List of chemical elements

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This is a list of the 118 chemical elements which have been identified as of 2020. A chemical element, often simply called an element, is a species of atoms which all have the same number of protons in their atomic nuclei (i.e., the same atomic number, or Z).[1]

A popular visualization of all 118 elements is the periodic table of the elements, a convenient tabular arrangement of the elements by their chemical properties that uses abbreviated chemical symbols in place of full element names, but the simpler list format presented here may also be useful. Like the periodic table, the list below organizes the elements by the number of protons in their atoms; it can also be organized by other properties, such as atomic weight, density, and electronegativity. For more detailed information about the origins of element names, see List of chemical element name etymologies.

List [edit]

List of chemical elements [hide]

Atomic number	Symbol	Element	Etymology[2][3]	Group	Period	Atomic weight[4][5]	Density	Melting point[6]	Boiling point	Specific heat capacity	Electro-negativity	Abundance in Earth's crust[I]
						(Da)	($\frac{g}{cm^3}$)	(K)	(K)	($\frac{J}{g \cdot K}$)		($\frac{mg}{kg}$)
1	H	Hydrogen	Greek elements *hydro-* and *-gen*, 'water-forming'	1	1	1.008[II][III][IV][V]	0.00008988	14.01	20.28	14.304	2.20	1400
2	He	Helium	Greek *hḗlios*, 'sun'	18	1	4.002602(2)[II][IV]	0.0001785	—[VI]	4.22	5.193	–	0.008
3	Li	Lithium	Greek *líthos*, 'stone'	1	2	6.94[II][III][IV][VII][V]	0.534	453.69	1560	3.582	0.98	20
4	Be	Beryllium	Beryl, a mineral (ultimately from the name of Belur in southern India)	2	2	9.0121831(5)	1.85	1560	2742	1.825	1.57	2.8
5	B	Boron	Borax, a mineral (from Arabic *bawraq*)	13	2	10.81[II][III][IV][V]	2.34	2349	4200	1.026	2.04	10
6	C	Carbon	Latin *carbo*, 'coal'	14	2	12.011[II][IV][V]	2.267	>4000 (pressure dependent)	4300	0.709	2.55	200
7	N	Nitrogen	Greek *nítron* and *-gen*, 'niter-forming'	15	2	14.007[II][IV][V]	0.0012506	63.15	77.36	1.04	3.04	19
8	O	Oxygen	Greek *oxy-* and *-gen*, 'acid-forming'	16	2	15.999[II][IV][V]	0.001429	54.36	90.20	0.918	3.44	461000
9	F	Fluorine	Latin *fluere*, 'to flow'	17	2	18.998403163(6)	0.001696	53.53	85.03	0.824	3.98	585
10	Ne	Neon	Greek *néon*, 'new'	18	2	20.1797(6)[II][III]	0.0008999	24.56	27.07	1.03	–	0.005
11	Na	Sodium	English *soda* (the symbol Na is derived from New Latin *natrium*, coined from German *Natron*, 'natron')	1	3	22.98976928(2)	0.971	370.87	1156	1.228	0.93	23600
12	Mg	Magnesium	Magnesia, a district of Eastern Thessaly in Greece	2	3	24.305[V]	1.738	923	1363	1.023	1.31	23300
13	Al	Aluminium	alumina, from Latin *alumen* (gen. *aluminis*), 'bitter salt, alum'	13	3	26.9815384(3)	2.698	933.47	2792	0.897	1.61	82300
14	Si	Silicon	Latin *silex*, 'flint' (originally *silicium*)	14	3	28.085[IV][V]	2.3296	1687	3538	0.705	1.9	282000
15	P	Phosphorus	Greek *phōsphóros*, 'light-bearing'	15	3	30.973761998(5)	1.82	317.30	550	0.769	2.19	1050
16	S	Sulfur	Latin *sulphur*, 'brimstone'	16	3	32.06[II][IV][V]	2.067	388.36	717.87	0.71	2.58	350
17	Cl	Chlorine	Greek *chlōrós*, 'greenish yellow'	17	3	35.45[II][III][IV][V]	0.003214	171.6	239.11	0.479	3.16	145
18	Ar	Argon	Greek *argós*, 'idle' (because of its inertness)	18	3	39.95[II][IV][V]	0.0017837	83.80	87.30	0.52	–	3.5
19	K	Potassium	New Latin *potassa*, 'potash' (the symbol K is derived from Latin *kalium*)	1	4	39.0983(1)	0.862	336.53	1032	0.757	0.82	20900
20	Ca	Calcium	Latin *calx*, 'lime'	2	4	40.078(4)[II]	1.54	1115	1757	0.647	1	41500
21	Sc	Scandium	Latin *Scandia*, 'Scandinavia'	3	4	44.955908(5)	2.989	1814	3109	0.568	1.36	22
22	Ti	Titanium	Titans, the sons of the Earth goddess of Greek mythology	4	4	47.867(1)	4.54	1941	3560	0.523	1.54	5650
23	V	Vanadium	Vanadis, an Old Norse name for the Scandinavian goddess Freyja	5	4	50.9415(1)	6.11	2183	3680	0.489	1.63	120
24	Cr	Chromium	Greek *chróma*, 'colour'	6	4	51.9961(6)	7.15	2180	2944	0.449	1.66	102
25	Mn	Manganese	Corrupted from *magnesia negra*; see Magnesium	7	4	54.938043(2)	7.44	1519	2334	0.479	1.55	950
26	Fe	Iron	English word (the symbol Fe is derived from Latin *ferrum*)	8	4	55.845(2)	7.874	1811	3134	0.449	1.83	56300
27	Co	Cobalt	German *Kobold*, 'goblin'	9	4	58.933194(3)	8.86	1768	3200	0.421	1.88	25
28	Ni	Nickel	Nickel, a mischievous sprite of German miner mythology	10	4	58.6934(4)	8.912	1728	3186	0.444	1.91	84
29	Cu	Copper	English word, from Latin *cuprum*, from Ancient Greek Kýpros 'Cyprus'	11	4	63.546(3)[IV]	8.96	1357.77	2835	0.385	1.9	60
30	Zn	Zinc	Most likely from German *Zinke*, 'prong' or 'tooth', though some suggest Persian *sang*, 'stone'	12	4	65.38(2)	7.134	692.88	1180	0.388	1.65	70
31	Ga	Gallium	Latin *Gallia*, 'France'	13	4	69.723(1)	5.907	302.9146	2673	0.371	1.81	19
32	Ge	Germanium	Latin *Germania*, 'Germany'	14	4	72.630(8)	5.323	1211.40	3106	0.32	2.01	1.5
33	As	Arsenic	French *arsenic*, from Greek *arsenikón* 'yellow arsenic' (influenced by *arsenikós*, 'masculine' or 'virile'), from a West Asian wanderword ultimately from Old Iranian **zarniya-ka*, 'golden'	15	4	74.921595(6)	5.776	1090[VIII]	887	0.329	2.18	1.8
34	Se	Selenium	Greek *selḗnē*, 'moon'	16	4	78.971(8)[IV]	4.809	453	958	0.321	2.55	0.05
35	Br	Bromine	Greek *brômos*, 'stench'	17	4	79.904[V]	3.122	265.8	332.0	0.474	2.96	2.4
36	Kr	Krypton	Greek *kryptós*, 'hidden'	18	4	83.798(2)[II][III]	0.003733	115.79	119.93	0.248	3	1×10^{-4}
37	Rb	Rubidium	Latin *rubidus*, 'deep red'	1	5	85.4678(3)[II]	1.532	312.46	961	0.363	0.82	90
38	Sr	Strontium	Strontian, a village in Scotland	2	5	87.62(1)[II][IV]	2.64	1050	1655	0.301	0.95	370
39	Y	Yttrium	Ytterby, Sweden, where it was found	3	5	88.90584(1)	4.469	1799	3609	0.298	1.22	33
40	Zr	Zirconium	Zircon, a mineral	4	5	91.224(2)[II]	6.506	2128	4682	0.278	1.33	165
41	Nb	Niobium	Niobe, daughter of king Tantalus from Greek mythology	5	5	92.90637(1)	8.57	2750	5017	0.265	1.6	20
42	Mo	Molybdenum	Greek *molýbdaina*, 'piece of lead', from *mólybdos*, 'lead', due to confusion with lead ore galena (PbS)	6	5	95.95(1)[II]	10.22	2896	4912	0.251	2.16	1.2
43	Tc	Technetium	Greek *tekhnētós*, 'artificial'	7	5	[98][IX]	11.5	2430	4538	–	1.9	~ 3×10^{-9}[X]
44	Ru	Ruthenium	New Latin *Ruthenia*, 'Russia'	8	5	101.07(2)[II]	12.37	2607	4423	0.238	2.2	0.001

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45	Rh	Rhodium	Greek *rhodóeis*, 'rose-coloured', from rhódon, 'rose'	9	5	102.90549(2)	12.41	2237	3968	0.243	2.28	0.001
46	Pd	Palladium	Asteroid Pallas, considered a planet at the time	10	5	106.42(1)[II]	12.02	1828.05	3236	0.244	2.2	0.015
47	Ag	Silver	English word (The symbol is derived from Latin *argentum*)	11	5	107.8682(2)[II]	10.501	1234.93	2435	0.235	1.93	0.075
48	Cd	Cadmium	New Latin *cadmia*, from King Kadmos	12	5	112.414(4)[II]	8.69	594.22	1040	0.232	1.69	0.159
49	In	Indium	Latin *indicum*, 'indigo' (colour found in its spectrum)	13	5	114.818(1)	7.31	429.75	2345	0.233	1.78	0.25
50	Sn	Tin	English word (The symbol is derived from Latin *stannum*)	14	5	118.710(7)[II]	7.287	505.08	2875	0.228	1.96	2.3
51	Sb	Antimony	Latin *antimonium*, the origin of which is uncertain: folk etymologies suggest it is derived from Greek *antí* ('against') + *mónos* ('alone'), or Old French *anti-moine*, 'Monk's bane', but it could plausibly be from or related to Arabic *ʾiṯmid*, 'antimony', reformatted as a Latin word. (The symbol is derived from Latin *stibium* 'stibnite'.)	15	5	121.760(1)[II]	6.685	903.78	1860	0.207	2.05	0.2
52	Te	Tellurium	Latin *tellus*, 'the ground, earth'	16	5	127.60(3)[II]	6.232	722.66	1261	0.202	2.1	0.001
53	I	Iodine	French *iode*, from Greek *ioeidḗs*, 'violet'	17	5	126.90447(3)	4.93	386.85	457.4	0.214	2.66	0.45
54	Xe	Xenon	Greek *xénon*, neuter form of *xénos* 'strange'	18	5	131.293(6)[II][III]	0.005887	161.4	165.03	0.158	2.6	3×10^{-5}
55	Cs	Caesium	Latin *caesius*, 'sky-blue'	1	6	132.90545196(6)	1.873	301.59	944	0.242	0.79	3
56	Ba	Barium	Greek *barýs*, 'heavy'	2	6	137.327(7)	3.594	1000	2170	0.204	0.89	425
57	La	Lanthanum	Greek *lanthánein*, 'to lie hidden'	3	6	138.90547(7)[II]	6.145	1193	3737	0.195	1.1	39
58	Ce	Cerium	Dwarf planet Ceres, considered a planet at the time		6	140.116(1)[II]	6.77	1068	3716	0.192	1.12	66.5
59	Pr	Praseodymium	Greek *prásios dídymos*, 'green twin'		6	140.90766(1)	6.773	1208	3793	0.193	1.13	9.2
60	Nd	Neodymium	Greek *néos dídymos*, 'new twin'		6	144.242(3)[II]	7.007	1297	3347	0.19	1.14	41.5
61	Pm	Promethium	Prometheus of Greek mythology		6	[145][IX]	7.26	1315	3273	–	1.13	2×10^{-19}[X]
62	Sm	Samarium	Samarskite, a mineral named after Colonel Vasili Samarsky-Bykhovets, Russian mine official		6	150.36(2)[II]	7.52	1345	2067	0.197	1.17	7.05
63	Eu	Europium	Europe		6	151.964(1)[II]	5.243	1099	1802	0.182	1.2	2
64	Gd	Gadolinium	Gadolinite, a mineral named after Johan Gadolin, Finnish chemist, physicist and mineralogist		6	157.25(3)[II]	7.895	1585	3546	0.236	1.2	6.2
65	Tb	Terbium	Ytterby, Sweden, where it was found		6	158.925354(8)	8.229	1629	3503	0.182	1.2	1.2
66	Dy	Dysprosium	Greek *dysprósitos*, 'hard to get'		6	162.500(1)[II]	8.55	1680	2840	0.17	1.22	5.2
67	Ho	Holmium	New Latin *Holmia*, 'Stockholm'		6	164.930328(7)	8.795	1734	2993	0.165	1.23	1.3
68	Er	Erbium	Ytterby, Sweden, where it was found		6	167.259(3)[II]	9.066	1802	3141	0.168	1.24	3.5
69	Tm	Thulium	Thule, the ancient name for an unclear northern location		6	168.934218(6)	9.321	1818	2223	0.16	1.25	0.52
70	Yb	Ytterbium	Ytterby, Sweden, where it was found		6	173.045(10)[II]	6.965	1097	1469	0.155	1.1	3.2
71	Lu	Lutetium	Latin *Lutetia*, 'Paris'		6	174.9668(1)[II]	9.84	1925	3675	0.154	1.27	0.8
72	Hf	Hafnium	New Latin *Hafnia*, 'Copenhagen' (from Danish *havn*)	4	6	178.49(2)	13.31	2506	4876	0.144	1.3	3
73	Ta	Tantalum	King Tantalus, father of Niobe from Greek mythology	5	6	180.94788(2)	16.654	3290	5731	0.14	1.5	2
74	W	Tungsten	Swedish *tung sten*, 'heavy stone' (The symbol *W* is from *Wolfram*, a name used for the element in many languages, originally from Middle High German *wolf-rahm* (wolf's foam) describing the mineral wolframite)[7]	6	6	183.84(1)	19.25	3695	5828	0.132	2.36	1.3
75	Re	Rhenium	Latin *Rhenus*, 'the Rhine'	7	6	186.207(1)	21.02	3459	5869	0.137	1.9	7×10^{-4}
76	Os	Osmium	Greek *osmḗ*, 'smell'	8	6	190.23(3)[II]	22.61	3306	5285	0.13	2.2	0.002
77	Ir	Iridium	Iris, the Greek goddess of the rainbow	9	6	192.217(2)	22.56	2719	4701	0.131	2.2	0.001
78	Pt	Platinum	Spanish *platina*, 'little silver', from *plata* 'silver'	10	6	195.084(9)	21.46	2041.4	4098	0.133	2.28	0.005
79	Au	Gold	English word (the symbol Au is derived from Latin *aurum*)	11	6	196.966570(4)	19.282	1337.33	3129	0.129	2.54	0.004
80	Hg	Mercury	Mercury, Roman god of commerce, communication, and luck, known for his speed and mobility (the symbol Hg derives from the element's Latin name *hydrargyrum*, from Greek *hydrárgyros*, 'water-silver')	12	6	200.592(3)	13.5336	234.43	629.88	0.14	2	0.085
81	Tl	Thallium	Greek *thallós*, 'green shoot or twig'	13	6	204.38[V]	11.85	577	1746	0.129	1.62	0.85
82	Pb	Lead	English word (the symbol Pb is derived from Latin *plumbum*)	14	6	207.2(1)[II][IV]	11.342	600.61	2022	0.129	1.87	14
83	Bi	Bismuth	German Wismut, from weiß Masse 'white mass', unless from Arabic	15	6	208.98040(1)[IX]	9.807	544.7	1837	0.122	2.02	0.009
84	Po	Polonium	Latin *Polonia*, 'Poland' (the home country of Marie Curie)	16	6	[209][IX]	9.32	527	1235	–	2.0	2×10^{-10}[X]
85	At	Astatine	Greek *ástatos*, 'unstable'	17	6	[210][IX]	7	575	610	–	2.2	3×10^{-20}[X]
86	Rn	Radon	Radium emanation, originally the name of the isotope Radon-222.	18	6	[222][IX]	0.00973	202	211.3	0.094	2.2	4×10^{-13}[X]
87	Fr	Francium	France	1	7	[223][IX]	1.87	281	890	–	0.7	~ 1×10^{-18}[X]
88	Ra	Radium	French *radium*, from Latin *radius*, 'ray'	2	7	[226][IX]	5.5	973	2010	0.094	0.9	9×10^{-7}[X]
89	Ac	Actinium	Greek *aktís*, 'ray'	3	7	[227][IX]	10.07	1323	3471	0.12	1.1	5.5×10^{-10}[X]
90	Th	Thorium	Thor, the Scandinavian god of thunder		7	232.0377(4)[IX][II]	11.72	2115	5061	0.113	1.3	9.6
91	Pa	Protactinium	Proto- (from Greek *prôtos*, 'first, before') + actinium, since actinium is produced through the radioactive decay of protactinium		7	231.03588(1)[IX]	15.37	1841	4300	–	1.5	1.4×10^{-6}[X]
92	U	Uranium	Uranus, the seventh planet in the Solar System		7	238.02891(3)[IX]	18.95	1405.3	4404	0.116	1.38	2.7
93	Np	Neptunium	Neptune, the eighth planet in the Solar System		7	[237][IX]	20.45	917	4273	–	1.36	$\leq 3\times10^{-12}$[X]
94	Pu	Plutonium	Dwarf planet Pluto, considered the ninth planet in the Solar System at the time		7	[244][IX]	19.84	912.5	3501	–	1.28	$\leq 3\times10^{-11}$[X]
95	Am	Americium	The Americas, as the element was first synthesised on the continent, by analogy with europium		7	[243][IX]	13.69	1449	2880	–	1.13	0[XI]
96	Cm	Curium	Pierre Curie and Marie Curie, French physicists and chemists		7	[247][IX]	13.51	1613	3383	–	1.28	0[XI]
97	Bk	Berkelium	Berkeley, California, where the element was first synthesised, by analogy with terbium		7	[247][IX]	14.79	1259	2900	–	1.3	0[XI]
98	Cf	Californium	California, where the element was first synthesised		7	[251][IX]	15.1	1173	(1743)[XII]	–	1.3	0[XI]
99	Es	Einsteinium	Albert Einstein, German physicist		7	[252][IX]	8.84	1133	(1269)[XII]	–	1.3	0[XI]
100	Fm	Fermium	Enrico Fermi, Italian physicist		7	[257][IX]	(9.7)[XII]	(1125)[XII]	–	–	1.3	0[XI]
101	Md	Mendelevium	Dmitri Mendeleev, Russian chemist and inventor who proposed the periodic table		7	[258][IX]	(10.3)[XII]	(1100)[XII]	–	–	1.3	0[XI]
102	No	Nobelium	Alfred Nobel, Swedish chemist and engineer		7	[259][IX]	(9.9)[XII]	(1100)[XII]	–	–	1.3	0[XI]
103	Lr	Lawrencium	Ernest Lawrence, American physicist		7	[266][IX]	(15.6)[XII]	(1900)[XII]	–	–	1.3	0[XI]
104	Rf	Rutherfordium	Ernest Rutherford, chemist and physicist from New Zealand	4	7	[267][IX]	(23.2)[XII]	(2400)[XII]	(5800)[XII]	–	–	0[XI]

105	Db	Dubnium	Dubna, Russia, where the Joint Institute for Nuclear Research is located	5	7	[268][IX]	(29.3)[XII]	–	–	–	–	0[XI]
106	Sg	Seaborgium	Glenn T. Seaborg, American chemist	6	7	[269][IX]	(35.0)[XII]	–	–	–	–	0[XI]
107	Bh	Bohrium	Niels Bohr, Danish physicist	7	7	[270][IX]	(37.1)[XII]	–	–	–	–	0[XI]
108	Hs	Hassium	New Latin *Hassia*, 'Hesse' (a state in Germany)	8	7	[270][IX]	(40.7)[XII]	–	–	–	–	0[XI]
109	Mt	Meitnerium	Lise Meitner, Austrian physicist	9	7	[278][IX]	(37.4)[XII]	–	–	–	–	0[XI]
110	Ds	Darmstadtium	Darmstadt, Germany, where the element was first synthesised	10	7	[281][IX]	(34.8)[XII]	–	–	–	–	0[XI]
111	Rg	Roentgenium	Wilhelm Conrad Röntgen, German physicist	11	7	[282][IX]	(28.7)[XII]	–	–	–	–	0[XI]
112	Cn	Copernicium	Nicolaus Copernicus, Polish astronomer	12	7	[285][IX]	(14.0)[XII]	(283)[XIII]	(340)[XIII]	–	–	0[XI]
113	Nh	Nihonium	Japanese *Nihon*, 'Japan' (where the element was first synthesised)	13	7	[286][IX]	(16)[XII]	(700)[XII]	(1400)[XII]	–	–	0[XI]
114	Fl	Flerovium	Flerov Laboratory of Nuclear Reactions, part of JINR, where the element was synthesised; itself named after Georgy Flyorov, Russian physicist	14	7	[289][IX]	(14)[XII]	–	~210	–	–	0[XI]
115	Mc	Moscovium	Moscow Oblast, Russia, where the element was first synthesised	15	7	[290][IX]	(13.5)[XII]	(700)[XII]	(1400)[XII]	–	–	0[XI]
116	Lv	Livermorium	Lawrence Livermore National Laboratory in Livermore, California, which collaborated with JINR on its synthesis	16	7	[293][IX]	(12.9)[XII]	(700)[XII]	(1100)[XII]	–	–	0[XI]
117	Ts	Tennessine	Tennessee, United States (where Oak Ridge National Laboratory is located)	17	7	[294][IX]	(7.2)[XII]	(700)[XII]	(883)[XII]	–	–	0[XI]
118	Og	Oganesson	Yuri Oganessian, Russian-born Armenian physicist	18	7	[294][IX]	(5.0)[XII][XIV]	(320)[XII]	(~350)[XII][XV]	–	–	0[XI]

Notes [hide]

I. ^ Unless otherwise indicated, elements are primordial – they occur naturally, and not through decay.

II. ^ a b c d e f g h i j k l m n o p q r s t u v w x y z aa ab ac ad ae af ag ah ai aj ak al The isotopic composition of this element varies in some geological specimens, and the variation may exceed the uncertainty stated in the table.

III. ^ a b c d e f g The isotopic composition of the element can vary in commercial materials, which can cause the atomic weight to deviate significantly from the given value.

IV. ^ a b c d e f g h i j k l m n o The isotopic composition varies in terrestrial material such that a more precise atomic weight can not be given.

V. ^ a b c d e f g h i j k l m The value listed is the conventional atomic-weight value suitable for trade and commerce. The actual value may differ depending on the isotopic composition of the sample. Since 2009, IUPAC provides the standard atomic-weight values for these elements using the interval notation. The corresponding standard atomic weights are:

- Hydrogen: [1.00784, 1.00811]
- Lithium: [6.938, 6.997]
- Boron: [10.806, 10.821]
- Carbon: [12.0096, 12.0116]
- Nitrogen: [14.00643, 14.00728]
- Oxygen: [15.99903, 15.99977]
- Magnesium: [24.304, 24.307]
- Silicon: [28.084, 28.086]
- Sulfur: [32.059, 32.076]
- Chlorine: [35.446, 35.457]
- Argon: [39.792, 39.963]
- Bromine: [79.901, 79.907]
- Thallium: [204.382, 204.385]

VI. ^ Helium does not solidify at a pressure of one atmosphere. Helium can only solidify at pressures above 25 atmospheres, which corresponds to a melting point of 0.95 K.

VII. ^ The atomic weight of commercial lithium can vary between 6.939 and 6.996—analysis of the specific material is necessary to find a more accurate value.

VIII. ^ This element sublimes at one atmosphere of pressure.

IX. ^ a b c d e f g h i j k l m n o p q r s t u v w x y z aa ab ac ad ae af ag ah ai aj ak al The element does not have any stable nuclides, and a value in brackets, e.g. [209], indicates the mass number of the longest-lived isotope of the element. However, four such elements, bismuth, thorium, protactinium, and uranium, have characteristic terrestrial isotopic compositions, and thus their standard atomic weights are given.

X. ^ a b c d e f g h i j k This element is transient – it occurs only through decay (and in the plutonium, also in traces deposited from supernovae onto Earth).

XI. ^ a b c d e f g h i j k l m n o p q r s t u v w x This element is synthetic – the transuranic elements 95 and above do not occur naturally, but they can all be produced artificially.

XII. ^ a b c d e f g h i j k l m n o p q r s t u v w x y z aa ab ac ad ae af ag ah ai aj ak The value has not been precisely measured, usually because of the element's short half-life; the value given in parentheses is a prediction.

XIII. ^ a b With error bars: 283±11 K and 340±10 K respectively. The best experimental value for the boiling point of copernicium is 357^{+112}_{-108} K.

XIV. ^ This predicted value is for solid oganesson, not gaseous oganesson.

XV. ^ With error bars: 350±30 K.

Background color shows subcategory in the metal–metalloid–nonmetal trend:

Metal						Metalloid	Nonmetal		Unknown chemical properties
Alkali metal	Alkaline earth metal	Lanthanide	Actinide	Transition metal	Post-transition metal		Reactive nonmetal	Noble gas	

See also [edit]

- List of people whose names are used in chemical element names
- List of places used in the names of chemical elements
- List of chemical element name etymologies

References [edit]

1. ^ Template:GoldBookREF
2. ^ "Periodic Table – Royal Society of Chemistry". *www.rsc.org*.
3. ^ "Online Etymology Dictionary". *etymonline.com*.
4. ^ Wieser, Michael E.; et al. (2013). "Atomic weights of the elements 2011 (IUPAC Technical Report)". *Pure Appl. Chemistry*. **85** (5): 1047–1078. doi:10.1351/PAC-REP-13-03-02. (for standard atomic weights of elements)
5. ^ Sonzogni, Alejandro. "Interactive Chart of Nuclides". National Nuclear Data Center: Brookhaven National Laboratory. Retrieved 2008-06-06. (for atomic weights of elements with atomic numbers 103–118)
6. ^ Holman, S. W.; Lawrence, R. R.; Barr, L. (1 January 1895). "Melting Points of Aluminum, Silver, Gold, Copper, and Platinum". *Proceedings of the American Academy of Arts and Sciences*. **31**: 218–233. doi:10.2307/20020628. JSTOR 20020628.
7. ^ van der Krogt, Peter. "Wolframium Wolfram Tungsten". Elementymology & Elements Multidict. Archived from the original on 2010-01-23. Retrieved 2010-03-11.

External links [edit]

- Atoms made thinkable, an interactive visualisation of the elements allowing physical and chemical properties to be compared

V • T • E **Periodic table** (Large cells) [hide]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	H																	He
2	Li	Be											B	C	N	O	F	Ne
3	Na	Mg											Al	Si	P	S	Cl	Ar
4	K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
5	Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
6	Cs	Ba	La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
7	Fr	Ra	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr	Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Cn	Nh	Fl	Mc	Lv	Ts	Og

Alkali metal | Alkaline earth metal | Lanthanide | Actinide | Transition metal | Post-transition metal | Metalloid | Reactive nonmetal | Noble gas | Unknown chemical properties

V • T • E **Periodic table** [show]

Categories: Lists of chemical elements