

# Chemical Elements Table

Table of Chemical Elements

Element	Sy m- bol	Atom ic no.	Atomic wt.	Specifi c gravity	Melting point °C	Boiling point °C	No. of isotop es <sup>1</sup>	Discoverer	Year
<a href="#">Actinium</a>	Ac	89	227 <sup>2</sup>	10.07 <sup>3</sup>	1051	3198	11	Debiere/Giesel	1899/1902
<a href="#">Aluminum</a>	Al	13	26.981538	2.6989	660.32	2519	8	Wöhler	1827
<a href="#">Americium</a>	Am	95	243 <sup>2</sup>	13.67	1176	2011	13 <sup>4</sup>	Seaborg et al.	1944
<a href="#">Antimony</a>	Sb	51	121.76	6.61	630.63	1587	29	Early historic times	—
<a href="#">Argon</a>	Ar	18	39.948	1.7837 <sup>5</sup>	-189.35	-185.85	8	Rayleigh and Ramsay	1894
<a href="#">Arsenic (gray)</a>	As	33	74.9216	5.73	817	603	14	Albertus Magnus	1250
<a href="#">Astatine</a>	At	85	210 <sup>2</sup>	—	302	—	21	Corson et al.	1940
<a href="#">Barium</a>	Ba	56	137.327	3.5	727	1897	25	Davy	1808
<a href="#">Berkelium</a>	Bk	97	247 <sup>2</sup>	14.00 <sup>6</sup>	1050 (α form)	—	8 <sup>4</sup>	Seaborg et al.	1949
<a href="#">Beryllium</a>	Be	4	9.012182	1.848	1287	2471	6	Vauquelin	1798
<a href="#">Bismuth</a>	Bi	83	208.98038	9.747	271.40	1564	19	Geoffroy the Younger	1753
<a href="#">Bohrium</a>	Bh	107	264 <sup>2</sup>	—	—	—	—	Armbruster and Münzenberg	1981
<a href="#">Boron</a>	B	5	10.811	2.37 <sup>7</sup>	2075	4000	6	Gay-Lussac and Thénard;	1808

								Davy	
<a href="#">Bromine</a>	Br	35	79.904	3.12 <sup>5</sup>	-7.2	58.8	19	Balard	1826
<a href="#">Cadmium</a>	Cd	48	112.411	8.65	321.07	767	22	Stromeyer	1817
<a href="#">Calcium</a>	Ca	20	40.078	1.55	842	1484	14	Davy	1808
<a href="#">Californium</a>	Cf	98	251 <sup>2</sup>	—	900	—	12 <sup>4</sup>	Seaborg et al.	1950
<a href="#">Carbon</a>	C	6	12.0107	1.8–3.5 <sup>8</sup>	4492 (graphite)	3825	7	Prehistoric	—
<a href="#">Cerium</a>	Ce	58	140.116	6.771	798	3443	19	Berzelius and Hisinger; Klaproth	1803
<a href="#">Cesium</a>	Cs	55	132.90545	1.873	28.5	671	22	Bunsen and Kirchoff	1860
<a href="#">Chlorine</a>	Cl	17	35.453	1.56 <sup>5</sup>	-101.5	-34.04	11	Scheele	1774
<a href="#">Chromium</a>	Cr	24	51.9961	7.18–7.20	1907	2671	9	Vauquelin	1797
<a href="#">Cobalt</a>	Co	27	58.9332	8.9	1495	2927	14	Brandt	c.1735
<a href="#">Copper</a>	Cu	29	63.546	8.96	1084.62	2562	11	Prehistoric	—
<a href="#">Curium</a>	Cm	96	247 <sup>2</sup>	13.51 <sup>3</sup>	1345	3100	13 <sup>4</sup>	Seaborg et al.	1944
<a href="#">Darmstadtium</a>	Ds	110	281 <sup>2</sup>	—	—	—	—	S. Hofmann et al.	1994
<a href="#">Dubnium</a>	Db	105	262 <sup>2</sup>	—	—	—	—	Ghiorso et al.	1970
<a href="#">Dysprosium</a>	Dy	66	162.5	8.540	1412	2567	21	de Boisbaudran	1886
<a href="#">Einsteinium</a>	Es	99	252 <sup>2</sup>	—	860	—	12 <sup>4</sup>	Ghiorso et al.	1952
<a href="#">Erbium</a>	Er	68	167.259	9.045	1529	2868	16	Mosander	1843
<a href="#">Europium</a>	Eu	63	151.964	5.283	822	1529	21	Demarcay	1901

<a href="#">Fermium</a>	Fm	100	257 <sup>2</sup>	—	1527	—	10 <sup>4</sup>	Ghiorso et al.	1953
<a href="#">Fluorine</a>	F	9	18.9984 032	1.108 <sup>5</sup>	- 219.67	- 188.1 2	6	Moissan	1886
<a href="#">Francium</a>	Fr	87	223 <sup>2</sup>	—	27	—	21	Perey	1939
<a href="#">Gadolinium</a>	Gd	64	157.25	7.898	1313	3273	17	de Marignac	1880
<a href="#">Gallium</a>	Ga	31	69.723	5.904	29.76	2204	14	de Boisbaudran	1875
<a href="#">Germanium</a>	Ge	32	72.64	5.323	938.2 5	2833	17	Winkler	1886
<a href="#">Gold</a>	Au	79	196.9665 5	19.32	1064.1 8	2856	21	Prehistoric	—
<a href="#">Hafnium</a>	Hf	72	178.49	13.31	2233	4603	17	Coster and von Hevesy	1923
<a href="#">Hassium</a>	Hs	108	277 <sup>2</sup>	—	—	—	—	Armbruster and Münzenberg	1983
<a href="#">Helium</a>	He	2	4.00260 2	0.178 5 <sup>5</sup>	-272.2	- 268.9 34	5	Janssen	1868
<a href="#">Holmium</a>	Ho	67	164.9303 2	8.781	1474	2700	29	Delafontaine and Soret	1878
<a href="#">Hydrogen</a>	H	1	1.00794	0.070 <sup>5</sup>	- 259.34	- 252.8 7	3	Cavendish	1766
<a href="#">Indium</a>	In	49	114.818	7.31	156.6 0	2072	34	Reich and Richter	1863
<a href="#">Iodine</a>	I	53	126.9044 7	4.93	113.7	184.4	24	Courtois	1811
<a href="#">Iridium</a>	Ir	77	192.217	22.42	2446	4428	25	Tennant	1804
<a href="#">Iron</a>	Fe	26	55.845	7.894	1538	2861	10	Prehistoric	—
<a href="#">Krypton</a>	Kr	36	83.8	3.733 <sup>5</sup>	- 157.38	- 153.2 2	23	Ramsay and Travers	1898

<a href="#">Lanthanum</a>	La	57	138.9055	6.166	918	3464	19	Mosander	1839
<a href="#">Lawrencium</a>	Lr	103	262 <sup>2</sup>	—	1627	—	20 <sup>4</sup>	Ghiorso et al.	1961
<a href="#">Lead</a>	Pb	82	207.2	11.35	327.46	1749	29	Prehistoric	—
<a href="#">Lithium</a>	Li	3	6.941	0.534	180.50	1342	5	Arfvedson	1817
<a href="#">Lutetium</a>	Lu	71	174.967	9.835	1663	3402	22	Urbain/ von Welsbach	1907
<a href="#">Magnesium</a>	Mg	12	24.305	1.738	650	1090	8	Black	1755
<a href="#">Manganese</a>	Mn	25	54.938049	7.21–7.44 <sup>9</sup>	1246	2061	11	Gahn, Scheele, and Bergman	1774
<a href="#">Meitnerium</a>	Mt	109	268 <sup>2</sup>	—	—	—	—	GSI, Darmstadt, West Germany	1982
<a href="#">Mendelevium</a>	Md	101	258 <sup>2</sup>	—	827	—	3 <sup>4</sup>	Ghiorso et al.	1955
<a href="#">Mercury</a>	Hg	80	200.59	13.546	-38.83	356.73	26	Prehistoric	—
<a href="#">Molybdenum</a>	Mo	42	95.94	10.22	2623	4639	20	Scheele	1778
<a href="#">Neodymium</a>	Nd	60	144.24	6.80 & 7.004 <sup>10</sup>	1021	3074	16	von Welsbach	1885
<a href="#">Neon</a>	Ne	10	20.1797	0.89990 (g/10° C/1 atm)	-248.59	-246.08	8	Ramsay and Travers	1898
<a href="#">Neptunium</a>	Np	93	237 <sup>2</sup>	20.25	644	—	15 <sup>4</sup>	McMillan and Abelson	1940
<a href="#">Nickel</a>	Ni	28	58.6934	8.902	1455	2913	11	Cronstedt	1751
<a href="#">Niobium</a>	Nb	41	92.9063	8.57	2477	4744	24	Hatchett	1801

(Columbiu m)			8						
<a href="#">Nitrogen</a>	N	7	14.0067	0.808 <sup>5</sup>	- 210.00	- 195.7 9	8	Rutherford	1772
<a href="#">Nobelium</a>	No	102	259 <sup>2</sup>	—	827	—	7 <sup>4</sup>	Ghiorso et al.	1958
<a href="#">Osmium</a>	Os	76	190.23	22.57	3033	5012	19	Tennant	1803
<a href="#">Oxygen</a>	O	8	15.9994	1.14 <sup>5</sup>	- 218.79	- 182.9 5	8	Priestley/Sch eele	1774
<a href="#">Palladium</a>	Pd	46	106.42	12.02	1554.9	2963	21	Wollaston	1803
<a href="#">Phosphorus</a> (white)	P	15	30.9737 61	1.82	44.15	280.5	7	Brand	1669
<a href="#">Platinum</a>	Pt	78	195.078	21.45	1768.4	3825	32	Ulloa/Wood	1735/17 41
<a href="#">Plutonium</a>	Pu	94	244 <sup>2</sup>	19.84	640	3228	16 <sup>4</sup>	Seaborg et al.	1940
<a href="#">Polonium</a>	Po	84	209 <sup>2</sup>	9.32	254	962	34	Curie	1898
<a href="#">Potassium</a>	K	19	39.0983	0.862	63.5	759	10	Davy	1807
<a href="#">Praseodymium</a>	Pr	59	140.9076 5	6.772	931	3520	15	von Welsbach	1885
<a href="#">Promethium</a>	Pm	61	145 <sup>2</sup>	—	1042	3000	14	Marinsky et al.	1945
<a href="#">Protactinium</a>	Pa	91	231.0358 8	15.37 <sup>3</sup>	1572	—	14	Hahn and Meitner	1917
<a href="#">Radium</a>	Ra	88	226 <sup>2</sup>	5.0?	700	—	15	Pierre and Marie Curie	1898
<a href="#">Radon</a>	Rn	86	222 <sup>2</sup>	4.4 <sup>5</sup>	-71	-61.7	20	Dorn	1900
<a href="#">Rhenium</a>	Re	75	186.207	21.02	3186	5596	21	Noddack, Berg, and Tacke	1925
<a href="#">Rhodium</a>	Rh	45	102.9055	12.41	1964	3695	20	Wollaston	1803
<a href="#">Roentgenium</a>	Rg	111	272 <sup>2</sup>	—	—	—	—	Hofmann et	1994

<a href="#">m<sup>10</sup></a>								<i>al.</i>	
<a href="#">Rubidium</a>	Rb	37	85.4678	1.532	39.30	688	20	Bunsen and Kirchoff	1861
<a href="#">Ruthenium</a>	Ru	44	101.07	12.44	2334	4150	16	Klaus	1844
<a href="#">Rutherfordium</a>	Rf	104	261 <sup>2</sup>	—	—	—	—	Ghiorso et al.	1969
<a href="#">Samarium</a>	Sm	62	150.36	7.536	1074	1794	17	Boisbaudran	1879
<a href="#">Scandium</a>	Sc	21	44.9559 1	2.989	1541	2836	15	Nilson	1878
<a href="#">Seaborgium</a>	Sg	106	266 <sup>2</sup>	—	—	—	—	Ghiorso et al.	1974
<a href="#">Selenium (gray)</a>	Se	34	78.96	4.79	220.5	685	20	Berzelius	1817
<a href="#">Silicon</a>	Si	14	28.0855	2.33	1414	3265	8	Berzelius	1824
<a href="#">Silver</a>	Ag	47	107.8682	10.5	961.7 8	2162	27	Prehistoric	—
<a href="#">Sodium</a>	Na	11	22.9897 7	0.971	97.80	883	7	Davy	1807
<a href="#">Strontium</a>	Sr	38	87.62	2.54	777	1382	18	Davy	1808
<a href="#">Sulfur</a>	S	16	32.065	2.07 <sup>10</sup>	95.3 (rhombic)	444.6 0	10	Prehistoric	—
<a href="#">Tantalum</a>	Ta	73	180.9479	16.654	3017	5458	19	Ekeberg	1801
<a href="#">Technetium</a>	Tc	43	98 <sup>2</sup>	11.50 <sup>3</sup>	2157	4265	23	Perrier and Segré	1937
<a href="#">Tellurium</a>	Te	52	127.60	6.24	449.5 1	988	29	von Reichenstein	1782
<a href="#">Terbium</a>	Tb	65	158.9253 4	8.234	1356	3230	24	Mosander	1843
<a href="#">Thallium</a>	Tl	81	204.3833	11.85	304	1473	28	Crookes	1861
<a href="#">Thorium</a>	Th	90	232.0381	11.72	1750	4788	12	Berzelius	1828
<a href="#">Thulium</a>	Tm	69	168.9342 1	9.314	1545	1950	18	Cleve	1879

<a href="#">Tin (white)</a>	Sn	50	118.71	7.31	231.9 <sub>3</sub>	2602	28	Prehistoric	—
<a href="#">Titanium</a>	Ti	22	47.867	4.55	1668	3287	9	Gregor	1791
<a href="#">Tungsten</a>	W	74	183.84	19.3	3422	5555	22	J. and F. d'Elhuyar	1783
<a href="#">Uranium</a>	U	92	238.0289 <sub>1</sub>	19.05	1135	4131	15	Peligot	1841
<a href="#">Vanadium</a>	V	23	50.9415	6.11	1910	3407	9	del Rio	1801
<a href="#">Xenon</a>	Xe	54	131.293	3.52 <sup>5</sup>	- 111.79	- 108.1 <sub>2</sub>	31	Ramsay and Travers	1898
<a href="#">Ytterbium</a>	Yb	70	173.04	6.972	819	1196	16	Marignac	1878
<a href="#">Yttrium</a>	Y	39	88.9058 <sub>5</sub>	4.457	1522	3345	21	Gadolin	1794
<a href="#">Zinc</a>	Zn	30	65.39	7.133	419.5	907	15	Prehistoric	—
<a href="#">Zirconium</a>	Zr	40	91.224	6.506 <sup>3</sup>	1855	4409	20	Klaproth	1789

NOTES: Elements 112, 113, 114, 115, and 116 are under review and are thus not included. *approximately* means "approximately." < means "less than."

1. Isotopes are different forms of the same element having the same atomic number but different atomic weights.

2. Mass number of the longest-lived isotope that is known.

3. Calculated figure.

4. Artificially produced.

5. Liquid.

6. Estimated.

7. Amorphous.

8. Depending on whether amorphous, graphite, or diamond.

9. Depending on allotropic form.

10. In 2004, the International Union of Pure and Applied Chemistry named element 111 Roentgenium after the discoverer of x-rays, Wilhelm Roentgen.