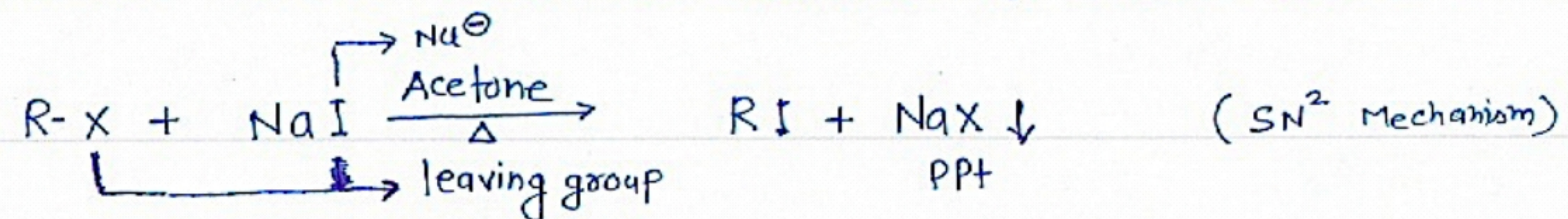


L-16 preparation of Alkyl-halide By Finkelstein Reaction. Page-1

- This Reaction is particularly useful for preparing iodoalkane.
- the iodoalkanes are obtained by heating Chloro or bromo-alkanes with a concentrated solution of Sodium iodide in acetone.



R = any Alkyl group i.e. CH_3- , $\text{CH}_3\text{-CH}_2-$ etc.

X = Cl or Br only

- the reaction gives the best Result with primary halide.
- $\text{I}^\ominus$ is better nucleophile and better leaving group.

- This Reaction is based on the fact that NaI is soluble in acetone page-2

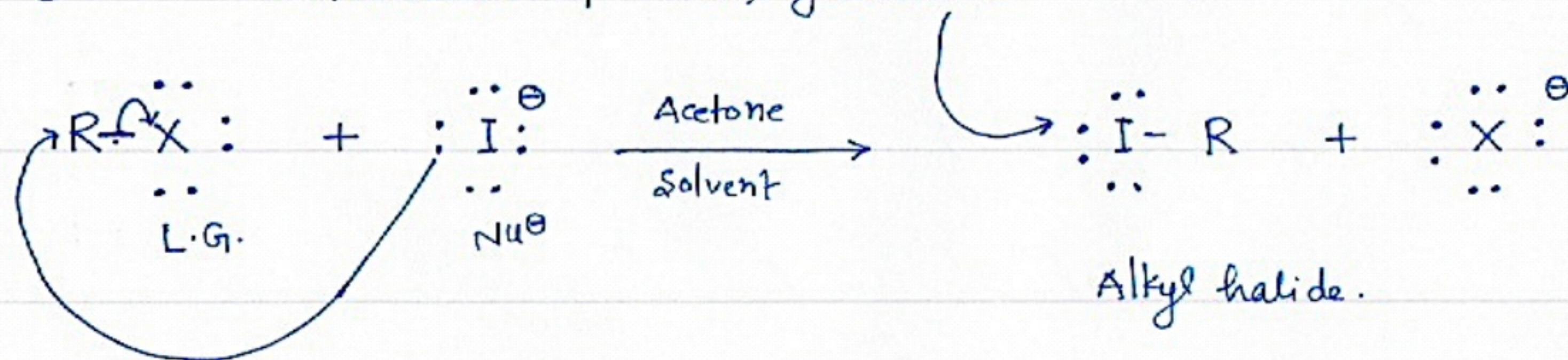
but NaBr and NaCl are not.

Mechanism - 1. Halogen exchange method.

2. Mechanism is single simple step Bimolecular Nucleophilic

Substitution Reaction

3. Inversion of Configuration



Fluoro Alkanes are difficult to prepare directly. These are prepared by heating alkyl chloride or bromide with salts such as Mercurous fluoride (Hg_2F_2), silver fluoride (AgF), cobalt fluoride (CoF_3) or Antimony trifluoride (SbF_3).

This reaction is known as Swarts Reaction

