Forensics Outline

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Chemical List

Powders Needed, approximately 27 g each

1. Lithium chloride ($LiCl$)
2. Sodium chloride ($NaCl$)
3. Sodium acetate ($NaCH_3COO$)
4. Sodium hydrogen carbonate ($NaHCO_3$)
5. Glucose ($C_6H_{12}O_6$)
6. Sucrose ($C_{12}H_{22}O_{11}$)
7. Boric acid (H_3BO_3)
8. Ammonium chloride (NH_4Cl)
9. Calcium carbonate ($CaCO_3$)
10. Calcium nitrate ($Ca(NO_3)_2$)

Other equipment needed

1. Iodine Reagent (I_2 dissolved in KI)
2. 2 M HCl (or any other stock solution concentration greater than 1 M)
3. 2 M $NaOH$ (or any other stock solution concentration greater than 1 M)
4. Benedict's solution
5. Other lab equipment including test tubes, beakers, Bunsen burner, and hot water bath.

Chemical Procedure

The students will primarily be reacting the powders in the powder list with HCl or $NaOH$ or testing if the powders are soluble. These reactions are safe given that standard laboratory procedure is followed. Some students will be performing a flame test with their own nichrome wire. Benedict's solution will primarily be used to distinguish the difference between glucose and sucrose. The powder in question will be dissolved in water, added with a bit of Benedict's solution, and placed into a water bath. The procedures performed are experimentally simple and harmless.