

NAME: IDUMUFININE POWEIDE EMMA

DEPARTMENT: NURSING.

MATRIC NUMBER: 19/MHS02/063

COURSE CODE: CHEM 102.

ASSIGNMENT: ETHERS.

a. IUPAC NAMES FOR SOME ORGANIC COMPOUNDS:

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**

b. PROPERTIES OF ETHERS.

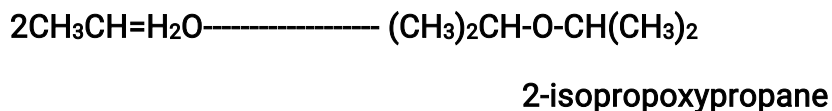
- a. **Physical states:** At room temperature, ethers are colourless, neutral liquids with pleasant odour. The lower aliphatic ethers are highly flammable gases or volatile liquids.
- b. **Solubility:** ethers are less soluble in water than are the corresponding alcohols. Lower molecules weight ethers such as methoxymethane and methoxyethane are fairly soluble in water since the molecule are able to form hydrogen bonds with water molecules but as the hydrocarbon content of the molecules increases, there is a rapid decline in solubility. They are miscible with organic solvents.
- c. **Density:** Most of the simple ethers are less dense than water, although the relative molecular mass and some of the aromatic ethers are in fact denser than water.
- d. **Boiling point:** Low molecular maas ethers have a lower boiling boint than the corresponding alcohols but those 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 relative molecular mass from which it can be concluded that the molecules are not associated in the liquid phase as there are

no suitable available hydrogen for association through hydrogen bonds.

- e. **Reactivity:** Ethers are inert at moderate temperature. Their inertness at moderate temperatures leads to their wide use as reaction media. Simple ethers are not found commonly in nature but the ether linkage is present in such natural products as sugars, starches, and cellulose.

c. **PREPARATION OF ETHERS AND THEIR EQUATION OF REACTION:**

- a. **Controlled catalytic hydration of olefins:**



- b. **From Haloalkanes and dry silver(1)oxide**



Propoxypropane.

USES OF ETHYLENE OXIDE:

- a. Ethylene oxide is used as an intermediate in the hydrolytic manufacture of ethylene glycol.

- c. **b.** Ethylene oxide is used in the preparation of nonionic emulsifying agents, plastics, plasticizers and several synthetic textiles.
- d. Ethylene oxides is used as a gaseous sterilizing agent.