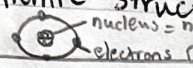
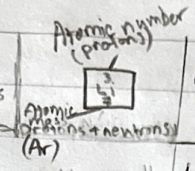
Chemistry

↳ Atomic structure





↳ Periodic table Ar : bigger no. Mr : smaller no.

↳ States of Matter

↳ Reactivity series

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↳ Gases in the atmosphere

78% = nitrogen 0.9% = argon
21% = oxygen 0.04% = carbon dioxide

*percentage of O2 in air
*combustion

↳ Elements, Compounds + mixtures

one type of atoms (on periodic table) | more than one type of atom chemically bonded | more than one type of atom not chemically bonded

↳ Separation techniques

*methods of each

Filtration (insoluble solid from liquid) | Crystalisation (↳ water from a solution) | Simple distillation (separating a solution)

↳ Acids, Bases

hydrogen ions (H^+) | (OH^-) hydroxide ions

*general equations

↳ Titrations

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↳ Group 1

...

↳ Group 7

...

↳ Bonding

Ionic ...

Covalent
- electrostatic force of attraction between shared pair of electrons and positively charged nuclei
- Share electrons
- between non metals
- atom shares = atom recieves back

Metalic
- metal atoms
- lose electrons
- form a giant lattice
- outer electron = sea of delocalised electrons
- atoms lose electrons leaving pos charged ions

↳ Chemical formulae, equations + calculations

- only metal + element = -ide
- oxygen, metal + element = -ate
- total mass of reactants = total mass of products
- reactant atoms = product atoms (ballance)
- Molecular formulae = actual amount
- Empirical formulae = smallest interger values of amount
- percentage yield = $\frac{\text{actual mass}}{\text{theoretical mass}} \times 100$

↳ Crude oil (Organic)

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↳ Alkanes + Alkenes (organic)

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↳ Synthetic Polymers (organic)

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↳ Rates of reaction

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↳ Salt preparation

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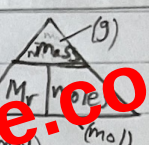
↳ Moles + Calculations

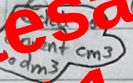
1dm³ = 1000cm³ = 1 litre

mass of 1 mol = Mr

moles = $\frac{(M) \times (V)}{1000}$

M = concentration measured (mol/dm³)
V = volume (cm³)





neutralisation reaction = $OH^- + H^+ = H_2O$

↳ Chemical tests

H = lit splint - squeaky pop
O = glowing splint - relights
Cl = damp litmus - red then bleaches white
CO2 = limewater - cloudy
H2O = white anhydrous copper sulfate turns blue
↳ freezes at exactly 0° ↳ boils at exactly 100°

Flame tests
Li - red
Na = yellow
K = lilac
Ca = orange - red
Cu^{2+} = blue - green

Cations
- Ammonia
- Other Cations

Anions
- carbonates
- sulfates
- halides

↳ Energetics

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↳ Solubility rules

nitrates = soluble

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