

11. Finding the percentage by mass

Example:1

[M/J/10-V31-Q7e]

- (e) The titanium ore contains 36.8% iron, 31.6% titanium and the remainder is oxygen.
(i) Determine the percentage of oxygen in this titanium compound.

percentage of oxygen = % [1]

Solution:

$$\text{Percentage of iron in the titanium compound} = 100 - (36.8 + 31.6) = 31.6$$

Example 2:

[M/J/15-V33-Q5c]

- (c) The table below shows the results obtained by reducing the copper(II) oxide produced by different methods to copper.

Q5

- (i) Complete the table.

source of copper(II) oxide	mass of copper(II) oxide /g	mass of copper /g	percentage copper /%
CuCO ₃	2.37	1.89	79.7
Cu(OH) ₂	2.51	1.99	
Cu(NO ₃) ₂	2.11	1.68	
Cu and O ₂	2.29	1.94	

[2]

Example 3:

[O/N/08-V31-Q3c]

- 3 Steel is an alloy made from impure iron.

- (a) Both iron and steel rust. The formula for rust is Fe₂O₃·2H₂O.
It is hydrated iron(III) oxide.

(c) (i) Calculate the mass of one mole of $\text{Fe}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$.

..... [1]

(ii) Use your answer to (i) to calculate the percentage of iron in rust.

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..... [2]



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