

11.2

TYPES OF CHEMICAL REACTIONS

Section Review

Objectives

- Describe the five general types of reactions
- Predict the products of the five general types of reactions

Vocabulary

- combination reaction
- decomposition reaction
- single-replacement reaction
- activity series
- double-replacement reaction
- combustion reaction

Part A Completion

Use this completion exercise to check your understanding of the concepts and terms that are introduced in this section. Each blank can be completed with a term, short phrase, or number.

It is possible to 1 the products of some chemical reactions. In order to do this, you must be able to recognize at least five general types of reactions. For example, in a 2 reaction, the reactants are two or more 3 and/or compounds and there is always a 4 product. In a 5 reaction, a single compound is broken down into two or more simpler substances.

In a 6 reaction, the reactants and products are an element and a compound. The 7 can be used to predict whether most single-replacement reactions will take place.

A 8 reaction involves the exchange of ions between two compounds. This reaction generally takes place between two ionic compounds in 9 solution. One of the reactants in a combustion reaction is 10 . The products of the complete combustion of a hydrocarbon are 11 and 12 .

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

Part B True-False

Classify each of these statements as always true, AT; sometimes true, ST; or never true, NT.

- _____ 13. In a decomposition reaction, there is a single reactant.
- _____ 14. The activity series of metals can be used to predict products in double-replacement reactions.
- _____ 15. Carbon dioxide and water are the products of the combustion of hexane (C₆H₁₄).
- _____ 16. A nonmetal can replace another nonmetal from a compound in a single-replacement reaction.
- _____ 17. One of the products of a double-replacement reaction is a gas that bubbles out of the mixture.

Part C Matching

Match each description in Column B to the correct term in Column A.

Column A

- _____ 18. combination reaction
- _____ 19. decomposition reaction
- _____ 20. single-replacement reaction
- _____ 21. combustion reaction

Column B

- a. reaction in which atoms of one element replace atoms of a second element in a compound
- b. a reaction in which two or more substances combine to form a single substance
- c. reaction of a compound with oxygen to produce energy
- d. reaction in which a single compound is broken down into two or more products

Part D Questions and Problems

Answer the following in the space provided.

22. Identify the type of each of the following reactions.



23. Complete and balance the following equation. What must be true of one of the products?

