



Lesson Question

Lesson Goals

Distinguish among the types of



Predict the of each type of chemical reaction.

Words to Know

Fill in this table as you work through the lesson. You may also use the glossary to help you.

oxidation	the addition of <input type="text"/> to a chemical substance
polymerization	the process by which <input type="text"/> combine in long strands to form <input type="text"/>
synthesis	a type of chemical reaction that involves the <input type="text"/> of substances to create a product that is a chemically bonded combination of the reactants



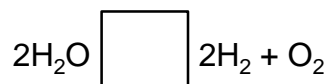
Chemical Equations

- General form of a chemical equation:

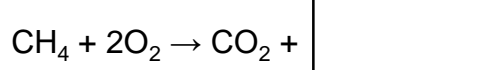


- According to the law of conservation of , the number of atoms of each element stays the before and after a chemical reaction.

- Water decomposes to form oxygen and hydrogen gas:



- Methane and oxygen react to form carbon dioxide and water:

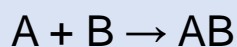


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2

Synthesis Reaction

- is a of substances to create a product that is a chemically bonded combination of the reactants.

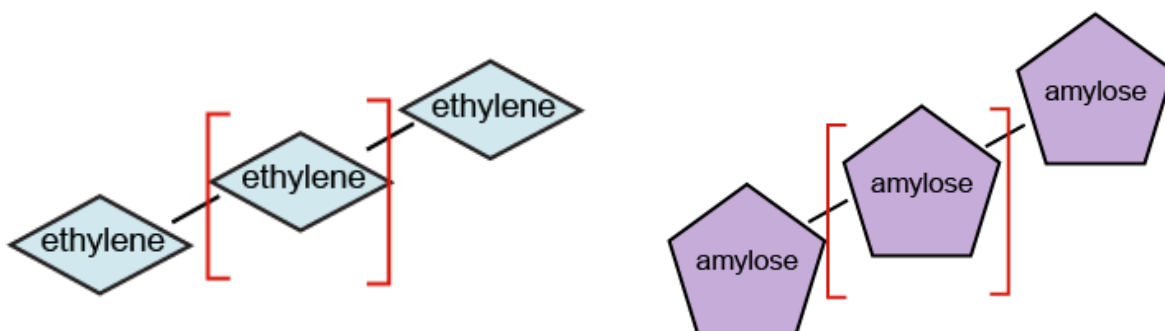


- is the addition of to a chemical substance.
 - Formation of rust: $2\text{Fe} + 3\text{O}_2 \rightarrow 2\text{FeO}_3$

Polymerization: Example

- is the process by which combine in long strands to form .
- Formation of plastics

Circle one example of a monomer and one example of a polymer.



Slide

5

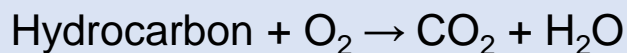
Words to Know

combustion	a type of chemical reaction that involves the <input type="text"/> of oxygen and fuel
decomposition	a type of chemical reaction that involves one chemical compound that <input type="text"/> into two or more separate compounds or elements
hydrocarbon	a compound containing only <input type="text"/> and <input type="text"/>
replacement	a type of chemical reaction that involves the <input type="text"/> of ions in ionic compounds

Combustion Reaction

Combustion:

- is similar to synthesis reactions.
- is a combination of and fuel.
- is “fueled” by , compounds containing only hydrogen and carbon.
- is almost always (heat-producing).

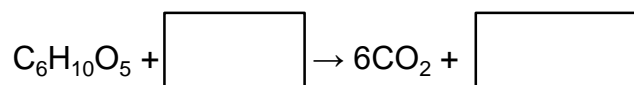


Slide

5

Wood Burning: Example

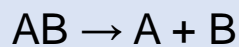
- Cellulose in the presence of to produce carbon dioxide and water vapor.
- Carbon is to form carbon .
- Hydrogen is oxidized to form .



8

Decomposition Reaction

- occurs when one chemical compound into two or more separate compounds or elements.



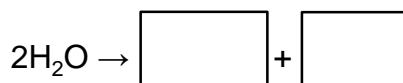
- Decomposition of hydrogen peroxide: $\rightarrow 2\text{H}_2\text{O} + \text{O}_2$

Slide

8

Electrolysis

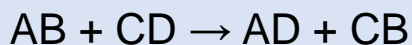
- Water decomposes to form and hydrogen gas.
- is a type of decomposition reaction.
- Electricity is used to water into hydrogen and oxygen.



11

Replacement Reaction

- occurs with ions in ionic compounds.
- Opposite charges .
- in these compounds: A^+ , B^- , C^+ , D^-
- The ions can around to make a new positive/negative pairing.

**Replacement Reaction: Example**

- Potassium iodide with lead nitrate to form lead iodide precipitate and potassium nitrate solution.
- Ions in these compounds: K^+ , I^- , Pb^{+2} , NO_3^-



Summary

Types of Chemical Reactions

?

Lesson Question

How are chemical reactions classified?

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Answer

Slide

2

Review: Key Concepts*Complete the table.*

Type of Reaction	Chemical Equation
	$A + B \rightarrow AB$
Combustion	Hydrocarbon + <input type="text"/> \rightarrow CO_2 + <input type="text"/>
	$AB \rightarrow A + B$
Replacement	<input type="text"/> + $CD \rightarrow AD$ + <input type="text"/>

Use this space to write any questions or thoughts about this lesson.