Golden Sheet of Nomenclature

Symbols and Charges for Monoatomic Ions

Symbol	Name	Symbol	Name	Symbol	Name
H^+	hydrogen ion	Sr^{2+}	strontium ion	Br^-	bromide
Li^+	lithium ion	Ba^{2+}	barium ion	I^-	iodide
Na^+	sodium ion	Ra^{2+}	radium ion	O^{2-}	oxide
K^+	potassium ion	Zn^{2+}	zinc ion	S^{2-}	sulfide
Rb^+	rubidium ion	Ca^{2+}	calcium ion	Se^{2-}	selenide
Cs^+	cesium ion	Al^{3+}	aluminum ion	Te^{2-}	telluride
Ag^+	silver ion	H^-	hydride	N^{3-}	nitride
Be^{2+}	beryllium ion	F^-	fluoride	P^{3-}	phosphide
Mg^{2+}	magnesium ion	Cl^-	chloride	As^{3-}	arsenide

Note that the letters in an anion's name before the -ide ending is the stem. For example, the stem for bromide is brom- and the stem for sulfur is sulf-.

Symbols and Charges for Polyatomic Ions

Formula	Name	Formula	Name
NH_4^+	**ammonium**	ClO_4^-	perchlorate
NO_3^-	nitrate	$C_2H_3O_2^-$	acetate (CH_3COO^-)
NO_2^-	nitrite	ClO_3^-	chlorate
CrO_4^{2-}	chromate	ClO_2^-	chlorite
$Cr_2O_7^{2-}$	dichromate	ClO^-	hypochlorite
CN^-	cyanide	IO_4^-	periodate
MnO_4^-	permanganate	IO_3^-	iodate
OH^-	hydroxide	IO^-	hypoiodite
O_2^{2-}	peroxide	BrO_3^-	bromate
NH_2^-	amide	BrO^-	hypobromite
CO_3^{2-}	carbonate	HCO_3^-	hydrogen carbonate (bicarbonate)
SO_4^{2-}	sulfate	HSO_4^-	hydrogen sulfate (bisulfate)
SO_3^{2-}	sulfite	HSO_3^-	hydrogen sulfite (bisulfite)
$C_2O_4^{2-}$	oxalate	$HC_2O_4^-$	hydrogen oxalate (binoxalate)
PO_4^{3-}	phosphate	HPO_4^{2-}	hydrogen phosphate
PO_3^{3-}	phosphite	$H_2PO_4^-$	dihydrogen phosphate
$S_2O_3^{2-}$	thiosulfate	HS^-	hydrogen sulfide
AsO_4^{3-}	arsenate	BO_3^{3-}	borate
SeO_4^{2-}	selenate	$B_4O_7^{2-}$	tetraborate
SiO_3^{2-}	silicate	SiF_6^{2-}	hexafluorosilicate
$C_4H_4O_6^{2-}$	tartrate	SCN^-	thiocyanate

Prefixes Used to Indicate Number in a Name Involving Two Non-metals

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

These prefixes are used in naming binary compounds involving two non-metals. Example include P_2O_5, Cl_2O, NO, N_2O, NO_2, N_2O_5, PCl_3, PCl_5, SO_2, SO_3, SiO_2. Sometimes metal ions are involved in a Greek prefix name, but these are less common. Examples include UF_6, $SbCl_3$, $SbCl_5$, OsO_4, $BiCl_3$.

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There is a preferred order of the nonmetals when writing them in a formula. It is:
Rn, Xe, Kr, B, Si, C, Sb, As, P, N, H, Te, Se, S, I, Br, Cl, O, F.

CO is carbon monoxide, **NOT** carbon monooxide. As_4O_6 is tetrarsenic hexoxide, **NOT** tetraarsenic hexaoxide.

Metals with more than one oxidation number

Symbol	Systematic name (stock system)	Classical Name	Symbol	Systematic Name (stock system)	Classical Name
Cu^{1+}	copper (I)	cuprous	**Hg_2^{2+}**	mercury (I)	mercurous
Cu^{2+}	copper (II)	cupric	**Hg^{2+}**	mercury (II)	mercuric
Fe^{2+}	iron (II)	ferrous	**Pb^{2+}**	lead (II)	plumbous
Fe^{3+}	iron (III)	ferric	**Pb^{4+}**	lead (IV)	plumbic
Sn^{2+}	tin (II)	stannous	**Co^{2+}**	cobalt (II)	cobaltous
Sn^{4+}	tin (IV)	stannic	**Co^{3+}**	cobalt (III)	cobaltic
Cr^{2+}	chromium (II)	chromous	**Au^{+}**	gold (I)	aurous
Cr^{3+}	chromium (III)	chromic	**Au^{3+}**	gold (III)	auric
Mn^{2+}	manganese (II)	manganous	**Ni^{2+}**	nickel (II)	nickelous
Mn^{3+}	manganese (III)	manganic	**Ni^{3+}**	nickel (III)	nickelic

Acid Names

Non-Oxygen Containing			Oxygen Containing (Oxyacids)	
Formula	**Name when dissolved in H_2O**	**Name as a pure compound**	**Formula**	**Name**
HF	hydrofluoric acid	hydrogen fluoride	**HNO_3**	nitric acid
HCl	hydrochloric acid	hydrogen chloride	**HNO_2**	nitrous acid
HBr	hydrobromic acid	hydrogen bromide	**H_2SO_4**	sulfuric acid
HI	hydroiodic acid	hydrogen iodide	**H_2SO_3**	sulfurous acid
HCN	hydrocyanic acid	hydrogen cyanide	**H_3PO_4**	phosphoric acid
H_2S	hydrosulfuric acid	hydrogen sulfide	**$HC_2H_3O_2$ (CH_3COOH)**	acetic acid

Add the word acid to each name when saying or writing.
Note that it is hydrogen sulfide, **NOT** hydrogen sulfuride.

Diatomic Elements

The following elements are diatomic elements: Br, I, N, Cl, H, O, and F. For example, hydrogen would be written as H_2 and oxygen would be written as O_2 when they are not combined with other elements. To remember this, remember the name "**BrINClHOF**" (said brinkle-hoff) or the phrase "**I Have No Bright Or Clever Friends.**" Lastly, you can look for the hockey puck (Hydrogen) and stick (Nitrogen, Oxygen, Fluorine, Chlorine, Bromine, Iodine).