High School Chemistry: Naming Chemicals Compounds

Chemical formulas are named with rules according to the type of compound.

Type 1: Binary Ionic
Between a metal and a non-metal—one element of each type. Write the name of the first element (the metal) and then the name of the second element with "-ide" replacing the last syllable. Subscripts are not important when using this type

Type 2: Polyatomic Ionic
It will contain more than 2 elements—with at least one being a metal and one being a non-metal. Write the name of the first element or polyatomic ion. Write the name of the second element or polyatomic ion. If the anion is an element, change the ending to "-ide"; if the anion is a polyatomic ion, do not change the ending. Polyatomic ions must match exactly—including the subscripts. If there are parenthesis, the polyatomic ion is inside the parenthesis.

Type 1 or 2 with Multivalent Metals
They'll start with Co, Cr, Cu, Fe, Hg, Pb, Sn. Multivalent metals are metals that have more than one possibility for the charge. The name of the metal is written, followed by roman numerals in parenthesis indicating the charge of the metal. The charge is determined by knowing the charge of the anion and knowing that the overall charge of the molecule is 0. The name of the anion is written—changing the ending of a single element anion to "-ide."

Type 3: Binary Covalent
Between two non-metals. Write the name of the first element with a prefix indicating the subscript (do not use "mono-" with the first element). Write the name of the second element with a prefix indicating the subscript and "-ide" as the ending syllable.

Type 4: Acids
The cation for an acid is H+. The name is based on the anion. A single element anion is named as "hydro____ic acid"; a "___ate" polyatomic anion is named as "___ic acid"; a "___ite" polyatomic anion is named as "___ous" acid.
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