

0 1

Water that is safe to drink contains dissolved substances.

0 1 . 1

What do we call water that is safe to drink?

[1 mark]Tick (✓) **one** box.

Desalinated

Filtered

Fresh

Potable

0 1 . 2

Describe a test for pure water.

Give the result of the test if the water is pure.

[2 marks]

Test _____

Result _____



0 1 . 3

Describe a method to determine the mass of dissolved solids in a 100 cm³ sample of river water.

[4 marks]

0 1 . 4

A sample of river water contains 125 mg per dm³ of dissolved solids.

Calculate the mass of dissolved solids in grams in 250 cm³ of this sample of river water.

Give your answer to 2 significant figures.

[4 marks]

Mass of dissolved solids = _____ g

Turn over ►



0 1 . 5

A water company allows a maximum of 500 mg per dm³ of sulfate ions in drinking water.

A sample of drinking water contains 44 mg per dm³ of sulfate ions.

Calculate the percentage (%) of the maximum allowed mass of sulfate ions in the sample of drinking water.

[2 marks]

Percentage (%) of the maximum allowed mass = _____ %

13

Question	Answers	Extra information	Mark	AO / Spec. Ref.	ID
01.1	potable		1	AO1.1 5.10.1.2	A
01.2	boil (water) (boils) at 100°C	allow boils at 100 °C for 2 marks ignore heat do not accept filter do not accept incorrect test alternative approach freeze (water) (1) (freezes) at 0°C (1) if no other mark awarded, allow 1 mark for evaporate or distil water and no solid left	1 1	AO2 5.8.1.1	E
01.3	Level 2: The design/plan would lead to the production of a valid outcome. All key steps are identified and logically sequenced.		3–4	AO1.1 5.10.1.2 10.2.13	E
	Level 1: The design/plan would not necessarily lead to a valid outcome. Some steps are identified, but the plan may not be logically sequenced.		1–2		
	No relevant content		0		
	Indicative content <ul style="list-style-type: none"> • weigh container. • measure volume (100 cm³) of water into container. • evaporate / heat until dry. • weigh container and remaining solids. • determine mass of dissolved solids <p>To access Level 2 there should be an indication of using a known volume of water, heating until dry and determining the mass of solid.</p>				

01.4	(conversion of cm^3 to dm^3) ($250 \text{ cm}^3 = \frac{250}{1000}$ or $0.25 \text{ (dm}^3\text{)}$)	an answer of 0.031 (g) scores 4 marks	1	AO2 5.3.2.5 10.2.13	E
	(conversion of mg to g) ($125 \text{ mg} = \frac{125}{1000}$ or 0.125 (g))		1		
	(0.25×0.125) = 0.03125	allow correct calculation from incorrect attempt(s) at conversion	1		
	=0.031 (g)	allow an answer correctly rounded to 2 significant figures from an incorrect calculation that uses the values in the question	1		

01.5	$\frac{44}{500} \times 100$ = 8.8 (%)	an answer of 8.8 (%) or 9 (%) scores 2 marks	1	AO2 5.10.1.2 10.2.13	E
		allow 9 (%)	1		

Total		13
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Question	Answers	Extra information	Mark	AO / Spec. Ref.	ID
02.1	high temperatures (in the engine)		1	AO1 5.9.3.1	E
	enable oxygen and nitrogen (from air) to react	allow combine / bond for react	1		