

## Ions – Cations and Anions

### Cations (positive ions)

#### Monatomic, Fixed Charge

Li <sup>+</sup>	lithium
Na <sup>+</sup>	sodium
K <sup>+</sup>	potassium
Rb <sup>+</sup>	rubidium
Cs <sup>+</sup>	cesium
Fr <sup>+</sup>	francium
Ag <sup>+</sup>	silver
Be <sup>+2</sup>	beryllium
Mg <sup>+2</sup>	magnesium
Ca <sup>+2</sup>	calcium
Sr <sup>+2</sup>	strontium
Ba <sup>+2</sup>	barium
Ra <sup>+2</sup>	radium
Zn <sup>+2</sup>	zinc

Cd<sup>+2</sup>                      cadmium

Al<sup>+3</sup>                        aluminum

### Anions (negative ions)

#### Monatomic, Fixed Charge

H <sup>-</sup>	hydride
F <sup>-</sup>	fluoride
Cl <sup>-</sup>	chloride
Br <sup>-</sup>	bromide
I <sup>-</sup>	iodide
O <sup>-2</sup>	oxide
S <sup>-2</sup>	sulfide
Se <sup>-2</sup>	selenide
Te <sup>-2</sup>	telluride
N <sup>-3</sup>	nitride
P <sup>-3</sup>	phosphide
As <sup>-3</sup>	arsenide

### Other

a block of iron: Fe  
(it's NOT an ion)

Naturally occurring diatomics:  
H<sub>2</sub>, N<sub>2</sub>, O<sub>2</sub>, F<sub>2</sub>, Cl<sub>2</sub>, Br<sub>2</sub>, I<sub>2</sub>

#### Monatomic, Variable Charge

Cu <sup>+</sup>	cuprous or copper (I)
Cu <sup>+2</sup>	cupric or copper (II)
Hg <sub>2</sub> <sup>+2</sup>	mercurous or mercury (I)
Hg <sup>+2</sup>	mercuric or mercury (II)
Fe <sup>+2</sup>	ferrous or iron (II)
Fe <sup>+3</sup>	ferric or iron (III)
Sn <sup>+2</sup>	stannous or tin (II)
Sn <sup>+4</sup>	stannic or tin (IV)
Pb <sup>+2</sup>	plumbous or lead (II)
Pb <sup>+4</sup>	plumbic or lead (IV)

#### Other metals, Variable Charge

M<sup>+n</sup>                        name (charge n as a  
Roman numeral)

#### Polyatomic, Fixed Charge

NH <sub>4</sub> <sup>+</sup>	ammonium
ClO <sup>-</sup>	hypochlorite
ClO <sub>2</sub> <sup>-</sup>	chlorite
ClO <sub>3</sub> <sup>-</sup>	chlorate
ClO <sub>4</sub> <sup>-</sup>	perchlorate
BrO <sub>3</sub> <sup>-</sup>	bromate
IO <sub>3</sub> <sup>-</sup>	iodate
NO <sub>2</sub> <sup>-</sup>	nitrite
NO <sub>3</sub> <sup>-</sup>	nitrate
HCO <sub>3</sub> <sup>-</sup>	bicarbonate
HSO <sub>3</sub> <sup>-</sup>	bisulfite
HSO <sub>4</sub> <sup>-</sup>	bisulfate
OH <sup>-</sup>	hydroxide
CN <sup>-</sup>	cyanide
MnO <sub>4</sub> <sup>-</sup>	permanganate
C <sub>2</sub> H <sub>3</sub> O <sub>2</sub> <sup>-</sup>	acetate
CO <sub>3</sub> <sup>-2</sup>	carbonate
C <sub>2</sub> O <sub>4</sub> <sup>-2</sup>	oxalate
SO <sub>3</sub> <sup>-2</sup>	sulfite
SO <sub>4</sub> <sup>-2</sup>	sulfate
S <sub>2</sub> O <sub>3</sub> <sup>-2</sup>	thiosulfate
Cr <sub>2</sub> O <sub>7</sub> <sup>-2</sup>	dichromate
CrO <sub>4</sub> <sup>-2</sup>	chromate
PO <sub>4</sub> <sup>-3</sup>	phosphate
AsO <sub>4</sub> <sup>-3</sup>	arsenate

## Simple Molecular Compounds

### Binary Compounds Involving Non-metals Only

<u>Prefix</u>	<u>First Element</u>	<u>Number of atoms</u>	<u>Prefix</u>	<u>Second Element</u> (ion ending)
(none)	hydrogen	1	mono	<b>fluoride</b>
di	boron	2	di	<b>chloride</b>
tri	carbon	3	tri	<b>bromide</b>
tetra	nitrogen	4	tetra	<b>iodide</b>
penta	oxygen	5	penta	<b>oxide</b>
hexa	silicon	6	hexa	<b>sulfide</b>
hepta	phosphorus	7	hepta	<b>selenide</b>
octa	sulfur	8	octa	<b>telluride</b>
nona	chlorine	9	nona	<b>nitride</b>
deca	arsenic	10	deca	<b>phosphide</b>
	selenium			
	bromine			
	tellurium			
	iodine			

## Acids

### Binary Acids and HCN

HF	hydrofluoric acid
HCl	hydrochloric acid
HBr	hydrobromic acid
HI	hydroiodic acid
H <sub>2</sub> S	hydrosulfuric acid
H <sub>2</sub> Se	hydroselenic acid
H <sub>2</sub> Te	hydrotelluric acid
HCN	hydrocyanic acid

### Common Names

H <sub>2</sub> O	water
CH <sub>4</sub>	methane
NH <sub>3</sub>	ammonia
H <sub>2</sub> O <sub>2</sub>	hydrogen peroxide

### Ternary and Higher Acids

HClO	hypochlorous acid
HClO <sub>2</sub>	chlorous acid
HClO <sub>3</sub>	chloric acid
HClO <sub>4</sub>	perchloric acid
HNO <sub>2</sub>	nitrous acid
HNO <sub>3</sub>	nitric acid
HC <sub>2</sub> H <sub>3</sub> O <sub>2</sub>	acetic acid
H <sub>2</sub> CO <sub>3</sub>	carbonic acid
H <sub>2</sub> CrO <sub>4</sub>	chromic acid
H <sub>2</sub> C <sub>2</sub> O <sub>4</sub>	oxalic acid
H <sub>2</sub> SO <sub>3</sub>	sulfurous acid
H <sub>2</sub> SO <sub>4</sub>	sulfuric acid
H <sub>3</sub> PO <sub>4</sub>	phosphoric acid
H <sub>3</sub> AsO <sub>4</sub>	arsenic acid