



In any chemical reaction, the products are made when the atoms in the reactants are rearranged into new substances. We can show this in a chemical equation.

In a word equation, the names of the reactant(s) and product(s) are written in words. The equation is written with the reactants on the left side and the products on the right side, separated by an arrow.

The arrow should always be shown in any chemical equation and is a shorthand way of saying “reacts to form”.

a)

Magnesium metal is heated in a Bunsen burner. It burns to produce magnesium oxide, a white powder.

Write a word equation to show this chemical reaction.

b)

In the lab, iron filings were sprinkled into the Bunsen flame, resulting in bright sparkles in the flame. In this reaction iron oxide was produced.

Write a word equation to show this chemical reaction.

c)

When an athlete runs, their muscles cells use up glucose. The reaction requires oxygen and the glucose breaks down to produce carbon dioxide and water.

Write a word equation to show this chemical reaction.

d)

Chalk react with hydrochloric acid to prelease carbon dioxide gas. A salt, calcium chloride and water also result.

Write a word equation to show this chemical reaction.

e)

A catalytic converter in a car exhaust uses oxygen from the air to change toxic carbon monoxide into less harmful carbon dioxide.

Write a word equation to show this chemical reaction.

f)

A lab technician produced hydrogen gas by reacting calcium metal with dilute hydrochloric acid.

Write a word equation to show this chemical reaction.

g)

At the Grangemouth petrochemical works, ethene is produced by cracking ethane. In the process, hydrogen gas is also produced.

Write a word equation to show this chemical reaction.

h)

Esters are organic compounds used to flavour food and drink. A flavour used in the boiled sweet, pear drops is pentyl ethanoate. It can be made by reacting pentanol with ethanoic acid. In the reaction water is released

Write a word equation to show this chemical reaction.

i)

The thermite process is used to weld railway lines. In the reaction iron metal is produced when aluminium reacts with iron oxide at high temperature. Aluminium oxide is also made in the reaction.

Write a word equation to show this chemical reaction.

j)

Crude oil contains sulphur compounds, such as hydrogen sulphide.

(a) Hydrogen sulphide burns in oxygen to produce sulphur dioxide and water.

Write a **word** equation for this reaction.

k)

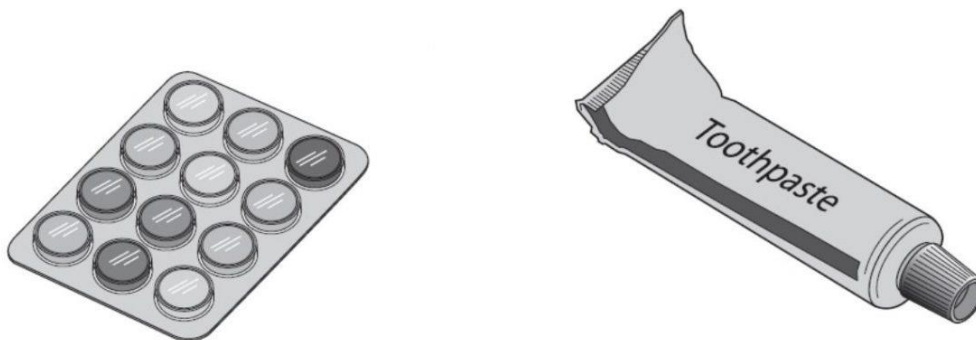
Hydrazine is a fuel used in rockets.

Hydrazine is unstable and can break down to produce ammonia, nitrogen and hydrogen.

Write a **word** equation for this reaction.

l)

Indigestion tablets and dental products contain many chemical compounds.



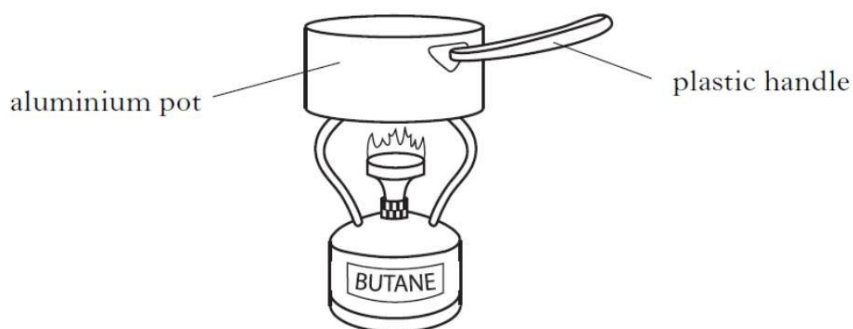
Some indigestion tablets contain calcium carbonate.

Calcium chloride, carbon dioxide and water are produced when calcium carbonate reacts with hydrochloric acid in the stomach.

(i) Write a **word** equation for the reaction.

m)

Butane is a hydrocarbon which can be used as a fuel.



(a) When butane burns in oxygen, carbon dioxide and water are produced.

Write an equation for the burning of butane