

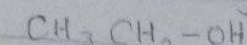
AGU EMMANUELLA CHIAMAKA

CHM 102

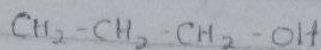
19/MHS 01/059

1) Alkanols are known as alcohols. Alkanols are classified into
Primary alkanol
Secondary alkanol

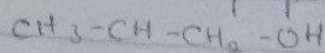
* Primary Alkanol :- The carbon which carries the -OH group is only attracted to one alkyl group. Example include



(Ethanol)

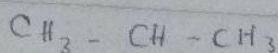
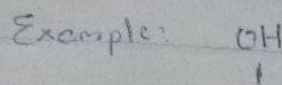


Propan-1-ol

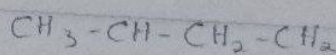


(2-methyl propan-1-ol)

* Secondary alkanol :- The carbon which carries the OH group is attracted to two groups which may be the same or different



(Propan-2-ol)

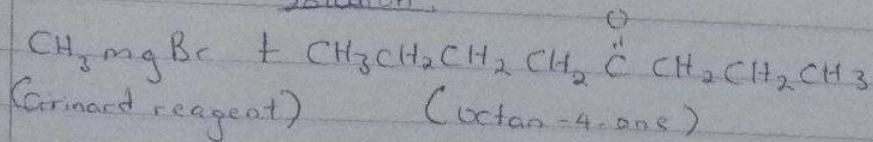


(butan-2-ol)

2) In the Grignard synthesis of alkanols react anamed reagent with $\text{CH}_3\text{CH}_2\text{CH}_2\text{C(=O)CH}_2\text{CH}_2\text{CH}_2$ slow reaction

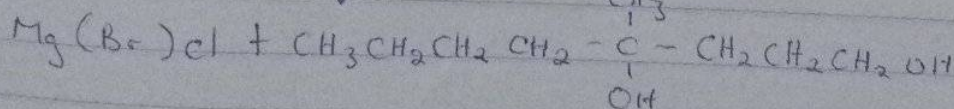
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Solution



(Grignard reagent)

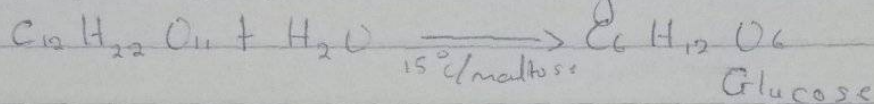
(Octan-4-one)



Tertiary alkanol

Industrial manufacture of ethanol carbohydrate is converted into maltose at a temperature of 60° and by the enzyme diastase $2(C_6H_{10}O_5) + nH_2O \xrightarrow[diastase]{60^{\circ}} C_{12}H_{22}O_{11}$ maltase

Maltose is broken down into glucose on addition of yeast which contains the enzyme maltase at $15^{\circ}C$



Glucose at constant temperature $15^{\circ}C$ is converted into alcohol with enzyme zymase contained also in yeast

This is based on the number of hydrogen atoms attached to the carbon atom containing the hydroxyl group. If the number of hydrogen atoms attached to the carbon atom is bearing hydroxyl group are three or two it is called a primary alcohol. If it is one hydrogen atom it is called secondary alcohol and if no hydrogen atom, it is called a tertiary alcohol (3 $^{\circ}$). Example CH_3OH (methanol), $CH_3CH(OH)CH_3$ propan-2-ol (2 $^{\circ}$), $(CH_3)_3C-OH$ methyl propan-2-ol (3 $^{\circ}$).

This is based on the number of hydroxyl groups they possess. Monohydric alcohols have one hydroxy group present in the alcohol structure, Dihydric has two hydroxy groups present while trihydric alcohols or triols have three hydroxyl group present.