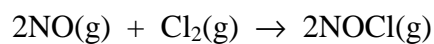


- The following data were obtained for the reaction between gaseous nitric oxide and chlorine at $-10\text{ }^{\circ}\text{C}$:



Experiment Number	Initial P_{NO} (atm)	Initial P_{Cl_2} (atm)	Initial Reaction Rate (atm s^{-1})
1	2.16	2.16	0.065
2	2.16	4.32	0.130
3	4.32	4.32	0.518

Derive an expression for the rate law for this reaction and calculate the value of the rate constant.

Marks
2

Rate law:

Rate constant:

THIS QUESTION CONTINUES ON THE NEXT PAGE