Acids Map

OCR A Level Chemistry A · 2.1.4 Acids

1 Acids and alkalis

2.1.4(a)

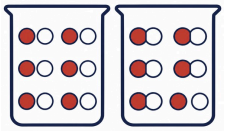
- HCl, H_2SO_4, HNO_3
- CH_3COOH
- NaOH, KOH, NH_3
- Acid releases H^+



2 Strong and weak

2.1.4(b)

- Strong: **full** dissociation
- Weak: **partial**
- Weak takes ⇌
- Weak is not dilute

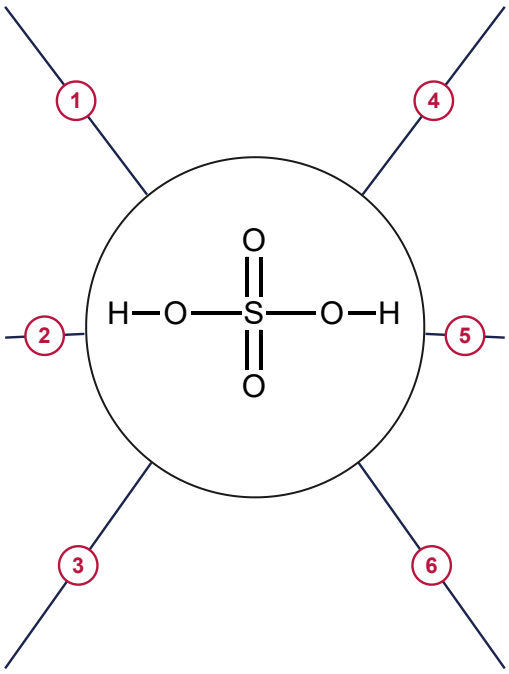


3 Neutralisation

2.1.4(c)

- $H^+ + OH^- \rightarrow H_2O$
- Forms a salt
- Spectator ions
- Ammonia: NH_4^+





4 Carbonates and oxides

2.1.4(c)

- Carbonate: CO_2 too
- Metal oxide: salt + H_2O
- $2H^+ + CO_3^{2-}$ ionic
- Limewater test



5 Standard solution

2.1.4(d)

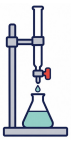
- Weigh, then dissolve
- Rinse into the flask
- Fill to the mark
- Stopper and invert



6 Titration

2.1.4(e)

- Pipette, then burette
- Swirl, near end dropwise
- Concordant: within 0.10
- Mean of concordant



Common salts

reactants to salt

Acid	Base	Salt
HCl	NaOH	Sodium chloride
H_2SO_4	KOH	Potassium sulfate
HNO_3	NH_3	Ammonium nitrate
HCl	$CaCO_3$	Calcium chloride
H_2SO_4	MgO	Magnesium sulfate

Worked examples

Moles in solution

- 25.0 cm^3, 0.100 mol dm^{-3}
- $n = c \times V \div 1000$
- **0.00250 mol**

Find a concentration

- 0.00125 mol H_2SO_4 in 20.0 cm^3
- 0.00125 ÷ 0.0200
- **0.0625 mol dm^{-3}**

Standard solution

- 1.325 g Na_2CO_3 in 250 cm^3
- 0.0125 mol ÷ 0.250
- **0.0500 mol dm^{-3}**

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