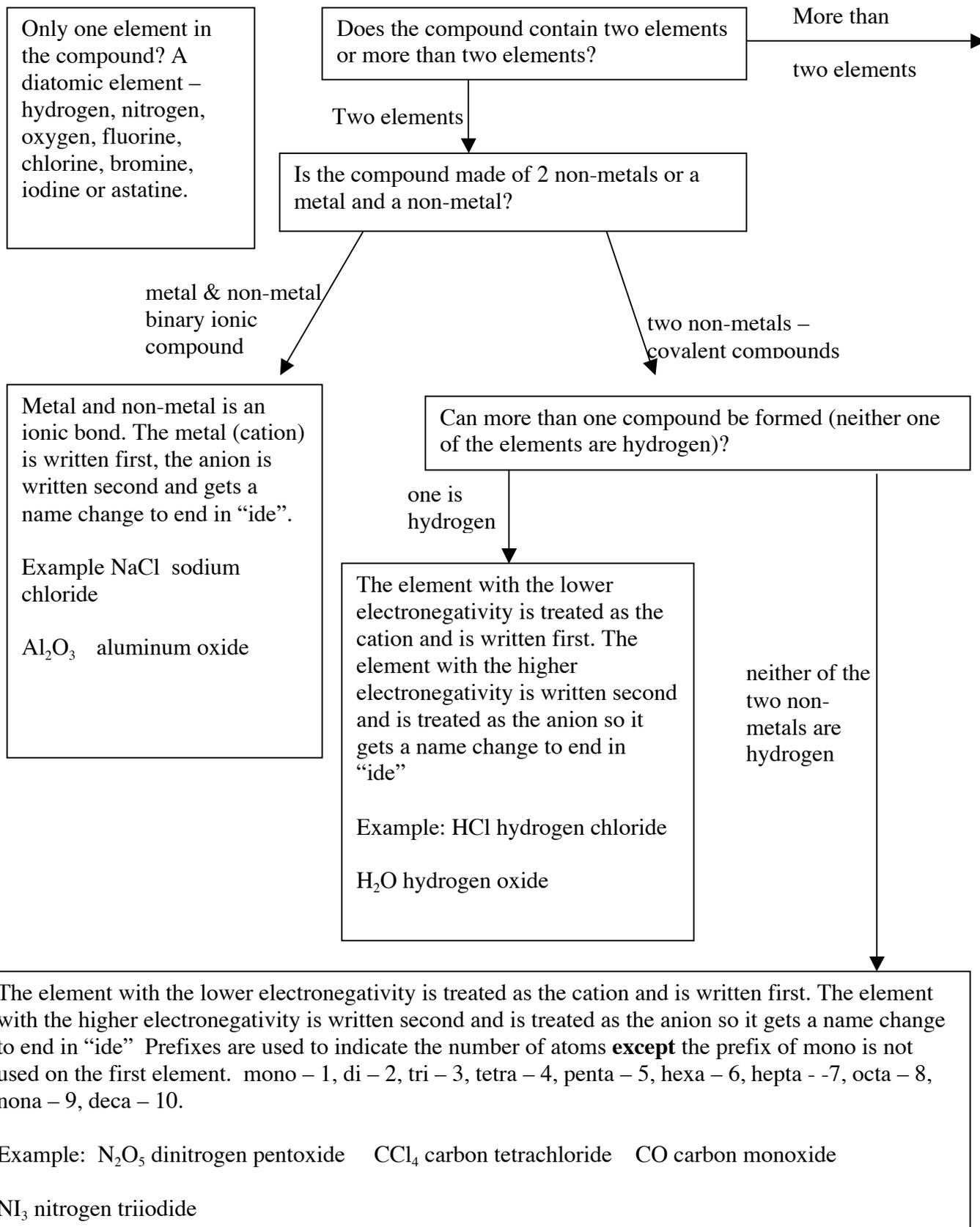


Naming Compounds Flow Chart

If the formula is an ion (it has a charge) simply write the name of the ion. For ion name help see the next page for compounds with more than two elements. Particles (formulas) with a charge must have the word "ion" in the name.



More than two elements – Polyatomic ions

Write the name of the cation and then the name of the anion. Be careful with the names, one number change produces a different name. If the formula has a charge the word “ion” **must** appear in the name. If the formula does not have a charge, the word “ion” **must not** appear in the name.

Cation Help

NH_4^{1+} is ammonium ion. Transition metals and the metals to the right of the transition metals on the periodic table **require** a roman numeral in the name to indicate the oxidation state of the metal **except for zinc, cadmium and silver**. Alkali metals, alkaline earth metals and aluminum **do not** get roman numerals.

example: Fe^{+3} is iron (III) ion Al^{+3} is aluminum ion Ag^{+1} is silver ion Na^{+1} is sodium ion

Anion Help

1. You **must** memorize the 13 “standard” anions, both the number of atoms and the charge. Most of these end in “ate”, the two exceptions are hydroxide ion (OH^{1-}) and cyanide ion (CN^{1-}).
2. If there is one more oxygen than the “standard” ion the prefix of “per” is added to the name. Example chlorate ion is ClO_3^{1-} so if the ion you are considering is ClO_4^{1-} the name is perchlorate ion.
3. If there is one less oxygen than the “standard” ion the “ate” ending is changed to an “ite” ending. Example: chlorate ion is ClO_3^{1-} so if the ion you are considering is ClO_2^{1-} the name is chlorite ion.
4. If there is two less oxygens than the “standard” ion, a “hypo” prefix is added and the “ate” ending is also changed to an “ite” ending. Example: chlorate ion is ClO_3^{1-} so if the ion you are considering is ClO^{1-} the name is hypochlorite ion.
5. If there is a hydrogen attached to the “standard” ion (also changing the charge by +1) a prefix of “bi” **or** “hydrogen” is used to indicate this. Example: sulfate ion is SO_4^{2-} so HSO_4^{1-} is bisulfate ion or hydrogen sulfate ion.
6. If the anion is a single element change the name to end in “ide”. Example NH_4Cl the name of the anion is chloride ion. The name of the compound is ammonium chloride.