SUMMARY Concentration of a Solution

Type	Definition	Units	
percentage by volume	$c = \frac{V_{\text{solute}}}{V_{\text{solution}}} \times 100\%$	% V/V	(or mL/100 mL)
mass by volume	$c = \frac{m_{\text{solute}}}{V_{\text{solution}}} \times 100\%$	% W/V	(or g/100 mL)
by mass	$c = \frac{m_{\text{solute}}}{m_{\text{solution}}} \times 100\%$	% W/W	(or g/100 g)
parts per million	$c = \frac{m_{\text{solute}}}{m_{\text{solution}}}$	ppm	(or mg/kg)
amount	$c = \frac{n_{\text{solute}}}{V_{\text{solution}}}$	mol/L	

For dilution or reduction (*removal of solvent by evaporation*) → $C_iV_i = C_fV_f$

The Ultimate Mole Conversion Picture