

FLOWCHART 1 – REACTING MASSES & GAS VOLUMES (HT)

START: Given mass of one substance



Find M_r of the given substance using the periodic table



Calculate moles = mass $\div$ M_r



Look at the balanced equation $\rightarrow$ find the mole ratio



Multiply moles by the ratio to get moles of the target substance



Need MASS?
Mass = moles $\times$ M_r

Need VOLUME?
Vol = moles $\times$ 24 dm³



Write final answer with correct units

FLOWCHART 2 – EMPIRICAL FORMULA

START: Given masses or percentages of each element



Divide each value by the element's A_r to get moles of each



Divide all mole values by the smallest mole value



Are all values whole numbers (or very close)?



YES → write as empirical formula

NO → multiply all by 2, 3, or 4 until whole



**If given M_r : $n = M_r \div (M_r \text{ of empirical formula}) \rightarrow$
molecular formula = empirical $\times n$**

FLOWCHART 3 — TITRATION / CONCENTRATION (HT)

START: Given volume & concentration of solution A



Convert volume to dm^3 (divide cm^3 by 1000)



Moles A = concentration $\times$ volume (dm^3)



Use mole ratio from balanced equation $\rightarrow$ find moles of B



Convert volume of B to dm^3 if needed



Concentration B = moles B $\div$ volume B (dm^3)



Answer in mol/dm^3