

Writing Chemical Formulas for Compounds with Polyatomic Ions:

The formula writing procedure follows the same approach used earlier. You have to focus on balancing the ion charges. You need to get to know the names of some of the polyatomic ions. Most of them have an -ate or -ite ending, which sets them apart from the regular non-metal anions who have an -ide ending. Some polyatomic also have an -ide ending! Many of the names are very similar. Be Careful!!!!

Remember to:

1. Write the cation symbol first and the anion symbol last.
2. Balance the charges by providing the appropriate numerical subscript for each ion.

The main difference in writing formulas for compounds that contain polyatomic ion is that occasionally, you need to place brackets around a polyatomic ion symbol if its numerical subscript is greater than one.

Writing Names for Chemical Compounds with Polyatomic Ions:

Same procedure as regular ionic compounds, name the positive ion, name the negative ion. No matter how many capital letters you see in an ionic compound, there are still just two ions. Note these examples:

aluminum phosphate

aluminum is Al^{3+} and phosphate (note the ate ending) is on the back table and is PO_4^{3-}

so AlPO_4

magnesium hydroxide

Mg^{2+} with OH^- , so $\text{Mg}(\text{OH})_2$ Note we needed brackets with any polyatomic ion that requires a subscript other than 1

NaH_2PO_4

Even though there are many capitals, it is still just 2 ions. Pick your cation out first, it is sodium. That means all the rest is your anion. Since there is more than one capital in the ion, it must be on the back. It is called dihydrogen phosphate, so this is:

sodium dihydrogen phosphate

Cu_2SO_4

Your cation is copper, but it is multivalent, so we look at the anion first. It is SO_4 , which is SO_4^{2-} , called sulfate. The copper must be copper (I), because we need two of them to balance the charge on one sulfate. So this is:

copper (I) sulfate

