

# CHEMISTRY STUDY MATERIALS FOR CLASS 12

## (NCERT Based Notes of Chapter - 11)

GANESH KUMAR

DATE:- 06/10/2020

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### Alcohols, Phenols and Ethers

#### Terms Related to Alcohols

- (a) **Rectified spirit:** It contains 95% ethyl alcohol and 45% water. It is an azeotrope (constant boiling mixture) and boils at  $74^\circ$ .
- (b) **Absolute alcohol:** Alcohol containing no water, i.e; 100%  $C_2H_5OH$  is known as absolute alcohol. It is prepared as follows.
- (i) Quick lime process                      (ii) Azeotropic method
- (c) **Methylated spirit:** The rectified spirit rendered poisonous by addition of 4-5% methyl alcohol, traces of pyridine and some copper sulphate and is known as methylated spirit or denatured alcohol.
- (d) **Power alcohol:** Alcohol mixed with petrol or fuel and used In internal combustion engines Is known as power alcohol.
- (e) **Wood spirit:** Methyl alcohol ( $CH_3OH$ ) is also called wood spirit. It is obtained by destructive distillation of wood. Pyroligneous add, the product of destructive distillation of wood, contains acetic acid (10%), methyl alcohol (25%) and acetone (05%). Drinking of methanol causes blindness.
- (f) **Grain alcohol:** Ethyl alcohol  $C_2H_5OH$  is also called grain alcohol. It is used In the preparation of various beverages containing different percentages.

#### Dihydric Alcohols

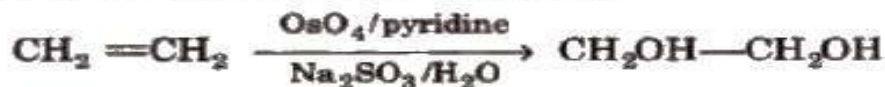
These are generally called glycols because of their sweet taste. Ethylene glycol ( $CH_2OH - CH_2OH$ ) is the first and most important member of dihydric alcohol series.

# Methods of Preparation

## (i) From ethylene



(1% alkaline  $\text{KMnO}_4$  is called Baeyer's reagent)



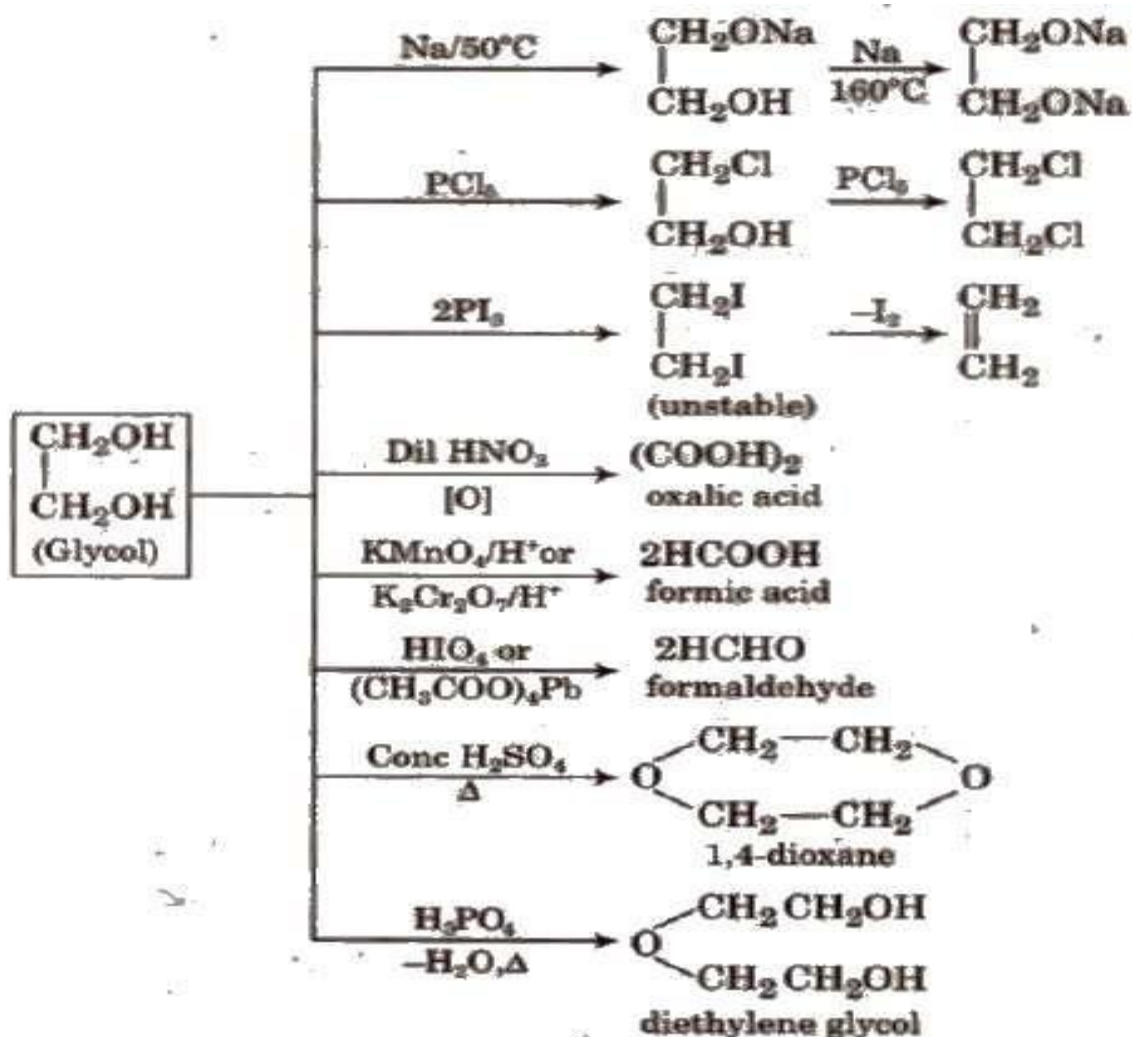
## (ii) By reduction of glyoxal



## Physical Properties

1. It is a colourless, syrupy liquid with sweet taste.
2. Because of its tendency of formation of H-bonds, it is miscible with  $\text{H}_2\text{O}$  and ethanol but not with ether.

**Chemical Properties:** It gives all the general reactions of -OH group.



The per-iodic acid cleavage of 1,2-glycols is sometimes called Malaprade reaction.