

**Name: Ike-Egbuonu marvellous chinelo**

**Matric: 19/SCI09/003 my**

**teacher: Mr. JONATHAN JOHNSON**

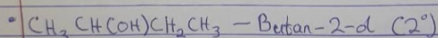
**Assignment: Chemistry**

**Level: 100lvl**

### 1. Classifications Of Alkanols:

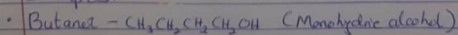
a) Alkanols can be ~~be~~ classified based on the number of hydrogen atoms which are attached to the carbon atom containing the hydroxyl group. If there are two or three hydrogen atoms attached to the carbon atom bearing the hydroxyl group, it is called a primary alcohol (1°). If it is one hydrogen atom, it is called secondary alcohol (2°). If no hydrogen atom is attached, it is called a tertiary alcohol (3°).

Examples:



b) Alkanols can also be ~~be~~ classified based on the number of hydroxyl group they possess. Alcohols with one hydroxyl group present are known as Monohydric alcohols. Alcohols that have two hydroxyl groups present in their alcohol structures are called Dihydric alcohols (Glycols). Trihydric alcohols or triols have three hydroxyl groups present in the alcohol structure. Polyhydric alcohols or polyols have more than three hydroxyl groups.

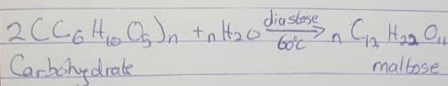
Examples:



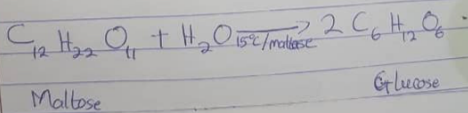
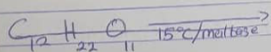
### 3. Industrial Production of Ethanol.

Fermentation is the biological process by which carbohydrates such as starch can be made to yield ethanol. The enzymes (biological catalysts), found in yeast break down the carbohydrate molecules into ethanol to give a yield of 95%.

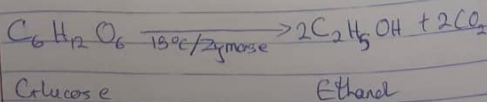
The carbohydrate is warmed with malt at 60°C for a specific period of time to yield maltose by the enzyme diastase, which is contained in the malt.



The maltose is further broken down into glucose by the enzyme maltase at a temperature of 15°C.

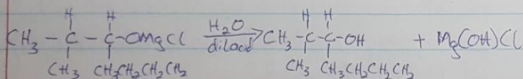
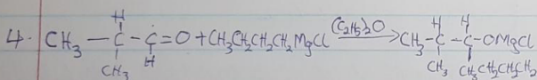


The glucose is then converted into ethanol by the enzyme zymase (also contained in yeast) at a temperature of 15°C.

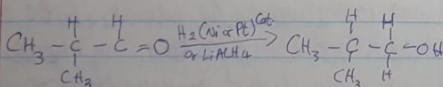


2. In solubility of alcohols, lower alcohols with up to 3 carbon atoms in their molecules are soluble in water because these lower alcohols can form hydrogen bond with water molecules. The water solubility of alcohols decreases with increasing relative molecular mass.

In organic solvents, all monohydric alcohols are soluble. The solubility of simple alcohols and polyhydric alcohols is largely due to their ability to form hydrogen bonds with water molecules.



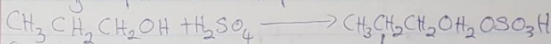
7. Reduction of 2-methyl propanal



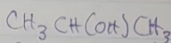
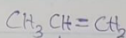
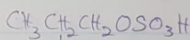
2-methyl propanal

2-methyl propanol

8. Converting Propan-1-ol to Propan-2-ol



Propan-1-ol



Propan-2-ol

