Chemistry Formula Sheet

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

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CHAPTER 7

Chemical Equilibrium

Law of mass action

$$aA + bB \rightleftharpoons cC + dD: \quad K_c = \frac{[C]^c[D]^d}{[A]^a[B]^b}$$

$$K_p = K_c(RT)^{\Delta n_g}$$

MANIPULATING K

$$\text{reverse: } \frac{1}{K}; \qquad \times n: \ K^n; \qquad \text{adding reactions: multiply } K$$

Reaction quotient and dissociation

$$Q < K \text{ forward}; \qquad Q = K \text{ equilibrium}; \qquad Q > K \text{ backward}$$

DEGREE OF DISSOCIATION FROM DENSITY

$$\alpha = \frac{D - d}{(n-1)\,d} \quad (D = \text{initial}, d = \text{equilibrium vapour density}, n = \text{particles per molecule})$$

Le Chatelier's principle

$$\text{adding reactant} \rightarrow \text{forward}; \qquad \uparrow P \rightarrow \text{fewer gas moles}; \qquad \uparrow T \rightarrow \text{endothermic direction}$$

VAN 'T HOFF

$$\log \frac{K_2}{K_1} = \frac{\Delta H^\circ}{2.303R}\left(\frac{1}{T_1} - \frac{1}{T_2}\right)$$

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