Chemistry Formula Sheet

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

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CHAPTER 29

Amines

Aliphatic and aromatic amines

HOFFMANN BROMAMIDE

$$\mathrm{RCONH_2 + Br_2 + 4NaOH \rightarrow RNH_2 \ \ (one\ carbon\ fewer)}$$

GABRIEL PHTHALIMIDE

$$\mathrm{gives\ 1^\circ\ aliphatic\ amines\ only}$$

HINSBERG TEST

$$\mathrm{1^\circ : product\ dissolves\ in\ alkali; \quad 2^\circ : insoluble; \quad 3^\circ : no\ reaction}$$

CARBYLAMINE TEST

$$\mathrm{1^\circ\ amines + CHCl_3 + KOH \rightarrow isocyanide\ (foul\ smell)}$$

Diazonium salts

$$\mathrm{ArNH_2 \xrightarrow{NaNO_2,\ HCl,\ 0\text{–}5^\circ C} ArN_2^+ Cl^-}$$

$$\mathrm{Sandmeyer\ (CuX,\ CuCN);\ Gattermann\ (Cu/HX);\ H_3PO_2 \rightarrow ArH;\ coupling\ with\ phenol \rightarrow azo\ dye}$$

Cyanides, isocyanides and nitro compounds

$$\mathrm{RX + KCN \rightarrow RCN; \quad RX + AgCN \rightarrow RNC; \quad ArNO_2 \xrightarrow{Sn/HCl} ArNH_2}$$

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