

Types of Chemical Reactions #2

1. A decomposition reaction starts with one reactant and ends up with two or more products. Which of the following reactions are decomposition reactions? Circle the letters.
 - a. $\text{NaCl} \rightarrow \text{Na} + \text{Cl}_2$
 - b. $\text{Na} + \text{Cl}_2 \rightarrow \text{NaCl}$
 - c. $\text{H}_2\text{O} \rightarrow \text{H}_2 + \text{O}_2$
 - d. $\text{H}_2 + \text{O}_2 \rightarrow \text{H}_2\text{O}$
 - e. $\text{NaOH} + \text{HCl} \rightarrow \text{HOH} + \text{NaCl}$
2. A synthesis reaction starts with two reactants and ends up with one product. Which of the following reactions are synthesis reactions? Circle the letters.
 - a. $\text{NaCl} \rightarrow \text{Na} + \text{Cl}_2$
 - b. $\text{Na} + \text{HCl} \rightarrow \text{H}_2 + \text{NaCl}$
 - c. $\text{H}_2 + \text{O}_2 \rightarrow \text{H}_2\text{O}$
 - d. $\text{NaOH} + \text{HCl} \rightarrow \text{HOH} + \text{NaCl}$
 - e. $\text{K} + \text{Cl}_2 \rightarrow \text{KCl}$
3. A single-replacement reaction starts with two reactants and ends up with two products. The uncombined element takes the place of the combined element in the compound. Which of the following reactions are single-replacement reactions? Circle the letters.
 - a. $\text{NaCl} \rightarrow \text{Na} + \text{Cl}_2$
 - b. $\text{NaOH} + \text{HCl} \rightarrow \text{HOH} + \text{NaCl}$
 - c. $\text{K} + \text{AgCl} \rightarrow \text{Ag} + \text{KCl}$
 - d. $\text{Ca} + \text{S} \rightarrow \text{CaS}$
 - e. $\text{Na} + \text{HCl} \rightarrow \text{H}_2 + \text{NaCl}$
4. A double-replacement reaction starts with two reactants and ends up with two products. In this case both reactants are compounds and both products are compounds. They simply change partners. Which of the following reactions are double-replacement reactions? Circle the letters.
 - a. $\text{NaCl} \rightarrow \text{Na} + \text{Cl}_2$
 - b. $\text{NaOH} + \text{HCl} \rightarrow \text{HOH} + \text{NaCl}$
 - c. $\text{Na} + \text{HCl} \rightarrow \text{H}_2 + \text{NaCl}$
 - d. $\text{KOH} + \text{HNO}_3 \rightarrow \text{HOH} + \text{KNO}_3$
 - e. $\text{Ca} + \text{S} \rightarrow \text{CaS}$

Identify and Balancing Chemical Equations

Types of chemical reactions:

S-Synthesis

SR-Single Replacement

D-Decomposition

DR-Double Replacement

Balance then identify the type of reaction for each of the following chemical equations:

Balance (2 points each)

Type of Reaction (1 point each)

- $\text{H}_2 + \text{O}_2 \rightarrow \text{H}_2\text{O}$ _____
- $\text{Ca} + \text{AgN} \rightarrow \text{Ag} + \text{Ca}_3\text{N}_2$ _____
- $\text{Fe} + \text{O}_2 \rightarrow \text{Fe}_2\text{O}_3$ _____
- $\text{Ni}_3\text{N}_2 + \text{MgF}_2 \rightarrow \text{Mg}_3\text{N}_2 + \text{NiF}_2$ _____
- $\text{HgO} \rightarrow \text{Hg} + \text{O}_2$ _____
- $\text{CuCl}_2 + \text{H}_2\text{S} \rightarrow \text{CuS} + \text{HCl}$ _____
- $\text{Ag} + \text{Cl}_2 \rightarrow \text{AgCl}$ _____
- $\text{KClO}_3 \rightarrow \text{O}_2 + \text{KCl}$ _____
- $\text{Al} + \text{CuCl}_2 \rightarrow \text{Cu} + \text{AlCl}_3$ _____
- challenge*
 $\text{K}_3(\text{PO}_4) + \text{MgCl}_2 \rightarrow \text{Mg}_3(\text{PO}_4)_2 + \text{KCl}$ _____