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 x10^{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. *The salt water solution was **concentrated** because lots of salt was added to a small volume of water.*
Concordant	Results that fall within 0.2 cm^3 of each other. *When doing a titration, only the **concordant** results should be used to calculate the mean titre.*
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 *5 g of iron and sulfur reacted together to make 5 g of iron sulfide. This demonstrates the Law of **Conservation of Mass.***
Dilute	*To decrease the concentration of a liquid by mixing it with water or another liquid.* *I plan to **dilute** the acid by adding more water.*
Dissociate	*When an acid or alkali splits into its ions in solution.* *Hydrochloric acid **dissociates** in solution:* $HCl\ (aq) \rightarrow H^+\ (aq) + Cl^-\ (aq)$.
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:* $HCl\ (aq) \rightarrow H^+\ (aq) + Cl^-\ (aq)$.

Limiting reactant	The reactant that is used up in a reaction, so limits the amount of product that can be made. *When magnesium burns in excess oxygen, the magnesium is the **limiting reactant**.*
Mass	The amount of matter in a substance. *In physics, we measure mass in kg but in chemistry we often use smaller masses, so we can measure **mass** in g instead.*
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. *In the equation $2Mg + O_2 \rightarrow 2MgO$, the **molar ratio** of magnesium to oxygen is 2:1.*
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 $x10^{23}$ particles. *1 **mole** of carbon dioxide contains the same number of molecules as 1 mole of oxygen or 1 mole of ammonia.*
Molecule	A small group of non-metal atoms chemically bonded together. *Oxygen gas is made up of many oxygen **molecules**, each with the chemical formula O_2.*
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 $2Mg + O_2 \rightarrow 2MgO$, magnesium oxide is the **product**.*
Reactant	The substance(s) that react in a chemical reaction to form a new substance. *In the equation $2Mg + O_2 \rightarrow 2MgO$, 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 1atm 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 *Sugar is **soluble** in water.*
Solution	A mixture of a dissolved solute and a solvent. *A **solution** of salt and water was used.*
Solvent	A substance in which a solute can dissolve *Water is a **solvent** because salt can dissolve in it*
Strong	(Of an acid) An acid that fully dissociates in solution. *Hydrochloric acid is an example of a **strong** acid.*
Subscript	The numbers that come after and below a chemical symbol in a chemical formula, to indicate the number of atoms of that element. *The **subscript** number two shown in a molecule of CO_2 indicates that it contains 2 atoms of oxygen.*
Titration	A method of quantitative analysis used to determine the volume of acid/alkali needed to completely neutralise an alkali/acid. *A **titration** can be used to measure the volume of hydrochloric acid needed to neutralise 25 cm^3 of sodium hydroxide.*
Titre	The volume of acid/alkali needed to completely neutralise the alkali/acid in a titration. *The **titre** can be calculated using the starting and final volume readings on a burette.*
Universal Indicator	A solution that changes colour depending on the pH of the solution it is added to. ***Universal indicator** turns green when it is added to a neutral solution.*
Volume	The amount of space a substance takes up. *In chemistry, **volume** is measured in dm^3.*
Weak	(Of an acid) An acid that partially dissociates in solution. *Ethanoic acid is an example of a **weak** acid.*