Chemistry Lab 6 part II

Prerequisites:

- Mass of the aluminum used
- Petri dish with alum
- Percent yield of the product

Melting point

1. Add some product to a capillary tube.
    - Gently tap the open end of the tube on your sample and push it in.
    - Tap the closed end of the tube to allow the sample to fall to the bottom of the tube
    - Fill 2-3 mm
2. Place the tube in the melting point apparatus. When you see melting, record the temperature. Once the entire sample is liquid, record the temperature.
    - These values give the "melting point range"
    - Tubes are waste

Sulfate Ions

1. Dissolve a few crystals of alum in a test tube using 2-3 mL of water.
2. Add 2-3 drops of 1.0 M barium chloride
    - If there are sulfate ions, they will react with the barium

Waters of Hydration

- We must determine how much mass is in the water sample
- Because our ionic compound has a far greater boiling point than water, we can heat the sample until the water boils away. (ensure that heat is the bare minimum to boil water and no greater)
- Given the initial mass and the final mass, we can then determine the amount of water present in the compound
- After a certain point, the mass of the sample will stop changing from heating, this is when the sample is dry

Procedure help

- Ensure the crucible is clean and dry before use, then place over the Bunsen burner.
    - Lid should be ajar to allow steam to escape
- Only weight the crucible when cool, and heat it over a ”cool” and low flame
- Turn of the burner when not in use
- Use ~1 gram of alum
- Stop heating immediately if white smoke or an odd smell is observed
- Use multiple heatings, and when the mass stops changing, the mission is complete

Waste

alum salt is not dangerous, feel free to sink it.
Rinse the crucible before putting it away