

Definitions and Concepts for AQA Chemistry GCSE

Topic 3 - Quantitative Chemistry

*Definitions in **bold** are for higher tier only*

Definitions marked by '' are for separate sciences only*

Definitions have been taken, or modified from the [AQA Specification for GCSE Chemistry, 8462, Version 1.1 04 October 2019](#).

***Actual yield:** The amount of product actually produced by a reaction.

***Atom economy:** The measure of the amount of starting materials that end up as useful products.

Avogadro constant: The number of atoms, molecules or ions in a mole of a given substance.

***Avogadro's law:** Equal amounts in moles of gases occupy the same volume under the same conditions of temperature and pressure.

Concentration: The amount of substance (e.g. the mass) in a certain volume of a solution.

Conservation of mass: The law of conservation of mass states that no atoms are lost or made during a chemical reaction so the mass of the products equals the mass of the reactants.

Limiting reactant: The reactant that is completely used up since it limits the amount of products formed.

***Mole:** Chemical amounts are measured in moles. The mole is the unit for amount of substance. The symbol for the unit mole is mol.

***Percentage by mass:** A value representing the concentration of an element in a compound or a component in a mixture. It is calculated by the mass of a component divided by the total mass of the mixture, multiplied by 100.

***Percentage yield:** The percentage ratio of the actual yield of product from a reaction compared with the theoretical yield.



Relative formula mass: The sum of the relative atomic masses of the atoms in the numbers shown in the formula. It is numerically equal to the mass of one mole of a substance in grams.

***Theoretical yield:** The maximum amount of product that could be produced from the given reactants, assuming a complete reaction takes place.

Thermal decomposition: The reaction that occurs when heat is applied to a compound causing it to break down into its different chemical constituents.

Uncertainty: All measurements have a degree of uncertainty regardless of precision and accuracy. Uncertainty can be due to the limitations of the measuring equipment or due to the skill of the experimenter carrying out the measurements

