



BACK IN BLACK

Tips for blackening silver

BY TINA WOJTKIELO SNYDER

Blackened silver is one of the hottest trends in jewelry today. The process involves coating a piece of silver with one of a number of solutions that blackens the surface. The end result can be chic, sleek, or sexy—and it looks great with high karat gold accents. But taking silver from sterling to black can be a little tricky. If you're looking to achieve a consistent, high-quality surface finish, you may need to experiment for some time with the process parameters before finding a system that works best for you. To aid you in your quest to get back in black, we've compiled the following tips from metal suppliers and jewelry makers that should take some of the mystery out of this touchy process.

Start with a clean, prefinished surface.

As when plating, you need to start with an ultraclean surface before blackening silver. "Any oils or polishing compound residues on the surface will prevent you from getting a good bond on the coating," says Jim Sivertsen of United Precious Metal Refining in Alden, New York, who recommends that jewelry makers who have access to electrocleaners for plating use them as the first step in the blackening process to thoroughly clean the work.

In lieu of electrocleaning, goldsmiths Jack and Elizabeth Gualtieri of Zaffiro in Portland, Oregon, use a combination of ultrasonic, steam, and a final short soak in denatured alcohol to ready the pieces in their Etrusco line for blackening. They also stress the importance of getting jewelry to its final finished state—stones set and all—before blackening. "You want to have the finished surface you desire on the entire piece before you blacken it," say the couple, whose Etrusco collection

features blackened fine silver accented with 22k granules.



Zaffiro

Choose a blackening agent.

There are a number of products you can use to blacken silver jewelry, the most common of which are liver of sulfur and chemical oxidizers such as Black Max. It's important to follow the directions on the containers when mixing these products with water to get the correct ratios for blackening. (*Safety Note:* You should always read the MSDS and wear eye protection, a mask, gloves, and all other necessary safety gear when handling chemicals, as well as ensure that your work area is well ventilated.) The following are tips for working with a sampling of blackening agents:

Liver of sulfur. The most common blackening agent used by jewelers, a liver of sulfur solution works best when heated. Chuck Bennett of ABI Precious Metals in Carson, California, suggests heating to 150°F (65.6°C) and then either dipping the piece in the prepared bath or applying the solution with a cotton swab or small artist's brush and letting it dry for about 45 minutes to 1 hour. If you choose

the dipping route, the amount of time you leave the piece in the solution is critical to obtaining good color. Bennett dips a piece for 5 seconds and then takes it out for 5 seconds, repeating the process five or six

times. "This gives you a deeper penetration of the liver of sulfur, resulting in a longer lasting surface," he says.



Barer

Sivertsen suggests a similar approach, but adds that the process is largely a matter of personal preference. "You may have to dip and re-dip the piece until you get the right tone," he says. "It's a really touchy-feely process."

And that "right tone" can range in color from a true black to a rainbow of other hues. "During the process the artist can stop at any point in the range of colors," says Mark Nelson of Rio Grande in Albuquerque, New Mexico, who offers that adding a few drops of ammonia to the bath will accentuate the blue and red tones.

Belle Brooke Barer of Belle Brooke Designs in Los Angeles, who uses the liver of sulfur method for her blackened silver and gold pieces, suggests dipping the piece in the solution for 15 to 60 seconds. "If you leave it in for too long, it can result in flaking," she warns.

Belle Brooke Barer's Blackening Process



1. I prepare the pieces with 800-grit sandpaper, bristle brushes, Moore's discs, etc. to get them to an almost finished state.



2. To get the matte look of my designs, I sandblast the pieces and even out the overall texture.



3. I boil water and pour it into a 500 ml beaker with a small chunk (about the size of a glob of toothpaste) of liver of sulfur. (This photo shows my blackening setup, including the rinsing jars, which are explained in step 5.)

4. I dunk the pieces in the solution for between 15 and 60 seconds. Leaving the pieces in solution for too long can cause flaking.

5. I rinse the pieces in three consecutive jars: tap water, tap water mixed with a small amount of baking soda and soap, and tap water again.

6. I finish with Renaissance wax, applying it and rubbing it off repeatedly. Sometimes I rub the pieces with a mild polishing cloth very lightly to shine them up a little.



In addition to giving your pieces a quick dip, it's important to use the liver of sulfur solution as soon as possible after mixing it up. "Once mixed, liver of sulfur solutions have a very short working life, generally about a day," says Nelson.

Safety Note: Do not mix liver of sulfur with any type of acid, as it will emit deadly fumes.

Black Max. A tellurium hydrochloric acid compound, Black Max offers a sort of instant gratification; the blackening occurs the second the solution touches the metal. Jewelers can submerge pieces in a bath or apply the solution to detailed areas with a toothpick, cotton swab, or artist's brush. For even coverage, Nelson suggests applying Black Max to a clean, dry surface and then rinsing in water. He has found that the product works best on pieces with matte finishes as opposed to those with high polished finishes.

Safety Note: Selenium and tellurium can be absorbed through the skin and attack the nervous system, so wear protective gear (gloves and safety glasses in particular) when working with these materials.

Other concoctions. Beyond liver of sulfur and chemical compounds, products for achieving a black coating on silver vary. Jewelers use everything from fruit fungus preventer to hard-boiled eggs to blacken silver. (We'll put the hard-boiled-egg method to the test this month at *MJSA Journal Online*.) The Gualtieris use Dormant Oil Spray, which is intended for spraying on stone fruits in winter to prevent fungus. They simply boil a pot of water, measure out a pint, and mix in four or five drops of the spray. After stringing the pieces to be coated on copper wires, they dip them in the solution to achieve the desired color. "The color graduates from a brownish gold to a rainbow hue to a final matte black," describes

Elizabeth. "We have to watch really carefully to make sure that we take the piece out when it's black enough but before the solution starts attacking the 22k gold. It takes just a few extra seconds before the gold starts getting orangey."

Elizabeth says the time in solution varies, but she never dips a piece for longer than 60 seconds.

Finish up. Once you are done blackening a piece with any of the processes described here, you can give it a quick rinse and gentle polish with any number of methods. The key is to avoid removing the blackened coating you worked so hard to perfect. Bennett cautions against using an ultrasonic on a piece that has been blackened, claiming that some ultrasonic solutions can react with the coating and turn it a creamy color.

In addition, he cautions against placing blackened pieces into a tumbler of finishing media that is used for standard sterling silver jewelry. "Even small amounts of residual blackening agents can contaminate your tumblers and other finishing equipment, leading to tarnishing of your other jewelry pieces," he says. "If you need to tumble your blackened

parts, it's essential to neutralize the chemicals in the blackening agents first. Liver of sulfur can never be truly neutralized, but it can be diluted, whereas Black Max can be neutralized because it is an acid. To do this, give the pieces a 10-minute bath in a water and baking soda solution (eight parts water, two parts baking soda) heated to between 140°F and 150°F (60°C to 65.6°C). It will save you many hours of rework and frustration."

To get the final polish she desires, Barer uses Renaissance Wax on her blackened silver jewelry, applying it and rubbing it off repeatedly. Sometimes, if she wants a slight shine to the surface, she'll rub it very lightly with a mild polishing cloth.

Safely store and dispose of solution. Avoid storing blackening agents near tools, as the fumes they emit will rust steel. Nelson suggests storing Black Max, liver of sulfur, and other oxidizers in sealed plastic bags in an area of your shop that is farthest from your tools.

When it comes to disposing of spent solution, the only thing you need to worry about before dumping it is the Ph. "The Black Max should be brought up to



Barer

a Ph of 5 and the liver of sulfur needs to be less than 11.5 before you pour it down the drain," says Nelson. To reduce Ph levels, add baking soda to Black Max and vinegar to the liver of sulfur solution, and test the Ph with readily available testing strips.

If you've been thinking about creating some pieces in blackened silver, pick your poison and go for it! The guidelines and tips in this article will help you avoid some of the pitfalls jewelers typically encounter with this process. If silver is the new gold, perhaps black is the new silver. ♦



Intrigued about methods of blackening silver? Continue this article at *MJSA Journal Online*, mjsa.org, where we'll put the hard-boiled-egg process to the test.