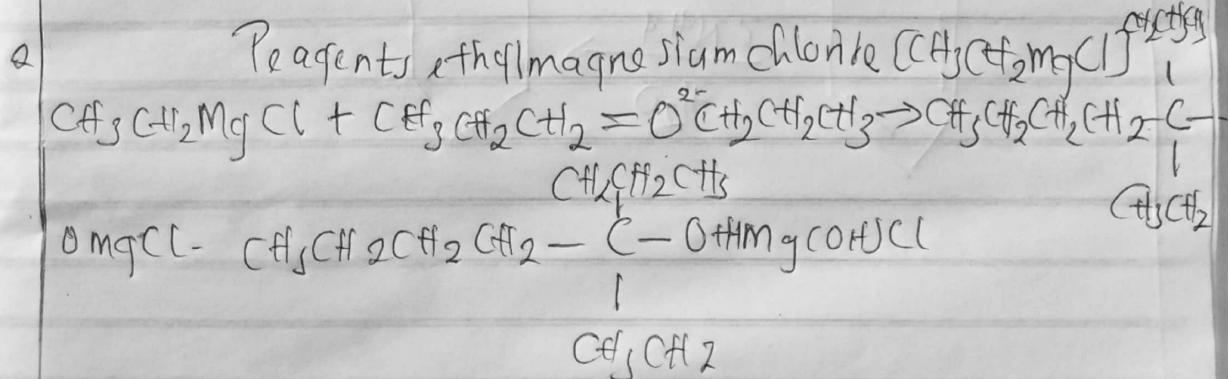


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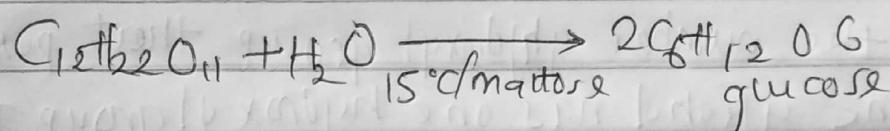
- (a) Based on the number of hydrogen atoms attached to the carbon atom containing the hydroxyl group. If the number of hydrogen atoms attached to the carbon leaving the hydroxyl group are three or four it is called primary alcohol e.g. methanol and ethanol. If it is one hydrogen atom, it is called secondary alcohol e.g. propan-2-ol and if the hydrogen atom is attached to the carbon atom bearing the hydroxyl group it is called tertiary alcohol e.g. 2-methylpropan-2-ol.
- (b) Based on the number of hydroxyl groups that possess monohydric alcohol has one hydroxyl group present in the alcohol structure e.g. propanol. Dihydric alcohol or glycerol have two hydroxyl groups present in the alcohol structure e.g. ethene-1,2-diol while trihydric alcohol or triol have three hydroxyl groups present in the structure of the alcohol e.g. propene-1,2,3-triol. Polychydric alcohols of polyols have more than three hydroxyl groups e.g. heptane-2,3,4,5,6-pentaol.



3 Carbohydrates such as starch are major group of natural compound and can be made to yield ethanol by the biological process of fermenting the biological catalyst, enzymes found in yeast break down the carbohydrate molecules into ethanol to give a yield of 95%. On warming the starch containing material such as cereals with malt at 60°C for a setting period of time are converted into maltose by the enzyme diastase carbon in the malt.

$$2(\text{C}_6\text{H}_{10}\text{O}_5)_n + n\text{H}_2\text{O} \xrightarrow[\text{diastase}]{60^{\circ}\text{C}} n\text{C}_{12}\text{H}_{22}\text{O}_{11} \quad \text{maltose}$$

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



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

