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matric no: 19/MTS01/026

Chemistry - Assignment (Ether)

- CH_3OCH_3 : methoxymethane
- $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$: Ethoxyethane
- $(\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2)_2\text{O}$: ~~permethoxy~~ Butoxymethane
- $\text{CH}_3\text{CH}_2\text{OCH}_3$: methoxyethane
- $\text{CH}_3\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_3$: Ethoxypropane

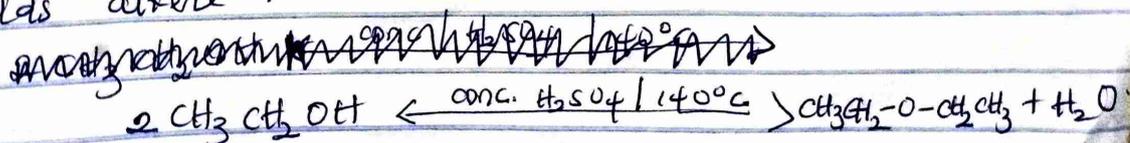
2) Properties of Ether

- An ether molecules has a net dipole moment due to the polarity of C-O bonds.
- the boiling point of ether is comparable to the alkanes but much lower than that of alcohols of comparable molecular mass despite the polarity of the C-O bonds.
- The miscibility of ether with water resembles those of alcohols - they are less soluble in water.
- they are less dense ^{than} water, although the density ~~making ester with acid anhydride~~ increases with increasing relative molecular mass.
- they are colourless neutral liquid gas with pleasant odours and are inert at moderate temperature.

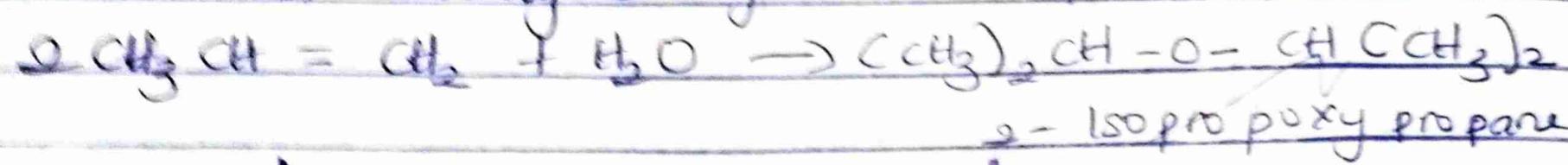
3) METHODS OF PREPARING ETHERS

a) Partial dehydration of alcohols

the alcohol in excess and conc. tetra oxo sulphate (vi) acid is heated at a carefully maintained temp. @ 140°C . This process is known as continuous etherification. If excess alcohol is not used, the temperature is as high as $170 - 180^\circ\text{C}$ further dehydration yields alkene.



e) controlled catalytic hydration of olefins -



Uses of Ethylene oxide -

- 1) They are used as an intermediate in hydrolytic manufacture of ethylene glycol.
- 2) Ethylene oxide is used in the preparation of nonionic emulsifying agents, elastics, plastomers and several synthetic textiles.
- 3) Ethylene oxide is used as a gaseous ~~sterilizing~~ ^{sterilizing} agent.