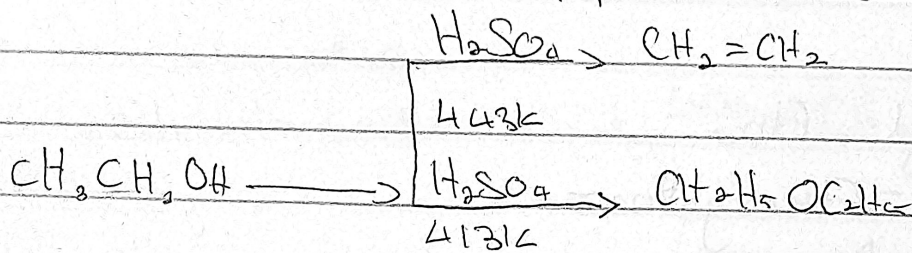
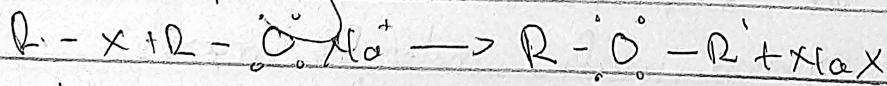


ether where as it yields ethoxyethane at 413K.

This is an ideal method of preparation through primary alcohols.



① Preparation of Ethers by Williamson Synthesis - This is an important method for the preparation of Symmetrical and asymmetrical ethers in laboratories. In this method an alkyl halide is reacted with Sodium alkoxides which leads to the formation of ether. The reaction generally follows the $\text{S}_{\text{N}}2$ mechanism for primary alcohol.



As we know alkoxides are strong bases and they can react with alkyl halide leading to elimination reaction.

④ State 3 uses of ethylene oxide

- Ethylene oxide is used as a gaseous sterilizing agent.

- It is used as a fumigant and as pesticides.

- Ethylene oxide is used as an intermediate in the hydrolytic manufacture of ethylene glycol.

AIKI DAVID JUSTKI

19/EXAC7/CO4

Chem 102 (Ethers)

- ① CH_3OCH_3 - Dimethyl Ether
 $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$ - Ethoxyethane
 $(\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2)_2\text{O}$ - Butoxyethane
 $\text{CH}_3\text{CH}_2\text{OCH}_3$ - Methoxyethane
 $\text{CH}_3\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_3$ - Ethoxypropane.

② Discuss the properties of ethers

(a) Density - Most of the simple ethers are less dense than water although the density increases relative molecular mass.

(b) Reactivity - Ethers are inert/moderately inert.

(c) Physical state - Ethers are less soluble in water than are the corresponding alcohols.

(d) Boiling Point - low molecular mass ethers have a lower boiling point than the corresponding alcohols but those ethers containing alkyl radicals larger than 4 carbon atoms, the reverse is true.

(e) Solubility - Ethers are less soluble in water than are the corresponding alcohols.

③ Preparation of Ethers by Dehydration of Alcohols: In the presence of acids (sulphuric acids) alcohols undergo dehydration to produce alkenes and ethers under different conditions. For example: In the presence of sulphuric acid, dehydration of ethanol at ~~443K~~^{443K} yields