

13.2 Naming Compounds

READ

Compounds have unique names that identify them for us when we study chemical properties and changes. Predicting the name of a compound is fairly easy provided certain rules are kept in mind. In this skill sheet, you will practice naming a variety of chemical compounds.

Chemical Formulas and Compound Names

Chemical formulas tell a great deal of information about a compound—the types of elements forming the compound, the numbers of atoms of each element in one molecule, and even some indication, perhaps, of the arrangement of the atoms when they form the molecule.

In addition to having a unique chemical formula, each compound has a unique name. These names provide scientists with valuable information. Just like chemical formulas, chemical names tell which elements form the compound. However, the names may also identify a “family” or group to which the compound belongs. It is useful for scientists, therefore, to recognize and understand both a compound’s formula and its name.

Naming Ionic Compounds

Naming ionic compounds is relatively simple, especially if the compound is formed only from monoatomic ions. Follow these steps:

1. Write the name of the first element or the positive ion of the compound.
2. Write the root of the second element or negative ion of the compound.
3. For example, write *fluor-* to represent fluorine, *chlor-* to represent chlorine.
4. Replace the ending of the negative ion's name with the suffix *-ide*.
5. Fluorine → Fluoride; Chlorine → Chloride

EXAMPLES 

A compound containing potassium (K^{1+}) and iodine (I^{1-}) would be named potassium iodide.

Lithium (Li^{1+}) combined with sulfur (S^{2-}) would be named lithium sulfide.

Naming Compounds with Polyatomic Ions

Naming compounds that contain polyatomic ions is even easier. Just follow these two steps:

1. Write the name of the positive ion first. Use the periodic table or an ion chart to find the name.
2. Write the name of the negative ion second. Again, use the periodic table or an ion chart to find the name.

EXAMPLES 

A compound containing aluminum (Al^{1+}) and sulfate (SO_4^{2-}) would be called aluminum sulfate.

A compound containing magnesium (Mg^{2+}) and carbonate (CO_3^{2-}) would be called magnesium carbonate.

**PRACTICE**

Predict the name of the compound formed from the reaction between the following elements and/or polyatomic ions. Use the periodic table and the polyatomic ion chart in section 13.2 of your student text to help you name the ions.

Combination	Compound Name
Al + Br	
Be + O	
K + N	
Ba + CrO_4^{2-}	
Cs + F	
NH_3^{1+} + S	
Mg + Cl	
B + I	
Na + SO_4^{2-}	
Si + $\text{C}_2\text{H}_3\text{O}_2^{1-}$	