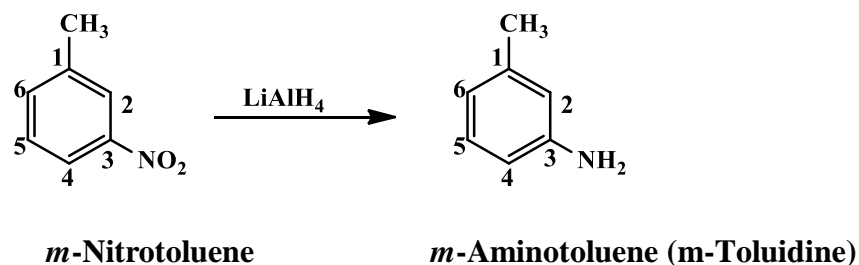
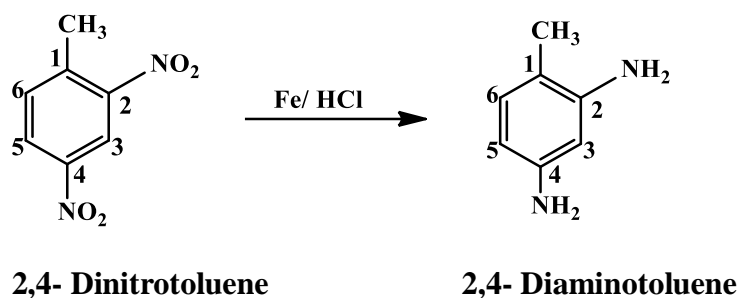
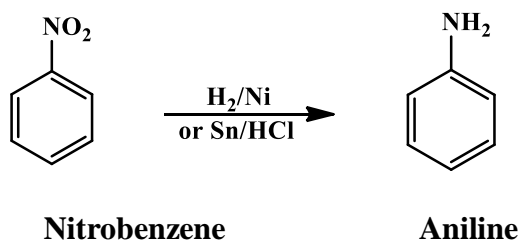


## METHODS OF PREPARATION

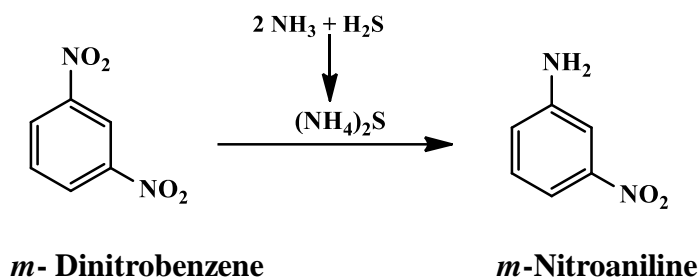
### 1. Reduction of Nitro compounds:

This is most widely used method of preparing aromatic amines. The reduction is carried with –

- H<sub>2</sub> in presence of Ni, Pt, Pd as catalyst
- Sn or Fe and HCl
- LiAlH<sub>4</sub> (Lithium aluminiumhydride)

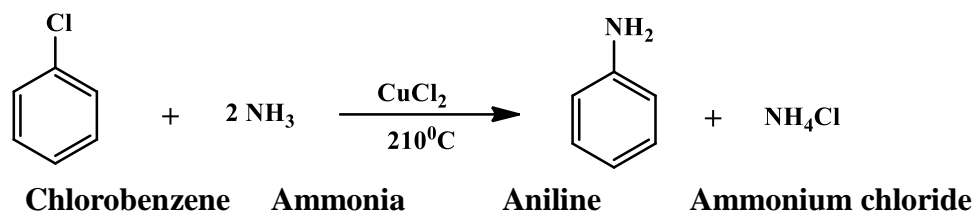


**Note:** Selective reduction with ammonium sulfide is used to prepare an amino compound such as *m*-nitroaniline from *m*-dinitrobenzene when only one nitro group is reduced.

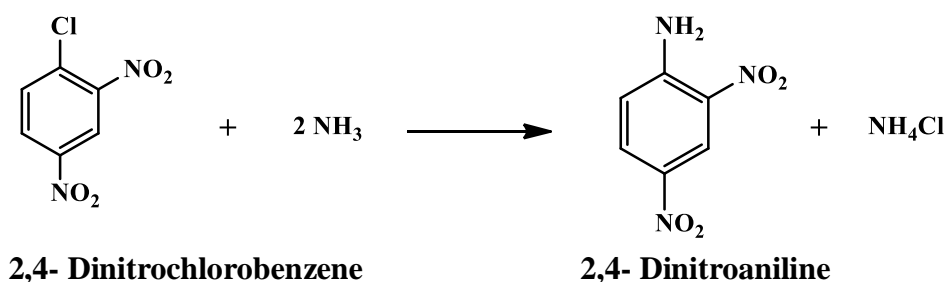


### 2. Ammonolysis of Aryl halides:

Aniline is prepared by treating chlorobenzene with NH<sub>3</sub> in presence of copper salt at high temperature and pressure.

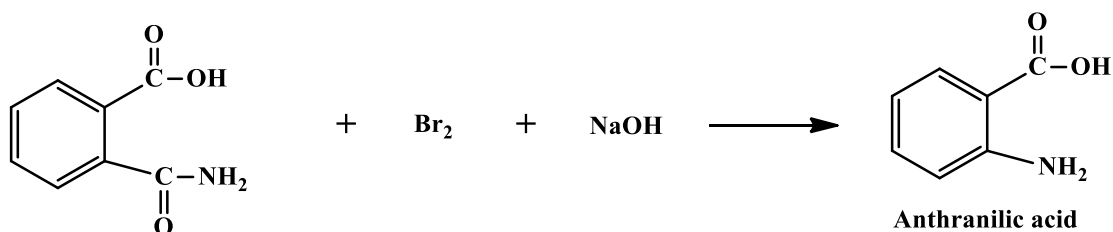
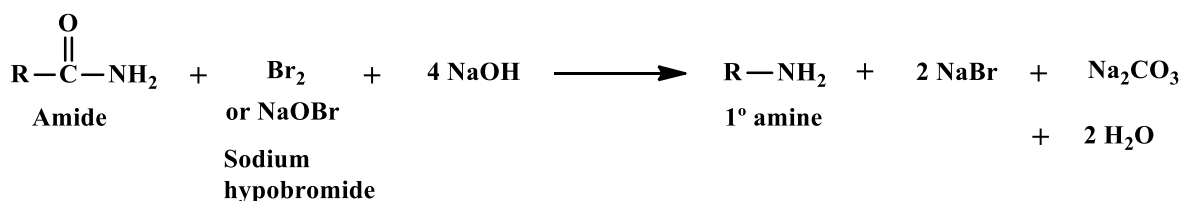


**Note:** This method is useful and can be carried under ordinary condition if a strongly electron withdrawn group such as nitro (-NO<sub>2</sub>) is present ortho or para to chloride (-Cl).



### 3. Hoffmann's degradation of Amide:

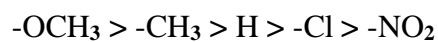
- This is a good laboratory method for conversion of an amide to a pure primary amines.
- The amide is warmed with bromine/ chlorine at concentrated aqueous NaOH/ KOH solution.



**Note:**

- This reaction is also called Hoffmann's rearrangement.
- Overall result is the removal of carbonyl group from the amide.
- The product contains 1 C less than the original amide.
- The rate of Hoffmann degradation of benzamide containing electron releasing substituents (-OCH<sub>3</sub>, -CH<sub>3</sub> etc.) is more than benzamide containing electron

withdrawing substituents (-NO<sub>2</sub>, -Cl, etc.). The decreasing order of the effect of these substituents.



- v. The Hoffmann's degradation of benzamide is kind of electrophilic substitution reaction.

#### 4. Ammonolysis of Aryl alcohol:

