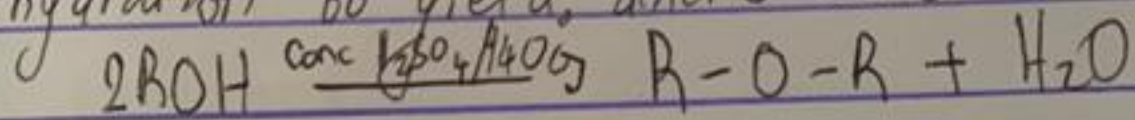


lower boiling point than the corresponding alcohols but those ethers containing alkyl radicals larger than four carbon atoms, the reverse is true.

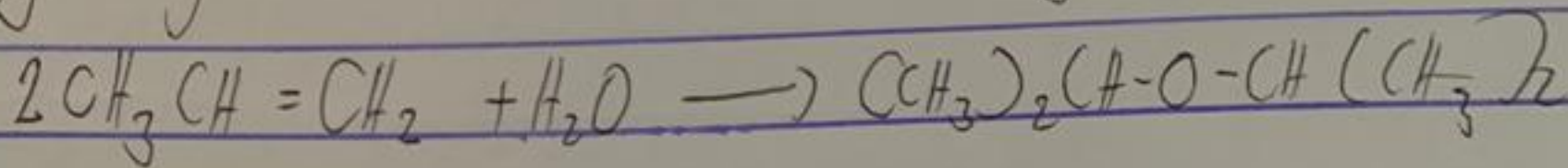
• Reactivity: ethers are inert at modern temperature.

3) Methods of manufacture of ethers

a) Partial dehydration of alcohols: Simple ethers are manufactured from alcohol by catalytic dehydration. Alcohol in excess and concentrated tetraoxo sulphate (V_2O_5) acid is heated at a carefully maintained temperature of 140°C . This process is known as continuous etherification. If excess alcohol is not used, the temperature is as high as $170^\circ\text{--}180^\circ\text{C}$, further dehydration to yield alkene occurs.



b) Controlled catalytic hydration of Olefins: The controlled catalytic hydration of olefins will yield ethers.



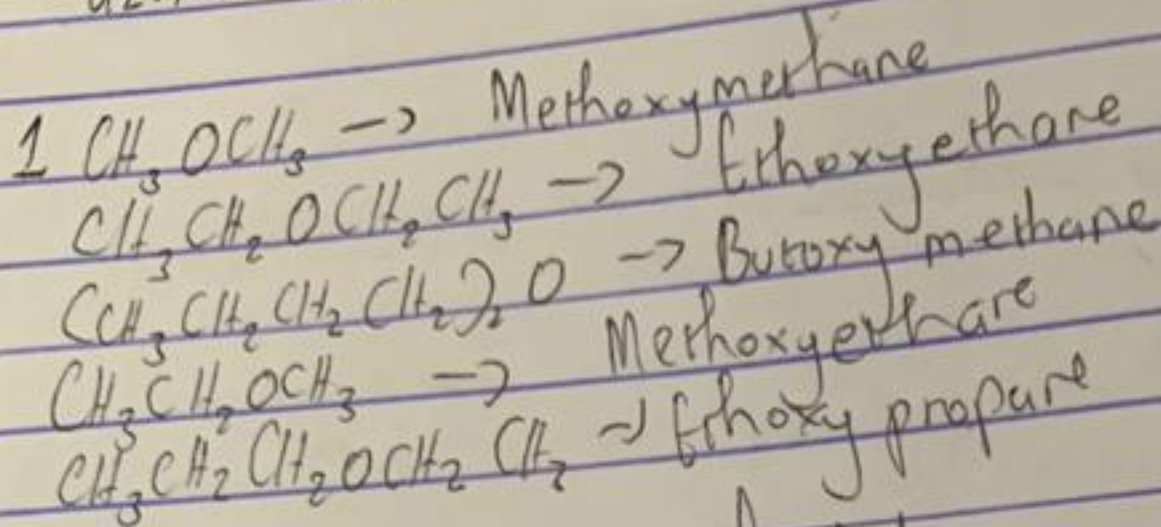
4) Uses of ethylene oxide

- It is used as a gaseous sterilizing agent
- It is used as an intermediate in the hydrolytic manufacture of ethylene glycol

• It is used in the preparation of nonionic emulsifiers, agents, plants, plasticizers and several synthetic textiles

CHEMISTRY Assignment 2

UZOMA Kaosisochukwu Chimaelo



2 General properties of Ethers

Physical states: At room temperature, ethers are colourless, neutral liquids with pleasant odours. The lower aliphatic ethers are highly flammable gases.

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

Density: Most of the simple ethers are less dense than water. The density increases with increasing RMM and some aromatic ethers are denser than water.

Boiling point: Low molecular mass ethers have a