

Name: _____ Date: _____
IPC

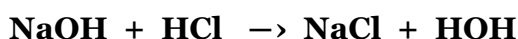
Class Notes

Chemical Reactions

Chemical reactions always involve the changing of certain substances into new substances with different chemical and physical properties.



In other words, a **chemical reaction** is the breaking of chemical bonds and then **rearranging the atoms or ions to form new bonds and new substances.**



The substance or substances that the reaction started with are called the **reactants** and the new substance or substances created are called **products**.

Chemical reactions undergo physical and chemical changes in which **new substances are always created** and **energy is either absorbed (endothermic) or released (exothermic)**. It is these characteristics that help determine whether a reaction has occurred.

List some signs that a chemical reaction has occurred:

- _____
- _____
- _____
- _____
- _____

For a chemical reaction to occur, the reactants must have the ability to combine with other substances. This ability to combine is determined by the bonding ability of the elements or polyatomic ions involved. **So, you can use your knowledge of ionic charges, oxidation numbers and the octet rule to determine how a reaction might occur.**

Think It Through

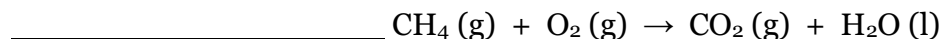
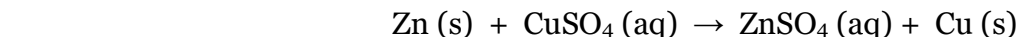
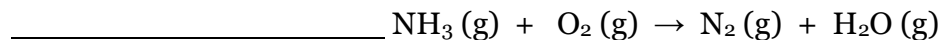
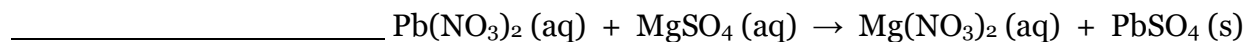
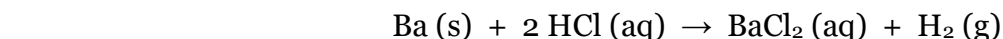
- Can you describe a physical change?
- Can you describe a physical change?
- What is a polyatomic ion?
- Can you describe a chemical reaction?

Types of Chemical Reactions

Chemists classify chemical reactions in order to help predict the products of chemical reactions. There are five main types of chemical reactions but not all reactions can be easily classified.



Practice



Think It Through

- What are reactants and products?
- What two things that always happen in a chemical reaction?
- Describe an exothermic and endothermic reaction?
- What are the signs that a chemical reaction has occurred?
- Can you list the 5 basic types of chemical reactions?
- What are the products of a combustion reaction?

***“Without legends, dreams die. When dreams die,
there is no opportunity for greatness.”***

--Old Adage