

SUBJECT - CHEMISTRY

CLASS - B.Sc (Sub/sem) PART - II

GROUP - C

TOPIC - Reactions of phenol with

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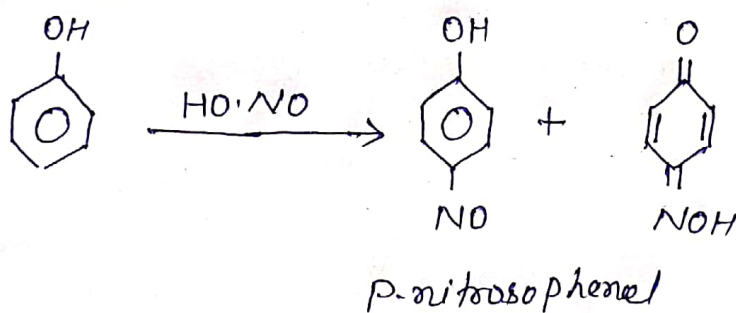
Dr. L. K. V. D College Taspur, Samastipur

Q. Examine the action of following substance on phenol

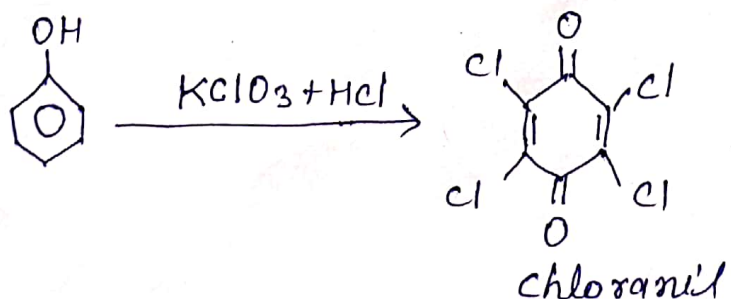
(a) HNO_2 (b) KClO_3 and HCl

Ans. Reactions of phenol with

(a) Nitrous acid: phenol reacts with nitrous acid to form mainly p-nitrosophenol which is tautomeric with monoxime of quinone.

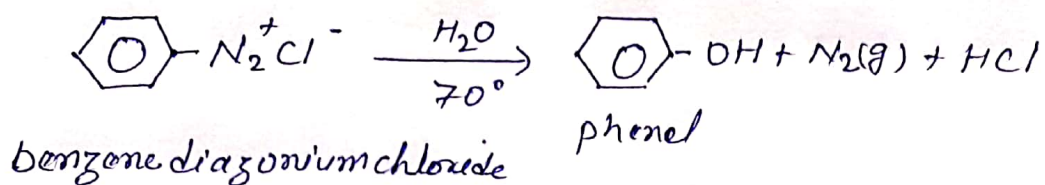


(b) $\text{KClO}_3 + \text{HCl}$: This oxidises phenol to chloroquinone (tetrachloro-p-benzoquinone) or chloranil $\text{C}_6\text{Cl}_4\text{O}_2$.

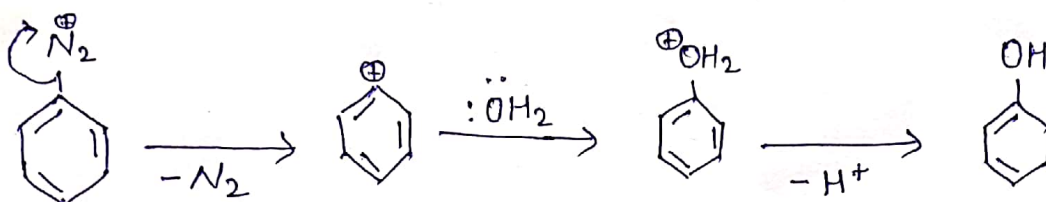


Q. How is phenol obtained when aqueous solution of benzene diazonium chloride is warmed to about 70° ?

Ans. The reaction may be shown as



The diazonium sheds a molecule of N_2 leaving a phenyl carbocation which is readily attacked by the nucleophile H_2O present in the reaction mixture:



Similarly iodobenzene is produced by the nucleophilic attack of I^- ion when benzene diazonium chloride is boiled with KI solution.