Classification of Alcohol;

a) Based on the number of hydrogen atom attached to the carbon atom

containing the hydrogen Group: if the number of hydrogen atom attached to

to carbon atom bearing the hydroxyl group are 3 or 2, it is called a primary alcohol

(1). But if it is one hydrogen atom, it is called secondary alcohol (2) and if no

hydrogen atom is attached the carbon atom bearing the hydrogen group; it is called

a tertiary alcohol (3).

e. g CH3 CH2 OH ethanol (1) 2) (CH3)3 C-OH-2 methylpropan-2ol (3)

a) Based on the number of hydroxyl group they possess: Monohydric

alcohol have one hydroxyl group present in the alcohol structure. Dihydric alcohol

are also called glycols. They have two hydroxyl group present in the alcohol

structure while trihydric alcohol or triols have three hydroxyl group present in the

structure of the alcohol. Polyhydric alcohols or polyols have more than three

hydroxyl groups.

e.g CH3 CH2 CH2 OH propannol (monohydric alcohol

OH CH2 (OH) CH2 OH PROPANE-1,2,3, TRIOL (TRIOL alcohol

2) CH3 CH2 CH2 CH2 C= OCH2 CH2 CH3 react a

grignard reagent with the reaction:

CH3 MgBr + CH CH CH CH CCH CH CH

(GRIGNARD REAGENT) (OCTAN-4- ene)

CH3

Mg(Br)CL + CH3 CH2 CH2 CH2 --- C ---CH2 CH2 CH3

OH

(Tertiary alkanol)

3) The industrial manufacture of ethanol showing all reaction

equation and necessary enzymes and temperature of reaction.

Production of ethanol:It is the biological process called

fermentation. It uses biological catalyst or enzymes

Step 1: it is the break down of carbohydrate:

Diastase(malt)

2(C6H10O5)n + nH2O -------------------- nC12 H22O11

(carbohydrate) 60 c/Diastase (maltose)

Step:2 it is the break down of maltose:

C12 H22 O11 +H2O--------------------------- 2C6H12O6

(maltose) 15 C/maltase (glucose)

Step:3 Converting glucose to ethanol:

C6 H12 O6------------------2CH3 CH2 OH +2CO2

(Glucose) 15 C/ zymaze ( Ethanol) oH

4) Alkanones and alkanals can be reduced using LiAIH4 or (C2H5)20

ALKANONES: The reduction process of propanone to propanol.

CH3CH2CHO-------------------CH3CH2CH2OH

LiAIH4/ (C2H5)20

ALKANALS: The reduction process of propanal to propanol.

CH3CH2C=O---------------------CH3CH2CH2OH

LiAIH4/ (C2H5)2O