

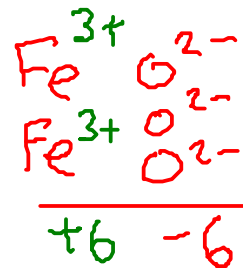
NAMING IONIC COMPOUNDS

- The name of the compound is based on the name of the ions in the compound
- Cation first, anion second (drop the word "ion")

Examples:



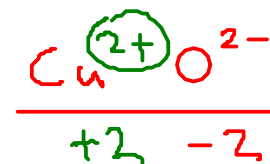
magnesium hydroxide



iron(III) oxide



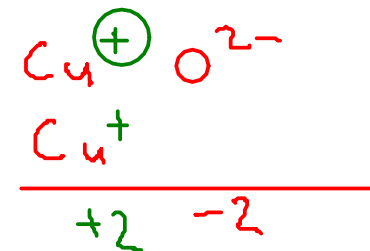
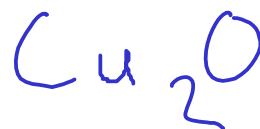
sodium sulfide



copper(II) oxide



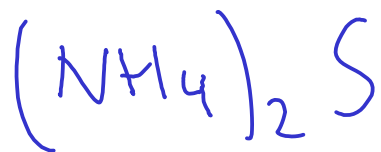
beryllium bromide



copper(I) oxide

Remember to include the Roman numeral for CHARGE in the name of transition metal compounds!

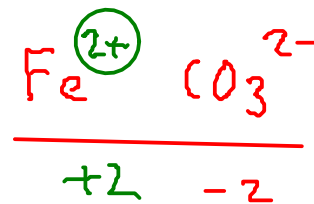
NAMING IONIC COMPOUNDS



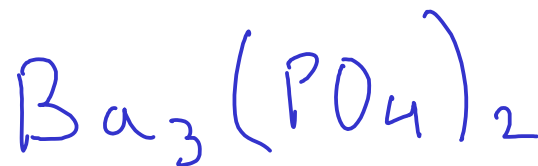
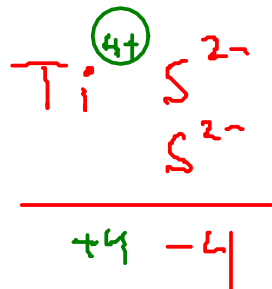
ammonium sulfide



iron(II) carbonate



titanium(IV) sulfide



barium phosphate



barium phosphide

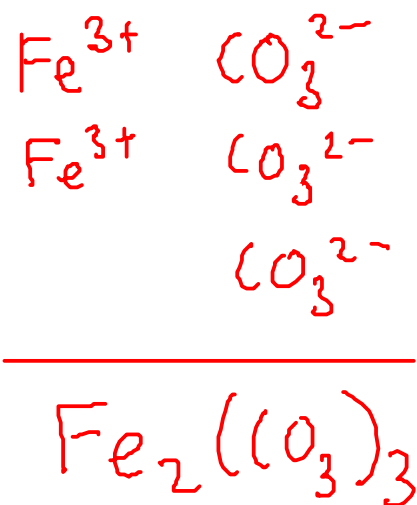
Spelling matters!

DETERMINING THE FORMULA OF AN IONIC COMPOUND FROM THE NAME

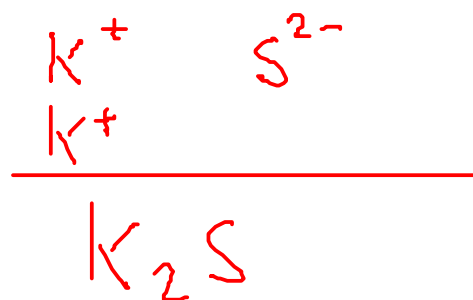
- The name of an ionic compound is made of the names of the CATION and ANION in the compound.
 - To get the FORMULA, you must figure out the SMALLEST RATIO of cation to anion that makes the charges balance out
-

Examples:

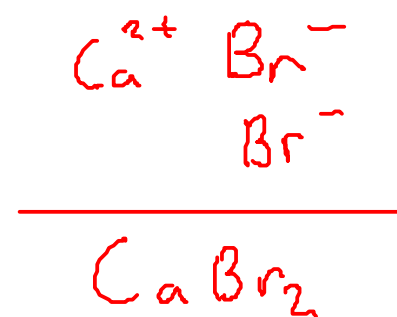
iron(III) carbonate



potassium sulfide

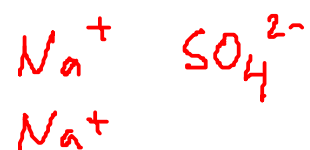


calcium bromide

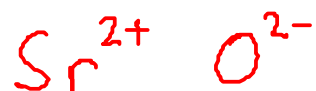


DETERMINING IONIC FORMULAS

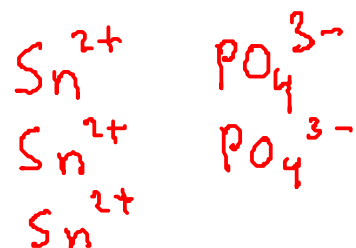
sodium sulfate



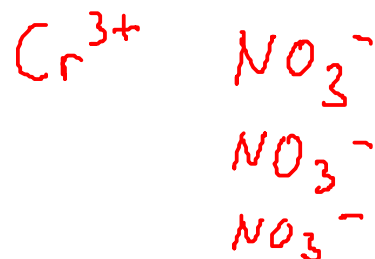
strontium oxide



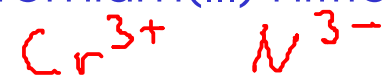
tin(II) phosphate



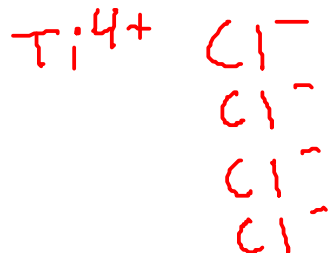
chromium(III) nitrate



chromium(III) nitride



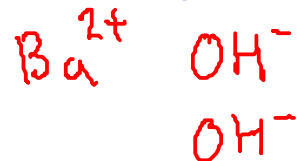
titanium(IV) chloride



titanium(IV) oxide



barium hydroxide



If your formula contains more than one polyatomic ion, you NEED to use parenthesis!

MOLECULAR COMPOUNDS

- There are several kinds of molecular compound. We will learn to name two simple but important classes

① BINARY MOLECULAR COMPOUNDS

- molecular compounds containing only two elements

② ACIDS

- molecular compounds that dissolve in water to release H^+ ions
- corrosive to metals (react with many to produce hydrogen gas)
- contact hazard: can cause chemical burns to eyes and skin
- sour taste
- turn litmus indicator RED
- two kinds of acids:

① BINARY ACIDS

- contain hydrogen and one other element

usually
Group VIIA



② OXYACIDS

- contain hydrogen, OXYGEN, and another element

BINARY MOLECULAR COMPOUNDS

- Named based on the elements they contain, plus prefixes to indicate the number of atoms of each element in each molecule

① FIRST ELEMENT

- Add a GREEK PREFIX to the name of the element.
- Omit the "MONO-" (1) prefix if there is only one atom of the first element

② SECOND ELEMENT

- Add a GREEK PREFIX to the STEM NAME of the element
- Add the suffix "-ide" (as if you were naming an anion)
- DO NOT omit the "mono-" prefix if there is only one atom of the second element

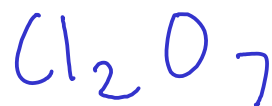
MEMORIZE THE GREEK PREFIXES. SEE COURSE WEB SITE FOR A LIST!

BINARY MOLECULAR COMPOUNDS

Examples:



boron trifluoride



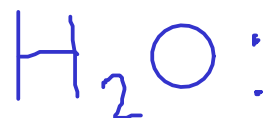
dichlorine hept(a)oxide



carbon monoxide



carbon dioxide

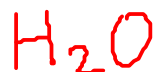


dihydrogen monoxide (common name: water)

carbon tetrachloride



dihydrogen monoxide



dinitrogen tetrafluoride



MgCl_2 : MAGNESIUM CHLORIDE (not 'magnesium dichloride'). Magnesium chloride is an IONIC compound, and should be named using the system we learned for ionic compounds. (How do we tell? Generally metal/nonmetal compounds are IONIC, and magnesium is a metal)