Mixing Guidelines for Accu-Cast Prosthetic Impression Materials.

WEIGH OUT YOUR MATERIALS- We recommend weighing both the powder and the water to be sure of your measurements.
For hand casts in a rigid mold, a Thin Mix or Med. Thin Mix is appropriate.
For face, head or body impressions, a Medium Mix or Med.Thick Mix is appropriate.

Powder weight	Thick Mix (2.5:1)	Med. Thick Mix	Med. Mix (3.5:1)	Med. Thin Mix	Thin Mix (5.0:1)
2 ounces	5 fl.oz. water	6 fl.oz. water	7 fl.oz. water	8 fl.oz. water	10 fl.oz. water
4 ounces	10 fl.oz.	12 fl.oz.	14 fl.oz.	16 fl.oz.	20 fl.oz.
8 ounces	20 fl.oz.	24 fl.oz.	28 fl.oz.	1 qt.	1 qt., 8 fl.oz.
16 ounces	1 qt., 8 fl.oz.	1 qt., 16 fl.oz.	1 qt., 24 fl.oz.	2 qt.	2 qt., 16 fl.oz.
24 ounces	1 qt., 28 fl.oz.	2 qt., 8 fl.oz.	2 qt., 20 fl.oz.	3 qt.	3 qt., 24 fl.oz.
2 pounds	2 qt., 16 fl.oz.	3 qt.	3 qt., 16 fl.oz.	4 qt.	5 qt.
3 pounds	3 qt., 24 fl.oz.	4 qt., 16 fl.oz.	5 qt., 8 fl.oz.	6 qt.	7 qt., 16 fl.oz.
4 pounds	5 qt.	6 qt.	7 qt.	8 qt.	10 qt.
5 pounds	6 qt., 8 fl.oz.	7 qt., 16 fl.oz.	8 qt., 24 fl.oz.	10 qt.	12 qt., 16 fl.oz.

ALWAYS ADD the **POWDER TO THE WATER** a little at a time. **STIR SLOWLY AT FIRST- THEN MIX FASTER.**

POWER MIXERS- For mixing volumes of powder greater than 1 pound, we recommend mixing with a drill operated power mixer like a "Jiffy Mixer" or the like. Many hardware stores will stock paint mixers, and most work well. ***Avoid the ones that look like small cylindrical cages with many vanes.*** These are difficult to clean and whip a lot of air into the mix. Adjustable speed drills work best- stir slowly, mix at medium speed. Make sure not to drop the drill into the water or the mix. It will short out and ruin your equipment.

GET A BUCKET- A 5-gallon white plastic paint bucket works exceptionally well for mixing larger quantities of alginate. Easily large enough for 5 pounds, & the steep sides keep splatter to a minimum. Don't worry the alginate will be very easy to remove after it sets.

DUST ???- At the very least, use a NIOSH approved "Nuisance Dust Mask" and Safety Glasses when mixing Accu-Cast. If dust is problem (indoors, for instance) you can cut a round hole in the paint bucket lid large enough for your mixing head to fit through. This will minimize the escape of airborne dust.

Factors that affect the setting time of alginate impression materials.

When we test each batch of Accu-Cast for setting time, we do so in a controlled environment. You will be lucky if you have the same. Local environmental conditions do have an affect on the final setting time of alginate impression materials, Accu-Cast included. Once you understand the factors that can alter the setting time, you will be able to adjust water temperature accordingly. See the Accu-Cast Setting Time Chart on our web sight (www.accu-cast-gel.com) for more information.

AIR TEMPERATURE- We run our Quality Control tests in our lab with an air temperature of between 68°F and 72°F (about 21°C). Warmer air will accelerate the set of Accu-Gels, cooler air will retard it. Air temperature primarily has an affect on the set time of the outside surface of the material. On a cold day, the surface may take much longer to set than the Accu-Cast on the subject's skin. On a very hot day, you may not be able to find a cool area in which to work. Be aware that this can accelerate the set of the material. Use cooler water to mix with or use an Accu-Cast with a longer setting time.

MIXING TIME- Mix Accu-Gel's just long enough to obtain a reasonably smooth mix. Longer mixing will have two effects.

1. The longer you mix, the shorter "application time" you will have.

2. When alginate thins out (upon application to the skin), the "surface area to volume ratio" increases. This brings more of the alginate in contact with the air, increasing the evaporation (cooling) of the material. Longer mixing keeps this "surface area to volume ratio" low for a longer period of time, decreasing the opportunity for evaporation, thus keeping the mass warmer and accelerating the set.

SURFACE TEMPERATURE- Skin temperature is approximately 92°F. This will not ordinarily have an affect on the setting time of an impression material mixed with warm water. However, if taking an impression of a prop that is at room temperature, the prop itself will conduct heat away from the impression material, causing a longer setting time. Metal objects have the greatest effect due to their high thermal conductivity.

HUMIDITY- Evaporation off the surface of the impression material is a factor in the overall setting time of the impression material, and especially of the outside surface. Higher humidity would lessen the evaporation, and lessen the heat loss from the material, decreasing the setting time. Lower humidity would lengthen the setting time.

WIND- Air movement increases evaporation. Outdoors or indoors, the more wind, the slower the setting time. Even air conditioning ducts can blow air on the mixing station or on the model, and obviously outdoors, the effects can be dramatic.

SUMMARY- Some decrease in the temperature of the overall mix is nearly inevitable. The greater the decrease in temperature, the greater the increase in setting time.