Chemistry

Rules for Writing and Naming Simple Ionic & Covalent Compounds

PROMETHEAN

Naming Molecules

1st element:
-If there is only 1,- "normal" name
-If more than 1, add a prefix

2nd element:
-Always use a prefix AND change ending to -ide

EXAMPLES:

N_2O
PCl_3
SF_6
CO
CO_2

Prefixes
1 = mono-
2 = di-
3 = tri-
4 = tetra-
5 = penta-
6 = hexa-
7 = hepta-
8 = octa-
9 = nona-
10 = deca-

Ionic Binary Compounds

* Ionic compound made of two elements.
  1st element is a metal
  2nd element is a nonmetal

* Naming Binary Compounds
  1st element - same name
  2nd element- change ending to -ide

  When cation is transition, you must include Roman Numerals to tell its oxidation #

Names to Formulas (binary compounds)

Sodium Chloride

Aluminum Sulfide

Magnesium Iodide

Potassium Iodide

Calcium Oxide

Magnesium Nitride

What about Transition, Tin, and Lead??

E-Configuration Explanation:
Fe2+
Fe3+

Writing and Naming:
Iron (III) Oxide PbO_2 PbO

MEMORIZE: Zn^{+2} Ag^{+1}

Polyatomic Ions in Ionic Compounds

Naming Rules
1. Name cation and anion according to previous naming rules.
2. **When naming the polyatomic, give it the name you learned - nothing changes!

Bonding Rules
1. Never change a polyatomic's subscripts.
2. When criss-crossing oxidation #s, use parenthesis around the polyatomic.

Polyatomic Examples

Aluminum Nitrate

Copper (II) Sulfate

Calcium Hydroxide

Silver Nitrate

Potassium Cyanide

Ammonium Phosphate

Ammonium Chloride

Covalent Bonding

Remember .....
-Bond between nonmetals
-Share electrons
-low melting points
-poor conductors
-MOLECULES

Bond Strength:

triple double single

H_2

O_2

N_2

H_2O

Diatomic Molecules

Discovered by **BrINClHOF**

-They can never be alone. If they are not bonded to another element, then there are two of them.

More Practice.....

F_2 HCl CH_4 CO_2

Activote Quiz!

Decide if each is Ionic (A) or Covalent (B)

1. NaCl
2. N_20
3. $CaSO_4$
4. FeO
5. H_2O