1.4 Organic Halides

- A hydrocarbon which one or more of the hydrogen atoms have been replaced by a halide.
- Famous organic halides: CFC's, DDT, Teflon, PCB's.

Naming Organic Halides

- Shorten the halogen name to: fluoro, chloro, bromo, or iodo.
- E.g. 1,2-dichloro-1-fluoroethane

Properties of Organic Halides

- The halogen makes the molecule more polar since it is more electronegative than C and H. This allows for greater intermolecular forces (dipole bonding).
- The higher polarity gives them a higher boiling point and makes them more soluble in polar solvents.

Preparing Organic Halides

- Organic halides are produces through the halogenation reaction. For the alkenes and alkynes this reaction is an addition reaction. For aromatics it is a substitution reaction.
- E.g. ethyne + bromine → 1,2-dibromoethene + bromine → 1,1,2,2-tetrabromoethane

- E.g. benzene + chlorine → chlorobenzene + hydrogen chloride

Preparing Alkenes from Alkyl Halides (Elimination Reactions)

- Alkenes can be formed from alkyl halides in the presence of hydroxide ions.
- E.g. 2-bromopropane + hydroxide ion → propene + water + bromine ion

Homework

- Practice 1,2,6
- Questions 1,2,3