

Oxidation and Rusting

KS3 Chemistry · Follows the national curriculum

Name _____ Class _____ Date _____

1. Worked example

What is oxidation? Give a word equation for copper being oxidised.

Step 1 · Definition

Oxidation is a reaction in which a substance gains oxygen.

Step 2 · Copper heated in air

The shiny copper turns black oxide forms on the surface.

Answer: copper + oxygen → copper oxide

Check: Metal + oxygen → metal oxide.

2. Now try one with the steps

Write the word equation for rusting.

Step 1 · Reactants

Step 2 · Product

Answer:

3. Practice

Show your working. The marks tell you how much is expected.

1. What is oxidation? [1]

2. What is the chemical name for rust? [1]

3. Name the TWO substances iron needs in order to rust. [2]

4. Name the product when magnesium is oxidised. [1]

5. Do all metals rust? [1]
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6. Give TWO ways of preventing rusting. [2]
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7. Why is water boiled before it is used in the 'no air' rust tube? [1]
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8. Why is a layer of oil put on top of the boiled water? [1]
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9. Why do cars rust faster in winter in the UK? [1]
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10. Why does a bike chain get oiled rather than painted? [2]
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11. A 5.0 g iron nail has a mass of 5.3 g after rusting. Explain the increase. [2]
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12. By how many grams did the nail's mass increase? [1]
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13. Hand warmers contain iron powder, salt and water. Suggest why they get warm when opened to the air. [2]
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14. Why does gold jewellery stay shiny for centuries? [1]
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4. Before you hand it in

"Iron rusts with just water."

Rusting needs BOTH water and oxygen.

"Aluminium and copper rust."

Other metals corrode; only iron and steel rust.

"Rusting makes the nail lighter."

Oxygen and water join the iron, so the mass increases.

Thinking oxidation always involves a flame.

Rusting and browning of cut apples are slow oxidations with no flame.