

## 1211-3

### Etching 101

By Kim O'Neill



**Use caution when etching metal. Protect all surfaces, clothing and body parts. Wear rubber gloves and safety glasses.**

Acid etching is not as mysterious as it may seem, in fact it is really quite simple. The basic components involved are a mordant (acid) and a resist. Resist can take the form of anything that will resist water. Examples of resist's are tape, nail polish, permanent inks such as STAZON or Sharpie markers, toner ink from a laser printer, acrylic paints, etc. Anything that will resist water and stick to the metal will work well.

Brass, copper and bronze are the most common used metals for etching. Silver can be etched, but it is a more difficult process. Rubber stamp and ink etching is what we will concentrate on. This is the quickest and easiest method.

#### **Preparing the metal**

Metal must be clean, dry and grease free. To prepare the metal, sand thoroughly with medium to fine grit sandpaper. This serves two purposes. One, to clean the metal, the other to roughen it up so inks and markers don't slide.

#### **Creating the design on metal**

Both sides of the metal can be etched, however you must do each side separately. To do the first side, stamp or draw an image onto the metal using permanent ink. For stamp pads, use STAZON, for drawing use a fine point sharpie. DO NOT

USE ULTRA FINE as this will not be a thick enough line to resist the acid. When stamping or drawing on the metal, make sure the ink is dark with crisp edges.

\*Note about metal gauge

If you want to etch both sides, you must use at least 20 gauge metal; otherwise you will end up with a very thin piece. Metal gauge is the opposite of what seems logical. The larger the number, the thinner the metal. For example, 16 gauge metal is thicker than 18 gauge, 18 gauge is thicker than 20 gauge, and etc. 18 gauge is the ideal thickness for etching both sides.

### **Getting ready to etch**

After the ink has dried, cut a piece of duct tape large enough to cover the metal and have a 1-2 inch overhang on both ends. Place the duct tape on a flat surface, sticky side up. Next, place the metal plain side down on top of the duct tape. Rub the tape onto the metal to make sure it is completely secure and there are no air gaps where the acid can leak in. Now place the metal, design and sticky tape side up on top of a foam block. Take two more pieces of duct tape and tape down each side of the excess tape onto the foam block. What you should have is a piece of metal stuck with tape onto the foam block, design side up. The goal here is to float the foam block, design metal side down in the acid.

### **Mix the solution**

Etching recipe

8 oz ferric chloride

\* Note: if you are etching brass and copper, each need to have their own separate container. When not using the solution, keep it covered so it does not evaporate.

Pour the ferric chloride into a container small enough so the solution is at least 3/4 inch deep. Place the foam block into the acid, metal side down. And wait..... and wait....and wait! Actually, you will start to see results in about 1/2 hr, but if you want a deep etch, wait about 1 - 1 1/2 hrs. You should have a nice, deep etch. You can use this solution and get a nice etch on average about 3 times. After that it loses its strength.

\*Note: When solution is completely spent, neutralize with a little baking soda. It will foam up and then stop. Contact your local hazardous waste authority for proper disposal. Please do not put it down the drain.

### **Clean the etched metal**

When you are satisfied with the etch, put on gloves and take the foam block out of the acid. Carefully get it to a sink or tub of water to be cleaned off. Contrary to other instructions on etching, you do not need to neutralize your piece with baking soda- it will stop etching once the metal is cleaned. I just take a little laundry soap (because it is right there!) and scrub off the ink and solution with a steel or brass brush. BE CAREFUL BECAUSE THIS STUFF WILL NEVER COME OUT OR OFF OF ANY SURFACE IT TOUCHES!

### **Etch the other side**

Now start all over again to etch the other side! Make sure your metal is dry before you put the resist duck tape on the side that has already been etched. Also, make sure the tape is SUPER tight on this side so you don't get leakage and ruin all your hard work of the first etch.

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