

Determining Reaction Order - The Method of Initial Rates

The results from 4 experiments to study the reaction



Experiment	Initial [BrO ₃ ⁻]	Initial [Br ⁻]	Initial [H ⁺]	Initial Rate (M/s)
1	0.10	0.10	0.10	8.0 x 10 ⁻⁴
2	0.20	0.10	0.10	1.6 x 10 ⁻³
3	0.20	0.20	0.10	3.2 x 10 ⁻³
4	0.10	0.10	0.20	3.2 x 10 ⁻³

- What is the rate law?
- What is the value of k?
- If we increase the bromate ion concentration by 4 times, what happens to the reaction rate? If we increase [H⁺] by 4 times?
- If [BrO₃⁻] is 0.80 M, [Br⁻] is 0.30 M and [H⁺] is 0.40 M what is the reaction rate?