

- The table below gives the concentrations of $\text{C}_2\text{H}_4\text{O}$ as a function of time at 690 K for the following reaction:



$[\text{C}_2\text{H}_4\text{O}]$ (M)	time (mins)
0.0860	0
0.0465	50
0.0355	72
0.0274	93
0.0174	130

The reaction is first order with respect to $\text{C}_2\text{H}_4\text{O}$.

Use the above data to determine the rate constant and the half-life of the reaction.

Marks
4

$k =$

$t_{1/2} =$

How long does it take for 75% of the $\text{C}_2\text{H}_4\text{O}$ to react?

Answer: