

## Naming Compounds Flow Chart

Does the Compound Begin with a Metal, Nonmetal, Hydrogen or Ammonium?

### 1. Metal

Is the metal polyvalent?  
(Cr, Fe, Co, Ni, Cu, Hg, Mn, Mo, Pb, etc)

Yes No

Use the equation to determine the oxidation number of the metal ("X")  
Subscript<sub>metal</sub> (X) + Subscript<sub>Nonmetal</sub> (ox #) = 0

2. State the name of the metal use a Roman numeral for Ox #  
*(Note Silver is +1 & Zinc is +2)*

State the name of the metal.

Does the formula contain only one other type of atom?

Yes NO

State the name of the second element and change the ending to **ide**

State the name of the polyatomic ion

OH <sup>-</sup> Hydroxide	CN <sup>-</sup> Cyanide
NO <sub>3</sub> <sup>-</sup> Nitrate	ClO <sub>3</sub> <sup>-</sup> Chlorate
BrO <sub>3</sub> <sup>-</sup> Bromate	FO <sub>3</sub> <sup>-</sup> Fluorate
C <sub>2</sub> H <sub>3</sub> O <sub>2</sub> <sup>-1</sup> Acetate	Cr <sub>2</sub> O <sub>7</sub> <sup>-2</sup> Dichromate
SO <sub>4</sub> <sup>-2</sup> Sulfate	CO <sub>3</sub> <sup>-2</sup> Carbonate
Oxalate C <sub>2</sub> O <sub>4</sub> <sup>-2</sup>	CrO <sub>4</sub> <sup>-2</sup> Chromate
PO <sub>4</sub> <sup>-3</sup> Phosphate	

### 2. Non-metal other than Hydrogen

Use a prefix to state the number of atoms of the first element, state the name of the element. Use the prefix for the second Change ending to ide

1 mono (2<sup>nd</sup> only)  
2 di  
3 tri  
4 tetra  
5 penta  
6 hexa  
7 hepta  
8 octa  
9 nano  
10 deca

### 3. Hydrogen (It's an acid!)

Is there only one other element?  
Yes No

Use the prefix hydro state the element/polyatomic change ending to ic add acid

Is Oxygen one of the elements?  
No Yes

Polyatomic Ion- follow chart for # oxygen vs back of chart

Oxygen	Prefix	ending
+2	hyper	ic
+1	per	ic
<b>ate ending</b>	----	<b>ic</b>
-1	-----	ous
-2	hypo	ous

Then add acid at the end

**4. NH<sub>4</sub><sup>+</sup> Ammonium -state name**  
Ammonium then follow flow chart