pH and neutralisation: Worksheet 4.9

Neutralisation

1. Which ion is present in both of these acids: hydrochloric acid (HCl) and sulfuric acid (H2SO4)?

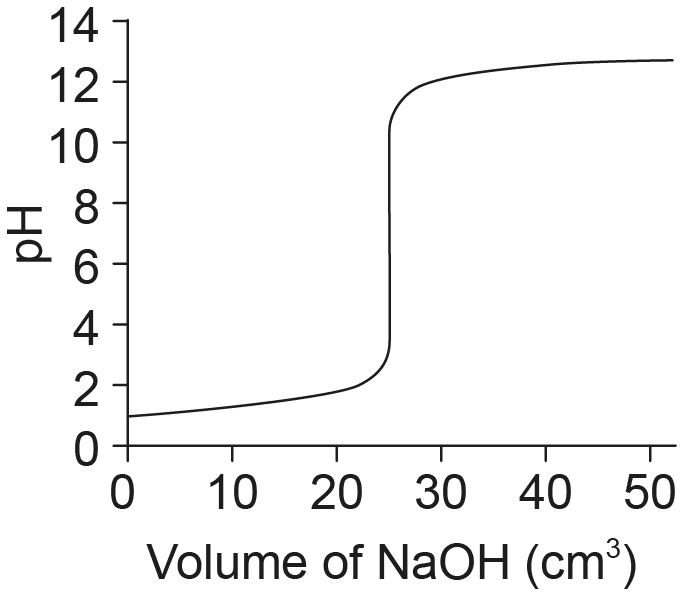
1. Which ion is present in both sodium hydroxide (NaOH) and potassium hydroxide (KOH)?

1. This equation shows a neutralisation reaction:

hydro**chloric** acid + **sodium** hydroxide → **sodium chloride** + water

(acid) (alkali) (neutral salt)

Explain how water is formed when the acid and the alkali react.

1. The graph shows how the pH of the mixture changed when 0.1 mol/dm3 sodium hydroxide was slowly added to 25 cm3 of 0.1 mol/dm3 hydrochloric acid.
   1. What was the pH of the acid at the start?
   2. What volume of sodium hydroxide was needed to neutralise all the acid?
   3. A neutralisation reaction can be written as an ionic equation. This shows only the ions that neutralise each other – the hydrogen ions from the acid and the hydroxide ions from the alkali:

hydrogen ions + hydroxide ions → water

Convert this into a symbol equation and add state symbols to show that the ions are dissolved in water but the product is water itself.