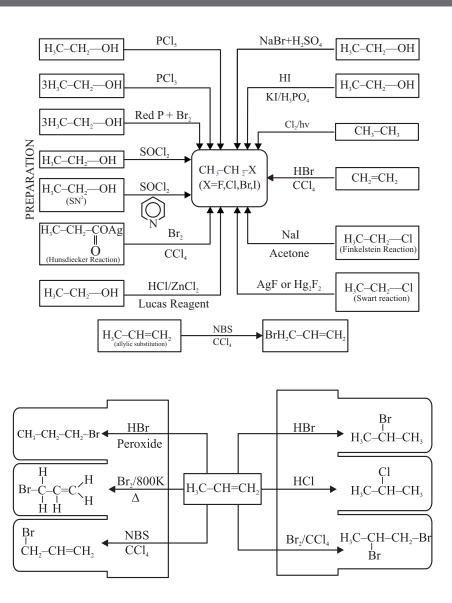
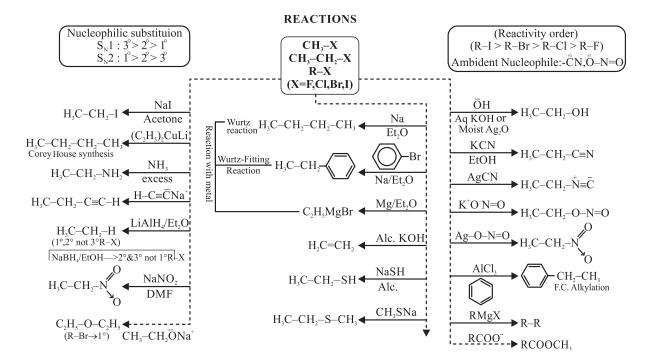


6

# **Haloalkanes and Haloarenes**



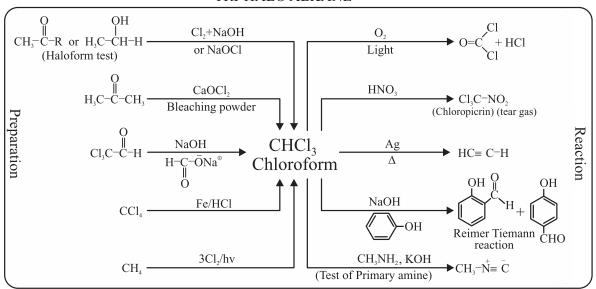


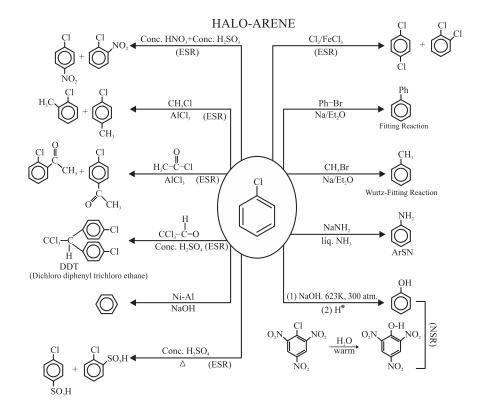
#### PHYSCIAL PROPERTIES

- (1) Dipole moment:  $CH_3-Cl > CH_3-F > CH_3-Br > CH_3-I$
- (2) Bond enthalpies:  $CH_3-F > CH_3-Cl > CH_3-Br > CH_3-I$
- (3) Boiling point: R-I > R-Br > R-Cl > R-F

- (4) Density:  $n-C_3H_7Cl < n-C_3H_7Br < n-C_3H_7I$
- (5) Solubility  $\rightarrow$  slightly soluble in water

#### TRI-HALO ALKANE





### (A) Reactivity toward Nucleophile

$$(i) \bigvee_{NO_2}^{F} > \bigvee_{NO_2}^{Cl} > \bigvee_{NO_2}^{Br} > \bigvee_{NO_2}^{I}$$

$$(ii) \bigvee_{NO_2}^{Cl} \times \bigvee_{NO_2}^{Cl} \times O_2 \times$$

## (B) Boiling point

$$(i) \bigcirc F \bigcirc Cl \qquad Br \qquad I$$

$$(i) \bigcirc Cl \bigcirc Cl \bigcirc Cl$$

$$(ii) \bigcirc Cl \bigcirc Cl \bigcirc Cl$$

## (C) Melting point