COOL TOOLS

Accent Silver™ Application Instructions

Accent Silver™ by Jewelry Material Innovations is a silver-alloy slip used to apply silver layers to copper, bronze and brass metals.

Accent Silver is mixed with distilled water and applied in 2 coats, then fired in a jewelry kiln to permanently bond the silver to the surface of the metal. After firing, the silver-embellished surface can be polished and patinated like fine or sterling silver.

Tools Needed			
Flat paint brush	Distilled water and dropper	Scotchbrite or 400 grit abrasive paper	Firing Tin with Activated Carbon
Palette knife	Small dish for distilled water	Stainless steel hand brush	Firing Tongs
Small acrylic discs (2) and a small bowl	Stainless steel pen-style scratch brush	Beeswax	

Before You Begin

1. Gather together all of your tools and supplies. Watch the "Discover Accent Silver" video tutorial available online in the video library or on the accent silver product page at **www.cooltools.us**

   Stir the Accent Silver powder with a clean, dry palette knife. Break up any small lumps in the powder by mashing them against the container wall with the palette knife. Prepare the surface by one of the options listed in our Metal Prep & Polishing Guide. Accent Silver can be applied to select areas using a mask. See the Metal Prep & Polishing Guide for instructions on creating masks located at the end of this document.

2. Mixing & Application - Base Coat

Dip and hold the flat brush in a small dish of distilled water for several seconds to allow the natural bristles to take up the water. Then dip the wet (not dripping) brush into the container of Accent Silver to get a ball of the material on the end of the brush. Wipe the ball into a small pile on the mixing disc and pat it with the brush to encourage it to take up all the water, then sweep it back into a pile. Add a drop or two of water using the palette knife. Pat and sweep the material until it is very smooth and creamy, but not runny.

Before application, use beeswax to hold your piece to the acrylic disc. This is helpful to hold your piece stationary while applying accent silver.Brush a thin coat on the areas to be embellished. Any spots that are missed by the first coat will not be thick enough after firing. Do not allow the slip to puddle in the nooks and crannies. If there are areas that puddle, spread the material out to redistribute it. If the texture is deep, or if you want to apply to select areas, a round brush may be more helpful. Allow the base coat to dry at room temperature. Drying can be encouraged with a gentle airflow, or move to a metal clay warmer. The coat should be opaque to the substraight underneath it.

If a rough, loose blue layer has formed on the surface of your piece, brush off with a soft bristle brush. Do not use a wire brush. (A dull layer of silver may be visible after your brush.)

Note: The unused Accent Silver on your disc can be left to dry. The brush can be left out to dry as well. Rehydrate when needed.

COOL TOOLS

3. Mixing & Application - Cover Coat

To mix the cover coat, first re-hydrate your application brush by dipping and holding in the distilled water container. Next, re-hydrate the previously used Accent Silver on your mixing disc by dabbing it with the wet brush. Then add new material and mix as before, but this time add a drop less water than you did for the first coat. Use the palette knife to mash any lumps. The consistency of the slip should be smooth and creamy, but thicker than the first coat, similar to mustard.

Brush Accent Silver over the dried base coat. Brush this coat on a little thicker than the base coat. The coverage should be even. While a single coat is not sufficient, applying the cover coat too thickly is a waste of material. Don't worry that the details and fine texture are filled in. The surface will be smooth after firing.

Work quickly in applying the cover coat because the moisture can re-hydrate the base coat and pull it back up, leaving bald spots. If you see areas that start to come up, work faster. Any bald spots can be repaired with a touch-up coat. Keep the cover coat smooth and free of lumps so the firing finish will be smooth, otherwise heavy burnishing will be required to smooth the final layer.

Allow the coated item to dry completely before firing. You may notice some white residue form on the surface as it dries. This is normal.

4. Firing

Your Firing Tin comes pre-filled with activated carbon. Simply remove the lid, bury the items, and replace the lid. The box does not have to be filled to the top with carbon. If you lose some carbon here and there, it's okay. Refer to the Firing Guide for the time and temperature suggested for your kiln model.

Firing with a Table Top Kiln

Arrange four ½" or taller kiln posts inside the kiln for the Firing Tin to sit on. If your kiln is a brick model, elevate the box so it is in line with a heating element.

The Firing Tin is inserted and removed from a pre-heated kiln with tongs, just as in enameling. Have a trivet ready to receive the hot Firing Tin. Space the kiln posts so there is clearance for the tongs. Practice moving the Firing Tin in and out of the kiln with the tongs a few times to be sure you have unobstructed access and a plan of action.

Set your kiln to the prescribed temperature (refer to the enclosed Firing Chart) and wait for it to pre-heat. When the kiln has reached the set temperature, open the door quickly, set the box on the kiln posts using the firing tongs, close the door, and set the timer.

If for some reason something goes wrong and you can't get the box in the kiln within 2 seconds, abort the mission. Temperature is critical to the successful bonding of Accent Silver. If you fumble something and the door is open for more than 2 or 3 seconds, too much temperature has been lost. Just close the door, wait for it to return to target temperature and try again.

When the timer goes off, open the door immediately and remove the Firing Tin to a trivet to cool. The Firing Tin cools in less than 30 minutes, and can be opened carefully in about 10 minutes using leather gloves. Top loading kilns need a sling for the Firing Tin to get it in and out of the kiln easily. (What is a sling? Visualize a helicopter airlifting a patient.) Get a package of steel wire from the hardware store and bend it up into some form of a sling with a loop on top for the tongs to grab. Most hardware stores offer packages of steel wire. The gauge doesn't matter, but you are most likely to encounter 16, 18, 22 or 24 gauge. Any of those is good. Put the Firing Tin in the sling and practice moving that in and out a few times. The sling is left on during firing for easy insert and removal.

COOL TOOLS

Firing with the Ultralite Kiln

Pack the coated articles in the Firing Tin. Place the flat cover on the kiln. Preheat the kiln for 15 minutes at full power. Place the Firing Tin on the brass cover and set the timer for 20 minutes. When the firing is complete, use the tongs to move the Firing Tin to a cooling trivet. The Firing Tin will cool in about 15 minutes. Use gloves when opening to be sure no heat remains.

When firing in the Ultralite Kiln, items should be placed coated-side down so it gets the most direct heat. Items to be fired must fit inside the firing tin. Do not use a taller container.

5. Finishing

Using the stainless steel hand brush, brush off the firing residue and reveal a dull silver color. Go gently, do not scrub the metal. This step is meant only to remove the firing residue.

Next, use the stainless steel scratch brush to burnish the silver. Set the bristles to about 1/8" in length. Using a circular motion, scour the silver surface lightly to bring up a clean, satin finish. Now the silver surface can be burnished or polished to your desired finish. See the enclosed **Metal Prep and Polishing Guide** for a variety of finishing options at the end of this document.

6. Clean-Up

Accent Silver left on your mixing disc between coats and between sessions can be left to dry. Store the disc in a plastic bag between sessions. The material should not be left in puddles, but should be spread out thinly on the disc for easier re-hydration. To re-hydrate, simply dab the dried material with a damp brush, then use the palette knife to scrape the material up in a pile, then add new material as needed.

Clean your brush between sessions. Use the palette knife to scrape as much Accent Silver from the bristles as best you can. Then wipe the palette knife off on the mixing disc to recover as much material as possible before washing the brush.

Limitations

Accent Silver can be applied to an entire piece, both front and back, but it must be bonded in a single firing. Anything that can fit inside the Firing Tin can be fired. Using a larger firing container may be possible, however the firing schedules have all been tested in the flat tin provided in your Starter Kit (Kit-625). If you wish to fire a larger piece, I recommend using No-Flake Firing Foil (NOT aluminum) as the container, and test fire to be sure the time is correct. You may need to add or subtract a minute or two from the schedule. The idea is to get in and out as quickly as possible, so a higher temperature and shorter time is better than a lower temperature and longer time.

Safety Precautions

Accent Silver contains fine silver powder and a chemical fluxing agent that can irritate the eyes. Take precautions to avoid getting it into the eyes. Wash your hands after use, and do not touch your eyes while handling Accent Silver. If Accent Silver contacts the eyes, flush them immediately with water for at least fifteen minutes and see a physician. Although Accent Silver is not highly toxic, avoid ingesting it. If ingested, contact a physician immediately.

COOL TOOLS

Accent Silver Firing Guide

1. Find Your Target Temperature

Find your kiln model from the chart below. Check the electrical data plate on your kiln and match it to your model. Circle your target temperature. This is the target temperature you will always use to fire Accent Silver in your kiln.

2. Select Your Firing Time

The hold time for your firing depends on the thickness of the material you are firing. For brass stampings and pieces that are 3mm or less in thickness, use the 3mm hold time. Anything thicker than 3mm requires a little more time, so use the over 3mm hold time.

Accent Silver Firing Guide

Kiln Model	Kiln Wattage	Target Temperature	Firing Time	
			3mm or less	Over 3mm
E9AX	1100	1050F	10 min	12 min
Firefly	1680	1050F	10 min	12 min
Caldera	1680	1150F	10 min	12 min
SC2	1440	1250F	10 min	12 min
SC2	1680	1200F	10 min	12 min
E360	1500	1250F	10 min	12 min
E450	1800	1200F	10 min	12 min
SC3	1680	1200F	10 min	12 min
SC3	2000	1150F	10 min	12 min
Kingpin 88	1500	1250F	10 min	12 min
Jewelry Artist	1800	1200F	10 min	12 min

3. Program Your Kiln

Program your kiln to heat at fast ramp to the target temperature found in the chart above for your kiln model. Set the hold time to 1 hour just so you have enough time for the procedure.

4. Load the Firing Tin

Bury your pieces in the activated carbon inside the Firing Tin, then replace the lid. When the kiln reaches the proper temperature, insert it and set the timer. After the timer goes off, immediately remove the Firing Tin from the kiln and place it on a trivet or heat-proof surface to cool. Then finish.

COOL TOOLS

Metal Prep & Polishing Guide

Accent Silver is bonded to copper-bearing base metals through a process similar to soldering. The Accent Silver-coated metal is heated to a specified temperature and held for a duration that allows the metallurgic process to occur. All of this is done in an oxygen-reduced atmosphere inside the Firing Tin to protect the base metal from oxidizing.

Successful bonding requires a clean, abraded surface, free from oxides, fingerprints and compounds. There are several options for cleaning and abrading the surface. BRONZclay and COPPRclay items can be tumbled prior to application if desired.

Metal Preparation Options

	By Hand	Flexible Shaft Machine
All Metals	3M™ Scotchbrite™ - Jewelers grade 400 grit wet/dry sandpaper Stainless steel scratch brush 3M Sponge Sanding Pad - Fine grit Sanding swabs - coarse grit	3M Bristle Discs: 36 grit for bronze, 80 for brass, 100 for copper use on slow speed Mini Fiber Wheel - coarse for bronze, medium for brass & copper 400 grit wet/dry sandpaper Miniature steel wheel Coarse polishing points

Metal Finishing Options

	By Hand	Flexible Shaft Machine
Brushed Finish	Use a steel hand brush to brush the metal. The brush should have bristles that are about .02" in diameter. Brush the item, in one direction to achieve a uniform scratch finish	Use a miniature mounted steel brush on slow speed. Go in one direction only.
Satin Finish	Use a Scotchbrite pad to "scour" the metal surface. Go easy!	Use a mini fiber wheel. Fine for copper, medium for brass, and medium or coarse for bronze.
Matte Finish	Use a wet Scotchbrite pad sprinkled with baking soda to scour the surface.	Use a miniature mounted brass brush on slow speed
High Polish	Burnish the surface with an agate or steel burnisher. Then, beginning with 1200 grit polishing papers, polish the surface up through 8000 grit and then buff with a polishing cloth.	Burnish the surface using a green Superflex polisher to accomodate the shape of the item. Then, use 3M Bristle Discs in grits starting at 6 micron, then 1 micron, then pumice. Buff with a polishing cloth.
Oxidized Satin Finish	Apply either a liver of sulfur patina or a heat patina, then use a Scotchbrite pad to "scour" the oxidation from the silver and leave a satin finish.	Apply either a liver of sulfur patina or a heat patina, then use a mini fiber wheel. Fine for copper, medium for brass, and medium or coarse for bronze.
Oxidized Matte Polish	Apply either a liver of sulfur patina or a heat patina, Use a wet Scotchbrite pad sprinkled with baking soda.	Apply either a liver of sulfur patina or a heat patina, then use a miniature mounted brass brush on slow speed.
Oxidized High Polish	Apply either a liver of sulfur patina or a heat patina, then use use an Ultra Polish Pad to remove the oxidation from the silver. Next, burnish the surface with an agate or steel burnisher, and, beginning with 1200 grit polishing papers, polish the surface up through 8000 grit and then buff with a polishing cloth.	Apply either a liver of sulfur patina or a heat patina, then burnish the surface using a green Superflex polisher to accomodate the shape of the item. Then, use 3M Bristle Discs in grits starting at 1 micron, then 6 micron, then pumice. Buff with a polishing cloth.
Masks	Since Accent Silver will only bond to clean metal, oxidation makes the perfect mask to selectively apply it. A mask can be a stencil, yellow ochre, china white, a correction pen (White-Out), or oxidation applied by a torch. To create a mask, first pre-polish and abrade the metal in the areas to receive Accent Silver. Heat the entire piece with a torch until it oxidizes. Cool or quench, then remove the oxidation from the areas to be embellished. Apply Accent Silver as directed and fire Stick-on stencils make wonderful masks for applying Accent Silver and come in many intricate designs. To use a stick-on stencil, first clean and abrade the selected area. Apply the stencil. Place a piece of paper or towel over the stencil and use the pressure of your finger to burnish the stencil down. (The paper protects the abraded area from picking up fingerprints and rolling the edges of the stencil). Then apply Accent Silver as directed. Gently peel off the stencil before firing. The dried material left on the stencil can be scratched off to your mixing disc with your fingernail.	