

Cations

Monoatomic

Polyatomic

Only one possible ion

More than one possible ion

Rule:

Name of Element + "ion"

Examples:

Na ⁺	Sodium Ion
Mg ²⁺	Magnesium Ion
H ⁺	Hydrogen Ion

Comment:

The number of positive charges is not indicated in the name because it is not necessary.

Rule:

(a) Newer Rule: positive charge indicated by Roman numeral

Examples:

Fe ³⁺	Iron (III) Ion
Fe ²⁺	Iron (II) Ion
Cu ²⁺	Copper (II) Ion

(b) Older Rule: Latin stem for the element + "ous" for the lesser charge and "ic" for the greater charge.

Examples:

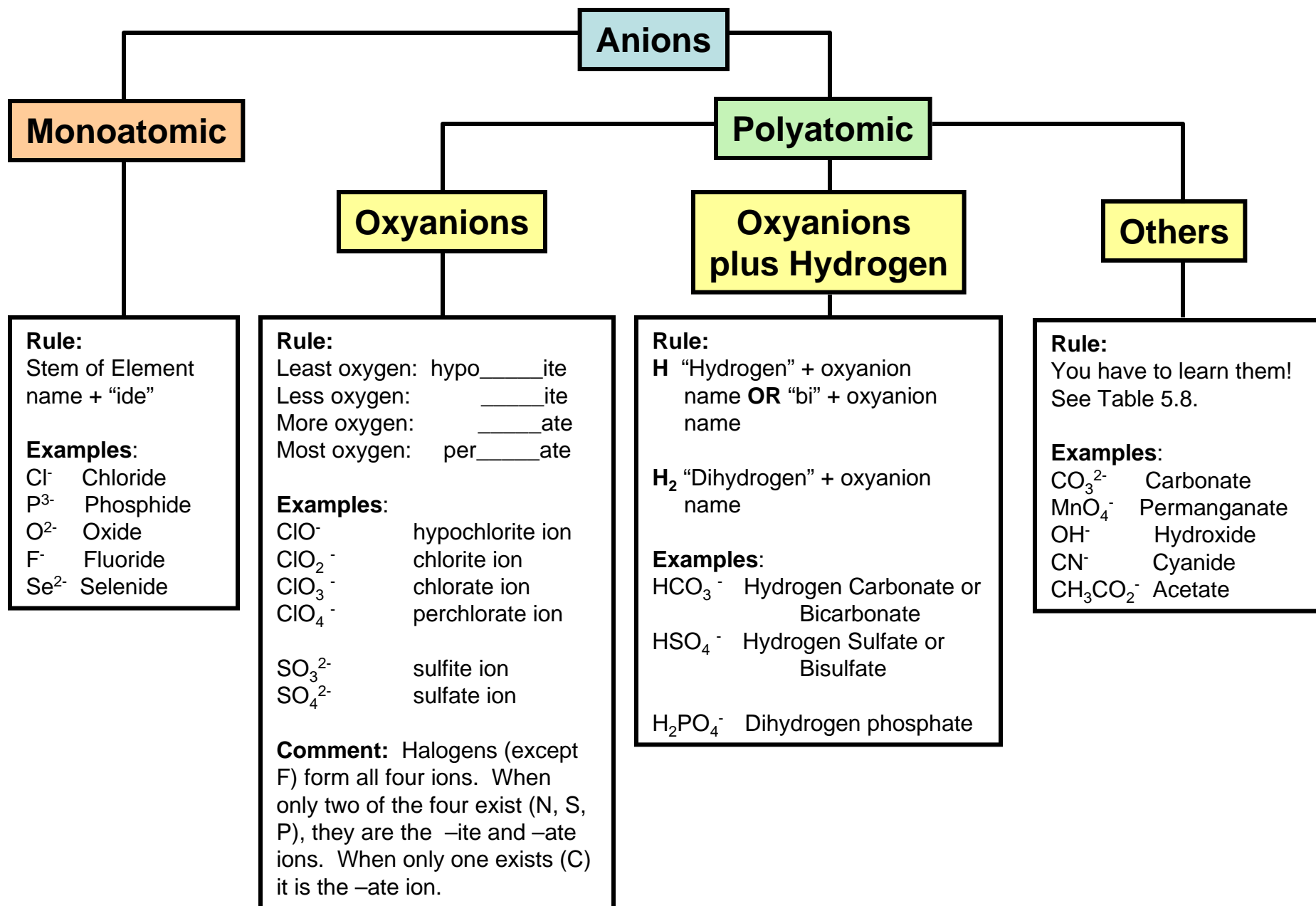
Fe ³⁺	Ferric Ion
Fe ²⁺	Ferrous Ion
Cu ²⁺	Cupric Ion

Rule:

You have to learn them! See Table 5.8.

Examples:

NH ₄ ⁺	Ammonium Ion
H ₃ O ⁺	Hydronium Ion



Inorganic Compounds

Ionic

Rule:

Name of the cation then the name of the anion. Drop the word "ion" from the names.

Examples:

NaCl Sodium chloride
AuBr₂ Gold (II) bromide
FeOH Iron (I) hydroxide
BaH₂ Barium hydride

H - Metal

Rule 1:

Non-aqueous compounds:

Hydrogen _____ide

Examples:

HF Hydrogen fluoride
H₃N Hydrogen nitride
HCl Hydrogen chloride

Rule 2 (Acids):

Aqueous compounds:

Hydro _____ic Acid

Examples:

HF (aq) Hydrofluoric Acid
H₃N (aq) Hydronitric Acid
HCl (aq) Hydrochloric Acid

H - Containing Compounds

H - Oxyanion

Rule 1:

Non-aqueous compounds:

Hydrogen hypo _____ite

Hydrogen _____ite

Hydrogen _____ate

Hydrogen per _____ate

Rule 2 (Acids):

Aqueous compounds:

Hypo _____ous Acid

_____ous Acid

_____ic Acid

Per _____ic Acid

Examples:

H₂SO₃ (aq) Sulfurous Acid
H₃PO₄ (aq) Phosphoric Acid
HBrO₄ (aq) Perbromic Acid

Binary Covalent

Rule 1:

The more cation-like element is named first. Second element ends in -ide.

Rule 2:

Number of atoms of each element is specified by prefixes

Rule 3:

Prefix "mono" is never used for the first element

Prefixes:

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

Examples:

CO₂ Carbon dioxide
N₂O Dinitrogen monoxide
S₃I₅ Trisulfur pentaiodide