Symbols and Charges for Monoatomic Ions

Symbol	Name	Symbol	Name		
H^+	hydrogen ion	H^-	hydride		
Li^+	lithium ion	F^-	fluoride	Note that the	
Na^+	sodium ion	Cl^-	chloride	letters in an ion's	
K^+	potassium ion	Br^-	bromide	name before the	
Rb^+	rubidium ion	I^-	iodide	-ide ending is	
Cs^+	cesium ion	O^{2-}	oxide	the stem. For	
Be^{2+}	beryllium ion	S^{2-}	sulfide	example, the stem	
Mg^{2+}	magnesium ion	Se^{2-}	selenide	for bromide is	
Ca^{2+}	calcium ion	Te^{2-}	telluride	brom-.	
Sr^{2+}	strontium ion				
Ba^{2+}	barium ion	Ag^+	silver ion	N^{3-}	nitride
Ra^{2+}	radium ion	Ni^{2+}	nickel ion	P^{3-}	phosphide
Zn^{2+}	zinc ion	Al^{3+}	aluminum ion	As^{3-}	arsenide

Symbol	Systematic name (Stock system)	Common name	Symbol	Systematic name (Stock system)	Common name
Cu^+	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			
Mn^{3+}	manganese(III)	manganic			

Symbols and Charges for Polyatomic Ions

Formula	Name	Formula	Name
NO_3^-	nitrate	ClO_4^-	perchlorate
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

More Symbols and Charges for Polyatomic Ions

$S_2O_3^{2-}$	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		

$C_2H_3O_2^-$ acetate (an alternate way to write acetate is CH_3COO^-)

There is one positive polyatomic ion. It is NH_4^+ and is called the ammonium ion.

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, $BiCl_3$.

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.

Acid Names – add the word acid to each name when saying or writing.

Non–oxygen containing

Formula	Name when dissolved in water	Name when a pure compound
HF	hydrofluoric acid	hydrogen fluoride
HCl	hydrochloric acid	hydrogen chloride
HBr	hydrobromic acid	hydrogen bromide
HI	hydroiodic acid	hydrogen iodide
HCN	hydrocyanic acid	hydrogen cyanide
H_2S	hydrosulfuic acid	hydrogen sulfide

(Note that it is hydrogen sulfide, NOT hydrogen sulfuride.)

Oxygen containing (oxyacids)

Formula	Name
HNO_3	nitric acid
HNO_2	nitrous acid
H_2SO_4	sulfuric acid
H_2SO_3	sulfurous acid
H_3PO_4	phosphoric acid
H_2CO_3	carbonic acid
$HC_2H_3O_2$	acetic acid

(also written CH_3COOH)