Nomenclature: Flowchart for Naming Compounds

**10 Polyatomic Ions to Know:**

NH4+1 ammonium

NO3- 1 nitrate

SO4-2 sulfate

OH-1 hydroxide

PO4-3 phosphate

CO3-2 carbonate

C2H3O2-1 acetate

MnO4-1 permanganate

CrO4-2 chromate

SCN-1 thiocyanate

\* mono- is only used for oxygen!

**Greek Prefixes:**

1 = mono- \*

2 = di-

3 = tri-

4 = tetra-

5 = penta-

6 = hexa-

7 = hepta-

8 = octa-

9 = nona-

10 = deca-

You’re done!

\* Add Roman numerals after the metal to indicate its charge.

Examples:

* FeCl3 = Iron (III) chloride
* ZnSO4 = Zinc (II) sulfate
* CuI2 = Copper(II) iodide

**YES**

**NO**

Is the metal a transition metal?

Steps:

1. Write the name of the metal first.
2. Write the name of the non-metal, but change the suffix to “–ide.”

Examples:

* NaCl = Sodium chloride
* K3N = Potassium nitride
* Al2O3 = Aluminum oxide

metal and non-metal

IONIC COMPOUND

Steps:

1. Write name of the left-most non-metal.
2. Write the name of the other non-metal, but change the suffix to “–ide.”
3. Add Greek prefixes in front of the element names to indicate number.

Examples:

* CF4 = Carbon tetrafluoride
* P2O5 = Diphosphorus pentoxide
* NO = Nitrogen monoxide

COVALENT COMPOUND

**2 non-**

**metals**

Are the elements

metals or

non-metals?

Steps:

1. If the polyatomic ion is first, write its name. The write the non-metal, but change the suffix to “–ide.”
2. If the polyatomic ion is second, write the name of the metal. Then write the name of the polyatomic ion. Do NOT change the suffix.

Examples:

* (NH4)2S = Ammonium sulfide
* CaCO3 = Calcium carbonate
* CrPO4 = Chromium (III) phosphate

POLYATOMIC

COMPOUND

**2 elements**

3 or more elements

How many elements are in the compound? (count the capital letters)