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19/MHS011351

1 - Classification based on the number of hydrogen atoms attached to carbon atom containing the hydroxyl group.

If the hydrogen atoms attached to the carbon atom bearing the hydroxyl group are three or two, it is a primary alcohol.

If the hydrogen atom attached to the carbon containing the hydroxyl group is one, it is a secondary group. Then if it is only

one there are no hydrogen atom on carbon atom containing the hydroxyl group then it is a tertiary alcohol.

Example

$\text{CH}_3\text{CH}_2\text{OH} \rightarrow$  ethanol (primary or 1° alcohol)

- Classification based on number of hydroxyl groups in the compound.

If it contains one hydroxyl group, then it is monohydric.

If it contains two hydroxyl groups, then it is dihydric or glycols.

If there are three hydroxyl groups, then it is a triol.

If it possess more than three hydroxyl group then it is a polyhydric.

Example

$\text{CH}_3\text{CH}_2\text{OH} \rightarrow$  ethanol (monohydric).

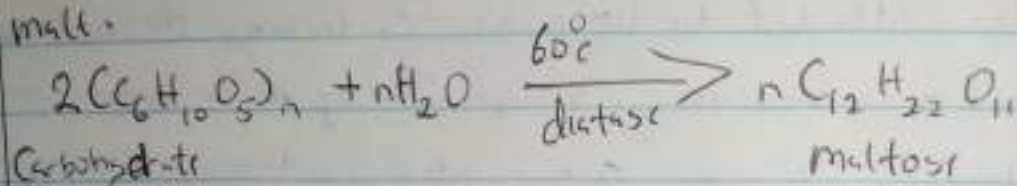
2 Solubility of alcohols in water and organic solvents:

Lower alcohols with up to three carbon atoms in their molecules are soluble in water because, lower alcohols can form hydrogen bond with water molecules. Higher solubility in water alcohol decrease

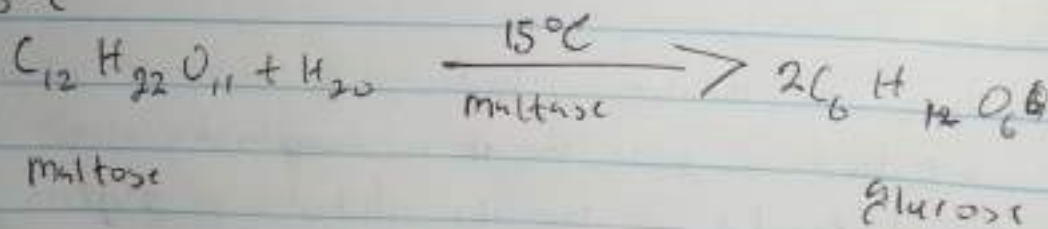
Increase in molecular mass

All monohydric alcohols are soluble in organic solvents.

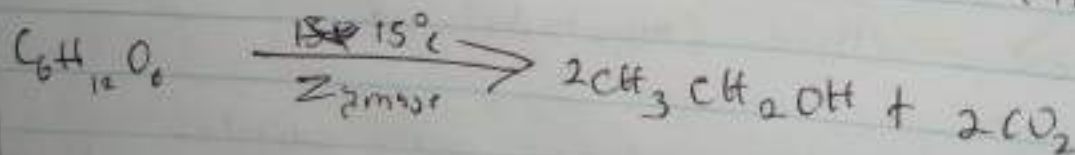
3 Mashing of starch containing materials such as potatoes, rice cereal etc. with malt to  $60^{\circ}\text{C}$  for a specific period of time are converted to maltose by the enzyme diastase contained in malt.



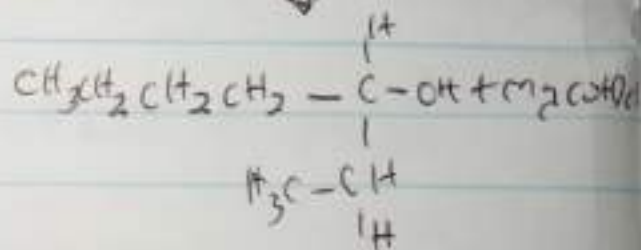
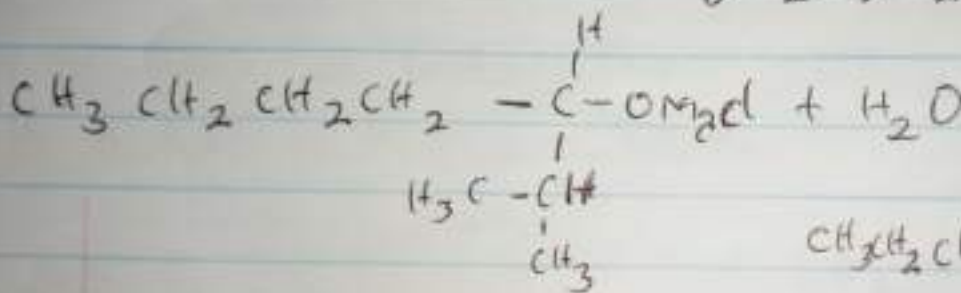
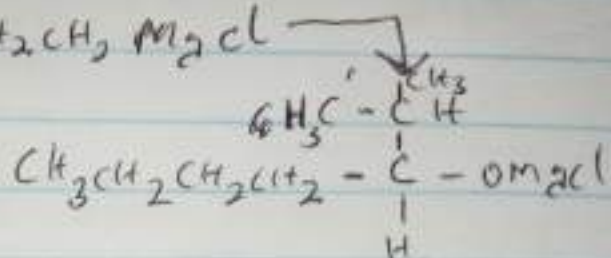
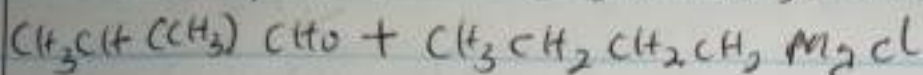
The maltose is broken down into glucose on addition of yeast which contains the enzyme maltase and at a temperature of  $15^{\circ}\text{C}$



The glucose at constant temperature of  $15^{\circ}\text{C}$  is then converted to alcohol by the enzyme zymase which is also contained in yeast

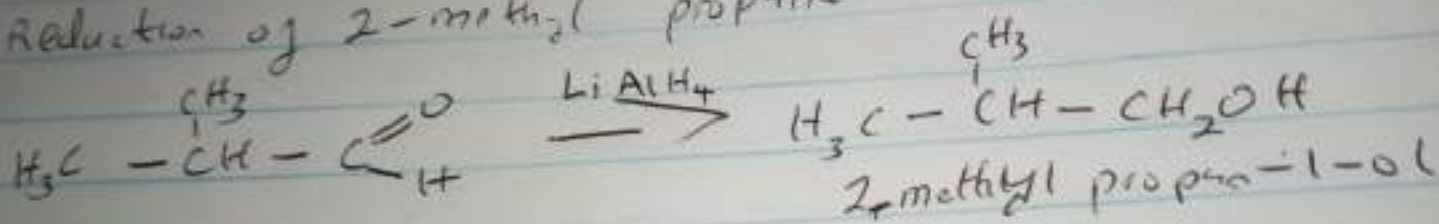


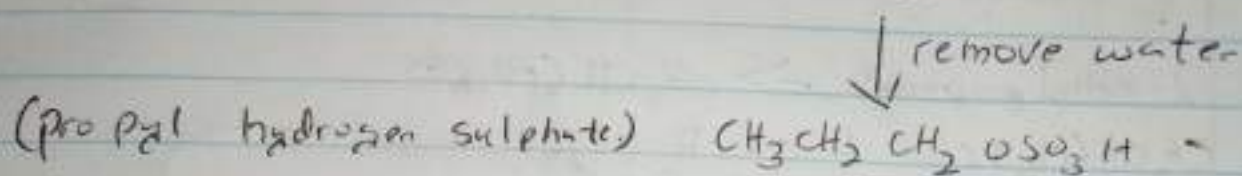
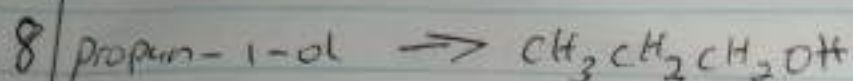
4 2 methyl propenal  $\rightarrow$   $\text{CH}_3\text{CH}(\text{CH}_3)\text{CHO}$



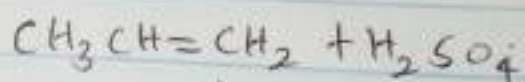


7 Reduction of 2-methyl propanal

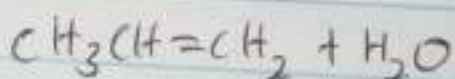




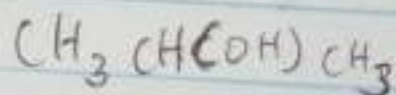
↓ hydrolysis



↓ hydrate propene



↓



propan-2-ol