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1. Alcohols can be classified into two:-

i) based on the number of hydrogen atom attached to the carbon atom containing the hydroxyl group &

ii) based on the number of hydroxyl group they possess,

(i) based on the number of hydrogen atom attached to the carbon atom: if there are two or three hydrogen atoms attached the carbon atom with a hydroxyl group it is called a primary alcohol, if it has one hydrogen atom it is called secondary alcohol and if it has no hydrogen atom it is called a tertiary alcohol e.g.  $\text{CH}_3\text{OH}$  (Methanol)

(ii) based on the number of hydroxyl group they possess: monohydric alcohols have one hydroxyl group present in the alcohol structure, Dihydric alcohols or Glycols have two hydroxyl groups, and trihydric alcohols or triols have three hydroxyl groups and polyhydric alcohols or polyols have more than three hydroxyl groups

e.g.  $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$  (Propanol) (monohydric)

2. Lower 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.

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.

