

**GCSE Chemistry A (Gateway Science)**

**J248/02 C4-C6 and C7 Foundation (Foundation Tier)**

**Question Set 14**

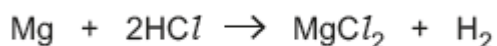
- 1 A student added 2.4 g of magnesium to hydrochloric acid. She observed that no magnesium was left when the reaction was complete.

The student transferred the solution to an evaporating basin. She heated the solution using a Bunsen burner and evaporated all the water.

- (a) Explain how you can tell from the student's observation that the hydrochloric acid was in excess.

[1]

- (b) Look at the equation for the reaction.



The student knows the reaction is complete when there is no magnesium left.

Use the equation to explain one **other** way the student could tell that the reaction was complete.

[1]

- (c) The student predicts she should make 9.5 g of magnesium chloride,  $\text{MgCl}_2$ .

She actually makes 7.9 g.

Calculate the **percentage yield**.

Give your answer to **3** significant figures.

Answer = ..... [3]

- (d) Write down one reason, other than a mistake, why the student may have obtained a percentage yield of less than 100%.

[1]

**Total Marks for Question Set 14: 6**

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