

AQA – Alkenes – AS Chemistry P2**1. June/ 2020/Paper_2/No.6**

0 6

This question is about poly(chloroethene), commonly known as PVC.

0 6 . 1

Give an equation, showing structural formulas, for the conversion of chloroethene into poly(chloroethene).

[3 marks]

0 6 . 2

State what you would observe if bromine water was added to poly(chloroethene). Explain this observation.

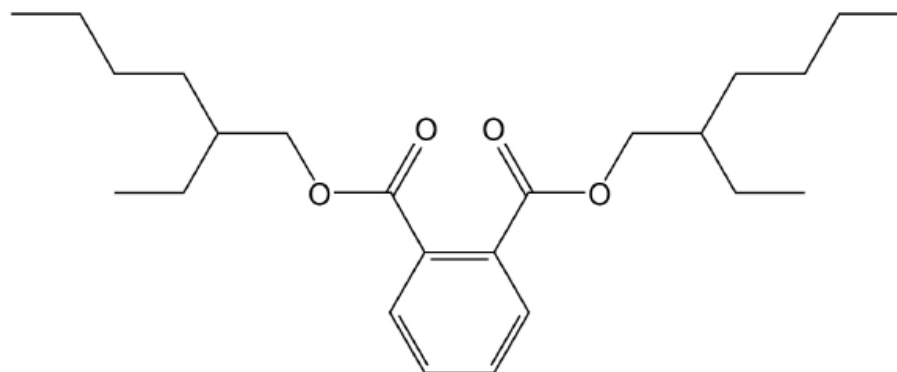
[2 marks]

Observation _____

Explanation _____

0 6 . 3

Plasticisers are often added during the manufacture of PVC. The structure of the plasticiser DEHP is shown.



Deduce the molecular formula of DEHP and state why a plasticiser is added to PVC.

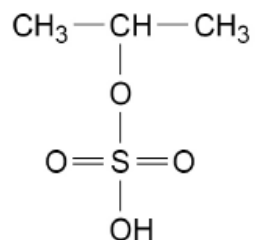
[2 marks]

Molecular formula _____

Why a plasticiser is added _____

2. June/ 2019/Paper_2/No.6

0 6

Propene reacts with concentrated sulfuric acid to form two isomers, **E** and **F**.The structure of **E** is shown.

0 6 . 1

Name and outline the mechanism for the formation of **E** in this reaction.**[5 marks]**

Name of mechanism _____

Mechanism

0 6 . 2 Draw the structure of **F**.

[1 mark]

0 6 . 3 Explain why more of isomer **E** than isomer **F** is formed in this reaction.

[2 marks]

3. June/ 2019/Paper_2/No.17

Which statement is **not** correct about $\text{CH}_2=\text{C}(\text{CH}_3)\text{CH}_2\text{Br}$?

[1 mark]

A It displays *E-Z* isomerism.

B It forms an addition polymer.

C It reacts with electrophiles.

D It decolourises bromine water.

4. June/ 2019/Paper_2/No.22

Which compound could **not** be produced by reacting 2-bromo-3-methylbutane with sodium hydroxide?

[1 mark]

A 2-methylbut-1-ene

B 3-methylbut-1-ene

C 2-methylbut-2-ene

D 3-methylbutan-2-ol

5. June/ 2021/Paper_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 _____

6. June/ 2021/Paper_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.

7. June/ 2021/Paper_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

