

Chapter 5 Lesson 2 pages 170-172

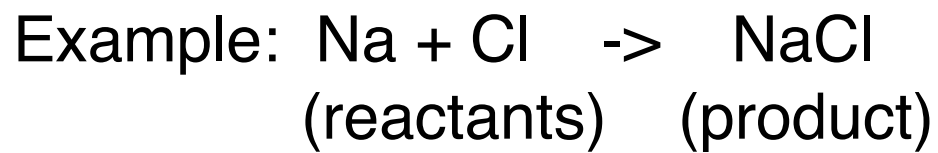
III. What Information Does a Chemical Equation Contain?

A. Chemical equation: a way to show chemical reaction using symbols.

- represents elements in compounds
- summarizes everything needed to carry out a chemical reaction
- tells you the substances you start within a reaction and the substances that are formed at the end.

B. Reactants - are what we start with in a reaction. (left)

Products are the new substances formed in a chemical reaction. (right)



C. The arrow means yields or reacts to form.

- 2 or more reactants are separated by a plus sign
- 2 or more products will also be separated by a plus sign.



4 Types of Chemical Reactions
(A.B. p. 8 & 9)

IV. How is Mass Conserved During a Chemical Reaction? Pages 174-175

Lesson 2 Cont.

A. Law of Conservation of Mass: states that during a chemical reaction matter is not created or destroyed.

- All of the atoms present at the start of the reaction are present at the end of the reaction.
- However, they may be rearranged to form new substances.

B. All the atoms in the reactants are present in the products.

- The amount of matter does not change.
- Total mass stays the same before and after the reaction. (See p.

C. Open and Closed Systems

- Open system: matter can enter from or escape to the surroundings.
 - If you want to measure all the matter before and after a reaction, you have to contain it.
 - Closed System: matter does not enter or leave.
 - A chemical reaction that occurs inside a sealed, airtight container is a closed system.
- * DEMO - Baking soda & Vinegar in a bottle with and without a balloon

V. What Are Three Types of Chemical Reactions? Page 180

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A. 4 Types of Chemical Reactions are: synthesis, decomposition, single replacement and double replacement.

B. Synthesis: to synthesis is to put things together.

*When 2 or more elements or compounds combine to make a more complex substance.

- C. Decomposition: reaction occurs when compounds break down into simpler products.
- D. Single replacement: one element replaces another element.
- E. Double replacement: elements in a compound appear to trade places with the elements in another compound.