AQA GCSE Chemistry | 8462

SPECIFICATION POINT 4.2.2.1

The three states of matter

Past-paper questions

Tier	**Foundation**
Question groups	**2**
Available paper years	**2010–2010**

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.

4.2.2.1 The three states of matter

Question 01

June 2010 | CHY1BP | Original Q1 | Legacy

QUESTION ONE

The table shows some information about four of the gases, **A**, **B**, **C** and **D**, in the Earth's atmosphere.

	Gas	Percentage (%) in the atmosphere	Melting point in °C	Boiling point in °C	Density in g per litre
A	Nitrogen	78	−210	−196	1.25
B	Oxygen	20	−218	−183	1.43
C	Carbon dioxide	0.04	−57	−78	1.98
D	Argon	1	−189	−186	1.78

Match gases, **A**, **B**, **C** and **D**, with the numbers **1–4** in the sentences.

The gas with the highest density is . . . **1** . . . .

The gas that makes up the largest percentage of the atmosphere is . . . **2** . . . .

The gas with the lowest melting point is . . . **3** . . . .

The gas with the smallest difference between its melting point and its boiling point is . . . **4** . . . .

4.2.2.1 The three states of matter

Question 02

June 2010 | CHY2F | Original Q3 | Legacy

3 The picture shows a student with two glow sticks.



Glow sticks contain several chemicals. When a glow stick is bent the chemicals mix. A chemical reaction takes place which causes light to be given out.

A student investigated three glow sticks. One was placed in water at 5 ºC, one in water at 40 ºC and one in water at 70 ºC.

The results are shown in the table.

Temperature in ºC	Effect on glow stick	
	Brightness of light	Time it gave out light, in hours
5	dim	7
40	bright	3
70	very bright	1

3 (a) How did increasing the temperature affect the brightness of the glow stick?

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(1 mark)

3 (b) How did increasing the temperature affect the time it gave out light?

.....

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(1 mark)

4.2.2.1 The three states of matter

Question 02 · continued

3 (c) The student was asked why an **increase** in temperature changes the rate of the chemical reaction. The student listed five ideas. Only **three** of them are correct.

Put ticks (✓) next to the **three** correct ideas.

Ideas	Tick (✓)
The particles will collide more often.	
The particles will be more concentrated.	
The particles will move faster.	
The particles will have more energy.	
The particles will get bigger.	

(3 marks)

3 (d) Suggest **one** way the student could improve this investigation.

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(1 mark)

6