CLASS 12 BATCH

FOR CHEMISTRY

LECTURE - 01

HALOALKANE AND HALOARENE

Today's Goal

Classification
Nomenclature and
Nature of C-X bond

Introduction

- The replacement of Hydrogen atom(s) in an aliphatic or aromatic hydrocarbon by halogen atom(s) results in the formation of alkyl halide (haloalkane) and aryl halide (haloarene), respectively.

- Haloalkanes contain halogen atom(s) attached to the sp^3 hybridized carbon atom of an alkyl group whereas haloarenes contain halogen atom(s) attached to sp^2 hybridized carbon atom(s) of an aryl group.

Introduction

- They are used as solvent for relatively non-polar compounds and as starting materials for the synthesis of wide range of organic compounds.

- Chlorine containing antibiotic, chloramphenicol, produced by microorganism is very effective for the treatment of typhoid fever. Our body produces iodine containing hormone, thyroxine, the deficiency of which causes a disease called goitre.

Introduction

- Synthetic halogen compounds, viz. chloroquine is used for the treatment of malaria; halothane is used as an anaesthetic during surgery. Certain fully fluorinated compounds are being considered as potential blood substitutes in surgery.

Classification of Haloalkane and Haloarene

- On the basis of number of halogen atom

For Example:

Classification of Haloalkane and Haloarene

- Compound containing sp^3 C-X bond

Alkyl Halide

Degree of Alkyl Halide :

1˚ (Primary halide) 2˚ (Secondary halide) 3˚ (Tertiary halide)

Classification of Haloalkane and Haloarene

- ✓ Allylic halides

For example

- ✓ Benzylic halides

For example

Classification of Haloalkane and Haloarene

❑ Compound containing sp^2 C-X bond

✓ Vinylic Halide

For example

✓ Aryl Halides

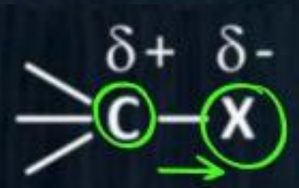
For example

NOMENCLATURE

STRUCTURE	COMMON NAME	IUPAC NAME
CH_3-CH_2-CH(Cl)-CH_3		

Nature of C-X bond

Halogen atoms are more electronegative than carbon, therefore, carbon-halogen bond of alkyl halide Is polarized; the carbon atom bears a partial positive charge whereas the halogen atom bears a partial negative charge.



THANK YOU !!

Homework

REVISE GENERAL ORGANIC CHEMISTRY