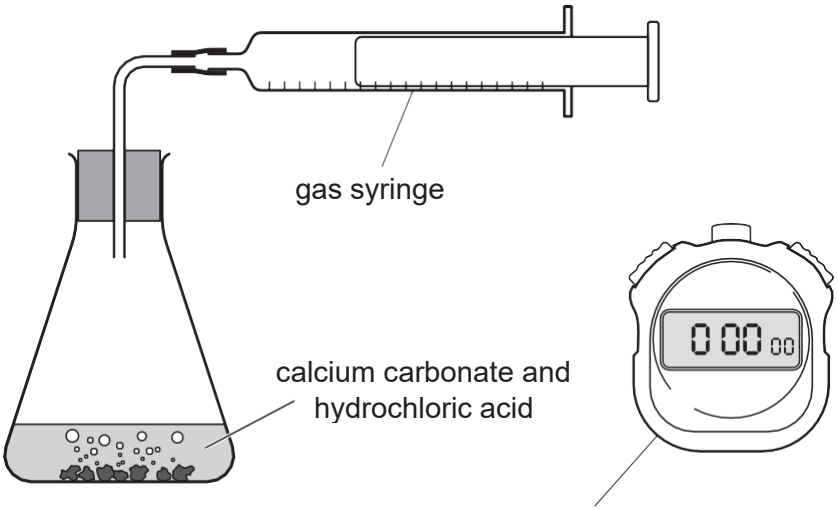
GCSE Chemistry B (Twenty First Century Science)

J258/01 Breadth in Chemistry (Foundation Tier)

Question Set 12

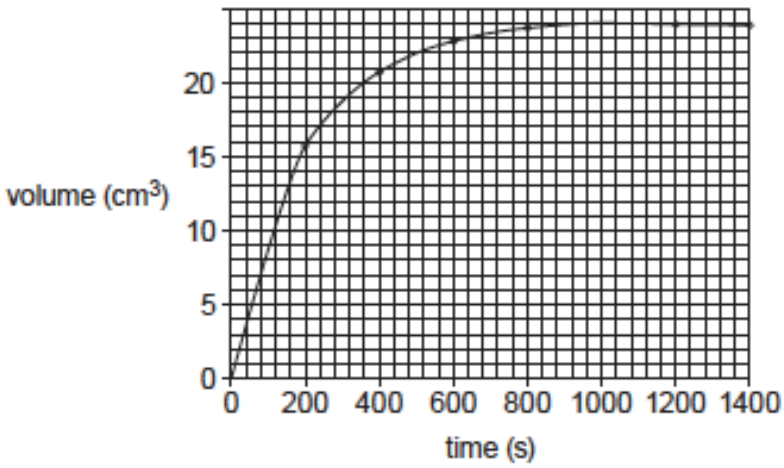
1 Calcium carbonate reacts with excess hydrochloric acid to make carbon dioxide.

Here is the apparatus Jack uses to investigate the reaction.



Jack records the volume of carbon dioxide made every

200 seconds.Here is a graph of his results.



(a) Use the graph to calculate the rate of reaction over the first 100 s.

Rate = ...cm^3 / s **[2]**

(b) Amaya wants to repeat Jack's experiment.

She uses the same mass of calcium carbonate.

She uses the same volume and concentration of hydrochloric acid.

Which **two** other factors does she need to keep the same?

[2]

(c) Jack repeats his experiment with more concentrated hydrochloric acid.

He keeps **all** other factors the same. The rate of reaction is faster.

Explain why.

Write about particles in your answer.

[2]

(d) 0.10 g of calcium carbonate makes 24 cm^3 of carbon dioxide.

Jack uses 0.070 g of calcium carbonate.

What volume of carbon dioxide does he make?

Give your answer to **2** significant figures.

Volume = ...cm^3 **[3]**

Total Marks for Question Set 12: 9

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) 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