

Name:

Class:



A solution of NaOH has a concentration of 64g/dm^3 . What is this in mol/dm^3 ?

$$\text{Mol/dm}^3 = \text{g/dm}^3 \div \text{Mr}$$

$$\text{Mol/dm}^3 = 64 \div 40$$

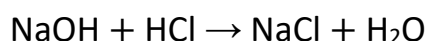
$$\text{mol/dm}^3 = \mathbf{1.6}$$

Ethanoic acid is a weak acid.

What is a weak acid?

A weak acid is one that only partially dissociates/ ionises in solution.

Look at the equation for a reaction.



The mean volume of sodium hydroxide solution used is 25.0 cm^3 . Hetty uses 20.0 cm^3 of hydrochloric acid. The concentration of the hydrochloric acid is 0.100 mol/dm^3 .

Calculate the concentration of the sodium hydroxide in mol/dm^3 .

$$\text{Moles of HCl} = \text{concentration} \times \text{volume}$$

$$\text{Moles of HCl} = 0.100 \times 0.020$$

$$\text{Moles of HCl} = 0.002$$

$$\text{Concentration} = \text{moles} \div \text{volume}$$

$$\text{Concentration} = 0.002 \div 0.025$$

$$\text{Concentration} = \mathbf{0.08}$$

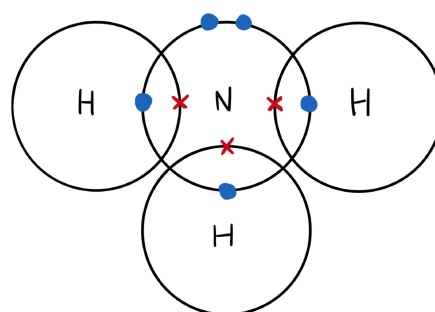
Answer: **0.08** mol/dm^3

Calculate the number of atoms combined in one mole of copper iodide, CuI_2 .

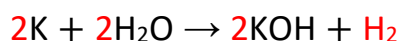
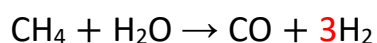
Avogadro constant = 6.02×10^{23}

$$3 \times 6.02 \times 10^{23} = 1.8 \times 10^{24}$$

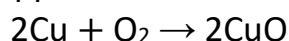
Draw the dot and cross diagram for a molecule of ammonia.



Balance the equations for these reactions.



Copper reacts with oxygen to form copper oxide.



Calculate the maximum mass of copper oxide that could be formed by reacting 25.4 g of copper with excess oxygen.

$$\text{Moles of Cu} = \text{mass} \div \text{Mr}$$

$$\text{Moles of Cu} = 25.4 \div 63.5$$

$$\text{Moles of Cu} = 0.4$$

$$\text{Mass of CuO} = \text{moles} \times \text{Mr}$$

$$\text{Mass of CuO} = 0.4 \times 79.5$$

$$\text{Mass of CuO} = 31.8\text{ g}$$

mass of copper oxide = **31.8 g**