

# STERLIUM PLUS<sup>®</sup>

## STERLING SILVER

Sterlium Plus is a sterling silver alloy that is tarnish resistant and maintains a bright white color. This germanium-based sterling silver is extremely user-friendly. It's easy to work with for casting, as well as, fabrication by rolling. Because it is fire-scale free, it provides a high luster finish. Sterlium Plus is a very inexpensive investment and the result will save you hours of clean up and frustration. It's available in grain, sheet, wire, sizing stock, stampings, and castings.



### Physical Properties

- Color: Grade 1 white
- Density: 10.33 g/cc
- Melt Range: 1560°F-1655°F

### Mechanical Properties

- As-Cast Hardness: 65-70 HV
- Annealed Hardness: 60 HV
- Age Hardened: 110-120 HV
- Ultimate Tensile Strength: 30,000 psi
- Yield Strength: 13,500 psi
- Elongation after annealing: 55%
- Elongation after age-hardening: 40%

### Age Hardening

- Solution anneal: 1300°F for 30 minutes followed by immediate water quenching
- Age harden: 600°F for 30 minutes, no special cooling requirements

### Annealing

- Coat with boric acid or any oxidation preventing solution
- Oven anneal: 1200°F-1300°F for 20 minutes followed by immediate quench in water

### Cold Working Considerations

- Can be worked much like typical sterling silver
- Maximum recommended total reduction during cold working is 60%

### Brazing

- Same guidelines for brazing as used with standard sterling silver alloys; silver braze alloys can be used

### Mold Material

- Typical calcium sulfate (gypsum) bonded investment can be used

### Investment Casting Recommendations

- Similar to that of any other sterling silver

### Appropriate Flask Temperatures (Range/Guideline)

- Filigree: 1150-1200°F (620-650°C)
- Light: 1100-1150°F (595-620°C)
- Medium: 900-1000°F (480-535°C)
- Heavy: 850-925°F (455-500°C)

### Approximate Melt Temperatures

- Filigree: 1800-1875°F
- Light: 1850°F
- Medium: 1775-1800°F
- Heavy: 1775-1800°F

### Pickling

- Hot Sparex solution (sodium bisulfate) or 10% Sulfuric Acid can be used

### Protective Cover

- When melting in casting equipment, we recommend that an inert gas, such as argon, be used as a protective cover

### Quenching

- Recommend quenching in water 20-25 minutes after casting

### Replenishing

- For reuse, a 50/50 ratio is recommended. Cleaned scrap should be re-grained for reuse. Buttons and rods should be free of investment and other contaminants.

### For the Bench Jeweler

- Can be fused without using solder
- Wire can be balled with a torch
- Sheet cannot be reticulated

FOR MORE INFORMATION, VISIT [STULLER.COM/STERLIUMPLUS](http://STULLER.COM/STERLIUMPLUS).

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