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 DEPT- PHARMACY

 MATRIC NO- 19/MHS11/062

 COURSE - CHEM

1. a CH3OCH3 - Methoxymethane

 b CH3CH30CH2CH3 - Ethyoxoethane

 c (CH3CH2CH2CH2)2O - Butoxymethane

 d CH3CH2OCH3 - Methoxoyethane

 e. CH3CH2CH2OCH2CH3─ Ethoxypropane

 2. Properties of ethers

 a. Reactivity;

 Ethers are inert at moderate temperature, which leads to their wide use as reaction media.

 b. Density

 Simple ethers are less dense than water, although the density increase with increasing relative molecular mass and some of the aromatic ethers are denser than water.

c. Solubility

 Ethers are less soluble in water than the corresponding alcohols. Lower molecular weight ethers such as methoxymethane are fairly soluble in water since the molecule are able to form hydrogen bonds with the water molecules but as the hydrocarbon content of the molecules increases, there is a rapid decline in solubility.

d. Physical States

 At room temperature, ethers are colourless, neutral liquids with pleasant odours. The lower aliphatic ethers are highly flammable gases or volatile liquids

e. Boiling points

 Low molecular mass ethers have a lower boiling point than the corresponding alcohols but those ethers containing alkyl radicals larger than carbon atoms reverse is true.

1. Preparation of ethers.
2. Partial dehydration of alcohols;

 Simple ethers are manufactured from alcohols by catalyst dehydration. The alcohol in excess and concentrated tetraoxosulphate (vi) acid is heated at a carefully maintained temperature of 1400 C. This process is known as continous esterification .

 conc H2S04/ 1400C

 2ROH <-----------------------------------------------🡪 R--- O --- R + H20

Examples

 conc H2S04/ 1400C

2CH3 CH2OH 🡨----------------------------------------------🡪CH3CH2-O-CH3CH2 + H20

1. Controlled Catalytic hydration of olefins

 2CH3CH ====CH2 + H20 -----🡪 (CH3)2 CH—O—CH (CH3)2

 2—isopropoxypropane

4. Uses of ethylene Oxide

 a. it is used as an intermediate in the hydrolytic manufacture of ethylene glycol.

 b. it is used in the production of non- ionic emulsifying agents

 c. it is used as a gaseous sterilization agent.