

CLEANING GOOCH CRUCIBLES

Up-dated September 2013

I. Personal Protective Equipment:

- A. Lab coat
- B. Safety glasses/goggles
- C. Latex gloves

II. Reagent

A. **Crucible Cleaning Solution**

1. Distilled Water (dH₂O)-1 liter
2. Sodium Hydroxide (NaOH)-1.1 g
3. Ethylenediaminetetraacetic acid (EDTA) (C₁₀H₁₆N₂O₈)-3.9 g
4. Trisodium phosphate, lab grade (Na₃O₄P) -50 g
5. Potassium Hydroxide (KHO)-200 g

Dissolve the NaOH in about 800 ml of water. Add EDTA, Na₃O₄P, and KOH. Use

Remaining water to rinse the funnel and containers used to weight chemicals. Stir on stir plate to mix.

Store in sealed, labeled reagent bottle.

II. Procedure

- A. Ash crucibles at 400°C for three hours. Brush out ash.
- B. Gently wash crucibles in soapy water (Alconox); rinse well with distilled water.
- C. Place crucibles upside-down in sonicator containing enough soapy distilled water solution to cover crucibles. Sonicate for five minutes.
- D. Thoroughly rinse sonicated crucibles with distilled water.
- E. Place crucibles in pail of distilled water. Back flush crucibles a minimum of four to five times using distilled water, or until no evidence of soap (suds) is observed.
- F. Dry in glassware drying oven and then place in drawers by fiber digestion racks.
- G. After crucibles have been used 5 to 10 times, or as needed, clean them as follows:
 1. Steps A - D above.
 2. Heat crucible cleaning solution to almost boiling. (**CAUTION: This solution is very caustic! Wear gloves!**)
 3. Arrange crucibles in glass pans and pour warm cleaning solution in crucibles, filling about half full.
 4. Let soak for no more than two hours. This solution can damage glass if left in contact for too long.
 5. Empty solution out of crucibles and put them into a pan or pail of tap water.
 6. Carefully pour cleaning solution into a container because it can be reused.
 7. Rinse crucibles well as in Step B above (no Alconox needed).
 8. Continue as in Steps C - F above.

NOTE: If it takes longer than 5 min for 50 ml of water to flow through a Gooch crucible by gravity, and the crucible has been cleaned, then crucible is likely damaged and should be discarded. Also, if water flows through in less than 2 min, the disk is likely cracked, and the crucible should be discarded.