Rio High-Temperature RTV Mold Compound

1.1-lb. #701-014
8.8-lb. #701-019

SAFETY PRECAUTIONS: This compound contains organometallic tin which will irritate or burn skin and eyes upon contact. In case of eye contact, flush with large amounts of water for at least 15 minutes; seek medical attention. In case of skin contact, wash area thoroughly with soap and water; seek medical attention.

Mixing Instructions and Processing Guidelines

1. Using the Teflon® mold release (#750-027), spray the mold frame, the plates and your model so that the rubber will not stick to them during the molding process. Place the sprue on your model securely in the sprue former in the mold frame, then assemble the frame and place rubber bands around assembly making sure there are no gaps between the plates and the frame (as shown below; see these frames in your *Rio Grande Tools & Equipment* catalog or on our website at riogrande.com).
2. Stir the mold compound (part A) well and weigh out the desired amount, placing it in a clean mixing container.
3. Shake or stir the catalyst (part B) well, and add the recommended proportion (by weight) to the container. The container should not be filled more than 1/3 its height to allow sufficient room for expansion during evacuation.
4. Mix the mold compound and catalyst well, using a flat-ended metal spatula, until a uniform color is obtained. Scrape container sides and bottom several times during the process to ensure thorough mixing.
5. Using a vacuum pump and bell jar, evacuate the trapped air from the mix (approximately 30 seconds). Break the vacuum for a split-second and then hold under vacuum until the mixture rises and falls. Hold for an additional minute after the rise and fall. This process should take approximately 5–6 minutes. If it takes longer, you may have a vacuum leak; check all connections or call Rio for more information.
6. Release the vacuum, and pour the mixture into your prepared mold frame and vacuum again for approximately 4 minutes or until the mixture rises and falls again. Top off the mold frame to offset any loss of compound from this step of vacuuming. No additional vacuuming is needed after this.
7. Allow the rubber to cure for 16–24 hours before removing the mold from the frame. When using glass or metal mold frames, the rubber may be cured with moderate heat (approximately 110°F) in 4 hours. **Important:** Do not heat-cure rubber if you're using plastic mold frames or if your model is heat sensitive.
8. After curing, cut the mold as you would any vulcanized mold.

Making A Two-Part (Powder Separation) Mold

1. Fill the bottom half of a standard aluminum mold frame (see your *Rio Grande Tools & Equipment* catalog) with modeling compound (#112-024) making sure to fill all gaps.
2. Determine exactly where you want the parting line to be, then push your piece down into the modeling clay. Manipulate the clay around the piece using wax-carving or similar tools to position the parting line.
3. Spray the clay and model with Teflon® mold release (#750-027). Press mold locks or caps into the clay prongs up. To prevent overflow during vacuuming, stack on an extra mold frame and seal the two with tape. Mix the mold compound as stated above and pour over the exposed half of your model. Follow the normal vacuuming and curing procedures.
4. After curing, turn the mold frame over and remove the modeling compound. Leave your model in place and spray this side with Teflon® mold release. Move the extra mold frame to this side and seal with tape. Mix and pour mold compound over this half. Vacuum and cure.
5. Remove the mold from the mold frame and the mold will pull apart. Remove the model and your mold is complete and ready to use.

Castaldo® mold frame #701-233

MATERIAL SAFETY DATA SHEETS ARE AVAILABLE UPON REQUEST FOR ALL RIO GRANDE PRODUCTS.

TECHNICAL DATA

How Much Do You Need?

- 1.1-lb. kit (#701-014) makes about 24.61 cubic inches of material.
- 8.8-lb. kit (#701-019) makes about 196.88 cubic inches of material.
- One cubic inch of High-Temperature mold compound weighs 18.03 grams.

Mixing & Clean-Up

- Mixing ratio is 10 parts base compound to 1 part curing agent by weight; 10 to 1.4 by volume.
- The total working time is one hour.
- Mix until material is one color.
- Solvents will clean material off tools (be sure tools are free of solvents before mixing another batch).

Vacuuming & Pouring

- Vacuum will cause material to rise approximately 4 times its volume.
- Vacuum time should be 5–6 minutes per step or one minute after the rise and fall of the material when under vacuum.
- Material, when mixed, is thick.
- Pour the material down the side of the container, thereby allowing it to rise around the model.

Curing Time

- At room temperature (76°F), High-Temperature mold compound will cure in 16 to 24 hours.
- When using glass or metal mold frames, the rubber may be cured with moderate heat (approximately 110°F) in 4 hours. **Important:** Do not heat-cure rubber if you're using a plastic mold frame or if your model is heat sensitive.
- If using a metal master and a metal mold frame, curing can be accomplished in 15 minutes at 220°F.

Curing Inhibitors

- Surfaces bearing tin and/or sulfur will prevent High-Temperature mold compound from curing; they leave a soft, pasty material. Coat these surfaces with shellac before making molds.

Shelf Life & Storage

- High-Temperature mold compound has a shelf life of approximately 6 months.
- High-Temperature mold compound should be stored at room temperature (76°F) in closed containers.
- The materials in High-Temperature mold compound will settle over time; therefore, periodically turn containers upside-down to help alleviate this.

Miscellaneous Information

- High-Temperature mold compound can tolerate temperatures up to 1100°F, allowing you to pour many white-metal alloys directly into the mold.

Additional Products

#750-027 12-oz. Teflon® mold release spray

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