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## INSTRUCTIONS FOR MASTER ALLOY # S-92

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Covered under one or more of the following #'s. **U.S. Patent # 4,973,446, # 5,039,479 or International Publication #'s WO 95/14112, & WO 96/22400**

**# S-92** is a 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-92** will cast without fire scale. The advantages over standard sterling are: **Reduced gas porosity.** **# S-92** contains deoxidizers which resist oxygen absorption. **Reduced shrinkage porosity.** Better solidification characteristics reduce shrinkage. **# S-92** sterling may be reused indefinitely with a 50% fresh mix, or with old sterling, using our Sterling Silver Replenisher. Less finishing rejects from fire scale and porosity.

Melting: Traditional methods of melting regular sterling silver I.E. (as cool as possible) will cause a variety of problems. Most failures with these sterling products are caused by too low of a melt temperature. Customers familiar with silicon deoxidized gold casting alloys should have less trouble adjusting to the appearance of these silvers.

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<b>MIXING</b>	Use 92.5% fine silver & 7.5% <b>S-92</b> . (We recommend using 92.7% fine silver & 7.3% <b>S-92</b> ). Example: 500 gms, add 462.5 gms of fine silver & 37.5 gms <b>S-92</b> .
<b>MELTING</b>	Temperature for mixing sterling: <b>1040° C / 1904° F</b> Temperature range for casting sterling: <b>990° - 1020° C / 1814° - 1868° F</b>
<b>REMELTING</b>	We recommend a 50% fresh mix.
<b>FLUXING</b>	We recommend Boric Acid. <b>Do not use Carbon Containing Fluxes or Charcoal.</b> Skim any surface oxides off the surface before stirring.
<b>QUENCH TIME</b>	<b>15 - 20 minutes.</b>
<b>HARDNESS AND HEAT TREATMENT</b>	This silver as cast will have a hardness similar to traditional sterling silver. It can be hardened further by heat treatment at <b>300° C / 575° F</b> for one hour.
<b>INVESTMENT REMOVAL</b>	Most standard investment removers will successfully remove the investment powder. Fluoric-based investment removers are the best for removing the silicon oxide invisible coating. Use of aggressive acids causes stress corrosion and surface damage and is therefore not recommended. <b>UNITED'S Brite-Cast™ Investment Remover works effectively in removing fire scale as well as preventing stress corrosion or surface damage of the cast piece.</b>
<b>FLASK TEMPERATURE</b>	Use your regular flask temperatures.
<b>FIRE SCALE</b>	Fire scale is completely eliminated.
<b>CYANIDE TREATMENT</b>	Not recommended.
<b>TECHNICAL ASSISTANCE</b>	Always available... Call 1-800-999-3463 / 1-800-999-FINE E-mail / <a href="mailto:doc@unitedpmr.com">doc@unitedpmr.com</a> Web-Site / <a href="http://www.unitedpmr.com">www.unitedpmr.com</a>

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