

Definitions and Concepts for CAIE Chemistry IGCSE

Topic 4 - Stoichiometry

Definitions in **bold** are for extended supplement only

Definitions have been taken, or modified from the [CAIE Specification for GCSE Chemistry, 0971, Version 1 September 2020](#)

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

Compound: A substance made up of two or more types of atoms chemically combined together.

Empirical formula: The simplest whole number ratio of atoms of each element in a compound.

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

Molar volume: The volume occupied by one mole of gaseous molecules.

Molar volume at RTP: The volume occupied by one mole of molecules of any gas at room temperature and pressure (RTP). The molar volume at RTP is 24 dm³.

Mole: The unit for amount of substance. The symbol for the unit mole is mol.

Molecular formula: The actual ratio of atoms of each element present in a compound.

Percentage purity: The percentage ratio of the mass of a pure compound in an impure sample.

$$\text{Percentage purity} = \frac{\text{Mass of pure compound}}{\text{Total mass of impure sample}} \times 100$$

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

$$\text{Percentage yield} = \frac{\text{Actual yield}}{\text{Theoretical Yield}} \times 100$$

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Relative atomic mass, A_r : The average mass of naturally occurring atoms of an element on a scale where the ^{12}C atom has a mass of exactly 12 units.

Relative formula mass, M_r : The sum of the relative atomic masses in an ionic compound.

Relative molecular mass, M_r : The sum of the relative atomic masses in a molecule.

