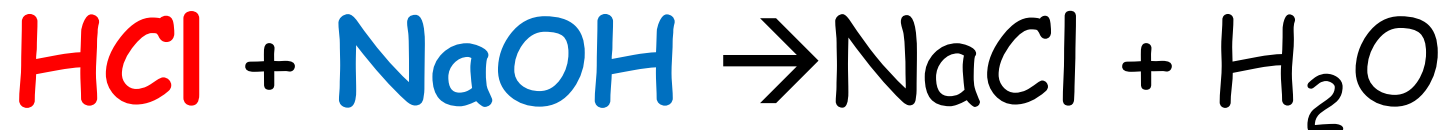


1. What volume of hydrochloric acid (concentration 0.1 mol l^{-1}) is required to neutralise 50 cm^3 of sodium hydroxide solution (concentration 0.2 mol l^{-1})?

Balanced
Chemical
Equation

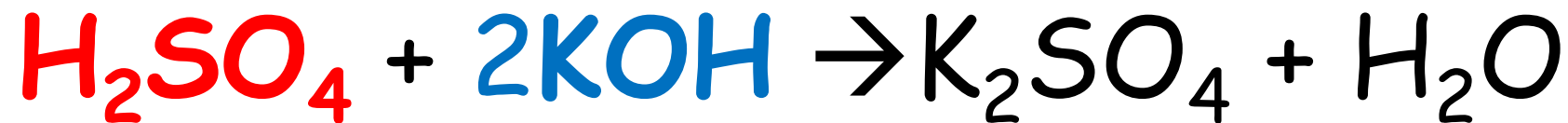


$$\frac{C_1 \times V_1}{n_1} = \frac{C_2 \times V_2}{n_2}$$

$$\frac{0.1 \times V_1}{\textcolor{red}{1}} = \frac{0.2 \times 50}{\textcolor{blue}{1}}$$

$$V_1 = 100 \text{ cm}^3$$

2. What is the concentration of sulphuric acid if 50 cm³ are neutralised by 25 cm³ of potassium hydroxide solution (concentration 1 mol l⁻¹)?

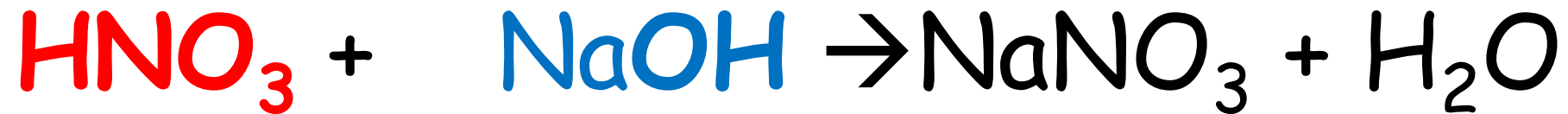


$$\frac{C_1 \times V_1}{n_1} = \frac{C_2 \times V_2}{n_2}$$

$$\frac{C_1 \times 50}{1} = \frac{1 \times 25}{2}$$

$$C_1 = 0.25 \text{ mol l}^{-1}$$

3. What volume of nitric acid (concentration 2 mol l⁻¹) is required to neutralise 20 cm³ of sodium hydroxide solution (concentration 0.5 mol l⁻¹)?



$$\frac{C_1 \times V_1}{n_1} = \frac{C_2 \times V_2}{n_2}$$

$$\frac{2 \times V_1}{1} = \frac{0.5 \times 20}{1}$$

$$V_1 = 5 \text{ cm}^3$$

4. What is the concentration of hydrochloric acid if 12.6 cm³ neutralises 20 cm³ of potassium hydroxide solution (concentration 0.1 mol l⁻¹)?



$$\frac{C_1 \times V_1}{n_1} = \frac{C_2 \times V_2}{n_2}$$

$$\frac{C_1 \times 12.6}{1} = \frac{0.1 \times 20}{1}$$

$$C_1 = 0.16 \text{ mol l}^{-1}$$

5. What is the concentration of sulphuric acid if 17.3 cm³ neutralises 25 cm³ of sodium hydroxide solution (concentration 0.5 mol l⁻¹)?



$$\frac{C_1 \times V_1}{n_1} = \frac{C_2 \times V_2}{n_2}$$

$$\frac{C_1 \times 17.3}{1} = \frac{0.5 \times 25}{2}$$

$$C_1 = 0.36 \text{ mol l}^{-1}$$