

Name: Essien Blessing Ekeng
Matric: 19/MH511/053
Department: Pharmacy

21/04/2020

Chem 102 Assignment

- a) $\text{CH}_3\text{OCH}_3 \longrightarrow$ Methoxymethane
b) $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3 \longrightarrow$ ethoxyethane
c) $(\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2)_2\text{O} \longrightarrow$ butoxybutane
d) $\text{CH}_3\text{CH}_2\text{OCH}_3 \longrightarrow$ methyl methoxyethane
e) $\text{CH}_3\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_3 \longrightarrow$ ethoxypropane

e) Discuss the Properties of ethers

a) Physical State: Ethers are colourless, neutral liquids at room temperature. The lower aliphatic ethers are volatile liquids or highly flammable gases.

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

c) Solubility: Ethers are less soluble in water than are the corresponding alcohols.

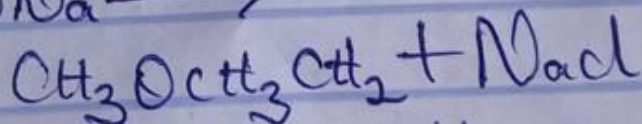
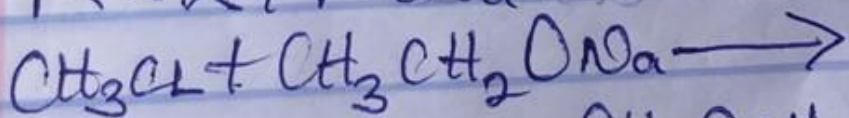
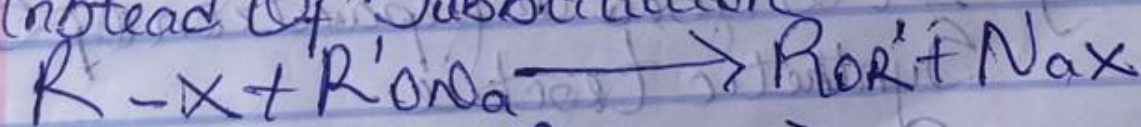
d) Boiling Point: Ethers with low molecular mass have a lower boiling point than

the corresponding alcohols but these ethers containing alkyl radicals larger than four carbon atoms, the reverse is true.

(e). Reactivity - Ethers are inert at moderate temperature.

3a) Williamson Synthesis

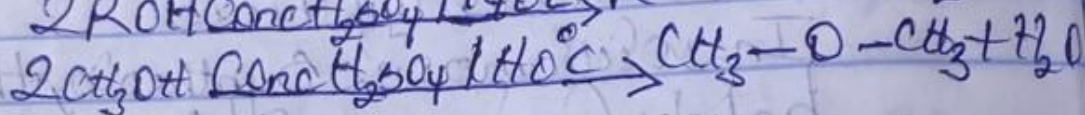
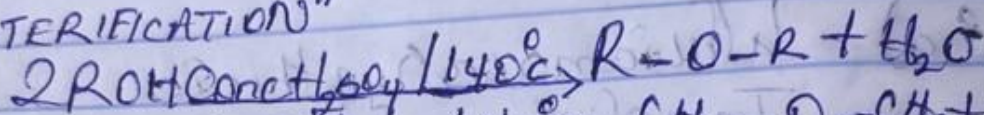
In Williamson's Synthesis, the alkyl halides (primary and secondary) react with sodium alkoxide ($R'O^-Na^+$) or potassium alkoxide ($R'O^-K^+$) to produce ethers. Tertiary alkyl halides are not used in this synthesis because tertiary alkyl halides prefer to undergo elimination instead of substitution.



Methoxyethane

b) Partial Dehydration of Alcohols
 Simple ethers are Manufactured From
 alcohols by Catalytic dehydration.
 The alcohol in excess and concentrated
 tetraoxosulphate.

(vi) acid is heated at a temperature of
 140°C . This process is called "CONTINUOUS
 ESTERIFICATION"



4a) It is used as a gaseous Sterilizing
 agent

b) Ethylene Oxide is used as an Intermed
 Intermediate in the hydrolytic Manufacture
 of ethylene glycol

c) It is used in preparation of Several
 Synthetic textile