

NAME: BOLA-MATANMI AJIBOLA HASIAT

DEPARTMENT: MBB3

MATRIC NO: 19/MHSD1/125

COURSE: CHM102

1a CH_3OCH_3 - Methoxymethane

$\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$ - Ethoxyethane

$(\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2)_2\text{O}$ - Butoxymethane

$\text{CH}_3\text{CH}_2\text{OCH}_3$ - Methoxyethane

$\text{CH}_3\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_3$ - Ethoxypropane

2 Properties of Ethers:

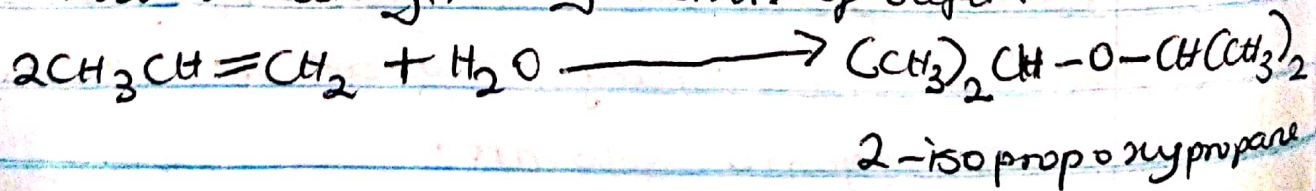
a Physical states: at room temperature, they are colorless, neutral liquids with pleasant odours. The lower aliphatic ethers are highly flammable gases or volatile liquids.

b Solubility: ethers are less soluble in water than corresponding alcohols. Lower molecular weight ethers are fairly soluble in water but as the hydrocarbon content of the molecule increases, there is a rapid decline in solubility. They are miscible with most organic solvents.

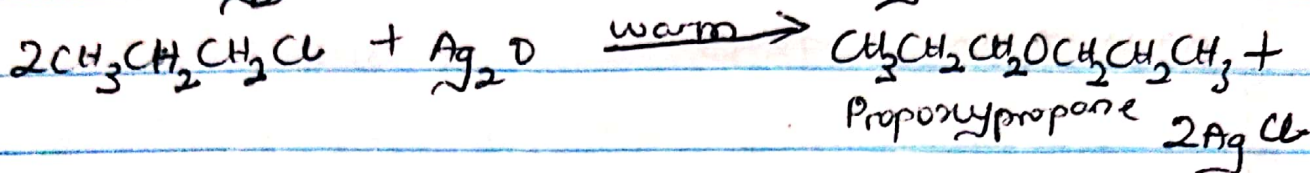
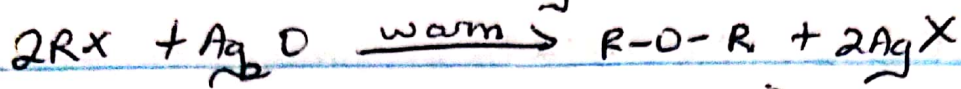
- c Density: most of simple ethers are less denser than water, although the density increases with increasing relative molecular mass and some of the aromatic ethers are in fact denser than water.
- d Boiling point: low molecular mass ethers have a lower boiling point than the corresponding alcohols but ethers containing alkyl radicals larger than four carbon atoms, the reverse is true. The boiling point of ethers tend to approximate those of hydrocarbons of same relative molecular mass from which it can be concluded that the molecules are not associated in the liquid phase as there are no suitably available hydrogens for association through hydrogen bonds.
- e Reactivity: they are inert at moderate temperature which leads to their wide use as reaction media.

3 Methods of Preparing Ethers:

- i Controlled catalytic hydration of olefins



ii From Haloalkanes and dry silver (I) oxide



4 Uses of Ethylene Oxide:

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