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Chapter 6 Chemical Bonds

Section 6.3 Naming Compounds and Writing Formulas

(pages 170-175)

This section explains how to name and write formulas for ionic and molecular compounds.

Reading Strategy (page 170)

Predicting Before you read, predict the meaning of the term *polyatomic ion*, and write your prediction in the table. After you read, if your prediction was incorrect, revise your definition. For more information on this Reading Strategy, see the **Reading and Study Skills** in the **Skills and Reference Handbook** at the end of your textbook.

Vocabulary Term	Before You Read	After You Read
Polyatomic ion		

Describing Ionic Compounds (pages 171-173)

- **1.** Is the following sentence true or false? The name of an ionic compound must distinguish the compound from other ionic compounds containing the same elements.
- 2. What information is provided by the formula for an ionic compound? _____
- **3.** Circle the letter of the word that describes a compound made from only two elements.
 - a. ionic

b. binary

c. diatomic

- d. polar
- **4.** Is the following sentence true or false? Names of anions are formed by placing the suffix *-ide* after part of the name of the nonmetal.
- **5.** When a metal forms more than one ion, the name of the ion contains a Roman numeral to indicate the ______ on the ion.
- 6. What is a polyatomic ion? _____
- 7. Is the following sentence true or false? Because all compounds are neutral, the total charges on the cations and anions in the formula of an ionic compound must add up to zero.

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- 8. Circle the letter of the correct answer. The formula for sodium sulfide is Na_2S . The sodium ion has a charge of 1+. What must the charge on the sulfide ion be?
 - a. 1+

b. 0

c. 1-

d. 2-

Some Polyatomic Ions				
Name	Formula	Name	Formula	
Ammonium	NH ₄ +	Acetate	C ₂ H ₃ O ₂ ⁻	
Hydroxide	OH-	Peroxide	O ₂ 2-	
Nitrate	NO ₃ -	Permanganate	MnO ₄ ⁻	
Sulfate	SO ₄ 2-	Hydrogen sulfate	HSO ₄ -	
Carbonate	CO ₃ 2-	Hydrogen carbonate	HCO ₃ ⁻	
Phosphate	PO ₄ 3-	Hydrogen phosphate	HPO ₄ 2-	

9. Circle the letter that identifies the number of ammonium ions needed to form a compound with one phosphate ion.

a. one

b. two

c. three

d. four

Describing Molecular Compounds (pages 174–175)

10. What information is provided by the name and formula of a molecular compound?

11. Describe the general rule for naming molecular compounds. _____

- **12.** Is the following sentence true or false? The formula for a molecular compound is written with the symbols for the elements in the same order as the elements appear in the name of the compound.
- **13.** Circle the letter that identifies the method of naming the number of atoms in molecular compounds.
 - a. prefix

b. suffix

c. number

d. symbol

14. In the formula of a molecular compound, the number of atoms of an element in the molecule is represented by a(n)
