

In this worksheet we will examine how to **Name Ionic Compounds** that have **Polyatomic ions**

Polyatomic ions. "poly" means many. **Ions** are particles with a positive or negative charge. So polyatomic ions are groups of ("many") two or more atoms that have a charge. The *group as a whole shares the charge*. The polyatomic ion is treated just like the negative nonmetals we have been using already. Most polyatomic ion's names end in "**-ate**" some end in "**-ite**". Only a few end in "**-ide**". Most polyatomic ions are negative.

1. Look up the polyatomic ions **p66 in your text, table 2.6**. Write down the formula (*including the charge*):

ammonium _____ acetate _____ carbonate _____

dichromate _____ hydroxide _____ nitrate _____

oxalate _____ sulfate _____ phosphate _____

permanganate _____ nitrite _____ cyanide _____

2. What is common about most of the names of the polyatomic ions?
3. What element do most of the polyatomic ions have in the formula?
4. What type of elements are found in the polyatomic ions? (metal/nonmetal)

Naming ionics with polyatomic ions. Identify the compound as an ionic compound first [begins with a metal and ends with nonmetal(s)]. **You have to recognize the polyatomic ions within the formula.** At first you may incorrectly attempt to name every element in the formula. If the formula *begins with a metal and ends with two or three nonmetals* then it must be a polyatomic ion in the formula.

- steps for naming:
- a. name the metal with its full name.
 - b. Identify the polyatomic ion at the end of the formula, use its name.
 - c. No prefixes used.

naming examples:

$\text{Ca}(\text{NO}_3)_2$	$\text{Ca}(\text{NO}_3)_2$	<i>calcium nitrate</i>
KNO_3	KNO_3	<i>potassium nitrate</i>
$\text{Ba}(\text{OH})_2$	$\text{Ba}(\text{OH})_2$	<i>barium hydroxide</i>
Li_2CO_3	Li_2CO_3	<i>lithium carbonate</i>
$\text{Al}_2(\text{SO}_4)_3$	$\text{Al}_2(\text{SO}_4)_3$	<i>aluminum sulfate</i>
NH_4ClO_3	NH_4ClO_3	<i>ammonium chlorate</i>