



WJEC Chemistry GCSE

Specified Practical 9A

Measuring Rate of Reaction

Using a Gas Collection Method

[Methods are adapted from the [Royal Society of Chemistry](#) and [AQA GCSE Chemistry required practical handbook](#)]

England Specification





Gas Collection Method

Aim

Investigate the effect of concentration on the rate of reaction by observing the volume of gas produced.

Equipment List

- Magnesium ribbon cut into 3 cm length
- Dilute hydrochloric acid, 1.0 mol dm⁻³ and 1.5 mol dm⁻³
- Safety goggles
- Conical flask (100 cm³)
- Single-holed rubber bung and delivery tube to fit conical flask
- Water trough
- Two measuring cylinders (100 cm³)
- Clamp stand, boss and clamp
- Stopwatch

Method

1. Using a measuring cylinder, measure 50 cm³ of 1.0 mol dm⁻³ hydrochloric acid and pour into the 100 cm³ conical flask.
2. Set up the experiment as shown in the diagram below - keeping the water in the measuring cylinder can be tricky.
3. You might need two sets of hands for this part - place a strip of magnesium ribbon (3 cm) to the flask and then immediately put the bung back into the flask. Ask your partner to start the stopwatch as soon as you have done this.
4. Record the volume of hydrogen gas collected for every 10 second interval. Stop when no more gas is being collected.
5. Now repeat steps 1-4 using a different concentration of hydrochloric acid
6. Plot your results onto a graph. Put 'volume of gas produced' on the y-axis and 'time' on the x-axis. Once you have plotted your points, you should see you have two curves: one for each concentration of acid.





Diagram

