

CHEMISTRY 102

Pentolasew.

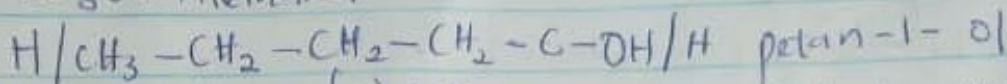
Discuss the two major classification of alcohols. Give examples each for each class.

Ans:

1. Based on the number of hydrogen atoms attached to the carbon atom containing the hydroxyl group; we have:

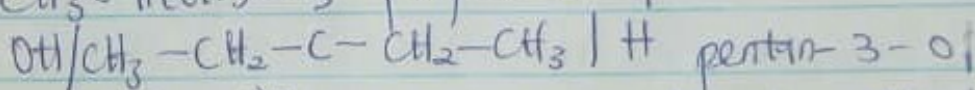
- Primary alcohol (1°): This occurs if the numbers of hydrogen atoms attached to the carbon atom bearing the hydroxyl group are two or three.

eg:  $\text{CH}_3\text{OH}$  Methanol



- Secondary alcohol (2°): If the numbers of hydrogen atoms attached to the carbon atom is just one, it is called a secondary alcohol

eg:  $\text{CH}_3\text{C}(\text{OH})\text{CH}_3$  propan-2-ol



- Tertiary alcohol (3°): If no hydrogen atom is attached to the carbon atom bearing the hydroxyl group, it is called a tertiary alcohol (3°) eg: Methyl propan-2-ol, methyl-3-pentanol

Based on the number of hydroxyl groups they possess,

- Monohydric alcohols have one hydroxyl group present in the alcohol structure.

E.g: Propanol, methyl alcohol

- Dihydric alcohols (Glycols): They have two hydroxyl groups present in the alcohol structure.

E.g: Ethane-1,2-diol, Hexane-2,4-diol.

- Trihydric alcohols (Triols): They have three hydroxyl groups

E.g: Propane-1,2,3-triol,

- Polyhydric alcohols: They have more than three hydroxyl groups

E.g: Pentanol,





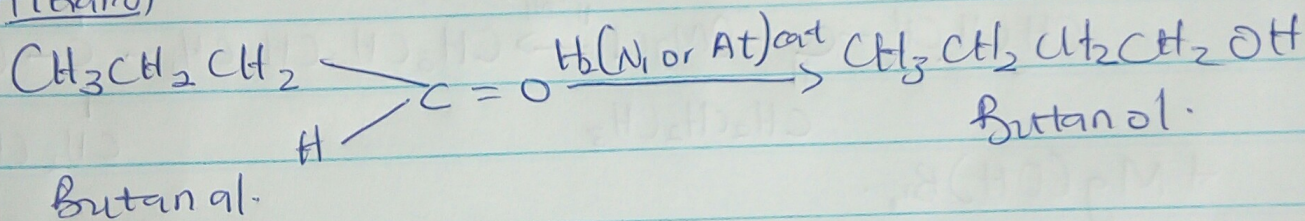


4. Determine the product obtained in the reduction of an aldehyde acid Alkanal. Use a specific example for each and show the equation of reaction.

Solution

Using Mierwein - Ponderoff - reactor

Alkanol



Alkanone

