



# Knowledge

1.  $\text{H}^+$

2.  $\text{OH}^-$

3.  $\text{H}^+ + \text{OH}^- \rightarrow \text{H}_2\text{O}$

4.

Name of acid	Formula	Surname of salt produced
Hydrochloric	HCl	chloride
Sulphuric	$\text{H}_2\text{SO}_4$	sulphate
nitric	$\text{HNO}_3$	nitrate

5. Indicator (e.g. universal)

6. Burette (or pipette)

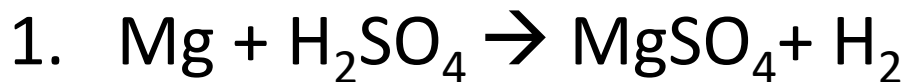
7. Acid + alkali  $\rightarrow$  Salt + water

8. Hydrogen

9. A strong acid is one in which the hydrogen ions fully dissociates in solution

10. The hydrogen ion concentration has dropped by 1000x

# Application



magnesium + sulphuric acid  $\rightarrow$  magnesium sulphate + hydrogen



Calcium oxide + hydrochloric acid  $\rightarrow$  Calcium chloride + water



Aluminium hydroxide + nitric acid  $\rightarrow$  aluminium hydroxide + water

2. Ethanoic acid is a weaker acid than HCl and therefore has fewer free hydrogen ions and a higher pH

Sensible  
volumes/masses

Equipment use  
detailed

3. Measure out  $100\text{cm}^3$  of hydrochloric acid into a beaker. Warm it gently with a Bunsen.

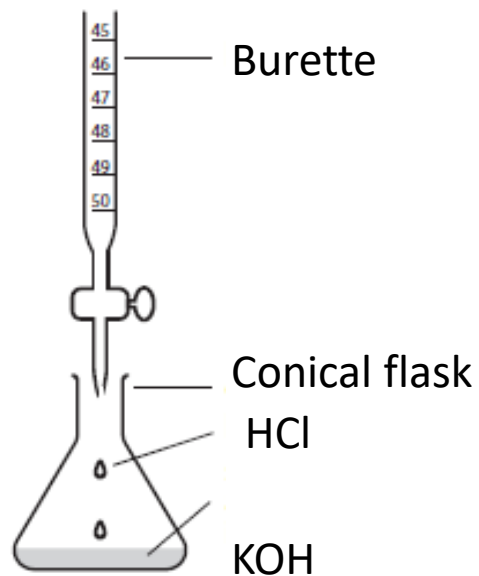
Add spatulas of copper oxide until it is in excess – no more will dissolve.

Filter the mixture using a funnel and filter paper to remove the excess insoluble copper oxide

Pour the filtrate into an evaporating dish and put it into a drying oven.

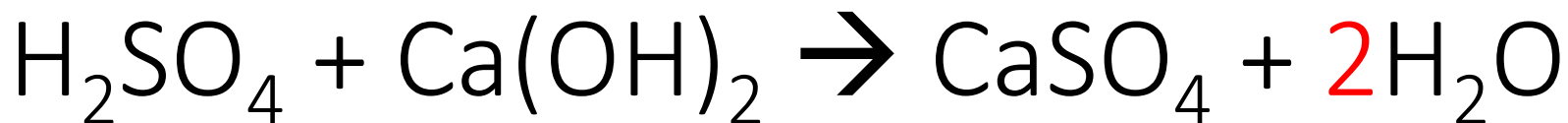
Good scientific  
terms

4a)



4b) The universal indicator would turn green

4c) 16 (14.5 is an anomaly)



$50/1000 \times 2 = 0.1$  moles  $\text{H}_2\text{SO}_4$  used

So this means there are 0.1 moles  $\text{Ca}(\text{OH})_2$  in  $20\text{cm}^3$

$0.1/20 \times 1000 = \underline{5\text{mol/dm}^3}$