

Making salts

1. Here is a symbol equation, with state symbols, for a chemical reaction between solutions of lead nitrate and potassium chloride.



The equation tells you the formulae of the two products of the reaction.

- (a) What are the names of the **two** products?

1

2

(2)

- (b) What else does the equation tell you about these products?

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(2)

(Total 4 marks)

2. The information in the box is about the preparation of copper sulphate crystals.

- Step 1** Add a small amount of black copper oxide to some hot dilute sulphuric acid, and stir.
- Step 2** Keep adding copper oxide until it is in excess.
- Step 3** Remove the excess copper oxide to leave blue copper sulphate solution.
- Step 4** Evaporate the copper sulphate solution until it is saturated.
- Step 5** Leave the saturated solution of copper sulphate to cool. Blue copper sulphate crystals form on cooling.
- Step 6** Remove the crystals from the solution remaining.
- Step 7** Dry the blue crystals on a piece of filter paper.

- (i) Suggest a reason for using excess copper oxide in Step 2.

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(1)

- (ii) Suggest how the excess copper oxide can be removed from the solution in Step 3.

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(1)

- (iii) What is meant by the term *saturated solution*?

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(2)

(iv) Why do crystals form when a hot saturated solution cools?

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(1)

(v) Suggest why the blue crystals are dried in Step 7 using filter paper instead of by heating.

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(1)

(Total 6 marks)

3. Here is a word equation for a chemical reaction.



Write down everything that the word equation tells you about the reaction.

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(Total 4 marks)