

---

## INSTRUCTIONS FOR MASTER ALLOY #S-97-NA

---

# S-97NA is a **New Age -master alloy** for adding to fine silver to make Sterling Silver. Based on our proprietary Sterling Silver, this master alloy was developed for those who wish to alloy their own sterling. # S-97NA will cast without fire scale. The advantages over standard sterling are: **Reduced gas porosity.** #S-97NA contains deoxidizers which resist oxygen absorption. **Reduced shrinkage porosity.** Better solidification characteristics reduce shrinkage porosity.

**MIXING** Use 92.5% fine silver & 7.5% **S-97NA**. (We recommend using 92.7% fine silver & 7.3% **S-97NA**). Example: 500 gms, add 462.5 gms of fine silver & 37.5 gms of **S-97NA**.

**MELTING** We do recommend pre-alloying all master alloy with fine silver followed by aggressive stirring & fluxing to assure a uniform mixture before using it for casting.

**Step : 1** Pre- Alloying (Fine silver + master alloy) Temperature **1035° - 1045° C (1895° - 1913° F)**

**Step : 2** **STATIC CASTING PARAMETERS:**

Temperature for ingots or bars **1020° - 1040° C (1868° - 1904° F)**  
Ingot molds should be well heated to **121° C / 250° F** before pouring metal.

**CONTINUOUS CASTING PARAMETERS:**

Crucible Temp for Continuous Casting : **1010° to 1038° C (1850° to 1900° F)**  
Die Temp for Continuous Casting: **910° to 940° C (1675° to 1725° F)**  
Sheet Drawing rate for Continuous Casting : **190 mm / min ( 7.5 inches per min )**  
Draw Roll Dwell time & pulse rate : **1 second at 4 mm pulse rate**

**REMELTING:** We recommend a 50% Fresh / 50% Scrap mix. Clean scrap well before re-melting.

**FLUXING:** We recommend a Boric Acid flux, skim off any surface oxides before pouring. Carbon or charcoal fluxes are not recommended.

**QUENCHING:** Cast ingots may be quenched immediately.

**PICKLING:** Hot Sparex solution (sodium bisulfate) or 10% Sulfuric Acid can be used.

**FABRICATION:** Use the same fabrication procedures as those used on regular Sterling Silver.

**ANNEALING:** Coat the jewelry items with boric acid or any oxidation preventing solutions available. A **20 minute anneal** at **700° C / 1292° F** followed by water quenching.

**HARDENING:** Place in a pre-heated oven set at **300° C / 575° F** for 1 hour and air cool.

**TECHNICAL ASSISTANCE** Always available... Call 1-800-999-3463 / 1-800-999-FINE  
E-mail / [doc@unitedpmr.com](mailto:doc@unitedpmr.com) Web-Site / [www.unitedpmr.com](http://www.unitedpmr.com)

---

2781 Townline Road, Alden, NY 14004, USA.  
Phone : (800) 999-3463; International Phone : +1-(716)-683-8334  
Fax : (800) 533-6657; International Fax : +1-(716)-683-5433  
E mail: [sales@unitedpmr.com](mailto:sales@unitedpmr.com); Website: [www.unitedpmr.com](http://www.unitedpmr.com)