

Data Table

	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8
mL of KIO_3	5	4	3	2	1	5	5	1
mL of water	0	1	2	3	4	0	0	3
mL of H_2SO_4	0	0	0	0	0	0	0	1
$[\text{KIO}_3]$ (M) before combining reactants								
$[\text{KIO}_3]$ (M) after combining reactants								
mL of $\text{Na}_2\text{S}_2\text{O}_5$ /starch	2	2	2	2	2	2	2	2
$[\text{Na}_2\text{S}_2\text{O}_5]$ (M) before combining reactants, but after mixing with starch								
$[\text{Na}_2\text{S}_2\text{O}_5]$ (M) after combining reactants								
Temperature ($^\circ\text{C}$)								
Catalyst Added?								
Time until the appearance of the blue color (sec)								

Post-Lab Questions (*Answer on a separate sheet of paper.*)

- Fill in any remaining cells in the Data Table. Calculate the initial concentrations of the potassium iodate and the sodium meta-bisulfite solutions for each reaction both before and after combining the reactants. (Remember that these will not be the same because combining the reactants dilutes all of the solutions.) Show your work.
- What effect does concentration have on the reaction rate (compare columns 1–5)? Explain.
- What would you predict for the rate if 2.5 mL of water were mixed with 2.5 mL of the potassium iodate solution, then 2 mL of the sodium meta-bisulfite/starch solution were added? Explain how you arrived at your answer.
- What effect does temperature have on the reaction rate (compare columns 6 and 7 with column 1)? Explain.
- What would you predict for the rate if 5 mL of the potassium iodate solution at 100°C were mixed with 2 mL of the sodium meta-bisulfite/starch solution? Explain how you arrived at your answer.
- What effect does a catalyst have on the reaction rate (compare column 8 with column 5)? Explain.
- Predict how the reaction rate would change if the concentration of the sodium meta-bisulfite solution were changed instead of the potassium iodate concentration.