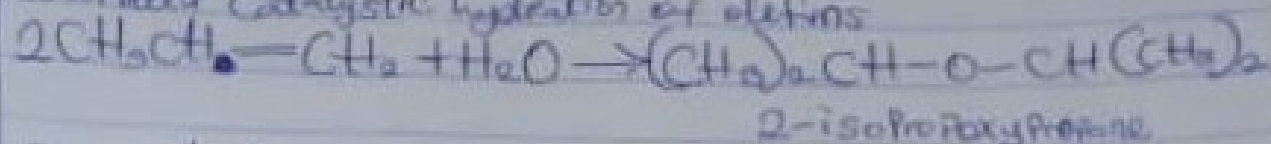
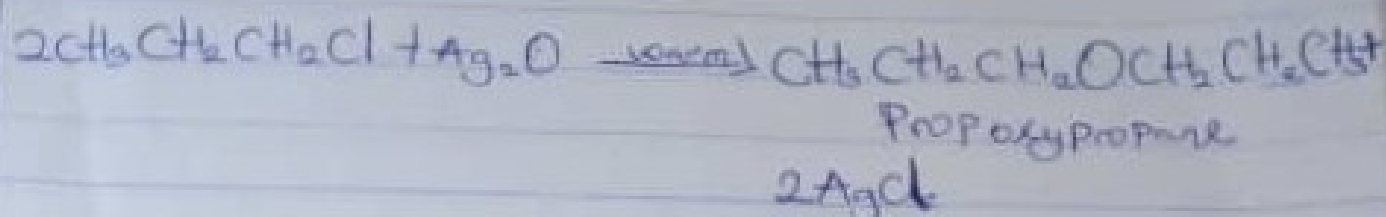


Preparation of ethers

Controlled catalytic hydration of alkenes



from haloalkane and dry silver oxide



Uses of ethylene oxide

1. Ethylene oxide is used as a gaseous sterilizing agent.
2. Ethylene oxide is used as an intermediate in the hydrolytic manufacture of ethylene glycol.
3. Ethylene oxide is used in the preparation of nonionic emulsifying agents, plastic, plasticizers and several synthetic textiles.

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Chem 102 Assignment

- 1) CH_3OCH_3 — methoxymethane
- 11) $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$ — Ethoxyethane
- 10) $(\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2)_2\text{O}$ — Butoxymethane
- 14) $\text{C}_6\text{H}_5\text{OCH}_3$ — methoxybenzene
- 16) $\text{C}_6\text{H}_5\text{CH}_2\text{OCH}_2\text{CH}_3$ — ethoxybenzene

- 2) Physical states: At room temperature, ethers are colorless neutral liquids with pleasant odors. The lower aliphatic ethers are highly flammable gases or volatile liquids. Solubility: Ethers are less soluble in water than corresponding alcohols. Lower molecular weight ethers such as methoxymethane and methoxyethane are fairly soluble in water since the molecules are able to form hydrogen bond with the water molecules but as the hydrocarbon content of the molecules increases, there is a rapid decline in solubility. They are miscible with most organic solvent. Density: Most of the simple ethers ~~are less~~ are less dense than water, although the density increases with increasing relative molecular mass and some of the aromatic ether are in fact denser than water. Boiling point: Lower molecular mass ethers have a lower boiling point than the corresponding alcohols but those ethers containing alkyl radicals larger than four carbons, the reverse is true. Reactivity: Ethers are inert at moderate temperature. The inertness at moderate temperatures lead to their wide use as reaction media.