

CHM 102

1. a) CH_3OCH_3 - ~~methyl methanone~~
- b) $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$ - ethyl ethanone
- c) $(\text{CH}_3\text{CH}_2\text{CH}_2)_2\text{O}$ - Octanol
- d) $\text{CH}_3\text{CH}_2\text{OCH}_3$ - methyl ethanone
- e) $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$ - ethyl propanone

1. a) CH_3OCH_3 - methoxy methane
- b) $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$ - ethoxy ethane
- c) $(\text{CH}_3\text{CH}_2\text{CH}_2)_2\text{O}$
- d) $\text{CH}_3\text{CH}_2\text{OCH}_3$ - methoxy ethane
- e) $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$ - ethoxy propane

2. Properties of ethers

- The boiling point of ethers is lower than that of their alkanols of comparable molecular mass.
- Ethers are miscible in water.
- Ethers are polar in nature.
- The lower ethers are highly volatile and flammable than the higher ones.

a) Williamson method! Here an alkoxide ion reacts with alkyl halide. This is also called substitution reaction.



b) Dehydration of alcohols: at 110° to 130°C an $\text{Sn}2$ reaction of the alcohol conjugate acid leads to an ether product. At higher temperatures (or 150°C) an $\text{E}2$ elimination takes place.
 $\text{C}_2\text{H}_5\text{CH}_2-\text{OH} + \text{H}_2\text{SO}_4 \xrightarrow{130^\circ\text{C}} \text{C}_2\text{H}_5\text{CH}_2\text{OCH}_2\text{C}_2\text{H}_5 + \text{H}_2\text{O}$

- a) To make antifreeze
- b) To make adhesives
- c) To make detergents
- d) To make polyester
- e) To make fabrics
- f) To make fungicides and pesticides
- g) To make sterilization agents for medical equipments.