

**Key Terms Needed For the Unit 2 Evaluation**

You should know the definitions for each of these key terms and be able to use them correctly when talking about chemistry.

- |                         |                           |                                |
|-------------------------|---------------------------|--------------------------------|
| ___ solubility          | ___ aqueous solution      | ___ precipitate                |
| ___ spectator ion       | ___ net ionic equation    | ___ total ionic equation       |
| ___ word equation       | ___ skeleton equation     | ___ balanced chemical equation |
| ___ complete combustion | ___ incomplete combustion |                                |

**Types of Chemical Equations**

synthesis reaction  $A + B \rightarrow AB$

decomposition reaction  $AB \rightarrow A + B$

combustion reaction  $\text{Metal} + O_2 \rightarrow \text{metal oxide}$      $\text{non-metal} + O_2 \rightarrow \text{dioxide}$

complete combustion:  $C_xH_y + O_2 \rightarrow CO_2 + H_2O$

incomplete combustion:  $C_xH_y + O_2 \rightarrow CO_2 + H_2O + C + CO$  etc.

single displacement reaction  $A + BC \rightarrow B + AC$

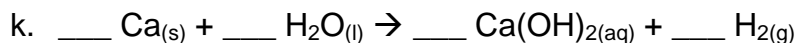
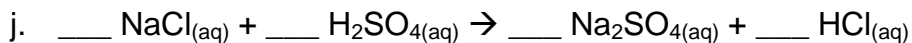
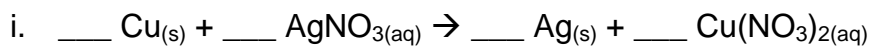
double displacement reaction  $AB + CD \rightarrow AD + CB$

**Problems You Should Be Able To Solve:**

- Identify different types of chemical reactions
- Write word equations
- Write balanced chemical equations
- Predict the formation of a precipitate
- Write total ionic equations and net ionic equations

**Review**

1. Complete assigned textbook questions (pg 53 #1-8, pg 57 #1, pg 62 #1-2, pg 72 #19-22)
2. Classify each of the following reactions as a synthesis, decomposition, single displacement, or double displacement reaction and balance them:
  - a.  $\text{___ CaO}_{(s)} + \text{___ CO}_{2(g)} \rightarrow \text{___ CaCO}_{3(s)}$
  - b.  $\text{___ FeS}_{(s)} + \text{___ HCl}_{(aq)} \rightarrow \text{___ FeCl}_{2(aq)} + \text{___ H}_2\text{S}_{(s)}$
  - c.  $\text{___ Na}_2\text{O}_{(s)} + \text{___ CO}_{2(g)} \rightarrow \text{___ Na}_2\text{CO}_{3(s)}$
  - d.  $\text{___ H}_2\text{O}_{(l)} \rightarrow \text{___ H}_{2(g)} + \text{___ O}_{2(g)}$
  - e.  $\text{___ KCl}_{(s)} + \text{___ O}_{2(g)} \rightarrow \text{___ KClO}_{3(s)}$
  - f.  $\text{___ Fe}_{(s)} + \text{___ Cu(NO}_3)_2(aq) \rightarrow \text{___ Fe(NO}_3)_2(aq) + \text{___ Cu}_{(s)}$
  - g.  $\text{___ Ba(ClO}_3)_2(s) \rightarrow \text{___ BaCl}_{2(s)} + \text{___ O}_{2(g)}$
  - h.  $\text{___ FeS}_{(s)} \rightarrow \text{___ Fe}_{(s)} + \text{___ S}_{(s)}$



3. Using the solubility rules, determine whether each of the following compounds are soluble in water:

a. calcium sulfate \_\_\_\_\_

b. hydrogen sulfide \_\_\_\_\_

c. sodium nitrate \_\_\_\_\_

d. copper (II) chloride \_\_\_\_\_

e. magnesium carbonate \_\_\_\_\_

f. sodium hydroxide \_\_\_\_\_

4. Using the solubility rules, complete each of the following double displacement reaction equations. Make sure to balance the equations. Write total ionic and net equations for each reaction. If no reaction occurs, write NR.

a. Aqueous silver nitrate and potassium chloride

b. Aqueous lead (II) nitrate and potassium sulfide