

Chemistry Study Materials for Class 11

(NCERT Based Revision Notes of Chapter- 13)

Ganesh Kumar

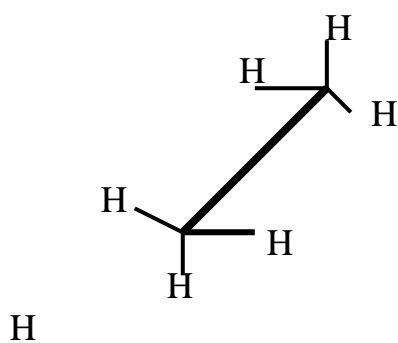
Date:-13/03/2021

❖ CONFORMATIONAL ISOMERISM:

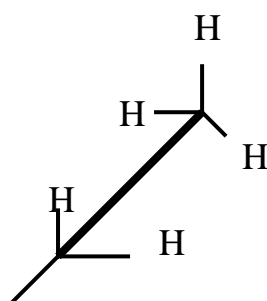
The different molecular arrangements arising as a result of rotation around carbon carbon single bonds are called conformational isomers or rotational isomers and the phenomenon is called conformational isomerism.

Numerous possible arrangements of ethane are possible. Two extreme conformations are known. These are eclipsed conformation and staggered conformation.

SAWHORSE REPRESENTATION

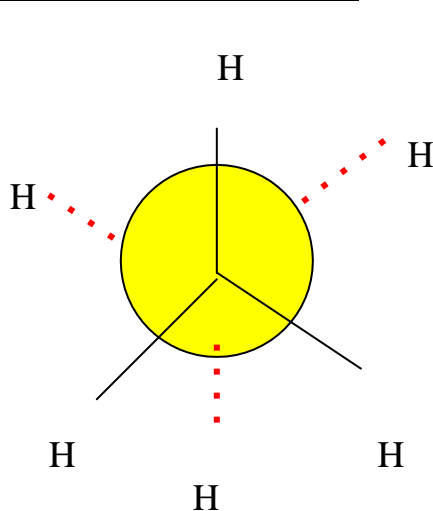


STAGGERED



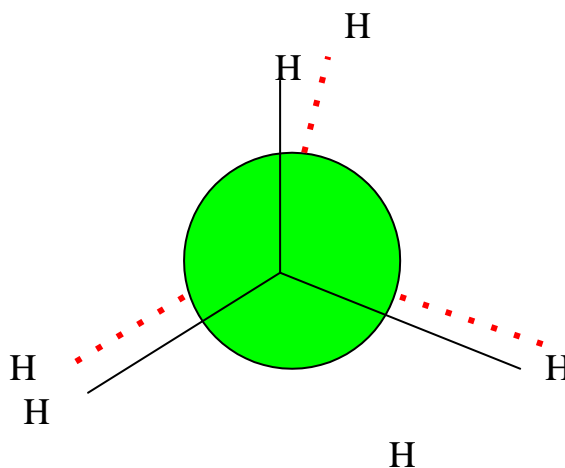
ECLIPSED

NEWMAN PROJECTION



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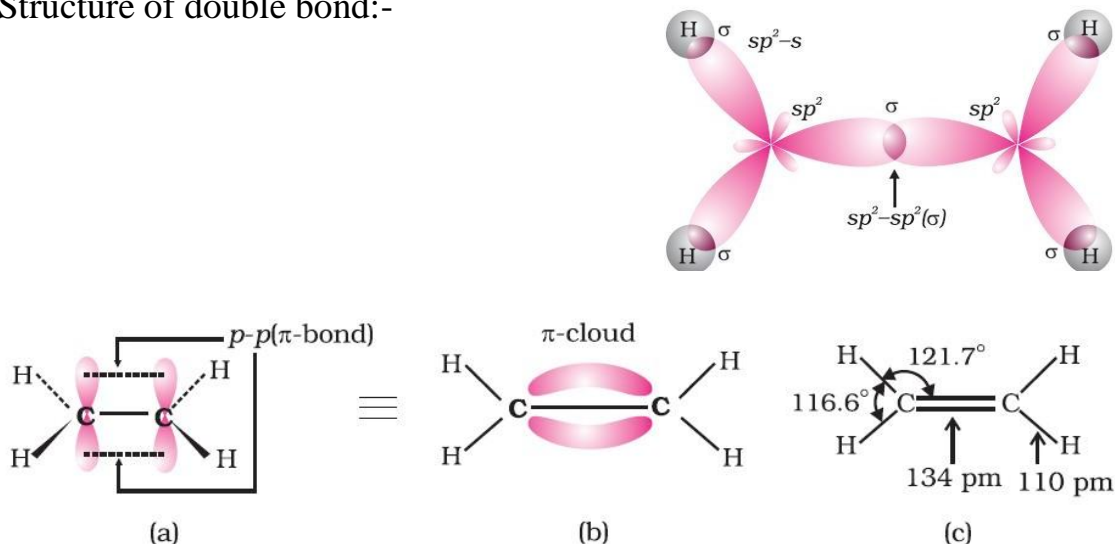
→ SKEW



← ECLIPSED

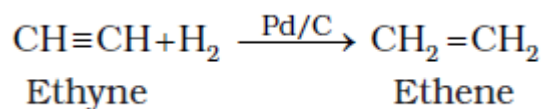
Alkenes

- ☞ Unsaturated hydrocarbon which have double bond.
- ☞ General molecular formula C_nH_{2n}
- ☞ C-C bond hybridization 1.34 \AA
- ☞ sp^2 hybridization
- ☞ When we treated Alkene with chlorine, oily products are obtained. So Alkenes are also known as Olefins. (Greek olefiant meaning oil forming).
- ☞ Show chain, positional and geometrical isomerism
- ❖ Structure of double bond:-

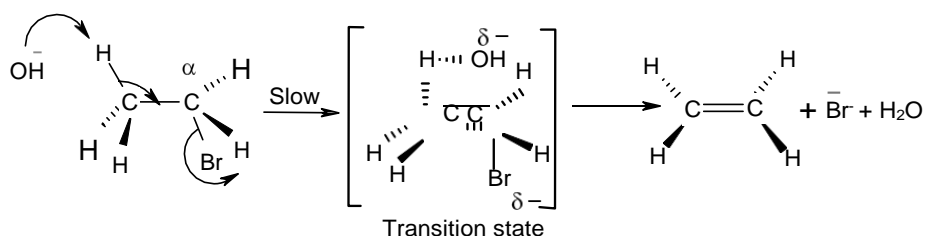
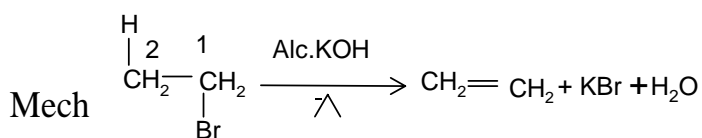


❖ Preparation:-

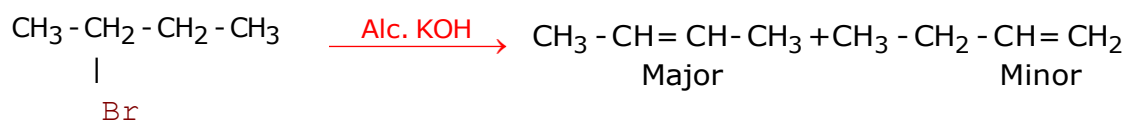
- From Alkynes:- Alkynes on partial reduction with Partially deactivated palladised charcoal known as *Lindlar's catalyst* give alkenes.



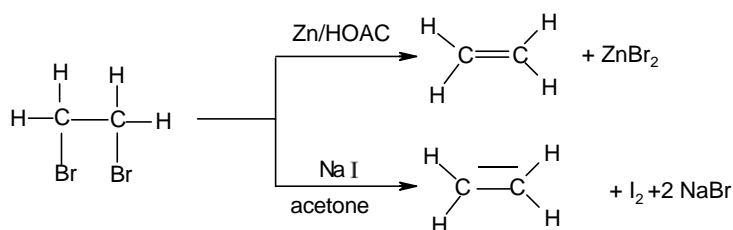
- From Haloalkanes: - dehydrohalogenation
(E_2 or 1,2-elimination or Beta-elimination)



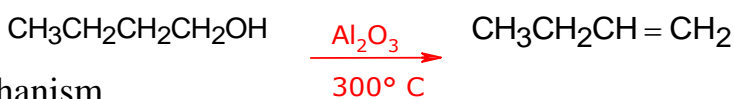
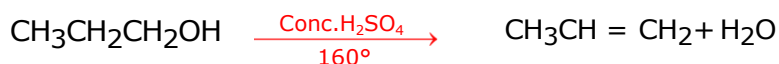
- predominant formation of a substituted alkene is formed according to Saytzeff's rule



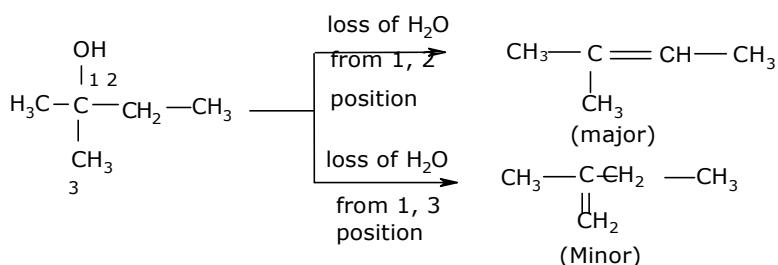
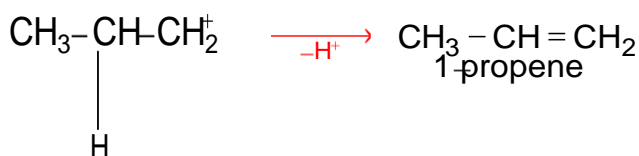
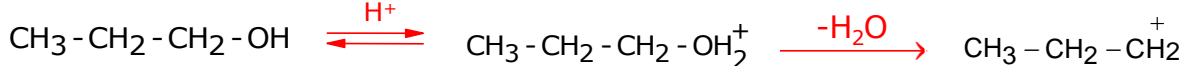
3. From Dihaloalkanes: - dehalogenation



4. From Alcohols:- Dehydration (E1 - elimination)



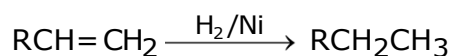
Mechanism



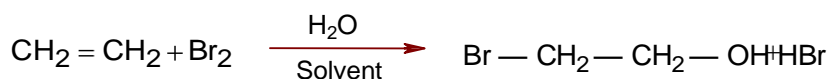
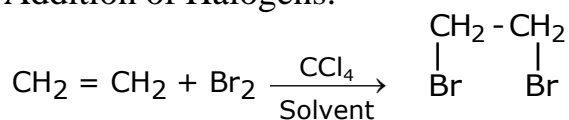
❖ Chemical Properties:-

① Addition Reaction:- Alkene show electrophilic addition reaction.

1. Addition of Hydrogen:-



2. Addition of Halogens:-

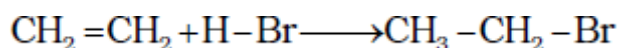


(Brown colour)

(Colourless)

3. Addition of hydrogen halides-

Addition reaction of HBr to symmetrical alkenes



Addition reaction of HBr to unsymmetrical alkenes takes place according to Markovnikov Rul

