



Technical Information

Scientists at Mitsubishi Materials in Japan invented Precious Metal Clay in 1993 but they didn't stop there. Since then they have continued their research and have developed several new forms of metal clay. The newest member of the family is called PMC3. It fires at a lower temperature and, yes, even faster!

Now artists have three distinct versions of PMC, each with its own special properties. Two things remain the same...

- the final product is 100% pure silver
- they're so easy to work with, your talent is given full play

Properties of Silver Precious Metal Clay

	PMC	PMC+	PMC3	
Silver Content	77% by weight	90% by weight	90% by weight	
Density (unfired)	3.5 grams/cm ³	6.0 grams/cm ³	5.5 grams/cm ³	
Shrinkage in size	25-30%	10-15%	10-15%	
Density (after firing)	<i>fired at 900° C</i>	<i>fired at 900° C</i>	<i>700° C</i>	<i>900° C</i>
fired for 5 minutes	N/A *	N/A *	8.2	9.3
fired for 15 minutes	N/A *	9.1 grams/cm ³	9.1	9.5
fired for 2 hours	7.9 grams/cm ³	9.8 grams/cm ³	9.5	9.9

* not appropriate

The first column of data describes original PMC. It tells us that there is about 23% binder, which means the unfired PMC is relatively light (compared to the other versions). Firing for 5 minutes leaves a brittle material which is only improved slightly after 15 minutes. Full sintering achieves strength of about 77% of theoretical density of silver (10.5 g/cm³).

The second column tells us that PMC+ has more metal (and less binder), a fact reflected by the lower shrinkage rate. When fired for 5 minutes, this material starts to show strength, achieving more than original PMC within 15 minutes. If fired for two hours, the strength continues to develop, reaching 92.5% of the theoretical maximum.

The third column shows us that PMC3, the newest member of the family, contains about the same proportion of silver-to-binder, and expectedly has the same shrinkage rate as PMC+. This material sinters to almost the same density and tensile strength of PMC+, reaching 86% of theoretical strength of pure silver. What this chart doesn't show is that this happens at a lower temperature.