


22 Laboratory Investigation (continued)

1. What visible indication is there that a chemical reaction is occurring?

2. How is the concentration of $\text{Na}_2\text{S}_2\text{O}_3$ affected by the volume of distilled water?

3. What happens to the reaction time as the volume of distilled water increases relative to the volume of $\text{Na}_2\text{S}_2\text{O}_3$?

4.  On a sheet of graph paper, prepare a graph of time versus volume of $\text{Na}_2\text{S}_2\text{O}_3$ by plotting time along the x-axis and volume along the y-axis.

Analysis and Conclusions

1. How did the concentration of $\text{Na}_2\text{S}_2\text{O}_3$ affect the rate of the reaction?

2. Does your graph support your conclusion for question 1? Explain.

3. In this investigation, what are the variables? What is the control?

4. Based on your data, what do you think might be the rate law for this reaction?

5. **On Your Own** With your teacher's permission, repeat this experiment keeping the concentration of $\text{Na}_2\text{S}_2\text{O}_3$ constant and varying the concentration of HCl.