

PMC+ Technical Information

When the scientists at Mitsubishi Materials started to work on what would become PMC, their mandate was to create a material that could be handled with the ease of modeling clay. They succeeded. About a few years, enthusiasts sent word back to the engineers that they wanted a material that fired faster and was denser. I don't know if they use drawingboards anymore, but the Mitsubishi folks went back to something like one and came up with a new material that is called PMC+.

The difference between Original PMC and PMC+ is relatively small as a percentage of ingredients, but very significant in terms of handling, firing, and the final product.

	Original PMC	PMC+
Silver Content	77% by weight	90% by weight
Density	3.5 grams/cm ³	6.0 grams/cm ³
Shrinkage in size*	25-30%	10-15%
Shrinkage in Volume*	50-60%	30-40%
Density*		
Fired for 15 minutes	insuffient	9.1 grams/cm ³
Fired for 2 hours	8.2 grams/cm ³	9.9 grams/cm ³

* after firing

This chart shows that PMC+ has a higher content of silver in proportion to the binder and water. In addition, PMC+ uses about a half a percent of an additional ingredient. After firing for only 15 minutes at 900 °C (1650° F), PMC+ is stronger than Original PMC. After firing for two hours, the new material approaches the theoretical hardness of silver, which is 10.5 g/cm³.

Practical Matters

People with silver clay experience will notice that PMCplus feels heavier in the hand. It is slightly sticky and a bit reluctant to bond to itself when forming. It can be rolled, cut, squeezed and joined like Standard PMC, but it might feel a little rubbery compared to the original material. For some people this is almost unnoticeable, while others find they prefer the Standard.

Both versions of PMC are water soluble. They can be remoistened with water when they dry, and in both cases it will take some time for the moisture to penetrate the material. Both should be dried before firing, especially when the work is thick. PMCplus dries a little slower than Standard PMC.

The two products can be used together without problem. Firing should be determined by the version that is used the most. If you make a piece mostly of Standard PMC and add details of PMCplus, fire at 1650F for two hours. There is no problem if filings of the two products are combined in your scrap jar. Again, fire according to the dominant ingredient.

After firing both materials assay as pure (fine) silver. They should be marked either as .999, F/S, or PMC .999.

Both Standard PMC and PMCplus are nontoxic. When the binders burn away they create a small odor and smoke. While these might be unpleasant, they are not dangerous.

Rio Grande will be the exclusive distributor of PMCplus and Standard PMC in the US. As soon as supplies are available, PMC+ will be sold in these three types:

100-880	PMCplus lump
100-882	PMCplus paste
100-884	PMCplus syringe

PMCplus will be sold in containers of equivalent price to Standard PMC. Because the denser material costs about 10% more, PMCplus will be packaged in .9 ounce containers. Call Rio Grande for more details.