

# Champleve Enameling Notes

Things learned along the way.

April 27, 2019

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## Overview

Enameling is quite a complex process, and much more is learned in practice than can be adequately conveyed by books. Understanding background is important, but a lot of technique is refined in the 'doing' that is difficult to convey through general text.

These notes serve as a sort of living document to record what is learned during each iteration of the enameling process and will hopefully assist in providing good advice.

In general the notes will operate more in a list format, but will likely sometimes deviate to be more in a paragraph format.

## Drawing Designs and Resist

### Drawing

- We have been using Adobe Illustrator for the bulk of the drawing work. Other programs like MS Paint, Inkscape, etc. will probably work as well.

### Resist

- Resist is applied mostly using Press n Peel transfer paper from [techniks.com](http://techniks.com), following the directions on the website.
- don't heat too hot, or for too long, otherwise the transfer ink will bleed and create a lower resolution image that will have to be cleaned up.
- Occasionally the transfer paper doesn't fully transfer the design, and must be supplemented.
  - Testor's paint is good for this. There might be others.
- Resist should be applied as thin as possible, so it's easier to remove later.

## Etching

- Packing tape should be applied to the back side of the copper pieces before they are etched, otherwise etchant will get behind it and ruin the back. Paint the seams as well to seal.
- Metal should be soaked in a sodium carbonate solution. This does two things: neutralize residual acids, starts to dissolve resist for easier removal



## Enameling

- Red enamel shouldn't be fired too many times or too hot. It starts to discolor.
- vibrating the wet enamel pieces against a firing rack is really useful for settling out the enamel. Otherwise it might be lumpy.
- it's generally always useful to slightly overpack the enamel and then grind it off with stones and sand paper.
- keep wet enamel away from pieces just out of the kiln. fire scale will pop off onto the wet enamel. no good.

## Polishing

- when using spray lacquer, don't sand or use steel wool on it.
- actually sanding is fine. I had some good success using wet 1000 grit. but just be careful.

## Materials to Have on Hand

- chemicals: sodium bisulfate, sodium carbonate (to neutralize ferric chloride), ferric chloride
- sand paper (up to 1000+ grit)
- alundum stones, used to grind off excess enamel and smooth copper.

## Purchasing

General purchasing information. There are several different online vendors that are useful for enameling, so cataloging them all in one place is helpful for parsing through.

- riogrande.com
  - copper metal (18ga max)
  - jewelry creation materials (saw, birds beak, etc.)
- contenti.com
  - pitch bowl and gravers (for engraving)
  - dapping block (doming medallions)
- thompsonenamel.com
  - general enameling supplies
  - some metal (riogrande seems to be better)
  - enamel tools (glass brush, kiln fork, etc.)



- metal foil
- paragonweb.com
  - kiln
  - kiln stuff
- [https://closeoutjewelryfindings.com/index.php?l=product\\_detail&p=1970](https://closeoutjewelryfindings.com/index.php?l=product_detail&p=1970)
  - copper chains for creating necklaces
- [https://closeoutjewelryfindings.com/index.php?l=product\\_detail&p=947](https://closeoutjewelryfindings.com/index.php?l=product_detail&p=947)
  - steel rope chain, 250ft.
- <https://www.fusionbeads.com/Base-Metal-Bar-Pin-Silver?size=63>
  - pin backs to make pins
- <https://www.fusionbeads.com/round-artistic-wire?gauge=7>
  - wire to create pins
  - 10 or 12 gauge



## References

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