

COPPRclay™ is as easy to sculpt, texture, carve or shape as the other metal clays.

Your imagination and a few simple tools will allow you to create solid copper pieces of jewellery, sculptures or almost anything you ever wanted to make out of copper.

Properties

COPPRclay™ consists of micro metal particles, water and an organic, non-toxic binder. By firing at high temperatures COPPRclay™ sinters, which means that the particles bond together to form solid copper.

Compounds: 100 % copper (after firing) in water and an organic binder.

Shrinkage: 20-25 %

Storage and Durability of fresh COPPRclay™

COPPRclay™ comes in airtight packages. Store COPPRclay™ in between work sessions, sealed in plastic wrap, in a ziplock bag. Take out only the amount of COPPRclay™ you need for a particular project or a single work session.

COPPRclay™ dries quickly when exposed to air. Moisten it with a little distilled water (apply with a paintbrush or a small spritzer). If COPPRclay™ begins to dry, add a little water, seal it in plastic wrap and leave it for a few minutes to let it rehydrate. Don't use absorbent work surfaces eg - cardboard).

To protect unfired COPPRclay™ from oxidation wrap it in plastic and store in the refrigerator.

If possible keep a separate set of tools for COPPRclay. Or clean tools very well prior to working with silver metal clay.

Working with COPPRclay™

Before you start to work cover your hands with a thin film of olive oil. This will stop the wet clay sticking to your fingers. Keep COPPRclay™ hydrated with water during any work session to prevent it from drying but don't use too much water. When using tools and textures, try and ensure the clay is not too sticky. Use olive oil as release agent. Before rolling it out you can also apply a little olive oil to the clay. When sculpting you may need a little more water,. Pay special attention to seams and joints, they have to be made with care. Scratch any connections or joints in a similar way to working with ceramics or pottery and apply slip before connecting them.

Always cover your work with plastic if you are interrupted or need to take a break.

To protect your finger nails from being discoloured by COPPRclay™, we recommend using Gloves in a Bottle.

Making Slip

Slip will quickly become one of your favourite tools for working with COPPRclay™, and it's easy to make. Simply mix tiny pieces of clay (filings, small dried or wet pieces) with water (we recommend distilled water for a longer shelf-life) until you reach a yogurt consistency. Keep slip stored in a sealed container. Note: Slip will last for about one week, so make only enough for your immediate need.

Drying COPPRclay™

Once you have finished your piece, you will need to dry the clay before firing it. Gently place the piece on a warming surface such as the top of your kiln or a toaster oven set at 110C. An inexpensive vegetable dehydrator works well, too. Be careful with thick pieces. They should dry slowly to prevent cracks. Once dry, you'll notice the clay is leather hard, making it very easy to add finishing touches such as filing, drilling, sanding, and carving. Once COPPRclay™ is fired, it's much more difficult to finish, so take advantage of this pre-fired stage to do as much of your detailed finishing work as possible.

Loading the firing container

- 1) Spread 1" of activated carbon granules on the bottom of a stainless steel firing container.
 - 2) Place the piece on top of the layer; if firing two or more pieces, leave at least 1/2" between pieces, more if the pieces are large.
 - 3) Pour more activated carbon granules on top of the pieces until the container is full, making sure there is a 1/2" layer of granules on top of the pieces. Again, if you are firing many pieces in layers, make sure there is at least 1/2" of space between the vertical layers as well.
 - 4) Put the stainless steel lid on the firing container and place it in the kiln on stilts to allow good heat circulation.
- Note: Front-loading kilns are cooler in the front near the door, so the front of your firing container will be cooler than the other sides. Compensate for this by placing the pieces closer to the sides and back of the firing container, making sure you leave at least 1" of space between the pieces and the front of the firing pan. If you have a top-loading kiln, there is no need to adjust.

Firing

COPPRclay™ is to be fired in a oxygen-free atmosphere to prevent oxidation. So it is necessary to place the pieces in a stainless steel pan and surround them with a special carbon during firing. Fire in kilns with temperature controls.

Firing Chart

Ramp	full
Temperature	927°C
Hold time	3 hours
Total firing time approx.	3,5 hours

This firing schedule is valid for all thicknesses.

Firing pan

Generally, most stainless steel containers with lids can be used to fire COPPRclay. Please take care not to use a coated container for firing.

Carbon

A special activated carbon has to be used for firing. Use only coconut shell based carbon for firing of COPPRclay™. In general, the carbon can be used until it starts to break down (broken grains and a sooty appearance, after approx. 30 to 40 firings).

Activated Carbon gives off sooty smoke when fired, even with the lid on. The soot settles on the inside of the kiln. You should vacuum your kiln periodically. For kilns with open heating elements a high temperature "blank" firing is recommended after each 10 carbon firings in order to burn off the soot. When firing with large containers this has to be done more often.

After firing

When the firing is finished, open the door of the kiln and let the pan cool down while the door is still open. Let the pan cool down completely before removing it and the COPPRclay™ pieces. Please Note: The carbon and the COPPRclay™ still can be very hot! You can leave the carbon in the container when you pick out the pieces with long tongs, a sifting spoon or tweezers..

Finishing after firing

The fired pieces are solid metal. They can be sawn, drilled, polished, patinated, and soldered with traditional methods and tools just like every other metal. Always keep in mind that finishing work prior to firing is much easier done, than after firing. Pieces which are faulty or not properly sintered can be repaired by using fresh COPPRclay™ and refired (no ramp required).

Safety

The binder in COPPRclay™ is non-toxic, and non-toxic fumes will be present during firing. Nevertheless, we recommend firing in a well ventilated room. Though rare, it is possible for some individuals to experience some sensitivity to COPPRclay™. We recommend wearing a dust mask while working with the carbon and also during sanding.

Maintenance and wearability

Clean fired COPPRclay™ with commercial cleaners for bronze and copper. Keep in mind that copper is not a precious metal like silver and gold. Pieces are subject to tarnishing. This attribute can also be used as a desirable surface decoration. Use liver of sulphur or a hand held butane torch to enhance patinas on fired COPPRclay.

Silver plating of parts which are in constant contact with skin is a good way to prevent skin discolouration. We recommend plating the inside of rings, bangles or bracelets with Accent Silver for bronze and copper.

COPPRclay™ for tableware?

Copper is non-toxic. Nevertheless, pieces made out of COPPRclay™ should not be used carelessly as tableware. The patinas which occur on any copper are not food-safe. We suggest that if using COPPRclay™ pieces, clean them carefully not only after using them, but also before using them as tableware.