

C11 - 1.4 - Naming Ionic/Covalent/Multivalent/Polyatomic/Acid/Base Notes

Ionic Compounds: Metal/Non-metal Transfer electrons Metal 1st Metal Non-metal-ide

Salt $Na^{1-}Cl^{1-}$ ~~Sodium Chlorine~~ *ine* → *ide*
 $NaCl$ $NaCl = \text{Sodium Chloride}$ *gen* → *ide*
 $Mg^{2+}O^{2-}$ ~~Magnesium Oxygen~~ *on* → *ide*
 MgO $MgO = \text{Magnesium Oxide}$ *xxx* → *ide*

Boron → Boride
 Oxygen → Oxide
 Flourine → Flouride
 Sulfer → Sulfide

Multi-valent Compounds: Multi-valent: More than one ionic charge

$Fe^{2+}N^{3-}$ $Fe_3N_2 = \text{Iron (II) Nitride}$ Roman Numerals in brackets to the right of the element representing its charge being used.
 Fe_3N_2
 $Fe^{3+}N^{3-}$ $FeN = \text{Iron (III) Nitride}$
 Fe_3N_3
 FeN

I = 1	VI = 6
II = 2	VII = 7
III = 3	VIII = 8
IV = 4	IX = 9
V = 5	X = 10

Covalent Compounds: Non-metal/Non-metal Share Electrons. Non-metal Non-metal-ide

$CO_2 = \text{Carbon Dioxide}$ * Monocarbon Dioxide
 $BO = \text{Boron Monoxide}$
 $CCl_4 = \text{Carbon Tetrachloride}$
 $C_2H_6 = \text{Dicarbon Hexahydride}$

*always write the more metallic non-metal first.

Monoboard, Dice, Tricycle, Tetrahedron, Penta Hexa Hepta Octa Nona Deca } Gon

Prefixes	
1	Mono
2	Di
3	Tri
4	Tetra
5	Penta
6	Hexa
7	Hepta
8	Octa
9	Nona
10	Deca

Exceptions to the naming:
 $NaCl$: Table Salt
 NH_3 : Ammonia
 O_3 : Ozone etc!

Why is October the 10th month.
 Because the Egyptians got it wrong and Julius Caesar and Augustus inserted July and August

Polyatomic Compounds See Polyatomic Table

$Li^+ (OH)^{-1}$ $Li(OH)$ Lithium Hydroxide $Fe^{+3} (SO_4)^{-2}$ $Fe_2(SO_4)_3$ Iron (III) Sulphate

Acids: tend to have an H^+

Contain Oxygen

Do not contain Oxygen

~~Hydrogen Chlorine~~
 $HCl = \text{Hydrochloric Acid}$
~~Hydrogen Bromine~~
 $HBr = \text{Hydrobromic Acid}$

gen
ine → *ic*
 Add: acid

~~Hydrogen Nitrate~~
 $HNO_3 = \text{Nitric Acid}$

~~Hydrogen Sulfate~~
 $H_2SO_4 = \text{Sulfuric Acid}$

~~Hydrogen~~
ate → *ic*
 Add: acid

Bases: tend to have an OH^-
 (Name as you would a polyatomic)
 $LiOH = \text{Lithium hydroxide}$
 $Ca(OH)_2 = \text{Calcium hydroxide}$
 $NH_4OH = \text{Ammonium Hydroxide}$

Mnemonic: Ateic Itous
ate → *ic*
ite → *ous*

~~Hydrogen Nitrite~~
 $HNO_2 = \text{Nitrous Acid}$

~~Hydrogen~~
ite → *ous*
 Add: acid

$\text{Hydrogen Phosphate} \rightarrow \text{Phosphuric}$
 $\text{Hydrogen Phosphite} \rightarrow \text{Phosphurous}$

ate → *uric*
ite → *urous*