

Worksheet 4.7

Important redox reactions

Redox means 'Reduction and Oxidation.'

These two kinds of reaction are very important. Below are some examples.

Oxidation

1 Burning fuels (combustion)

When fuels burn, they combine with oxygen making carbon dioxide and water. Write the word and chemical equations for burning methane (the main component of natural gas).

Word equation:

Chemical equation:

2 Breathing (respiration)

Living things use food as fuel. They combine it with Glucose is an important compound made from the carbohydrate in the food. It combines with oxygen in cells to make energy, carbon dioxide and water. Write the word and chemical equations for respiration using glucose ($C_6H_{12}O_6$) as the example of food.

Word equation:

Chemical equation:

3 Rusting and corrosion

Metals react slowly with oxygen and corrode away, making metal oxides. Balance the following equation for the rusting of iron.



4 Food and wine going off

When food reacts with oxygen, it can go sour or rancid.

What steps do we take to prevent this happening?

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Complete the following word equation for the oxidation of wine to vinegar:

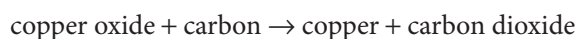


Reduction

1 Making metals from their ores

Oxygen is taken away from metal ores, usually by carbon. The pure metal is left behind.

Give the equation for the reduction of copper(II) oxide:



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2 Photosynthesis

Plants make food, taking oxygen from carbon dioxide and water. Glucose is made in the process and oxygen is released. Give the word and chemical equations for photosynthesis.

Word equation:

Chemical equation: