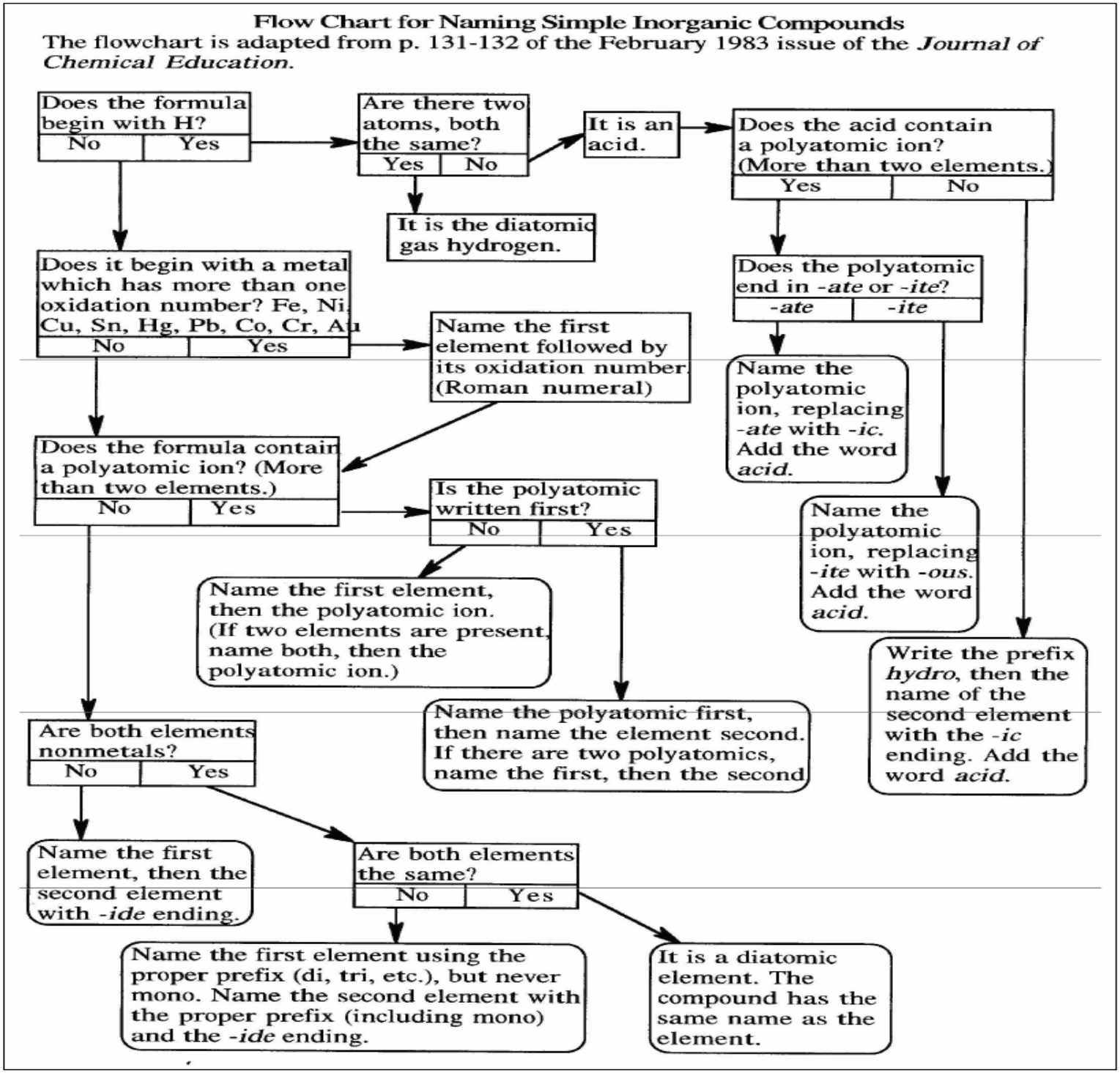
Flow Chart for Naming Simple Inorganic Compounds

The flowchart is adapted from p. 131-132 of the February 1983 issue of the *Journal of Chemical Education*.



COMMON IONS

POSITIVE IONS (CATIONS)		NEGATIVE IONS (ANIONS)	
aluminum	Al^{3+}	acetate	CH_3COO^- *or* $C_2H_3O_2^-$
ammonium	NH_4^+	bromide	Br^-
barium	Ba^{2+}	carbonate	CO_3^{2-}
cadmium	Cd^{2+}	hydrogen carbonate (bicarbonate)	HCO_3^-
calcium	Ca^{2+}	perchlorate	ClO_4^-
chromium(II)	Cr^{2+}	chlorate	ClO_3^-
chromium(III)	Cr^{3+}	chlorite	ClO_2^-
cobalt(II)	Co^{2+}	hypochlorite	ClO^-
cobalt(III)	Co^{3+}	chloride	Cl^-
copper(1)	Cu^+	chromate	CrO_4^{2-}
copper(II)	Cu^{2+}	dichromate	$Cr_2O_7^{2-}$
hydrogen	H^+	cyanide	CN^-
iron(II)	Fe^{2+}	fluoride	F^-
iron(III)	Fe^{3+}	hydroxide	OH^-
lead(II)	Pb^{2+}	iodide	I^-
lead(IV)	Pb^{4+}	nitrate	NO_3^-
lithium	Li^+	nitrite	NO_2^-
magnesium	Mg^{2+}	nitride	N^{3-}
manganese(II)	Mn^{2+}	oxalate	$C_2O_4^{2-}$
mercury(I)	Hg_2^{2+}	oxide	O^{2-}
mercury(II)	Hg^{2+}	peroxide	O_2^{2-}
nickel(II)	Ni^{2+}	permanganate	MnO_4^-
nickel(III)	Ni^{3+}	phosphate	PO_4^{3-}
potassium	K^+	phosphite	PO_3^{3-}
silver	Ag^+	selenide	Se^{2-}
sodium	Na^+	sulfate	SO_4^{2-}
strontium	Sr^{2+}	sulfite	SO_3^{2-}
tin(II)	Sn^{2+}	hydrogen sulfate	HSO_4^-
tin(IV)	Sn^{4+}	sulfide	S^{2-}
zinc	Zn^{2+}	hydrogen sulfide	HS^-

PERIODIC CHART OF IONS

ammonium	NH_4^+	hydrogen sulfate	HSO_3^-	hydrogen phosphate	HPO_4^{2-}
		hydrogen sulfide	HS^-		
		hydroxide	OH^-	silicate	SiO_3^{2-}
acetate	$C_2H_3O_2^-$	**nitrate**	NO_3^-		
chlorate	ClO_3^-	nitrite	NO_2^-	**sulfate**	SO_4^{2-}
cyanide	CN^-	permanganate	MnO_4^-		
dihydrogen phosphate	$H_2PO_4^-$	thiocyanate	SCN^-	sulfite	SO_3^{2-}
		carbonate	CO_3^{2-}	tartrate	$C_4H_4O_6^{2-}$
hydrogen carbonate (bicarbonate)	HCO_3^-	chromate	CrO_4^{2-}		
		dichromate	$Cr_2O_7^{2-}$	**phosphate**	PO_4^{3-}

																1 H^- hydride	2 He helium
4 Be^{2+} beryllium											5 B boron	6 C carbon	7 N^{3-} nitride	8 O^{2-} oxide	9 F^- fluoride	10 Ne Neon
12 Mg^{2+} magnesium											13 Al^{3+} aluminum	14 Si silicon	15 P^{3-} phosphide	16 S^{2-} sulphide	17 Cl^- chloride	18 Ar argon
20 Ca^{2+} calcium	21 Sc^{3+} scandium	22 Ti^{4+} titanium (IV) Ti^{3+} titanium(III)	23 V^{5+} vanadium (V) V^{4+} vanadium (IV)	24 Cr^{3+} chromium (III) Cr^{2+} chromium (II)	25 Mn^{2+} manganese (II) Mn^{4+} manganese (IV)	26 Fe^{3+} iron(III) Fe^{2+} iron(II)	27 Co^{2+} cobalt(II) Co^{3+} cobalt (III)	28 Ni^{2+} nickel(II) Ni^{3+} nickel(III)	29 Cu^{2+} copper(II) Cu^+ copper(I)	30 Zn^{2+} zinc	31 Ga^{3+} gallium	32 Ge^{4+} germanium	33 As^{3-} arsenide	34 Se^{2-} selenide	35 Br^- bromide	36 Kr krypton
38 Sr^{2+} strontium	39 Y^{3+} ytrium	40 Zr^{4+} zirconium	41 Nb^{5+} niobium(V) Nb^{3+} niobium (III)	42 Mo^{6+} molybdenum	43 Tc^{7+} technetium	44 Ru^{3+} ruthenium (III) Ru^{4+} ruthernium (IV)	45 Rh^{3+} rhodium	46 Pd^{2+} palladium (II) Pd^{4+} palladium (IV)	47 Ag^+ silver	48 Cd^{2+} cadmium	49 In^{3+} indium	50 Sn^{4+} tin(IV) Sn^{2+} tin(II)	51 Sb^{3+} antimony(III) Sb^{5+} antimony (V)	52 Te^{2-} telluride	53 I^- Iodide	54 Xe xenon
56 Ba^{2+} barium	57 – 71	72 Hf^{4+} hafnium	73 Ta^{5+} tantalum	74 W^{6+} tungsten	75 Re^{7+} rhenium	76 Os^{4+} osmium	77 Ir^{4+} iridium	78 Pt^{4+} platinum (IV) P^{2+} platinum (II)	79 Au^{3+} gold(III) Au^+ gold(I)	80 Hg^{2+} mercury(II) Hg_2^{2+} mercury(I)	81 Tl^+ thallium(I) Tl^{3+} thallium(III)	82 Pb^{2+} lead(II) Pb^{4+} lead(IV)	83 Bi^{3+} bismuth(III) Bi^{5+} bismuth(V)	84 Po^{2+} polonium (II) Po^{4+} polonium (IV)	85 At^- astatide	86 Rn radon
88 Ra^{2+} radium	89 – 103	104 Rf rutherfordium	105 Ha halfnium	106	107												

57 La^{3+} lanthanum	58 Ce^{3+} cerium	59 Pr^{3+} praseodymium	60 Nd^{3+} neodymium	61 Pm^{3+} promethium	62 Sm^{3+} samarium (III) Sm^{2+} samarium (II)	63 Eu^{3+} europium (III) Eu^{2+} europium (II)	64 Gd^{3+} gadolinium	65 Tb^{3+} terbium	66 Dy^{3+} dysprosiume	67 Ho^{3+} holmium	68 Er^{3+} erbium	69 Tm^{3+} thulium	70 Yb^{3+} ytterbium (III) Yb^{2+} ytterbium (II)	71 Lu^{2+} lutetium
89 Ac^{3+} actinium	90 Th^{4+} thorium	91 Pa^{5+} protact.(V) Pa^{4+} prot.(IV)	92 U^{6+} uranium (VI) U^{4+} uranium (IV)	93 Np^{5+} neptunium	94 Pu^{4+} plutonium(IV) Pu^{6+} plutonium(VI)	95 Am^{3+} amer. (III) Am^{4+} americium(V)	96 Cm^{3+} curium	97 Bk^{3+} berkelium(III) Bk^{4+} berkelium(IV)	98 Cf^{3+} californium	99 Es^{3+} einsteinium	100 Fm^{3+} fermium	101 Md^{2+} mendelevium(II) Md^{3+} mendelevium (III)	102 No^{2+} nobelium (II) No^{3+} nobelium (III)	103 Lr^{3+} lawrencium