

CHEMISTRY ASSIGNMENT 2

1	Chemical Formula	Iupac Names
a.	CH_3OCH_3	Methoxy methane
b.	$\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$	Ethoxy ethane
c.	$(\text{CH}_2\text{CH}_2\text{CH}_2\text{O})_n$	Butoxy methane
d.	$\text{CH}_3\text{CH}_2\text{OCH}_3$	Methoxy ethane
e.	$\text{CH}_3\text{CH}_2\text{CH}_2\text{OCC}_2\text{H}_5$	Ethoxy propane

a) From Haloalkanes and dry silver (I) oxide:
 $2\text{RX} + \text{Ag}_2\text{O} \xrightarrow{\text{Warm}} \text{R-O-R} + 2\text{AgX}$
 $2\text{C}_2\text{H}_5\text{CH}_2\text{CH}_2\text{Cl} + \text{Ag}_2\text{O} \xrightarrow{\text{Warm}}$
 $\text{C}_2\text{H}_5\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{C}_2\text{H}_5 + 2\text{AgCl}$
 Propoxypropane.

2a. Properties of Ethers:

a. Physical States: At room temperature ethers are colourless, neutral liquids with pleasant odours.

b. Density: most simple ethers are less dense than water, some aromatic ethers are denser than water.

c. Reactivity: They are inert at moderate temperature.

d. Solubility: Ethers are less soluble in water than are the corresponding alcohols.

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

b. 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 temperature of 140°C .
 $2\text{ROH} \xrightarrow[140^\circ\text{C}]{\text{conc. H}_2\text{SO}_4} \text{R-O-R} + \text{H}_2\text{O}$
 $2\text{C}_2\text{H}_5\text{CH}_2\text{OH} \xrightarrow{\text{conc. H}_2\text{SO}_4/140^\circ\text{C}}$
 $\text{C}_2\text{H}_5\text{CH}_2\text{-O-CH}_2\text{C}_2\text{H}_5 + \text{H}_2\text{O}$

4. Uses of ethylene oxide

a. It is used as a gaseous sterilizing agent.

b. It is used in the preparation of monomeric emulsifying agents, plastics, plasticizers and several synthetic textiles.

c. It is used as an intermediate in the hydrolytic manufacture of ethylene glycol.

3. Preparation of Ethers: