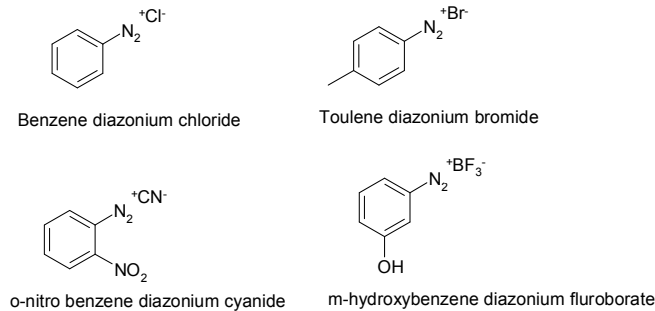


DIAZONIUM SALTS: B. SC. I

Diazonium salts are: $\text{ArN}_2^+ \text{X}^-$ where X^- may be Cl^- , Br^- , NO_2^- , BF_4^- etc.

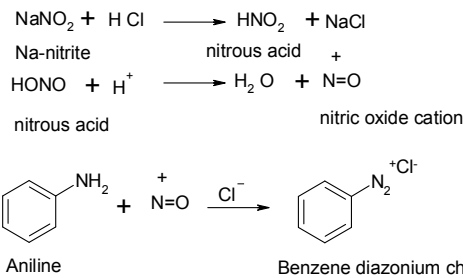
Aryl Carbocation combined with N_2 is called diazonium ion.

Nomenclature: sandwiching 'diazonium' term in between aryl radical and the anion .



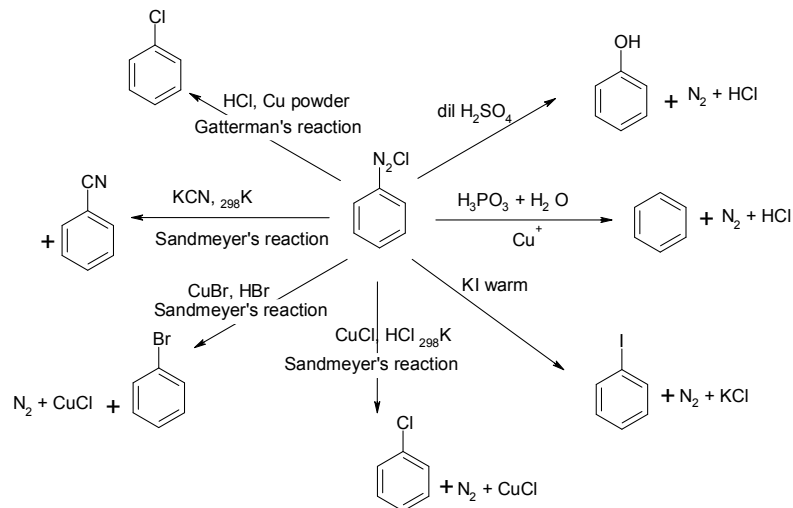
Methods of formation: (by diazotization of Benzene Diazonium chloride.)

Nitrous acid is formed in situ which reacts with aniline hydrochloride to form benzene diazonium chloride.



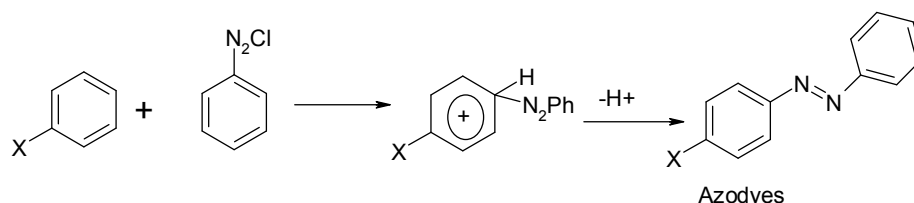
Chemical reactions: benzene diazonium chloride acts as a synthetic intermediate. It undergoes two types of reactions:

1. Replacement Reactions: There is replacement of $-\text{N}_2\text{Cl}$ by Cl , Br , I , CN , NO_2 etc.



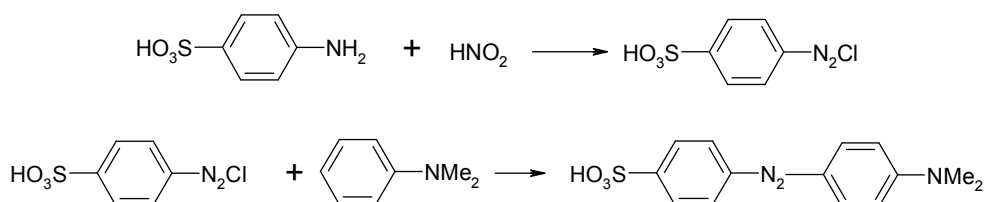
2. Coupling reactions: N_2 is retained and only Cl is replaced. Diazonium ion acts as an electrophile and couples with aromatic ring or coupling agent.

Eg.



X is a strong releasing group eg. $-OH$, $-NMe_2$ etc. coupling occurs generally at para position.

1. Synthesis of methyl orange: diazonium salt is obtained from sulphanilic acid which couples with N,N dimethyl aniline to give methyl orange.



2. Synthesis of Congo red: Diazonium salt is prepared from benzidine and is then coupled with naphthanoic acid to give Congo Red.

