

Liver of Sulfur Tips and Tricks

With Katie Baum



Elm Sprig by Katie Baum

When it comes to adding color to silver clay, we have quite a few options. There are enamels, resins, pencils, Vitrea paints, beads... And that doesn't touch decorative, embeddable embellishments such as beads, glass, ceramics, or gemstones. Of all the options, I still find Liver of Sulfur among the easiest.

Like many silver clay enthusiasts, I value instant gratification. We can form a piece, dry it, torch-fire it, and be fine-finishing the silver within an hour. I like Liver of Sulfur because it is also quick to prepare, and I find it simple to use. In the U.S., we have dry, chunk-form LOS. I need only add a fingernail-sized chunk to 8 ounces (236mL) of almost-boiling water. I will honestly admit that prior to this conference, I have not used liquid-prepared Liver of Sulfur; I refer you to the instructions on the packaging. In addition to the patina solution, we need rinse water. Running water is preferable, but a container of clear water will do fine. Hook the piece on something you don't mind sacrificing—I often use bent paper-clips—and dip until you get the color you were hoping for.

I won't lie: Liver of Sulfur is always unpredictable. One batch can be bland, another can be vibrant, and yet it all came from the same initial jar. I've given up predicting what the patina will do, in lieu of working with what I know it *can* do.

I begin with listing what I absolutely know about Liver of Sulfur:

1. It has a potent odor of sulfur, similar to not-so-fresh eggs.
2. The more Liver of Sulfur you add to the water, the stronger it will be.
3. The longer you leave a piece of silver in, the darker it will get.
4. The patina always produces color in the same order, regardless of how quickly: goldens to ambers, then reds, then to purples, blues, and finally greens, before becoming a matte black.
5. The best way to stop the LOS reaction is to rinse in clear water, very well, freezing the color where we want it.
6. Polishing Liver of Sulfur with any type of metal polish or polishing cloth removes the patina, leaving color only where the cloth cannot reach.
7. Re-firing a piece removes patina completely.



Round Birdhouse by Maria Martinez

From here, I started experimenting with all the variables I could think of. I categorize things in 3 ways: changing the LOS solution, changing the rinse solution, and changing the piece of silver itself.

Options for Liver of Sulfur Solutions:

1. Add coffee! By far the best results I get, with vibrant purples and blues, happens when I add my regular-sized chunk of Liver of Sulfur to the typical volume of hot coffee, rather than plain hot water.
2. Add vinegar: Adding 50ml or so of vinegar to the patina solution seems to slow down the patina reaction, making it a little more manageable, but I also have found that the colors seem to be more dull.
3. Add ammonia: In experimentation, when adding ammonia (denatured alcohol works the same way) to Liver of Sulfur, the reaction seemed to freeze at the tarnished, golden hues, then landing on the ambers and reds.
4. Add Cola: The cola acted like a diluted version of the coffee solution. The colors are generally vibrant and long-lasting.



Polaris by Judi Weers



Mists of Inverness by Kate Qualley Peterson



Sugarplum Sweet by
Kate Qualley Peterson

The next variable is to change the rinse water. Of course, we can add other solutions to the rinse water in the same manner we added them to the Liver of Sulfur solution, but I must say that I have not noticed any real benefit to this. When it comes to rinse water, I've only noticed three major categories of difference.

1. Cold rinse water: The colder the water, the better the golds and greens seem to be. I've gotten my fair share of lovely spring-leaf projects using rinse water with an ice cube or two.
2. Hot rinse water: Incredibly hot water seems to stop the patina reaction with bold reds and purples, as if the hot water got the silver very angry.
3. Rinse water at either above temperature will have the same effect, but adding baking soda in small amounts to the water will mute the colors, giving them a paler, more pastel appearance.



Lentil Bead by Jackie Truty

If you've already experimented with the Liver of Sulfur solution and the rinse water, the other element to play with is the silver piece itself. How the patina reacts with the silver depends on a few things:



Lizard Lentil by Stanley Micallef

1. Is the piece clean? The silver picks up all sorts of dust and debris from our work areas. Unfired silver powder, ash from the kiln, bits of fiber paper or fire batting, and even the oils from our hands find ways to attach themselves to the silver. If your studio shares space with children or pets, you can be sure to have things such as pet dander or cleanser molecules in the air, ready to land on the surface of the silver. To be sure that the piece is as clean as possible, clean it with a baking soda paste just before dipping it into patina.

2. Where do you want the color to appear? If you have sections of the piece, such as the design of a woman with long hair, perhaps you only want to color a certain area—such as the hair of your silver maiden. In this case, how you handle

the piece determines the areas of patina. If not dipping the entire piece into the Liver of Sulfur, apply the stinky stuff with a cotton swab.

3. What is the finish on the piece? The rougher, more textured the piece, the deeper the color seems to be. I don't mean deeper in the sense that it somehow soaks further into the silver—you know that patina is a surface-only effect. But, the richness of the color seems to be more full when the surface of the piece is not completely smooth. Not that a piece that has been tumbled won't look fabulous, but the color is somehow a little less bold.



The Guardian by Dana Peters

4. What about resist? Did you know that you can use any oil-based permanent marker as a resist on the surface of the piece? This means that you can darken any untreated areas to a matte black, while keeping anything under the oil marker perfectly silver. With a polishing cloth—no polish, though—you can bring the piece to a pewter shine with great contrast.

I wish I had better words of wisdom, or absolutely reliable advice about getting the effect you want from your patina every time.

I'm sorry I have no breakthrough genius method of Liver of Sulfur application. I do, however, hope I offered at least one new thing for you to enjoy trying at home. Thanks for having me! Cheers!



Tribal Message by Katie Baum