



Here's a Question we've received a bunch of times from customers:

"I mixed the alginate according to the instructions using 4 cups of water to 1 cup of alginate powder and it mixed up very watery and very lumpy. I used it anyway and it took a long time to set. The casting had lots of little dimples in it and some of the fingers were distorted. What did I do wrong?"

The answer is that you mixed the alginate waaaaay too thin. All of our instructions ask you to measure out the alginate and water by WEIGHT, not volume.

A cup of water weighs about half a pound and a cup of alginate weighs about 3 ounces. The problem with measuring alginate volumetrically is that it is a highly compressible powder and weighs about 40% less when it is fluffed than when it is compressed. Alginate powder is MUCH lighter than water.

According to your question, you mixed 4x8 ounces of water (32) with about 3 ounces of alginate. By WEIGHT, that'd be about 11 to 1, almost 3 times too thin.

A bunch of bad things happen when alginate is mixed too thin:

1. Its almost impossible to get all the lumps out. The alginate mixture needs to have some internal friction to work at busting up the small lumps during mixing and if its too thin, it just doesn't work.
2. The alginate will take quite a bit longer to set.
3. Even after it is set, the alginate won't ever get as firm as when its mixed correctly. That's why some of the fingers were distorted- the alginate just wasn't strong enough to hold its shape.
4. With more water, the alginate polymers are further apart so the holes (while still microscopic) are much bigger and the water leaks out of the system much faster. This causes accelerated shrinkage and the lumps start to poke into the surface of the mold very quickly causing the little dimples you saw.

To solve these problems, mix your alginate much closer to the 4 to 1 ratio (by WEIGHT) we recommend. Since a pint (2 cups) of water weighs almost exactly 1 pound, this makes your calculations easier. An inexpensive postal scale should be accurate enough to weigh out the powder.

Good luck and have fun.