

CAMBRIDGE IGCSE · 0620

IGCSE Chemistry Formula Sheet

Mole calculations, general formulae and a chemical formulas list.

1 Calculations

The mole relationships and calculations the syllabus asks you to use.

Amount of substance (moles)	$\text{moles} = \frac{\text{mass (g)}}{\text{molar mass (g/mol)}}$
Avogadro constant Extended	1 mole = 6.02×10^{23} particles
Gas volume at r.t.p. (24 dm ³ per mole)	volume (dm ³) = moles $\times$ 24
Concentration	g/dm ³ or mol/dm ³ ; concentration = $\frac{\text{amount}}{\text{volume (dm}^3\text{)}}$
Percentage yield	% yield = $\frac{\text{actual yield}}{\text{theoretical yield}} \times 100$
Percentage purity	% purity = $\frac{\text{mass of pure substance}}{\text{mass of impure sample}} \times 100$
Percentage by mass of an element	$\frac{A_r \times \text{number of atoms}}{M_r} \times 100$
Rf value (chromatography)	$R_f = \frac{\text{distance moved by substance}}{\text{distance moved by solvent}}$

2 General formulae of homologous series

Listed in the syllabus for organic chemistry.

Alkanes	C_nH_{2n+2}
Alkenes	C_nH_{2n}
Alcohols	$C_nH_{2n+1}OH$
Carboxylic acids	$C_nH_{2n+1}COOH$

3 Chemical formulas of common compounds

Compounds named in the syllabus, whose formulae you are expected to state.

Water, carbon dioxide, carbon monoxide	H_2O , CO_2 , CO
Ammonia, methane, sulfur dioxide	NH_3 , CH_4 , SO_2
Hydrochloric, sulfuric and nitric acid	HCl , H_2SO_4 , HNO_3
Sodium hydroxide, sodium chloride	$NaOH$, $NaCl$
Calcium carbonate, calcium oxide	$CaCO_3$, CaO
Copper(II) sulfate, iron(III) oxide, aluminium oxide	$CuSO_4$, Fe_2O_3 , Al_2O_3
Ethene, ethanol, ethanoic acid	C_2H_4 , C_2H_5OH , CH_3COOH
Glucose	$C_6H_{12}O_6$

From the exam board's published formulas for Cambridge IGCSE · 0620, checked 22 October 2026. Always check your own exam paper.

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