

Chem 102 (Assignment)

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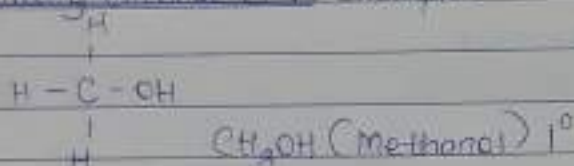
Department: Medicine and Surgery (MBBS)

Matric Number: 19/MH501/406

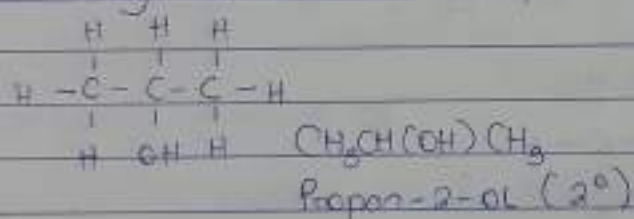
1) Classification of Alcohols

(i) This is based on the number of hydrogen atoms attached to the carbon atom containing the hydroxyl group. If the number of hydrogen atoms attached to the carbon atom bearing the hydroxyl group are three or two, it is called **PRIMARY ALCOHOL (1°)**, if it is one hydrogen atom it is called **SECONDARY ALCOHOL (2°)** and if no hydrogen atom is attached to it, it is called **TERTIARY ALCOHOL (3°)**.

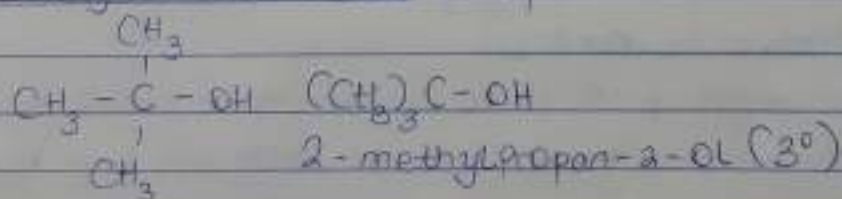
a) Primary alcohol (1°): Example



b) Secondary alcohol (2°): Example



c) Tertiary alcohol (3°): Example

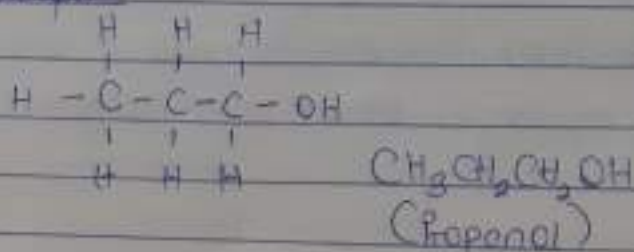


(ii) This is based on the number of hydroxyl groups they possess

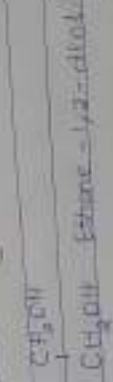
a) Monohydric alcohol

They have one hydroxyl group present in the alcohol structure.

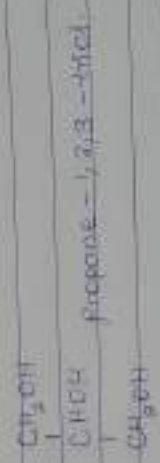
Example:



b) Dibasic alcohol
 They have two hydroxyl groups present in the alcohol structure. They are also known as diols. Example



c) Tertiary alcohol
 They have three hydroxyl groups present in the structure of the alcohol. It is also known as triol. Example

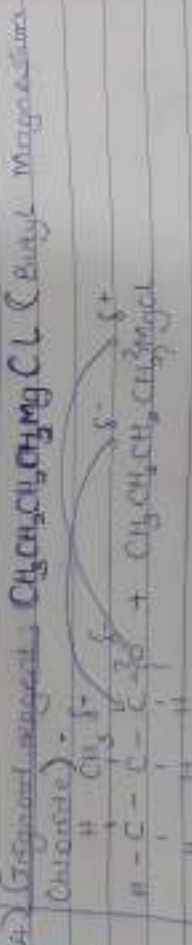


d) Polyhydric alcohol
 They have more than three hydroxyl groups. They are also known as polyols. Example



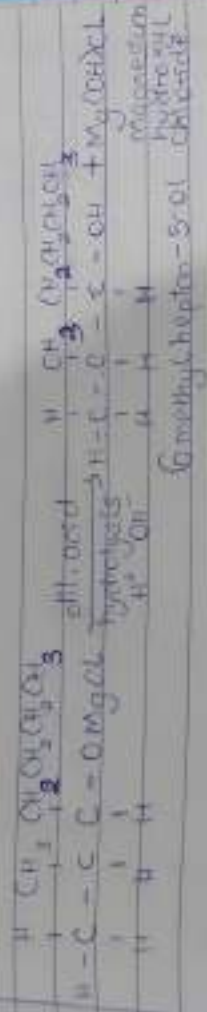
2) Solubility of alcohols in water
 Lesser alcohols with up to three carbon atoms in their molecules are soluble in water because these lower alcohols can form hydrogen bond with water molecules. The water solubility of alcohols decreases with increasing relative molecular mass.

Solubility of alcohols in organic solvents
 All monohydric alcohols are soluble in organic solvents. The solubility of simple alcohols and polyhydric alcohols is largely due to their ability to form hydrogen bonds with water molecules.

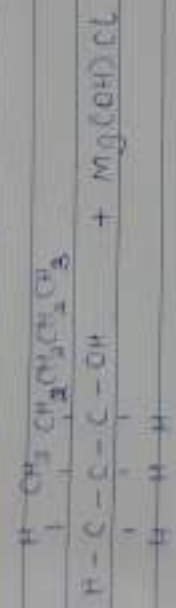


Ethylmagnesium Chloride

2-methylpropanal

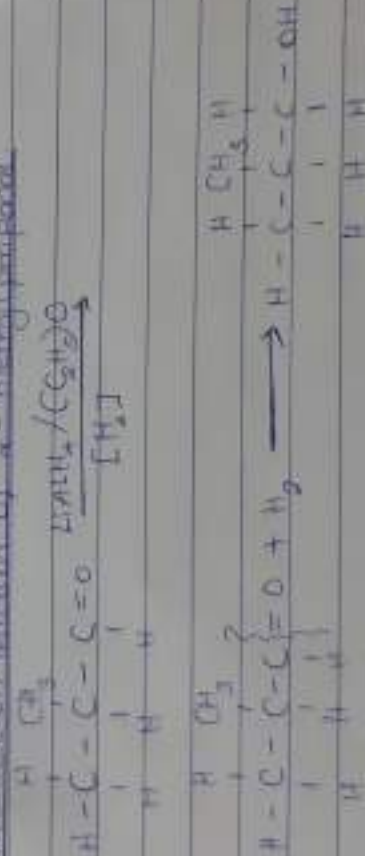


PRODUCT OF THE GRIGNARD SYNTHESIS



Magnesium hydroxyl chloride

7) Reduction reaction of 2-methylpropanal



8) Conversion of propan-1-ol to propan-2-ol

