

Writing and Balancing Chemical Equations
Worksheet #2

1. Solid sodium reacts with oxygen gas to produce solid sodium oxide. Write a word equation for this reaction. Then write a balanced chemical equation, using the correct chemical formulas and phase symbols.

2. Give the word equation and the balanced chemical equation for the decomposition of solid calcium carbonate into solid calcium oxide and carbon dioxide gas.

3. Solid potassium chlorate is synthesized by combination of solid potassium, chlorine gas, and oxygen gas. Write the word equation and the balanced chemical equation for this synthesis.

4. Magnesium metal replaces mercury in an aqueous solution of the compound mercury (II) nitrate. Give the word equation and the balanced chemical equation for this single replacement reaction.

5. Write the word equation and the balanced chemical equation for the chemical reaction between liquid water and calcium metal, given that the reaction produces aqueous calcium hydroxide and hydrogen gas.

6. Give the word equation and the balanced chemical equation for the chemical reaction that produces solid copper (I) oxide from its elements.

7. Liquid bromine combines with gaseous nitrogen to produce gaseous nitrogen tribromide. Write the word equation and the balanced chemical equation for this synthesis reaction.

8. Lead (II) sulfate is precipitated from a mixture of water solutions of potassium sulfate and lead (II) nitrate. Write the word equation and the balanced chemical equation for this double replacement reaction.

9. Write the word equation and the balanced chemical equation for the chemical reaction that occurs when solid aluminum oxide is decomposed into aluminum and oxygen.

10. Carbon monoxide gas reacts with sulfur trioxide gas to produce carbon dioxide gas and sulfur dioxide gas. Write the word equation and the balanced chemical equation for this reaction.

11. Write the word equation and the balanced chemical equation for the synthesis reaction that occurs when ammonia vapor and hydrogen sulfide gas react to produce solid ammonium sulfide.
(Hint: The chemical formula for ammonia is NH_3 .)

12. Ethane gas, C_2H_6 , combines chemically with atmospheric oxygen in a combustion reaction to produce carbon dioxide gas and water vapor. Write the word equation and the balanced chemical equation for this reaction.