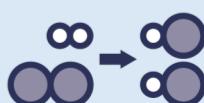




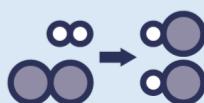
C4.3 Student Glossary

Acid	A substance that produces H ⁺ ions in aqueous solutions. Acids can be neutralised by alkalis.
Alkali	A substance that produces OH ⁻ ions in aqueous solutions. An alkali is a soluble base.
Aqueous solution	A solution in which the solvent is water. Many chemical reactions take place in aqueous solutions .
A_r	This is the symbol for relative atomic mass. See relative atomic mass .
Avogadro's number	The constant or number that shows how many particles, molecules, atoms, or ions there are in 1 mole of a substance. Avogadro's number is 6.02 × 10 ²³ .
Burette	A piece of equipment used to measure a variable volume in a titration. A burette is used to add one solution dropwise to another.
Chemical formula	A series of chemical symbols showing the number of atoms of each element in a compound. The chemical formula for Magnesium Oxide is MgO.
Coefficient	The 'big' number or balancing numbers in front of a chemical formula in an equation. In the equation 2Mg + O ₂ → 2MgO, the coefficient in front of magnesium is 2.
Compound	A substance made up of two or more different elements chemically bonded together. Water is a compound of hydrogen and oxygen.
Concentration	The mass of solute dissolved in a given volume of solvent The concentration of the copper sulphate solution was 0.1 g/cm ³



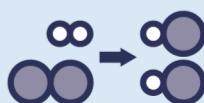


Concentrated	If a solution is concentrated, there is a large mass of solute in a given volume of solvent. <i>The salt water solution was concentrated because lots of salt was added to a small volume of water.</i>
Concordant	Results that fall within 0.2 cm ³ of each other. <i>When doing a titration, only the concordant results should be used to calculate the mean titre.</i>
Conservation of Mass	The law of conservation of mass states that the total mass of reactants in any chemical reaction equals the total mass of products <i>5 g of iron and sulfur reacted together to make 5 g of iron sulfide. This demonstrates the Law of Conservation of Mass.</i>
Dilute	To decrease the concentration of a liquid by mixing it with water or another liquid. <i>I plan to dilute the acid by adding more water.</i>
Dissociate	When an acid or alkali splits into its ions in solution. Hydrochloric acid dissociates in solution: $HCl \text{ (aq)} \rightarrow H^+ \text{ (aq)} + Cl^- \text{ (aq)}$.
Element	A substance made of only one type of atom. Oxygen is an example of an element .
Excess	The reactant that is not used up in a reaction, so some is left over. When magnesium burns in excess oxygen, the magnesium is used up but the oxygen is not.
Formulae	Plural of formula See chemical formula
Ionise	Another way to describe dissociation, or the formation of ions. When an acid or alkali splits into its ions in solution. Hydrochloric acid ionises in solution: $HCl \text{ (aq)} \rightarrow H^+ \text{ (aq)} + Cl^- \text{ (aq)}$.



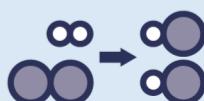


Limiting reactant	The reactant that is used up in a reaction, so limits the amount of product that can be made. <i>When magnesium burns in excess oxygen, the magnesium is the limiting reactant.</i>
Mass	The amount of matter in a substance. <i>In physics, we measure mass in kg but in chemistry we often use smaller masses, so we can measure mass in g instead.</i>
Molar ratio	The ratio of balancing numbers in front of the chemical formulae in an equation, showing the ratio in which reactants react and products are made. <i>In the equation $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$, the molar ratio of magnesium to oxygen is 2:1.</i>
Molar volume	The volume of one mole of any gas at room temperature and pressure. Molar volume at rtp is 24 dm^3 .
Mole	The amount of substance that contains 6.02×10^{23} particles. <i>1 mole of carbon dioxide contains the same number of molecules as 1 mole of oxygen or 1 mole of ammonia.</i>
Molecule	A small group of non-metal atoms chemically bonded together. <i>Oxygen gas is made up of many oxygen molecules, each with the chemical formula O_2.</i>
M_r	This is the symbol for relative formula mass. See relative formula mass .
Neutralisation	A chemical reaction in which an acid and a base react with each other. Neutralisation reactions produce a salt and water.
pH	A measure of the acidity or alkalinity of a solution. Acids have a pH of less than 7.





pH probe	An instrument used to measure the pH of a solution. A pH probe can give a numerical value for pH whereas universal indicator gives a colour that corresponds to a number on the pH scale.
Phenolphthalein	An indicator often used in titrations because of its clear colour change. Phenolphthalein is pink in alkaline solutions but turns colourless in acidic solutions.
Pipette	A piece of equipment used to measure a fixed volume accurately. A pipette allows a more precise volume of liquid to be measured than a measuring cylinder.
Product	The substance(s) that are made in a chemical reaction. In the equation $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$, magnesium oxide is the product .
Reactant	The substance(s) that react in a chemical reaction to form a new substance. In the equation $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$, magnesium and oxygen are the reactants .
Relative atomic mass	The relative atomic mass of an element is the average mass of its atoms compared to the mass of a carbon-12 atom. The relative atomic masses for each element are given in the Periodic Table. The relative atomic mass of oxygen is 16.
Relative formula mass	The relative formula mass of a substance is the sum of the relative atomic masses of its atoms, in the numbers shown in its chemical formula. The relative formula mass of a molecule of H_2O is 18.
RTP	Room temperature and pressure: 20 °C and 1 atm of pressure. Molar volume at rtp is 24 dm ³ .
Solute	A substance that is dissolved in a solvent. Salt is the solute when it is dissolved in water.





Soluble	A substance is soluble if it can be dissolved in a solvent. <i>Sugar is soluble in water.</i>
Solution	A mixture of a dissolved solute and a solvent. <i>A solution of salt and water was used.</i>
Solvent	A substance in which a solute can dissolve <i>Water is a solvent because salt can dissolve in it</i>
Strong	(Of an acid) An acid that fully dissociates in solution. <i>Hydrochloric acid is an example of a strong acid.</i>
Subscript	The numbers that come after and below a chemical symbol in a chemical formula, to indicate the number of atoms of that element. <i>The subscript number two shown in a molecule of CO₂ indicates that it contains 2 atoms of oxygen.</i>
Titration	A method of quantitative analysis used to determine the volume of acid/alkali needed to completely neutralise an alkali/acid. <i>A titration can be used to measure the volume of hydrochloric acid needed to neutralise 25 cm³ of sodium hydroxide.</i>
Titre	The volume of acid/alkali needed to completely neutralise the alkali/acid in a titration. <i>The titre can be calculated using the starting and final volume readings on a burette.</i>
Universal Indicator	A solution that changes colour depending on the pH of the solution it is added to. <i>Universal indicator turns green when it is added to a neutral solution.</i>
Volume	The amount of space a substance takes up. <i>In chemistry, volume is measured in dm³.</i>
Weak	(Of an acid) An acid that partially dissociates in solution. <i>Ethanoic acid is an example of a weak acid.</i>

