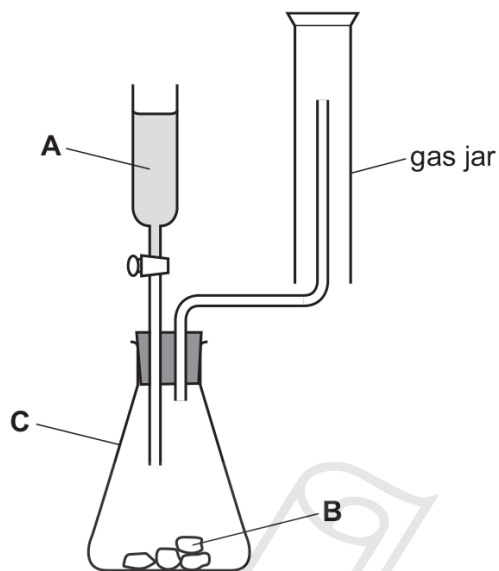


12.1. CARBONATES

03. 0620_w21_qp_62 Q: 1

Carbon dioxide is a colourless gas that is denser than air.
Carbon dioxide can be made by reacting marble chips with dilute hydrochloric acid.

A student tried to make and collect carbon dioxide gas using the apparatus shown.



(a) (i) Name the substances labelled A and B.

A

B

[1]

(ii) Name the item of apparatus labelled C.

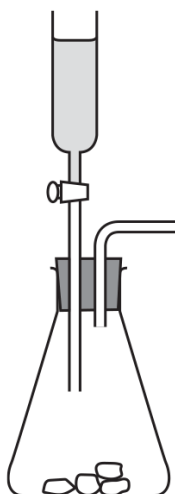
..... [1]

(b) Explain why very little carbon dioxide gas would be collected using the apparatus shown.

.....

..... [2]

- (c) Complete the diagram to show how carbon dioxide gas could be collected and the volume measured.



[2]

- (d) At the end of the experiment there were unreacted marble chips and aqueous calcium chloride in the item of apparatus labelled **C**.

Describe how you would find the mass of unreacted marble chips in apparatus **C**.

.....

.....

.....

.....

[3]

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[Total: 9]

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01. 0620_s19_ms_63 Q: 4

<p>any six from:</p> <p>EITHER</p> <ul style="list-style-type: none"> <input type="checkbox"/> measured volume (dilute) hydrochloric acid <input type="checkbox"/> add named indicator <input type="checkbox"/> add measured mass / weight of calcium compound <input type="checkbox"/> stir / mix (acid and calcium compound) <input type="checkbox"/> continue additions until colour changes <input type="checkbox"/> repeat with other calcium compounds <input type="checkbox"/> conclusion, e.g.: the calcium compound that needs the smallest mass / weight / amount to neutralise the acid is most effective <p>OR</p> <ul style="list-style-type: none"> <input type="checkbox"/> measured mass / weight of calcium compound <input type="checkbox"/> add named indicator <input type="checkbox"/> add (dilute) hydrochloric acid (gradually) <input type="checkbox"/> stir / mix (acid and calcium compound) <input type="checkbox"/> continue additions until colour changes <input type="checkbox"/> repeat with other calcium compounds <input type="checkbox"/> conclusion, e.g.: the calcium compound that neutralises the largest volume / amount of (dilute) hydrochloric acid is the most effective 	max 6
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02. 0620_w12_ms_61 Q: 6

any seven from:

equal weight/mass of limestone and marble (1)

[7]

crush (1)

add excess owtte (1) hydrochloric acid (1)

stir (1)

filter mixture (1)

dry (1)

reweigh (1)

conclusion (1)

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[Total: 60]

03. 0620_w21_ms_62 Q: 1

Question	Answer	Marks
(a)(i)	A (dilute) hydrochloric acid and B marble chips	1
(a)(ii)	(conical) flask	1
(b)	M1 (carbon dioxide) is denser than air	1
	M2 drops out of gas jar	1
(c)	M1 shows collection over water / in a gas syringe	1
	M2 in a measuring cylinder / graduations shown on collection vessel	1
(d)	M1 filter	1
	M2 wash	1
	M3 dry and weigh	1