



## Section I: Body Casting Alginate

Alginate is a temporary, highly absorbent, biodegradable skin safe mold making material made from algae. It is a powder that

when mixed with water will set to a firm yet rubbery consistency. Alginate takes impeccable detail from skin and castings are incredibly life-like. These molds are best used within the first 2 hours of being made because the moisture in the alginate evaporates and distorts the mold. There are various kinds of body casting alginates available - each with different characteristics. Some are as follows:

- **Hollywood Impressions:** for molding baby hands, feet/teeth, fangs/small parts – Set time: 2-3 minutes (Fast Set!)
- **Moldgel Regular Set:** for general life casting and taxidermy / food / candle / soap / restoration – Set time: 4-5 minutes
- **Alja-Safe:** general body casting – Set time: 10 minutes.
- **Moldgel Sloset:** typically used for larger life castings – Set time: 7-8 minute. Long set time is not usually needed for hand casting.
- **Fibergel:** designed with fibers mixed into the alginate. It is used to mold objects with severe undercuts where strength and shrink resistance is needed – Set time: 4-5 minutes.



## Section II: A Word About Mold Making and Casting

Mold Making and Casting are not entirely exact sciences. Periodically unforeseen or untold events may happen that lead to complications. These are best taken in stride and treated as a learning experience.

Assembling all the information you need on the products you will be using as well as pre-testing any materials you have never worked with before is always a good idea. This will help your project flow more smoothly and your final casting more successful.

Some mold making and casting materials have inhibitions to other materials. You should be aware of the inhibitions the materials you are working with have.

For example: Polyurethane casting resins are a popular material for casting. However they are inhibited by moisture. Cured alginate has a high water content and therefore typically urethanes are not used in alginate molds (unless you use a very rapid setting urethane, which can be tricky and still might fail).

Cast pieces often require some amount of retouching after they are removed from the mold. This is a part of mold making and casting. Be prepared to remove some bubbles or repair a seam line when casting (a.k.a. chasing the casting).

## Section III: Materials

- **Container** large enough to fit your hand in the position you wish. To be sure the container is large enough, place your hand in the empty container in the position desired and check to make sure your hand will not touch the sides or bottom of the container.
- **Release Cream** - If there is hair on the hand/arm you wish to cast make sure to use a light coating of Release cream on those areas so the alginate will not pull them out during de-molding.
- **Alginate**
- **Mixing stick** (or mix by hand)
- **Chip brush**
- **Clean water** - Room temperature will typically produce close to the set time on the tech info for the brand of alginate you are using. Cooler water will slow the set time and warmer water will hasten the set time. The use of \*cold\* water is not recommended.

## Section IV: Technique

*1. Assemble materials.* It is a good idea to have all the materials you will need at hand before you begin. Alginate can set up while you are looking for a stir stick.



*2. Mix the Alginate.* Fill the bucket with water. Immerse your hand in the container to be sure the level of water rises to completely cover the area of the hand you wish to cast but does not overflow the container.

TIP: To save time and materials, we mix the alginate in the same container we are casting in. When testing the water level (Step 2) be sure that you leave room for mixing, about 1 inch at the top of the container so the alginate does not spill out.

Start adding the alginate to the water and mixing as you add until you reach a creamy yogurt consistency. The ratio of most alginates to water is 1:3 (one part alginate to 3 parts water, by volume).



TIP: Alginates are designed to set quickly so mixing should be done quickly.

*3. Brush, then insert the hand.* Once the alginate is mixed well and there are no lumps of dry material, use a chip brush (disposable natural bristle brush) to lightly brush the hand to be cast with the alginate. This will break the surface tension and minimize any air bubbles that might be trapped on the hand by surface tension. Once brushed insert the hand into the alginate in the desired position and keep hand and arm still.

Tap the container lightly to encourage any bubbles in the material to rise to the surface. This will produce a stronger mold and a better cast.

*4. Wait for the cure and remove the hand.* Wait for the alginate to set, it will become less spongy and more firm when cured.



Start by carefully wiggling the fingers then gently pull your hand from the mold. Since the wrist is typically the smallest part, as you take your hand out the alginate might tear slightly. Don't be too concerned because the container will lock the alginate back in place while casting.

5. *Cast into the alginate.* Alginate molds have a limited life because the alginate dehydrates and the mold becomes dry and distorted. Alginate molds are best used shortly after they cure and are good for one, maybe two castings. Plaster is a good casting material for alginate since A) it does not require a release agent, B) is not inhibited by the moisture content of the alginate, C) takes great detail and D) can be easily tooled for any repairs that need to be made.

*5A. Mixing Plaster – The Island Method.*

Pour about a pint of water into a mixing container. Slowly sift the plaster into the water until an island forms that does sink into the water. This is called the “island method”. Once the island has stopped sinking, mix the plaster completely into the water so that there are no lumps.

Another method of testing the mix is to dip a finger into the mixed plaster. The finger should come out opaquely coated like a cotton glove. If the mixture is too thin, add more plaster.

TIP: Salt added to the water will accelerate the cure time.



Pour a quarter of the mixed plaster into the mold and “skim coat” the mold by holding it and slowly rotating the mold - rolling the plaster around inside. This will coat the surface of the mold with a thin layer of plaster and deter bubbles from forming on the surface of your casting. When the inside seems completely coated (it may be difficult to see

all the way to the finger tips) pour in the remainder of the plaster and let it sit undisturbed until cured.

Optional: You can over-pour the mold filling the container to the rim to produce a cast base for your hand.

6. *De-molding the Plaster Hand.* Since curing plaster produces heat you will feel it heat up as it starts to harden. Once the plaster has cooled you can de-mold the hand.

Very gently turn the container with the mold in it upside-down and carefully squeeze it to release the alginate from the sides of the container. Do not squeeze too hard as the compressing alginate might break a finger off the cast. Once air has gotten in between the alginate and the container it will slip right out.



In small pieces, being very careful not to damage the cast, start to pull apart the alginate away from the plaster. You can use your fingers or a dull tool. When you reach the fingers be very careful not to be too aggressive removing the alginate. The digits are the most vulnerable area for breakage. Discard the alginate pieces.

If you do break off a finger set it aside until the rest of the hand is de-molded. We recommend using Loctite #454 Glue for reattaching broken plaster parts. This glue is specially designed as a “surface insensitive” adhesive and works well with gypsum plasters.



You can fix the cast straight out of the mold, using small steel tools to remove any bubbles or repair seam lines.

Wait until the plaster is dry if you would like to seal or paint your hand cast. Plaster is generally assumed to be dry when it no longer feels cool to the touch. The drying time can vary depending on how wet the initial mix was as well as the temperature and humidity of the room it dries in.



Hand cast with over-pour base.

Dry plaster casts can be coated with Metal Coatings or shellac mixed with metal powders to make remarkably convincing metallic finishes. They can also be coated with Rub-n-Buff or antiqued with tinted waxes.

Please see our website for more finishing materials and techniques.

# The Compleat Sculptor

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