



WebElements: the periodic table on the world-wide web

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1 hydrogen H 1.00794(7)	2 helium He 4.002602(2)	3 lithium Li 6.941(2)	4 beryllium Be 9.012182(3)	5 sodium Na 22.989770(2)	6 potassium K 39.0983(1)	7 rubidium Rb 85.4678(3)	8 caesium Cs 132.90545(2)	9 francium Fr [223]	10 calcium Ca 40.078(4)	11 strontium Sr 87.62(1)	12 barium Ba 137.327(7)	13 radium Ra [226]	14 scandium Sc 44.955910(8)	15 yttrium Y 88.90585(2)	16 lutetium Lu 174.967(1)	17 lawrencium Lr [262]	18 titanium Ti 47.867(1)	19 zirconium Zr 91.224(2)	20 niobium Nb 92.90638(2)	21 hafnium Hf 178.49(2)	22 rutherfordium Rf [261]	23 vanadium V 50.9415(1)	24 niobium Nb 92.90638(2)	25 dubnium Db [262]	26 chromium Cr 51.9961(6)	27 manganese Mn 54.938049(9)	28 seaborgium Sg [266]	29 manganese Mn 54.938049(9)	30 iron Fe 55.845(2)	31 bohrium Bh [264]	32 cobalt Co 58.933200(9)	33 nickel Ni 58.6934(2)	34 rhodium Rh 101.07(2)	35 palladium Pd 106.42(1)	36 silver Ag 107.8682(2)	37 cadmium Cd 112.411(8)	38 mercury Hg 200.59(2)	39 thallium Tl 204.3833(2)	40 lead Pb 207.2(1)	41 thallium Tl 204.3833(2)	42 lead Pb 207.2(1)	43 tin Sn 118.710(7)	44 antimony Sb 121.760(1)	45 tellurium Te 127.60(3)	46 iodine I 126.90447(3)	47 xenon Xe 131.293(6)	48 boron B 10.811(7)	49 aluminum Al 26.981538(2)	50 silicon Si 28.0855(3)	51 phosphorus P 30.973761(2)	52 sulfur S 32.065(5)	53 chlorine Cl 35.453(2)	54 argon Ar 39.948(1)	55 boron B 10.811(7)	56 carbon C 12.0107(8)	57 nitrogen N 14.0067(7)	58 oxygen O 15.9994(3)	59 fluorine F 18.9984032(5)	60 neon Ne 20.1797(6)
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Key:

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

Lanthanoids

lanthanum La 138.9055(2)	cerium Ce 140.116(1)	praseodymium Pr 140.90765(2)	neodymium Nd 144.24(3)	promethium Pm [145]	samarium Sm 150.36(3)	europium Eu 151.964(1)	gadolinium Gd 157.25(3)	terbium Tb 158.92534(2)	dysprosium Dy 162.500(1)	holmium Ho 164.93032(2)	erbium Er 167.259(3)	thulium Tm 168.93421(2)	ytterbium Yb 173.04(3)
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Actinoids

actinium Ac [227]	thorium Th 232.0381(1)	protactinium Pa 231.03588(2)	uranium U 238.02891(3)	neptunium Np [237]	plutonium Pu [244]	americium Am [243]	curium Cm [247]	berkelium Bk [247]	californium Cf [251]	einsteinium Es [252]	fermium Fm [257]	mendelevium Md [258]	nobelium No [259]
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Element symbols and names: symbols, names, and spellings are recommended by IUPAC (<http://www.iupac.org/>). The names of elements 101-110 are now confirmed (Pure & Appl. Chem., 1997, **69**, 2471–2473). The name for element 111 is proposed but not confirmed. Names are not proposed for the elements 112-116 - those used here are IUPAC's temporary systematic names (Pure & Appl. Chem., 1979, **51**, 381–384). In the USA and some other countries, the spellings **aluminum** and **cesium** are normal while in the UK and elsewhere the usual spelling is **sulphur**.

Atomic weights (mean relative masses): Apart from the heaviest elements, these are IUPAC 2001 values (Pure & Appl. Chem., 2003, **75**, 1107–1122). Elements with values given in brackets have no stable nuclides and are represented by integer values for the longest-lived isotope. The elements thorium, protactinium, and uranium have characteristic terrestrial abundances and these are the values quoted. The last significant figure of each value is considered reliable to ±1 except where a larger uncertainty is given in parentheses.

Periodic table organisation: for a justification of the positions of the elements La, Ac, Lu, and Lr in the WebElements periodic table see W.B. Jensen, "The positions of lanthanum (actinium) and lutetium (lawrencium) in the periodic table", J. Chem. Ed., 1982, **59**, 634–636.

Group labels: the numeric system (1–18) used here is the current IUPAC convention. For a discussion of this and other common systems see: W.C. Fernelius and W.H. Powell, "Confusion in the periodic table of the elements", J. Chem. Ed., 1982, **59**, 504–508.

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Web Links

If you are connected to the InterNet and your Adobe Acrobat software is sufficiently current, click on any of the elements in the periodic table from within the Adobe Acrobat reader to retrieve information about that element from the WebElements site. To do this, you will need an appropriate Web browser program. You may need to update your Adobe Acrobat Reader program [<http://www.adobe.com/acrobat/>].

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