## Writing and Balancing Chemical Reactions

Write and balance the following chemical reactions.

1) Solid aluminum reacts with oxygen gas to produce solid aluminum oxide. 2) Propane reacts with oxygen to produce carbon dioxide and water. 3) Aluminum nitrate reacts with sodium hydroxide to form aluminum hydroxide and sodium nitrate. 4) Potassium nitrate decomposes to form potassium nitrite and oxygen. 5) Oxygen reacts with carbon sulfide to form carbon dioxide and sulfur dioxide. 6) Potassium chlorate decomposes to form potassium chloride and oxygen. 7) Barium fluoride reacts with potassium phosphate to form barium phosphate and potassium fluoride. 8) Hydrogen sulfate reacts with magnesium nitrate to form magnesium sulfate and hydrogen nitrate. 9) Solid aluminum reacts with hydrogen sulfate to form aluminum sulfate and hydrogen. 10) Tungsten oxide reacts with hydrogen to form tungsten and water.

## Writing and Balancing Chemical Reactions

## **Answers**

1) Solid aluminum reacts with oxygen gas to produce solid aluminum oxide.

$$AI + 3 O_2 \rightarrow 2 AI_2O_3$$

2) Propane reacts with oxygen to produce carbon dioxide and water.

$$C_3H_8 + 5 O_2 \rightarrow 3 CO_2 + 4 H_2O$$

3) Aluminum nitrate reacts with sodium hydroxide to form aluminum hydroxide and sodium nitrate.

$$Al(NO_3)_3 + 3 NaOH \rightarrow Al(OH)_3 + 3 NaNO_3$$

4) Potassium nitrate decomposes to form potassium nitrite and oxygen.

$$2 \text{ KNO}_3 \rightarrow 2 \text{ KNO}_2 + \text{O}_2$$

5) Oxygen reacts with carbon sulfide to form carbon dioxide and sulfur dioxide.

$$3 O_2 + CS_2 \rightarrow CO_2 + 2 SO_2$$

6) Potassium chlorate decomposes to form potassium chloride and oxygen.

$$2 \text{ KCIO}_3 \rightarrow 2 \text{ KCI} + 3 \text{ O}_2$$

7) Barium fluoride reacts with potassium phosphate to form barium phosphate and potassium fluoride.

$$3 \text{ BaF}_2 + 2 \text{ K}_3 \text{PO}_4 \longrightarrow \text{Ba}_3 (\text{PO}_4)_2 + 6 \text{ KF}$$

8) Hydrogen sulfate reacts with magnesium nitrate to form magnesium sulfate and hydrogen nitrate.

$$H_2SO_4 + Mg(NO_3)_2 \rightarrow MgSO_4 + 2 HNO_3$$

9) Solid aluminum reacts with hydrogen sulfate to form aluminum sulfate and hydrogen.

$$2 AI + 3 H2SO4 \rightarrow AI2(SO4)3 + 3 H$$

10) Tungsten oxide reacts with hydrogen to form tungsten and water.

$$WO_3 + 3 H_2 \rightarrow W + 3 H_2O$$