Foil Saggar/Ferric Chloride

**WARNING:** This process produces Hydrochloric Acid vapors during firing. Hydrochloric Acid is an inhalation hazard. A respirator rated for volatile hydrocarbons should be worn during this process.

**Clay:** I use Alligator 210 or Laguna B-Mix.

**Preparing the pots:** I prefer a smooth surface for this process. After the piece is dry, I sand it with fine sandpaper. I always wear a respirator when dry sanding pottery. I then burnish the piece to get the smoothest possible finish. I sometimes use an OM4 terra sigillata burnished with a soft towel or a stone. I sometimes, after sanding, re-humidify the piece to just past leather hard and burnish with a stone, a cloth, or just my fingers. Most authors I have read bisque burnished pieces to between cone 012 and 010. I use a commercial studio to fire my bisque ware and they bisque to cone 05. This works, but some of the gloss is lost at this high of temperature.

**Preparing for Raku firing:** Ferric Chloride is applied to the bisque ware by pouring it over the ware. I use two coats. The piece is allowed to dry between coats. I perform this task outside or in a well ventilated area. I simply pour the Ferric Chloride over the piece, while wearing latex or butyl gloves, until it is evenly wet. I hold the piece over a large, clean, plastic bucket while pouring the Ferric Chloride. This allows for recycling of the Ferric Chloride. Let the ware drip over the bucket until the excess Ferric Chloride is removed. Set the piece aside to dry. When I am finished coating the pieces, I pour the Ferric Chloride left in the bucket back into the original bottle. The pieces are allowed to dry thoroughly before wrapping them in Aluminum foil. The foil is wrapped from bottom to top to allow the fumes to travel upward around the piece and out of the foil. The closer the foil is to the piece, the darker the color; thus, pieces with relief may have lighter coloring, or even white areas, at the bottom of the relief areas. Open forms will be mostly white inside unless foil is applied firmly to the inside of the piece. Additional interest can be added by placing a fern, or similar plant, on the surface of the ware under the foil. Sugar can also be used to produce dark spots on the ware. After the last coat of Ferric Chloride has been applied, before the Ferric Chloride starts to dry, sprinkle the piece with sugar – a little sugar goes a long way.

**Firing foil saggars:** Place the pieces in the Raku kiln and heat up as usual. I put on my respirator as soon as the kiln is lit. Hydrochloric Acid vapor will be released as the piece fires. If there is a breeze, I stand upwind of the kiln. The foil will start to degrade around 1380 degF. The foil will become a dull gray as it degrades. If the temperature is allowed to continue to increase, holes will form in the foil. I try to cut the kiln off before holes form in the foil; however, I have had good results with pieces with many holes in the foil. After turning off the
burner, I let the kiln set until the temperature is below 900 degF. I then open the kiln and place the pieces in a clean metal container with sand and a hot fire brick in the bottom. The metal container is preheated with a hot brick from the previous kiln load. This helps reduce thermal shock of the piece. I leave the pieces in the metal container until they are around 300 degF. At which time, while wearing a respirator, I open the foil saggars and remove them from the metal container. When the pieces are below 150 degF, I spray them with a coat of acrylic sealer. If you are not in a hurry to show someone how the acrylic sealer changes the color of the pot, let them cool to the touch before spraying them. Let the acrylic sealer dry for a couple of hours before taking them in the house – my wife complains about the smell if do not. I prefer Krylon Acrylic Crystal Clear. It comes in gloss, satin, and flat. I prefer the satin finish.

Krylon Acrylic Crystal Clear can usually be found at hardware stores that carry Krylon products.

Ferric Chloride can be found at electrical supply companies. It is used for etching Copper traces on printed circuit boards. I buy it from Allied Electronics at www.alliedelec.com/ A direct link to the size of bottle I buy is: http://www.alliedelec.com/search/productdetail.aspx?SKU=70125792

The shipping charges will likely be more than the price of the Ferric Chloride.

When I first started studying this method, I found a video on YouTube of Charlie Riggs explaining the process. Go to www.youtube.com and search for “Riggs Ferric Chloride.”