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Course code: CHM 102

Assignment

1. Alcohols are very important organic compounds. Discuss briefly their classification and give one example each.

Answer

Alcohols are classified into two

a. 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 atoms containing the hydroxyl group are 3 or 2, it is called a primary (1°). If it is 1 hydrogen atom it is a secondary alcohol (2°) and if no hydrogen atom it is a tertiary alcohol (3°). Eg CH_3OH (methanol)

b. Based on the number of hydroxyl groups they possess. If there is one hydroxyl group present in the alcohol structure it is a monohydric alcohol or glycol. If there are three it is called trihydric alcohol or triol. If there are more than three it's called a polyhydric alcohol or polyol. Eg $\text{C}_2\text{H}_5\text{OH}$ (ethanol) (monohydric)

2. Discuss the solubility of alcohols in water, organic solvents.

Lower alcohols with up to three carbon atoms in their molecules are soluble in water because they can form hydrogen bond with water molecules. All monohydric alcohols are soluble in organic solvents.

3. Show the three stages in the industrial manufacture of ethanol. Equations of reaction are mandatory

Answer

a. Starch containing foods can be made to yield ethanol through a biological process called fermentation.

6. Q.11. Propose a scheme for the conversion of Propan-1-ol to Propan-2-ol

