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1.) CH_3OCH_3 – Methoxymethiane
$CH_3CH_2OCH_2CH_3$ – Ethoxyethane
$(CH_3CH_2CH_2CH_2)_2O$ – Butoxybutane
$CH_3CH_2OCH_3$ – Methoxyethane

$CH_3CH_2CH_2OCH_2CH_3$ – Ethoxypropane

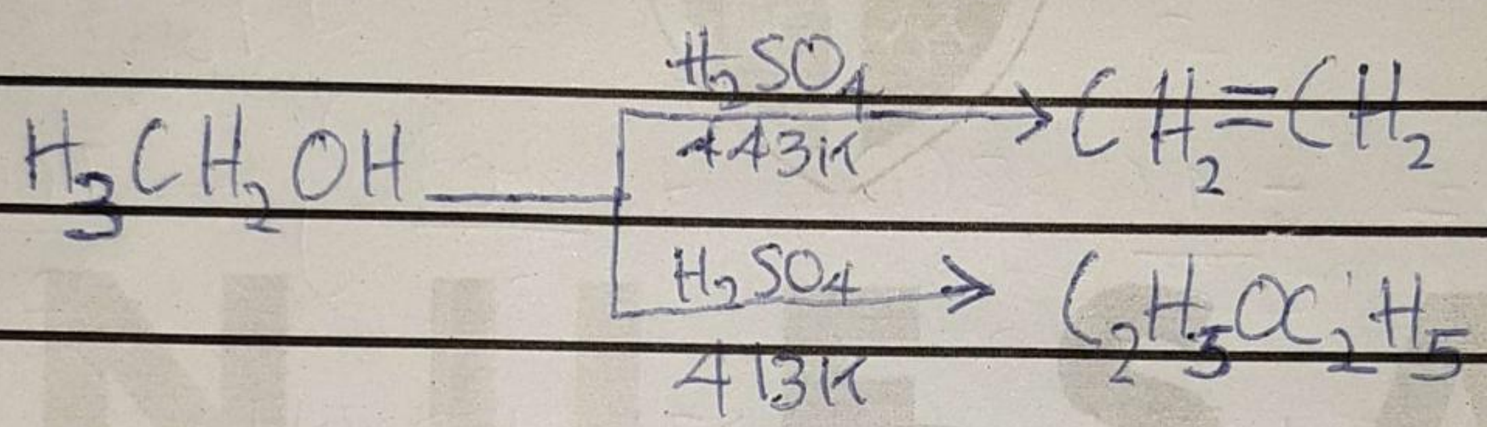
2.) An ether molecule has a net dipole moment due to the polarity of C-O bonds. Ether molecules have no hydrogen atom on the oxygen atom (that is, no OH group). Therefore there is no intermolecular hydrogen bonding between ether molecules, and ethers therefore having quite low boiling points for a given molar mass. Indeed, ethers have boiling points about the same as those of alkanes of comparable molar mass and much lower than those of the corresponding alcohols.

Also, Ether molecules are miscible in water. This is attributed to the fact that like alcohol, the oxygen atom of ether can also form hydrogen bonds with water molecule.

3.) Preparation of Ethers by dehydration of Alcohols.

In the presence of protic acids (sulphuric acid) alcohols undergo dehydration to produce alkenes and ethers under different conditions.

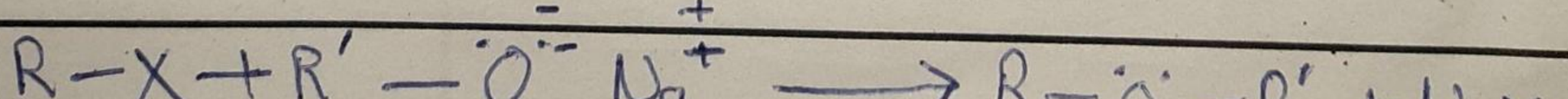
The preparation of ethers by dehydration of alcohol is nucleophilic substitution reaction



The alcohol in the reaction plays two roles ; one acts as a nucleophile while the other molecules acts as a ~~substance~~ substrate either SN1 or SN2 mechanism.

Preparation of Ethers by Williamson Synthesis

It is an important method for the preparation of symetrical and assymetrical ethers in laboratories. In this method an alkyl halide is reacted with sodium alkoxide which leads to the formation of ether. The reaction generally follows SN2 mechanism for primary alcohol.



4.) Uses of ethylene oxide.

(i) It is used in making adhesives

(ii) It is used in production of fumigants

(iii) It is used to make antifreeze.