

CHEMISTRY STUDY MATERIALS FOR CLASS 10

(NCERT Based notes of Chapter -04)

GANESH KUMAR

DATE:- 03/07/2021

CARBON AND ITS COMPOUND

SOME IMPORTANT CARBON COMPOUNDS – ETHANOL AND ETHANOIC ACID

Almost all the compounds are useful to us in a number of ways. Most of the fuels, medicines, paints, explosives, synthetic polymers, perfumes and detergents are basically organic compounds. In fact, organic chemistry has made our life colourful and also comfortable.

Two commercially important compounds are ethanol and ethanoic acid

ETHANOL (C₂H₅OH)

Ethanol or ethyl alcohol or simply alcohol is one of the most important members of the family of alcohols.

(1)Manufacture of ethanol from molasses

Molasses is a dark coloured syrupy liquid left after the crystallization of sugar from the concentrated sugar cane juice. Molasses still contain about 30% of sucrose which cannot be separated by crystallization. It is converted into ethanol by the following steps:

(i) Dilution -

Molasses is first diluted with water to bring down the concentration of sugar to about 8 to 10 percent.

PROPERTIES OF ETHANOL

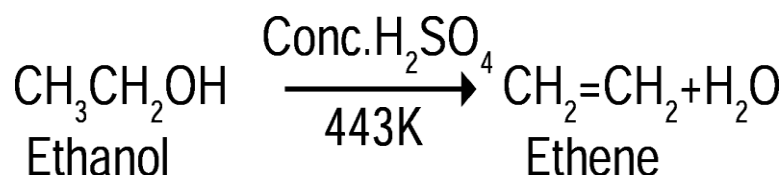
PHYSICAL PROPERTIES

- (i) Ethanol is a clear liquid with burning taste.
- (ii) Its boiling point is 351K which is higher than corresponding alkane.
- (iii) It is completely miscible with water in all proportions.

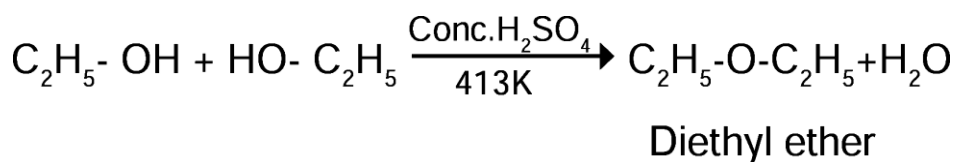
CHEMICAL PROPERTIES

(i) DEHYDRATION

(a) Intra molecular dehydration: Ethanol, when heated with excess conc. H_2SO_4 at 443 K undergoes intra molecular dehydration (i.e. removal of water within a molecule of ethanol).



(b) Inter molecular dehydration: When excess of alcohol is heated with conc. H_2SO_4 at 413K two molecules condense by losing a molecule of water to form ether (i.e. removal of water from two molecules of ethanol).



(ii) **Reaction with sodium** : Ethanol reacts with sodium metal to form sodium ethoxide and hydrogen gas.

