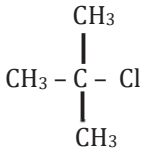
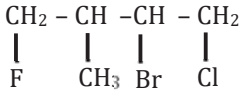
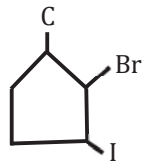
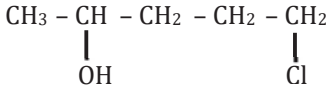
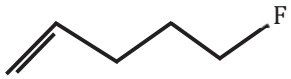
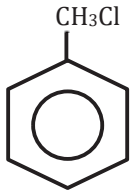
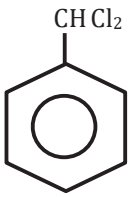
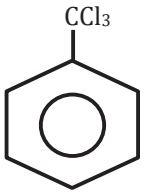
NOMENCLATURE

Nomenclature of Halo Compounds

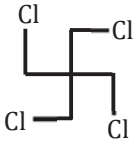
IUPAC Nomenclature of Alkyl Halides

In the IUPAC nomenclature system, haloalkanes and haloarenes are classified as hydrocarbons with substituted halogen atoms. The naming conventions for these compounds adhere to the same principles as those for hydrocarbons, with halogens treated as substituents. When naming them using common nomenclature, one typically begins by stating the name of the alkyl or aryl group, followed by the term "halide."

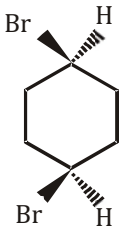
S.N.	Compound	IUPAC name
1.		2 – Chloro-2-methylpropane
2.		3-Bromo-1-chlorobutane
3.		2-Bromo-1-chloro-4-fluoro-3-methylbutane
4.		2-Bromo-1-chloro-3-iodocyclopentane
5.		5-chloropentan-2-ol
6.		5-Fluoropent-1-ene
7.		Chlorophenyl methane
8.		Di chlorophenyl methane

9. 

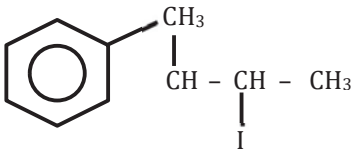
Trichloro phenyl methane

10. 

2,2-Bis(chloromethyl)-1,3-dichloropropane

11. 

Cis-1,4-dibromocyclohexane

12. 

2-iodo-3-phenylbutane

Isomerism In Haloalkanes

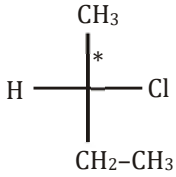
S.N.	Compound		IUPAC name
1.	Structural Isomerism		
	(a) Chain	1.	$CH_3-CH_2-CH_2-CH_2$ - Cl-Chlorobutane $CH_3-CH(CH_3)-CH_2-Cl$ 1-Chloro-2-methylpropane
		2.	$CH_3-CH_2-CH_2-CH_2-CH_2-Cl$ 1-Chlorobutane $CH_3-CH(CH_3)-CH_2-CH_2-Cl$ 1-Chloro-3 - methyl butane $CH_3-C(CH_3)_2-CH_2-Cl$ 1-Chloro-2 , 2-dimethylpropane
	(b) Position	1.	$CH_3-CH_2-CH_2-Cl$ 1-Chlorobutane $CH_3-CH(Cl)-CH_2-Cl$ 2-Chloropropane

2. Stereoisomerism

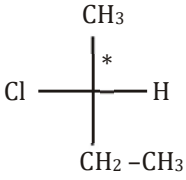
2. $CH_3 - \underset{\displaystyle CH_3}{\overset{\displaystyle |}{CH}} - CH_2 - Cl$ 1-Chloro-2- methylpropane

$CH_3 - \underset{\displaystyle CH_3}{\overset{\displaystyle Cl}{\overset{|}{\underset{|}{C}}H}} - CH_3$ 2-Chloro-2-methylpropane

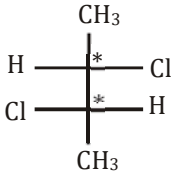
(a) Optical isomerism

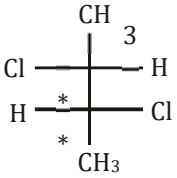


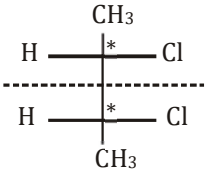
(2S)- 2-Cholobutane



(2R)- 2-Cholobutane





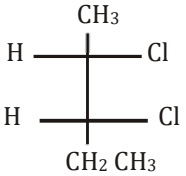


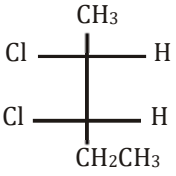
Plane of symmetry

Meso-optically inactive

Enantiomers of
2,3-Dichlorobutane

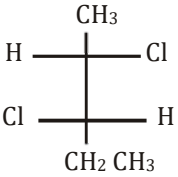
Mirror

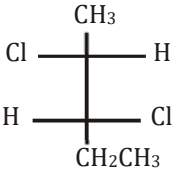




Enantiomers

Mirror





Enantiomers
2,3-Dichloropentane