



Name:	_Key_	 -		
Period:_	_			

By the end of Unit 5, you should be able to:

Chapter 11

- 35. Write word and chemical equations based on chemical reactions
- 36. Balance chemical equations
- 37. Identify the five types of chemical reactions
- 38. Predict the products of chemical equations

Chemical Reaction: Answer the following questions about the generic chemical equation below. (pg 346-348)

$$A_{(aq)} + B_{(s)} \rightarrow C_{(g)} + D_{(l)}$$

- 1. A and B represent the **__Reactants____**.
- 2. C and D represent the _____.
- 3. The (aq) stands for **_aqueous__** which means **__dissolved in water___**.
- 4. The (s) stands for _____.
- 5. The (g) stands for **__gas___**.
- 6. The (l) stands for .
- 7. The → stands for __yields, produces, forms, creates____.

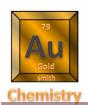
Word to Chemical Equations: Write the following word equations as chemical equations. Do not worry about balancing the equations. Include the state of matter when it is given.

- 8. Methane (CH₄) in the gaseous state reacts with oxygen gas to yield water and carbon dioxide gas.
- 9. Aqueous hydrogen chloride reacts with aqueous sodium hydroxide to create water and aqueous sodium chloride.

$$HC1_{(aq)} + NaOH_{(aq)} \rightarrow H_2O_{(l)} + NaC1_{(aq)}$$

- 10. Potassium chloride mixed with oxygen gas forms potassium chlorate.
- 11. Calcium carbonate breaks into calcium oxide and carbon dioxide.

$$CaCO_3 \rightarrow CaO + CO_2$$





12. Lithium oxide combines with water to form lithium hydroxide.

Chemical to Word Equations: Write the following chemical equations as word equations. Include the state of matter when they are provided.

$$13.H_2SO_{4 (aq)} + Ca(OH)_{2 (aq)} \rightarrow CaSO_{4 (aq)} + 2H_2O_{(l)}$$

Aqueous hydrogen sulfate and aqueous calcium hydroxide creates aqueous calcium sulfate and water.

14.6Na + Fe₂O₃ →
$$3$$
Na₂O + 2 Fe

$$15.F_{2 (g)} + 2NaCl_{(aq)} \rightarrow 2NaF_{(aq)} + Cl_{2 (g)}$$

Fluorine gas and aqueous sodium chloride create aqueous sodium fluoride and chlorine gas.

$$16.MgCO_3 \rightarrow CO_2 + MgO$$

$$17.2$$
NaHCO₃ \rightarrow Na₂CO₃ + H₂O + CO₂

Sodium hydrogen carbonate decomposes into sodium carbonate, water, and carbon dioxide

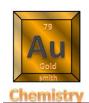
Balancing Chemical Reactions: Balance the following chemical reactions.

18.__Ca + __AgBr
$$\rightarrow$$
 __Ag + __CaBr₂

19.
$$2$$
 LiCl + 1 F₂ \rightarrow 1 Cl₂ + 2 LiF

$$20. C_2H_6 + O_2 \rightarrow CO_2 + H_2O$$

$$21._2Cl_2 + _1HgO \rightarrow _1HgCl_2 + _1Cl_2O$$





$$22.$$
 $MnO_2 + _H_2SO_4 \rightarrow _MnSO_4 + _O_2 + _H_2O$

$$23._{C_2H_3O_2Br} + _3_{O_2} \rightarrow _4_{CO_2} + _2_{H_2O} + _2_{HBr}$$

24.
$$CO + O_2 \rightarrow CO_2$$

Types of Reactions: Identify the type of chemical reaction shown.(pg. 356-367)

$$25.CH_4 + 2O_2 \rightarrow 2H_2O + CO_2$$
 Type: __combustion_____

$$27.Ba(OH)_2 + 2Na \rightarrow 2NaOH + Ba$$
 Type: Cationic Single R.

$$28. CaCO_3 \rightarrow CaO + CO_2$$
 Type: _____

$$29. \text{MgO} + \text{H}_2\text{O} \rightarrow \text{Mg(OH)}_2$$
 Type: _**Synthesis**____

$$30.C_3H_8 + 5O_2 \rightarrow 3CO_2 + 4H_2O$$
 Type: _____

$$31.\text{Fe} + 3\text{AgNO}_3 \rightarrow \text{Fe(NO}_3)_3 + 3\text{Ag}$$
 Type: Cationic Single R.

$$32.RbCl + O_2 \rightarrow RbClO_3$$
 Type: _____

$$33.2Mg + O_2 \rightarrow 2MgO$$
 Type: _Synthesis_____

$$34.Zn + CuSO_4 \rightarrow ZnSO_4 + Cu$$
 Type: _____

35.2NiCl + Mg(NO₃)₂
$$\rightarrow$$
 2 NiNO₃ + MgCl₂ Type: _Double Replacement____

$$36. H_3PO_4 + Fe(OH)_3 \rightarrow FePO_4 + 3 H_2O$$
 Type: _____

$$37.2SO_2 + O_2 \rightarrow 2SO_3$$
 Type: _Synthesis_____





Predicting Products: Predict the products if the following chemicals are combined.

Balance the equations. If the reaction will not occur, write "no reaction". (pg 366-367)

$$39. \underline{\qquad} MgCl_2 + \underline{\qquad} NaNO_3 \rightarrow \underline{\qquad} Mg(NO_3)_2 + \underline{\qquad} 2NaCl\underline{\qquad}$$

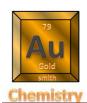
$$40.$$
 __C₂H₅O + __O₂ \rightarrow _____

43.
$$CaCl_2 + _3 O_2 \rightarrow _Ca(ClO_3)_2$$

44.
$$\underline{\hspace{0.1cm}}$$
MgBr₂ + $\underline{\hspace{0.1cm}}$ F₂ \rightarrow $\underline{\hspace{0.1cm}}$

45.
$$Mg_3(PO_4)_2 + _6$$
_Li \rightarrow _2Li₃PO₄ + 3Mg_____

47.
$$Cr(NO_2)_2 + 2KCl \rightarrow 2KNO_2 + CrCl_2$$





$$49.$$
 _2_Fe(OH)₃ \rightarrow ___Fe₂O₃ + $3H_2O$ _____

51._3_HCl + Fe(OH)₃
$$\rightarrow$$
 __**H**₂O + FeCl₃_____

52.
$$\underline{\hspace{0.1cm}}$$
SnCl₄ + Cu⁺¹ \rightarrow

Write and balance the chemical equations if the following are combined (3 pt).

53. Sodium chloride and lithium

- 54. Magnesium nitrate and lead (IV) phosphate
- 55. Hydrogen cyanide and gold (I)

No Reaction

56.Oxygen gas and butanol (C₄H₁₀O)