Kevin Zhang

Prelab 3

Preliminary Questions

1. Write the equation for the reaction of sodium sulfite with sulfur.

$$Na_2SO_3 + S + 5H_2O \rightarrow Na_2S_2O_3 \bullet 5H_2O$$

2. In the procedure for this experiment, which reactant, Na_2SO_3 or S, is in excess, and by how many moles?

$$\text{mol of } Na_2SO_3 = \frac{m}{\text{molar mass of } Na_2SO_3} = \frac{12.6g}{126.043g/mol} = 0.1 \text{ mol}$$

$$\text{mol of } S = \frac{m}{\text{molar mass of } S} = \frac{3.5g}{32.06g/mol} = 0.109 \text{ mol}$$

$$\text{difference in mol} = 0.1 - 0.109 = 0.009 \text{ mol}$$

   S is in excess by 0.009 mol.

3. Describe the proper disposal of the solution in part 1a of the Qualitative Tests. Waste should be disposed of in **inorganic synthesis waste bottle**. Sodium Thiosulfate pentahydrate + filter paper should be disposed of in beaker labeled **waste sodium thiosulfate**