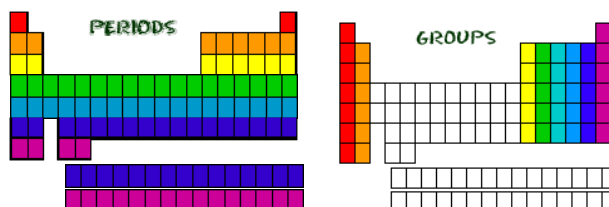




## Analytical chemistry 3150/FAAI1, 2010/2011 FaF VFU

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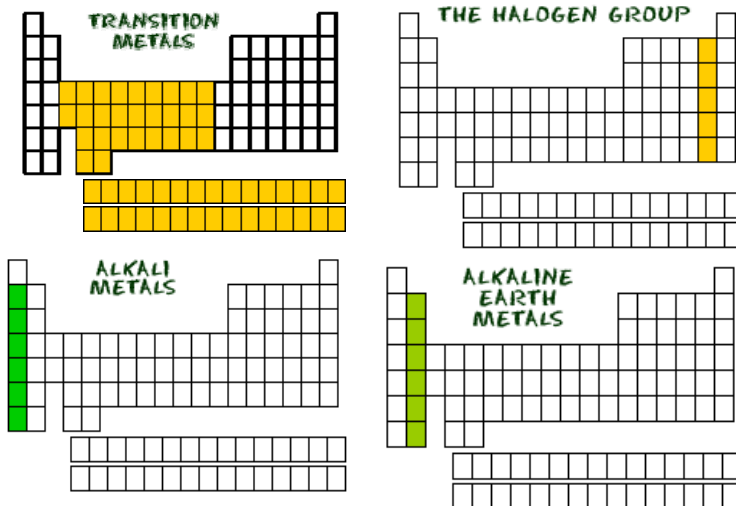
### Nomenclature

It is crucial to avoid misunderstandings in our communication. Therefore, you have to understand the chemical language – symbols and formulae are the starting point:

#### I. Symbols and Charges for Monoatomic Ions

##### A. Fixed Charge

Symbol	Name	Symbol	Name
H <sup>+</sup>	hydrogen ion	H <sup>-</sup>	hydride ion
Li <sup>+</sup>	lithium ion	F <sup>-</sup>	fluoride ion
Na <sup>+</sup>	sodium ion	Cl <sup>-</sup>	chloride ion
K <sup>+</sup>	potassium ion	Br <sup>-</sup>	bromide ion
Ag <sup>+</sup>	silver ion	I <sup>-</sup>	iodide ion
Mg <sup>2+</sup>	magnesium ion	O <sup>2-</sup>	oxide ion
Ca <sup>2+</sup>	calcium ion	S <sup>2-</sup>	sulfide ion
Ba <sup>2+</sup>	barium ion	N <sup>3-</sup>	nitride ion
Zn <sup>2+</sup>	zinc ion	P <sup>3-</sup>	phosphide ion
Al <sup>3+</sup>	aluminum ion		
Bi <sup>3+</sup>	bismuth ion		

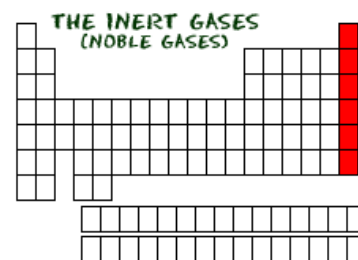


##### B. Variable Charge

Symbol	Systematic Name	Common Name	Symbol	Systematic Name	Common Name
Cu <sup>+</sup>	copper(I) ion	cuprous ion	Hg <sub>2</sub> <sup>2+</sup>	mercury(I) ion	mercurous ion
Cu <sup>2+</sup>	copper(II) ion	cupric ion	Hg <sup>2+</sup>	mercury(II) ion	mercuric ion
Fe <sup>2+</sup>	iron(II) ion	ferrous ion	Pb <sup>2+</sup>	lead(II) ion	plumbous ion
Fe <sup>3+</sup>	iron(III) ion	ferric ion	Pb <sup>4+</sup>	lead(IV) ion	plumbic ion
Sn <sup>2+</sup>	tin(II) ion	stannous ion	Co <sup>2+</sup>	cobalt(II) ion	cobaltous ion
Sn <sup>4+</sup>	tin(IV) ion	stannic ion	Co <sup>3+</sup>	cobalt(III) ion	cobaltic ion
Cr <sup>2+</sup>	chromium(II) ion	chromous ion	Ni <sup>2+</sup>	nickel(II) ion	nickelous ion
Cr <sup>3+</sup>	chromium(III) ion	chromic ion	Ni <sup>4+</sup>	nickel(IV) ion	nickelic ion
Mn <sup>2+</sup>	manganese(II) ion	manganous ion	Ti <sup>3+</sup>	titanium(III) ion	titanous ion
Mn <sup>3+</sup>	manganese(III) ion	manganic ion	Ti <sup>4+</sup>	titanium(IV) ion	titanic ion

#### II. Symbols and Charges for Polyatomic Ions

Formula	Name	Formula	Name
NO <sub>3</sub> <sup>-</sup>	nitrate ion	ClO <sub>4</sub> <sup>-</sup>	perchlorate ion
NO <sub>2</sub> <sup>-</sup>	nitrite ion	ClO <sub>3</sub> <sup>-</sup>	chlorate ion
CrO <sub>4</sub> <sup>2-</sup>	chromate ion	ClO <sub>2</sub> <sup>-</sup>	chlorite ion
Cr <sub>2</sub> O <sub>7</sub> <sup>2-</sup>	dichromate ion	ClO <sup>-</sup>	hypochlorite
CN <sup>-</sup>	cyanide ion	MnO <sub>4</sub> <sup>-</sup>	permanganate ion
OH <sup>-</sup>	hydroxide ion	O <sub>2</sub> <sup>2-</sup>	peroxide ion
CO <sub>3</sub> <sup>2-</sup>	carbonate ion	HCO <sub>3</sub> <sup>-</sup>	hydrogen carbonate ion (bicarbonate ion)
SO <sub>4</sub> <sup>2-</sup>	sulfate ion	HSO <sub>4</sub> <sup>-</sup>	hydrogen sulfate ion (bisulfate ion)
SO <sub>3</sub> <sup>2-</sup>	sulfite ion	HSO <sub>3</sub> <sup>-</sup>	hydrogen sulfite ion (bisulfite ion)
C <sub>2</sub> O <sub>4</sub> <sup>2-</sup>	oxalate ion	HC <sub>2</sub> O <sub>4</sub> <sup>-</sup>	hydrogen oxalate ion (binoxalate ion)
PO <sub>4</sub> <sup>3-</sup>	phosphate ion	HPO <sub>4</sub> <sup>2-</sup>	hydrogen phosphate ion
PO <sub>3</sub> <sup>3-</sup>	phosphite ion	H <sub>2</sub> PO <sub>4</sub> <sup>-</sup>	dihydrogen phosphate ion
		HS <sup>-</sup>	hydrogen sulfide ion (bisulfide ion)
CH <sub>3</sub> COO <sup>-</sup>	acetate ion		



There is only one polyatomic cation, NH<sub>4</sub><sup>+</sup> = ammonium ion