

Instruction of PMC Sterling™

Start Here

PMC Sterling™ combines microscopic particles of metals in the precise proportions of 92.5% silver with 7.5% copper—the same proportions as traditional sterling. The metal powders are mixed with water and a nontoxic binder to create a material that can be worked as easily as modeling clay. Objects can be made with simple tools, and then they are dried and sometimes refined further. The pieces are then taken through a firing process that drives off the water, burns away the binder, and fuses the particles into solid metal. The result has properties very similar to cast sterling silver. It can be polished, soldered, and patinated just like any other precious metal.

Firing

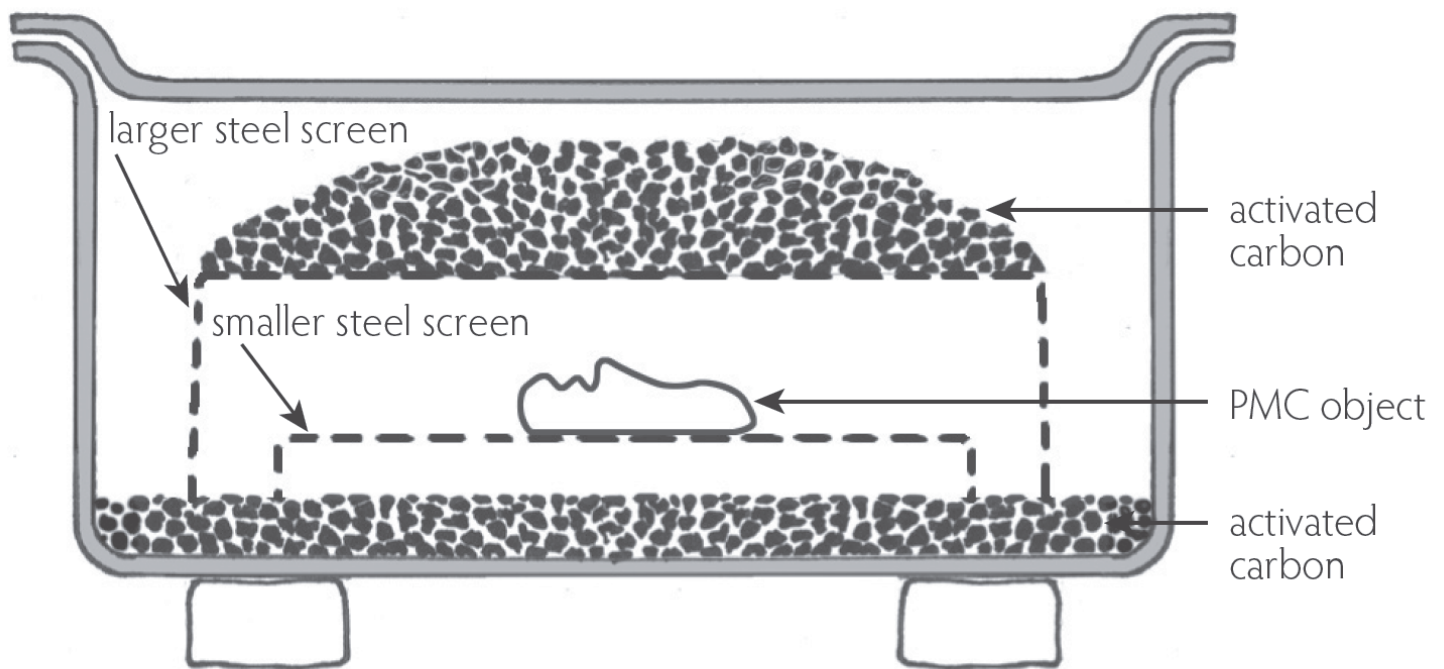
PMC Sterling™ requires special firing because of the copper content of the alloy. For proper firing you will need a controllable kiln, a steel firing container, and granules of activated carbon. Ventilation is recommended during firing.

Firing method 1: Single firing (Sandwich Reduction)

With this firing, you will need activated carbon and steel screens to make an activated carbon layer and oxygen layer. (Please refer to the “Image 1” below)

Set about 1 gram (1/2 of a teaspoon) of activated carbon on the bottom of the stainless steel box. Put the smaller steel screen onto the activated carbon to avoid the work touching the activated carbon. Then, make another activated carbon layer above the work with about 2g (1 teaspoon) of activated carbon on the larger steel screen. It is better to use one more steel screen to prevent the carbon falling on the work. Cover with a lid, heat to 1500° F (815°C), and hold for at least 30 minutes. Using small meshes screen is recommended. This instruction shows the conditions of using the following stainless container: W90×D60×H40. The ratio of the activated carbon should be the “upper” : “lower” = 2:1. Allow the work to cool while in the container. You cannot use this single fire method if you have organic cores inside your pieces. The cores must be burnt out ahead of time.

<Image1>



Firing method 2: Open-Air firing + Reduction firing (Embedding Reduction)

STEP ONE

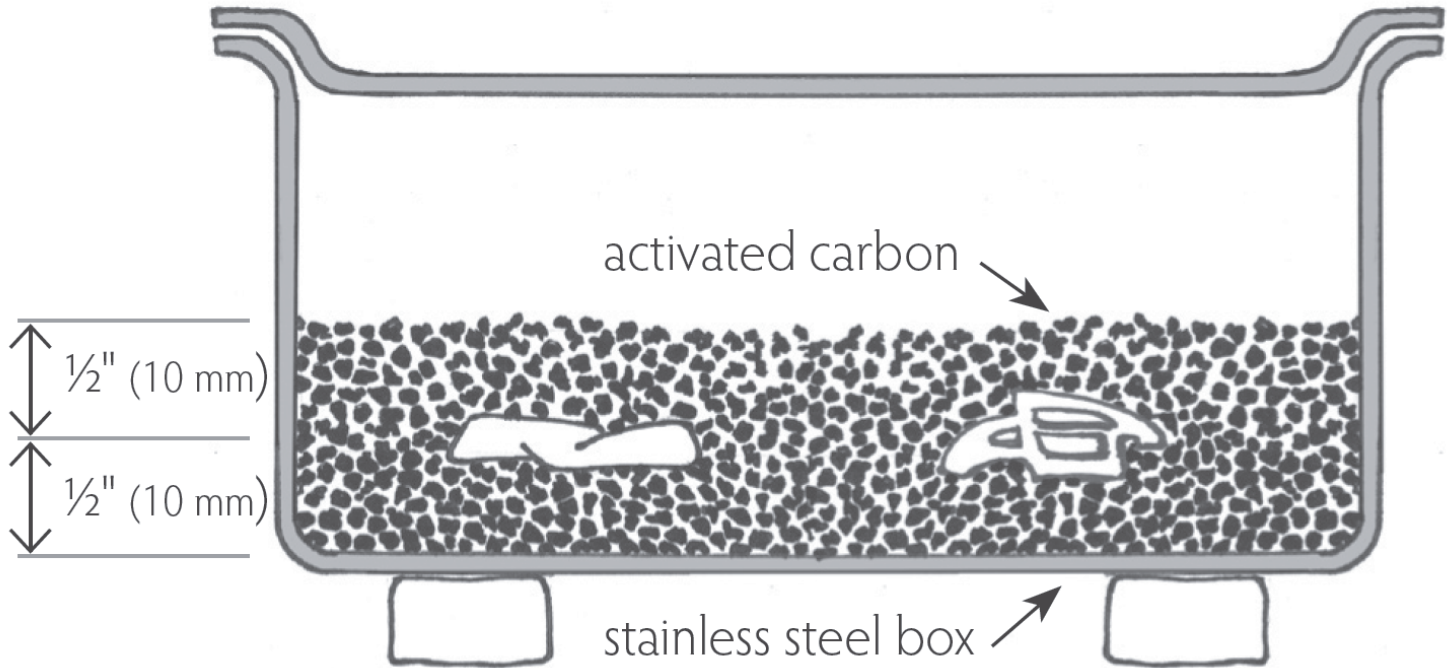
To remove the binder and start the solidifying process, fire work on a shelf in atmosphere. This will be familiar to anyone who has fired fine silver PMC. When you are sure the work is completely dry, heat to 1000° F (538° C) for 30 minutes, more for thick pieces.

STEP TWO

Allow the work to cool so it can be safely handled, then transfer it to a firing container that has a half inch (10 mm) layer of activated carbon. Set the pieces at least ¼" apart. Sprinkle more activated carbon over the pieces, again creating a layer about a half inch deep (10 mm). It is possible to fire multiple pieces in layers, but do not make more than three layers, and provide a half inch of carbon in between each layer.

Cover with a lid, heat to 1500° F (815° C), and hold for at least 30 minutes. When firing more than three or four pieces, or when the work is more than 3 mm thick, extend the firing time to an hour or longer. Allow the work to cool while buried in the carbon. Not only will this prevent burns, but it leaves the PMC Sterling™ a clean white color.

<Image 2>



Finishing

PMC Sterling™ can be filed, sanded, tumbled, and polished using traditional jewelry techniques. Filings and scraps can be sent for refining just like other precious metals. Use liver of sulfur or a proprietary oxidizer to develop a dark patina. Because PMC Sterling™ is the result of sintered powders, it does not create fire scale.

Health and Safety

PMC Sterling™, like all other forms of PMC, contains no toxic chemicals. It has been extensively tested to insure that there are no harmful ingredients. Though rare, it is possible for some individuals to experience skin rash or itchiness after contact. If you have a reaction, discontinue use and see a physician. Wash hands after use, do not ingest, and keep out of the reach of children. Take care to avoid burns.