

The H in square brackets means "hydrogen from a reducing agent". In general terms, reduction of an aldehyde leads to a primary alcohol. A primary alcohol is one which only has one alkyl group attached to the carbon with the $-OH$ group on it. They all contain the grouping $-CH_2OH$

NAME: ~~blaba~~, Victor Pedro

3rd April 2021

MATRIC NUMBER: 19/MHS011/190

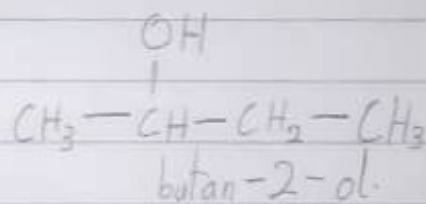
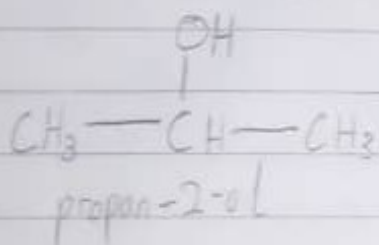
DEPARTMENT: MBBS

COURSE TITLE: General Chemistry II.

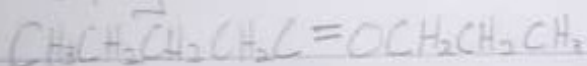
COURSE CODE: CHM 102

1) Primary alcohol is an alcohol which has the hydroxyl group connected to a primary carbon atom. It can also be defined as a molecule containing a $-\text{CH}_2\text{OH}$ group. Examples of primary alcohols include ethanol and butanol.

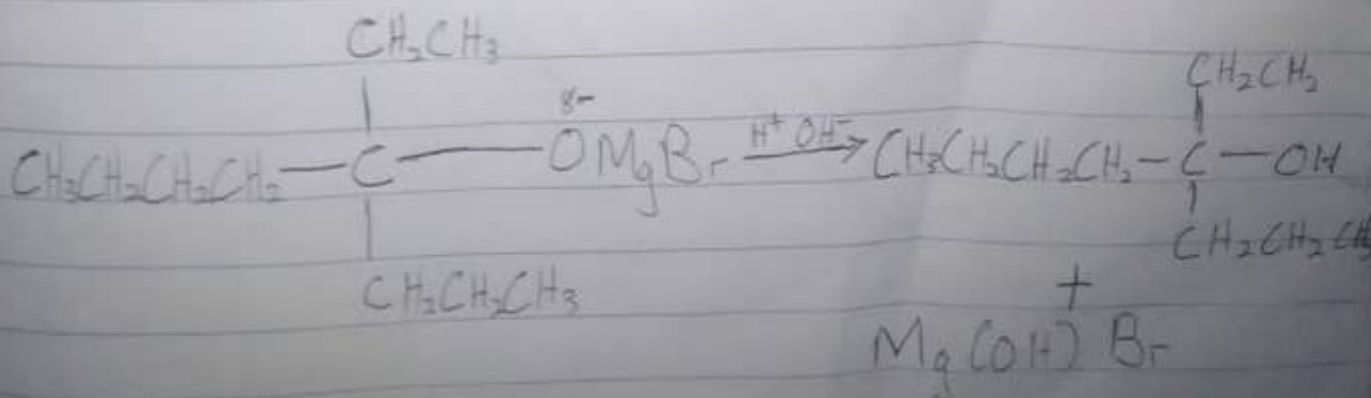
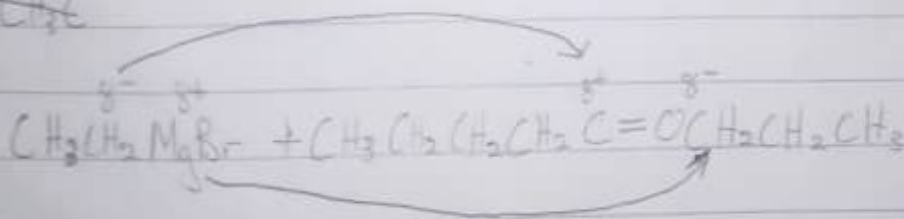
Secondary alcohols are those where the carbon atom of the hydroxyl group is attached to two alkyl groups on either side. The two alkyl groups present may be either structurally identical or even different. Some of the examples of secondary alcohols are given below.



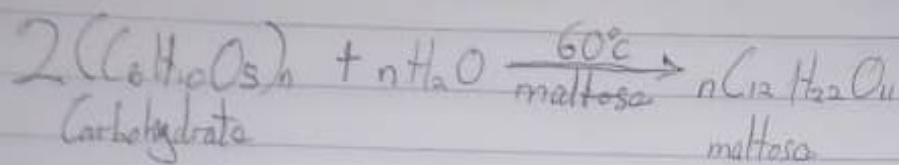
2) Grignard synthesis:



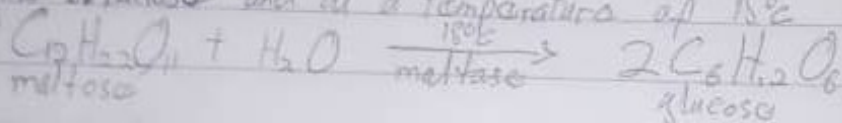
~~CH₃C~~



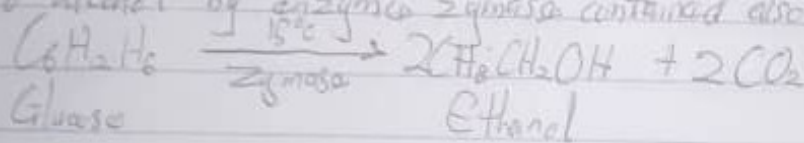
3) Carbohydrates such as starch are major group of natural compounds that can be made to yield ethanol by biological process of fermentation. Enzymes found in yeast break down the carbohydrate molecules into ethanol to give a yield of 95%. The starch containing materials like mashes, potatoes on warming with malt to 60°C for a specific period of time are converted into maltose by the enzyme diastase contained in the malt.



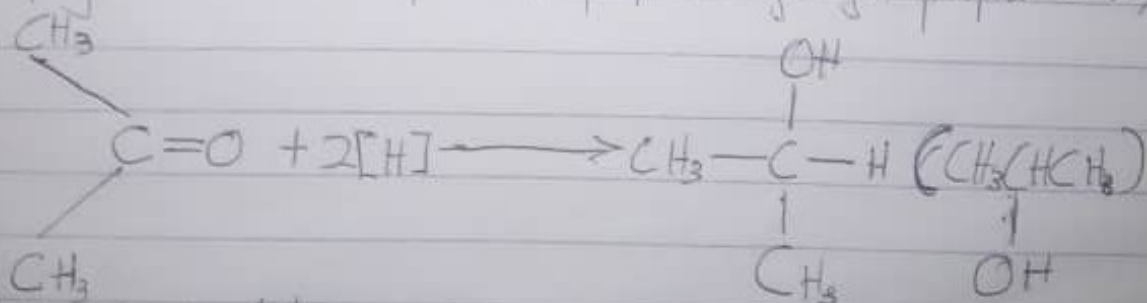
The maltose is broken down into glucose on addition of yeast which the enzyme maltase and at a temperature of 15°C



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



4) Reduction of alkanone also known as ketone leads to a secondary alcohol. A secondary alcohol is one which has two alkyl groups attached to the carbon with the -OH group on it. They all contain the grouping -CHOH (Example with propanone you get propan-2-ol)



The Reduction Of An Aldehyde: For example, with ethanal you get ethanol

