AQA GCSE Combined Science - Trilogy | 8464

SPECIFICATION POINT 5.8.2.4

Test for chlorine

Past-paper questions

Tier	**Foundation**
Question groups	**3**
Available paper years	**2019–2024**

Using this booklet

1. Answer the questions in order and show your working.
2. Original question numbers and marks are retained.
3. Print at actual size (100%) for measuring questions.
4. Use the companion answer booklet to check your work.

Name: _____ **Date:** _____

Whole questions are retained for context, so some parts assess other specification points. Current and legacy sources are labelled. Continue on extra paper if needed.

5.8.2.4 Test for chlorine

Question 01

June 2019 | 8464/C/1F | Original Q4

0 4 This question is about Group 1 elements.

0 4 . 1 Sodium reacts with chlorine to produce sodium chloride.

Balance the equation for the reaction.

[1 mark]

$$____ Na + Cl_2 \rightarrow ____ NaCl$$

0 4 . 2 4.6 g of sodium reacts with chlorine to produce 11.7 g of sodium chloride.

What mass of chlorine reacted?

[1 mark]

Mass of chlorine = _____ g

0 4 . 3 A teacher puts hot sodium into a gas jar of chlorine.

The changes seen before, during and after this reaction were observed.

Complete the sentences.

Choose the answers from the box.

[4 marks]

colourless	**green**	**lilac**	**silver**	**white**	**yellow**

Sodium is a _____ solid.

Chlorine is a _____ gas.

The hot sodium burns with a _____ flame.

The product sodium chloride is a _____ solid.

5.8.2.4 Test for chlorine

Question 01 · continued June 2019 | 8464/C/1F | Original Q4

0 4 . 4 Sodium chloride (NaCl) is an ionic compound.

Write the formulae of the ions in sodium chloride.

[2 marks]

Sodium ion _____

Chloride ion _____

0 4 . 5 Complete the sentence.

Choose the answer from the box.

[1 mark]

an atom	an electron	a neutron	a proton

Potassium is more reactive than sodium.

This is because potassium loses _____ more easily than sodium.

0 4 . 6 How does the size of a potassium atom compare with the size of a sodium atom?

Give a reason for your answer.

[2 marks]

_____

Reason _____

_____

_____

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5.8.2.4 Test for chlorine

Question 02

June 2019 | 8464/C/2F | Original Q1

0 1 . 1 This question is about gases.

Draw **one** line from each substance to the description of the substance.

[3 marks]

Substance	Description of substance
	Compound
Air	Element
Carbon dioxide	Hydrocarbon
Oxygen	Metal
	Mixture

5.8.2.4 Test for chlorine

Question 02 · continued

0 1 . 2 What is used to test for each of the gases?

Draw **one** line from each gas to the test for the gas.

[2 marks]

Gas	Test
Carbon dioxide	A glowing splint
Oxygen	A lighted splint
	Limewater
	Litmus paper

0 1 . 3 Give **two** reasons why the percentage of carbon dioxide in the air has decreased in the last 2.7 billion years.

[2 marks]

Tick (✓) **two** boxes.

- Combustion ☐
- Dissolved in oceans ☐
- Intense volcanic activity ☐
- Photosynthesis ☐
- Respiration ☐

5.8.2.4 Test for chlorine

Question 02 · continued

Oxygen reacts with sulfur dioxide.

The reaction is reversible.

0 1 . 4 What is the symbol for a reversible reaction?

[1 mark]

_____

0 1 . 5 Complete the sentence.

[1 mark]

In a reversible reaction the forward reaction is exothermic, so the

reverse reaction is _____ .

0 1 . 6 A reversible reaction happens in apparatus which stops the escape of reactants and products.

Complete the sentence.

[1 mark]

Equilibrium is reached when the forward and reverse reactions happen at

exactly the same _____ .

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5.8.2.4 Test for chlorine

Question 03

0 2 Different tests can be used to identify chemicals.

0 2 . 1 A student measured the melting points of four substances.

Table 1 shows the results.

Table 1

Substance	Melting point in °C
A	52 to 54
B	61
C	–2 to 0
D	80 to 82

Which substance was pure?

Give **one** reason for your answer.

[2 marks]

Substance _____

Reason _____

_____

Question 2 continues on the next page

5.8.2.4 Test for chlorine

Question 03 · continued

Anhydrous copper sulfate can be used to test for water.

The word equation for the reaction is:

anhydrous copper sulfate + water ⇌ hydrated copper sulfate

0 2 . 2 Complete the sentence.

Choose answers from the box.

[2 marks]

blue	**green**	**red**	**white**	**yellow**

When water is added to anhydrous copper sulfate, the colour changes

from _____ to _____.

0 2 . 3 The reaction between anhydrous copper sulfate and water is reversible.

How does the word equation show that the reaction is reversible?

[1 mark]

_____

5.8.2.4 Test for chlorine

Question 03 · continued

0 2 . 4 The formula of anhydrous copper sulfate is $CuSO_4$

What is the total number of atoms in the formula $CuSO_4$?

[1 mark]

Tick (✓) **one** box.

3 ☐ 4 ☐ 6 ☐ 7 ☐

0 2 . 5 Chlorine is a gas.

Describe the test for chlorine.

Give the result.

[2 marks]

Test _____

_____

Result _____

_____

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