Hi! I am doing an experiment where I measure the volume of hydrogen gas produced from reacting different concentrations of an acid with a magnesium strip. I have calculated the rate of reaction fir each concentration and the units are $dm^3 \cdot s^{-1}$ I now need to plot a graph of concentration of the acid against rate of reaction. Do I need to convert the units from $dm^3 \cdot s^{-1}$ to $mol \cdot dm^{-3} \cdot s^{-1}$ in order to determine the order of the reaction with respect to the acid?

Solution

Determine the reaction rate to the following formula

V= $k \cdot C$

V-reaction rate; $mol \cdot dm^{-3} \cdot s^{-1}$

K - Reaction rate constant; s^{-1}

C – Concentration; $mol \cdot dm^{-3}$

If you multiply the value of right side of equation, you get $mol \cdot dm^{-3} \cdot s^{-1}$. On this basis, left side of equation must be $mol \cdot dm^{-3} \cdot s^{-1}$

Answer: Yes, You need to convert the units from $dm^3 \cdot s^{-1}$ to $mol \cdot dm^{-3} \cdot s^{-1}$