

CHM102 Assignment

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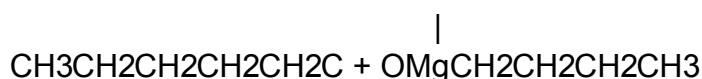
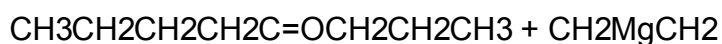
COLLEGE: MHS

COURSE: CHM102

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- This is based on the number of hydrogen atoms attached to the carbon atom containing the hydroxyl group. If the numbers of hydrogen atoms attached to the carbon atom bearing the hydroxyl group are three or two, it is called a primary alcohol (1°). If it is one hydrogen atom, it is called secondary alcohol (2°) and if no hydrogen atom is attached to the carbon bearing the hydroxyl group, it is called a tertiary alcohol (3°). An example is: CH_3OH Methanol (1°)
- This is based on the number of hydroxyl groups they possess. Monohydric alcohols have one hydroxyl group present in the alcohol structure. Dihydric alcohols are also called Glycols which have two hydroxyl groups present in the alcohol structure while trihydric alcohols or triols have three hydroxyl groups present in the structure of the alcohol. Polyhydric alcohols or polyols have more than three hydroxyl groups. An example is $\text{CH}_3\text{CH}_2\text{CHOH}$ propanol (Monohydric alcohol).

2

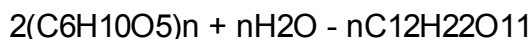


CH_2MgCH_3 as Grignard reagent

3

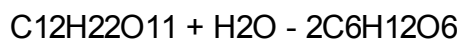
Production Of Ethanol

Carbohydrates such as starch are major group of natural compounds that can be made to yield ethanol by the biological process of fermentation. The biological catalysts, enzymes found in yeast break down the carbohydrate molecules into ethanol to give a yield of 95%. The starch containing materials include molasses, potatoes, cereals, rice and on warming with malt to 60% for specific period of time are converted into maltose by the enzyme diastase contained in the malt.



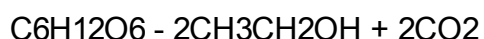
Carbohydrate

Maltose



Maltose

Glucose



Glucose

Ethanol

4

Reduction of methanal (formaldehyde) gives methanol. **Reduction** of other aldehydes gives primary alcohols. **Reduction** of ketones gives secondary alcohols. The acidic work-up converts

an intermediate metal alkoxide salt into the desired alcohol via a simple acid base reaction.



LiAlH₄

or

MaBH₄

