

**GCSE Chemistry B (Twenty First Century Science)**  
**J258/01** Breadth in Chemistry (Foundation Tier)

**Question Set 3**

Multiple Choice Questions

1

Some farmers use manure from cows as a natural fertiliser. Other farmers use ammonium sulfate as a synthetic fertiliser.

(a) (i) The formula of ammonium sulfate is  $(\text{NH}_4)_2\text{SO}_4$ .

Which elements does ammonium sulfate contain?

Tick (✓) **four** boxes.

Ammonia	<input type="checkbox"/>
Hydrogen	<input type="checkbox"/>
Nitrogen	<input type="checkbox"/>
Oxygen	<input type="checkbox"/>
Sodium	<input type="checkbox"/>
Sulfur	<input type="checkbox"/>

[1]

(ii) Plants need one of the elements in ammonium sulfate to grow faster.

Write down the name of this element.

[1]

(b) Farmers can choose manure or ammonium sulfate as a fertiliser.

Farmers need to consider the cost of the fertiliser.

(i) Suggest **one** reason, **other than cost**, why some farmers use manure rather than ammonium sulfate as a fertiliser.

[1]

(ii) Suggest **one** reason, **other than cost**, why some farmers use ammonium sulfate rather than manure as a fertiliser.

[1]

(c) Alex has a solution of ammonium sulfate.

(i) Alex uses barium chloride solution to show that the solution contains sulfate ions.

Describe what Alex sees **and** name the substance formed.

[3]

(ii) Alex wants to make **solid** ammonium sulfate from the solution of ammonium sulfate.

What would Alex do first?

Tick (✓) **one** box.

Distil the solution.

Evaporate the solution.

Filter the solution.

Use chromatography.

[1]

(d) 132g of ammonium sulfate contain 28g of nitrogen.

Calculate the mass of nitrogen in **1.0 kg** of ammonium sulfate.

Give your answer in kg and to **2** decimal places.

Mass = .....kg

[3]

**Total Marks for Question Set 3: 11**

---

# OCR

Oxford Cambridge and RSA

## **Copyright Information**

OCR is committed to seeking permission to reproduce all third-party content that it uses in its assessment materials. OCR has attempted to identify and contact all copyright holders whose work is used in this paper. To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced in the OCR Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download from our public website ([www.ocr.org.uk](http://www.ocr.org.uk)) after the live examination series.

If OCR has unwittingly failed to correctly acknowledge or clear any third-party content in this assessment material, OCR will be happy to correct its mistake at the earliest possible opportunity.

For queries or further information please contact The OCR Copyright Team, The Triangle Building, Shaftesbury Road, Cambridge CB2 8EA.

OCR is part of the Cambridge Assessment Group; Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge