

AQA Chemistry A-level

Topic 1.2 - Amount of Substance

Flashcards

This work by [PMT Education](https://www.pmt.education) is licensed under [CC BY-NC-ND 4.0](https://creativecommons.org/licenses/by-nc-nd/4.0/)



Define Relative Molecular Mass



Define Relative Molecular Mass

Average mass of the naturally occurring isotopes of a compound, compared to $1/12$ mass of an atom of carbon-12 (C^{12})



Define Relative Atomic Mass



Define Relative Atomic Mass

Average mass of the naturally occurring isotopes of an atom, compared to $1/12$ mass of an atom of carbon-12 (C^{12})



Define the Avogadro constant.



Define the Avogadro constant.

Number of particles/atoms/ions in one mole of a substance



Write the equation that links
mass of 1 mol, mass of 1
atom and Avogadro
constant



Write the equation that links mass of 1 mol, mass of 1 atom and Avogadro constant

Mass of 1 mol = mass of 1 atom/molecule X Avogadro constant



Define percentage yield.



Define percentage yield.

The % of a product produced by a reaction, compared to a theoretical maximum



How would you calculate percentage yield?



How would you calculate percentage yield?

Mass of useful product \div expected mass of useful product



What can the percentage yield of a practical be used to investigate?



What can the percentage yield of a practical be used to investigate?

Efficiency of practical techniques and whether reactions proceed as estimated



Define atom economy.



Define atom economy.

% of amount of reactants made into a certain
(useful) product



How would you calculate atom economy?



How would you calculate atom economy?

Mr of atoms of useful product \div Mr of atoms of reactants



What can the atom economy of a reaction be used to investigate?



What can the atom economy of a reaction be used to investigate?

Efficiency of using a specific reaction to produce a product



Write the Ideal Gas
Equation (in symbols and in
words, with units for each
thing)



Write the Ideal Gas Equation (in symbols and in words, with units for each thing)

$$PV = nRT$$

Pressure \times volume = number of moles \times gas constant \times temperature

Pressure in Pa, volume in m^3 , temperature in K, $R=8.31$



What are standard conditions?



What are standard conditions?

25°C/298K

1atm/100kPa



How do you convert between K and C temperatures?



How do you convert between K and C temperatures?

$^{\circ}\text{C}$ to K + 273

K to $^{\circ}\text{C}$ - 273



Define empirical formula



Define empirical formula

Simplest whole number ratio of atoms in a compound



What is the equation that links mols, concentration and volume?



What is the equation that links mols, concentration and volume?

Moles = concentration \times volume



What is the equation that links moles, mass and Mr?



What is the equation that links moles, mass and Mr?

Moles = mass / Mr

