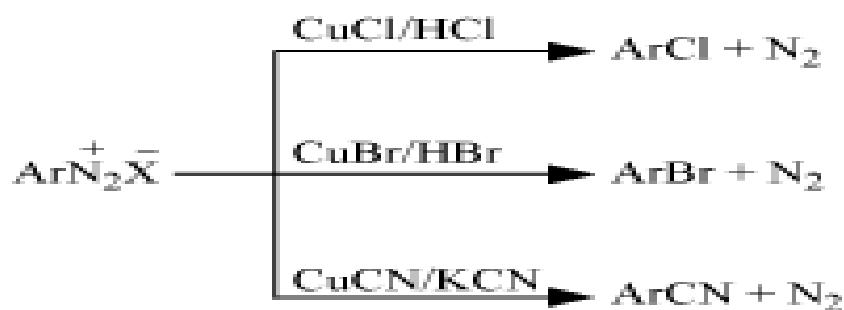


CHEMISTRY STUDY MATERIALS FOR CLASS 12 (NCERT Based Notes of Chapter -10 to 13) GANESH KUMAR DATE:- 28/11/2020

Organic Chemistry – Specific Name Reactions

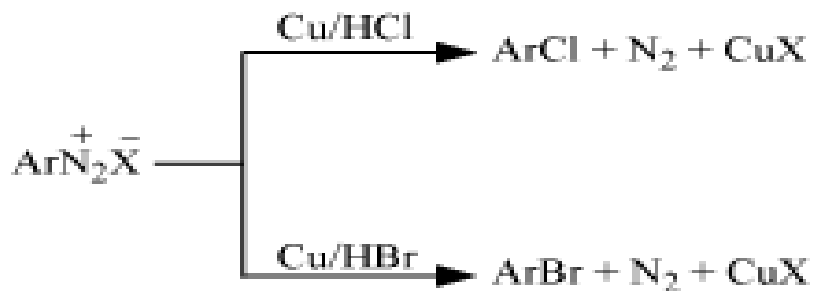
1. Sandmeyer's Reaction

The Cl, Br and CN nucleophiles can easily be introduced in the benzene ring of benzene diazonium salt in the presence of Cu (I) ion. This reaction is called Sandmeyer's reaction.



2. Gatterman Reaction

Chlorine or bromine can be introduced in the benzene ring by treating the benzene diazonium salt solution with corresponding halogen acid in the presence of copper powder. This is referred as Gatterman reaction.



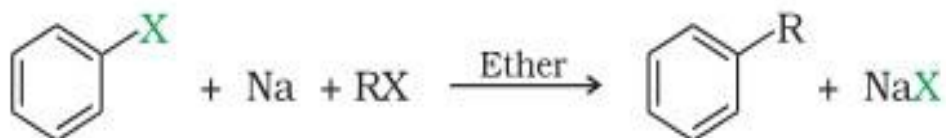
Note: The yield in Sandmeyer's reaction is found to be better than Gatterman reaction.

3. Balz-Schiemann Reaction

When arene diazonium chloride is treated with fluoroboric acid, arene diazonium fluoroborate is precipitated which on heating decomposes to yield aryl fluoride.

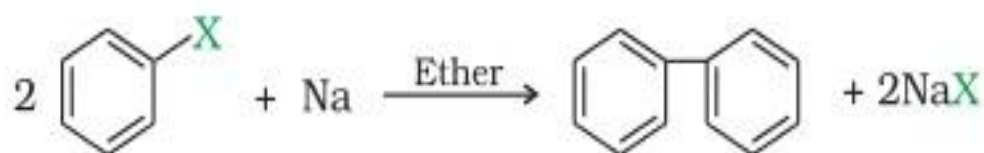
7. Wurtz-Fittig Reaction

A mixture of an alkyl halide and aryl halide gives an alkylarene when treated with sodium in dry ether and is called Wurtz-Fittig reaction.



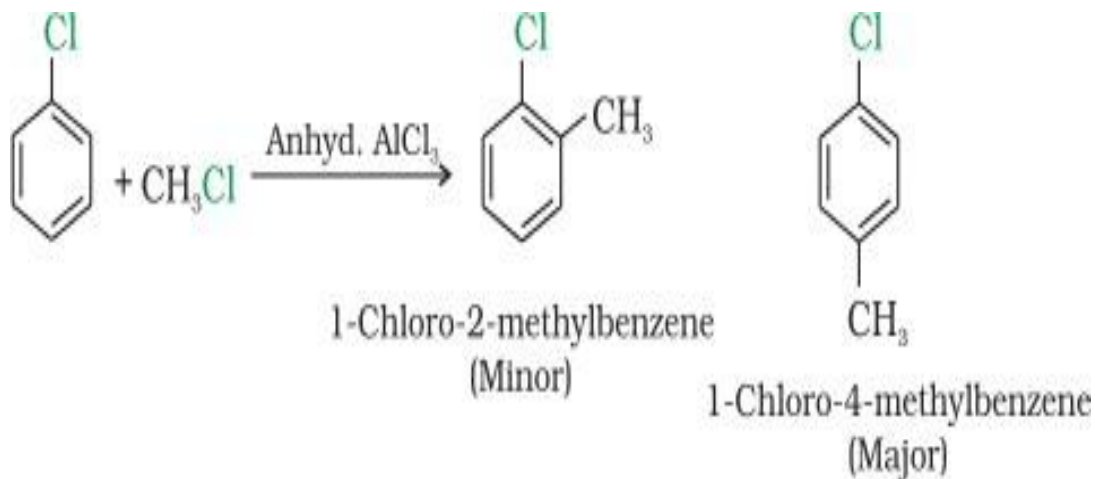
8. Fittig Reaction

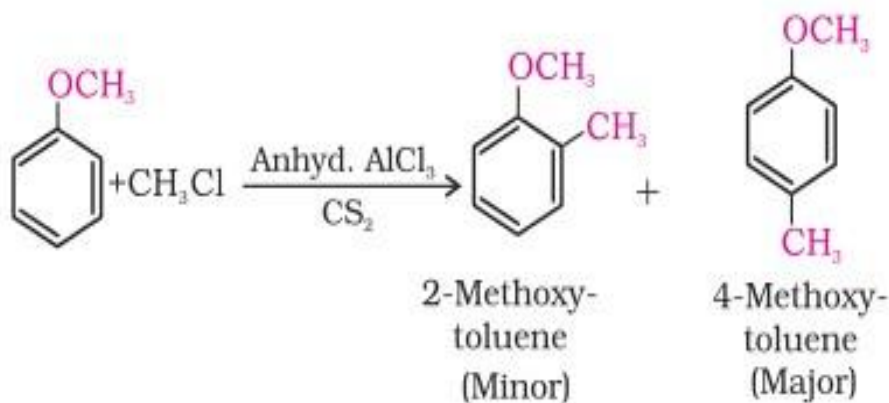
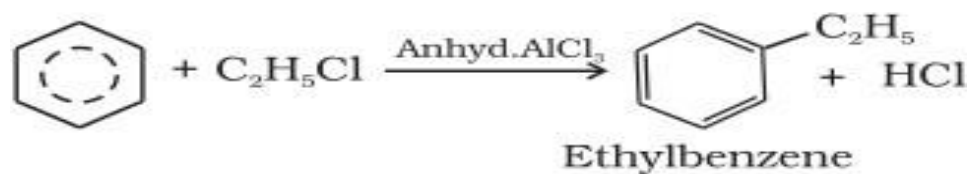
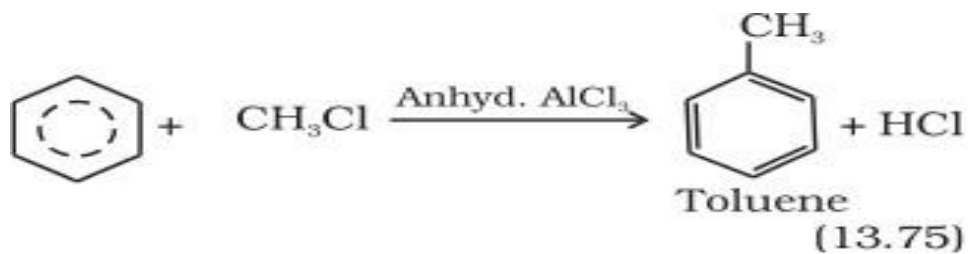
Aryl halides also give analogous compounds when treated with sodium in dry ether, in which two aryl groups are joined together. It is called Fittig reaction.



9. Friedel-Crafts alkylation Reaction

When benzene is treated with an alkyl halide in the presence of anhydrous aluminium chloride, alkylbenzene is formed.





Note: Aromatic carboxylic acids do not undergo Friedel-Crafts reaction because the carboxyl group is deactivating and the catalyst aluminium chloride (Lewis acid) gets bonded to the carboxyl group.

10. Friedel-Crafts acylation reaction

The reaction of benzene with an acyl halide or acid anhydride in the presence of Lewis acids (AlCl_3) yields acyl benzene.

