moist air by enclosing stored molds in tightly closed plastic bags. Wax or metal patterns should be stored

CLEANING MOLDS: CASTALDO® LiquaGlass® molds can be cleaned if they become soiled or dirty by wiping them carefully with denatured ethyl alcohol (shellac thinner).

MODEL PREPARATION: Porous surfaces such as wood, terra cotta or plaster must be sealed to prevent the rubber from penetrating the pores. Several coats of paste wax, allowed to dry and then polished, or melted paraffin, petroleum jelly, PVA (polyvinyl alcohol solution) and potters soap all work well for certain surfaces.

INCOMPATIBLE MATERIALS: CASTALDO® LiquaGlass® may attack some plastics and surface coatings, including styrenes and lacquer. If in doubt, test on an inconspicuous area or scrap piece first. Barrier coatings such as polyurethane maybe needed.

CLEAN UP: Paper towels for wiping up are a must. Tools should be wiped clean before plastic or rubber is hard. Denatured ethyl alcohol (shellac thinner), acetone or methyl-ethyl-ketone are good cleaning solvents, but are highly flammable.

REMOVING CURED RUBBER: Simply pull off cured rubber from surfaces it has adhered to. There is no known acid or

solvent that will remove it. If rubber has lodged in jewelry models and cannot be otherwise removed, heating with a torch to above 300o F/ 149o Cwill burn the rubber and allow it to be cleaned off as ordinary carbon scale. Even a match or cigarette lighter will do. Use adequate ventilation.

MOLD RELEASE: Mold release agents are not normally needed. If glass mold frame plates are used, or if sticking occurs for any other reason, use an aerosol spray of wax, such as furniture polish, auto polish. Do not use silicone oil sprays. Plastic mold frame plates do not need release agents.

DISCLAIMER: The information contained in this bulletin is considered accurate. However, no warranty is expressed or implied regarding the accuracy of the data, the results to be obtained by the use thereof, or that any such use will not infringe any patent. Before using, user shall determine the suitability of the product for the intended use and user assumes all risk and liability whatsoever in connection therewith.

WARNING: Uncured LiquaGlass® compounds may cause skin or respiratory irritation or sensitization if improperly handled. Avoid skin and eye contact with the uncured material. If skin contact occurs, remove with water-less hand cleaner or alcohol, then soap and water. Flush eyes with water for 15 minutes and seek medical attention. Use with adequate ventilation. Read MSDS and container labels prior to use. LiquaGlass® can be used safely if simple precautions are taken as recommended. Use gloves, dust masks, eye protection, closed shoes and adequate clothing as needed.

GENERAL ADVICE

Have all material at the same temperature. Warm room temperature, 70-85°F / 22-30°C, is best. Remember, it may take 24 hours for a container of material to warm up to room temperature in the winter.

Close containers tightly after use. While CASTALDO® LiquaGlass® is usable for at least six months after shipment if unopened, its components absorb atmospheric moisture, and thus should be used up as soon as possible after the container is opened. Leaving caps off will cause deterioration even faster, sometimes within a few days.

Mix well, but avoid mixing air into the mix. Scrape the sides and bottom of the mixing container thoroughly several times while mixing. To insure that no unmixed material is clinging to the sides or bottom, the mix can be poured into another clean container and mixed again for a minute or two before pouring into the mold frame.

Problem	Cause
Mold won't cure - soft & sticky	• Improper mix ratio; not mixed properly •Too cold • Rubber contaminated with moisture from air, mixing equipment, etc. • Individual components not mixed thoroughly before use
Mold cures too slowly	• Improper mix ratio • Cure temperature too low • Individual components not mixed thoroughly before use
Rubber Around Model Soft & Sticky	• See "Model Preparation", page
Mold distorts after handling or use	• Cure temperature too low • Mold removed from frame or cut too soon
Streaks of soft rubber or air bubbles	• Rubber not mixed thoroughly. Unmixed rubber usually from the bottom or sides of mixing bowl
Mold hard to release	• Use aerosol wax spray
Part A becomes hard; crystals form	• Stored too long and/or spoiled by humidity
Bubbles in mold	• Improper mixing of individual components A & B • Insufficient vacuuming of uncured rubber • Temperature changes during curing

WARRANTY - IMPORTANT NOTICE

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