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Department: M.B.B.S

Course: CHM 102

CH_3OCH_3 — Dimethyl Ether

$\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$ — Methoxyethane Ethoxyethane

$\text{CH}_3\text{CH}_2(\text{CH}_2\text{CH}_2)_2\text{O}$ — Butoxymethane

$\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$ — methoxyethane

$\text{CH}_3\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{CH}_3$ — Ethoxypentane

Physical

An ether molecule has a net dipole moment. ~~we go~~

The boiling point is comparable to the alkanes

The miscibility of ethers with water resembles that of alcohols

Ether molecules are miscible in water

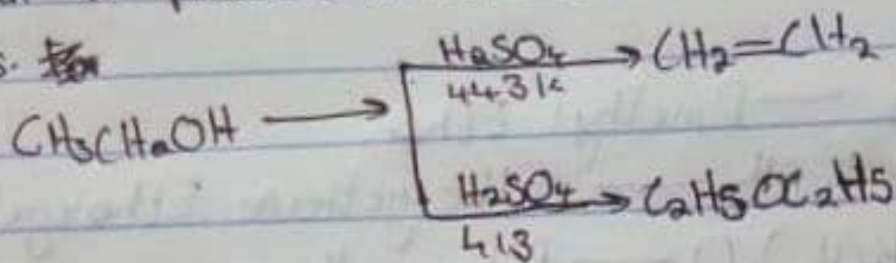
Chemical

Cleavage of ~~ether~~ ^{C-O Bond}: - Ethers are generally very unreactive in nature. When an excess of hydrogen halide is added to the ether, cleavage of C-O bond takes place leading to the formation of alkyl halides. The order of reactivity is given as $\text{HI} > \text{HBr} > \text{HCl}$

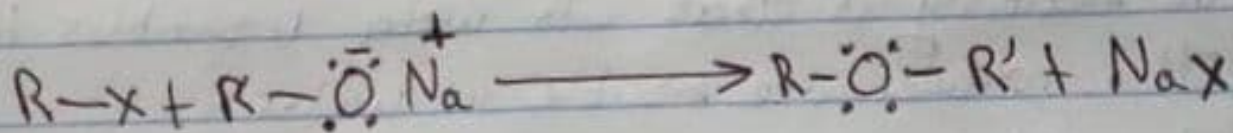
Electrophilic substitution: - The alkoxy group in ether activates the aromatic ring at ortho and para positions for electrophilic substitution reactions are halogenation, Friedel Crafts reaction.

Halogenation of Ethers: - Aromatic ethers undergo halogenation for example, bromination, upon the addition halogen in the presence or absence of a catalyst

1) Preparation of ~~the~~ Ethers by Dehydration of Alcohols :-
In the presence of protic acids (sulphuric acid), alcohols undergo a dehydration to produce alkenes and ~~the~~ ethers under different conditions. ~~for~~



2) Preparation of ethers by Williamson Synthesis: Williamson Synthesis is an important method for the preparation of symmetrical ~~ethers in laboratories~~ and asymmetrical 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 the $\text{S}_{\text{N}}2$ mechanism for primary alcohol.



It is used to make adhesives
detergents
polyester