

Neutralisation

Answer the questions below and then check your answers.

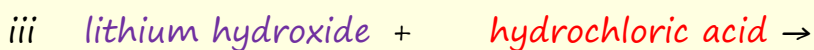
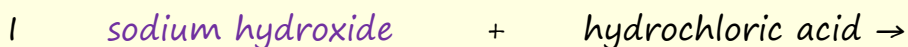
- 1 Name three *acids* and three *alkalis* commonly used in the laboratory.
- 2 What do all *acids* and all *alkalis* contain in their formulae?
- 3 What is used to test the pH of a substance?
- 4 What colour will *acid* turn universal indicator solution?
- 6 What are the products of a neutralisation reaction?
- 7 Complete the neutralisation equation below.



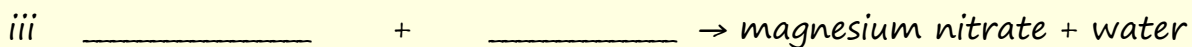
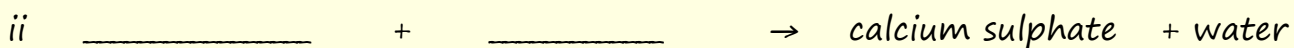
8. Complete the table below by filling in the blanks:

acid	molecular formula	alkali	molecular formula
	HCl		NaOH
sulfuric acid	H ₂ SO ₄	potassium hydroxide	
nitric acid		calcium hydroxide	Ca(OH) ₂
	CH ₃ COOH		NH ₄ OH

9 Complete the following word equations:



b.



10. The three common strong **acids** used in neutralisation reactions are hydrochloric, nitric and sulfuric acids. What are the salts called when an **alkali** or **base** is neutralised by each of these acids.....

i. **Hydrochloric acid** always makes salts called

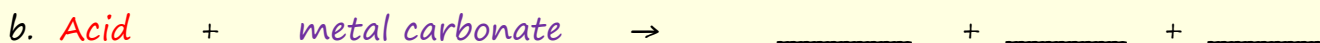
ii. **nitric acid** always makes salts called

iii. **sulfuric acid** always makes salts called

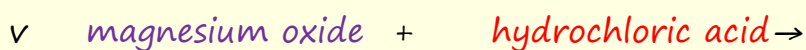
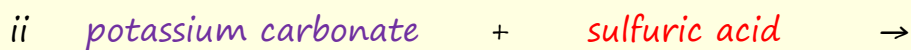
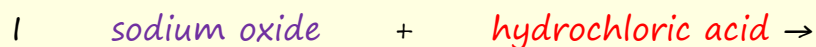
11. If you are doing higher tier try writing balanced symbolic equations for the reactions in question 9. If you need help with working out the formulae for compounds try hlooking here for some additional help: [finding the formula](#)

12. Bases are also used to neutralise acids. Common bases include metal oxides and metal carbonates.

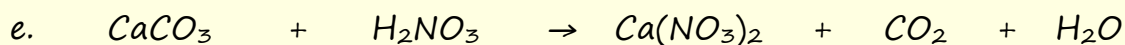
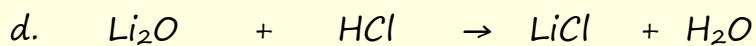
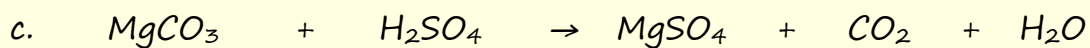
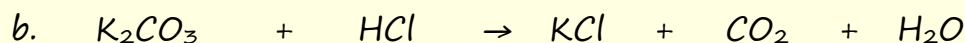
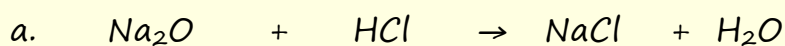
a. Complete the equation below:



13. Complete the following neutralisation word equations:



14. Balance the equations.



14b. The equations above all show neutralisation reactions. They are all symbolic equations. Write word equations for these reactions.

Neutralisation

Answers

- 1 Name three acids and three alkalis commonly used in the laboratory.

acids	alkalis
Hydrochloric	Sodium hydroxide
Sulfuric	Potassium hydroxide
nitric	Calcium hydroxide

- 2 What do all acids and all alkalis contain in their formulae?

Acids contain $H^+_{(aq)}$ and alkalis contain $OH^-_{(aq)}$

- 3 What is used to test the pH of a substance?

An indicator

- 4 What colour will acid turn universal indicator solution?

red

- 6 What are the products of a neutralisation reaction?

Salt and water

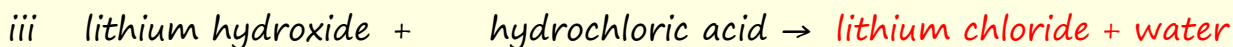
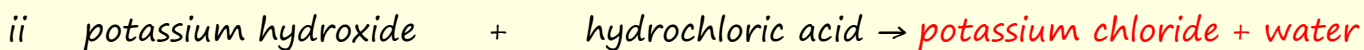
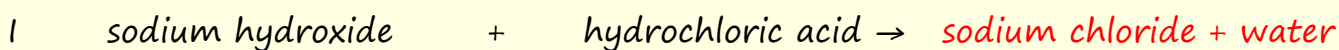
- 7 Complete the equation below.

Acid + alkali → salt + water

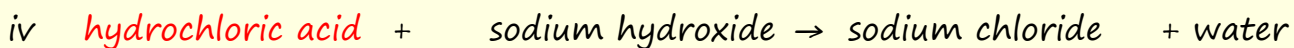
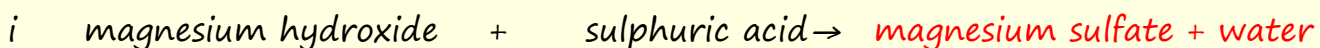
8. Complete the table below by filling in the blanks:

acid	molecular formula	alkali	molecular formula
hydrochloric acid	HCl	sodium hydroxide	NaOH
sulfuric acid	H ₂ SO ₄	potassium hydroxide	KOH
nitric acid	HNO ₃	calcium hydroxide	Ca(OH) ₂
ethanoic acid	CH ₃ COOH	ammonium hydroxide	NH ₄ OH

9 Complete the following word equations:



b.



note you could have used metal oxides instead of metal hydroxides in these equations, the products would have been the same

10. The three common strong acids used in neutralisation reactions are hydrochloric, nitric and sulfuric acids. What are the salts called when an alkali or base is neutralised by each of these acids.....

i. Hydrochloric acid always makes salts calledchloride

ii. nitric acid always makes salts callednitrate

iii. sulfuric acid always makes salts calledsulfate

11. If you are doing higher tier try writing balanced symbolic equations for the reactions in question 9.

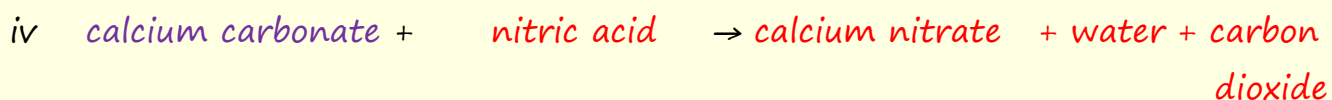
12. Bases are also used to neutralise acids. Common bases include metal oxides and metal carbonates.

Complete the equation below:

a. Acid + base → salt + water

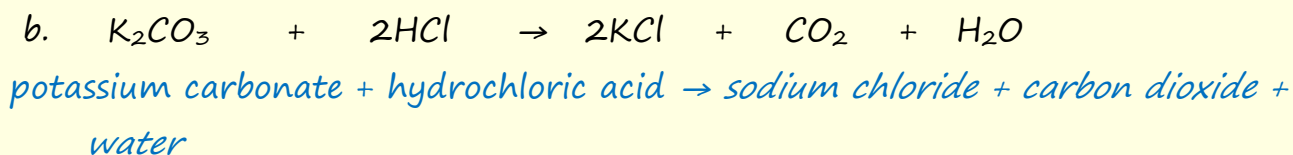
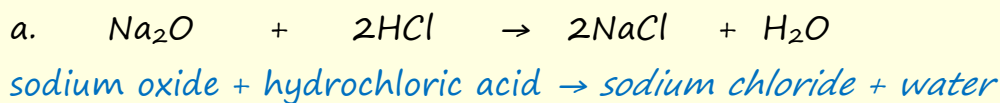
b. Acid + metal carbonate → salt + water + carbon dioxide

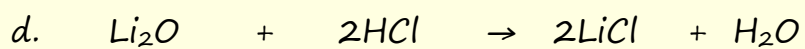
13. Complete the following neutralisation word equations:



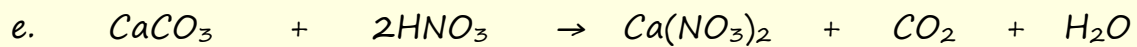
14. The equations below all show neutralisation reactions. They are all symbolic equations. Write word equations for these reactions.

14b. Balance the equations.





lithium oxide + hydrochloric acid → lithium chloride + water



calcium carbonate + nitric acid → calcium nitrate + carbon dioxide + water