Key

Worksheet #2: Synthesis Reactions

In synthesis reactions, two or more reactants come together to form one compound.

A + B → AB

Complete the following word equations, and write and balance the formula equation.

1. calcium + oxygen → calcium oxide

$2Ca + O_2 \rightarrow 2CaO$

2. copper + sulfur → copper(II) sulfide

$Cu + S \rightarrow CuS$

3. calcium oxide + water → calcium hydroxide

CaO H_2O $Ca(OH)_2$

4. hydrogen + nitrogen → ammonia

$3H_2 + N_2 \rightarrow 2NH_3$

5. hydrogen + chlorine → Hydrogen Chloride

$H_2 + Cl_2 \rightarrow 2HCl$

6. silver + sulfur → silver sulfide

$Ag + S \rightarrow Ag_2S$

7. chromium + oxygen → Chromium (II) Oxide

$2Cr + O_2 \rightarrow 2CrO$

8. aluminum + bromine → Aluminum Bromide

$2Al + 3Br_2 \rightarrow 2AlBr_3$

9. sodium + iodine → Sodium Iodide

$2Na + I_2 \rightarrow 2NaI$

10. hydrogen + oxygen → water

$2H_2 + O_2 \rightarrow 2H_2O$

11. aluminum + oxygen → Aluminum Oxide

$4Al + 3O_2 \rightarrow 2Al_2O_3$

Worksheet #3: Decomposition Reactions

In decomposition reactions, one compound will break down into two or more parts.

1. barium carbonate → Barium Oxide + Carbon Dioxide

$BaCO_3 \rightarrow BaO + CO_2$

2. magnesium carbonate → Magnesium Oxide + Carbon Dioxide

$MgCO_3 \rightarrow MgO + CO_2$

3. potassium carbonate → Potassium Oxide + Carbon Dioxide

$K_2CO_3 \rightarrow K_2O + CO_2$

4. zinc hydroxide → Zinc Oxide + WATER

~~$Zn(OH)_2 \rightarrow ZnO + H_2$~~

$Zn(OH)_2 \rightarrow ZnO + H_2O$

5. Iron(II) hydroxide → Iron(II) Oxide + WATER

$Fe(OH)_2 \rightarrow FeO + H_2O$

6. nickel(II) chlorate →

$Ni(ClO_3)_2 \rightarrow NiCl_2 + 3O_2$

7. sodium chlorate →

$2NaClO_3 \rightarrow 2NaCl + 3O_2$

8. potassium chlorate →

$KClO_3 \rightarrow 2KCl + 3O_2$

9. sulfuric acid → Sulfur Trioxide + Water

$H_2SO_4 \rightarrow SO_3 + H_2O$

10. carbonic acid → Carbon Dioxide + Water

$H_2CO_3 \rightarrow CO_2 + H_2O$

11. aluminum oxide → Aluminum + Oxygen

$2Al_2O_3 \rightarrow 4Al + 3O_2$

12. silver oxide → Silver + Oxygen

$2Ag_2O \rightarrow 4Ag + O_2$