

Charlie's Home Brew Sig'

This sig' recipe is for all of us non-technophiles and first timers.

1. Crack open a beer. Relax.
2. Dump 3 1/2 gallons of water in a 5-gallon bucket.
3. Stir in a tablespoon of sodium silicate and/or soda ash.
4. Mix in 17 lbs of XX Sagger ball clay or 9 lbs OM 4 ball clay*. Put the bucket up on a table where it won't be bumped or jarred.
5. Finish your cold one and wait a day (20 hours).
6. Siphon off the top gallon. ** (This includes the little bit of water off the top) The siphon tip should only be about 1/4 inch down into the liquid as you siphon. This top 1 gallon is your terra sig. You can use it immediately or store it for several years. (specific gravity 1.13-1.15)

Dump the rest. It's just dirt!

1. If you want, you can sieve it to get the little specks and cat/dog hair out. (200 mesh --or as fine of a sieve as you can lay your hands on.)

That's it. Dip it, spray it, brush it.

** OM4 ball clay seems to produce a foamy mess on the top but don't worry about it.*

***If the finished 1 gallon of sig isn't fine enough for some ungodly reason, then stir just that 1 gallon up again, and let it sit for a couple of hours to let the big stuff settle out. Then pour the thin liquid off the top and throw the bottom 1/2 inch.*

Pop-off Slip Naked Raku

(One Step Slip Process)

Clay body for pots:

Highwater Phoenix and Moon White, Laguna's Miller 10-T and B mix with Grog, or any raku clay. Basically, any clay body that can withstand the raku process but we choose as smooth and as white of clay as possible.

Making the pot:

The pot is smoothed as best as possible during the throwing and the trimming process. When the pieces are dry enough to be bisqued we paint on terra sig (see handout on sig) and lightly polish the pottery. The pieces are then bisqued to cone 08/010.

Making the Slip Resist:

Mix the following dry ingredients with water to a thick sludge or cake batter consistency.

Lincoln Fire Clay/Hawthorne..... 5 parts (as in cup full not grams)

EPK 3 parts

Alumina Hydrate 2 parts

More alumina hydrate is used to enable the slip to "stick" to the pot better and is subtracted from the recipe if you need it to fall off more easily.

It is important to remember that almost everyone will need to make some adjustments to their slip formula. The adding and subtracting of EPK and/or alumina changes how the slip stays on or falls off.

Applying the Slip Resist:

- Use masking tape on surface areas that are meant to remain black
- Dip the pot into the slip. The longer the pot remains in the slip the thicker it will be. Hold for the desired thickness (1/8 inch). Wipe off slip from areas with tape. Remove tape.

Firing the pot: Place the pot immediately in the kiln after applying slip. Heat it quickly to 400-500F. degrees. Hold at between 400 and 500 degrees until the slip appears to have lost it's moisture. (about 15 minutes). It will turn a dull gray color and no longer have a shine and also should have developed the crackles in the slip. Then slowly fire it up to 1500 degrees. Remove pot and place in reduction chamber—remove after 10 minutes.

Two-Step Naked Raku Recipes
For slip and Glaze Method

Slip Mixtures

Highwater Phoenix or Laguna 52 Slip

50 Dried Clay (one of above)

30 EPK

20 Silica

100 gms

Add about enough water for the consistency of light cream. *Specific Gravity*

1.27 to 1.28

Naked Raku Glaze:

Standard Mixture (*Pouring and Dipping and Applying with brush*)

35 Gerstley Borate

65 Frit 3110

100 grams

Add: water mixing to specific gravity of 140

Screen through 80 mesh screen

Using Ferric Chloride

(Also known as PCB Etching Solution)

Ferric Chloride is a highly toxic and corrosive substance and should only be used in areas with lots of ventilation. Be sure to use protective gear such as vapor masks, rubber gloves and protective eyewear.

Foil Sagger Technique:

Paint or pour straight ferric chloride solution onto bisqued pot or sculpture. If painting, make sure you use a brush you are willing to throw away.

Optional: sprinkle salt, sugar or/and add a few strands of horsehair. Let the ferric chloride dry completely.

Use layer or 2 of Extra Strength Aluminum Foil to make an air tight pocket around the pot. Fire the pot in a raku kiln to 1100-1400 degrees F. Let cool in kiln or promptly remove with tongs or gloves. Then allow to cool long enough to remove foil from pot.

Raku Techniques

Make a solution of water and ferric chloride...about 1-3 Tablespoons per cup of water. Put in an inexpensive spray gun device. (*Paint/home improvement stores carry disposable sprayers*). The ferric chloride will cause serious corrosion to any metal.

Unglazed ware:

Fire an unglazed bisqued raku pot to 1100 F. Remove pot with tongs and put it on a soft brick on a banding wheel protected by foil or plastic wrap. Start spraying immediately for deep rust color. Wait several minutes for the pot to cool and spray for yellows. A mixture of both is nice.

This technique can be combined with horsehair raku. Follow the directions for firing a horse hair pot. After hair is applied, move pot to a spray booth or well ventilated area and spray on the diluted ferric chloride. The hotter the pot, the darker the result. For light yellow, allow pot to cool for 5 minutes.

Glazed ware:

Fire a cone 06 clear glaze or raku white crackle glaze to 1850 degrees F. to melt glaze. Turn off kiln. Let it cool to 1200 degrees F.

At 1200 degrees F. remove the pot with tongs and put it on a soft brick on a banding wheel protected by plastic wrap. Spray the pot immediately. More intense application of ferric chloride will produce amber and oranges. A light spray will produce a gold with opalescence. Place in a reduction chamber and reduce in newspaper.

Horse Hair

Firing Technique

Each pot is placed in a raku or electric kiln and taken up to 1000-1100 f Remove it from the kiln and place on an IFB (*Insulated Fire Brick*) to protect the bottom of the pot from heat shock. . Place strands of the hair on the pot. This will quickly sizzle leaving a dark line and plume of smoke trailing up the pot. .

(Ferric Chloride can be sprayed onto the pot at this time to add a rust to golden yellow coloring. See "Using Ferric Chloride" Handout for more details.)

The pot is then set aside to cool completely before buffing off. At this point then piece is sprayed with a sealer. (*Grumbacher Myston Workable Matt Fixative*)

Trouble shooting the horse hair technique

If the pot is too hot then the carbon absorbed by the pot when the hair is placed on the piece will appear and then disappear. Or instead of a line you get a large black plume. Let the pot cool down a bit more and try again by firing the next piece to a lower temperature.

If you try to brush off the ash residue from the burned hair while to pot is still hot it will smear and smudge. Wait until you can handle to pot with bare hands before trying to clean and polish it.

Saggar Firing In A Raku Kiln

Making the Saggars

Saggars are thrown out of highly grogged like a Raku Clay or Laguna Soldate 60. They look like two salad bowls and are about 1/8th of an inch thick. These two bowls are set rim to rim. Saggars are bisque fired to cone 08/010.

Loading A Saggar

Place your pot into the lower part of the saggar that has wood shavings, copper carb/salt in it.

Place strands of steel wool on the pots as you like—less is better.

Table salt and copper carbonate--about 1 part copper carb to 5 parts salt. Place the saggar lid onto the saggar bottom and put into the raku kiln.

Firing Cycle

10 minutes: up to 500F degrees. Then every 7-8 minutes increase the gas until you reach 1600F degrees. Hold between 1600F and 1700F for about 20 minutes. Turn off gas. Let cool until you can touch with bare hands before removing from kiln.

Mummy Saggar Variation:

Save scraps of dried clay and throwing trimmings in a bucket. Add water to just barely cover clay. Let it sit overnight. Stir up the slurry with a glaze mixer.

You will want about 1 gallon of slurry per pot to be fired.

Put your wood shavings, copper carb/salt and pot into a brown paper bag. Add the steel wool. Fold the top of the bag and tape shut.

Take newspaper and dip it into your slurry. Put 3-4 layers of slurry covered newspaper around the paper bag. Punch a few small holes in the bundle to allow smoke to escape.

Put it immediately into the kiln. Fire very slowly to 450-500 degrees. Hold 15 minutes to allow the clay slurry to dry. Fire the mummy saggar with the same firing schedule as the clay saggar (see above) except your top soaking temperature should be around 1700-1750 degrees F. Let it cool before removing from kiln. The crust will fall apart very easily when moved.

TIPS and Products suggested by Linda and Charlie Riggs

- **Use Pre Tape drop cloth for resisting glaze and Blue taper's paint for resist – 3M or Scotch brand**
- **Carve designs through glaze with a skewer stick**
- **Use a carbon based speedball ink in a ferric chloride firing**
- **Turn off ferric firing when edges of foil get dull or wilty @ 1350 degrees F.**
- **Raku Satin White Glaze: 5 EPK, 5Silica, 3 Gerstley Borate**
- **Check out the Naked Raku video for all the technical info on the firing technique.**
- **Great brushed for Terra Sig: Mayco Reflections #8 RB140 Soft Fan**
- **Renaissance Wax (used by museums) as a sealer**
- **Minwax or deft poly spray as a sealer**
- **3M vinyl tape 471 (1/4 x 36')**
- **Use a siphon from a wine making supply store**

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Centr@l Clay
a virtual tour of North American potters

Charlie and Linda Riggs work together to create a variety of decorative types of pottery. Most of their work is thrown by Charlie who takes time to make a very smooth surface that will later be polished with terra sigillata. These pots are then finished with one of the smoke fired techniques that results in a shiny unglazed surface brilliant with the colors of saggar firing, the bold blacks and whites of naked raku or the subtle marks of horsehair and ferric chloride.



Charlie also has a line of strictly raku pots that reflect his need for creativity. Many of these have multiple layered glazes and a wide variety of shapes which sometimes feature altered forms and interesting lids.

Linda handbuilds sculptural bowls, trays, animals and jewelry which are later finished with one of her specialty techniques--saggar firing or naked raku.



Charles has a Bachelor's Degree in Fine Art--Ceramics. He has been featured in Clay Times, Ceramics Monthly, and Studio Potter as well as in the books, "Alternative Firing Methods" by Watkins/ Wandless and "Raku, The Practical Approach," by Steven Branfman. Charlie has exhibited extensively in the Southeast, the Western US, and as far away as Canada and Norway. He also teaches workshops throughout the US and Canada in a variety of subjects including, Raku Methods, Saggar-firing, Pit-Firing, Raku Kiln Building, and Throwing Techniques. He is a member of the faculty at Laloba Ranch Clay School in Steamboat Springs, CO.

Linda has written a number of articles on pottery for Ceramics Monthly and Clay Times. She is also featured in magazine articles on saggar firing, and in the books by Watkins/Wandless and Steven Branfman. She is on the faculty of Laloba Ranch Clay Center in Colorado and co-teaches workshops with her husband Charlie.



Where you can fine their work:

Great White Oak Gallery,
Seagrove, NC.
www.greatwhiteoakgallery.com

Riggs Pottery, in the woods
near Carthage, NC. *(The
Riggs' studio is open by
appointment only. For
directions please call or e-mail
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