



# Studio PMC

Member Magazine of the PMC Guild

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Example of typical etching setup.

## Tools & Supplies:

Ferric chloride (Radio Shack PCB Etchant) 20 gauge copper plate approximately 3"x4"

Sharpie or Speedball "Painters" Paint Pen

Rubber gloves

Eye protection

Shop apron

Glass or plastic container with a tight-fitting lid

Distilled water

Electrical tape or contact paper

Degreasing cleanser or copper cleaner like Penny Brite or Bon Ami

Thin green scouring pads (Scotch-Brite)

Q-Tip

Chopsticks

Ammonia

Baking soda for neutralizing spills

Warming tray

Paper towels

*"You've got to be original, because if you're like someone else, what do they need you for?"*

—Bernadette Peters,  
Inside the Actor's Studio

One of the first things we all fell in love with is the way metal clay takes texture, and there are a number of commercially available texture plates and other tools out there to help us take advantage of that property. But there comes a point when buying commercially available tools just isn't satisfying for creative artists. We want to make our own.

When I saw a lovely copper bracelet a friend had formed and etched herself, I realized that I could make texture plates using the same technique. Etching copper for texture plates allows me to control the overall depth of the recesses, creating shallow or deep impressions with crisp clean edges. As an added bonus, a deep etch imparts a slight texture, similar to textures obtained through reticulation. Etched texture plates are a great way to imprint PMC as an integral design element or as a pattern under enamel, transparent epoxy resins, or the rainbow of colors produced by liver of sulfur.

There are many different methods and mordants that can be used to etch metals, but my choice is ferric chloride. It is sold at Radio Shack as PCB Etchant and used to etch circuit boards. Although ferric chloride is a chemical and requires care in its use, it is less hazardous than most other choices for etching metal, and is safe to use in a home studio.

Ferric chloride stains just about everything it comes in contact with, so wear rubber gloves, eye protection, and old clothes or a shop apron. Be sure to have some clean wash water nearby in case of mishaps. Ferric chloride doesn't have a nasty scent or give off toxic fumes by itself, but when it's heated, the solution remaining on the fully etched metal is cleaned off with water and



Making your own etched metal texture plates allows for unleashed creativity.

ammonia, or spills are doused with baking soda, dangerous fumes are produced. Work in a well ventilated area!

Because iron and steel tools will contaminate the etchant, use chopsticks or copper tongs if you need to move the metal around in the solution to dislodge any sediment created by the etching process. An individual batch of ferric chloride solution may be used multiple times, but eventually loses strength and takes longer to complete etching. When it no longer etches efficiently, take the spent solution to your local hazardous waste disposal facility. Never pour it down the drain or throw it in the trash.

## Sketch Your Etch

Preparation is critical in this process. Clean and degrease the metal with cleanser or copper cleaner until water sheets off the surface. Neither the resist nor the etchant will adhere to dirty or oily metal.

Cover the back of the plate with contact paper or electrical tape and burnish it down. The contact paper will prevent the back of the plate from etching. Attach a tape tab in the center of the back as a handle.

A Sharpie or Speedball paint pen works well as a resist. Using the pen, coat the edges of the plate and let dry. Then, handling the plate by the sides, draw your design on the front of the copper. You may



Photos by Lora Hartman. Other photos are by the author.

Examples of PMC jewelry created by Lora using etched metal plates.

find it helpful to trace the pattern onto the metal with pencil prior to using the ink resist. Slight imperfections may be finessed away with a toothpick. You can also coat the entire plate with resist and use a blunt toothpick or skewer to scratch an image in the dry ink. Keep in mind that the metal covered by resist will be left behind by the etching process as a raised surface. When the etched plate is used to imprint the clay, the image will be reversed, including letters and numbers.

#### Etch Your Sketch

You will need a plastic or glass container to hold the etching solution. I find that using a container that is roughly the same size as the metal plate works best: a plastic or glass loaf pan with a tight fitting lid will enable you to etch two plates at a time and store the used solution in the same container.

Pour in enough ferric chloride to completely cover a thin, green scouring pad. (The scouring pad will be used to suspend the metal just below the surface of the solution.) You may use the etchant full strength or dilute it to three parts ferric chloride to one part distilled water. Be sure to add the ferric chloride to the water (acid to water, just like you oughter), not the other way around.

For a faster etch, put the solution on a warming tray (like the one Mom used at

dinner parties in the '60s). The temperature should not rise above 135°F (57°C), and be sure to use good ventilation.

Place the metal plate art side down on top of the scouring pad in the ferric chloride solution, leaving the tape handle on the back above the solution. Etching should take one to two hours, depending on the strength of the solution and the depth of the desired etch.

Check the progress every 15 to 30 minutes by removing the plate from the solution using the little tape handle and "squeegeeing" the ferric chloride solution clinging to the metal into the container with your gloved finger. Rinse the plate in fresh water and test the depth of the etch with your finger or a needle.

If some of the resist has come off, carefully pat the plate dry with a paper towel, reapply the ink, let dry and continue to etch. The longer you leave the plate in the ferric chloride solution, the deeper the etch will be.

When you're happy with the results, rinse the plate again, place it in a neutralizing solution of water and baking soda, and then clean in a bath of water and ammonia. This will stop the action of the chemical. Scrub the newly etched plate with cleanser to take off any remaining ink. Your plate is now ready to make its first impression!

Lora Hart began her jewelry-making career in 2000, when an actor's strike left her idle in her 17-year career as a make-up artist. Since then, her jewelry has been featured in galleries in Southern California, and she has taught extensively in the Los Angeles area. Certified in four programs as a PMC artisan, she began NewMetal Artists, the Los Angeles chapter of the PMC Guild, with fellow PMC artist Chris Brooks in January 2004. Lora can be reached via e-mail at [LoraHartJewels@earthlink.net](mailto:LoraHartJewels@earthlink.net).

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