

# Nomenclature

The process of writing a chemical name + formula.

## Background:

**Ion:** an atom that has gained or lost  $e^-$  + is now charged.

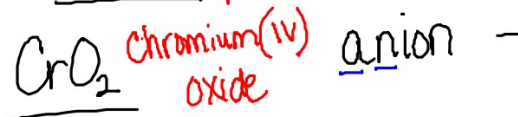
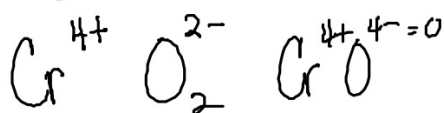
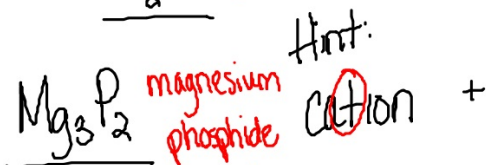
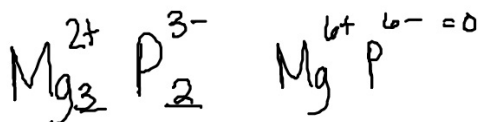
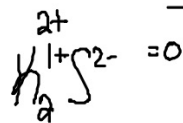
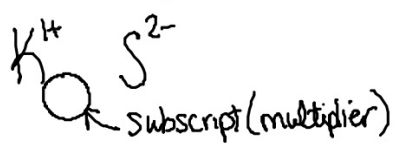
gain  $e^-$  = negative charge

lose  $e^-$  = positive charge

**Octet Rule** = atoms want 8 valence  $e^-$

IA	IIA	Grp B	IIIA	IVA	VA	VIA	VIIA	VIIIA
1 val $e^-$	2 val $e^-$	2 val $e^-$	3 val $e^-$	4 val $e^-$	5 val $e^-$	6 val $e^-$	7 val $e^-$	8 val $e^-$
lose 1 $e^-$	lose 2 $e^-$	X	lose 3 $e^-$	gain or lose 4 $e^-$	gain 3 $e^-$	gain 2 $e^-$	gain 1 $e^-$	☺
1+	2+		3+	4+ 4-	3-	2-	1-	

Binary Ionic Compounds - metal + nonmetal - based on charges



To name them use name of metal followed by the anion name of the non-metal.  
The anion form adds -ide to the ending.

Ionic compounds with a polyatomic ion. \* USE CHARGES!

Hydroxide  $\text{OH}^{1-}$

cyanide  $\text{CN}^{1-}$

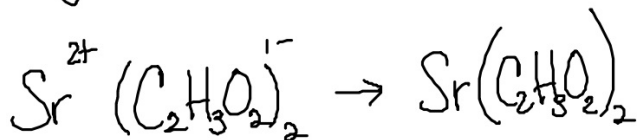
Chlorate  $\text{ClO}_3^{1-}$

peroxide  $\text{O}_2^{2-}$

Sulfate  $\text{SO}_4^{2-}$

permanganate  $\text{MnO}_4^{1-}$

nitrate  $\text{NO}_3^{1-}$

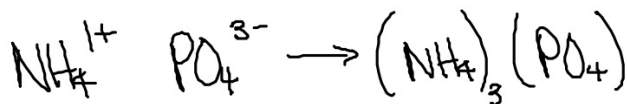


phosphate  $\text{PO}_4^{3-}$

strontium acetate

carbonate  $\text{CO}_3^{2-}$

ammonium  $\text{NH}_4^{1+}$



acetate  $\text{C}_2\text{H}_3\text{O}_2^{1-}$

ammonium phosphate

Binary molecular compounds - nonmetal + nonmetal Do NOT use charges-

Sulfur dioxide



you must use the name as directions

CO carbon monoxide

use prefixes to indicate quantity

$\text{N}_2\text{Br}$  dinitrogen monobromide

# Acids

Binary

Hydrogen must be present!!

Oxyacid \*Polyatomic  
Ternary Ion present

H + nonmetal

H + polyatomic ion

hydro \_\_\_\_\_ ic acid

ide → ends with ic

HF(aq) hydrofluoric acid

ite — end with ous

H<sub>2</sub>S(aq) hydro<sup>1+</sup>sulfuric<sup>2-</sup> acid

Acid disease

Hydro

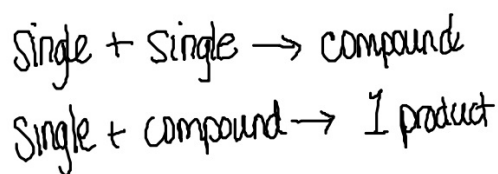
ate ic ite ous

H<sub>2</sub>SO<sub>4</sub>(aq) Sulfuric acid

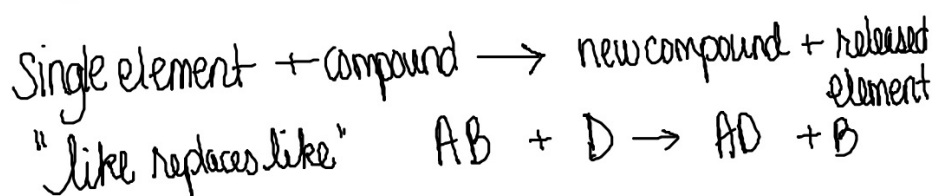
HC<sub>2</sub>H<sub>3</sub>O<sub>2</sub>(aq) acetic acid

## Types of Chemical Reactions

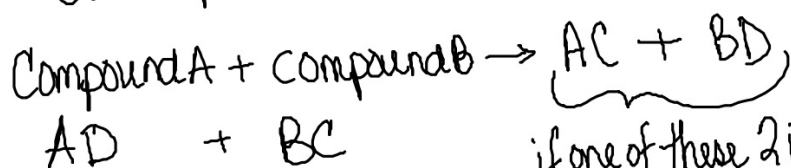
Synthesis or  
Direct Combination



Single  
Replacement

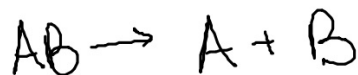


Double  
Replacement



if one of these 2 is solid  
it is called a precipitate  
(ppt)

Decomposition



Combustion

