PROPERTIES OF ELEMENTS (D2)

Chemical Element Name	Chemical Symbol	Relative Atomic Mass of Isotope with Highest Isotopic Abundance A_r [u or Da]	Atomic Number *Z*	Abbreviated Electron Configuration/ Ground Shells	State of Matter at STP	Melting Point/ Liquefaction Point at 1 atm [K]	Boiling Point at 1 atm [K]
Hydrogen	H	1.007 825 032 230 (90)	1	$1s^1$	Gas	14.01	20.28
Helium	He	4.002 603 254 130 (60)	2	$1s^2$	Gas	0.00 [No solid state]	4.22
Lithium	Li	7.016 003 436 600 (4 500)	3	[He] $2s^1$	Solid	453.69	1 615.00
Beryllium	Be	9.012 183 065 000 (82 000)	4	[He] $2s^2$	Solid	1 560.00	2 743.00
Boron	B	11.009 305 360 000 (450 000)	5	[He] $2s^2$ $2p^1$	Solid	2 348.00	4 273.00
Carbon	C	12.000 000 000 000	6	[He] $2s^2$ $2p^2$	Solid	3 823.00	4 300.00
Nitrogen	N	14.003 074 004 430 (200)	7	[He] $2s^2$ $2p^3$	Gas	63.10	77.36
Oxygen	O	15.994 914 619 570 (170)	8	[He] $2s^2$ $2p^4$	Gas	54.80	90.20
Fluorine	F	18.998 403 162 730 (920)	9	[He] $2s^2$ $2p^5$	Gas	53.50	85.03
Neon	Ne	19.992 440 176 200 (1 700)	10	[He] $2s^2$ $2p^6$	Gas	24.56	27.07
Sodium	Na	22.989 769 282 000 (1 900)	11	[Ne] $3s^1$	Solid	370.87	1 156.00
Magnesium	Mg	23.985 041 697 000 (14 000)	12	[Ne] $3s^2$	Solid	923.00	1 363.00
Aluminium	Al	26.981 538 530 000 (110 000)	13	[Ne] $3s^2$ $3p^1$	Solid	933.47	2 792.00
Silicon	Si	27.976 926 534 650 (440)	14	[Ne] $3s^2$ $3p^2$	Solid	1 687.00	3 200.00

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Phosphorus	P	30.973 761 998 420 (700)	15	[Ne] $3s^2$ $3p^3$	Solid	317.30 [Yellow]	553.60 [Yellow]
Sulfur	S	31.972 071 174 400 (1 400)	16	[Ne] $3s^2$ $3p^4$	Solid	388.36	717.87
Chlorine	Cl	34.968 852 682 000 (37 000)	17	[Ne] $3s^2$ $3p^5$	Gas	171.70	239.11
Argon	Ar	39.962 383 123 700 (2 400)	18	[Ne] $3s^2$ $3p^6$	Gas	83.80	87.40
Potassium	K	38.963 706 486 400 (4 900)	19	[Ar] $4s^1$	Solid	336.53	1 032.00
Calcium	Ca	39.962 590 863 000 (22 000)	20	[Ar] $4s^2$	Solid	1 115.00	1 757.00
Scandium	Sc	44.955 908 280 000 (770 000)	21	[Ar] $3d^1$ $4s^2$	Solid	1 814.00	3 103.00
Titanium	Ti	47.947 941 980 000 (380 000)	22	[Ar] $3d^2$ $4s^2$	Solid	1 941.00	3 560.00
Vanadium	V	50.943 957 040 000 (940 000)	23	[Ar] $3d^3$ $4s^2$	Solid	2 183.00	3 680.00
Chromium	Cr	51.940 506 230 000 (630 000)	24	[Ar] $3d^5$ $4s^1$	Solid	2 180.00	2 944.00
Manganese	Mn	54.938 043 910 000 (480 000)	25	[Ar] $3d^5$ $4s^2$	Solid	1 519.00	2 334.00
Iron	Fe	55.934 936 330 000 (490 000)	26	[Ar] $3d^6$ $4s^2$	Solid	1 811.00	3 134.00
Cobalt	Co	58.933 194 290 000 (560 000)	27	[Ar] $3d^7$ $4s^2$	Solid	1 768.00	3 200.00
Nickel	Ni	57.935 342 410 000 (520 000)	28	[Ar] $3d^8$ $4s^2$	Solid	1 728.00	3 186.00
Copper	Cu	62.929 597 720 000 (560 000)	29	[Ar] $3d^{10}$ $4s^1$	Solid	1 357.77	2 835.00

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Zinc	Zn	63.929 142 010 000 (710 000)	30	[Ar] $3d^{10}$ $4s^2$	Solid	692.68	1 180.00
Gallium	Ga	68.925 573 500 000 (1 300 000)	31	[Ar] $3d^{10}$ $4s^2$ $4p^1$	Solid	302.91	2 477.00
Germanium	Ge	73.921 177 761 000 (13 000)	32	[Ar] $3d^{10}$ $4s^2$ $4p^2$	Solid	1 211.00	3 093.00
Arsenic	As	74.921 594 570 000 (950 000)	33	[Ar] $3d^{10}$ $4s^2$ $4p^3$	Solid	1 090.00	887.00
Selenium	Se	79.916 521 800 000 (1 300 000)	34	[Ar] $3d^{10}$ $4s^2$ $4p^4$	Solid	494.00	958.00
Bromine	Br	78.918 337 600 000 (1 400 000)	35	[Ar] $3d^{10}$ $4s^2$ $4p^5$	Liquid	265.80	332.00
Krypton	Kr	83.911 497 728 200 (4 400)	36	[Ar] $3d^{10}$ $4s^2$ $4p^6$	Gas	115.79	119.93
Rubidium	Rb	84.911 789 737 900 (5 400)	37	[Kr] $5s^1$	Solid	312.46	961.00
Strontium	Sr	87.905 612 500 000 (1 200 000)	38	[Kr] $5s^2$	Solid	1 050.00	1 655.00
Yttrium	Y	88.905 840 300 000 (2 400 000)	39	[Kr] $4d^1$ $5s^2$	Solid	1 799.00	3 618.00
Zirconium	Zr	89.904 697 700 000 (2 000 000)	40	[Kr] $4d^2$ $5s^2$	Solid	2 128.00	4 682.00
Niobium	Nb	92.906 373 000 000 (2 000 000)	41	[Kr] $4d^4$ $5s^1$	Solid	2 750.00	5 017.00
Molybdenum	Mo	97.905 404 820 000 (490 000)	42	[Kr] $4d^5$ $5s^1$	Solid	2 896.00	4 912.00
Technetium	Tc	[96.906 366 7(40), 98.906 250 8(10)]	43	[Kr] $4d^5$ $5s^2$	Solid	2 430.00	4 538.00
Ruthenium	Ru	101.904 344 100 000 (1 200 000)	44	[Kr] $4d^7$ $5s^1$	Solid	2 607.00	4 423.00

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Rhodium	Rh	102.905 498 000 000 (2 600 000)	45	[Kr] $4d^8\ 5s^1$	Solid	2 237.00	3 968.00
Palladium	Pd	105.903 480 400 000 (1 200 000)	46	[Kr] $4d^{10}$	Solid	1 828.00	3 236.00
Silver	Ag	106.905 091 600 000 (2 600 000)	47	[Kr] $4d^{10}\ 5s^1$	Solid	1 234.90	2 435.00
Cadmium	Cd	113.903 365 090 000 (430 000)	48	[Kr] $4d^{10}\ 5s^2$	Solid	594.22	1 040.00
Indium	In	114.903 878 776 000 (12 000)	49	[Kr] $4d^{10}\ 5s^2\ 5p^1$	Solid	429.80	2 345.00
Tin	Sn	119.902 201 630 000 (970 000)	50	[Kr] $4d^{10}\ 5s^2\ 5p^2$	Solid	505.08	2 875.00
Antimony	Sb	120.903 812 000 000 (3 000 000)	51	[Kr] $4d^{10}\ 5s^2\ 5p^3$	Solid	903.78	1 860.00
Tellurium	Te	129.906 222 748 000 (12 000)	52	[Kr] $4d^{10}\ 5s^2\ 5p^4$	Solid	722.66	1 261.00
Iodine	I	126.904 471 900 000 (3 900 000)	53	[Kr] $4d^{10}\ 5s^2\ 5p^5$	Solid	386.90	457.50
Xenon	Xe	131.904 155 085 600 (5 600)	54	[Kr] $4d^{10}\ 5s^2\ 5p^6$	Gas	161.30	165.00
Caesium	Cs	132.905 451 961 000 (8 000)	55	[Xe] $6s^1$	Solid	301.59	944.00
Barium	Ba	137.905 247 000 000 (310 000)	56	[Xe] $6s^2$	Solid	1 000.00	2 143.00
Lanthanum	La	138.906 356 300 000 (2 400 000)	57	[Xe] $5d^1\ 6s^2$	Solid	1 193.00	3 737.00
Cerium	Ce	139.905 443 100 000 (2 300 000)	58	[Xe] $4f^1\ 5d^1\ 6s^2$	Solid	1 071.00	3 633.00
Praseodymium	Pr	140.907 657 600 000 (2 300 000)	59	[Xe] $4f^3\ 6s^2$	Solid	1 204.00	3 563.00

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Neodymium	Nd	141.907 729 000 000 (2 000 000)	60	[Xe] $4f^4$ $6s^2$	Solid	1 294.00	3 400.00
Promethium	Pm	[144.912 755 9(33), 146.915 145 0(19)]	61	[Xe] $4f^5$ $6s^2$	Solid	1 400.00	3 300.00
Samarium	Sm	151.919 739 700 000 (1 800 000)	62	[Xe] $4f^6$ $6s^2$	Solid	1 345.00	2 067.00
Europium	Eu	152.921 238 000 000 (1 800 000)	63	[Xe] $4f^7$ $6s^2$	Solid	1 095.00	1 800.00
Gadolinium	Gd	157.924 112 300 000 (1 700 000)	64	[Xe] $4f^7$ $5d^1$ $6s^2$	Solid	1 586.00	3 523.00
Terbium	Tb	158.925 354 700 000 (1 900 000)	65	[Xe] $4f^9$ $6s^2$	Solid	1 629.00	3 503.00
Dysprosium	Dy	163.929 181 900 000 (2 000 000)	66	[Xe] $4f^{10}$ $6s^2$	Solid	1 685.00	2 840.00
Holmium	Ho	164.930 328 800 000 (2 100 000)	67	[Xe] $4f^{11}$ $6s^2$	Solid	1 747.00	2 973.00
Erbium	Er	165.930 299 500 000 (2 200 000)	68	[Xe] $4f^{12}$ $6s^2$	Solid	1 770.00	3 141.00
Thulium	Tm	168.934 217 900 000 (2 200 000)	69	[Xe] $4f^{13}$ $6s^2$	Solid	1 818.00	2 223.00
Ytterbium	Yb	173.938 866 400 000 (2 200 000)	70	[Xe] $4f^{14}$ $6s^2$	Solid	1 092.00	1 469.00
Lutetium	Lu	174.940 775 200 000 (2 000 000)	71	[Xe] $4f^{14}$ $5d^1$ $6s^2$	Solid	1 936.00	3 675.00
Hafnium	Hf	179.946 557 000 000 (2 000 000)	72	[Xe] $4f^{14}$ $5d^2$ $6s^2$	Solid	2 506.00	4 876.00
Tantalum	Ta	180.947 995 800 000 (2 000 000)	73	[Xe] $4f^{14}$ $5d^3$ $6s^2$	Solid	3 290.00	5 731.00
Tungsten	W	183.950 930 920 000 (940 000)	74	[Xe] $4f^{14}$ $5d^4$ $6s^2$	Solid	3 695.00	5 828.00

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Rhenium	Re	186.955 750 100 000 (1 600 000)	75	[Xe] $4f^{14}$ $5d^5$ $6s^2$	Solid	3 459.00	5 896.00
Osmium	Os	191.961 477 000 000 (2 900 000)	76	[Xe] $4f^{14}$ $5d^6$ $6s^2$	Solid	3 306.00	5 285.00
Iridium	Ir	192.962 921 600 000 (2 100 000)	77	[Xe] $4f^{14}$ $5d^7$ $6s^2$	Solid	2 739.00	4 701.00
Platinum	Pt	194.964 791 700 000 (1 000 000)	78	[Xe] $6s^1$ $4f^{14}$ $5d^9$	Solid	2 041.50	4 098.00
Gold	Au	196.966 568 790 000 (710 000)	79	[Xe] $4f^{14}$ $5d^{10}$ $6s^1$	Solid	1 337.33	3 129.00
Mercury	Hg	201.970 643 400 000 (690 000)	80	[Xe] $4f^{14}$ $5d^{10}$ $6s^2$	Liquid	234.32	629.88
Thallium	Tl	204.974 427 800 000 (1 400 000)	81	[Xe] $4f^{14}$ $5d^{10}$ $6s^2$ $6p^1$	Solid	577.00	1 746.00
Lead	Pb	207.976 652 500 000 (1 300 000)	82	[Xe] $4f^{14}$ $5d^{10}$ $6s^2$ $6p^2$	Solid	600.61	2 022.00
Bismuth	Bi	208.980 399 100 000 (1 600 000)	83	[Xe] $4f^{14}$ $5d^{10}$ $6s^2$ $6p^3$	Solid	544.40	1 837.00
Polonium	Po	[208.982 430 8(20), 209.982 874 1(13)]	84	[Xe] $4f^{14}$ $5d^{10}$ $6s^2$ $6p^4$	Solid	527.00	1 235.00
Astatine	At	[209.987 147 9(83), 210.987 496 6(30)]	85	[Xe] $4f^{14}$ $5d^{10}$ $6s^2$ $6p^5$	Solid	575.00	-
Radon	Rn	[210.990 601 1(73), 222.017 578 2(25)]	86	[Xe] $4f^{14}$ $5d^{10}$ $6s^2$ $6p^6$	Gas	202.00	211.40
Francium	Fr	223.019 736 000 000 (2 500 000)	87	[Rn] $7s^1$	Solid	-	-
Radium	Ra	[223.018 502 3(27), 228.031 070 7(26)]	88	[Rn] $7s^2$	Solid	970.00	2 010.00
Actinium	Ac	227.027 752 300 000 (2 500 000)	89	[Rn] $6d^1$ $7s^2$	Solid	1 323.00	3 473.00

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Thorium	Th	232.038 055 800 000 (2 100 000)	90	[Rn] $6d^2$ $7s^2$	Solid	2 023.00	5 093.00
Protactinium	Pa	231.035 884 200 000 (2 400 000)	91	[Rn] $5f^2$ $6d^1$ $7s^2$	Solid	1 845.00	4 273.00
Uranium	U	238.050 788 400 000 (2 000 000)	92	[Rn] $5f^3$ $6d^1$ $7s^2$	Solid	1 408.00	4 200.00
Neptunium	Np	[236.046 570(54), 237.048 173 6(19)]	93	[Rn] $5f^4$ $6d^1$ $7s^2$	Solid	917.00	4 300.00
Plutonium	Pu	[238.049 560 1(19), 244.064 205 3(56)]	94	[Rn] $5f^6$ $7s^2$	Solid	913.00	3 503.00
Americium	Am	[241.056 829 3(19), 243.061 381 3(24)]	95	[Rn] $5f^7$ $7s^2$	Solid	1 449.00	2 284.00
Curium	Cm	[243.061 389 3(22), 248.072 349 9(56)]	96	[Rn] $5f^7$ $6d^1$ $7s^2$	Solid	1 618.00	3 383.00
Berkelium	Bk	[247.070 307 3(59), 249.074 987 7(27)]	97	[Rn] $5f^9$ $7s^2$	Solid	1 323.00 [alpha]	-
Californium	Cf	[249.074 853 9(23), 252.081 627 2(56)]	98	[Rn] $5f^{10}$ $7s^2$	Solid	1 173.00	-
Einsteinium	Es	252.082 980 000 000 (54 000 000)	99	[Rn] $5f^{11}$ $7s^2$	Solid	1 133.00	-
Fermium	Fm	257.095 106 100 000 (6 900 000)	100	[Rn] $5f^{12}$ $7s^2$	-	1 800.00	-
Mendelevium	Md	[258.098 431 5(50), 260.103 65(34#)]	101	[Rn] $5f^{13}$ $7s^2$	-	1 100.00	-
Nobelium	No	259.101 030 000 000 (110 000 000#)	102	[Rn] $5f^{14}$ $7s^2$	-	1 100.00	-
Lawrencium	Lr	262.109 610 000 000 (220 000 000#)	103	[Rn] $5f^{14}$ $7s^2$ $7p^1$	-	1 900.00	-
Rutherfordium	Rf	267.121 790 000 000 (620 000 000#)	104	[Rn] $5f^{14}$ $6d^2$ $7s^2$	-	-	-

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Dubnium	Db	268.125 670 000 000 (570 000 000#)	105	[Rn] $5f^{14}$ $6d^{3}$ $7s^{2}$	-	-	-
Seaborgium	Sg	271.133 930 000 000 (630 000 000#)	106	[Rn] $5f^{14}$ $6d^{4}$ $7s^{2}$	-	-	-
Bohrium	Bh	272.138 260 000 000 (580 000 000#)	107	[Rn] $5f^{14}$ $6d^{5}$ $7s^{2}$	-	-	-
Hassium	Hs	270.134 290 000 000 (270 000 000#)	108	[Rn] $5f^{14}$ $6d^{6}$ $7s^{2}$	-	-	-
Meitnerium	Mt	276.151 590 000 000 (590 000 000#)	109	[Rn] $5f^{14}$ $6d^{7}$ $7s^{2}$	-	-	-
Darmstadtium	Ds	281.164 510 000 000 (590 000 000#)	110	[Rn] $5f^{14}$ $6d^{9}$ $7s^{1}$	-	-	-
Roentgenium	Rg	280.165 140 000 000 (610 000 000#)	111	[Rn] $5f^{14}$ $6d^{10}$ $7s^{1}$	-	-	-
Copernicium	Cn	285.177 120 000 000 (600 000 000#)	112	[Rn] $5f^{14}$ $6d^{10}$ $7s^{2}$	-	-	-
Nihonium	Nh	284.178 730 000 000 (620 000 000#)	113	[Rn] $5f^{14}$ $6d^{10}$ $7s^{2}$ $7p^{1}$	-	-	-
Flerovium	Fl	289.190 420 000 000 (600 000 000#)	114	[Rn] $5f^{14}$ $6d^{10}$ $7s^{2}$ $7p^{2}$	-	-	-
Moscovium	Mc	288.192 740 000 000 (620 000 000#)	115	[Rn] $5f^{14}$ $6d^{10}$ $7s^{2}$ $7p^{3}$	-	-	-
Livermorium	Lv	293.204 490 000 000 (600 000 000#)	116	[Rn] $5f^{14}$ $6d^{10}$ $7s^{2}$ $7p^{4}$	-	-	-
Tennessine	Ts	292.207 460 000 000 (750 000 000#)	117	[Rn] $5f^{14}$ $6d^{10}$ $7s^{2}$ $7p^{5}$	-	-	-
Oganesson	Og	294.213 920 000 000 (710 000 000#)	118	[Rn] $5f^{14}$ $6d^{10}$ $7s^{2}$ $7p^{6}$	-	-	-

Abbreviations and Notes:

- Uncertainty: Provided in Concise Form (1σ)
- [] (Relative Atomic Mass): No Stable Isotope Observed, Range of Isotopic Masses Provided
- # (Relative Atomic Mass): Value Partially Derived from Trends from the Mass Surface (TMS)
- [] (Abbreviated Electron Configuration/Ground Shells): Designations Used,
  - **[He]** $1s^2$
  - **[Ne]** $1s^2\ 2s^2\ 2p^6$
  - **[Ar]** $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6$
  - **[Kr]** $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^{10}\ 4s^2\ 4p^6$
  - **[Xe]** $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^{10}\ 4s^2\ 4p^6\ 4d^{10}\ 5s^2\ 5p^6$
  - **[Rn]** $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^{10}\ 4s^2\ 4p^6\ 4d^{10}\ 5s^2\ 5p^6\ 4f^{14}\ 5d^{10}\ 6s^2\ 6p^6$
- STP: Standard Temperature and Pressure (also abbreviated as NTP)[1]

Units:

- atm: Atmospheric Pressure
- Pa: Pascal
- K: Kelvin
- u or Da: Unified Atomic Mass Unit

Sources:

- Chemical Element Name [6] [10] [13] [17]
- Chemical Symbol [6] [10] [13] [17]
- Relative Atomic Mass of Isotope with Highest Isotopic Abundance, A_r [1] [4] [5] [10] [13] [14] [20] [21]
- Atomic Number, Z [6] [10] [13] [17]
- Abbreviated Electron Configuration/Ground Shells [2] [3] [7] [8] [9] [11] [12] [15] [16] [18] [19] [20] [21]
- State of Matter/Phase at STP [14] [17] [20] [21]
- Melting Point/Liquefaction Point at STP [14] [17] [20] [21]
- Boiling Point at STP [14] [17] [20] [21]

[1] Standard Temperature and Pressure (also abbreviated as NTP) is here defined as 293.15 K and 1 atm.