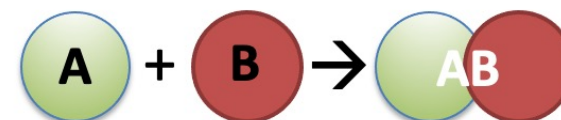
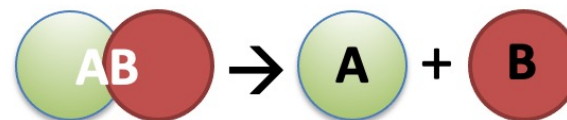
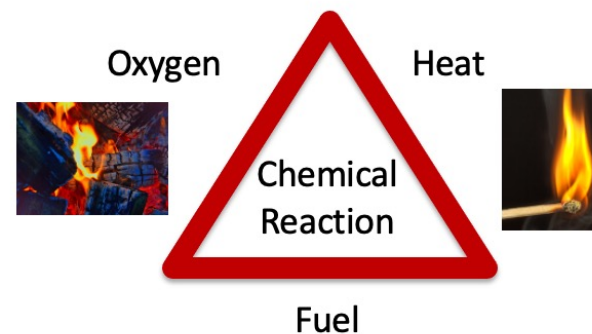


Chemical Reactions

Synthesis, Decomposition, & Combustion

- The 5 Main Reaction Types
- Steps to Writing Reactions
- Synthesis Reactions
- Decomposition Reaction
- Combustion Reactions
- Check Your Understanding for each type of reaction



Preview File

Please enjoy this preview of your Student Version of the presentation. Please note within this sample file:

- Some slides appear blank because they have been removed
- Student versions have portions of the text removed which is given in the teacher version and appear as _____ which the students are to fill in
- Other slides may have on them, this represents writing that has been removed on this sample

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Types of Reactions

There are five types of chemical reactions:

1. _____
2. _____
3. _____
4. Single displacement reactions
5. Double displacement reactions

You need to be able to identify the type of reaction and predict the product(s). This lesson will cover synthesis, decomposition, and combustion reactions.

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Synthesis reactions

- _____

reactant + reactant $\rightarrow$ 1 product



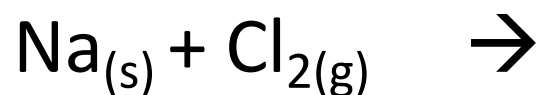
- Example: $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$

- Example: $\text{C} + \text{O}_2 \rightarrow \text{CO}_2$

Check Your Understanding

Predict the products. Write and balance the following synthesis reaction equations:

Sodium metal reacts with chlorine gas



Solid Magnesium reacts with fluorine gas



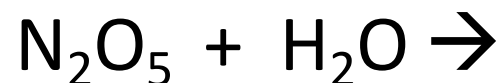
Aluminum metal reacts with fluorine gas



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Check Your Understanding

Predict the products. Write and balance the following synthesis reaction equations:

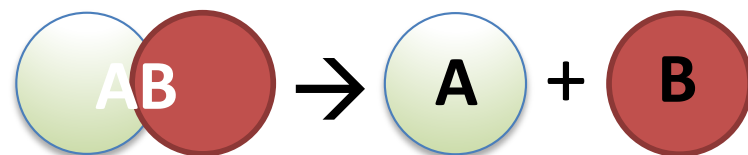


Decomposition Reactions

- Decomposition reactions occur when a compound breaks up into the elements or in a few to simpler compounds.

- _____

- In general: $AB \rightarrow A + B$



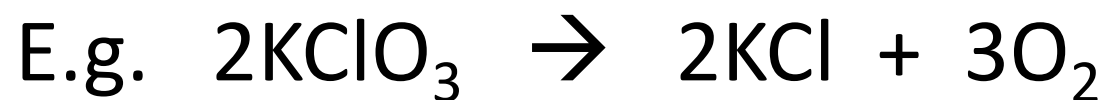
- Example: $2\text{H}_2\text{O} \rightarrow 2\text{H}_2 + \text{O}_2$
- Example: $2\text{HgO} \rightarrow 2\text{Hg} + \text{O}_2$

Other Decomposition Reactions:

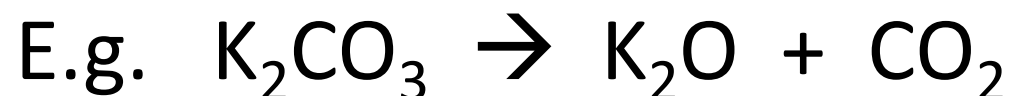
___ Nitrate $\rightarrow$ ___ Nitrite + oxygen



___ Chlorate $\rightarrow$ ___ Chloride + oxygen



___ Carbonate $\rightarrow$ ___ oxide + carbon dioxide



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Other Decomposition Reactions:

___hydroxide $\rightarrow$ ___oxide + water



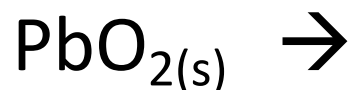
acid $\rightarrow$ nonmetallic oxide + water



Check Your Understanding

Predict the products then write and balance the following decomposition reaction equations:

Solid Lead (IV) oxide decomposes

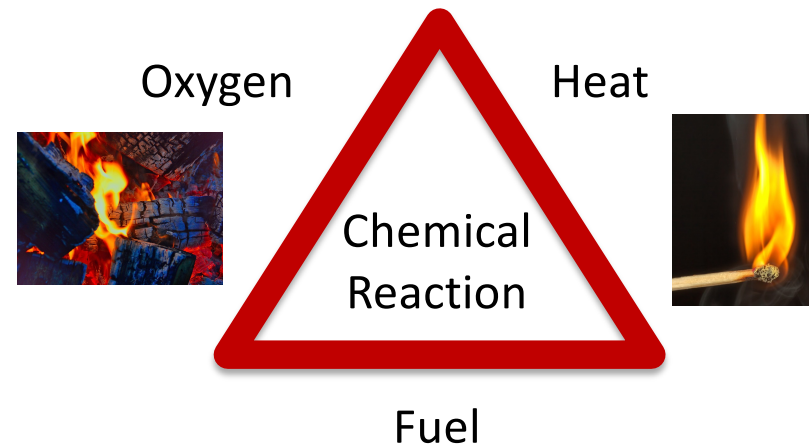


Aluminum nitride decomposes

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Combustion Reactions

- _____
- This is also called burning
- In order to burn something, you need the 3 things in the “fire triangle”



- 1) A fuel (hydrocarbon).
- 2) Oxygen to burn it with.
- 3) Something to ignite the reaction (spark).



Combustion Reactions

- In general:



- _____

- Combustion is used to heat homes and run automobiles (octane, as in gasoline, is C_8H_{18})



CO detector

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Check Your Understanding

State the type, predict the products, and balance the following reactions:

