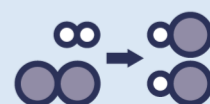


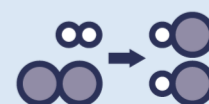


C4.3 Student Glossary

Acid	A substance that produces H^+ ions in aqueous solutions. <i>Acids can be neutralised by alkalis.</i>
Alkali	A substance that produces OH^- ions in aqueous solutions. <i>An alkali is a soluble base.</i>
Aqueous solution	A solution in which the solvent is water. <i>Many chemical reactions take place in aqueous solutions.</i>
A_r	This is the symbol for relative atomic mass. <i>See relative atomic mass.</i>
Avogadro's number	The constant or number that shows how many particles, molecules, atoms, or ions there are in 1 mole of a substance. <i>Avogadro's number is 6.02×10^{23}.</i>
Burette	A piece of equipment used to measure a variable volume in a titration. <i>A burette is used to add one solution dropwise to another.</i>
Chemical formula	A series of chemical symbols showing the number of atoms of each element in a compound. <i>The chemical formula for Magnesium Oxide is MgO.</i>
Coefficient	The 'big' number or balancing numbers in front of a chemical formula in an equation. <i>In the equation $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$, the coefficient in front of magnesium is 2.</i>
Compound	A substance made up of two or more different elements chemically bonded together. <i>Water is a compound of hydrogen and oxygen.</i>
Concentration	The mass of solute dissolved in a given volume of solvent <i>The concentration of the copper sulphate solution was 0.1 g/cm^3</i>

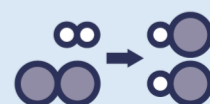


Concentrated	<p>If a solution is concentrated, there is a large mass of solute in a given volume of solvent.</p> <p><i>The salt water solution was concentrated because lots of salt was added to a small volume of water.</i></p>
Concordant	<p>Results that fall within 0.2 cm³ of each other.</p> <p><i>When doing a titration, only the concordant results should be used to calculate the mean titre.</i></p>
Conservation of Mass	<p>The law of conservation of mass states that the total mass of reactants in any chemical reaction equals the total mass of products</p> <p><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></p>
Dilute	<p><i>To decrease the concentration of a liquid by mixing it with water or another liquid.</i></p> <p><i>I plan to dilute the acid by adding more water.</i></p>
Dissociate	<p><i>When an acid or alkali splits into its ions in solution.</i></p> <p><i>Hydrochloric acid dissociates in solution:</i></p> <p><i>$\text{HCl (aq)} \rightarrow \text{H}^+ \text{(aq)} + \text{Cl}^- \text{(aq)}$.</i></p>
Element	<p>A substance made of only one type of atom.</p> <p><i>Oxygen is an example of an element.</i></p>
Excess	<p>The reactant that is not used up in a reaction, so some is left over.</p> <p><i>When magnesium burns in excess oxygen, the magnesium is used up but the oxygen is not.</i></p>
Formulae	<p>Plural of formula</p> <p>See chemical formula</p>
Ionise	<p><i>Another way to describe dissociation, or the formation of ions. When an acid or alkali splits into its ions in solution.</i></p> <p><i>Hydrochloric acid ionises in solution:</i></p> <p><i>$\text{HCl (aq)} \rightarrow \text{H}^+ \text{(aq)} + \text{Cl}^- \text{(aq)}$.</i></p>



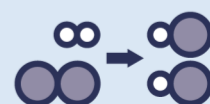


Limiting reactant	The reactant that is used up in a reaction, so limits the amount of product that can be made. <i>When magnesium burns in excess oxygen, the magnesium is the limiting reactant.</i>
Mass	The amount of matter in a substance. <i>In physics, we measure mass in kg but in chemistry we often 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. <i>Acids have a pH of less than 7.</i>





pH probe	An instrument used to measure the pH of a solution. <i>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.</i>
Phenolphthalein	An indicator often used in titrations because of its clear colour change. <i>Phenolphthalein is pink in alkaline solutions but turns colourless in acidic solutions.</i>
Pipette	A piece of equipment used to measure a fixed volume accurately. <i>A pipette allows a more precise volume of liquid to be measured than a measuring cylinder.</i>
Product	The substance(s) that are made in a chemical reaction. <i>In the equation $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$, magnesium oxide is the product.</i>
Reactant	The substance(s) that react in a chemical reaction to form a new substance. <i>In the equation $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$, magnesium and oxygen are the reactants.</i>
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. <i>The relative atomic mass of oxygen is 16.</i>
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. <i>The relative formula mass of a molecule of H_2O is 18.</i>
RTP	Room temperature and pressure: 20 °C and 1 atm of pressure. <i>Molar volume at rtp is 24 dm³.</i>
Solute	A substance that is dissolved in a solvent. <i>Salt is the solute when it is dissolved in water.</i>





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>

