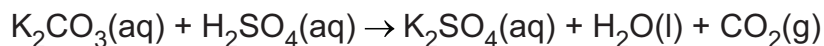


- 1 A student prepares some crystals of pure potassium sulfate by reacting aqueous potassium carbonate with dilute sulfuric acid. The equation for the reaction is shown.



The student:

- places 25.0 cm³ of aqueous potassium carbonate in a conical flask
- adds a few drops of a suitable indicator to the conical flask
- uses a burette to add dilute sulfuric acid to the conical flask until the end-point is reached and the indicator changes colour.

Table 1.1 shows the burette readings the student obtains.

Table 1.1

final burette reading / cm ³	18.8
initial burette reading / cm ³	4.2
volume of dilute sulfuric acid added / cm ³	

- (a) Complete Table 1.1 by calculating the volume of dilute sulfuric acid added to the conical flask. [1]

- (b) State which solution, aqueous potassium carbonate or dilute sulfuric acid, is the **least** concentrated. Give a reason for your answer.

least concentrated solution

reason

[1]

- (c) Name a piece of apparatus suitable for measuring the 25.0 cm³ of aqueous potassium carbonate.

..... [1]

- (d) Name a suitable indicator and give the colour change of this indicator at the end-point.

indicator

colour change at end-point to

[2]

- (e) As the student added the dilute sulfuric acid to the aqueous potassium carbonate they looked for a colour change.

State what the student should do as they add the dilute sulfuric acid to the aqueous potassium carbonate in the conical flask. Do **not** include observations in your answer.

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..... [1]

- (f) Describe what the student should now do to obtain crystals of pure potassium sulfate.

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..... [3]

[Total: 9]