# Chemistry Formula Sheet

Chapter by chapter, topic by topic. Written by the PadhoNa team for quick revision.

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CHAPTER 17

## Solutions

### Concentration and Henry's law

HENRY'S LAW

$$p = K_H x$$

PPM

$$\text{ppm} = \frac{\text{mass of solute}}{\text{mass of solution}} \times 10^6$$

### Raoult's law

$$p_A = x_A p_A^\circ, \qquad P = x_A p_A^\circ + x_B p_B^\circ, \qquad y_A = \frac{p_A}{P}$$

NON-IDEAL

$$\text{positive deviation: } \Delta H_{\text{mix}} > 0,\ \Delta V_{\text{mix}} > 0; \qquad \text{negative: } \Delta H_{\text{mix}} < 0,\ \Delta V_{\text{mix}} < 0$$

### Colligative properties

RELATIVE LOWERING

$$\frac{p^\circ - p}{p^\circ} = i\, x_{\text{solute}}$$

$$\Delta T_b = i K_b m, \qquad \Delta T_f = i K_f m, \qquad \pi = iCRT$$

VAN 'T HOFF FACTOR

$$i = 1 + (n-1)\alpha \ \text{(dissociation)}, \qquad i = 1 - \left(1 - \frac{1}{n}\right)\alpha \ \text{(association)}$$

MOLAR MASS

$$M = \frac{K_b \times w \times 1000}{\Delta T_b \times W}$$

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