**ONUORAH ADAMMA JANET**

**19/MHSO1/351**

1. **i CH3OCH3----Methoxymethane**

**ii CH3CH2OCH2CH3-----Ethoxyethane**

**iii (CH3CH2CH2CH2)2O--------Butoxymethane**

**iv CH3CH2OCH3------Methoxyethane**

**v CH3CH2CH2OCH2CH3-----Ethoxypropane**

1. **-Solubility: Ethers are less soluble in water (do not form hydrogen bond with water)than corresponding alcohol. Lower molecular weight ethers such as methoxymethane(CH3OCH3) and methoxyethane (CH3CH2OCH3) are fairly soluble in water since the molecules are able to form hydrogen bond with water molecules but as the hydrogen content increases, there is a decline in solubility. They are miscible wth most organic solvents.**

**-Physical states: At room temperature, ethers are colorless, neutral liquids with pleasant odours. The lower aliphatic ethers are highly flammable gases or volatile liquids.**

**-Density: Most of the simple ethers are less dense than water, although the density increase with increasing relative molecular mass and some of the aromatic ethers are in fact denser than water.**

**-Boiling point: The boiling point of ethers tend to approximate those of hydrocarbons of same relative molecular mass from which it can be concluded that the molecules are not associated in liquid phase as there are no suitable available hydrogen for association though hydrogen bond.**

**-Reactivity: Ethers are inert at moderate temperature which lead to their wide use as reaction media.**

1. **From Haloalkanes and dry silver (1)oxide: When haloalkane is added to dry silver I oxide it produces an ether and silver halide.**

 **Warm**

 **2RX + Ag2O -------------> R-O-R + AgX**

 **( Haloalkane) (silver I oxide) (Ether) ( silver halide)**

**Example**

 **warm**

**2CH3CH2CH2Cl +Ag2O--------------> CH3CH2CH2OCH2CH2CH3 + AgCl**

**Partial dehydration of alcohols: simple ether are manufactured from alcohols by catalytic dehydration. Alcohol in excess and concentrated tetreoxosulphate(vi) acid is heated ata carefeully maintained temperature of 140\*C this process is known as Etherification. Where there is no excess H2SO4 then the temperature should be between 170-1808C. PLEASE \* REPRESENT DEGREES.**

 **Concentrated H2SO4/140\*C.**

 **2ROH <----------------------------------------- > R-O-R + H2O**

 **(alcohol) ( Ether) (water)**

**Example:**

 **Conc.H2SO4/140\*C**

**2CH3CH2OH <------------------------------> CH3CH2OCH2CH3 + H2O**

1. **Uses of ethylene oxide:**

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

**Ethylene oxide is used as a gaseous sterilizing agent.**

**Ethylene oxide is used in the preparation of nonionic emulsifying agent, plastic, plasticizers and several synthetic textiles.**