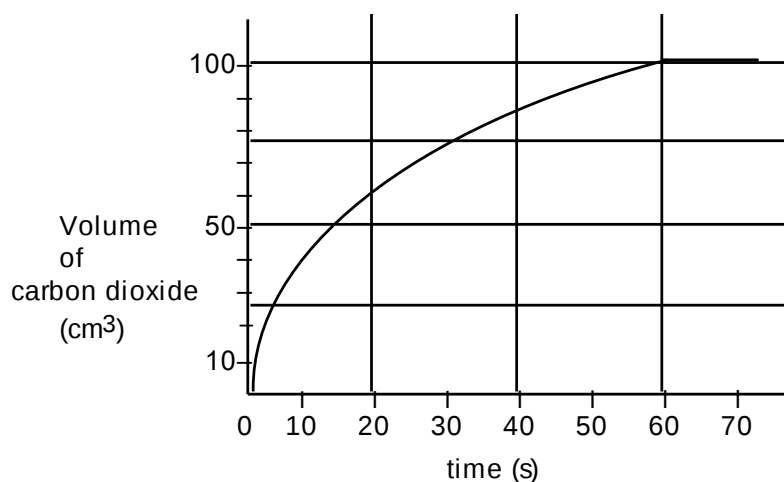


Homework 1 – Chemical Reactions

- 1) What is always formed in a chemical reaction?
- 2) State three signs that a chemical reaction has occurred.
- 3) Adding a catalyst is one way of speeding up a chemical reaction. Give three other ways of speeding up a reaction.
- 4) Some students carried out the following experiments to investigate the rate of reaction between magnesium and hydrochloric acid:

A  powder 2 mol/l 20 °C	B  ribbon 1 mol/l 20 °C	C  powder 1 mol/l 30 °C
D  ribbon 1 mol/l 30 °C	E  powder 2 mol/l 40 °C	F  ribbon 2 mol/l 20 °C

- a) Identify the experiment with the fastest rate of reaction.
 - b) Identify the two experiments which could be used to investigate the effect of concentration on the rate of reaction.
- 5) The graph below shows the volume of carbon dioxide released when an excess of powdered marble chips react with dilute acid.



- Explain why the slope of the graph is steepest at the start of the reaction.
- Sketch the graph in your jotter and draw and label the curves you would expect if the experiment was repeated using a lower temperature.
- Sketch the graph in your jotter and draw and label the curves you would expect if the experiment was repeated using marble powder instead of chips.