Relative Formula Mass / Percentage by Mass

Do not writ outside the box

1 Ammonia is used to make ammonium nitrate.

Calculate the relative formula mass (Mr) of ammonium nitrate, NH_4NO_3

Relative atomic masses (Ar): H = 1; N = 14; O = 16

.....

.....

.....

Relative formula mass = ...

(2 marks)

1 (a) (i) Potassium nitrate is a fertilser with the formula, KNO_3

The relative formula mass (Mr) of potassium nitrate is 101.

Calculate the percentage by mass of potassium in potassium nitrate.

Relative atomic masses (Ar): N = 14; O = 16; K = 39

.....

.....

(2 marks)

1 (b) A metal oxide has a relative formula mass (Mr) of 81. The formula of this metal oxide is XO.

X is not the correct symbol for the metal.

The relative atomic mass (Ar) of oxygen is 16. Calculate the relative atomic mass (Ar) of metal X

.....

.....

Relative atomic mass (Ar) = ...

(2 marks)

Use your answer to part (a)(i) and the periodic table on the Data Sheet to name metal X.

The name of metal X is .....

(1 mark)

Total (7 marks)

2 Swimming pools are treated in order to killed microbes. One type of treatment is adding calcium hypochlorite tablets to the water.

Calcium hypochlorite formula is $CaCl_2O_2$

2 (a) (i) Calculate the relative formula mass (M_r) of calcium hypochlorite.

Relative atomic masses: O = 16; Cl = 35.5; Ca = 40.

.....

.....

Relative formula mass (M_r) of calcium hypochlorite = ...

(2 marks)

(2) (a) (ii) Calculate the percentage by mass of chlorine in calcium hypochlorite.

.....

.....

Percentage by mass of chlorine in calcium hypochlorite = ... %

(2 marks)

(2) (a) (iii) Calculate the mass of chlorine in a 20 g tablet of calcium hypochlorite.

.....

.....

Mass of chlorine = ... g

(1 mark)

Total (5 marks)