

Physical properties of R-X :-

- Colourless when pure
- R-Br and R-I develop colour when exposed to light.
- Volatile halogen compounds have sweet smell.

Melting and boiling points :-

CH₃Cl, CH₃-Br, C₂H₅Cl and chloroform are gases at room temperature.

- B.P. of haloalkanes are higher in comparison to their parent hydrocarbons — (1) due to presence of dipole-dipole intermolecular attraction in polar R-X
- (2) Due to higher molar mass in comparison to parent hydrocarbon leading to higher van der Waals forces.

→ hydrocarbons of comparable molecular masses.

For the same alkyl group (R), the b.p. of R-X decreases

in the order: $R-I > R-Br > R-Cl > R > F$

Reason: with increase in size and mass of X, the magnitude of van der Waal forces increases.

Note: for the same reason, for the same halogen the b.p. increases with increase in the size of the R.