

Alkenes – AS 2022 Chemistry P2

1. June/2022/Paper_7404/2/No.3

0 3

This question is about isomers.

Hex-2-ene has the molecular formula C_6H_{12}

0 3 . 1

Draw the displayed formula of a **position** isomer of hex-2-ene that exists as *E* and *Z* isomers.

[1 mark]

0 3 . 2

Draw the displayed formula of a **chain** isomer of hex-2-ene that does **not** exist as *E* and *Z* isomers.

[1 mark]

Butanal has the molecular formula C_4H_8O

0 3 . 3

Draw the skeletal formula of a **functional group** isomer of butanal that has an absorption in the range $1680-1750\text{ cm}^{-1}$ in its infrared spectrum.

[1 mark]

0 3 . 4

Draw the skeletal formula of a structural isomer of butanal that has an absorption in the range 3230–3550 cm^{-1} in its infrared spectrum.

[1 mark]

0 3 . 5

Several saturated halogenoalkanes contain 17.8% carbon, 3.0% hydrogen and 79.2% bromine by mass.

Calculate the empirical formula of these compounds.

Give the IUPAC names of **two** saturated halogenoalkanes that have this empirical formula.

[4 marks]

Empirical formula _____

Names of halogenoalkanes

1 _____

2 _____

2. June/2022/Paper_7404/2/No.10

Which statement about poly(ethene) is correct?

[1 mark]

A It has a lower relative molecular mass than ethene.

B It has a lower density than ethene at standard temperature and pressure.

C It has a higher melting point than ethene.

D It decolourises bromine water.

3. June/2022/Paper_7404/2/No.11

A polymer is formed from the monomer $\text{CH}_2=\text{CHCN}$ Which statement is **not** correct?

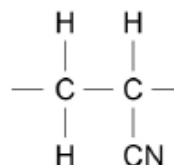
[1 mark]

A The monomer is propanenitrile.

B The monomer is unsaturated.

C The polymer is an addition polymer.

D The polymer has the repeating unit



4. June/2022/Paper_7404/2/No.12

Which alcohol when dehydrated forms a mixture of alkenes?

[1 mark]

A propan-1-ol

B propan-2-ol

C pentan-1-ol

D pentan-2-ol