

Pharmaceuticals
Computer Engineering
17/Eng 02/045
C/M 102

1) Based on the number of hydrogen atoms attached to the carbon atom with the hydroxyl group

- Primary alcohols (1°) have 2 or 3 hydrogen atoms

Example $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$ (propanol)

- Secondary alcohols (2°) have 1 hydrogen atom

Example $\text{CH}_3\text{CH}(\text{OH})\text{CH}_2\text{CH}_3$ (butan-2-ol)

- Tertiary alcohols (3°) have no hydrogen atom

Example $(\text{CH}_3)_3\text{COH}$ (2-methyl propan-2-ol)

① Based on the number of hydroxyl groups in the compound

- Monohydric alcohols have one hydroxyl group

Example $\text{CH}_3\text{CH}_2\text{OH}$ (ethanol)

- Dihydric alcohol have 2 hydroxyl groups

Example $\text{HOCH}_2\text{CH}_2\text{OH}$ (ethane-1,2-diol)

- Trihydric alcohols have four or more hydroxyl groups

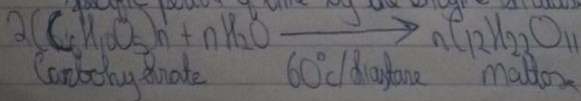
Example $\text{CH}_2\text{CH}(\text{OH})\text{CH}(\text{OH})\text{CH}(\text{OH})\text{CH}(\text{OH})\text{CH}_3$ (hexane-2,3,4,5-tetrol)

2) Solubility of alcohols

- In water: lower alcohols with up to three carbon atoms in their molecules are soluble in water. The water solubility decreases with increasing relative molecular mass.

- In organic solvents: all monohydric alcohols are soluble in organic solvents.

3) Step 1: Starch containing material on warming with malt to 60°C for a specific period of time by the enzyme diastase (in malt) to maltose



Step 2: The maltose is broken down into glucose on addition of yeast which contains the enzyme maltase at 15°C

$$C_{12}H_{22}O_{11} + H_2O \xrightarrow[15^\circ C \text{ maltase}]{15\% \text{ maltose}} 2 C_6H_{12}O_6$$

Step 3: The glucose at a constant temperature of 15°C is then converted into ethanol by the enzyme zymase (in yeast)

