

CLEANING SILVER OBJECTS*

November 2021



Silver is a lustrous, warm metal that is produced in many alloy compositions and used to make a wide array of decorative objects. It can range in color from steely blue to a warmer mellow color. Many objects are silverplated with a thin layer of silver alloy deposited over a base metal. Below you will find discussion and instructions to examine and clean decorative silver items. Please read the

instructions carefully and proceed with caution. Permanent damage can result from the misapplication of these procedures. Work should be performed slowly and gently. Consult a conservator with any questions or concerns you may have relating to the care of the specific object in question.

BEFORE YOU BEGIN:

Examine the Object:

Structure

Is the item structurally sound? Structural integrity of your object is essential because the amount of handling and manipulation required to properly clean your silver object will put great stress on thinner parts of the piece and places where parts are joined together. Look at all parts and surfaces of the object very carefully. Do you see cracks, delamination, old repairs, loose areas, bent areas, or missing parts? These are potential signs of structural weakness and may preclude cleaning. If you have examined all of the parts of your object and they seem stable and sound, you can then move on to look at the surface of your piece.



Surface

The first step to examining the surface is to figure out if there is a protective coating or surface finish on the surface of your silver. Wax, natural resins, synthetic resins and oils have all been used as protective coatings on silver. Waxes and resin coatings were probably added for protection from tarnishing but may have broken down over time allowing parts of the underlying silver alloy to tarnish unevenly leaving the surface with a mottled appearance. Many commercial silver cleaning compounds leave a waxy film behind after use. These thin films can also wear unevenly and produce a mottled appearance on objects.

These coatings must be removed prior to cleaning. If they are not removed, a very aggressive level of pressure will be needed during cleaning or polishing in order to abrade or wear the coating away before you can access the metal surface for cleaning. As you will see below, hot soapy water or mineral spirits can be used to remove most coatings. If these methods do not remove the coating, you may need to take your piece to a conservator so that they can remove the coating using more aggressive solvents prior to cleaning.

A number of chemical finishes have also been applied to silver throughout time. These include intentional chemical patination, gold plating, and false gilding (created with colored finishes). These can be an important and intentional element of your object and should not be removed. If you suspect an intentional surface finish, check with a conservator before cleaning your piece.

While patination can form naturally over time, silversmiths and artisans commonly used them as an intentional finishing process. Intentional patination on a silver object is typically gray or black in color and can help define intricate patterns and deepen the overall appearance of surface treatments like engraving and repoussé. Patination in the deepest parts of your object's surface can be very hard to access and to remove. Often it is best to leave these areas alone even if you decide to move forward with polishing.

A very dark Sulphur-based silver patination method has been intentionally used to decorate silver objects. This technique, called "niello," has been used around the world. It should not be cleaned.

Gold layers are another type of finish added to silver objects. These areas of gold finish were added to utensils designed to be used with food that would attack the silver alloy such as the bowls of sugar, spoons, the tines of forks for fruit, or any utensil for use with eggs. This very thin layer of gold is called parcel gilt, vermeil, or gold wash and is extremely easy to accidentally polish away. Objects with a gold wash should not be polished.

Some objects are plated silver over another base metal. This layer is thin and easy to polish away. Tips for determining if an object is plated is to look for a hallmark or maker's mark as these can sometimes help clue you into the materials used. The base metal of a plated object may also show through the silver in high points that have received more aggressive polishing over time. If the base metal is an iron alloy, the object will be magnetic.

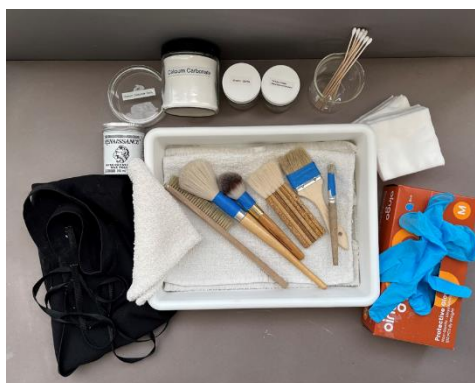
Ready to Clean?

If your object is structurally sound, has no wax or resin coatings, has no evidence of original decorative surface treatments, has minor superficial soil and/or tarnish, you can proceed.

Remember to be extremely gentle with these materials and techniques to avoid causing any damage. Always avoid use of commercial polishes, as many contain corrosive chemicals such as ammonia or harsh abrasives that can permanently damage delicate surfaces. The materials and techniques listed below have been tested by conservators and found to be safe and effective when used in a careful and sensitive manner.

Preparation:

Set up a workspace in a well-ventilated area. Provide a clean padded work surface, adequate light, and sufficient ventilation to remove fumes. Use a clean piece of cotton flannel or other soft cotton cloth on the table as a work surface so that your object is not scratched. Wear a clean apron to protect your clothing. Due to the reflective quality of silver, a neutral or dark apron can help improve the visibility of the surface as you clean and/or polish. Use clean nitrile or latex gloves to protect both your hands and your artifact. Start by disassembling the object and removing any loose parts. Take digital images and keep written notes so that you can reassemble the object properly after cleaning. Mask off any ivory, wood, or other non-silver materials that may be present on the object to protect them from cleaning chemicals and techniques. Clear, thin polyethylene plastic, saran wrap, or a flexible film such as Parafilm M can be used but must be removed as soon as possible because these materials can tarnish silver.



Materials to Have on Hand:

- Clean cotton cloth and padding
- Cotton swabs or pads
- Apron
- Latex or nitrile disposable gloves
- Soft clean natural bristle brushes, such as hake brushes, watch brushes, or soft paint brushes
- Clean natural bristle stencil brushes or shoe buffing brushes for waxing and buffing
- Clear Microcrystalline Paste Wax, such as Renaissance© wax, or a clear hard paste wax from the hardware store e.g., Butcher's™ Wax
- Mineral Spirits
- Precipitated Calcium Carbonate - **do not substitute ground chalk or whiting as it will scratch!**
- Mild detergent solution - a few drops of clear dishwashing liquid in a quart container of distilled water
- Acid free tissue and a polyethylene or Silvercloth® bag for storage after polishing. If storing in a Silvercloth bag, wrap object in an interleaving layer of tissue to prevent direct contact with the Silvercloth.

Cleaning Procedures:

1. Remove loose dirt and dust with a soft brush. Haké watercolor brushes are good choices for dusting because they are made entirely of wood or bamboo and have no metal bands. If a brush is used that has a metal ferrule holding the bristles in place, cover the ferrule with masking tape to avoid scratching the object by accident. Stiffer brushes may be needed for very dirty or badly tarnished items. Be very careful not to scratch the silver surface of your object.

2. Old polish residues are often trapped in depressed areas. Many commercial polish compounds contain waxes that can attract and hold abrasive dirt and dust to the surface. These can usually be removed by soaking them with the dilute detergent solution and waiting for the deposits to soften before attempting removal. Gently agitate the deposit with a soft paintbrush or stencil brush to help loosen embedded material then rinse thoroughly with clean distilled water and cotton swabs. Be very careful when removing these deposits to avoid scratching the surface with the old abrasive residue and dirt that you are removing. Change brushes and swabs often to reduce risk of abrasion and use a rolling rather than rubbing motion with swabs. Pre-rolled swabs are more tightly rolled resulting in a harder, denser swab. Use with care as they can scratch the surface of the silver if too much pressure is applied.
3. If your object has hollow handles or other hollow parts that are difficult to rinse or dry, do not immerse the object in a bath of water. Use care to prevent liquid from flowing into the hollow parts.
4. Light tarnish can often be removed from silver simply by washing with cotton moistened with the dilute detergent solution and then rinsing with clean, distilled water. In order to determine if your silver actually needs polishing, test-clean a small area with detergent solution first. If polishing is not needed, simply clean the object gently with pieces of clean flannel or cotton dampened with detergent solution, changing them frequently to prevent scratching of the surface with the materials that you are removing. Rinse the surface by wiping it with clean cotton dampened with distilled water, and allow the object to dry completely in a warm, dust free environment.

Polishing Procedures:

1. To polish your silver, mix a small amount of precipitated calcium and mild detergent solution together in a shallow dish to create a slurry the consistency of cream. Apply a small amount of the slurry to the object with a small piece of clean cotton flannel or a wad of loose cotton. Rub gently in a circular motion and change out the cotton or flannel often as you work so that you are not grinding the used slurry back into the surface. Tarnish in depressions can be lightened with a cotton swab but remember it is not a good idea to remove too much from these areas. Try not to use too much precipitated calcium carbonate. Remember that even the gentlest polish is an abrasive that works by scraping off a microscopic layer of silver from the surface of your object. The more often you polish, the more elbow grease you use, the faster you will remove the surface detail and crispness of the silver surface.
2. When polishing is complete, thoroughly rinse surfaces with clean distilled water. It is important at this stage to **change the padding on the table and your gloves** so that you are working on a clean surface with clean hands that are not contaminated with the used precipitated calcium carbonate mixture. After thorough rinsing, dry the object thoroughly by wiping with a clean, dry, piece of flannel or cotton cloth and leave it out to air dry until you are certain that it is completely dry.

3. To remove any remaining traces of polish, buff the surface with a clean piece of cotton velveteen. The velveteen surface will trap stray polish residue particles. If the object is to be stored, wrap it in acid free tissue and place it in a clean polyethylene bag or a Pacific Silvercloth® bag. If you plan to display your silver, you are now ready to apply a protective coating to keep it from tarnishing too quickly.

Waxing Procedures

1. Silver can be protected from water and pollutants with a coat of paste wax. Apply a small amount of microcrystalline paste wax (Renaissance Wax® or Butcher's® White Diamond clear paste wax) to a soft clean dry cloth or very soft brush and apply it lightly to the entire surface of the object. (It is very easy to apply too much wax which will be very hard to remove. One usually only makes this mistake once!) After applying the small amount of wax, wait a moment and then buff the wax with clean pieces of old stockings or soft natural bristle brushes. These materials will not leave lint trapped in the wax. Wax forms a flat, overlapping, plate-like structure when buffed. The buffing aligns and compresses the plates to form a contiguous protective coating. If you leave unbuffed wax on the surface for too long and it becomes hardened, use a small amount of fresh wax to soften the dried wax and buff immediately.
2. Keep the object free of dust by dusting with a soft natural bristle brush. Check for evidence of tarnishing. The wax should provide protection for approximately one year, depending on the environmental conditions and amount of handling the object receives. If tarnish is observed, remove the old wax by wiping the surface with cotton pads wetted with mineral spirits. Clean the object and reapply the wax as described above.
3. **Please note that if the object or utensil will be used for food consumption, it should not be waxed.** Washing these items before each use using the cleaning procedures described above can prolong the time before polishing is needed. When these objects are not needed for food use, they can be stored as described above in acid-free tissue and either a polyethylene or Silvercloth® bag. Sometimes buffet drawers have or divided boxes can be bought that have silver cloth laminated to them for storage of silver flatware and objects. These are great options, but be sure to interleave or wrap your silver in tissue as direct contact with silver cloth can cause tarnish.
4. For objects slated for permanent display, consider having a conservator professionally clean the artifact and apply a stable organic resin coating. This durable and protective coating can provide up to twenty years of protection and minimizes the repeated wear and tear associated with periodic polishing.

*WARNINGS:

- **Health Hazards:** When working with solvents, follow all recommended safety precautions noted on the containers. Mineral Spirits are flammable and their fumes are harmful to your health when they are not used as instructed. **Always work in a well-ventilated space.** Know the location of the nearest fire extinguisher when working with flammable solvents and waxes.
- **Avoid damaging your object:** Materials and techniques should be executed with extreme

care to avoid causing unnecessary deterioration. Avoid the use of commercial polishes, as many contain corrosive chemicals such as ammonia or harsh abrasives that can permanently damage delicate surfaces.

- **Guidance Only:** Recommendations in this handout are provided as a public service for guidance only and only for those who have completed the ICA *Caring for Silver* webinar. Neither inclusion nor exclusion of products or providers constitutes endorsement or lack thereof.
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