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 27

Aldehydes and Ketones

Nucleophilic addition

REACTIVITY

$$\mathrm{HCHO} > \mathrm{RCHO} > \mathrm{RCOR'} \text{ (steric and electronic)}$$

$$\mathrm{HCN},\ \mathrm{NaHSO_3},\ \mathrm{RMgX},\ \mathrm{NH_2{-}Z} \text{ (oximes, hydrazones)}$$

Named reactions

ALDOL

$$\text{needs an } \alpha\text{-H; dilute base} \Rightarrow \beta\text{-hydroxy carbonyl}$$

CANNIZZARO

$$\text{no } \alpha\text{-H, conc. base: } 2\,\mathrm{HCHO} \rightarrow \mathrm{HCOO^-} + \mathrm{CH_3OH}$$

REDUCTIONS

$$\text{Clemmensen } (\mathrm{Zn{-}Hg/HCl}) \text{ and Wolff–Kishner } (\mathrm{NH_2NH_2/KOH})\text{: } \mathrm{C{=}O \rightarrow CH_2}$$

TESTS

$$\text{Tollens (silver mirror) and Fehling (red ppt): aldehydes;}$$

$$\text{iodoform: } \mathrm{CH_3CO{-}} \text{ and } \mathrm{CH_3CH(OH){-}}$$

Preparation

$$\text{Rosenmund: } \mathrm{RCOCl} \xrightarrow{\mathrm{H_2,\ Pd/BaSO_4}} \mathrm{RCHO}; \qquad \text{Stephen: } \mathrm{RCN} \rightarrow \mathrm{RCHO};$$

$$\text{Etard: toluene} \rightarrow \text{benzaldehyde}$$

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.