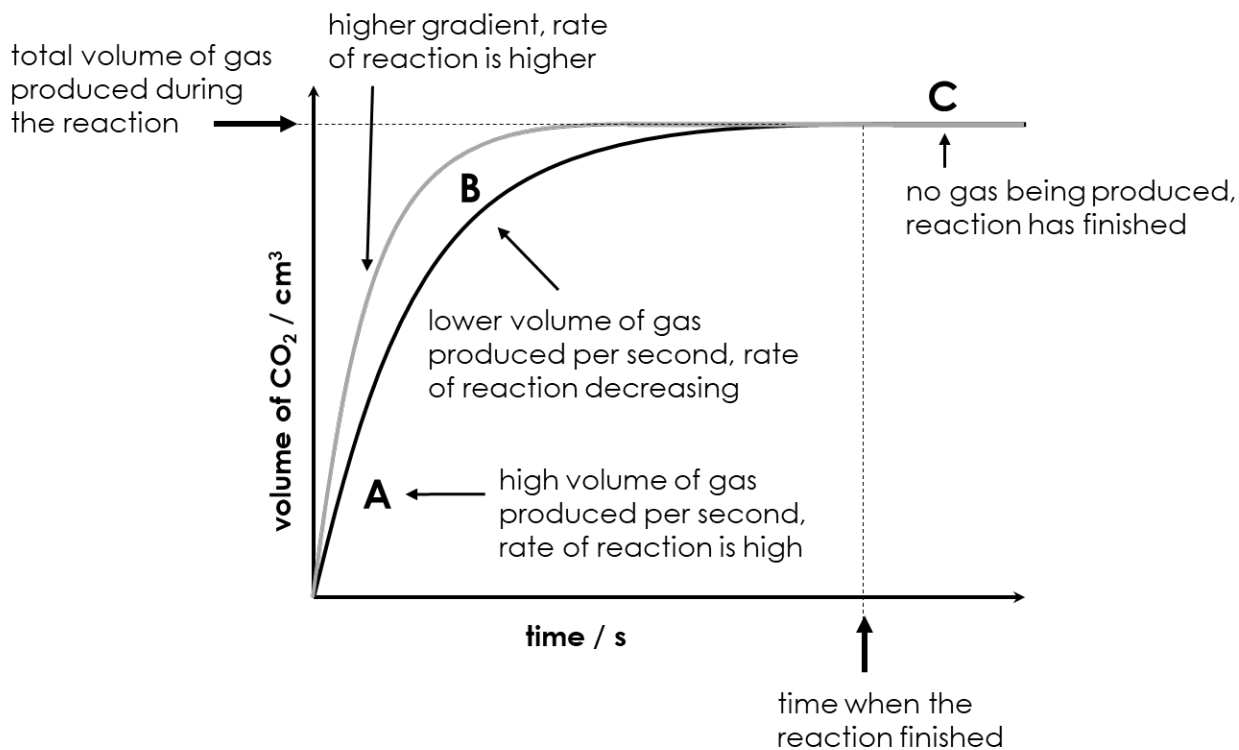


KNOWLEDGE ORGANISER
BIG IDEA: REACTIONS
TOPIC: RATES OF REACTION

Key Word	Definition
reactant(s)	Substances that react together.
product(s)	Substances formed in a reaction.
chemical reaction	Where the atoms in the reactant(s) rearrange to form new chemical(s).
volume	The amount of 3D space a substance or object occupies.
concentration	A measure of the number of particles in a given volume.
gradient	How "steep" a graph is
rate of reaction	Quantity of product formed over a unit of time <i>or</i> Quantity of reactant used over a unit of time

Interpreting time-volume graphs:

We plot time-volume graphs to follow a chemical reaction that produces a gas.

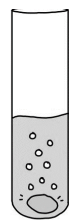


Rate of reaction:

In non-scientific language we could say this is *"the speed of a chemical reaction"*. However, when defining reaction rates scientists emphasise the idea of time. We measure the rate by finding the amount of product formed over a unit of time or the amount of reactant used over a unit of time. A unit of time could be a day, a minute, an hour, a second, 30 seconds etc.



POTASSIUM



MAGNESIUM



ZINC

The picture shows that the rate of reaction is highest for potassium because there are more bubbles of gas produced **per second**.

Factors affecting the reaction rate:

Some methods used to increase the reaction rate are:

- stirring
- increasing the temperature
- increasing the concentration
- adding a catalyst