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Elect/Elect

CHM 102

Classification of Alcohols -

(1)

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

- i) Primary Alcohol: Three or two hydrogen atoms are attached e.g. CH_3OH (Methanol)
- ii) Secondary Alcohol: One hydrogen atom is attached e.g. $\text{CH}_3\text{CH}(\text{OH})\text{CH}_3$ (Propan-2-ol)
- iii) Tertiary Alcohol: No hydrogen atom is attached e.g. $(\text{CH}_3)_3\text{C-OH}$ (2-methyl propan-2-ol)

2. This is based on the number of hydroxyl groups they possess.

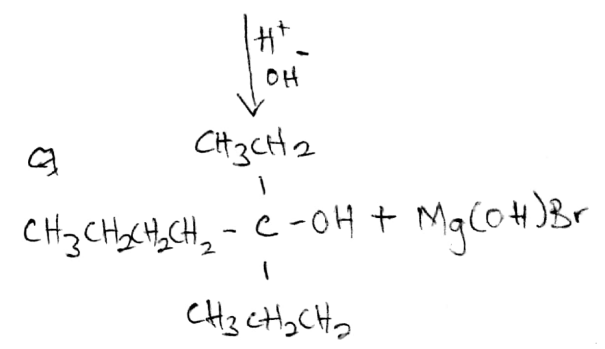
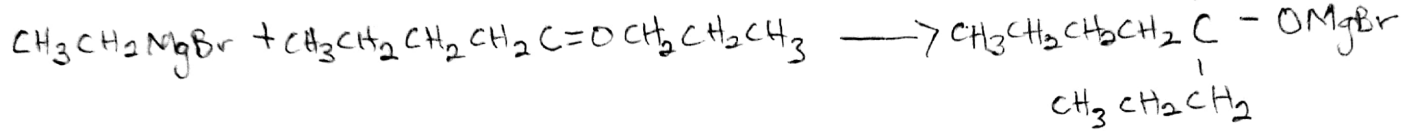
- 1) Monohydric alcohol: One hydroxyl group present e.g. $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$ (Propanol)
- 2) Dihydric alcohol: Two hydroxyl groups present e.g. $\text{HOCH}_2\text{CH}_2\text{OH}$ (Ethane 1,2-diol)
- 3) Trihydric alcohol: Three hydroxyl groups present e.g. $\text{OHCH}_2\text{CH}(\text{OH})\text{CH}_2\text{OH}$ (Propane-1,2,3-triol)
- 4) Polyhydric alcohol: more than 3 hydroxyl groups present e.g. $\text{CH}_3\text{CH}(\text{OH})\text{CH}(\text{OH})\text{CH}(\text{OH})\text{CH}(\text{OH})\text{CH}(\text{OH})\text{CH}_3$ (Heptane-2,3,4,5,6-Pentaol)

(2)

CH₃CH₂CH₂CH₂COCH₂CH₂CH₃

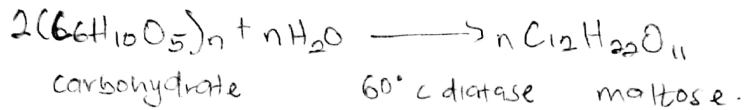
(2)

Grignard Reagent \rightarrow CH₃CH₂MgBr

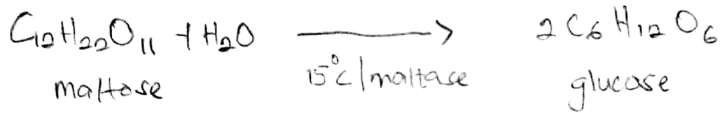


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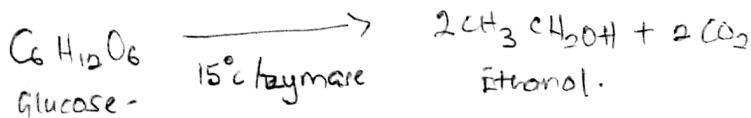
The starch containing material (rice, cereals) on warming with malt to 60°C for a specific period of time are converted into maltose by the enzyme diastase contained in the malt.



The maltose is broken down on addition of yeast which contains the enzyme maltase and at a temperature of 15°C

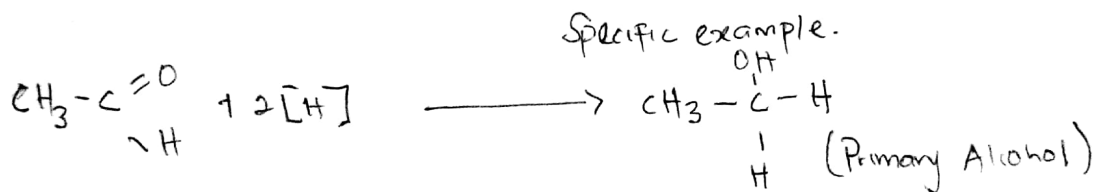
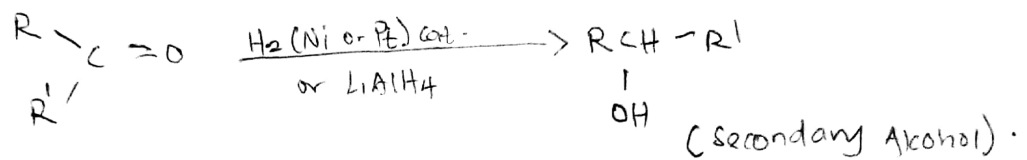
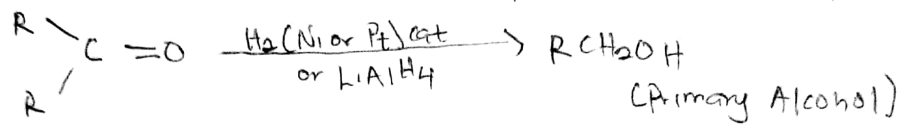


The glucose at constant temperature of 15°C is then converted into alcohol by the enzyme zymase contained also in yeast

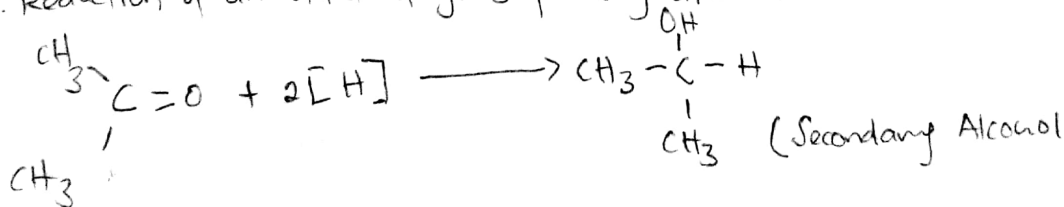


(4)

Primary and Secondary are the products obtained from the reduction of Alkanone and Alkanal



Note: Reduction of an alkanal gives primary alcohols.



Reduction of a Ketone gives Secondary Alcohol.