

Prometheus® Copper Clay

Only 30 minutes at 920°C or 90 minutes at 850°C or 10 minutes with a Torch

We are now pleased to present you the new generation **rapid and low fire** copper clay; the **Prometheus® Copper Clay**.

Prometheus® Copper Clay is an extraordinary medium that will transform your imagination into pure copper fine art and jewelry objects. You can easily shape your clay by hand or using some simple tools, or even turn it on a potter's wheel. Firing Prometheus® Copper Clay is easier than ever; you simply need 30 minutes at 920°C or 90 minutes at 850°C or 10 minutes with a Torch.

Prometheus® Copper Clay

- can be stored at room temperature
- does not stick to hands at normal consistency
- gives you long working time by its slow drying character
- does not need long firing hours
- does not need high firing temperatures
- does not need a firing pan or activated carbon
- does not need large and programmable kilns

What is Prometheus® Copper Clay?

Prometheus® Copper Clay is a claylike material which turns into pure, solid copper when fired in the kiln. It is a mixture of micron sized copper powder, water, and organic binder. It can be formed by hand, rolled into a sheet or a rope. It can be molded, textured, even turned on a potter's wheel. **Prometheus® Copper Clay** can be fired with most lab-created gemstones (cubic zirconias), pre-tested natural stones, glass beads, ceramic porcelain and **Prometheus® Copper Clay**. It is also suitable for enameling.

When **PCC®** is fired in a kiln, the organic binder evaporates, burns away and you're left with pure, solid copper. Brush it, if needed pickle it, to remove any firescale, and finally polish.

You can create unique jewellery, ornaments, hollow ware, statues and many other decorative objects with **PCC®**. Anything you create with **PCC®** is a piece of art. Combine it with your imagination and let your fingers do the rest!

Working with Prometheus® Copper Clay

Working with **PCC®** is similar to working with **Prometheus® Metal Clays (Silver, Copper and Bronzes)**, polymer clays, modelling dough, flower dough and ceramic clays. It is very easy to use.

Wet Stage

- At normal consistency, **PCC®** does not stick to hands or plastic working surfaces. However, oiling your fingers and the working surface lightly is useful, and would not harm your clay. Olive oil is preferable.
- Remove the clay from its plastic bag and place it on a clean plastic surface, Teflex sheet or wax paper. Use your fingers, roller, spatulas, clay shapers, craft knives, tooth picks and other simple tools to shape it, texture it, or turn it on a potter's wheel. You can texture the clay with rubber stamps, texture mats, leaves, papers, and any other interesting textures.
- When you take the clay out of the package "**The Wet Stage**" begins. Try not to work at this stage for too long, to avoid clay from drying out but don't rush your work, **PCC®** gives you enough time to play with. However, if you detect any cracks on the surface, apply some

water straight away with a brush or spray, and fill the cracks with a little paste* to repair them.

** To make paste, mix a little clay with a little water until it is the consistency of thick yoghurt.*

- To join two wet pieces together, simply apply some water to the points that will touch or add a little paste. If the two pieces are dry, wet the touching points well and apply some paste to create a secure bond.
- Store any unused clay in a plastic bag with a zipper to prevent it from drying out. Place any offcuts in the bag straight away whilst you're working, and keep it closed. If you're not planning to work with the clay for a while, put the sealed plastic bag in a jar with a tight lid. Placing a wet sponge to the bottom of the jar will keep your clay at a good condition, until your next usage. If you are storing it for a long time, keep an eye on the sponge and add water if needed.

Drying

- Before firing, you need to dry your piece completely. A hair dryer or putting it on top of a kiln will do it well. Hot-plates or food dehydrators work well too.
- To check if the clay is completely dried, put the hot clay (straight from drying) on a cold mirror. After a few seconds, move it and check that there is no condensation on the mirror. This test is especially important for big and thick pieces. If the piece is not dried completely, then it can crack, break or have bubbles on the surface while firing.
- We don't recommend fast drying for large and/or massive pieces (statues etc.). For these, it is recommended to leave them in room temperature for some time and then continue drying at moderate temperatures in order to avoid cracks.

Dry Stage

Even though the dried **PCC®** is stronger than the other metal clays, you still need to take some care while working with it. You can carve designs on the surface*, file it, grind it, drill holes with hand tools or rotary tools and engravers. To join dried pieces, wet the joining points with a brush and apply some paste.

** Draw your design with a pencil, wet the lines with a brush and make your carving with any instrument even a tooth-pick.*

After completing your design, it is easy to sand uneven surfaces, using sand papers, and sanding sponges. It is a lot easier to do this step now - before you have fired the clay!

Firing Prometheus® Copper Clay

Before firing your works, test your kiln's accuracy by firing a small piece of clay. Electric kilns may show slight deviations due to their temperature control systems and isolations. According to your test result, you may change the firing temperature by 5% (up or down) until you reach to the correct sintering.

You have 3 choices for firing PCC® :	
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1. Carbon Method*

This is a 2-step-method.

Step.1 Place the dried piece (or pieces) on a stainless steel mesh and put it in to the cold kiln and let it raise to 500°C/ 932°F, or put it on a kitchen stove. Fire it for 15 minutes, take it on to a fire proof surface and let it cool down.

Step.2 Put approximately 3 cm. of activated carbon to the bottom of a steel container. Place the pieces with at least 1.5 cm space between each other and fill the container with activated carbon, close it and put it into the preheated kiln to 850°C / 1570°F. Let the kiln raise to the target temperature again and fire it for 90 minutes. When the firing is completed, either leave it to cool down in the kiln or, carefully take it out and leave it on a heat isolated surface until it is cold enough to take your pieces out.

** This is the recommended firing method for PCC® of Prometheus®.*

2. Open Shelf Firing

Place the dried piece (or pieces) on a stainless steel mesh and put it in to the pre-heated kiln to 920°C/1700°F. (*) Wait for the kiln to raise up to its target temperature again, then start timing your firing for 30 minutes.

When the firing is completed, take out the piece, put it on a heat proof surface and wait for it to cool down or much better, quench it in water while it is hot. (**) Most of the fire scale will fall of the piece. If any left, leave it in hot pickling solution for some time and then rinse with water.

(*) Most kilns are cooler near the front door, so put them close to the back of the heating chamber.

(**) Beware of water vapour.

3. Torch Firing Method

Place the dried piece on a stainless steel mesh. Put the mesh on a fiber brick or a thick construction brick. First start heating the piece very slowly until you see it producing a candle like flame and smoke which is an indication of the binder burning. Once the flame and smoke disappear, start heating the piece with full power until you achieve an light orange colour and continue firing at least 5-10 minutes carefully observing the piece keeps this light orange colour during whole time. Avoid melting. After firing is completed, either leave it to cool down or quench in water. Leave the fired piece in hot Picklean® solution to get rid of any fire scale if any left.

Combining Prometheus® Clays

You can combine different Prometheus Base Metal Clays in one piece and fire them together. When firing use the 2 Step Carbon Firing Method. To determine the second step firing temperature, refer to the firing instructions of the clay which requires the minimum firing temperature within your combination. Fire at least 2 hours.

The shrinkage rates are; **PCC®** 9-10%, **PBC®** 12-13%, **PSB®** 12-13%, **PSW®** 15-16%, **PGY®** 13-14%, **PLY®** 17-19% and **PWB®** 10-11%.

Finishing Prometheus® Copper Clay

Brush your piece with a metal brush and, if necessary, put it in hot pickling solution. (*) After pickling, rinse the piece thoroughly with water and dry. This will give you a nice warm reddish copper

color. You can also use various patina solutions to obtain different colours.

(*) We recommend **Picklelean®** granules. Mix one table spoon of **Picklelean®** to a glass of hot water and leave your piece in it for some time.

Polish the piece with a burnisher, polishing papers, a tumbler or polishing motor. Using polishing compounds can give extra shine to your works.

Safety Precautions

1. **PROMETHEUS® COPPER CLAY** contains organic binder, water and copper powder. It is non-toxic and does not contain any harmful chemicals. There have been no reports of allergic reactions; however, people with allergies should of course be cautious and use the product with care.
2. While firing, individuals with lung or respiratory problems may be affected by the smoke created. Fire in a well-ventilated place or under a kitchen extractor fan. Firing large pieces, like sculptures, is best done in a furnace with a smoke extractor.
3. Wear gloves and safety glasses, use tongs, paddle when loading and unloading a kiln.
4. Put your hot pieces and tools on heat proof surfaces.

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