

CHEMISTRY 102 ASSIGNMENT TWO

- 1) a) CH_3OCH_3 - Methoxy methane
- b) $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$ - Ethoxy ethane
- c) $(\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2)_2\text{O}$ - Butoxymethane
- d) $\text{CH}_3\text{CH}_2\text{OCH}_3$ - Methoxy ethane
- e) $\text{CH}_3\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_3$ - Ethoxy propane

2a) At room temperature, ethers are colourless, neutral, with pleasant odours. Lower aliphatic ethers are volatile liquids or highly flammable gases

b) Most simple ethers are less dense than water. Density increases with increasing relative molecular mass. Aromatic ethers are denser than water

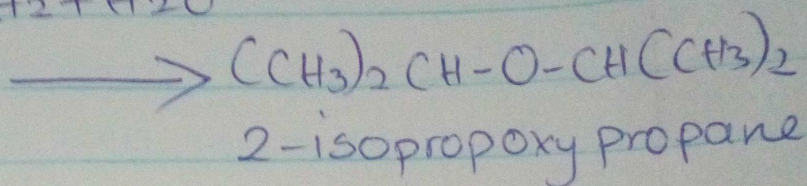
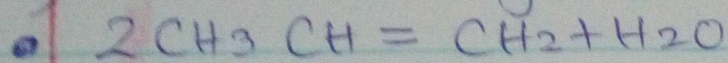
c) As the hydrocarbon content of the molecule increases, there is decrease in solubility. i.e. The higher the ether, the lower the ability to form hydrogen bonds with water. Although they are dissolve in organic solvents

d) The boiling point of ethers tend to approximate those hydrocarbons of same relative molecular mass. Lower molecular mass ethers have low boiling points compared to alcohols, but ethers containing alkyl radicals larger than 4 C-atoms have higher boiling points

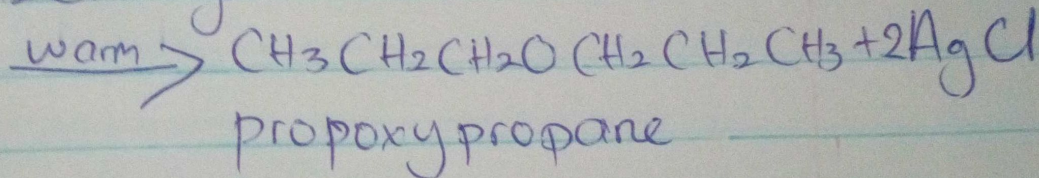
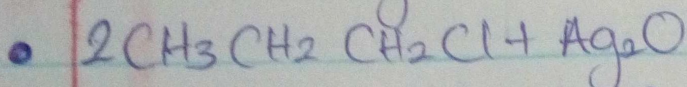
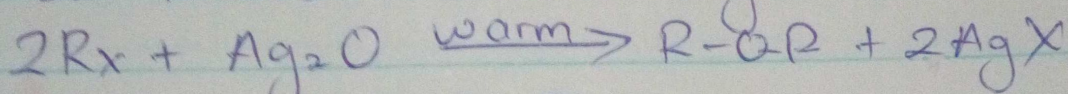
- ② They are unreactive at moderate temperature.
They are usually stored in amber bottles to prevent oxidation.

3. Methods of Preparing Ethers

a) Controlled catalytic reactions of alkenes/alkene



b) From haloalkanes and dry silver oxide



4. Uses of Ethylene Oxide

• It can be used as gaseous sterilizing agent

• It can be used as an intermediate in hydrolytic manufacture of ethylene glycol

• Used in the preparation of nonionic emulsifying agents, plastics, plasticizers, synthetic textiles.