

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
hydrogen 1 H 1.00794(7)	helium 2 He 4.002602(2)	lithium 3 Li 6.941(2)	beryllium 4 Be 9.012182(3)	boron 5 B 10.811(7)	carbon 6 C 12.0107(8)	nitrogen 7 N 14.0067(7)	oxygen 8 O 15.9994(3)	fluorine 9 F 18.9984032(5)	neon 10 Ne 20.1797(6)	aluminum 13 Al 26.981538(2)	silicon 14 Si 28.0855(3)	phosphorus 15 P 30.973761(2)	sulfur 16 S 32.065(5)	chlorine 17 Cl 35.453(2)	argon 18 Ar 39.948(1)		
potassium 19 K 39.0983(1)	calcium 20 Ca 40.078(4)	scandium 21 Sc 44.955910(8)	titanium 22 Ti 47.867(1)	vanadium 23 V 50.9415(1)	chromium 24 Cr 51.9961(6)	iron 26 Fe 55.845(2)	cobalt 27 Co 58.933200(9)	nickel 28 Ni 58.6934(4)	copper 29 Cu 63.546(3)	zinc 30 Zn 65.38(2)	gallium 31 Ga 69.723(1)	germanium 32 Ge 72.64(1)	arsenic 33 As 74.92160(2)	seelenium 34 Se 78.96(3)	bromine 35 Br 79.904(1)	krypton 36 Kr 83.798(2)	
rubidium 37 Rb 85.4678(3)	strontium 38 Sr 87.62(1)	yttrium 39 Y 88.90585(2)	zirconium 40 Zr 91.224(2)	niobium 41 Nb 92.90638(2)	molybdenum 42 Mo 95.96(2)	rhodium 45 Rh 101.07(2)	nickel 46 Ni 102.90550(2)	copper 47 Cu 107.8682(2)	zinc 48 Zn 112.411(8)	cadmium 49 Cd 114.818(3)	indium 50 In 114.818(3)	tin 51 Sn 118.710(7)	antimony 52 Sb 121.760(1)	tellurium 53 Te 127.60(3)	iodine 54 I 126.90447(3)	xenon 55 Xe 131.293(6)	
cesium 55 Cs 132.90545(2)	barium 56 Ba 137.327(7)	lanthanum 57 La 138.9055(2)	hafnium 72 Hf 178.49(2)	tantalum 73 Ta 180.9479(1)	wolfram 74 W 183.84(1)	osmium 76 Os 190.23(3)	iridium 77 Ir 192.22(3)	gold 79 Au 196.966569(2)	mercury 80 Hg 200.59(2)	thallium 81 Tl 204.3833(2)	lead 82 Pb 207.2(1)	bismuth 83 Bi 208.98038(2)	polonium 84 Po [209]	astatine 85 At [222]	radon 86 Rn [222]	francium 87 Fr [223]	
radium 88 Ra [226]	actinoids	actinoids	rutherfordium 104 Rf [261]	dubnium 105 Db [268]	seaborgium 106 Sg [271]	hassium 108 Hs [270]	meitnerium 109 Mt [276]	roentgenium 110 Rg [281]	unnilium 111 Uu [280]	unlivermorgium 112 Uub [285]	ununquadium 114 Uuq [289]	ununpentium 115 Uup [288]	ununhexium 116 Uuh [293]	ununseptium 117 Uus [294]	ununoctium 118 Uuo [294]	copernicium 119 Cn [285]	

* More than one possible charge as an ion. See chart on back.

Key:
 element name
 atomic number
 symbol
 2003 atomic weight (mean relative mass)

lanthanum 57 La 138.9055(2)	cerium 58 Ce 140.116(1)	praseodymium 59 Pr 140.90765(2)	neodymium 60 Nd 144.24(3)	promethium 61 Pm [145]	samarium 62 Sm 150.36(3)	europium 63 Eu 151.964(1)	gadolinium 64 Gd 157.25(3)	terbium 65 Tb 158.92534(2)	dysprosium 66 Dy 162.500(1)	holmium 67 Ho 164.93032(2)	erbium 68 Er 167.259(3)	thulium 69 Tm 168.93421(2)	ytterbium 70 Yb 173.054(5)
actinium 89 Ac [227]	thorium 90 Th 232.0381(1)	protactinium 91 Pa 231.03588(2)	uranium 92 U 238.02891(3)	neptunium 93 Np [237]	plutonium 94 Pu [244]	americium 95 Am [243]	curium 96 Cm [247]	berkelium 97 Bk [247]	californium 98 Cf [251]	einsteinium 99 Es [252]	fermium 100 Fm [257]	mendelevium 101 Md [258]	nobelium 102 No [259]

Lanthanoids

Actinoids

Element symbols and names: symbols, names, and spellings are recommended by IUPAC (http://www.iupac.org). Names are not yet proposed for the elements beyond 111 - those used here are IUPAC's temporary systematic names (Pure & Appl. Chem., 1979, 51, 361-364). In the USA and some other countries, the spelling aluminum and californium are used. In the UK and elsewhere the usual spelling is sulphur.
 Atomic weights (mean relative atomic masses) are given in brackets. The values in brackets are the values recommended by IUPAC (Pure & Appl. Chem., 2007, In press). Elements with values given in brackets have no stable nuclides and are represented by integer values for the long-lived isotopes known at the time writing.
 The elements boron, protactinium, and uranium from the heaviest elements, these are IUPAC 2007 values (Pure & Appl. Chem., 2007, In press). Elements with values given in brackets have no stable nuclides and are represented by integer values for the long-lived isotopes known at the time writing.
 Periodic table organization: for a justification of the positions of the actinoids, see the IUPAC Periodic Table of the Elements (http://www.webelements.com/periodic-table.html).
 Group labels: the numeric system (1-18) used here is the current IUPAC convention. For the old system of labels (I-VIII) used here see the IUPAC Periodic Table of the Elements (http://www.webelements.com/periodic-table.html).
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Common Polyatomic Ions Table

Polyatomic Ion Name	Formula	Charge (Oxidation Number)
Ammonium	NH ₄	1+
Bicarbonate (Hydrogen carbonate)	HCO ₃	1-
Chlorate	ClO ₃	1-
Hydroxide	OH	1-
Nitrate	NO ₃	1-
Nitrite	NO ₂	1-
Bromate	BrO ₃	1-
Hypochlorite	ClO	1-
Acetate	C ₂ H ₃ O ₂	1-
Cyanide	CN	1-
Benzoate	C ₇ H ₅ O ₂	1-
Permanganate	MnO ₄	1-
Carbonate	CO ₃	2-
Sulphate	SO ₄	2-
Sulphite	SO ₃	2-
Oxalate	C ₂ O ₄	2-
Chromate	CrO ₄	2-
Silicate	SiO ₃	2-
Phosphate	PO ₄	3-
Phosphite	PO ₃	3-
Citrate	C ₆ H ₅ O ₇	3-

***Note:** Ammonium (NH₄) is the only cation. The others are anions.

Ions with Variable Charges

Ion	Charges		Ion	Charges
Titanium	+3, +4		Ruthenium	+4, +3
Vanadium	+4, +5		Palladium	+4, +2
Chromium	+6, +3, +2		Tin	+4, +2
Manganese	+7, +4, +2		Tungsten	+2, +6, +4
Iron	+3, +2		Iridium	+6, +4, +3
Cobalt	+3, +2		Platinum	+4, +2
Nickel	+3, +2		Gold	+1, +3
Copper	+1, +2		Mercury	+2, +1
Molybdenum	+5, +6, +4		Thallium	+3, +1
Technetium	+7, +4		Lead	+4, +2