

# Rates of Reactions

The key areas of study in this topic are:

- factors that affect the rate of reaction
- explaining these factors in terms of colliding particles
- how to measure rates of reaction

By the end of this topic I should be able to:

Start

End

7.1 Core Practical: Investigate the effects of changing the conditions of a reaction on the rates of chemical reactions by:

- measuring the production of a gas (in the reaction between hydrochloric acid and marble chips)
- observing a colour change (in the reaction between sodium thiosulfate and hydrochloric acid)

7.2 Suggest practical methods for determining the rate of a given reaction

7.3 Explain how reactions occur when particles collide and that rates of reaction are increased when the frequency and/or energy of collisions is increased

7.4 Explain the effects on rates of reaction of changes in temperature, concentration, surface area to volume ratio of a solid and pressure (on reactions involving gases) in terms of frequency and/or energy of collisions between particles

7.5 Interpret graphs of mass, volume or concentration of reactant or product against time

7.6 Describe a catalyst as a substance that speeds up the rate of a reaction without altering the products of the reaction, being itself unchanged chemically and in mass at the end of the reaction

7.7 Explain how the addition of a catalyst increases the rate of a reaction in terms of activation energy

7.8 Recall that enzymes are biological catalysts and that enzymes are used in the production of alcoholic drinks

