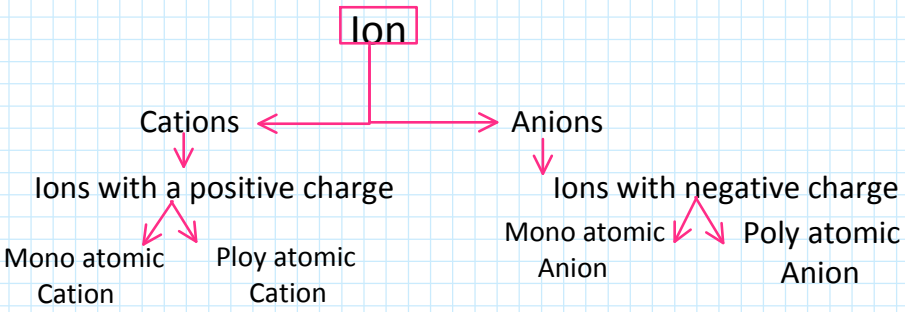
Chem "Ions" Summary

Saturday, December 31, 2022 6:50 PM

1.



- Atom → cation (+vely charge)
- Atom → anion (-vely charged)

2. **Symbol and Nomenclature of different ions:**

Poly atomic cations:

Name of ion	Symbol
Ammonium ion	NH_4^+
Hydronium ion	H_3O^+

Poly atomic anions:

Name of ion	Symbol
Hydroxide ion	OH^-
Sulfate ion	SO_4^-
Carbonate ion	CO_3^-
Bicarbonate ion	HCO_3^-
Nitrate ion	NO_3^-
Phosphate ion	PO_4^{3-}
Dichromate ion	$Cr_2O_7^{2-}$
Chromate ion	CrO_4^{2-}
Permanganate ion	MnO_4^-
Oxalate ion	$C_2O_4^{2-}$
Hypochlorite ion	CIO^-

Monoatomic anions

Name of ion	Symbol
Bromide ion	Br^-
Chloride ion	Cl^-

Monoatomic Cations:

Name of ion	Symbol
Magnesium ion	Mg^{2+}
Calcium ion	Ca^{2+}
Barium ion	Ba^{2+}
Cupric ion	Cu^{2+}
Cuprous ion	Cu^+
Zin ion	Zn^{2+}
Lead ion	Pb^{2+}
Beryllium ion	Be^{2+}
Nickel ion	Ni^{2+}
Mercuric ion	Hg^{2+}
Hydrogen ion	H^+
Lithium ion	Li^+
Sodium ion	Na^+
Potassium ion	K^+
Silver ion	Ag^+
Ferrous ion	Fe^{2+}

Bromide ion	Br^-
Chloride ion	Cl^-
Iodide ion	I^-
Fluoride ion	F^-
Oxide ion	O^{2-}
Sulfide ion	S^{2-}
Nitride ion	N^{3-}

Silver ion	Ag^+
Ferrous ion	Fe^{2+}
Ferric ion	Fe^{3+}
Aluminium ion	Al^{3+}
Gold ion	Au^{3+}

3. <u>Ionic bond:</u>

→ it is a bond due to transfer of electrons from an atom (metal) to another atom (non-metal).

→ These 2 ions (,) are oppositely charged ions and are attracted by electrostatic force of attraction forming ionic bond.

4. <u>Determination of the number of cations and anions in an ionic compound:</u>

By using the triple method

Or

$n_{molecule} = \frac{n_{ion}}{st.coeff} = \frac{n_{ion}}{st.coeff}$

5. <u>Equation of ionization:</u>

…. + electron $\xrightarrow{H_2O}$ …..

….. $\xrightarrow{H_2O}$ ….. + electron