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DEPARTMENT: Nursing.

COURSE: Chemistry 102.

MATRIC NUMBER: 19/MHS02/075.

1. Give the iupac names of the following organic compounds.

a)HCOOH-Methanoic.

b)HOOCCH2CH2CH2COOH-Pentan-1,5-dioc

c)CH3C(H2)4COOH-Hexanoic acid

d)CH3CH=CHCH2CH2COOH-Hex-4-eneoic acid

e)HO2C-CO2H-Ethandioic acid.

1. Properties of Ethers
2. At room temperature ethers are colorless, neutral liquids with pleasant odors.
3. The lower aliphatic ethers are highly flammable gases or volatile liquids.
4. Ethers are less soluble in water than are the corresponding alcohol.
5. Low molecular mass ethers have a lower boiling point than the corresponding alcohols but those ethers containing alkyl radicals larger than four carbons atoms, the reverse is true.
6. Ethers are inert at moderate temperature.
7. Give two methods of preparing ethers and show equations of reaction.
8. Partial dehydration of alcohol.

Simple ethers are manufactured from alcohols by catalytic dehydration. The alcohol in excess and concentrated tetraoxosulphate (iv) acid is heated at a carefully maintained temperature of 140 ͦ.this process is known as continuous etherification. If excess alcohol is not used , the temperature is as high as 170-180c further dehydration to yield alkene occurs.

2ROH conc. H2SO4/140Cr-o-r + H2O

EXAMPLE

Controlled catalytic hydration of olefins.

2CH3CH=CH2 + H2O (CH3)2CH-O-CH(CH3)2

2-Isopropoxypropane.

From halo alkanes and dry silver(I)

2RX + Ag2O warm R-O-R + 2AgX

2CH3CH2CH2Cl + Ag2O warm CH3CH2CH2OCH2CH2CH3 + 2AgClpropoxypropane

1. State three uses of ethylene oxide .
2. It is used as an intermediate in the hydrolytic manufacture of ethylene glycol.
3. It is used in the preparation of nonionic emulsifying agents, plastics, plasticizers and several synthetic textiles.
4. It is used as a gaseous sterilizing agent.