

A Comparison of Various Concentration Units

<u>Name</u>	<u>Units</u>	<u>Advantages</u>	<u>Disadvantages</u>
Molarity (M)	mol solute / L solution	Useful in stoichiometry; measure by volume	Temperature dependent; must know density to find solvent mass
Molality (m)	mol solute / kg solvent	Temperature independent; useful in special applications <i>Examples:</i> Boiling point elevation: $\Delta T = K_{bp}m$ Freezing point depression: $\Delta T = K_{fp}m$	Measure by mass; must know density to convert to molarity
Mole Fraction (χ)	<i>none</i>	Temperature independent; useful for special applications <i>Example:</i> Raoult's Law: $P_{\text{solvent}} = \chi_{\text{solvent}} P^{\circ}_{\text{solvent}}$	Measure by mass; must know density to convert to molarity
Weight Percent	<i>none (%)</i>	Temperature independent; useful for small amounts	Measure by mass; must know density to convert to molarity