

Making your own homemade metal clay

When I first started working with metal clay I tried PMC3, COPPRclay and BRONZEclay. I had really good luck with the silver and copper but the third one I tried was bronze and it was a total disaster. The clay was pretty hard and dried out and the binder totally failed with I tried to add water and make it workable. My pieces crumbled and I was so disappointed. Instead of calling the supplier I started reading blogs and joining Facebook groups wondering if I had done something wrong. I started thinking there had to be a way to make my own and that it would also cost less too. I googled it and found some good information. It is super easy and fun to make. For me it making my own clay is an important part of the process.

Many of the instructions I found called for methyl cellulose which is a sugary fibrous powder. For some reason I thought it would be something I could easily find on a baking aisle in a craft store so I didn't order it at the same time I ordered the metal powder. I shopped around and was unable to find it close to home. My impatience with waiting a couple of days to get it from Amazon didn't work because I was looking for something that I could find locally that day. I found Ty-Tex gum at Hobby Lobby on the baking aisle. I thought I would give it a try because it has lots of stickiness to it and it was pretty cheap. (The 40% off coupon made it really cheap!) Well, it worked great and I use it much of the time. It is pretty hard when it dries and not as easy to carve, but it is great when you are using a mold or making a ring band. I have since bought Methyl-cellulose and the texture and consistency of the clay is more like the commercial clays. My internet searches found articles that suggested quite a few different binders. I think that in different countries there are different products available and different names for them. I like the feel of the methyl cellulose clay but I have had it curl up when rolling it thin and drying it. I have never had the result using Ty-Tex.



I bought atomized metals from Ozo Metal (<http://www.ozometal.com/>) and from Douglass and Sturgess (<http://www.douglasandsturgess.net/>) also. They have equally good metal powder. I usually buy two pounds at a time so I have plenty. I mix large batches in an old mayonnaise jar for convenience but I suggest you start with small batches and see what works best for you. I think that humidity can have an effect on the mix so work slowly and take notes on what works best for you.

Recipe:

(Please save your lungs with a good respirator and your eyes with safety glasses!)

Mix three parts metal powder to 1 part binder (Ty-Tex or methyl cellulose). Start with 1 Tablespoon of metal powder and 1 teaspoon of binder. I just pour them in a container together. Make sure there is extra room in the container. Screw on the lid and shake it up good to mix. Let the powder settle before opening so you don't get it in the air or all over your studio. Pour some of the clay powder into a small stainless steel container. (I buy mine from Sam's club. A whole stack was less than \$10.) Add a little bit of water and begin to mix. I like to use a small palate knife to mix it together. I also add 5 drops of food grade glycerin (for flexibility) and then add small amounts of water until the clay begins to hold together. I scrape the clay out onto a plastic sheet that has been very lightly lubricated with olive oil. Cover with a second sheet and roll it out. If it is dry you can spray a squirt or two of water and scrape the clay into a lump. Knead with your fingers a bit and roll out again. Keep repeating the process until it is a nice workable lump of clay. If it accidentally gets too wet you can simply leave it out for a few minutes to dry a little. Work into a ball in the palms of your hands. Wrap in plastic wrap and put it in an air tight container to rest for 15-30 minutes. I often find that I need to spritz it with a spray of water and work it in after it is rested. That is really all there is to making the clay. I have made bronze, brass, copper, nickel silver (AKA German silver or white copper) and steel. I have not tried making silver clay because I can buy it cheaper than I can make it. My results have been really good with the exception of the steel. I think the problem with that is the kiln I am using and not the clay. I am using a Speedfire Mini Front loader and I think it just doesn't get hot enough and it is really hard to keep a steady temperature in at higher temps. It's good for bronze and silver but copper is hard to control and since it is not programmable I must really keep a close watch on it while firing.

Good luck and have a great time experimenting! Keep a note pad and pencil handy and make notes until you find the perfect formula for you.

Firing:

I looked up sintering temps for the metals. I followed Hadar's method of burning out the binder for an hour at 1000 degrees F on an open shelf. I allow it to cool until no more than 200 F (because the stainless steel shelf will flake like crazy when you open the kiln at high temps), then bury in coconut carbon and fire two hours at the suggested sintering temp. (Bronze is about 1650 F, copper is about 1780 F) I am still working on firing methods for steel. If you try it and have success please let me know how you did it!

Other notes:

I have been using a ceramic firing vessel with a lid that I bought from MetalClaySupply.com. If you are using the same kiln as I do the quarter size will fit. (Barely!)

I have used regular coconut carbon except I do occasionally use magic carbon on Bronze for a really cool patina effect.

I let the vessel cool to no hotter than 400 F before removing it. I don't know if that is necessary but I worry about it breaking while cooling. It developed a crack but it doesn't seem to have caused any problems for carbon pouring out or for firing so far.

I have never had a problem with failure of the TY-TEX binder. I roll sheets for engraving in my Silhouette Cameo and if it chips I simply grind it up in an old coffee grinder and add water to make clay again. I have ground some of it over and over again and still had great results.

I read that corn starch would work as a binder and had complete failure with it. It was like quicksand to work with and it completely fell apart when dried.

Ty-TEX binder uses less water than methyl-cellulose so there is less shrinkage.

It is a really good idea to make a small thin strip and a 1 inch by 1 inch square to fire with your hard work to check for proper sintering. I toss them into a scrap container for the day that I will start playing with casting.

Please share your ideas and notes! It is always better to learn from someone else's mistakes than waste time and money.

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