

Fixed Charge Cations

Group IA (Alkali metals)	1+
Group IIA (Alkaline earth metals)	2+
Group IIIA	3+

Ag¹⁺
Zn²⁺
Cd²⁺

Variable Charge Cations

Use Roman Numeral to indicate the charge.

iron (II) ion Fe²⁺
iron (III) ion Fe³⁺

cobalt (II) ion Co²⁺
cobalt (III) ion Co³⁺

nickel (I) ion Ni⁺
nickel (II) ion Ni²⁺

copper (I) ion Cu⁺
copper (II) ion Cu²⁺

tin (II) ion Sn²⁺
tin (IV) ion Sn⁴⁺

lead (II) ion Pb²⁺
lead (IV)ion Pb⁴⁺

Anions are Always Fixed Charge

Group VA	3-
Group VIA	2-
Group VIIA	1-

Naming Ionic Compounds

Cation + Anion with end changed to "ide"

*** Do not change the name for polyatomic ions

Examples:

lithium sulfide	Li ₂ S
calcium oxide	CaO
iron (II) bromide	FeBr ₂
potassium acetate	KC ₂ H ₃ O ₂
gold (II) nitrite	Au(NO ₂) ₂

Naming Acids

If anion name ends with -ide, change to -ic
and use prefix hydro-

If anion name ends with -ite, change to -ous

If anion name ends with -ate, change to -ic

hydrochloric acid	HCl
hydrosulfuric acid	H ₂ S
chlorous acid	HClO ₂
nitrous acid	HNO ₂
sulfurous acid	H ₂ SO ₃
phosphorous acid	H ₃ PO ₃
carbonic acid	H ₂ CO ₃
sulfuric acid	H ₂ SO ₄
phosphoric acid	H ₃ PO ₄

Naming Covalent Compounds

Use Greek prefixes to indicate number of atoms.

*** Do not use charges of the atoms

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

First Element

prefix (except mono) + nonmetal name

Second Element

prefix + nonmetal name with end changed to "ide"

CO ₂	=	carbon dioxide
PCl ₃	=	phosphorus trichloride
N ₂ S ₅	=	dinitrogen pentasulfide
SF ₆	=	sulfur hexafluoride
Cl ₂ O ₇	=	dichlorine heptaoxide