Shining Wave Metals

Data Sheet

Mokume-gane

18K ROSE GOLD/SHAKUDO ROD

RMS
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18K ROSE GOLD/4% SHAKUDO ROD

COMPOSITION:
Ninteen layers(19), alternating 18K Rose Gold(9) and 4% Shakudo(10) with shakudo on the outside. Shakudo layers are twice as thick as the gold. 40% Rose gold, 60% 4% Shakudo.

QUALITY MARK: No legal quality mark in the USA

MELTING POINT:
1632°F/889ºC

USES:
The use of this mokume for rings or other works that have continuous contact with the skin is not recommended. The copper in the shakudo alloy can turn the skin green. In addition, the continuous etching by the skin will eventually etch out all the shakudo, much to the detriment of the work.

ANNEALING TEMPERATURE:
Recommended annealing temperature is 1150º-1300ºF/620º-704ºC. 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 and reduce scale on the shakudo.

Do Not Quench from the annealing temperature. Let air cool to about 1000ºF/538ºC 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. 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 easily formed by standard methods including forging, bending, rolling, die striking and stock removal. Anneal after a 30-50% reduction has been achieved.
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. **Reverse twisting is NOT covered by the warranty.**

Please see the following guide on twist patterning: https://www.reactivemetals.com/downloads

Use a solder that flows at a temperature lower than the melting point of the sterling. We suggest using easy or medium 18K gold solders. The ends of the rod can be sealed with silver or 14K gold solder 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 sterling.

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.

ETCHING:*
Use all chemical solutions with proper ventilation, saftey equipment and supervision.
Use a 20-25% solution of Nitric Acid (HNO3) or Multi Etch. Mask any areas not to be etched, such as silver solder seams or non-gold elements, with nail polish or some other resist. Carefully watch the object while etching so as not to over etch as etching can occur quite quickly.

PATINA:*
For best results clean the surface well with soap to remove all oily contamination. Prepare the surface by rubbing with fine pumice or No Name Patina Prep. Baldwin's Patina will turn the Shakudo a deep black. Warm the metal under running water and shake off the excess. Then gently rub a small amount of the solution on the whole surface and rinse. Continue alternating application with rinsing until the color is achieved.

**** 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.***