

ABIODUN ROLAT INUMOLU

19/MHSDI/009

MBBS

### 1. Classification of alcohols

A. Number of hydrogen atoms attached to the carbon atom bearing the hydroxyl group

a) Primary alcohols: When the number of hydrogen atoms is 3 or 2 e.g.  $\text{CH}_3\text{OH}$

b) Secondary alcohol: When the number of hydrogen atoms is 1 e.g.  $\text{CH}_3\text{CH}(\text{OH})\text{CH}_3$

c) Tertiary alcohols: When the number of hydrogen atoms is 0 e.g.  $(\text{CH}_3)_3\text{C}=\text{OH}$

### B. Number of hydroxyl group

a) Monohydric alcohols - Presence of 1 hydroxyl group  
e.g.  $\text{CH}_3\text{CH}_2\text{OH}$  (ethanol)

b) Dihydric alcohol: Presence of 2 hydroxyl group  
e.g.  $\text{HOCH}_2\text{CH}_2\text{OH}$  (ethane-1,2-diol)



PRINCE MUFTAU MOBOLAJI OLUSI

Sunday, 23rd February, 2020

COURTESY: THE FAMILY

c. Trihydric alcohol: Presence of 3 or more hydroxyl groups e.g.  $\text{HO}-\text{C}_2\text{H}_4-(\text{OH})-\text{CH}_2\text{OH}$   
Propane-1, 2, 3-triol.

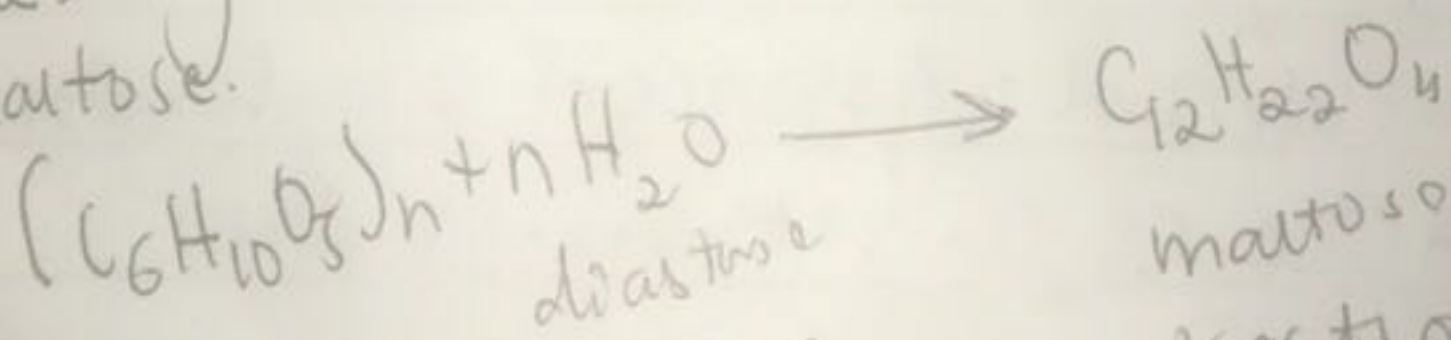
2. Solubility of alcohols:

- Lower alcohols are very soluble in water as they easily form hydrogen bonds with water.  
The solubility in water decreases with increasing relative molecular mass.

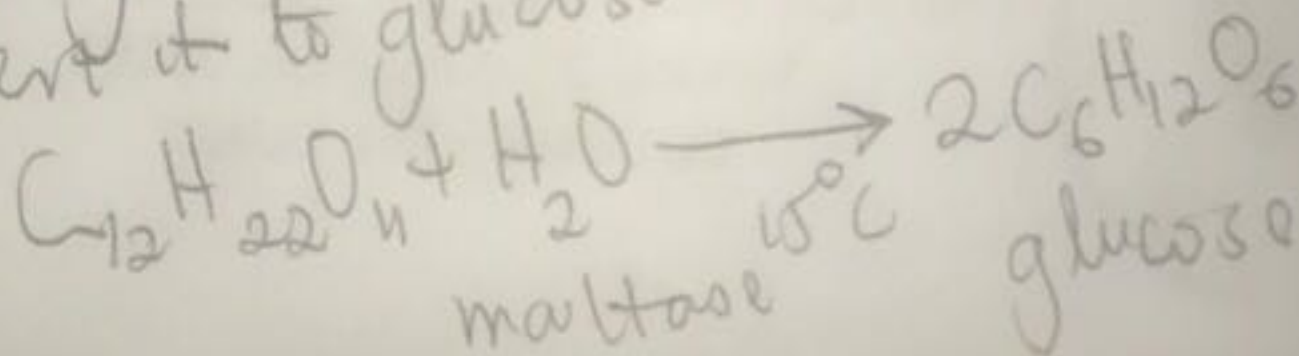
Monohydric alcohols are very soluble in organic solvents.

3. Industrial manufacture of ethanol

The carbohydrate such as potatoes, yam, is cut. Malt is then added at  $60^\circ\text{C}$  to the carbohydrate. The enzyme diastase acts on it to convert it to maltose.



The enzyme maltase from yeast acts on it to convert it to glucose.

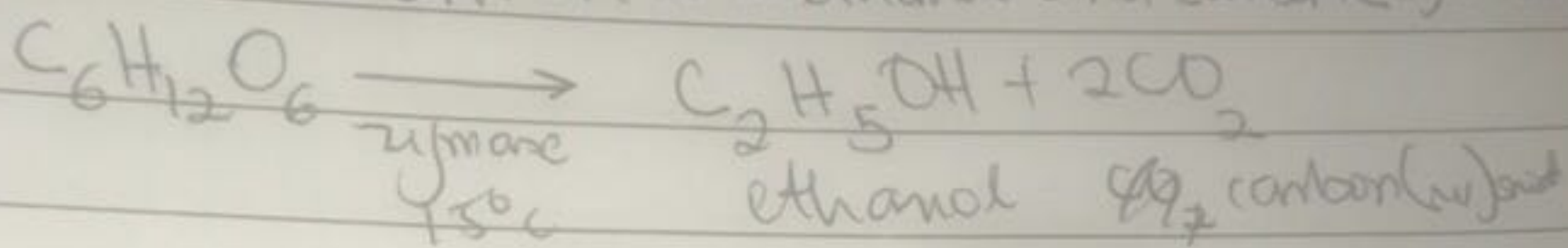


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The enzyme zymase also from yeast acts on it to convert it to ethanol and carbon(IV)oxide



A. Reaction between 2methyl propanal and butyl magnesium chloride

