Rate law assignment

Experiment: 3A The purpose of laboratory assignment 3 was to measure the rate at which a chemical reaction takes place. For the purpose of this lab we measured the rate a balanced oxidation/reduction reaction between iodine, hydrogen, and bromate ion occurs. The above reaction occurs slowly so we used a coupled iodine clock reaction to measure the rate of the oxidation/reduction reaction because it occurs much faster but is still dependent upon the other reaction. To accomplish this, two mixtures were prepared in separate Erlenmeyer flasks.

In the 250 ml flask . 010M potassium iodide, . 0010M Sodium thiosulfate and distilled water was prepared. A 125 ml flask was also prepared with a mixture of . 040M potassium bromate, hydro chloric acid and 4 drops of starch indicator. When ready the stop watch was started and the entire contents of both mixtures were transferred into an empty flask to be mixed. When the iodine clock reaction was complete the color of the mixture should have changed from clear to blue. Experiment: 3B

The purpose of experiment 3B was to observe how temperature affects the reaction rate. To observe this in laboratory the solutions were prepared as described above in experiment 3A, and then placed in water baths for 8-10 minutes or until the solutions reached the temperature of the water. After 8-10 minutes the solutions were poured into an Erlenmeyer flask and placed back into the water baths until they turned blue. This Process was repeated at four different temperatures 10°C, 30°C, 40°C and room temperature.