



# Anti Tarnish Sterling Silver Casting Grain



Imperial's Anti-tarnish Sterling Silver grain was developed to provide an alternative to the standard Ag-Cu sterling silver alloy for casting applications. This alloy is not intended for use in the manufacture of fabricated items.

This alloy contains elements that will likely burn off during the melting stage of casting. Please refer to the MSDS for additional information on this as well as the melting range and density of this alloy, as values are different than those for the standard Ag-Cu alloy.

## CASTING INFORMATION

1. Melting range: 825 - 867 ° C / 1516 - 1593 ° F
2. Density: 10.25 grams / cc
3. Recommended Casting and Flask Temperatures: The melting range for the Anti-tarnish alloy is narrower with different solidus and liquidus values than that for the standard Ag-Cu version of Sterling Silver. Final parameters for your specific application will likely vary with the design of the item(s) being cast, the size of the tree, and the thermal profiles associated with furnaces. Trials may be needed to work out the optimum parameters for your specific application. A suggested starting point is:

	<u>Casting Temperature</u>	<u>Flask Temperature</u>
Large Items	920° C / 1688 ° F	480° C / 900 ° F
Medium sized items	960° C / 1760 ° F	540° C / 1000 ° F
Small intricate items	1000° C / 1832 ° F	590° C / 1100 ° F

4. Cooling: After casting, let the flask cool at room temperature until it is no longer red (approximately 10 to 15 minutes), then quench in water.
5. Recycling: In house trials indicated this alloy can be recycled 50% cleaned scrap / 50% new grain into subsequent melts. Avoid adding items where the surface is not completely free of oxide, investment particles and finishing compounds to melts as brittle and porous castings may result.
6. Mechanical Properties: As cast U.T.S. values of 30,000 psi at 25 % elongation to failure were seen when appropriately shaped castings were tested, indicating as cast pieces will have some formability.
7. Tarnish Resistance: Qualitative in house tests indicated the tarnishing response of this alloy differs from that of Imperial's Ag-Cu sterling alloy. As of the date of issue, tests by an independent lab to quantify this difference are being scheduled.

*We are always interested in hearing your opinion of how our products have performed for your application. Please contact us with any questions, comments or should you require information regarding Imperial's wide range of gold, silver and platinum products.*

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