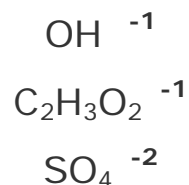


## How do we write Ionic Formulas involving Polyatomic Ions?

The word **polyatomic** means that we are working with **more than one atom** in an ion.

Examples of polyatomic ions are:



You DO NOT NEED TO MEMORIZE the polyatomic ions. They are given to you on a reference sheet. (see **List of Common Polyatomic Ions Handout**)

When writing ionic formulas using polyatomic ions, we still **use the crisscross method**.

**Example:**

**Q:** What is the formula for  $\text{Li}^{+1}$  and  $\text{OH}^{-1}$ ?

**Steps to Find the Answer:**

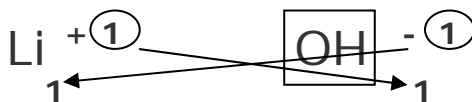
1. Put a **BOX** around the polyatomic ion



Once you draw the box, you **CANNOT CHANGE** anything inside the box!

The **charge** of the polyatomic ions stays **OUTSIDE THE BOX!**

2. Crisscross the charges.  
Remember to bring only the number! (No +/-)



The charges becoming subscripts are still OUTSIDE the box!

3. Write the formula.



### Another Example

Q: What is the formula for Ca<sup>+2</sup> and C<sub>2</sub>H<sub>3</sub>O<sub>2</sub><sup>-1</sup>?

### Steps to Find the Answer:

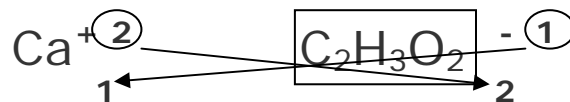
1. Put a **BOX** around the polyatomic ion



Once you draw the box, you CANNOT CHANGE anything inside the box!

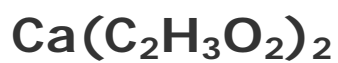
The charge of the polyatomic ions stays OUTSIDE THE BOX!

2. Crisscross the charges.  
Remember to bring only the number! (No +/-)



The charges becoming subscripts are still OUTSIDE the box!

3. Write the formula.



This time we need to use **(PARENTHESES)**! This is because there are 2 acetate ions bonded to 1 calcium ion.

