Type I & II Tertiary Ionic Nomenclature

· Type I Tertiary Formulas

- write the symbol & charge of metal cation
- do the same for the polyatomic ion
- criss-cross charges, use parentheses around the polyatomic ion if you are writing a number after it.

Ex.) calcium nitrate

Ca^{2+} NO_3^{1-}

$Ca(NO_3)_2$

sodium phosphate

Na^{1+} PO_4^{3-}

Na_3PO_4

aluminum dichromate

Al^{3+} $Cr_2O_7^{2-}$

$Al_2(Cr_2O_7)_3$

barium sulfite

Ba^{2+} SO_3^{2-}

$BaSO_3$

· Type I Tertiary Names

- write the name of the metal cation
- write the name of the polyatomic ion.

Ex) $NaOH$
sodium hydroxide

$Sr(ClO_4)_2$
strontium perchlorate

$Mg_3(PO_3)_2$
magnesium phosphite

$NaHSO_4$
sodium hydrogen sulfate

Type II Teritary Formulas

has Roman numerals for transition metals (charge)

- Do the same thing you did for type I

Ex) chromium (III) carbonate

Cr^{3+} CO_3^{2-}

$Cr_2(CO_3)_3$

iron (II) chromate

Fe^{2+} CrO_4^{2-}

$FeCrO_4$

mercury (I) cyanide

Hg_2^{2+} CN^{1+}

$Hg_2(CN)_2$

lead (IV) silicate

Pb^{4+} SiO_3^{2-}

$Pb_2(SiO_3)_4$

$\Downarrow$

$Pb(SiO_3)_2$

Type II Tertiary Names

- write name of transition metal cation
- write the original charge of transition metal as a roman numeral
- write name of polyatomic ion.

Ex)

2+	1-
Zn	$(NO_2)_2$

2+ 2-

zinc (II) nitrite

3+	3-
Au	PO_4

3+ 3-

gold (III) phosphate

14+	2-
Mn_2	$(SO_3)_7$

14+ 14-

manganese (VII) sulfite

6+	2-
Os	$(SiO_3)_3$

6+ 6-

osmium (VI) silicate