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DEPARTMENT: NURSING

MATRIC NUMBER: 19/MHS02/057

ASSIGNMENT

1. The classifications of alkanols are;
2. Classification based on the number of hydrogen atoms: This is based on the number of hydrogen atoms attached to the carbon atom containing the hydroxyl group. This is made up of the primary alkanol, secondary alkanol and tertiary alkanol. The primary alkanol is made up of two or three carbon atoms attached to the hydrogen atom. The secondary alkanol is made up of one carbon atom attached to the hydrogen atom. The tertiary alkanol is made up of no carbon atom attached to the hydrogen atom.

EXAMPLES;

CH3OH [Methanol]

CH3CH2OH [Ethanol]

1. Classification based on the number of hydroxyl group they posses: This is made up of monohydric alcohol that is made up of one hydroxyl group present in the alcoholic structure, the dihydric alcoholic [Glycols] is made up of two hydroxyl groups in their alcoholic structures. The trihydric [Triols] that is made up of three hydroxyl groups present in their alcoholic structures.

EXAMPLES;

CH3CH2CH2OH-Propanol [Monohydric alcohol]

HOCH2CH2OH-Ethane [Dihydric alcohol]

1. CH3MgBr + CH3CH2CH2CH2C=OCH2CH2CH3

(Grignard reagent) (Octan-4-ene)

CH3

Mg(Br)Cl +CH3CH2CH2CH2 C CH2CH2CH3

OH

1. The biological catalysts [Enzymes] found in yeast breaks down the carbohydrate molecules in ethanol. The industrial manufacture shows the following processes;
2. The starch containing the materials is warmed with malt to 60˚C for a specific period of time and is converted into maltose by diastase [an enzyme] in the malt.

2[C6H1006] n + nH20 nC12H22O11

Carbohydrate 60˚C/diastase maltose

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

C12H22011 + H20 2C6H1206

Maltose 15˚C/Maltase glucose

1. Glucose at a constant temperature of 15˚C is then converted into alcohol by the enzyme zymase contained also in the yeast.

C6H12O6 2CH3CH2OH+2CO2

Glucose 15˚C/zymase Ethanol

1. The product obtained from the reduction of alkanone and alkanals in alcohol.

[Reduction of Ethanal to form Ethanol]

CH3C=OH+2[H] CH3CH2OH

Ethanal Ethanol

[Reduction of propanone to form propan-2-ol]

2[CH3]C=O+2[H] CH3CHCH3

propanone

OH

Propan-2-ol