

Chemical Reactions Study Guide

Name Key

1. Label each of the following as describing a metal or a nonmetal:

- Ions form a positive charge metal
- Ions form a negative charge non-metal
- Ion name ends in -ide non-metal
- Found on left side of the periodic table metals
- Found on right side of the periodic table non-metals

2. List the charge of the most common ion formed by each of the following elements:

- Li +1
- O -2
- N -3
- Aluminum +3
- Chlorine -1

3. What is the formula of these compounds? Show work.

a. Magnesium fluoride



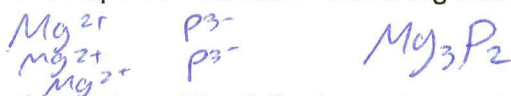
b. Calcium oxide



c. The compound formed between Li and S



d. The compound formed between Mg and P



4. What are the names of the following compounds?

a. Al_2Se_3

Aluminum selenide

b. BaF_2

Barium fluoride

5. Describe how charged ions can combine to make a neutral compound.

Equal amounts of positive and negative charge add up to a net charge of zero.

6. Mg_3P_2 . Circle the subscripts in the formula. What do the subscripts represent?

The subscripts represent the number of ions in the formula.

7. Which two factors affect the strength of coulombic forces?

distance and charge

8. What happens to particles that have a negative coulombic force?

~~the~~ particles with a negative coulombic force are attracted to each other.

9. Why is the coulombic force between metal and nonmetal ions always negative?

Coulombic force between metal and nonmetal is always negative because metals have a positive charge, nonmetals have a negative charge and positive times negative is always ~~positive~~ negative.

10. How can you determine the charge of a transition metal ion?

look at the subscripts in the formula

11. Determine the charge of chromium in the following compounds:

- a. Cr_2S_3 +3
- b. CrBr_2 +2
- c. Cr_2O +1

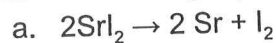
12. Label the following as relating to decomposition or combination reactions:

- a. Compounds become elements decomposition
- b. Elements become compounds combination
- c. The reaction has only one reactant decomposition
- d. The reaction has only one product combination
- e. $2\text{NaCl} \rightarrow 2\text{Na} + \text{Cl}_2$ decomposition
- f. $2\text{Ca} + \text{F}_2 \rightarrow 2\text{CaF}_2$ combination

13. What phrase does an arrow (\rightarrow) represent in a chemical equation?

React to ~~produce~~ form

14. Write the following equations as sentences. Use complete names, not symbols:



Strontium iodide reacts to form strontium and iodine



Aluminum and selenium react to form aluminum selenide

15. Fill in the blanks with complete names of elements and compounds:

a. Magnesium bromide will decompose into magnesium and Bromine

b. calcium will decompose into calcium chloride mistake

c. Beryllium and Sulfur react to form Beryllium sulfide

d. lithium and phosphorus react to form lithium phosphide