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1. CH_3OCH_3 → Methoxymethane
   $CH_3CH_2OCH_2CH_3$ → Ethoxyethane
   $(CH_3CH_2CH_2CH_2)_2O$ → Butoxymethane
   $CH_3CH_2OCH_3$ → Methoxyethane
   $CH_3CH_2CH_2OCH_2CH_3$ → Ethoxypropane

2. Properties of Ethers

* Density → Most of the simple ethers are less dense than water, although the density increases with increasing relative molecular mass and some of the aromatic ethers are, in fact denser than water
* Solubility → Ethers are less soluble in water than are the corresponding alcohols. Lower ~~wet~~ molecular weight ethers such as methoxymethane and methoxyethane are fairly soluble in water since the molecules are able to form hydrogen bonds with the water molecules but as the hydrogen content of the molecules increases, there is a rapid decline in solubility. They are miscible with most organic solvents.
* Physical states: At room temperature, ethers are colourless, neutral liquids with pleasant ~~colours~~ odours - the lower aliphatic ethers are highly flammable gases or volatile liquids
* Cleavage of 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 HI > HBr > HCl

$$R-O-R + HX \rightarrow RX + R-OH$$

3) Preparation of Ethers

* 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 carefully maintained temperature of 140°C. This process is known as continuous etherification. If excess alcohol is not used, the temperature is as high as 170 - 180°C, further dehydration to yield alkene occurs $2ROH \xrightarrow{\text{conc. } H_2SO_4/140^\circ C} R-O-R + H_2O$

* Ethers can be prepared using controlled catalytic hydration of olefins

$2CH_3CH=CH_2 + H_2O \rightarrow (CH_3)_2CH-O-CH(CH_3)_2$

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

Ethylene oxide is used in the preparation of nonionic emulsifying agents, plastics, plasticizers and several synthetic textiles

Ethylene oxide is used as a gaseous sterilizing agent.