

- 1) CH_3OCH_3 — methoxy methane
 $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$ — ethoxy ethane
 $(\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2)_2\text{O}$ — butoxy butane

- $\text{CH}_3\text{CH}_2\text{OCH}_3$ — methoxy ethane
 $\text{CH}_3\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_3$ — ethoxy propane

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

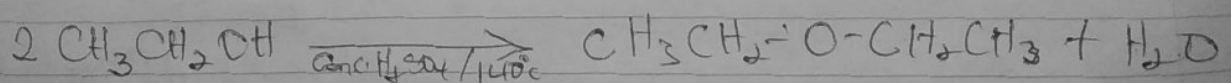
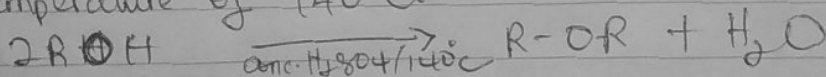
ii) Solubility: Ethers are less soluble in water than the corresponding alcohols. The higher the hydrocarbon content the more rapid the decline in solubility.

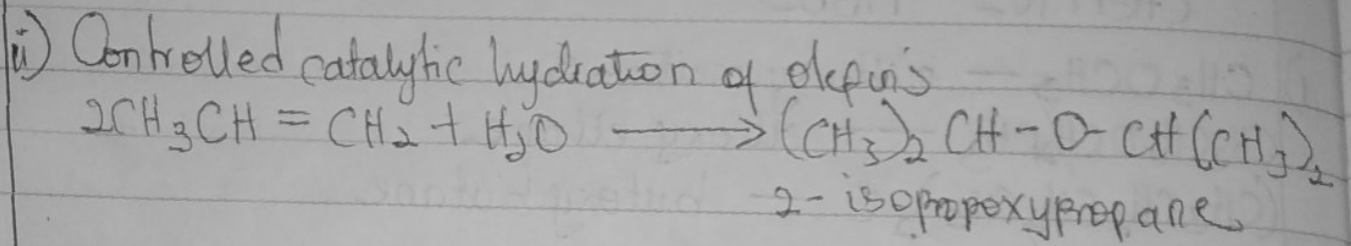
iii) Density: Most of the simple ethers are less dense than water; although the density increases with increasing relative molecular mass.

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

v) Reactivity: Ethers are inert at moderate temperature.

3) i) Partial dehydration of alcohols: The alcohol in excess and conc. H_2SO_4 is heated carefully and maintained temperature of 140°C .





4) i) It is used as an intermediate in hydrolytic manufacture of ethylene glycol.

ii) Ethylene oxide is used in the preparation of nonionic ~~emulsy~~ emulsifying agents, plastics, plasticizers and several synthetic textiles.

iii) Ethylene oxide is used as a gaseous sterilizing agent.