

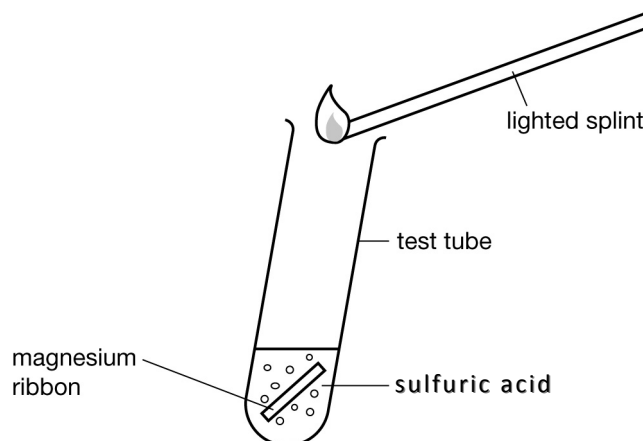
Word and symbol equations

Task 1: Describing chemical reactions

Carry out the following experiment and answer the questions below:

Method:

- Place 1 cm length of magnesium ribbon in a test tube containing 2 cm depth of dilute sulfuric acid (0.5 mol dm^{-3}).
- Look for clues that a chemical reaction is taking place.
- Place your thumb over the top of the test tube and test the gas given off with a lighted splint.



Questions:

1 What are the reactants in your experiment?

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2 What signs were there that a chemical reaction was taking place?

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3 What gas was given off?

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4 During the reaction, magnesium sulfate was also produced. This dissolved in the water in the test tube. What were the products of your reaction?

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Task 2: Writing word equations

Write a word equation to sum up the following reactions.

- 1 Iron objects react with water and oxygen to form hydrated iron oxide.

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- 2 Magnesium reacts with oxygen to form magnesium oxide.

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- 3 Carbon burns in a good supply of oxygen to form carbon dioxide.

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- 4 Carbon burns in a limited supply of oxygen to form carbon monoxide.

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- 5 Hydrochloric acid reacts with magnesium to form magnesium chloride and hydrogen.

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- 6 Sodium hydroxide neutralises hydrochloric acid to form sodium chloride and water.

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- 7 Sulphur reacts with oxygen to form sulphur dioxide.

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- 8 Nitric acid reacts with iron to form iron nitrate and hydrogen.

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- 9 Copper carbonate reacts with hydrochloric acid to form copper chloride, water and carbon dioxide.

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- 10 Calcium oxide reacts with nitric acid to form calcium nitrate and water.

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Task 3: Writing symbol equations

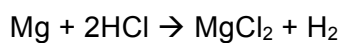
We use chemical formula to represent chemicals. The formulae tell us which type of atoms make up the substance and how many of each type of atom are present.

- 1 Complete the table to show the number and type of each atom in the formulae. You will need a copy of the Periodic Table to look up the symbols.

Formula	Type of atom	How many of each type?
HCl		
CaCO ₃		
HNO ₃		
KOH		
NaCl		
Na ₂ O		
H ₂ O		
MgSO ₄		
FeSO ₄		
NaHCO ₃		

- 2** Magnesium reacts with dilute hydrochloric acid to produce magnesium chloride and hydrogen gas.

The symbol equation is:



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

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- b** Iron and zinc have similar reactions with hydrochloric acid. Write word equations for these reactions.

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- c** Write symbol equations for these reactions.

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