

CHEMISTRY FORMULAE FOR SCHOOL CERTIFICATE

NO.	CONCEPT	FORMULAE	SYMBOLS AND UNITS
1.	Retention factor	$R_f = \frac{\text{distance moved by substance, in cm or mm}}{\text{distance moved by solvent front, in cm or mm}}$	R_f = retention factor (no unit)
2.	Number of protons in an atom	$n_p = n_e = Z$	n_p =number of protons n_e =number of electrons Z =atomic or proton number
3.	Number of neutrons in an atom	$n_n = A - Z$	n_n =number of neutrons A =mass or nucleon number Z =atomic or proton number
4.	Percentage composition	Percentage composition of an element in a compound = $\frac{\text{No. of atoms of element} \times A_r \text{ of element}}{M_r \text{ of compound}} \times 100\%$	
5.	Empirical formula	<ol style="list-style-type: none"> 1. Element 2. Percentage 3. Divide by A_r 4. Divide by smallest Empirical formula (whole number ratio)	
6.	Molecular formula	molecular formula = (empirical formula) $_n$	$n = \frac{M_r \text{ of molecular formula}}{M_r \text{ of empirical formula}}$
7.	Molar mass	mass of 1 mole of an element = A_r of element in grams mass of 1 mole of a compound = M_r of compound in grams	
8.	Molar volume	volume of 1 mole of any gas (molar volume) at r.t.p = 24 dm ³ (litres) or 24000 cm ³	
9.	Percentage yield	percentage yield = $\frac{\text{experimental mass of product}}{\text{calculated mass of product}} \times 100\%$	
10.	Percentage purity	percentage purity = $\frac{\text{mass of pure substance}}{\text{total mass of impure substance}} \times 100\%$	
11.	Concentration	concentration in mol dm ⁻³ = $\frac{\text{concentration in g dm}^{-3}}{\text{molar mass in g mol}^{-1}}$	
12.	Enthalpy change	$\Delta H = H_{\text{products}} - H_{\text{reactants}}$	ΔH =enthalpy change, in J H_{products} =enthalpy of products, in J $H_{\text{reactants}}$ =enthalpy of reactants, in J
13.	Exothermic reactions	$\Delta H = H_{\text{products}} - H_{\text{reactants}}$ has a negative value	
14.	Endothermic reactions	$\Delta H = H_{\text{products}} - H_{\text{reactants}}$ has a positive value	
15.	Bond breaking and bond formation	Overall energy change = (energy required to break old bonds in reactants) - (energy given out in the formation of new bonds in the products)	