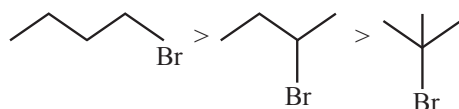


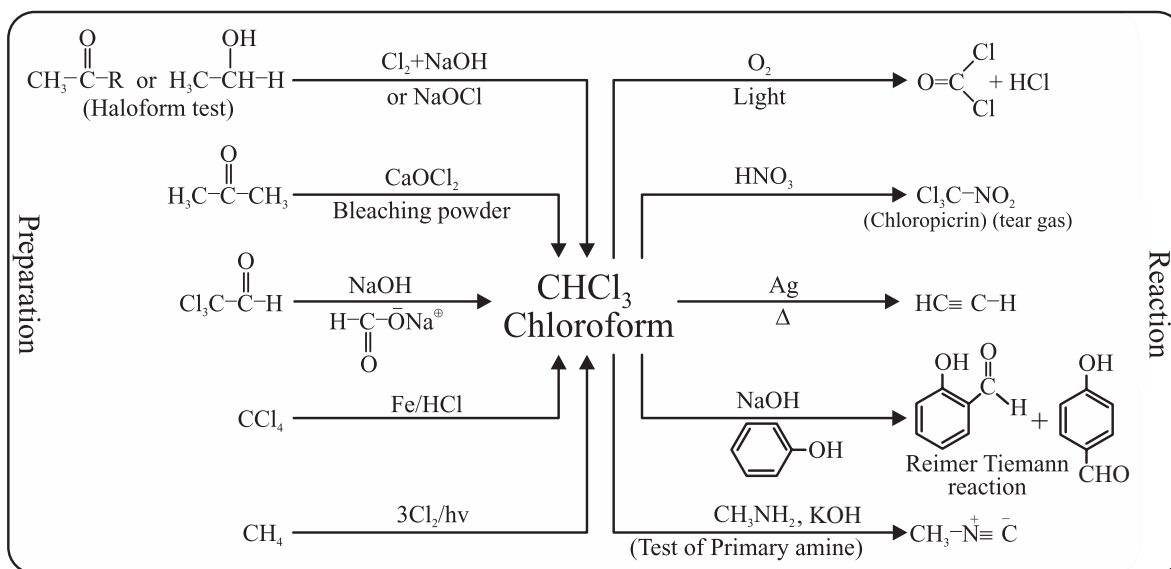
## PHYSICAL PROPERTIES

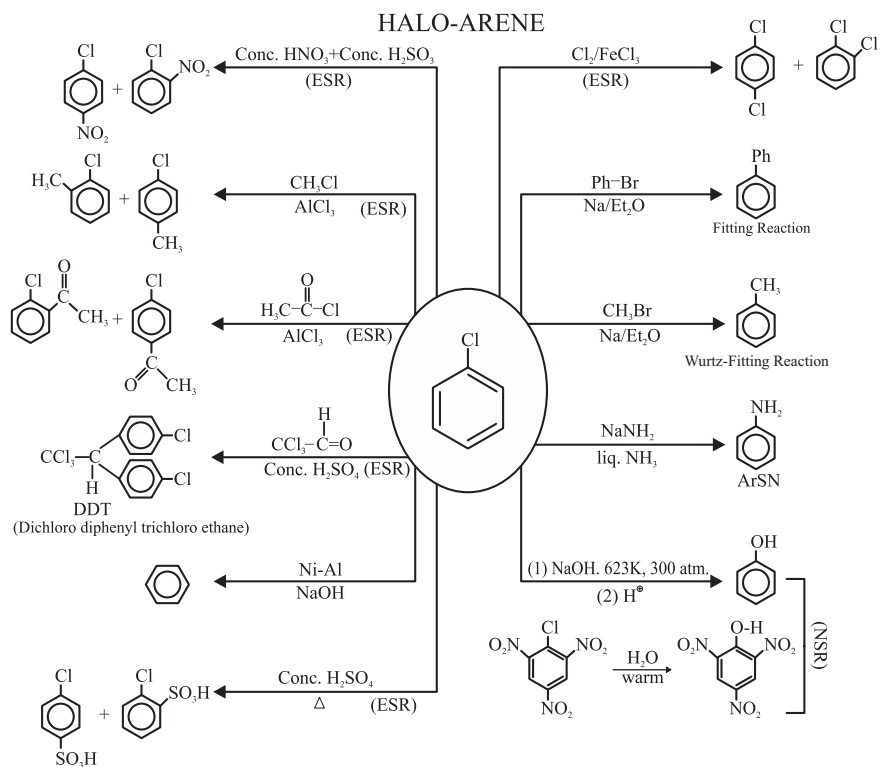
- (1) Dipole moment:  $\text{CH}_3\text{-Cl} > \text{CH}_3\text{-F} > \text{CH}_3\text{-Br} > \text{CH}_3\text{-I}$
- (2) Bond enthalpies:  $\text{CH}_3\text{-F} > \text{CH}_3\text{-Cl} > \text{CH}_3\text{-Br} > \text{CH}_3\text{-I}$
- (3) Boiling point:  $\text{R-I} > \text{R-Br} > \text{R-Cl} > \text{R-F}$



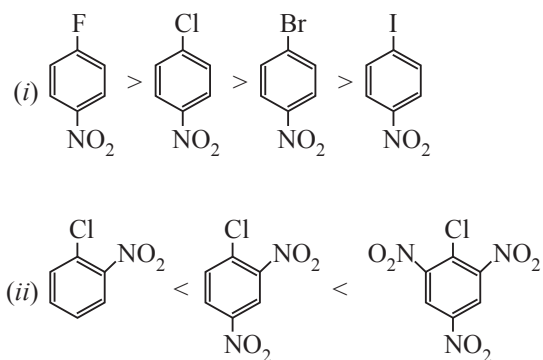
- (4) Density:  $\text{n-C}_3\text{H}_7\text{Cl} < \text{n-C}_3\text{H}_7\text{Br} < \text{n-C}_3\text{H}_7\text{I}$
- (5) Solubility  $\rightarrow$  slightly soluble in water

## TRI-HALO ALKANE

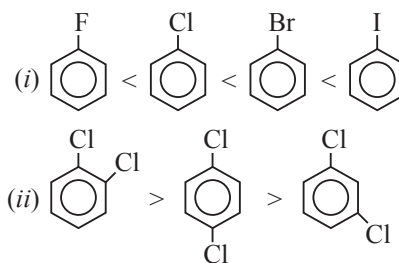




**(A) Reactivity toward Nucleophile**



**(B) Boiling point**



**(C) Melting point**

