

Argentium User Guide

Guidance for ring sizing and refinishing



ARGENTIUM[®]
THE FINEST SILVER

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Look for this sign for useful/important information to remember about Argentium silver.

Basic 'need to know' information

Heating applications and heat/colour recognition



It is important to remember that Argentium silver displays a paler colour glow than traditional sterling silver at annealing and soldering temperatures.



Argentium silver cannot be touched, moved, manipulated or quenched when it is at red-hot temperatures.

Do's

- Carry out torch annealing and soldering procedures in a shaded area to assist heat/colour recognition and prevent overheating.
- Make sure Argentium silver is securely supported whilst heating.
- Wait until the red glow has disappeared from Argentium silver before touching or moving.

Don'ts

- Do not touch, move or manipulate Argentium silver while it is at red heat, as this can cause cracking.
- Be careful not to overheat.

Quenching



Argentium silver retains its heat for longer than traditional sterling silver due to the germanium content.

Do's

- After annealing, wait for the red glow to disappear before quenching (best judged in a shaded area).
- Always quench in water.

Don'ts

- Do not quench Argentium silver too quickly as this can cause cracking.
- It is hazardous to quench metals in pickle solutions.

Pickling

Recommended pickling solutions are:

- Sodium Bisulphate
- Weak Sparex
- Phosphoric Acid
- Citric Acid
- Sulphuric Acid

Do's

- Dilute pickle solution as advised by the supplier.
- Heat pickle solution to recommended working temperature.
- Use pickling solution that is not over-used.

Don'ts

- **Do not use Hydrofluoric Acid with Argentium silver** - Hydrofluoric Acid damages the protective germanium oxide and diminishes tarnish resistance.
- Do not use old or over-used pickle as the strength of any pickling solution will reduce with use and saturated solutions can leave unwanted deposits on immersed items.

Joining techniques

Soldering

When carrying out repairs, particularly ring sizing, a soldering operation is usually required. Specific Argentium solders have been developed to give a good colour match with the Argentium silver. The Argentium Easy solder can be used for general repair work but for ring sizing the Argentium Medium solder is preferred. (Argentium silver solders are available from Rio Grande - www.riogrande.com)



One important difference when soldering Argentium silver, compared to traditional sterling silver, is that you generally only have to heat the area that is being joined (not the whole piece). The reason for this is because the germanium content enables Argentium silver to retain its heat much better than traditional sterling silver.

Do's

- Always make sure that surfaces are clean and degreased before soldering.
- Remember that Argentium silver glows a paler colour than traditional sterling silver at soldering temperatures - it is therefore recommended that soldering applications should be carried out in a shaded area to avoid overheating.
- Make sure that Argentium silver is well supported during soldering applications.
- Wait a few seconds for the red glow to disappear before touching or moving.
- Remember to protect stones when you are soldering - products such as 'Heat Shield' (supplied by Rio Grande) can be used (please follow product instructions). NB. Some stones e.g. pearls, turquoise and opals should be removed before soldering - please check the suitability of stones before applying heat.

Don'ts

- Do not quench soldered pieces as this can cause the solder joint to fracture.
- Be careful not to touch or move your Argentium silver piece too quickly after soldering as this can cause it to crack - wait until the red glow has disappeared.

Flux

Argentium silver is highly resistant to firestain, it is therefore only necessary to flux the seam to be soldered rather than applying flux to the whole piece. The following fluxes are recommended (use as directed by the manufacturer):

- My-T-Flux (supplied by Rio Grande)
- Battern's Flux
- Prip's Flux



Joining techniques

Fusing

It is possible to easily fuse Argentium silver alloys - this can be considered as an alternative joining technique to soldering when, for example, a ring has been reduced in size.

Do's

- Thoroughly clean/degrease the sections being fused.
- It is recommended to apply a diluted flux to the sections being fused.
- Heat the piece with a gas/air flame and work in a shaded area (this makes it easier to visualise the temperature by the colour/glow of the metal).
- Argentium silver will glow brighter as the temperature rises - look for a 'wet' surface appearance as an indication of the correct fusing temperature.
- Allow the red glow to disappear before touching or moving the fused piece.
- Wait until the red glow has disappeared before quenching (don't quench stone set pieces).
- Remember to protect stones when you are fusing - products such as 'Heat Shield' (supplied by Rio Grande) can be used (please follow product instructions). NB. Some stones e.g. pearls, turquoise and opals should be removed before fusing - please check the suitability of stones before applying heat.

Don'ts

- Be careful not to touch, move or quench your Argentium silver piece too quickly after fusing as this can cause it to crack - wait until the red glow has disappeared.
- Do not quench stone-set pieces as this may damage the stones.



Instruction DVDs by Ronda Coryell demonstrate fusing techniques - these are available to purchase from www.rondacoryell.com and www.riogrande.com (short video clips can be viewed on YouTube: www.youtube.com/user/rondacoryell/featured).



Heat-hardening your resized ring

Soldering and fusing operations will soften Argentium silver - it is therefore recommended to carry out a heat-hardening procedure to increase hardness and durability.

Method

Heat Argentium silver in a furnace or oven at 300°C/572°F for approximately 120 minutes, then air-cool to room temperature. (The heat treatment temperature can be reduced to 220°C/428°F with a corresponding increase in time.)

Important information

- Preheat the oven/furnace and supports to the required temperature before commencing the heat-hardening treatment.
- Slight discolouration may occur during the heating processes - this can easily be removed using pickle.
- Care should be taken when carrying out any heat treatments on stone-set pieces. Please check the suitability of stones before commencing heat treatment.

Refinishing processes

Optimising tarnish resistance

The tarnish resistant properties of Argentium silver relies upon applying good practice for finishing procedures, to optimise the formation of the protective germanium oxide. The following recommendations are a guide to achieving a beautiful lustrous finish with high tarnish resistance.

Manual finishing/polishing

Following the repair/re-sizing of an Argentium silver ring, the surface can be smoothed and any excess solder removed using abrasive papers/wheels. The piece is then ready to be polished. Please read 'important information' below.



Important information

Please use separate abrasive papers, polishing wheels, mops and compounds for Argentium silver to avoid contaminating the surface with residues from other metals or materials - surface contamination can diminish the tarnish resistance of Argentium silver items.

Refinishing processes

Cleaning and rinsing

Recommendations

- Ultrasonic cleaning using a near-neutral aqueous cleaning solution (pH 7-9)
- Cleaning solution temperature - 40-60°C / 104-140°F
- Immersion time - 2-3 minutes

The following aqueous cleaning solutions can be recommended:

- Legor 4580511 (www.legorgroup.com)
- Dishwashing detergents including Joy and Fairy (smaller scale operations)

Following cleaning, pieces should be rinsed with tap water and thoroughly dried.



Important information

It is important not to rinse Argentium silver with deionised water as this can damage the surface of the Argentium silver and diminish tarnish resistance.

Steam cleaning and electrolytic cleaning should not be used with Argentium silver as these processes can diminish tarnish resistance.

Long term care

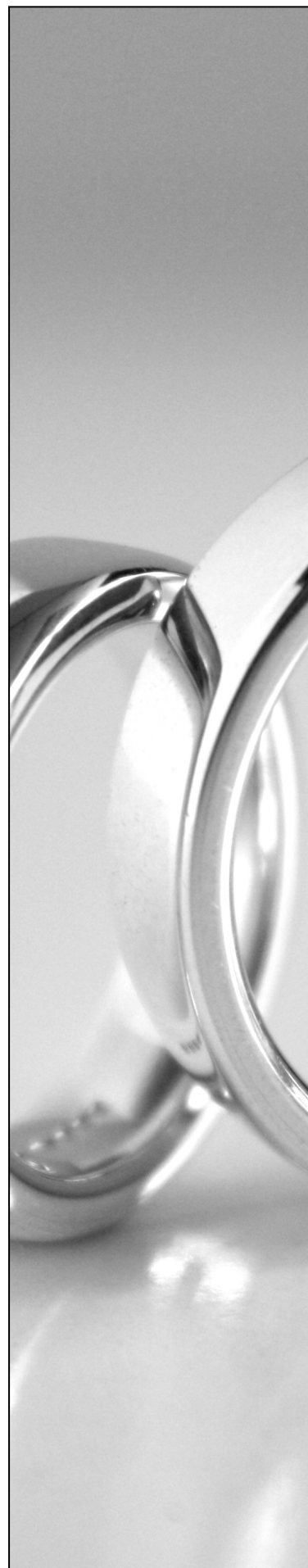
Argentium silver is low maintenance, easy to care for and simple to keep clean. Simply wipe away any dust or finger marks with a soft cloth or, for more intricate pieces, wash them in warm soapy water, rinse and dry immediately to avoid water marks.

An occasional wipe with a clean silver polishing cloth will help to maintain

Argentium silver's beautiful shine and lustre (Goddard's Long Term Silver Cloths and Tiffany & Co. Mitts are recommended). Avoid using coarse, contaminated or old cloths as they may impair the surface lustre of Argentium silver.

Please do not use 'dip' polishes or electrolytic cleaning processes with Argentium silver.

As recommended for other precious metals, it is advisable to remove Argentium silver jewellery before entering swimming pools/jacuzzis and before carrying out activities where Argentium silver could come into contact with chemicals.



For sales and technical enquiries please email
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