

Name: Okafor Tochukwu Oluferunmilayo
Department: Mechanical Engineering
Matric No: 19/ENGR 06/043
Course: CHM102

Assignment

- i) CH_3OCH_3 - methoxymethane
- ii) $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$ - ethoxyethane
- iii) $(\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2)_2\text{O}$ - butoxymethane
- iv) $\text{CH}_3\text{CH}_2\text{OCH}_3$ - dimethoxyethane
- v) $\text{CH}_3\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_3$ - ethoxypropane

2) Properties of ethers

i) Physical states

At room temperature they are colorless, neutral liquids with pleasant odours.

ii) Solubility

Ethers are less soluble in water than their corresponding alcohols. They are miscible with most organic solvents.

iii) Density

Most simple ethers are less dense than water. The density increases with relative molecular mass.

iv) Boiling point

Lower molecular mass ethers have a lower boiling point than the corresponding alcohols.

v) Reactivity

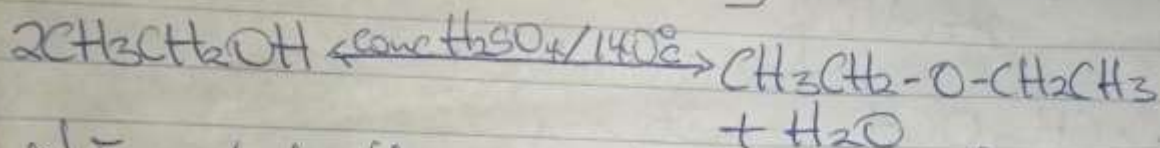
They are inert at moderate temperatures.

3) Preparation of Ethers

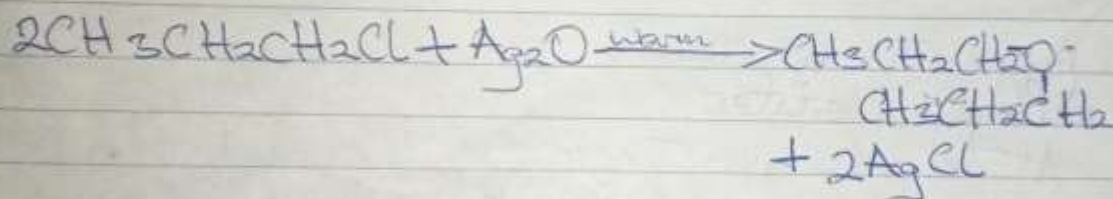
i) Partial dehydration of alcohols

Simple ethers are manufactured from alcohols by catalytic dehydration. The alcohol in excess and concentrated tetraoxosulphate (VI) acid is heated at a carefully maintained

temperature. If excess alcohol is not used, the temperature is as high as $170-180^{\circ}\text{C}$, it would dehydrate and yield an alkene.



ii) From haloalkenes and dry silver(I) oxide
When haloalkenes and dry silver(I) oxide are reacted in a warm condition it produces an ether.



4) Uses of ethylene oxide

- i) It is used in the preparation of plastics, plasticizers and several synthetic textiles.
- ii) It is used as a gaseous sterilizing agent.
- iii) It is used as an intermediate in the hydrolytic manufacture of ethylene glycol.