

Sterling Silver 59

Purpose - Casting

Advantages - Heat treatable, good tarnish resistance

Physical & Mechanical Properties

Composition		Density (g/cc)	Hardness (HV)	
Ag	92.60%		10.22	As cast
Cu	4.40%	1 stage hardened		76
Zn	3.00%	2 stage hardened		102

Melting & Casting Instructions

Temperatures			Process parameters	
Pre alloying	1010° - 1040° C	1850° - 1904° F	Quench Time	20-30 minutes
Casting	955° - 985° C	1751° - 1805° F	Remelting	60% fresh mix
Flask	540° - 650° C	1004° - 1202° F		

Heat treatment Instructions

(1) 1 Stage Hardening process for medium to high hardness:

Heat the sample at 450° C for 1 hour and air cool.

(2) 2 Stage Hardening process for super high hardness:

Stage 1 - Anneal the sample at 700° C for 15 - 25 minutes (depending on the size) & quench in water.

Stage 2 - Heat the sample at 450° C for 1 hour and air cool

Note: Cover the object with slurry of Borax / Boric acid paste to protect the surface from discoloration.

General Instructions

- **Fluxing:** It may be necessary to flux these silver melts. We recommend Boric Acid. Do not use Carbon Containing Fluxes or Charcoal. Skim any surface oxides off the surface before stirring.
- **Investment removal:** *Flouric based* investment removers are the best for silicon oxide invisible coating. Use of aggressive acid causes corrosion and surface damage. *United's brite cast* works very effectively.
- To calculate the weight of the metal needed (in grams), multiply density (gm/cc) with weight of wax (grams). Add 10% of the total weight for button.

Note: There are proprietary metals in the formulation which are not included in the composition section.

Technical Assistance: Always available... Call: **1-800-999-3463 / 1-800-999-FINE**

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