1.0 Purpose

To describe how to clean laboratory glassware properly, for use in USP testing.

2.0 Scope

This procedure applies to USP lot change, stability testing, and any time USP quality needs to be verified. All USP glassware cleaning is performed in the Quality Assurance laboratory.

3.0 Responsibility

QA Lab personnel are responsible for USP glassware cleaning.

4.0 Safety Considerations

Safety Goggles, Chemical Resistant Gloves, and Lab Coat should be worn.

Safety is a condition of employment. Employees are not authorized to work in an unsafe manner and are prohibited from harming the environment of the facility or community.

5.0 Materials/Equipment

- Laboratory Sink
- Brushes Appropriate for glassware types
- Magnetic Stirring Hot Plate
- Magnetic Stirring Bars – 1” length
- Laboratory Tissue Wipers
- 1000-ml beaker
- 250-ml beaker
- Acetone Wash Bottle
- Compressed Air Source

Reagents:

- Alconox® Powdered Precision Cleaner
- DI H_2O
- Acetone
- 6M Hydrochloric Acid (If Acid Soak is Necessary)
- Concentrated Hydrochloric Acid (If Aqua Regia Soak is Necessary)
- Concentrated Nitric Acid (If Aqua Regia Soak is Necessary)

6.0 Procedure

Solutions Preparation:

1. 1% Alconox® Solution—Mix 10 g of Alconox® Powder with 1000 ml of water. Heat and stir to dissolve.

2. Aqua Regia (If Aqua Regia Soak is Necessary)—In the hood, mix 1 part concentrated nitric acid and 3 parts concentrated hydrochloric acid. **NOTE: Extreme caution must be used when working with aqua regia because it generates Cl_2 and NO_x gases in addition to causing severe tissue damage.**

Cleaning Procedure

1. Place the glassware in, or fill with warm 1% Alconox solution, and let sit for several minutes.

2. Scrub. Be sure that your brush is in good shape before scrubbing (not rusty, bristles are not matted down); replace it if necessary.

3. Rinse thoroughly with tap water twice and give a final rinse with DI water. The water will sheet cleanly off the glass, if it is quantitatively clean. If water does not sheet off the glass, first repeat the above soaking and scrubbing steps. If, after a second cleaning, bits of solid still adhere to the glass, or if there is clearly a greasy residue on the glass, an acid soak must be performed.

4. Place on drying rack to drip dry. Cuvettes may be dried using acetone and laboratory tissue wipers. Other glassware may be dried by blowing out the water with compressed air, if needed.

Acid Soak

Soak the piece of glassware in a 6 M HCl solution. Once the solid has dissolved, copiously rinse the item with tap water, and then repeat the general cleaning steps above. If, after this more aggressive cleaning, bits of solid still adhere to the glass, or if there is clearly a greasy residue on the glass, an aqua regia soak must be performed. Dispose of the acid by diluting, neutralizing, and washing down the sink.

Aqua Regia Soak

Soak the piece of glassware in aqua regia, and then rinse thoroughly with water. Dispose of the acid by diluting (in the hood), neutralizing, and washing down the sink. **NOTE: This must always be performed in the hood, as it produces noxious fumes.**

7.0 Reference Documents

N/A

8.0 Change Information

Updated SOP to current Doc System format
Changed Owner