



**Shining Wave Metals**

**Data Sheet**

**Mokume-gane**

**18K PD WHITE, ROSE & YELLOW GOLD ROD**

**RMS**  
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## 18K Pd WHITE, ROSE & YELLOW GOLD

### COMPOSITION:

Twenty-one layers(21), alternating 18K Rose(5), 18K Yellow(5) and 18K Palladium White gold (11) arranged in an ABACABAC pattern with the white gold on either side of the stack. Relative layer thickness is about 4-5 18K white to the red and yellow golds. Approx 25.5% each 18K Rose & Yellow golds, 49% 18K Palladium White gold.

### QUALITY MARK: 18K

### MELTING POINT:

Starts to melt at 1668°F/908°C, the same as the 18KY. There is no eutectic interaction between the component metals.

### ETCHING:

Can be done only with aqua regia or by reverse plating. Aqua regia is dangerous to handle and its use is not recommended. Gold plating solutions tend to be highly toxic and should be handled with great care and with no release into the environment. We do not recommend etching this material.

### ANNEALING TEMPERATURE:

Recommended annealing temperature is 1150°-1300°F/620°-704°C. This material should only be torch annealed. This temperature is about a medium red in a dark room. Use a large, soft flame, using a prestolite torch, air-propane or large oxy-propane torch. Use of small or micro torches for annealing is not recommended. Soaking at the annealing temperature is not recommended. Protection from oxygen by coating with flux or annealing in a reducing atmosphere will maintain the brightness of the gold.

**Do Not Quench from the annealing temperature.** Let air cool to about 1000°F/538°C before quenching after all visible color has left the metal when viewed in a dark room. A note to the impatient: speed cooling can be done by resting the hot metal on a heavy steel plate. Pickle as needed, but it is not necessary to pickle at every anneal. Over-annealing in frequency, time and temperature is not recommended as it can cause excessive grain growth and significantly weaken the metal.

### WORKING THE MATERIAL:

**Do NOT hot work this material, doing so will void the warranty. The warranty is limited to flaws in the material and does not cover customer mishandling. All rods of this mokume are tested at the factory by rolling, twisting and hammering into sheet stock.** This mokume is quite strong and requires a lot of strength to make it move. Anneal after a 30-50% reduction has been achieved.

**Reverse twisting is NOT covered by the warranty.** Pattern is often developed by twisting. Perform this operation cold, twisting by hand until the rod feels too hard, then anneal and twist further, if desired. It is not recommended to go beyond a 45 degree pitch. Extensive experience working with 18K alloys is very helpful. Sometimes during working, the outer layers of 18K white gold will envelop the harder red and yellow gold layers creating a shallow cold shut. This will look like a flakey area between the layers. It can be removed by sanding and/or filing.

Please see the following guide on twist patterning: <http://tinyurl.com/b4wvjyp>

Use a solder that flows at a temperature lower than the melting point of the 18KY. The ends of the rod may be sealed with 18K gold solder or silver solder during the initial stages of rolling or forging, though this is not done during the fabrication process. The solder can be filed off when nearing the final shape of the work. This mokume can be enameled on with enamels that will work on gold and palladium.

### FINISHING:

This mokume may be finished using the standard jewelry finishing techniques. Heavy buffing is not recommended as this may smear the surface of the metal and muddy the pattern. Use abrasives and tools that cut rather than grind. If a rotary file tool is used, it is often best to remove the tool marks with abrasive paper or water stones before buffing. A matte surface will show off the colors of the metals much better than a high polish. Sandblasting or glass beading can produce interesting results; experimentation with surface finish is recommended before determining a final form.

**\* Note: Take proper safety precautions when using any chemicals or tools. This information represents the best knowledge and experience regarding the use of Shining Wave Metals products by their manufacturer, however it is not guaranteed to produce an expected result and is no substitute for experimentation by the user.**