



MANL Note

Care of Collections

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CLEANING & PREVENTING TARNISH ON SILVER ARTIFACTS

Tarnish can be described as a discolouration of a bright metal surface by a thin film of corrosion products. Silver objects, including sterling and plated, will readily tarnish in the presence of sulphur compounds. In the museum environment, sulphur compounds can be found in rubber products, wool, felt, industrial emissions (pulp and paper mills), or burning fossil fuels. If allowed to progress, the surface of the object may be etched and pitted beneath the tarnish layer.



Tarnish can be removed in 3 ways: mechanically with a polish; chemically with a dip; or electrochemically. Polishing or chemical tarnish removal methods remove the surface layer of tarnish and may also expose a certain amount of the underlying silver. It is therefore suggested that museum objects are not subjected to tarnish removal frequently.

Before undertaking any of these methods, it is important to examine the objects carefully. Look for identifying marks such as hallmarks and also try to determine how the object was constructed. It is extremely important to decide in advance the final appearance you are trying to achieve. The method chosen should be driven by the object type. For example, composite objects such as a silver teapot with an ivory handle should not be subjected to chemical or electrochemical cleaning because

it usually involves submerging the objects, which will damage the ivory component.

Components of Polishes:

- somewhat abrasive
- remove silver and tarnish from the surface of an object
- leave behind a pattern of fine scratches
- Results of the finish, or scratching is more influenced by the polisher than by the polish

Polishing Cloths

- cloths that are impregnated with an abrasive material
- most gentle of abrasive polishing
- most useful for buffing or lightly tarnished silver

Waddings

- contain an organic solvent instead of water
- useful for objects that cannot be exposed to water
- Abrasive particles will be left behind and much of the residue should be removed by brushing with a soft brush or rubbing with a soft cloth.

Liquids, Pastes & Foams

- Most commercial silver polishes contain a tarnish inhibitor.
- Tarnish inhibitors are not necessarily beneficial. They do slow down the rate of tarnishing, but when they do re-

tarnish, they do so rapidly and unevenly.

- Hagerty's Silver Polish and Twinkle for Silver are recommended.

Components of Chemical Dips:

- work by dissolving the tarnish on an object at a faster rate than the underlying silver
- Manufacturers recommend total submersion; this can often lead to over-cleaning.
- Conservation practices recommend applying the dip locally using a cotton swab and then rinsing with distilled water to remove excess dip.
- Dips are made of an acid and a complexing agent. These may damage not only the object, but can be harmful to the user.
- should never be used on objects that have sealed hollow components, such as candle sticks
- Objects cleaned look "new" because there is no tarnish left in the deeper recesses of the design.

Components of Electrochemical (Galvanic) Reduction:

- Tarnish on silver slowly disappears when a silver object is placed in contact with aluminum and both are submerged in a warm solution of sodium carbonate or sodium bicarbonate.
- As long as contact is maintained between the two metals, the aluminum corrodes and hydrogen gas is produced. This gas then reacts with the tarnish reducing it back to silver metal.
- Objects must be rinsed well with distilled water to remove any traces of electrolyte.
- Silver from the tarnish remains on the surface of the object in the form of rough particles that leave a dull, matte finish.
- Silver treated electrochemically may tarnish more quickly.
- Objects with sealed hollow components should not be submerged to aqueous solutions.

Further Preventive Measures:

- When handling silver, wear cotton gloves. Oils and salts from human skin can leave fingerprints that may cause damage.
- All objects should be kept clean and free of dust.
- Further tarnishing can be minimized by using desiccated silica gel to keep the relative humidity low, and activated charcoal to remove tarnishing gases.
- Tarnish does not need to be removed before objects are placed in storage. It is better to remove tarnish only when necessary, such as for exhibit.
- In storage, tarnish can be minimized by wrapping individual silver objects in unbuffered acid free tissue and placing them into polyethylene (ziploc) bags. Ensure each bag is clearly labelled with the object name and artifact number.



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