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Chem 201

Chemical transformations of copper

1. A.)Record all observations(color, formation, dissolution of solids ,ect…)
2. Place 100mg copper wire in a 10 mL Erlenmeyer flask, in the hood add 2ml of 6M Nitric acid, cover and warm on a hot plate.
3. Allow the resulting solution to cool to room temperature. When cool, add 2mL of distilled water
4. B.) Add a magnetic stirring bar to flask and place it in an ice bath on stirring plate. Add 6M NaOH in .5mL increments until the solution is basic.
5. C.)With stirring heat the flask until temp = 110 degrease C.
6. Allow mixture to cool and isolate solid by vacuum filtration
7. D.) Warm 6mL of 3M sulfuric acid in 30mL beaker. Pour the acid over the black solid precipitate and filter paper, collecting the blue filtrate in a 30 ml beaker. Dissolve completely and rinse with 1-2 mL of distilled water.
8. E.) Place the beaker in the hood and add in small increments 800 mg zinc powder, stir until dissolved.
9. Add a drop of the solution to ammonia , if it turns blue allow the reaction to continue.
10. After the reaction is complete, add 5mL of 3M hydrochloric solution and stir the mixture with a glass rod.
11. Allow the copper precipitate to settle, decant the aqueous solution and wash the solid 3 times with 2 mL of distilled water. Repeat the process with acetone as the wash solvent.
12. Spread the copper solid on filter paper and allow it to air dry. Weigh the copper and calculate % recovery.
13. Apply pressure to the copper and it will transform from an amorphous state to a metallic state with a bright luster.