The reaction between selenious acid and iodide ion in acidic solution is:

H2SeO3 + 6I-+ 4 H+ --> Se(s) + 2I3- + 3H2O

The initial reaction rates were measured at 273 K at a variety of concentrations, as indicated in the following table, in mol/L. These initial rates were evaluated from plots of H2SeO3 vs time. Determine the form of the rate law. Note that this rate law only works for low concentrations of I3-  .

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Trial | H2SeO3 | H+ | I- | Initial Rate |
| 1 | 2.40 | 2.06 | 3.00 | 14.60 |
| 2 | 7.2 | 2.06 | 3.00 | 44.60 |
| 3 | 0.71 | 2.06 | 3.00 | 4.50 |
| 4 | 0.71 | 2.06 | 9.00 | 102.00 |
| 5 | 0.71 | 2.06 | 3.00 | 4.05 |
| 6 | 0.71 | 12.50 | 3.00 | 173.00 |