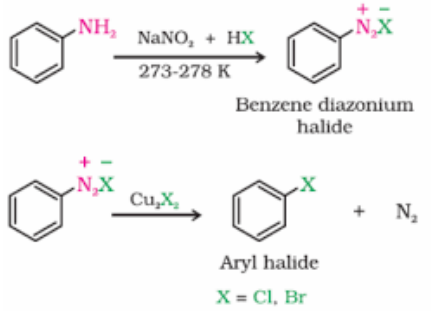
ORGANIC NAME REACTIONS

1. **Sandmeyer's reaction**

   Benzene diazonium salt with cuprous chloride or cuprous bromide results in the replacement of the diazonium group by –Cl or –Br.

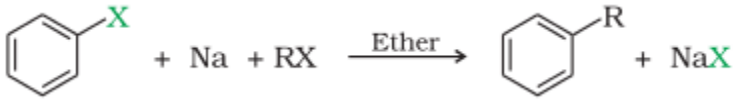


2. **Wurtz reaction**

   Alkyl halides react with sodium in dry ether to give hydrocarbons containing double the number of carbon atoms present in the halide.

3. **Wurtz-Fittig reaction**

   A mixture of an alkyl halide and aryl halide gives an alkylarene when treated with sodium in dry ether.



4. **Fittig reaction**

   Aryl halides when treated with sodium in dry ether give diphenyl.

5. **Finkelstein reaction**

   R-X + NaI → R-I + NaX X=Cl, Br

6. **Swarts reaction**

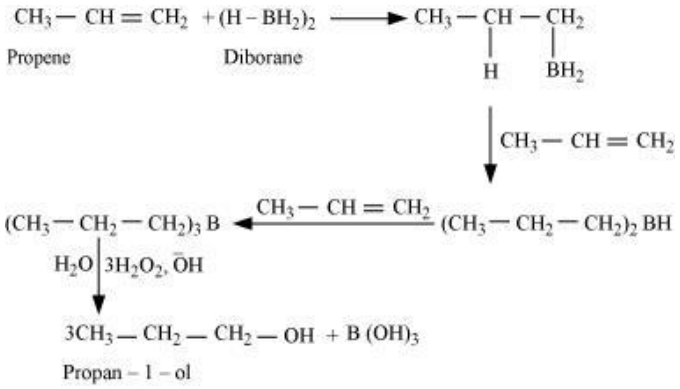
   H_3C-Br +AgF → H_3C-F + AgBr

7. **Darzene reaction**

   R-OH + $SOCl_2$ → R-Cl + HCl + SO_2

8. **Hydroboration-Oxidation reaction (Anti-Markownikov)**

   Diborane reacts with alkene to give trialkyl boranes which on oxidation with H2O2 in presence of aq. NaOH gives alcohol.

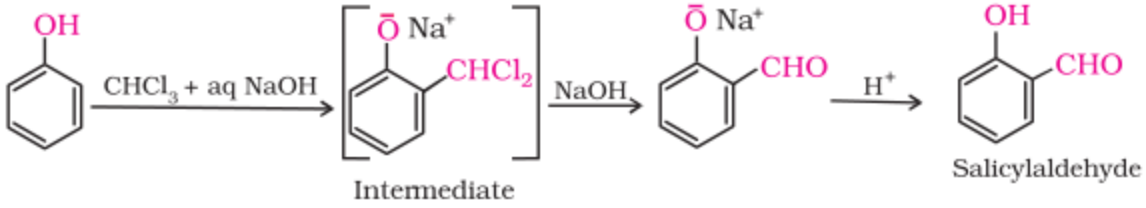


9. **Kolbe's reaction**

When phenol reacts with sodium hydroxide, phenoxide ion generated undergoes electrophilic substitution with carbon dioxide and forms salicylic acid.

10. **Reimer-Tiemann reaction**

On treating phenol with chloroform in the presence of sodium hydroxide, a –CHO group is introduced at ortho position of benzene ring.

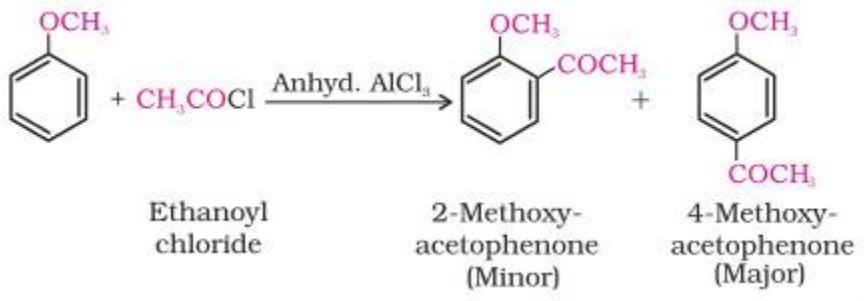


11. **Williamson synthesis**

An alkyl halide is treated with sodium alkoxide to form ether.

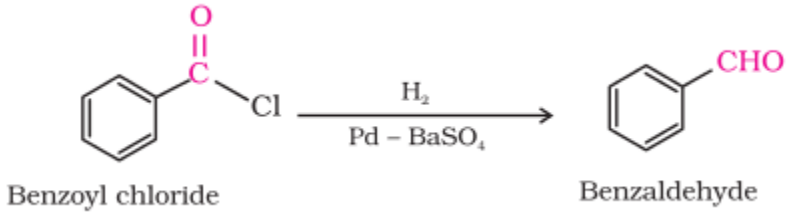
$CH_3Br + C_2H_5ONa \rightarrow CH_3 - O - C_2H_5$

12. Friedel Crafts reaction



13. Rosenmund reduction.

Acyl chloride (acid chloride) is hydrogenated over catalyst, palladium on barium sulphate to give aldehyde.



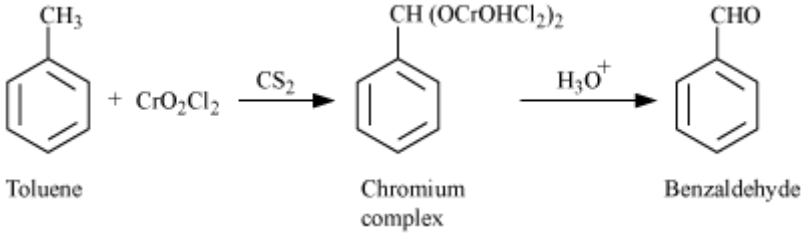
14. **Stephan reaction**

Reduction of cyanide to aldehyde using anhy. stannous chloride in HCl.

$$R\text{-}C \equiv N + SnCl_2 + HCl \longrightarrow R\text{-}CH = NH \xrightarrow{H_2O} R\text{-}CHO$$

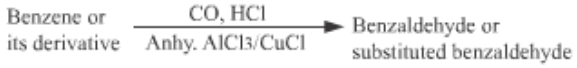
15. **Etard reaction**

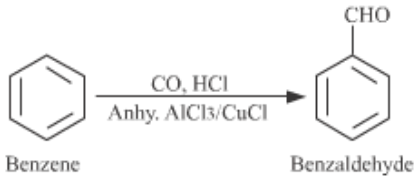
Oxidation of toluene with chromyl chloride in CS2 to give benzaldehyde.



16. Gatterman- Koch reaction

When a mixture of CO and HCl is passed over benzene at 373 K in presence of anhy AlCl3 catalyst and small amount of CuCl, benzaldehyde is formed.





17. Clemmensen reduction

Aldehydes and ketones are reduced to alkanes on treatment with zinc- amalgam and concentrated hydrochloric acid.

CH_3–CHO → CH_3 - CH_3

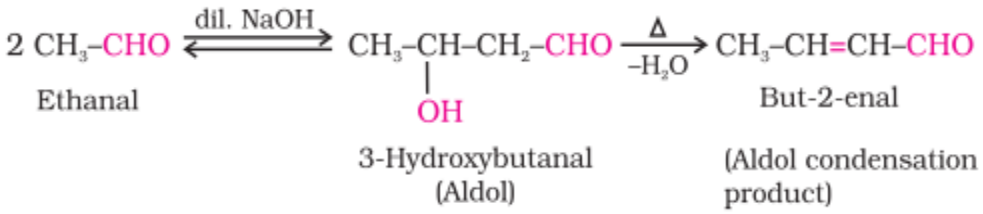
18. Wolff-Kishner reduction

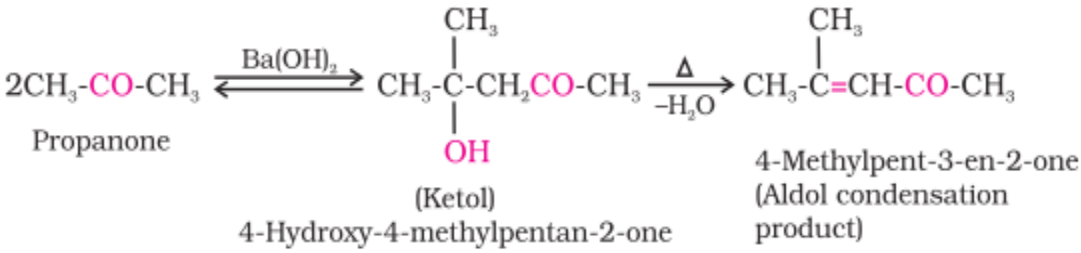
Aldehydes and ketones are reduced to alkanes on reaction with hydrazine followed by heating with potassium hydroxide in ethylene glycol.

CH_3–CO - CH_3 → CH_3–CH_2 - CH_3

19. Aldol condensation

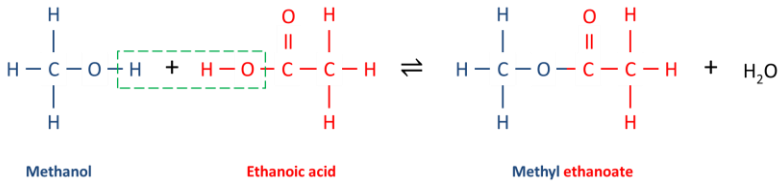
Aldehydes and ketones having at least one α-hydrogen undergo a reaction in the presence of dilute alkali form β-hydroxy aldehydes (aldol) or β-hydroxy ketones (ketol), respectively.





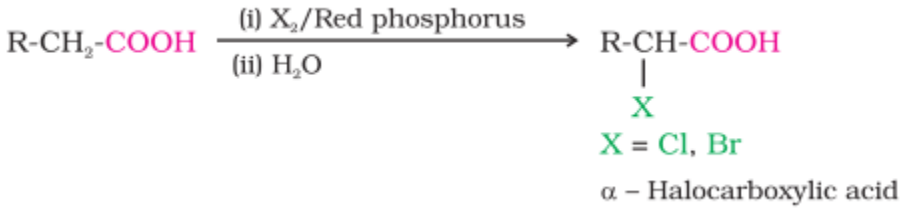
20. **Esterification**

Carboxylic acids react with alcohol in presence of few drops of conc. H_2SO_4 to form esters.



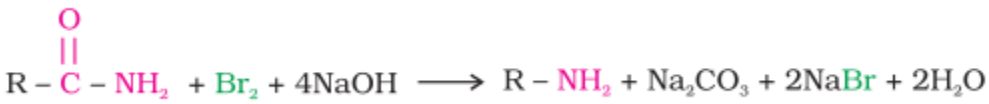
21. **Hell-Volhard-Zelinsky (HVZ)reaction**

Carboxylic acids having an α-hydrogen are halogenated at the α-position on treatment with chlorine or bromine in the presence of small amount of red phosphorus to give α-halocarboxylic acids.



22. **Hoffmann bromamide degradation reaction**

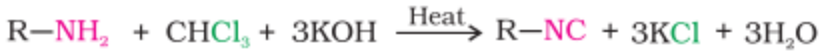
Primary amines can be prepared by treating an amide with bromine in an aqueous or ethanolic solution of sodium hydroxide.The amine so formed contains one carbon less than that present in the amide.



23. Carbylamine reaction

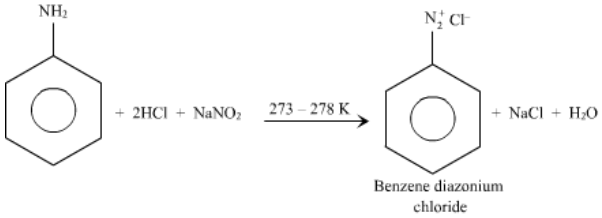
Aliphatic and aromatic primary amines on heating with chloroform and ethanolic potassium hydroxide form isocyanides or carbylamines which are foul smelling substances. Secondary and

tertiary amines do not show this reaction.



24. Diazotisation reaction

When cold solution of primary aromatic amines is treated with nitrous acid(NaNO2/ HCl),benzene diazonium salt is formed.



25. Coupling reaction

Benzene diazonium chloride reacts with phenol or aniline to form azo dyes.