

① @ Primary alcohols :- These are those alcohols that where the carbon atom of the hydroxyl group (OH) is attached to only one single alkyl group. The existence of only one linkage among -OH group and an alkyl group and the thing that qualifies any alcohol as a primary. Ex: Methanol.

② Secondary alcohols :- Secondary alcohols are those where the carbon atom of the hydroxyl group is attached to two alkyl groups on either side. The two alkyl groups present may be either structurally identical or even different. Ex: Ethanol.

③ Tertiary Alcohols :- These alcohols are those which feature hydroxyl group attached to the carbon atom which is connected to 3-alkyl groups. The presence of this -OH group allows the alcohols in the formation of hydrogen bonds with their neighbouring atoms.

Examples of primary alcohols :- Methanol.

Secondary alcohols :- Propan-2-ol

Tertiary alcohols :- 2-methylbutan-2-ol.

② Solubility of alcohols in water :- Alcohols are soluble in water. This is due to the hydroxyl group in the alcohol which is able to form hydrogen bonds with water molecules. Alcohols with a smaller hydrocarbon chain are very soluble. As the length of the hydrocarbon chain increases, the solubility in water decreases. With four carbon in the hydrocarbon chain and higher, the decrease in solubility becomes visible as the mixture forms two immiscible layers of liquid.

③ INDUSTRIAL MANUFACTURE OF ETHANOL.

Ethanol is produced from biomass mostly via a fermentation process using glucose derived from sugars, starch or cellulose. In the case of sugar this is quite straight forward as the sugar is simply dissolved in water; Starch, however, requires pre-processing where the starch is transformed into glucose through the ~~addition~~ liquefaction and saccharification.

This process through the addition of enzymes frees the glucose bound in the starch and makes it available for fermenting into alcohol.



⑤ Dehydration.