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1  $\text{CH}_3\text{OCH}_3$  - Methoxy methane

$\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$  - Ethoxy ethane

$(\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2)_2\text{O}$  - Butoxy methane

$\text{CH}_3\text{CH}_2\text{OCH}_3$  - Methoxy ethane

$\text{CH}_3\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_3$  - Ethoxy propane

2 Physical states

At room temperature, ethers are colourless, neutral liquids with pleasant odours, the lower aliphatic ethers are highly flammable gases or volatile liquids

~~Solubility~~

Solubility

Ethers are less soluble in water than their corresponding alcohols

## A Density

Most of the simple ethers are less ~~than~~ dense than water, although density increases with increasing relative molecular mass and some of the aromatic ethers are in fact denser than water.

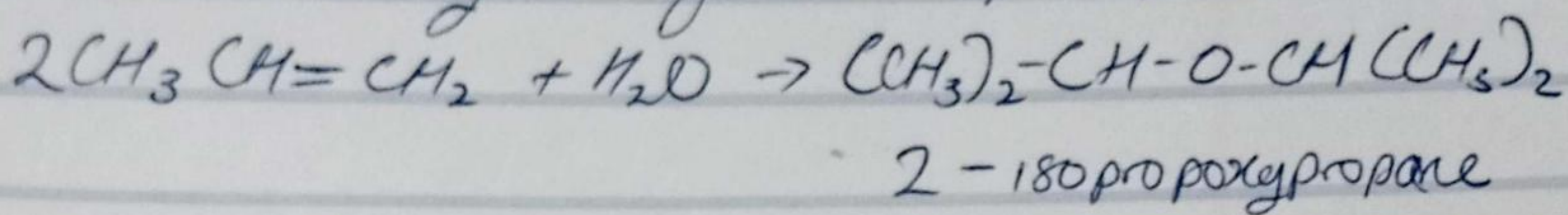
## Boiling point

Low molecular mass ethers have a lower boiling point than the corresponding alcohol but those ethers containing alkyl radicals larger than four carbon atoms, the reverse is true.

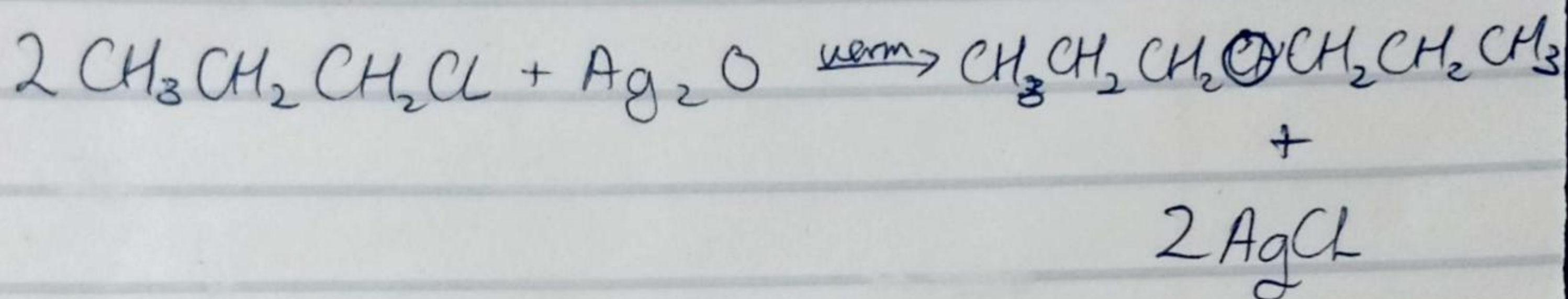
## Reactivity:

Ethers are inert at moderate temperatures. Their inertness at moderate temperatures leads to their wide use as reaction media.

3a Controlled catalytic hydration of olefins



b From Haloalkanes and dry silver (I) oxide



4a Ethylene oxide is used in the preparation of nonionic emulsifying agents, plastics, and several synthetic textiles

b Ethylene oxide is used as a gaseous sterilizing agent

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