Chemistry Formula Sheet

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

Unlock the full PadhoNa Test Series
Every chapter-wise JEE Main test on the real exam screen, with full solutions and automatic analysis. Plans from ₹99 a month.
padhona.com/go/test-series →

CHAPTER 6

States of Matter

Gas laws

$$PV = nRT, \qquad \frac{P_1V_1}{T_1} = \frac{P_2V_2}{T_2}, \qquad d = \frac{PM}{RT}$$

DALTON'S LAW

$$P = \sum p_i, \qquad p_i = x_i P$$

GRAHAM'S LAW

$$\frac{r_1}{r_2} = \sqrt{\frac{M_2}{M_1}}$$

$$R = 0.0821 \text{ L atm K}^{-1}\text{mol}^{-1} = 8.314 \text{ J K}^{-1}\text{mol}^{-1}$$

Kinetic theory and real gases

SPEEDS

$$v_{\text{rms}} : v_{\text{avg}} : v_{\text{mp}} = \sqrt{3} : \sqrt{8/\pi} : \sqrt{2}$$

VAN DER WAALS

$$\left(P + \frac{an^2}{V^2}\right)(V - nb) = nRT$$

COMPRESSIBILITY FACTOR

$$Z = \frac{PV}{nRT}; \qquad Z < 1 \text{ attractions dominate}, \; Z > 1 \text{ repulsions dominate}$$

CRITICAL CONSTANTS

$$T_c = \frac{8a}{27Rb}, \qquad P_c = \frac{a}{27b^2}, \qquad V_c = 3b; \qquad T_B = \frac{a}{Rb}$$

Liquid state

vapour pressure rises with temperature; boiling when vapour pressure=external pressure

Unlock the full PadhoNa Test Series

Every chapter-wise JEE Main test on the real exam screen, with full solutions and automatic analysis. Plans from ₹99 a month.

padhona.com/go/test-series →

Keep going with PadhoNa

Unlock the full PadhoNa Test Series

Every chapter-wise JEE Main test on the real exam screen, with full solutions and automatic analysis. Plans from ₹99 a month.

padhona.com/go/test-series →

PadhoNa Pro Chemistry notes

Complete, exam-focused Chemistry notes by the PadhoNa team: ₹99 for a year.

padhona.com/go/notes/chemistry →

Physics, Chemistry and Maths notes together

PadhoNa Pro · JEE: all three subjects for ₹249 a year, for JEE Main and Advanced.

padhona.com/go/pro →

© PadhoNa · padhona.com · This sheet is for personal study.