

WORKING THE MATERIAL:

The mokume is easily formed by raising, cold forming, die striking and sawing. Anneal after a 40% to 50% reduction has been achieved. Use silver or gold solder with a melting point of less than 1439°F/779°C. **Do not hot form this material, doing so will void the warranty.**

ANNEALING:

Recommended annealing temperature is 1200°F/649°C. This material may be torch or kiln annealed. Kiln annealing is preferred because of the possibility of soaking the work at the annealing temperature. To kiln anneal, make a bag using stainless steel foil and enclose the work in the bag with some natural charcoal. Anneal for 5 to 10 minutes. Quenching in the foil will speed up the process but is not necessary. Pickle as needed.

Over-annealing in frequency, time and temperature is not recommended. Over annealing can cause excessive grain growth and significantly weaken the metal.

SOLDER:

Solder with either silver or gold in the Medium to Easy range. Solder should flow at temperatures less than 1439°F/779°C. 14K White Easy from Hauser & Miller has been shown to work well and is particularly good if the piece is to be etched.

FINISHING:

This mokumé-gane may be finished using standard jewelry finishing techniques. Heavy buffing is not recommended as this may smear the surface of the metal and muddy the pattern.

ETCHING:

A light etch will enhance the wood grain effect of the mokumé-gane. The sterling will be etched, making that layer smaller and matte textured. Etch using a 25%- 30% Nitric Acid/water solution. Experimentation is strongly recommended!

*** 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.**



Shining Wave Metals

Data Sheet

Mokume-gane

**14K Palladium White Gold/
Sterling Silver
Samidare & Rod**

RMS
Reactive Metals Studio Inc
RMS

PO Box 890

Clarkdale, AZ 86324

928/634-3434 • 800/876-3434 • 928/634-6734F
www.reactivemetals.com • info@reactivemetals.com

14K Palladium White/Sterling Silver Rod

COMPOSITION:

Nineteen(19) layers, alternating sterling silver(10) and 14K Palladium White Gold(9) with sterling on the outside two layers. The sterling layers are approximately twice as thick as the gold layers. 39% 14K Pd White, 61% Sterling.

QUALITY MARK: 35% 14K/Stg (no legal standing in the USA)

MELTING POINT:

Starts to melt at 1439°F/779°C.

ANNEALING:

1150°-1200°F/590°-675°C. May be torch or kiln annealed. This is about a light red in a dark room, if done by eye. Soaking at the annealing temp is not recommended. Protections from oxygen by coating with flux or annealing in a reducing atmosphere will maintain the brightness of the gold. **DO NOT QUENCH AFTER ANNEALING.** Let air cool to about 500°F/260°C before cooling rapidly. 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 temp is not recommended as it can cause excessive grain growth and significantly weaken the metal.

WORKING THE MATERIAL:

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. **DO NOT HOT WORK THIS MATERIAL, DOING SO WILL VOID THE WARRANTY.**

Use a solder that flows at a temperature lower than the melting point of the sterling. We suggest using easy or medium silver or gold solders. 14K White Easy from Hauser & Miller has been shown to work well and is particularly good if the piece is to be etched. 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.

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

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, safety equipment and supervision.

Use a 20-25% solution of Nitric Acid (HNO₃). Mask any areas not to be etched, such as silver solder seams, or non-gold elements with nail polish or other resist. Carefully watch the object while etching so as not to over-etch. Etching often leaves a thin film of silver deposited on the gold layers and this must be removed by the use of a light abrasive and a bristle brush in order to display the colors of gold accurately.

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. Traditional liver of sulphur can be used effectively. Dissolve a small amount in warm water. It should be light brown. Warm the metal under running water. 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. The sterling should take on a grey black color.

Antique Patina should be diluted and applied as suggested above.

14K Palladium White/Sterling Mokume Samidare Sheet

COMPOSITION:

Approximately 35.3% 14KPW and 64.70% Sterling Silver by weight. The layer thickness is 1 to 2 with the 14KPW being the thinner layer. The flat grain billet from which the pattern is made is 27 layers, 13 -14KPW and 14-Stg.

PATTERN:

Samidare: In Japanese - early summer rain

MELTING POINT:

The same as sterling which starts to melt at about 1439°F/779°C.

APPEARANCE:

The 14K Pd White gold is a fairly dark warm gray next to the very white sterling. Color contrast is excellent with superb pattern readability.

QUALITY MARK:

35.3% 14K/Stg. No legally recognized mark can be applied.