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CHEM 102

1. Alchohols are classified into two

* 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 atoms containing the hydroxyl group are 3 or 2 it is called a primary alcohol If it is 1 hydrogen atom it is called a secondary alcohol and if there is no hydrogen atoms then it is called a tertiary alcohol.
* Based on the number of hydroxyl groups they possess.If there is one hydroxyl group present in the alcohol structure it is called a monohydric alcohol. If there are two it is called a dihydric alcohol or glycol. If there are three it is called a trihydric alcohol or triol.If there are more than three it is called a polyhydric alcohol or poly.

1. Lower alcohols with up to three carbon atoms in their molecules are soluble in water because they can form hydrogen bon with water molecules.All Monohydric alcohols are soluble in Organic solvents.
2. Industrial Manufacture of Ethanol

Starch containing foods can be made to yield ethanol through a biological process called fermentation

I.the ethanol containing material is wrmed with malt to 60.C for a period of time.This converts it into maltose by the enzyme diastose contained in the malt.

2(C6H10O5)n +nH20 Diatose nC6H12011

Carbohydrate 60.C Maltose

II.The maltose is broken down into glucose when yeast is added which contains enzyme maltose at 15.C

C6H22O11 + H20 Maltase 2C6H12O6

Maltose 16C Glucose

III.The glucose at 15.C is converted into alcohol by enzyme zymase contained in yeast.

C6H12O6 Zymase 2CH3H2OH + 2CO2

Glucose 15C Ethanol Carbon dioxide



